IDENTIFICATION AND QUANTIFICATION OF SUBMARINE GROUNDWATER DISCHARGE IN THE HAWAIIAN ISLANDS

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ABSTRACT

Submarine groundwater discharge (SGD) is a fundamental pathway for nutrient and contaminant entry to the world's coastal zones from terrestrial aquifers. The distribution and scale of SGD vary spatially and temporally, necessitating use of multiple methodologies for its study. High-resolution aerial thermal infrared (TIR) remote sensing was employed to map the distribution of cold SGD around much of Oahu, Hawaii, and a dual infrared thermography and in situ tracer (^{222}Rn, temperature, salinity, and dissolved inorganic nutrient) study in Pearl Harbor was conducted to determine locations and fluxes of groundwater discharge to the harbor. Surface water surveys of the natural tracer ^{222}Rn in Pearl Harbor confirmed point source and diffuse seepage areas identified in SST maps. Conservative estimates of groundwater fluxes derived from ^{222}Rn inventories of surface water indicate that between 119,400 and 322,030 m^3/d of groundwater enters the harbor along its shoreline. Recently discharged groundwater contributes at least 51,600 mol/d of nitrate, 4,500 mol/d of phosphate, and 835,000 mol/d of silica to the harbor. Isotopic analyses of dissolved nitrate suggest that multiple water sources exist in the harbor and that these sources mix within the aquifer.

Chlorofluorocarbon groundwater apparent ages in Kona Hawaii were investigated to determine groundwater residence times and potential implications of the residence times on discharging groundwater. A single water-source model indicates that groundwater recharged four supply wells during the mid-1960s and mid-1970s. Recharge occurred between the mid-1970s and mid-1980s for several coastal wells and ponds using the same model. Alternately, a simple binary mixing model, with one water source recharged prior to 1940 (young water) and the other after 1940 (old water), indicates recharge of the young water fraction from between the mid-1970s to mid-1980s for several wells and coastal ponds. Water supply wells contain greater proportions of relatively old groundwater than coastal wells and ponds, consistent with sampling depths, complex aquifer geometries, and varied flow networks that cause mixing of old water with younger water within the aquifers. Furthermore, CFCs may be used to identify water from different aquifers.

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CHAPTER 1. INTRODUCTION

Submarine Groundwater Discharge

Submarine groundwater discharge (SGD) is a global, naturally occurring process that happens wherever coastal aquifers are in direct communication with the sea. SGD is typically defined as any and all flow of water across the sea floor regardless of fluid composition or driving force (Burnett et al., 2003). The definition of SGD includes water circulation through continental shelf sediments, but excludes deep-sea hydrothermal circulation, deep fluid expulsion at convergent margins, and density-driven cold seeps on continental slopes (Burnett et al., 2006).

Submarine groundwater discharge is an important component of the hydrological cycle. The Atlantic Ocean, for example, receives similar volumes of SGD and riverine inputs (Moore et al., 2008). In the Hawaiian Islands, Garrison et al. (2003) found a similar relationship of equal fluxes of SGD and surface runoff to Kahana Bay on Oahu. In addition, although the flux of SGD to coastal ecosystems may be less than surface water inputs, SGD's dissolved nutrient concentrations are often much larger than surface water counterparts. An excellent example of this disparity was demonstrated by Garrison et al. (2003) for Kahana Bay, where estimates of total dissolved phosphorus fluxes and total dissolved nitrogen fluxes from SGD were 500 and 200 times greater, respectively, than fluxes from surface runoff. Similar relationships have been found in numerous areas, including South Carolina (Krest et al., 2000) and Thailand (Burnett et al., 2007). SGD can, therefore, impact coastal ecosystems leading to eutrophication (Paerl, 1997; Bowen et al., 2007), harmful algal blooms (Paerl, 1997; Hu et al., 2006; Lee and Kim, 2007), and shifts in the dominant flora and fauna of coastal waters (Dollar and Atkinson, 1992; Miller and Ullman, 2004).

Since SGD occurs at a variety of scales, is spatially and temporally variable, and may flow through easily identifiable point-sources or as more discrete, diffuse flows, a variety of methods are customarily employed to effectively study this common coastal zone process. Burnett et al. (2006) provides a comprehensive overview of different measurement techniques, including seepage meters, piezometers, radiochemical tracers, temperature, and salinity. I have primarily employed temperature, salinity, and the radiochemical tracer radon-222 (^{222}Rn) to study SGD.

Temperature and salinity are two of the easiest tracers of SGD to measure. Temperature can be utilized to study SGD in areas where the temperature of discharging water contrasts with that of receiving water. Since SGD typically contains a fresh groundwater component, the salinity of the discharging water will be fresher than seawater. Temperature and salinity are usually measured concurrently during in situ field work via boat or shoreline surveys.

Thermal infrared (TIR) remote sensing is another method used to detect SGD. The TIR technique utilizes the typically buoyant nature of groundwater discharge relative to estuary or ocean water. The method is used to determine temperature differences between discharging groundwater and coastal water. TIR data can be obtained from satellite missions (e.g. Varma et al., 2010; Wilson and Rocha, 2012) or aerial missions (e.g. Miller and Ullman, 2004; Mulligan and Charette, 2006; Johnson et al., 2008) to study SGD. Satellite data are relatively inexpensive for the end-user, but typically cannot resolve SGD on the smaller scales at which it is normally observed. Aerial surveys require specialized equipment and aircraft time, but do provide information about SGD on the scales at which it is commonly observed. However, the TIR technique only senses the surface skin of the water column. It does not provide information about mixing that occurs within the water-column or groundwater discharge from sediment/water interface that does not float to the water's surface, for example.

^{222}Rn is a natural radiochemical tracer of groundwater discharge (e.g. Dulaiova et al., 2005; Burnett et al., 2006). ^{222}Rn is radioactive-conservative and is enriched in groundwater aquifers relative to ocean water due to the natural occurrence of ^{238}U in basalt and sedimentary rocks. ^{238}U is a parent isotope of ^{222}Rn. This enrichment of ^{222}Rn in groundwater results in a large concentration gradient between the discharging groundwater and the receiving water, making identification of groundwater discharge based on elevated ^{222}Rn activities possible. A disadvantage of using ^{222}Rn is that all non-groundwater sources and sinks must be evaluated (Burnett et al., 2006).

Field Sites

I primarily investigated two field sites for my in situ research. One field site was Pearl Harbor, Hawaii on the island of Oahu. The other field site was the Kona Coast, on the west side of the island of Hawaii.

Pearl Harbor is the largest estuary in the Hawaiian Islands. It also has the largest freshwater spring complex in the Hawaiian Islands. Pearl Harbor represents a drowned river system that has been successively flooded and drained as a result of past sea-level changes (Stearns, 1985). During lower sea-level stands, fairly impermeable sedimentary rocks were deposited over much of Pearl Harbor's coastal plain and valley mouth areas (Stearns and Vaksvik, 1935). The sedimentary rocks were deposited on top of the volcanic rocks that contain the island's primary drinking water aquifer. The main source of groundwater to the Pearl Harbor area originates from rainfall over the Koolau Mountains on the north and east sides of the harbor. Smaller amounts of water originate from the Waianae Mountains to the west of the harbor (Hufen et al., 1980). This groundwater converges in the basaltic aquifer along a narrow zone between the inland edge of the sedimentary rocks and ~6 m above sea level (Stearns and Vaksvik, 1935; Visher and Mink, 1964). The confining sedimentary rock pressurizes the upper part of the volcanic-rock aquifer and produces numerous subaerial springs. Less voluminous subaerial and submarine springs flow from more seaward areas of the sedimentary rock (Lau, 1962; Visher and Mink, 1964). Hunt (1996) also speculated that groundwater discharge occurs as diffuse leakage through the sedimentary rocks and in areas where the confining sedimentary rocks are absent or scant. Sources of water to Pearl Harbor include stream flow and runoff from precipitation, spring-fed streams, subaerial springs near the estuary, submarine springs, and diffuse flow.

The Kona Coast is located on the dry, western side of the island of Hawaii. Hawaii Island is composed of numerous lava flows with variable thicknesses and composition. The permeability of the rocks is heterogeneous, but is high overall (Stearns and MacDonald, 1946). The coastal area receives between 500 and 1000 mm of rain per year. This contrasts to the inland, and upslope areas of the coast that receive >2000 mm of rain per year. Recharged water flows toward the coast through volcanic rock aquifers and eventually discharges to the coast as submarine groundwater discharge. There are no perennial streams in the area, so submarine groundwater discharge is the only source of freshwater to the area's coastal zones.

Research Objectives

My research has primarily been focused on three objectives related to the study of SGD. My first objective was to fully develop a method to locate SGD on regional scales. My second objective was to quantify SGD that I identified by completing my first objective. My final objective was to understand how groundwater end-member sources, mixing, and nutrient transformations impact SGD. The research presented within primarily utilizes TIR remote sensing and ^{222}Rn as a tracer of SGD.

Previous studies of SGD have demonstrated that TIR remote sensing can be used to identify SGD (e.g. Miller and Ullman, 2004; Mulligan and Charette, 2006; Johnson et al., 2008), but very few studies have employed the technique at regional scales (e.g. Johnson et al., 2008). The aerial TIR technique has remained relatively inaccessible to most researchers because a thorough description of the necessary equipment and methods has been lacking. Furthermore, the cost to obtain such data through outside vendors is typically prohibitive ($100K or higher per survey).

My primary hypothesis for my first research objective was that aerial TIR remote sensing would be a reliable technique to detect SGD on the scales it is commonly observed. With that in mind, I developed a methodology for aerial TIR remote sensing that includes data collection, post-flight data processing, and image interpretation. To test my hypothesis, I employed aerial TIR remote sensing to detect SGD on a regional scale (the island of Oahu, Hawaii). I further validated SGD detections from the aerial TIR imagery by conducting in situ field work in Pearl Harbor using commonly-used and well-established in situ SGD tracers (temperature, salinity, and ^{222}Rn).

My second objective was to utilize the aerial TIR imagery to plan in situ field work to quantify SGD in Pearl Harbor, Hawaii. One hypothesis for this research was that the aerial TIR surveys and in situ ^{222}Rn measurements would identify similar areas of groundwater discharge. To determine groundwater fluxes to the harbor, I employed ^{222}Rn mass balance techniques (e.g. Dulaiova et al., 2005, 2010). I collected ^{222}Rn data from stationary time-series platforms, surface-water surveys of ^{222}Rn, and water-column surveys of ^{222}Rn.

I also characterized nutrient concentrations in groundwater end-members to develop nutrient budgets for the harbor. I conducted this research to partially fulfill the

third objective of my dissertation. To understand nitrogen transformations along flow paths, I also employed the "denitrifier" method (Sigman et al., 2001; Casciotti et al., 2002) to determine nitrogen and oxygen isotopic compositions of nitrate dissolved in groundwater.

SGD assessment necessitates a thorough understanding of groundwater influences upland of discharge sites as well as an understanding of the changes groundwater undergoes as it travels through aquifers and discharges to coastal waters. In order to understand how groundwater end-member sources and evolution impact SGD, one must first know about aquifer residence times. The hypothesis for my third objective was that chlorofluorocarbons (CFCs) could be used in the fairly pristine environment on the Kona Coast to determine apparent groundwater ages of water in both high-level and basal aquifers. Furthermore, once a recharge date was known with some certainty, groundwater sources and mixing could be evaluated. Potential then existed for inferences about how changes in land-use and climatic patterns may have impacted recharging aquifers and how those patterns may impact the discharging groundwater, and coastal ecosystems receiving the discharge. I would have loved to conduct this research in the Pearl Harbor area; however, previous research by Hunt (2004) demonstrated that CFCs were unable to determine apparent groundwater ages for the area because of recent recharge related to agricultural practices.

Significance of Work

Since SGD is spatially and temporally variable, and nearly invisible in plain (visible) light, locating SGD can be quite challenging. I have devised an aerial TIR remote sensing technique that quickly and accurately locates point-source and non-point-source SGD inputs on a regional scale by using temperature differences between discharging and receiving waters. Once airborne, approximately 40 km of coastline can be mapped per hour with this technique. Aerial TIR remote sensing, therefore, provides the ability to regionally assess SGD on the scale it is normally observed in a few hours of flight time. Post flight data processing is involved, but a well-trained person can process one flight line, calculate surface plume areas, and make a publication quality sea-surface temperature (SST) map in about twelve hours. This is typically the same amount of time

that it would take a well-trained person to process in situ measurements of one ^{222}Rn time-series platform or one ^{222}Rn survey for locating SGD.

Aerial TIR imagery is usually utilized qualitatively to study SGD. I have confirmed that SST maps are also quantitative tools that can be used to calculate surface plume areas. Furthermore, I have confirmed that surface plume areas identified in the infrared imagery do correlate to measured SGD fluxes. This correlation provides a way to estimate total groundwater discharge to a field area by measuring fluxes for only a few SGD plumes.

In situ assessment is crucial for confirming SGD identified in SST maps. I demonstrate that SST maps do correlate to SGD locations through field measurements conducted in Pearl Harbor, Hawaii. Pearl Harbor is the largest estuary in the Hawaiian Islands and has the largest spring complex in the Hawaiian Islands. Quantifying groundwater inputs to the harbor, therefore, also has broader significance to the scientific community than just confirming that aerial TIR remote sensing reliably and accurately detects SGD. One particularly significant aspect of my research in Pearl Harbor involves estimating groundwater and dissolved nutrient fluxes to the harbor on a segment-by-segment of coastline basis. This technique utilizes ^{222}Rn mass balance models and provides flux estimates in units of volume of water per length of shoreline per unit of time. These units allow for easy comparison of groundwater discharges and nutrient fluxes throughout the harbor, as well as with other locations around the world.

SGD, by definition, excludes all subaerial inputs of groundwater to a field area. The numerous subaerial spring sources to Pearl Harbor do contribute recently discharged groundwater to the estuary. In the strictest sense, we measured SGD to Pearl Harbor through completion of my second objective. I do, however, recognize the importance of the subaerial springs to the overall water (and nutrient) budget for the harbor. I also recognize that the ^{222}Rn tracer will detect non-degassed water from the subaerial springs, but will not detect degassed water from the subaerial springs. The flux estimates of SGD by ^{222}Rn mass balance will therefore include fractions of subaerial spring discharge that have not completely degassed ^{222}Rn, before entering the estuary. Unfortunately, ^{222}Rn cannot distinguish true SGD from subaerial spring discharge in these situations. I have therefore estimated fluxes of freshwater discharge from the subaerial springs using a

salinity balance model. I also estimate subaerial spring fluxes using linear correlations between spring discharge rates and water-head in a nearby water supply well (Oki, 1998). This research, as a whole, does provide the most up-to-date assessment of Pearl Harbor's groundwater resources. Furthermore, our flux estimates include diffuse seepage to the harbor, which has not been previously measured.

Nitrogen isotopic studies of macroalgae have been used in the Hawaiian Islands to study nitrogen sources to coastal waters (e.g. Derse et al., 2007; Dailer et al., 2010, 2012). Aside from research by Hunt (2007) and Hunt and Rosa (2009), use of isotopic analyses of dissolved nitrate in groundwater to study nutrient sources and cycling has been underutilized in the Hawaiian Islands. I have measured the combined nitrogen and oxygen isotopic composition of dissolved nitrate from water supply wells, coastal springs, and estuary waters in the Pearl Harbor area. To my knowledge, this is the first study in Hawaii to use stable isotope analyses of dissolved nitrate in areas that are not directly impacted by waste-water injection.

My combined use of oxygen and hydrogen isotopic analyses of groundwater, $\delta^{18}O$/altitude gradients, and well-established lapse rates has provided an integrated way to establish recharge trajectories for water samples. An integrated approach can easily be applied to other areas in the Hawaiian Islands with steep elevation gradients. I have also shown that CFCs can be successfully applied to more pristine areas in the Hawaiian Islands and can potentially be used to determine if a water sample originated from high-level or basal aquifers. The broader implications of this research include (1) the ability to assess anthropogenic inputs along water flow paths, (2) the ability to infer how land-use changes may impact groundwater resources, including those that discharge to the sea, and (3) the ability to evaluate how changes in climatic patterns may impact groundwater resources, including those that discharge to the sea.

Dissertation Organization

Since SGD is cold relative to seawater in the Hawaiian Islands, temperature is a tracer that distinguishes SGD from coastal waters. One very effective way to determine the spatial distribution of SGD on a regional scale is to generate SST maps using TIR remote sensing. I choose airborne mapping missions because they provide much higher spatial resolution (0.5 to 3.2 m) compared to satellite data (60 m). This technique

allowed me to collect SST data from approximately 40 km of coastline per hour with a temperature accuracy of 0.5°C and a precision of 0.1°C. *Chapter 2* presents a complete methodology for data collection, post-flight data processing, and image interpretation of infrared data. Specific examples are given from the islands of Oahu, Hawaii, and Maui. Since the material presented in *Chapter 2* is primarily methods, I have written the chapter in the Limnology and Oceanography Methods style.

^{222}Rn, a geochemical tracer of SGD, is generated from the decay of uranium-series isotopes naturally present in the volcanic and sedimentary rocks of the Islands. Once produced, ^{222}Rn can dissolve into the groundwater. As a result, groundwater becomes enriched in ^{222}Rn relative to seawater. Groundwater discharge therefore generates concentration gradients, which are detectable by surface-water ^{222}Rn surveys, ^{222}Rn surveys of the water column, and stationary time-series ^{222}Rn measurements. *Chapter 3* discusses the combined use of aerial thermal infrared remote sensing and ^{222}Rn measurements in Pearl Harbor, Hawaii. The aerial TIR survey and the ^{222}Rn survey are independent techniques and operate at different scales (3.2 m for thermal infrared and 1-100 m for ^{222}Rn surveys). Both methods identified similar groundwater discharge areas. Groundwater discharge fluxes for Pearl Harbor are also presented in *Chapter 3*.

Of particular concern to ecosystems health and management is nutrient loading, especially where anthropogenic influences impact nutrient loads entering coastal zones. SGD is a natural pathway for transportation of dissolved nutrients into coastal areas. In the Hawaiian Islands, groundwater is naturally enriched in dissolved nutrients compared to the oligotrophic waters surrounding the Islands. *Chapter 4* presents dissolved nitrate, dissolved phosphate, and dissolved silica nutrient budgets for Pearl Harbor. Potential sources of dissolved nitrate within the groundwaters entering the harbor and processes modifying the dissolved nitrate as groundwater flows from mountainous recharge areas to coastal discharge zones are also addressed.

Understanding groundwater nutrient evolution, recharge altitudes, probable recharge areas, and flow paths is important for assessing how groundwater discharge may vary through time. Such assessments require knowledge of aquifer residence times. The chlorofluorocarbon technique is a well-established method for assessing apparent groundwater ages on a 60-year time sale. *Chapter 5* presents apparent groundwater ages,

recharge altitudes, and probable recharge areas for multiple aquifers located near Kona, Hawaii.

Chapter 6 discusses the major conclusions of my research. I also present ideas for future research that expand upon what I have presented within my dissertation.

I have collected aerial TIR imagery from much of the island of Oahu. I present this imagery in *Appendix 1*. The imagery is organized in panels starting at Hanauma Bay that move clock-wise around the island ending at Kawela Bay. I was unable to map windward Oahu from Kaneohe Bay to the east side of Hanauma Bay due to persistent cloud-cover. The temperature scales in each SST map vary between panels to maximize contrast of features located within each panel. All panels are, however, shown at the same map scale (1:25,000) so features in different panels may be easily compared.

A large amount of in situ data from a variety of scientific apparatuses has been collected for my dissertation. I have compiled all of this data in *Appendix 2*.

CHAPTER 2. HIGH-RESOLUTION AERIAL INFRARED MAPPING OF GROUNDWATER DISCHARGE TO THE COASTAL OCEAN

Introduction

Submarine groundwater discharge (SGD) is a global, naturally occurring process that happens wherever coastal aquifers are in direct communication with the sea (Moore, 1999). SGD is any combination of terrestrially-derived freshwater mixed with recirculated seawater, which is discharged to the sea through subterranean estuaries (Moore, 1999). Temperatures of SGD are usually either colder or warmer than waters receiving the discharge. SGD occurs at a wide variety of scales and is typically less saline than seawater, forming point-sourced plumes and diffuse, non-point-sourced discharges, which commonly float upon seawater.

SGD can impact coastal zone biogeochemistry through transfer of pristine and anthropogenically-enhanced fluxes of biologically available nutrients, trace metals, carbon, and bacteria to oceans (Krest et al., 2000; Moore et al., 2002; Paerl et al., 2002; Burnett et al., 2007). Because SGD is typically nutrient laden, it can sustain new primary productivity (Giblin and Gaines, 1990; Valiela et al., 1990, 1992; Miller and Ullman, 2004; Paytan et al., 2006; Street et al., 2008), promote coastal eutrophication, and nourish harmful algal blooms (Paerl, 1997; Hu et al., 2006; Bowen et al., 2007; Lee and Kim, 2007). Shifts in dominant flora and fauna within coastal waters (Dollar and Atkinson, 1992; Miller and Ullman, 2004) may result, driving nitrogen-limited coastal primary production to phosphorus limitation (Slomp and Van Cappellen, 2004). The growing national recognition that SGD is a critical pathway for nutrient and contaminant entry to oceans (e.g. National Research Council, 2004) has led to the realization that techniques are necessary to pinpoint and up-scale local SGD assessments to a regional basis.

SGD is spatially and temporally variable, and virtually invisible in plain (visible) light. Locating discharges is therefore challenging, even when relying on the multitude of traditional ground-based methods such as geochemical tracers (radon and radium), temperature, salinity, seepage meters, piezometers, electrical resistivity, and hydrological modeling (e.g. Burnett et al., 2006).

SGD can be identified at the top-most surface of a water body by thermal infrared (TIR) remote sensing. Infrared technology can be used at large scales via satellite, with

individual pixel resolutions of ~60 m to 10's of kms (see Wilson and Rocha, 2012 for a review), or via aircraft at finer scales suitable for detailed SGD characterization, with pixel resolutions better than 5 m. End-users can inexpensively acquire satellite data, which provide board views of SGD. The coarse spatial resolution of satellite data usually cannot resolve localized features, common for SGD. Collecting airborne TIR data involves costs of hardware and aircraft time, but the imagery can pinpoint SGD on the scales at which individual discharges typically occur. Airborne missions can be designed for any coastline configuration and can be up-scaled or down-scaled by simple adjustments of flight altitude.

Thermographic detection of SGD depends on a difference in temperature between discharging groundwater and seawater. Roxburgh (1985), Banks et al. (1996), and Miller and Ullman (2004) used aerial infrared thermography at high latitudes to study seasonally warm SGD. Portnoy et al. (1998), Shaban et al. (2005), Mulligan and Charette (2006), and Danielescu et al. (2009) used aerial infrared surveying to study seasonally cold SGD at high latitudes. Adams and Lepley (1968), Duarte et al. (2006), and Johnson et al. (2008) used aerial TIR at low latitudes to study groundwater that is colder than seawater. Additionally, Akawwi et al. (2008) used aerial infrared thermography to study geothermally-heated discharge. These studies demonstrate the utility and applicability aerial infrared thermography to a wide variety of settings.

We believe that TIR techniques have strong potential to augment coastal zone studies that utilize temperature contrasts, such as SGD research. One barrier to wide-spread use of infrared thermography has been the lack of a detailed description to easily conduct an infrared survey and adequately process the resulting data. We present a comprehensive description of our methodology for aerial TIR data collection, post-flight data processing, and image interpretation to detect and quantify any thermal anomaly in coastal zones, including SGD. We demonstrate high-resolution differentiation and mapping of point-source and non-point-source SGD flows, and illustrate variances in data collection at different altitudes. We also provide insight for distinguishing SGD from radiance anomalies created by beach sands, mudflats, shoreline vegetation, shallow waters, and other potential sources of false SGD. Finally, we show that high-resolution TIR imagery can be applied to up-scale groundwater flux measurements to the sea.

Materials and Procedures

Flight Track Planning

Our flight tracks were designed to contain land for manual tie-point georeferencing in the event of INS/GPS (inertial navigation system and global positioning system) system failure. Flight tracks varied in length and were designed to best fit the coastline. For coastal areas larger than the physical area viewable by our camera configuration, multiple, adjacent flight tracks were necessary. Adjacent flight tracks were designed with 30% overlap to maximize continuous sea-surface temperature (SST) mapping. This overlap also provided allowances for aircraft deviation from the planned flight track and aircraft movements such as roll and pitch.

Equipment

For the majority of our research, we used a FLIR Systems Inc. (Portland, Oregon) Photon 320 uncooled microbolometer array camera. This camera has a 320 X 240 pixel detector array and operates in the 8.5-13.5 μm region of the electromagnetic spectrum. The camera's range reduces sensitivity to atmospheric water and carbon dioxide. The measured sensitivity of the camera is 20 mK, well below environmental variables. A 25 mm focal length lens was used on the camera, giving an angular sample of 1.5 mrad/pixel and a camera field of view of 27.5 X 22.0°.

A temperature-adjustable blackbody with a flat-panel design accurate to within 0.1°C was used to calibrate the infrared data during our flights. All calibration temperatures were chosen to bracket the temperatures of the water of interest.

A combined INS/GPS monitored aircraft velocity, roll, pitch, heading, and the three-dimensional position of the aircraft during the flight. This system (C-MIGITS™ II manufactured by BEI Systron Donner Inertial Division, Concord, California and operated in standard positioning service (SPS) mode) has rated performances of 78 m three-dimensional position, 45 m circular error probable horizontal position accuracy, and 52 m vertical error probable vertical position accuracy. Horizontal velocity accuracy is 0.5 m/s, vertical velocity accuracy is 1.0 m/s, roll and pitch accuracy is 2.5 mrad, and heading accuracy is 3 mrad.

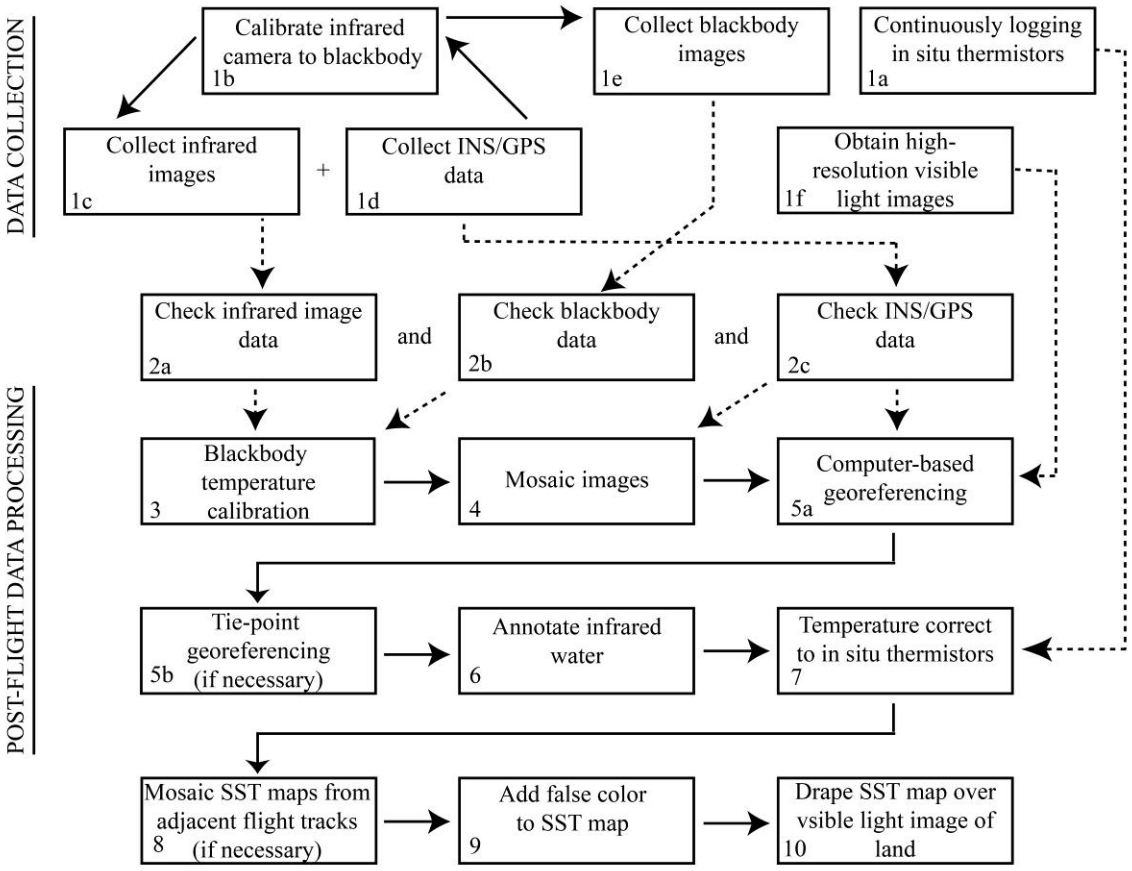


Figure 2.1: Data collection and post-flight data processing flowchart. Boxes represent processes, solid arrows show the progression from one process to another, and dashed arrows indicate the required data for each process. The "if necessary" steps may be bypassed.

The infrared system (camera, blackbody, INS/GPS, and data collection computer) was operated in a twin engine Piper Navajo. We designed and custom built a camera mount that fit into the aircraft's hull. The camera was affixed to the top of the mount with nadir view. The top and bottom of the mount were separated by vibration isolators that dampened aircraft vibrations and resonant frequencies. Except for vibration isolation, the camera was not otherwise stabilized. The blackbody calibration plate was incorporated into the camera mount directly below the camera. The plate was affixed on roller bars allowing manual movement out of the camera's field of view during data acquisition and movement into the camera's field of view for calibration. This integrated arrangement allowed blackbody calibration in-between every flight track during our flights.

Data Collection

Data acquisition (Figure 2.1) included collecting 100 low-temperature calibration images of the blackbody followed by 100 intermediate-temperature calibration images (Figure 2.1, boxes 1b and 1e). Flight track images were then collected (Figure 2.1, box 1c), followed by 100 high-temperature calibration images of the blackbody (Figure 2.1, box 1e). We collected 100 calibration images to reduce random noise in the calibration data to values well below inherent noise in the scene data. All images were collected at a frame rate of 30 Hz. INS/GPS data were simultaneously collected with image data (Figure 2.1, box 1d). This process was repeated for every flight track (Figure 2.1, boxes 1b-1e).

Image Processing

Software

We used ENVI+IDL (Exelis, Boulder, Colorado) to process our data. We could have also easily processed our data using Matlab (MathWorks, Natick, Massachusetts) or ERDAS (Intergraph, Norcross, Georgia), for example. Our processing methodology, described below, is generalized enough to be adapted to any of these software packages.

Data Inspection and Quality Control

We inspected all INS/GPS data for quality and completeness (Figure 2.1, box 2c). We also inspected all coastline images (Figure 2.1, box 2a) and blackbody images (Figure 2.1, box 2b) for quality and completeness.

Temperature Calibration

To calibrate all coastal images, the camera observed the surface of a single, uniform flat-panel blackbody that produces known responses from known inputs. Data were converted from digital counts (DN) to temperature (Figure 2.1, box 3) using low-and-high-temperature blackbody observations to determine pixel dependent gains

$$gain_{xy} = (T_h - T_l)/(DN_{xy,Th} - DN_{xy,Tl}) \quad (2.1)$$

and offsets

$$offset_{xy} = T_h - gain_{xy} DN_{xy,Th} \quad (2.2)$$

to calculate the apparent temperature of the water's surface ($T_{surface}$) on a pixel-by-pixel basis, this also removed non-uniformity in the camera sensor:

$$T_{surface} = gain_{xy} DN_{xy,surface} + offset_{xy} \quad (2.3)$$

where $gain_{xy}$ is gain in units of °C/DN, T_h and T_l are the high- and low-blackbody temperatures, $DN_{xy,Th}$ is the DN value for pixel x,y at the high-temperature blackbody calibration, $DN_{xy,Tl}$ is the DN for pixel x,y at the low-temperature blackbody calibration, $offset_{xy}$ is the offset in units of °C, and $DN_{xy,surface}$ is the DN recorded by the camera for pixel x,y.

Image Mosaicking

We accomplished image mosaicking (Figure 2.1, box 4) by constructing a blank array (workspace), appropriately sized to contain all mosaicked images from a flight track. Next, the center of the first image was placed at a known (x,y) coordinate within the array. The image was then corrected for aircraft roll (x-coordinate plane correction) and pitch (y-coordinate plane correction), returning the image to a perfect nadir view. Each image was next rotated to account for aircraft heading. Finally, a latitude and longitude correction placed all images an appropriate distance from the first image, reflecting aircraft movement across Earth's surface. Since total meters in one degree of latitude and longitude vary by geographic location, we used the geographic location of the central image in each flight track to calculate the average meters per degree of latitude and longitude. Variation in aircraft speed was accommodated with this last correction. This correction was also altitude-dependent; the pixel size as mapped on the ground, for example, decreased as the aircraft operated at lower altitudes.

Since we operated over the ocean, we assumed flat-surface topography and constant aircraft elevation for mosaicking our images. We did not correct our mosaicked images for altitude variation.

Average temperature for every pixel was calculated as each image was placed in the array. During mosaicking, pixels representing the same object on the ground were stacked to occupy the same physical space as previously placed images. Temperatures of all stacked pixels were summed, providing a cumulative temperature for each pixel (T_{sum}). Stacked pixels occupying the same physical space were also summed (N_{sum}). An average temperature (T_{ave}) for every pixel was then calculated by:

$$T_{ave} = T_{sum}/N_{sum} \quad (2.1)$$

Every pixel in the resulting image contained temperature, but lacked spatial reference.

Georeferencing

Computer-based georeferencing (Figure 2.1, box 5a) utilized a latitude array and a longitude array of exactly the same size as the blank array described in the previous section. We determined the exact row in the blank array that held the center of the very first image placed during mosaicking. We then gave the appropriate row in the latitude array the latitude coordinate that corresponded to the center of the first flight track image placed during mosaicking. Insertion of the latitude coordinate into the latitude array necessitated the same pitch, roll, and heading corrections that the mosaicked image underwent. Similarly, the appropriate array column was identified and populated with the longitude coordinate of the first image placed during mosaicking. Next, both arrays were populated with the remaining latitude and longitude coordinates. These coordinates were calculated using the pixel size for each flight altitude and the meters per degree of latitude and longitude determined during the previous step. The outcome produced arrays with geographic coordinates that were merged to the image mosaic, creating an infrared image that contained temperature, latitude, and longitude in every pixel.

We obtained 0.3 m resolution georectified visible-light orthoimages from the United States Geological Survey (USGS; http://hawaii.wr.usgs.gov/oahu/earthdata.html). Our computer-based georeferenced images were preliminarily draped over these visible light images. Land in the visible light images enabled validation of computer-based georeferencing. Minor adjustments (two to four pixels in each direction) were usually required to better align infrared images to visible light images (Figure 2.1, box 5b). We accomplished this minor adjustment by collecting ground control points during manual tie-point georeferencing.

Water Annotation (Digitization)

Coastlines in infrared images were manually digitized to mask land and clouds, retaining only infrared water (Figure 2.1, box 6). Clouds were distinguished by viewing their movement across sequential images. We removed clouds from the final images

because image mosaicking averaged the colder cloud temperatures in the scene, resulting in false low temperatures that could be mistaken for cold SGD.

Emitted radiation sensed by the detector for pixels immediately adjacent to the shoreline may be a combination of water and land. We made no attempt to un-mix these pixels, choosing instead to remove mixed pixels during digitization. We acknowledge that some mixed pixels may inadvertently remain in the final images.

In Situ Temperature Correction

We recalibrated our mosaicked, temperature-corrected images to continuously logging in water thermistors ($T_{thermistor}$; HOBO pendant UA-001-08; Onset, Cape Cod, Massachusetts) floating at the water's surface (Figure 2.1, box 7). Thermistors were deployed in each flight track and geographic location of all thermistors was determined by hand-held GPS (Garmin eTrex, Olathe, KS) with 15 m accuracy.

Data collection times for the mosaicked images were used to retrieve SSTs from the appropriate thermistors by matching time stamps. In each mosaicked image, temperatures were averaged ($T_{surface,ave}$) from a roughly 10 X 10 m area, corresponding to the thermistor's location. The difference ($T_{correction}$) between $T_{thermistor}$ and $T_{surface,ave}$ was used to linearly correct the entire image by offsetting $T_{surface}$ to $T_{thermistor}$ by $T_{correction}$.

Flight tracks lacking thermistor data (failed thermistor retrieval, for example), were temperature corrected to adjacent flight tracks with thermistor data. Overlapping areas between the temperature-corrected and non-temperature corrected images were delineated. The average temperature difference between the two areas was used to linearly correct the entire image lacking thermistor data to the image with $T_{correction}$. We used the same convention as the $T_{surface}$ and $T_{thermistor}$ correction above to complete this correction.

Mosaicking Multiple Flight Tracks

We mosaicked adjacent and overlapping flight tracks (Figure 2.1, box 8) by merging that adjacent flight tracks. All pixels in overlapping areas of both images were blended by pixel/distance averaging.

Adding False Color and Draping Infrared Water Over Visible Light Images

Infrared images were linearly stretched and maximized to accentuate temperature variation, while leaving all data intact. Color tables were then applied to mosaicked images (Figure 2.1, box 9), prior to draping the infrared water over visible light images (Figure 2.1, box 10). This process produced the finalized image.

Assessment

The Thermal Infrared Region of the Electromagnetic Spectrum

Thermal infrared cameras are sensitive to light in the 3-5 or 8-14 µm atmospheric windows. Most remote measurements of water utilize the 8-14 µm window where blackbody emission for objects at typical temperatures has peak emitted power (Campbell, 2002). For SGD studies, the signal perceived by the camera is the sum of radiance emitted by the water's surface, partially attenuated by atmospheric radiance, and environmental radiance reflected off the water, whereby:

$$L_{sensor} = B(T)_{water}\varepsilon_{water} + L_{downwell}R_{water} + L_{atm(surface\text{-}sensor)} \quad (2.5)$$

L_{sensor} is the at-sensor radiance, $B(T)_{water}$ is blackbody emission of the water at temperature T, ε_{water} is water emissivity, $L_{downwell}$ is atmospheric downwelling radiance, including clouds, R_{water} is the bidirectional reflectance function of the water surface at the time of observation, and $L_{atm(surface\text{-}sensor)}$ is atmospheric radiance emitted between the water's surface and the sensor. Under clear sky and relatively smooth surface water conditions, most of the signal reaching a detector positioned with nadir view (vertically downward) is derived from the water's surface. The reflected term is small because of water's low reflectance and very low sky emission under clear conditions; atmospheric radiance is also low, away from water vapor and carbon dioxide emission near 8 and 14 µm, respectively (Campbell, 2002). Subtle

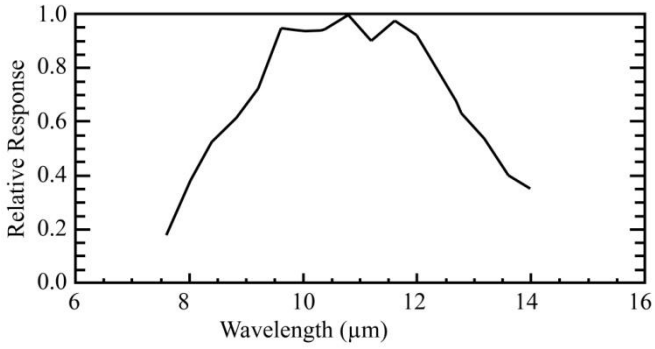


Figure 2.2: Response of the Photon 2.0 infrared camera to a fixed change in temperature. Data were collected with a calibrated spectroradiometer.

temperature differences are detectable even though water vapor and carbon dioxide absorb some of the energy across the window's spectrum (Short, 1982). The sensitivity of a particular sensor to water and carbon dioxide emission and absorbance depends upon the sensor's spectral response across the atmospheric window. Our camera has very low response short of 9 µm and longward of 13 µm, (Figure 2.2).

Table 2.1: Comparison of spatial resolutions, swath widths, and pixel advancements per frame for Oahu's flight missions. Pixel advancement per frame assumes a constant aircraft operating speed of 161 km/h.

Altitude (m)	Spatial resolution (m)	Swath width (m)	Advancement (pixels/frame)
975	1.5	474.6	1.0
1295	2.0	630.3	0.8
2134	3.2	1038.1	0.5

Data Collection

Several factors must be considered when determining the appropriate time to collect infrared data. First, water is almost opaque in the thermal infrared region of the electromagnetic spectrum (8-14 µm). The camera, therefore, cannot see through clouds. Second, rough water surfaces will experience diffusing effects that direct high atmospheric radiance from the horizon toward the sensor. Turbulent water and large waves may also mask SGD by mixing the water column. Third, during the day, sunlight produces temperature anomalies by unevenly heating water or suspended matter in shallow water columns. Furthermore, day-time missions usually require flight track alignment directly toward or directly away from the sun (Myers and Miller, 2005). We have determined that TIR data are best collected when cloud cover is minimal, seas are tranquil, and tide is low, maximizing groundwater flow and signal. For example, we collect data when there is a 0% chance of precipitation, cloud cover is forecasted to be <20%, surf is typically <0.6 m, 0.3 m is better, and tide is down-going to the lowest-low tide of the day. We also avoid mapping water heated from solar radiation (insolation) by collecting data at night. Night operations allow maximum flexibility in flight track

directions and tend to avoid heavy air-traffic situations. Night operations do not require special permissions, permits, or licenses.

Oahu's coastline imagery were obtained on 6 July 2009 between 00:20 and 04:45 a.m. HST (Hawaii Standard Time), 17 July 2009 between 00:55 and 05:35 a.m. HST, and 22 July 2009 between 00:20 and 02:55 a.m. HST. Most data from Oahu were collected at 2134 m altitude, giving a swath width of 1038.1 m and a pixel size of 3.2 m (Table 2.1). Each consecutive image advanced 0.5 pixels/frame at our targeted aircraft ground speed of 161 km/h (Table 2.1). Data from the island of Maui were collected on 26 May 2011 between 00:00 and 03:15 a.m. HST. Data from the island of Hawaii were collected on 1 May 2007 between 07:53 and 10:30 a.m. HST using a different sensor (Johnson et al. 2008) than described within.

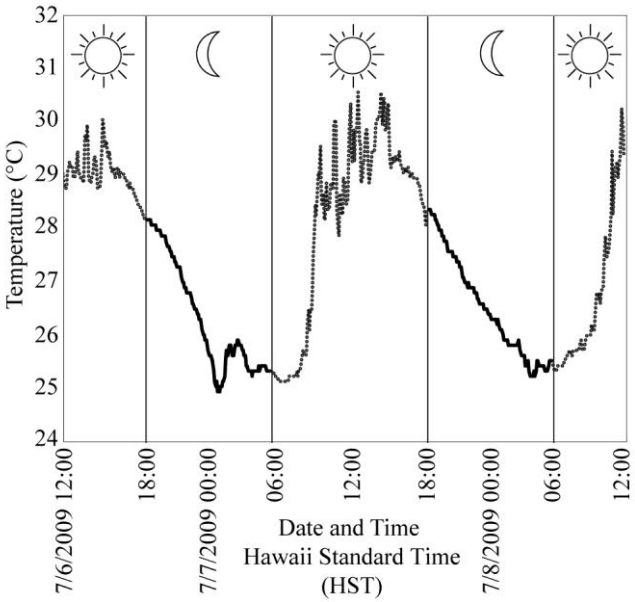


Figure 2.3: Surface water temperatures recorded by a thermistor (21˚22'31.3"N, 157˚58'33.7"W, WGS84). Solid lines represent nighttime temperatures and dotted lines represent daytime temperatures. Warmest temperatures during daylight hours reflect thermistor heating, not true water temperatures. Nighttime temperatures are accurate SSTs.

Temperature Calibration

Our gain and offset temperature calibration (equations 2.1-2.3) assumed a linear relationship between DN and temperature, which is strictly incorrect. The camera responds linearly to total power incident on each of its detectors that is proportional to the radiance integrated over the bandpass. However, over the very small temperature range of our calibration, the error caused by our use of gains and offsets was always <0.25°C, compared to calculating temperatures using the Planck Equation.

Thermistors

Figure 2.3 depicts a typical example of in-water temperatures collected from one of our Oahu, Hawaii flight missions. Water cooled after sunset, stabilized to within 1°C from midnight to sunrise, and rapidly warmed after sunrise. For all Oahu missions, we chose an optimum flight-time window between midnight and 6:00 a.m. HST. Thermal contrast between SGD and ocean water is not at maximum during this time, although temperature differences between groundwater (19 and 21°C; Visher and Mink, 1964) and coastal water (24 to 28°C) were easily differentiated with our measurement precision (1°C). Figure 2.3 also shows that correcting infrared images to daytime temperatures recorded by our thermistors floating at the water's surface would result in inaccurate SST maps due to greater thermistor heating than water heating. In practice, determining in situ temperatures prior to data collection is highly recommended for establishing optimal flight times, especially since optimal times will vary seasonally and with location.

Sea Surface Effect

Radiance emitted from the ocean's surface is absorbed by water vapor, carbon dioxide, and aerosols in the atmosphere. As a result, radiance reaching the airborne sensor is reduced, leading to colder calculated surface temperatures ($T_{surface}$) than actual skin-water temperatures ($T_{thermistor}$). Calibrating $T_{surface}$ to $T_{thermistor}$ may result in erroneous water temperatures since liquid water is opaque in the 8-14 μm region of the electromagnetic spectrum. Due to the camera's perceived opaque nature of water, emission sensed by the detector is derived from a thin skin at the water's surface. This is called the "sea surface effect" (Schluessel et al., 1990; Banks et al., 1996; Fisher and Mustard, 2004). Bulk water temperatures are, therefore, not strictly determined by TIR remote sensing (Brown et al., 2005), since temperature micro-gradients between surface and bulk water exist (Fisher and Mustard, 2004). Skin temperatures are colder than bulk water due to evaporative cooling (Handcock et al., 2006); however, temperature differences between skin and bulk water are usually between 0.3 and 0.5°C (Schluessel et al., 1990; Emery et al., 1994; Donlon et al., 1998; Emery et al., 2001). Evaporative cooling did not obscure the underlying signals as SGD anomalies were apparent in our data. Evaporative cooling appeared to be an offset.

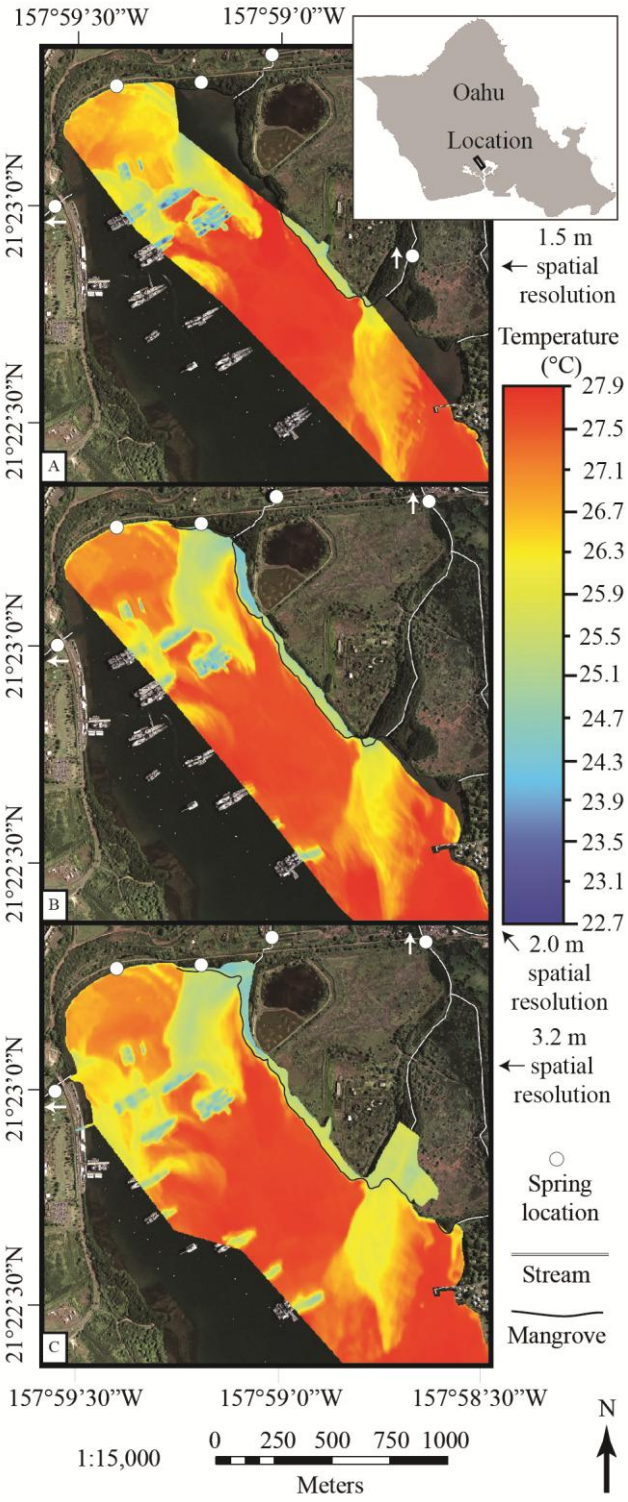


Figure 2.4: Altitude comparison study of Middle Loch, Pearl Harbor, Oahu on 22 July 2009 (A) 975 m altitude; 1.5 m spatial resolution; 02:49 to 02:52 a.m. HST, (B) 1295 m altitude; 2.0 m spatial resolution; 02:43 to 02:45 a.m. HST, and (C) 2134 m altitude; 3.2 m spatial resolution; 02:34 to 02:36 a.m. HST. All panels have the same temperature scale and map scale. The coldest blue rectangle-shaped objects were moored naval ships. Springs adjacent to white arrows indicate USGS monitoring locations outside of the area shown in the figure. In situ temperature, salinity, and ^{222}Rn surface water surveys (Chapter 3) confirmed a relationship between cold water and submarine groundwater discharge. →

For SGD research, relative temperature differences between pixels are more important than absolute temperatures assigned to each pixel. When accurate temperatures are required, more accurate temperature loggers should be deployed and quantification of the "sea-surface" effect must be completed.

Altitude Comparison Study

Spatial resolution obtained from any fixed focal-length camera system is dependent on flight altitude. We tested three flight altitudes (Table 2.1) by collecting sequential TIR images over the Middle Loch estuary of Pearl Harbor, Oahu

(Figures 2.4A-C), an area with known SGD (Visher and Mink ,1964; Oki, 1998). All panels in Figure 2.4 were collected at the same tidal stage. Honolulu tide (NOAA gauge 1612340) was +0.17 m relative to mean low-low water. All panels are displayed with the same temperature and map scales to allow unbiased comparison. Figures 2.4A-C illustrate that the flight operation at the moderately high altitude (2134 m) was sufficient to discern SGD. Higher altitude surveying generated larger swath widths, providing greatest aerial coverage (Figure 2.4C). Spatial resolution at the lowest altitude (Figure 2.4A) was over twice that of the highest altitude (Figure 2.4C), allowing discernment of ≥1.5 m diameter features in Figure 2.4A. Sharpest images were therefore generated at the lowest altitude. The exposed coastline in the east, north-east section of each panel is delineated by a black line. This line separates water from mangroves, which have comparable temperatures to SGD. Similar temperature characteristics are evident in all images indicating that the lowest resolution imagery, and therefore most cost-effective survey, was adequate for mapping the scale of SGD throughout this estuary.

Thermal Signatures from Beach Sands, Shoreline Vegetation, Mudflats, and Coral Reefs

Relatively rapid nighttime cooling caused some coastal features to have similar temperatures as SGD. Some interfering features included beach sands, shoreline vegetation, mudflats, and shallow seawater that ponded over coral reefs. In addition, evaporative cooling gave wet beach sands colder temperatures than dry beach sands, which therefore resembled SGD. Shoreline vegetation such as mangroves had similar temperatures as SGD and masked the SGD signal until it reached open water (Figures 2.4A-C). In many situations, we found that simply comparing visible light images and infrared images provided valuable insight regarding radiance interferences (i.e. the mangroves in Figures 2.4A-C). In situ field work may be required to confirm potential SGD occurrences on SST maps that are not obvious by comparing visible light and infrared images.

Mapping Point-Source and Diffuse SGD

Understanding the mechanisms of discharge and the degree to which discharging water interacts with the subterranean estuary is an important objective of most SGD studies. Furthermore, various discharge mechanisms require different in situ sampling

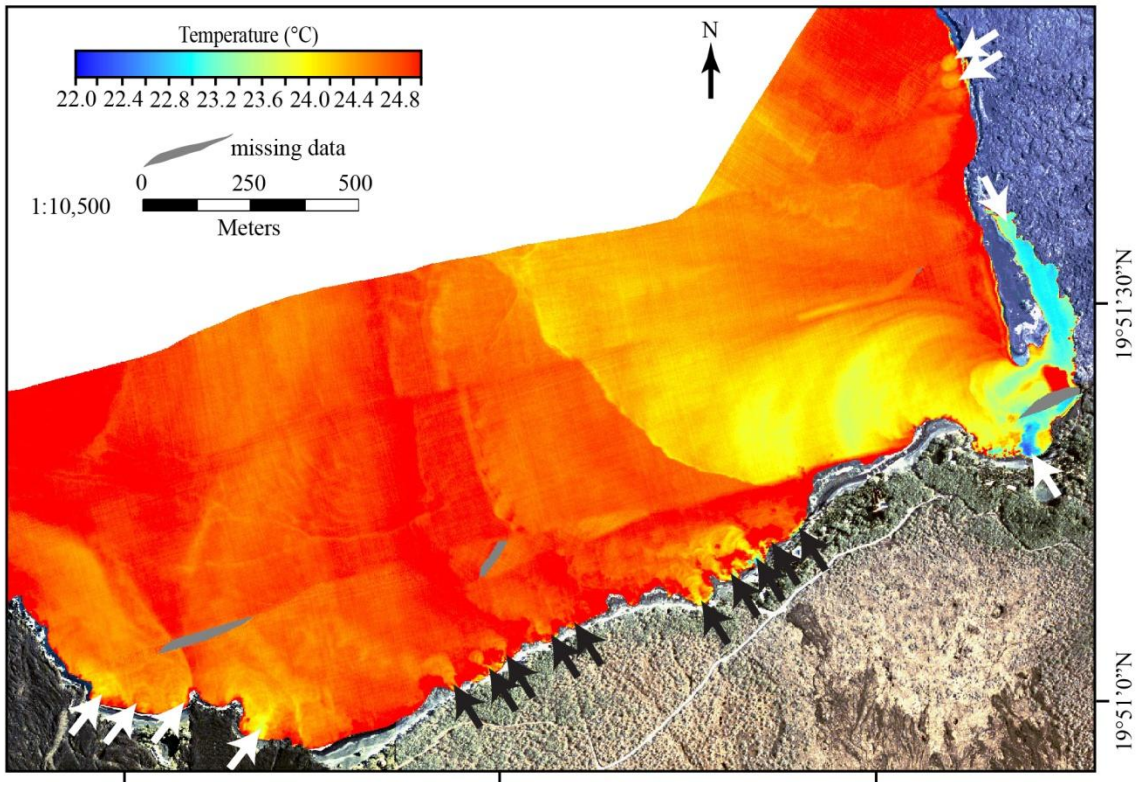


Figure 2.5: Kiholo Bay, Hawaii exhibits at least eighteen point-sourced SGD locations at a variety of scales. All point-sourced plumes are delineated by arrows. This SST map was collected on 1 May 2007 and has 1.3 m spatial resolution (after Johnson, 2008).

strategies. Differentiation of discharge mechanisms ranging from (1) discrete point-source discharges, (2) diffuse, non-point-source seepage, and (3) some combination of both is important for SGD research. Differentiation can be readily accomplished via aerial TIR mapping. To stream-line SGD classification, we define point-source and diffuse flow. Point-sourced discharge is water that emanates outward as a single, spatially well-defined plume or jet that possesses distinguishable temperatures relative to the waters which surround it, and which is resolvable within the spatial resolution of our TIR configuration (≤3.2 m in this chapter). We define diffuse SGD as non-point-sourced flow that occurs as a broad-scale distribution with no discernible single input source. Diffuse flow results in a fairly large area of relatively uniform temperature-water that is anomalously cold or warm relative to the surrounding water. Figure 2.5 illustrates at least eighteen point-sourced SGD plumes emanating from young basalts at Kiholo Bay, Hawaii. Of 50 large SGD plumes mapped by TIR along the western half of the island of Hawaii, the spatially largest and quantitatively most voluminous discharge emanates

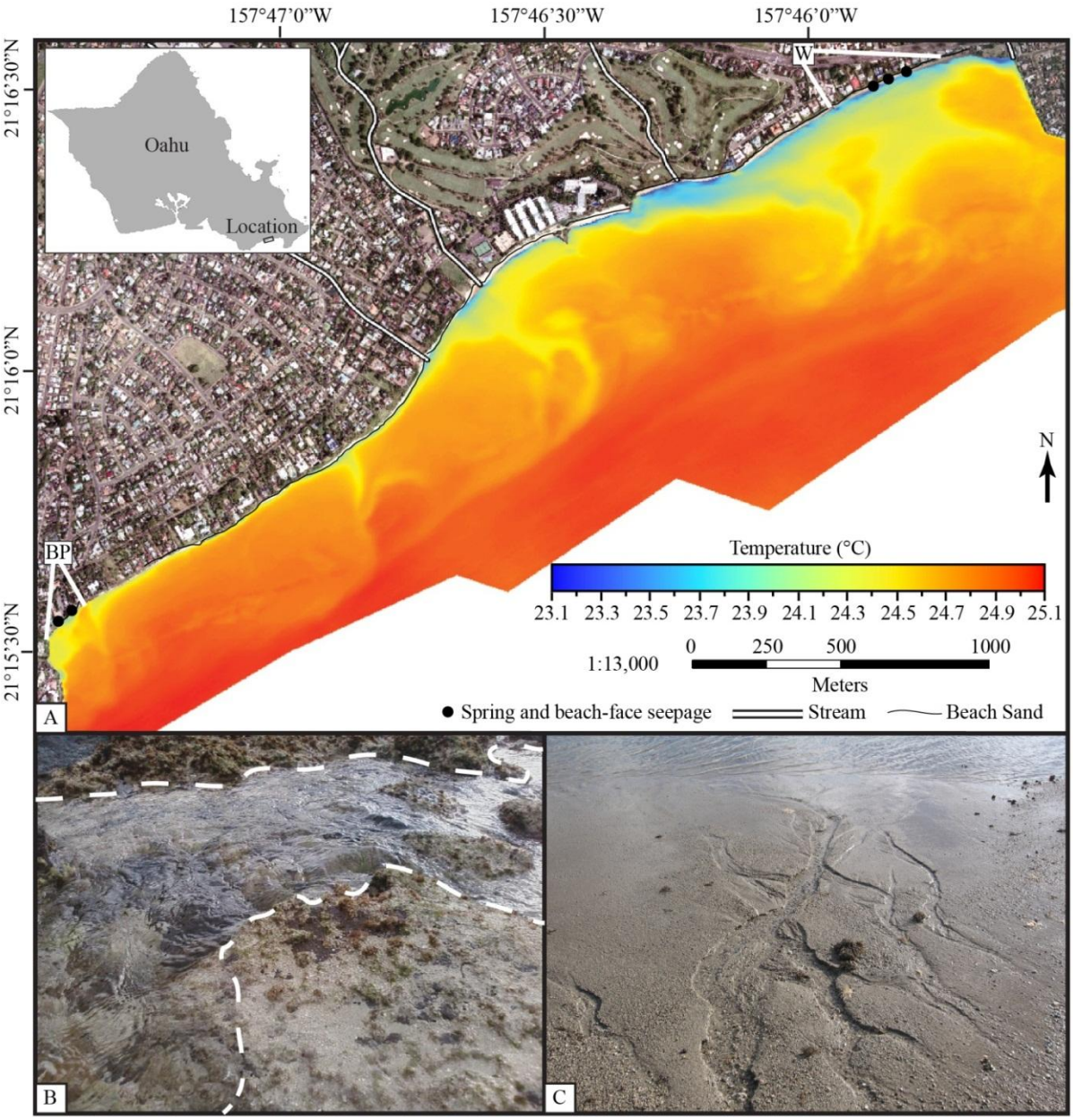


Figure 2.6: SGD in Aina Haina, Oahu (A) TIR image showing predominantly diffuse flow. This SST map was collected on 22 July 2009 between 2:01 and 2:06 a.m. HST when Honolulu tide was +0.16 m. This image has 3.2 m spatial resolution. Stream beds were dry during data collection, so cold water (blue hues) along the shore was exclusively SGD. Black Point (BP) exhibited groundwater springs resulting from artesian pressure (B). The white dashed line marks the boundary of the spring, which disturbed the otherwise flat water surface. Diffuse SGD in this area was also augmented by groundwater beach-face seepage such as rivulets (C) at Wailupe Beach (W). These rivulets are especially evident at low tide. Horizontal dimensions of (B) and (C) are ~1 m.

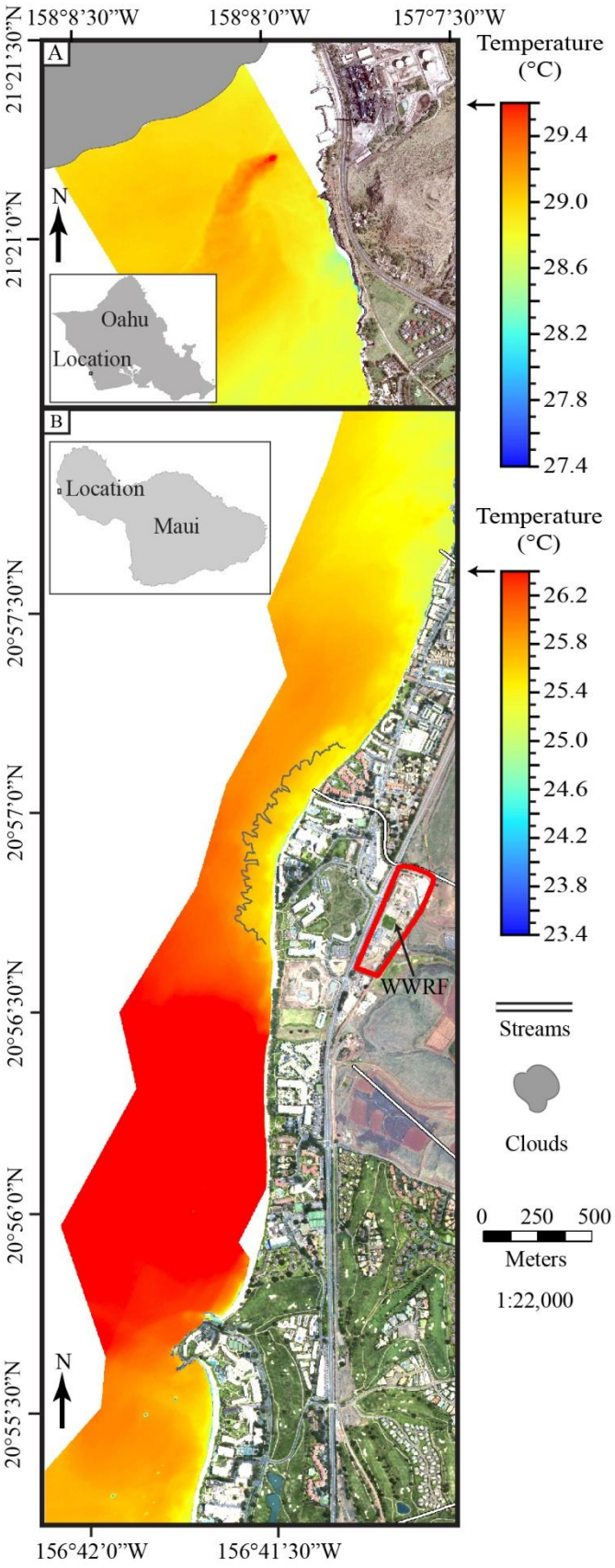


Figure 2.7: Hot water plumes from Kahe Power Plant outfall near Nanakuli, Oahu (A) and heated coastal waters near Lahaina, Maui (B). The 3.2 m resolution SST map in (A) was collected on 17 July 2009 between 4:51 and 4:59 a.m. HST when Honolulu tide was -0.04 m. The 2.3 m resolution SST map in (B) was collected on 26 May 2011 between 12:45 and 12:49 a.m. HST when Lahaina tide was +0.25 m. The SST map in (B) is draped over a 0.5 m resolution, orthorectified visible light image from DigitalGlobe Inc. (Longmont, Colorado). Both panels are at the same map scale.

from the single inlet on the east side of this bay (blue hues; Johnson, 2008; Peterson et al., 2009). Diffuse SGD was also readily identified in our high resolution imagery. An excellent example, illustrated in Figure 2.6A, concerns Oahu's south shore. In this area, groundwater seepage was dispersed through confining layers that contained fine-grained mud, marl, and basalt weathering products (Nichols et al., 1996). These rock properties created conditions conducive for diffuse discharge

where the few known point-source inputs (Figures 2.6B-C) occurred below the 3.2 m resolution of Figure 2.6A. McGowan (2004), Bukunt (2006), Swarzenski et al. (2009), and Holleman (2011) have all demonstrated prominent SGD in this area.

Hot Water Sources

Examples of TIR mapping of hot water plumes are illustrated in Figures 2.7A-B. Kahe Power Plant, on Oahu, discharges warm water via an underwater outfall pipe ~250 m offshore in 8 m of water (Figure 2.7A). Outfall water is approximately 5 to 6°C warmer than ocean water (Lager, unpublished data 2011 available at http:// cramp.wcc. hawaii.edu/ LT_Montoring_files/lt_study _sites_Oahu_Kahe_Point.htm). The outfall introduces freshwater that buoyantly floats to the ocean's surface, cooling as it flows upward (Figure 2.7A). In comparison, near Lahaina, Maui, warm waters are vented to the ocean's surface via benthic point-source seeps and diffuse flows (Figure 2.7B). SCUBA divers noted anomalously warm water disseminating from several small (<1 km area), localized seeps, but the SST map revealed the true lateral extent of the thermal impact to the coastal zone. Seasonally warm discharge at high latitudes, for example, will therefore be detectable with our camera configuration and post-flight processing methodology.

Estuary and Coastal Oceanic Mixing and Currents

Airborne TIR imagery also conveyed information about coastal mixing. Figure 2.6A shows >4 km of coastline with abundant diffuse discharge (blue hues) to the ocean. The discharge was pulled to the northeast by a nearshore current and then to the southwest by an offshore current. The hot water plume from Kahe Power Plant in Figure 2.7A provides another example, where surface waters were mixed toward the south. Evaluation of mixing between surface water and groundwater was also possible using SST maps. In Middle Loch (Figures 2.4A-C), groundwater-fed streams thermally impacted the estuary's surface waters to a greater spatial extent than cold spring sources at the back of the loch. Moored naval ships also bifurcated the flows.

TIR-Derived Plume Areas and In Situ Groundwater Fluxes

A major achievement for aerial TIR remote sensing is the quantitative application of SST data to study terrestrially-derived groundwater discharge in the coastal zone. Our research demonstrated a direct, positive correlation between SGD plume areas mapped by aerial infrared thermography and volumetric discharge. This achievement greatly advanced our ability to study and up-scale SGD fluxes.

Two-dimensional surface areas of SGD plumes were determined from TIR imagery. We defined the outer edge of each plume by averaging the maximum change in temperature, or inflection point (Johnson, 2008) from several transects drawn either from the source of input, or laterally across the plume (Figure 2.8A). Averaged maximum-temperature inflection-points (Figure 2.8B) were then contoured to define the outer boundary of each plume (Figure 2.8C).

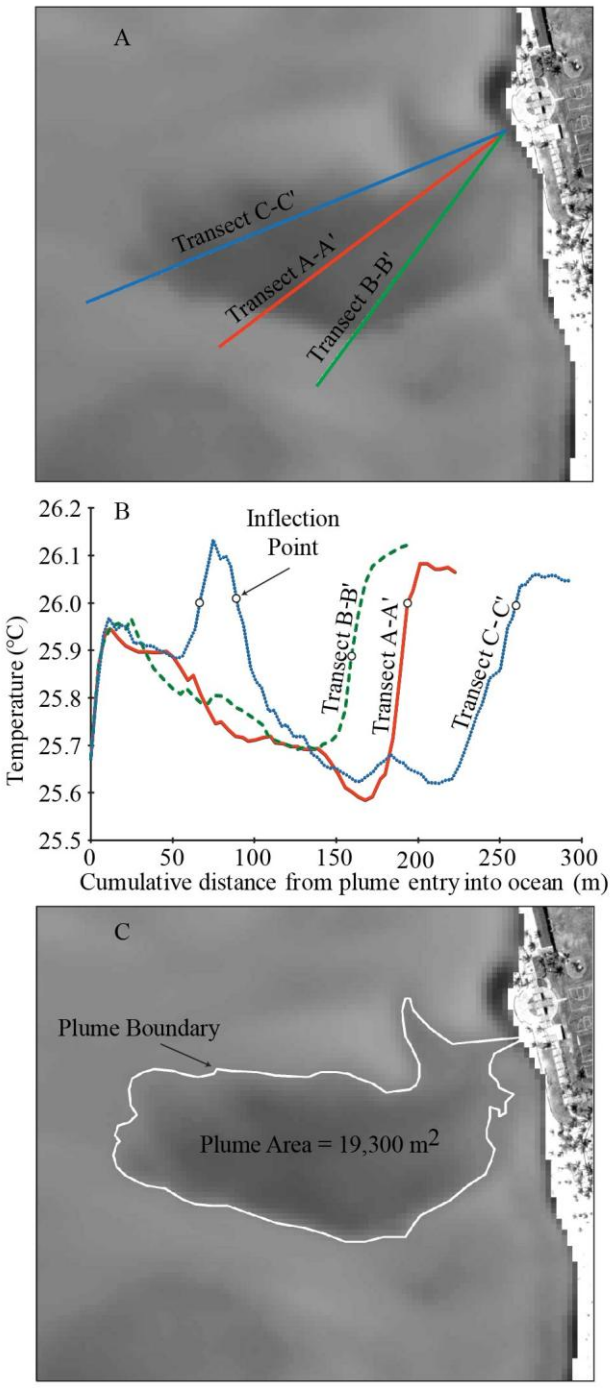


Figure 2.8: Surface areas of groundwater plumes (A), represented by the darkest hues, are calculated by determining the steepest inflection points of a family of linear temperature curves (B) to calculate an average temperature for the plume boundary, which is contoured (C) to enclose the overall plume and used to calculate the surface area.

Figure 2.9 shows the correlation between surface areas of plumes and groundwater fluxes determined via ^{222}Rn mass balance for Pearl Harbor, Hawaii (see Chapter 3). The strong correlation in Figure 2.9 likely results from the buoyant discharge. Discharge to the Pearl Harbor field area was likely influenced by similar geologic features and coastal mixing characteristics. These factors will likely change the slope of the line to be specific to a particular field area. For example, Johnson (2008) demonstrated a similar relationship with a slope of 0.1 for the west side of the island of Hawaii using ^{222}Rn mass balance to calculate groundwater fluxes. Danielescu et al. (2009) also found a similar linear relationship with a slope of 0.00006 between TIR plume areas and spring discharge rates calculated using portable flumes for two watersheds on Prince Edward Island, Canada. We hypothesize that once a region has been mapped via TIR, and some certainty of groundwater fluxes has been established, regional up-scaling of coastal groundwater discharge is possible.

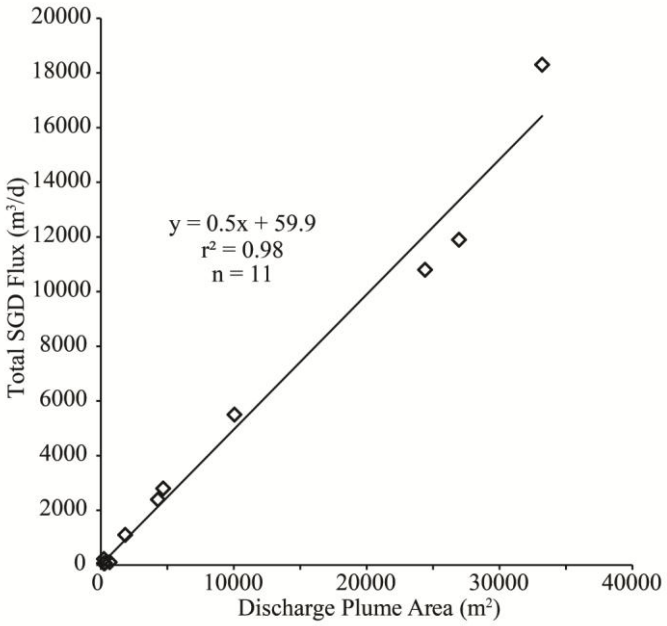


Figure 2.9: Submarine groundwater discharge flux (fresh plus saline water) measured from ^{222}Rn time-series platforms in Pearl Harbor, Hawaii (see Chapter 3) plotted relative to plume areas determined from SST maps.

Discussion

Our data collection and post-flight data processing techniques provide some of the crispest, clearest, and most precisely georeferenced images compared to previously published results. The imagery readily shows the precise occurrences of the surface expression of groundwater discharge with the detail necessary differentiate between point-source and diffuse flow. The nadir camera configuration eliminates additional processing required for oblique-view infrared missions (Miller and Ullman, 2004; Duarte

et al., 2006). Furthermore, the rapid computer-based georeferencing (<10 minutes to georeference an entire flight track) eliminates the need for hours of manual to-point georeferencing. Manual tie-point georeferencing also has the disadvantage of distorting and warping images if too few ground-control-points are selected. The nadir camera configuration and computer-based georeferencing greatly reduces the time required for post-flight data processing. Our post-flight data processing routine also removes non-uniformity of the detector, which makes image interpretation simple. Additionally, the accurately georeferenced images allow us to determine exact locations of thermal anomalies and use those geographic coordinates to precisely locate the discharge during field operations.

Since aerial TIR imagery can be collected at a variety of altitudes, the spatial resolution can be varied to investigate coastal zone processes at a variety of scales. This is a distinct advantage over satellite data. SGD's typically buoyant nature and anomalous temperatures relative to seawater allow for its rapid and accurate detection by aerial TIR remote sensing. At minimum groundspeeds of 161 km/h, airborne TIR remote sensing affords rapid data acquisition over large stretches of coastline in a short time. We typically image 40 km of coastline per hour at a cost of less than $40.00/km, excluding camera and associated equipment expenses (~$50,000).

The biggest advantage of aerial infrared surveying compared to the more traditional methods used to study SGD is its ability to collect large quantities of data over large stretches of shoreline in a short amount of time. The high-resolution data also provides information about the precise groundwater discharge location, the discharge's surface expression, and whether the discharge is point-source flow or diffuse flow. A disadvantage of the technique compared to more traditional techniques is its ability to only detect the very surface of the water column. This method cannot detect vertical variability or stratification in the water column. The method also cannot to detect discharge that does not reach the water's surface or discharge that is similar in temperature to the surrounding water.

TIR data are customarily employed for qualitative assessment of coastal zone processes. We have demonstrated that aerial TIR data is also a quantitative tool useful for calculating surface plume areas. The ability to calculate plume areas allows us to

prioritize field measurements. We have also established that TIR data can be used for up-scaling SGD to regional basis, once some knowledge of flux rates is attained for a field area. This is a powerful application of TIR data that can be applied to research sites world-wide.

In conclusion, we recommend that thermal infrared remote sensing be added to the many techniques used to study SGD. The imagery allows SGD researchers to (1) obtain a regional-scale view of SGD with knowledge of precise discharge locations, (2) determine whether the discharge is point-source or diffuse, (3) streamline field operations, (4) calculate plume areas, and (5) qualitatively estimate groundwater discharge fluxes for large field areas with only a few in situ flux measurements.

Comments and Recommendations

Our technique is also applicable to any lake or coastal zone process that involves temperature contrasts between water bodies. Although we use this technique to study SGD, impacts of stream/river mixing in estuaries and coastal zones, power plant outfalls, and nearshore current studies, for example, are all attainable with the techniques and methods presented herein.

Our work demonstrates that a variety of coastal and estuarine field-based studies can benefit from high-resolution aerial SST maps generated by aerial infrared thermography. Selection of groundwater sampling sites, estimation of environmental effects of contaminant mitigation, evaluation of nearshore ecosystems impacts, detection of nearshore currents, determination of seaward mixing characteristics of discharging water, and improvement of groundwater contour maps can all been aided by SST maps. In situ field measurements of SGD tracers such as salinity, radon, and radium, as well as sub-seafloor resistivity investigations can be used in combination with TIR data to investigate field sites at a variety of scales using independent techniques.

Our methodology can be easily adapted for helicopter flight missions and ground-based studies. For ground-based studies, geographic location corrections will not be necessary; however, ground-based studies usually require oblique camera viewing angles. Data processing will have to be amended to include corrections for these oblique viewing angles.

CHAPTER 3. GROUNDWATER FLUXES TO PEARL HARBOR, HAWAII DETERMINED BY RADON AND THERMAL INFRARED SURVEYS

Introduction

Submarine groundwater discharge (SGD) is a globally important process that introduces terrestrially-derived constituents to coastal ecosystems. Although SGD flux to coastal areas may be lower than surface water inputs, concentrations of dissolved constituents in SGD are often much higher than surface waters (Zektser et al., 2006). Discharge can, therefore, impact coastal ecosystems leading to eutrophication, harmful algal blooms, and shifts in the dominant flora and fauna of coastal waters (Dollar and Atkinson, 1992; Paerl, 1997; Miller and Ullman, 2004). SGD occurs throughout the Hawaiian Islands (Derse et al., 2007, Peterson et al., 2007, Johnson et al., 2008, Street et al., 2008, Peterson et al., 2009, Holleman, 2011), but very little is known about the distribution of discharge into and within Pearl Harbor. Pearl Harbor is the largest estuary in the Islands and has the largest freshwater spring complex in the Islands (Englund et al., 2000) with subaerial (shoreline) springs (Nellist, 1953; Visher and Mink, 1964; Nichols et al., 1996), submarine springs (Lau, 1962; Visher and Mink, 1964; Nichols et al., 1996), and diffuse, non-point source groundwater inputs (Hunt, 1996; Nichols et al., 1996; Shade and Nichols, 1996).

Locating groundwater inputs and establishing fluxes for those inputs is desirable for groundwater managers, ecosystems scientists, and environmental impact assessors, particularly if the discharging water contains contaminants or other undesirable constituents. Furthermore, groundwater production from the underlying Pearl Harbor aquifer diminishes spring flow to the harbor, with flow rates less than half of estimated predevelopment rates (Nichols et al., 1996). Direct assessment of groundwater fluxes may also help document changes in discharge and the impact water withdrawals have on the aquifer and the estuary.

Thermal infrared (TIR) surveying is applicable wherever temperature differences exist between discharging groundwater and receiving estuary or coastal water (e.g. Johnson et al., 2008; Wilson and Rocha, 2012). We utilized aerial TIR remote sensing to detect cold groundwater discharge in surface waters of Pearl Harbor. The thermal infrared technique only detects SGD from the vary surface of the water. Radon-222

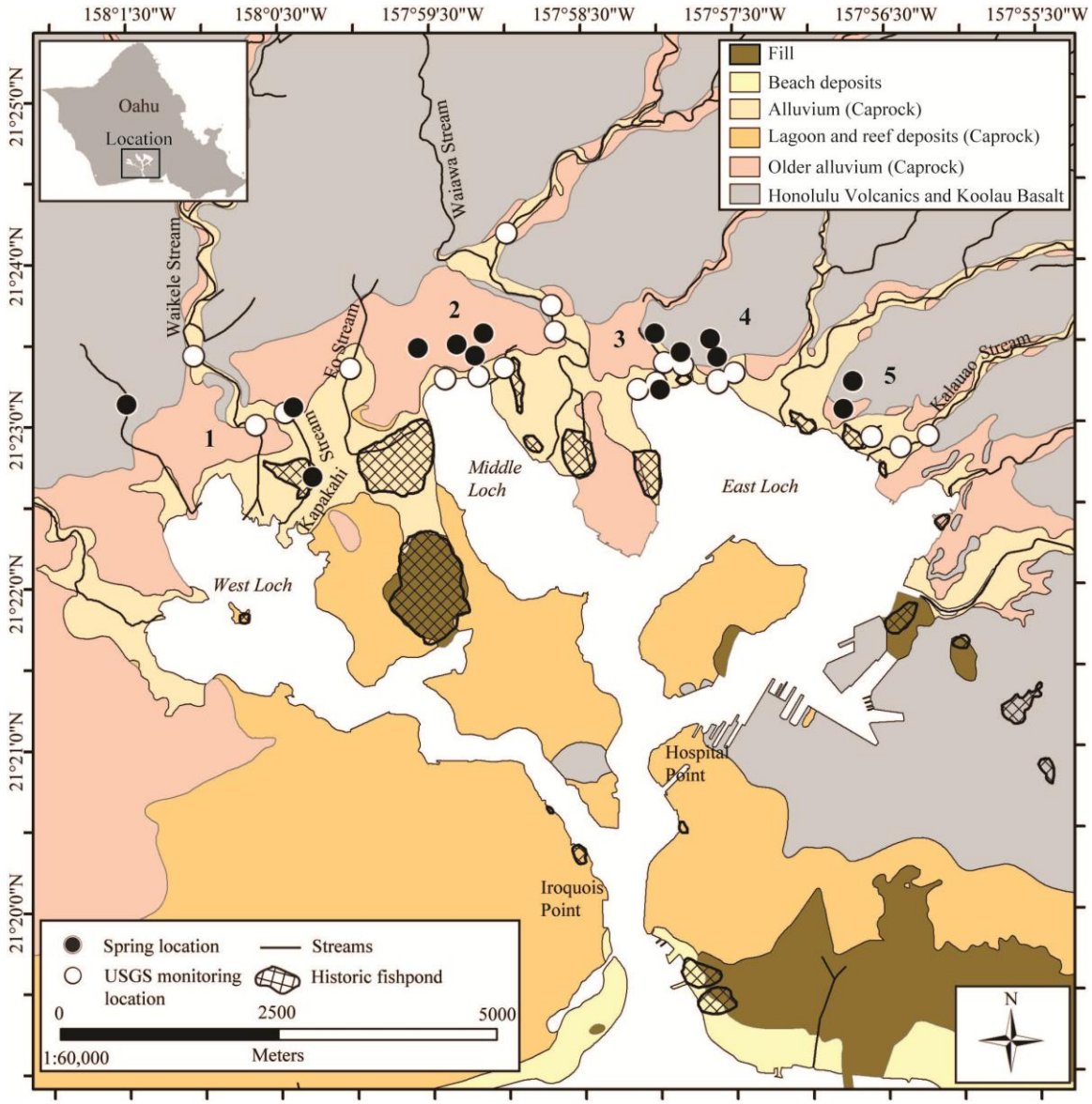


Figure 3.1: West Loch, Middle Loch, and East Loch of Pearl Harbor with respect to the island of Oahu, Hawaii (top left inset map). Five spring systems are identified by numbers: 1) Waikele Springs, 2) Waiawa Springs, 3) Waimano Springs, 4) Waiau Springs, and 5) Kalauao Springs. Each spring system contains numerous subaerial springs that reside in the vicinity of the number identifier. Spring monitoring stations (United States Geological Survey) are indicated by white dots while other spring locations from Stearns and Vaksvik (1935) are identified by black dots. Streams specifically referred to in the text are labeled, while all other stream names are omitted for figure clarity. Historic fishpond locations are modified from Donn (1902) and Grovhoug (1992). The geologic map is after Sherrod et al. (2007).

(^{222}Rn) is a naturally-occurring radioactive proxy of SGD. It is radioactive-conservative and is enriched in groundwater aquifers (due to natural occurrence of ^{238}U in basalt, a parent isotope of ^{222}Rn) compared to ocean water. This enrichment of ^{222}Rn in groundwater results in a large concentration gradient between the discharging groundwater and the receiving water, making identification of groundwater discharge based on elevated ^{222}Rn activities possible. We used ^{222}Rn to confirm groundwater discharge locations identified in the infrared imagery and to estimate groundwater fluxes to Pearl Harbor. As we discuss below, the ^{222}Rn tracer identified all SGD inputs to the harbor, but only partially identified subaerial spring inputs to the harbor due to ^{222}Rn degassing.

This study additionally explored the relationship between current groundwater discharge locations and historically known fishponds locations. These fishponds are relevant to understanding the area's hydrogeology since they were strategically built around fresh or brackish water sources, including streams and springs.

Field Area

Pearl Harbor (Figure 3.1) is underlain by numerous basalt flows and represents a drowned river system that has been successively flooded and drained as a result of past sea-level changes (Stearns, 1985). Deposition of marine sedimentary rocks (caprock) over much of Pearl Harbor's coastal plain and valley mouth areas (Figure 3.1) ensued during lower sea-level stands (Stearns and Vaksvik, 1935). Increased weathering and erosion rates during lower sea-level promoted production and deposition of fine-grained mud and marl in the caprock (Hufen et al., 1980), giving it low permeability compared to the island's basaltic aquifers. Caprock is thus hydrologically important because it behaves as a confining unit.

The northern boundary of Pearl Harbor is divided into five separate spring systems (Figure 3.1). Each spring system contains several subaerial springs that result from groundwater convergence along a narrow zone between the inland edge of the caprock and 6 m above sea-level (Stearns and Vaksvik, 1935; Visher and Mink, 1964; Hunt, 1996; Nichols et al., 1996). These artesian springs flow because of pressure generated by the confining caprock overlying the basaltic aquifer. The springs represent overflow of pressurized water from the upper part of the groundwater transition zone

(Nellist, 1953; Visher and Mink, 1964; Nichols et al., 1996). Less voluminous subaerial and submarine springs flow from more seaward areas of the caprock that contain only terrestrial sediments and where weathered basalt, marine sediments, and pyroclastic materials are absent (Lau, 1962; Visher and Mink, 1964; Nichols et al., 1996). Groundwater discharge is also believed to occur as diffuse leakage through the caprock and in areas where the caprock is absent or scant (Hunt, 1996; Nichols et al., 1996; Shade and Nichols, 1996).

Nichols et al. (1996) speculated that Pearl Harbor's springs account for approximately 70% of the natural groundwater discharge from the area, with the remainder occurring as diffuse leakage through the caprock. Furthermore, spring flow varies with aquifer head and is greatest during winter when groundwater withdrawals are least and decreases during summer when groundwater is pumped from the aquifer in greater quantity (Hunt, 1996; Nichols et al., 1996; Shade and Nichols, 1996; Visher and Mink, 1964).

Methods

Aerial Thermal Infrared Remote Sensing

We employed high-resolution (2.0 to 3.2 m) aerial infrared thermography to determine temperatures of the top sub-millimeter of the water's surface. All TIR data were calibrated to in situ thermistors (HOBO pendant UA-001-08; Onset, Cape Cod, Massachusetts) that were deployed within flight tracks prior to TIR data collection. These thermistors continuously recorded sea-surface temperatures (SSTs) at five-minute intervals and were retrieved shortly after TIR data collection was completed.

Data were obtained during low-tide conditions at night, while the prevailing sky conditions were clear to mostly-clear. We collected data on 12 June 2009 at 06:27 a.m. Hawaii Standard Time (HST), on 17 July 2009 at 03:50 a.m. HST, and on 22 July 2009 at 02:17 a.m. HST following the methods and camera configuration discussed in Chapter 2. Briefly, a FLIR Systems Inc. (Portland, Oregon) Photon 320 uncooled microbolometer array camera, temperature-adjustable blackbody with a flat-panel design, and combined inertial navigational system and global positioning system (C-MIGITS II; BEI Systron Donner Inertial Division, Concord, California) were affixed to a custom-built camera

mount and installed in the belly of a twin engine Piper Navajo airplane. All TIR images were calibrated to the blackbody before and after each flight track while in flight.

Post-flight data processing was completed following the methods described in Chapter 2. Briefly, data were inspected for quality control, temperature corrected to blackbody calibration data, mosaicked, georeferenced, annotated (digitized) to retain only the water signal, corrected to in situ thermistor measurements of temperature, colorized with false color, and finally, draped over 0.3 m georectified, visible-light orthoimages available at http://hawaii.wr.usgs.gov/oahu/earthdata.html.

We determined the temperature of each plume boundary visible in the final infrared images by averaging maximum temperature inflection-points (≥ 6) from multiple transects (≥ 3) across each plume. We then contoured the average temperature of the plume boundary and determined the area within the contour. These calculations are described in greater detail by Johnson (2008) and in Chapter 2.

Discrete samples from Water Supply Wells and Coastal Springs

^{222}Rn activities from ten City and County of Honolulu Board of Water Supply wells and five subaerial springs located in proximity to the shoreline were determined by grab samples collected in either 40 or 250 mL screw-top glass bottles (Durridge Company Inc., Billerica, MA). Samples from the water supply wells were collected using preexisting pumps in the wells, whereas spring samples were collected by hand or by peristaltic geopump (geotech, Denver, CO). Screw-top bottles were filled from the bottom up, allowed to overflow for at least three bottle volumes of water, and sealed, leaving no head-space. All grab samples were analyzed using a RAD-H_2O (Durridge Company Inc., Billerica, MA) and decay-corrected to their time of collection. Temperature and salinity of all water supply wells and coastal springs were also determined at the time of sample collection by either a YSI Model 63 or YSI 6920 V2 (YSI Inc., Yellow Springs, OH).

Stationary Time-Series Deployments, Surface-Water Surveys, and Water-Column Surveys

Three ^{222}Rn measurement strategies were utilized for this study: 1) stationary ^{222}Rn time-series deployments, 2) ^{222}Rn surveys of surface waters, and 3) ^{222}Rn surveys of the water column. For all ^{222}Rn -monitoring strategies, a commercially available ^{222}Rn

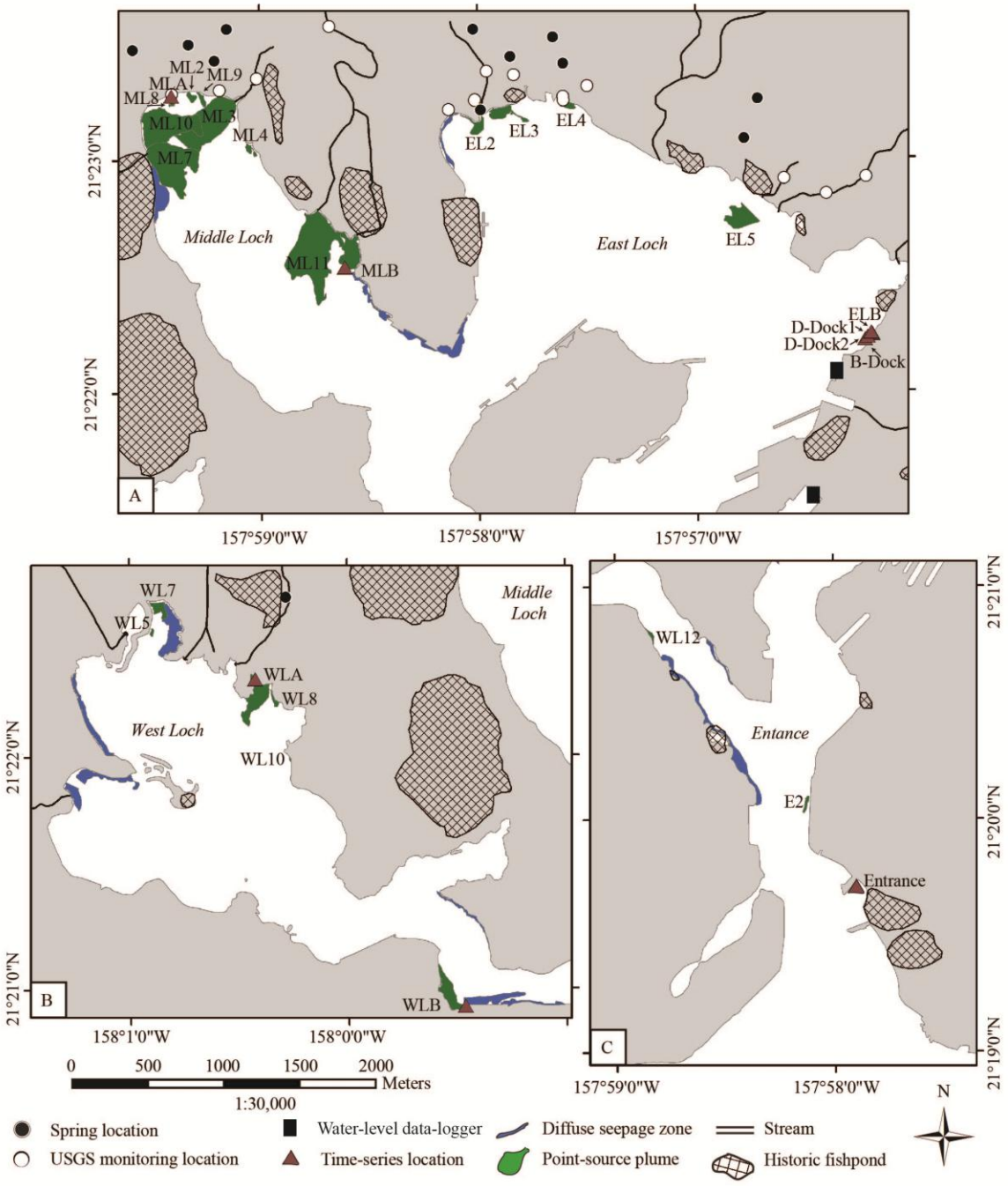


Figure 3.2: ^{222}Rn time-series (brown triangles) and water-level data-logger (black squares) locations. Twenty-five point-source plumes (green) and 13 diffuse seepage zones (blue) identified in the sea-surface temperature maps are also shown. The three point-source plumes at Rainbow Bay Marina are hidden by the time-series symbols. References for spring and historic fishpond locations are provided in the caption for Figure 3.1.

detector (RAD-7; Durridge Company Inc., Billerica, MA) was connected to an air-water exchanger that received water from a bilge pump. Time-series deployments were equipped with a 32 L/min bilge pump, while surveys of surface waters and surveys of the water column utilized a 235 L/min bilge pump (both pumps manufactured by Rule, Gloucester, MA). The air-water exchanger facilitated evasion of ^{222}Rn from the water phase and into the air phase. Once in the air phase, ^{222}Rn entered the RAD-7 by a closed air loop (Lane-Smith et al., 2002).

While ^{222}Rn measurements were conducted, water temperature, salinity, conductivity, pH, and dissolved oxygen were measured by a multiparameter sonde (YSI 6600 V2-4, YSI 6920 V2, or YSI 600-XLM; YSI Inc., Yellow Springs, OH) or by a conductivity, temperature, depth sensor (CTD-Diver; Schlumberger Water Services, Houston, TX). All subsequent references to water quality parameters measured by either a multiparameter sonde or by a CTD-Diver refer to the exact parameters described above.

Tidal heights were determined by an ultrasonic water-level data-logger (Infinities USA, Inc., Port Orange, FL) that recorded data at 5-minute intervals. The water-level data-logger was deployed at one of the two locations identified on Figure 3.2, and compared to the National Oceanic and Atmospheric Administration (NOAA) tide gauge (1612340) positioned in Honolulu Harbor.

Wind speed data were obtained from the Honolulu International Airport weather station (WBAN #22521), located no more than ~15 km from Pearl Harbor. These data were reported at roughly one-hour frequencies.

Radon Stationary Time-Series Deployments

Eight ^{222}Rn time-series stations were deployed on stationary, floating platforms at or near point-source groundwater discharge locations throughout Pearl Harbor (Figures 3.2A-C). Two locations in Middle Loch, one location in East Loch, and two locations in West Loch were monitored during January 2010. Three locations were monitored near the same East Loch location as above from late February to early March 2010 (Figure 3.2A). One additional location, near the entrance to the harbor, was monitored in January 2010 (Figure 3.2C).

All time-series deployments continuously measured ^{222}Rn at 30-minute intervals for two to eight tidal cycles. Water for these measurements was collected ~20 cm below

the water's surface, regardless of tidal height. The multiparameter sonde was positioned ~20 cm below the surface and recorded data at 5-minute intervals.

We adopted the methodology described by Burnett and Dulaiova (2003) to build a non-steady-state ^{222}Rn mass-balance model for quantifying groundwater discharge fluxes. The model included the following ^{222}Rn source and loss terms: 1) input from in situ ^{222}Rn production through decay of its parent isotope ^{226}Ra, 2) input by groundwater flow, 3) input via diffusion from sediments, 4) removal through mixing with estuary waters, 5) removal by evasion to the atmosphere, and 6) removal due to radioactive decay. This model utilized differences in ^{222}Rn activity and salinity between ocean water and recently discharged groundwater to calculate fluxes of both components through defined coastal boxes. The coastal boxes were representative of groundwater-impacted areas for each time-series location.

^{222}Rn budgets for each time-series analysis were generated after measuring ^{222}Rn water activities, atmospheric ^{222}Rn (30 dpm/m^3), water temperature, water salinity, water depth, air temperature, and wind speed. Data from the first analysis cycle (30 minutes) was ignored to allow the monitoring system to reach equilibrium. For all subsequent analysis cycles, excess ^{222}Rn was accounted for by identifying ^{222}Rn within the water column that was unsupported by ^{226}Ra. We used an offshore ^{222}Rn activity of 64 dpm/m^3 calculated by Street et al. (2008) as well as 82 dpm/m^3 (from stations H1, H3, and H4 in Street et al. (2008)) for the ^{226}Ra-supported activities of ^{222}Rn in water. We assumed an average tidal cycle length of 12 hours and 15 minutes and added an absolute viscosity calculation from Isdale et al. (1972) to the model. We used a proportionality constant of 0.5 (Macintyre et al., 1995) and molecular diffusion was calculated from Peng et al. (1974). ^{222}Rn inventories were normalized to tidal height and corrected for losses due to atmospheric evasion over each measurement interval. ^{222}Rn flux into estuary waters was estimated by calculating changes in ^{222}Rn inventory over time. We assumed minimum mixing losses to the inventory equaled maximum net negative fluxes. Summing minimum mixing losses, atmospheric evasion, and net fluxes for each measurement interval resulted in total ^{222}Rn fluxes. Total ^{222}Rn fluxes were then divided by the ^{222}Rn activity of the discharging water to calculate total water fluxes.

We scaled measured flux rates to each time-series location, by defining each platform's groundwater-impacted area. We calculated groundwater-impacted areas in two ways: (1) we used boat movements from the 2010 ^{222}Rn survey of surface waters to determine the distance the boat was from the shoreline, for one or multiple analysis cycles. We multiplied that distance by distance the boat traveled during the analysis cycle(s), and (2) we calculated the area within contoured plume boundaries observed on SST maps by the inflection-point technique described above.

To obtain volumetric fluxes, the groundwater-impacted area, calculated above, was multiplied by the thickness of the groundwater-impacted layer. Groundwater-impacted layer thicknesses were determined from depth profiles of the water column (surface of the water column to the sediment/water interface) collected in 2011 at the previous year's time-series locations (Figure 3.2). Groundwater-impacted layer thicknesses were measured during low tide conditions and matched to a similar tidal stage during each of the time-series deployments in 2010. The above match was a fixed point that was used to calculate corresponding changes in tidal heights for each analysis cycle relative to the record of the water-level data-logger.

Radon Surveys of Surface Waters

Surface-water surveys for ^{222}Rn of East Loch, Middle Loch, West Loch, and the entrance to the harbor were collected within three hours of low tide between 2 January and 8 January 2010. We operated a boat with a target speed of ≤5 km/h as close as possible to the shoreline. Actual travel speeds during the survey varied from stationary to 10 km/h. Average speeds were 3.2 km/h in 2010 and 2.6 km/h in 2011. For all surveys, the bilge pump was positioned ~20 cm from the water's surface. The RAD-7 was programmed to integrate ^{222}Rn measurements over 5-minute cycles. The multiparameter sonde was positioned ~20 cm from the water's surface and continuously logged water quality parameters at 30-second intervals. A GPSMAP 420S depth sounder and global positioning system (Garmin, Olathe, KS) continuously recorded depth, latitude, and longitude at 30-second intervals.

We combined ^{222}Rn, temperature, salinity, wind speed, depth, and latitude/longitude data into a ^{222}Rn box model for coastal surveys developed by Dulaiova et al. (2005) and modified by Dulaiova et al. (2010). Model parameters, including

activity of ^{222}Rn in air, pore-water, offshore water, and ^{226}Ra-supported levels of ^{222}Rn in the water were the same as described for the stationary platform model. In the surveying model, ^{222}Rn measurements were offset backward one analysis cycle from the multiparameter sonde, depth, and latitude/longitude data since the ^{222}Rn system took ~ 5 minutes to respond to changes in ^{222}Rn activity in the water. This offset also aligned measured activities to the physical location of the water cycling through the air-water exchanger and RAD-7 system, instead of the actual time when each analysis cycle was completed.

We converted all ^{222}Rn and salinity measurements from the surveys into groundwater discharge fluxes based on the following equations from Moore (1996):

$$Q_{SGD_{tot}} = \frac{A_{Rn\_cw} * V}{\tau * A_{Rn\_gw}} \tag{3.1}$$

and

$$Q_{SGD_{fresh}} = \frac{(S_o - S_{cw}) * V}{\tau * S_o} \tag{3.2}$$

where $Q_{SGD_{tot}}$ was total (fresh and saline) groundwater discharge and $Q_{SGD_{fresh}}$ was fresh groundwater discharge in m^3/d. A_{Rn_cw} and A_{Rn_gw} were ^{222}Rn activities in coastal water and groundwater in dpm/m^3, respectively. S_{cw} and S_o were coastal water and offshore salinity. We assumed the offshore salinity equaled 35. V was the volume of the coastal water box in m^3, and τ was the flushing rate of the volume of water considered in the calculation. Since we lacked flushing rates for our specific study period, we choose two different flushing rates for τ. We calculated $Q_{SGD_{tot}}$ and $Q_{SGD_{fresh}}$ using a tidal flushing rate (12 hours 15 minutes). We also used published flushing rates from Buske and Evans (1974), which were variable, and ranged from day(s) in the back of Middle Loch to as little as 30 minutes near the entrance to the harbor.

We calculated the volume of water in the coastal box for each analysis cycle in a multi-step process. First, we calculated the half distance between the previous ^{222}Rn and following ^{222}Rn measurements (Dulaiova et al., 2010) for all surveys of surface waters. Next, we calculated the area of the coastal box for one of two scenarios: (1) coastal boxes with no visible plumes on the SST map, or (2) coastal boxes with visible plumes on the SST map. For case 1, the perimeter of the coastal box was delineated by a line drawn perpendicular from the shoreline to the half distance location of the previous ^{222}Rn

measurement (side 1), continued to the half distance of the following ^{222}Rn measurement (side 2), drawn perpendicular from the end of the second half distance to the shoreline (side 3), and continued along the shoreline to the starting point (side 4). The area inside the box was then calculated based on the defined perimeter. For case 2, the perimeter of the coastal box was delineated by a line drawn perpendicular from the shoreline to the half distance location of the previous ^{222}Rn measurement (side 1), continued along the edge of plume boundary from the SST map until reaching the half distance of the following ^{222}Rn measurement (side 2), drawn perpendicular from the end of the second half distance to the shoreline (side 3), and continued along the shoreline to the starting point (side 4). The area inside the box was then calculated based on the defined perimeter. Our coastal boxes were, therefore, coastal polygons. For the depth component of the volume calculation, we assumed a groundwater-impacted layer thickness of 40 cm for the entire harbor, except in the back of Middle Loch were 0.85 cm was used (see discussion of ^{222}Rn surveys of the water column). The 40 cm depth represented the thickness of water sampled by the submersible pump, positioned ~ 20 cm below the water's surface.

Radon Surveys of the Water Column

^{222}Rn surveys of the water column were conducted to measure ^{222}Rn, temperature, salinity, and conductivity throughout the water column. All lochs of Pearl Harbor were surveyed between 5 January and 19 January 2011. At each depth-profiling location, a multiparameter sonde was first lowered through the water column to assess the depths where changes in temperature and salinity occurred. Three RAD-7s were then simultaneously deployed to monitor ^{222}Rn activities at three different depths in the water column. Each RAD-7 was programmed to measure at 5-minute cycles. One RAD-7 constantly monitored surface-water ^{222}Rn activities. Water quality parameters of surface-waters were also continuously measured by a multiparameter sonde at 1-minute intervals. The submersible pump for the second RAD-7 monitoring system was either placed at mid-depth in the water column, or where the preliminary temperature/salinity depth profile indicated different conditions from surface waters. The deepest pump, for the third ^{222}Rn monitoring system, was typically deployed at or near the seafloor. If the depth of the water column exceeded the hose length (9 m), the deepest pump was

suspended in the water column at ~9 m. Conductivity, water temperature, and absolute depths from the intermediate and deep water systems were measured at 30-second intervals using a CTD-Diver (described earlier) affixed to the end of each pump. All CTD-Diver conductivity measurements were converted to salinity using relationships derived by Williams (1986). Water column depth and geographic location were monitored at 30-second intervals by the GPSMAP 420S (described earlier). While the boat was transiting from one depth-profiling location to the next, the intermediate and deep pumps were brought to the surface to prevent impacting with submerged objects and dragging along the harbor's bottom. The pumps were lowered to their respective depths at the following depth-profiling location, after the preliminary temperature/salinity depth profile was completed.

The ^{222}Rn model and input parameters for all surveys of the water column were the same as the model used for surveys of surface waters. The first 5-minutes of ^{222}Rn data collected at each depth were ignored, as described above.

Results

Sea-surface Temperature Maps

All SST maps are shown in false color. In all SST maps, coldest temperatures are displayed as blue hues and warmest temperatures are displayed as red hues. SSTs varied from 24.2 to 27.8°C (e.g. Figures 3.5A-C, 3.9A-C).

On 12 June 2009, we collected thermal infrared data at a flight altitude of 1295 m. Our camera configuration gave a spatial resolution of 2.0 m at this altitude. On 17 July and 22 July 2009, we collected data at 2134 m, resulting in a spatial resolution of 3.2 m. During all flights, our target ground speed was 161 km/h, making consecutive images advance by 0.8 m on the ground at 1295 m flight altitude and by 0.5 m on the ground at 2134 m flight altitude.

Discrete Samples from Water Supply Wells and Coastal Springs

Fifteen samples of groundwater end-members (water supply wells and coastal springs) had temperatures that ranged from 20.20 to 24.06°C and salinities that varied

Table 3.1: Names, locations, sampling dates, temperature (Temp.), salinity (Sal.), measured groundwater ^{222}Rn activities and average ^{222}Rn activities used to estimate groundwater end-members for all ^{222}Rn models. Where available, a comparison to previous ^{222}Rn measurements by Hunt (2004) is made. All samples were collected in 2010.

Sample Name	Latitude N*	Longitude W*	Sample Date	Temp. °C	Sal.	^{222}Rn dpm/m^3	^{222}Rn dpm/m^3
MLC1	21.38825	157.98883	8 JAN	21.20	1.90	95,152	
MLC2	21.38806	157.99006	8 JAN	21.80	1.70	112,183	
Aiea Heights 2	(2355-07)		28 JAN	20.92	0.24	95,748	206,460
Hoaeae P-2	(2301-35)		28 JAN	22.42	0.24	136,270	
Kunia I-P2	(2302-02)		28 JAN	22.21	0.24	95,748	
Manana Well	(2458-05)		28 JAN	20.20	0.36	99,020	
Waipahu I-P2	(2400-02)		28 JAN	21.33	0.17	87,729	
Waipahu IV-2	(2301-35)		28 JAN	21.78	0.21	91,062	
Waipio Heights II-1	(2500-01)		28 JAN	21.64	0.14	78,235	88,800
				Average Rn: 99,016±16,658			
Waiau HECO Spring 1	21.38971	157.96260	9 FEB	20.22	0.30	255,155	
Waiau HECO Spring 2	21.38969	157.96477	9 FEB	24.06	0.00	519,172	
Waiau HECO Spring 3	21.39095	157.96480	9 FEB	20.47	0.24	591,361	
Waiau Spring HECO	21.38891	157.96268	28 JAN	21.02	0.42	289,140	
Kaahumanu I-1	(2357-24)		28 JAN	20.73	0.37	313,445	
Waiau HECO 2A	(2357-11)		28 JAN	20.78	0.24	376,562	
				Average Rn: 390,806±135,370			

* Latitude and Longitude are relative to WGS84. Water supply well locations are withheld to comply with water resource protection guidelines. The state-designated well-identifier number is given in place of geographic coordinates.

from 0.00 to 1.90°C (Table 3.1). ^{222}Rn activities ranged from 78,235 to 591,361 dpm/m^3 (Table 3.1).

Radon Stationary Time-Series Deployments

^{222}Rn activities, plume depths, and salinities through time for the six time-series analyses conducted in January 2010 are shown in Figure 3.3. ^{222}Rn activities varied from 2 to 50 dpm/L. Figure 3.4 shows measured ^{222}Rn activities and plume depths through time for the three time-series analyses conducted during February and March 2010.

Model parameters specific to each platform (average excess ^{222}Rn, average evasion of ^{222}Rn to the atmosphere, water depth, and plume area) are provided in Table 3.2. Table 3.2 also presents one to five estimates of groundwater fluxes for each of the nine time-series analyses. Multiple estimates were derived from varying surface area of the plume in the ^{222}Rn model, the survey of surface waters, and/or estimates of spring

flow from the USGS (http://hi.water.usgs.gov/studies/pearlharborsprings/data_phs09.html). Total discharge was calculated for nearly-complete to complete, even-numbered tidal cycles. Results for two tidal cycles, therefore, correspond to 49 ^{222}Rn analysis cycles at 30-minute intervals. In some instances, the time-series station was deployed for less than an even number of tidal cycles (at most, 2 hours 30 minutes short of the 12 hour 15 minute tidal cycle). Discharge estimates for these platforms are labeled as biased

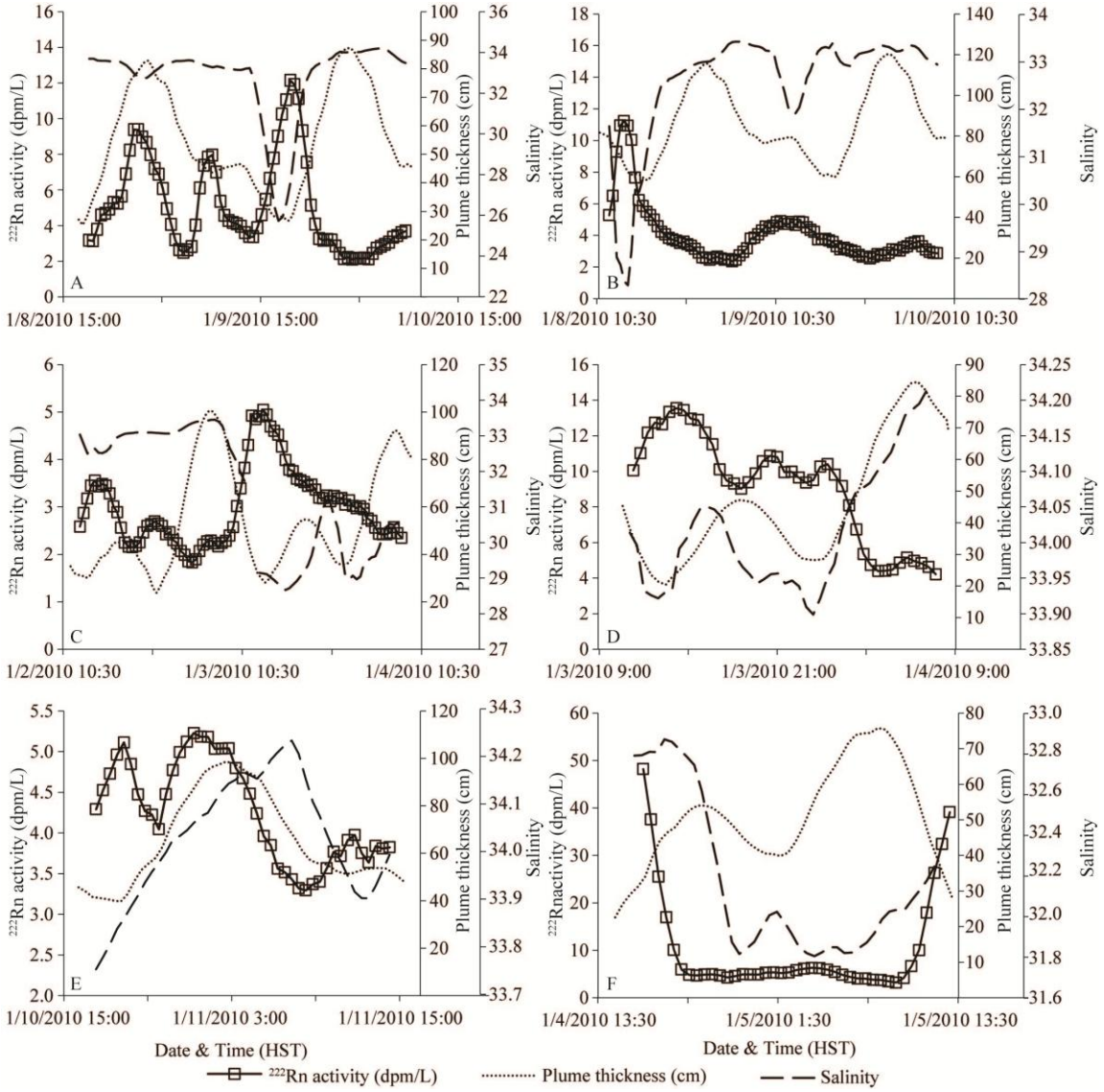


Figure 3.3: ^{222}Rn time-series results for: A) middle of Middle Loch (MLB), B) back of Middle Loch (MLA), C) back of West Loch (WLA), D) W4 pier in West Loch (WLB), E) entrance, and F) the east side of East Loch (ELB). Vertical and horizontal scales vary from by panel and are maximized to display the full range of the data. ^{222}Rn activities, salinity, and plume thicknesses are displayed as five-point moving averages.

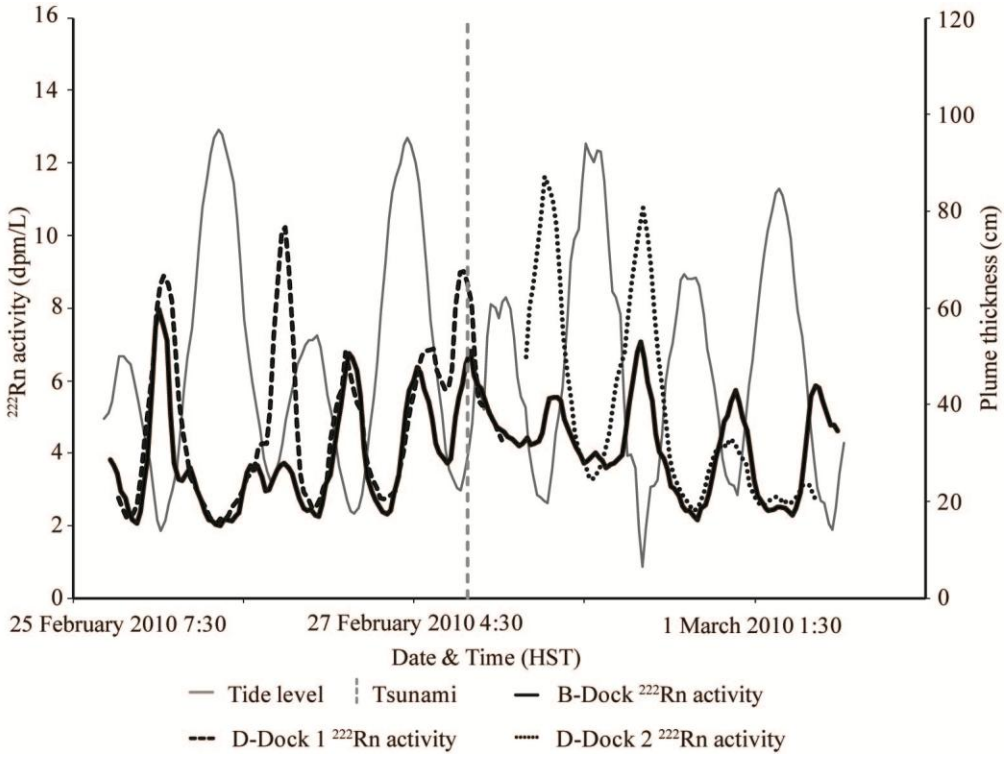


Figure 3.4: Three concurrent ^{222}Rn time-series results for stationary platforms deployed at Rainbow Bay Marina in East Loch from 25 February to 2 March 2010. The vertical line represents the time at which the first tsunami wave from the 27 February Chilean earthquake reached Pearl Harbor. ^{222}Rn activities, salinity, and depth are displayed as five-point moving averages.

toward high- or low-tide conditions (Table 3.2). Total discharge varied from 60 m^3/d to 27,600 m^3/d with one outlier at 177,200 m^3/d.

Radon Surveys of Surface Waters

^{222}Rn activities for the surface-water survey of Pearl Harbor conducted in January 2010 are shown in Figures 3.5A-C. The lines on Figures 3.5A-C delineate the path the boat took while travelling as close as possible to the shoreline. ^{222}Rn activities varied from 0.26 to 15.56 dpm/L in West Loch, 0.25 to 20.75 dpm/L in Middle Loch, 0.26 to 24.41dpm/L in East Loch, and 1.30 to 23.28 dpm/L in the entrance to Pearl Harbor.

Figures 3.6A-C show total groundwater fluxes (calculated from eq. 3.1) to Pearl Harbor on a segment-by-segment of coastline basis for a tidal flushing rate. These groundwater fluxes were derived from the surface-water survey shown in Figures 3.5A-C. The shoreline length used to derive the units presented in Figures 3.6A-C was

Table 3.2: Groundwater-impacted layer depth, groundwater-plume surface area, method employed to calculate surface area, and groundwater discharge fluxes (rounded to the nearest lowest 100 m^3/d, or to the nearest lowest 10 m^3/d for fluxes <100 m^3/d) for all nine time-series locations. Rainbow Bay Marina is abbreviated RBM. All TIR data were collected in 2009.

Location	Average excess ^{222}Rn (dpm/m^3)	Average evasion (dpm/m^2/h)	Depth (cm)†	Surface area (m^2)	Method	Total discharge (m^3/d)
MLB: middle of Middle Loch	5,231	81	40	33,205	TIR 17 July	18,300 (n=49)
(8-10 January 2010)	5,231	81	40	10,060	TIR 22 July	5,500 (n=49)
	5,231	81	40	50,100	Rn 2010	27,600 (n=49)
MLA: back of Middle Loch	3,943	77	85	4,120	TIR 12 June	2,400$^-$ (n=93)
(8-10 January 2010)	3,943	77	85	1,840	TIR 17 July	1,100$^-$ (n=93)
	3,943	77	85	4,690	TIR 22 July	2,800$^-$ (n=93)
	3,943	77	85	19,960	Rn 2010	12,000$^-$ (n=93)
	3,943	77	85	650	Rn 2011	300$^-$ (n=93)
WLB: middle of West Loch	8,826	516	40	26,950 P*	TIR 17 July	11,900$^+$ (n=47)
(3-4 January 2010)	8,826	516	40	24,400 B*	TIR 17 July	10,800$^+$ (n=47)
	8,826	516	40	13,840	Rn 2010	6,100$^+$ (n=47)
	8,826	516	40	40,020	Rn 2011	177,200$^+$ (n=47)
WLA: back of West Loch	2,509	47	40	36,420	TIR 17 July	5,000 (n=49)
(2-4 January 2010)	2,509	47	40	5,635	Rn 2010	700 (n=49)
Near Harbor Entrance (10-11 January 2010)	4,213	102	40	57,220	Rn 2010	12,100$^+$ (n=47)
ELA: East Loch RBM	13,815	793	40	230	TIR 17 July	220$^+$ (n=45)
(4-5 January 2011)	13,815	793	40	1,685	Rn 2011	1,600$^+$ (n=45)
B-Dock: East Loch RBM (25 February - 1 March 2010)	3,949	205	40	305	TIR 17 July	70 (n=196)
D-Dock 1: East Loch RBM	4,679	281	40	230	TIR 17 July	60 (n=98)
(25-27 February 2010)	4,679	281	40	1,685	Rn 2011	400 (n=98)
D-Dock 2: East Loch RBM (27 February - 1 March 2010)	6,126	206	40	665	TIR 17 July	100 (n=49)

† Depth is reported as a fixed measurement that corresponds to a specific tide reported in the text. See the ^{222}Rn Stationary Time-Series Deployments Discussion for more details.

* P is Pier and B is Bay

$^+$ indicates that the discharge estimate is biased toward high tide and $^-$ indicates that the discharge is biased toward low tide. For two complete tidal cycles, n=49, for four tidal cycles, n=98.

described in the perimeter calculation (side 4) above. Total groundwater fluxes varied from 0.3 to 7.9 m^3/m/d in West Loch, 0.1 to 42.8 m^3/m/d in Middle Loch, 0.8 to 56.7 m^3/m/d in East Loch, and 0.4 to 18.0 m^3/m/d to the entrance of Pearl Harbor (Figures3.6A-C). In contrast, flushing rates proposed by Buske and Evans (1974), generated groundwater fluxes that varied from 0.1 to 16.3 m^3/m/d in Middle Loch, 0.3 to 41.5 m^3/m/d in East Loch, and 0.1 to 138.9 m^3/m/d to the entrance of Pearl Harbor. Flushing rates were unavailable for West Loch (Buske and Evans, 1974).

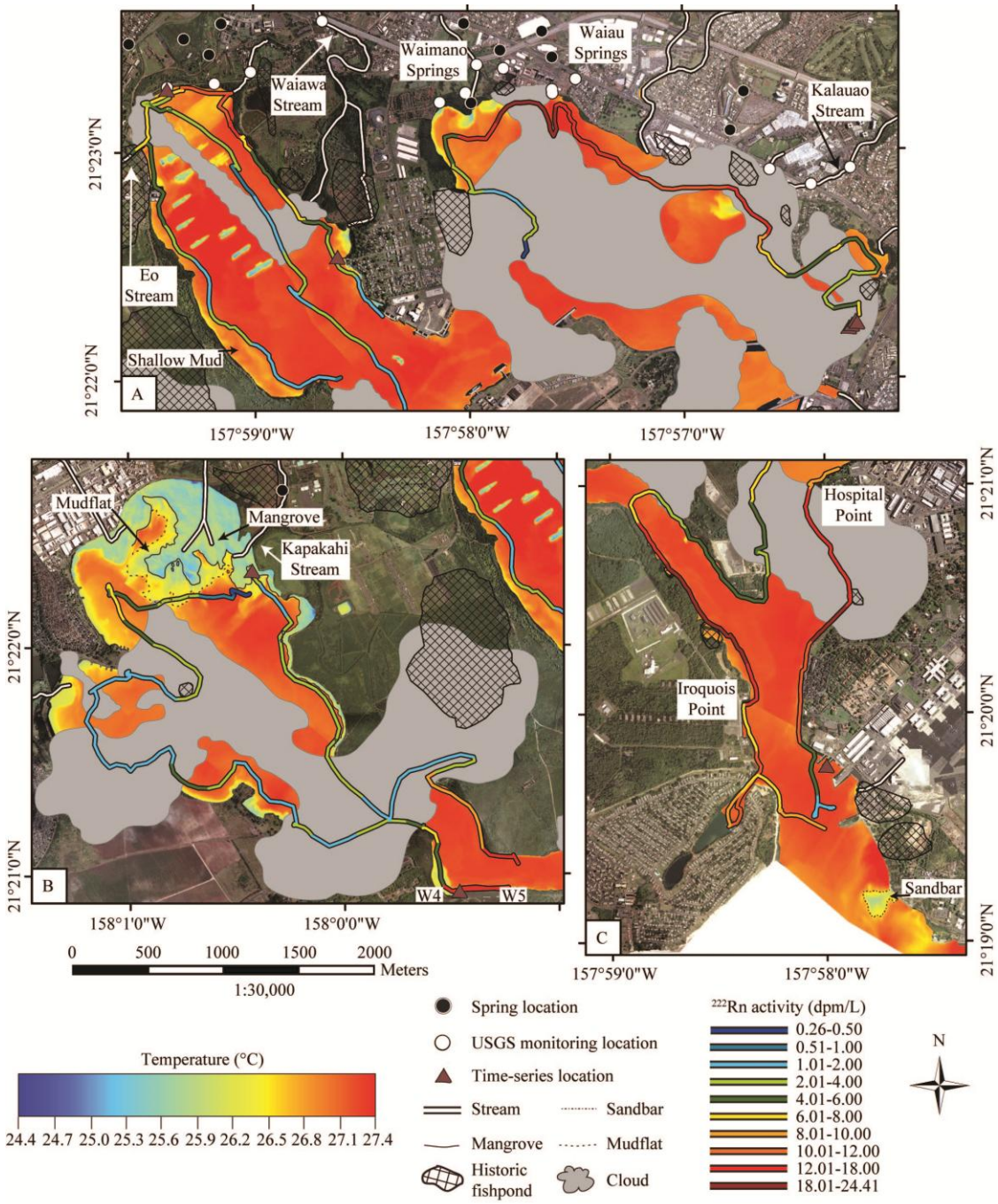


Figure 3.5: Surveys of surface waters for ^{222}Rn (colored lines) in Pearl Harbor superimposed on a sea-surface temperature (SST) map from 17 July 2009. A) Middle Loch (left side) survey collected on 8 January 2010 and East Loch (right side) survey collected on 4 January 2010, B) West Loch survey collected on 2 January 2010, and C) entrance to Pearl Harbor survey collected on 10 January 2010. Missing SST data are due to clouds. The seaward extent of mangroves (solid lines), mudflats (dashed lines), and sandbars (dotted lines) are delineated from water. ^{222}Rn activities are reported on a non-linear scale to better differentiate the data. References for spring and historic fishpond locations are provided in the caption of Figure 3.1.

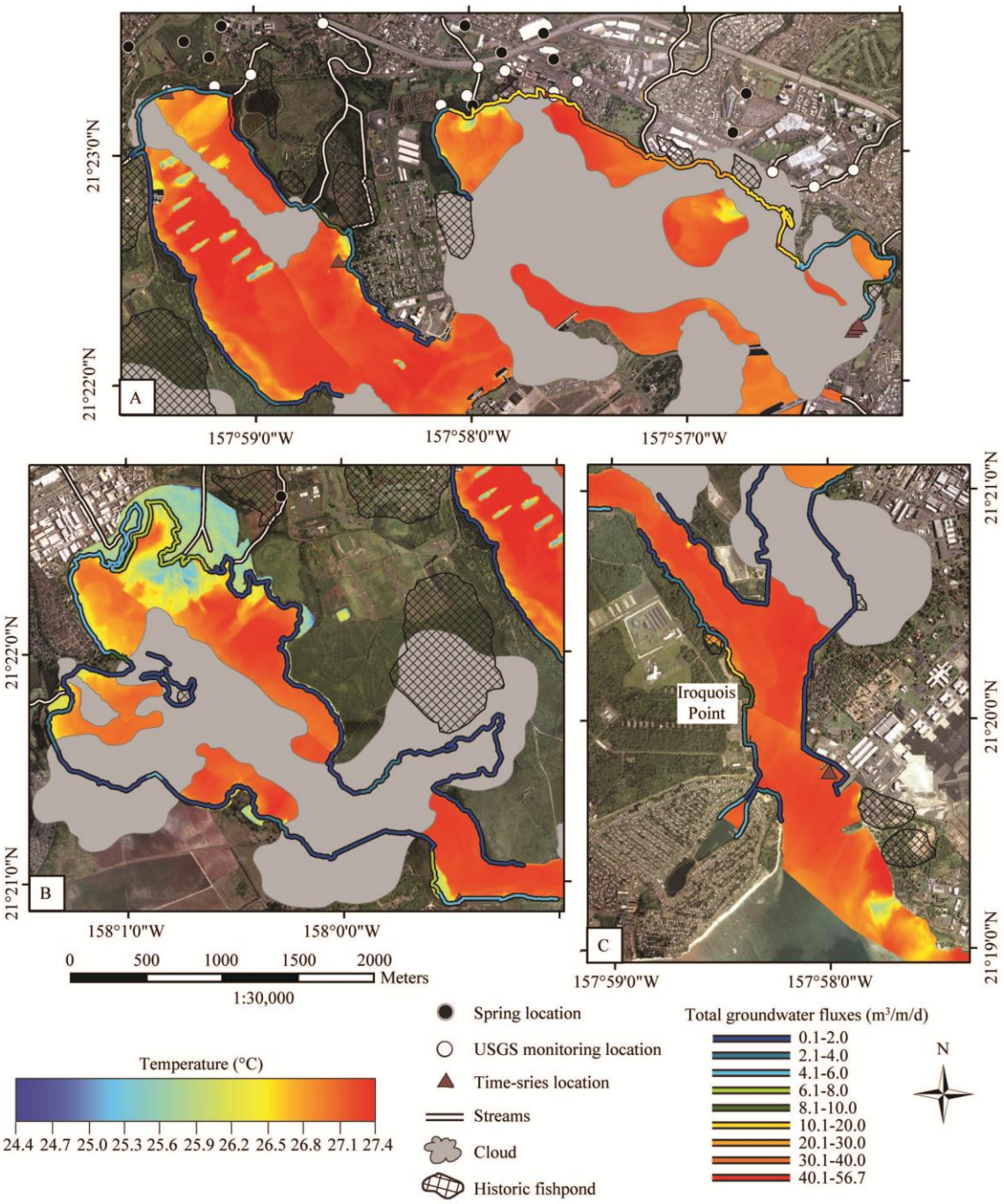


Figure 3.6: Total groundwater fluxes (m^3/m/d) from the January 2010 surveys of surface waters: A) Middle Loch (left side) collected on 8 January 2010 and East Loch (right side) collected on 4 January 2010, B) West Loch collected on 2 January 2010, and C) the entrance to Pearl Harbor collected on 10 January 2010. Groundwater fluxes are displayed on a non-linear scale to better differentiate the data. Flux estimates are draped over the sea-surface temperature map from 17 July 2009. References for spring and historic fishpond locations are provided in the caption of Figure 3.1.

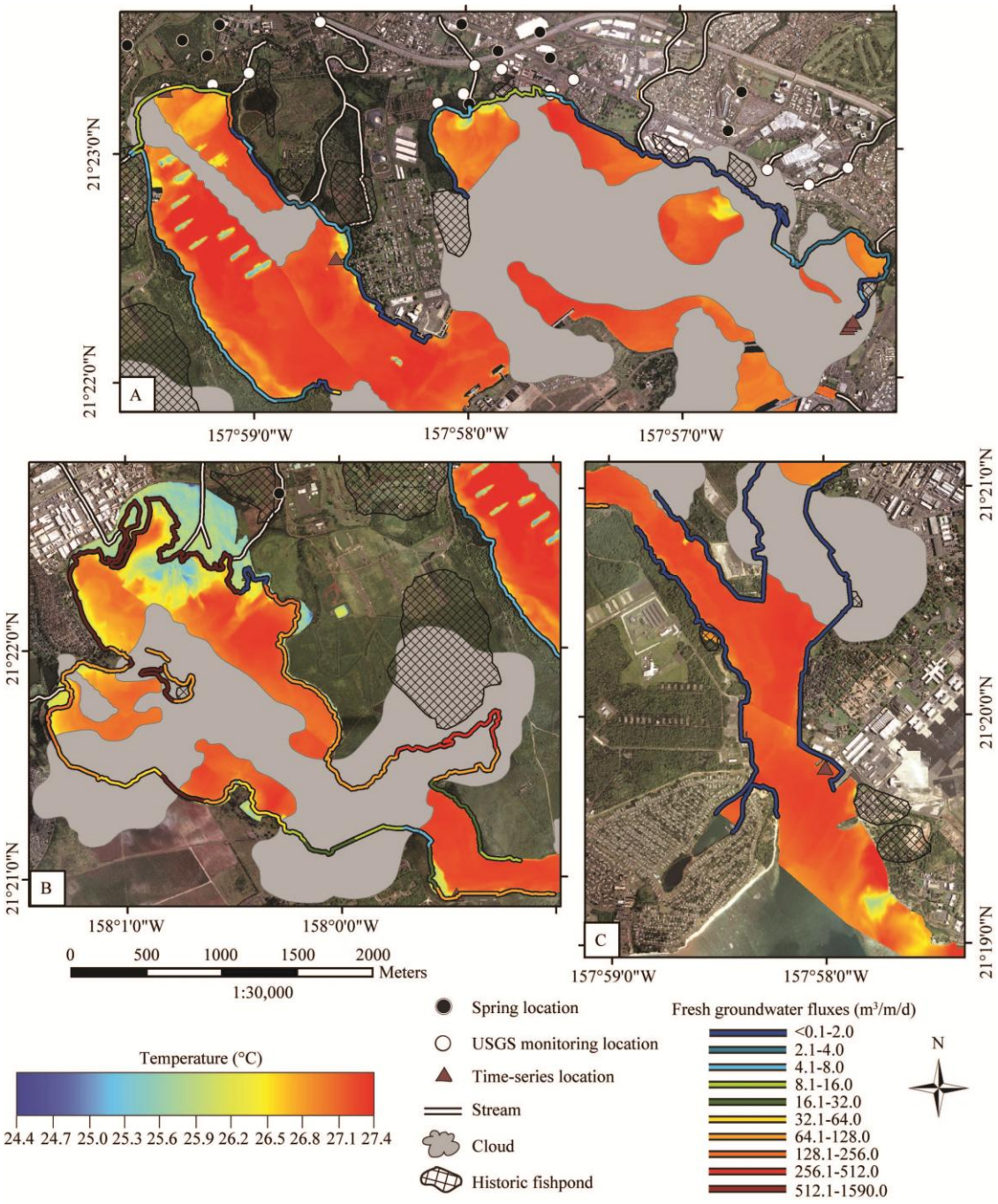


Figure 3.7: Fresh groundwater fluxes (m^3/m/d) calculated by salinity balance from eq. 3.2 for the January 2010 surveys of surface waters: A) Middle Loch (left side) collected on 8 January 2010 and East Loch (right side) collected on 4 January 2010, B) West Loch collected on 2 January 2010, and C) the entrance to Pearl Harbor collected on 10 January 2010. Groundwater fluxes are displayed on a non-linear scale to better differentiate the data. Flux estimates are draped over the sea-surface temperature map from 17 July 2009. References for spring and historic fishpond locations are provided in the caption of Figure 3.1.

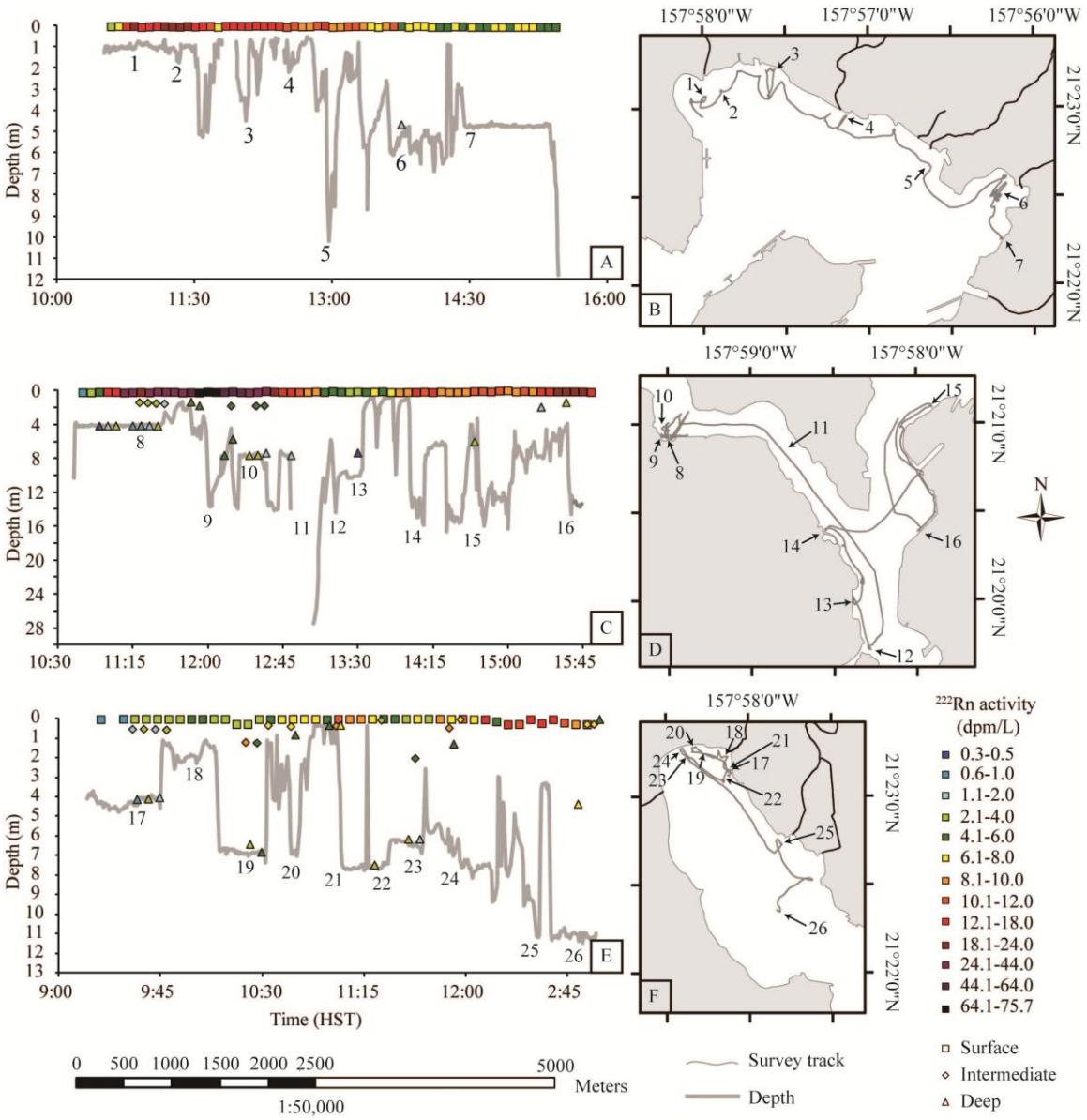


Figure 3.8: ^{222}Rn depth-profiling survey of: A and B) East Loch on 5 January 2011, C and D) West Loch and the entrance to Pearl Harbor on 7 January 2011, and E and F) Middle Loch on 19 January 2011. On panels A, C, and E, the solid gray line represents water-column depth recorded by the depth sounder. The boat path for each survey is shown as the gray line on panels B, D, and F. Station numbers are specified in the left panels and matched to their geographic location on the right panels. ^{222}Rn activities are displayed on a non-linear scale to better differentiate the data.

Figures 3.7A-C show fresh groundwater fluxes (calculated from eq. 3.2) to Pearl Harbor on a segment-by-segment of coastline basis. These groundwater fluxes were derived from the surface-water survey shown in Figures 3.5A-C. Shoreline lengths used

to calculate the results presented in Figures 3.7A-C were exactly the same as those used for the results shown in Figures 3.6A-C. Fresh groundwater fluxes varied from 0.1 to 1,590.0 m^3/m/d in West Loch, 0.4 to 120.2 m^3/m/d in Middle Loch, <0.1 to 19.0 m^3/m/d in East Loch, and <0.1 m^3/m/d to the entrance of Pearl Harbor. In contrast, for flushing rates proposed by (Buske and Evans, 1974), fresh groundwater fluxes varied from 0.2 to 37.2 m^3/m/d in Middle Loch, 0.3 to 23.4 m^3/m/d in East Loch, and 0.1 to 36.5 m^3/m/d in the entrance to Pearl Harbor. Residence times were unavailable for West Loch (Buske and Evans, 1974).

Radon Surveys of the Water Column

Figures 3.8A-F show ^{222}Rn activities of the water-column survey completed in January 2011. ^{222}Rn activities varied from 0.3 to 75.8 dpm/L in West Loch, 0.5 to 14.0 dpm/L in Middle Loch, and 0.3 to 22.7 dpm/L in East Loch. Gaps in the intermediate and deep data shown in Figures 3.8A, 3.8C, and 3.8E occurred when the pumps were brought to the surface during transit. Gaps also occurred when insufficient time (< 10 minutes) was spent at a depth-profiling location.

Discussion

All remote sensing data, surveys of surface waters, and surveys of the water column were conducted within three hours of low tide. This timing was chosen because groundwater discharge should have been maximized due to a larger hydraulic gradient between the aquifer and the ocean. The groundwater discharge signal should also have been maximized at low tide because dilution of the estuary waters from intruding coastal waters during flooding tides was minimized. Time-series analyses were conducted over complete tidal cycles to capture the variability of groundwater discharge throughout a tidal cycle.

Infrared remote sensing data provide near-instantaneous, high-resolution (2.0 to 3.2 m) images of the estuary's SSTs, whereas the ^{222}Rn survey data are averaged over 5-minute intervals and variable (1-100 m) spatial resolution. The ^{222}Rn tracer, however, detects groundwater discharge below the water's surface, while the remotely sensed temperature data represents only the very top of the water's surface.

Aerial TIR Remote Sensing

We collected thermal infrared data at night to avoid uneven solar heating of shallow coastal waters during daylight hours. We also collected data during clear to mostly-clear sky conditions to avoid clouds, which mask SSTs since the camera cannot see through them.

The aerial TIR remote sensing technique produced SST maps with 0.5°C accuracy and <0.1°C precision (see Chapter 2). The precisely known temperatures and high-resolution nature of the thermal infrared SST maps allowed us to categorize groundwater discharge into two groups: (1) point-source plumes, and (2) diffuse, non-point-source seepage. We define point-source discharge as water that emanates outward as a single, spatially well-defined plume or jet. Point-source discharge possesses distinguishable temperatures relative to the waters which surrounded it. Point-source plumes are also resolvable within the spatial resolution of our remote sensing configuration (2.0 to 3.2 m in this chapter). We define diffuse seepage as non-point-sourced flow that occurs as a broad-scale distribution with no discernible single input source. Diffuse flow results in a fairly large area of relatively uniform temperature-water, which is anomalously cold relative to the surrounding water.

Cold water temperatures in the TIR images (Figures 3.5A-C) represented one of several possibilities: drainage from subaerial springs, buoyant spring water from subsurface inputs, diffuse groundwater seepage, groundwater-fed streams, and non-groundwater-fed streams. Cold temperatures in the infrared images also corresponded to non-water features such as shallow mud (Figure 3.5A), mud flats (Figure 3.5B), mangroves (Figure 3.5B), and sandbars (Figure 3.5C). See Chapter 2 for a detailed discussion of these radiance interferences.

SST maps of Middle Loch, from three different dates (Figures 3.9A-C), demonstrate the dynamic nature of the estuary. Middle Loch has four groundwater-fed streams, at least two subaerial springs, three groundwater discharge locations at the beach, and two diffuse seepage zones. These distinct water masses and their mixing characteristics are evident in the SST maps (Figures 3.9A-C). Man-made objects or obstacles also influenced water movement and mixing in the estuary, for example, bifurcation of flow by the moored naval ships in the middle of the loch (Figures 3.9A-C).

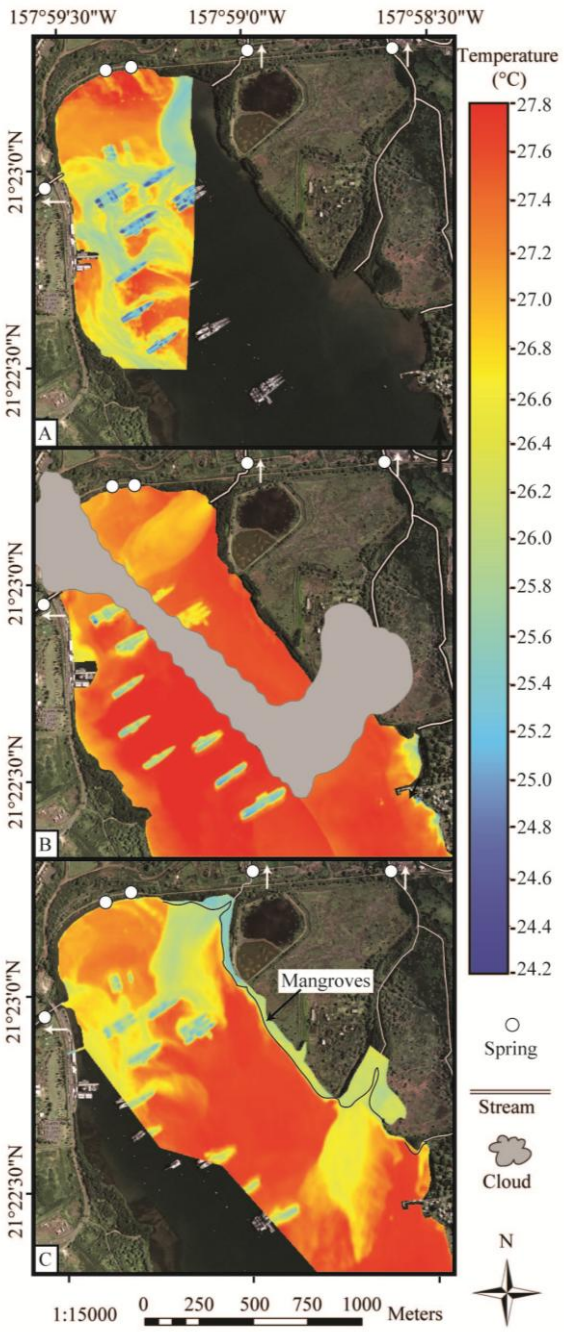


Figure 3.9: Comparison of sea-surface temperature maps collected from Middle Loch, Pearl Harbor on: A) 12 June 2009 at 06:28 a.m. Hawaii Standard Time (HST); 1295 m altitude; 2.0 m spatial resolution, B) 17 July 2009 at 03:50 a.m. HST; 2134 m altitude; 3.2 m spatial resolution, and C) 22 July 2009 at 02:35 a.m. HST; 2134 m altitude; 3.2 m spatial resolution. Tidal conditions were +0.53 m for A, -0.04 m for B, and +0.17 m for C relative to mean-lower low-water recorded at the Honolulu tide gauge (1612340). All images are displayed at the same map scale and same temperature scale. Cold rectangular objects near the middle of the loch are moored naval ships. All streams are spring-fed; spring locations beyond the viewable area of the image are indicated by a white circle with a white arrow adjacent to the symbol. Panel C includes cold temperature mangroves, which are delineated from water by a solid black line. ⟶

We used the inflection-point technique and the SST maps shown in Figures 3.5A-C and Figures 3.9A-C to delineate at least 25 distinct groundwater point-source locations (green polygons in Figures 3.2A-C) and 13 diffuse-seepage areas (blue polygons in Figures 3.2A-C). These calculations represent minimum values since clouds created gaps in the SST maps. Surface-plume areas varied in size from 230 to 160,240 m^2 (Table 3.2), while diffuse-seepage areas varied from 5,130 to 47,304 m^2. Point-source plumes were concentrated near well-known subaerial spring locations (e.g. Stearns and Vaksvik, 1935) such as those near the northwest corner of East Loch associated with the Waiau and Waimano spring complexes (Figure 3.5A). Plumes were also visible at the mouths of spring-fed

streams like the Kalauao Stream in East Loch (Figure 3.5A) and Waiawa and Eo Streams in Middle Loch (Figure 3.5A). The diffuse-seepage zones were predominantly narrow, shore-parallel areas that had lower water temperatures than nearby coastal waters as shown in Figures 3.2A-C, which can be compared to Figures 3.5A-C.

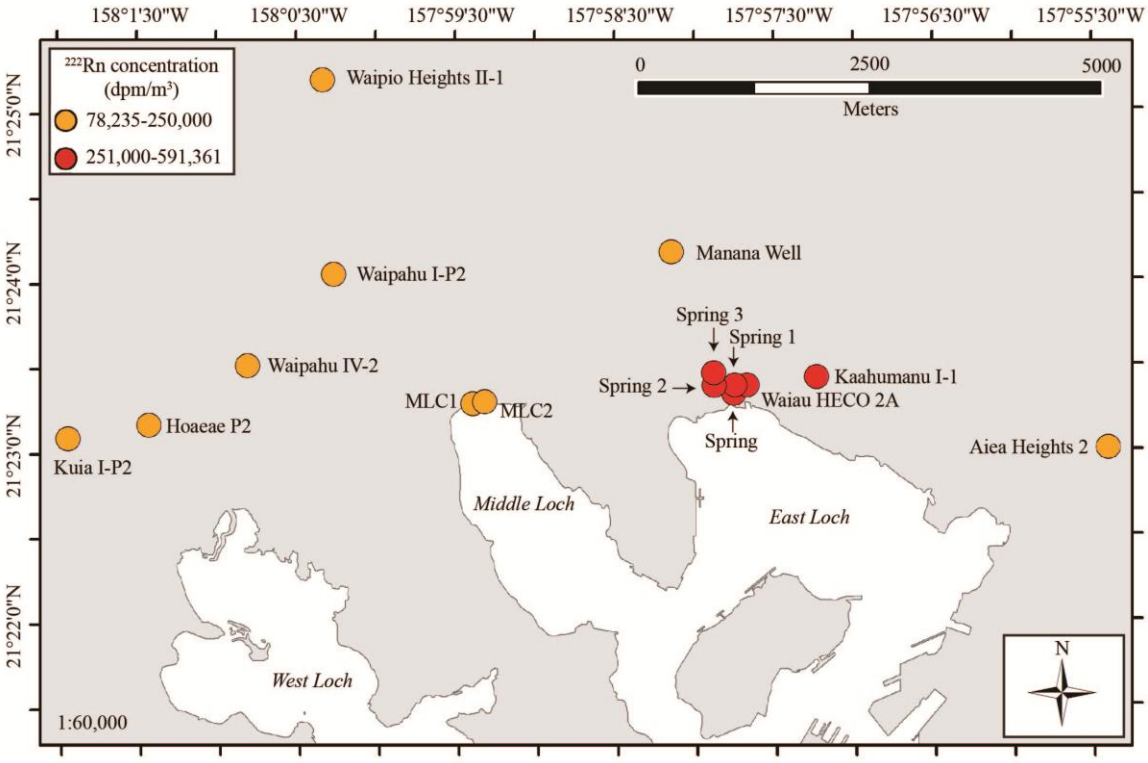


Figure 3.10: ^{222}Rn activities of groundwater end-members. The highest end-member activities (red circles) occur near the Waiau and Waimano spring systems shown on Figure 3.1.

Discrete Samples from Water Supply Wells and Coastal Springs

Groundwater temperatures in Southern Oahu vary from 20 to 25°C and are principally determined by the cool, atmospheric temperatures of the water's mountainous areas of recharge (Visher and Mink, 1964). As groundwater travels toward the coast, it warms very little (Mink, 1964). This contrasts with coastal water temperatures, which typically vary from 24 to 28°C. During our study, well temperatures varied from 20.20 to 22.42°C (Table 3.1). Spring samples had temperatures (20.22 to 24.06°C) intermediate between recharge temperatures and coastal water temperatures (Table 3.1).

Samples from water supply wells and coastal springs indicated two distinct groundwater end-members with respect to ^{222}Rn as shown in Figure 3.10. The ^{222}Rn activity (390,806±135,370 dpm/L; n=6) of the fresh discharge from the Waiau and Waimano Spring systems was distinct from all other well and spring sources sampled (99,016±16,658 dpm/L; n=9; Table 3.1). Measured ^{222}Rn activities from all well samples were similar to their respective down-gradient subaerial springs. Two of the sampled wells were analyzed for ^{222}Rn by Hunt (2004). The Waipio Heights 2-1 sample in this study (78,235 dpm/m^3) was similar to the Hunt (2004) measurement (88,800 dpm/m^3). Aiea Heights 2, on the other hand, had less agreement between the two measurements (95,748 dpm/m^3 in 2010 and 206,460 dpm/m^3 in Hunt (2004)).

Radon Stationary Time-Series Deployments

The surface expressions of groundwater plumes were dynamic and varied with differing wind directions and velocities (Figures 3.9A-C). Surface expressions of groundwater discharge will also change with time, seasons, weather, and tidal conditions. We, unfortunately, do not have data regarding the specific configuration of groundwater plumes and water masses during our ^{222}Rn deployments, as multiple logistical considerations prevented simultaneous collection of TIR and ^{222}Rn data. We accommodated this uncertainty as well as the natural variability of the surface expression of groundwater discharge by utilizing all available infrared imagery and ^{222}Rn surveys of surface waters to calculate multiple estimates for groundwater-impacted areas (Table 3.2). These areas were then used to calculate multiple estimates for V in equations (3.1) and (3.2).

All flux estimates from the platforms were calculated for measurements of nearly-complete to complete tidal cycles to avoid biasing the results toward high- or low-tide conditions. Tidal heights were allowed to vary in the model with the assumption that that the groundwater-impacted layer became thicker during flooding tides, as water mixed into the layer, and became thinner during falling tides. Groundwater-impacted depths do not necessarily reflect total depth of the water column at each time-series location. The results from the time-series analyses represent the average discharge over the entire measurement period. Most of our groundwater flux measurements were conducted in

January and should represent maximum flows due to the seasonal demand of the aquifer's water (least in winter months).

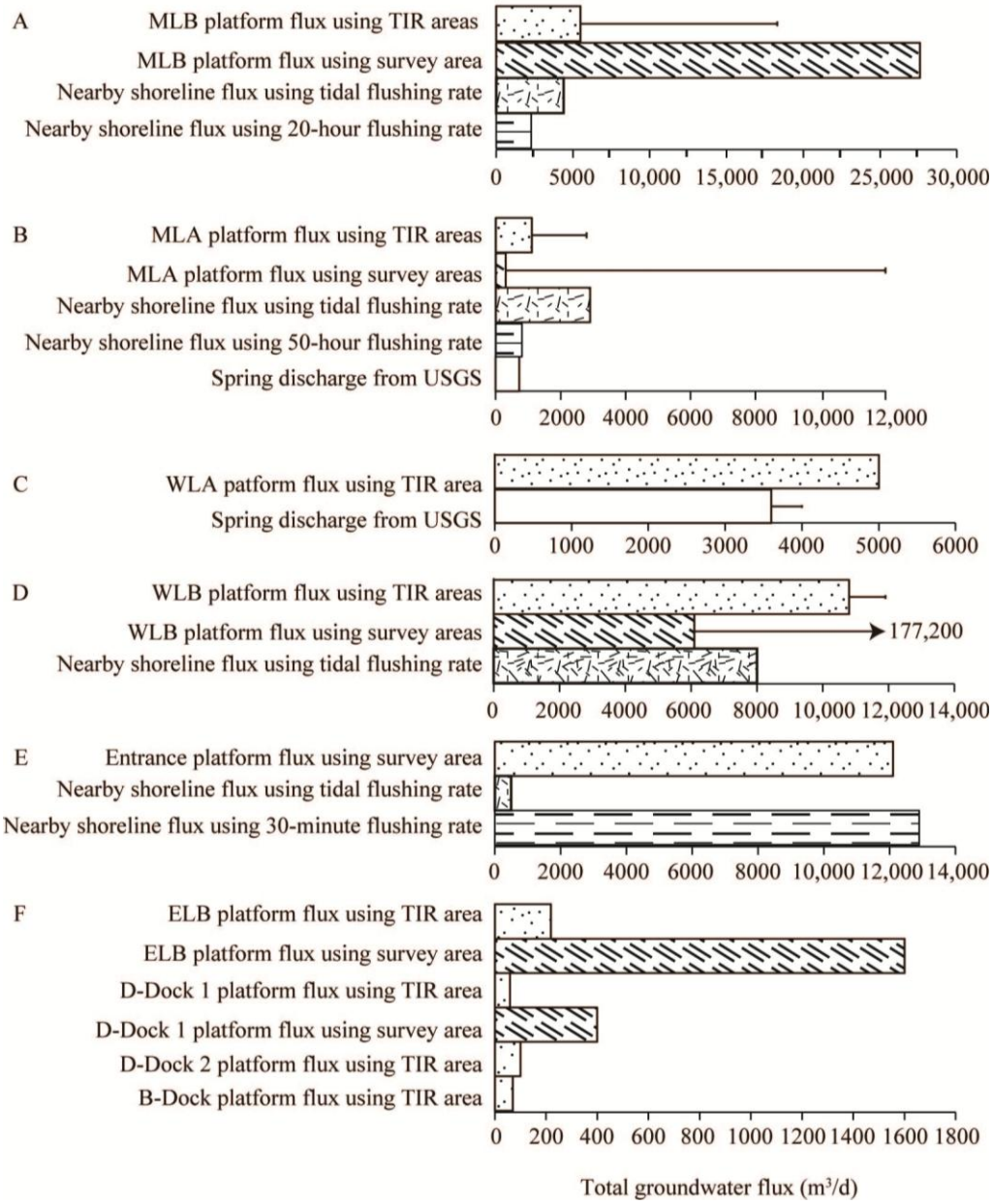


Figure 3.11: Horizontal bars represent total (fresh + saline) groundwater fluxes for each time-series location calculated by several methods. Error bars show a second groundwater flux estimate that utilized an additional data-set similar to the first. For example, the top bar for MLB represents fluxes calculated using the areas from SST maps collected on 17 July and 22 July 2009. The second bar for MLB represents the flux calculated using the area from the ^{222}Rn survey of surface waters. The bottom two bars for MLB represent fluxes of groundwater from the shoreline immediately adjacent to the platform location for the two flushing rate estimates.

In the discussion that follows, we provide flux estimates for groundwater discharge points identified and quantified based on the SST maps, ^{222}Rn time-series measurements, and ^{222}Rn surveys. Figure 3.11 illustrates the results from the combination of these techniques for the time-series locations in each loch. To quantify groundwater fluxes, we used the ^{222}Rn mass-balance of the time-series measurements and ^{222}Rn inventory mass-balance measured during the coastal survey. The area of groundwater plumes at each location, used for these calculations, was calculated from either SST maps (inflection-point technique) or ^{222}Rn surveys of surface waters (coastal box polygons). Note that the groundwater fluxes from the survey of surface waters and the survey of the water column are biased toward low tide, and should represent maximum flux estimates.

Middle Loch

The time-series analysis near the middle of Middle Loch (MLB; Figure 3.2A) was located ~275 and ~500 m from the mouths of two spring-fed streams and ~175 m from a diffuse seepage area. Salinity remained relatively constant between 32 and 34 but dropped to as low as 23.5 for ~12 hours during the middle of the deployment (Figure 3.3A). The low salinity occurred simultaneously with an increase in ^{222}Rn, reflecting intersection of MLB with recently discharged, less saline water.

The depth profile of the water column at MLB suggested a thin (~40 cm) groundwater-impacted layer at a tide-level of +0.09 m relative to mean-lower low-water (MLLW). We, therefore, used 40 cm for a corresponding tide-level during MLBs deployment. Calculated discharge rates ranged from 2,300 to 27,600 m^3/d (Figure 3.11A). The lower fluxes (2,300 to 4,400 m^3/d) from the shoreline adjacent to the platform may indicate that MLB received recently discharged water from beyond the area next to the platform.

The time-series analysis for the back of Middle Loch (MLA) was ~20 m from the nearest subaerial spring and ~140 m from the second nearest subaerial spring. It was also ~300 m from at least three coastal springs located at land/water interface, and ~500 m from the mouth of a spring-fed stream (Figure 3.5A). ^{222}Rn activities >4 dpm/L and salinities <16 near the beginning and middle of the deployment (Figure 3.3B) represented greater intersection of a recently discharged groundwater plume with MLA. We chose

the plume called MLA on Figure 3.2A, which was located closest to the time-series station (under time-series symbol on Figure 3.2A), for determination of the groundwater-impacted area. SST maps collected on multiple dates showed variable plume sizes (1,840 to 4,690 m^2; Table 3.2). These plumes emanated from a spring that is monitored annually by the USGS. It has a fairly constant flow rate of ~730 m^3/d (Figure 3.11B; http://hi.water.usgs.gov/studies/pearlharborsprings/data_ phs09.html). Under near constant flow conditions, variable plume sizes must have reflected prevailing wind and tidal conditions as well as variable plume thicknesses.

During our 2011 survey of the water column at MLA, the groundwater-impacted layer was 85 cm at a tide-level of +0.04 m relative to MLLW, and extended to the bottom of the estuary. We used 85 cm for a corresponding tide-level during the time-series analysis. Calculated fluxes from ^{222}Rn mass balance ranged from 800 to 12,000 m^3/d (Figure 3.11B). The 50-hour residence time fluxes of 800 m^3/d agreed with the 730 m^3/d from the USGS (Figure 3.11B). However, we believe a tidal flushing rate better describes the data. At high tide, ^{222}Rn activities decreased markedly on the time-series measurement and increased again at low tide, suggesting that the system was tidally flushed. Furthermore, the tidal discharge flux of 2,900 m^3/d (biased to low-tide conditions) from the shoreline agreed with the 1,100 to 2,800 m^3/d calculated from the time-series analysis (Figure 3.11B).

West Loch

The time-series location in the back of West Loch (WLA; Figure 3.2B) was located within a groundwater plume (yellow area on Figure 3.5B) that flowed through mangroves from the nearby groundwater-fed Kapakahi Stream. Kapakahi Stream has a USGS monitoring station located ~1,500 m upstream of its mouth with flow rates ranging from 3,600 to 4,000 m^3/d (http://hi.water.usgs.gov/studies/ pearlharborsprings/data_ phs08.html). ^{222}Rn activities at WLA fluctuated inversely with tide, increasing during ebbing tide and decreasing during flooding tide (Figure 3.3C).

By ^{222}Rn balance, we calculated a discharge rate of 5,000 m^3/d for this time-series (Figure 3.11C). Since the groundwater-impacted area within the mangroves could not be delineated, this flux represents a minimum estimate. The large size and relatively colder temperatures of the plume suggested that the area monitored by WLA was a main

receiving area for groundwater discharge from Kapakahi stream. Furthermore, since ^{222}Rn in recently discharged groundwater to the stream likely evaded to the atmosphere as the water travelled to the estuary, the calculated discharge from ^{222}Rn data would be a minimum flux. Despite this minimum estimate, the fluxes measured by ^{222}Rn mass balance were larger than the fluxes at the gauging station and provided evidence for groundwater inputs downstream of the gauging station.

The time-series station located inside of the U.S. Navy's W4 pier (Figure 3.5B) near the middle of West Loch (WLB; Figure 3.2B) was deployed in a location with no streams or historic fishponds, but was an area of cold groundwater flow (Figure 3.5B). The SST map showed a point-source groundwater plume immediately to the west of the pier, as well as a point-source groundwater plume that flowed laterally against the pier. These plumes coincided with some of the highest ^{222}Rn activities (13.7 dpm/L) measured in the harbor (Figure 3.5B). ^{222}Rn activities fluctuated with tidal level (Figure 3.3D), similar to the other West Loch time-series location. Salinity also correlated to tidal-level; it was higher at high tides and lower at low tides (Figure 3.3D).

We used a groundwater-impacted layer thickness of 40 cm, which was determined from survey of the water column at a tide-level of ~+0.17 m relative to MLLW. Since we cannot conclusively say which one of the plumes was monitored by the stationary platform, both were considered in the ^{222}Rn model (Figure 3.11D). Groundwater flux estimates ranged from 6,100 to 13,840 m^3/d (Figure 3.11D).

Entrance

The time-series station deployed near the entrance to Pearl Harbor (Figure 3.2C) had fairly constant salinities (33.5 to 34.5) and exhibited no obvious correlation to tidal data (Figure 3.3E). No depth-profiling data were collected at this station, so a groundwater-impacted layer was assumed to be 40 cm thick at the lowest tide during the deployment. This should be a reasonable assumption given the fairly uniform surface-water salinities measured during the deployment. No TIR data were available for the time-series location, so the 2010 ^{222}Rn survey was used to calculate the groundwater-impacted surface area, and input into the ^{222}Rn mass-balance model. Calculated groundwater fluxes ranged from 500 to 12,900 m^3/d (Figure 3.11E). The largest fluxes

(12,100 and 12,900 m^3/d agreed quite well and likely represented the amount of discharge to the area.

East Loch

Time-series analyses were conducted from the floating docks of Rainbow Bay Marina in East Loch (ELB; Figure 3.2A) in January 2010 and again during February and March 2010 (B-Dock, D-Dock 1, D-Dock 2; Figure 3.2A). For all deployments, we used a groundwater-impacted layer thickness of 40 cm at a tide-level of +0.15 m relative to MLLW. This depth was determined from the survey of the water column. During the January deployment, groundwater fluxes varied from 230 to 1,685 m^3/d (Figure 3.11F). Water with ^{222}Rn activities of 45-65 dpm/L intersected the platform at the beginning and end of the deployment, but not during the rest of the deployment (Figure 3.3F). This pattern likely reflected only partial intersection of the discharging water with the platform.

To obtain a better flux estimate of this plume, we deployed a longer time-series at the same location from the end of February to the beginning of March (D-Dock 1, Figure 3.2B). We deployed two additional time-series stations at Rainbow Bay Marina (D-Dock 2 and B-Dock), that intersected two other groundwater plumes identified in the TIR imagery. For these two additional platforms, one station was deployed for approximately half of the time and then moved to the second location. We therefore had two sets of simultaneously collected data from three different groundwater plumes that were located adjacent to each other (longest distance between the three plumes was ~80 m). Although the measured ^{222}Rn activities at each platform differed, peaks and troughs in the activities occurred at the same time during the entire deployment (Figure 3.4), indicating that all three plumes behaved similarly. Calculated discharge rates for these three locations were 70 m^3/d for B dock, between 60 and 400 m^3/d for D-Dock 1, and 100 m^3/d for D-Dock 2; Figure 3.11F). When combined together, these plumes contributed between 230 and 570 m^3/d of total groundwater discharge to the harbor, assuming each platform independently monitored each of the plumes.

During the February and March deployment, a tsunami triggered by the 27 February 2010 Chile earthquake reached the Hawaiian Islands. The maximum water level change recorded by the deployed water-level data-logger was 15 cm (Figure 3.4).

There was no discernible impact on the groundwater flow as measured from the two simultaneously deployed ^{222}Rn - time-series stations; however, interestingly an "extra" ^{222}Rn peak corresponded to the first increase in water level.

Peterson et al. (2009) measured groundwater flow on the west side of the island of Hawaii from seven point-source locations. SGD for these sites ranges from 1,100 to 12,000 m^3/d, totaling 39,100 m^3/d. In comparison, our nine point-source measurements ranged from 60 to 18,300 m^3/d (Table 3.2) and totaled 46,200 m^3/d (average of multiple flux estimates per time-series station). Thus, recently discharged groundwater to Pearl Harbor (as detected by ^{222}Rn) is comparable to the major plumes measured from most of the west side of the island of Hawaii.

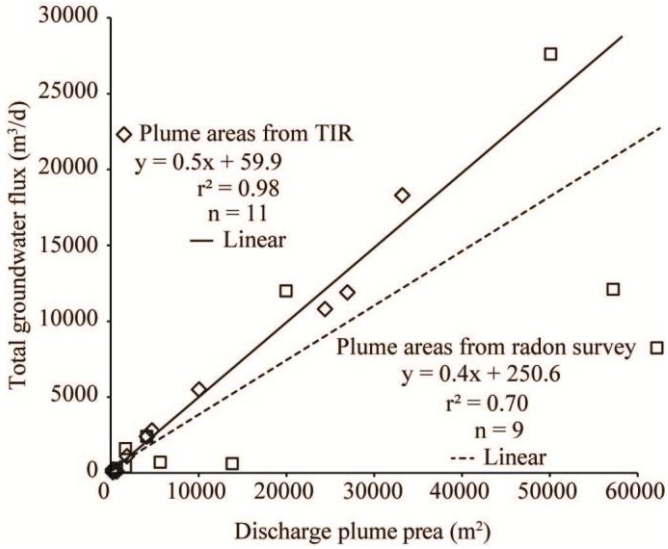


Figure 3.12: Correlation between groundwater fluxes calculated by ^{222}Rn mass balance for all nine stationary platforms and plume areas calculated from either sea-surface temperature maps (triangles) or surveys of surface waters (squares). All data points are from Table 3.2. The MLB discharge estimate of 177,200 m^3/d was excluded from the correlation.

Figure 3.12 shows a strong (r^2=0.98, n=12) relationship between plume areas determined from TIR images and groundwater fluxes measured at the nine time-series locations. A weaker correlation exists for plume areas determined from ^{222}Rn surveys of surface waters and ^{222}Rn surveys of the water column (r^2= 0.70, n=9; Figure 3.12). The strong relationship between plume areas and groundwater fluxes allowed us to estimate groundwater fluxes for all plumes visible on the SST maps that were not directly measured by ^{222}Rn time-series deployments (Table 3.3). We summed the regressed fluxes for plumes not measured in situ with averages of multiple estimates of plumes measured by time-series deployments. The total estimated flux of groundwater to Pearl Harbor was 333,380 m^3/d for all 25 plumes identified in the SST maps. Since we

targeted point-source flows for the time-series measurements, we cannot comment on a similar correlation between fluxes of diffuse discharge and surface areas.

Table 3.3: Point source plumes identified in the sea-surface temperature map and shown on Figures 3.2A-C. Plume areas were calculated from the temperature-inflection point technique, groundwater discharge fluxes were calculated from the strongest correlated regression in Figure 3.12, and groundwater discharge fluxes were calculated from the surveys of surface waters using a tidal residence time for comparison (where applicable).

Location	Area (m^2)	Groundwater flux from regression (m^3/d)	Groundwater flux from survey (m^3/d)
WL5	1,200	600	12,000
WL7	9,610	4,700	(combined)
WL8	2,690	1,300	600
WL10	530	300	200
WL12	3,400	1,700	700
ML2	3,680	1,870	1,300
ML9	3,490	1,700	(combined)
ML3	112,250	55,300	15,600
ML4	3,640	1,800	300
ML7	108,740	53,600	1,900
ML8	2,380	1,200	2,900
ML10	91,850	45,300	4,200
ML11	160,240	79,000	3,500
EL2	9,770	4,800	800
EL3	14,870	7,300	1,800
EL4	5,580	2,800	600
EL5	30,480	15,000	17,000
		Total: 278,270	Total: 63,400
Location	Average Area (m^2)	Average Groundwater flux from time-series (m^3/d)	Groundwater flux from survey (m^3/d)
MLA	3,550	2,100	2,900
MLB	21,630	11,900	4,400
WLA	36,420	5,000	N/A
WLB; P+B	26,950	11,900	5,700
WLB; B	24,400	10,800	8,000
ELA	230	910	N/A
B-Dock	305	70	N/A
D-Dock 1	230	230	N/A
D-Dock 2	665	100	N/A
C2	2,710	12,100	N/A
		Total: 55,110	Total: 21,000
		Harbor Total: 333,380	Harbor Total: 84,400

Groundwater Fluxes from Radon Surveys of Surface Waters

All harbor water surveyed was above background ^{222}Rn activities (0.08 dpm/L). These activities indicated that all of Pearl Harbor's surveyed surface waters were impacted by recent groundwater inputs.

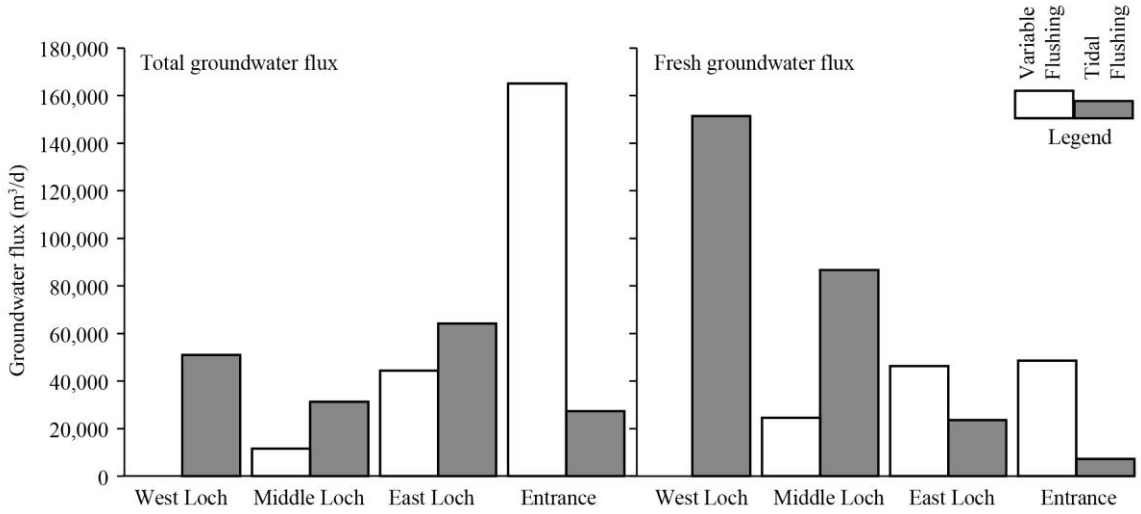


Figure 3.13: Comparison of total (fresh + saline) groundwater fluxes by ^{222}Rn mass balance to Pearl Harbor (left) and fresh groundwater fluxes (right) by salinity balance (eq. 3.2). Instances where fresh groundwater fluxes exceed total groundwater fluxes indicate either input of fresh water that is partially or fully degassed of ^{222}Rn, or input of stream water, which has negligible ^{222}Rn.

^{222}Rn was highest by the Waiau and Waimano spring complexes near the northwest side of East Loch (Figure 3.5A). This also corresponded to the area with highest ^{222}Rn activities in groundwater end-members (Figure 3.10). ^{222}Rn was also elevated next to and across from the U.S. Navy's W4 and W5 piers (bottom right side of Figure 3.5B), near Hospital Point (Figure 3.5C), and near Iroquois Point (Figure 3.5C). The highest ^{222}Rn activities in Middle and East Lochs (Figure 3.5A) were adjacent to stream mouths and spring locations, indicating the presence of recently discharged groundwater (within the past 20 days based on a ^{222}Rn half life of 3.82 days X 5 decay cycles). Other areas of high ^{222}Rn that were not adjacent to streams corresponded to areas that have been dredged, for example near the W4 pier (Figure 3.5B), Hospital Point (Figure 3.5C), and Iroquois Points (Figure 3.5C). Areas of higher ^{222}Rn also occurred in

proximity to point-source and diffuse seepage zones identified in the TIR imagery from Figures 3.5A-C.

Using the variable flushing rates proposed by Buske and Evans (1974), calculated fluxes of total groundwater discharge to the harbor were: 11,600 m^3/d to Middle Loch, 44,300 m^3/d to East Loch, and 165,100 m^3/d to the entrance (Figure 3.13). These estimates summed to 221,000 m^3/d. No residence time data were available for West Loch. Flux estimates using tidal flushing rates, which assumed uniformly quick flushing of water for all areas of the harbor, resulted in 51,000 m^3/d to West Loch, 31,200 m^3/d to Middle Loch, 64,200 m^3/d to East Loch, and 27,300 m^3/d through the entrance to the harbor (Figure 3.13). Groundwater fluxes for a tidal flushing time summed to 173,700 m^3/d. All of these fluxes represented minimum estimates since we lacked survey data for all shoreline areas, especially near the active U.S. Navy piers in East Loch. Furthermore, recently discharged groundwater to spring-fed streams had the potential for radon degassing, which would also cause the fluxes discussed above to be minimum estimates.

Figures 3.6A-C show that areas of highest total groundwater flow, as determined by ^{222}Rn, included most of East Loch (Figure 3.6A) and the unnamed spring-fed stream near the back of the east side of Middle Loch (Figure 3.6A). Furthermore, areas of diffuse seepage that were identified on TIR images (Figures 3.2A-C), such as near Iroquois Point (Figure 3.6C), around the peninsula separating Middle and East Lochs (Figure 3.6A), and the northwest side of the back of West Loch (Figure 3.6B), typically exhibited greater fluxes than areas lacking diffuse seepage zones.

The combination of cold temperatures from the TIR survey and high ^{222}Rn activities from the ^{222}Rn survey of surface waters confirmed that many spring-fed streams (e.g. Kalauao Stream in East Loch; Figure 3.5A) contributed at least some amount of recently discharged groundwater that was not degassed of ^{222}Rn. However, some spring-fed streams (especially those in West Loch; Figures 3.6A-C) contributed water that was partially or fully degassed of ^{222}Rn. Runoff and drainage from each stream's watershed should have been naturally low in ^{222}Rn, and would not have been detected by the ^{222}Rn surveys.

Using the variable flushing rates proposed by Buske and Evans (1974), calculated fluxes of fresh groundwater discharge to the harbor were: 24,500 m^3/d to Middle Loch,

46,300 m^3/d to East Loch, and 48,600 m^3/d to the entrance (Figure 3.13). These estimates summed to 119,400 m^3/d. No residence time data were available for West Loch. Using tidal flushing rates, estimates of freshwater fluxes were: 151,300 m^3/d to West Loch, 86,600 m^3/d to Middle Loch, 23,600 m^3/d to East Loch, and 7,200 m^3/d through the entrance to the harbor (Figure 3.13). Fluxes calculated using tidal flushing rates summed to 268,700 m^3/d. All of these fluxes represented minimum estimates since we lacked survey data for all shoreline areas.

Approximately 151,370 m^3/d of freshwater entered West Loch compared to ~51,000 m^3/d of total groundwater discharge detected by the ^{222}Rn tracer. During the study period, Waikele Stream contributed, on average, ~35,500 m^3/d of discharge (http://hi.water.usgs.gov/). This discharge should have contained negligible ^{222}Rn. Unfortunately, the other streams entering West Loch were not monitored by the USGS. The disparity between the total groundwater and fresh groundwater fluxes measured during this study suggested that at least some of the water from Waikele Springs experienced ^{222}Rn degassing as it travelled ~1600 m, before entering West Loch. In Middle Loch, the fresh groundwater flux (86,600 m^3/d for tidal flushing) was greater than total groundwater flux (31,200 m^3/d for tidal flushing). All of the streams flowing to Middle Loch were spring fed (Figure 3.9A), indicating that spring water was at least partially degassed of ^{222}Rn. Some spring water reaching Middle Loch discharged at the beach, while other springs were located ~ 500 m from shore. In East Loch, fresh groundwater flux (23,600 m^3/d for tidal flushing) was less than total groundwater flux (27,300 m^3/d for tidal flushing), even near stream channels. Much of the recently discharged water likely experienced some degassing, but not to the same extent as West or Middle Lochs. East Loch, like Middle Loch, had several spring sources near the beach with several others ~500 m from shore.

Radon Survey of the Water Column

The ^{222}Rn, temperature, and salinity/conductivity depth-profiling survey from January 2011 suggested that the water column had a uniformly thin groundwater-impacted layer (< 40 cm), with one exception near the back of Middle Loch. In this location, the groundwater-impacted layer was 0.85 cm think and extended to the sediment/water interface. The survey also indicated isolated locations of groundwater

discharge from mid-depths into the harbor, for example, in Middle Loch at stations 19 and 24 (Figures 3.8E-F), despite continuously flowing subaerial springs near the shoreline. Conduits of submarine groundwater flow also existed at depth in the entrance to the harbor (stations 13 and 15, Figures 3.8C-D) and in West Loch (stations 8 and 10, Figures 3.8C-D). At station 8 (Figures 3.8C-D), for example, groundwater likely entered the harbor from or near the sediment/water interface in great enough quantity to generate a ~4 m thick water column of recently discharged groundwater. The location of this water mass suggested that it may have been possible for dredging activities to open conduits of groundwater flow. In Middle Loch, thick layers of water with uniform ^{222}Rn activity existed at stations 17, and possibly 23 (Figures 3.8E-F). All lochs also had isolated locations of slightly lower salinity water immediately overlying the sediment/water interface, indicating that brackish water seepage through bottom sediments may have been an important pathway for groundwater discharge to the harbor.

We observed groundwater discharging from the bottom of the harbor in West Loch. The discharge generated a detectable, lower-salinity plume at the surface of the water column, which was ~0.5 m thick. The plume was also visible on the SST map (WL5 in Table 3.3). Although the water was too shallow for a ^{222}Rn survey, this finding also demonstrated that groundwater entered the harbor through muddy bottom sediments. The regression from Figure 3.12 indicated that this small plume delivered 600 m^3/d to the estuary, which was more than the individual plumes at Rainbow Bay Marina (Table 3.2), for example. Stearns and Vaksvik (1935) and Hunt (1996) speculated that such discharge locations likely occur through breaks in the caprock or where the caprock is absent or scant.

Multiple data sets provided a temporal comparison aspect to the study. Surveys of surface waters from January 2010 and 2011 typically showed similar spatial relationships. Areas of high ^{222}Rn in 2010 were also high in 2011, for example, area 2 on Figure 3.8A in East Loch varied from 18 to 24 dpm/L in 2010 (Figure 3.5A) as well as in 2011 (Figure 3.8A). One exception to similar ^{222}Rn activities occurred near the W4 pier, which had 75.7 dpm/L in 2011 (Figures 3.8C-D) and 15.0 dpm/L in 2010 (Figure 3.5B). The high 2011 activities may have resulted from eddying conditions, concentrating the recently discharged water in the bay, thereby building a strong ^{222}Rn inventory.

Alternately, the atypically high ^{222}Rn activities in 2011 may have been caused by greater groundwater discharge fluxes. Additionally, areas of high ^{222}Rn in 2010 and 2011 correspond to discharge plumes identified on the 2009 SST maps, indicating that the groundwater flow paths were active during the three years of this study.

Discharge from the Spring Complexes

Aquifer head has been shown to directly influence Pearl Harbor's spring discharge (Oki, 1998). Oki (1998) developed linear regression equations for discharge from each of the spring complexes in relation to water level in well 2256-10. We calculated the average head-level for this well for 2, 4, 8, and 10 January 2010 (our survey dates) as 4.94 m above sea level (USGS, 2010). We then applied regression equations from Oki (1998) and calculated a total spring discharge estimate of 289,860 m^3/d during our study period (61,678 for Waikele Springs, 74,234 for Waiawa Springs, 94,646 for Waimano and Waiau Springs, and 59,302 for Kalauao Springs).

Although the springs did not strictly discharge freshwater, we compared the freshwater flux based on a tidal flushing rate (268,700 m^3/d) and the freshwater flux based on the variable flushing rate (119,400 m^3/d) to the spring discharge estimate (289,860 m^3/d). Our flux estimates were of the right order of magnitude. The spring complex discharge estimates and the estimates of total freshwater flux represented less than half of the volume of water indicated by historic spring discharge estimates of 800,000 to 832,000 m^3/day (Nichols et al., 1996).

Fishponds

Fishponds were once a common feature along Hawaiian Island coastlines, including Pearl Harbor. Prior to contact with western civilizations, it is estimated that the Hawaiians established over 350 operational coastal fishponds in the Hawaiian Islands (Kikuchi, 1976; Wyban and Wyban, 1989). In the 1920s, Pearl Harbor contained approximately thirty fishponds (Coles et al., 1997), but by the 1990s, most of its fishponds were destroyed (Englund et al., 2000).

Higher ^{222}Rn activities were generally found in proximity to former fishponds locations, especially along the northern side of East Loch (Figure 3.5A). The former fishpond near Hospital Point and the fishpond by Iroquois Point also corresponded to

areas of higher ^{222}Rn activities (Figure 3.5C) than the surrounding areas. A slightly weaker relationship may have been present for the large fishpond located between West Loch and Middle Loch (Figure 3.5A).

Conclusions

This work demonstrates the advantage of fully integrating thermal infrared and ^{222}Rn surface, depth, and time-series deployments. The thermal infrared and ^{222}Rn techniques complement each other, while independently assessing two different tracers: temperature and ^{222}Rn. The TIR and radon methods agree exceptionally well: areas of cold water in SST maps correspond with areas of higher ^{222}Rn activity. ^{222}Rn confirms TIR data interpretations in situations where the SST map contains temperature signals from features such as exposed beach sand, mud flats, and vegetation, which can look like cold groundwater discharge. The thermal infrared technique quickly assesses the distribution of groundwater discharge locations and scales over large areas of the water's surface, while the ^{222}Rn tracer detects groundwater below the water's surface that is invisible to the infrared technique.

The identification of diffuse seepage zones also benefited from the combined use of TIR and ^{222}Rn. Such seepage zones could have been misinterpreted using TIR data alone; however, correspondingly higher ^{222}Rn activities provided independent, supporting evidence of groundwater leakage to the harbor as diffuse flow.

In dynamic estuaries, water mass assessment is important, especially when using ^{222}Rn or salinity monitoring at time-series locations to ensure that the major discharging conduits are being monitored. Our study shows the importance of conducting water-column investigations where subaerial springs, submarine springs, and diffuse seepage zones are present. Unless flow is voluminous and buoyantly rises to the water's surface, seepage from mid-depths and from the sediment/water interface will not be detectable by aerial thermal infrared or the ^{222}Rn surveys of surface waters.

The strong relationship between plume areas and groundwater fluxes demonstrates a scientific advancement for the combined use of TIR and ^{222}Rn methodologies. We hypothesize that once a region has been mapped via TIR, and some certainty of groundwater fluxes has been established, regional up-scaling of coastal groundwater discharge is possible.

Future groundwater research in Pearl Harbor will require a more-detailed assessment of groundwater contributions to streams. If ^{222}Rn is used as a tracer, then a thorough investigation of ^{222}Rn degassing from spring-fed streams is necessary. Furthermore, the several occurrences of discharge from the bottom of the harbor that were found during this research warrant a more thorough investigation because these groundwater sources may be a large component of the groundwater budget to the harbor.

CHAPTER 4. QUANTIFICATION OF SUBMARINE GROUNDWATER-DERIVED NUTRIENTS TO PEARL HARBOR, HAWAII

Introduction

Submarine groundwater discharge (SGD) is a globally important source of terrestrially-derived nutrients to coastal ecosystems. Although SGD flux to coastal areas may be lower than surface water inputs, concentrations of dissolved constituents in SGD are often much higher than surface waters (Zektser et al., 2006). Discharge can, therefore, impact coastal ecosystems leading to eutrophication, harmful algal blooms, and shifts in the dominant flora and fauna of coastal waters (Dollar and Atkinson, 1992; Paerl, 1997; Miller and Ullman, 2004).

Several studies have shown that groundwater in the Hawaiian Islands can provide substantial dissolved nutrients to the uniformly low nutrient concentrations observed in offshore waters. For example, Dollar and Atkinson (1992) found that groundwater flowing underneath two golf courses on west Hawaii increased dissolved nitrogen and phosphorus fluxes by up to 229% and 400%, respectively. In Kahana Bay on Oahu, Garrison et al. (2003) found that total dissolved nitrogen and phosphorus fluxes by SGD were 200% and 500% greater than surface runoff fluxes, respectively. Johnson (2008) found that six SGD locations on the west side of Hawaii contributed approximately three times as much dissolved inorganic nitrogen as the Wailuku River, which is the largest river in the state of Hawaii. Street et al. (2008) calculated nutrient fluxes for west Hawaii, west Maui, and southern Molokai that were similar in magnitude to other estimates of nutrient fluxes from the Hawaiian Islands.

Pearl Harbor, which is located on the island of Oahu, is the largest estuary in the Hawaiian Islands and has the largest freshwater spring complex in the Islands (Englund et al., 2000). Despite the potential significance of dissolved nutrients, in both magnitude and environmental impacts, little is known about the quantity and distribution of dissolved nutrient loads to Pearl Harbor. Such knowledge is critical for understanding current and future effects of groundwater discharge and the dissolved nutrients it transports to the estuary.

The Pearl Harbor area has experienced a series of land-use changes, the most recent of which has been a shift from agricultural to urban zoning (Oki and Brasher,

2003). Discerning the sources of dissolved nutrients within the groundwaters as well as processes modifying the nutrients is crucial for evaluating how land-use influences nutrient loads in the groundwater.

We conducted this study to assess dissolved nitrate, phosphate, and silica loading to Pearl Harbor from groundwater sources. We also conducted this study to determine sources and transformations of nitrate along groundwater flow paths, and at groundwater discharge locations. An additional objective for this research was to locate areas where groundwater contributed the greatest nutrient loads to the harbor. We accomplished this by calculating nutrient fluxes for most of Pearl Harbor's shoreline.

Geologic Setting

Oahu, Hawaii (Figure 4.1) consists of the Waianae Mountains (Pliocene) and the Koolau Mountains (Pliocene and Pleistocene; Shade and Nichols, 1996). Koolau basaltic flows unconformably overlie Waianae basaltic flows (Stearns and Vaksvik, 1935), with flow interfingering likely at depth between the two mountain ranges (Hunt, 1996). The volcanic rocks are composed of numerous lava flows of varying thicknesses and compositions. These flows are variable with respect to permeability, but have high permeability overall (Stearns and MacDonald, 1946). High permeability results from aa lava clinker zones, voids between lava flow contacts, cooling joints normal to flow surfaces, and lava tubes (Stearns and Macdonald, 1946).

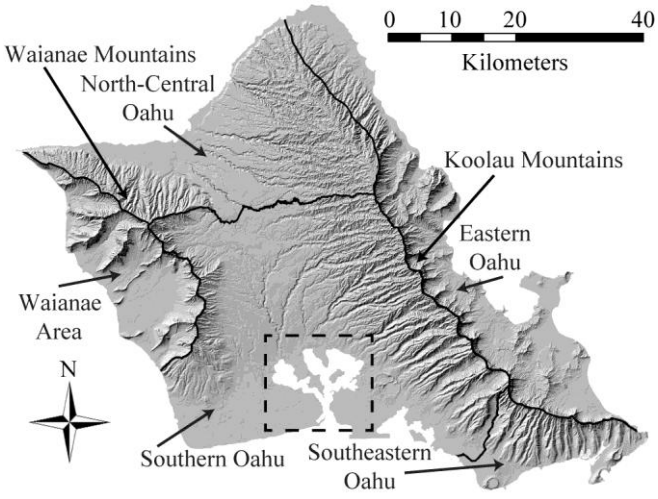


Figure 4.1: Hillshade of Oahu, Hawaii (Office of Planning, State of Hawaii; http://hawaii.gov/dbedt/gis/hill.htm) showing the five major groundwater flow systems. The groundwater flow systems are after Shade and Nichols (1996). The dashed box encloses Pearl Harbor.

All Hawaiian Volcanoes contain low permeability and low hydraulic conductivity dike complexes (Takasaki and Mink, 1985). Dikes are hydrologically important because

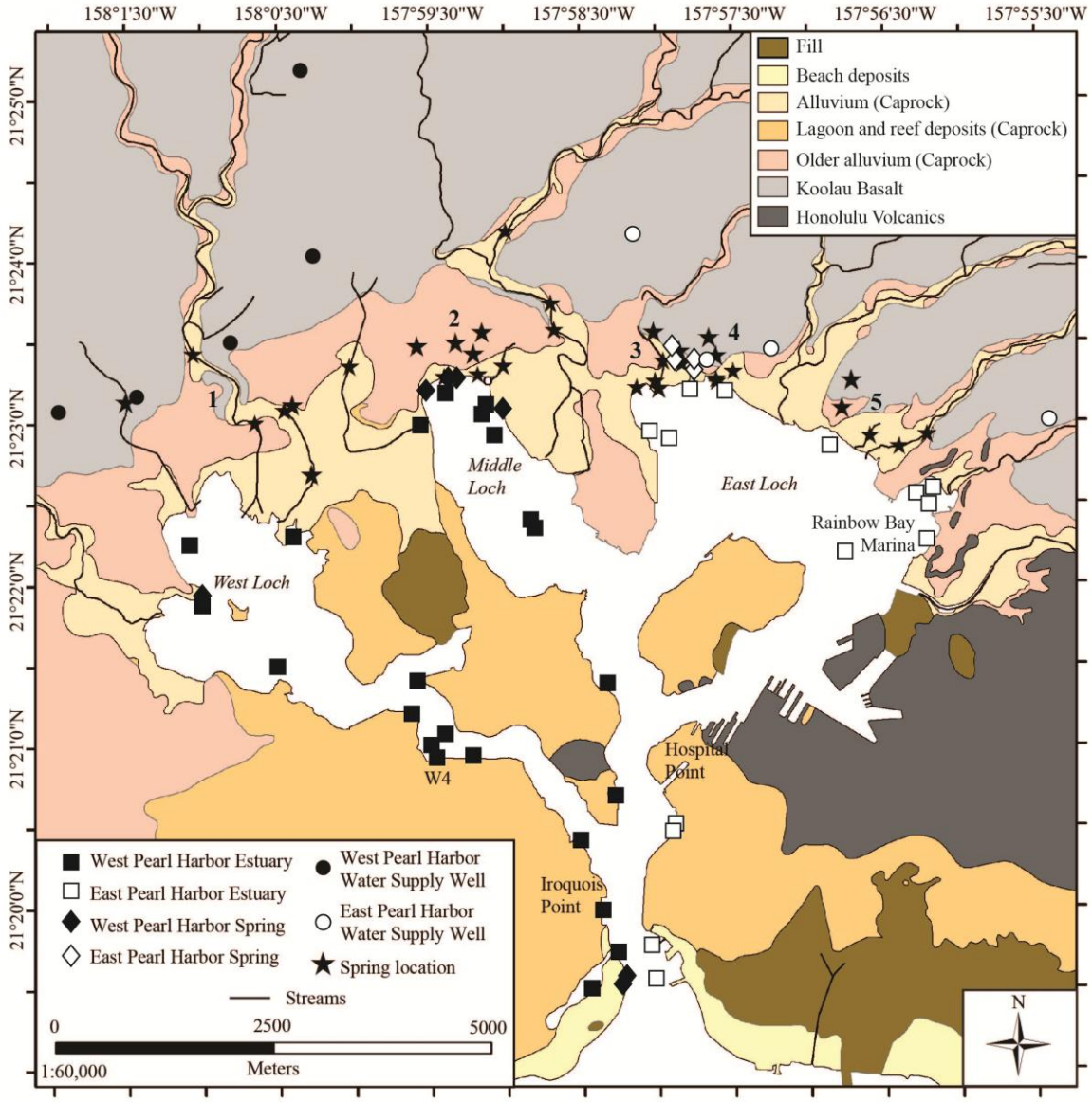


Figure 4.2: Generalized geologic map of Pearl Harbor (after Sherrod et al., 2007) showing the five spring systems. Each spring system is identified by numbers from west to east: 1) Waikele Springs, 2) Waiawa Springs, 3) Waimano Springs, 4) Waiau Springs, and 5) Kalauao Springs. Each spring system contains numerous subaerial springs (stars) that are located in the vicinity of the number identifier. Sample locations (squares, diamonds, and circles) are delineated by sample type. Spring locations are after Stearns and Vaksvik (1935).

they extend vertically and laterally for thousands of meters (Oki et al., 1999). These circumstances favor effective compartmentalization of the more permeable intruded rocks (Takasaki and Valenciano, 1969), creating isolated, but slightly leaky groundwater reservoirs (Hunt, 1996). These reservoirs are locally referred as high-level aquifers.

Fresh groundwater near dike-free coastal areas, on the other hand, exists in a freshwater lens that floats on denser saltwater roughly according to Ghyben-Herzberg principles. This water resides in the basal aquifer and ultimately discharges to the sea as submarine groundwater discharge (SGD).

Pearl Harbor (Figure 4.2) is an estuary that occupies a drowned river system. The drowned river system has been successively flooded and drained as a result of past sea-level changes (Stearns, 1985). Deposition of calcareous and non-calcareous marine sedimentary rocks, called caprock, over much of Pearl Harbor's coastal plain and valley mouth areas (Figure 4.2) ensued during lower sea-level stands (Stearns and Vaksvik, 1935).

Caprock varies greatly in composition, grain size, thickness, permeability, and porosity (Lau, 1962; Nichols et al., 1996). Caprock is aerially widespread and generally lies 150 to 300 m inland of the coastline (Lau, 1962). It can extend as far as 3 km into stream valleys (Lau, 1962). Caprock deposits are up to 300 m thick near the coast (Oki, 1998) and extend to 400 m below sea level off-shore of Pearl Harbor (Visher and Mink, 1964). Caprock overlies basaltic rock, subdividing basal water into several interconnected, but semi-independent water systems (Hufen et al., 1980). Fine-grained mud and marl in the caprock (Nichols et al., 1996) make it no greater than $1/500^{th}$ as permeable as the underlying basaltic rock (Hufen et al., 1980).

Groundwater Occurrence

The primary source of groundwater to the Pearl Harbor area originates from rainfall over the Koolau Mountains (Figure 4.1), with smaller amounts from the Waianae Mountains (Hufen et al., 1980). Much of this recharge may be stored in high-level dike compartments before leaking to the basal freshwater lens. Rainfall infiltration in unconfined areas, proximal to the coast, also recharges the basal aquifer (Hufen et al., 1980; Nichols et al., 1996). In the past, irrigation-return flow augmented groundwater recharge in some areas, especially near central Oahu (Nichols et al., 1996). Irrigation-return flow has been found recently by Hunt (2004) in the volcanic aquifer.

The island of Oahu is divided into five major groundwater flow systems (Shade and Nichols, 1996; Figure 4.1). The Southern Oahu system contains Pearl Harbor, which contains a freshwater spring complex. Pearl Harbor’s spring complex is divided into five

separate spring systems (Figure 4.2). Each spring system contains several subaerial springs that result from groundwater convergence in the basal aquifer along a narrow zone between the inland edge of the caprock and ~6 m above sea level (Stearns and Vaksvik, 1935; Visher and Mink, 1964). These artesian springs result from pressure generated by the confining caprock and represent overflow of the pressurized water from the upper part of the groundwater transition zone (Visher and Mink, 1964).

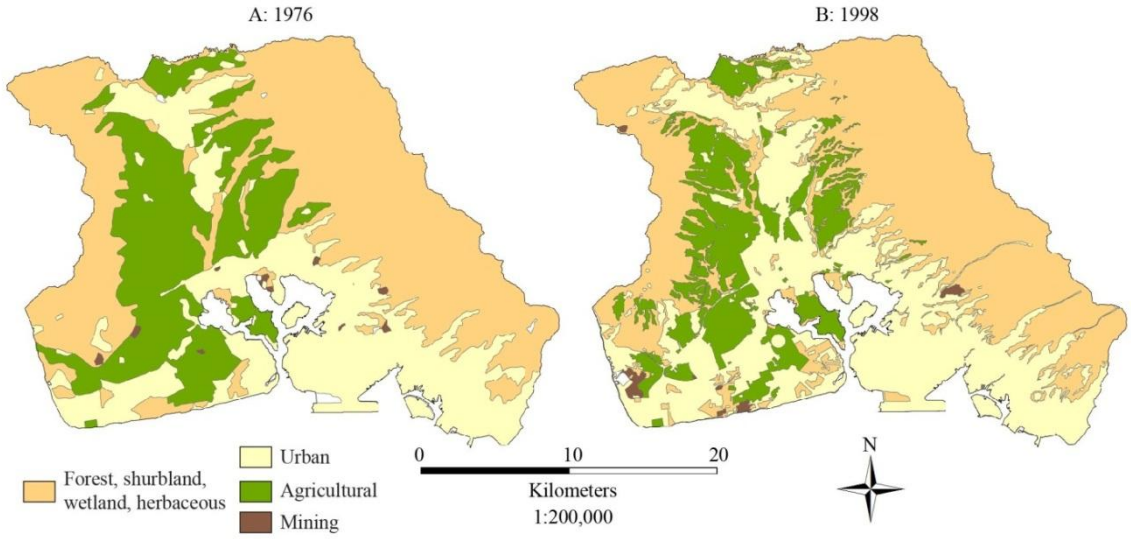


Figure 4.3: Comparison of land-use in the Southern Oahu sector in (A) 1976 (Santos, 1976) and (B) 1998 (Klasner and Mikami, 2003).

Subaerial springs are not traditionally considered a source of groundwater discharge to nearshore environments; however, past convention has included subaerial springs as a major groundwater source to Pearl Harbor. For example, Nichols et al. (1996) estimated that 70% of the natural groundwater discharge to Pearl Harbor occurred through the springs, with the remainder entering the harbor as diffuse flow. To maintain consistency with this classification scheme, we also classify subaerial springs as a source of groundwater to the harbor, but not a source of SGD to the harbor. True sources of SGD to Pearl Harbor include all submarine springs and diffuse seepage areas. Hunt (1996) hypothesized that true SGD flows into Pearl Harbor occur where the caprock is absent or scant. Lau (1962) and Visher and Mink (1964) hypothesized that SGD also

enters the harbor through the caprock in areas that only contain terrestrial sediments and where weathered basalt, marine sediments, and pyroclastic materials are absent.

Land-Use

The area surrounding Pearl Harbor has experienced a series of land-use changes as large-scale plantation-style sugarcane and pineapple agricultural fields have been slowly replaced by more urbanized land-use and diversified agriculture land-use (Oki and Brasher, 2003). The land-use map (Figure 4.3A) for the Southern Oahu flow system from 1976 (Santos, 1976), shows that the area was dominated by forested land (48%) followed by urban areas (29%), and agricultural uses (23%). This contrasts to the 1998 land-use map (Figure 4.3B; Klasner and Mikami, 2003), in which forested land remained at 48%, urban areas comprised 36%, and agriculture lands occupied 16% of the area. Overall, there has been a consistent pattern of more agricultural lands on the west side of Pearl Harbor and more urbanized lands on the east side of the harbor (Figures 4.3A-B).

Dissolved Inorganic Nutrient Sources

In Hawaii, all groundwater undergoes chemical modification as it flows from its recharge area toward coastal discharge zones. Groundwater obtains its dissolved inorganic nutrients from several sources. Virtually all silica and phosphate is derived from soil and rocks (Visher and Mink, 1964). Basaltic rock composition and rainfall intensity favor high silica removal rates during weathering (Hufen et al,. 1980). As groundwater flows from dike-impounded aquifers toward the down-gradient basal-freshwater lens system, groundwater silica concentrations typically increase due to dissolution of volcanic rocks along the flow path (Visher and Mink, 1964). Nitrate, on the other hand, is derived from the atmosphere, plant residue leachate, fertilizers in agricultural areas, and sewage in urbanized areas (Visher and Mink, 1964).

The groundwater flow system's natural landscape and land-use practices likely influence the dissolved nutrient loads that are supplied to Pearl Harbor. The similar geology of the area will allow for assessment of how the predominantly agricultural land-use practices on the west side of Pearl Harbor compare and contrast to the predominantly urban land-use practices on the east side of the harbor.

Methods

Water Sampling

Seventy-five water samples of fresh and brackish groundwater, as well as estuary waters thought to represent end-member compositions were collected in January and February 2010 and in January 2011. Nine water supply wells operated by the City and County of Honolulu Board of Water Supply were sampled on 28 January 2010 using existing pumps in the wells. Six coastal springs were sampled on 8 January 2010 and 9 February 2010 by peristaltic pump (geotech, Denver, CO). Between 2 and 8 January 2010, three pore-water samples were collected using a 0.91 m long, 0.64 cm diameter push-point piezometer (M.H.E. Products, East Tawas, MI) connected to a peristaltic pump (described above). Twenty-seven water samples from the surface waters of Pearl Harbor were collected from 2 to 11 January 2010 and 16 additional surface-water samples were collected from 5 to 19 January 2011. An additional seven City and County of Honolulu Board of Water Supply wells and one urban spring located near eastern Oahu were sampled on 27 and 28 October 2010. All sampled locations were analyzed for dissolved inorganic nutrients: $Si(OH)_4$, NO_3^-, NO_2^-, NH_4^+, and PO_4^{3-}, as well as the nitrogen and oxygen isotopic composition of dissolved nitrate. Temperature, salinity, and specific conductivity were determined by multiparameter sondes (YSI XLM-600, YSI 6920 V2, or YSI 6600 V2-4; YSI Inc., Yellow Springs, OH) at the time of sample collection. Geographic positions were determined using a hand-held GPS receiver (Garmin eTrex, Olathe, KS) with 15 m accuracy.

Dissolved Inorganic Nutrients

Samples for dissolved inorganic nutrients were collected in 500 mL high density polyethylene (HDPE) bottles that were pre-cleaned with 10% v/v hydrochloric acid (HCl; 1.2 N) and triple-rinsed with distilled, de-ionized water. During sample collection, HDPE bottles were triple-rinsed with sample water, filled, and stored in the dark inside of a chilled cooler while in the field. Temperature and salinity of all samples were determined at the time of sample collection using a multiparameter sonde (described above).

Upon completing each day of field work, samples for dissolved inorganic nutrients were split from the 500 mL bottle into 60 mL HDPE bottles that were pre-cleaned exactly the same way as the 500 mL bottle. Samples for dissolved inorganic nutrients were filtered using 45µm GC-F syringe filters (Nalgene, part #190-9945) to remove particulate matter. Prior to filling each new sample bottle, the filter was pre-flushed with at least 10 mL of either distilled, de-ionized water or sample water to remove any nutrients retained by the filter during manufacturing. Each 60 mL HDPE bottle was triple rinsed with filtered sample water, filled with approximately 50 mL of filtered sample, and then frozen until analysis at the University of Washington's Marine Chemistry Laboratory.

The Marine Chemistry Laboratory uses a Technicon AutoAnalyzer AAII (UNESCO, 1994) for spectrophotometric segmented flow nutrient analysis. The lab's reported detection limits were 0.76 µmol/L for $Si(OH)_4$, 0.08 µmol/L for NO_3^-, 0.01 µmol/L for NO_2^-, 0.07 µmol/L for NH_4^+, and 0.03 µmol/L for PO_4^{3-}. Uncertainties on blind duplicates of three samples, reported for two standard deviations, were ±76 µmol/L for $Si(OH)_4$, ±0.6 µmol/L for NO_3^-, ±<0.1 µmol/L for NO_2^-, ±0.2 µmol/L for NH_4^+, and ±0.9 µmol/L for PO_4^{3-}.

Nitrogen and Oxygen Isotopes of Dissolved Nitrate

Samples for nitrogen and oxygen isotopic analysis of dissolved nitrate were collected in 60 mL HDPE bottles that were pre-cleaned exactly the same way as the 500 mL bottles described above. During sample collection, the 60 mL HDPE bottle was triple-rinsed with sample water. Samples were kept in the dark in a chilled cooler while in the field and immediately frozen upon returning to the lab. Temperature and salinity of all samples were also determined at the time of sample collection using a multiparameter sonde (described above).

Prior to analysis, nitrite was removed from each sample following the procedures by Granger and Sigman (2009). Samples were analyzed at the University of Hawai‘i Stable Isotope Biogeochemistry Laboratory. Approximately 40 nmol concentration nitrate-aliquots of sample water were added to vials containing *Pseudomonas chlorophus*. Following incubation, the $\delta^{15}N$ and $\delta^{18}O$ values of the nitrous oxide gas produced from nitrate using the "denitrifier" method (Sigman et al., 2001 and Casciotti et al., 2002) were

measured using the system described by Popp et al. (1995) and Sansone et al. (1997). Briefly, nitrous oxide gas was stripped from the reaction vial, cryofocused, separated from other gases using a CP-PoraBond Q 25 m X 0.32 mm X 0.5 µm capillary column (Varian Capillary Column, Santa Clara, CA, part number CP7351), and introduced into the carrier stream of either a Finnigan MAT252 or Finnigan MAT253 mass spectrometer through either a modified Finnigan GC-C1 or thermo-Finnigan GC-CIII interface.

We used replicates of National Institute of Standards and Technology NIST-3 and the University of Hawai‘i (UH) $NaNO_3$ isotopic reference materials to normalize all isotopic results. NIST-3, an internationally recognized nitrate reference material, has an assigned $\delta^{15}N$ of 4.7‰ versus air N_2 (Bohlke and Coplen, 1995) and a reported $\delta^{18}O$ of 25.6‰ versus Vienna Standard Mean Ocean Water (VSMOW; Bohlke et al., 2003). UH $NaNO_3$ has a previously determined $\delta^{15}N$ of 1.03‰ versus air N_2. At least one blank, four NIST-3 isotopic reference materials and two UH $NaNO_3$ isotopic reference materials were analyzed in each batch of twenty analyses. At least two samples were duplicated in every batch and all results are expressed in ‰ notation. Nitrogen isotopic values are reported relative to air and oxygen isotopic values are reported relative to VSMOW. The N and O isotopic ratios represent the mean of any replicate measurements. Standard and duplicate analyses for each batch of samples ranged from 0.5 to 1.3‰ for $\delta^{15}N$ and averaged 0.6±0.1‰, 1SD, n=80. Standard and duplicate analyses for each batch of samples ranged from 0.6 to 2.6‰ for $\delta^{18}O$ and averaged 1.71±0.7‰, 1SD, n=72.

Results

Salinity

All samples of surface waters from Pearl Harbor varied from 22.20 to 34.50, except for one sample that had a salinity of 8.0 (Table 4.1). Pore-water samples ranged from 22.00 to 35.80. Spring samples ranged from 0.00 to 22.00. Water supply wells from Central Oahu (Figure 4.2) had salinities that ranged from 0.14 to 0.37. Similarly, water supply wells from the eastern side of Oahu (Figure 4.4) ranged from 0.14 to 0.47 (Table 4.1).

Table 4.1: Sample names, geographic coordinates (WGS84), dates, temperature (Temp.), salinity (Sal.), and location (west Pearl Harbor or east Pearl Harbor). For estuary, pore-water, and spring samples, WL = West Loch, ML = Middle Loch, EL = East Loch, and E, TS, and HIT = samples collected from the mouth of the harbor. Except for the seawater samples, locations are shown on Figures 4.2 and 4.4. See discussion for classification of west (W) and east (E) Pearl Harbor samples.

Sample Name	Latitude °N	Longitude °W	Sample Date	Temp. °C	Sal.	Location
Pearl Harbor Estuary Water						
WLT1	21.37091	158.01826	1/2/2010	25.55	29.87	W
WLT2	21.36480	158.01685	1/2/2010	25.56	33.72	W
WLT3	21.35813	158.00851	1/2/2010	25.40	33.30	W
WLT4	21.35337	157.99393	1/2/2010	24.76	33.41	W
WLT5	21.34852	157.99141	1/2/2010	25.35	33.34	W
WLT6	21.34895	157.98734	1/2/2010	24.86	33.58	W
WLT7	21.37180	158.00694	1/2/2010	26.40	26.29	W
WLT8	21.35694	157.99306	1/3/2010	N/A	33.40	W
ELT9	21.38175	157.96537	1/4/2010	25.70	33.80	E
ELT10	21.38215	157.96788	1/4/2010	26.00	33.80	E
ELT11	21.38655	157.95922	1/4/2010	28.50	31.80	E
ELT12	21.37605	157.93803	1/4/2010	26.30	31.87	E
ELT13	21.37073	157.93666	1/4/2010	27.10	32.60	E
ELT14	21.37000	157.94605	1/4/2010	26.10	33.40	E
MLT4	21.38643	157.98988	1/8/2010	26.10	25.20	W
MLT5	21.38223	157.98459	1/8/2010	26.40	33.30	W
MLT6	21.37337	157.98061	1/8/2010	25.60	32.60	W
MLT7	21.38332	157.99280	1/8/2010	23.70	25.80	W
MLT8	21.38762	157.98523	1/8/2010	26.70	8.00	W
HIT1	21.32605	157.96740	1/10/2010	25.20	34.50	E
HIT2	21.34197	157.96475	1/10/2010	25.20	32.30	E
HIT3	21.35623	157.97240	1/10/2010	25.20	33.60	E
HIT4	21.34504	157.97186	1/10/2010	25.20	34.10	E
HIT5	21.32510	157.97429	1/10/2010	25.20	34.50	E
TS1	21.32961	157.96753	1/10/2010	25.00	34.10	E
TS2	21.32961	157.96753	1/11/2010	23.70	34.50	E
TS3	21.32961	157.96753	1/11/2010	25.90	34.20	E
EL2 1-1	21.38683	157.96313	1/7/2011	26.27	34.08	E
EL4 1-1	21.38119	157.94739	1/5/2011	25.52	22.60	E
EL5 1-1	21.37681	157.93637	1/5/2011	25.82	22.20	E
EL5 2-1	21.37480	157.93677	1/5/2011	26.22	33.60	E
WL1 1-1	21.34870	157.99130	1/7/2011	21.86	24.41	W
WL1 5-1	21.35003	157.99172	1/7/2011	22.75	28.51	W

Table 4.1: (Continued) Sample names, geographic coordinates (WGS84), dates, temperature (Temp.), salinity (Sal.), and location (west Pearl Harbor or east Pearl Harbor). For estuary, pore-water, and spring samples, WL = West Loch, ML = Middle Loch, EL = East Loch, and E, TS, and HIT = samples collected from the mouth of the harbor. Except for the seawater samples, locations are shown on Figures 4.2 and 4.4. See discussion for classification of west (W) and east (E) Pearl Harbor samples.

Sample Name	Latitude °N	Longitude °W	Sample Date	Temp. °C	Sal.	Location
Pearl Harbor Estuary Water						
WL1 6-1	21.35098	157.99035	1/7/2011	23.06	28.77	W
E1 1-1	21.32876	157.97151	1/7/2011	24.38	32.62	W
E1 2-1	21.33320	157.97296	1/7/2011	24.41	32.91	W
E1 5-1	21.34009	157.97573	1/7/2011	23.78	30.37	W
E2 4-1	21.34155	157.96477	1/7/2011	24.60	32.48	W
ML1 1-1	21.38538	157.98543	1/19/2011	25.07	29.43	W
ML1 6-1	21.38807	157.98865	1/19/2011	24.48	25.45	W
ML1 8-1	21.38482	157.98585	1/19/2011	24.29	27.08	W
ML1 9-1	21.38787	157.98996	1/19/2011	24.15	21.96	W
ML1 13-1	21.37306	157.98049	1/19/2011	25.15	26.13	W
Pearl Harbor Pore-water and Spring Samples						
WLC1	21.36530	158.01700	1/2/2010	25.90	35.80	W
EC1	21.32608	157.97067	1/10/2010	25.20	29.20	W
EC2	21.32639	157.97058	1/10/2010	24.50	30.70	W
WLC2	21.37625	158.88980	1/3/2010	27.20	22.00	W
MLC4	21.38486	157.98378	1/8/2010	31.60	10.00	W
MLC3	21.38686	157.99214	1/8/2010	25.20	19.00	W
MLC2	21.38806	157.99006	1/8/2010	21.80	1.70	W
MLC1	21.38825	157.98883	1/8/2010	21.20	1.90	W
Waiau Spring HECO	21.38891	157.96268	1/28/2010	21.02	0.42	E
Waiau HECO Spring 1	21.38971	157.96260	2/9/2010	20.22	0.30	E
Waiau HECO Spring 2	21.38969	157.96477	2/9/2010	24.06	0.00	E
Waiau HECO Spring 3	21.39095	157.96480	2/9/2010	20.47	0.24	E
Central Oahu Drinking Water Wells[a]						
Kaahumanu I-1	2357-24		1/28/2010	20.73	0.37	E
Manana Well	2458-05		1/28/2010	20.20	0.36	E
Waiau HECO 2A	2357-11		1/28/2010	20.78	0.24	E
Kunia I-P2	2302-02		1/28/2010	22.21	0.24	W
Hoaeae P-2	2301-35		1/28/2010	22.42	0.24	W
Aiea Heights II-1	2355-07		1/28/2010	20.92	0.24	E
Waipahu IV-2	2301-44		1/28/2010	21.78	0.21	W
Waipahu I-P2	2400-02		1/28/2010	21.33	0.17	W
Waipio Heights II-1	2500-01		1/28/2010	21.64	0.14	W
Southeastern Oahu Drinking Water Wells[a] and Upland Spring						
Waialae Golf Course	1646-01		10/27/2010	21.90	0.47	N/A
Palolo Well 2	1847-02		10/27/2010	20.82	0.14	N/A

Table 4.1: (Continued) Sample names, geographic coordinates (WGS84), dates, temperature (Temp.), salinity (Sal.), and location (west Pearl Harbor or east Pearl Harbor). For estuary, pore-water, and spring samples, WL = West Loch, ML = Middle Loch, EL = East Loch, and E, TS, and HIT = samples collected from the mouth of the harbor. Except for the seawater samples, locations are shown on Figures 4.2 and 4.4. See discussion for classification of west (W) and east (E) Pearl Harbor samples.

Sample Name	Latitude °N	Longitude °W	Sample Date	Temp. °C	Sal.	Location
Southeastern Oahu Drinking Water Wells[a] and Upland Spring						
AinaKoa Well 2	1746.04		10/27/2010	20.96	0.17	N/A
Kapalama Well 1	2052-13		10/27/2010	21.58	0.21	N/A
Wilder Well 1	1849-14		10/27/2010	21.91	0.22	N/A
Moanalua Well 2	2153-11		10/27/2010	21.10	0.24	N/A
Ainakoa Well 1	1749-10		10/27/2010	21.26	0.32	N/A
Kunawai Spring	21.32592	157.85768	10/28/2010	21.91	0.12	N/A
Seawater end-members from Wailupe Beach, Southeastern Oahu						
Wailupe	21.28592	157.79432	5/30/2010	N/A	35.12	N/A
Wailupe	21.27543	157.76248	5/30/2010	N/A	35.13	N/A
Wailupe	21.27545	157.76247	5/30/2010	N/A	35.14	N/A
Wailupe	21.27530	157.76245	5/30/2010	N/A	35.14	N/A
Wailupe	21.27520	157.76240	5/30/2010	N/A	35.15	N/A

[a]Water supply well locations are withheld to comply with water resource protection guidelines. State designated well identification numbers are given in place of the geographic location.

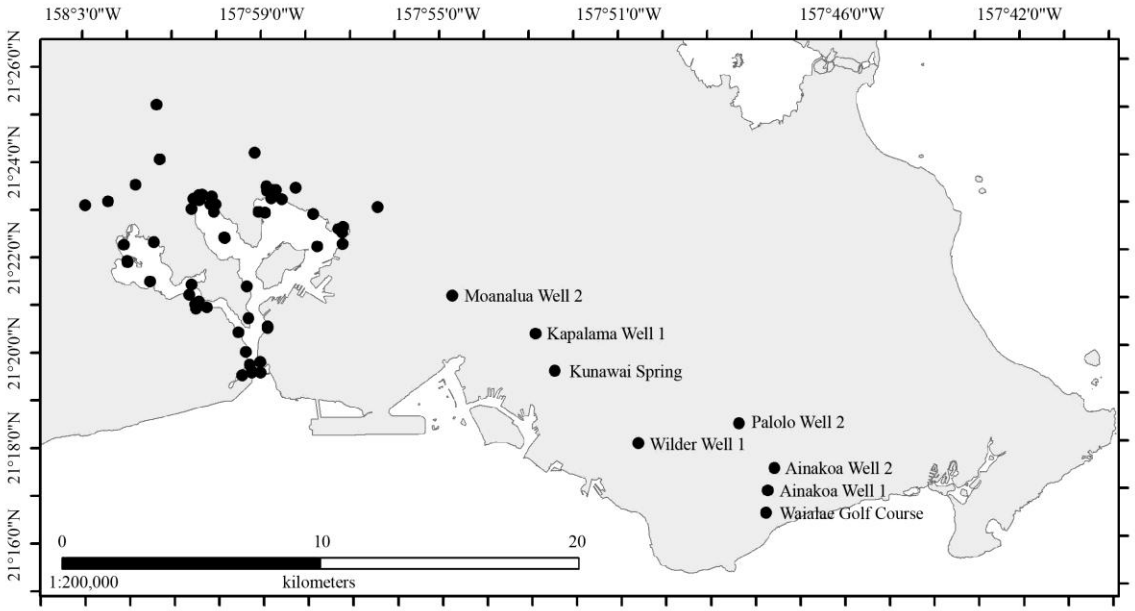


Figure 4.4: Location of the water supply wells sampled from eastern Oahu in relation to the samples collected from Pearl Harbor.

Table 4.2: Specific nutrient concentrations, nitrogen to phosphorus ratios, and nitrogen and oxygen isotopic compositions of dissolved nitrate. ND indicates that the sample was below detection limits for the particular nutrient species. Uncertainties on the isotopic values are calculated from duplicates analyzed in each batch of twenty samples and are therefore batch-specific. WL = West Loch, ML = Middle Loch, EL = East Loch, P-W = pore-water, H = harbor, and ave. = average.

Sample Name	PO_4	$Si(OH)_4$	NO_3^-	NO_2^-	NH_4^+	N:P	$\delta^{15}N$	$\delta^{18}O$
	(µmol/L)						‰[a]	
Pearl Harbor Estuary Water								
WLT1	0.4	165	11.6	0.4	3.8	36.7	18.9±0.7	3.5±1.8
WLT2	0.2	64	1.0	0.2	1.7	15.6	71.6±0.8	7.1±0.6
WLT3	0.2	62	0.2	0.1	0.5	4.2	N/A	N/A
WLT4	0.2	52	0.5	<0.1	0.3	3.9	N/A	N/A
WLT5	0.2	56	3.5	0.1	1.1	25.9	18.4±1.3	9.4±1.3
WLT6	0.2	51	2.1	0.0	0.2	12.3	19.6±1.3	6.6±1.3
WLT7	1.2	263	27.5	0.9	9.4	31.5	11.2±0.5	0.4±1.4
WLT8	1.8	114	0.8	0.1	16.1	9.5	N/A	N/A
ELT9	0.1	23	ND	<0.1	0.2	2.1	N/A	N/A
ELT10	0.1	25	ND	<0.1	0.1	1.6	N/A	N/A
ELT11	0.1	68	0.5	0.1	0.2	5.7	N/A	N/A
ELT12	0.1	53	ND	<0.1	0.1	1.1	N/A	N/A
ELT13	0.1	39	ND	0.1	0.2	2.9	N/A	N/A
ELT14	<0.1	23	ND	0.1	0.1	4.7	N/A	N/A
MLT4	0.4	107	0.3	0.1	0.2	1.4	N/A	N/A
MLT5	0.1	50	0.2	<0.1	<0.1	4.3	N/A	N/A
MLT6	0.1	62	0.3	<0.1	0.1	5.0	N/A	N/A
MLT7	1.2	254	15.9	0.4	5.4	18.1	15.2±0.7	5.1±1.8
MLT8	1.6	874	31.9	0.4	2.1	21.4	12.7±0.5	3.8±1.4
HIT1	0.1	26	0.2	<0.1	0.2	4.3	N/A	N/A
HIT2	0.2	60	2.7	0.1	0.2	15.3	19.8±1.3	11.1±1.3
HIT3	0.1	34	0.2	<0.1	0.1	3.9	N/A	N/A
HIT4	0.1	27	0.1	<0.1	<0.1	2.0	N/A	N/A
HIT5	0.1	27	0.2	<0.1	0.2	7.2	N/A	N/A
TS1	0.1	21	0.5	<0.1	0.1	4.8	N/A	N/A
TS2	0.1	17	0.4	<0.1	0.3	7.4	N/A	N/A
TS3	0.1	21	0.3	<0.1	0.1	5.0	N/A	N/A
EL2 1-1	0.3	36	0.5	0.1	0.3	3.3	N/A	N/A
EL4 1-1	0.6	381	10.5	0.4	0.4	19.1	25.4±0.7	-0.1±1.8
EL5 1-1	0.5	343	3.1	0.1	0.1	7.4	28.2±0.8	5.7±0.6
EL5 2-1	0.1	36	0.3	0.1	0.1	4.2	N/A	N/A
WL1 1-1	0.1	205	106.3	1.4	4.9	865.8	10.9±0.5	6.3±1.0

Table 4.2: (Continued) Specific nutrient concentrations, nitrogen to phosphorus ratios, and nitrogen and oxygen isotopic compositions of dissolved nitrate. ND indicates that the sample was below detection limits for the particular nutrient species. Uncertainties on the isotopic values are calculated from duplicates analyzed in each batch of twenty samples and are therefore batch-specific. WL = West Loch, ML = Middle Loch, EL = East Loch, P-W = pore-water, H = harbor, and ave. = average.

Sample Name	PO_4	$Si(OH)_4$	NO_3^-	NO_2^-	NH_4^+	N:P	$\delta^{15}N$	$\delta^{18}O$
			(µmol/L)				‰[a]	
Pearl Harbor Estuary Water								
WL1 5-1	0.1	81	2.8	0.2	1.8	39.8	19.4±1.3	10.9±1.3
WL1 6-1	0.2	81	2.2	0.1	4.8	41.4	25.8±1.3	12.1±1.3
E1 1-1	0.2	40	0.5	0.1	0.7	8.3	N/A	N/A
E1 2-1	0.1	25	0.1	1.2	4.3	61.9	N/A	N/A
E1 5-1	0.2	59	2.2	0.2	0.5	15.5	15.9±1.3	8.2±1.3
E2 4-1	0.2	41	3.1	0.1	0.3	18.1	21.5±1.3	9.8±1.3
ML1 1-1	0.1	68	0.2	0.1	1.2	13.0	N/A	N/A
ML1 6-1	1.0	640	33.7	0.4	1.3	37.3	14.3±0.5	6.7±1.4
ML1 8-1	0.1	105	0.8	0.1	7.9	110.6	N/A	N/A
ML1 9-1	1.1	596	31.8	0.4	2.2	31.0	18.6±0.5	7.4±1.4
ML1 13-1	0.2	102	0.8	0.1	0.2	4.8	N/A	N/A
P.H. ave.	*0.3*	*127*	*7.0*	*0.2*	*1.7*	*16.0*	*21.6*	*6.7*
WL ave.[b]	*0.4*	*108*	*14.4*	*0.3*	*4.1*	*22.1*	*17.7*	*7.0*
ML ave.	*0.5*	*286*	*11.6*	*0.2*	*2.1*	*24.7*	*15.2*	*5.8*
EL ave.	*0.2*	*103*	*1.5*	*0.1*	*0.2*	*5.2*	*26.8*	*2.8*
Mouth ave.	*0.1*	*33*	*0.9*	*0.2*	*0.6*	*12.8*	*19.1*	*9.7*
Pearl Harbor Pore-water								
WLC1	0.8	385	0.4	0.1	0.3	0.8	N/A	N/A
EC1	1.0	116	0.4	ND	0.1	0.5	N/A	N/A
EC2	1.7	268	0.6	ND	2.9	2.0	N/A	N/A
P-W ave.	*1.2*	*256*	*0.4*	*0.02*	*1.1*	*1.1*	*N/A*	*N/A*
Pearl Harbor Spring Samples								
MLC4	0.1	377	0.5	0.1	1.3	13.4	N/A	N/A
MLC3	1.9	341	1.2	0.4	12.9	7.8	N/A	N/A
MLC2	2.4	912	3.6	0.1	0.6	1.8	17.5±1.3	11.9±1.3
MLC1	2.3	1010	38.0	0.3	1.3	16.9	10.0±0.7	5.3±1.8
WLC2	0.9	284	20.7	1.0	3.7	29.1	16.8±0.5	3.5±1.4
Waiau Spring HECO	1.5	753	18.8	0.1	1.5	13.3	12.0±0.6	5.6±1.8
Waiau HECO Spring 1	1.8	523	24.8	<0.1	0.8	14.2	13.4±0.8	6.3±0.6
Waiau HECO Spring 2	2.9	543	32.1	<0.1	0.9	11.5	11.2±0.8	4.9±0.6
Waiau HECO Spring 3	2.0	540	18.5	0.1	1.5	10.2	12.3±0.8	5.6±0.6
Springs ave.	*1.7*	*587*	*17.6*	*0.2*	*2.7*	*13.1*	*13.3*	*6.2*
P.H. ave.	*1.6*	*504*	*13.3*	*0.2*	*2.3*	*10.1*	*13.3*	*6.2*

Table 4.2: (Continued) Specific nutrient concentrations, nitrogen to phosphorus ratios, and nitrogen and oxygen isotopic compositions of dissolved nitrate. ND indicates that the sample was below detection limits for the particular nutrient species. Uncertainties on the isotopic values are calculated from duplicates analyzed in each batch of twenty samples and are therefore batch-specific. WL = West Loch, ML = Middle Loch, EL = East Loch, P-W = pore-water, H = harbor, and ave. = average.

Sample Name	PO_4	$Si(OH)_4$	NO_3^-	NO_2^-	NH_4^+	N:P	$\delta^{15}N$	$\delta^{18}O$
			(μmol/L)				‰[a]	
Central Oahu Drinking Water Wells								
Kunia I-P2	10.5	1049	300.7	<0.1	<0.1	28.7	4.1±0.5	4.0±1.0
Hoaeae P-2	9.6	1243	265.4	<0.1	ND	27.6	3.4±0.5	3.4±1.0
Waipahu IV-2	7.2	1123	179.1	<0.1	ND	24.9	3.9±0.5	3.2±1.0
Waipahu I-P2	8.4	1079	202.7	<0.1	ND	24.2	11.0±0.5	2.0±1.0
Waipio Heights II-1	7.4	973	254.8	<0.1	ND	34.2	4.6±0.5	4.9±1.0
West P.H. ave.	*8.6*	*1093*	*240.5*	*<0.1*	*<0.1*	*27.9*	*5.4*	*3.5*
Kaahumanu I-1	1.8	765	21.3	0.1	*<0.1*	11.7	11.7±0.5	1.1±1.4
Manana Well	0.4	693	20.7	0.1	*<0.1*	54.8	10.9±1.9	3.4±1.4
Waiau HECO 2A	0.6	806	28.5	<0.1	<0.1	49.3	9.9±0.5	14.9±1.4
Aiea Heights II-1	2.3	840	73.9	0.1	ND	31.9	14.0±0.5	9.9±2.6
East P.H. ave.	*1.3*	*776*	*36.1*	*0.1*	*<0.1*	*36.9*	*11.6*	*7.3*
P.H. ave.	*5.4*	*952*	*149.7*	*<0.1*	*<0.1*	*31.9*	*8.2*	*5.2*
Southeastern Oahu Drinking Water Wells and Upland Spring								
Waialae Golf Course	1.7	724	56.5	ND	0.1	32.7	14.0±0.5	6.6±2.6
Palolo Well 2	1.4	655	34.7	ND	<0.1	24.5	8.9±0.5	-0.1±1.4
AinaKoa Well 2	2.3	663	54.3	ND	0.1	23.6	13.7±0.5	14.8±2.6
Kapalama Well 1	1.7	717	53.0	ND	ND	31.4	10.7±0.5	7.1±2.6
Wilder Well 1	1.1	593	88.1	ND	ND	77.3	7.5±0.5	2.9±1.0
Moanalua Well 2	1.4	719	44.6	ND	<0.1	31.0	16.7±0.5	7.8±2.6
Ainakoa Well 1	1.9	767	78.5	ND	<0.1	41.3	10.7±0.5	7.1±2.6
Kunawai Spring	6.0	549	24.5	ND	0.1	4.1	14.5±0.5	3.0±1.4
Ave.	*2.2*	*673*	*54.3*	*ND*	*<0.1*	*33.2*	*12.1*	*6.2*

Table 4.2: (Continued) Specific nutrient concentrations, nitrogen to phosphorus ratios, and nitrogen and oxygen isotopic compositions of dissolved nitrate. ND indicates that the sample was below detection limits for the particular nutrient species. Uncertainties on the isotopic values are calculated from duplicates analyzed in each batch of twenty samples and are therefore batch-specific. WL = West Loch, ML = Middle Loch, EL = East Loch, P-W = pore-water, H = harbor, and ave. = average.

Sample Name	PO_4	$Si(OH)_4$	NO_3^-	NO_2^-	NH_4^+	N:P	$\delta^{15}N$ ‰[a]	$\delta^{18}O$
Seawater end-members from Wailupe Beach, Southeastern Oahu								
Wailupe	0.1	7	0.1	0.1	0.5	6.2	N/A	N/A
Wailupe	0.1	7	0.1	0.1	0.3	3.8	N/A	N/A
Wailupe	0.1	8	<0.1	0.1	0.5	5.1	N/A	N/A
Wailupe	0.1	8	<0.1	0.1	0.3	3.5	N/A	N/A
Wailupe	0.1	6	<0.1	0.1	0.2	3.0	N/A	N/A
Ave.	*0.1*	*7*	<0.1	*0.1*	*0.4*	*4.3*	*N/A*	*N/A*

[a]N/A indicates that the sample was not analyzed for its nitrate isotopic composition because nitrate concentrations were too low for analysis or that averages of groups of samples were not calculated.
[b]Excludes WL1-1-1 which has a N:P ratio of 865.8.

Dissolved Inorganic Nutrients

Dissolved silica (DSi) was highly variable (17 to 874 µmol/L) in the study area, but was always one- to two-orders of magnitude higher in estuary water than in typical offshore water (~1.5 µmol/L; Laws et al., 1999). Concentrations of nitrate were two orders of magnitude higher in groundwater (149.7 µmol/L) than estuary water (7.0 µmol/L), while phosphate was one order of magnitude higher in groundwater (5.4 µmol/L) than estuary water (0.3 µmol/L). Nitrite and ammonium were one and two orders of magnitude higher in estuary water than in the groundwater, respectively (Table 4.2).

DSi concentrations from water supply wells located in Central Oahu varied from 693 to 1243 µmol/L. Nitrate in these wells ranged from 20.7 to 300.7 µmol/L, NO_2^- was <0.1 µmol/L, NH^{4+} was <0.1 µmol/L, and PO_4^{3-} varied from 0.4 to 10.5 µmol/L (Table 4.2).

DSi in the three pore-water samples ranged from 116 to 385 µmol/L and averaged 256±135 µmol/L, 1SD. Orthophosphate varied from 0.8 to 1.7 µmol/L and averaged 1.2±0.5 µmol/L, 1SD. Nitrate concentrations ranged from 0.4 to 0.6 µmol/L. Nitrite in

all pore-water samples was <0.1 µmol/L. Ammonium varied from 0.1 to 2.9 µmol/L (Table 4.2).

Springs had DSi that ranged from 284 to 1010 µmol/L and averaged 587±254 µmol/L, 1SD, n=9. Orthophosphate in the nine springs varied from 0.1 to 2.9 µmol/L and averaged 1.7±0.8 µmol/L, 1SD. Nitrate concentrations ranged from 0.4 to 38.0 µmol/L and averaged 17.6±13.4 µmol/L, 1SD. Nitrite in spring samples varied from <0.1 to 1.0 µmol/L and averaged 0.2±0.3 µmol/L, 1SD. Ammonium ranged from 0.6 to 12.9 µmol/L and averaged 2.7±3.9 µmol/L, 1SD (Table 4.2).

Water from Pearl Harbor's surface had orthophosphate concentrations that averaged 0.3±0.4 µmol/L, 1SD, n=43. By loch, orthophosphate was 0.4±5 µmol/L, 1SD, n=11 for West Loch, 0.6±0.6 µmol/L, 1SD, n=10 for Middle Loch, 0.2±0.2 µmol/L, 1SD, n=10 for East Loch, and 0.1±0.0 µmol/L, 1SD, n=12 for the mouth of the harbor. With the exception of WL1-1-1, which had a dissolved nitrate concentration of 106.3 µmol/L, nitrate throughout the harbor's surface waters varied from not detectable to 33.7 µmol/L. West Loch averaged 14.4±31.5 µmol/L, 1SD, n=10, Middle Loch averaged 11.6±15.2 µmol/L, 1SD, n=10, East Loch averaged 1.5±3.3 µmol/L, 1SD, n=10, and the mouth of the harbor averaged 0.9±1.1 µmol/L, 1SD, n=12 (Table 4.2). DSi was highly variable (16 to 874 µmol/L) in the surface waters. DSi in West Loch averaged 108±72 µmol/L, 1SD, n=10, Middle Loch averaged 286±302 µmol/L, 1SD, n=10, East Loch averaged 103±138 µmol/L, 1SD, n=10, and the mouth of the harbor averaged 33±14 µmol/L, 1SD, n=12 (Table 4.2).

Nitrogen to Phosphorus Ratios

Nitrogen to phosphorus ratios varied from 11.7 to 54.8 for drinking water wells located in Central Oahu (Table 4.2). Wells sampled near eastern Oahu varied from 23.6 to 77.3. In contrast, pore and spring waters had smaller ratios that varied from 0.5 to 29.1 and averaged 10.1±8.3, 1SD, n=12. One estuary sample from West Loch (WL1-1-1) had a N:P ratio of 865.8:1. Excluding this outlier, the harbor averaged 16.0±20.4, 1SD, n=43. West Loch averaged 22.1±14.7, 1SD, n=10, Middle Loch averaged 24.7±32.5, 1SD, n=10, East Loch averaged 5.2±5.3, 1SD, n=10, and the mouth of the harbor averaged 12.8±16.3, 1SD, n=12 (Table 4.2).

Dissolved Nitrate Stable Isotopes

The results for dissolved nitrate isotopic analyses are reported from those samples that contained >1.2 µmol/L of dissolved nitrate (minimum concentration required for the analysis). Of the 75 samples collected, 44 samples had nitrate concentrations suitable for the isotopic analysis. The nitrogen isotopic composition of dissolved nitrate in Pearl Harbor's estuary waters ranged from +11.2 to +71.6‰, while the oxygen isotopic composition varied from -0.1 to +12.1‰. Spring samples had $\delta^{15}N$ compositions that ranged from +10.0 to +17.5‰ and $\delta^{18}O$ compositions that varied from +3.5 to +11.9‰. The water supply wells in central Oahu had $\delta^{15}N$ compositions that varied from +3.4 to +14.0‰, while $\delta^{18}O$ compositions varied from +1.1 to +14.9‰. The water supply wells sampled from the eastern side of the island had $\delta^{15}N$ compositions that ranged from +7.5 to +16.7‰ and $\delta^{18}O$ compositions that varied from -0.1 to +14.8‰ (Table 4.2).

Discussion

Dissolved Inorganic Nutrients

In the Hawaiian Islands, silica is not greatly influenced by soil adsorption processes (Visher and Mink, 1964). Hawaiian soils do, however, have higher uptake and sorption capacities for phosphorus than for nitrogen (Fox, 1967, Chang and Young, 1977). Nitrate readily leaches through the soil zone and reaches the groundwater table (Soicher and Peterson, 1997). Phosphates have a high reactivity and therefore strong affinity to absorb to particles Parfitt et al., 1975; McLaughlin et al., 1981). Phosphate is usually retained in the soils by goethite and other iron and aluminum oxides and hydroxides (Parfitt et al., 1975; McLaughlin et al., 1981; Barron et al., 1988). Furthermore, phosphorus has a low solubility in soils (Parfitt et al., 1975; McLaughlin et al., 1981). It is generally believed that phosphorous fertilizers have not significantly affected groundwater quality (Parfitt et al., 1975; McLaughlin et al., 1981). Since the coastal waters surrounding Oahu are oligotrophic, and because the Hawaiian Islands do not have extensive shelves with organic-rich sediments, only small fractions of dissolved silica, nitrate, and phosphate are derived from seawater (Visher and Mink, 1964).

We assumed that the water supply wells were representative of the terrestrial part of the aquifer and classified them as fresh, groundwater end-members. Measured DSi in

the water supply wells was typical of the Hawaiian Islands, and reflected interaction between groundwater and volcanic rocks (Laws et al., 1999). The MLC1 and MLC2 samples (Table 4.2) were collected from springs located just above the high-tide line in the back of Middle Loch. These springs had DSi concentrations that were similar to DSi concentrations measured in terrestrial water from the west side of the central Oahu region (Kunia 1 P-2, Hoaeae P-2, Waipahu IV-2, or Waipahu I-P2). DSi in these springs was much higher than any terrestrial sample from the east side of Pearl Harbor. We therefore assumed that all groundwater flowing into Middle Loch originated from the west side of Pearl Harbor and designated the west side as one terrestrial end-member of the harbor (Table 4.3). We likewise assumed that terrestrial samples from the east side of the harbor (Kaahumanu I-1, Manana Well, Waiau HECO 2A, Aiea Heights II, and all Waiau HECO springs) were representative of the groundwater end-member for the east side of the harbor (Table 4.3).

Table 4.3: End-member characteristics used in theoretical mixing lines for nutrient calculations and as end-members for the dissolved nitrate isotope discussion (see below).

End Member	Sal.	DSi (µmol/L)	PO_4^{3-} (µmol/L)	NO_3^- (µmol/L)	NO_2^- (µmol/L)	NH^{4+} (µmol/L)	$\delta^{15}N$ ‰	$\delta^{18}O$ ‰
West Pearl Harbor (n=5)	0.20	1093	8.6	240.5	<0.1	<0.1	5.4	3.5
East Pearl Harbor (n=8)	0.27	683	1.7	29.8	<0.1	0.6	11.9	6.5
Estuary (n=4)	32.90	52	0.2	2.8	0.1	0.5	19.8	9.2
Seawater (n=5)	35.14	8	0.1	<0.1	0.1	0.3	N/A	N/A

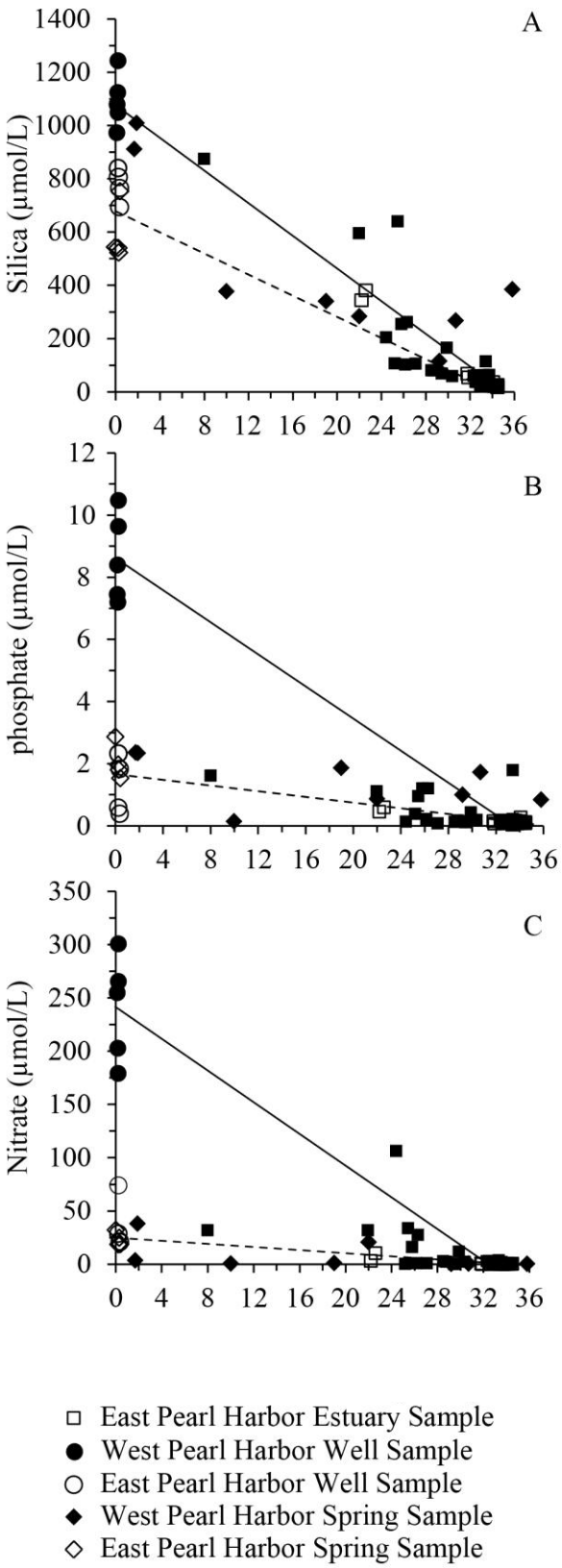
Although phosphates from fertilizers are generally not believed to greatly impact the groundwater, higher phosphate concentrations in groundwater from the west side of the harbor (compared to the east side) suggested that agricultural processes did augment the phosphate supply to the groundwater. Orthophosphate concentrations in MLC1 and MLC2 were lower than their assumed terrestrial end-members (Table 4.2). For these samples, phosphate may have absorbed onto particles along the groundwater flow path, or may have been utilized by plant roots and/or microbes in contact with the terrestrial waters closer to the harbor.

Nutrient concentrations in wells from the west side of the Pearl Harbor were similar in nitrate and varied from 179.1 to 300.7 µmol/L. Phosphate concentrations from these wells varied from 7.2 to 10.5 µmol/L. Well water from locations on the east side of the harbor was similar in nitrate, which varied from 20.7 to 73.9 µmol/L. Phosphate concentrations in these wells varied from 0.4 to 2.3 µmol/L.

Wells from the eastern side of Pearl Harbor were more comparable in dissolved nitrate, phosphate, and silica concentrations to the water supply wells located on the eastern side of Oahu (Figure 4.4) than to wells on the western side of Pearl Harbor (Table 4.2). These generalized patterns agreed with findings by Hunt (2004). The similarity between the eastern-most wells sampled on the island and wells on the eastern side of Pearl Harbor likely resulted because aquifers from these two areas are in communication with each other (Mink, 1980). Alternatively, or perhaps additionally, wells on the eastern side of Pearl Harbor did not receive the heavy agricultural irrigation and fertilizer applications that the west side of the harbor experienced. Similarly, the eastern side of Oahu experienced little agricultural land-use practices. Land-use patterns may have therefore imparted spatial heterogeneity in nutrient distributions reaching the harbor.

Spring and pore-water samples had variable dissolved inorganic nutrient concentrations, but all pore-water samples had higher salinities than the springs (Table 4.1). The higher salinities in the pore-water samples suggest that these samples interacted with more saline water in the subterranean estuary. Chemical reactions within the subterranean estuary likely modified terrestrially-derived groundwater entering the estuary (Burnett et al., 2003). The pore-water (WLC1, EC1, and EC2) and slow-flowing springs (WLC2, MLC3, and MLC4) had lower nitrate concentrations, higher nitrite and ammonium concentrations, and generally lower orthophosphate concentrations than the terrestrial end-members. This evidence suggested that chemical reactions did occur within Pearl Harbor's subterranean estuaries. Furthermore, many of the fast-flowing springs (all Waiau HECO springs, MLC1, and MLC2) had nutrient characteristics comparable to terrestrial end-members, suggesting that limited chemical reactions occurred in the spring samples prior to discharge (Table 4.2)

Figure 4.5: Dissolved inorganic nutrients: A) silica, B) orthophosphate, and C) nitrate concentrations versus salinity for the west side of Pearl Harbor (closed symbols) and the east side of Pearl Harbor (open symbols). Solid lines represent theoretical mixing for the west side of Pearl Harbor and dashed lines represent theoretical mixing for the east side of Pearl Harbor. The water end-members used in the theoretical mixing are seawater, terrestrial water from west Pearl Harbor, and terrestrial water from east Pearl Harbor as described in Table 4.3.



Dissolved silica, orthophosphate, and nitrate are plotted relative to salinity in Figures 4.5A-C. Theoretical mixing lines, representative of conservative mixing, were drawn between the groundwater end-members form Pearl Harbor's west side and offshore seawater as well as for Pearl Harbor's east side and offshore seawater (Table 4.3). DSi concentrations were negatively correlated with salinity in groundwater, springs, pore-water, and estuary samples of surface-water (Figure 4.5A). The strength of this correlationsuggested that DSi was predominantly controlled

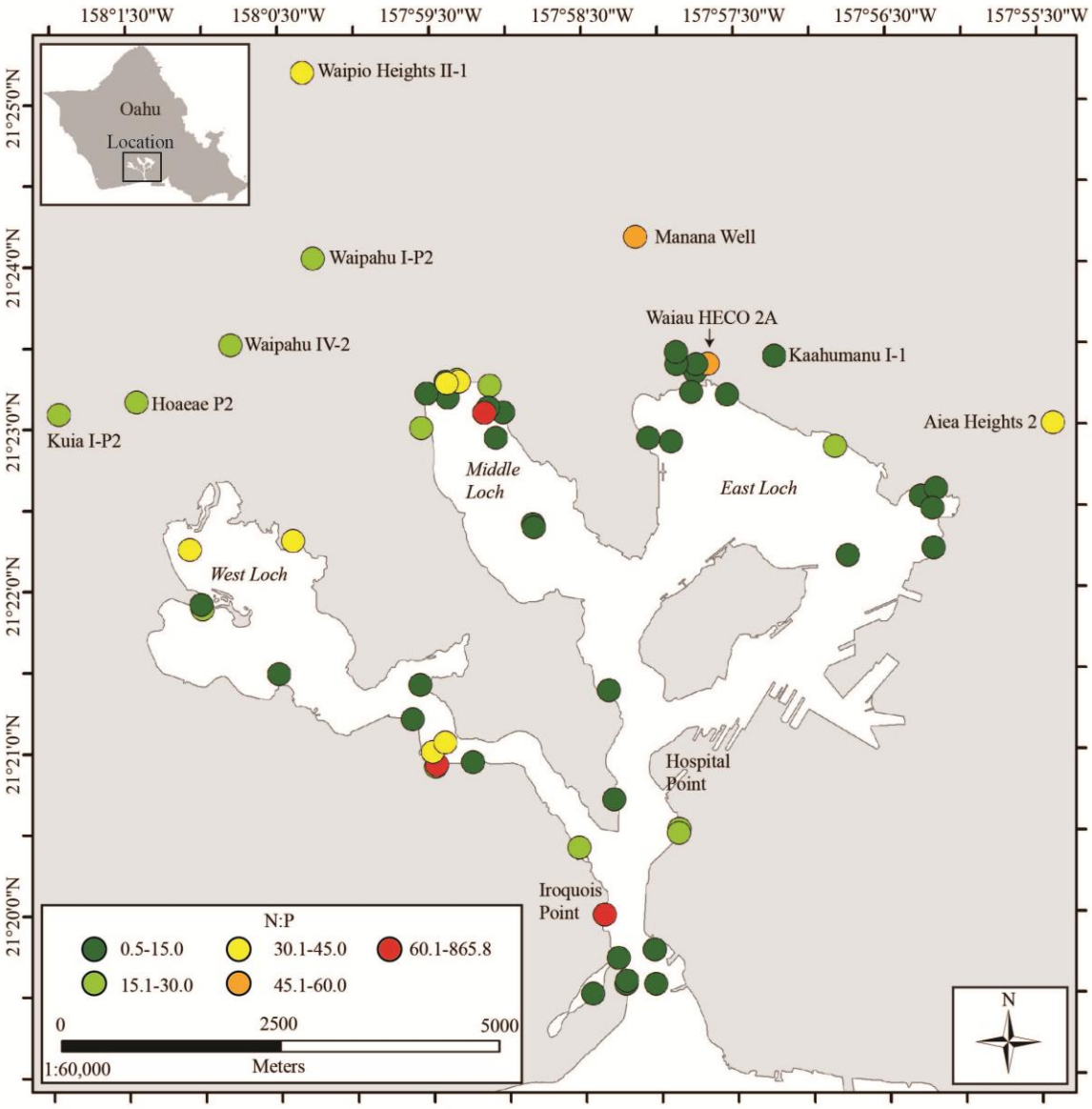


Figure 4.6: Dissolved inorganic nitrogen (nitrate+nitrite+ammonium) to orthophosphate ratios (displayed on a non-linear scale). Labeled locations represent water supply wells

by dilution once it reached Pearl Harbor's subterranean estuaries and estuary waters. Orthophosphate and nitrate samples deviated from the theoretical conservative mixing lines for both sides of the harbor. The deviation of dissolved nitrate and orthophosphate from their respective theoretical mixing lines (Figures 4.5B-C) suggested that these bioavailable nutrients were influenced by biological uptake and/or nutrient cycling on land and in Pearl Harbor's estuary.

Nitrogen to Phosphorus Ratios

N:P ratios for the harbor's surface waters averaged 16.0±20.4, 1SD, n=43, similar to the Redfield stoichiometric ratio for phytoplankton nutrients of N:P = 16:1 (Redfield, 1934). East Loch exhibited the lowest N:P ratios in the harbor (Figure 4.6). The average N:P for macroalgae is believed to be near 40:1 (Larned, 1998). The harbor may have been nitrogen-limited with respect to macroalgal nitrogen and phosphorus requirements, but did have nitrogen and phosphorus in adequate proportions for phytoplankton growth.

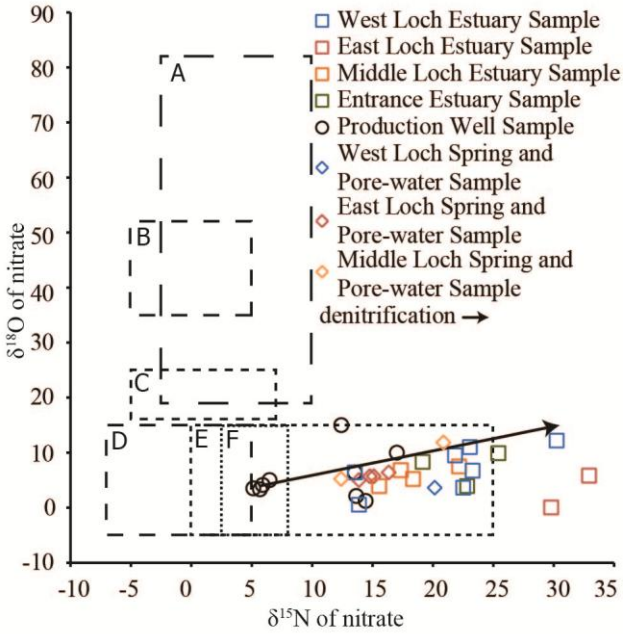
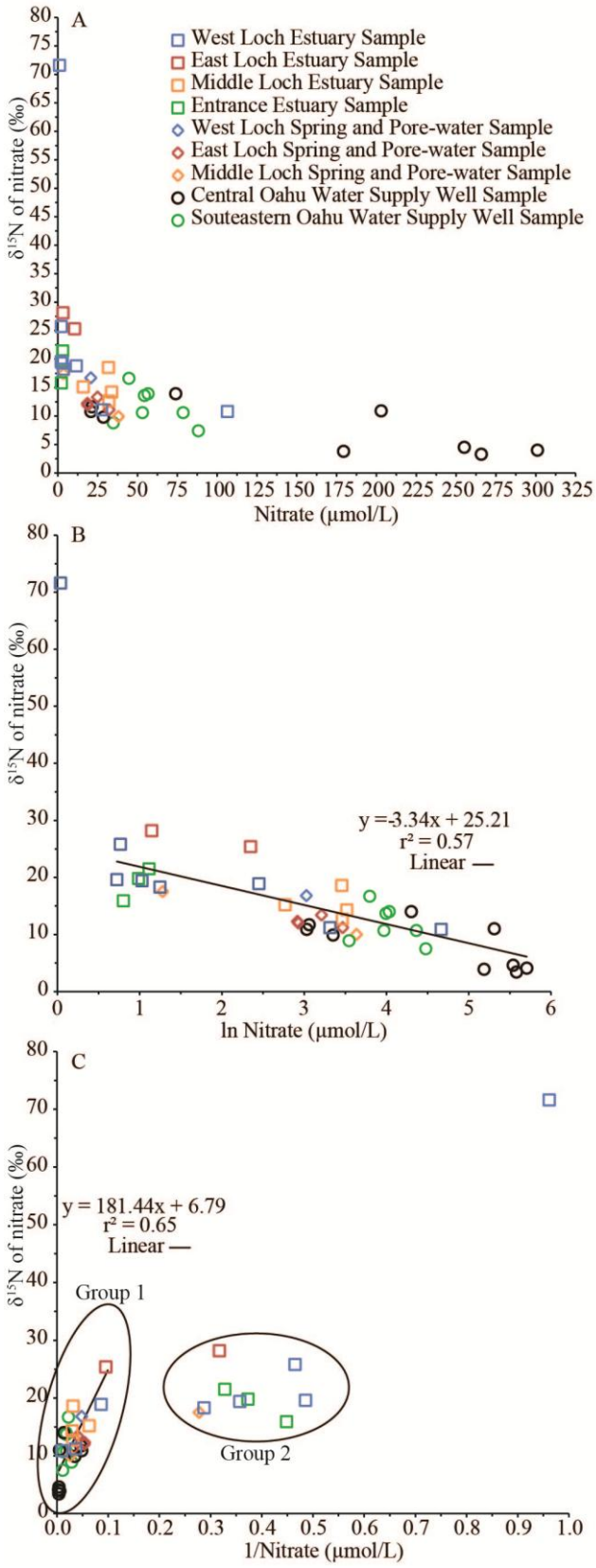


Figure 4.7: Cross-plot of $\delta^{18}O$(nitrate) verses $\delta^{15}N$(nitrate) delineated by sample type. All box designation letters are in the upper left hand corners of each box. A) nitrate in precipitation and atmospheric deposition, B) desert nitrate, C) fertilizer nitrate, D) nitrification of ammonium in fertilizer and rain, E) manure and septic waste, and F) soil nitrogen sources. Box designations are after Kendall (1998) and Mayer (2005). Sample WLT-2 with $\delta^{15}N$ = +71.6‰ and $\delta^{18}O$ = +7.1‰ is omitted for clarity.

Dissolved Nitrate Stable Isotopes

Nitrogen and oxygen isotopic analyses of dissolved nitrate (Figure 4.7) were conducted on samples that had greater than 1.2 µmol/L of nitrate (minimum concentration required for analysis). All open water estuary samples (i.e. samples collected away from the shoreline) with the exception of WL1-5-1, WL1-6-1, and WLT1 had nitrate concentrations below the minimum requirement for analysis. The three exceptions likely represented recently discharged groundwater because they were located in proximity to cold temperatures on SST maps and areas of high ^{222}Rn activity (Chapter 3). There was adequate dissolved nitrate for analysis in most spring samples as well as several near-shoreline samples, which presumably contained a recently discharged groundwater component.

Figure 4.8: A) $\delta^{15}N$(nitrate) versus nitrate concentration, B) $\delta^{15}N$(nitrate) versus the natural log of nitrate concentration, and C) $\delta^{15}N$(nitrate) versus $1/[NO_3^-]$. →



Water supply wells, including Kunia 1 P-2, Hoaeae P-2, Waipahu IV-2, and Waipio Heights II-1 had similar nitrogen and oxygen isotopic compositions (Figure 4.7) that plotted in the overlapping region of nitrate derived from mineralization of soil organic matter (Figure 4.7, box F) and nitrate derived from ammonium fertilizer and rain (Figure 4.7, box D). These samples also plotted in an overlapping region that encompassed nitrate from manure and septic waste (Figure 4.7, box E). Most of the remaining samples plotted in box F (Figure 4.7), which represents samples with nitrate from septic waste. The samples showed signs of fractionation and mixing processes (Figures 4.8A-C) and may have simply plotted in box F due to these overprinting processes (see discussion below).

The hyperbolic pattern of

increasing δ^{15}N(nitrate) with decreasing nitrate concentration in Figure 4.8A indicates loss of nitrate by an isotopically fractionating process. This loss of nitrate likely occurred as the water flowed from water supply wells to the coastal springs as demonstrated by lower nitrate concentrations and higher δ^{15}N(nitrate) values in spring waters than in water supply wells. This process continued as water flowed through the subterranean estuary as evidenced by the lower nitrate concentration and higher δ^{15}N(nitrate) values in pore-waters than in either spring or water supply well samples. Denitrification and photosynthetic uptake are two possibilities for such a fractionating process. During denitrification, ^{14}N reacts more rapidly than ^{15}N, causing enrichment of ^{15}N in the remaining nitrate (Kendall, 1998). Typical enrichment factors for denitrification range from -5 to -30‰ (Mariotti et al., 1988; Sigman and Casciotti, 2001). During photosynthetic uptake, phytoplankton preferentially consume ^{14}N relative to ^{15}N (Sigman and Casciotti, 2001). A typical enrichment factor for uptake is -5‰ (Sigman and Casciotti, 2001). All enrichment factors were defined by the Rayleigh model after Kendall (1998):

$$\delta_R \approx \delta_{Ro} + \varepsilon \, ln \frac{C}{C_o} \tag{4.1}$$

where δ_R is the nitrogen or oxygen isotopic composition of the reactant, δ_{Ro} is the initial nitrogen or oxygen isotopic composition, ε is the enrichment factor, C is the measured concentration, and C_o is the initial concentration.

The roughly linear correlation in Figure 4.8B (r^2=0.57) in the cross-plot of δ^{15}N(nitrate) versus natural log of [NO_3^-] is indicative of the presence of a fractionating process for at least some of the samples. The -3.3 slope of the regression in Figure 4.8B represents an average nitrogen enrichment factor derived from nitrate ($^{15}\varepsilon$) of -3.3‰ for the field area. Average $^{15}\varepsilon$ calculated by loch were -3.4‰ for West Loch (n=13, r^2=0.87), -3.4‰ for Middle Loch (n=11, r^2=0.74), and -6.1‰ for East Loch (n=8, r^2=0.60). In contrast, the average oxygen enrichment factor derived from nitrate ($^{18}\varepsilon$) was -1.0‰ for the harbor (r^2=0.21). Average $^{18}\varepsilon$ calculated by loch were -1.1‰ for West Loch (n=13, r^2=0.44), -1.5‰ for Middle Loch (n=11, r^2=0.65), and +1.4‰ for East Loch (n=8, r^2=0.06). Fewer samples were available for East Loch to calculate end-member characteristics, thus the enrichment factors for East Loch likely do not reflect

representative processes or end-members for the loch and will not be considered in the discussion below.

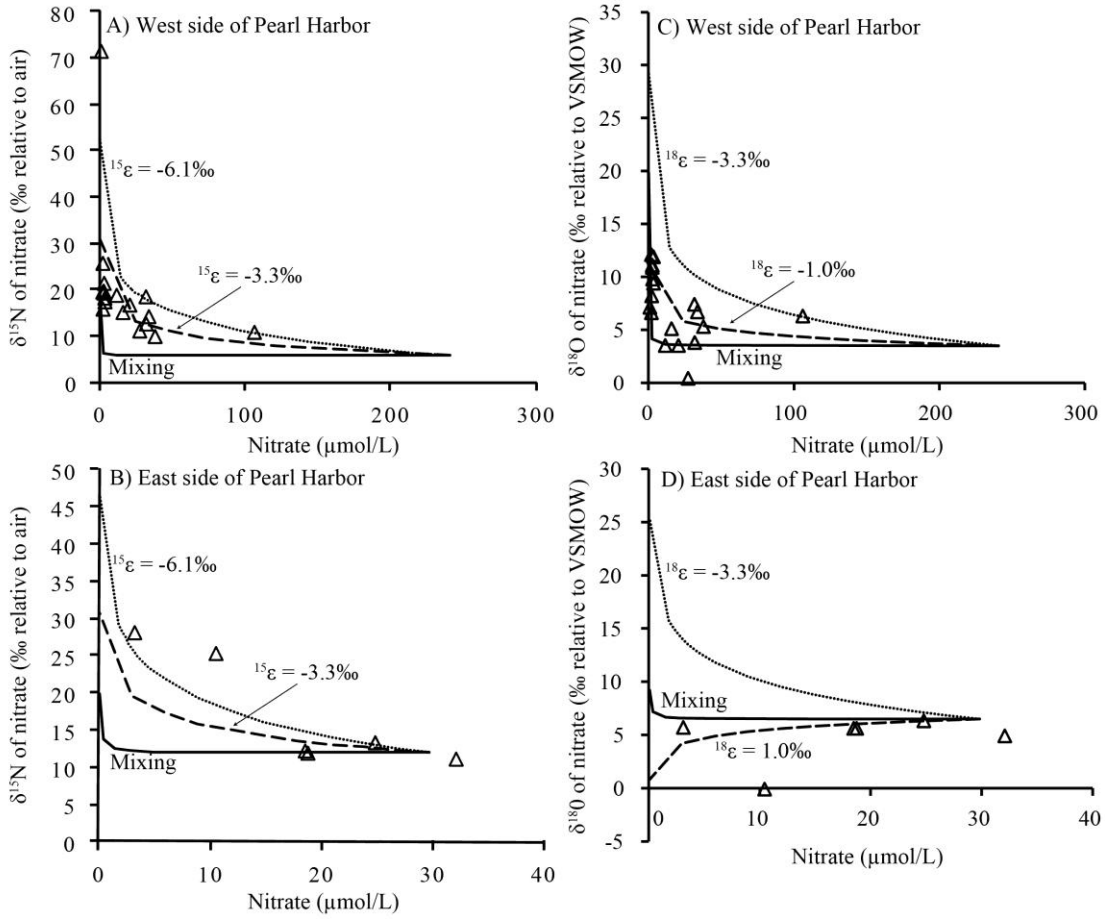
$^{15}\varepsilon$ for the harbor as a whole, as well as for West and Middle Lochs were not consistent with published enrichment factors for denitrification or uptake. Green et al. (1998) published a similar enrichment factor of -3.0‰ from Jersey Island. Green et al. (1998) suggested that their enrichment factor could have resulted from fast denitrification at high temperatures, or could have reflected mixing between low-and high-nitrate groundwaters with similar isotopic compositions.

Assimilation by phytoplankton and by alga as well as denitrification has been shown to have $^{15}\varepsilon$:$^{18}\varepsilon$ ratios of nearly 1:1 for oceanic systems (Sigman et al., 2003; Granger et al., 2004). Lehmann et al. (2003) found $^{15}\varepsilon$:$^{18}\varepsilon$ of 1.4 to 2.0 for denitrification in freshwater systems. The average $^{15}\varepsilon$:$^{18}\varepsilon$ ratio is 3.3 for Pearl Harbor, with 3.1 for West Loch and 2.3 for Middle Loch. The $^{15}\varepsilon$:$^{18}\varepsilon$ ratios suggest that assimilation and denitrification are not major processes controlling nitrogen cycling in the harbor.

Denitrification does occur in aquifers in the Hawaiian Islands (Hunt and Rosa, 2009; Fackrell, unpublished.). Fackrell (unpublished) calculated enrichment factors of -18.9‰ for the Lahaina, Maui area. However, it is our experience that most aquifers in the Hawaiian Islands have predominantly oxic conditions are therefore are not conductive to denitrification. The high concentrations of nitrate and low concentrations of nitrite and ammonium in the water supply wells and fast-flowing springs also support this conclusion. The more stagnant spring sources as well as the pore-water samples, on the other hand, had lower nitrate concentrations than their freshwater end-members and larger nitrite and ammonium concentrations than their freshwater end-members. $^{15}\varepsilon$ for these samples was still -3.2‰ despite the lower nitrate and higher nitrite and ammonium concentration in these samples. The enrichment factor for oxygen ($^{18}\varepsilon$) for these samples was -1.5‰. $^{15}\varepsilon$:$^{18}\varepsilon$ for these samples was 2.1, which is larger than previously determined enrichment factor ratios for either denitrification or uptake. We therefore hypothesize that the groundwater end-members may not be representative of the water flowing into the more stagnant pools.

In addition to a fractionating process, mixing also occurred in the field area, as indicated by the group 1 samples on the left side of Figure 4.8C. These samples follow a

linear trend (r^2=0.65, n=34) in the plot of $\delta^{15}N$(nitrate) versus 1/[NO_3^-]. Group 2 in Figure 4.8C is predominantly composed of samples from near the W4 pier in West Loch and samples collected near the shoreline along the main channel entrance to the harbor (with the exception of MLC3 and one shoreline surface water sample collected on the east side of East Loch, EL5-1-1). These samples do not show a mixing relationship.



We used the end-members described in Table 4.3 to generate cross-plots of the samples with progressive mixing curves and Rayleigh fractionation curves (Figures 4.9A-

Figure 4.9: $\delta^{15}N$ of nitrate versus nitrate concentration for A) the west side of Pearl Harbor and B) the east side of Pearl Harbor. $\delta^{18}O$ of nitrate versus nitrate concentration for C) the west side of Pearl Harbor and D) the east side of Pearl Harbor. Table 4.3 contains the end-member descriptions. Solid lines represent mixing between the two end-members. The dotted and dashed lines represent progressive isotopic composition resulting from Rayleigh fractionation for various isotope effects observed in Pearl Harbor (see discussion).

D). Progressive mixing curves were calculated after Mariotti et al. (1988):

$$\delta_m = \frac{Q_a(\delta_a - \delta_b)}{Q_m} + \delta_b \quad (4.2)$$

eq. 4.2 describes mixing between two water of types "a" and "b," where δ_m is the isotopic composition of the mixture, Q_a is the volume of water "a" multiplied by the nitrate concentration of water "a", δ_a is the isotopic composition of water "a", δ_b is the isotopic composition of water "b", and Q_m is the volume of the water mixture multiplied by the nitrate concentration of the water mixture.

Rayleigh fractionation curves in Figures 4.9A-D were calculated from eq. 4.1. Most of the samples plotted between the mixing curve and the average Rayleigh fractionation curve with a $^{15}\varepsilon$ value of -3.3‰ (Figures 4.9A-B). In contrast, plots of $^{18}\varepsilon$ and mixing curves show that most of the samples from the west side of Pearl Harbor plotted on the mixing curve in Figure 4.9C. Fewer samples plotted between the mixing curve and the average Rayleigh fractionation curve with a $^{18}\varepsilon$ value of -1.0‰ (Figure 4.9C). For the east side of harbor, most samples plotted between the mixing curve and the average Rayleigh fractionation curve with a $^{18}\varepsilon$ value of 1.0‰. The simplest explanation of the above relationships is mixing combined with end-members that may not be indicative of all sources of water and nutrients to the harbor.

Further end-member testing and likely use of multiple tracers is required to specifically identify nitrate sources and nutrient transformations within Pearl Harbor. The isotopic variation of ~25‰ in nitrogen and ~15‰ in oxygen suggests that, with better end-member constraints, it should be possible to determine the ultimate source(s) of nitrogen based on isotopic analyses of nitrate in groundwater and isotopic analyses of δ^{15}N of nearshore macroalgae.

Nutrient Fluxes to Pearl Harbor

To calculate nutrient fluxes to Pearl Harbor, an estimate of the nutrient concentrations for the discharging groundwater end-member must be established and then multiplied by a groundwater discharge rate from the coastline. Although the calculation is fairly simple in principle, proper designation of the groundwater end-member is crucial for meaningful nutrient budgets to result. Slomp and Van Cappellen (2004) and Charette and Sholkovitz (2006) have shown that chemical transformations in the subterranean

estuary can impact the dissolved species concentrations that are discharged to a water body. Thus, it may not always be appropriate to use nutrient concentrations measured in the fresh groundwater end-member to estimate nutrient fluxes to a coastal zone (Santos et al., 2008).

Assigning nutrient concentrations in groundwater is complicated in Pearl Harbor because the harbor exhibits at least two distinct groundwater discharge processes. Pearl Harbor's springs are thought to discharge from near the top of the groundwater transition zone (Visher and Mink, 1964) and likely spend little time or even directly by-pass the subterranean estuary. Anthropogenic-sourced nutrients and other dissolved constituents discharging from spring sources may do so without heavily interacting with the subterranean estuary. On the other hand, Pearl Harbor's diffuse (non-point source) discharge should interacts with the subterranean estuary, changing the water's chemical composition before discharging to Pearl Harbor (discussion above and Table 4.2). We collected multiple samples of spring water and established representative estimates for the average composition of the dissolved nutrients of the spring discharge. We also collected three pore-water samples, but cannot extrapolate the nutrient concentrations in those samples to the whole harbor with any certainty. We therefore, cannot characterize the dissolved nutrient concentrations of the diffuse component or any other discharge that interacts with the subterranean estuary and eventually discharges through the sediment/water interface.

Multiple groundwater end-members can be adopted (e.g. Santos et al., 2008) for a field area. The ideal scenario for Pearl Harbor would be to apply at least four groundwater end-members. These end-members would include terrestrial water from the west side of Pearl Harbor, subterranean estuary water from the west side of the harbor, terrestrial water from the east side of the harbor, and subterranean estuary water from the east side of Pearl Harbor. Since we cannot characterize the subterranean estuary end-members with certainty, we chose to use the terrestrial end-members from the west and east sides of Pearl Harbor (Table 4.3). We also applied these end-members based on the assumption that most of the groundwater flow to Pearl Harbor occurred through the springs (Chapter 3).

Our application of average groundwater end-members for use in nutrient flux calculations does not capture local factors such as potential increased anthropogenic inputs near golf courses or increased inputs near communities with cesspools, for example. Several streams contributed water to the harbor; however, most of these streams were groundwater-fed. We made no attempt to differentiate nutrient signatures from recently discharged groundwater and stream flow. Nutrient uptake by algae and plants (e.g. mangroves) in and near each stream was also not considered. The local variations due to increased nutrient loads would cause the nutrient flux estimates to the harbor to be underestimates, while uptake by algae and other plants would result in over-estimates of nitrate and orthophosphate nutrient loads to the harbor.

^{222}Rn is sensitive to groundwater discharged within the past ~20 days (^{222}Rn half life of 3.82 days X 5 decay cycles). We calculated groundwater fluxes to Pearl Harbor using a ^{222}Rn coastal box model developed by Dulaiova et al. (2005) and modified by Dulaiova et al. (2010). This model used ^{222}Rn activities measured from a survey of surfaces waters and is described in detail in Chapter 3. Briefly, ^{222}Rn activities, water temperature, water salinity, water depth, air wind speed, and latitude/longitude data were input into the model. All ^{222}Rn measurements were converted to total groundwater fluxes based on eq. 4.3 after Moore (1996).

$$Q_{SGD_{tot}} = \frac{A_{Rn\_cw} * V}{\tau * A_{Rn\_gw}} \quad (4.3)$$

where $Q_{SGD_{tot}}$ is total (fresh and saline) groundwater discharge in m^3/d. A_{Rn_cw} and A_{Rn_gw} are ^{222}Rn activities in coastal water and groundwater in dpm/m^3, V is the volume of the coastal water box in m^3 represented by the ^{222}Rn measurement and τ is the flushing rate of the volume of water considered in the calculation. As described in Chapter 3, we utilized a tidal flushing rate (12 hours 15 minutes) and a variable (by location) flushing rate described by Buske and Evans (1974). The tidal flushing rate assumed that each coastal box in the model was flushed uniformly quickly. This flushing rate generated maximum estimates of groundwater fluxes for the all lochs and minimum estimates for the mouth of the harbor. The flushing rates proposed by Buske and Evans (1974) ranged from hours to days in the back of East and Middle Lochs, to 30 minutes near the mouth of the harbor. The groundwater fluxes from the variable flushing rate represented

minimum estimates in the back of East and Middle Lochs and maximum estimates near the mouth of the harbor. No variable flushing rate data were available for West Loch (Buske and Evans, 1974). Groundwater fluxes calculated by ^{222}Rn mass balance (Chapter 3) represented minimum estimates for several reasons. First, recently discharged groundwater to spring-fed streams had the potential for radon degassing, which would make degassed water transparent to the ^{222}Rn tracer. Second, runoff and drainage from each stream's watershed would have been naturally low in ^{222}Rn, and would not have been detected by the surveys. Finally, we were unable to survey the entire shoreline of the harbor (Chapter 3).

After groundwater fluxes were calculated, the fluxes were multiplied by the nutrient concentrations of the appropriate terrestrial end-member (Table 4.3). We incorporated a salinity balance into our nutrient budget to accommodate mixing of seawater and freshwater by using the theoretical mixing lines between each dissolved nutrient species and salinity shown in Figures 4.5A-C. DSi budgets will generate the most accurate flux estimates compared to dissolved nitrate and phosphate since the DSi data more closely fit the theoretical mixing line. Dissolved nutrient contributions from nitrate and phosphate were over-estimated in most cases. Estuary samples typically had dissolved nitrate and phosphate concentrations that plotted below the theoretical mixing line and represented non-conservative mixing (Figures 4.5B-C). In our model, atmospheric deposition of nutrients was ignored since it is minimal on the time-scale of our budget calculations (Vitousek, 2004). Nutrient inputs by precipitation were also ignored because no precipitation occurred during the surveys.

For the tidal flushing rate, DSi contribution from West Loch was 8,600 mol/d, Middle Loch was 11,700 mol/d, East Loch was 10,300 mol/d, and the harbor mouth was 1,900 mol/d, totaling 32,500 mol/d. For nitrate, West Loch contributed 1,800 mol/d, Middle Loch contributed 2,500 mol/d, East Loch contributed 400 mol/d and the mouth of the harbor contributed 100 mol/d, totaling 4,800 mol/d. Phosphate loads to the harbor included 70 mol/d from West Loch, 90 mol/d from Middle Loch, 30 mol/d from East Loch, and <10 mol/d from the mouth of the harbor, totaling 200 mol/d. In comparison, for the variable flushing rates proposed by Buske and Evans (1974), DSi contribution from Middle Loch was 5,000 mol/d, East Loch was 7,100 mol/d, and the mouth of the

harbor was 4,700 mol/d, totaling 16,800 mol/d plus unknown contributions from West Loch. For nitrate, Middle Loch contributed 1,000 mol/d, East Loch contributed 300 mol/d and the mouth of the harbor contributed 700 mol/d, totaling 2,000 mol/d plus unknown contributions from West Loch. Phosphate loads to the harbor included 30 mol/d from Middle Loch, 20 mol/d from East Loch, and 40 mol/d from the mouth of the harbor, totaling 90 mol/d plus unknown contributions from West Loch.

On a per-m length of shoreline basis, West Loch contributed, on average, 332,300 µmol/d/m of DSi, Middle Loch contributed 1,539,341 µmol/d/m, East Loch contributed 831,000 µmol/d/m and the mouth of the harbor contributed 82,500 µmol/d/m of DSi (Figures 4.10A-C) based on tidal flushing rates. For dissolved nitrate, on average, West Loch contributed 69,700 µmol/d/m, Middle Loch contributed 334,800 µmol/d/m, East Loch contributed 646,400 µmol/d/m and the entrance contributed 12,900 µmol/d/m (Figures 4.11A-C) for tidal flushing rates. For orthophosphate, on average, West Loch contributed 2,700 µmol/d/m, Middle Loch contributed 12,200 µmol/d/m, East Loch contributed 5,100 µmol/d/m and the mouth of the harbor contributed 600 µmol/d/m (Figures 4.12A-C). In comparison, the variable flushing rates proposed by Buske and Evans (1974) yielded, on average, 694,000 µmol/d/m for Middle Loch, 572,900 µmol/d/m for East Loch, and 354,200 µmol/d/m of DSi for the mouth of the harbor. For dissolved nitrate, 151,300 µmol/d/m came from Middle Loch, 23,700 µmol/d/m came from East Loch and 55,300 µmol/d/m came from the mouth of the harbor, on average. For orthophosphate, Middle Loch contributed 4,000 µmol/d/m, East Loch contributed 1,800 µmol/d/ and the mouth of the harbor contributed 3,100 µmol/d/m, on average. Compared to SGD-derived nutrient inputs to other Hawaiian coastlines, Pearl Harbor contributed similar silica, nitrate, and phosphate loads on a per-m length of shoreline basis (see Johnson 2008 for a compilation).

Conclusions

We have demonstrated that nutrient characteristics of fresh groundwater end-members are heterogeneous, but may be broadly separated into two distinct groups, one for the west side of Pearl Harbor and one for the east side of Pearl Harbor. The

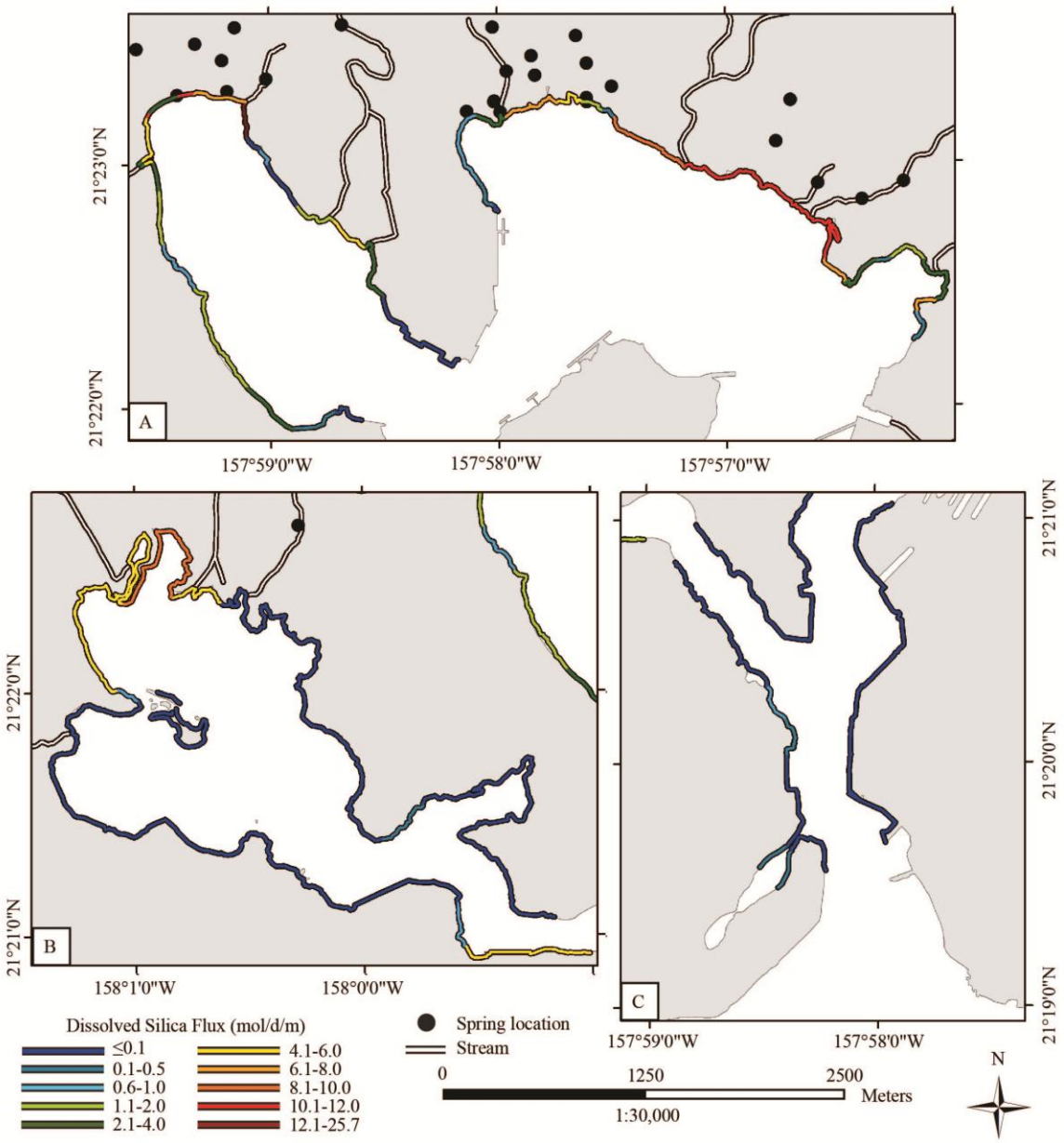


Figure 4.10: DSi fluxes from recently discharged groundwater A) Middle Loch survey (left) collected on 8 January 2010 and East Loch survey (right) collected on 4 January 2010, B) West Loch survey collected on 2 January 2010, and C) mouth of Pearl Harbor survey collected on 10 January 2010. Nutrient concentrations are reported on a non-linear scale to better differentiate lower fluxes from higher fluxes. End-members are described in Table 4.3. Subaerial spring locations are after Stearns and Vaksvik (1935).

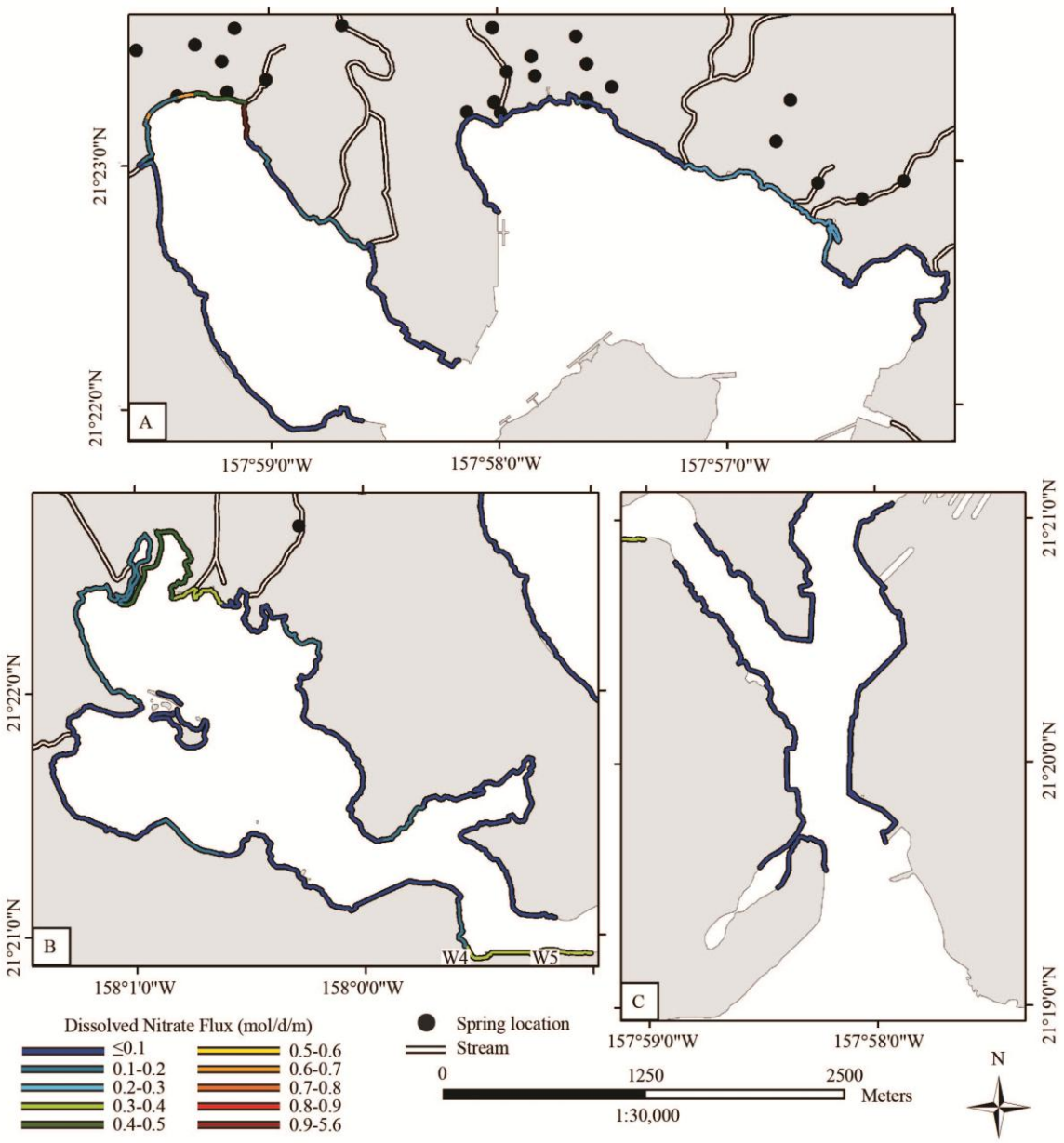


Figure 4.11: Dissolved NO_3^- fluxes from recently discharged groundwater A) Middle Loch survey (left) collected on 8 January 2010 and East Loch survey (right) collected on 4 January 2010, B) West Loch survey collected on 2 January 2010, and C) mouth of Pearl Harbor survey collected on 10 January 2010. Nutrient concentrations are reported on a non-linear scale to better differentiate lower fluxes from higher fluxes. End-members are described in Table 4.3. Subaerial spring locations are after Stearns and Vaksvik (1935).

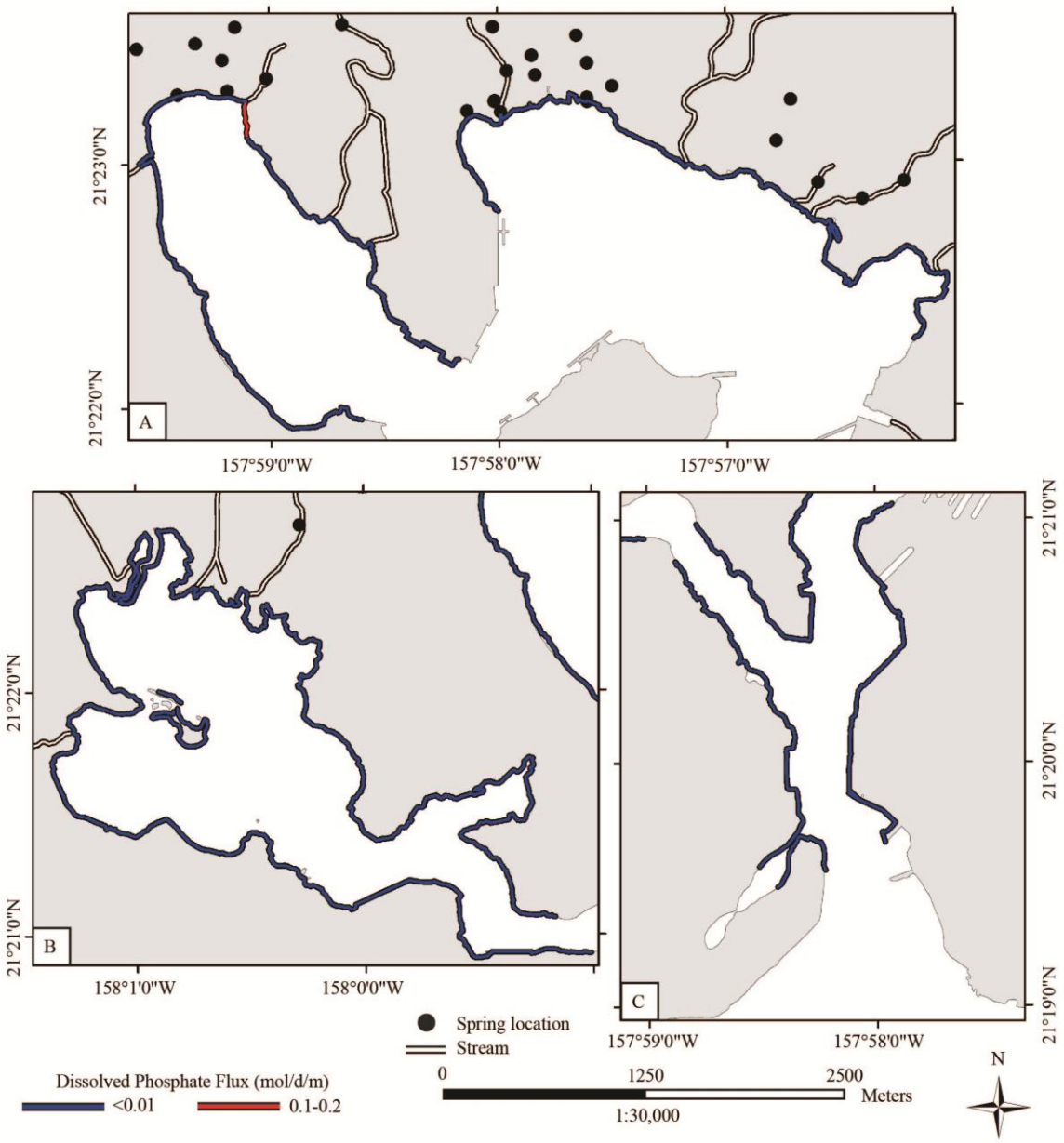


Figure 4.12: Dissolved PO_4^{3-} fluxes from recently discharged groundwater A) Middle Loch survey (left) collected on 8 January 2010 and East Loch survey (right) collected on 4 January 2010, B) West Loch survey collected on 2 January 2010, and C) mouth of Pearl Harbor survey collected on 10 January 2010. Nutrient concentrations are reported on a non-linear scale to better differentiate lower fluxes from higher fluxes. End-members are described in Table 4.3. Subaerial spring locations are after Stearns and Vaksvik (1935).

heterogeneity in the two groups likely stems from large-scale agricultural processes on the west side of the harbor and the more urbanized land-use on the east side of Pearl

Harbor. Land-use patterns have likely imparted spatial heterogeneity in nutrient distributions reaching harbor waters.

The nitrogen isotopic data are consistent with four water supply wells that have nitrate sourced either from soils or from nitrate in fertilizer and rain. Mixing between water sources is likely and better characterization of the various end-members is necessary for a more comprehensive assessment of the processes occurring in the harbor. Dissolved nutrient loads of silica, nitrate, and orthophosphate to the harbor vary by loch. Minimum estimates for nutrient contributions to the harbor by recently discharged groundwater include between 2,000 and 4,800 mol/d of dissolved nitrate, between 90 and 200 mol/d of orthophosphate, and between 16,800 and 32,500 mol/d of dissolved silica. The estimates of nutrient loads compare to other Hawaiian shorelines.

CHAPTER 5. CHLOROFLUOROCARBON APPARENT AGES OF GROUNDWATERS IN WESTERN HAWAII

Introduction

Geohydrological budgets (Shade, 1995a, 1995b; Shade and Nichols, 1996; Shade, 1997) suggest that nearly all groundwater recharge to Hawaiian aquifers eventually discharges to the sea. Investigations utilizing aerial thermal infrared surveying and ^{222}Rn mass balance models have definitively established that large quantities of groundwater discharge into Kona (western), Hawaii coastal zones as submarine groundwater discharge (SGD; Peterson et al., 2007; Johnson et al., 2008; Street et al., 2008; Peterson et al., 2009; Knee et al., 2010; Holleman, 2011). On the Kona Coast, SGD flux always exceeds river inputs since the area contains no perennial streams (Johnson et al., 2008).

Despite prolific groundwater discharge, little is known about aquifer geometries, aquifer recharge areas, groundwater residence times, and groundwater flow paths. This knowledge is beneficial for groundwater resource management since groundwater is utilized for almost all of the area's freshwater needs. This aquifer knowledge can also help assess changes of the groundwater resources through time. Modification of land-use practices and climatological patterns, for example, can affect dissolved nutrient concentrations and the quantity of groundwater in the aquifer. These impacts will influence SGD and, therefore, coastal ecosystems. Assessing SGD holistically, from the point of recharge to the impacts of its discharge on coastal ecosystems, is an important next step for areas with prolific SGD like the Kona Coast.

We conducted this study to test the hypothesis that chlorofluorocarbon (CFC) apparent age dating could be utilized in the relatively pristine Kona Coast to determine aquifer residence times. We also hypothesized that groundwater's oxygen and hydrogen isotopic composition could help locate potential recharge areas. If successful, our goal was to apply the residence time information to better understand the area’s SGD resources.

We present an integrated approach for using oxygen and hydrogen isotopic compositions of groundwater, $\delta^{18}O$/altitude gradients, and lapse rates to determine recharge elevations and water temperatures for groundwater samples. We demonstrate that apparent groundwater ages from chlorofluorocarbons (CFCs) can be established for

the relatively pristine aquifers of the Kona Coast. We also show that CFCs may be useful for distinguishing between groundwater from different aquifer systems.

Chlorofluorocarbons

Anthropogenic activities related to industrial, commercial, and household applications prompted manufacture and release of CFCs into the atmosphere, beginning in the 1930s (CFC-11 and CFC-12) and 1940s (CFC-113; Plummer and Busenberg, 2000; Happell et al., 2006; Plummer and Busenberg, 2006a). CFC use was terminated in the U.S. in 1995 (Cook et al., 2003) to curtail their deleterious effects on Earth's ozone layer. Each CFC compound had unique atmospheric concentrations through time because of their different production and release schedules. Since CFCs are stable and water soluble, they have been imbibed into Earth's hydrologic cycle through precipitation, infiltration, and groundwater recharge. CFC incorporation into the hydrologic cycle has closely followed their

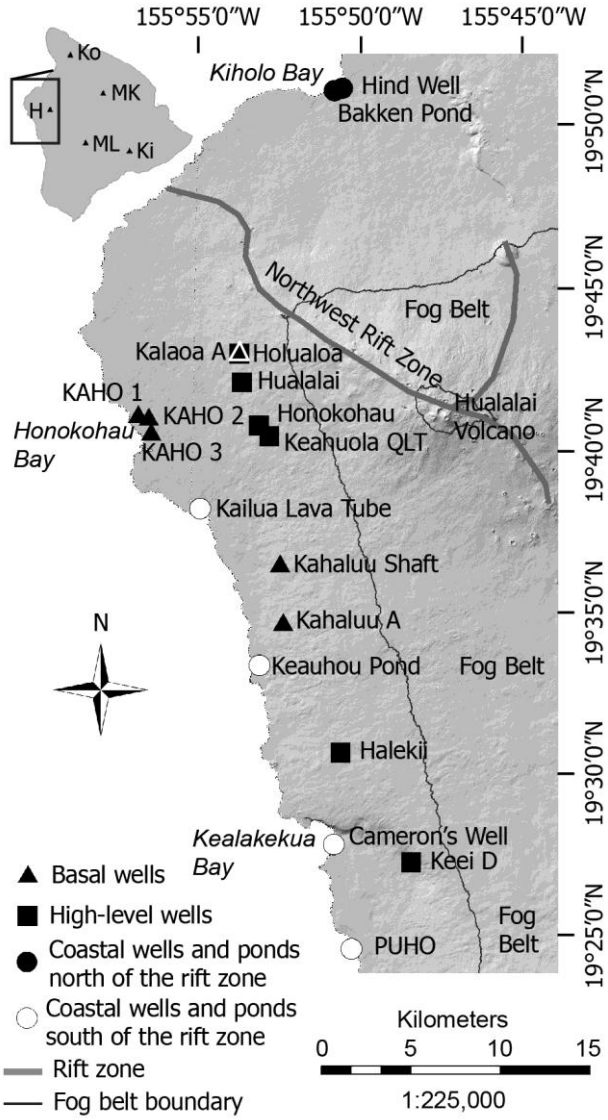


Figure 5.1: Sample locations delineated by basal wells, high-level wells, coastal wells and ponds north of Hualalai Volcano's northwest rift zone, and coastal wells and ponds south of the rift zone. Areas east of the lower fog belt boundary (975 m) lie within the fog belt zone. Hualalai's summit is above the upper fog belt boundary at 2,255 m. Kalaoa A is a basal well located within undistinguishable proximity, at the scale of this figure, to Holualoa and is outlined in white. Locations of the five mountains of Hawaii Island are shown in the inset map: Ko=Kohala, MK=Mauna Kea, H=Hualalai, ML=Mauna Loa, and Ki=Kilauea.

production, making CFCs excellent tracers and age determination tools for water younger than ~60 years (Plummer and Busenberg, 2000).

Materials and Methods

Subsurface Geology and Groundwater Occurrence of Western Hawaii

Hawaii Island is composed of numerous lava flows with variable thicknesses and composition. The permeability of the rocks is heterogeneous, but is high overall (Stearns and MacDonald, 1946). Aa lava clinker zones, voids between lava flow contacts, cooling joints normal to flow surfaces, and lava tubes contribute to the aquifer's high permeability (Stearns and MacDonald, 1946). Fractures and the permeability features mentioned above facilitate rapid groundwater transport through the aquifer (Oki et al., 1999). Peterson et al. (2007), Johnson et al. (2008), Street et al. (2008), and Peterson et al. (2009) have found that focused SGD points in numerous areas of this coastal zone result from these geological controls.

All Hawaiian volcanoes contain low permeability and low hydraulic conductivity dike complexes, which are typically associated with rift zones (Takasaki and Mink, 1985). The northwest rift zone of Hualalai Volcano bisects the study area (Figure 5.1). The rift zone consists of a 1.9 to 4.0 km wide and 21.1 km long subaerial portion as well as a submarine portion (not shown; Oki, 1999). Oki (1999) considers the rift zone a groundwater divide and no-flow boundary.

Dikes are believed to be most abundant within central rift zones, and are hydrologically important because they may extend vertically and laterally for thousands of meters (Oki et al., 1999). Dikes complexes compartmentalize the more permeable intruded rocks, creating isolated and slightly leaky groundwater reservoirs (Oki et al., 1999). Aquifers resulting from dike complexes are locally referred to as high-level aquifers. These aquifers typically have water levels >12 m above sea-level (Oki et al., 1999).

Fresh groundwater near dike-free coastal areas exists in a freshwater lens that floats on denser saltwater roughly according to Ghyben-Herzberg principles. Water in this aquifer is locally referred to as basal water, and generally has water levels <3 m above sea-level (Oki et al., 1999). It is this basal water that should discharge to coastal areas as SGD.

Climate of Western Hawaii

Coastal areas of Western Hawaii experience little seasonal temperature fluctuation with a mean annual temperature of 23.7°C. High temperatures vary between 26 and 29°C and low temperatures approach 21°C (Nullet and Sanderson, 1993). The tallest topographic feature in the study area is Hualalai volcano at 2,521 m. Hualalai's summit has a mean annual air temperature of 10.6°C.

On the Kona Coast, east-flowing sea breezes converge daily with west-flowing northeast trade winds. The trade winds pass between Mauna Kea and Mauna Loa (Figure 5.1 inset) as well as atop Mauna Loa's upper slopes. The wind pattern results in afternoon rainfall over the ocean that drifts toward the shore at night (Schroeder, 1993). Summer months experience a high frequency of late afternoon and early evening showers, making the Kona Coast the only region in the Hawaiian Islands where summer rainfall exceeds winter rainfall (Schroeder, 1993). Despite this unique rainfall pattern, the area resides in the rain-shadow of several large mountains and is classified as having a rain-shadow microclimate (Scholl et al., 2002).

A fog belt exists in the field area (Figure 5.1) predominantly between 975 and 2,255 m altitude (County of Hawai'i, 2003), but never extends lower than 760 m (Juvik and Ekern, 1978). When trade winds are forced to ascend mountainous areas, persistent mountain-hugging clouds form (Giambelluca and Sanderson, 1993). Often, formation of these clouds is limited by the base of a trade wind inversion, which commonly occurs between 1,500 and 3,000 m (Giambelluca and Schroeder, 1998). The inversion layer prevents large raindrops from forming and produces high ratios of fog to rain near the base of the inversion layer (Juvik and Ekern, 1978). Furthermore, fog droplets are scavenged by soil and vegetation in contact with the clouds. Some of this intercepted water contributes to aquifer recharge (Giambelluca and Sanderson, 1993).

Sample Collection

Water samples were collected between 28 July and 1 August 2008 from 18 locations (Table 5.1). Nine Hawaii Department of Water Supply drinking water wells (water supply wells), five brackish coastal ponds and wells, three coastal monitoring wells, and a lava tube that discharged to the bottom of Kailua Bay were sampled (Figure

Table 5.1: Sample name, location, collection date, water temperature (Temp), sample elevation (Elev), salinity (Sal), calculated recharge temperature, and calculated recharge elevation listed in order from north to south. All samples were collected in 2008.

Sample Name	Latitude (N)[a]	Longitude (W)[a]	Date Sam.	Temp (°C)	Elev (m)	Sal.	Recharge Temp. (°C)[b]	Recharge Elev. (m)[b]
Hind Well	19°51'14.5"	155°55'23.2"	7/28	22.0	3	1.9	11.2	2382
Bakken Pond	19°51'10.2"	155°55'38.3"	7/28	24.7	3	1.9	11.6	2285
Kalaoa A[c]	4358-01		7/29	23.3	548	0.1	14.3	1610
Holualoa[c]	3657-01		7/29	21.7	342	0.3	23.7/17.3[f]	-195/975[f]
Hualalai[c]	4258-03		7/29	21.7	513	0.1	11.7	2252
KAHO 1[d]	4161-01		8/1	20.0	7	5.2	22.6/17.3[g]	163/975[g]
KAHO 2[d]	4161-02		8/1	22.9	17	4.7	23.7/17.3[f]	-276/975[f]
KAHO 3[d]	4061-01		8/1	21.5	11	10.2	23.1/17.3[g]	98/975[g]
Honokohau[c]	4158-02		7/29	22.0	512	0.1	13.3	1854
Keahuola QLT-1[c]	4057-01		7/29	21.4	537	0.1	18.4	813
Kailua Lava Tube	19°38'22.9"	155°59'42.7"	8/2	19.5	-2	14.6	23.7/17.3[f]	-350/975[f]
Kahaluu Shaft[c]	3557-05		7/29	21.1	180	0.5	20.0	569
Kahaluu A[c]	3557-01		7/29	21.4	762	0.2	19.0	715
Keauhou Pond	19°33'39.0"	155°57'43.2"	8/1	24.1	6	4.3	22.6	171
Halekii[c]	3155-02		7/29	21.6	762	0.0	17.3	976
Cameron's Well	19°28'14.5"	155°55'14.6"	7/30	20.4	2	5.5	20.9/17.3[g]	431/975[g]
Keei D[c]	2753-03		7/29	18.9	411	0.1	19.6/17.3[g]	634/975[g]
PUHO[e]	19°25'4.7"	155°54'37.3"	7/30	22.4	8	7.3	23.7/17.3[f]	-813/975[f]

[a]Latitude and Longitude are relative to WGS84. Water supply well locations are withheld to comply with water resource protection guidelines; state designated well numbers are given instead of geographic location.

[b]For samples with two listed numbers, the first number corresponds to the calculated recharge temperature or elevation and the second number corresponds to the actual temperature or elevation used in the CFC models.

[c]Department of Water Supply drinking water well.

[d]Kaloko-Honokohau (KAHO) National Historical Park observation well.

[e]Puuhonua o Honaunau (PUHO) National Historical Park anchialine pool.

[f]Samples likely had a fog drip component, causing the calculated recharge elevation to plot at a lower elevation than the actual sample location. The lower elevation of the main fog belt (975 m) was used for the recharge altitude and 17.3°C was used for the recharge temperature in the CFC models (see Recharge Altitude and Temperature).

[g]Estimated recharge temperatures are warmer than sample temperatures at collection, suggesting a fog drip component. An elevation of 975 m was used for the recharge altitude and 17.3°C was used for the recharge temperature in the CFC models (see Recharge Altitude and Temperature).

5.1). All wells were purged before sample collection. Existing pumps installed in water supply wells were utilized to obtain samples from three basal and six high-level wells. Basal wells extended no greater than 15 m below sea-level. Open intervals in the wells ranged from 2 to 137 m. The three monitoring wells extended no greater than 5 m below sea-level and were sampled using a portable stainless-steel Fultz Pump equipped with

polyethylene tubing. Polyethylene tubing is traditionally considered unsuitable for CFC sampling because it releases low concentrations of CFC-11 and CFC-113 into the sample (Cook et al., 2006). We will discuss the implications of sampling with this tubing in the results and discussion sections. Coastal well and pond samples were collected using a peristaltic pump (geopump by geotech, Denver, CO) equipped with Viton tubing (Barnant MasterFlex, Thermo Scientific). Samples from these locations were collected by placing the end of the tubing as close as possible to spring vents or the bottom of the well or pond. Temperature and salinity measurements were taken at the time of sample collection using a multiparameter sonde (YSI Model 63; YSI Inc., Yellow Springs, OH) accurate to within ±1% for both temperature and salinity. Geographic position was determined using a hand-held GPS receiver (Garmin eTrex, Olathe, KS) with 15 m accuracy.

Oxygen and Hydrogen Isotopic Analysis of Water

Samples for oxygen and hydrogen isotopic analysis of water were collected in 20 mL glass vials (MicroLiter Analytical Supplies, Inc. #20-2300), filled from the bottom up, and sealed underwater with a rubber septum (MicroLiter Analytical Supplies, Inc. #20-0025) and aluminum crimp-top seal (MicroLiter Analytical Supplies, Inc. #20-0000A). At least three volumes of water flowed through each vial prior to sealing. Samples were analyzed at the University of Utah Stable Isotope Ratio Facility for Environmental Research (SIRFER). All oxygen and hydrogen isotopic data are expressed in ‰ notation relative to Vienna Standard Mean Ocean Water (VSMOW) on a normalized scale in which δ^2H of standard light Arctic precipitation (SLAP) water is -428‰ and $\delta^{18}O$ of SLAP water is -55.5‰.

Establishing Recharge Altitude

Recharge elevations were estimated using the East Maui rain-shadow $\delta^{18}O$/altitude gradient from Scholl et al. (2002):

$$\delta^{18}O = -0.00123m - 4.42 \quad (5.1)$$

where $\delta^{18}O$ is the measured oxygen isotopic composition of water and m is the calculated recharge altitude.

Salinity measurements were used to correct brackish samples for seawater content by employing simple mass balance rules. For this correction, brackish coastal wells and ponds were assumed to be a mixture of fresh meteoric water (salinity = 0) and seawater (salinity = 35 and $\delta^{18}O$ = +0.2‰ relative to SMOW; Epstein and Mayeda, 1953).

Establishing Recharge Temperature

We calculated recharge temperatures using well-established lapse rates for the Hawaiian Islands (Nullet and Sanderson, 1993). Below 1,100 m, an average lapse rate of 7.3°C/1,000 m was applicable, while above 1,200 m, an average lapse rate of 4.1°C/1,000 m was relevant (Nullet and Sanderson, 1993). For each sample, we used the recharge altitude calculated from the $\delta^{18}O$/altitude gradient to derive a recharge temperature based on the lapse rate equation above. For all lapse rate calculations, we used a mean annual temperature of 23.7°C for sea-level.

Chlorofluorocarbon Analysis of Water

Samples for CFC analysis were collected in 125 mL boston round glass bottles (Wheaton #217112) in triplicate. All bottles were filled from the bottom up, and at least three volumes of water overflowed the bottle before each sample was sealed under water using an aluminum foil–lined screw cap (Scientific Specialties #A69522). Bottles were inspected for large air bubbles after filling. If no large air bubbles were present, samples were double sealed using electrical tape and stored upside-down until analysis. Samples were analyzed at the University of Miami Rosenstiel School of Marine and Atmospheric Science (RSMAS) using purge-and-trap gas chromatography with electron capture detection (Bullister and Weiss, 1983; Happell et al., 1996), approximately one month after sample collection. CFC concentrations are reported on the Scripps Institution of Oceanography 1998 (SIO 1998) absolute calibration scale (Prinn et al., 2000). The detection limit for CFC-12 and CFC-113 was 0.010 pmol/kg and the limit for CFC-11 was 0.005 pmol/kg. Precision for all three CFCs was 2% or less. All CFC ages are apparent ages, but we use age for brevity. Age indicates the time elapsed since isolation of recharged water from the atmosphere. We also expressed our results as recharge years. As with the age, the recharge year indicated when the water was isolated from the atmosphere and reached the water table.

Establishing Chlorofluorocarbon Apparent Ages

Individual concentrations of CFC-11, CFC-12, and CFC-113 and ratios of CFC-12/CFC-11, CFC-113/CFC-12 and CFC-113/CFC-11 were used to calculate groundwater ages using well-established formulas and standard techniques described by Plummer and Busenberg (2006b). Briefly, the concentration of a particular CFC, C_i, dissolved in water and in equilibrium with air is proportional to the partial pressure, p_i, of the gas in the air:

$$C_i = K_H p_i \tag{5.2}$$

where K_H is the Henry's Law constant for C_i (Plummer et al., 2006a). All brackish samples were corrected for the salinity dependence of K_H (Plummer and Busenberg, 2006b). The p_i for C_i is defined by:

$$p_i = x_i(P-p_{H2O}) \tag{5.3}$$

where x_i is the dry air mole fraction of C_i (x_i <<1), the total atmospheric pressure is P, and the water vapor pressure is p_{H2O} (Warner and Weiss, 1985; Plummer et al., 2006a). The dry air mole fraction was then replaced with a dry air mixing ratio, volume per volume. The dry air mixing ratio of a particular CFC was compared to the appropriate historical atmospheric mixing ratio to determine a recharge year (Plummer et al., 2006a).

CFC ages were also determined from measured concentrations of two CFCs by well-established time-dependent atmospheric CFC concentration ratios. Briefly, if a fraction x of CFC-free water mixes with a fraction $(1-x)$ of CFC-containing water, then the concentrations of the CFCs, for example CFC-113 and CFC-12, are established by simple mass balance rules using:

$$[CFC\text{-}113]_{mixture} = (1-x)[CFC\text{-}113]_y \tag{5.4}$$

and

$$[CFC\text{-}12]_{mixture} = (1-x)[CFC\text{-}12]_y \tag{5.5}$$

where $[CFC\text{-}113]_{mixture}$ and $[CFC\text{-}12]_{mixture}$ are CFC concentrations in the water (determined from sample analysis), and $[CFC\text{-}113]_y$ and $[CFC\text{-}12]_y$ are concentrations of the CFC-containing fraction. The apparent age of the younger, CFC-containing water was determined by:

$$[CFC\text{-}113]_{\text{mixture}} / [CFC\text{-}12]_{mixture} = [CFC\text{-}113]_y / [CFC\text{-}12]_y \tag{5.6}$$

Once this calculation was complete, a mixing ratio was calculated by:

$$[CFC\text{-}113]_{mixture} / [CFC\text{-}113]_y = [CFC\text{-}12]_{mixture} / [CFC\text{-}12]_y \quad (5.7)$$

A similar process was followed for CFC-113/11 and CFC-11/12 ratios.

Table 5.2: Hydrogen and oxygen isotopic compositions of water, listed in order from north to south.

Sample Name	δ^2H of water (‰)	δ^{18}O of water (‰)
Hind Well	-46.4±0.7	-6.9±0.18
Bakken Pond	-45.6±0.0	-6.8±0.05
Kalaoa A[a]	-39.4±0.6	-6.4±0.24
Holualoa[a]	-19.0±0.4	-4.1±0.20
Hualalai[a]	-45.1±0.1	-7.2±0.20
KAHO 1[b]	-20.4±0.1	-3.9±0.08
KAHO 2[b]	-18.5±1.0	-3.5±0.14
KAHO 3[b]	-17.9±0.2	-3.2±0.04
Honokohau[a]	-41.9±0.7	-6.7±0.02
KeahuolaQLT-1[a]	-29.7±0.2	-5.4±0.00
Kailua Lava Tube	-11.7±0.0	-2.3±0.09
Kahaluu Shaft[a]	-28.0±0.6	-5.1±0.18
Kahaluu A[a]	-28.2±1.0	-5.3±0.19
Keauhou Pond	-20.8±0.0	-4.1±0.20
Halekii[a]	-32.8±0.9	-5.6±0.21
Cameron's Well	-23.5±0.5	-4.2±0.18
Keei D[a]	-28.3±0.8	-5.1±0.07
PUHO[c]	-12.5±1.5	-2.7±0.19

[a]Department of Water Supply drinking water well.
[b]Kaloko-Honokohau (KAHO) National Historical Park observation well.
[c]Puuhonua o Honaunau (PUHO) National Historical Park anchialine pool.

Results and Discussion

Recharge Altitudes

Groundwater recharge elevations and approximate recharge areas can be established from δ^{18}O/altitude gradients in field areas where sharp contrasts in elevation exist (Scholl et al., 1995). The oxygen isotopic composition of the water samples in this study varied from -7.2 to -2.3‰ while hydrogen isotopic composition varied from -46.4

to -11.7‰ (Table 5.2). The 5‰ variation in ^{18}O and the 35‰ variation in ^{2}H support the use of a $\delta^{18}O$/altitude gradient to determine recharge elevations. Calibrating the area's $\delta^{18}O$/altitude gradient required knowledge of the local meteoric water line (LMWL). A precisely defined LMWL for the Kona Coast, unfortunately, has not yet been established. Trade wind microclimates in the Hawaiian Islands do exert strong influences on $\delta^{18}O$/altitude gradients (Scholl et al., 2002). Trade wind microclimates follow predictable and similar patterns within and between the islands (Scholl et al., 2002). Additionally, similar temperature/altitude gradients along the similar facing slopes of west Hawaii and west Maui suggest that use of the calibrated $\delta^{18}O$/altitude gradient (eq. 5.1) could be applied to samples from the Kona Coast. We refer to all of our calculated recharge elevations (Table 5.1) as approximate recharge altitudes because of this assumption. We acknowledge that eq. 5.1 may over- or under-estimate recharge altitudes

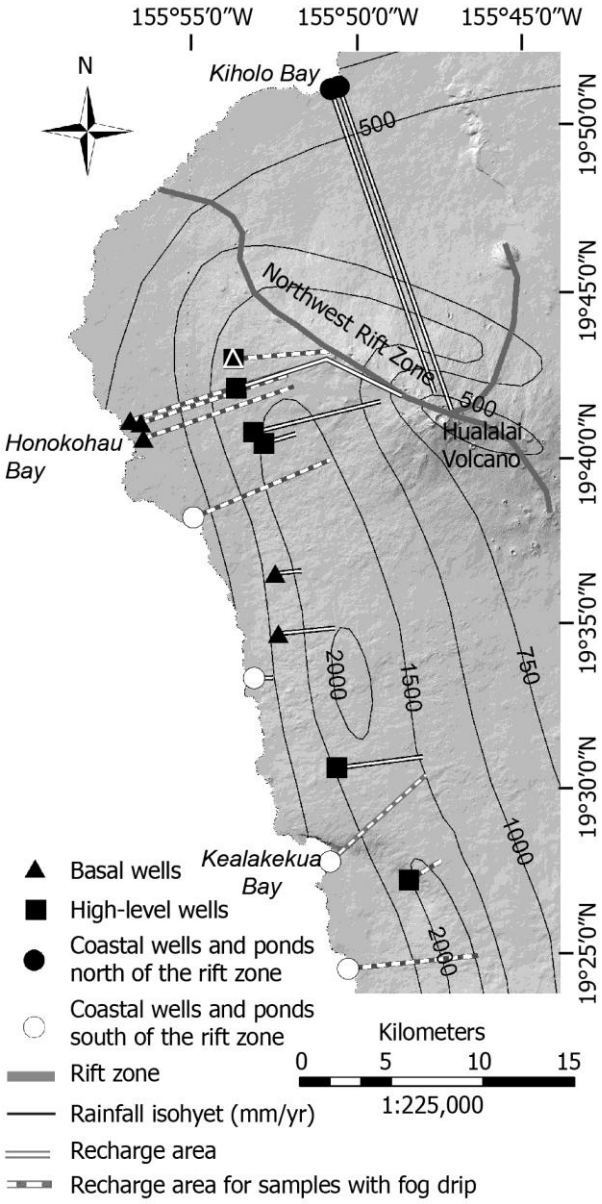


Figure 5.2: Recharge trajectories are shown as either solid white lines or dashed lines. Trajectories are drawn perpendicular to elevation contours (not shown). Samples with dashed lines likely have fog drip contributions. Trajectories for samples with fog drip are drawn to 975 m, which corresponds to the lowest elevation of the main fog belt zone. Rainfall isohyets (mm/y) are contoured on the map, showing areas of minimum and maximum precipitation. Rainfall data is available at: http://hawaii.gov/dbedt/gis/download.htm.

by several hundred meters because of the unique rainfall pattern along the Kona Coast. We have evaluated the limitations of applying eq. 5.1 to the Kona Coast by conducting a sensitivity analysis on our CFC results (see discussion below).

Approximate recharge elevations were drawn as straight line trajectories (Figure 5.2) from each sample location normal to elevation contours. Elevation contours above the sample from Hualalai necessitated a kink in the recharge trajectory on the steepest part of the mountain. This slope-normal method provided inferred recharge areas that were in good agreement with rift zone no-flow boundaries. The trajectories also indicated that most samples recharged from areas receiving maximum precipitation (Figure 5.2).

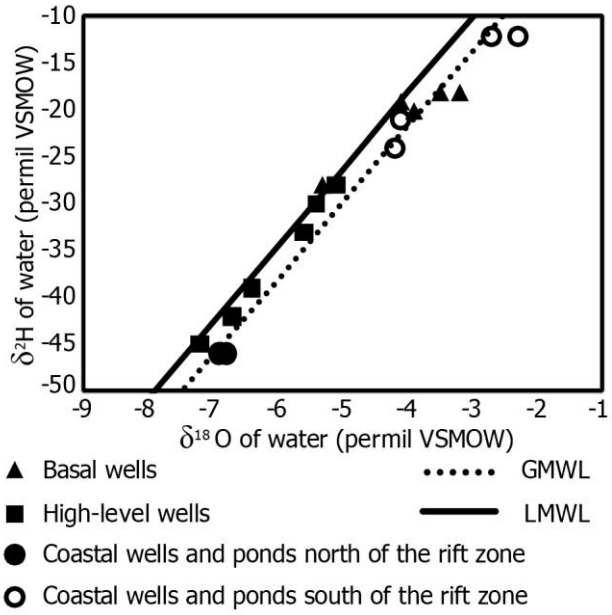


Figure 5.3: δ^2H versus $\delta^{18}O$ of water samples (uncorrected for salinity). Water supply (high-level and basal) wells plot on or just below the East Maui local meteoric water line (solid line). Error bars on the analyses are approximately the size of the sample symbols and are omitted for clarity. The global meteoric water line is shown for comparison (dotted line).

Measurements of fog drip from Mauna Loa by Juvik and Ekern (1978) and from Maui by Scholl et al. (2002) demonstrated that fog drip was a substantial component of recharging water in mountainous areas. Furthermore, Engott (2011) estimated that for Hualalai, the ratio of fog interception to rainfall was 0.3 above 1,500 m and 0.5 above 2,100 m. Fog drip contributions will cause approximate recharge altitudes to plot geographically down-slope of actual sample locations because eq. 5.1 was calibrated for the isotopic composition of precipitation. This geographic misalignment occurs because fog is isotopically enriched compared to precipitation. For example, Scholl et al. (2002) found that fog from the East Maui rain-shadow area was isotopically enriched in ^{18}O by 3‰ and ^{2}H by 21‰, compared to volume-weighted average precipitation at similar

altitudes. The approximate recharge altitudes for Holualoa, PUHO, KAHO 2, and Kailua Lava Tube (Table 5.2), were impossibly low, plotting below sea-level. This result suggests that these samples likely had fog drip components.

Oxygen and hydrogen isotopic values of samples from Kona plotted on or slightly below the East Maui rain-shadow LMWL (Figure 5.3). Previous findings by Scholl et al. (2002) indicated that samples from the East Maui rain-shadow area were slightly enriched in ^{18}O compared to Hawaii rain-shadow samples. Results from this study indicated similar enrichment (<0.25‰). Brackish coastal wells and ponds plotted farther off the LMWL than freshwater samples. Salinity-corrected data did not show any evaporation trends.

Recharge Temperatures

On Oahu, recharging water temperatures closely track atmospheric temperatures (Mink, 1964). Since the Hawaiian Islands have similar climates, we assumed a similar relationship existed on Hawaii. Thus, we assumed that calculated atmospheric temperatures for each recharge altitude should have been similar to recharging water temperatures.

Calculated sample temperatures from the lapse rate equations are shown in Table 1. For Keei D, KAHO 1, KAHO 3, and Cameron's Well, estimated recharge temperatures were warmer than actual temperatures during sample collection. This relationship also held true for Holualoa, PUHO, KAHO 2, and Kailua Lava Tube mentioned above. This relationship was opposite of Mink's (1964) observation that Hawaiian groundwater warmed as it flowed from recharge to discharge areas. Mink (1964) described warming by absorption of heat resulting from resistance to flow. Furthermore, water recharging down-slope should be warmer than water recharging up-slope. The field area also likely has remnant heat from historic volcanic activity. The reverse relationship for the samples mentioned above may indicate that either our calculated recharge altitudes were too low, or that the samples contained a fog drip component. If our recharge altitudes were too low, then the difference between the sample altitude and the recharge elevation should have been fairly consistent for all samples. This difference varied from 293 to 537 m, with an average value of 397±105 m for the samples with impossibly low approximate recharge altitudes. This result indicates

that eq. 1 may underestimate recharge altitudes in the Kona area by roughly 400 m. We believe that the 293 to 537 m range is not tight enough to fully substantiate this hypothesis. Furthermore, samples from Hind Well, Bakken Pond, and Hualalai would have had to recharge above the summit of Hualalai (2,521 m). Although, as we describe below, this may have been the case for the Hind Well and Bakken Pond samples, the geographic location of the Hualalai sample dictates that it must have recharged from the slopes of Hualalai Mountain. We, therefore, prefer the fog-drip contribution hypothesis. For all samples that likely contained fog drip, the lower elevation of the main fog belt (975 m), which roughly corresponded to maximum precipitation zones, was designated as the recharge altitude (Table 5.1). The corresponding calculated lapse rate temperature of 17.3°C was designated for the recharge temperature (Table 5.1).

Basal wells south of Keahuola QLT-1 recharged from ~1.4 to 3.1 km upslope of the sampling locations. High-level wells similarly recharged from ~2.1 to 4.7 km upslope of well locations. Three high-level wells north of Keahuola QLT-1 recharged along the flanks of Hualalai Volcano from 5.3 to 9.4 km upslope of the sample locations. The three southern-most coastal wells and ponds recharged predominantly within the main precipitation belt, from 1.0 to 8.1 km upslope of their geographic locations. The KAHO samples recharged from within the fog belt, 8.7 to 9.0 km upslope of the monitoring locations. Coastal samples north of the rift zone may have recharged from the upper flanks of Hualalai Volcano (17.6 to 18.7 km upslope), as shown in Figure 5.3. The recharge trajectory of these samples intersected the fog belt, although the isotopic and temperature data did not indicate a fog drip component. Since fog drip biases recharge elevations low, these samples may have alternately recharged from the lower flanks of Mauna Kea or Mauna Loa (Figure 5.1 inset). The recharge trajectories from Hualalai and Honokohau intersected the fog belt as well. The isotopic data from these samples also did not suggest the presence of a fog drip component. We hypothesize that the calculated recharge elevations from these samples may also be biased low.

Recharge trajectories for all KAHO samples (basal samples) showed water recharge from areas geographically above the four high-level wells on the flanks of Hualalai Volcano. Although the geographic locations of the high-level aquifers were not strictly defined in the field area, long recharge trajectories for the Kailua Lava Tube

sample, Cameron's well near Kealakekua Bay, and the anchialine pool at PUHO may have also traversed the high-level/basal aquifer boundary. These relationships provide evidence that high-level water recharged the basal lens along the entire field area.

Most samples likely had a fog drip component, as suggested by the oxygen and hydrogen isotopic data, or had recharge trajectories that traversed the fog belt. Fog drip probably contributed to aquifer recharge and requires further assessment regarding its isotopic signature and its importance for aquifer recharge, relative to precipitation inputs.

Chlorofluorocarbons and the Unsaturated Zone

CFC water-based ages depend on equilibrium partitioning between recharging groundwater and the partial pressures of the three CFCs in the atmosphere when recharge occurs (Katz, 2004). Successful interpretation of CFC data, therefore, requires knowledge of each sample's recharge elevation and temperature, which were calculated (Table 5.1) using oxygen and hydrogen isotopic measurements, a $\delta^{18}O$/altitude gradient, and well-established lapse rates for the Hawaiian Islands.

Implicit in this method is the assumption that CFC concentrations of the recharging water (at the top of the water table) were in equilibrium with atmospheric concentrations at the time of recharge (Busenberg and Plummer, 1992; Plummer and Busenberg, 2000; Plummer et al., 2000; Katz et al., 2001). This assumption necessitated fast gas exchange between tropospheric air and unsaturated zone air. Several circumstances likely facilitated fast gas exchange through the unsaturated zone along the Kona Coast: (1) highly permeable lava flows, (2) a complex network of fractures and lava tubes, (3) high recharge rates (2,000 mm/yr; Cook et al., 2006), (4) barometric pumping of air, and (5) thermally induced topographic wind driving gas transport through the unsaturated zone (Nilson et al., 1991). If our assumption of rapid gas exchange through the unsaturated zone was invalid, then groundwater ages would indicate equilibrium with old air (Plummer et al., 2006c), but not the actual time of recharge.

The Piston Flow Model for Chlorofluorocarbons

The piston flow model is commonly used for water age interpretation of CFC data. This model accounts for water of nearly uniform age that is approximated by flow through a pipe (Plummer and Busenberg, 2006b). The water does not mix

Table 5.3: Sample CFC-11, CFC-12, and CFC-113 water concentrations and CFC-11, CFC-12, and CFC-113 equivalent atmospheric concentrations, listed in order from north to south.

Sample Name	Water Concentration (pmol/kg)[a]			Equivalent Atmospheric Concentration (pmol/kg)[b]		
	CFC-11	CFC-12	CFC-113	CFC-11	CFC-12	CFC-113
Hind Well	1.110	0.701	0.073	88.2	203.4	19.8
	1.186	0.683	0.083	94.3	198.1	22.6
	1.168	0.696	0.083	92.8	201.9	22.6
Bakken Pond	1.617	0.984	0.128	128.4	285.5	34.8
	1.564	0.957	0.155	124.3	277.8	42.1
	1.817	1.110	0.131	144.3	322.1	35.6
Kalaoa A	0.161	-0.002	-0.001	12.8	-0.6	-0.3
	0.137	0.003	-0.004	10.8	0.9	-1.1
	0.157	0.004	0.004	12.5	1.2	1.1
Holualoa	0.341	0.138	0.016	27.1	40.2	4.2
	0.303	0.149	0.012	24.1	43.1	3.4
	0.725	0.172	0.014	57.6	49.9	3.7
Hualalai	0.239	0.064	0.009	19.0	18.6	2.5
	0.293	0.062	0.012	23.2	18.0	3.4
	0.231	0.059	0.016	18.3	17.1	4.2
KAHO 1	2.880	1.579	0.196	228.8	458.2	53.2
	2.850	1.579	0.228	226.5	458.2	61.9
	2.827	1.598	0.245	224.6	463.8	66.5
KAHO 2	2.857	1.467	0.206	227.0	425.7	56.0
	2.796	1.460	0.228	222.1	423.7	61.9
	2.819	1.406	0.217	224.0	408.0	58.8
KAHO 3	2.035	1.005	0.096	161.7	291.7	26.0
	2.083	0.990	0.130	165.5	287.3	35.4
	2.025	1.031	0.143	160.9	299.1	38.7
Honokohau	0.268	0.043	-0.001	21.3	12.4	-0.3
	0.243	0.046	0.004	19.3	13.3	1.1
	0.190	0.047	0.004	15.1	13.6	1.1
Keahuola QLT-1	0.690	0.090	0.054	54.8	26.0	14.7
	0.444	0.072	0.247	35.3	21.0	67.0
	0.206	0.055	0.092	16.4	15.9	24.9
Kailua Lava Tube	1.972	0.677	0.040	156.7	196.3	10.7
	1.982	0.678	0.058	157.5	196.6	15.8
	4.632	0.671	0.067	368.0	194.9	18.1
Kahaluu Shaft	0.974	0.644	0.082	77.4	186.9	22.3
	0.948	0.670	0.078	75.4	194.6	21.2
	0.892	0.624	0.083	70.9	181.0	22.6
Kahaluu A	0.650	0.497	0.045	51.6	144.4	12.2
	0.701	0.509	0.043	55.7	147.6	11.6
	0.665	0.497	0.056	52.8	144.4	15.3

Table 5.3: (Continued) Sample CFC-11, CFC-12, and CFC-113 water concentrations and CFC-11, CFC-12, and CFC-113 equivalent atmospheric concentrations, listed in order from north to south.

Sample Name	Water Concentration (pmol/kg)[a]			Equivalent Atmospheric Concentration (pmol/kg)[b]		
	CFC-11	CFC-12	CFC-113	CFC-11	CFC-12	CFC-113
Keauhou Pond	2.639	1.352	0.178	209.7	392.4	48.4
	2.628	1.381	0.180	208.8	400.9	48.9
	2.679	1.368	0.187	212.9	397.1	50.9
Halekii	0.618	0.209	0.014	49.1	60.5	3.7
	0.440	0.197	0.011	35.0	57.3	3.1
	0.395	0.192	0.008	31.4	55.8	2.3
Cameron's Well	2.394	1.340	0.192	190.2	388.8	52.0
	2.323	1.415	0.212	184.6	410.7	57.7
	2.341	1.399	0.218	186.0	405.9	59.1
Keei D	0.955	0.503	0.048	75.8	145.8	13.0
	1.027	0.519	0.054	81.6	150.6	14.7
	0.887	0.520	0.058	70.5	150.9	15.8
PUHO	2.378	1.445	0.161	189.0	419.2	43.8
	2.372	1.414	0.212	188.5	410.4	57.7
	2.402	1.427	0.215	190.8	414.2	58.5

[a]All samples were analyzed in triplicate. Water concentration is corrected for stripping efficiency.

[b]Equivalent atmospheric concentration calculated from measured water concentration and solubility functions found in Warner and Weiss (1985) and Bu and Warner (1995).

during transit from the recharge location to the discharge location (Plummer and Busenberg, 2006b). Steady-state conditions, one water source per sample, water travel at a mean velocity (Happell et al., 2006), negligible hydrodynamic dispersion, and negligible molecular diffusion (Katz et al., 2001) are other assumptions for this model. Relatively tight age agreement (within ~6 years; tighter is better) of all three CFC species suggests that the sample can be explained as being from one water source of uniform age.

Measured concentrations of the three CFCs in water as well as their equivalent atmospheric concentrations used for the piston flow model are given in Table 5.3. Figure 5.4 shows results for the piston flow model. The 5.5-year range for Halekii and the 6.0-year range for Keei D suggested that these samples were composed of water from one source that recharged between 1963 and 1968.5 for Halekii and between 1971 and 1977 for Keei D.

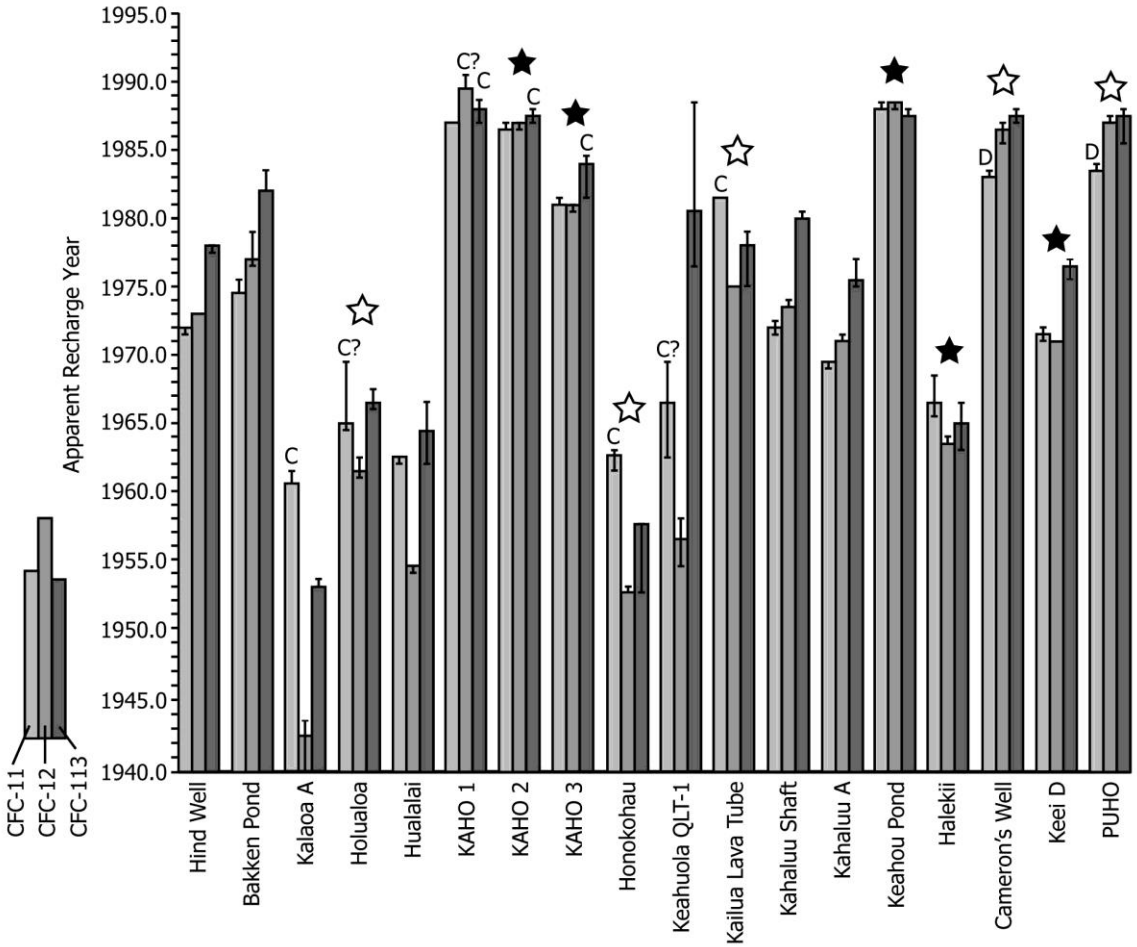


Figure 5.4: Piston flow model results for CFC-11, CFC-12, and CFC-113 delineated by sample. Each bar's height represents the median recharge year of the triplicate analysis. Lower and upper ends of the uncertainty bars represent minimum and maximum recharge years given by the triplicate analysis. CFC data lacking uncertainty bars yield concordant recharge years for all analyses of the sample. A (C) above a bar means sample contamination, a (C?) means potential sample contamination, and a (D) indicates sample degradation with the CFC represented by the bar. A black star above a sample indicates that the model can explain the data, whereas a white star indicates that the model can explain the data with additional assumptions (see discussion).

The more recent recharge year given by CFC-11 and CFC-12 than by CFC-113 (Figure 5.4) indicates that Honokohau, Kalaoa A, and potentially Holualoa, and Keahuola QLT-1 were contaminated with CFC-11. Ignoring CFC-11 contamination for these samples, the piston flow model for Holualoa and Honokohau gave recharge years between 1961 and 1967.5 and 1952.5 to 1957.5, respectively (Figure 5.4).

Relatively tight CFC-triplet agreement for Halekii, Keei D, and potentially Holualoa and Honokohau suggests that the high-level water in these wells could have been biased toward more permeable layers of the aquifer. Alternately, the part of the aquifers sampled could have contained consistently-aged water. We evaluated CFC ages of these samples by estimating horizontal hydraulic conductivity and comparing the conductivity results to published values. Meyer and Souza (1995) estimated that dike complexes have horizontal hydraulic conductivities ranging from 0.003 to 0.03 m/d. Marginal dike zones are transitional areas between dike complexes and dike-free areas. Marginal dike zones have estimated horizontal hydraulic conductivities ranging from 0.15 to 3.05 m/d (Oki, 1999). Lava flows in dike-free areas, away from rift zones, have the greatest estimated horizontal hydraulic conductivities (152 to 10,330 m/d; Kanehiro and Peterson, 1977; Nance, 1991; Oki et al., 1999). We used the recharge year from the piston flow model and the straight line travel distance determined from the recharge trajectory to estimate maximum horizontal hydraulic conductivities by the Pythagorean Theorem. This calculation assumed no tortuosity in the flow path. The aquifer above Holualoa had a maximum horizontal hydraulic conductivity of 0.3 m/d (calculated from straight trajectory; not kinked trajectory). The maximum horizontal hydraulic conductivity for Honokohau was 0.4 m/d, Halekii was 0.3 m/d, and Keei D was 0.2 m/d. Calculated hydraulic conductivities for these samples were comparable to the range given for marginal-dike zone areas (0.15 to 3.05 m/d; Oki, 1999). These maximum horizontal hydraulic conductivities were all comparable and were reasonable given that the exact locations of dike zones and marginal dike zones are unknown.

Water collected from Hawaii Department of Water Supply wells was sampled over large open intervals. The complex and imprecisely known geometry of aquifer systems in the area (Oki, 1999) make it unsurprising that the piston flow model only worked for several of the high-level samples.

All KAHO samples were collected using polyethylene tubing. This tubing contributed noticeable amounts of CFC-113 contamination. The CFC-11 and CFC-12 recharge years are indistinguishable from each other indicating that CFC-11 contamination was not detectable within the precision of the analysis (Figure 5.4).

Most coastal wells and ponds had recharge years in the 1970s and 1980s (Figure 5.4). The pond near Keauhou, KAHO 2, and KAHO 3 had extremely good recharge year agreement (late 1980s for all). Cameron's Well and the PUHO sample may have experienced CFC-11 degradation. Using only unmodified CFCs for these samples, recharge years ranged from 1985.5 to 1988.0. The Kailua Lava Tube sample was modeled by the piston flow model, providing that it had CFC-11 contamination. If contaminated by CFRC-11, the water for this sample recharged to the aquifer between 1975.0 and 1979.

Maximum horizontal hydraulic conductivities for these samples were 1.1 and 1.0 m/d for KAHO 2 and KAHO 3, respectively, 0.1 m/d for Keauhou Pond, 0.7 m/d for Kailua Lava Tube, 0.8 m/d for Cameron's Well, and 0.9 m/d for PUHO. Except for Keauhou Pond, maximum horizontal hydraulic conductivities were greater than for the water supply wells. These results suggest that the coastal samples flowed through more permeable and less dike-compartmentalized aquifers, compared to the water supply wells. The calculated hydraulic conductivities, however, do not approach estimates for dike-free areas of 152 to 10,330 m/d (Kanehiro and Peterson, 1977; Nance, 1991; Oki et al., 1999).

Bakken Pond and Hind Well had similar recharge altitudes that traversed the fog belt. The estimated recharge temperatures were too low for these samples to be modeled using the Piston Flow model. An alternate explanation of the data required contamination by CFC-113 and degradation of CFC-11 (Plummer et al., 2006c) to apply the piston flow model. These results strongly suggest that the samples could not be from water of uniform age.

Water recharged at high altitudes had lower dissolved CFC concentrations (caused by lower barometric pressure) than water recharged at lower altitudes. Uncertainties on recharge altitudes can cause large uncertainties on groundwater ages. Since our samples recharged at higher altitudes in this mountainous region, large over- or under-estimations (±1,000 m) in recharge altitude would bias the age toward: (1) older values if elevation was underestimated or (2) younger values if elevation was overestimated. Large elevation uncertainties were unlikely for many locations, but may have been possible for samples with fog drip. To assess the uncertainties on samples with likely fog drip, we performed a sensitivity analysis on all calculated recharge dates.

Our analysis included temperature and elevation ranges from 11.7°C at 2,255 m (top of fog belt) to the elevation and corresponding temperature at each sample's collection location. Calculated recharge ages were accurate two within ten years for the piston flow model. This sensitivity analysis performed over the large altitude gradient also incorporated the uncertainty associated with use of eq. 1 to calculate recharge altitudes.

When the CFC-113 recharge date is more recent than the CFC-11 and CFC-12 recharge date, mixing of two water sources is qualitatively demonstrated (Plummer et al., 2006b). This pattern exists for Bakken Pond, Hind Well, Holualoa, Hualalai, Keahuola QLT-1, Kahaluu Shaft, Kahaluu A, Cameron's Well, Keei D, and PUHO. Of these samples, Cameron's Well, Keei D, and PUHO were successfully modeled using the piston flow model (Figure 5.4).

The Binary Mixing Model for Chlorofluorocarbons

The binary mixing model used a simple mixture of two end-member waters, where one recently recharged and the other recharged in the more distant past (Happell et al., 2006). Theoretically, the end-members can be any age (Happell et al., 2006). Our model assumed one end-member recharged prior to 1940 (free of CFCs), and the other recharged since the 1940s (contains CFCs). Ratios of one CFC concentration to another (CFC 113/12, CFC 113/11, and CFC 11/12) were used to differentiate groundwater ages for this model. Binary mixing models best explain the data if all three CFC ratios have similar fractions of recently recharged water (Plummer et al., 2006b). Since the recharge year is nearly independent of the mixing ratio for the two water components, the age of the CFC-containing fraction is represented by the concordance of its three CFC ratios (rather than by absolute abundances), provided that the old water is CFC-free (Plummer et al., 2006b). Within this approach, ratio-based ages are not calculable when: (1) the apparent age is not contained within the applicable dating range for a particular CFC ratio, (2) the CFC ratio of a water sample is greater than the largest ratio recorded in the atmosphere, and (3) the CFC ratio of a water sample is smaller than the smallest CFC ratio recorded in the atmosphere. For our results, such non-calculable ratio-based ages are noted as NP (not possible) in Table 5.4. For instances where CFC-11 contamination occurred, fractions of young water were typically calculated using CFC113/12 ratios.

Table 5.4: Sample names, apparent CFC recharge years for the piston flow and binary mixing models. Calculated fractions of young water are given as well as the CFC ratio used to calculate the fractions for all samples, listed in order from north to south.

Sample Name	Piston Flow Model Recharge Date			Binary Mixing Model Ratio Based Recharge Year			Young Fraction in Mixture			Ratio
	CFC-11	CFC-12	CFC-113	CFC-11/12	CFC-113/12	CFC-113/11	CFC-11	CFC-12	CFC-113	
Hind Well	1971.5	1973.0	1977.5	NP	1982.5	1985.5	41	53	54	113/12
Hind Well	1972.0	1973.0	1978.0	NP	1984.5	1986.5	40	47	48	113/12
Hind Well	1972.0	1973.0	1978.0	NP	1982.0	1987.0	40	49	51	113/12
Bakken Pond	1974.5	1977.0	1982.0	NP	1985.0	1988.5	54	67	70	113/12
Bakken Pond	1974.5	1976.5	1983.5	NP	1988.5	NP	43	55	55	113/12
Bakken Pond	1975.5	1979.0	1982.0	NP	1984.0	1987.0	63	79	82	113/12
Kalaoa A[a]	1960.5	1940.0	1953.0	NP	NP	NP	----	----	----	---------
Kalaoa A[a]	1961.5	1942.5	1953.0	NP	NP	NP	----	----	----	---------
Kalaoa A[a]	1960.5	1943.5	1953.5	NP	NP	NP	----	----	----	---------
Holualoa[a]	1965.0	1961.0	1967.5	NP	1984.0	1981.5	13	11	11	113/12
Holualoa[a]	1964.5	1961.5	1966.0	1977.0	1980.5	1980.0	14	14	14	113/12
Holualoa[a]	1969.5	1962.5	1966.5	NP	1979.5	NP	34	16	16	113/12
Hualalai[a]	1962.5	1954.5	1962.0	NP	1987.0	1979.0	7	4	4	113/12
Hualalai[a]	1962.5	1954.5	1964.5	NP	1991.5	1980.0	8	3	4	113/12
Hualalai[a]	1962.0	1954.0	1966.5	NP	NP	1986.0	----	----	----	---------
KAHO 1[b]	1987.0	1989.5	1987.0	NP	NP	NP	----	----	----	---------
KAHO 1[b]	1987.0	1989.5	1988.0	NP	NP	1989.0	92	102	93	113/11
KAHO 1[b]	1987.0	1990.5	1988.5	NP	NP	1990.5	87	98	87	113/11
KAHO 2[b]	1987.0	1987.0	1987.0	NP	NP	NP	----	----	----	---------
KAHO 2[b]	1986.5	1987.0	1988.0	NP	1988.5	1989.5	90	94	93	113/12
KAHO 2[b]	1986.5	1986.5	1987.5	NP	1988.5	1988.5	92	92	93	113/12
KAHO 3[b]	1981.0	1981.0	1981.5	NP	1983.0	NP	90	92	87	113/12
KAHO 3[b]	1981.5	1980.5	1984.0	NP	1986.5	1985.5	76	80	75	113/12
KAHO 3[b]	1981.0	1981.0	1984.5	NP	1987.5	1987.5	74	74	73	113/12
Honokohau[a]	1963.0	1952.5	1952.5	NP	NP	NP	----	----	----	---------
Honokohau[a]	1962.5	1952.5	1957.5	NP	1980.5	NP	10	4	4	113/12
Honokohau[a]	1961.5	1953.0	1957.5	NP	1980.5	NP	8	4	4	113/12
KeahuolaQLT-1[a]	1969.5	1958.0	1976.5	NP	NP	1988.5	22	6	23	113/11
KeahuolaQLT-1[a]	1966.5	1956.5	1988.5	NP	NP	NP	----	----	----	---------
KeahuolaQLT-1[a]	1962.5	1954.5	1980.5	NP	NP	NP	----	----	----	---------
Kailua Lava Tube	1981.5	1975.0	1975.0	NP	1975.5	NP	140	93	93	113/12
Kailua Lava Tube	1981.5	1975.0	1978.0	NP	1980.5	NP	105	72	74	113/12
Kailua Lava Tube	Cont.	1975.0	1979.0	NP	1983.0	NP	219	63	63	113/12
Kahaluu Shaft[a]	1972.5	1973.5	1980.0	NP	1986.0	1990.5	38	49	50	113/12
Kahaluu Shaft[a]	1972.0	1974.0	1980.0	NP	1985.0	1990.0	39	53	54	113/12
Kahaluu Shaft[a]	1971.5	1973.5	1980.5	NP	1986.5	NP	34	46	48	113/12
Kahaluu A[a]	1969.0	1971.0	1975.5	NP	1981.5	1987.0	30	45	46	113/12
Kahaluu A[a]	1969.5	1971.5	1975.0	NP	1980.5	1985.0	34	49	50	113/12
Kahaluu A[a]	1969.5	1971.0	1977.0	NP	1984.5	1990.0	27	39	40	113/12

Table 5.4: (Continued) Sample names, apparent CFC recharge years for the piston flow and binary mixing models. Calculated fractions of young water are given as well as the CFC ratio used to calculate the fractions for all samples, listed in order from north to south.

Sample Name	Piston Flow Model Recharge Date			Binary Mixing Model Ratio Based Recharge Year			Young Fraction in Mixture			Ratio
	CFC-11	CFC-12	CFC-113	CFC-11/12	CFC-113/12	CFC-113/11	CFC-11	CFC-12	CFC-113	
Keauhou Pond	1988.0	1988.0	1987.5	NP	NP	NP	----	----	----	---------
Keauhou Pond	1988.0	1988.5	1987.5	NP	NP	NP	----	----	----	---------
Keauhou Pond	1988.5	1988.5	1988.0	NP	NP	NP	----	----	----	---------
Halekii[a]	1968.5	1964.0	1966.5	NP	1977.0	NP	34	23	24	113/12
Halekii[a]	1966.5	1963.5	1965.0	NP	1975.5	NP	29	25	25	113/12
Halekii[a]	1965.5	1963.5	1963.0	1977.0	NP	NP	----	----	----	---------
Cameron's Well	1983.5	1985.5	1987.0	NP	1987.5	1989.0	84	92	95	113/12
Cameron's Well	1983.0	1987.0	1987.5	NP	1988.5	1994.0	77	93	93	113/12
Cameron's Well	1983.0	1986.5	1988.0	NP	1989.0	1995.5	77	91	91	113/12
Keei D[a]	1971.5	1971.0	1975.5	1975.0	1982.5	1983.0	41	43	43	113/12
Keei D[a]	1972.0	1971.0	1976.5	1976.5	1983.5	1983.5	42	42	43	113/12
Keei D[a]	1971.0	1971.0	1977.0	NP	1984.0	1986.0	35	40	41	113/12
PUHO[c]	1984.0	1987.5	1985.5	NP	NP	1986.5	89	107	90	113/11
PUHO[c]	1983.5	1987.0	1987.5	NP	1988.0	1992.0	74	85	74	113/11
PUHO[c]	1984.0	1987.0	1988.0	NP	NP	1992.0	75	86	75	113/11

[a]Department of Water Supply drinking water well.

[b]Kaloko-Honokohau (KAHO) National Historical Park observation well.

[c]Puuhonua o Honaunau (PUHO) National Historical Park anchialine pool.

NP - The ratio-based age is not possible for one of several reasons (see Results and Discussion).

Similar fractions of recently recharged water for Holualoa, Hualalai, Honokohau, Kahaluu Shaft, Kahaluu A, Halekii, and Keei D (Table 5.4) showed that the simple binary mixing model could be used for these samples, as illustrated in Figure 5.5. Water samples from these seven supply wells likely represented a part of the aquifer where flow lines of relatively old, CFC-free water converged with relatively young, CFC-containing water. All samples had young fractions of water that recharged between the late 1970s to late 1980s at the time of sample collection. The results illustrated that samples from these wells varied from 5 to 47% young water, with the remainder recharging prior to the atmospheric release of CFCs. The northernmost water supply wells (Holualoa, Hualalai, and Honokohau), which were closer to the Hualalai rift zone, contained a larger percentage of old water than the more southern wells. This relationship may indicate lower hydraulic conductivities and slower water movement through the presumably more heavily dike-compartmentalized aquifers near the rift zone. Burton et al. (2002) noted,

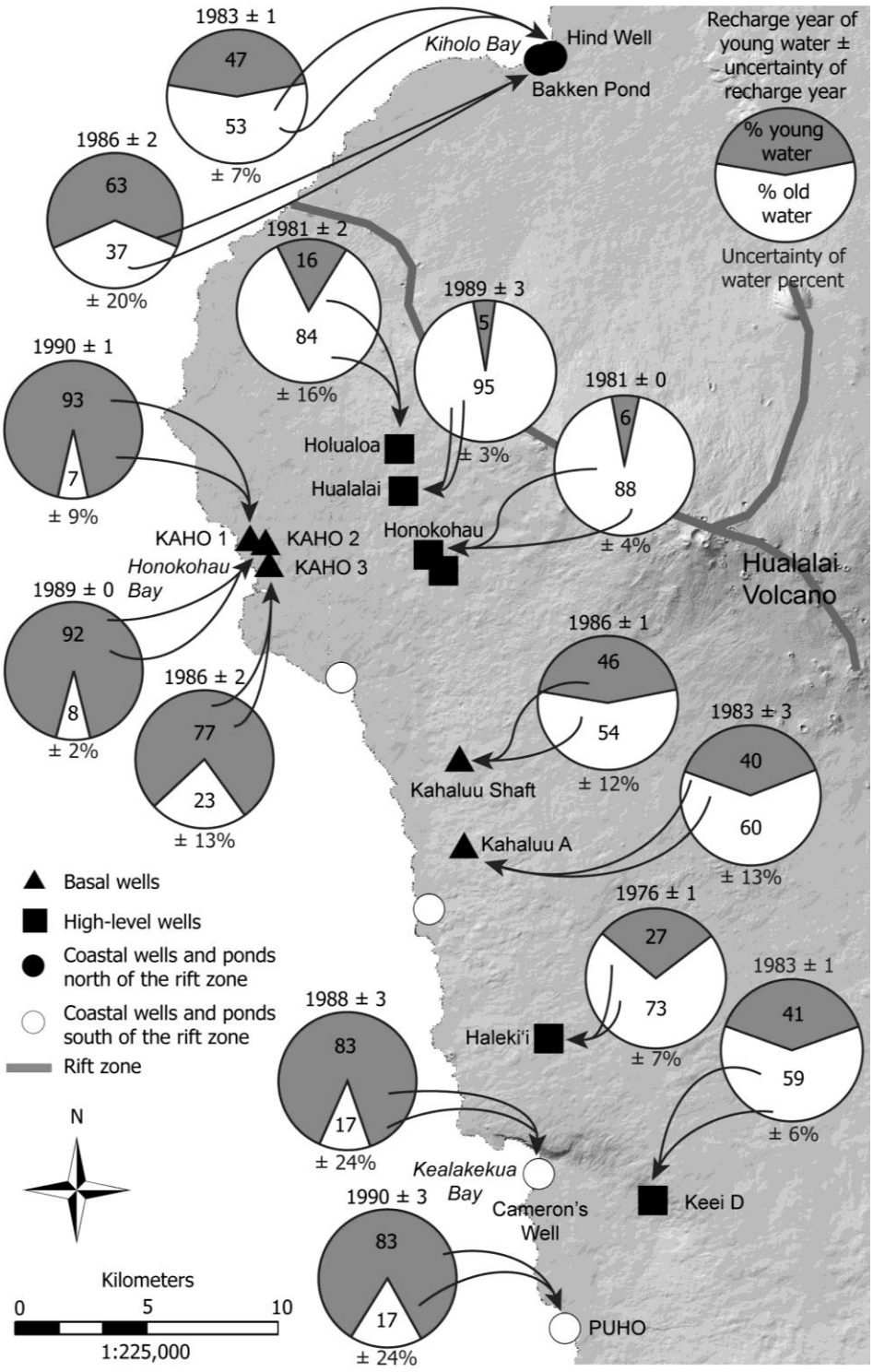


Figure 5.5: Pie graphs showing binary mixing model results. Recharge years above each pie represent the recharge year of the young fraction of water plus the uncertainty on the recharge year. Gray portions of each pie show the percent of young, CFC-containing water in each sample. White portions of each pie show the percent of old, CFC-free water (recharged before 1940). Percent signs underneath each pie represent the uncertainty on the percentage of young and old water shown in the pie.

however, that the sampling process can produce mixtures of groundwater. Since our samples were drawn from wells with large open intervals (2 to 137 m) in fractured rock aquifers, mixtures may have been produced. Mixtures would cause the age of the young water to be biased old and the age of the old water to be biased young as described by Cook et al. (2006).

Coastal well and pond samples were also modeled using the simple binary mixing model. The KAHO samples, PUHO, and Cameron's well were dominated by mid-1980s to mid-1990s recharged water with smaller fractions (8 to 20%) of CFC-free water (Figure 5.5). We previously demonstrated that the Bakken Pond and Hind Well samples were mixtures of water of different ages. Averaging the nine fractions of young water (Table 5.4), Bakken Pond had ~63% mid- to late-1980s water, and although less robust, Hind Well had ~47% early- to mid-1980s water.

Our findings suggested that the top of the basal lens near the coast was fairly uniform in age. Coastal well and pond samples located in proximity to each other had similar patterns of CFC degradation or contamination, suggesting strong local land-use or aquifer controls influencing the samples. For example, the KAHO samples all likely had a fog drip component. Bakken Pond and Hind Well both recharged from the highest altitudes of all samples.

Travel Distance and Water Age

Samples with longer straight-line travel distances from their approximate recharge areas to water sampling depth generally had greater fractions of water recharged prior to 1940 (Figure 5.6). Water supply wells had a strong correlation (r^2=0.94) between percent young water in the sample and straight-line travel distance. The maximum water travel distance

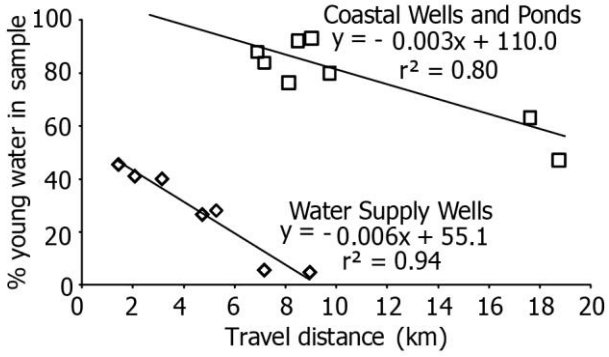


Figure 5.6: Relationship between (1) the percent of young water in the water supply well samples and (2) all other coastal well and pond samples relative to the straight line distance a water droplet would travel from the land surface to a well's pump or the sampling depth for coastal wells and ponds.

for water supply wells was less than 10 km, possibly constraining high-level aquifer compartment sizes. Basal water supply wells also plotted on high-level water curve, suggesting that basal water may have been highly influenced by water leakage from nearby dike compartments. An alternate, albeit fortuitous possibility is that the perforated casing depths of all basal wells intersected a mixture of young and old water of appropriate proportions to fall on the trend line with high-level wells.

Although less robust (r^2=0.70), the linear relationship from coastal well and pond samples tracked fairly closely to 100% young water at a sampling distance of zero meters. Coastal samples from the top of the basal aquifer were likely influenced by local and recent recharge. Since none of our coastal samples contained 100% young water, flow lines of older water within the aquifer must have been thin and were intersected during the sampling process.

Distinguishing Water Masses

Young fractions of water from the three CFC species are presented on a ternary plot shown in Figure 5.7. We converted modern fractions of water (determined by the CFC binary mixing model) into percentages. As described in Darling et al. (2010), water equilibrated with modern air resides at the center of Figure 5.7. Plotting the samples in this manner separates water masses containing similar fractions of recently recharged water by CFC compound and suggests that samples from basal and high-level areas can be distinguished. Figure 5.7 shows that high-level water resides in the area dominated by young water fractions from CFC-11, while basal water resides at the base of the triangle, within and below the modern air-equilibrated area.

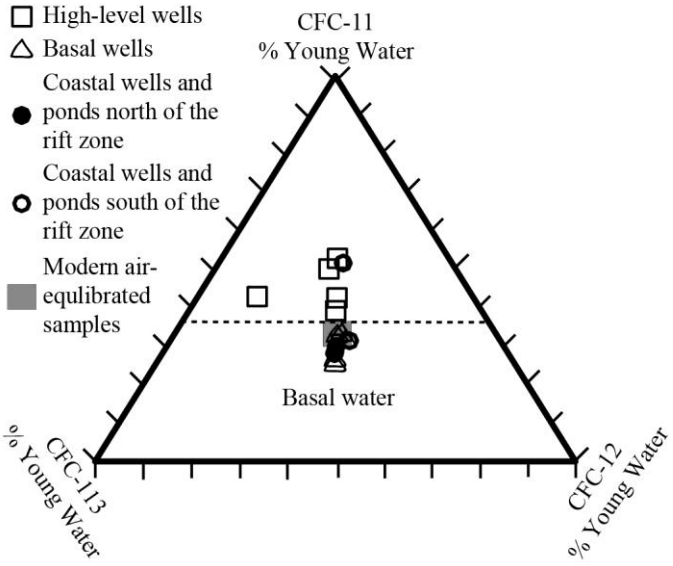


Figure 5.7: Ternary diagram showing normalized fractions of young water for each sample. The dashed line separates basal samples from high-level samples.

Figure 5.7 suggests that Keei D, which is considered a high-level water sample, has CFC signatures indicative of basal water, and therefore, may need to be reclassified as a basal water source. Furthermore, the sample from Kailua Lava tube had CFC signatures indicative of high-level water. This relationship suggests that water discharging from the bottom of Kailua Bay traveled through the basal aquifer without readily mixing with basal water. This finding suggests that high-level water can discharge directly to the ocean, bypassing the basal aquifer. Such flows may exist in other areas with conduit flow through high permeability features such as lava tubes.

Precipitation Patterns

Rainfall varies over time and, in the Hawaiian Islands, is impacted by the El Niño-Southern Oscillation (ENSO), the Pacific Decadal Oscillation (PDO), longer-term trends that may result from global warming, and possibly the recent volcanic activity at Kilauea Volcano (Giambelluca et al., 2011).

The effects of ENSO in the Hawaiian Islands are strong, with El Niño and La Niña events recurring roughly every 3 to 7 years. ENSO gives rise to large year-to-year variability in rainfall (Giambelluca et al., 2011). The PDO also exerts strong influences on rainfall patterns in Hawaii, with phases lasting up to 30 years. Since roughly the late-1970s, the PDO has been in a positive phase. Positive PDO phases are generally associated with lower rainfall in the Hawaiian Islands (Giambelluca et al., 2011). In addition to large changes in precipitation quantity caused by ENSO and PDO, rainfall in Hawaii has slowly declined over the past 90 to 100 years (Giambelluca et al., 2011).

In the Kona area, groundwater recharge increases with greater precipitation and decreases with lower precipitation (Engott, 2011). We can, therefore, hypothesize that the decrease in precipitation over the past century will cause groundwater discharge to the coastal areas to decrease over the next 30^{+} years as water recharged within the past 30 years slowly travels toward the coast.

Land-Use Changes

Since the binary mixing model suggests that young fractions of water recharged the aquifers in the area between the late-1970s to mid-1980s, we briefly discuss land-use changes since the mid-1970s. The study area's land-use in 1976 was dominated by

evergreen forested-land and rangeland, with smaller amounts of agricultural land, bare exposed rock, and urban land (http://hawaii.gov/dbedt/gis/download.htm). Urban development has increased rapidly over the past few decades in the Kona area. Urbanized land cover, for example, increased by more than 60% between 1992 and 2010 (http://cie.research.yale.edu/research/land-use-and-land-cover-phase-ii). These land-use changes coupled with increased population growth should decrease the quantity of groundwater reaching the coast and alter the nutrient biogeochemistry of the discharging groundwater. The more-immediate impacts of land-use changes on SGD in the Kona area have been studied by Dollar and Atkinson (1992), Johnson (2008), and Knee et al. (2010). However, more research is needed to understand how past land-use changes may impact future SGD, with specific attention paid to how urbanization has impacted and may impact the quantity and quality of the discharging groundwater.

Conclusions

Calculated recharge elevations show that many samples recharge from zones of maximum precipitation. The recharge trajectories and CFC data suggest that high-level water recharges the basal aquifer. Furthermore, water samples with substantial fog drip components are suggested by O and H isotopic data. The quantity of samples potentially influenced by fog drip demonstrates that fog drip requires a more detailed study, especially for the Kiholo Bay area where recharge trajectories are ambiguous.

CFC apparent age dating is applicable in the fractured-rock aquifers of west Hawaii. Distinct and robust correlations of fractions of percent young water versus travel distance exist for the water supply wells and the coastal wells and ponds. Such correlations may be useful for constraining sizes of dike compartments. Furthermore, a ternary plot of young fractions of recharging water suggests that it is possible to differentiate between water from high-level aquifers and water from basal aquifers. Our CFC work suggests that the Kailua Lava Tube sample is from high-level water sources, despite discharging to the bottom of a bay. Numerous lava tubes and conduits conducive to groundwater flow likely exist on the Hawaiian Islands. CFCs should be utilized more rigorously in such locations to confirm these results and to hopefully determine sources of water within the conduits.

Results presented here are useful for water supply managers and for those concerned with coastal ecosystems influenced by submarine groundwater discharge. Knowing aquifer residence times will allow for predictions about when recharged water masses may be expected to discharge to the sea and impact (positively or negatively) coastal ecosystems. Such studies are applicable in other field areas where long-term trends or changes in groundwater resources need to be understood.

CHAPTER 6. CONCLUSIONS

Accomplishments and Scientific Advancements

The aerial thermal infrared (TIR) technique is preferred over the satellite TIR technique because satellite data lack the spatial resolution necessary to detect submarine groundwater discharge (SGD) on the scale that it is normally observed. It is important to locate even small-scale SGD occurrences, especially in areas without streams, because SGD can deliver large quantities of dissolved nutrients and other constituents to the coastal zone. TIR imagery provides the information necessary to assess SGD on a regional scale, to choose field sites based on the imagery (minimizing field time spent searching for SGD), and to make informed designs for field studies that fit the scale of the SGD occurrences.

The complete methodology for the aerial TIR technique described within this dissertation encompasses data collection through post-flight data processing and image interpretation. I have demonstrated that this technique is an excellent way to locate SGD on a regional scale, thereby fulfilling my first research objective. These methods, I hope, will make aerial TIR missions accessible to more scientists interested in studying SGD. I also foresee this method branching out into other areas of research involving thermal contrasts, including geothermal activity, estuary dynamics, coastal currents, power plant and waste water outfalls, and the impacts of surface waters in estuaries, including water mass mixing.

I have demonstrated that use of ^{222}Rn for surface water and water-column surveying is beneficial for calculating groundwater fluxes. I have also shown that these surveys are useful for determining if multiple SGD locations are present at a single field location. I specifically recommend water-column surveying using ^{222}Rn in dynamic places like estuaries where multiple inputs of SGD may occur at different depths.

I have also demonstrated that ^{222}Rn mass balance models can be used to show where groundwater discharge occurs in Pearl Harbor on a segment-by-segment of coastline basis. My application of nutrient end-members to the ^{222}Rn model has allowed me to calculate nutrient budgets to the harbor on a segment-by-segment of coastline basis as well. The use of ^{222}Rn models to help estimate nutrient fluxes is applicable to other shorelines, and will prove useful for studying locations that require detailed knowledge

about where groundwater is discharging, as well as the quantity of dissolved compounds in the groundwater.

My research has greatly benefited from the combined use of aerial TIR remote sensing and ^{222}Rn surveying. The aerial TIR imagery stream-lined the field work by identifying where SGD occurred and, therefore, where to target field investigations. ^{222}Rn surveying corroborated TIR findings and can be used to detect SGD below the water's surface. Furthermore, groundwater plume areas calculated from TIR surveys have been extremely beneficial for ^{222}Rn mass balance modeling of all ^{222}Rn time-series measurements of point-source SGD in my field area. Another benefit, and a scientific advancement for the combined use of ^{222}Rn mass balance models and aerial TIR plume areas, is confirmation of a linear correlation between the two techniques that can be used to up-scale SGD flux estimates to the field region. This correlation will make complete assessment of SGD to a field area less time-consuming since only a few plumes need to be measured by ^{222}Rn mass balance. This research has proven that aerial TIR remote sensing and ^{222}Rn measurements identify similar SGD occurrences. This research has also fulfilled my second objective, which was to quantify groundwater and nutrient fluxes to Pearl Harbor.

I have measured the combined nitrogen and oxygen isotopic composition of dissolved nitrate from water supply wells, coastal springs, and estuary waters in the Pearl Harbor area. My third objective was to determine sources of nitrate to the aquifer and processes occurring along the flow path from recharge areas to discharge areas. This research has contributed knowledge about the Southern Aquifer Flow System on Oahu, which partially discharges into Pearl Harbor.

Many SGD studies are concerned with finding and quantifying SGD. However, they do not always attempt to understand what happens in the aquifer geographically upslope of SGD sites. I have made a first step toward investigating the linkage between recharged groundwater and the water that eventually discharges to the coast along entire groundwater flow paths by calculating groundwater residence times. Establishing water residence times allows inference about how land-use changes through urbanization, increased agricultural demands, or vegetation shifts due to climate change, for example, may impact the groundwater resources. Furthermore, changes in precipitation patterns

influence recharge quantities and the amount of water that can be pumped from aquifers. With respect to SGD, if we know how long it takes water to travel from recharge areas to the coast, say 30 years, we can assess how land-use changes in the last 30 years may impact SGD for the next 30 years. The same thought can be applied to SGD fluxes, which are dependent on water recharge.

My research in Kona demonstrated that the combined use of oxygen and hydrogen isotopes of water, $\delta^{18}O$/altitude gradients, and well-established lapse rates do provide information about the recharge altitude and temperature of a water sample. From this information, inferred recharge trajectories can be established. This technique can be applied to any terrain that has steep altitude gradients. I have also shown that CFCs can be used in more pristine environments to learn about water residence times, again fulfilling the third objective of my research. I also suggest that CFCs can possibly be used to determine if a water sample originated from basal or high-level aquifers, providing valuable information about water mass mixing and the nature of the aquifers in the area.

Future Research

Thermal Infrared Remote Sensing

I spent a considerable amount of time characterizing radiance anomalies that were not related to submarine groundwater discharge processes, but yet, had temperature signals similar to groundwater discharge. It would be beneficial to develop a more quantitative approach for identifying and characterizing radiance anomalies so that it is less cumbersome to interpret sea-surface temperature maps from aerial TIR remote sensing.

Radon Measurements in Pearl Harbor

There are two major areas for future research in Pearl Harbor that expand on the research presented within this dissertation. First, subaerial springs experienced degassing of radon, which greatly influenced our ability to calculate water fluxes to Pearl Harbor. A detailed investigation of where springs are specifically located along stream segments would be highly beneficial for evaluating how much degassing of radon actually occurs before spring-fed streams reach Pearl Harbor. Second, several areas in Pearl Harbor were

found to have groundwater discharge from the bottom of the harbor (for example, at the back of Middle Loch) or from intermediate depths along the sides of the Harbor (for example, in West Lock by the W4 pier). These discharges warrant further investigation.

Nitrogen and Oxygen Stable Isotope Analyses of Dissolved Nitrate in Pearl Harbor

Stable isotope analyses of dissolved nitrate in the Pearl Harbor area need to be revisited with a more rigorous sampling approach and much better quantification of potential groundwater end-members. I think the approach has great potential for the Pearl Harbor area, especially since the land-use practices around the periphery of the harbor are quite different. I think future research would benefit from sampling of additional tracers to help characterize end-members and water masses. Combining stable isotope analyses of dissolved nitrate with stable isotope analyses of oxygen and hydrogen of the water molecules, for example, may be one way to better characterize end-members and, potentially, water mixing within the estuary.

Chlorofluorocarbon use in the Kona Area

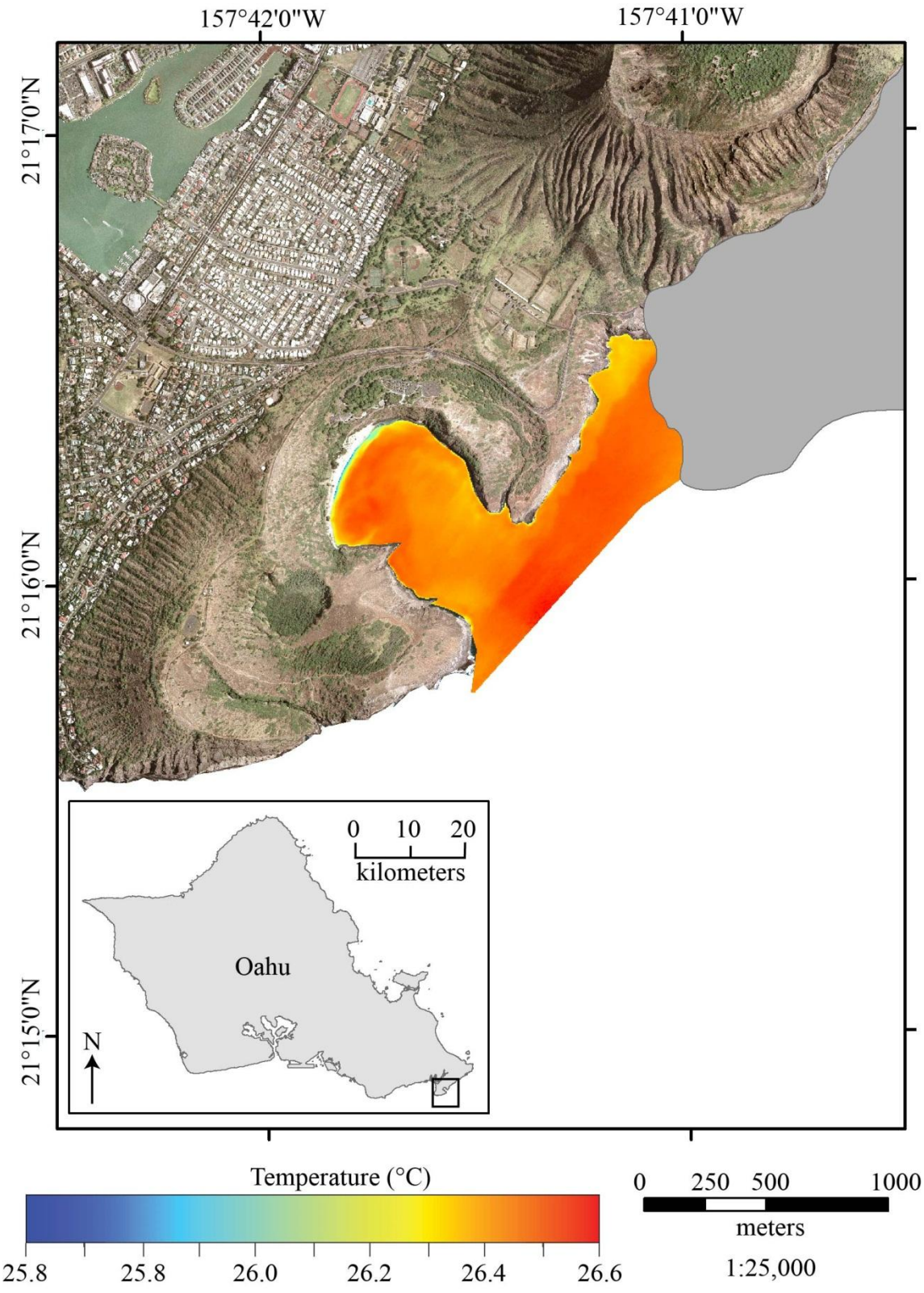
The lack of a local meteoric water line (LMWL) for Kona, Hawaii has complicated interpretations of stable isotope data for the area. A LMWL needs to be established for the Kona area for several reasons. The Kona area is the only place in the Hawaiian Islands with rainfall maxima in the summer. Scientifically speaking, it would be very interesting to see how the LMWL differs from other LMWLs established for the Hawaiian Islands. From a resource management perspective, it is beneficial to understand where aquifer water actually recharges, especially as population increases. Population growth will cause increased demands on the aquifer and increased likelihood for anthropogenic contamination of the aquifer and coastal waters. Furthermore, the recharge areas for groundwater flowing into the Kiholo Bay area, which has the largest known groundwater discharge fluxes on the Kona coast, need to be investigated more thoroughly.

I have shown that it may be possible to identify water sample origin (basal or high-level) through use of CFCs in the Kona area. This relationship needs to be confirmed by a study with a larger sample size. If confirmed, does the relationship hold true for the other islands? Additionally, if the relationship holds true, then coastal

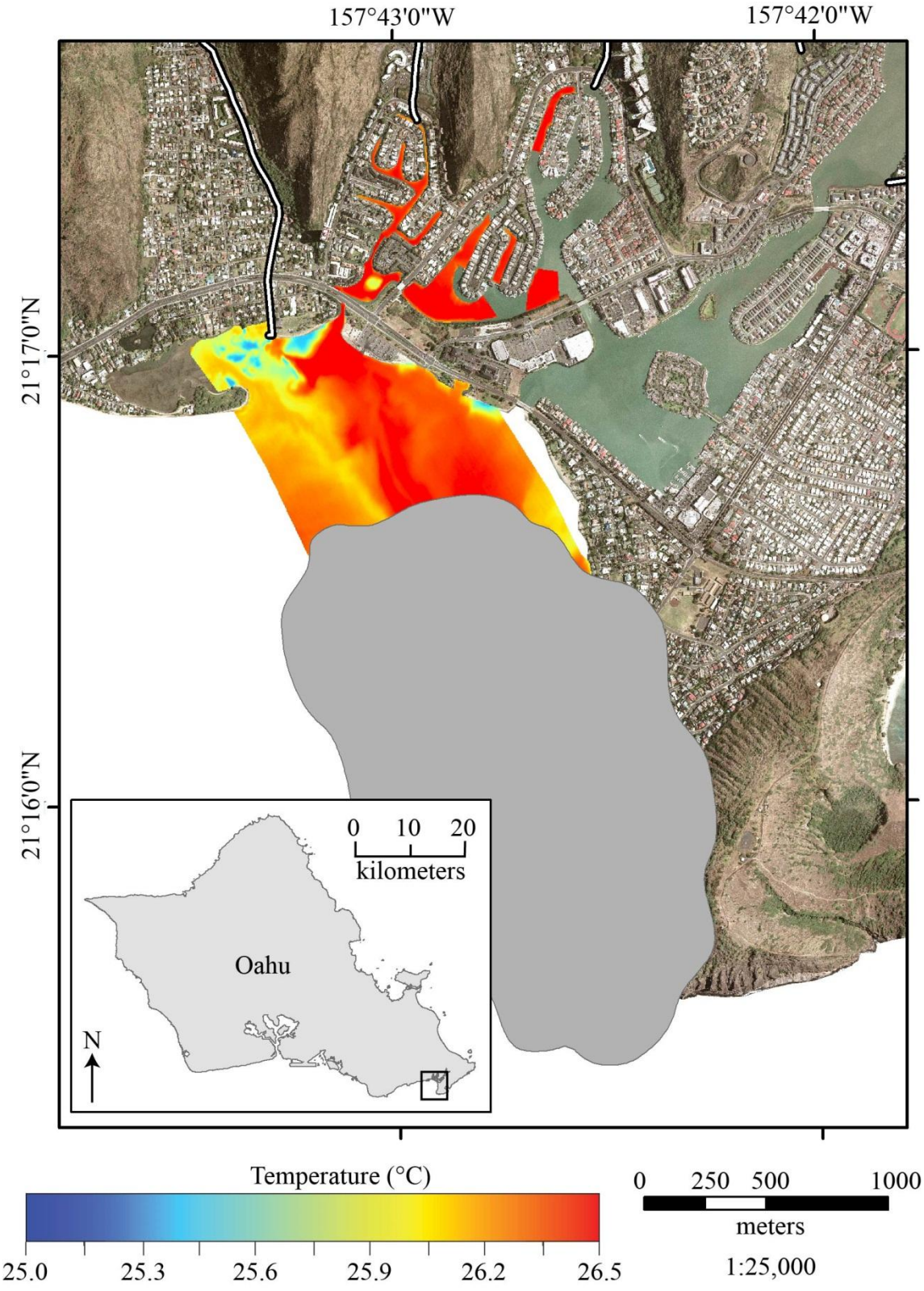
discharge locations that potentially travel through lava tubes and other conduits of preferential flow should be sampled. A rigorous evaluation of whether groundwater discharge at the coast really can originate from the high-level aquifer area is necessary. The sample from Kailua Bay indicates that this may be possible

APPENDIX 1. THERMAL INFRARED IMAGERY OF OAHU

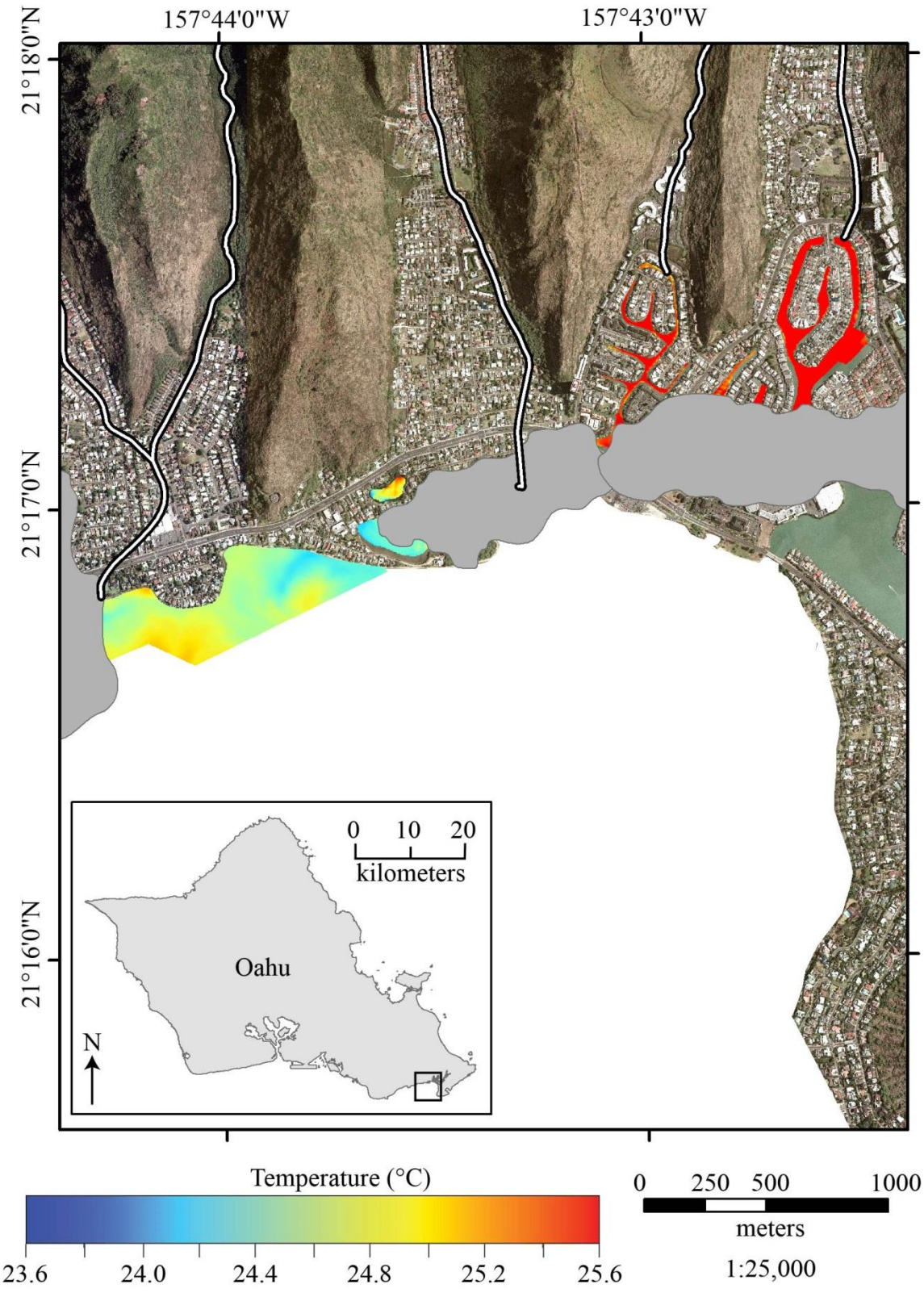
Processed thermal infrared imagery of Oahu, Hawaii are provided in this appendix as panels. All imagery is shown at the same map scale; however, temperature bars are maximized for contrast for each panel, and therefore vary from panel to panel. The panels begin at Hanauma Bay and move around the island in a clock-wise direction up to Kahuku Point. Data are unavailable from Kahuku Point to Makapuu Point. All data were collected on 12 June 2009, 6 July 2009, 17 July 2009, or 22 July 2009 between midnight and 07:00 a.m., Hawaii Standard Time (HST). Flight dates and collection times are given in each panel's caption. Since submarine groundwater discharge fluxes vary with tidal height, figure captions also contain tidal height information calculated relative to Honolulu Harbor (National Oceanic and Atmospheric Administration tide gauge 1612340) for easy comparison between multiple flights of a particular area and possible future data. In all panel captions, mean-lower low-water is abbreviated MLLW. No attempt is made to calculate actual tidal heights for distal areas that have different tide conditions from Honolulu Harbor.



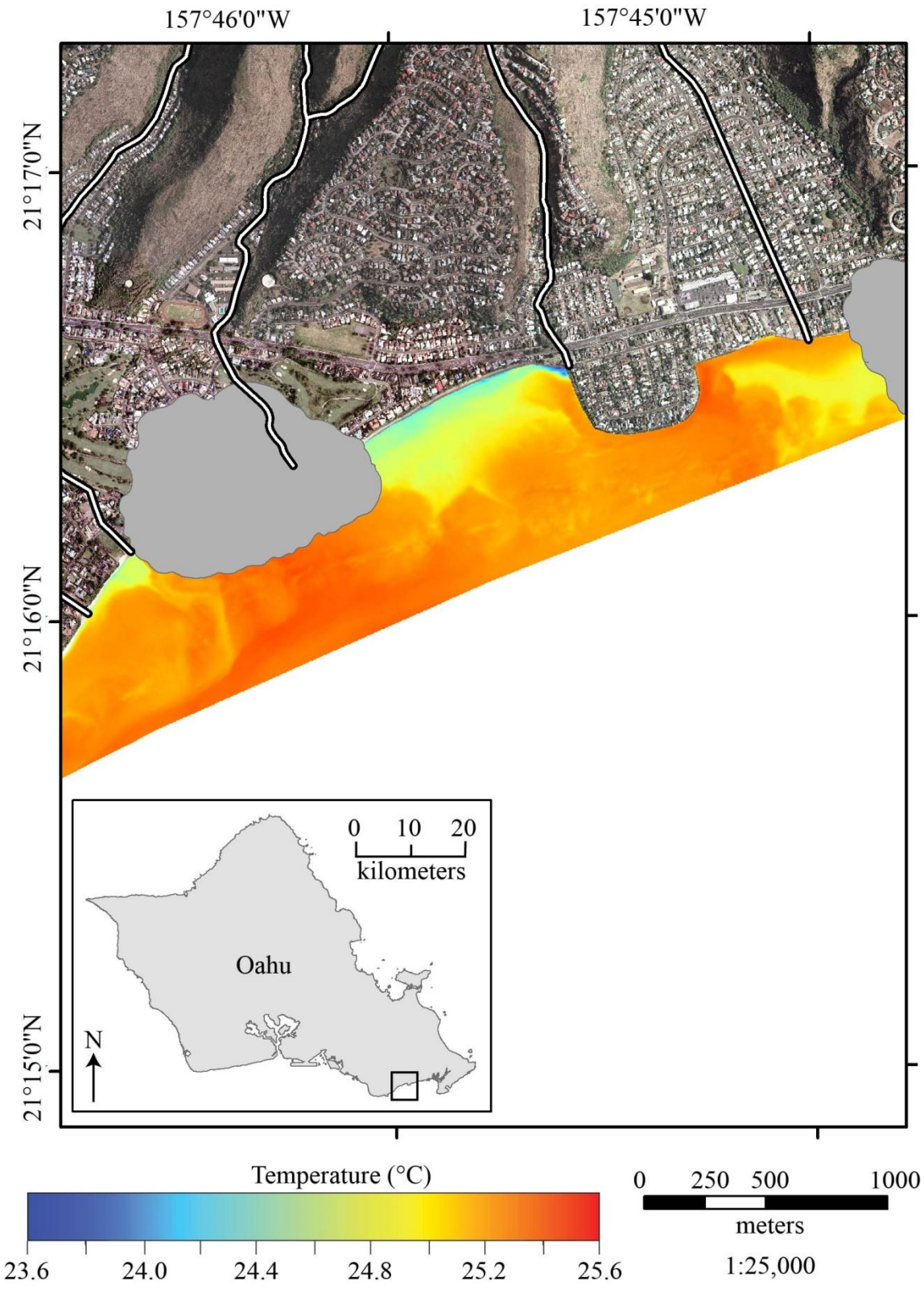
Panel 1: Hanauma Bay from 22 July 2009 at 01:31-01:34 a.m., HST. Honolulu tide was +0.12-0.13 m MLLW.



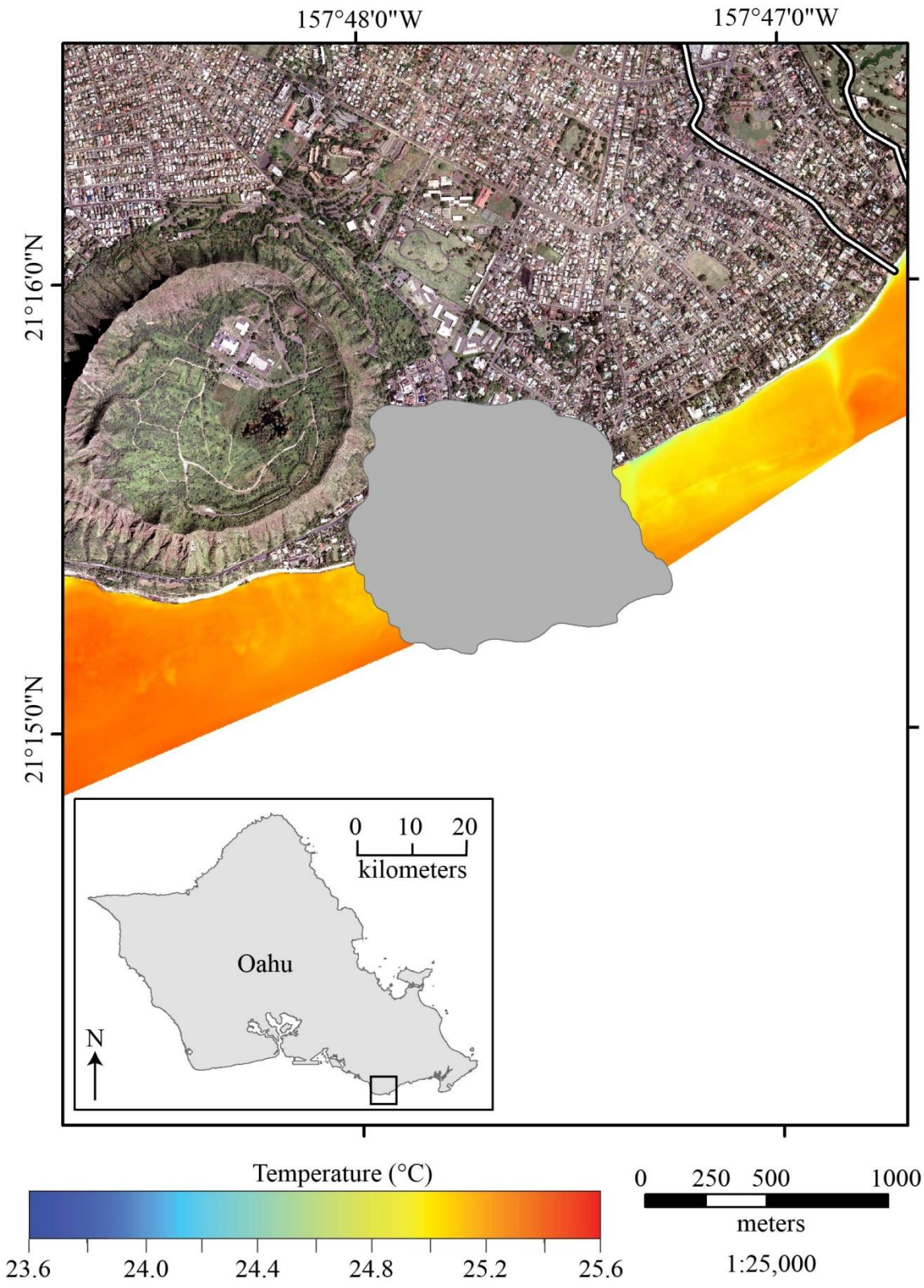
Panel 2: Hawaii Kai from 22 July 2009 at 01:31-01:56 a.m., HST. Honolulu tide was +0.12-0.15 m.



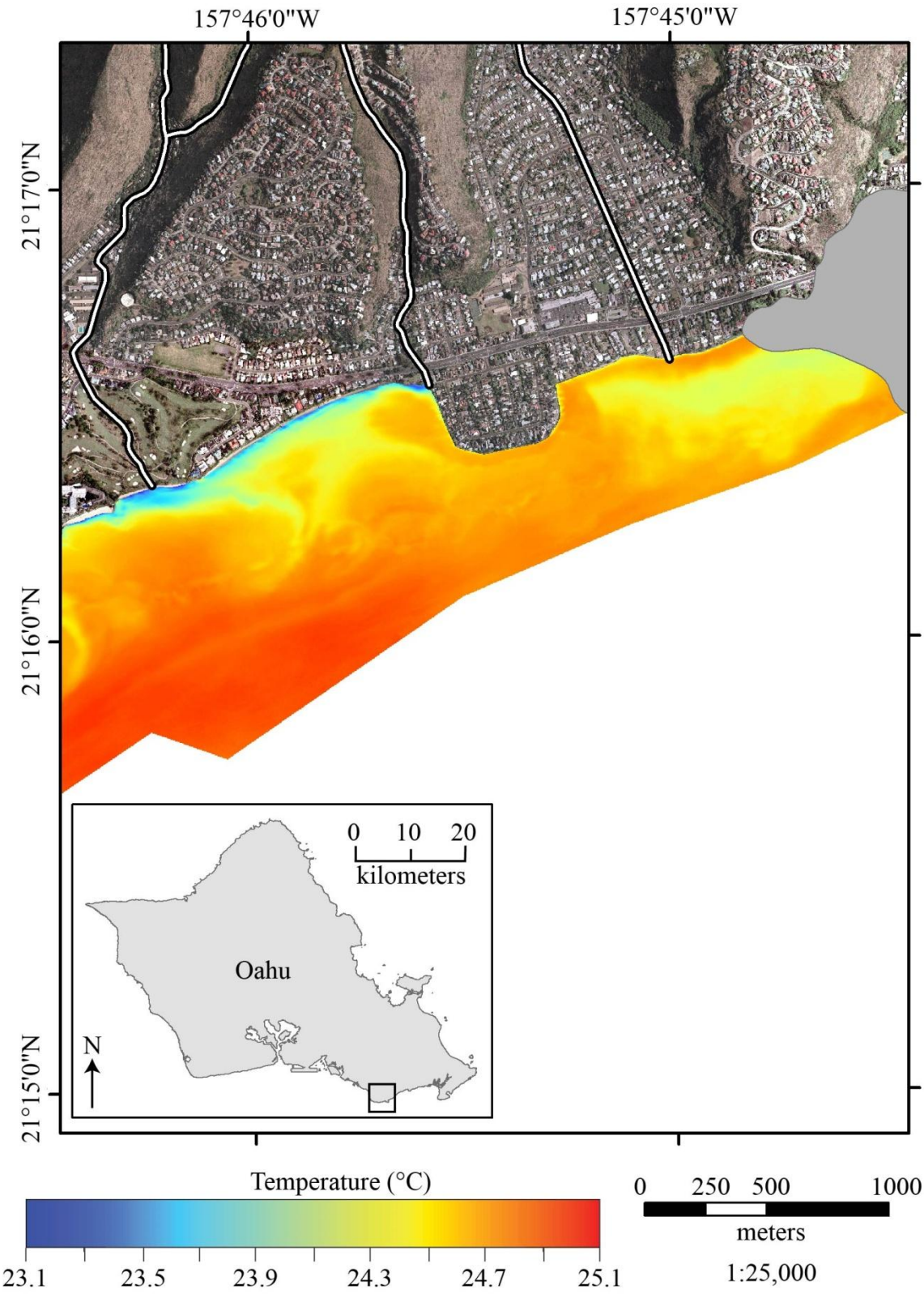
Panel 3: Niu Peninsula and Paiko Lagoon from 6 July 2009 at 02:04-02:09 a.m., HST. Honolulu tide was +0.16 m MLLW.



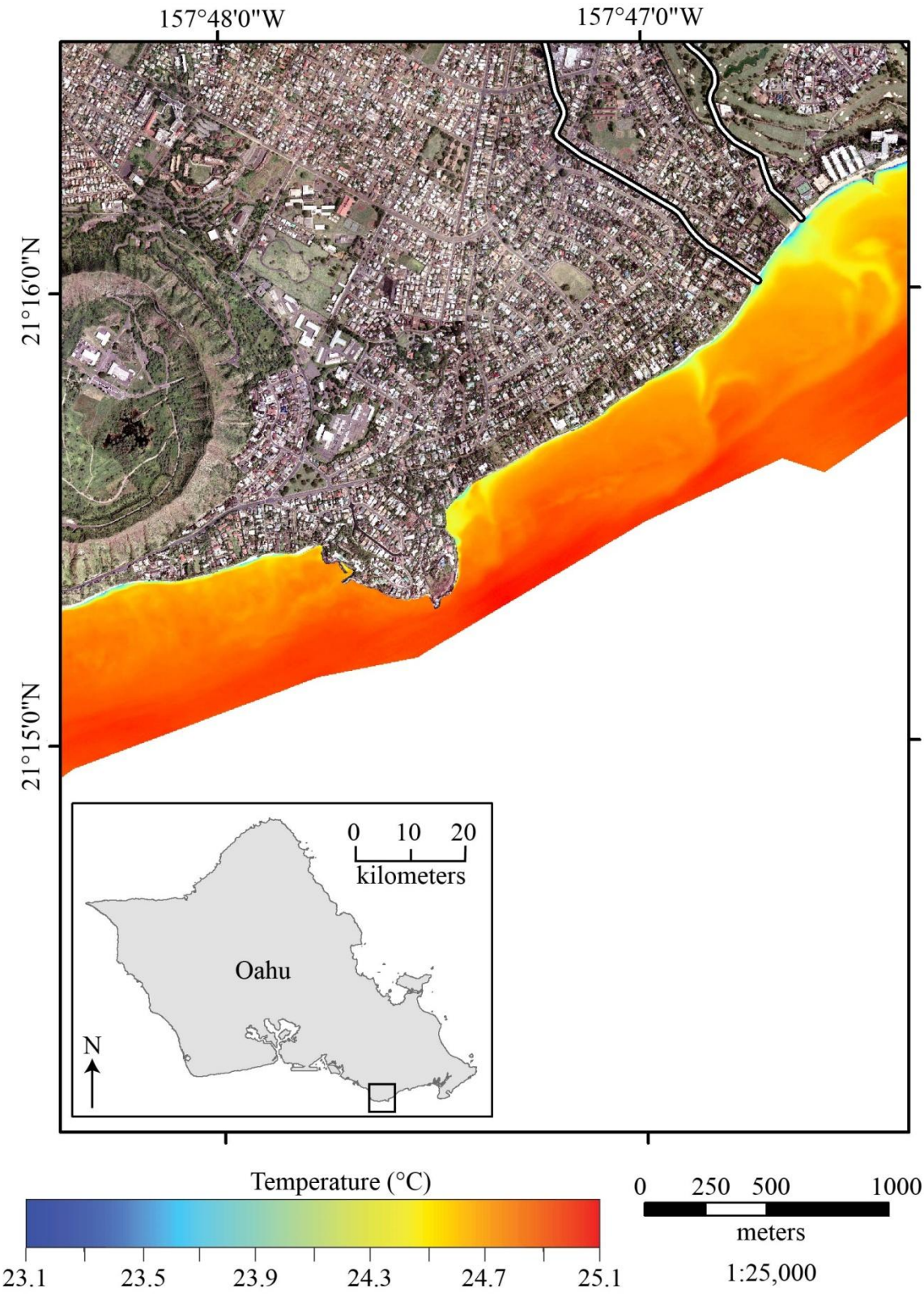
Panel 4: Wailupe Beach Park from 6 July 2009 at 02:04-02:09 a.m., HST. Honolulu tide was +0.16m MLLW.



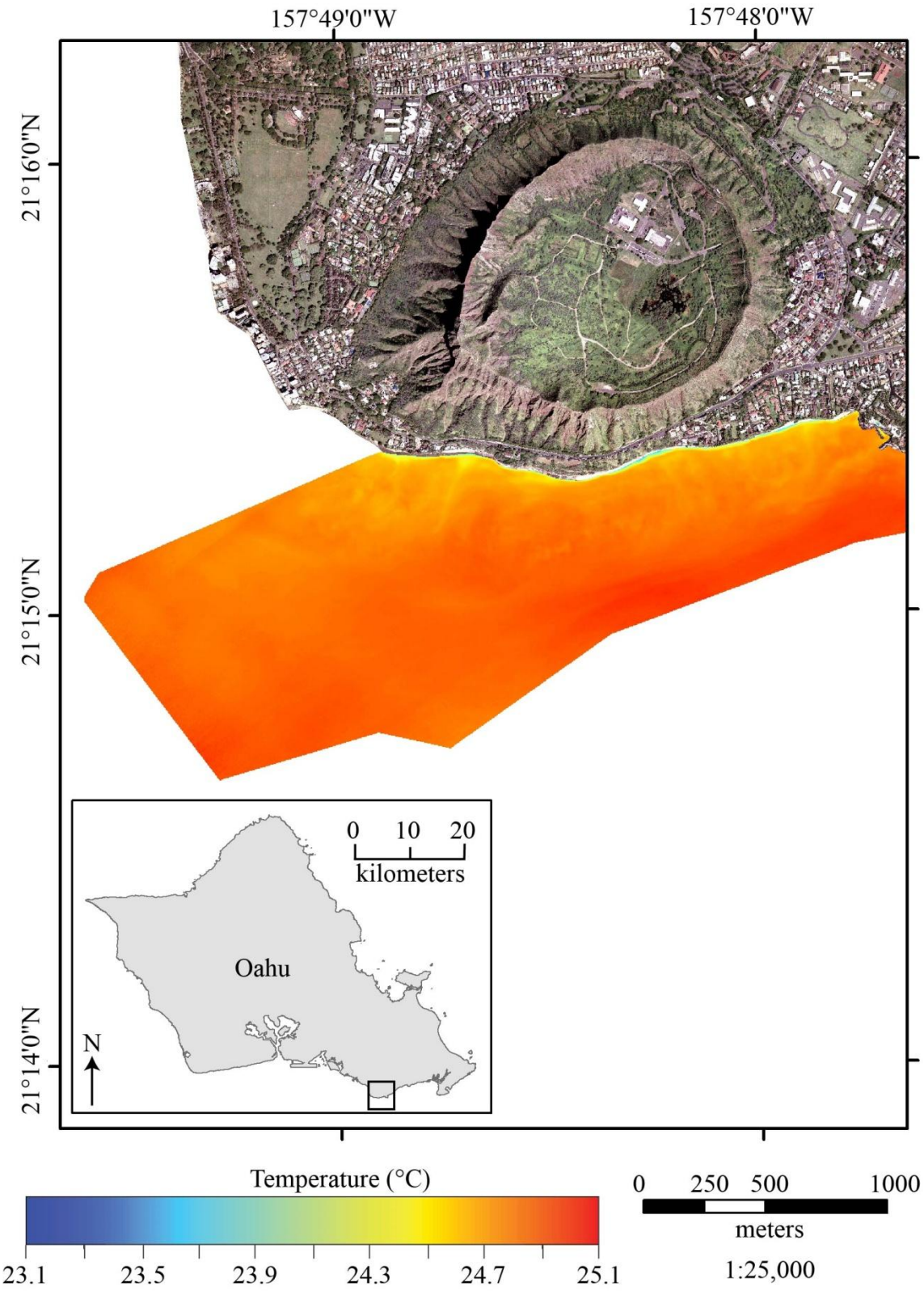
Panel 5: Diamond Head from 6 July 2009 at 02:04-02:09 a.m., HST. Honolulu tide was +0.16 m MLLW.



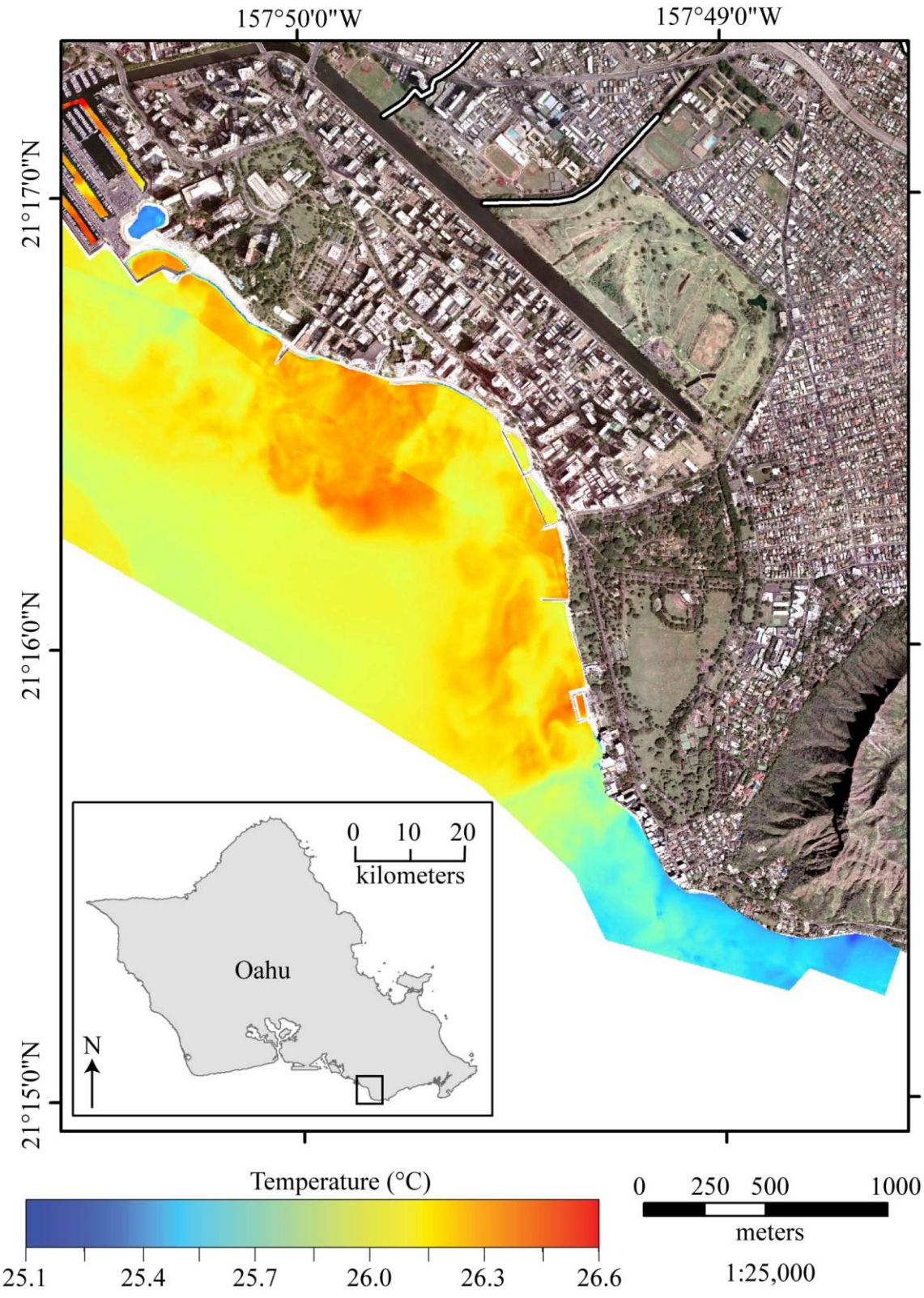
Panel 6: Niu Peninsula and Wailupe Beach Park from 22 July 2009 at 02:01-02:06 a.m., HST. Honolulu tide was +0.16 m MLLW.



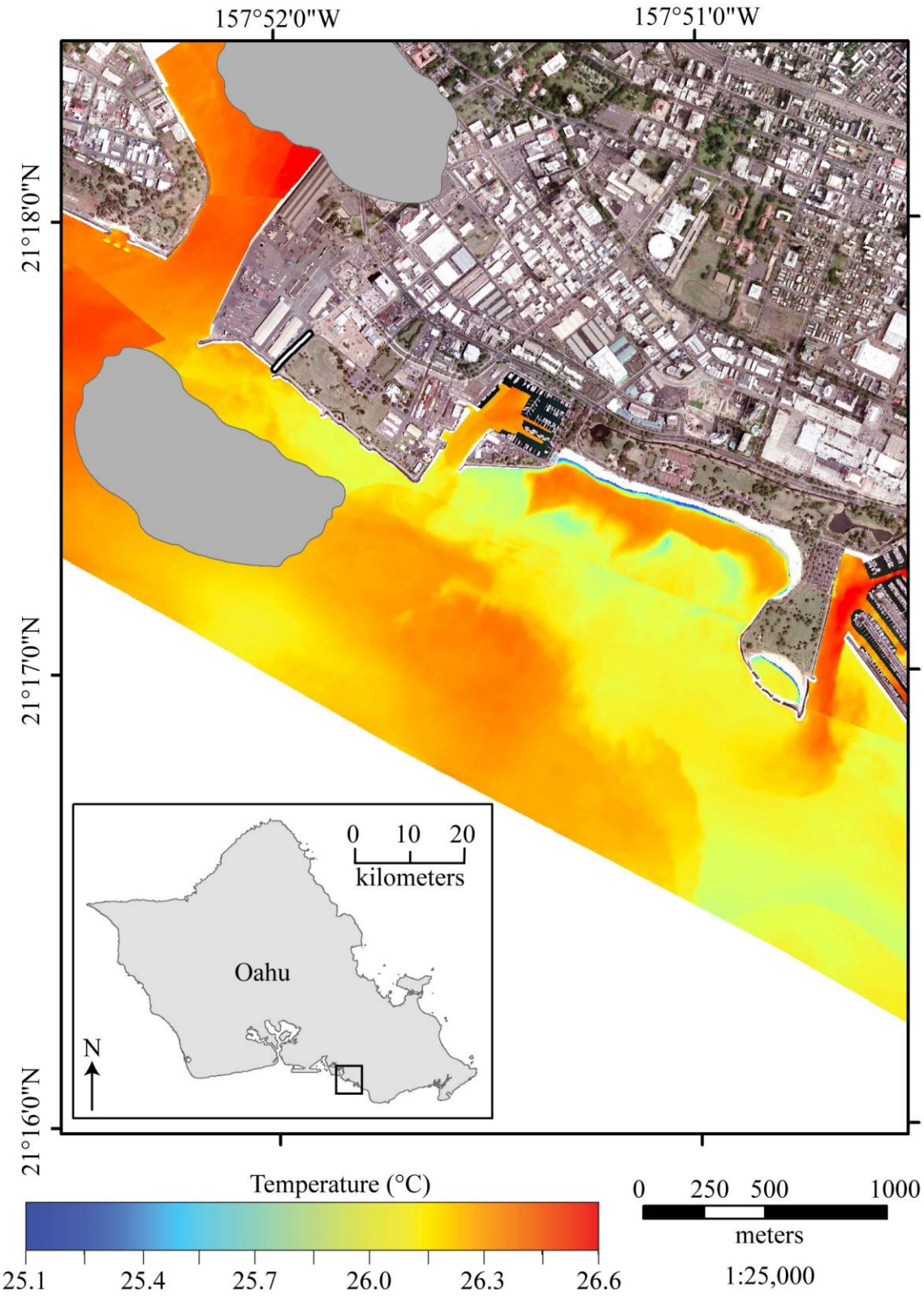
Panel 7: Black Point from 22 July 2009 at 02:01-02:06 a.m., HST. Honolulu tide was +0.16 m MLLW.



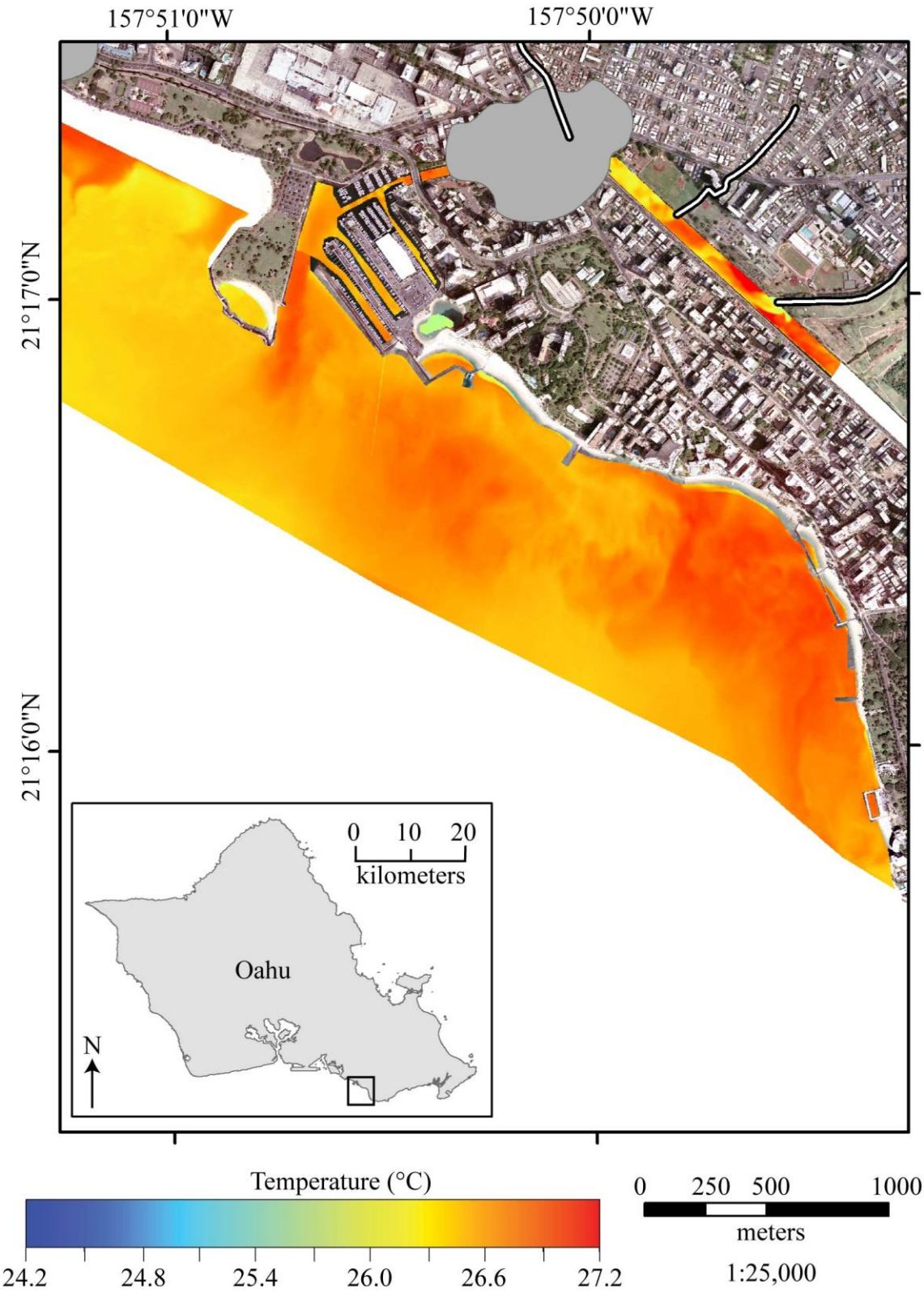
Panel 8: Diamond Head from 22 July 2009 at 02:01-02:06 a.m., HST. Honolulu tide was +0.16 m MLLW.



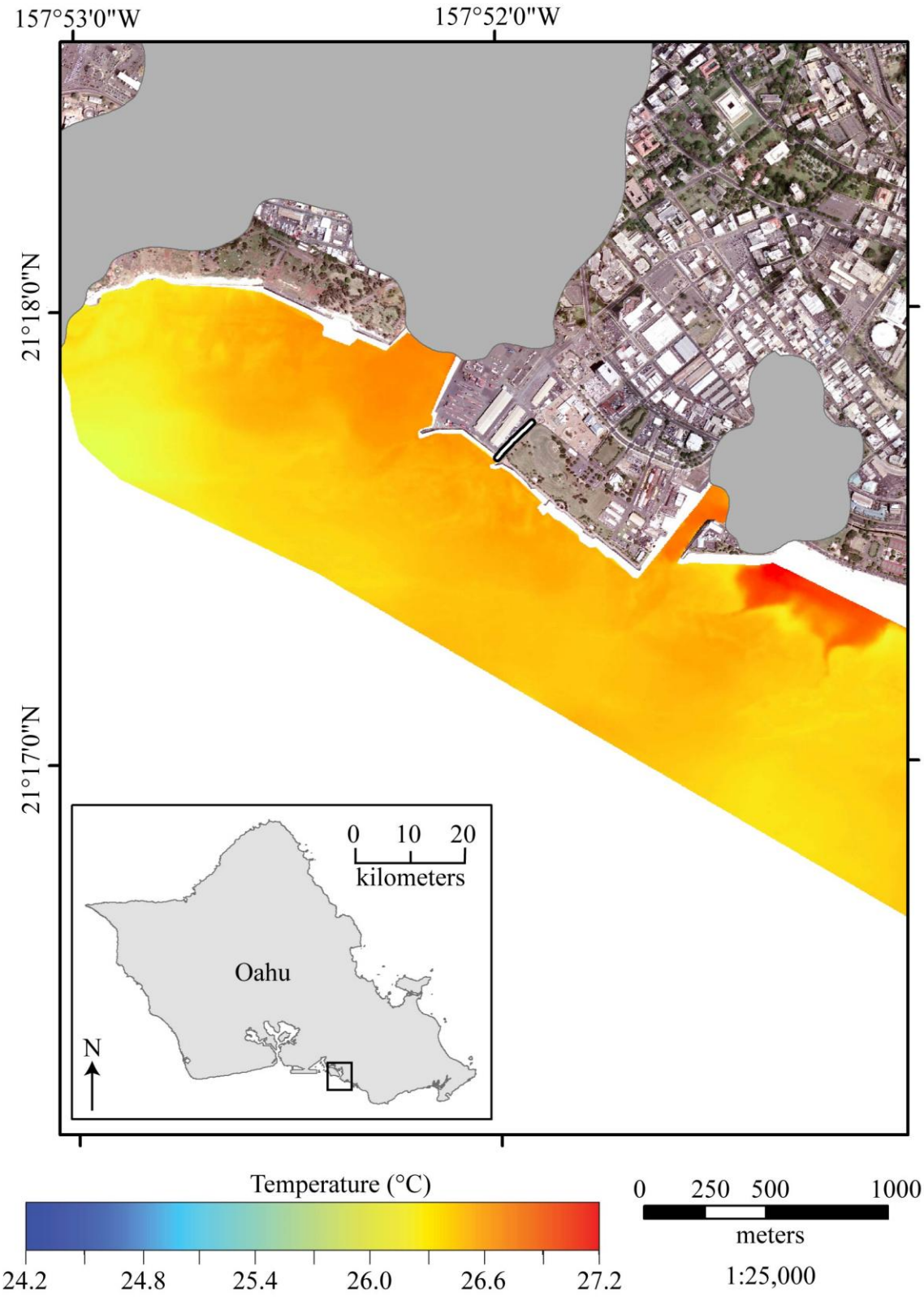
Panel 9: Diamond Head and Waikiki from 6 July 2009 at 01:12-01:54 a.m., HST. Honolulu tide was +0.13 to +0.16 m MLLW.



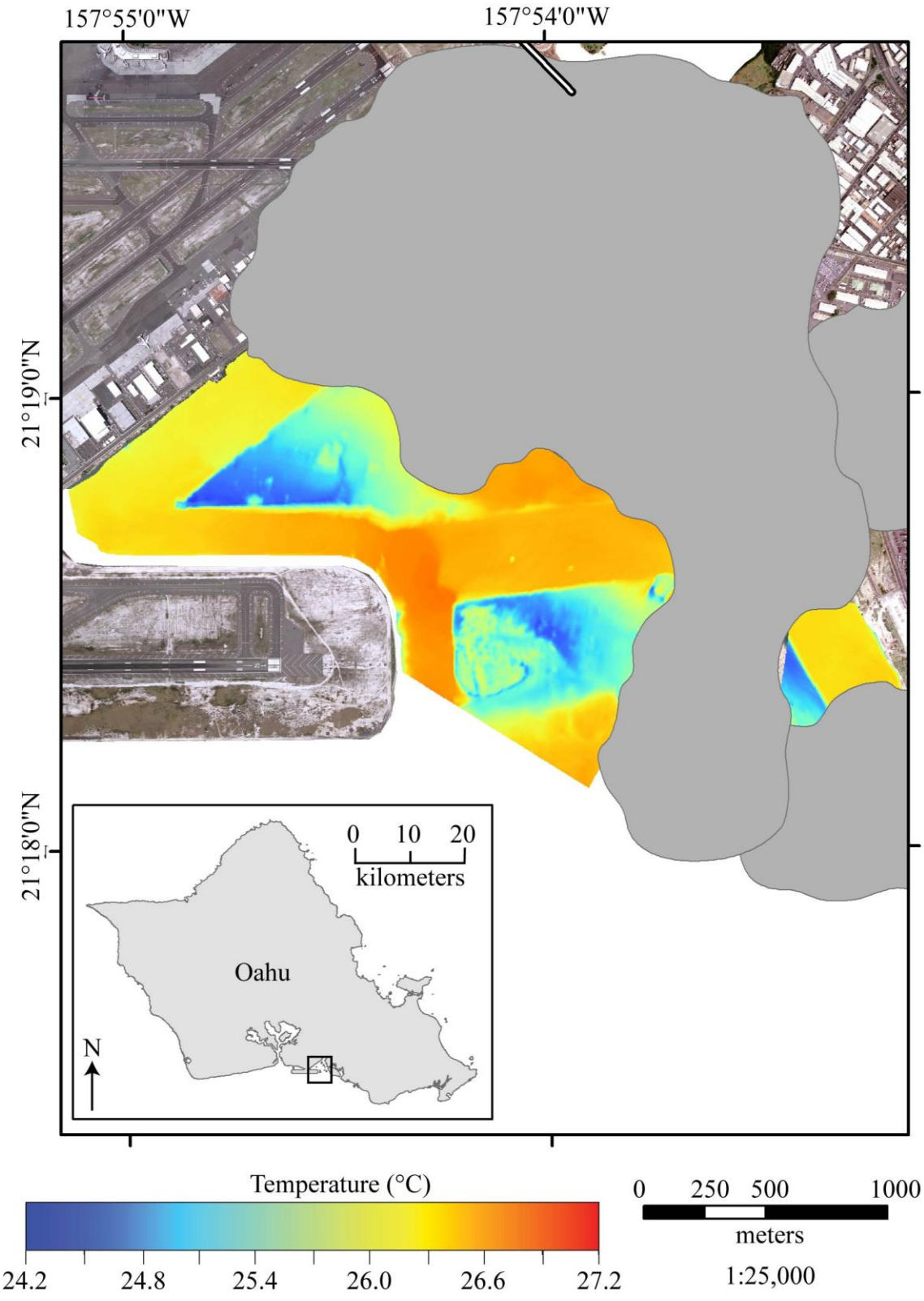
Panel 10: Ala Moana Regional Beach Park and Magic Island from 6 July 2009 at 01:12-01:54 a.m., HST. Honolulu tide was +0.13 to +0.16 m MLLW.



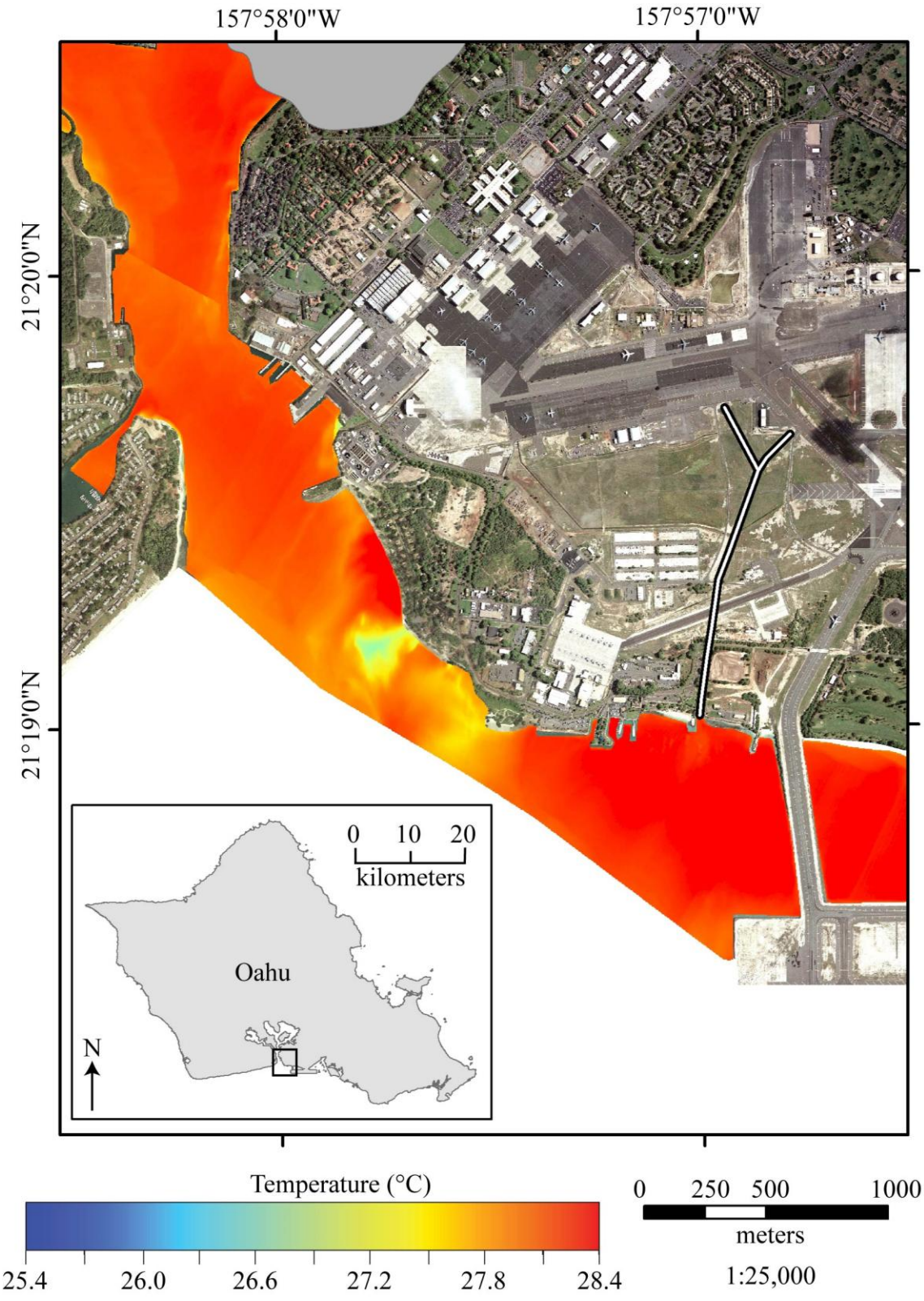
Panel 11: Waikiki and Ala Moana Regional Beach Park from 17 July 2009 at 02:14-02:51 a.m., HST. Honolulu tide was +0.04 to +0.08 m MLLW.



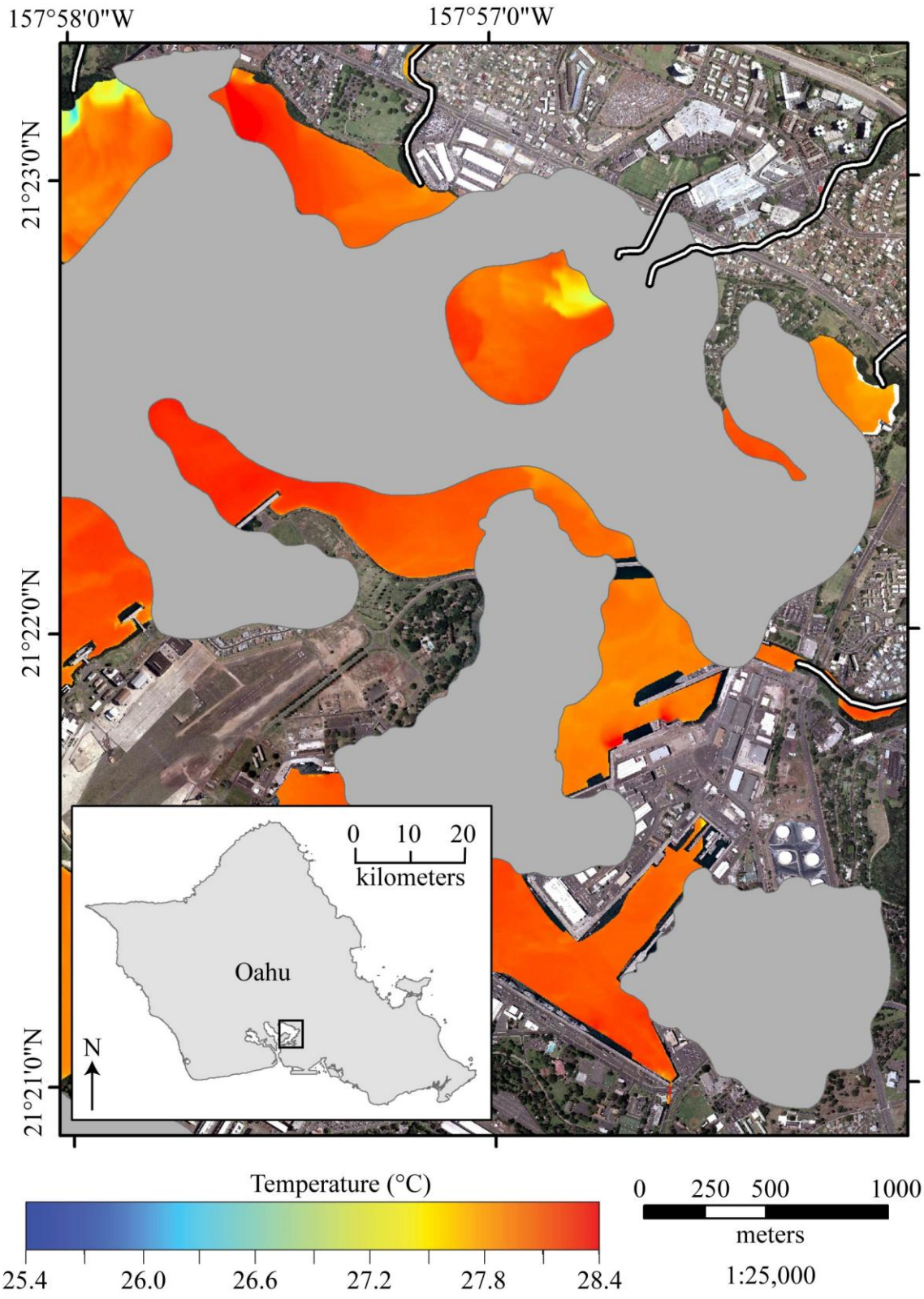
Panel 12: Ala Moana Regional Beach Park and Kakaako Waterfront Park from 17 July 2009 at 02:14-02:51 a.m., HST. Honolulu tide was +0.04 to +0.08 m MLLW.



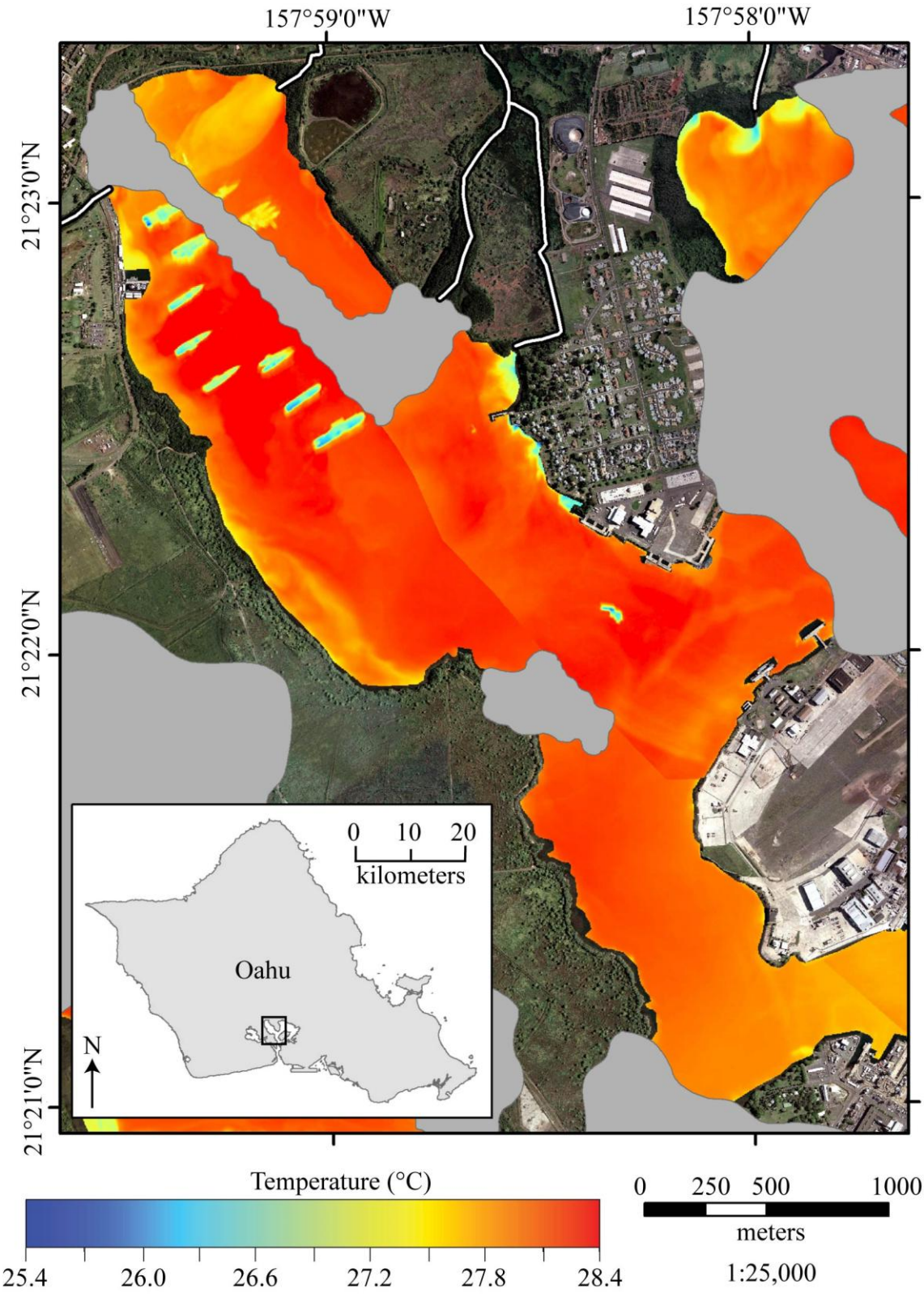
Panel 13: Reef runway from 17 July 2009 at 02:14-02:51 a.m., HST. Honolulu tide was +0.04 to +0.08 m MLLW.



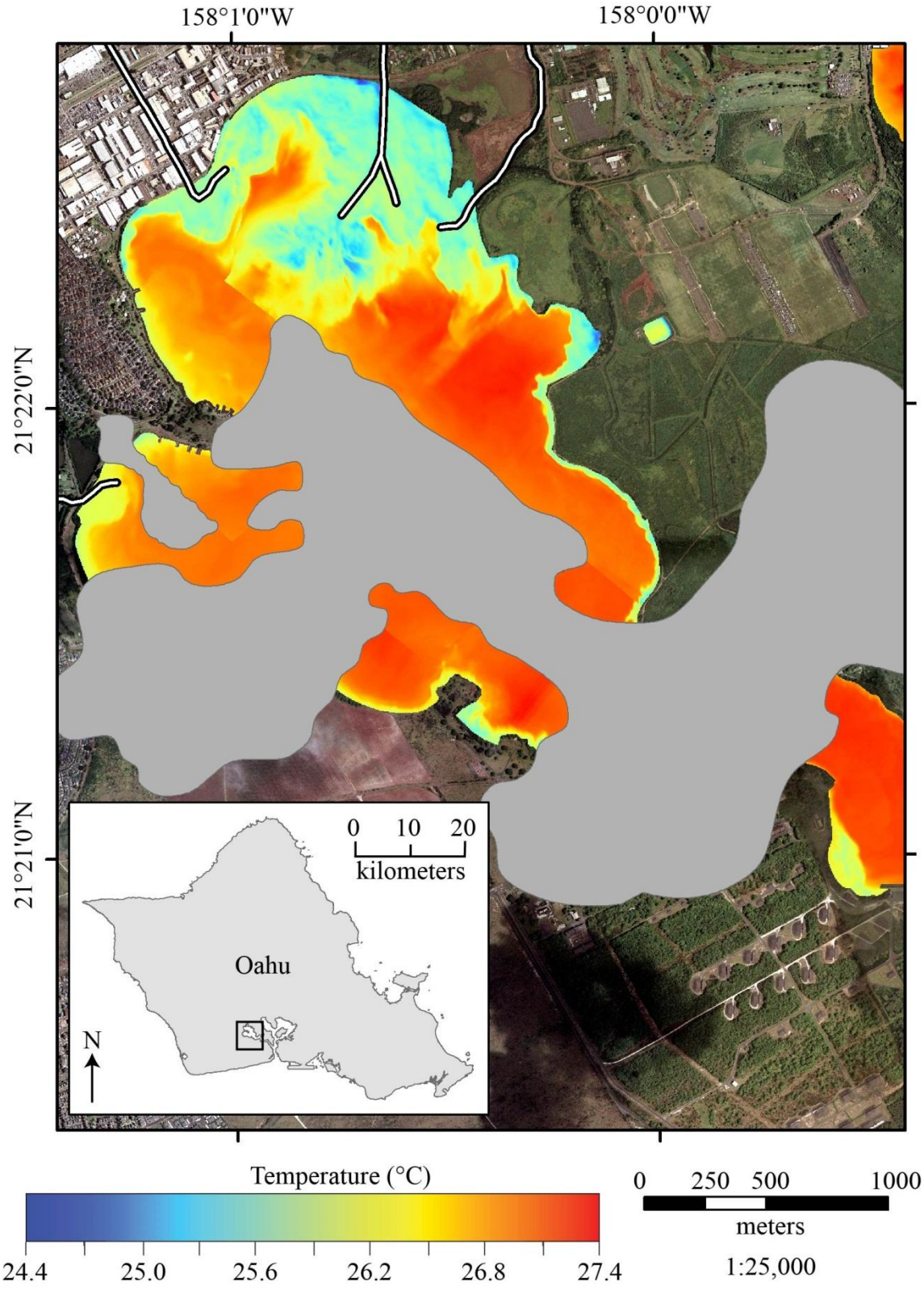
Panel 14: Mouth of Pearl Harbor from 17 July 2009 at 01:00-04:36 a.m., HST. Honolulu tide was -0.04 to +0.15 m MLLW.



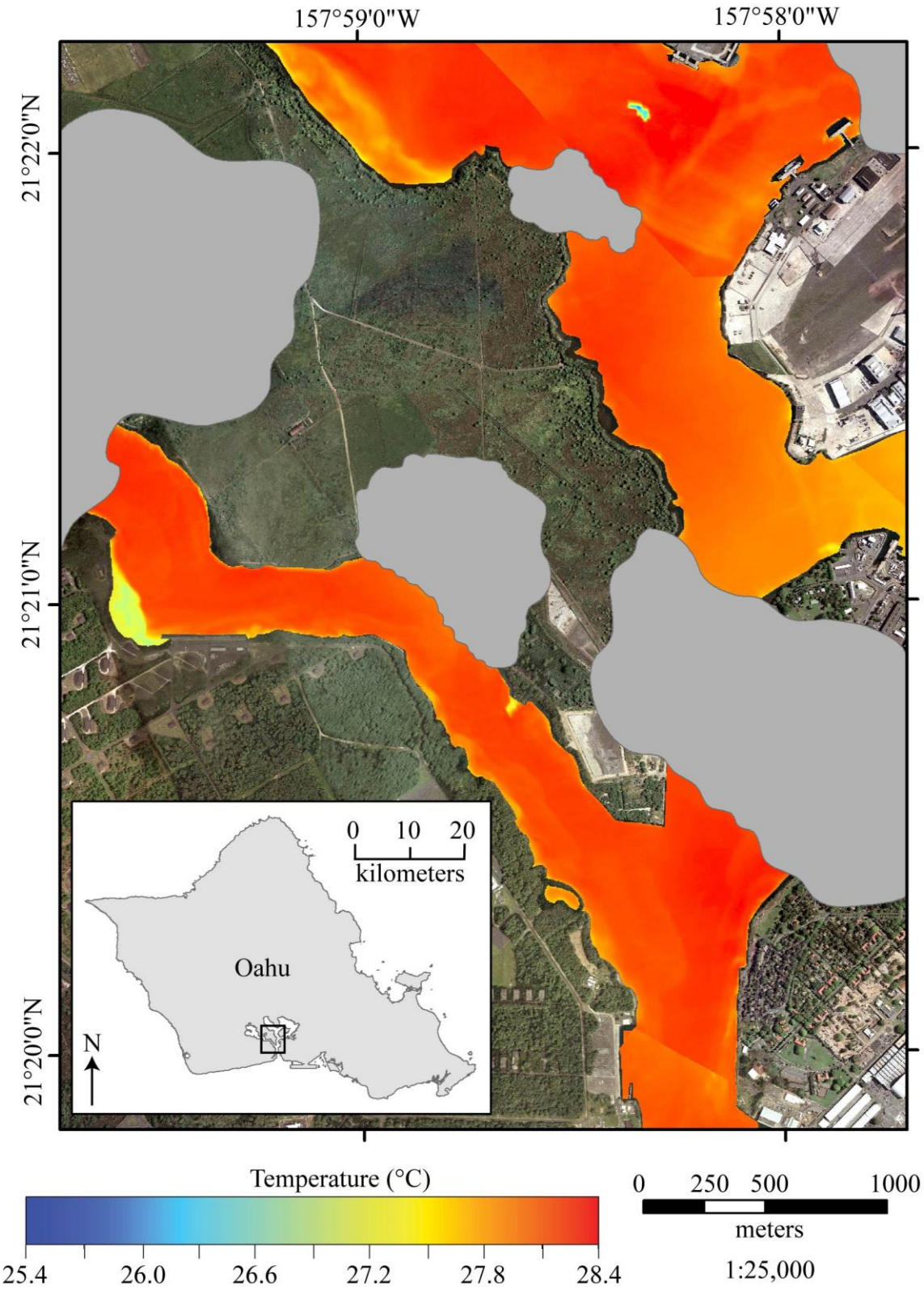
Panel 15: East Loch of Pearl Harbor from 17 July 2009 at 01:00-04:36 a.m., HST. Honolulu tide was -0.04 to +0.15 m MLLW.



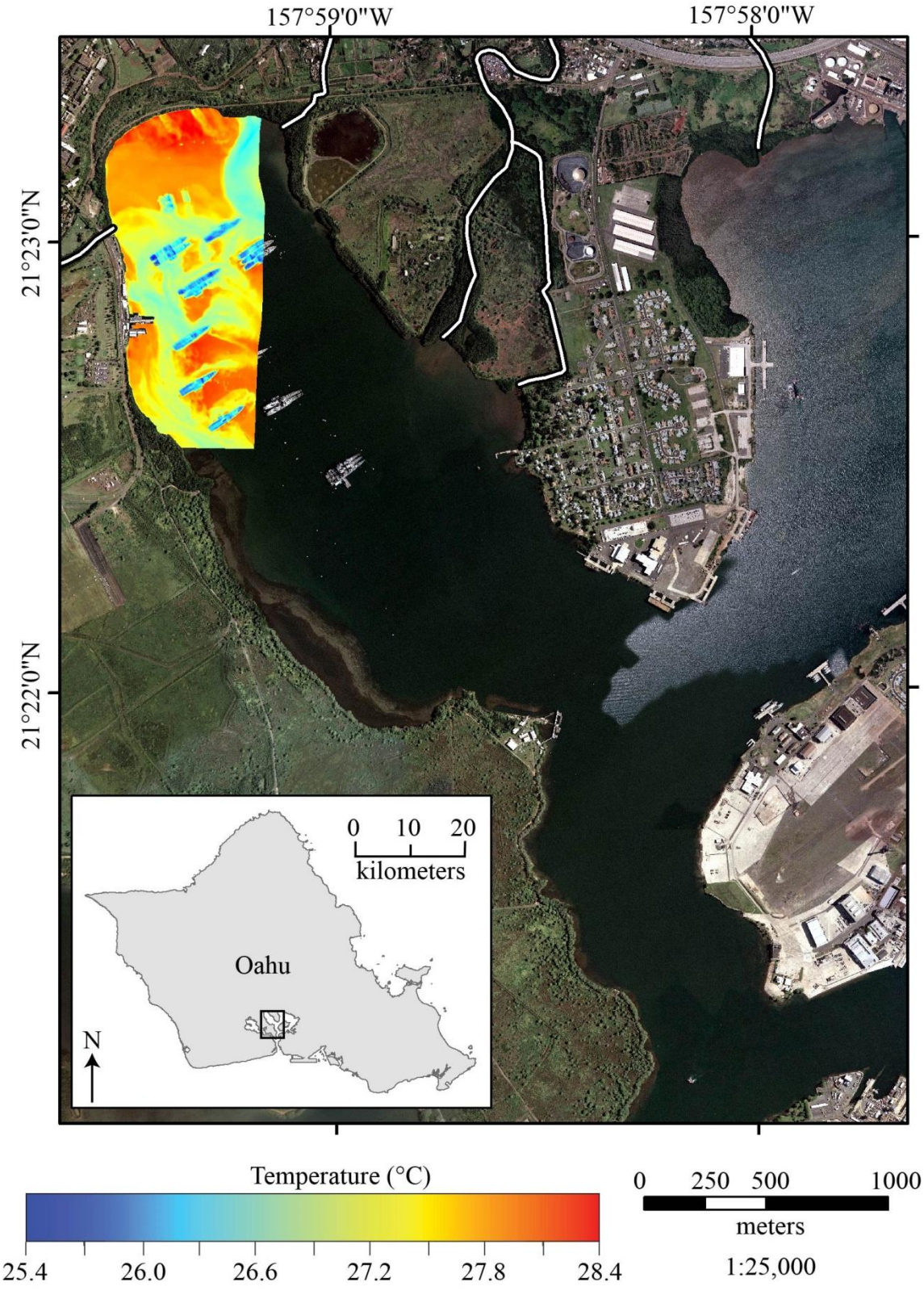
Panel 16: Middle Loch of Pearl Harbor from 17 July 2009 at 01:00-04:36 a.m., HST. Honolulu tide was -0.04 to +0.15 m MLLW.



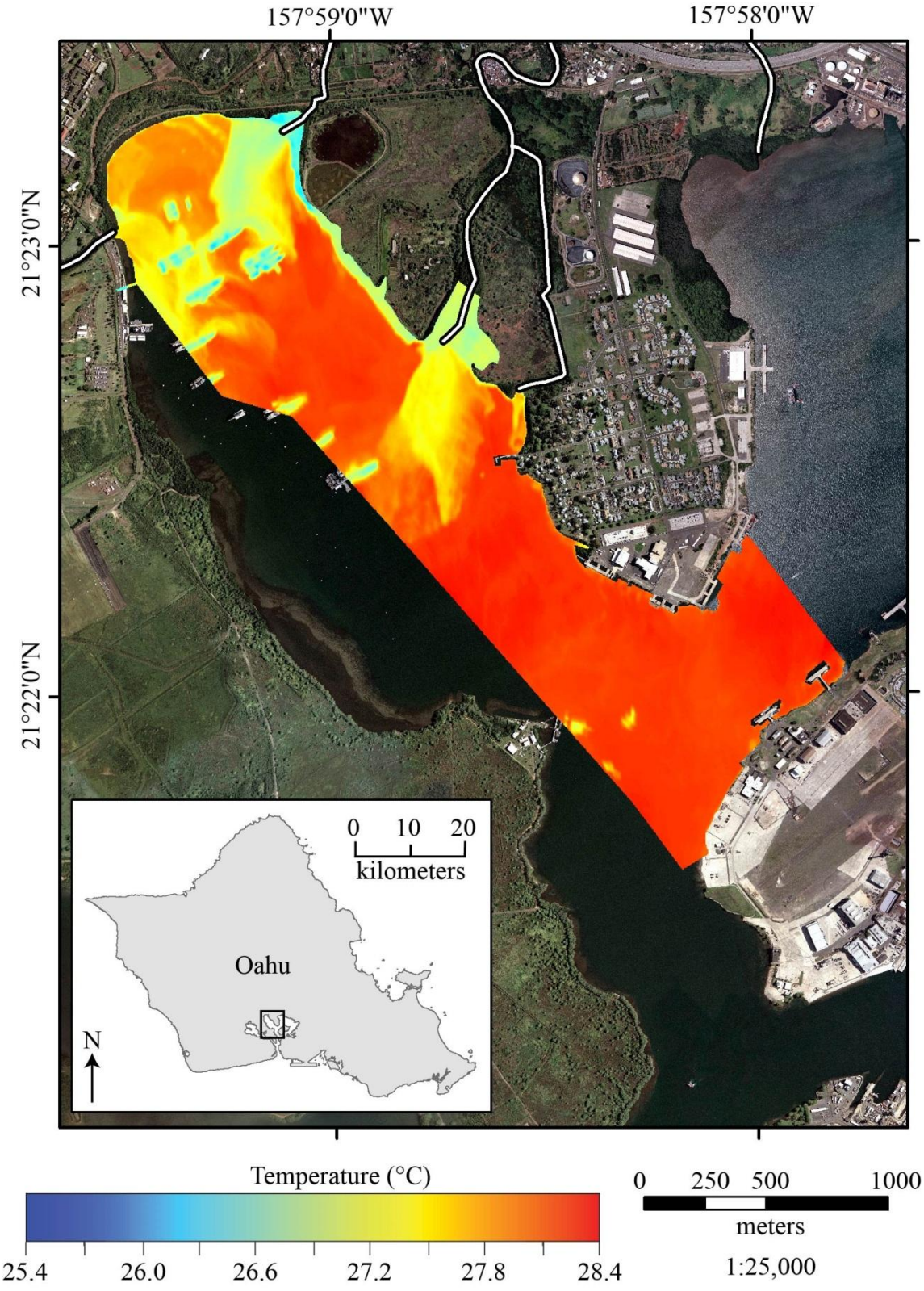
Panel 17: West Loch of Pearl Harbor from 17 July 2009 at 01:00-04:36 a.m., HST. Honolulu tide was -0.04 to +0.15 m MLLW.



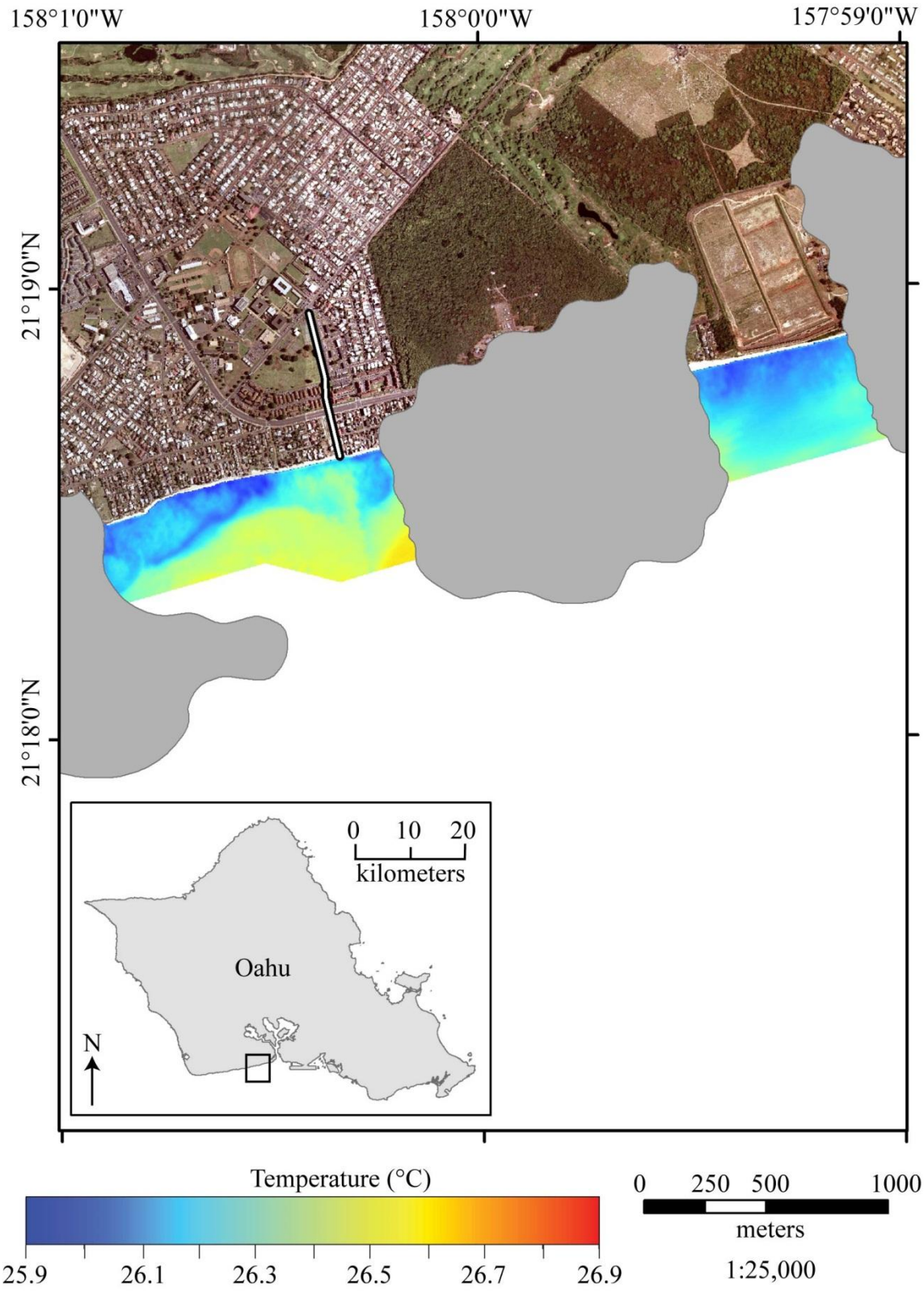
Panel 18: Channel of West Loch, Pearl Harbor from 17 July 2009 at 01:00-04:36 a.m., HST. Honolulu tide was -0.04 to +0.15 m MLLW.



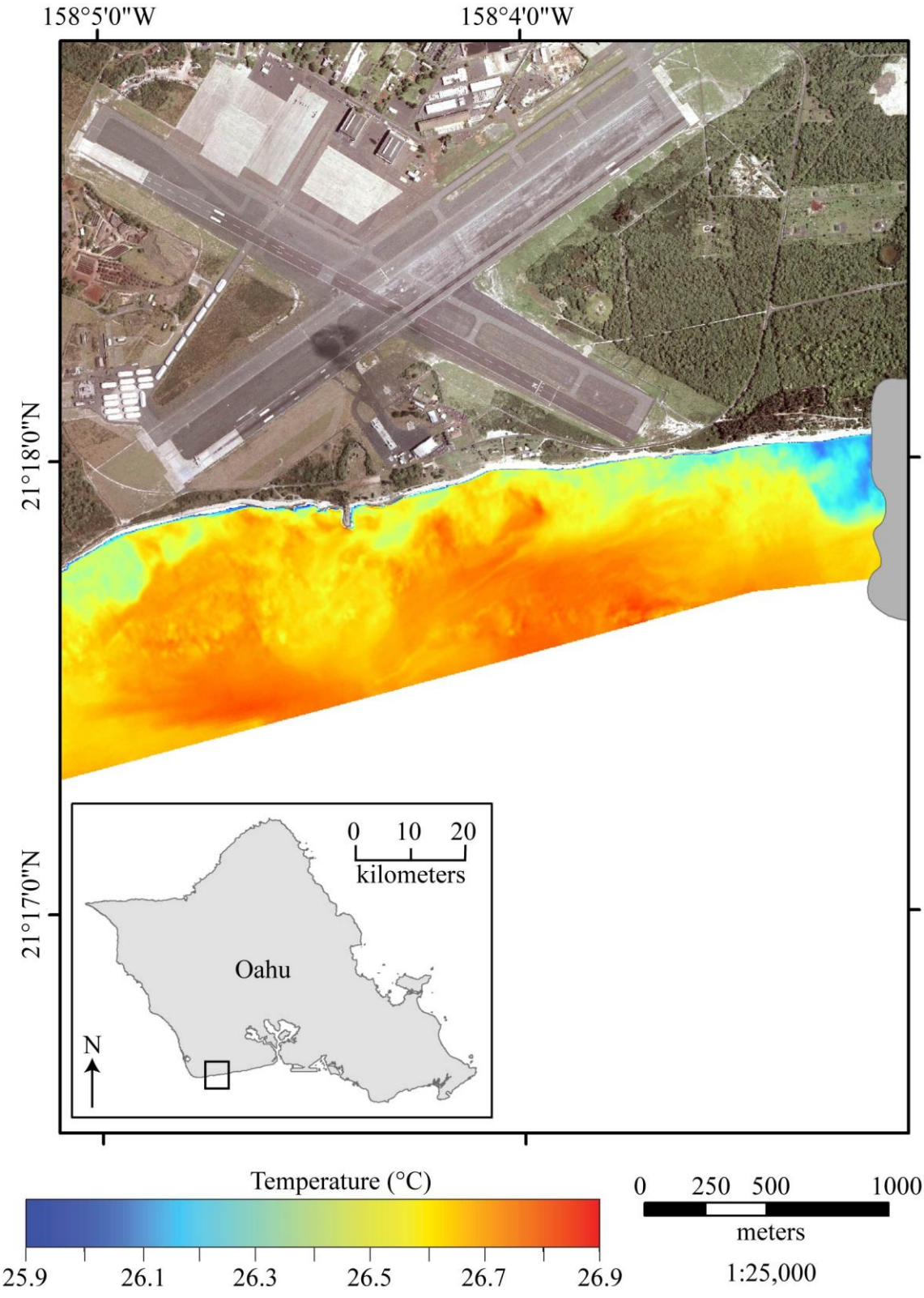
Panel 19: Middle Loch, Pearl Harbor from 12 June 2009 at 06:27-06:28 a.m., HST. Honolulu tide was +0.16 m MLLW.



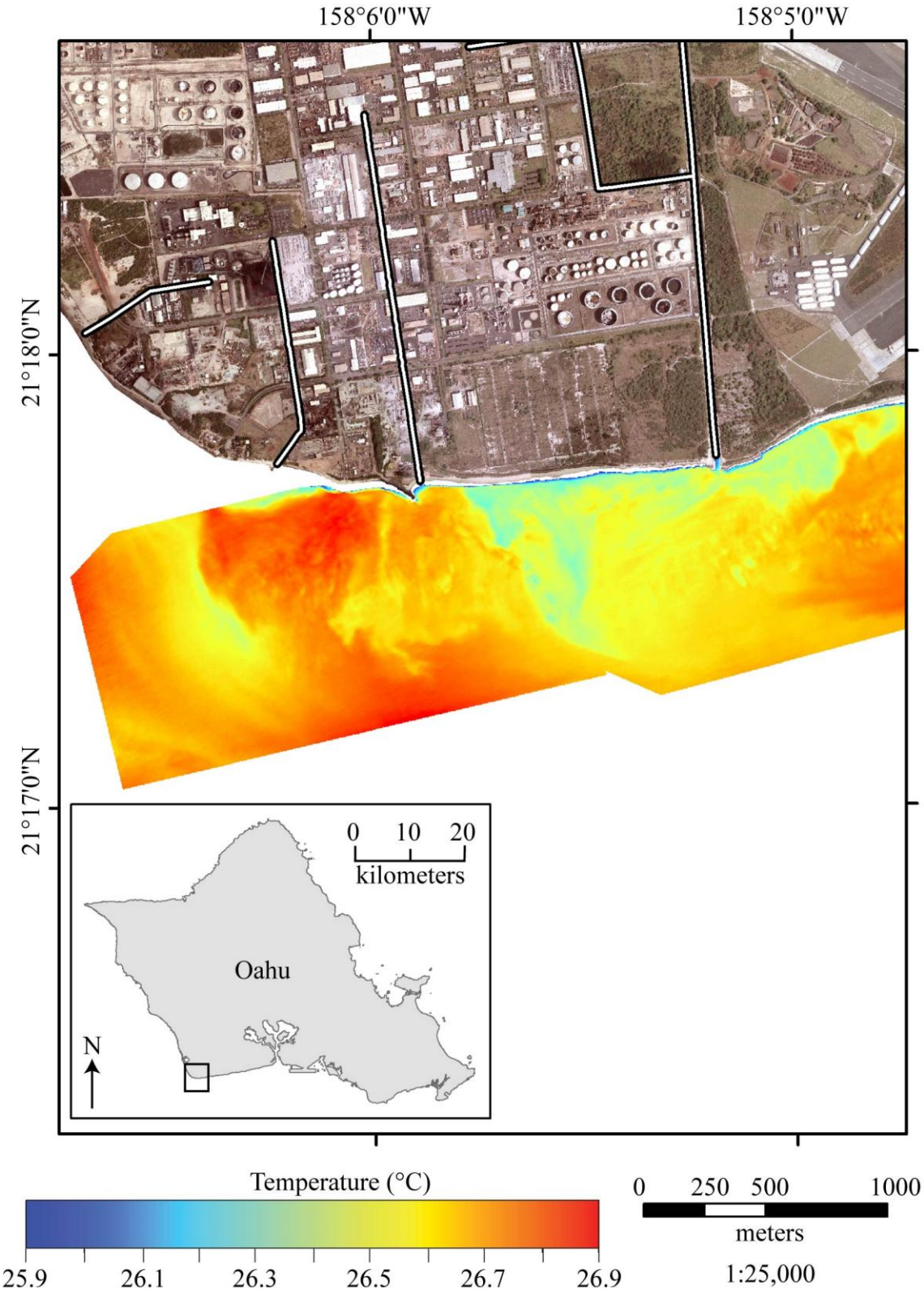
Panel 20: Middle Loch, Pearl Harbor from 22 June 2009 at 02:34-02:36 a.m., HST. Honolulu tide was +0.20 m MLLW.



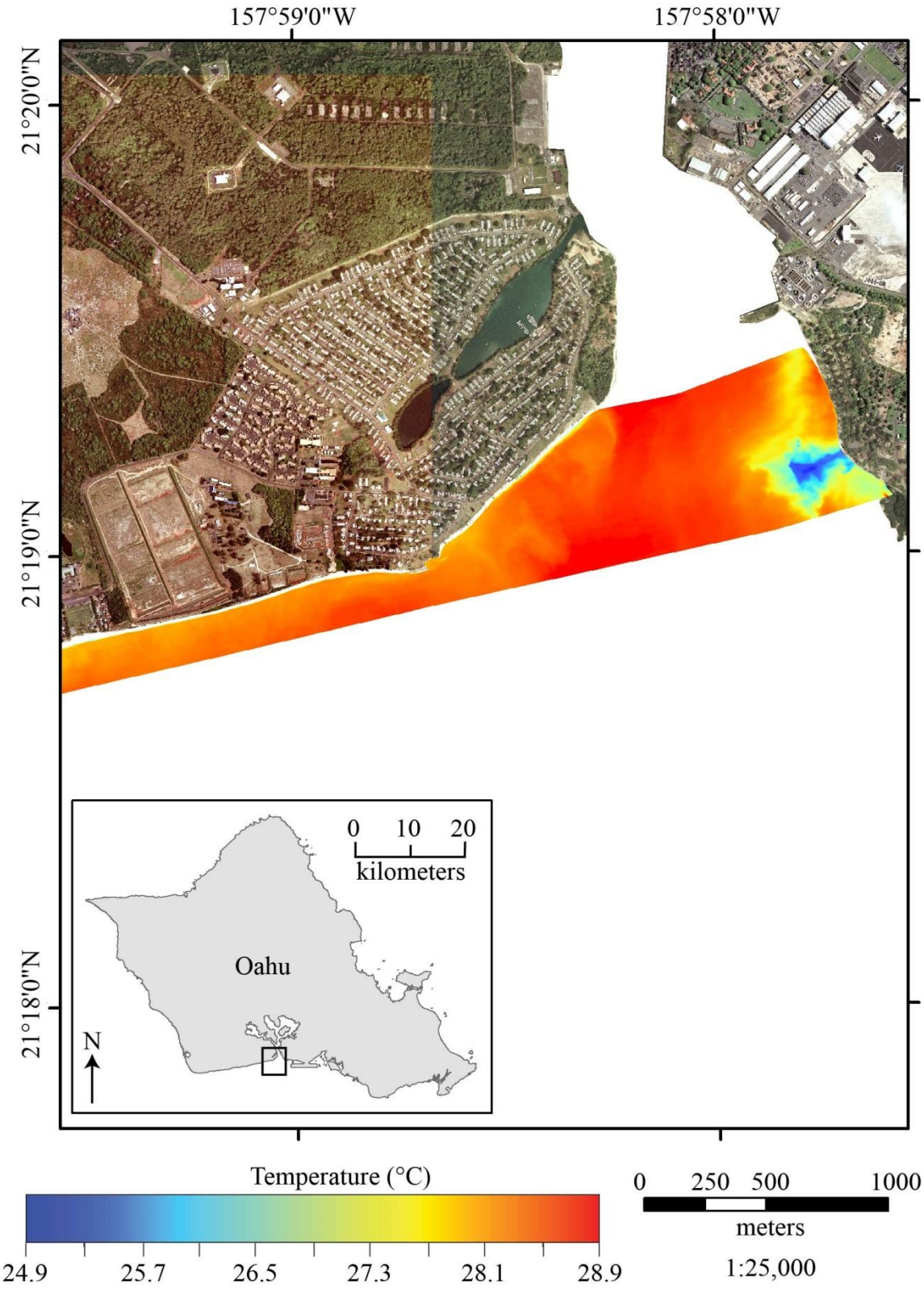
Panel 21: Ewa Beach from 6 July 2009 at 02:49-02:55 a.m., HST. Honolulu tide was +0.17 to +0.18 m MLLW.



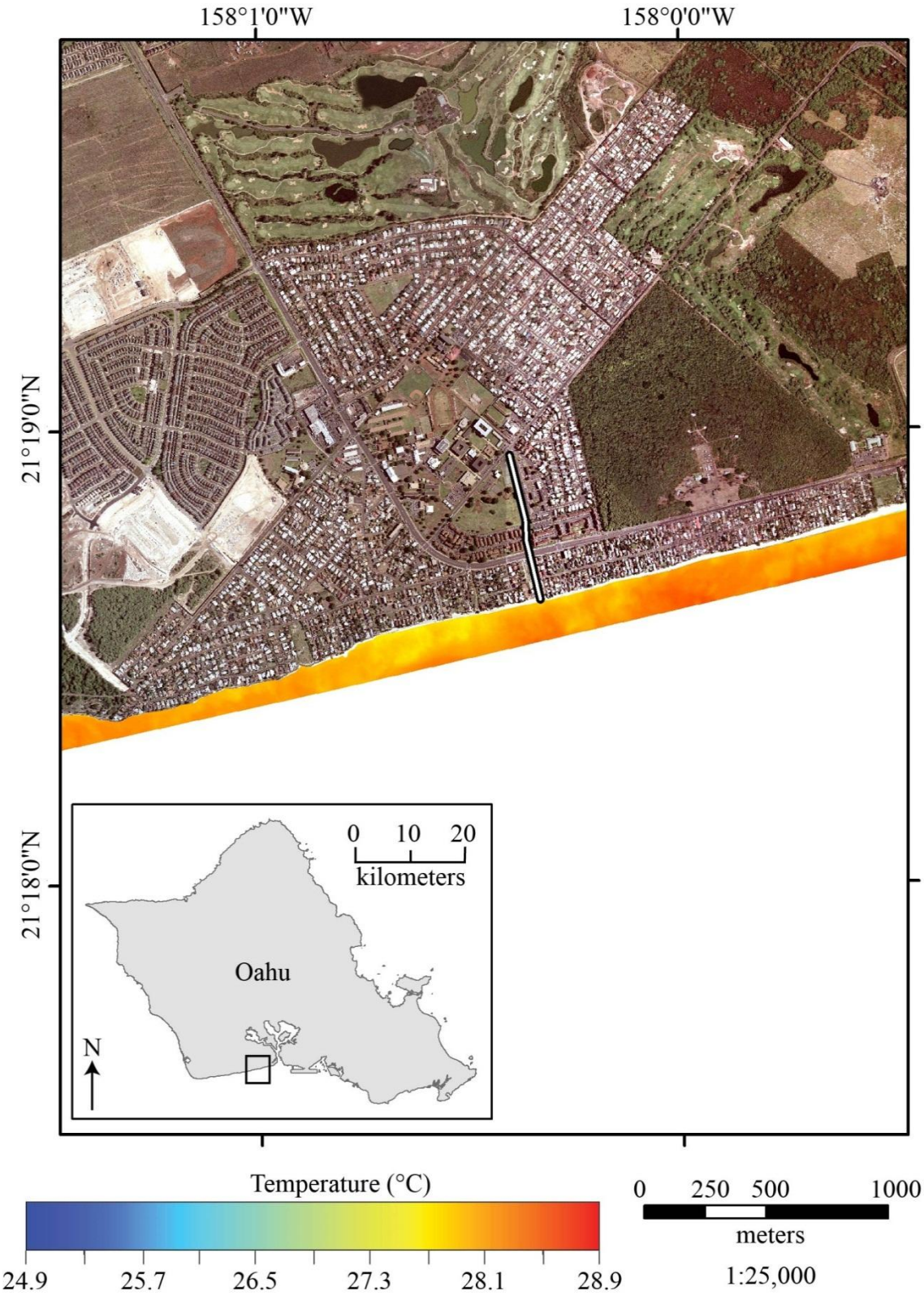
Panel 22: Kalaeloa Airport from 6 July 2009 at 02:49-02:55 a.m., HST. Honolulu tide was +0.17 to +0.18 m MLLW.



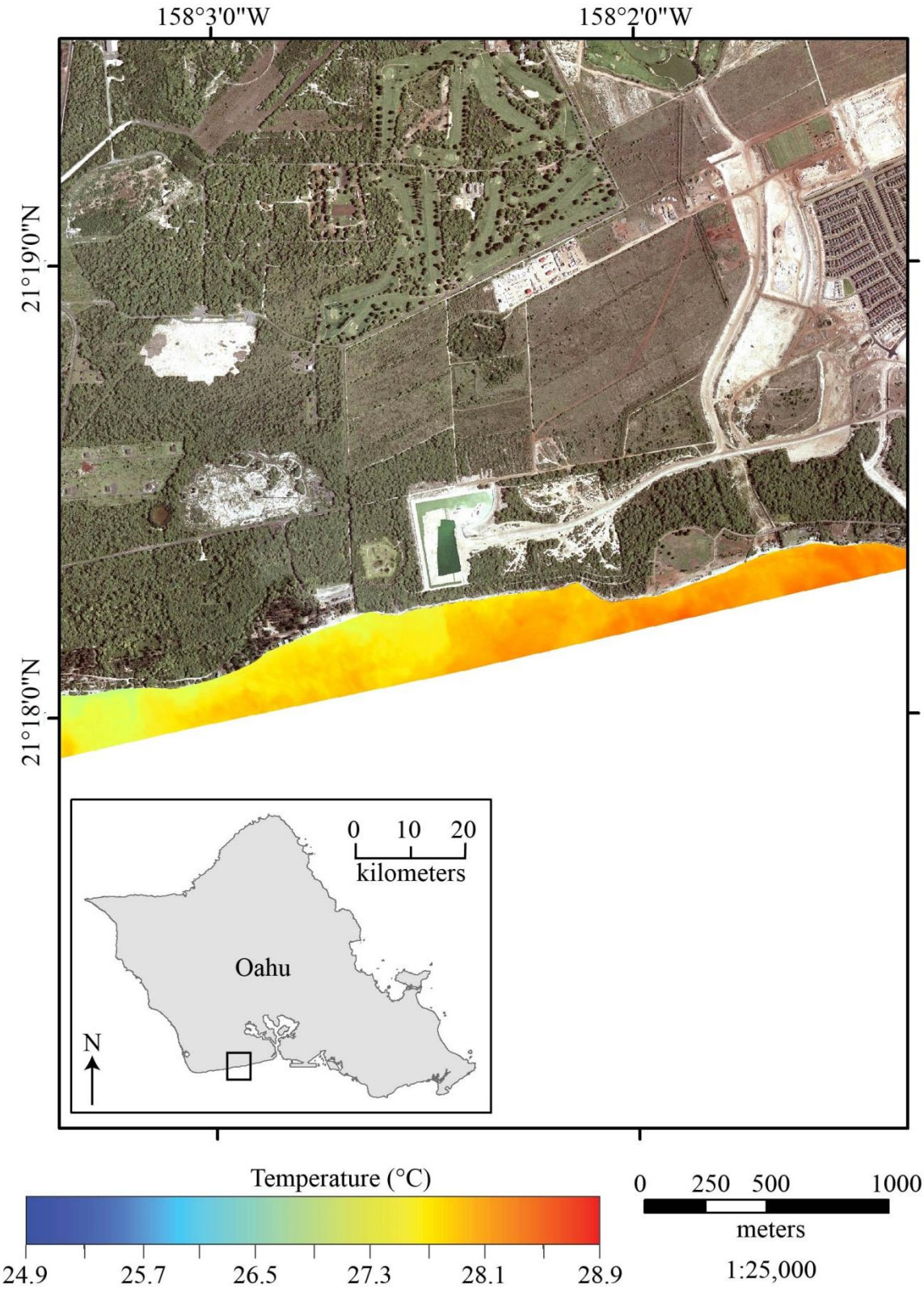
Panel 23: Kalaeloa Regional Park from 6 July 2009 at 02:49-02:55 a.m., HST. Honolulu tide was +0.17 to +0.18 m MLLW.



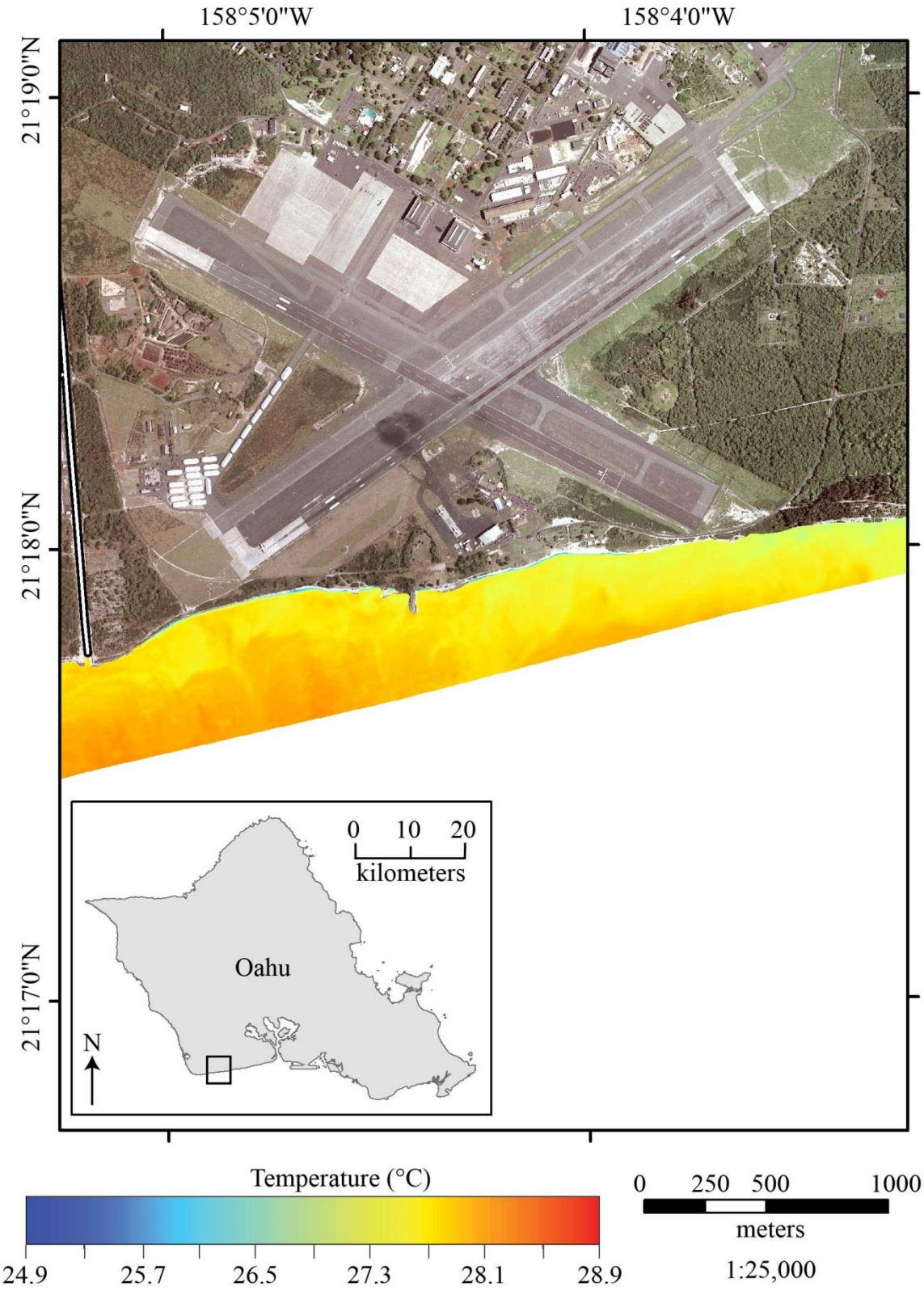
Panel 24: Mouth of Pearl Harbor from 12 June 2009 at 06:36-06:38 a.m., HST. Honolulu tide was +0.16 m MLLW.



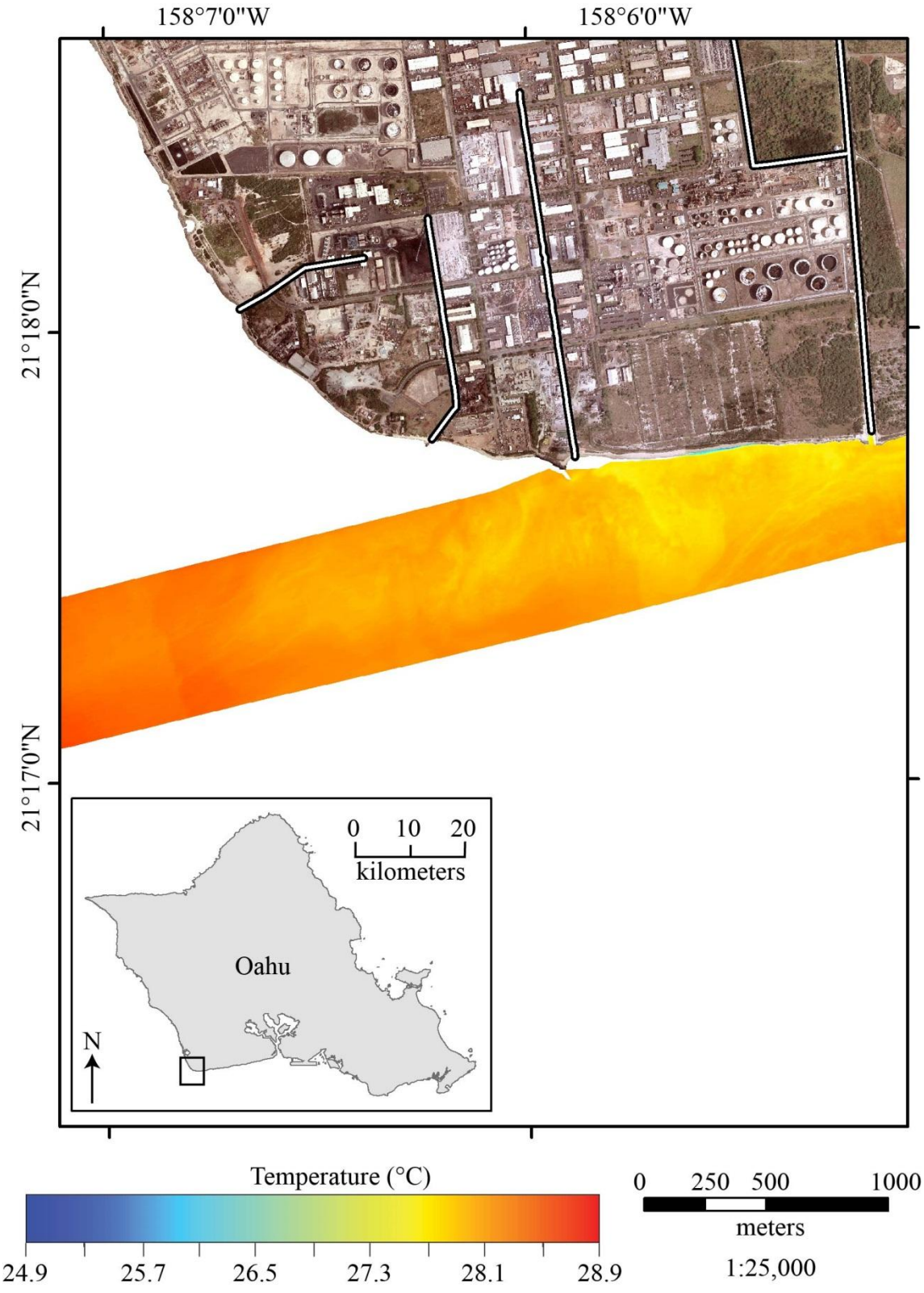
Panel 25: Ewa Beach from 12 June 2009 at 06:36-06:38 a.m., HST. Honolulu tide was +0.16 m MLLW.



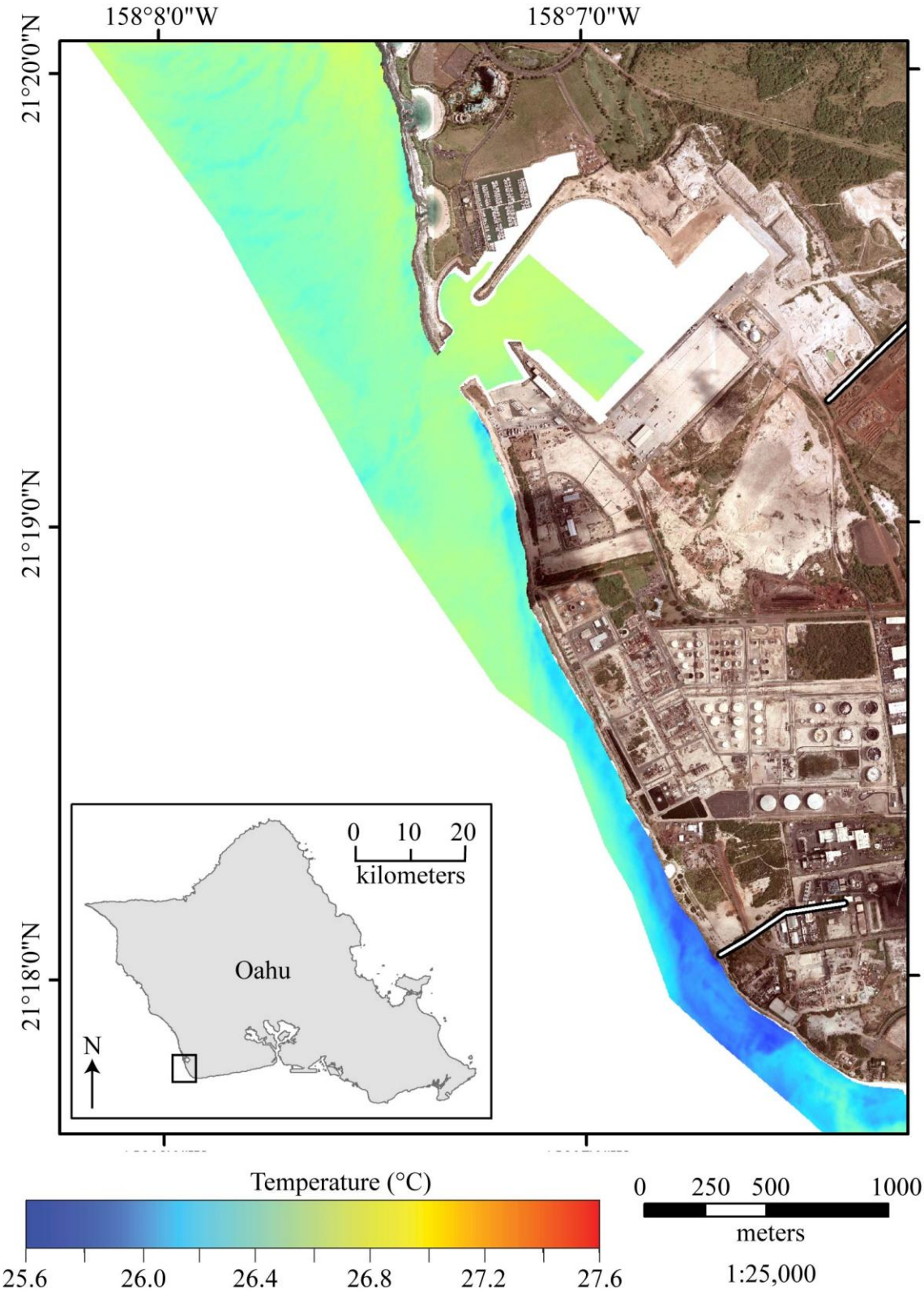
Panel 26: Oneula Beach Park from 12 June 2009 at 06:36-06:38 a.m., HST. Honolulu tide was +0.16 m MLLW.



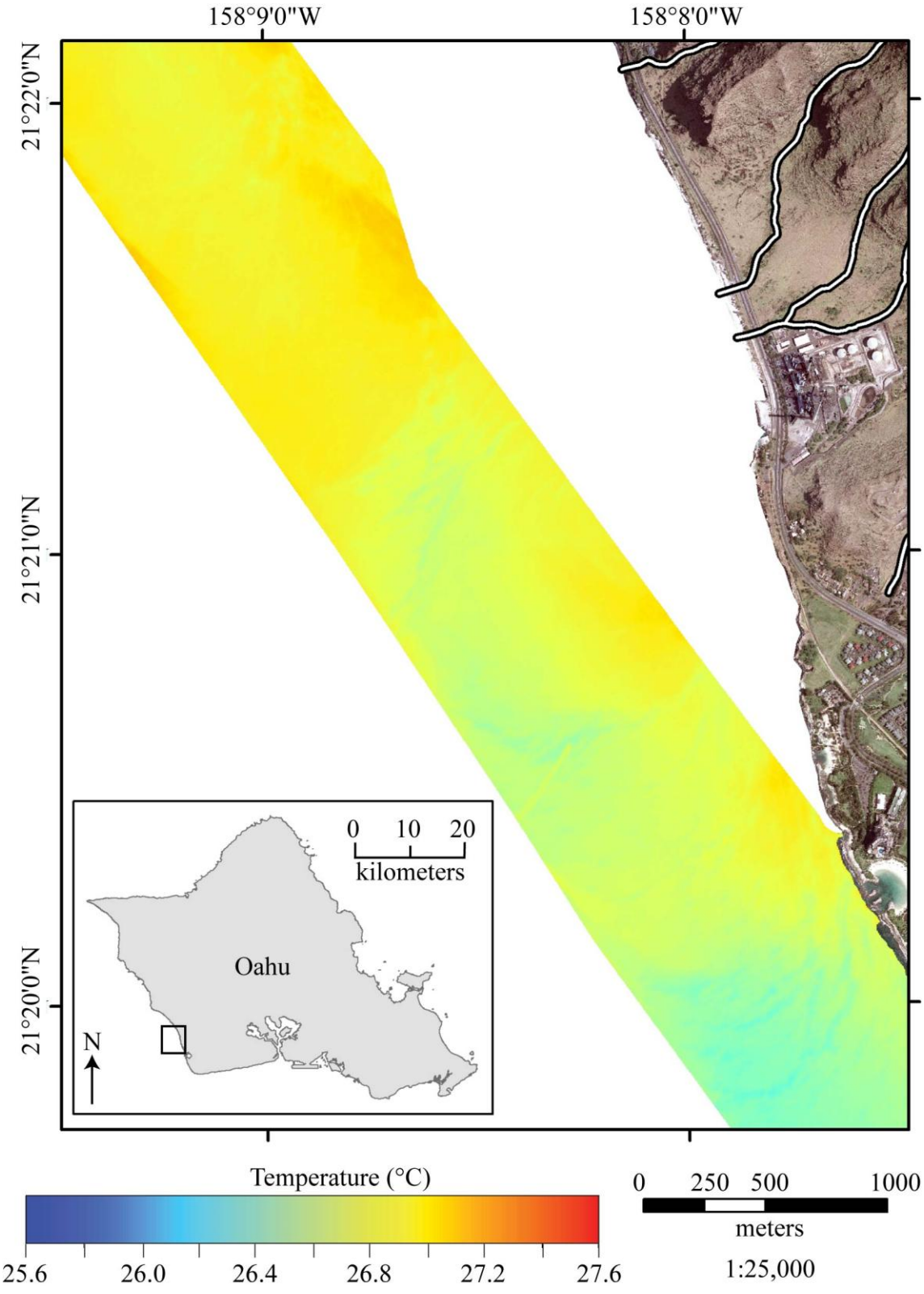
Panel 27: Kalaeloa Airport from 12 June 2009 at 06:36-06:38 a.m., HST. Honolulu tide was +0.16 m MLLW.



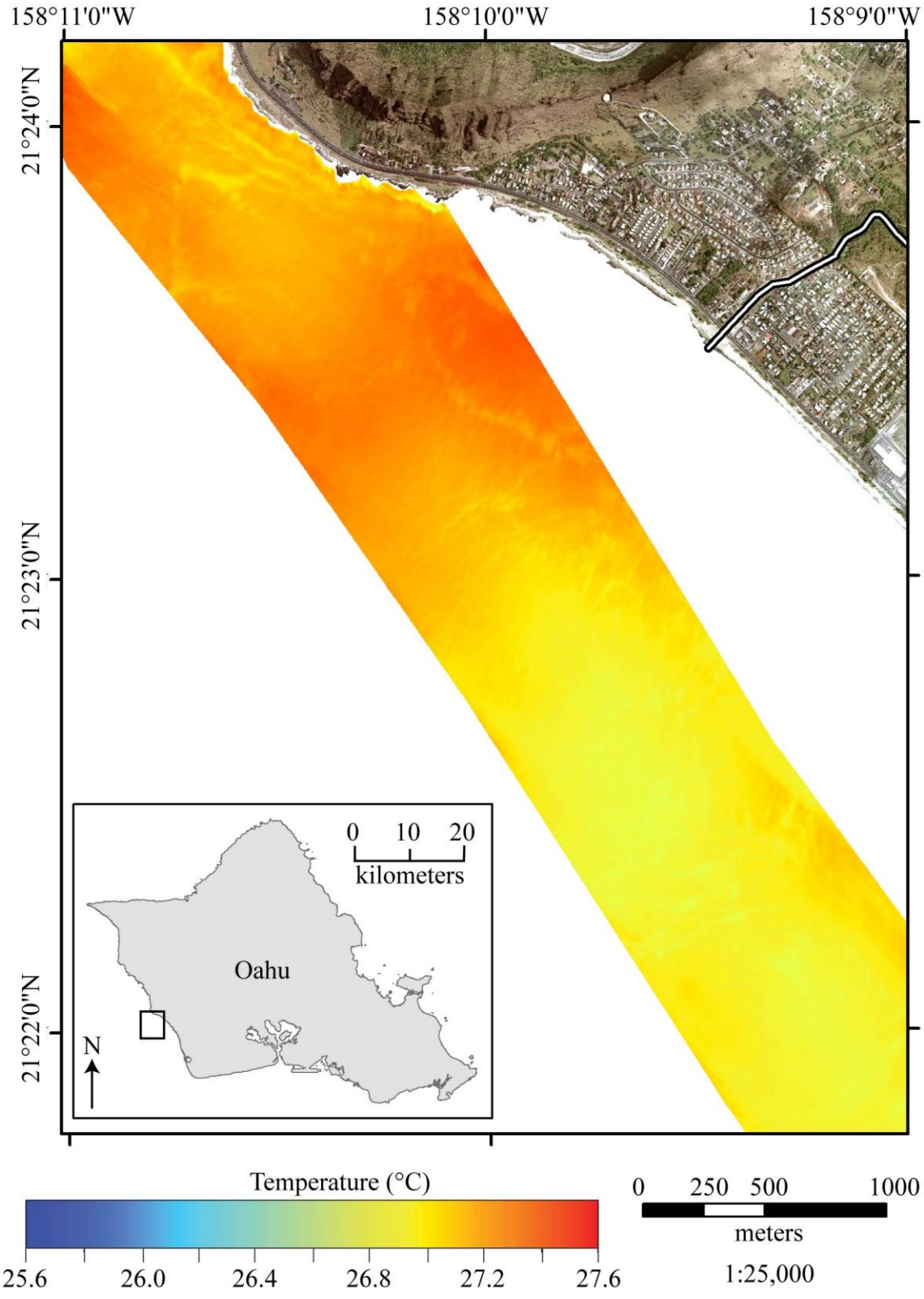
Panel 28: Kalaeloa Regional Park from 12 June 2009 at 06:36-06:38 a.m., HST. Honolulu tide was +0.16 m MLLW.



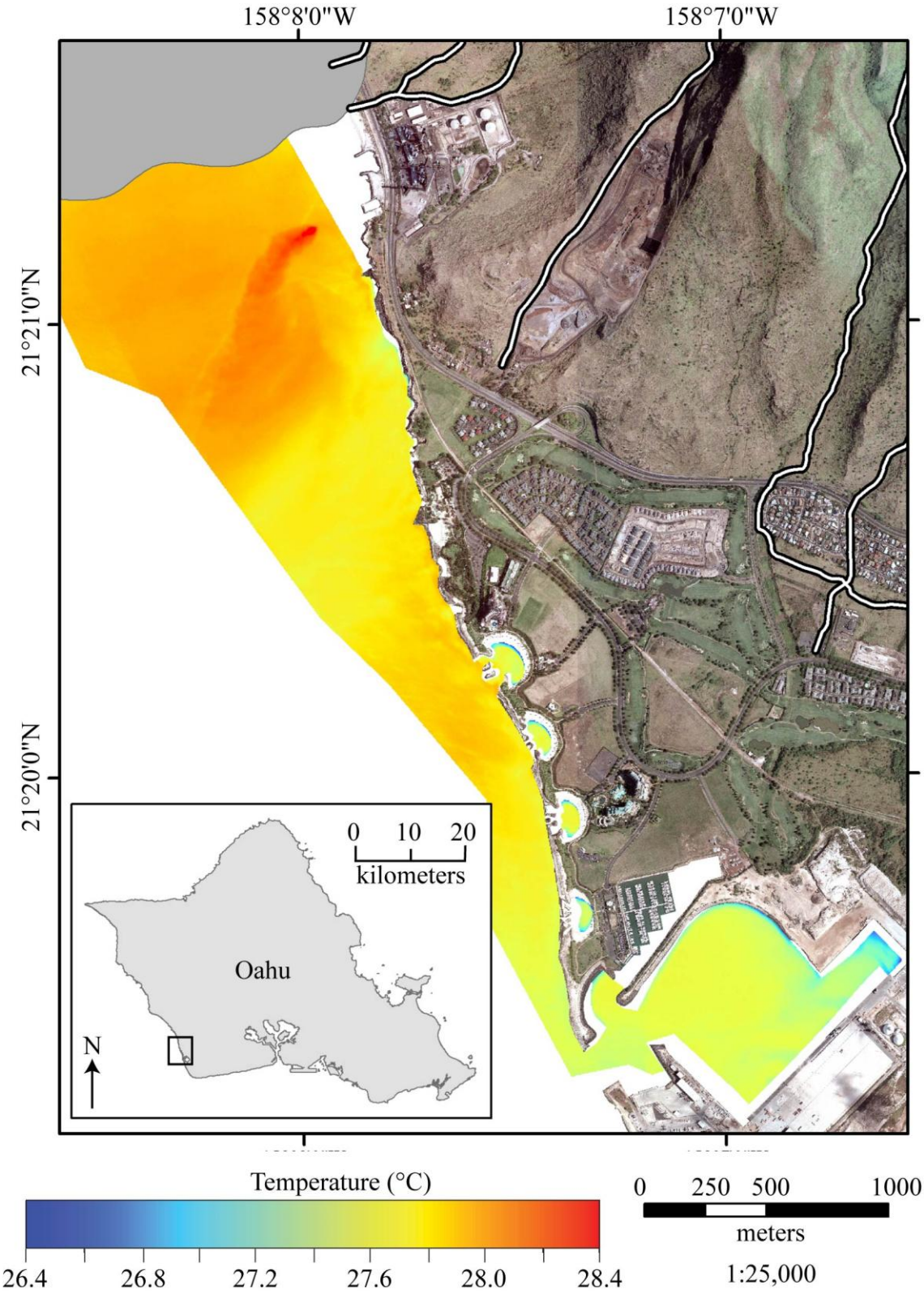
Panel 29: Barber's Point Deep Draft Harbor from 6 July 2009 at 03:06-03:13 a.m., HST. Honolulu tide was +0.18 m MLLW.



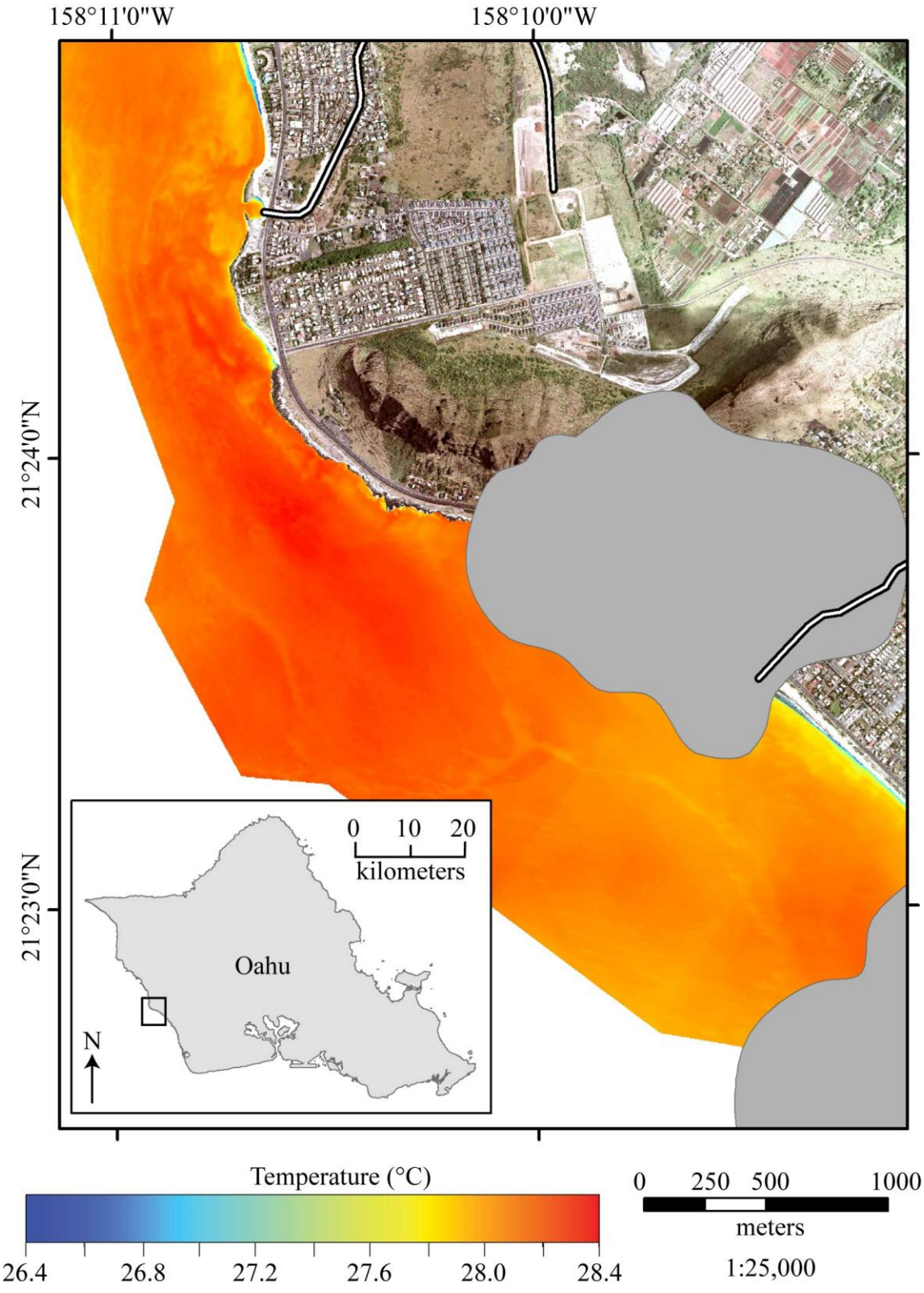
Panel 30: Kahe Point from 6 July 2009 at 03:06-03:13 a.m., HST. Honolulu tide was +0.18 m MLLW.



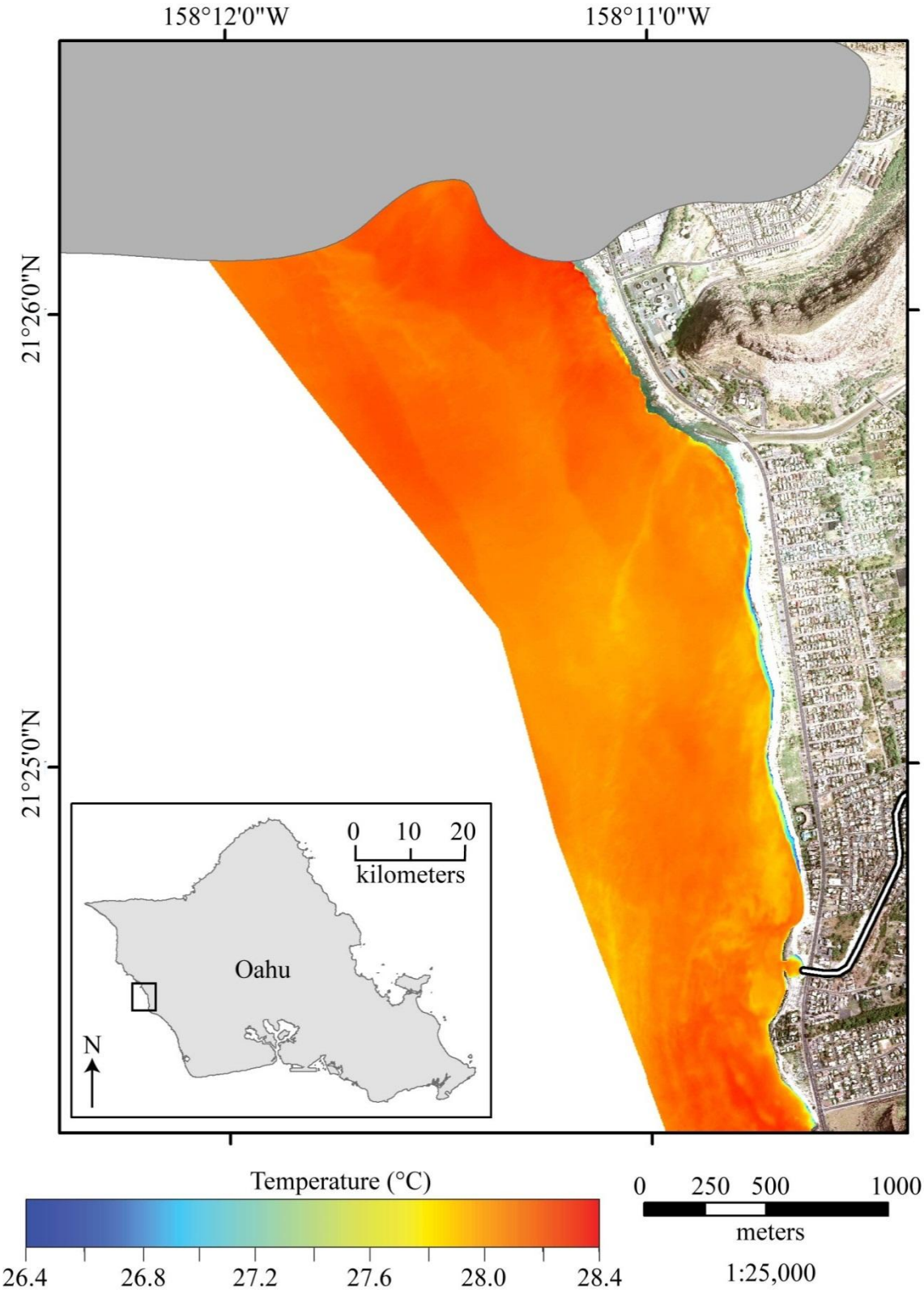
Panel 31: Nanakuli from 6 July 2009 at 03:06-03:13 a.m., HST. Honolulu tide was +0.18 m MLLW.



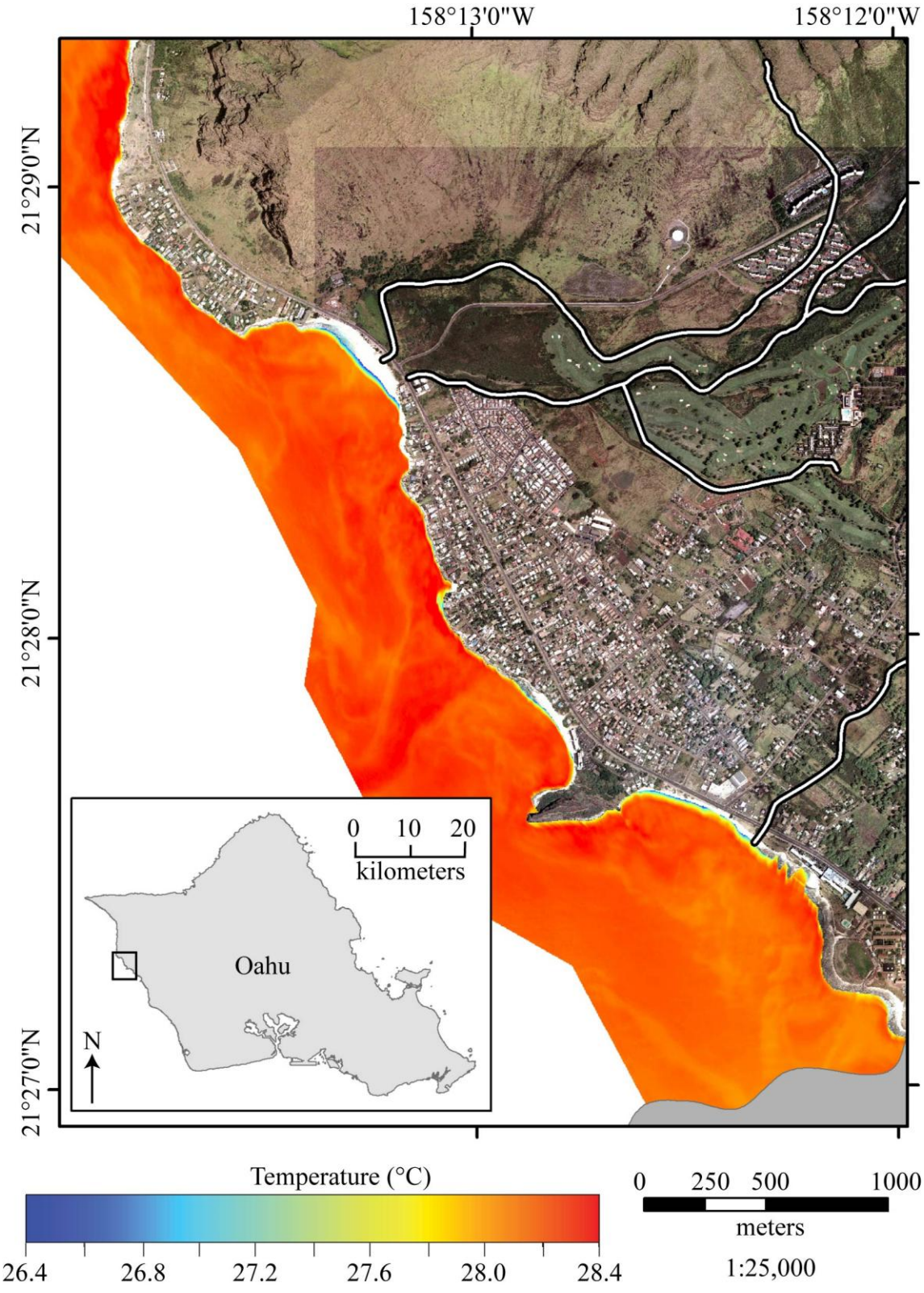
Panel 32: Barber's Point Deep Draft Harbor and Kahe Point from 17 July 2009 from 04:51-04:59 a.m., HST. Honolulu tide was -0.04 m MLLW.



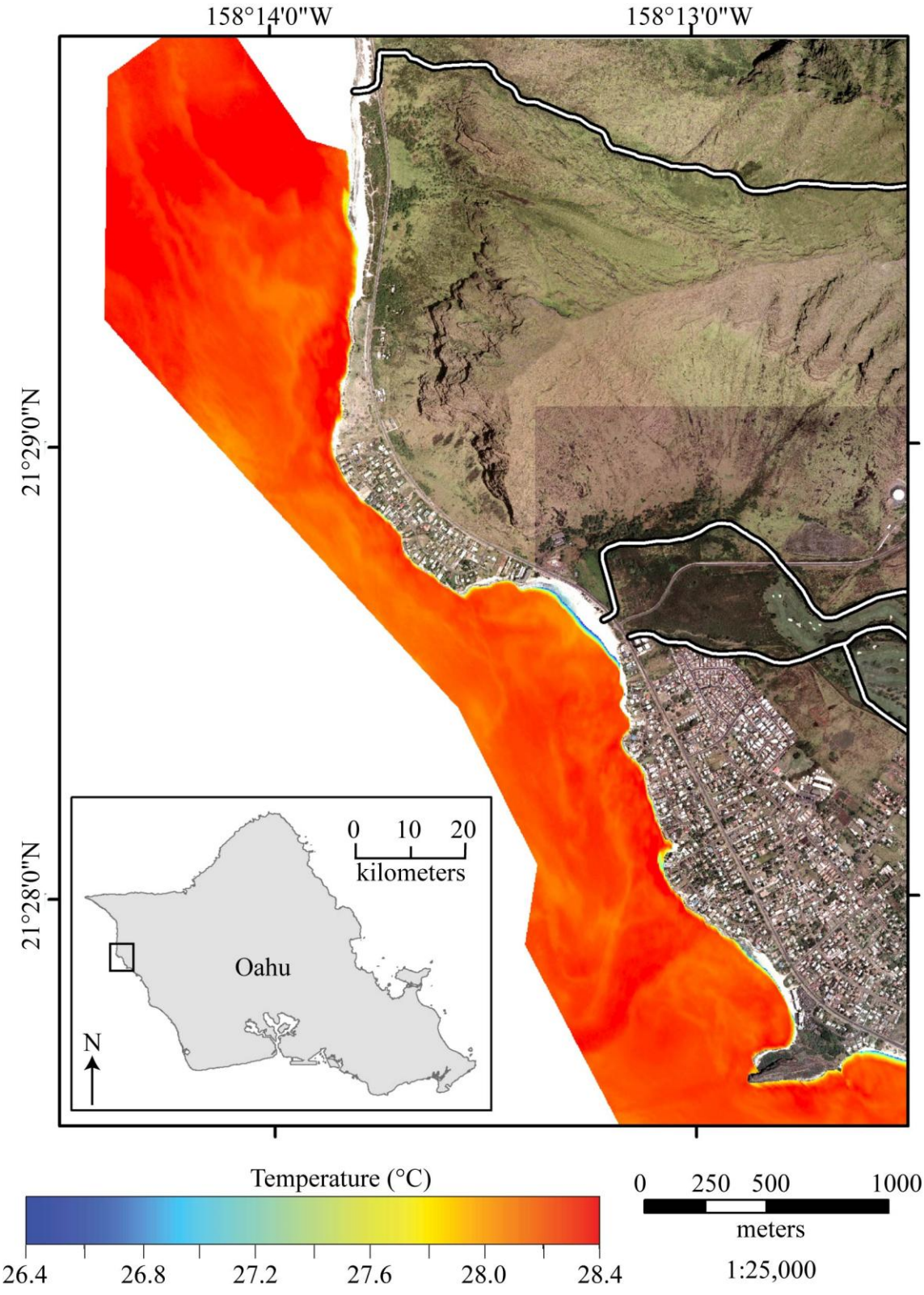
Panel 33: Nanakuli from 17 July 2009 from 17 July 2009 from 04:51-04:59 a.m., HST. Honolulu tide was -0.04 m MLLW.



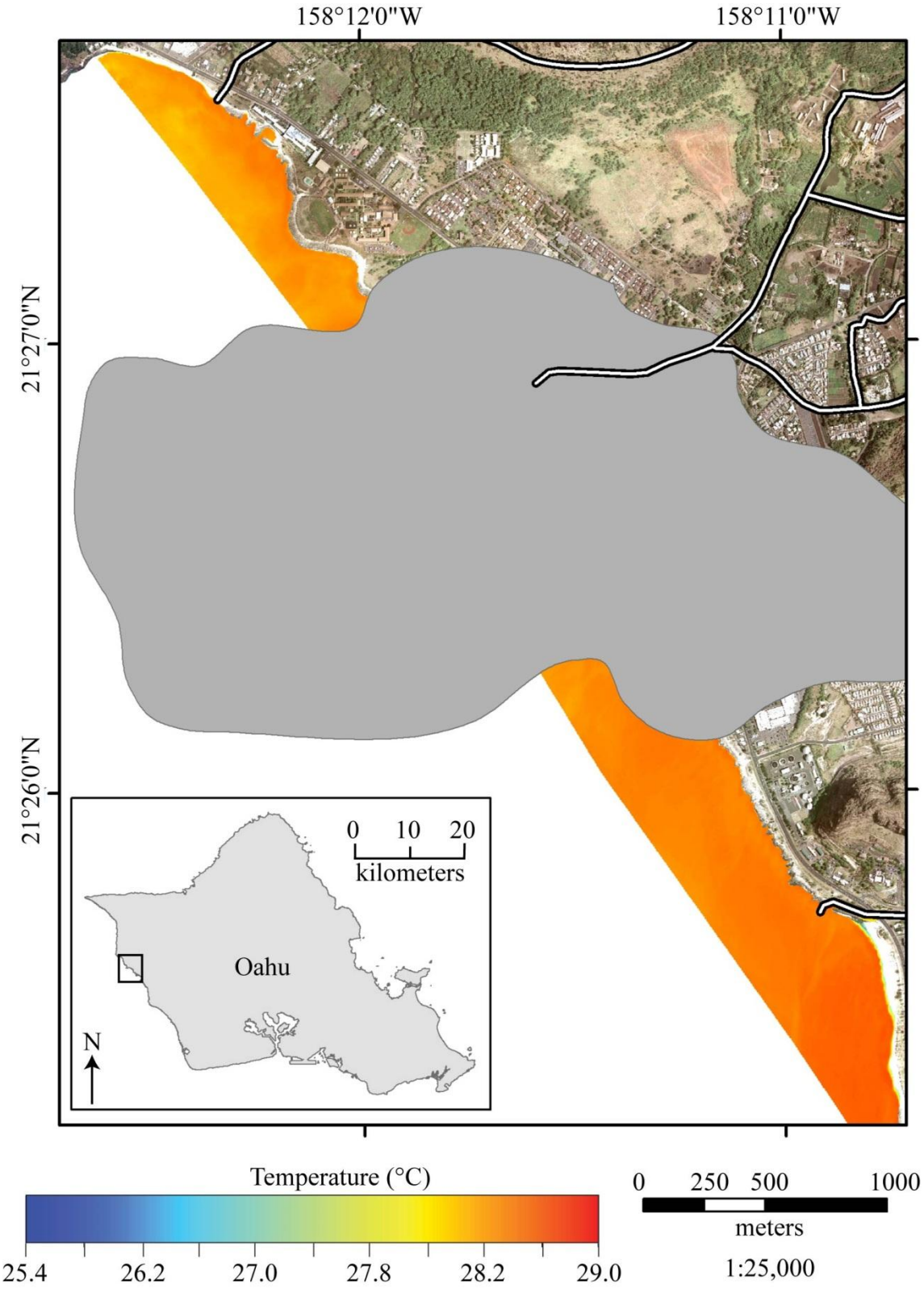
Panel 34: Maili from 17 July 2009 from 17 July 2009 from 04:51-04:59 a.m., HST. Honolulu tide was -0.04 m MLLW.



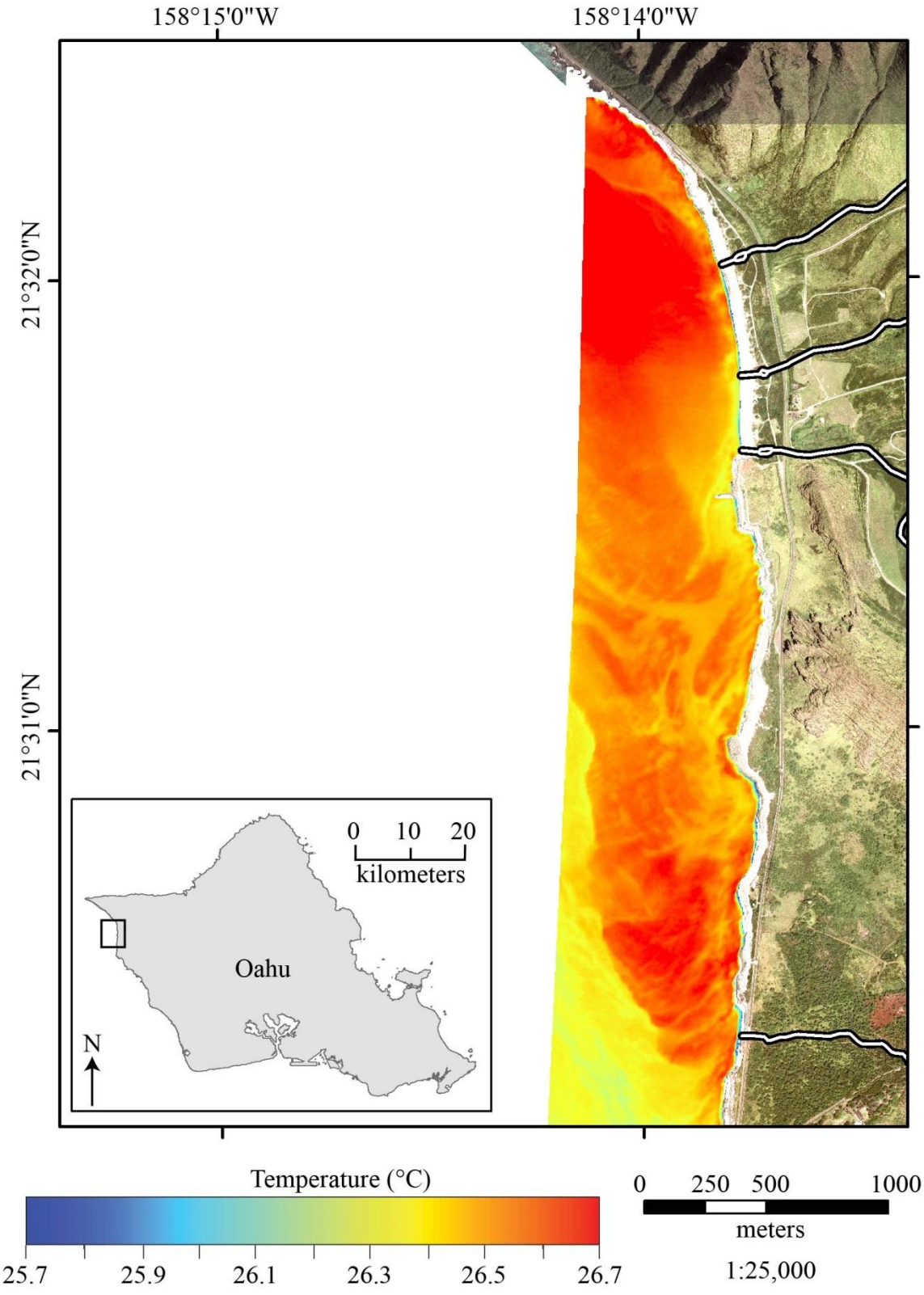
Panel 35: Makaha from 17 July 2009 from 17 July 2009 from 04:51-04:59 a.m., HST. Honolulu tide was -0.04 m MLLW.



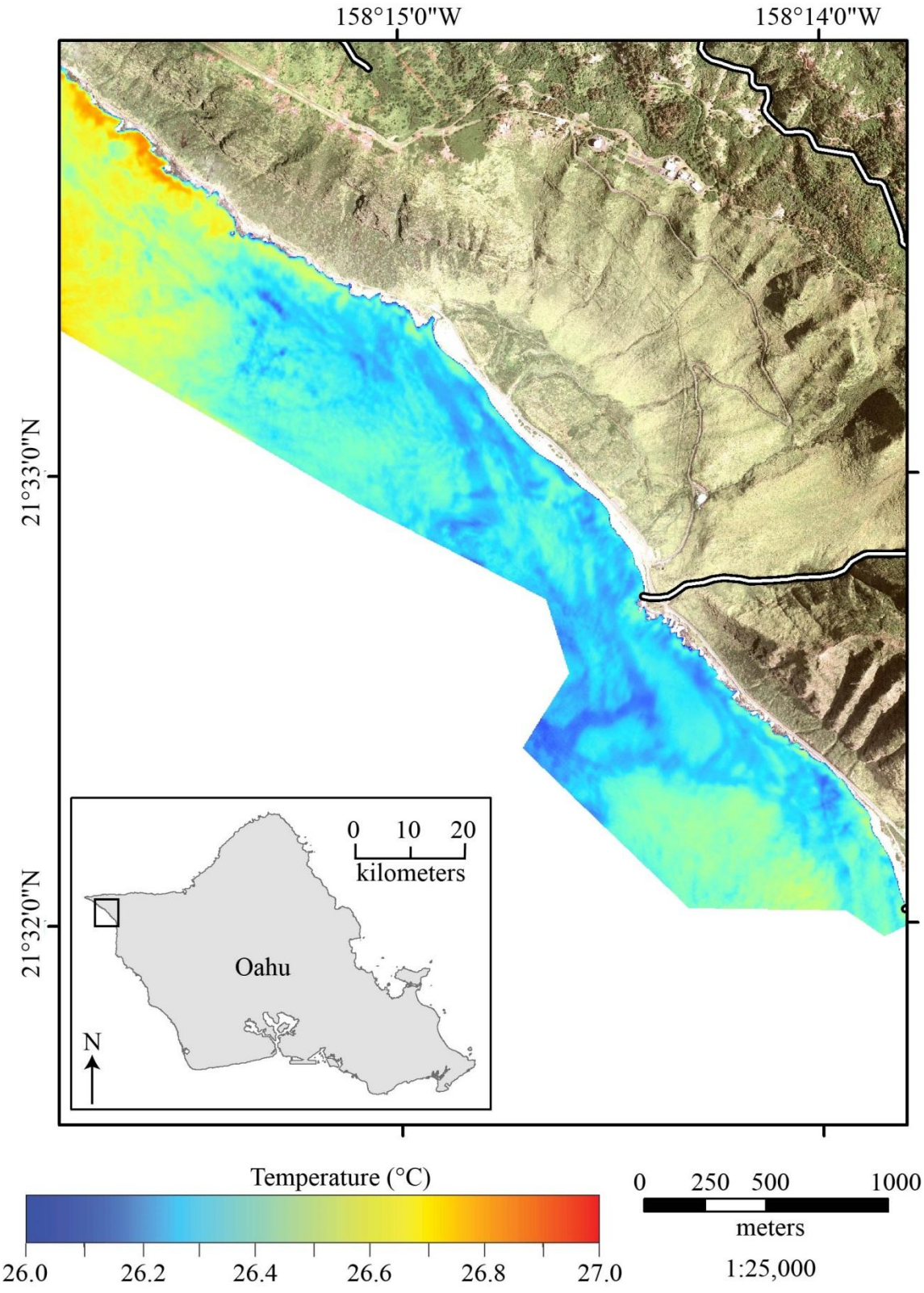
Panel 36: Makaha from 17 July 2009 from 17 July 2009 from 04:51-04:59 a.m., HST. Honolulu tide was -0.04 m MLLW.



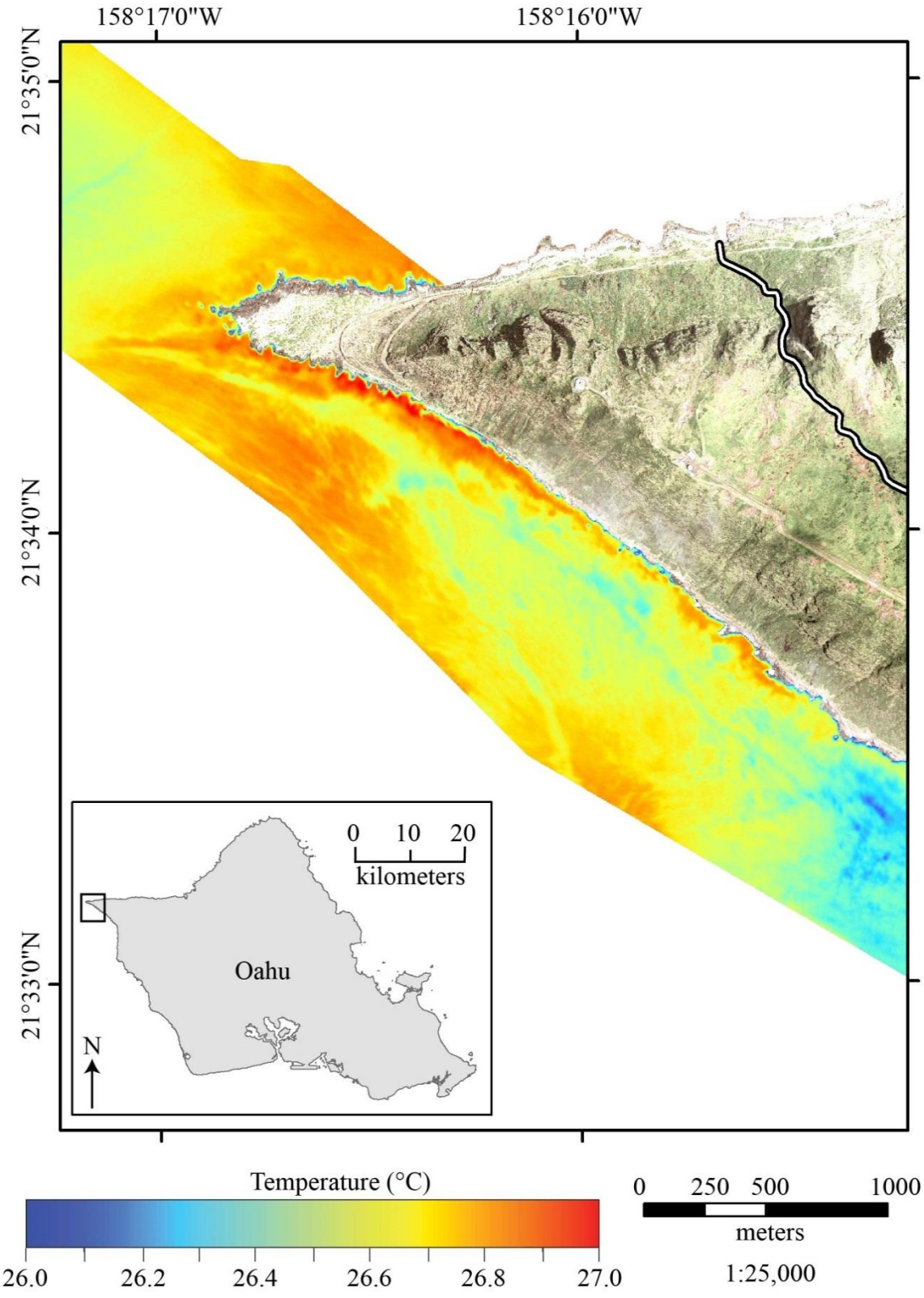
Panel 37: Waianae from 17 July 2009 at 05:24-05:30 a.m., HST. Honolulu tide was -0.04 to -0.03 m MLLW.



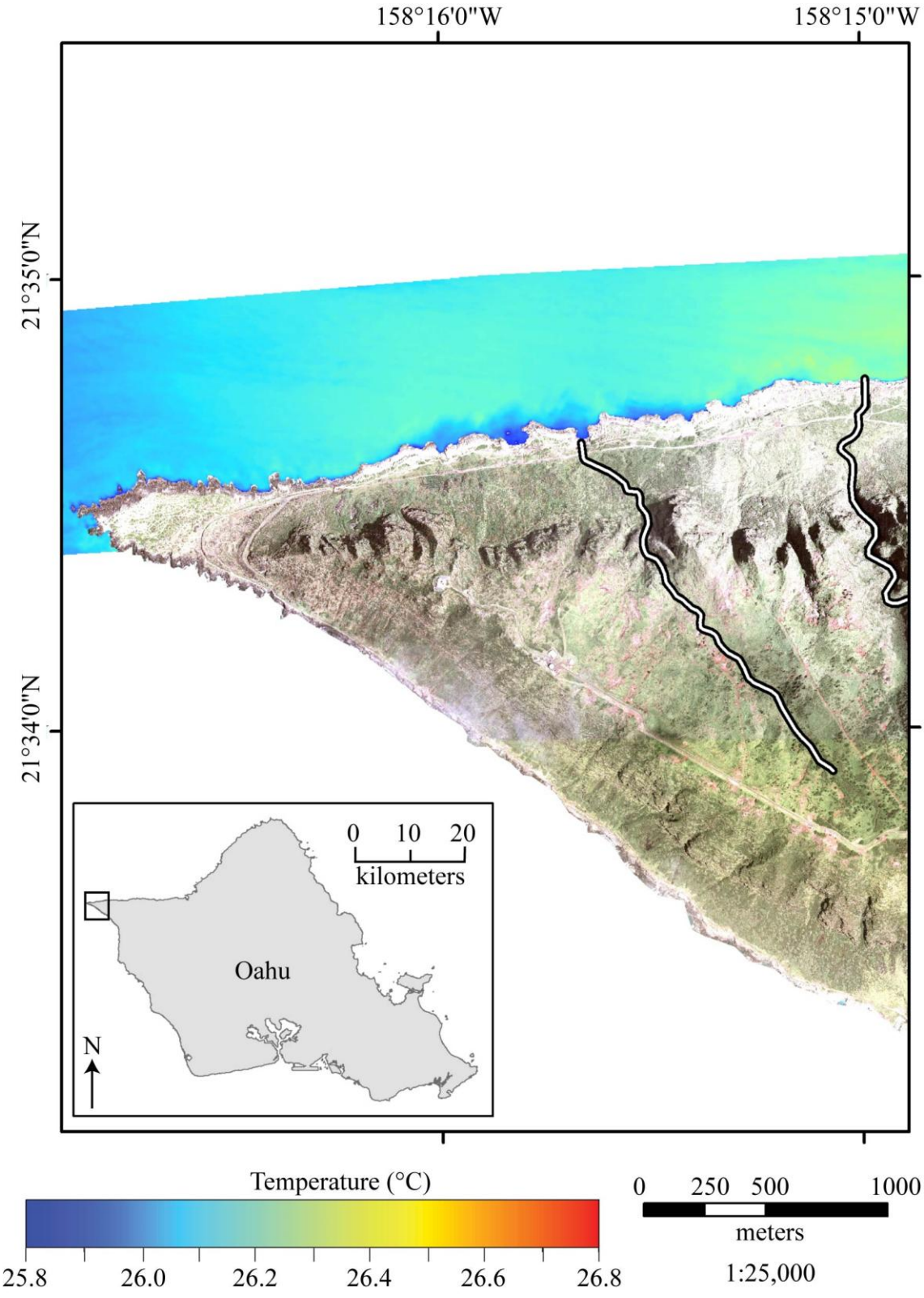
Panel 38: Makua Keaau Forest Reserve from 17 July 2009 at 05:07-05:09 a.m., HST. Honolulu tide was -0.04 m MLLW.



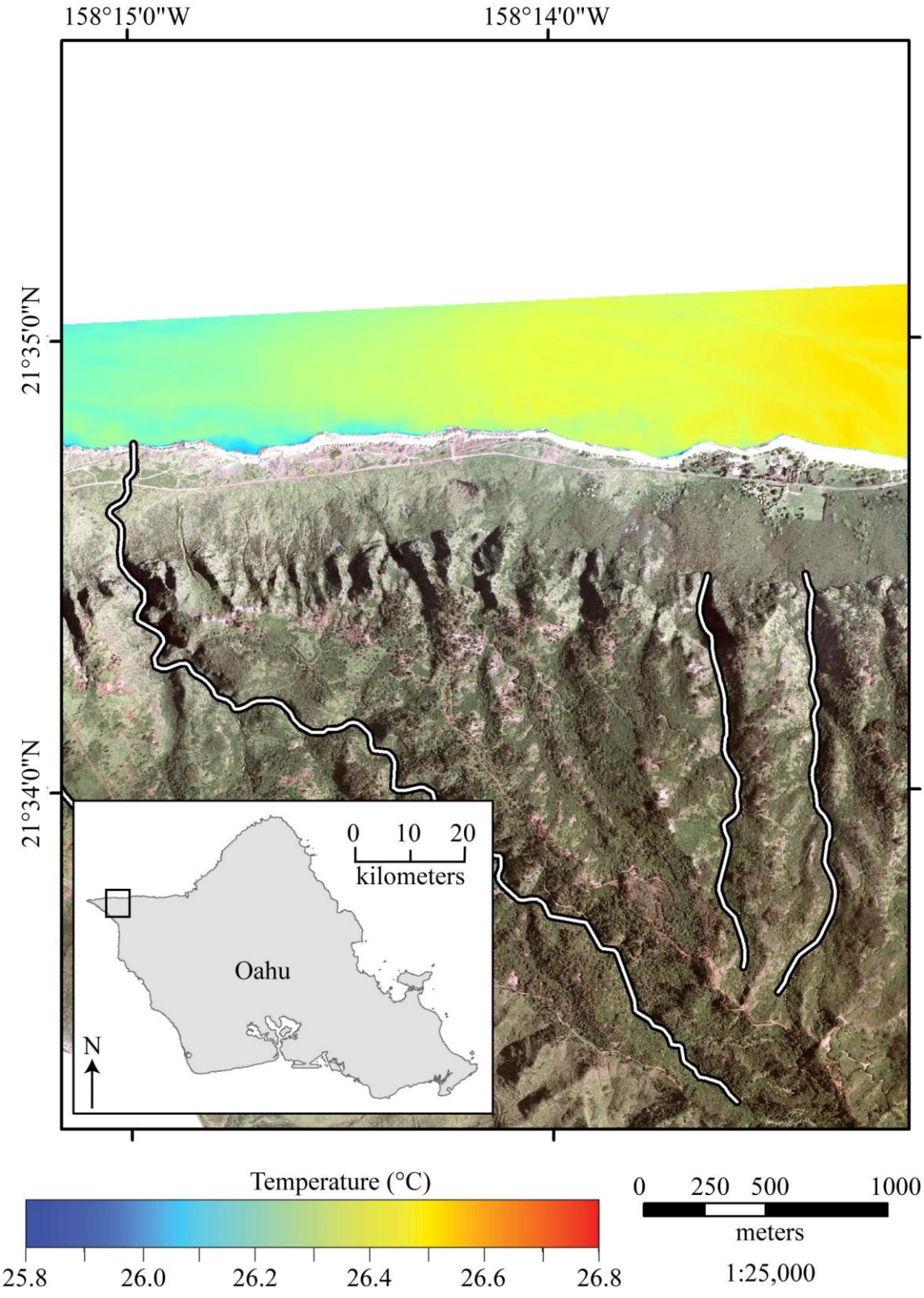
Panel 39: Kaena Point State Natural Area Reserve from 22 July 2009 at 00:30-00:33 a.m., HST. Honolulu tide was +0.05 m MLLW.



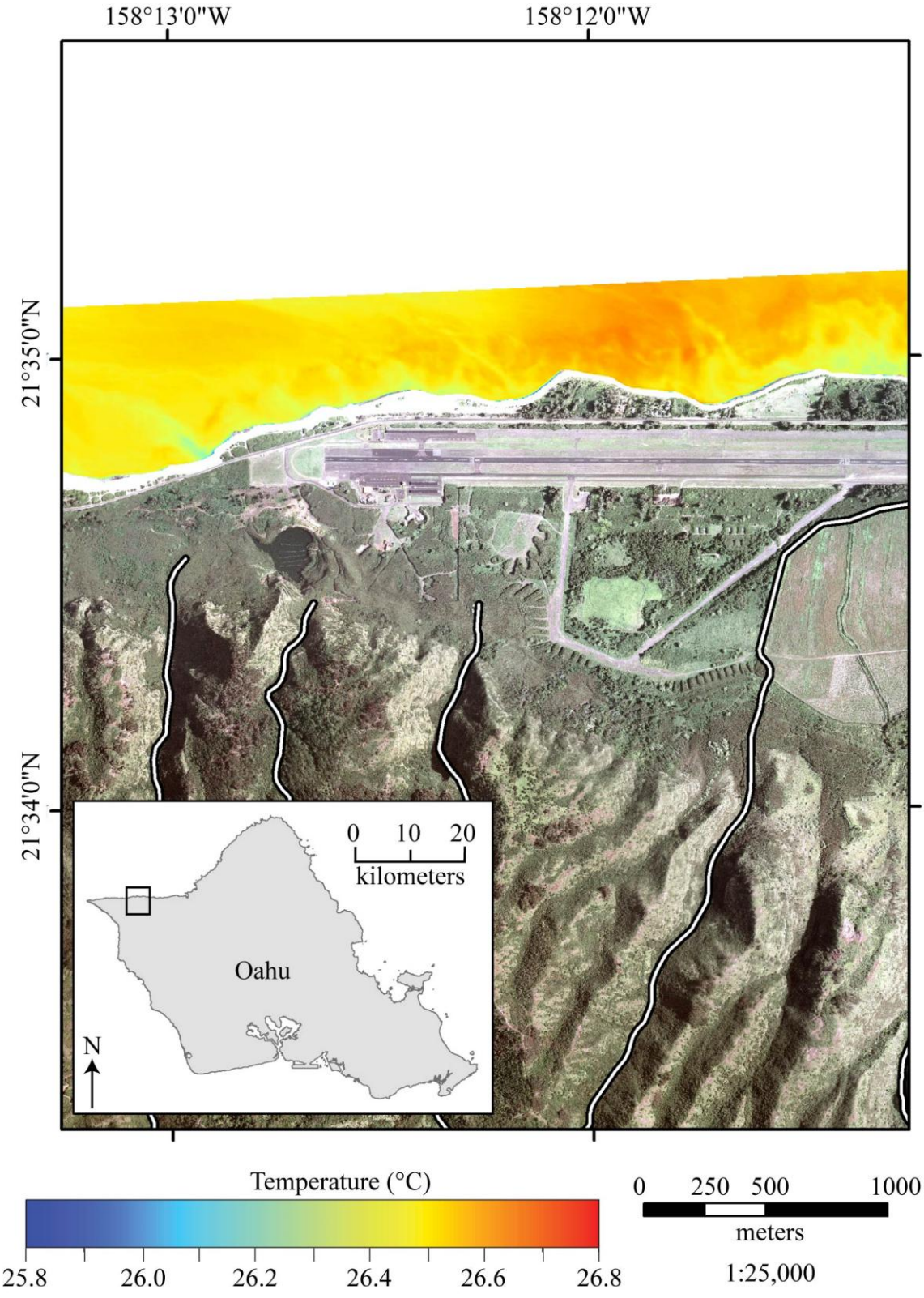
Panel 40: Kaena Point 22 July 2009 at 00:30-00:33 a.m., HST. Honolulu tide was +0.05 m MLLW.



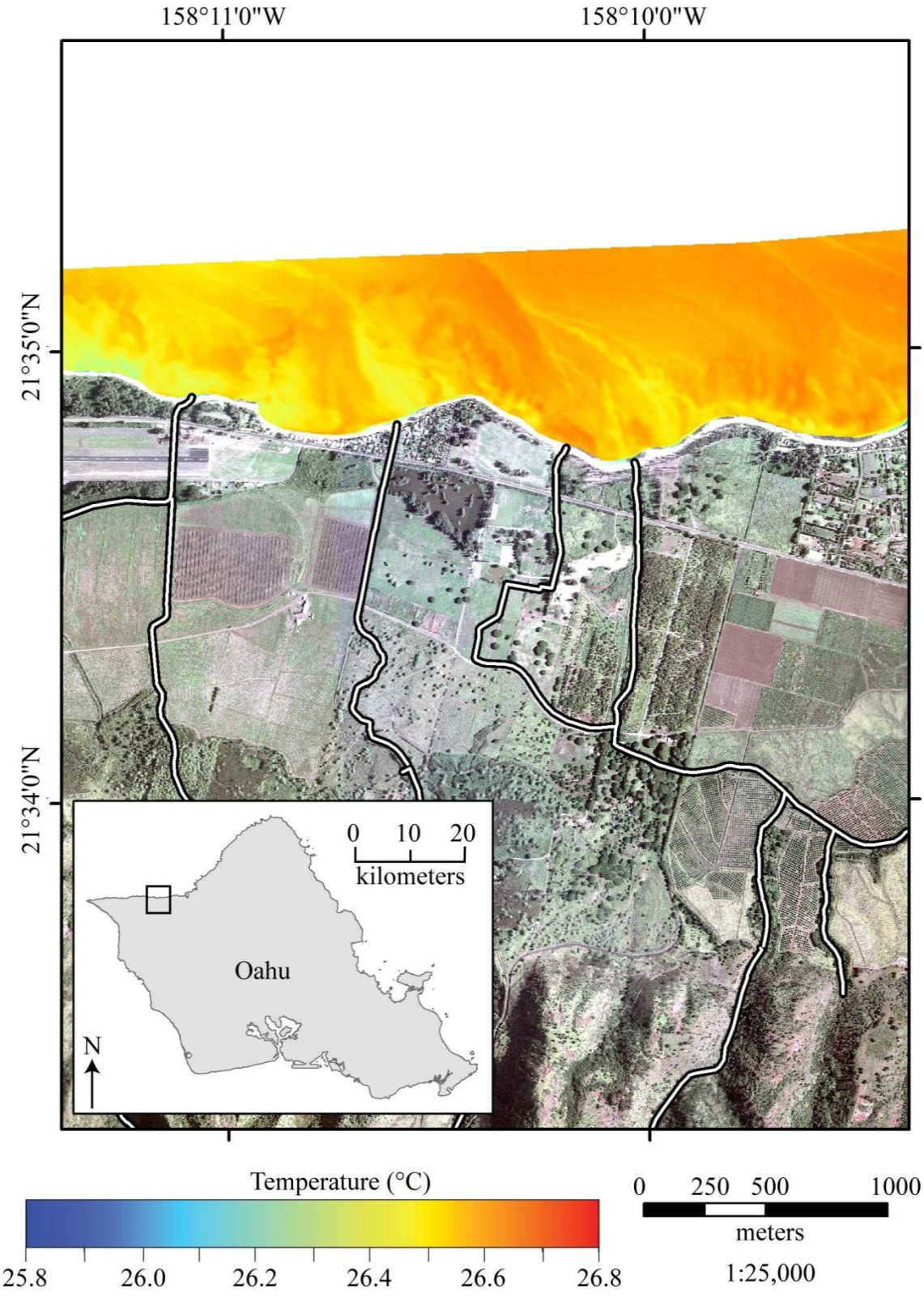
Panel 41: Kaena Point from 22 July 2009 at 00:36-00:43 a.m., HST. Honolulu tide was +0.05 to +0.06 m MLLW.



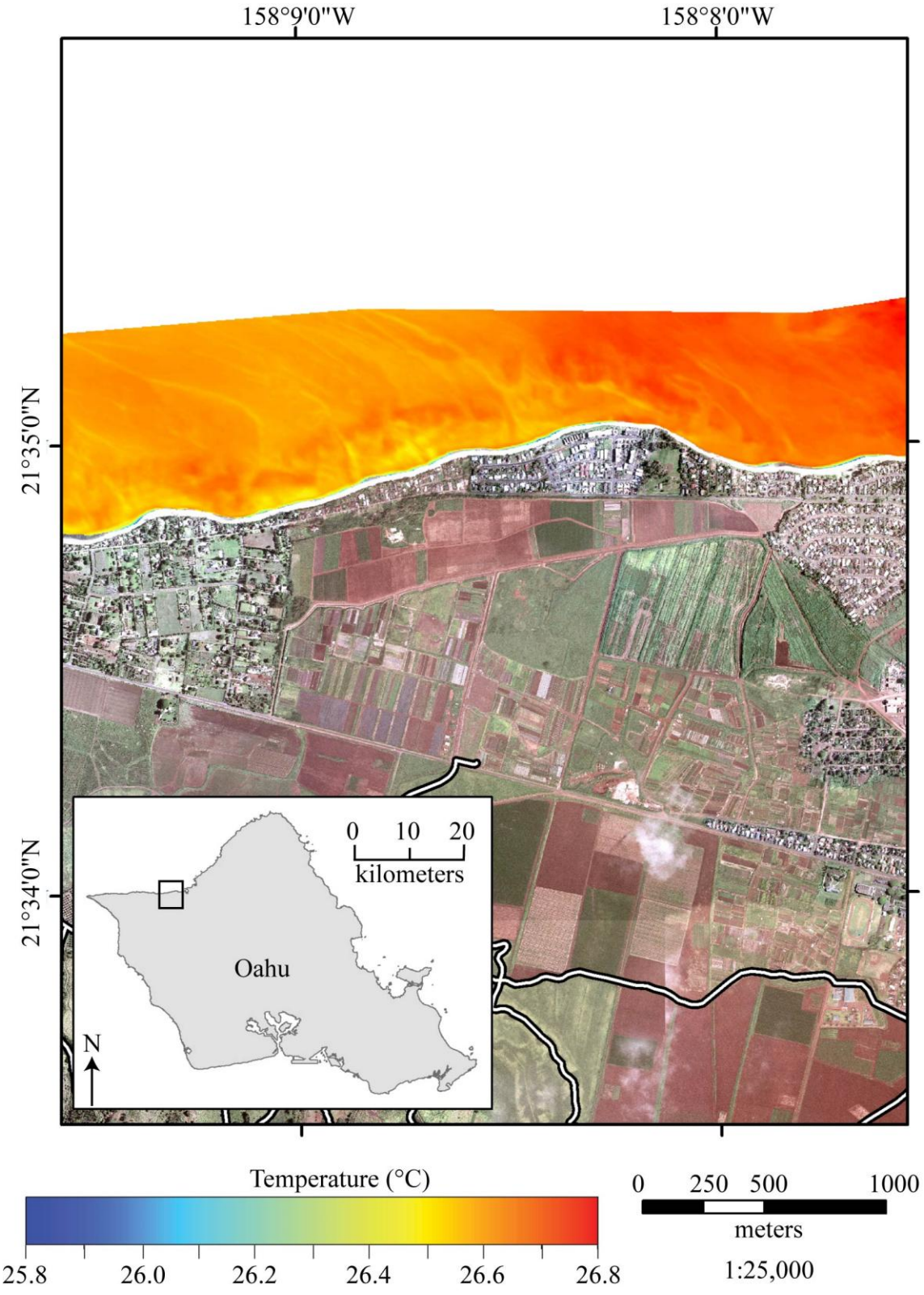
Panel 42: Kaena Point from 22 July 2009 at 00:36-00:43 a.m., HST. Honolulu tide was +0.05 to +0.06 m MLLW.



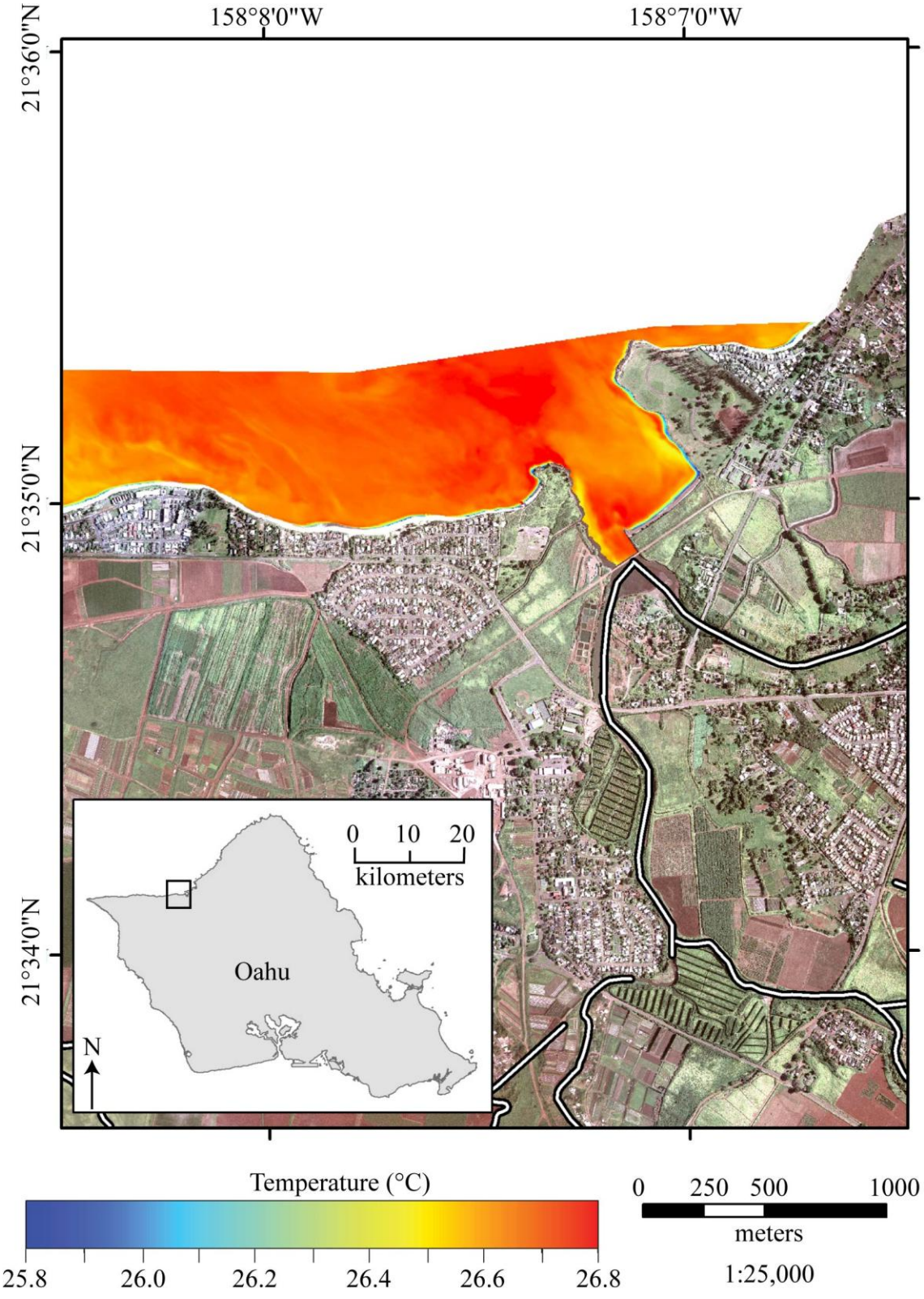
Panel 43: Dillingham Airfield from 22 July 2009 at 00:36-00:43 a.m., HST. Honolulu tide was +0.05 to +0.06 m MLLW.



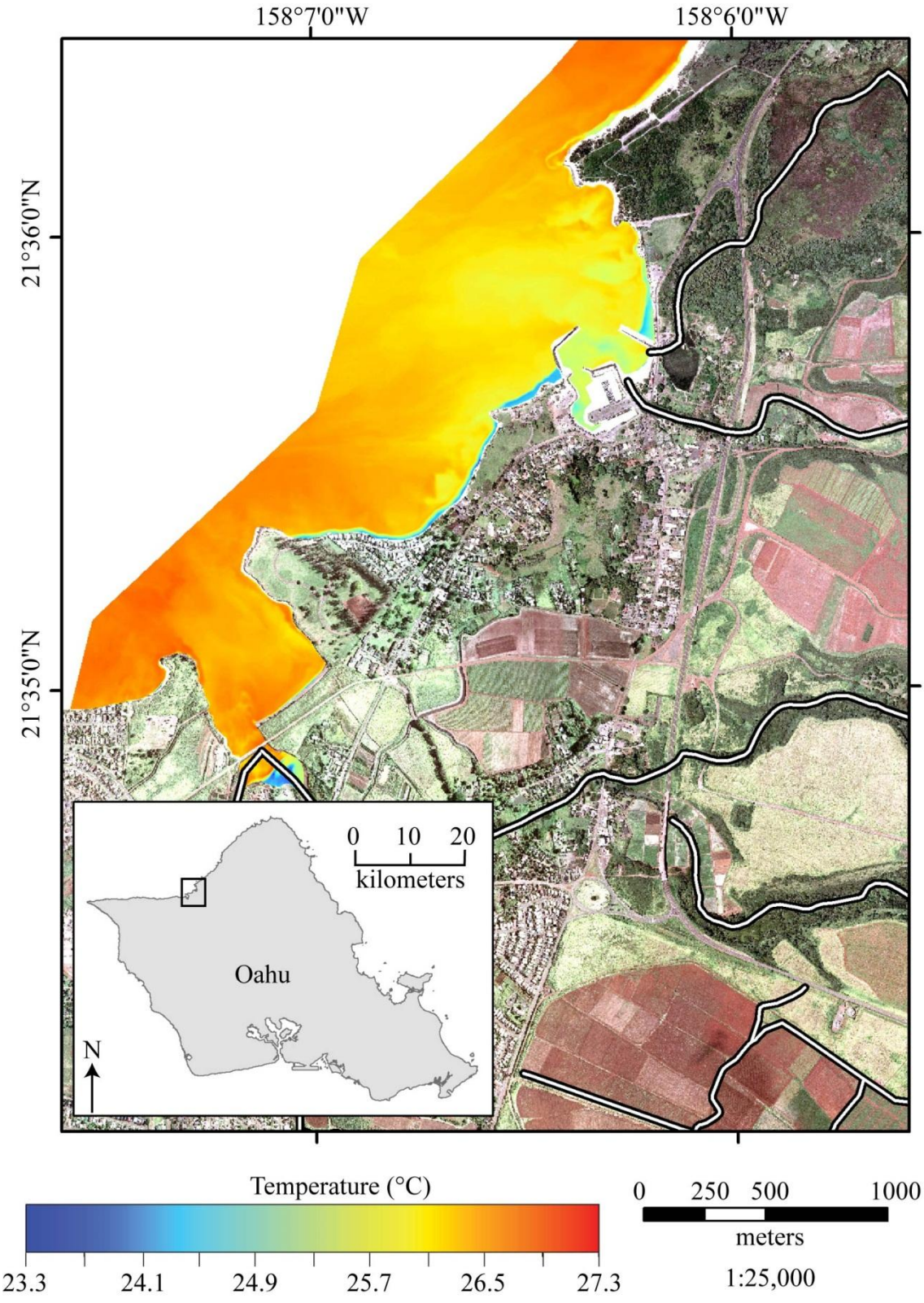
Panel 44: Dillingham Airfield from 22 July 2009 at 00:36-00:43 a.m., HST. Honolulu tide was +0.05 to +0.06 m MLLW.



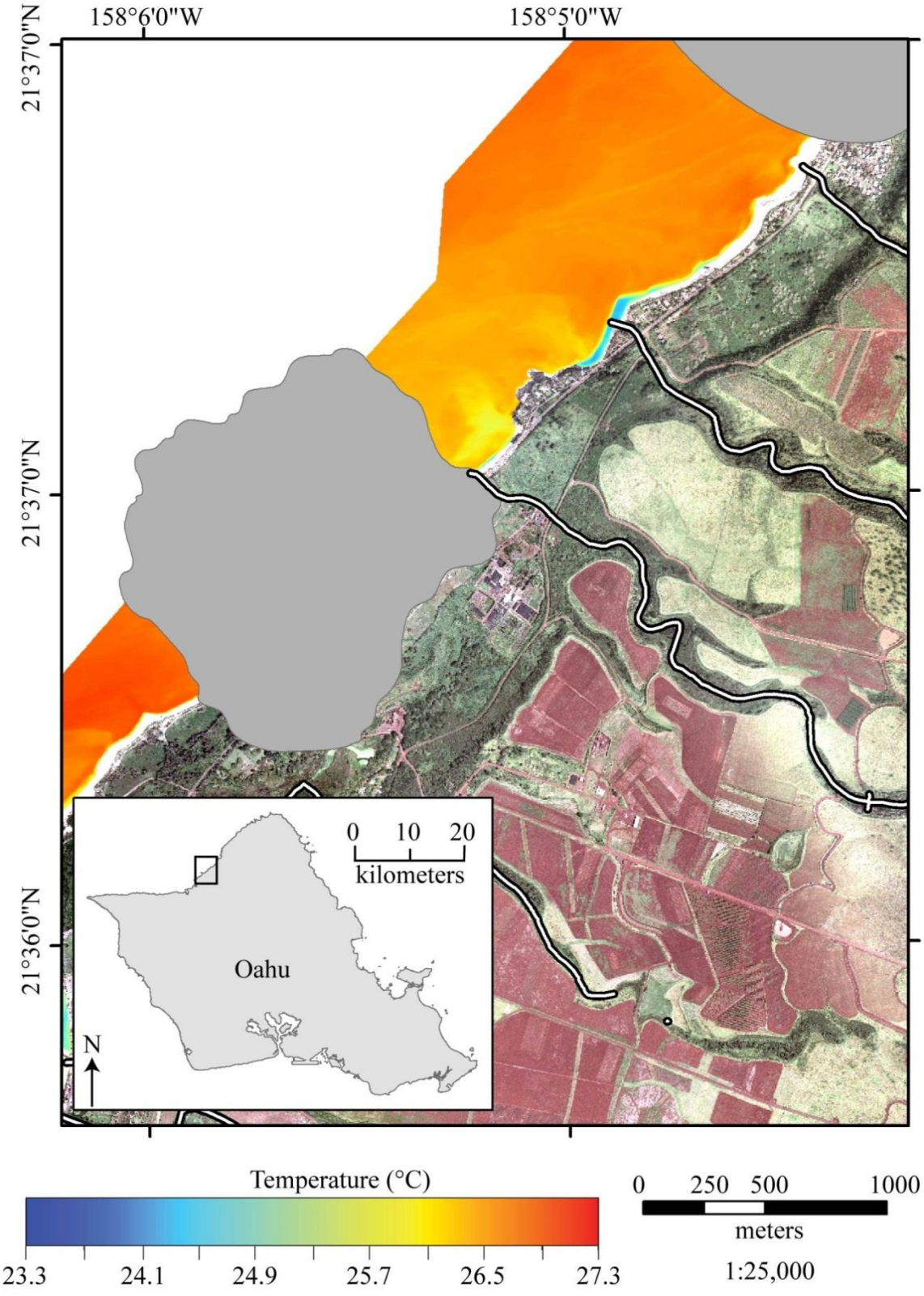
Panel 45: Mokuleia and Waialua from 22 July 2009 at 00:36-00:43 a.m., HST. Honolulu tide was +0.05 to +0.06 m MLLW.



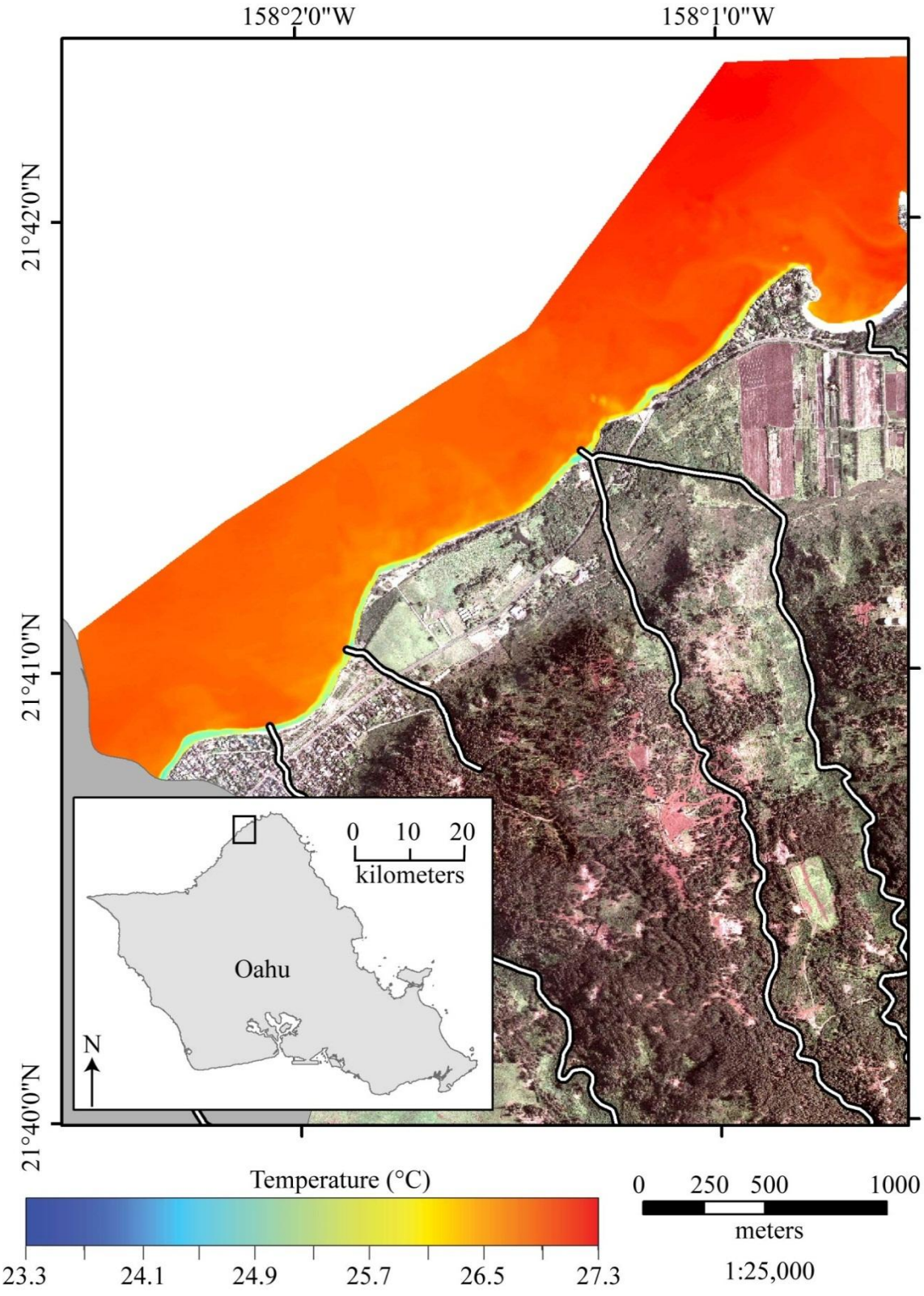
Panel 46: Kalaka Bay and Haleiwa from 22 July 2009 at 00:36-00:43 a.m., HST. Honolulu tide was +0.05 to +0.06 m MLLW.



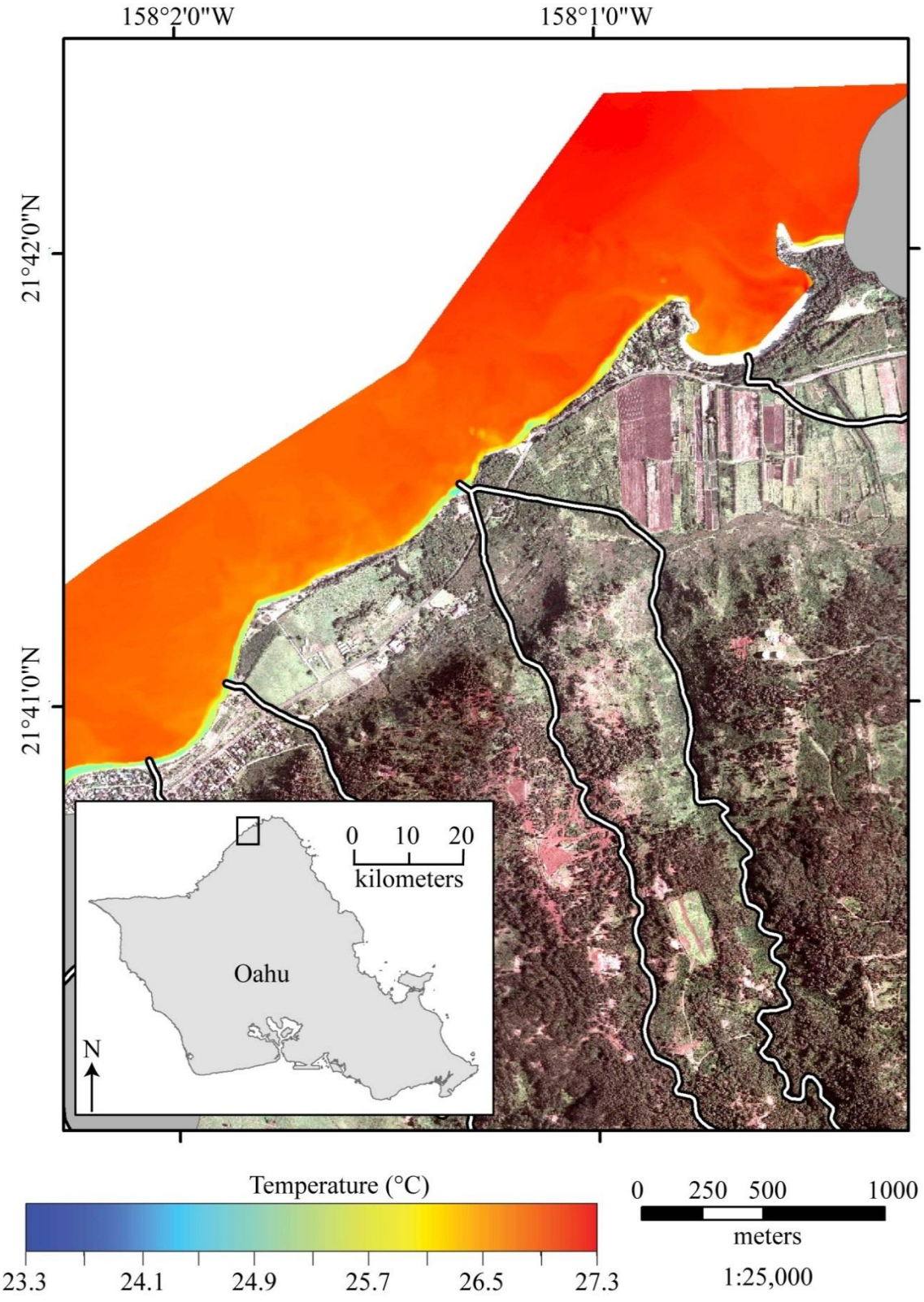
Panel 47: Kalaka and Waialua Bays near Haleiwa from 22 July 2009 at 00:50-00:57 a.m., HST. Honolulu tide was +0.07 to +0.08 m MLLW.



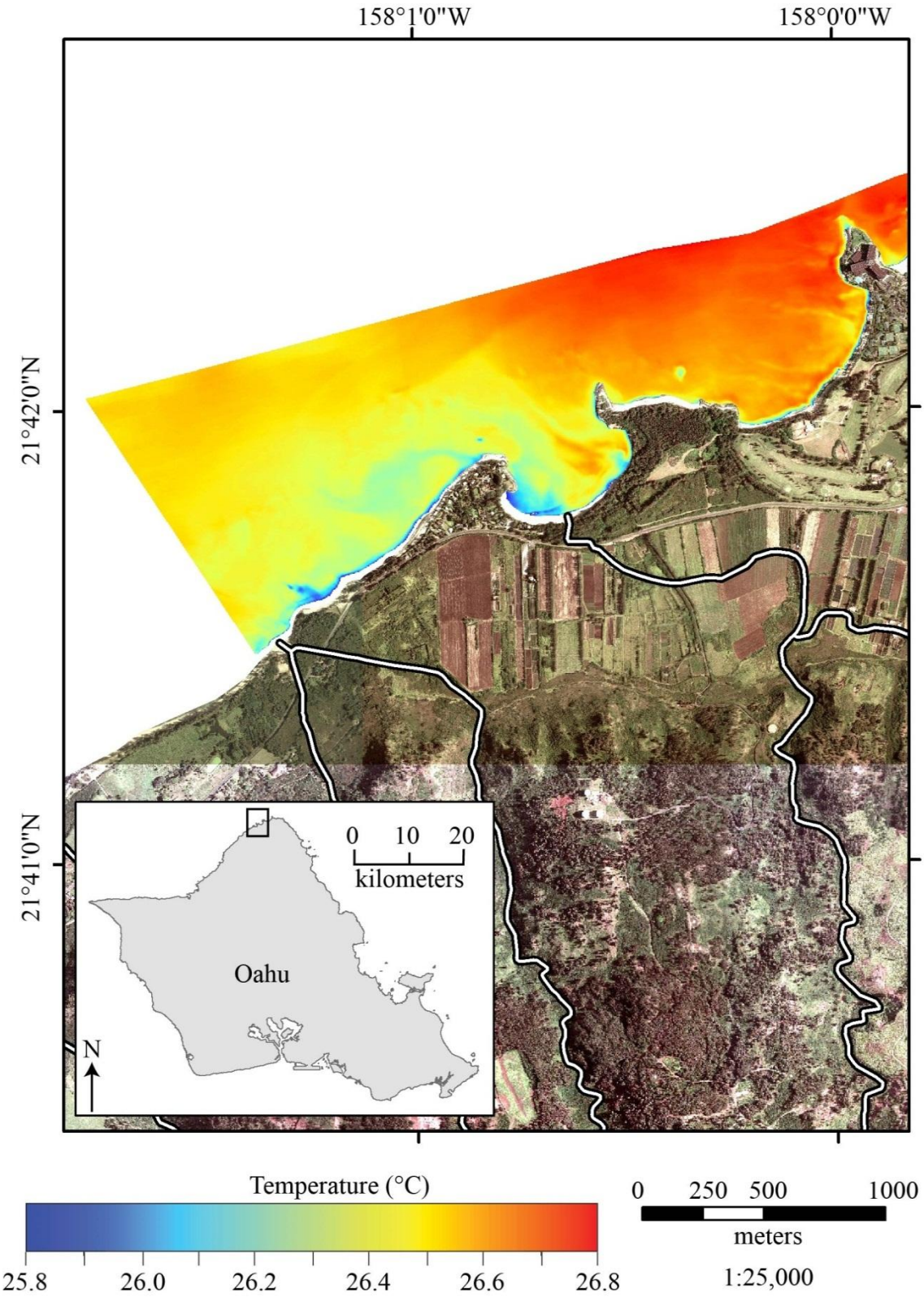
Panel 48: Northeast of Haleiwa from 22 July 2009 at 00:50-00:57 a.m., HST. Honolulu tide was +0.07 to +0.08 m MLLW.



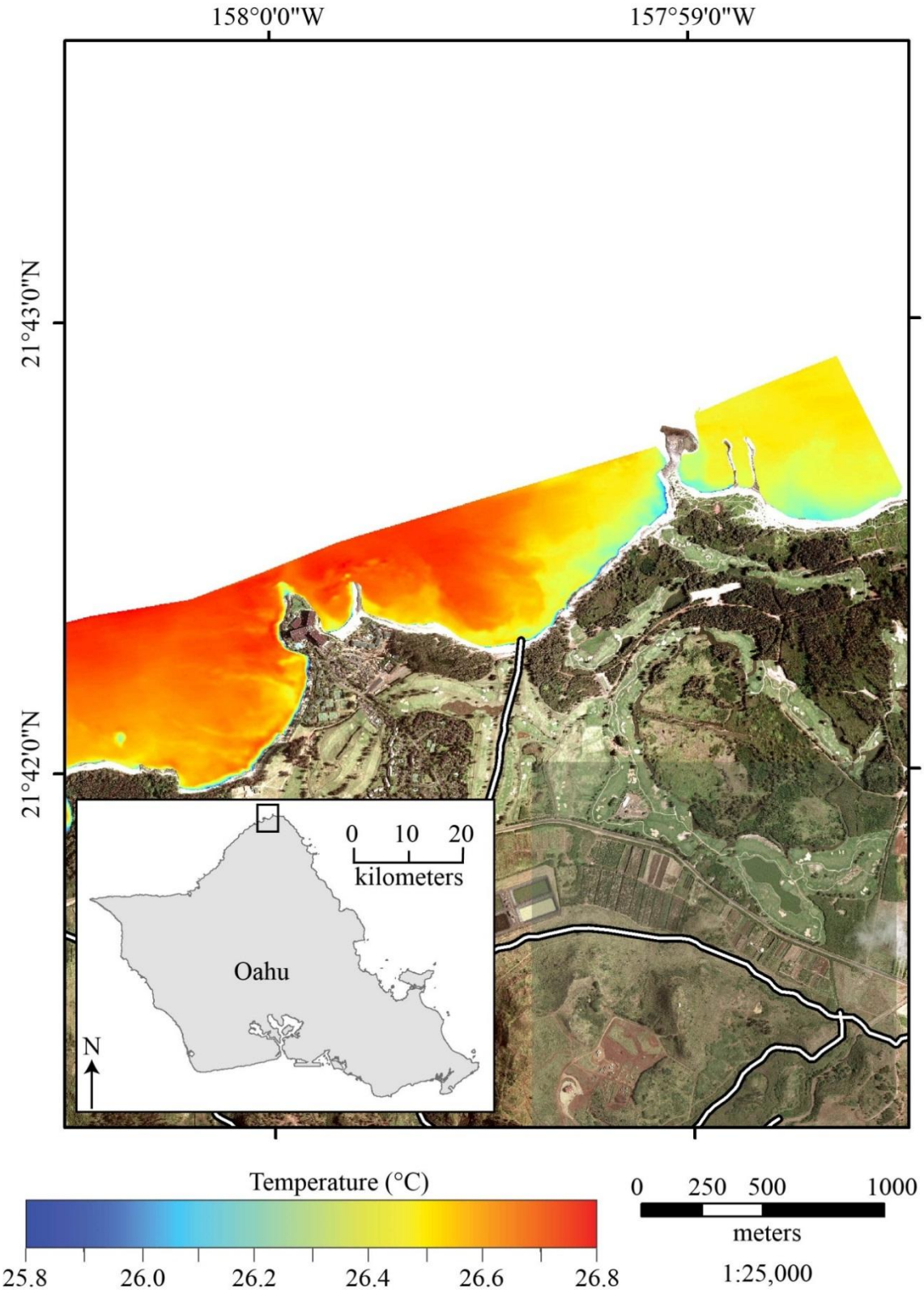
Panel 49: Southwest of Kawela Bay from 22 July 2009 at 00:50-00:57 a.m., HST. Honolulu tide was +0.07 to +0.08 m MLLW.



Panel 50: Southwest of Kawela Bay from 22 July 2009 at 00:50-00:57 a.m., HST. Honolulu tide was +0.07 to +0.08 m MLLW.



Panel 51: Kawela Bay from 22 July 2009 at 01:04-01:08 a.m., HST. Honolulu tide was +0.09 m MLLW.



Panel 52: Kawela Bay from 22 July 2009 at 01:04-01:08 a.m., HST. Honolulu tide was +0.09 m MLLW.

APPENDIX II. DATA

All raw data for analyses presented throughout the dissertation are presented in this appendix. Data include specific nutrient analyses, radon time-series measurements, radon surveys of surface waters, radon surveys of the water column, water quality data, wind-speed data, water-level data-logger data, global positioning system data, conductivity-temperature-depth data, stable isotope analyses of hydrogen and oxygen in water, stable isotope analyses of nitrogen and oxygen of dissolved nitrate, and chlorofluorocarbon data.

All specific nutrient data were analyzed at the University of Washington Oceanography Technical Services using a *Technicon Model AAII*. Data are reported per batch in chronological order.

All radon data tables are tabulated as two separate tables for each RAD-7 deployment. The first table contains RAD-7 raw data through window counts. The second table for each RAD-7 contains the remaining raw data. For all radon data tables, (eff) is efficiency, (Test #) is test number, (Yr) is year, (Mon) is month, (Hr) is hour, (Min) is minute, (Tot Cnt) is total counts, (Win) is window, (High Vol) is high voltage in units of volts, (HV duty) is a duty cycle with typical values of 10-20%, (Temp) is the temperature of the detector in Celsius, (R Hum) is % relative humidity of the sampled air, (Leak Curr) is leakage current and ranges from 0-255 mA but should be below 20 mA, (Batt Vol) is battery voltage in units of volts, (Pump Curr) is pump current in mA, (Flags Byte), which indicate individual settings, The measured activity concentration (Activity Con) is reported in units of bequerrels per cubic meter, (Error 2 sigma) is the error in bequerrels per cubic meter on the analysis, and (Units byte) indicates RAD-7 setting information.

All YSI (water quality) data are tabulated in separate tables, one per RAD-7 deployment. For all YSI data, temperature (T) is in Celsius, specific conductivity (SpCond) is in millisemins per centimeter °C, Salinity is (Sal), (DOsat) is dissolved oxygen saturation in percent, (DO) is dissolved oxygen in milligrams per liter, depth is in meters, chlorophyll (Chl) is in units of micrograms per liter, and oxidation reduction potential (ORP) is in units of millivolts. The XLM-600 YSI did not record cholorophyll

or oxidation reduction potential. These columns contain (N/A) for not applicable. The 6920 V2 YSI recorded all water quality parameters.

All wind speed data were from Honolulu International Airport weather station #911820, NCDC #22521 located at 21.238°N; 157.943°W. Data are reported at an hourly (or less) frequency.

For all water-level data-logger data, (GW Impacted Layer (cm)) is groundwater impacted layer. Air space is always negative because the zero-level of the water-level data-logger was set to the bottom of the actual logging device.

The water head reported for the temperature-conductivity-depth data reflects actual water depth. (Temp) is measured water temperature and (SpCond) is specific conductivity.

In some global positioning survey (GPS) logs for surface and depth profiling surveys, the GPS either lost power connection or only intermittently recorded data. Blank cells in GPS tables reflect these two circumstances.

Table AII.1: Dissolved inorganic nutrient data analyzed at the University of Washington Oceanography Technical Services Marine Chemistry Laboratory.

UW University of Washington Oceanography Technical Services

School of Oceanography, Box 357940
University of Washington
Seattle, WA 98195-7940

Marine Chemistry Laboratory
Katherine A. Krogslund, Manager
Phone: (206) 543-9235
E-Mail: kkrog@u.washington.edu

Nutrient Sample Analyses, Technicon Model AAII

Customer: Jacque Kelly — Date: 22-Aug-08
Analyst: KAK
Comments: Big Island Samples — Filename: jkelly801

	[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
Status					
Factor	0.0384	1.7205	0.4202	0.0318	0.0454
Refractive Index	0.00	0.00	0.00	0.00	-1.00
Synch Time	0	0	0		0
Initial Blank	8.8	5.1	6.2	4.0	4.0
Final Blank	9.3	6.0	6.0	2.5	1.9
Factor Adjustment	0.0372	1.6949	0.4202	0.0320	0.0469
Total Samples+Blanks+Standards	60	60	60	60	60

Seq#	Sample ID	Dilution Factor	Calculated Values [µmol]				
			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
58	chk	1.0	1.2	120	18.1	1.5	1.6
60	blk	1.0	0.0	0	0.0	0.0	0.1
	actual		1.2	120	18.0	1.5	1.5
21	Halekii	1.0	4.4	810	69.8	0.1	0.1
22	Kalaoa A	1.0	4.1	905	68.8	<0.1	0.2
23	Hualalai	1.0	4.4	851	67.8	<0.1	0.1
24	Honokohau	1.0	4.0	852	79.1	<0.1	0.1
25	Keahuola QLT	1.0	3.9	794	86.5	<0.1	0.3
26	Keei D	1.0	4.6	788	48.1	<0.1	0.1
27	Kahaluu A	1.0	4.6	803	80.7	<0.1	<0.1
28	Holualoa	1.0	3.7	747	64.8	<0.1	0.1
29	Kahaluu B	1.0	4.6	801	81.1	<0.1	0.1
30	Kahaluu D	1.0	4.6	802	81.0	<0.1	0.2
31	Kahaluu Shaft	1.0	4.4	799	84.1	0.1	0.3
32	Waste Water Treatment Plant	1.0	178.2	596	251.1	6.7	36.3
33	Bakken Pond	1.0	1.0	700	26.4	0.1	0.2

Table AII.1: (Continued) Dissolved inorganic nutrient data analyzed at the University of Washington Oceanography Technical Services Marine Chemistry Laboratory.

Seq#	Sample ID	Dilution Factor	Calculated Values [µmol]				
			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
34	Hind Well	1.0	2.2	787	62.5	<0.1	0.2
35	Kiholo Lava Tube Well	1.0	2.0	785	61.3	<0.13	2.5
36	Kiholo Fishpond Spring	1.0	2.4	779	64.3	<0.1	<0.1
37	Kiholo Fishpond Spring Blind Duplicate	1.0	2.3	776	64.1	<0.1	<0.1
38	Hualalai Resort Pond 3	1.0	3.5	971	158.9	0.3	6.0
39	Hualalai Resort Pond 2	1.0	4.5	931	164.7	0.2	1.1
40	Keauhou Pond	1.0	5.1	758	214.1	0.5	1.3
41	Honokohau Harbor Expansion Well 2	1.0	108.4	502	37.0	0.1	0.4
42	KAHO Obs. 2	1.0	4.7	648	101.4	<0.1	0.1
43	Hualalai Resort Pond 1	1.0	2.1	933	56.3	1.2	3.5
44	KAHO Obs. 1	1.0	4.2	668	78.5	0.1	0.2
45	Cameron's Well	1.0	4.4	725	148.8	0.1	0.5
46	Virgie's Well	1.0	4.2	732	157.0	<0.1	0.1
47	PUHO	1.0	3.7	790	64.9	<0.1	0.1
48	KAHO Obs. 3	1.0	3.0	578	82.3	<0.1	0.5
49	Kailua Lava Tube	1.0	2.6	486	62.9	<0.1	<0.1
50	Honokohau Harbor	1.0	5.2	418	44.4	0.1	3.3
51	Honokohau Marine	1.0	1.8	102	9.5	0.1	0.4
52	Kiholo Slue Skate	1.0	1.5	475	27.2	0.2	0.3
53	Kiholo Bay Marine	1.0	0.4	84	2.8	0.1	0.7

Table AII.1: (Continued) Dissolved inorganic nutrient data analyzed at the University of Washington Oceanography Technical Services Marine Chemistry Laboratory.

Customer: Jacque Kelly — Date: 26-Feb-10
Analyst: KAK
Comments: Oahu Samples — Filename: cg101

	[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
Status					
Factor	0.0415	1.0354	0.3518	0.0304	0.0422
Refractive Index	0.00	-0.39	0.00	0.00	-0.10
Synch Time					
Initial Blank	6.0	9.2	3.5	4.2	14.2
Final Blank	6.0	9.7	4.4	4.0	14.0
Factor Adjustment	0.0410	1.0429	0.3110	0.0303	0.0410
Total Samples+Blanks+Standards	58	58	58	58	58

Seq#	Sample ID	Dilution Factor	Calculated Values [µmol]				
			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
25	chk	1	1.6	90	24.2	2.0	2.0
22	fwblk	1.0	<0.1	0	0.2	0.0	0.0
22	actual	1.0	1.6	90	24.0	2.0	2.0
1							
2	EC1	1.0	1.0	116	0.4	0.0	0.1
3	EC2	1.0	1.7	268	0.6	0.0	2.9
4							
5	WLT1	1.0	0.4	165	12.0	0.4	3.8
6	WLT2	1.0	0.2	64	1.0	0.2	1.7
7	WLT3	1.0	0.2	62	0.2	0.1	0.5
8	WLT4	1.0	0.2	52	0.5	<0.1	0.3
9	WLT5	1.0	0.2	56	3.5	0.1	1.1
10	WLT6	1.0	0.2	51	2.1	<0.1	0.2
11	WLT7	1.0	1.2	263	27.5	0.9	9.4
12	WLT8	1.0	1.8	114	0.8	0.1	16.1
13							
15	TS2	1.0	0.1	17	0.4	0.1	0.3
14	TS1	1.0	0.1	21	0.5	<0.1	0.1
16	TS3	1.0	0.1	21	0.3	<0.1	0.1
32							
33	MLT4	1.0	0.4	107	0.3	0.1	0.2
34	MLT5	1.0	0.1	50	0.2	<0.1	<0.1
35	MLT6	1.0	0.1	62	0.2	<0.1	0.1

Table AII.1: (Continued) Dissolved inorganic nutrient data analyzed at the University of Washington Oceanography Technical Services Marine Chemistry Laboratory.

Seq#	Sample ID	Dilution Factor	Calculated Values [µmol]				
			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
36	MLT7	1.0	1.2	254	15.9	0.4	5.4
37	MLT8	1.0	1.6	874	31.9	0.4	2.1
38							
39	HIT1	1.0	0.1	26	0.2	<0.1	0.2
40	HIT2	1.0	0.2	60	2.7	0.1	0.2
41	HIT3	1.0	0.1	33	0.2	<0.1	0.1
42	HIT4	1.0	0.1	26	0.1	<0.1	<0.1
43	HIT5	1.0	0.1	27	0.2	<0.1	0.2
44							
45	ELT9	1.0	0.1	23	0.0	<0.1	0.2
46	ELT10	1.0	0.1	25	0.0	<0.1	0.1
47	ELT11	1.0	0.1	68	0.5	0.1	0.2
48	ELT12	1.0	0.1	53	0.0	<0.1	0.1
49	ELT13	1.0	0.1	39	0.0	0.1	0.2
50	ELT14	1.0	<0.1	23	0.0	<0.1	0.1
51							
52	SG4	1.0	0.5	531	296.5	0.5	0.6
53	SG5	1.0	0.9	583	10.1	0.1	0.4
54	SG6	1.0	0.4	689	14.8	0.2	2.7

Customer: Jacque Kelly		Date:	26-Feb-10
		Analyst:	KAK
Comments:		Filename:	cg102

	[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
Status					
Factor	0.0414	1.0433	0.3037	0.0304	0.0419
Refractive Index	0.00	0.00	0.00	0.00	-0.50
Synch Time					
Initial Blank	6.0	9.6	4.2	4.1	13.8
Final Blank	6.0	9.0	4.0	4.4	13.9
Factor Adjustment	0.0414	1.0433	0.3037	0.0304	0.0419
Total Samples+Blanks+Standards	38	38	38	38	38

Seq#	Sample ID	Dilution Factor	Calculated Values [µmol]				
			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
8	chk	1.0	1.6	90	24.0	2.0	2.1
2	fwblk	1.0	0.0	0	0.0	0.0	0.0
	actual	1.0	1.6	90	24.0	2.0	2.0

Table AII.1: (Continued) Dissolved inorganic nutrient data analyzed at the University of Washington Oceanography Technical Services Marine Chemistry Laboratory.

Seq#	Sample ID	Dilution Factor	Calculated Values [µmol]				
			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
12							
13	WLC1	1.0	0.8	385	0.4	0.1	0.3
14	WLC2	1.0	0.9	284	20.7	1.0	3.7
15							
16	MLC4	1.0	0.1	377	0.5	0.1	1.3
17	MLC3	1.0	1.9	341	1.2	0.4	12.9
18	MLC2	1.0	2.4	912	3.6	0.1	0.6
19	MLC1	1.0	2.3	1009	38.0	0.3	1.3
20							
21	MLC4 Blind Duplicate	1.0	0.1	361	0.4	0.1	1.1
22	MLC1 Blind Duplicate	1.0	1.6	816	31.5	0.4	2.3
23	Waiau HECO 2A Blind Duplicate	1.0	2.4	718	29.3	0.0	0.1
24							
25							
27							
28	Waiau HECO	1.0	1.5	753	18.8	0.1	1.5
29	Kaahumanu I-1	1.0	1.8	765	21.3	0.1	<0.1
30	Manana Well	1.0	0.7	693	20.7	0.1	<0.1
31	Waiau HECO 2A	1.0	2.1	806	28.5	<0.1	<0.1
32	Kunia I-P2	1.0	10.5	1049	300.7	<0.1	<0.1
33	Hoaeae P2	1.0	9.6	1243	265.4	<0.1	0.0
34	Aiea Heights	1.0	2.3	840	73.9	0.1	0.0
35	Waikalaua	1.0	4.6	1336	325.2	<0.1	<0.1
36	Waipahu IV-2	1.0	7.2	1123	179.1	<0.1	0.0
37	Waipahu I-P2	1.0	8.4	1079	202.7	<0.1	0.0
38	Waipio Heights II-1	1.0	7.4	973	254.8	<0.1	0.0

Customer: Jacque Kelly

Date: 5-Nov-10

Analyst: KAK

Comments:

Filename: cg115

Table AII.1: (Continued) Dissolved inorganic nutrient data analyzed at the University of Washington Oceanography Technical Services Marine Chemistry Laboratory.

			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
Status							
Factor			0.0459	0.7594	0.3810	0.0318	0.0459
Refractive Index			0.00	0.00	0.00	0.00	-1.20
Synch Time							
Initial Blank			9.1	8.3	6.0	4.2	14.0
Final Blank			9.2	9.2	6.2	4.7	11.8
Factor Adjustment			0.0459	0.7594	0.3810	0.0318	0.0459
Total Samples+Blanks+Standards			42	42	42	42	42
			Calculated Values [µmol]				
Seq#	Sample ID	Dilution Factor	[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
30	chk	1.0	1.3	53	12.2	1.0	1.0
27	swblk	1.0	0.3	5	0.3	0.1	0.0
	actual	1.0	1.0	48	12.0	1.0	1.0
2	Waialae Golf Course	1.0	1.7	723	56.5	0.0	0.1
3	Waialae Golf Course Blind Duplicate	1.0	1.8	721	55.6	0.0	0.1
4	Palolo Well 2 Blind Duplicate	1.0	1.4	644	36.8	0.0	0.1
5							
6	Kunawai Spring	1.0	6.0	549	24.5	0.0	0.1
7	Palolo Well 2	1.0	1.4	655	34.7	0.0	<0.1
8	AinaKoa Well 2	1.0	2.3	663	54.3	0.0	0.1
9	Kapalama Well 1	1.0	1.7	717	53.0	0.0	0.0
10	Wilder Well 1	1.0	1.1	593	88.1	0.0	0.0
11	Moanalua Well 2	1.0	1.4	718	44.6	0.0	<0.1
12	Ainakoa Well 1	1.0	1.9	761	78.5	0.0	<0.1

Customer: Jacque Kelly Date: 16-Mar-11

Analyst: KAK

Comments: Filename: cg1104

Table AII.1: (Continued) Dissolved inorganic nutrient data analyzed at the University of Washington Oceanography Technical Services Marine Chemistry Laboratory.

			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
Status							
Factor			0.0396	2.1992	0.3430	0.0386	0.0489
Refractive Index			0.00	0.00	0.00	0.00	-5.70
Synch Time							
Initial Blank			5.0	2.6	2.3	4.0	11.3
Final Blank			5.8	5.4	3.0	4.8	11.3
Factor Adjustment			0.0396	2.2670	0.3404	0.0394	0.0478
Total Samples+Blanks+Standards			69	69	69	69	69
			Calculated Values [µmol]				
Seq#	Sample ID	Dilution Factor	[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
29	chk	1.0	2.0	90	24.1	2.0	2.3
23	fwblk	1.0	0.0	0	<0.1	0.0	0.3
	actual	1.0	2.0	90	24.0	2.0	2.0
1							
2	ML1 1-1	1.0	0.1	68	0.2	0.1	1.2
3	ML1 6-1	1.0	1.0	640	33.7	0.4	1.3
4	ML1 8-1	1.0	0.1	105	0.8	0.1	7.9
5	ML1 9-1	1.0	1.1	596	31.8	0.4	2.2
6	ML1 13-1	1.0	0.2	102	0.8	0.1	0.2
7							
8	WL1 1-1	1.0	0.1	205	106.3	1.4	4.9
9	WL1 5-1	1.0	0.1	81	2.8	0.2	1.8
10	WL1 6-1	1.0	0.2	81	2.2	0.1	4.8
11							
12	E1 1-1	1.0	0.2	40	0.5	0.1	0.7
13	E1 2-2	1.0	0.1	25	0.1	1.2	4.3
14	E1 5-1	1.0	0.2	59	2.2	0.2	0.5
15	EL2 1-1	1.0	0.3	36	0.5	0.1	0.3
16	E2 4-2	1.0	0.2	41	3.1	0.1	0.3
17	EL4 1-1	1.0	0.6	381	10.5	0.4	0.4
18	EL5 1-1	1.0	0.5	343	3.2	0.1	0.1
19	EL5 2-1	1.0	0.1	36	0.3	0.1	0.1
51	chk	1.0	2.0	90	24.1	2.0	2.3
69	fwblk	1.0	0.0	0	0.0	0.0	0.3
	actual		2.0	90	24.0	2.0	2.0

Table AII.1: (Continued) Dissolved inorganic nutrient data analyzed at the University of Washington Oceanography Technical Services Marine Chemistry Laboratory.

Customer: Jacque Kelly				Date:	16-Mar-11	
Comments:				Analyst:	KAK	
				Filename:	cg1104	
		[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
Status		0	1	1	1	1
Factor		0.0403	1.4412	0.3220	0.0388	0.0449
Refractive Index		0.00	0.00	0.00	0.00	-10.70
Synch Time		0	0	0		0
Initial Blank		6.9	4.5	5.9	4.2	16.2
Final Blank		7.0	4.8	5.8	4.6	15.3
Factor Adjustment		0.0399	1.4907	0.3280	0.0399	0.0442
Total Samples+Blanks+Standards		48	48	48	48	48
Seq#	Sample ID	Dilution Factor	Calculated Values [µmol]				
			[PO_4]	[$Si(OH)_4$]	[NO_3]	[NO_2]	[NH_4]
9	chk	1.0	2.6	182	30.1	2.5	2.5
4	fwblk	1.0	<0.1	1	<0.1	<0.1	0.0
	actual	1.0	2.5	180	30.0	2.5	2.5
43	Waiau HECO spring 1	1.0	1.8	522	24.8	<0.1	0.8
44	Waiau HECO spring 2	1.0	2.9	543	32.1	<0.1	0.9
45	Waiau HECO spring 3	1.0	2.0	540	18.5	0.1	1.5
48	chk	1.0	3.0	240	36.0	3.0	3.0
49	fwblk		0.0	0	0.0	0.0	0.0
	actual	1.0	3.0	240	36.0	3.0	3.0

Table AII.2: West Loch Platform A time-series radon measurements.

RAD-7 #2356			West Loch Platform A				eff=0.416 cpm/pCi/L				
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	10	1	2	11	32	13	28.1	76.9	0.0	15.4	0.0
2	10	1	2	12	2	62	28.0	75.8	1.6	17.8	0.0
3	10	1	2	12	32	80	28.0	56.3	2.5	37.5	0.0
4	10	1	2	13	2	90	28.0	55.6	1.1	38.9	0.0
5	10	1	2	13	32	139	28.0	56.1	0.7	38.1	0.0
6	10	1	2	14	2	181	28.0	54.7	2.2	38.1	1.1
7	10	1	2	14	32	164	28.0	50.6	0.6	44.5	0.6
8	10	1	2	15	2	172	28.0	48.3	0.6	47.7	1.8
9	10	1	2	15	32	176	28.0	47.7	1.7	46.6	1.7
10	10	1	2	16	2	182	28.0	50.0	2.2	42.9	2.8
11	10	1	2	16	32	181	28.0	45.9	1.1	49.7	0.0
12	10	1	2	17	2	173	28.0	52.0	0.6	42.8	1.7
13	10	1	2	17	32	180	28.0	43.9	0.6	50.6	1.1
14	10	1	2	18	2	154	28.0	40.9	0.7	53.3	1.3
15	10	1	2	18	32	148	28.0	38.5	0.7	56.1	1.4
16	10	1	2	19	2	154	28.0	43.5	0.7	53.3	0.0
17	10	1	2	19	32	118	28.0	41.5	3.4	50.9	0.9
18	10	1	2	20	2	107	28.0	37.4	0.9	58.9	0.0
19	10	1	2	20	32	119	28.0	43.7	3.4	49.6	1.7
20	10	1	2	21	2	122	28.0	45.1	0.8	50.8	0.8
21	10	1	2	21	32	131	28.0	53.4	0.8	41.2	0.0
22	10	1	2	22	2	136	28.0	42.7	1.5	50.7	0.7
23	10	1	2	22	32	132	28.0	49.3	2.3	42.4	0.8
24	10	1	2	23	2	127	28.0	54.3	1.6	41.7	0.8
25	10	1	2	23	32	151	28.0	39.1	0.7	56.3	0.7
26	10	1	3	0	2	142	28.0	54.2	0.0	39.4	2.1
27	10	1	3	0	32	118	28.0	44.1	0.0	54.2	0.0
28	10	1	3	1	2	131	28.0	45.1	0.0	48.9	2.3
29	10	1	3	1	32	128	28.0	36.7	1.6	56.3	0.8
30	10	1	3	2	2	128	28.0	50.0	0.0	48.5	0.8
31	10	1	3	2	32	108	28.0	51.9	1.9	41.7	0.9
32	10	1	3	3	3	118	28.0	36.5	2.6	57.6	0.0
33	10	1	3	3	33	98	28.0	39.8	0.0	54.1	1.0
34	10	1	3	4	3	111	28.0	33.3	2.7	57.7	1.8
35	10	1	3	4	33	98	28.0	48.0	0.0	47.0	1.0
36	10	1	3	5	3	112	28.0	47.3	3.6	45.5	0.9
37	10	1	3	5	33	118	28.0	42.4	0.9	50.9	0.9

Table AII.2: (Continued) West Loch Platform A time-series radon measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
38	10	1	3	6	3	119	28.0	50.4	4.2	41.2	1.7
39	10	1	3	6	33	131	28.0	39.7	1.5	51.9	0.0
40	10	1	3	7	3	111	28.0	49.6	3.6	43.3	1.8
41	10	1	3	7	33	118	28.0	46.6	0.0	46.6	3.4
42	10	1	3	8	3	105	28.0	41.0	2.9	48.6	1.0
43	10	1	3	8	33	116	28.0	44.8	1.7	45.7	3.5
44	10	1	3	9	3	116	28.0	52.6	0.9	40.5	2.6
45	10	1	3	9	33	140	28.0	42.2	1.4	52.2	0.7
46	10	1	3	10	3	137	28.0	49.6	2.9	43.1	0.7
47	10	1	3	10	33	141	28.0	45.4	0.7	46.8	0.7
48	10	1	3	11	3	198	28.0	53.0	1.5	41.4	0.5
49	10	1	3	11	33	214	28.0	49.5	2.3	43.9	0.9
50	10	1	3	12	3	220	28.0	50.5	0.5	43.2	1.8
51	10	1	3	12	33	257	28.0	49.0	0.8	46.3	1.2
52	10	1	3	13	3	273	28.0	50.6	0.4	46.2	1.8
53	10	1	3	13	33	247	28.0	38.9	1.2	52.6	4.1
54	10	1	3	14	3	265	28.0	43.4	1.1	50.6	1.1
55	10	1	3	14	33	261	28.0	50.2	0.4	46.0	0.8
56	10	1	3	15	3	240	28.0	48.8	0.8	47.5	0.8
57	10	1	3	15	33	238	28.0	46.7	0.9	49.2	1.3
58	10	1	3	16	3	244	28.0	36.1	2.1	57.4	0.4
59	10	1	3	16	33	253	28.0	41.9	1.6	54.2	1.2
60	10	1	3	17	3	230	28.0	43.9	0.4	50.9	1.8
61	10	1	3	17	33	202	28.0	41.1	0.0	54.5	1.0
62	10	1	3	18	3	205	28.0	42.0	1.5	50.3	2.5
63	10	1	3	18	33	197	28.0	42.7	0.5	53.8	1.5
64	10	1	3	19	3	198	28.0	43.4	0.5	53.5	0.5
65	10	1	3	19	33	217	28.0	44.7	1.9	48.9	1.4
66	10	1	3	20	3	190	28.0	41.1	2.1	53.7	0.5
67	10	1	3	20	33	169	28.0	45.0	0.6	49.1	1.8
68	10	1	3	21	3	170	28.0	51.2	1.2	43.0	1.2
69	10	1	3	21	33	164	28.0	44.5	0.6	50.0	2.5
70	10	1	3	22	3	162	28.0	46.9	0.0	48.2	3.1
71	10	1	3	22	33	169	28.0	45.6	0.0	49.1	2.4
72	10	1	3	23	3	165	28.0	50.3	1.8	43.0	1.2
73	10	1	3	23	33	161	28.0	44.7	0.0	49.1	3.1
74	10	1	4	0	3	175	28.0	49.2	1.7	44.6	0.6
75	10	1	4	0	33	172	28.0	40.1	1.2	54.7	1.2

Table AII.2: (Continued) West Loch Platform A time-series radon measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
76	10	1	4	1	3	186	28.0	41.4	1.1	52.2	1.1
77	10	1	4	1	33	157	28.0	40.8	2.6	51.6	1.3
78	10	1	4	2	3	172	28.0	47.7	0.6	48.3	1.2
79	10	1	4	2	33	160	28.0	43.8	1.9	47.5	1.9
80	10	1	4	3	3	152	28.0	40.8	0.7	54.0	2.6
81	10	1	4	3	33	170	28.0	47.1	2.4	47.7	0.0
82	10	1	4	4	3	139	28.0	40.3	2.2	51.1	2.9
83	10	1	4	4	33	147	28.0	38.8	1.4	55.8	3.4
84	10	1	4	5	3	124	28.0	51.6	0.0	41.9	3.2
85	10	1	4	5	33	129	28.0	34.1	1.6	59.7	3.1
86	10	1	4	6	3	142	28.0	45.1	0.0	52.1	1.4
87	10	1	4	6	33	111	28.0	49.6	0.9	42.4	0.9
88	10	1	4	7	3	129	28.0	45.0	0.8	51.2	0.8
89	10	1	4	7	33	130	28.0	52.3	3.1	40.8	0.8
90	10	1	4	8	3	143	28.0	39.9	1.4	51.1	1.4
91	10	1	4	8	33	127	28.0	38.6	0.8	53.6	3.2
92	10	1	4	9	3	108	28.0	39.8	2.8	49.1	3.7

Table AII.3: West Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	9	33.2	10	2	6.18	70	5	18.330	14.070
2	2218	9	35.0	9	2	6.36	0	5	88.675	26.545
3	2218	9	35.6	9	2	6.36	0	5	114.769	29.741
4	2218	9	35.3	8	2	6.18	70	5	130.071	31.442
5	2218	9	35.3	8	2	6.33	0	5	200.641	38.257
6	2218	9	35.3	8	2	6.18	70	5	255.779	43.003
7	2218	8	35.6	7	2	6.33	0	5	237.188	41.408
8	2218	8	35.3	7	2	6.18	70	5	249.653	42.649
9	2218	8	35.0	8	2	6.33	0	5	252.716	42.767
10	2218	9	34.7	7	2	6.18	70	5	254.021	43.082
11	2218	9	34.4	8	2	6.33	0	5	264.497	43.393
12	2218	8	33.8	9	2	6.30	0	5	249.208	42.454
13	2201	9	31.3	7	1	6.18	70	5	258.382	43.160
14	2218	9	28.6	7	1	6.15	70	5	220.159	40.005
15	2218	8	26.8	8	1	6.27	0	5	212.515	39.367

Table AII.3: (Continued) West Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
16	2218	9	25.2	8	1	6.27	0	5	227.804	40.508
17	2218	8	24.0	7	1	6.15	70	5	166.648	35.128
18	2218	8	23.4	7	1	6.12	70	5	157.475	34.241
19	2218	9	22.5	7	1	6.15	70	5	168.177	35.418
20	2218	9	22.5	7	1	6.09	70	5	178.880	36.274
21	2201	9	21.9	7	1	6.09	70	5	189.582	37.245
22	2218	9	21.6	7	1	6.09	70	5	194.168	37.652
23	2218	8	21.3	7	1	6.24	0	5	184.995	36.832
24	2218	8	21.0	7	1	6.09	70	5	186.524	36.970
25	2218	8	21.0	6	1	6.09	70	5	220.159	39.878
26	2218	8	21.0	7	1	6.09	70	5	200.284	38.586
27	2218	9	20.7	7	1	6.06	70	5	177.351	36.133
28	2218	8	20.7	7	1	6.09	70	5	186.524	37.245
29	2218	8	20.7	7	1	6.06	70	5	181.937	36.554
30	2218	9	20.7	7	1	6.09	70	5	192.640	37.517
31	2218	8	20.7	7	1	6.06	70	5	154.417	33.940
32	2218	9	20.4	7	1	6.09	70	5	169.706	35.418
33	2218	8	20.4	6	1	6.09	70	5	140.657	32.546
34	2218	8	20.4	6	1	6.06	70	5	152.888	33.940
35	2218	9	20.0	7	1	6.06	70	5	142.186	32.704
36	2218	8	20.0	7	1	6.09	70	5	157.475	34.391
37	2218	9	20.0	7	1	6.06	60	5	168.177	35.273
38	2218	8	20.0	7	1	6.06	70	5	165.120	35.128
39	2218	8	20.0	7	1	6.06	70	5	183.466	36.693
40	2218	8	20.7	6	1	6.03	70	5	155.946	34.391
41	2218	8	21.3	7	1	6.03	70	5	165.120	35.418
42	2218	8	22.2	7	1	6.06	70	5	143.715	32.861
43	2218	8	23.7	7	1	6.03	70	5	157.475	34.688
44	2201	9	26.4	7	1	6.03	70	5	163.591	35.128
45	2218	9	28.6	7	1	6.06	70	5	201.813	38.322
46	2218	8	30.4	9	1	6.18	0	5	194.168	37.652
47	2218	8	31.3	8	1	6.18	0	5	198.755	38.056
48	2218	8	32.5	9	2	6.18	0	5	286.156	45.024
49	2218	9	33.5	9	2	6.18	0	5	304.519	46.450
50	2201	9	34.7	9	2	6.18	0	5	312.170	47.200
51	2218	8	35.0	8	2	6.06	70	5	373.380	51.160

Table AII.3: (Continued) West Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
52	2218	9	34.1	9	2	6.18	0	5	400.925	52.976
53	2218	9	34.4	9	2	6.18	0	5	338.185	49.374
54	2218	8	34.1	8	2	6.18	0	5	379.501	51.548
55	2218	9	32.8	8	2	6.15	0	5	382.562	51.644
56	2218	8	32.5	7	2	6.03	70	5	351.957	49.677
57	2218	9	31.9	7	2	6.15	0	5	347.366	49.475
58	2218	9	30.7	8	1	6.15	0	5	348.896	49.374
59	2218	8	29.8	7	1	6.00	70	5	370.320	50.965
60	2218	8	28.9	7	1	5.97	70	5	330.534	48.455
61	2218	9	28.3	7	1	5.97	70	5	293.808	45.798
62	2218	8	27.1	6	1	6.00	70	5	284.626	45.357
63	2218	9	26.1	7	1	5.97	70	5	289.217	45.468
64	2218	8	25.5	7	1	5.97	70	5	292.277	45.578
65	2218	9	25.2	6	1	6.00	70	5	309.110	46.880
66	2218	8	24.9	6	1	5.97	70	5	275.199	44.196
67	2218	9	24.6	6	1	5.94	60	5	241.564	41.857
68	2218	8	24.3	6	1	5.97	70	5	243.093	41.857
69	2218	8	24.0	6	1	5.97	70	5	233.919	41.372
70	2201	9	23.7	7	1	5.97	70	5	232.391	41.249
71	2218	9	23.7	6	1	5.97	60	5	241.564	41.977
72	2218	8	23.7	6	1	5.97	70	5	233.919	41.127
73	2218	8	23.4	6	1	5.94	60	5	227.804	40.880
74	2201	9	23.7	6	1	5.94	60	5	250.737	42.336
75	2201	8	23.7	6	1	5.94	60	5	247.679	42.216
76	2218	8	23.7	6	1	5.94	60	5	264.733	43.547
77	2201	8	23.7	6	1	5.91	60	5	220.159	40.005
78	2218	8	23.7	6	1	5.94	60	5	250.737	42.454
79	2218	9	23.7	6	1	5.91	60	5	221.688	40.257
80	2218	8	24.0	6	1	5.91	60	5	217.102	40.005
81	2218	9	24.0	6	1	5.91	60	5	246.150	41.977
82	2218	8	24.0	6	1	5.91	60	5	191.111	37.787
83	2218	8	24.0	6	1	5.91	60	5	207.928	39.367
84	2201	9	24.0	6	1	5.91	60	5	174.293	36.274
85	2218	8	24.0	6	1	5.88	60	5	181.937	36.970
86	2218	9	24.0	6	1	5.88	60	5	209.457	39.238
87	2218	9	24.0	6	1	5.91	60	5	155.946	34.091

Table AII.3: (Continued) West Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
88	2218	8	24.0	6	1	5.88	60	5	189.582	37.245
89	2218	9	24.0	6	1	5.88	60	5	184.995	36.832
90	2218	9	24.0	6	1	5.88	60	5	197.226	38.056
91	2218	9	25.5	6	1	5.88	60	5	175.822	36.414
92	2201	8	27.1	7	1	5.88	60	5	143.715	33.328

Table AII.4: West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	11:00:40	25.69	52.00	34.19	29.2	1.97	N/A	8.18	N/A	N/A
1/2/2010	11:05:40	25.69	52.08	34.25	33.9	2.28	N/A	8.26	N/A	N/A
1/2/2010	11:10:40	25.72	52.09	34.26	41.3	2.77	N/A	8.29	N/A	N/A
1/2/2010	11:15:40	25.71	51.97	34.17	41.1	2.76	N/A	8.29	N/A	N/A
1/2/2010	11:20:40	25.74	52.03	34.22	39.0	2.62	N/A	8.29	N/A	N/A
1/2/2010	11:25:40	25.76	52.02	34.21	44.0	2.95	N/A	8.31	N/A	N/A
1/2/2010	11:30:40	25.81	52.12	34.28	42.5	2.85	N/A	8.32	N/A	N/A
1/2/2010	11:35:40	25.79	52.02	34.21	43.2	2.90	N/A	8.30	N/A	N/A
1/2/2010	11:40:40	25.88	52.05	34.23	44.1	2.95	N/A	8.30	N/A	N/A
1/2/2010	11:45:40	25.88	52.10	34.27	39.8	2.67	N/A	8.30	N/A	N/A
1/2/2010	11:50:40	25.90	51.99	34.18	44.1	2.96	N/A	8.29	N/A	N/A
1/2/2010	11:55:40	25.86	51.75	34.00	40.0	2.68	N/A	8.28	N/A	N/A
1/2/2010	12:00:40	25.83	51.44	33.78	41.7	2.80	N/A	8.28	N/A	N/A
1/2/2010	12:05:40	25.97	51.65	33.93	42.1	2.83	N/A	8.28	N/A	N/A
1/2/2010	12:10:40	26.03	51.69	33.95	39.9	2.67	N/A	8.28	N/A	N/A
1/2/2010	12:15:40	26.14	51.94	34.14	42.1	2.81	N/A	8.29	N/A	N/A
1/2/2010	12:20:40	26.19	51.78	34.02	42.0	2.80	N/A	8.28	N/A	N/A
1/2/2010	12:25:40	26.31	51.52	33.82	37.1	2.47	N/A	8.29	N/A	N/A
1/2/2010	12:30:40	26.37	51.91	34.11	38.4	2.55	N/A	8.29	N/A	N/A
1/2/2010	12:35:40	26.17	51.04	33.48	35.8	2.40	N/A	8.26	N/A	N/A
1/2/2010	12:40:40	26.08	49.00	31.98	39.7	2.69	N/A	8.25	N/A	N/A
1/2/2010	12:45:40	26.11	47.55	30.92	34.4	2.34	N/A	8.25	N/A	N/A
1/2/2010	12:50:40	26.09	46.90	30.44	39.6	2.70	N/A	8.21	N/A	N/A
1/2/2010	12:55:40	26.29	48.77	31.81	37.7	2.54	N/A	8.21	N/A	N/A
1/2/2010	13:00:40	26.25	48.24	31.42	36.8	2.49	N/A	8.21	N/A	N/A
1/2/2010	13:05:40	26.23	47.78	31.08	36.4	2.47	N/A	8.20	N/A	N/A
1/2/2010	13:10:40	26.58	50.20	32.85	38.9	2.60	N/A	8.23	N/A	N/A
1/2/2010	13:15:40	26.26	48.01	31.25	39.3	2.66	N/A	8.23	N/A	N/A
1/2/2010	13:20:40	26.59	49.58	32.39	36.2	2.42	N/A	8.21	N/A	N/A
1/2/2010	13:25:40	26.65	50.00	32.70	34.3	2.29	N/A	8.21	N/A	N/A
1/2/2010	13:30:40	26.69	50.32	32.93	39.9	2.65	N/A	8.22	N/A	N/A
1/2/2010	13:35:40	26.88	50.68	33.19	38.0	2.52	N/A	8.24	N/A	N/A
1/2/2010	13:40:40	26.96	51.00	33.42	38.1	2.52	N/A	8.23	N/A	N/A
1/2/2010	13:45:40	26.76	50.48	33.05	39.9	2.65	N/A	8.22	N/A	N/A
1/2/2010	13:50:40	26.96	50.76	33.25	40.8	2.70	N/A	8.23	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	13:55:40	26.78	50.50	33.06	39.7	2.64	N/A	8.20	N/A	N/A
1/2/2010	14:00:40	26.79	50.48	33.05	41.7	2.77	N/A	8.20	N/A	N/A
1/2/2010	14:05:40	26.39	50.29	32.92	44.9	3.00	N/A	8.24	N/A	N/A
1/2/2010	14:10:40	26.33	50.26	32.90	49.8	3.34	N/A	8.26	N/A	N/A
1/2/2010	14:15:40	25.98	49.77	32.54	55.9	3.78	N/A	8.29	N/A	N/A
1/2/2010	14:20:40	26.12	50.17	32.83	51.4	3.46	N/A	8.30	N/A	N/A
1/2/2010	14:25:40	26.20	50.02	32.73	58.1	3.91	N/A	8.31	N/A	N/A
1/2/2010	14:30:40	26.40	50.33	32.95	62.4	4.17	N/A	8.31	N/A	N/A
1/2/2010	14:35:40	26.19	50.10	32.78	59.4	4.00	N/A	8.31	N/A	N/A
1/2/2010	14:40:40	26.32	49.95	32.67	56.3	3.78	N/A	8.30	N/A	N/A
1/2/2010	14:45:40	26.33	49.65	32.45	57.4	3.86	N/A	8.29	N/A	N/A
1/2/2010	14:50:40	26.81	50.44	33.02	55.6	3.70	N/A	8.29	N/A	N/A
1/2/2010	14:55:40	26.72	50.05	32.73	48.0	3.20	N/A	8.27	N/A	N/A
1/2/2010	15:00:40	26.50	49.36	32.23	53.4	3.58	N/A	8.25	N/A	N/A
1/2/2010	15:05:40	26.77	50.10	32.77	52.4	3.49	N/A	8.25	N/A	N/A
1/2/2010	15:10:40	26.61	49.87	32.60	50.4	3.37	N/A	8.26	N/A	N/A
1/2/2010	15:15:40	26.35	49.79	32.55	54.6	3.67	N/A	8.29	N/A	N/A
1/2/2010	15:20:40	26.25	49.76	32.53	63.2	4.25	N/A	8.30	N/A	N/A
1/2/2010	15:25:40	26.43	49.68	32.47	59.3	3.98	N/A	8.30	N/A	N/A
1/2/2010	15:30:40	26.44	49.43	32.29	56.3	3.78	N/A	8.29	N/A	N/A
1/2/2010	15:35:40	26.49	49.48	32.32	57.3	3.84	N/A	8.29	N/A	N/A
1/2/2010	15:40:40	26.60	49.16	32.08	50.8	3.41	N/A	8.27	N/A	N/A
1/2/2010	15:45:40	26.57	49.15	32.08	52.9	3.55	N/A	8.27	N/A	N/A
1/2/2010	15:50:40	26.64	48.48	31.59	50.7	3.41	N/A	8.25	N/A	N/A
1/2/2010	15:55:40	26.58	49.05	32.00	57.4	3.85	N/A	8.27	N/A	N/A
1/2/2010	16:00:40	26.50	49.11	32.05	60.0	4.03	N/A	8.29	N/A	N/A
1/2/2010	16:05:40	26.51	49.40	32.26	58.3	3.91	N/A	8.29	N/A	N/A
1/2/2010	16:10:40	26.53	49.72	32.49	61.2	4.10	N/A	8.30	N/A	N/A
1/2/2010	16:15:40	26.52	49.94	32.65	58.6	3.92	N/A	8.31	N/A	N/A
1/2/2010	16:20:40	26.52	50.01	32.70	57.8	3.86	N/A	8.31	N/A	N/A
1/2/2010	16:25:40	26.43	49.96	32.67	63.7	4.27	N/A	8.32	N/A	N/A
1/2/2010	16:30:40	26.50	50.18	32.84	63.3	4.23	N/A	8.33	N/A	N/A
1/2/2010	16:35:40	26.59	49.94	32.65	61.5	4.11	N/A	8.32	N/A	N/A
1/2/2010	16:40:40	26.58	50.15	32.81	65.7	4.39	N/A	8.33	N/A	N/A
1/2/2010	16:45:40	26.64	50.01	32.70	58.6	3.91	N/A	8.32	N/A	N/A
1/2/2010	16:50:40	26.62	50.11	32.78	66.7	4.45	N/A	8.34	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	16:55:40	26.59	50.02	32.72	69.6	4.65	N/A	8.35	N/A	N/A
1/2/2010	17:00:40	26.59	50.32	32.93	63.8	4.25	N/A	8.34	N/A	N/A
1/2/2010	17:05:40	26.59	50.11	32.78	67.0	4.48	N/A	8.35	N/A	N/A
1/2/2010	17:10:40	26.57	50.07	32.75	67.7	4.53	N/A	8.34	N/A	N/A
1/2/2010	17:15:40	26.53	50.20	32.85	71.7	4.79	N/A	8.36	N/A	N/A
1/2/2010	17:20:40	26.45	50.34	32.95	74.9	5.01	N/A	8.38	N/A	N/A
1/2/2010	17:25:40	26.42	50.39	32.99	73.2	4.90	N/A	8.37	N/A	N/A
1/2/2010	17:30:40	26.39	50.37	32.98	73.0	4.89	N/A	8.37	N/A	N/A
1/2/2010	17:35:40	26.50	50.45	33.03	69.0	4.60	N/A	8.37	N/A	N/A
1/2/2010	17:40:40	26.49	50.41	33.00	73.3	4.90	N/A	8.38	N/A	N/A
1/2/2010	17:45:40	26.29	50.52	33.09	73.9	4.95	N/A	8.38	N/A	N/A
1/2/2010	17:50:40	26.24	50.45	33.04	73.2	4.91	N/A	8.38	N/A	N/A
1/2/2010	17:55:40	26.20	50.42	33.02	70.7	4.74	N/A	8.37	N/A	N/A
1/2/2010	18:00:40	26.17	50.44	33.03	70.0	4.70	N/A	8.37	N/A	N/A
1/2/2010	18:05:40	26.14	50.43	33.03	71.0	4.77	N/A	8.37	N/A	N/A
1/2/2010	18:10:40	26.40	50.38	32.98	70.7	4.73	N/A	8.36	N/A	N/A
1/2/2010	18:15:40	26.22	50.49	33.07	70.2	4.71	N/A	8.37	N/A	N/A
1/2/2010	18:20:40	26.22	50.49	33.07	69.7	4.68	N/A	8.36	N/A	N/A
1/2/2010	18:25:40	26.31	50.46	33.05	68.3	4.58	N/A	8.35	N/A	N/A
1/2/2010	18:30:40	26.27	50.47	33.05	69.5	4.66	N/A	8.35	N/A	N/A
1/2/2010	18:35:40	26.14	50.47	33.06	70.9	4.76	N/A	8.36	N/A	N/A
1/2/2010	18:40:40	26.14	50.45	33.04	71.3	4.79	N/A	8.37	N/A	N/A
1/2/2010	18:45:40	26.14	50.43	33.03	72.4	4.87	N/A	8.36	N/A	N/A
1/2/2010	18:50:40	26.19	50.50	33.08	70.2	4.71	N/A	8.36	N/A	N/A
1/2/2010	18:55:40	26.13	50.48	33.07	69.7	4.68	N/A	8.36	N/A	N/A
1/2/2010	19:00:40	26.16	50.45	33.04	69.9	4.69	N/A	8.36	N/A	N/A
1/2/2010	19:05:40	26.07	50.44	33.04	71.0	4.77	N/A	8.37	N/A	N/A
1/2/2010	19:10:40	26.11	50.47	33.06	68.4	4.60	N/A	8.36	N/A	N/A
1/2/2010	19:15:40	26.04	50.49	33.07	70.0	4.71	N/A	8.37	N/A	N/A
1/2/2010	19:20:40	26.11	50.44	33.03	69.9	4.70	N/A	8.37	N/A	N/A
1/2/2010	19:25:40	26.03	50.46	33.05	69.8	4.69	N/A	8.36	N/A	N/A
1/2/2010	19:30:40	25.97	50.47	33.06	68.9	4.64	N/A	8.36	N/A	N/A
1/2/2010	19:35:40	25.97	50.51	33.09	68.0	4.58	N/A	8.36	N/A	N/A
1/2/2010	19:40:40	25.97	50.48	33.06	68.6	4.62	N/A	8.37	N/A	N/A
1/2/2010	19:45:40	25.97	50.48	33.07	69.7	4.69	N/A	8.37	N/A	N/A
1/2/2010	19:50:40	25.98	50.50	33.08	64.5	4.35	N/A	8.35	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	19:55:40	26.02	50.49	33.08	66.4	4.47	N/A	8.36	N/A	N/A
1/2/2010	20:00:40	26.04	50.58	33.14	64.2	4.32	N/A	8.35	N/A	N/A
1/2/2010	20:05:40	26.05	50.58	33.14	60.4	4.06	N/A	8.34	N/A	N/A
1/2/2010	20:10:40	25.97	50.52	33.09	63.6	4.29	N/A	8.34	N/A	N/A
1/2/2010	20:15:40	26.01	50.55	33.12	63.4	4.26	N/A	8.34	N/A	N/A
1/2/2010	20:20:40	26.01	50.54	33.11	61.3	4.12	N/A	8.33	N/A	N/A
1/2/2010	20:25:40	26.00	50.56	33.13	57.6	3.87	N/A	8.34	N/A	N/A
1/2/2010	20:30:40	25.98	50.51	33.09	62.8	4.23	N/A	8.33	N/A	N/A
1/2/2010	20:35:40	25.97	50.54	33.11	62.8	4.23	N/A	8.34	N/A	N/A
1/2/2010	20:40:40	26.05	50.49	33.07	62.7	4.22	N/A	8.34	N/A	N/A
1/2/2010	20:45:40	25.99	50.49	33.07	64.2	4.33	N/A	8.34	N/A	N/A
1/2/2010	20:50:40	25.98	50.51	33.09	62.5	4.21	N/A	8.34	N/A	N/A
1/2/2010	20:55:40	25.96	50.51	33.09	61.0	4.11	N/A	8.33	N/A	N/A
1/2/2010	21:00:40	25.94	50.50	33.08	62.9	4.24	N/A	8.34	N/A	N/A
1/2/2010	21:05:40	25.96	50.52	33.10	60.0	4.04	N/A	8.34	N/A	N/A
1/2/2010	21:10:40	25.93	50.53	33.10	58.5	3.94	N/A	8.33	N/A	N/A
1/2/2010	21:15:40	25.91	50.51	33.09	58.7	3.96	N/A	8.33	N/A	N/A
1/2/2010	21:20:40	25.91	50.52	33.10	59.8	4.03	N/A	8.34	N/A	N/A
1/2/2010	21:25:40	25.90	50.52	33.10	59.7	4.03	N/A	8.34	N/A	N/A
1/2/2010	21:30:40	25.88	50.52	33.10	59.9	4.04	N/A	8.34	N/A	N/A
1/2/2010	21:35:40	25.88	50.52	33.10	59.7	4.02	N/A	8.34	N/A	N/A
1/2/2010	21:40:40	25.87	50.51	33.09	59.2	3.99	N/A	8.34	N/A	N/A
1/2/2010	21:45:40	25.86	50.52	33.10	59.3	4.00	N/A	8.34	N/A	N/A
1/2/2010	21:50:40	25.86	50.51	33.09	58.6	3.95	N/A	8.34	N/A	N/A
1/2/2010	21:55:40	25.84	50.51	33.09	59.1	3.99	N/A	8.33	N/A	N/A
1/2/2010	22:00:40	25.87	50.49	33.07	58.1	3.92	N/A	8.32	N/A	N/A
1/2/2010	22:05:40	25.89	50.48	33.07	58.9	3.97	N/A	8.33	N/A	N/A
1/2/2010	22:10:40	25.92	50.49	33.07	58.1	3.92	N/A	8.33	N/A	N/A
1/2/2010	22:15:40	25.88	50.49	33.07	56.0	3.78	N/A	8.32	N/A	N/A
1/2/2010	22:20:40	25.89	50.49	33.08	57.2	3.86	N/A	8.32	N/A	N/A
1/2/2010	22:25:40	25.89	50.49	33.08	55.5	3.75	N/A	8.32	N/A	N/A
1/2/2010	22:30:40	25.89	50.49	33.08	57.5	3.88	N/A	8.32	N/A	N/A
1/2/2010	22:35:40	25.89	50.50	33.08	53.9	3.64	N/A	8.31	N/A	N/A
1/2/2010	22:40:40	25.89	50.51	33.09	55.1	3.72	N/A	8.32	N/A	N/A
1/2/2010	22:45:40	25.89	50.50	33.08	53.2	3.59	N/A	8.31	N/A	N/A
1/2/2010	22:50:40	25.89	50.51	33.09	54.4	3.67	N/A	8.31	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	22:55:40	25.89	50.51	33.09	53.1	3.58	N/A	8.31	N/A	N/A
1/2/2010	23:00:40	25.88	50.51	33.10	52.9	3.57	N/A	8.31	N/A	N/A
1/2/2010	23:05:40	25.87	50.50	33.09	51.6	3.48	N/A	8.30	N/A	N/A
1/2/2010	23:10:40	25.87	50.51	33.09	51.3	3.46	N/A	8.30	N/A	N/A
1/2/2010	23:15:40	25.88	50.51	33.09	52.3	3.53	N/A	8.30	N/A	N/A
1/2/2010	23:20:40	25.88	50.50	33.09	49.4	3.33	N/A	8.30	N/A	N/A
1/2/2010	23:25:40	25.87	50.51	33.09	50.7	3.42	N/A	8.30	N/A	N/A
1/2/2010	23:30:40	25.87	50.51	33.09	49.9	3.37	N/A	8.30	N/A	N/A
1/2/2010	23:35:40	25.85	50.48	33.07	49.5	3.34	N/A	8.29	N/A	N/A
1/2/2010	23:40:40	25.82	50.47	33.07	54.8	3.70	N/A	8.32	N/A	N/A
1/2/2010	23:45:40	25.82	50.46	33.05	53.2	3.59	N/A	8.32	N/A	N/A
1/2/2010	23:50:40	25.81	50.48	33.07	55.5	3.75	N/A	8.33	N/A	N/A
1/2/2010	23:55:40	25.82	50.48	33.07	53.0	3.58	N/A	8.32	N/A	N/A
1/3/2010	0:00:40	25.80	50.46	33.06	54.1	3.66	N/A	8.32	N/A	N/A
1/3/2010	0:05:40	25.80	50.45	33.05	53.7	3.63	N/A	8.32	N/A	N/A
1/3/2010	0:10:40	25.78	50.46	33.06	54.7	3.70	N/A	8.33	N/A	N/A
1/3/2010	0:15:40	25.81	50.47	33.06	50.2	3.39	N/A	8.31	N/A	N/A
1/3/2010	0:20:40	25.79	50.46	33.06	52.3	3.53	N/A	8.31	N/A	N/A
1/3/2010	0:25:40	25.79	50.45	33.05	53.0	3.58	N/A	8.31	N/A	N/A
1/3/2010	0:30:40	25.78	50.42	33.03	51.9	3.51	N/A	8.32	N/A	N/A
1/3/2010	0:35:40	25.77	50.45	33.05	53.1	3.59	N/A	8.32	N/A	N/A
1/3/2010	0:40:40	25.76	50.46	33.05	52.0	3.52	N/A	8.31	N/A	N/A
1/3/2010	0:45:40	25.75	50.45	33.05	51.9	3.51	N/A	8.31	N/A	N/A
1/3/2010	0:50:40	25.73	50.44	33.04	51.9	3.51	N/A	8.31	N/A	N/A
1/3/2010	0:55:40	25.72	50.44	33.05	51.9	3.51	N/A	8.31	N/A	N/A
1/3/2010	1:00:40	25.69	50.45	33.05	51.6	3.49	N/A	8.32	N/A	N/A
1/3/2010	1:05:40	25.69	50.45	33.05	50.8	3.44	N/A	8.31	N/A	N/A
1/3/2010	1:10:40	25.67	50.45	33.05	51.1	3.46	N/A	8.31	N/A	N/A
1/3/2010	1:15:40	25.65	50.44	33.05	50.3	3.41	N/A	8.31	N/A	N/A
1/3/2010	1:20:40	25.63	50.46	33.06	50.6	3.43	N/A	8.31	N/A	N/A
1/3/2010	1:25:40	25.60	50.46	33.06	50.2	3.41	N/A	8.31	N/A	N/A
1/3/2010	1:30:40	25.55	50.46	33.06	50.6	3.43	N/A	8.31	N/A	N/A
1/3/2010	1:35:40	25.53	50.47	33.07	50.9	3.45	N/A	8.31	N/A	N/A
1/3/2010	1:40:40	25.51	50.48	33.08	49.9	3.39	N/A	8.31	N/A	N/A
1/3/2010	1:45:40	25.50	50.48	33.08	50.3	3.42	N/A	8.31	N/A	N/A
1/3/2010	1:50:40	25.49	50.48	33.08	50.5	3.43	N/A	8.31	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	1:55:40	25.48	50.46	33.07	51.0	3.46	N/A	8.32	N/A	N/A
1/3/2010	2:00:40	25.46	50.49	33.09	51.1	3.47	N/A	8.31	N/A	N/A
1/3/2010	2:05:40	25.44	50.53	33.11	51.4	3.49	N/A	8.32	N/A	N/A
1/3/2010	2:10:40	25.41	50.53	33.12	52.2	3.55	N/A	8.32	N/A	N/A
1/3/2010	2:15:40	25.40	50.55	33.13	51.3	3.49	N/A	8.32	N/A	N/A
1/3/2010	2:20:40	25.37	50.58	33.15	52.8	3.59	N/A	8.33	N/A	N/A
1/3/2010	2:25:40	25.37	50.58	33.15	53.1	3.61	N/A	8.33	N/A	N/A
1/3/2010	2:30:40	25.34	50.63	33.20	53.2	3.62	N/A	8.33	N/A	N/A
1/3/2010	2:35:40	25.32	50.68	33.23	54.3	3.69	N/A	8.34	N/A	N/A
1/3/2010	2:40:40	25.31	50.70	33.24	54.5	3.71	N/A	8.34	N/A	N/A
1/3/2010	2:45:40	25.29	50.72	33.26	54.2	3.69	N/A	8.34	N/A	N/A
1/3/2010	2:50:40	25.28	50.71	33.25	56.0	3.82	N/A	8.35	N/A	N/A
1/3/2010	2:55:40	25.27	50.72	33.26	55.7	3.79	N/A	8.35	N/A	N/A
1/3/2010	3:00:40	25.26	50.74	33.28	55.7	3.79	N/A	8.35	N/A	N/A
1/3/2010	3:05:40	25.25	50.73	33.27	56.5	3.85	N/A	8.35	N/A	N/A
1/3/2010	3:10:40	25.23	50.76	33.29	55.8	3.80	N/A	8.36	N/A	N/A
1/3/2010	3:15:40	25.21	50.77	33.30	56.0	3.82	N/A	8.36	N/A	N/A
1/3/2010	3:20:40	25.20	50.78	33.31	57.9	3.94	N/A	8.37	N/A	N/A
1/3/2010	3:25:40	25.19	50.82	33.34	57.6	3.93	N/A	8.37	N/A	N/A
1/3/2010	3:30:40	25.19	50.84	33.35	56.7	3.86	N/A	8.36	N/A	N/A
1/3/2010	3:35:40	25.18	50.84	33.35	56.9	3.88	N/A	8.37	N/A	N/A
1/3/2010	3:40:40	25.17	50.87	33.37	57.3	3.91	N/A	8.37	N/A	N/A
1/3/2010	3:45:40	25.16	50.91	33.40	57.2	3.90	N/A	8.37	N/A	N/A
1/3/2010	3:50:40	25.16	50.93	33.42	58.0	3.95	N/A	8.38	N/A	N/A
1/3/2010	3:55:40	25.16	50.95	33.43	57.3	3.90	N/A	8.37	N/A	N/A
1/3/2010	4:00:40	25.15	50.91	33.40	57.0	3.88	N/A	8.38	N/A	N/A
1/3/2010	4:05:40	25.16	50.87	33.38	56.2	3.83	N/A	8.37	N/A	N/A
1/3/2010	4:10:40	25.16	50.93	33.42	56.6	3.86	N/A	8.37	N/A	N/A
1/3/2010	4:15:40	25.15	50.95	33.43	57.9	3.94	N/A	8.38	N/A	N/A
1/3/2010	4:20:40	25.15	50.99	33.46	57.6	3.92	N/A	8.37	N/A	N/A
1/3/2010	4:25:40	25.14	50.98	33.46	56.7	3.87	N/A	8.38	N/A	N/A
1/3/2010	4:30:40	25.04	50.85	33.36	55.6	3.80	N/A	8.37	N/A	N/A
1/3/2010	4:35:40	25.08	50.89	33.39	56.8	3.87	N/A	8.36	N/A	N/A
1/3/2010	4:40:40	25.10	50.94	33.42	57.7	3.94	N/A	8.38	N/A	N/A
1/3/2010	4:45:40	25.12	51.01	33.48	58.2	3.97	N/A	8.38	N/A	N/A
1/3/2010	4:50:40	25.10	50.99	33.46	58.2	3.97	N/A	8.38	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	4:55:40	24.92	50.68	33.24	54.2	3.71	N/A	8.36	N/A	N/A
1/3/2010	5:00:40	25.04	50.90	33.40	55.3	3.78	N/A	8.36	N/A	N/A
1/3/2010	5:05:40	25.08	50.99	33.47	56.0	3.82	N/A	8.37	N/A	N/A
1/3/2010	5:10:40	25.01	50.85	33.36	54.6	3.73	N/A	8.37	N/A	N/A
1/3/2010	5:15:40	25.09	50.98	33.46	57.6	3.93	N/A	8.37	N/A	N/A
1/3/2010	5:20:40	25.08	51.00	33.47	56.2	3.84	N/A	8.37	N/A	N/A
1/3/2010	5:25:40	25.04	50.94	33.43	55.2	3.77	N/A	8.37	N/A	N/A
1/3/2010	5:30:40	24.91	50.86	33.37	55.4	3.79	N/A	8.37	N/A	N/A
1/3/2010	5:35:40	24.87	50.91	33.41	55.9	3.83	N/A	8.36	N/A	N/A
1/3/2010	5:40:40	25.02	50.98	33.46	57.4	3.92	N/A	8.39	N/A	N/A
1/3/2010	5:45:40	25.06	51.08	33.53	56.8	3.88	N/A	8.38	N/A	N/A
1/3/2010	5:50:40	25.02	51.01	33.48	56.2	3.84	N/A	8.38	N/A	N/A
1/3/2010	5:55:40	24.72	50.78	33.32	54.7	3.76	N/A	8.37	N/A	N/A
1/3/2010	6:00:40	24.73	50.76	33.30	54.2	3.73	N/A	8.36	N/A	N/A
1/3/2010	6:05:40	24.70	50.77	33.31	54.9	3.77	N/A	8.35	N/A	N/A
1/3/2010	6:10:40	24.81	50.91	33.41	56.1	3.85	N/A	8.37	N/A	N/A
1/3/2010	6:15:40	24.89	50.91	33.41	55.1	3.77	N/A	8.38	N/A	N/A
1/3/2010	6:20:40	24.70	50.82	33.35	53.3	3.66	N/A	8.36	N/A	N/A
1/3/2010	6:25:40	24.83	50.89	33.40	54.3	3.72	N/A	8.36	N/A	N/A
1/3/2010	6:30:40	24.91	50.95	33.44	56.1	3.84	N/A	8.37	N/A	N/A
1/3/2010	6:35:40	24.90	50.95	33.44	55.8	3.82	N/A	8.38	N/A	N/A
1/3/2010	6:40:40	24.94	51.00	33.47	56.3	3.85	N/A	8.38	N/A	N/A
1/3/2010	6:45:40	24.97	51.03	33.49	55.6	3.80	N/A	8.38	N/A	N/A
1/3/2010	6:50:40	24.97	51.03	33.50	54.8	3.74	N/A	8.38	N/A	N/A
1/3/2010	6:55:40	24.97	51.03	33.50	54.7	3.74	N/A	8.38	N/A	N/A
1/3/2010	7:00:40	24.92	51.03	33.50	52.8	3.61	N/A	8.37	N/A	N/A
1/3/2010	7:05:40	24.91	51.04	33.50	52.8	3.61	N/A	8.38	N/A	N/A
1/3/2010	7:10:40	24.93	51.05	33.51	53.6	3.67	N/A	8.38	N/A	N/A
1/3/2010	7:15:40	24.97	51.07	33.52	54.3	3.71	N/A	8.38	N/A	N/A
1/3/2010	7:20:40	24.99	51.07	33.53	54.8	3.74	N/A	8.38	N/A	N/A
1/3/2010	7:25:40	24.97	51.08	33.53	54.1	3.70	N/A	8.38	N/A	N/A
1/3/2010	7:30:40	25.00	51.09	33.54	53.9	3.68	N/A	8.38	N/A	N/A
1/3/2010	7:35:40	24.98	51.09	33.54	53.4	3.65	N/A	8.38	N/A	N/A
1/3/2010	7:40:40	24.98	51.09	33.54	54.0	3.69	N/A	8.38	N/A	N/A
1/3/2010	7:45:40	24.98	51.06	33.52	53.7	3.67	N/A	8.38	N/A	N/A
1/3/2010	7:50:40	24.91	50.92	33.41	52.8	3.61	N/A	8.37	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	7:55:40	24.92	50.92	33.41	52.8	3.61	N/A	8.36	N/A	N/A
1/3/2010	8:00:40	24.92	50.90	33.40	51.4	3.52	N/A	8.36	N/A	N/A
1/3/2010	8:05:40	24.80	50.69	33.25	53.2	3.65	N/A	8.36	N/A	N/A
1/3/2010	8:10:40	24.92	50.85	33.36	50.2	3.44	N/A	8.34	N/A	N/A
1/3/2010	8:15:40	24.74	50.57	33.17	50.8	3.49	N/A	8.34	N/A	N/A
1/3/2010	8:20:40	24.79	50.49	33.10	50.3	3.46	N/A	8.33	N/A	N/A
1/3/2010	8:25:40	24.78	50.36	33.01	48.3	3.32	N/A	8.32	N/A	N/A
1/3/2010	8:30:40	24.69	50.32	32.98	46.5	3.20	N/A	8.29	N/A	N/A
1/3/2010	8:35:40	24.75	50.39	33.03	42.1	2.89	N/A	8.28	N/A	N/A
1/3/2010	8:40:40	24.67	50.26	32.94	44.2	3.05	N/A	8.28	N/A	N/A
1/3/2010	8:45:40	24.67	50.36	33.01	41.0	2.83	N/A	8.25	N/A	N/A
1/3/2010	8:50:40	24.67	50.10	32.82	46.5	3.21	N/A	8.28	N/A	N/A
1/3/2010	8:55:40	24.63	49.90	32.67	44.3	3.06	N/A	8.28	N/A	N/A
1/3/2010	9:00:40	24.50	49.63	32.48	45.8	3.18	N/A	8.29	N/A	N/A
1/3/2010	9:05:40	24.60	49.76	32.57	44.3	3.07	N/A	8.27	N/A	N/A
1/3/2010	9:10:40	24.56	49.61	32.46	45.0	3.12	N/A	8.28	N/A	N/A
1/3/2010	9:15:40	24.34	48.95	31.98	48.9	3.41	N/A	8.30	N/A	N/A
1/3/2010	9:20:40	24.41	48.92	31.96	47.1	3.28	N/A	8.29	N/A	N/A
1/3/2010	9:25:40	24.57	49.01	32.02	39.8	2.76	N/A	8.23	N/A	N/A
1/3/2010	9:30:40	24.60	48.87	31.92	40.3	2.80	N/A	8.24	N/A	N/A
1/3/2010	9:35:40	24.59	48.95	31.98	40.0	2.77	N/A	8.23	N/A	N/A
1/3/2010	9:40:40	24.63	48.96	31.98	42.8	2.97	N/A	8.24	N/A	N/A
1/3/2010	9:45:40	24.65	48.93	31.96	41.6	2.88	N/A	8.24	N/A	N/A
1/3/2010	9:50:40	24.50	47.61	31.00	44.7	3.13	N/A	8.25	N/A	N/A
Break in time - YSI was retrieved and then re-deployed										
1/3/2010	13:50:40	25.83	45.39	29.36	52.7	3.64	0.41	8.05	N/A	N/A
1/3/2010	13:55:40	25.87	45.26	29.26	57.4	3.96	0.41	8.06	N/A	N/A
1/3/2010	14:00:40	25.94	44.64	28.82	50.4	3.48	0.41	8.03	N/A	N/A
1/3/2010	14:05:40	25.95	45.08	29.13	50.1	3.45	0.41	8.01	N/A	N/A
1/3/2010	14:10:40	25.96	44.69	28.85	53.5	3.69	0.42	8.03	N/A	N/A
1/3/2010	14:15:40	25.94	45.26	29.26	57.1	3.93	0.41	8.04	N/A	N/A
1/3/2010	14:20:40	25.98	45.10	29.15	58.6	4.04	0.41	8.04	N/A	N/A
1/3/2010	14:25:40	25.96	45.17	29.20	59.4	4.09	0.41	8.04	N/A	N/A
1/3/2010	14:30:40	25.97	44.96	29.05	60.2	4.15	0.41	8.05	N/A	N/A
1/3/2010	14:35:40	25.96	45.20	29.22	58.6	4.03	0.41	8.05	N/A	N/A
1/3/2010	14:40:40	26.00	44.78	28.92	60.4	4.16	0.41	8.05	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	14:45:40	26.01	44.91	29.01	58.9	4.06	0.41	8.04	N/A	N/A
1/3/2010	14:50:40	26.02	45.04	29.11	55.2	3.80	0.41	8.03	N/A	N/A
1/3/2010	14:55:40	26.01	45.16	29.19	58.7	4.04	0.41	8.03	N/A	N/A
1/3/2010	15:00:40	26.05	44.85	28.97	60.4	4.16	0.41	8.04	N/A	N/A
1/3/2010	15:05:40	26.13	44.72	28.87	63.2	4.34	0.41	8.04	N/A	N/A
1/3/2010	15:10:40	26.09	44.78	28.92	60.2	4.14	0.41	8.04	N/A	N/A
1/3/2010	15:15:40	26.12	44.30	28.57	57.4	3.96	0.41	8.03	N/A	N/A
1/3/2010	15:20:40	26.10	44.78	28.92	58.4	4.01	0.41	8.04	N/A	N/A
1/3/2010	15:25:40	26.18	44.52	28.72	59.7	4.10	0.41	8.03	N/A	N/A
1/3/2010	15:30:40	26.15	44.19	28.49	58.9	4.06	0.41	8.04	N/A	N/A
1/3/2010	15:35:40	26.14	44.69	28.85	59.4	4.08	0.41	8.04	N/A	N/A
1/3/2010	15:40:40	26.28	43.72	28.15	62.5	4.30	0.41	8.04	N/A	N/A
1/3/2010	15:45:40	26.21	44.47	28.69	62.4	4.29	0.41	8.05	N/A	N/A
1/3/2010	15:50:40	26.23	44.29	28.56	64.0	4.40	0.41	8.04	N/A	N/A
1/3/2010	15:55:40	26.18	44.69	28.85	61.1	4.20	0.41	8.04	N/A	N/A
1/3/2010	16:00:40	26.19	44.22	28.51	59.5	4.10	0.41	8.04	N/A	N/A
1/3/2010	16:05:40	26.16	44.45	28.67	55.8	3.84	0.41	8.03	N/A	N/A
1/3/2010	16:10:40	26.20	44.37	28.62	57.2	3.93	0.41	8.02	N/A	N/A
1/3/2010	16:15:40	26.22	44.31	28.57	60.9	4.19	0.41	8.04	N/A	N/A
1/3/2010	16:20:40	26.18	44.70	28.85	57.0	3.92	0.41	8.03	N/A	N/A
1/3/2010	16:25:40	26.22	44.11	28.43	58.4	4.02	0.40	8.03	N/A	N/A
1/3/2010	16:30:40	26.22	44.60	28.78	59.9	4.11	0.41	8.04	N/A	N/A
1/3/2010	16:35:40	26.17	44.29	28.56	60.0	4.13	0.41	8.05	N/A	N/A
1/3/2010	16:40:40	26.16	44.40	28.64	61.9	4.26	0.41	8.05	N/A	N/A
1/3/2010	16:45:40	26.20	43.95	28.31	60.5	4.17	0.41	8.05	N/A	N/A
1/3/2010	16:50:40	26.15	44.21	28.50	60.2	4.15	0.41	8.05	N/A	N/A
1/3/2010	16:55:40	26.15	44.49	28.71	57.7	3.97	0.41	8.04	N/A	N/A
1/3/2010	17:00:40	26.14	44.73	28.88	60.5	4.16	0.41	8.04	N/A	N/A
1/3/2010	17:05:40	26.14	44.62	28.80	62.0	4.27	0.41	8.05	N/A	N/A
1/3/2010	17:10:40	26.14	44.28	28.55	60.7	4.18	0.41	8.05	N/A	N/A
1/3/2010	17:15:40	26.18	44.26	28.54	60.5	4.17	0.41	8.05	N/A	N/A
1/3/2010	17:20:40	26.13	44.72	28.87	58.6	4.03	0.41	8.05	N/A	N/A
1/3/2010	17:25:40	26.12	44.73	28.88	61.5	4.23	0.41	8.05	N/A	N/A
1/3/2010	17:30:40	26.12	44.66	28.83	59.0	4.06	0.41	8.04	N/A	N/A
1/3/2010	17:35:40	26.12	45.04	29.10	57.8	3.97	0.41	8.04	N/A	N/A
1/3/2010	17:40:40	26.14	44.76	28.90	58.1	3.99	0.41	8.04	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	17:45:40	26.15	44.68	28.84	58.1	4.00	0.41	8.04	N/A	N/A
1/3/2010	17:50:40	26.12	45.05	29.11	55.8	3.83	0.41	8.04	N/A	N/A
1/3/2010	17:55:40	26.13	45.19	29.21	55.2	3.79	0.41	8.03	N/A	N/A
1/3/2010	18:00:40	26.15	44.63	28.80	58.1	3.99	0.41	8.05	N/A	N/A
1/3/2010	18:05:40	26.13	44.98	29.06	60.8	4.18	0.41	8.05	N/A	N/A
1/3/2010	18:10:40	26.13	45.06	29.11	60.9	4.18	0.41	8.05	N/A	N/A
1/3/2010	18:15:40	26.10	45.16	29.19	56.4	3.88	0.41	8.05	N/A	N/A
1/3/2010	18:20:40	26.09	45.15	29.18	58.2	4.00	0.41	8.05	N/A	N/A
1/3/2010	18:25:40	26.10	45.03	29.09	61.5	4.23	0.41	8.06	N/A	N/A
1/3/2010	18:30:40	26.11	44.91	29.01	60.8	4.18	0.41	8.06	N/A	N/A
1/3/2010	18:35:40	26.09	45.09	29.14	61.6	4.23	0.41	8.05	N/A	N/A
1/3/2010	18:40:40	26.08	45.02	29.09	61.9	4.26	0.41	8.06	N/A	N/A
1/3/2010	18:45:40	26.06	45.11	29.15	59.3	4.08	0.41	8.05	N/A	N/A
1/3/2010	18:50:40	26.03	45.11	29.16	56.8	3.91	0.41	8.05	N/A	N/A
1/3/2010	18:55:40	25.99	45.05	29.11	62.0	4.27	0.42	8.06	N/A	N/A
1/3/2010	19:00:40	25.98	45.08	29.13	62.6	4.31	0.42	8.07	N/A	N/A
1/3/2010	19:05:40	25.97	45.05	29.11	61.8	4.25	0.42	8.06	N/A	N/A
1/3/2010	19:10:40	26.01	45.21	29.23	58.8	4.04	0.42	8.06	N/A	N/A
1/3/2010	19:15:40	26.01	45.47	29.41	54.4	3.74	0.42	8.05	N/A	N/A
1/3/2010	19:20:40	25.98	45.21	29.23	58.0	3.99	0.42	8.06	N/A	N/A
1/3/2010	19:25:40	25.99	45.35	29.33	58.3	4.01	0.42	8.06	N/A	N/A
1/3/2010	19:30:40	26.02	45.42	29.38	58.3	4.01	0.42	8.05	N/A	N/A
1/3/2010	19:35:40	26.00	45.45	29.40	58.4	4.02	0.42	8.05	N/A	N/A
1/3/2010	19:40:40	26.01	45.44	29.40	56.4	3.88	0.42	8.05	N/A	N/A
1/3/2010	19:45:40	26.05	45.45	29.40	53.3	3.66	0.42	8.03	N/A	N/A
1/3/2010	19:50:40	26.01	45.54	29.47	54.2	3.73	0.42	8.04	N/A	N/A
1/3/2010	19:55:40	25.98	45.55	29.47	56.9	3.91	0.42	8.05	N/A	N/A
1/3/2010	20:00:40	25.98	45.76	29.62	56.5	3.88	0.42	8.05	N/A	N/A
1/3/2010	20:05:40	25.94	45.52	29.45	59.2	4.07	0.42	8.07	N/A	N/A
1/3/2010	20:10:40	26.01	46.39	30.08	56.5	3.86	0.42	8.06	N/A	N/A
1/3/2010	20:15:40	25.99	46.02	29.81	56.9	3.90	0.42	8.06	N/A	N/A
1/3/2010	20:20:40	25.99	45.98	29.78	56.0	3.84	0.42	8.06	N/A	N/A
1/3/2010	20:25:40	26.01	46.07	29.85	55.0	3.77	0.43	8.07	N/A	N/A
1/3/2010	20:30:40	26.02	46.70	30.30	54.4	3.72	0.43	8.07	N/A	N/A
1/3/2010	20:35:40	26.02	46.38	30.07	54.1	3.71	0.43	8.07	N/A	N/A
1/3/2010	20:40:40	26.03	46.89	30.44	55.2	3.77	0.43	8.07	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	20:45:40	26.02	46.63	30.25	54.6	3.73	0.43	8.08	N/A	N/A
1/3/2010	20:50:40	26.04	47.55	30.92	54.1	3.69	0.43	8.07	N/A	N/A
1/3/2010	20:55:40	26.03	47.24	30.70	57.6	3.92	0.43	8.10	N/A	N/A
1/3/2010	21:00:40	26.01	46.89	30.44	53.1	3.63	0.43	8.09	N/A	N/A
1/3/2010	21:05:40	26.03	47.62	30.98	53.9	3.67	0.43	8.09	N/A	N/A
1/3/2010	21:10:40	26.03	47.74	31.06	55.2	3.76	0.43	8.09	N/A	N/A
1/3/2010	21:15:40	26.04	48.10	31.33	55.5	3.77	0.43	8.10	N/A	N/A
1/3/2010	21:20:40	26.04	48.22	31.41	57.5	3.90	0.43	8.12	N/A	N/A
1/3/2010	21:25:40	26.04	48.29	31.46	56.8	3.86	0.43	8.12	N/A	N/A
1/3/2010	21:30:40	26.04	48.39	31.54	56.8	3.85	0.43	8.12	N/A	N/A
1/3/2010	21:35:40	26.04	48.11	31.33	57.7	3.92	0.43	8.12	N/A	N/A
1/3/2010	21:40:40	26.03	47.95	31.22	53.9	3.66	0.43	8.10	N/A	N/A
1/3/2010	21:45:40	26.04	48.54	31.64	55.9	3.79	0.43	8.11	N/A	N/A
1/3/2010	21:50:40	26.04	48.60	31.69	56.8	3.85	0.43	8.12	N/A	N/A
1/3/2010	21:55:40	26.04	48.70	31.76	56.5	3.83	0.43	8.12	N/A	N/A
1/3/2010	22:00:40	26.04	48.53	31.63	54.3	3.68	0.43	8.12	N/A	N/A
1/3/2010	22:05:40	26.04	48.77	31.81	54.5	3.69	0.43	8.12	N/A	N/A
1/3/2010	22:10:40	26.04	48.54	31.64	52.9	3.59	0.43	8.11	N/A	N/A
1/3/2010	22:15:40	26.04	48.59	31.68	53.1	3.60	0.43	8.11	N/A	N/A
1/3/2010	22:20:40	26.04	48.62	31.70	52.5	3.56	0.43	8.11	N/A	N/A
1/3/2010	22:25:40	26.03	48.33	31.49	50.3	3.41	0.43	8.10	N/A	N/A
1/3/2010	22:30:40	26.04	48.47	31.59	49.2	3.34	0.43	8.09	N/A	N/A
1/3/2010	22:35:40	26.05	48.69	31.75	48.0	3.25	0.43	8.09	N/A	N/A
1/3/2010	22:40:40	26.02	48.30	31.47	47.3	3.21	0.43	8.08	N/A	N/A
1/3/2010	22:45:40	25.99	47.71	31.04	43.9	2.99	0.43	8.06	N/A	N/A
1/3/2010	22:50:40	26.01	48.07	31.30	46.9	3.19	0.43	8.06	N/A	N/A
1/3/2010	22:55:40	25.98	47.13	30.62	48.2	3.29	0.43	8.04	N/A	N/A
1/3/2010	23:00:40	25.93	46.16	29.92	47.8	3.28	0.43	8.05	N/A	N/A
1/3/2010	23:05:40	25.95	46.76	30.35	49.1	3.36	0.43	8.06	N/A	N/A
1/3/2010	23:10:40	25.94	46.91	30.46	48.1	3.29	0.43	8.06	N/A	N/A
1/3/2010	23:15:40	25.92	46.70	30.30	45.7	3.13	0.43	8.04	N/A	N/A
1/3/2010	23:20:40	25.88	45.82	29.67	47.7	3.28	0.43	8.03	N/A	N/A
1/3/2010	23:25:40	25.85	45.70	29.59	45.0	3.10	0.43	8.02	N/A	N/A
1/3/2010	23:30:40	25.80	45.51	29.45	50.0	3.45	0.43	8.03	N/A	N/A
1/3/2010	23:35:40	25.80	45.25	29.26	53.0	3.66	0.43	8.04	N/A	N/A
1/3/2010	23:40:40	25.79	45.39	29.36	50.8	3.51	0.43	8.04	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	23:45:40	25.82	45.44	29.39	44.7	3.08	0.43	8.02	N/A	N/A
1/3/2010	23:50:40	25.72	45.78	29.65	42.5	2.93	0.43	8.01	N/A	N/A
1/3/2010	23:55:40	25.78	45.95	29.77	39.4	2.71	0.43	8.01	N/A	N/A
1/4/2010	0:00:40	25.69	45.05	29.12	51.3	3.55	0.43	8.03	N/A	N/A
1/4/2010	0:05:40	25.79	45.58	29.50	42.6	2.94	0.43	8.02	N/A	N/A
1/4/2010	0:10:40	25.87	46.50	30.17	42.1	2.89	0.43	8.01	N/A	N/A
1/4/2010	0:15:40	25.73	45.89	29.72	39.1	2.70	0.43	8.02	N/A	N/A
1/4/2010	0:20:40	25.73	46.14	29.91	37.1	2.55	0.43	8.04	N/A	N/A
1/4/2010	0:25:40	25.82	47.09	30.59	37.6	2.57	0.43	8.04	N/A	N/A
1/4/2010	0:30:40	25.66	46.07	29.85	39.2	2.70	0.43	8.04	N/A	N/A
1/4/2010	0:35:40	25.74	46.54	30.20	41.4	2.84	0.43	8.04	N/A	N/A
1/4/2010	0:40:40	25.59	44.60	28.80	49.7	3.45	0.43	8.05	N/A	N/A
1/4/2010	0:45:40	25.26	43.60	28.09	50.9	3.57	0.43	8.05	N/A	N/A
1/4/2010	0:50:40	25.17	42.78	27.50	54.1	3.81	0.43	8.03	N/A	N/A
1/4/2010	0:55:40	25.07	42.94	27.61	58.0	4.09	0.43	8.04	N/A	N/A
1/4/2010	1:00:40	25.17	42.50	27.30	53.9	3.80	0.43	8.03	N/A	N/A
1/4/2010	1:05:40	24.89	42.42	27.24	57.9	4.10	0.42	8.03	N/A	N/A
1/4/2010	1:10:40	25.08	43.33	27.89	54.0	3.81	0.42	8.03	N/A	N/A
1/4/2010	1:15:40	25.07	42.93	27.61	55.9	3.95	0.42	8.04	N/A	N/A
1/4/2010	1:20:40	25.06	42.90	27.59	59.1	4.17	0.42	8.05	N/A	N/A
1/4/2010	1:25:40	25.02	42.95	27.62	57.1	4.03	0.42	8.04	N/A	N/A
1/4/2010	1:30:40	24.96	42.79	27.51	60.7	4.29	0.42	8.05	N/A	N/A
1/4/2010	1:35:40	25.61	45.49	29.44	41.8	2.89	0.42	8.01	N/A	N/A
1/4/2010	1:40:40	25.49	45.43	29.40	40.7	2.82	0.42	7.99	N/A	N/A
1/4/2010	1:45:40	25.34	44.86	28.99	35.4	2.47	0.42	7.96	N/A	N/A
1/4/2010	1:50:40	25.07	46.10	29.89	43.2	3.01	0.42	7.97	N/A	N/A
1/4/2010	1:55:40	24.98	45.90	29.75	44.5	3.10	0.42	8.01	N/A	N/A
1/4/2010	2:00:40	25.10	46.47	30.16	51.1	3.55	0.42	8.04	N/A	N/A
1/4/2010	2:05:40	25.10	46.53	30.20	43.6	3.03	0.42	8.06	N/A	N/A
1/4/2010	2:10:40	25.19	46.21	29.97	48.6	3.38	0.42	8.05	N/A	N/A
1/4/2010	2:15:40	25.00	45.93	29.77	52.6	3.67	0.42	8.06	N/A	N/A
1/4/2010	2:20:40	25.11	46.47	30.16	56.7	3.94	0.42	8.08	N/A	N/A
1/4/2010	2:25:40	24.97	46.04	29.85	57.6	4.02	0.42	8.10	N/A	N/A
1/4/2010	2:30:40	24.89	45.92	29.77	59.8	4.18	0.42	8.10	N/A	N/A
1/4/2010	2:35:40	24.94	45.76	29.65	57.0	3.98	0.42	8.10	N/A	N/A
1/4/2010	2:40:40	24.89	45.66	29.58	57.0	3.99	0.42	8.08	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	2:45:40	24.87	44.89	29.02	59.1	4.15	0.42	8.08	N/A	N/A
1/4/2010	2:50:40	24.95	45.29	29.31	60.4	4.23	0.42	8.09	N/A	N/A
1/4/2010	2:55:40	24.94	45.89	29.74	60.6	4.24	0.42	8.11	N/A	N/A
1/4/2010	3:00:40	24.83	45.53	29.48	61.5	4.31	0.42	8.11	N/A	N/A
1/4/2010	3:05:40	24.80	45.02	29.11	60.7	4.27	0.42	8.11	N/A	N/A
1/4/2010	3:10:40	24.70	44.37	28.65	63.4	4.48	0.42	8.11	N/A	N/A
1/4/2010	3:15:40	24.73	44.78	28.94	62.2	4.38	0.42	8.11	N/A	N/A
1/4/2010	3:20:40	24.46	42.87	27.57	62.8	4.48	0.42	8.13	N/A	N/A
1/4/2010	3:25:40	24.59	44.16	28.50	63.2	4.47	0.42	8.12	N/A	N/A
1/4/2010	3:30:40	24.75	44.75	28.93	59.8	4.21	0.42	8.10	N/A	N/A
1/4/2010	3:35:40	24.74	45.17	29.22	61.4	4.32	0.42	8.10	N/A	N/A
1/4/2010	3:40:40	24.66	45.57	29.51	65.4	4.60	0.42	8.14	N/A	N/A
1/4/2010	3:45:40	24.44	44.85	29.00	66.3	4.69	0.42	8.15	N/A	N/A
1/4/2010	3:50:40	24.35	45.20	29.26	66.8	4.73	0.42	8.16	N/A	N/A
1/4/2010	3:55:40	24.30	45.79	29.68	67.1	4.74	0.42	8.15	N/A	N/A
1/4/2010	4:00:40	24.28	45.87	29.74	67.6	4.78	0.42	8.16	N/A	N/A
1/4/2010	4:05:40	24.28	45.70	29.62	67.7	4.79	0.42	8.16	N/A	N/A
1/4/2010	4:10:40	24.36	46.08	29.89	67.5	4.76	0.42	8.16	N/A	N/A
1/4/2010	4:15:40	24.35	46.12	29.92	66.8	4.71	0.42	8.16	N/A	N/A
1/4/2010	4:20:40	24.37	46.11	29.91	66.2	4.67	0.42	8.16	N/A	N/A
1/4/2010	4:25:40	24.65	46.88	30.47	63.1	4.41	0.42	8.17	N/A	N/A
1/4/2010	4:30:40	24.63	46.85	30.44	63.5	4.44	0.42	8.17	N/A	N/A
1/4/2010	4:35:40	24.74	47.80	31.13	63.6	4.42	0.42	8.17	N/A	N/A
1/4/2010	4:40:40	24.65	46.61	30.27	62.9	4.40	0.42	8.16	N/A	N/A
1/4/2010	4:45:40	24.63	47.27	30.75	64.2	4.48	0.42	8.14	N/A	N/A
1/4/2010	4:50:40	24.49	46.13	29.93	66.3	4.66	0.42	8.14	N/A	N/A
1/4/2010	4:55:40	24.41	46.05	29.87	65.8	4.64	0.42	8.15	N/A	N/A
1/4/2010	5:00:40	24.48	46.47	30.17	65.1	4.57	0.42	8.15	N/A	N/A
1/4/2010	5:05:40	24.43	46.37	30.10	67.3	4.73	0.42	8.16	N/A	N/A
1/4/2010	5:10:40	24.55	46.53	30.21	66.0	4.63	0.42	8.16	N/A	N/A
1/4/2010	5:15:40	24.38	45.57	29.52	66.0	4.66	0.42	8.15	N/A	N/A
1/4/2010	5:20:40	24.29	45.53	29.50	66.2	4.68	0.42	8.14	N/A	N/A
1/4/2010	5:25:40	24.18	45.42	29.42	65.7	4.66	0.42	8.14	N/A	N/A
1/4/2010	5:30:40	23.99	45.24	29.29	68.6	4.89	0.42	8.15	N/A	N/A
1/4/2010	5:35:40	24.08	45.83	29.72	68.1	4.83	0.42	8.16	N/A	N/A
1/4/2010	5:40:40	24.04	45.69	29.61	69.0	4.90	0.42	8.16	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	5:45:40	24.10	45.58	29.54	67.4	4.79	0.42	8.16	N/A	N/A
1/4/2010	5:50:40	24.30	46.18	29.96	65.0	4.59	0.42	8.16	N/A	N/A
1/4/2010	5:55:40	24.16	46.02	29.85	66.2	4.68	0.42	8.16	N/A	N/A
1/4/2010	6:00:40	24.53	46.47	30.17	62.0	4.35	0.42	8.15	N/A	N/A
1/4/2010	6:05:40	24.38	46.79	30.40	64.0	4.49	0.42	8.15	N/A	N/A
1/4/2010	6:10:40	24.77	47.50	30.91	55.6	3.87	0.42	8.14	N/A	N/A
1/4/2010	6:15:40	24.86	47.62	31.00	54.8	3.81	0.43	8.13	N/A	N/A
1/4/2010	6:20:40	24.71	47.59	30.98	54.1	3.77	0.43	8.13	N/A	N/A
1/4/2010	6:25:40	24.83	48.03	31.30	53.8	3.73	0.43	8.13	N/A	N/A
1/4/2010	6:30:40	24.83	48.10	31.35	54.4	3.77	0.43	8.14	N/A	N/A
1/4/2010	6:35:40	24.87	48.37	31.55	55.7	3.86	0.43	8.15	N/A	N/A
1/4/2010	6:40:40	24.80	48.13	31.37	54.6	3.79	0.43	8.15	N/A	N/A
1/4/2010	6:45:40	24.85	48.28	31.48	52.5	3.64	0.43	8.14	N/A	N/A
1/4/2010	6:50:40	24.77	47.88	31.19	54.9	3.82	0.43	8.14	N/A	N/A
1/4/2010	6:55:40	24.80	47.66	31.03	59.0	4.10	0.43	8.15	N/A	N/A
1/4/2010	7:00:40	25.05	48.61	31.72	49.1	3.38	0.43	8.13	N/A	N/A
1/4/2010	7:05:40	24.97	48.11	31.36	50.6	3.50	0.43	8.12	N/A	N/A
1/4/2010	7:10:40	25.05	48.26	31.46	43.1	2.97	0.43	8.11	N/A	N/A
1/4/2010	7:15:40	24.71	47.04	30.58	53.4	3.73	0.43	8.13	N/A	N/A
1/4/2010	7:20:40	24.77	47.73	31.08	56.6	3.94	0.43	8.14	N/A	N/A
1/4/2010	7:25:40	24.43	46.75	30.38	63.1	4.43	0.43	8.15	N/A	N/A
1/4/2010	7:30:40	24.08	45.61	29.55	66.0	4.68	0.43	8.15	N/A	N/A
1/4/2010	7:35:40	24.12	45.96	29.81	65.7	4.65	0.43	8.15	N/A	N/A
1/4/2010	7:40:40	24.16	46.09	29.90	65.2	4.61	0.43	8.15	N/A	N/A
1/4/2010	7:45:40	24.10	45.85	29.73	65.0	4.61	0.44	8.16	N/A	N/A
1/4/2010	7:50:40	23.84	45.03	29.14	66.6	4.76	0.44	8.15	N/A	N/A
1/4/2010	7:55:40	23.82	45.10	29.20	67.5	4.82	0.44	8.15	N/A	N/A
1/4/2010	8:00:40	23.89	45.31	29.34	66.9	4.77	0.44	8.15	N/A	N/A
1/4/2010	8:05:40	24.10	46.19	29.98	65.5	4.63	0.44	8.15	N/A	N/A
1/4/2010	8:10:40	24.24	46.35	30.09	62.0	4.38	0.44	8.14	N/A	N/A
1/4/2010	8:15:40	23.98	45.69	29.61	63.8	4.53	0.44	8.15	N/A	N/A
1/4/2010	8:20:40	24.19	46.36	30.10	63.9	4.52	0.44	8.15	N/A	N/A
1/4/2010	8:25:40	24.14	46.87	30.47	67.1	4.73	0.44	8.16	N/A	N/A
1/4/2010	8:30:40	24.14	46.84	30.45	66.1	4.67	0.44	8.17	N/A	N/A
1/4/2010	8:35:40	24.12	46.32	30.07	66.6	4.71	0.44	8.17	N/A	N/A
1/4/2010	8:40:40	23.71	43.89	28.32	64.4	4.63	0.46	8.14	N/A	N/A

Table AII.4: (Continued) West Loch Platform A YSI data from the XLM-600. The absolute depth was incorrectly calibrated for the beginning of deployment until the break in time when the YSI was retrieved from the platform.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	8:45:40	24.23	47.20	30.71	65.8	4.63	0.38	8.15	N/A	N/A

Table AII.5: West Loch Platform A wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:ss	Wind Speed m/s	Date yyyymmdd	Time hh:ss	Wind Speed m/s
20100102	10:53	2.1	20100103	10:53	3.1
20100102	11:53	1.5	20100103	11:53	3.6
20100102	12:00	1.5	20100103	12:00	3.6
20100102	12:53	0.0	20100103	12:53	3.6
20100102	13:53	2.1	20100103	13:53	4.6
20100102	14:53	0.0	20100103	14:53	4.6
20100102	15:53	1.5	20100103	15:53	5.7
20100102	16:53	2.1	20100103	16:53	4.1
20100102	17:53	1.5	20100103	17:53	4.1
20100102	18:00	1.5	20100103	18:00	4.1
20100102	18:53	0.0	20100103	18:53	5.7
20100102	19:53	0.0	20100103	19:53	5.1
20100102	20:53	3.1	20100103	20:53	5.1
20100102	21:53	3.6	20100103	21:53	6.2
20100102	22:53	4.1	20100103	22:53	6.7
20100102	23:53	3.6	20100103	23:53	5.7
20100103	00:00	3.6	20100104	00:00	5.7
20100103	00:53	4.1	20100104	00:53	6.2
20100103	01:53	3.6	20100104	01:53	6.2
20100103	02:53	3.1	20100104	02:53	6.2
20100103	03:53	1.5	20100104	03:53	5.1
20100103	04:53	1.5	20100104	04:53	5.1
20100103	05:53	0.0	20100104	05:53	5.1
20100103	06:00	0.0	20100104	06:00	5.1
20100103	06:53	1.5	20100104	06:53	5.1
20100103	07:53	2.6	20100104	07:53	6.7
20100103	08:53	1.5	20100104	08:53	4.6
20100103	09:53	2.1			

Table AII.6: West Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 80 cm at 1606 on 2 January 2010. An alternative groundwater impacted layer of 40 cm requires subtraction of 40 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/2/10 11:05	-109.50	77.10	1/2/10 14:00	-115.57	71.03
1/2/10 11:10	-109.50	77.10	1/2/10 14:05	-114.27	72.33
1/2/10 11:15	-112.09	74.51	1/2/10 14:10	-113.46	73.14
1/2/10 11:20	-112.88	73.73	1/2/10 14:15	-113.77	72.84
1/2/10 11:25	-112.37	74.23	1/2/10 14:20	-113.36	73.24
1/2/10 11:30	-113.87	72.74	1/2/10 14:25	-112.67	73.93
1/2/10 11:35	-113.77	72.84	1/2/10 14:30	-111.68	74.92
1/2/10 11:40	-114.38	72.23	1/2/10 14:35	-111.48	75.12
1/2/10 11:45	-114.55	72.05	1/2/10 14:40	-111.28	75.33
1/2/10 11:50	-114.96	71.64	1/2/10 14:45	-111.48	75.12
1/2/10 11:55	-114.96	71.64	1/2/10 14:50	-110.19	76.42
1/2/10 12:00	-114.86	71.75	1/2/10 14:55	-111.00	75.61
1/2/10 12:05	-115.37	71.24	1/2/10 15:00	-109.40	77.21
1/2/10 12:10	-115.75	70.86	1/2/10 15:05	-109.40	77.21
1/2/10 12:15	-115.37	71.24	1/2/10 15:10	-108.79	77.82
1/2/10 12:20	-114.96	71.64	1/2/10 15:15	-107.70	78.91
1/2/10 12:25	-115.47	71.14	1/2/10 15:20	-107.59	79.01
1/2/10 12:30	-114.96	71.64	1/2/10 15:25	-107.42	79.19
1/2/10 12:35	-115.37	71.24	1/2/10 15:30	-107.11	79.49
1/2/10 12:40	-115.37	71.24	1/2/10 15:35	-107.11	79.49
1/2/10 12:45	-115.37	71.24	1/2/10 15:40	-107.90	78.70
1/2/10 12:50	-115.16	71.44	1/2/10 15:45	-107.80	78.81
1/2/10 12:55	-116.05	70.55	1/2/10 15:50	-107.59	79.01
1/2/10 13:00	-115.75	70.86	1/2/10 15:55	-107.49	79.11
1/2/10 13:05	-115.95	70.65	1/2/10 16:00	-106.12	80.48
1/2/10 13:10	-116.46	70.14	1/2/10 16:05	-106.60	80.00
1/2/10 13:15	-116.36	70.25	1/2/10 16:10	-106.50	80.10
1/2/10 13:20	-115.75	70.86	1/2/10 16:15	-106.81	79.80
1/2/10 13:25	-116.87	69.74	1/2/10 16:20	-105.13	81.47
1/2/10 13:30	-117.25	69.36	1/2/10 16:25	-105.13	81.47
1/2/10 13:35	-116.36	70.25	1/2/10 16:30	-105.13	81.47
1/2/10 13:40	-116.46	70.14	1/2/10 16:35	-103.94	82.67
1/2/10 13:45	-116.05	70.55	1/2/10 16:40	-103.73	82.87
1/2/10 13:50	-116.05	70.55	1/2/10 16:45	-103.02	83.58
1/2/10 13:55	-115.95	70.65	1/2/10 16:50	-102.34	84.27

Table AII.6: (Continued) West Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 80 cm at 1606 on 2 January 2010. An alternative groundwater impacted layer of 40 cm requires subtraction of 40 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/2/10 16:55	-102.13	84.47	1/2/10 19:50	-103.73	82.87
1/2/10 17:00	-102.03	84.57	1/2/10 19:55	-104.72	81.88
1/2/10 17:05	-102.44	84.17	1/2/10 20:00	-105.61	80.99
1/2/10 17:10	-101.45	85.16	1/2/10 20:05	-105.92	80.69
1/2/10 17:15	-101.55	85.05	1/2/10 20:10	-107.42	79.19
1/2/10 17:20	-101.24	85.36	1/2/10 20:15	-107.80	78.81
1/2/10 17:25	-101.35	85.26	1/2/10 20:20	-108.79	77.82
1/2/10 17:30	-101.35	85.26	1/2/10 20:25	-108.79	77.82
1/2/10 17:35	-101.63	84.98	1/2/10 20:30	-109.30	77.31
1/2/10 17:40	-101.14	85.46	1/2/10 20:35	-110.08	76.52
1/2/10 17:45	-101.45	85.16	1/2/10 20:40	-109.80	76.80
1/2/10 17:50	-101.63	84.98	1/2/10 20:45	-110.69	75.91
1/2/10 17:55	-101.83	84.78	1/2/10 20:50	-110.29	76.32
1/2/10 18:00	-101.14	85.46	1/2/10 20:55	-110.59	76.01
1/2/10 18:05	-102.24	84.37	1/2/10 21:00	-110.79	75.81
1/2/10 18:10	-101.83	84.78	1/2/10 21:05	-111.58	75.02
1/2/10 18:15	-100.05	86.55	1/2/10 21:10	-111.68	74.92
1/2/10 18:20	-100.53	86.07	1/2/10 21:15	-111.38	75.22
1/2/10 18:25	-100.15	86.45	1/2/10 21:20	-112.67	73.93
1/2/10 18:30	-99.64	86.96	1/2/10 21:25	-112.27	74.34
1/2/10 18:35	-99.16	87.44	1/2/10 21:30	-113.08	73.52
1/2/10 18:40	-99.54	87.06	1/2/10 21:35	-113.87	72.74
1/2/10 18:45	-98.96	87.65	1/2/10 21:40	-114.38	72.23
1/2/10 18:50	-98.35	88.26	1/2/10 21:45	-115.06	71.54
1/2/10 18:55	-98.65	87.95	1/2/10 21:50	-116.15	70.45
1/2/10 19:00	-98.96	87.65	1/2/10 21:55	-117.35	69.26
1/2/10 19:05	-98.55	88.05	1/2/10 22:00	-117.96	68.65
1/2/10 19:10	-98.45	88.15	1/2/10 22:05	-119.33	67.27
1/2/10 19:15	-99.06	87.54	1/2/10 22:10	-119.43	67.17
1/2/10 19:20	-98.86	87.75	1/2/10 22:15	-120.24	66.36
1/2/10 19:25	-99.64	86.96	1/2/10 22:20	-121.34	65.27
1/2/10 19:30	-100.94	85.66	1/2/10 22:25	-121.92	64.68
1/2/10 19:35	-100.53	86.07	1/2/10 22:30	-121.72	64.89
1/2/10 19:40	-101.45	85.16	1/2/10 22:35	-122.81	63.79
1/2/10 19:45	-103.33	83.28	1/2/10 22:40	-123.11	63.49

Table AII.6: (Continued) West Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 80 cm at 1606 on 2 January 2010. An alternative groundwater impacted layer of 40 cm requires subtraction of 40 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/2/10 22:45	-123.01	63.59	1/3/10 1:40	-97.36	89.25
1/2/10 22:50	-122.63	63.97	1/3/10 1:45	-95.58	91.02
1/2/10 22:55	-123.01	63.59	1/3/10 1:50	-94.28	92.32
1/2/10 23:00	-122.22	64.38	1/3/10 1:55	-93.19	93.41
1/2/10 23:05	-121.54	65.06	1/3/10 2:00	-91.08	95.52
1/2/10 23:10	-121.44	65.17	1/3/10 2:05	-90.30	96.31
1/2/10 23:15	-120.52	66.08	1/3/10 2:10	-88.62	97.98
1/2/10 23:20	-119.74	66.87	1/3/10 2:15	-86.92	99.69
1/2/10 23:25	-119.33	67.27	1/3/10 2:20	-86.03	100.57
1/2/10 23:30	-118.85	67.76	1/3/10 2:25	-84.53	102.07
1/2/10 23:35	-117.35	69.26	1/3/10 2:30	-83.13	103.47
1/2/10 23:40	-116.94	69.66	1/3/10 2:35	-81.46	105.15
1/2/10 23:45	-116.87	69.74	1/3/10 2:40	-79.86	106.75
1/2/10 23:50	-116.15	70.45	1/3/10 2:45	-79.07	107.53
1/2/10 23:55	-115.27	71.34	1/3/10 2:50	-77.37	109.24
1/3/10 0:00	-114.86	71.75	1/3/10 2:55	-76.28	110.33
1/3/10 0:05	-114.66	71.95	1/3/10 3:00	-74.78	111.83
1/3/10 0:10	-113.97	72.63	1/3/10 3:05	-72.90	113.71
1/3/10 0:20	-113.56	73.04	1/3/10 3:10	-72.11	114.49
1/3/10 0:25	-112.78	73.83	1/3/10 3:15	-70.92	115.69
1/3/10 0:15	-114.27	72.33	1/3/10 3:20	-69.62	116.98
1/3/10 0:30	-112.19	74.41	1/3/10 3:25	-68.63	117.97
1/3/10 0:35	-112.37	74.23	1/3/10 3:30	-67.34	119.27
1/3/10 0:40	-111.58	75.02	1/3/10 3:35	-65.43	121.17
1/3/10 0:45	-111.07	75.53	1/3/10 3:40	-64.44	122.16
1/3/10 0:50	-109.80	76.80	1/3/10 3:45	-63.14	123.46
1/3/10 0:55	-108.99	77.61	1/3/10 3:50	-62.36	124.25
1/3/10 1:00	-108.10	78.50	1/3/10 3:55	-61.06	125.54
1/3/10 1:05	-107.70	78.91	1/3/10 4:00	-59.87	126.74
1/3/10 1:10	-106.12	80.48	1/3/10 4:05	-58.98	127.63
1/3/10 1:15	-104.42	82.18	1/3/10 4:10	-57.79	128.82
1/3/10 1:20	-103.23	83.38	1/3/10 4:15	-57.38	129.23
1/3/10 1:25	-101.93	84.67	1/3/10 4:20	-56.29	130.32
1/3/10 1:30	-100.53	86.07	1/3/10 4:25	-54.99	131.61
1/3/10 1:35	-99.06	87.54	1/3/10 4:30	-54.51	132.10

Table AII.6: (Continued) West Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 80 cm at 1606 on 2 January 2010. An alternative groundwater impacted layer of 40 cm requires subtraction of 40 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/3/10 4:35	-53.59	133.01	1/3/10 7:30	-52.12	134.48
1/3/10 4:40	-52.71	133.90	1/3/10 7:35	-52.40	134.20
1/3/10 4:45	-52.12	134.48	1/3/10 7:40	-53.42	133.19
1/3/10 4:50	-51.51	135.09	1/3/10 7:45	-53.70	132.91
1/3/10 4:55	-50.32	136.29	1/3/10 7:50	-54.51	132.10
1/3/10 5:00	-50.22	136.39	1/3/10 7:55	-55.30	131.31
1/3/10 5:05	-49.63	136.97	1/3/10 8:00	-56.79	129.81
1/3/10 5:10	-48.74	137.86	1/3/10 8:05	-57.48	129.12
1/3/10 5:15	-48.64	137.96	1/3/10 8:10	-58.67	127.93
1/3/10 5:20	-47.45	139.16	1/3/10 8:15	-60.86	125.75
1/3/10 5:25	-47.04	139.56	1/3/10 8:20	-62.05	124.55
1/3/10 5:30	-47.04	139.56	1/3/10 8:25	-64.54	122.06
1/3/10 5:35	-46.53	140.07	1/3/10 8:30	-65.15	121.45
1/3/10 5:40	-46.36	140.25	1/3/10 8:35	-67.23	119.37
1/3/10 5:45	-46.15	140.45	1/3/10 8:40	-67.03	119.57
1/3/10 5:50	-45.95	140.66	1/3/10 8:45	-69.11	117.49
1/3/10 5:55	-45.64	140.96	1/3/10 8:50	-70.00	116.60
1/3/10 6:00	-45.95	140.66	1/3/10 8:55	-71.40	115.20
1/3/10 6:05	-45.75	140.86	1/3/10 9:00	-72.59	114.01
1/3/10 6:10	-46.15	140.45	1/3/10 9:05	-73.99	112.61
1/3/10 6:15	-45.95	140.66	1/3/10 9:10	-75.49	111.12
1/3/10 6:20	-46.63	139.97	1/3/10 9:15	-75.59	111.01
1/3/10 6:25	-46.94	139.66	1/3/10 9:20	-77.67	108.93
1/3/10 6:30	-46.94	139.66	1/3/10 9:25	-77.37	109.24
1/3/10 6:35	-47.73	138.88	1/3/10 9:30	-79.76	106.85
1/3/10 6:40	-48.34	138.27	1/3/10 9:35	-80.65	105.96
1/3/10 6:45	-48.34	138.27	1/3/10 9:40	-81.94	104.66
1/3/10 6:50	-48.82	137.79	1/3/10 9:45	-82.14	104.46
1/3/10 6:55	-49.02	137.58	1/3/10 9:50	-84.12	102.48
1/3/10 7:00	-49.12	137.48	1/3/10 9:55	-84.63	101.97
1/3/10 7:05	-50.72	135.88	1/3/10 10:00	-85.83	100.78
1/3/10 7:10	-50.01	136.59	1/3/10 10:05	-87.02	99.58
1/3/10 7:15	-50.93	135.68	1/3/10 10:10	-88.90	97.70
1/3/10 7:20	-51.21	135.40	1/3/10 10:15	-89.81	96.79
1/3/10 7:25	-50.93	135.68	1/3/10 10:20	-91.90	94.71

Table AII.6: (Continued) West Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 80 cm at 1606 on 2 January 2010. An alternative groundwater impacted layer of 40 cm requires subtraction of 40 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/3/10 10:25	-93.29	93.31	1/3/10 13:20	-118.75	67.86
1/3/10 10:30	-94.49	92.12	1/3/10 13:25	-117.55	69.05
1/3/10 10:35	-95.68	90.92	1/3/10 13:30	-118.34	68.27
1/3/10 10:40	-97.05	89.55	1/3/10 13:35	-118.06	68.54
1/3/10 10:45	-97.87	88.74	1/3/10 13:40	-118.95	67.66
1/3/10 10:50	-99.54	87.06	1/3/10 13:45	-118.06	68.54
1/3/10 10:55	-100.63	85.97	1/3/10 13:50	-116.56	70.04
1/3/10 11:00	-100.84	85.77	1/3/10 13:55	-115.85	70.75
1/3/10 11:05	-102.54	84.06	1/3/10 14:00	-115.47	71.14
1/3/10 11:10	-103.84	82.77	1/3/10 14:05	-114.17	72.43
1/3/10 11:15	-105.61	80.99	1/3/10 14:10	-114.76	71.85
1/3/10 11:20	-104.52	82.08	1/3/10 14:15	-114.17	72.43
1/3/10 11:25	-106.60	80.00	1/3/10 14:20	-113.97	72.63
1/3/10 11:30	-107.32	79.29	1/3/10 14:25	-114.17	72.43
1/3/10 11:35	-107.80	78.81	1/3/10 14:30	-114.48	72.13
1/3/10 11:40	-108.61	77.99	1/3/10 14:35	-112.57	74.03
1/3/10 11:45	-109.50	77.10	1/3/10 14:40	-113.46	73.14
1/3/10 11:50	-110.08	76.52	1/3/10 14:45	-112.57	74.03
1/3/10 11:55	-112.37	74.23	1/3/10 14:50	-112.09	74.51
1/3/10 12:00	-111.07	75.53	1/3/10 14:55	-110.39	76.22
1/3/10 12:05	-113.28	73.32	1/3/10 15:00	-111.38	75.22
1/3/10 12:10	-112.98	73.62	1/3/10 15:05	-108.99	77.61
1/3/10 12:15	-113.56	73.04	1/3/10 15:10	-111.38	75.22
1/3/10 12:20	-114.66	71.95	1/3/10 15:15	-110.08	76.52
1/3/10 12:25	-116.05	70.55	1/3/10 15:20	-108.99	77.61
1/3/10 12:30	-116.66	69.94	1/3/10 15:25	-109.09	77.51
1/3/10 12:35	-114.86	71.75	1/3/10 16:15	-102.82	83.78
1/3/10 12:40	-117.45	69.15	1/3/10 16:20	-102.64	83.96
1/3/10 12:45	-116.56	70.04	1/3/10 16:25	-100.94	85.66
1/3/10 12:50	-117.35	69.26	1/3/10 16:30	-100.74	85.87
1/3/10 12:55	-117.55	69.05	1/3/10 16:35	-99.85	86.76
1/3/10 13:00	-117.14	69.46	1/3/10 16:40	-99.34	87.26
1/3/10 13:05	-117.55	69.05	1/3/10 16:45	-98.96	87.65
1/3/10 13:10	-119.53	67.07	1/3/10 16:50	-98.15	88.46
1/3/10 13:15	-119.33	67.27	1/3/10 16:55	-97.97	88.64

Table AII.6: (Continued) West Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 80 cm at 1606 on 2 January 2010. An alternative groundwater impacted layer of 40 cm requires subtraction of 40 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/3/10 17:00	-97.05	89.55	1/3/10 19:55	-93.68	92.93
1/3/10 17:05	-96.57	90.03	1/3/10 20:00	-94.39	92.22
1/3/10 17:10	-95.48	91.13	1/3/10 20:05	-94.77	91.84
1/3/10 17:15	-95.48	91.13	1/3/10 20:10	-94.67	91.94
1/3/10 17:20	-95.28	91.33	1/3/10 20:15	-95.28	91.33
1/3/10 17:25	-95.48	91.13	1/3/10 20:20	-95.68	90.92
1/3/10 17:30	-94.08	92.52	1/3/10 20:25	-96.37	90.24
1/3/10 17:35	-93.47	93.13	1/3/10 20:30	-96.57	90.03
1/3/10 17:40	-93.98	92.62	1/3/10 20:35	-96.95	89.65
1/3/10 17:45	-93.19	93.41	1/3/10 20:40	-97.66	88.94
1/3/10 17:50	-93.09	93.51	1/3/10 20:45	-98.15	88.46
1/3/10 17:55	-93.19	93.41	1/3/10 20:50	-98.25	88.36
1/3/10 18:00	-93.19	93.41	1/3/10 20:55	-98.45	88.15
1/3/10 18:05	-92.48	94.12	1/3/10 21:00	-99.26	87.34
1/3/10 18:10	-92.48	94.12	1/3/10 21:05	-99.64	86.96
1/3/10 18:15	-92.20	94.40	1/3/10 21:10	-100.25	86.35
1/3/10 18:20	-91.80	94.81	1/3/10 21:15	-101.04	85.56
1/3/10 18:25	-91.69	94.91	1/3/10 21:20	-101.45	85.16
1/3/10 18:30	-91.69	94.91	1/3/10 21:25	-101.45	85.16
1/3/10 18:35	-92.00	94.61	1/3/10 21:30	-102.54	84.06
1/3/10 18:40	-91.29	95.32	1/3/10 21:35	-103.33	83.28
1/3/10 18:45	-92.20	94.40	1/3/10 21:40	-103.33	83.28
1/3/10 18:50	-91.69	94.91	1/3/10 21:45	-103.94	82.67
1/3/10 18:55	-92.00	94.61	1/3/10 21:50	-104.32	82.29
1/3/10 19:00	-92.20	94.40	1/3/10 21:55	-105.03	81.57
1/3/10 19:05	-92.28	94.33	1/3/10 22:00	-105.51	81.09
1/3/10 19:10	-91.69	94.91	1/3/10 22:05	-106.02	80.58
1/3/10 19:15	-92.10	94.50	1/3/10 22:10	-107.21	79.39
1/3/10 19:20	-92.48	94.12	1/3/10 22:15	-106.91	79.70
1/3/10 19:25	-92.00	94.61	1/3/10 22:20	-107.59	79.01
1/3/10 19:30	-92.68	93.92	1/3/10 22:25	-108.41	78.20
1/3/10 19:35	-92.89	93.72	1/3/10 22:30	-108.79	77.82
1/3/10 19:40	-92.89	93.72	1/3/10 22:35	-109.70	76.90
1/3/10 19:45	-93.29	93.31	1/3/10 22:40	-108.99	77.61
1/3/10 19:50	-93.68	92.93	1/3/10 22:45	-109.80	76.80

Table AII.6: (Continued) West Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 80 cm at 1606 on 2 January 2010. An alternative groundwater impacted layer of 40 cm requires subtraction of 40 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/3/10 22:50	-109.98	76.62	1/4/10 1:45	-98.35	88.26
1/3/10 22:55	-110.08	76.52	1/4/10 1:50	-97.87	88.74
1/3/10 23:00	-110.90	75.71	1/4/10 1:55	-96.77	89.83
1/3/10 23:05	-110.39	76.22	1/4/10 2:00	-96.57	90.03
1/3/10 23:10	-110.49	76.11	1/4/10 2:05	-95.86	90.74
1/3/10 23:15	-110.79	75.81	1/4/10 2:10	-95.07	91.53
1/3/10 23:20	-110.79	75.81	1/4/10 2:15	-94.56	92.04
1/3/10 23:25	-111.00	75.61	1/4/10 2:20	-93.29	93.31
1/3/10 23:30	-110.49	76.11	1/4/10 2:25	-93.29	93.31
1/3/10 23:35	-110.39	76.22	1/4/10 2:30	-92.48	94.12
1/3/10 23:40	-110.79	75.81	1/4/10 2:35	-91.69	94.91
1/3/10 23:45	-110.79	75.81	1/4/10 2:40	-91.01	95.60
1/3/10 23:50	-110.69	75.91	1/4/10 2:45	-90.40	96.21
1/3/10 23:55	-110.79	75.81	1/4/10 2:50	-89.10	97.50
1/4/10 0:00	-110.49	76.11	1/4/10 2:55	-88.01	98.59
1/4/10 0:05	-110.69	75.91	1/4/10 3:00	-87.60	99.00
1/4/10 0:10	-111.18	75.43	1/4/10 3:05	-85.83	100.78
1/4/10 0:15	-110.29	76.32	1/4/10 3:10	-84.73	101.87
1/4/10 0:20	-111.18	75.43	1/4/10 3:15	-83.95	102.66
1/4/10 0:25	-110.29	76.32	1/4/10 3:20	-82.65	103.95
1/4/10 0:30	-109.98	76.62	1/4/10 3:25	-81.74	104.87
1/4/10 0:35	-110.49	76.11	1/4/10 3:30	-80.37	106.24
1/4/10 0:40	-109.70	76.90	1/4/10 3:35	-77.98	108.63
1/4/10 0:45	-109.19	77.41	1/4/10 3:40	-77.47	109.13
1/4/10 0:50	-108.20	78.40	1/4/10 3:45	-76.28	110.33
1/4/10 0:55	-108.31	78.30	1/4/10 3:50	-75.39	111.22
1/4/10 1:00	-107.01	79.59	1/4/10 3:55	-73.10	113.50
1/4/10 1:05	-106.22	80.38	1/4/10 4:00	-72.21	114.39
1/4/10 1:10	-105.03	81.57	1/4/10 4:05	-71.81	114.80
1/4/10 1:15	-104.01	82.59	1/4/10 4:10	-71.40	115.20
1/4/10 1:20	-103.02	83.58	1/4/10 4:15	-70.51	116.09
1/4/10 1:25	-102.13	84.47	1/4/10 4:20	-69.22	117.39
1/4/10 1:30	-101.14	85.46	1/4/10 4:25	-68.53	118.07
1/4/10 1:35	-99.64	86.96	1/4/10 4:30	-67.92	118.68
1/4/10 1:40	-99.64	86.96	1/4/10 4:35	-67.44	119.17

Table AII.6: (Continued) West Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 80 cm at 1606 on 2 January 2010. An alternative groundwater impacted layer of 40 cm requires subtraction of 40 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/4/10 4:40	-66.24	120.36	1/4/10 6:55	-54.69	131.92
1/4/10 4:45	-66.04	120.56	1/4/10 7:00	-54.41	132.20
1/4/10 4:50	-65.15	121.45	1/4/10 7:05	-54.69	131.92
1/4/10 4:55	-64.54	122.06	1/4/10 7:10	-54.79	131.82
1/4/10 5:00	-64.14	122.47	1/4/10 7:15	-55.40	131.21
1/4/10 5:05	-63.45	123.15	1/4/10 7:20	-55.88	130.72
1/4/10 5:10	-63.25	123.36	1/4/10 7:25	-56.69	129.91
1/4/10 5:15	-61.85	124.75	1/4/10 7:30	-57.28	129.33
1/4/10 5:20	-62.15	124.45	1/4/10 7:35	-57.68	128.92
1/4/10 5:25	-62.05	124.55	1/4/10 7:40	-58.78	127.83
1/4/10 5:30	-61.37	125.24	1/4/10 7:45	-59.66	126.94
1/4/10 5:35	-59.97	126.63	1/4/10 7:50	-60.96	125.64
1/4/10 5:40	-59.97	126.63	1/4/10 7:55	-59.66	126.94
1/4/10 5:45	-59.77	126.84	1/4/10 8:00	-61.26	125.34
1/4/10 5:50	-58.37	128.23	1/4/10 8:05	-62.15	124.45
1/4/10 5:55	-58.09	128.51	1/4/10 8:10	-61.85	124.75
1/4/10 6:00	-57.48	129.12	1/4/10 8:15	-62.76	123.84
1/4/10 6:05	-57.07	129.53	1/4/10 8:20	-62.76	123.84
1/4/10 6:10	-55.60	131.00	1/4/10 8:25	-64.44	122.16
1/4/10 6:15	-55.98	130.62	1/4/10 8:30	-63.86	122.75
1/4/10 6:20	-54.99	131.61	1/4/10 8:35	-64.64	121.96
1/4/10 6:25	-54.79	131.82	1/4/10 8:40	-64.74	121.86
1/4/10 6:30	-55.09	131.51	1/4/10 8:45	-64.44	122.16
1/4/10 6:35	-54.20	132.40	1/4/10 8:50	-64.74	121.86
1/4/10 6:40	-54.61	131.99	1/4/10 8:55	-67.13	119.47
1/4/10 6:45	-53.49	133.11	1/4/10 9:00	-66.93	119.67
1/4/10 6:50	-54.61	131.99	1/4/10 9:05	-68.73	117.87

Table AII.7: West Loch Platform B time-series radon measurements.

RAD-7 #2357				West Loch Platform B				eff=0.406 cpm/pCi/L			
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
109	10	1	2	17	41	59	28.1	15.3	1.7	79.7	0.0
110	10	1	2	18	11	36	28.0	0.0	2.8	94.5	0.0
111	10	1	2	18	41	20	28.1	5.0	0.0	85.0	0.0
112	10	1	2	19	11	17	28.0	5.9	11.8	82.4	0.0
113	10	1	2	19	41	15	28.1	20.0	26.7	33.3	20.0
114	10	1	2	20	11	11	28.1	9.1	36.4	36.4	9.1
115	10	1	2	20	41	12	28.1	75.0	8.3	16.7	0.0
116	10	1	2	21	11	15	28.1	40.0	6.7	46.7	6.7
117	10	1	2	21	41	8	28.1	62.5	12.5	25.0	0.0
118	10	1	2	22	11	19	28.0	42.1	10.5	31.6	0.0
119	10	1	2	22	41	22	28.0	59.1	4.6	36.4	0.0
120	10	1	2	23	11	18	28.0	33.3	5.6	44.5	5.6
121	10	1	2	23	41	11	28.0	27.3	0.0	63.6	0.0
122	10	1	3	0	11	6	28.0	50.0	0.0	33.3	16.7
123	10	1	3	0	41	7	28.0	14.3	0.0	57.2	28.6
124	10	1	3	1	11	10	28.0	30.0	0.0	50.0	10.0
125	10	1	3	1	41	15	28.0	66.7	0.0	33.3	0.0
126	10	1	3	2	11	11	28.0	27.3	9.1	63.6	0.0
127	10	1	3	2	41	13	28.0	46.2	7.7	38.5	0.0
128	10	1	3	3	11	8	28.0	75.0	12.5	12.5	0.0
129	10	1	3	3	41	14	28.0	42.9	14.3	28.6	7.2
130	10	1	3	4	11	17	28.0	41.2	0.0	35.3	11.8
131	10	1	3	4	41	26	28.0	34.6	7.7	50.0	3.9
132	10	1	3	5	11	24	28.0	41.7	0.0	50.0	8.3
133	10	1	3	5	41	16	28.0	37.5	0.0	50.0	0.0
134	10	1	3	6	11	15	28.0	26.7	6.7	40.0	6.7
135	10	1	3	6	41	12	28.0	16.7	8.3	66.7	8.3
136	10	1	3	7	11	6	28.0	16.7	33.3	50.0	0.0
137	10	1	3	7	41	5	28.0	20.0	0.0	40.0	0.0
138	10	1	3	8	11	3	28.0	0.0	66.7	0.0	33.3
139	10	1	3	8	41	4	28.0	25.0	25.0	0.0	25.0
140	10	1	3	9	11	3	28.0	33.3	33.3	0.0	33.3
141	10	1	3	9	41	21	28.2	81.0	4.8	0.0	0.0
142	10	1	3	10	11	108	28.2	82.4	2.8	10.2	0.0
143	10	1	3	10	41	230	28.2	75.7	0.9	18.7	0.4
144	10	1	3	11	11	340	28.2	62.7	0.6	33.0	0.9
145	10	1	3	11	41	447	28.2	58.0	0.9	38.9	0.2

Table AII.7: (Continued) West Loch Platform B time-series radon measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
146	10	1	3	12	11	502	28.2	53.2	1.0	40.5	0.4
147	10	1	3	12	41	537	28.1	49.4	0.2	45.5	0.6
148	10	1	3	13	11	582	28.1	50.0	0.9	46.4	0.4
149	10	1	3	13	41	690	28.1	51.0	1.6	43.3	0.3
150	10	1	3	14	11	658	28.1	49.4	0.5	46.8	0.0
151	10	1	3	14	41	652	28.1	39.4	1.4	56.0	0.6
152	10	1	3	15	11	708	28.1	49.2	0.4	47.9	0.2
153	10	1	3	15	41	693	28.1	45.5	1.0	50.4	0.3
154	10	1	3	16	11	721	28.1	46.9	1.0	47.9	1.0
155	10	1	3	16	41	666	28.1	40.4	1.1	54.1	0.3
156	10	1	3	17	11	623	28.1	39.7	1.8	56.4	0.2
157	10	1	3	17	41	632	28.1	41.8	1.0	54.4	0.5
158	10	1	3	18	11	574	28.1	41.1	1.2	54.9	0.4
159	10	1	3	18	41	426	28.2	40.2	0.7	56.6	0.2
160	10	1	3	19	11	438	28.2	44.5	0.7	52.5	0.2
161	10	1	3	19	41	473	28.2	48.0	0.6	48.2	0.2
162	10	1	3	20	11	475	28.2	48.4	0.9	48.6	0.4
163	10	1	3	20	41	529	28.1	52.4	0.4	44.6	0.4
164	10	1	3	21	11	521	28.2	44.0	0.6	52.2	0.6
165	10	1	3	21	41	551	28.1	49.6	0.6	47.0	0.6
166	10	1	3	22	11	551	28.1	47.6	1.1	48.3	0.2
167	10	1	3	22	41	528	28.1	41.9	1.1	52.7	1.1
168	10	1	3	23	11	426	28.2	42.0	0.2	53.5	0.7
169	10	1	3	23	41	491	28.2	47.3	0.8	50.1	0.0
170	10	1	4	0	11	478	28.2	49.6	0.6	46.5	0.6
171	10	1	4	0	41	499	28.2	45.9	0.6	50.5	0.2
172	10	1	4	1	11	508	28.2	47.1	1.0	48.0	0.2
173	10	1	4	1	41	527	28.1	50.5	0.2	46.9	0.4
174	10	1	4	2	11	491	28.2	50.7	1.2	44.0	0.8
175	10	1	4	2	41	435	28.2	38.4	1.2	57.5	0.7
176	10	1	4	3	11	406	28.2	37.9	0.3	60.4	0.0
177	10	1	4	3	41	356	28.2	31.5	1.4	63.8	0.9
178	10	1	4	4	11	281	28.2	38.4	1.1	58.0	0.4
179	10	1	4	4	42	243	28.2	35.8	1.2	58.4	1.2
180	10	1	4	5	12	217	28.2	43.3	1.9	51.6	0.0
181	10	1	4	5	42	227	28.2	50.2	0.9	44.1	0.0
182	10	1	4	6	12	264	28.2	43.2	1.1	51.9	0.4
183	10	1	4	6	42	246	28.2	46.8	1.2	48.8	0.8

Table AII.7: (Continued) West Loch Platform B time-series radon measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
184	10	1	4	7	12	269	28.2	49.1	1.5	45.7	0.4
185	10	1	4	7	42	275	28.2	46.2	1.1	49.1	0.4
186	10	1	4	8	12	224	28.2	40.6	0.5	52.2	1.8
187	10	1	4	8	42	237	28.2	41.8	0.4	55.7	1.7
188	10	1	4	9	12	224	28.2	40.6	2.2	54.5	0.9
189	10	1	4	9	20	54	8.1	44.5	1.9	48.2	1.9

Table AII.8: West Loch Platform B time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
109	2218	8	27.1	8	1	6.24	60	5	87.469	26.709
110	2218	8	25.5	7	1	6.36	0	5	53.154	21.624
111	2218	8	24.0	9	1	6.36	0	5	28.115	16.741
112	2218	9	22.8	8	1	6.36	0	5	23.450	15.633
113	2218	9	21.9	9	1	6.33	0	5	9.372	13.003
114	2218	8	21.6	9	1	6.33	0	5	7.810	10.776
115	2218	9	21.3	9	1	6.33	0	5	17.181	13.945
116	2218	9	21.3	8	1	6.33	0	5	20.305	14.812
117	2218	9	21.0	8	1	6.33	0	5	10.934	11.960
118	2218	9	21.0	8	1	6.30	0	5	21.887	15.236
119	2218	9	20.7	8	1	6.33	0	5	32.830	17.792
120	2218	9	20.7	7	1	6.15	60	5	21.887	15.236
121	2218	9	21.0	7	1	6.18	60	5	15.633	13.497
122	2201	10	21.0	7	1	6.15	60	5	7.817	10.785
123	2218	8	21.0	7	1	6.15	60	5	6.253	10.785
124	2218	9	21.0	7	1	6.15	60	5	12.507	12.507
125	2218	9	21.0	7	1	6.15	60	5	23.450	15.633
126	2218	10	21.0	7	1	6.15	60	5	15.633	13.497
127	2218	9	20.7	7	1	6.18	60	5	17.197	13.958
128	2218	9	20.7	7	1	6.15	60	5	10.943	11.970
129	2218	9	20.4	7	1	6.15	60	5	14.070	13.497
130	2218	9	20.0	7	1	6.15	60	5	18.760	14.826
131	2218	9	20.0	7	1	6.15	60	5	34.394	18.122
132	2218	10	19.7	7	1	6.15	60	5	32.830	18.444
133	2218	9	20.0	7	1	6.12	60	5	21.887	15.236
134	2218	9	20.4	7	1	6.15	60	5	15.633	13.497

Table AII.8: (Continued) West Loch Platform B time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
135	2218	9	20.7	7	1	6.15	60	5	15.633	13.497
136	2218	10	21.3	7	1	6.12	60	5	6.253	10.118
137	2201	10	21.3	7	1	6.09	60	5	4.690	9.380
138	2218	9	21.9	7	1	6.12	60	5	0.000	6.253
139	2201	10	22.5	7	1	6.12	60	5	1.563	7.548
140	2218	9	23.7	7	1	6.12	60	5	1.563	7.548
141	2218	9	27.4	8	2	6.88	0	5	26.459	16.319
142	2218	9	32.8	8	2	6.88	0	5	155.229	34.305
143	2218	9	36.5	8	2	6.91	0	5	337.144	48.986
144	2201	9	38.9	8	2	6.76	70	5	503.831	59.350
145	2201	9	40.8	8	2	6.91	0	5	673.927	67.961
146	2218	9	41.7	9	2	6.91	0	5	729.958	70.669
147	2218	9	41.4	7	2	6.85	70	5	791.360	73.544
148	2218	8	41.4	9	2	6.97	0	5	872.365	76.975
149	2218	9	40.8	9	2	7.00	0	5	1013.466	82.804
150	2218	9	40.5	7	2	6.91	70	5	986.960	81.637
151	2218	9	39.9	9	2	7.03	0	5	966.691	81.015
152	2218	8	38.0	7	2	6.91	70	5	1069.596	84.912
153	2218	8	36.8	9	2	7.03	0	5	1033.735	83.533
154	2218	8	34.7	7	1	7.06	0	5	1060.241	84.793
155	2218	8	32.8	7	1	6.94	70	5	979.164	81.451
156	2218	8	31.3	7	1	6.91	70	5	931.561	79.368
157	2218	8	29.5	6	1	6.94	70	5	945.582	80.065
158	2218	8	27.4	6	1	6.97	70	5	856.787	76.315
159	2201	9	26.1	6	1	6.97	70	5	641.242	66.373
160	2218	8	25.2	6	1	6.97	70	5	661.476	67.361
161	2218	8	24.9	6	1	6.97	70	5	708.168	69.585
162	2218	8	24.6	6	1	6.97	70	5	715.950	70.021
163	2218	8	24.3	6	1	6.97	70	5	797.591	73.751
164	2218	8	24.0	6	1	6.97	70	5	778.207	72.926
165	2218	8	23.7	6	1	6.97	70	5	825.631	75.112
166	2218	8	23.7	6	1	6.97	70	5	822.516	74.774
167	2218	8	23.7	6	1	6.97	70	5	772.666	72.852
168	2218	9	23.4	6	1	7.00	70	5	631.904	66.066
169	2218	8	23.1	6	1	6.97	70	5	743.966	71.240
170	2218	8	23.4	6	1	7.00	70	5	712.838	69.948

Table AII.8: (Continued) West Loch Platform B time-series radon measurements continued. All "Units Byte" = 254**.**

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
171	2218	9	23.7	6	1	7.00	70	5	748.635	71.453
172	2218	8	23.4	6	1	7.00	70	5	750.192	71.595
173	2218	8	23.1	6	1	6.97	70	5	797.591	73.751
174	2218	8	23.4	6	1	6.97	70	5	720.620	70.382
175	2218	8	23.4	6	1	7.00	70	5	647.468	66.831
176	2218	9	23.7	6	1	6.97	70	5	621.009	65.369
177	2218	8	23.4	6	1	6.97	70	5	524.047	60.541
178	2218	8	23.4	6	1	6.97	70	5	419.860	54.403
179	2218	9	23.7	6	2	7.00	70	5	354.234	50.334
180	2218	8	23.7	6	1	6.97	70	5	320.054	47.814
181	2218	9	23.4	6	1	7.00	70	5	332.483	48.670
182	2218	8	23.4	6	1	6.97	70	5	390.314	52.481
183	2201	9	23.4	6	1	6.97	70	5	363.556	50.843
184	2218	8	23.7	6	1	6.97	70	5	396.534	52.871
185	2218	9	23.7	6	1	6.97	70	5	407.419	53.547
186	2218	8	24.0	6	1	6.97	70	5	320.054	48.137
187	2218	8	24.6	6	2	7.00	70	5	355.788	50.538
188	2218	8	25.5	6	2	6.97	70	5	329.376	48.670
189	2218	9	26.1	7	2	6.97	70	5	269.269	87.689

Table AII.9: West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	17:20:48	25.04	51.70	33.99	122.4	N/A	0.19	8.47	5.8	-17.5
1/2/2010	17:25:48	25.03	51.65	33.95	122.7	N/A	0.12	8.47	5.9	-16.4
1/2/2010	17:30:48	25.02	51.67	33.97	123.5	N/A	0.10	8.47	5.9	-17.0
1/2/2010	17:35:48	25.01	51.70	33.99	124.6	N/A	0.17	8.48	6.0	-17.3
1/2/2010	17:40:48	24.99	51.66	33.96	122.8	N/A	0.09	8.47	6.6	-17.4
1/2/2010	17:45:48	24.98	51.71	34.00	121.9	N/A	0.10	8.47	5.7	-17.6
1/2/2010	17:50:48	24.96	51.50	33.84	120.7	N/A	0.10	8.46	5.0	-17.8
1/2/2010	17:55:49	24.97	51.58	33.90	121.4	N/A	0.10	8.46	5.1	-17.9
1/2/2010	18:00:48	24.99	51.62	33.93	121.9	N/A	0.10	8.46	5.8	-17.9
1/2/2010	18:05:48	24.98	51.59	33.91	120.4	N/A	0.10	8.46	5.0	-18.4
1/2/2010	18:10:49	24.99	51.65	33.95	121.6	N/A	0.10	8.46	5.5	-18.4
1/2/2010	18:15:48	24.99	51.67	33.97	122.8	N/A	0.10	8.47	5.3	-18.4
1/2/2010	18:20:48	24.99	51.67	33.97	122.7	N/A	0.10	8.47	6.2	-18.4
1/2/2010	18:25:48	25.00	51.67	33.97	121.9	N/A	0.10	8.46	6.0	-18.5
1/2/2010	18:30:48	25.01	51.67	33.97	121.0	N/A	0.10	8.46	4.3	-18.7
1/2/2010	18:35:48	25.02	51.69	33.98	121.2	N/A	0.10	8.46	5.9	-18.6
1/2/2010	18:40:48	25.01	51.70	33.99	118.9	N/A	0.10	8.46	7.2	-18.9
1/2/2010	18:45:49	24.99	51.67	33.97	118.7	N/A	0.10	8.46	6.2	-19.1
1/2/2010	18:50:48	24.96	51.71	34.00	117.8	N/A	0.10	8.46	5.4	-19.3
1/2/2010	18:55:49	24.97	51.68	33.98	117.6	N/A	0.10	8.45	5.6	-19.2
1/2/2010	19:00:48	24.99	51.74	34.02	116.7	N/A	0.10	8.45	5.3	-19.3
1/2/2010	19:05:48	24.99	51.70	33.99	116.0	N/A	0.10	8.45	4.5	-19.3
1/2/2010	19:10:48	24.98	51.63	33.94	115.8	N/A	0.10	8.45	4.5	-19.5
1/2/2010	19:15:48	24.97	51.71	34.00	114.3	N/A	0.10	8.44	4.6	-19.5
1/2/2010	19:20:48	24.94	51.60	33.92	113.4	N/A	0.10	8.44	4.2	-19.6
1/2/2010	19:25:48	24.93	51.68	33.98	113.7	N/A	0.10	8.44	4.4	-19.7
1/2/2010	19:30:48	24.95	51.68	33.97	115.5	N/A	0.11	8.44	5.3	-19.8
1/2/2010	19:35:48	24.89	51.71	34.00	112.4	N/A	0.11	8.44	3.8	-19.8
1/2/2010	19:40:48	24.92	51.68	33.98	114.2	N/A	0.10	8.44	3.5	-19.9
1/2/2010	19:45:48	24.94	51.65	33.95	111.7	N/A	0.11	8.43	5.3	-20.2
1/2/2010	19:50:48	24.94	51.67	33.97	115.5	N/A	0.11	8.44	4.5	-20.1
1/2/2010	19:55:49	24.95	51.68	33.98	114.1	N/A	0.11	8.45	5.5	-19.8
1/2/2010	20:00:48	24.91	51.65	33.95	112.9	N/A	0.11	8.42	4.7	-20.1
1/2/2010	20:05:48	24.93	51.69	33.98	113.4	N/A	0.11	8.43	4.0	-21.0
1/2/2010	20:10:48	24.93	51.69	33.98	113.1	N/A	0.11	8.44	3.7	-20.7
1/2/2010	20:15:48	24.96	51.72	34.00	113.4	N/A	0.11	8.43	3.4	-20.5
1/2/2010	20:20:48	24.95	51.74	34.02	113.4	N/A	0.11	8.44	4.8	-20.2
1/2/2010	20:25:48	24.94	51.77	34.05	113.1	N/A	0.11	8.44	4.1	-20.0
1/2/2010	20:30:48	24.84	51.69	33.99	106.6	N/A	0.11	8.42	3.9	-20.3
1/2/2010	20:35:48	24.95	51.71	34.00	111.6	N/A	0.11	8.43	4.5	-20.1

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	20:40:48	24.95	51.67	33.97	107.7	N/A	0.11	8.41	3.1	-20.2
1/2/2010	20:45:49	24.97	51.71	34.00	108.9	N/A	0.11	8.43	3.8	-20.2
1/2/2010	20:50:48	24.93	51.65	33.95	106.4	N/A	0.11	8.42	3.7	-20.6
1/2/2010	20:55:49	24.96	51.76	34.03	110.4	N/A	0.11	8.43	4.0	-20.4
1/2/2010	21:00:48	24.94	51.79	34.06	109.4	N/A	0.11	8.43	3.7	-20.3
1/2/2010	21:05:48	24.96	51.79	34.06	112.8	N/A	0.11	8.43	5.1	-20.3
1/2/2010	21:10:48	24.96	51.79	34.05	111.8	N/A	0.11	8.43	4.1	-20.1
1/2/2010	21:15:48	24.96	51.80	34.07	112.3	N/A	0.11	8.44	3.6	-19.8
1/2/2010	21:20:48	24.96	51.79	34.06	112.5	N/A	0.11	8.44	5.0	-19.7
1/2/2010	21:25:48	24.95	51.79	34.06	113.8	N/A	0.11	8.44	4.6	-28.3
1/2/2010	21:30:48	24.93	51.76	34.03	112.0	N/A	0.11	8.43	3.7	-28.9
1/2/2010	21:35:48	24.94	51.78	34.05	109.6	N/A	0.11	8.43	3.5	-28.5
1/2/2010	21:40:48	24.95	51.85	34.10	113.2	N/A	0.11	8.44	4.9	-27.8
1/2/2010	21:45:48	24.96	51.86	34.11	111.0	N/A	0.11	8.44	4.4	-27.2
1/2/2010	21:50:48	24.92	51.76	34.04	111.6	N/A	0.11	8.43	3.8	-26.8
1/2/2010	21:55:48	24.90	51.73	34.01	111.7	N/A	0.11	8.44	4.6	-26.6
1/2/2010	22:00:48	24.93	51.77	34.04	111.5	N/A	0.11	8.44	4.6	-26.1
1/2/2010	22:05:48	24.90	51.68	33.98	110.9	N/A	0.11	8.43	3.2	-26.0
1/2/2010	22:10:48	24.91	51.69	33.98	110.3	N/A	0.11	8.43	4.5	-25.8
1/2/2010	22:15:48	24.89	51.69	33.98	108.2	N/A	0.11	8.41	3.9	-25.9
1/2/2010	22:20:48	24.90	51.64	33.95	108.4	N/A	0.11	8.42	3.5	-25.7
1/2/2010	22:25:48	24.91	51.66	33.96	110.8	N/A	0.11	8.43	4.6	-25.3
1/2/2010	22:30:48	24.93	51.71	34.00	110.4	N/A	0.11	8.43	3.8	-25.2
1/2/2010	22:35:48	24.96	51.76	34.04	106.3	N/A	0.11	8.42	3.2	-25.3
1/2/2010	22:40:48	24.96	51.79	34.05	109.4	N/A	0.11	8.43	4.1	-25.1
1/2/2010	22:45:48	24.80	51.45	33.81	107.9	N/A	0.11	8.42	3.7	-25.1
1/2/2010	22:50:48	24.89	51.40	33.77	102.3	N/A	0.11	8.39	2.6	-25.5
1/2/2010	22:55:48	24.92	51.57	33.90	104.3	N/A	0.11	8.41	3.4	-25.5
1/2/2010	23:00:49	24.96	51.50	33.84	103.0	N/A	0.11	8.40	2.7	-25.6
1/2/2010	23:05:48	24.94	51.41	33.77	105.3	N/A	0.11	8.41	2.3	-25.0
1/2/2010	23:10:48	24.86	51.37	33.75	104.4	N/A	0.11	8.40	2.1	-25.2
1/2/2010	23:15:48	24.97	51.40	33.77	105.9	N/A	0.11	8.41	2.5	-25.3
1/2/2010	23:20:48	24.96	51.36	33.74	106.4	N/A	0.11	8.40	4.2	-25.0
1/2/2010	23:25:48	24.94	51.52	33.86	108.3	N/A	0.11	8.41	3.7	-25.0
1/2/2010	23:30:48	24.92	51.45	33.81	108.2	N/A	0.11	8.41	3.8	-25.0
1/2/2010	23:35:49	24.97	51.46	33.81	98.1	N/A	0.11	8.38	1.9	-25.3
1/2/2010	23:40:48	24.96	51.56	33.89	101.3	N/A	0.11	8.39	2.6	-25.9
1/2/2010	23:45:48	24.95	51.60	33.92	104.5	N/A	0.11	8.40	2.7	-25.9
1/2/2010	23:50:48	24.95	51.61	33.92	106.3	N/A	0.11	8.41	3.0	-25.9
1/2/2010	23:55:48	24.92	51.59	33.91	106.7	N/A	0.11	8.42	3.3	-25.5

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	0:00:48	24.90	51.44	33.80	105.4	N/A	0.11	8.40	2.9	-25.5
1/3/2010	0:05:48	24.88	51.33	33.72	104.6	N/A	0.11	8.39	3.7	-25.4
1/3/2010	0:10:48	24.90	51.43	33.79	97.9	N/A	0.11	8.37	1.6	-25.8
1/3/2010	0:15:48	24.97	51.56	33.89	99.9	N/A	0.11	8.38	1.9	-26.2
1/3/2010	0:20:48	24.99	51.41	33.77	98.8	N/A	0.11	8.38	2.6	-26.3
1/3/2010	0:25:48	24.98	51.44	33.80	98.9	N/A	0.11	8.38	3.0	-26.4
1/3/2010	0:30:48	24.92	51.54	33.88	99.1	N/A	0.11	8.37	2.5	-26.4
1/3/2010	0:35:48	24.98	51.55	33.88	98.3	N/A	0.11	8.37	1.7	-26.7
1/3/2010	0:40:48	24.98	51.50	33.84	98.4	N/A	0.11	8.38	2.4	-26.5
1/3/2010	0:45:48	24.94	51.53	33.87	97.9	N/A	0.11	8.38	2.8	-26.4
1/3/2010	0:50:48	24.93	51.50	33.84	101.7	N/A	0.11	8.40	3.6	-25.9
1/3/2010	0:55:48	24.99	51.57	33.89	98.8	N/A	0.11	8.39	2.5	-26.3
1/3/2010	1:00:48	24.99	51.59	33.91	99.3	N/A	0.11	8.38	1.9	-26.4
1/3/2010	1:05:48	24.99	51.64	33.95	99.5	N/A	0.11	8.39	1.8	-26.4
1/3/2010	1:10:48	24.97	51.71	34.00	101.8	N/A	0.11	8.40	3.1	-26.1
1/3/2010	1:15:48	24.95	51.79	34.06	105.0	N/A	0.11	8.40	3.8	-26.0
1/3/2010	1:20:48	24.96	51.80	34.06	104.2	N/A	0.11	8.40	2.9	-25.9
1/3/2010	1:25:48	24.95	51.80	34.06	108.5	N/A	0.11	8.42	4.0	-25.6
1/3/2010	1:30:48	24.94	51.84	34.09	110.8	N/A	0.11	8.44	3.8	-24.9
1/3/2010	1:35:48	24.93	51.87	34.11	111.1	N/A	0.10	8.44	4.0	-24.2
1/3/2010	1:40:48	24.93	51.85	34.10	111.5	N/A	0.11	8.44	4.5	-24.0
1/3/2010	1:45:48	24.93	51.85	34.11	111.4	N/A	0.11	8.44	4.8	-24.0
1/3/2010	1:50:48	24.93	51.85	34.10	111.4	N/A	0.10	8.44	3.9	-23.6
1/3/2010	1:55:48	24.94	51.86	34.11	111.7	N/A	0.10	8.45	4.6	-23.1
1/3/2010	2:00:48	24.94	51.84	34.09	111.6	N/A	0.10	8.44	3.7	-23.1
1/3/2010	2:05:48	24.93	51.83	34.09	111.5	N/A	0.10	8.44	4.3	-22.9
1/3/2010	2:10:48	24.94	51.79	34.06	111.1	N/A	0.10	8.44	4.9	-22.9
1/3/2010	2:15:49	24.93	51.77	34.04	109.8	N/A	0.10	8.43	3.7	-22.9
1/3/2010	2:20:48	24.93	51.78	34.05	108.8	N/A	0.10	8.43	4.3	-22.9
1/3/2010	2:25:48	24.94	51.78	34.05	108.2	N/A	0.10	8.43	4.2	-22.9
1/3/2010	2:30:49	24.94	51.81	34.08	109.1	N/A	0.10	8.43	3.9	-22.8
1/3/2010	2:35:48	24.94	51.85	34.10	108.7	N/A	0.10	8.43	3.4	-22.8
1/3/2010	2:40:48	24.92	51.86	34.11	110.2	N/A	0.10	8.44	3.8	-22.5
1/3/2010	2:45:48	24.92	51.86	34.11	111.1	N/A	0.10	8.44	4.3	-22.4
1/3/2010	2:50:48	24.90	51.88	34.12	110.2	N/A	0.10	8.44	4.2	-22.0
1/3/2010	2:55:48	24.87	51.75	34.03	108.1	N/A	0.10	8.43	4.0	-22.3
1/3/2010	3:00:48	24.90	51.79	34.06	108.5	N/A	0.10	8.44	4.6	-22.3
1/3/2010	3:05:48	24.90	51.84	34.10	110.4	N/A	0.10	8.44	4.0	-21.9
1/3/2010	3:10:49	24.89	51.85	34.11	110.3	N/A	0.10	8.44	4.0	-21.8
1/3/2010	3:15:49	24.86	51.88	34.13	108.8	N/A	0.10	8.44	3.9	-21.5

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	3:20:48	24.85	51.91	34.15	107.8	N/A	0.10	8.44	3.7	-21.5
1/3/2010	3:25:48	24.80	51.86	34.12	106.2	N/A	0.10	8.43	3.5	-21.7
1/3/2010	3:30:49	24.79	51.85	34.10	104.2	N/A	0.09	8.42	3.7	-21.9
1/3/2010	3:35:49	24.80	51.67	33.97	105.3	N/A	0.09	8.43	3.0	-22.0
1/3/2010	3:40:49	24.72	51.60	33.92	104.0	N/A	0.09	8.41	3.5	-22.3
1/3/2010	3:45:48	24.76	51.64	33.95	104.0	N/A	0.09	8.42	3.7	-22.1
1/3/2010	3:50:49	24.70	51.61	33.93	104.9	N/A	0.09	8.41	3.3	-22.5
1/3/2010	3:55:49	24.73	51.62	33.93	105.2	N/A	0.09	8.41	3.8	-22.7
1/3/2010	4:00:48	24.79	51.75	34.03	106.4	N/A	0.09	8.41	4.1	-22.6
1/3/2010	4:05:49	24.80	51.80	34.07	103.2	N/A	0.09	8.42	3.3	-22.6
1/3/2010	4:10:49	24.77	51.76	34.04	105.6	N/A	0.09	8.42	3.5	-22.6
1/3/2010	4:15:48	24.75	51.81	34.07	107.1	N/A	0.09	8.42	3.6	-22.4
1/3/2010	4:20:48	24.74	51.80	34.07	103.3	N/A	0.09	8.42	3.4	-22.5
1/3/2010	4:25:48	24.85	51.77	34.05	107.4	N/A	0.09	8.43	3.8	-22.2
1/3/2010	4:30:49	24.71	51.82	34.09	106.3	N/A	0.09	8.42	4.3	-22.2
1/3/2010	4:35:48	24.68	51.87	34.12	104.7	N/A	0.09	8.42	3.2	-22.1
1/3/2010	4:40:48	24.66	51.81	34.08	103.8	N/A	0.09	8.42	3.7	-22.1
1/3/2010	4:45:48	24.63	51.77	34.05	103.3	N/A	0.09	8.42	3.6	-22.2
1/3/2010	4:50:49	24.66	51.78	34.05	103.2	N/A	0.09	8.42	4.0	-22.3
1/3/2010	4:55:48	24.66	51.79	34.06	103.8	N/A	0.09	8.42	4.0	-22.3
1/3/2010	5:00:48	24.68	51.78	34.06	104.6	N/A	0.09	8.42	3.8	-22.3
1/3/2010	5:05:48	24.71	51.84	34.10	104.4	N/A	0.09	8.43	3.6	-22.0
1/3/2010	5:10:49	24.68	51.89	34.14	103.4	N/A	0.09	8.42	3.4	-22.2
1/3/2010	5:15:48	24.70	51.83	34.09	103.7	N/A	0.09	8.43	3.2	-22.1
1/3/2010	5:20:48	24.73	51.90	34.14	104.9	N/A	0.09	8.43	4.0	-22.2
1/3/2010	5:25:49	24.65	51.88	34.13	103.7	N/A	0.09	8.43	3.5	-22.0
1/3/2010	5:30:49	24.64	51.87	34.13	103.6	N/A	0.09	8.43	3.7	-21.9
1/3/2010	5:35:49	24.65	51.88	34.13	103.8	N/A	0.09	8.43	3.7	-21.9
1/3/2010	5:40:49	24.65	51.88	34.13	103.7	N/A	0.09	8.43	3.7	-21.8
1/3/2010	5:45:48	24.65	51.87	34.12	103.5	N/A	0.09	8.43	4.2	-21.7
1/3/2010	5:50:49	24.65	51.89	34.13	103.8	N/A	0.09	8.43	2.9	-21.7
1/3/2010	5:55:48	24.63	51.89	34.14	103.5	N/A	0.09	8.43	3.7	-21.7
1/3/2010	6:00:49	24.59	51.86	34.11	103.1	N/A	0.09	8.42	3.5	-21.7
1/3/2010	6:05:49	24.65	51.88	34.13	103.6	N/A	0.09	8.43	3.9	-21.7
1/3/2010	6:10:48	24.71	51.91	34.15	105.4	N/A	0.09	8.43	3.0	-21.5
1/3/2010	6:15:49	24.68	51.87	34.12	102.9	N/A	0.09	8.42	3.2	-21.5
1/3/2010	6:20:48	24.66	51.89	34.13	102.7	N/A	0.09	8.42	3.8	-21.9
1/3/2010	6:25:49	24.62	51.87	34.12	102.2	N/A	0.09	8.42	3.6	-21.9
1/3/2010	6:30:48	24.67	51.89	34.14	102.6	N/A	0.09	8.42	3.5	-22.0
1/3/2010	6:35:48	24.61	51.84	34.10	102.0	N/A	0.09	8.42	3.4	-22.1

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	6:40:49	24.65	51.89	34.14	103.0	N/A	0.09	8.43	3.2	-22.0
1/3/2010	6:45:48	24.63	51.90	34.14	102.2	N/A	0.09	8.42	4.1	-22.0
1/3/2010	6:50:48	24.65	51.89	34.14	101.3	N/A	0.09	8.42	4.1	-22.2
1/3/2010	6:55:48	24.65	51.89	34.14	102.2	N/A	0.09	8.42	3.5	-22.2
1/3/2010	7:00:48	24.65	51.89	34.14	102.3	N/A	0.09	8.42	4.1	-22.1
1/3/2010	7:05:49	24.66	51.90	34.14	102.3	N/A	0.09	8.42	4.1	-22.2
1/3/2010	7:10:48	24.65	51.89	34.14	102.3	N/A	0.09	8.42	4.7	-22.0
1/3/2010	7:15:49	24.62	51.89	34.14	102.0	N/A	0.09	8.42	3.2	-22.0
1/3/2010	7:20:48	24.63	51.90	34.14	101.8	N/A	0.09	8.42	3.7	-21.9
1/3/2010	7:25:49	24.64	51.91	34.15	101.9	N/A	0.09	8.42	3.2	-21.7
1/3/2010	7:30:48	24.64	51.92	34.16	102.2	N/A	0.09	8.42	3.8	-21.7
1/3/2010	7:35:48	24.64	51.93	34.16	102.0	N/A	0.09	8.42	3.6	-21.8
1/3/2010	7:40:48	24.64	51.90	34.15	101.9	N/A	0.09	8.42	3.6	-21.7
1/3/2010	7:45:49	24.63	51.93	34.16	103.0	N/A	0.09	8.43	4.0	-21.5
1/3/2010	7:50:49	24.63	51.92	34.16	102.9	N/A	0.09	8.43	3.5	-21.3
1/3/2010	7:55:49	24.64	51.93	34.17	102.7	N/A	0.09	8.43	3.2	-21.3
1/3/2010	8:00:48	24.63	51.93	34.17	102.4	N/A	0.09	8.42	4.0	-21.1
1/3/2010	8:05:49	24.62	51.92	34.16	102.0	N/A	0.09	8.42	5.5	-21.1
1/3/2010	8:10:48	24.62	51.93	34.17	101.3	N/A	0.09	8.42	4.0	-21.1
1/3/2010	8:15:49	24.61	51.93	34.17	100.7	N/A	0.09	8.42	3.4	-21.2
1/3/2010	8:20:48	24.61	51.93	34.17	99.9	N/A	0.09	8.42	3.4	-21.2
1/3/2010	8:25:49	24.59	51.92	34.16	99.4	N/A	0.09	8.42	3.9	-21.4
1/3/2010	8:30:48	24.57	51.92	34.16	98.5	N/A	0.09	8.41	2.9	-21.4
1/3/2010	8:35:48	24.65	51.97	34.19	102.2	N/A	0.09	8.43	3.9	-21.1
1/3/2010	8:40:48	24.64	51.97	34.20	102.2	N/A	0.09	8.43	4.0	-20.9
1/3/2010	8:45:48	24.67	51.97	34.20	102.6	N/A	0.09	8.43	3.5	-20.8
1/3/2010	8:50:48	24.63	51.90	34.15	106.3	N/A	0.09	8.44	3.9	-20.4
1/3/2010	8:55:48	24.63	51.91	34.15	106.2	N/A	0.09	8.44	4.0	-20.3
1/3/2010	9:00:48	24.63	51.92	34.16	106.0	N/A	0.09	8.44	3.4	-20.2
1/3/2010	9:05:48	24.65	51.91	34.15	106.3	N/A	0.09	8.44	4.0	-20.1
1/3/2010	9:10:48	24.67	51.92	34.16	105.9	N/A	0.09	8.44	3.2	-20.1
1/3/2010	9:15:48	24.67	51.92	34.16	106.1	N/A	0.09	8.44	3.4	-20.0
1/3/2010	9:20:48	24.67	51.92	34.16	106.1	N/A	0.09	8.44	3.3	-19.9
1/3/2010	9:25:48	24.68	51.94	34.18	101.0	N/A	0.15	8.42	2.8	-20.3
1/3/2010	9:30:48	24.70	51.94	34.17	101.2	N/A	0.09	8.42	3.1	-20.4
1/3/2010	9:35:48	24.69	51.97	34.19	99.2	N/A	0.09	8.41	2.9	-20.7
1/3/2010	9:40:48	24.72	51.96	34.19	103.2	N/A	0.09	8.43	3.4	-20.6
1/3/2010	9:45:49	24.76	51.94	34.17	103.5	N/A	0.09	8.43	3.0	-20.4
1/3/2010	9:50:49	24.76	51.92	34.16	104.7	N/A	0.09	8.43	2.7	-20.3
1/3/2010	9:55:49	24.77	51.92	34.15	105.3	N/A	0.09	8.43	3.4	-20.1

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	10:00:49	24.76	51.88	34.13	104.1	N/A	0.08	8.42	2.5	-20.2
1/3/2010	10:05:49	24.75	51.89	34.14	102.6	N/A	0.08	8.42	2.1	-20.4
1/3/2010	10:10:48	24.79	51.89	34.13	104.3	N/A	0.08	8.43	2.0	-20.4
1/3/2010	10:15:48	24.76	51.91	34.15	102.4	N/A	0.08	8.42	2.1	-20.4
1/3/2010	10:20:48	24.76	51.86	34.11	101.6	N/A	0.08	8.42	3.5	-20.6
1/3/2010	10:25:48	24.76	51.76	34.04	99.4	N/A	0.08	8.39	3.4	-20.6
1/3/2010	10:30:49	24.77	51.80	34.07	102.0	N/A	0.08	8.41	3.6	-20.7
1/3/2010	10:35:49	24.82	51.86	34.11	102.1	N/A	0.08	8.42	2.1	-20.9
1/3/2010	10:40:48	24.81	51.74	34.03	100.5	N/A	0.08	8.40	1.7	-20.8
1/3/2010	10:45:48	24.82	51.78	34.05	101.8	N/A	0.08	8.41	2.1	-20.7
1/3/2010	10:50:48	24.77	51.92	34.16	101.8	N/A	0.08	8.42	3.6	-20.8
1/3/2010	10:55:49	24.81	51.68	33.98	97.7	N/A	0.08	8.37	1.8	-20.8
1/3/2010	11:00:49	24.74	51.57	33.90	94.5	N/A	0.08	8.36	1.7	-21.4
1/3/2010	11:05:48	24.86	51.71	34.00	100.8	N/A	0.08	8.40	2.4	-21.2
1/3/2010	11:10:48	24.91	51.99	34.20	100.1	N/A	0.08	8.41	3.2	-21.4
1/3/2010	11:15:49	25.07	51.82	34.08	101.2	N/A	0.08	8.40	1.9	-22.2
1/3/2010	11:20:48	25.24	51.76	34.03	104.6	N/A	0.08	8.39	2.0	-22.6
1/3/2010	11:25:48	25.29	51.53	33.86	101.3	N/A	0.08	8.37	1.9	-23.3
1/3/2010	11:30:48	25.25	51.59	33.90	101.9	N/A	0.08	8.38	2.7	-23.2
1/3/2010	11:35:48	25.29	51.66	33.95	103.3	N/A	0.08	8.39	1.9	-22.8
1/3/2010	11:40:48	25.19	51.77	34.04	105.9	N/A	0.08	8.41	2.7	-22.5
1/3/2010	11:45:48	25.28	51.73	34.00	105.2	N/A	0.08	8.41	2.8	-22.4
1/3/2010	11:50:49	25.21	51.87	34.11	107.0	N/A	0.08	8.42	2.1	-22.5
1/3/2010	11:55:48	25.17	51.60	33.91	105.9	N/A	0.08	8.39	2.7	-22.3
1/3/2010	12:00:49	25.31	51.60	33.91	105.9	N/A	0.08	8.39	1.9	-22.3
1/3/2010	12:05:48	25.39	51.72	34.00	110.3	N/A	0.08	8.42	2.4	-22.4
1/3/2010	12:10:48	25.20	51.80	34.06	108.3	N/A	0.08	8.42	2.7	-22.2
1/3/2010	12:15:49	25.27	51.79	34.05	108.7	N/A	0.08	8.42	2.1	-22.0
1/3/2010	12:20:48	25.31	51.50	33.84	105.7	N/A	0.07	8.39	3.0	-22.3
1/3/2010	12:25:49	25.32	51.76	34.03	111.4	N/A	0.07	8.43	2.4	-22.5
1/3/2010	12:30:49	25.40	51.74	34.01	114.0	N/A	0.07	8.44	2.5	-22.3
1/3/2010	12:35:48	25.42	51.62	33.92	112.1	N/A	0.07	8.43	3.1	-22.6
1/3/2010	12:40:48	25.56	51.61	33.91	116.2	N/A	0.07	8.44	2.6	-22.7
1/3/2010	12:45:48	25.49	51.80	34.05	115.4	N/A	0.07	8.45	3.0	-22.3
1/3/2010	12:50:48	25.56	51.72	33.99	117.1	N/A	0.07	8.44	3.5	-22.3
1/3/2010	12:55:49	25.53	51.62	33.92	117.2	N/A	0.07	8.44	2.6	-22.5
1/3/2010	13:00:49	25.48	51.74	34.01	117.9	N/A	0.07	8.45	2.8	-22.3
1/3/2010	13:05:49	25.41	51.77	34.03	118.4	N/A	0.07	8.45	2.9	-22.0
1/3/2010	13:10:48	25.39	51.70	33.98	116.9	N/A	0.07	8.45	3.7	-22.0
1/3/2010	13:15:48	25.61	51.54	33.86	119.3	N/A	0.07	8.45	2.8	-22.0

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	13:20:48	25.37	51.21	33.62	112.3	N/A	0.07	8.41	2.5	-22.0
1/3/2010	13:25:48	25.59	51.12	33.55	117.4	N/A	0.06	8.43	3.0	-22.0
1/3/2010	13:30:49	25.39	51.39	33.75	115.7	N/A	0.06	8.43	3.8	-22.2
1/3/2010	13:35:49	25.43	51.35	33.72	115.6	N/A	0.06	8.43	3.6	-22.0
1/3/2010	13:40:48	25.32	51.56	33.88	115.2	N/A	0.06	8.44	3.3	-21.9
1/3/2010	13:45:48	25.32	51.50	33.83	115.4	N/A	0.06	8.44	2.4	-21.9
1/3/2010	13:50:48	25.32	51.62	33.92	115.7	N/A	0.06	8.44	3.2	-21.5
1/3/2010	13:55:48	25.33	51.69	33.97	116.5	N/A	0.06	8.45	3.2	-21.4
1/3/2010	14:00:48	25.36	51.65	33.94	116.9	N/A	0.06	8.45	3.9	-21.1
1/3/2010	14:05:48	25.44	51.73	34.00	119.0	N/A	0.06	8.45	3.9	-21.1
1/3/2010	14:10:48	25.41	51.74	34.01	118.9	N/A	0.06	8.45	3.7	-21.2
1/3/2010	14:15:49	25.43	51.71	33.99	119.9	N/A	0.06	8.46	3.4	-21.1
1/3/2010	14:20:48	25.46	51.69	33.97	120.4	N/A	0.06	8.46	3.1	-20.9
1/3/2010	14:25:48	25.46	51.69	33.97	119.6	N/A	0.06	8.45	4.4	-20.8
1/3/2010	14:30:49	25.46	51.76	34.02	120.3	N/A	0.06	8.46	3.5	-20.7
1/3/2010	14:35:48	25.47	51.74	34.00	120.0	N/A	0.06	8.46	4.3	-20.6
1/3/2010	14:40:49	25.45	51.61	33.91	120.2	N/A	0.06	8.45	4.2	-20.5
1/3/2010	14:45:48	25.59	51.43	33.77	121.0	N/A	0.06	8.45	5.4	-20.6
1/3/2010	14:50:48	25.40	51.83	34.08	123.1	N/A	0.06	8.47	4.3	-20.4
1/3/2010	14:55:49	25.47	51.57	33.88	123.3	N/A	0.06	8.47	4.2	-20.3
1/3/2010	15:00:48	25.42	51.84	34.09	123.8	N/A	0.06	8.47	4.0	-20.1
1/3/2010	15:05:49	25.42	51.86	34.10	123.1	N/A	0.06	8.47	4.2	-20.0
1/3/2010	15:10:49	25.43	51.83	34.08	123.0	N/A	0.06	8.47	4.0	-20.1
1/3/2010	15:15:49	25.43	51.86	34.10	122.7	N/A	0.06	8.47	4.1	-20.0
1/3/2010	15:20:48	25.47	51.78	34.04	122.6	N/A	0.06	8.47	4.0	-19.8
1/3/2010	15:25:49	25.53	51.76	34.02	122.8	N/A	0.06	8.46	4.9	-19.9
1/3/2010	15:30:49	25.54	51.57	33.88	122.8	N/A	0.06	8.46	3.9	-19.8
1/3/2010	15:35:48	25.44	51.79	34.04	121.8	N/A	0.06	8.47	5.2	-20.0
1/3/2010	15:40:48	25.43	51.76	34.02	121.7	N/A	0.06	8.47	5.4	-19.8
1/3/2010	15:45:48	25.50	51.71	33.99	122.8	N/A	0.06	8.47	4.8	-19.9
1/3/2010	15:50:49	25.40	51.77	34.03	122.8	N/A	0.06	8.47	4.2	-19.7
1/3/2010	15:55:48	25.37	51.75	34.02	121.1	N/A	0.06	8.46	5.2	-19.7
1/3/2010	16:00:48	25.37	51.81	34.06	120.9	N/A	0.06	8.46	4.5	-19.7
1/3/2010	16:05:48	25.39	51.76	34.02	121.7	N/A	0.06	8.46	5.6	-19.6
1/3/2010	16:10:48	25.40	51.71	33.99	121.5	N/A	0.06	8.46	5.7	-19.7
1/3/2010	16:15:48	25.39	51.80	34.05	120.7	N/A	0.06	8.46	4.9	-19.6
1/3/2010	16:20:48	25.37	51.61	33.92	119.9	N/A	0.06	8.45	4.7	-19.7
1/3/2010	16:25:49	25.40	51.78	34.04	120.7	N/A	0.06	8.46	4.4	-19.7
1/3/2010	16:30:49	25.36	51.67	33.96	119.3	N/A	0.06	8.45	5.0	-19.7
1/3/2010	16:35:48	25.40	51.84	34.08	120.7	N/A	0.06	8.46	5.3	-19.5

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	16:40:48	25.35	51.77	34.03	118.6	N/A	0.06	8.46	5.3	-19.7
1/3/2010	16:45:49	25.38	51.86	34.10	120.2	N/A	0.06	8.46	5.6	-19.6
1/3/2010	16:50:49	25.36	51.83	34.08	120.3	N/A	0.06	8.46	5.6	-19.6
1/3/2010	16:55:49	25.37	51.89	34.12	120.7	N/A	0.06	8.47	5.6	-19.5
1/3/2010	17:00:49	25.36	51.86	34.10	120.9	N/A	0.06	8.47	5.9	-19.3
1/3/2010	17:05:49	25.35	51.87	34.11	120.1	N/A	0.06	8.47	5.6	-19.4
1/3/2010	17:10:48	25.33	51.85	34.09	120.4	N/A	0.06	8.46	5.5	-19.2
1/3/2010	17:15:48	25.34	51.90	34.13	120.6	N/A	0.06	8.47	4.7	-19.1
1/3/2010	17:20:49	25.32	51.84	34.08	120.4	N/A	0.06	8.46	5.3	-18.9
1/3/2010	17:25:48	25.35	51.91	34.13	120.7	N/A	0.06	8.47	5.4	-18.9
1/3/2010	17:30:48	25.31	51.86	34.10	119.8	N/A	0.06	8.46	6.0	-18.7
1/3/2010	17:35:49	25.34	51.89	34.12	120.2	N/A	0.06	8.46	5.5	-18.7
1/3/2010	17:40:48	25.30	51.72	33.99	119.5	N/A	0.06	8.45	5.4	-18.6
1/3/2010	17:45:48	25.27	51.68	33.97	119.2	N/A	0.06	8.46	5.5	-18.8
1/3/2010	17:50:48	25.32	51.84	34.09	119.8	N/A	0.06	8.46	5.6	-18.7
1/3/2010	17:55:49	25.29	51.82	34.07	119.5	N/A	0.06	8.46	4.8	-18.6
1/3/2010	18:00:49	25.31	51.78	34.04	119.0	N/A	0.06	8.46	5.7	-18.5
1/3/2010	18:05:48	25.27	51.78	34.04	118.5	N/A	0.06	8.46	4.7	-18.4
1/3/2010	18:10:48	25.21	51.65	33.95	118.0	N/A	0.06	8.45	5.3	-18.4
1/3/2010	18:15:49	25.18	51.69	33.98	117.3	N/A	0.06	8.45	5.1	-18.5
1/3/2010	18:20:48	25.26	51.83	34.08	117.3	N/A	0.06	8.46	5.0	-18.4
1/3/2010	18:25:48	25.22	51.76	34.03	116.1	N/A	0.06	8.45	4.8	-18.6
1/3/2010	18:30:48	25.22	51.83	34.08	116.5	N/A	0.06	8.46	5.4	-18.6
1/3/2010	18:35:48	25.20	51.66	33.96	115.9	N/A	0.06	8.45	5.5	-18.4
1/3/2010	18:40:48	25.11	51.54	33.87	115.5	N/A	0.06	8.44	4.7	-18.4
1/3/2010	18:45:48	25.11	51.54	33.87	115.0	N/A	0.06	8.43	5.5	-18.5
1/3/2010	18:50:49	25.21	51.66	33.96	115.4	N/A	0.06	8.45	4.8	-18.5
1/3/2010	18:55:49	25.17	51.74	34.01	114.7	N/A	0.06	8.44	5.2	-18.6
1/3/2010	19:00:48	25.18	51.79	34.05	114.6	N/A	0.07	8.45	4.4	-18.5
1/3/2010	19:05:48	25.08	51.52	33.86	112.0	N/A	0.07	8.43	5.4	-18.6
1/3/2010	19:10:48	25.12	51.74	34.01	114.1	N/A	0.07	8.45	5.5	-18.5
1/3/2010	19:15:48	25.08	51.64	33.94	112.4	N/A	0.07	8.44	4.3	-18.3
1/3/2010	19:20:48	25.08	51.67	33.96	113.1	N/A	0.07	8.43	4.9	-18.4
1/3/2010	19:25:48	25.12	51.70	33.99	114.2	N/A	0.07	8.45	5.6	-18.2
1/3/2010	19:30:48	25.06	51.64	33.95	112.1	N/A	0.07	8.44	4.8	-18.2
1/3/2010	19:35:48	25.09	51.68	33.97	112.2	N/A	0.07	8.44	4.6	-18.6
1/3/2010	19:40:48	25.12	51.62	33.93	113.0	N/A	0.07	8.44	4.3	-18.5
1/3/2010	19:45:48	25.10	51.70	33.98	113.0	N/A	0.07	8.44	4.4	-18.1
1/3/2010	19:50:48	25.11	51.65	33.95	113.3	N/A	0.07	8.44	5.2	-18.1
1/3/2010	19:55:48	25.05	51.62	33.93	111.4	N/A	0.07	8.44	5.1	-18.2

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	20:00:49	25.15	51.70	33.99	113.5	N/A	0.07	8.44	4.8	-18.1
1/3/2010	20:05:48	25.09	51.67	33.96	112.2	N/A	0.07	8.44	5.3	-18.1
1/3/2010	20:10:48	25.12	51.62	33.93	111.4	N/A	0.07	8.44	5.2	-18.0
1/3/2010	20:15:48	25.08	51.63	33.93	112.7	N/A	0.07	8.44	4.6	-17.9
1/3/2010	20:20:48	25.12	51.75	34.03	113.5	N/A	0.07	8.45	5.3	-18.0
1/3/2010	20:25:48	25.09	51.66	33.96	111.3	N/A	0.08	8.43	4.5	-18.2
1/3/2010	20:30:48	25.04	51.66	33.96	109.2	N/A	0.08	8.43	4.4	-18.3
1/3/2010	20:35:48	25.08	51.61	33.92	109.6	N/A	0.08	8.43	4.2	-18.5
1/3/2010	20:40:48	25.09	51.61	33.92	111.0	N/A	0.08	8.43	4.1	-18.2
1/3/2010	20:45:48	25.04	51.62	33.93	110.5	N/A	0.08	8.43	4.5	-18.1
1/3/2010	20:50:49	25.01	51.59	33.91	109.2	N/A	0.08	8.42	4.8	-18.2
1/3/2010	20:55:48	25.05	51.63	33.94	108.9	N/A	0.08	8.43	4.7	-18.2
1/3/2010	21:00:48	25.07	51.63	33.94	109.8	N/A	0.08	8.43	4.7	-18.2
1/3/2010	21:05:49	25.10	51.68	33.98	109.9	N/A	0.08	8.43	4.0	-18.2
1/3/2010	21:10:48	25.10	51.70	33.99	109.7	N/A	0.08	8.43	4.7	-18.2
1/3/2010	21:15:48	25.09	51.59	33.91	109.6	N/A	0.08	8.43	4.4	-18.4
1/3/2010	21:20:48	25.10	51.55	33.87	103.6	N/A	0.08	8.41	3.8	-18.5
1/3/2010	21:25:48	25.08	51.66	33.96	103.9	N/A	0.08	8.41	3.8	-19.0
1/3/2010	21:30:48	25.07	51.54	33.87	105.4	N/A	0.08	8.41	3.6	-19.0
1/3/2010	21:35:48	25.09	51.54	33.87	104.4	N/A	0.08	8.41	3.8	-19.0
1/3/2010	21:40:48	25.08	51.58	33.90	105.5	N/A	0.08	8.41	3.7	-19.0
1/3/2010	21:45:48	25.11	51.67	33.96	107.8	N/A	0.08	8.42	4.3	-18.9
1/3/2010	21:50:48	25.13	51.76	34.03	107.8	N/A	0.08	8.43	4.0	-18.6
1/3/2010	21:55:49	25.11	51.60	33.91	106.0	N/A	0.08	8.41	3.6	-18.7
1/3/2010	22:00:48	25.14	51.68	33.97	109.1	N/A	0.08	8.43	4.1	-18.6
1/3/2010	22:05:48	25.15	51.75	34.02	108.7	N/A	0.08	8.43	4.3	-18.6
1/3/2010	22:10:48	25.15	51.76	34.03	109.6	N/A	0.08	8.44	5.0	-18.6
1/3/2010	22:15:48	25.14	51.62	33.93	106.4	N/A	0.08	8.41	3.9	-18.6
1/3/2010	22:20:48	25.14	51.71	33.99	108.1	N/A	0.08	8.42	4.3	-18.6
1/3/2010	22:25:49	25.15	51.68	33.97	106.6	N/A	0.08	8.42	4.0	-18.5
1/3/2010	22:30:48	25.17	51.76	34.03	107.4	N/A	0.08	8.42	3.8	-18.5
1/3/2010	22:35:48	25.13	51.73	34.01	106.8	N/A	0.08	8.42	3.5	-18.4
1/3/2010	22:40:48	25.17	51.75	34.02	105.7	N/A	0.08	8.42	3.7	-18.5
1/3/2010	22:45:48	25.16	51.75	34.02	106.4	N/A	0.08	8.42	4.6	-18.5
1/3/2010	22:50:48	25.16	51.66	33.96	104.4	N/A	0.08	8.41	2.9	-18.4
1/3/2010	22:55:48	25.13	51.63	33.93	107.2	N/A	0.08	8.42	4.2	-18.3
1/3/2010	23:00:49	25.13	51.64	33.94	105.5	N/A	0.08	8.41	4.3	-18.2
1/3/2010	23:05:48	25.15	51.67	33.96	103.6	N/A	0.08	8.41	3.4	-18.4
1/3/2010	23:10:48	25.14	51.63	33.94	103.3	N/A	0.08	8.40	2.8	-18.4
1/3/2010	23:15:48	25.20	51.55	33.87	103.7	N/A	0.08	8.41	3.6	-18.5

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/3/2010	23:20:48	25.12	51.66	33.96	105.0	N/A	0.08	8.41	2.6	-18.5
1/3/2010	23:25:48	25.09	51.56	33.89	107.1	N/A	0.08	8.41	3.7	-18.6
1/3/2010	23:30:48	25.17	51.57	33.89	104.7	N/A	0.08	8.41	3.3	-18.6
1/3/2010	23:35:49	25.20	51.46	33.81	104.3	N/A	0.08	8.40	2.1	-18.6
1/3/2010	23:40:48	25.20	51.52	33.86	103.9	N/A	0.08	8.41	3.6	-18.7
1/3/2010	23:45:48	25.19	51.65	33.95	106.1	N/A	0.08	8.41	3.0	-18.5
1/3/2010	23:50:48	25.18	51.64	33.94	103.9	N/A	0.08	8.41	3.0	-18.6
1/3/2010	23:55:48	25.18	51.62	33.93	102.8	N/A	0.08	8.40	3.2	-18.5
1/4/2010	0:00:48	25.17	51.57	33.89	104.5	N/A	0.08	8.41	3.7	-18.7
1/4/2010	0:05:48	25.18	51.57	33.89	103.3	N/A	0.08	8.40	3.6	-18.6
1/4/2010	0:10:49	25.16	51.58	33.90	102.8	N/A	0.08	8.41	3.2	-18.6
1/4/2010	0:15:48	25.16	51.61	33.92	102.8	N/A	0.08	8.41	3.1	-18.5
1/4/2010	0:20:49	25.14	51.65	33.95	104.1	N/A	0.08	8.41	2.8	-18.4
1/4/2010	0:25:48	25.13	51.55	33.87	103.3	N/A	0.08	8.41	3.2	-18.4
1/4/2010	0:30:48	25.14	51.68	33.97	105.0	N/A	0.08	8.42	4.5	-18.2
1/4/2010	0:35:48	25.10	51.71	33.99	108.3	N/A	0.08	8.42	4.8	-18.1
1/4/2010	0:40:48	25.15	51.68	33.97	105.4	N/A	0.08	8.41	3.7	-18.1
1/4/2010	0:45:48	25.15	51.44	33.79	102.0	N/A	0.08	8.39	2.8	-18.3
1/4/2010	0:50:48	25.15	51.52	33.85	101.4	N/A	0.08	8.40	2.8	-18.4
1/4/2010	0:55:48	25.15	51.62	33.93	102.1	N/A	0.08	8.40	3.0	-18.3
1/4/2010	1:00:48	25.08	51.34	33.72	102.1	N/A	0.08	8.40	3.6	-18.6
1/4/2010	1:05:48	25.13	51.55	33.88	103.4	N/A	0.07	8.41	3.5	-18.4
1/4/2010	1:10:48	25.15	51.60	33.91	104.0	N/A	0.07	8.41	4.1	-18.4
1/4/2010	1:15:49	25.12	51.47	33.82	102.2	N/A	0.07	8.39	3.6	-18.4
1/4/2010	1:20:48	25.16	51.56	33.88	100.9	N/A	0.07	8.39	2.8	-18.4
1/4/2010	1:25:48	25.09	51.56	33.89	103.7	N/A	0.07	8.41	4.1	-18.4
1/4/2010	1:30:48	25.15	51.61	33.92	104.1	N/A	0.07	8.40	3.6	-18.2
1/4/2010	1:35:48	25.15	51.72	34.00	103.5	N/A	0.07	8.41	4.2	-18.6
1/4/2010	1:40:48	25.16	51.60	33.92	101.4	N/A	0.07	8.40	3.3	-18.7
1/4/2010	1:45:48	25.15	51.70	33.99	104.1	N/A	0.07	8.41	4.9	-18.5
1/4/2010	1:50:48	25.15	51.64	33.94	102.9	N/A	0.07	8.40	2.8	-18.6
1/4/2010	1:55:48	25.15	51.65	33.95	101.4	N/A	0.07	8.40	3.3	-18.7
1/4/2010	2:00:49	25.14	51.79	34.06	107.5	N/A	0.07	8.43	4.1	-18.5
1/4/2010	2:05:48	25.14	51.75	34.02	106.7	N/A	0.07	8.42	4.0	-18.2
1/4/2010	2:10:48	25.10	51.73	34.01	108.0	N/A	0.07	8.43	4.1	-17.8
1/4/2010	2:15:48	25.12	51.81	34.07	108.3	N/A	0.07	8.43	4.3	-17.5
1/4/2010	2:20:48	25.13	51.80	34.06	108.1	N/A	0.07	8.43	4.8	-17.2
1/4/2010	2:25:48	25.12	51.80	34.06	109.4	N/A	0.07	8.44	4.6	-17.0
1/4/2010	2:30:48	25.09	51.76	34.03	108.3	N/A	0.07	8.43	4.1	-16.8
1/4/2010	2:35:49	25.12	51.85	34.09	108.4	N/A	0.07	8.43	4.8	-16.8

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	2:40:49	25.09	51.79	34.06	109.0	N/A	0.07	8.44	4.6	-16.7
1/4/2010	2:45:48	25.10	51.79	34.06	108.9	N/A	0.07	8.43	4.8	-16.6
1/4/2010	2:50:48	25.11	51.84	34.09	109.2	N/A	0.07	8.43	5.2	-16.5
1/4/2010	2:55:48	24.98	51.62	33.93	106.4	N/A	0.07	8.41	4.4	-16.7
1/4/2010	3:00:48	25.09	51.73	34.01	107.0	N/A	0.07	8.42	5.0	-16.7
1/4/2010	3:05:48	25.12	51.84	34.09	107.5	N/A	0.07	8.43	5.0	-17.0
1/4/2010	3:10:48	25.11	51.81	34.07	107.9	N/A	0.07	8.43	4.5	-16.6
1/4/2010	3:15:48	25.11	51.83	34.08	109.0	N/A	0.07	8.44	5.4	-16.4
1/4/2010	3:20:48	25.12	51.87	34.11	109.4	N/A	0.07	8.44	5.5	-16.1
1/4/2010	3:25:48	25.09	51.74	34.01	108.2	N/A	0.07	8.43	4.5	-16.0
1/4/2010	3:30:48	25.10	51.77	34.04	108.9	N/A	0.07	8.44	4.7	-16.2
1/4/2010	3:35:48	25.12	51.89	34.13	109.3	N/A	0.07	8.44	4.5	-16.4
1/4/2010	3:40:48	25.10	51.83	34.09	108.2	N/A	0.07	8.43	4.6	-16.5
1/4/2010	3:45:48	25.09	51.83	34.08	108.6	N/A	0.07	8.44	5.2	-16.7
1/4/2010	3:50:48	25.02	51.79	34.05	107.1	N/A	0.07	8.43	5.3	-16.8
1/4/2010	3:55:48	25.00	51.68	33.98	105.6	N/A	0.07	8.42	3.9	-17.0
1/4/2010	4:00:49	25.08	51.77	34.04	106.5	N/A	0.07	8.42	3.7	-17.2
1/4/2010	4:05:48	25.12	51.91	34.14	108.9	N/A	0.07	8.44	5.0	-17.1
1/4/2010	4:10:48	25.08	51.85	34.10	108.3	N/A	0.07	8.43	4.3	-16.8
1/4/2010	4:15:49	25.09	51.88	34.12	108.6	N/A	0.07	8.44	4.9	-16.7
1/4/2010	4:20:48	25.07	51.78	34.05	106.1	N/A	0.07	8.42	4.5	-16.9
1/4/2010	4:25:48	25.05	51.77	34.04	103.8	N/A	0.07	8.42	3.7	-17.2
1/4/2010	4:30:49	25.11	51.88	34.12	108.3	N/A	0.07	8.43	5.4	-17.2
1/4/2010	4:35:48	25.12	51.93	34.16	107.8	N/A	0.07	8.44	4.8	-17.0
1/4/2010	4:40:49	25.07	51.88	34.12	107.6	N/A	0.07	8.43	4.5	-16.8
1/4/2010	4:45:49	25.03	51.79	34.05	104.4	N/A	0.07	8.42	4.8	-17.0
1/4/2010	4:50:49	25.10	51.91	34.14	107.4	N/A	0.07	8.43	5.0	-17.1
1/4/2010	4:55:48	25.07	51.88	34.12	106.9	N/A	0.07	8.43	4.6	-17.2
1/4/2010	5:00:48	25.01	51.83	34.09	105.8	N/A	0.07	8.42	4.2	-17.3
1/4/2010	5:05:48	24.97	51.79	34.05	102.7	N/A	0.07	8.41	4.2	-17.3
1/4/2010	5:10:48	25.08	51.89	34.13	107.5	N/A	0.07	8.43	4.5	-17.3
1/4/2010	5:15:49	25.14	51.94	34.16	107.0	N/A	0.07	8.43	4.9	-17.0
1/4/2010	5:20:48	25.14	51.97	34.19	106.2	N/A	0.07	8.43	5.0	-17.0
1/4/2010	5:25:49	24.70	51.52	33.87	101.0	N/A	0.07	8.40	4.9	-17.3
1/4/2010	5:30:48	24.98	51.67	33.97	101.1	N/A	0.07	8.40	4.7	-17.7
1/4/2010	5:35:48	25.11	51.94	34.16	98.1	N/A	0.07	8.40	3.7	-17.3
1/4/2010	5:40:48	25.07	51.88	34.12	92.3	N/A	0.07	8.37	2.5	-18.5
1/4/2010	5:45:48	25.08	51.94	34.17	91.2	N/A	0.07	8.37	2.5	-19.0
1/4/2010	5:50:48	24.95	52.01	34.22	93.7	N/A	0.07	8.37	3.3	-19.2
1/4/2010	5:55:48	25.04	51.87	34.11	95.5	N/A	0.07	8.39	3.6	-19.3

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	6:00:48	24.95	51.90	34.14	94.9	N/A	0.07	8.38	3.8	-19.3
1/4/2010	6:05:48	25.00	51.93	34.16	97.0	N/A	0.08	8.39	4.0	-19.3
1/4/2010	6:10:48	24.94	51.88	34.13	95.5	N/A	0.08	8.39	3.7	-19.3
1/4/2010	6:15:48	24.93	51.90	34.14	96.2	N/A	0.08	8.39	3.3	-19.3
1/4/2010	6:20:48	24.94	51.91	34.15	97.4	N/A	0.08	8.40	3.6	-19.3
1/4/2010	6:25:48	24.93	51.90	34.14	97.2	N/A	0.08	8.39	4.1	-19.3
1/4/2010	6:30:48	24.90	51.88	34.13	97.0	N/A	0.08	8.39	3.2	-19.3
1/4/2010	6:35:48	24.87	51.82	34.08	96.1	N/A	0.08	8.39	3.8	-19.5
1/4/2010	6:40:48	24.91	51.93	34.16	97.9	N/A	0.08	8.40	4.3	-19.5
1/4/2010	6:45:48	24.96	51.91	34.14	93.2	N/A	0.08	8.37	3.0	-19.5
1/4/2010	6:50:49	24.98	51.93	34.16	92.5	N/A	0.08	8.37	2.6	-20.2
1/4/2010	6:55:48	24.93	51.92	34.15	93.8	N/A	0.08	8.38	4.2	-20.3
1/4/2010	7:00:48	24.94	51.95	34.18	95.9	N/A	0.08	8.39	2.9	-20.0
1/4/2010	7:05:48	24.96	51.97	34.19	95.6	N/A	0.08	8.39	3.5	-20.0
1/4/2010	7:10:48	24.96	51.98	34.20	95.1	N/A	0.08	8.39	3.0	-20.0
1/4/2010	7:15:48	24.97	51.99	34.20	95.6	N/A	0.08	8.39	2.3	-20.1
1/4/2010	7:20:49	24.99	52.00	34.21	96.7	N/A	0.08	8.40	3.2	-20.0
1/4/2010	7:25:48	24.98	52.02	34.23	96.1	N/A	0.08	8.40	3.0	-20.0
1/4/2010	7:30:48	24.99	52.05	34.25	99.8	N/A	0.08	8.41	3.9	-19.8
1/4/2010	7:35:48	24.93	52.02	34.23	100.7	N/A	0.08	8.42	3.7	-19.3
1/4/2010	7:40:48	24.91	52.02	34.23	100.9	N/A	0.08	8.42	4.1	-19.0
1/4/2010	7:45:48	24.88	51.91	34.15	100.8	N/A	0.08	8.41	3.9	-18.8
1/4/2010	7:50:48	24.85	51.93	34.16	100.5	N/A	0.08	8.41	4.4	-18.7
1/4/2010	7:55:48	24.84	52.02	34.23	100.6	N/A	0.09	8.41	4.2	-18.6
1/4/2010	8:00:49	24.82	52.02	34.23	100.9	N/A	0.09	8.42	3.8	-18.4
1/4/2010	8:05:49	24.82	52.03	34.24	101.2	N/A	0.09	8.42	4.7	-18.3
1/4/2010	8:10:49	24.88	52.05	34.25	97.9	N/A	0.09	8.40	4.0	-18.2
1/4/2010	8:15:48	24.92	52.07	34.27	96.9	N/A	0.09	8.40	4.0	-18.2
1/4/2010	8:20:48	24.93	52.07	34.27	96.2	N/A	0.09	8.40	3.5	-18.4
1/4/2010	8:25:48	24.78	51.82	34.08	100.9	N/A	0.09	8.42	3.8	-18.1
1/4/2010	8:30:48	24.77	51.96	34.19	100.6	N/A	0.09	8.42	3.8	-17.9
1/4/2010	8:35:49	24.76	51.94	34.17	100.4	N/A	0.09	8.42	4.7	-17.8
1/4/2010	8:40:48	24.78	51.95	34.18	100.7	N/A	0.09	8.41	4.2	-17.5
1/4/2010	8:45:48	24.76	51.94	34.17	100.2	N/A	0.09	8.41	4.0	-17.4
1/4/2010	8:50:48	24.77	51.96	34.19	100.4	N/A	0.09	8.41	3.7	-17.2
1/4/2010	8:55:48	24.78	51.94	34.17	100.4	N/A	0.09	8.42	4.1	-17.3
1/4/2010	9:00:49	24.78	51.95	34.18	100.4	N/A	0.09	8.41	4.1	-17.2
1/4/2010	9:05:48	24.80	51.95	34.18	100.5	N/A	0.09	8.42	3.9	-17.1
1/4/2010	9:10:48	24.80	51.94	34.17	100.7	N/A	0.09	8.42	3.7	-17.1
1/4/2010	9:15:49	24.89	52.07	34.27	95.3	N/A	0.09	8.39	3.6	-17.5

Table AII.9: (Continued) West Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	9:20:49	24.87	52.05	34.25	99.2	N/A	0.12	8.41	3.4	-17.5

Table AII.10: West Loch Platform B wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100102	16:53	2.1	20100103	13:53	4.6
20100102	17:53	1.5	20100103	14:53	4.6
20100102	18:00	1.5	20100103	15:53	5.7
20100102	18:53	0.0	20100103	16:53	4.1
20100102	19:53	0.0	20100103	17:53	4.1
20100102	20:53	3.1	20100103	18:00	4.1
20100102	21:53	3.6	20100103	18:53	5.7
20100102	22:53	4.1	20100103	19:53	5.1
20100102	23:53	3.6	20100103	20:53	5.1
20100103	00:00	3.6	20100103	21:53	6.2
20100103	00:53	4.1	20100103	22:53	6.7
20100103	01:53	3.6	20100103	23:53	5.7
20100103	02:53	3.1	20100104	00:00	5.7
20100103	03:53	1.5	20100104	00:53	6.2
20100103	04:53	1.5	20100104	01:53	6.2
20100103	05:53	0.0	20100104	02:53	6.2
20100103	06:00	0.0	20100104	03:53	5.1
20100103	06:53	1.5	20100104	04:53	5.1
20100103	07:53	2.6	20100104	05:53	5.1
20100103	08:53	1.5	20100104	06:00	5.1
20100103	09:53	2.1	20100104	06:53	5.1
20100103	10:53	3.1	20100104	07:53	6.7
20100103	11:53	3.6	20100104	08:53	4.6
20100103	12:00	3.6	20100104	09:53	5.7
20100103	12:53	3.6			

Table AII.11: West Loch Platform B depth profile collected on 7 January 2011 using an YSI 6600 V2-4.

Depth m	Time hh:mm	Temp °C	SpCond mS/cm	Sal	pH	ORP	Chl µg/L	DO %	DO mg
0.08	11:02	21.87	38.43	24.48	7.94	110.6	9.3	87.4	6.61
0.09	11:05	22.04	38.97	26.26	8.03	111.9	11.0	85.9	6.36
0.12	11:06	22.32	42.74	27.53	8.07	112.3	11.2	87.3	6.46
0.14	11:08	22.40	43.32	27.97	8.09	112.6	11.3	88.5	6.53
0.35	11:09	22.48	43.90	28.37	8.10	112.8	10.5	88.4	6.50
0.28	11:12	22.51	44.01	28.42	8.11	112.6	10.7	88.0	6.48
0.51	11:13	22.55	44.30	28.64	8.11	113.0	11.3	88.1	6.46
0.75	11:14	23.10	45.22	29.34	8.10	113.8	12.9	86.9	6.27
0.77	11:17	23.98	47.16	30.66	8.08	114.1	13.2	81.4	5.73
0.86	11:18	24.61	48.63	31.83	8.07	115.1	10.5	80.0	5.53
1.03	11:20	24.80	50.22	32.91	8.09	115.1	9.8	81.4	5.60
1.42	11:21	25.42	50.88	33.42	8.09	115.1	8.2	81.6	5.53
1.66	11:23	25.43	51.36	33.73	8.10	115.0	7.6	81.0	5.49
2.16	11:24	25.31	51.92	34.15	8.10	112.1	5.2	81.9	5.55
2.71	11:25	25.36	52.38	34.48	8.09	113.3	4.1	72.0	4.86
3.79	11:27	25.28	52.78	34.78	8.05	114.7	4.0	61.2	4.14
4.40	11:28	25.23	52.82	34.81	8.05	115.2	3.0	62.0	4.19

Table AII.12: West Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1128 on 7 January 2011 which corresponds to a similar tide at 1900 on 2 January 2010. An alternative modeled groundwater impacted layer of 143 cm requires addition of 103 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/2/10 17:10	-101.45	37.51	1/2/10 20:00	-105.61	33.35
1/2/10 17:15	-101.55	37.41	1/2/10 20:05	-105.92	33.04
1/2/10 17:20	-101.24	37.71	1/2/10 20:10	-107.42	31.54
1/2/10 17:25	-101.35	37.61	1/2/10 20:15	-107.80	31.16
1/2/10 17:30	-101.35	37.61	1/2/10 20:20	-108.79	30.17
1/2/10 17:35	-101.63	37.33	1/2/10 20:25	-108.79	30.17
1/2/10 17:40	-101.14	37.82	1/2/10 20:30	-109.30	29.66
1/2/10 17:45	-101.45	37.51	1/2/10 20:35	-110.08	28.87
1/2/10 17:50	-101.63	37.33	1/2/10 20:40	-109.80	29.15
1/2/10 17:55	-101.83	37.13	1/2/10 20:45	-110.69	28.27
1/2/10 18:00	-101.14	37.82	1/2/10 20:50	-110.29	28.67
1/2/10 18:05	-102.24	36.72	1/2/10 20:55	-110.59	28.37
1/2/10 18:10	-101.83	37.13	1/2/10 21:00	-110.79	28.16
1/2/10 18:15	-100.05	38.91	1/2/10 21:05	-111.58	27.38
1/2/10 18:20	-100.53	38.43	1/2/10 21:10	-111.68	27.27
1/2/10 18:25	-100.15	38.81	1/2/10 21:15	-111.38	27.58
1/2/10 18:30	-99.64	39.31	1/2/10 21:20	-112.67	26.28
1/2/10 18:35	-99.16	39.80	1/2/10 21:25	-112.27	26.69
1/2/10 18:40	-99.54	39.42	1/2/10 21:30	-113.08	25.88
1/2/10 18:45	-98.96	40.00	1/2/10 21:35	-113.87	25.09
1/2/10 18:50	-98.35	40.61	1/2/10 21:40	-114.38	24.58
1/2/10 18:55	-98.65	40.30	1/2/10 21:45	-115.06	23.90
1/2/10 19:00	-98.96	40.00	1/2/10 21:50	-116.15	22.80
1/2/10 19:05	-98.55	40.41	1/2/10 21:55	-117.35	21.61
1/2/10 19:10	-98.45	40.51	1/2/10 22:00	-117.96	21.00
1/2/10 19:15	-99.06	39.90	1/2/10 22:05	-119.33	19.63
1/2/10 19:20	-98.86	40.10	1/2/10 22:10	-119.43	19.53
1/2/10 19:25	-99.64	39.31	1/2/10 22:15	-120.24	18.71
1/2/10 19:30	-100.94	38.02	1/2/10 22:20	-121.34	17.62
1/2/10 19:35	-100.53	38.43	1/2/10 22:25	-121.92	17.04
1/2/10 19:40	-101.45	37.51	1/2/10 22:30	-121.72	17.24
1/2/10 19:45	-103.33	35.63	1/2/10 22:35	-122.81	16.15
1/2/10 19:50	-103.73	35.22	1/2/10 22:40	-123.11	15.84
1/2/10 19:55	-104.72	34.23	1/2/10 22:45	-123.01	15.95

Table AII.12: (Continued) West Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1128 on 7 January 2011 which corresponds to a similar tide at 1900 on 2 January 2010. An alternative modeled groundwater impacted layer of 143 cm requires addition of 103 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/2/10 22:50	-122.63	16.33	1/3/10 1:40	-97.36	41.60
1/2/10 22:55	-123.01	15.95	1/3/10 1:45	-95.58	43.38
1/2/10 23:00	-122.22	16.73	1/3/10 1:50	-94.28	44.67
1/2/10 23:05	-121.54	17.42	1/3/10 1:55	-93.19	45.77
1/2/10 23:10	-121.44	17.52	1/3/10 2:00	-91.08	47.87
1/2/10 23:15	-120.52	18.44	1/3/10 2:05	-90.30	48.66
1/2/10 23:20	-119.74	19.22	1/3/10 2:10	-88.62	50.34
1/2/10 23:25	-119.33	19.63	1/3/10 2:15	-86.92	52.04
1/2/10 23:30	-118.85	20.11	1/3/10 2:20	-86.03	52.93
1/2/10 23:35	-117.35	21.61	1/3/10 2:25	-84.53	54.43
1/2/10 23:40	-116.94	22.02	1/3/10 2:30	-83.13	55.82
1/2/10 23:45	-116.87	22.09	1/3/10 2:35	-81.46	57.50
1/2/10 23:50	-116.15	22.80	1/3/10 2:40	-79.86	59.10
1/2/10 23:55	-115.27	23.69	1/3/10 2:45	-79.07	59.89
1/3/10 0:00	-114.86	24.10	1/3/10 2:50	-77.37	61.59
1/3/10 0:05	-114.66	24.30	1/3/10 2:55	-76.28	62.68
1/3/10 0:10	-113.97	24.99	1/3/10 3:00	-74.78	64.18
1/3/10 0:15	-114.27	24.68	1/3/10 3:05	-72.90	66.06
1/3/10 0:20	-113.56	25.40	1/3/10 3:10	-72.11	66.85
1/3/10 0:25	-112.78	26.18	1/3/10 3:15	-70.92	68.04
1/3/10 0:30	-112.19	26.77	1/3/10 3:20	-69.62	69.34
1/3/10 0:35	-112.37	26.59	1/3/10 3:25	-68.63	70.33
1/3/10 0:40	-111.58	27.38	1/3/10 3:30	-67.34	71.62
1/3/10 0:45	-111.07	27.88	1/3/10 3:35	-65.43	73.53
1/3/10 0:50	-109.80	29.15	1/3/10 3:40	-64.44	74.52
1/3/10 0:55	-108.99	29.97	1/3/10 3:45	-63.14	75.81
1/3/10 1:00	-108.10	30.86	1/3/10 3:50	-62.36	76.60
1/3/10 1:05	-107.70	31.26	1/3/10 3:55	-61.06	77.90
1/3/10 1:10	-106.12	32.84	1/3/10 4:00	-59.87	79.09
1/3/10 1:15	-104.42	34.54	1/3/10 4:05	-58.98	79.98
1/3/10 1:20	-103.23	35.73	1/3/10 4:10	-57.79	81.17
1/3/10 1:25	-101.93	37.03	1/3/10 4:15	-57.38	81.58
1/3/10 1:30	-100.53	38.43	1/3/10 4:20	-56.29	82.67
1/3/10 1:35	-99.06	39.90	1/3/10 4:25	-54.99	83.97

Table AII.12: (Continued) West Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1128 on 7 January 2011 which corresponds to a similar tide at 1900 on 2 January 2010. An alternative modeled groundwater impacted layer of 143 cm requires addition of 103 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/3/10 4:30	-54.51	84.45	1/3/10 7:20	-51.21	87.75
1/3/10 4:35	-53.59	85.36	1/3/10 7:25	-50.93	88.03
1/3/10 4:40	-52.71	86.25	1/3/10 7:30	-52.12	86.84
1/3/10 4:45	-52.12	86.84	1/3/10 7:35	-52.40	86.56
1/3/10 4:50	-51.51	87.45	1/3/10 7:40	-53.42	85.54
1/3/10 4:55	-50.32	88.64	1/3/10 7:45	-53.70	85.26
1/3/10 5:00	-50.22	88.74	1/3/10 7:50	-54.51	84.45
1/3/10 5:05	-49.63	89.33	1/3/10 7:55	-55.30	83.66
1/3/10 5:10	-48.74	90.22	1/3/10 8:00	-56.79	82.16
1/3/10 5:15	-48.64	90.32	1/3/10 8:05	-57.48	81.48
1/3/10 5:20	-47.45	91.51	1/3/10 8:10	-58.67	80.28
1/3/10 5:25	-47.04	91.92	1/3/10 8:15	-60.86	78.10
1/3/10 5:30	-47.04	91.92	1/3/10 8:20	-62.05	76.91
1/3/10 5:35	-46.53	92.43	1/3/10 8:25	-64.54	74.42
1/3/10 5:40	-46.36	92.60	1/3/10 8:30	-65.15	73.81
1/3/10 5:45	-46.15	92.81	1/3/10 8:35	-67.23	71.72
1/3/10 5:50	-45.95	93.01	1/3/10 8:40	-67.03	71.93
1/3/10 5:55	-45.64	93.31	1/3/10 8:45	-69.11	69.85
1/3/10 6:00	-45.95	93.01	1/3/10 8:50	-70.00	68.96
1/3/10 6:05	-45.75	93.21	1/3/10 8:55	-71.40	67.56
1/3/10 6:10	-46.15	92.81	1/3/10 9:00	-72.59	66.37
1/3/10 6:15	-45.95	93.01	1/3/10 9:05	-73.99	64.97
1/3/10 6:20	-46.63	92.32	1/3/10 9:10	-75.49	63.47
1/3/10 6:25	-46.94	92.02	1/3/10 9:15	-75.59	63.37
1/3/10 6:30	-46.94	92.02	1/3/10 9:20	-77.67	61.29
1/3/10 6:35	-47.73	91.23	1/3/10 9:25	-77.37	61.59
1/3/10 6:40	-48.34	90.62	1/3/10 9:30	-79.76	59.20
1/3/10 6:45	-48.34	90.62	1/3/10 9:35	-80.65	58.31
1/3/10 6:50	-48.82	90.14	1/3/10 9:40	-81.94	57.02
1/3/10 6:55	-49.02	89.94	1/3/10 9:45	-82.14	56.81
1/3/10 7:00	-49.12	89.83	1/3/10 9:50	-84.12	54.83
1/3/10 7:05	-50.72	88.23	1/3/10 9:55	-84.63	54.33
1/3/10 7:10	-50.01	88.95	1/3/10 10:00	-85.83	53.13
1/3/10 7:15	-50.93	88.03	1/3/10 10:05	-87.02	51.94

Table AII.12: (Continued) West Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1128 on 7 January 2011 which corresponds to a similar tide at 1900 on 2 January 2010. An alternative modeled groundwater impacted layer of 143 cm requires addition of 103 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/3/10 10:10	-88.90	50.06	1/3/10 13:00	-117.14	21.81
1/3/10 10:15	-89.81	49.14	1/3/10 13:05	-117.55	21.41
1/3/10 10:20	-91.90	47.06	1/3/10 13:10	-119.53	19.43
1/3/10 10:25	-93.29	45.66	1/3/10 13:15	-119.33	19.63
1/3/10 10:30	-94.49	44.47	1/3/10 13:20	-118.75	20.21
1/3/10 10:35	-95.68	43.28	1/3/10 13:25	-117.55	21.41
1/3/10 10:40	-97.05	41.91	1/3/10 13:30	-118.34	20.62
1/3/10 10:45	-97.87	41.09	1/3/10 13:35	-118.06	20.90
1/3/10 10:50	-99.54	39.42	1/3/10 13:40	-118.95	20.01
1/3/10 10:55	-100.63	38.32	1/3/10 13:45	-118.06	20.90
1/3/10 11:00	-100.84	38.12	1/3/10 13:50	-116.56	22.40
1/3/10 11:05	-102.54	36.42	1/3/10 13:55	-115.85	23.11
1/3/10 11:10	-103.84	35.12	1/3/10 14:00	-115.47	23.49
1/3/10 11:15	-105.61	33.35	1/3/10 14:05	-114.17	24.79
1/3/10 11:20	-104.52	34.44	1/3/10 14:10	-114.76	24.20
1/3/10 11:25	-106.60	32.35	1/3/10 14:15	-114.17	24.79
1/3/10 11:30	-107.32	31.64	1/3/10 14:20	-113.97	24.99
1/3/10 11:35	-107.80	31.16	1/3/10 14:25	-114.17	24.79
1/3/10 11:40	-108.61	30.35	1/3/10 14:30	-114.48	24.48
1/3/10 11:45	-109.50	29.46	1/3/10 14:35	-112.57	26.39
1/3/10 11:50	-110.08	28.87	1/3/10 14:40	-113.46	25.50
1/3/10 11:55	-112.37	26.59	1/3/10 14:45	-112.57	26.39
1/3/10 12:00	-111.07	27.88	1/3/10 14:50	-112.09	26.87
1/3/10 12:05	-113.28	25.67	1/3/10 14:55	-110.39	28.57
1/3/10 12:10	-112.98	25.98	1/3/10 15:00	-111.38	27.58
1/3/10 12:15	-113.56	25.40	1/3/10 15:05	-108.99	29.97
1/3/10 12:20	-114.66	24.30	1/3/10 15:10	-111.38	27.58
1/3/10 12:25	-116.05	22.91	1/3/10 15:15	-110.08	28.87
1/3/10 12:30	-116.66	22.30	1/3/10 15:20	-108.99	29.97
1/3/10 12:35	-114.86	24.10	1/3/10 15:25	-109.09	29.87
1/3/10 12:40	-117.45	21.51	1/3/10 15:30	-108.20	30.75
1/3/10 12:45	-116.56	22.40	1/3/10 15:35	-107.01	31.95
1/3/10 12:50	-117.35	21.61	1/3/10 15:40	-106.50	32.46
1/3/10 12:55	-117.55	21.41	1/3/10 15:45	-106.32	32.63

Table AII.12: (Continued) West Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1128 on 7 January 2011 which corresponds to a similar tide at 1900 on 2 January 2010. An alternative modeled groundwater impacted layer of 143 cm requires addition of 103 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/3/10 15:50	-104.93	34.03	1/3/10 18:40	-91.29	47.67
1/3/10 15:55	-105.41	33.55	1/3/10 18:45	-92.20	46.76
1/3/10 16:00	-104.22	34.74	1/3/10 18:50	-91.69	47.26
1/3/10 16:05	-103.23	35.73	1/3/10 18:55	-92.00	46.96
1/3/10 16:10	-104.11	34.84	1/3/10 19:00	-92.20	46.76
1/3/10 16:15	-102.82	36.14	1/3/10 19:05	-92.28	46.68
1/3/10 16:20	-102.64	36.32	1/3/10 19:10	-91.69	47.26
1/3/10 16:25	-100.94	38.02	1/3/10 19:15	-92.10	46.86
1/3/10 16:30	-100.74	38.22	1/3/10 19:20	-92.48	46.48
1/3/10 16:35	-99.85	39.11	1/3/10 19:25	-92.00	46.96
1/3/10 16:40	-99.34	39.62	1/3/10 19:30	-92.68	46.27
1/3/10 16:45	-98.96	40.00	1/3/10 19:35	-92.89	46.07
1/3/10 16:50	-98.15	40.81	1/3/10 19:40	-92.89	46.07
1/3/10 16:55	-97.97	40.99	1/3/10 19:45	-93.29	45.66
1/3/10 17:00	-97.05	41.91	1/3/10 19:50	-93.68	45.28
1/3/10 17:05	-96.57	42.39	1/3/10 19:55	-93.68	45.28
1/3/10 17:10	-95.48	43.48	1/3/10 20:00	-94.39	44.57
1/3/10 17:15	-95.48	43.48	1/3/10 20:05	-94.77	44.19
1/3/10 17:20	-95.28	43.68	1/3/10 20:10	-94.67	44.29
1/3/10 17:25	-95.48	43.48	1/3/10 20:15	-95.28	43.68
1/3/10 17:30	-94.08	44.88	1/3/10 20:20	-95.68	43.28
1/3/10 17:35	-93.47	45.49	1/3/10 20:25	-96.37	42.59
1/3/10 17:40	-93.98	44.98	1/3/10 20:30	-96.57	42.39
1/3/10 17:45	-93.19	45.77	1/3/10 20:35	-96.95	42.01
1/3/10 17:50	-93.09	45.87	1/3/10 20:40	-97.66	41.30
1/3/10 17:55	-93.19	45.77	1/3/10 20:45	-98.15	40.81
1/3/10 18:00	-93.19	45.77	1/3/10 20:50	-98.25	40.71
1/3/10 18:05	-92.48	46.48	1/3/10 20:55	-98.45	40.51
1/3/10 18:10	-92.48	46.48	1/3/10 21:00	-99.26	39.70
1/3/10 18:15	-92.20	46.76	1/3/10 21:05	-99.64	39.31
1/3/10 18:20	-91.80	47.16	1/3/10 21:10	-100.25	38.70
1/3/10 18:25	-91.69	47.26	1/3/10 21:15	-101.04	37.92
1/3/10 18:30	-91.69	47.26	1/3/10 21:20	-101.45	37.51
1/3/10 18:35	-92.00	46.96	1/3/10 21:25	-101.45	37.51

Table AII.12: (Continued) West Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1128 on 7 January 2011 which corresponds to a similar tide at 1900 on 2 January 2010. An alternative modeled groundwater impacted layer of 143 cm requires addition of 103 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/3/10 21:30	-102.54	36.42	1/4/10 0:20	-111.18	27.78
1/3/10 21:35	-103.33	35.63	1/4/10 0:25	-110.29	28.67
1/3/10 21:40	-103.33	35.63	1/4/10 0:30	-109.98	28.98
1/3/10 21:45	-103.94	35.02	1/4/10 0:35	-110.49	28.47
1/3/10 21:50	-104.32	34.64	1/4/10 0:40	-109.70	29.26
1/3/10 21:55	-105.03	33.93	1/4/10 0:45	-109.19	29.76
1/3/10 22:00	-105.51	33.45	1/4/10 0:50	-108.20	30.75
1/3/10 22:05	-106.02	32.94	1/4/10 0:55	-108.31	30.65
1/3/10 22:10	-107.21	31.75	1/4/10 1:00	-107.01	31.95
1/3/10 22:15	-106.91	32.05	1/4/10 1:05	-106.22	32.74
1/3/10 22:20	-107.59	31.36	1/4/10 1:10	-105.03	33.93
1/3/10 22:25	-108.41	30.55	1/4/10 1:15	-104.01	34.95
1/3/10 22:30	-108.79	30.17	1/4/10 1:20	-103.02	35.94
1/3/10 22:35	-109.70	29.26	1/4/10 1:25	-102.13	36.83
1/3/10 22:40	-108.99	29.97	1/4/10 1:30	-101.14	37.82
1/3/10 22:45	-109.80	29.15	1/4/10 1:35	-99.64	39.31
1/3/10 22:50	-109.98	28.98	1/4/10 1:40	-99.64	39.31
1/3/10 22:55	-110.08	28.87	1/4/10 1:45	-98.35	40.61
1/3/10 23:00	-110.90	28.06	1/4/10 1:50	-97.87	41.09
1/3/10 23:05	-110.39	28.57	1/4/10 1:55	-96.77	42.18
1/3/10 23:10	-110.49	28.47	1/4/10 2:00	-96.57	42.39
1/3/10 23:15	-110.79	28.16	1/4/10 2:05	-95.86	43.10
1/3/10 23:20	-110.79	28.16	1/4/10 2:10	-95.07	43.89
1/3/10 23:25	-111.00	27.96	1/4/10 2:15	-94.56	44.39
1/3/10 23:30	-110.49	28.47	1/4/10 2:20	-93.29	45.66
1/3/10 23:35	-110.39	28.57	1/4/10 2:25	-93.29	45.66
1/3/10 23:40	-110.79	28.16	1/4/10 2:30	-92.48	46.48
1/3/10 23:45	-110.79	28.16	1/4/10 2:35	-91.69	47.26
1/3/10 23:50	-110.69	28.27	1/4/10 2:40	-91.01	47.95
1/3/10 23:55	-110.79	28.16	1/4/10 2:45	-90.40	48.56
1/4/10 0:00	-110.49	28.47	1/4/10 2:50	-89.10	49.86
1/4/10 0:05	-110.69	28.27	1/4/10 2:55	-88.01	50.95
1/4/10 0:10	-111.18	27.78	1/4/10 3:00	-87.60	51.35
1/4/10 0:15	-110.29	28.67	1/4/10 3:05	-85.83	53.13

Table AII.12: (Continued) West Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1128 on 7 January 2011 which corresponds to a similar tide at 1900 on 2 January 2010. An alternative modeled groundwater impacted layer of 143 cm requires addition of 103 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/4/10 3:10	-84.73	54.22	1/4/10 6:00	-57.48	81.48
1/4/10 3:15	-83.95	55.01	1/4/10 6:05	-57.07	81.88
1/4/10 3:20	-82.65	56.31	1/4/10 6:10	-55.60	83.36
1/4/10 3:25	-81.74	57.22	1/4/10 6:15	-55.98	82.98
1/4/10 3:30	-80.37	58.59	1/4/10 6:20	-54.99	83.97
1/4/10 3:35	-77.98	60.98	1/4/10 6:25	-54.79	84.17
1/4/10 3:40	-77.47	61.49	1/4/10 6:30	-55.09	83.87
1/4/10 3:45	-76.28	62.68	1/4/10 6:35	-54.20	84.75
1/4/10 3:50	-75.39	63.57	1/4/10 6:40	-54.61	84.35
1/4/10 3:55	-73.10	65.86	1/4/10 6:45	-53.49	85.47
1/4/10 4:00	-72.21	66.75	1/4/10 6:50	-54.61	84.35
1/4/10 4:05	-71.81	67.15	1/4/10 6:55	-54.69	84.27
1/4/10 4:10	-71.40	67.56	1/4/10 7:00	-54.41	84.55
1/4/10 4:15	-70.51	68.45	1/4/10 7:05	-54.69	84.27
1/4/10 4:20	-69.22	69.74	1/4/10 7:10	-54.79	84.17
1/4/10 4:25	-68.53	70.43	1/4/10 7:15	-55.40	83.56
1/4/10 4:30	-67.92	71.04	1/4/10 7:20	-55.88	83.08
1/4/10 4:35	-67.44	71.52	1/4/10 7:25	-56.69	82.27
1/4/10 4:40	-66.24	72.72	1/4/10 7:30	-57.28	81.68
1/4/10 4:45	-66.04	72.92	1/4/10 7:35	-57.68	81.28
1/4/10 4:50	-65.15	73.81	1/4/10 7:40	-58.78	80.18
1/4/10 4:55	-64.54	74.42	1/4/10 7:45	-59.66	79.29
1/4/10 5:00	-64.14	74.82	1/4/10 7:50	-60.96	78.00
1/4/10 5:05	-63.45	75.51	1/4/10 7:55	-59.66	79.29
1/4/10 5:10	-63.25	75.71	1/4/10 8:00	-61.26	77.69
1/4/10 5:15	-61.85	77.11	1/4/10 8:05	-62.15	76.80
1/4/10 5:20	-62.15	76.80	1/4/10 8:10	-61.85	77.11
1/4/10 5:25	-62.05	76.91	1/4/10 8:15	-62.76	76.20
1/4/10 5:30	-61.37	77.59	1/4/10 8:20	-62.76	76.20
1/4/10 5:35	-59.97	78.99	1/4/10 8:25	-64.44	74.52
1/4/10 5:40	-59.97	78.99	1/4/10 8:30	-63.86	75.10
1/4/10 5:45	-59.77	79.19	1/4/10 8:35	-64.64	74.32
1/4/10 5:50	-58.37	80.59	1/4/10 8:40	-64.74	74.21
1/4/10 5:55	-58.09	80.87	1/4/10 8:45	-64.44	74.52

Table AII.12: (Continued) West Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1128 on 7 January 2011 which corresponds to a similar tide at 1900 on 2 January 2010. An alternative modeled groundwater impacted layer of 143 cm requires addition of 103 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/4/10 8:50	-64.74	74.21	1/4/10 9:10	-67.44	71.52
1/4/10 8:55	-67.13	71.83	1/4/10 9:15	-69.90	69.06
1/4/10 9:00	-66.93	72.03	1/4/10 9:20	-70.71	68.24
1/4/10 9:05	-68.73	70.23			

Table AII.13: East Loch Platform A time-series radon measurements.

RAD-7 #2356			East Loch Platform A				eff=0.416 cpm/pCi/L				
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
97	10	1	4	11	27	63.0	28.1	30.2	3.2	57.2	4.8
98	10	1	4	11	57	112.0	28.0	67.0	0.0	27.7	1.8
99	10	1	4	12	27	169.0	28.0	62.7	0.0	33.7	0.6
100	10	1	4	12	57	195.0	28.0	59.0	1.0	35.9	1.0
101	10	1	4	13	27	250.0	28.0	59.6	0.8	35.6	0.8
102	10	1	4	13	57	267.0	28.0	48.3	0.0	48.7	1.5
103	10	1	4	14	27	275.0	28.0	42.9	0.7	52.4	0.4
104	10	1	4	14	57	301.0	28.0	40.5	0.3	52.5	2.7
105	10	1	4	15	27	257.0	28.0	47.9	2.0	45.1	1.2
106	10	1	4	15	57	245.0	28.0	39.6	0.4	56.3	1.6
107	10	1	4	16	27	220.0	28.0	38.6	1.8	54.6	1.4
108	10	1	4	16	57	212.0	28.0	46.2	1.4	49.5	1.0

Table AII.14: East Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
97	2218	8	32.5	7	2	5.88	60	5	82.486	26.120
98	2218	9	33.8	7	2	5.88	60	5	160.676	34.719
99	2201	9	34.7	8	2	6.00	0	5	248.121	42.292
100	2218	9	34.7	7	2	5.88	60	5	281.817	44.840
101	2218	8	34.1	7	2	5.88	60	5	362.992	50.519
102	2218	9	32.8	7	2	5.85	70	5	393.624	52.551
103	2218	9	32.2	7	2	5.85	60	5	401.283	52.740
104	2218	9	31.6	7	1	5.85	60	5	422.725	54.595
105	2218	8	31.6	7	1	5.81	60	5	362.992	50.617
106	2218	9	31.9	7	1	5.81	60	5	356.548	50.176
107	2218	8	31.9	7	2	5.85	60	5	312.170	47.093
108	2218	9	31.6	7	1	5.81	60	5	309.110	46.773

Table AII.15: East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	11:10:40	25.89	51.25	33.64	79.7	5.36	0.39	8.38	N/A	N/A
1/4/2010	11:15:40	25.90	51.27	33.65	80.2	5.39	0.38	8.39	N/A	N/A
1/4/2010	11:20:40	25.91	51.28	33.66	80.7	5.42	0.38	8.39	N/A	N/A
1/4/2010	11:25:40	26.02	51.28	33.65	80.1	5.38	0.38	8.40	N/A	N/A
1/4/2010	11:30:40	25.94	51.30	33.67	80.5	5.41	0.38	8.40	N/A	N/A
1/4/2010	11:35:40	25.97	51.30	33.67	80.6	5.41	0.38	8.40	N/A	N/A
1/4/2010	11:40:40	25.91	51.29	33.67	81.9	5.50	0.38	8.40	N/A	N/A
1/4/2010	11:45:40	26.05	51.29	33.66	81.1	5.43	0.38	8.40	N/A	N/A
1/4/2010	11:50:40	26.04	51.24	33.62	82.7	5.55	0.38	8.40	N/A	N/A
1/4/2010	11:55:40	25.97	51.27	33.65	82.3	5.53	0.38	8.40	N/A	N/A
1/4/2010	12:00:40	26.05	51.27	33.64	82.5	5.53	0.38	8.40	N/A	N/A
1/4/2010	12:05:40	26.10	51.28	33.65	82.5	5.52	0.37	8.40	N/A	N/A
1/4/2010	12:10:40	26.24	51.30	33.67	82.4	5.51	0.37	8.40	N/A	N/A
1/4/2010	12:15:40	26.02	51.28	33.66	82.5	5.54	0.37	8.40	N/A	N/A
1/4/2010	12:20:40	26.23	51.29	33.66	83.5	5.58	0.37	8.40	N/A	N/A
1/4/2010	12:25:40	26.18	51.28	33.65	83.4	5.58	0.37	8.40	N/A	N/A
1/4/2010	12:30:40	26.14	51.27	33.65	83.0	5.55	0.37	8.40	N/A	N/A
1/4/2010	12:35:40	26.12	51.23	33.62	83.3	5.58	0.37	8.40	N/A	N/A
1/4/2010	12:40:40	26.30	51.22	33.60	83.8	5.60	0.37	8.40	N/A	N/A
1/4/2010	12:45:40	26.21	51.33	33.69	83.4	5.57	0.37	8.40	N/A	N/A
1/4/2010	12:50:40	26.31	51.27	33.64	83.1	5.55	0.37	8.40	N/A	N/A
1/4/2010	12:55:40	26.53	51.23	33.60	84.1	5.59	0.36	8.40	N/A	N/A
1/4/2010	13:00:40	26.22	51.25	33.63	83.7	5.59	0.37	8.39	N/A	N/A
1/4/2010	13:05:40	26.51	51.21	33.59	84.3	5.61	0.36	8.39	N/A	N/A
1/4/2010	13:10:40	26.20	51.29	33.66	83.7	5.60	0.36	8.39	N/A	N/A
1/4/2010	13:15:40	26.25	51.26	33.64	83.4	5.58	0.36	8.39	N/A	N/A
1/4/2010	13:20:40	26.35	51.24	33.62	83.7	5.59	0.36	8.40	N/A	N/A
1/4/2010	13:25:40	26.25	51.26	33.63	83.2	5.56	0.36	8.40	N/A	N/A
1/4/2010	13:30:40	26.32	51.25	33.62	83.1	5.55	0.36	8.40	N/A	N/A
1/4/2010	13:35:40	26.22	51.27	33.64	82.7	5.53	0.36	8.40	N/A	N/A
1/4/2010	13:40:40	26.35	51.26	33.63	83.0	5.54	0.36	8.40	N/A	N/A
1/4/2010	13:45:40	26.22	51.26	33.64	83.0	5.55	0.36	8.40	N/A	N/A
1/4/2010	13:50:40	26.17	51.27	33.65	82.5	5.52	0.36	8.40	N/A	N/A
1/4/2010	13:55:40	26.08	51.23	33.61	83.0	5.56	0.36	8.40	N/A	N/A
1/4/2010	14:00:40	26.18	51.24	33.62	82.7	5.53	0.36	8.40	N/A	N/A
1/4/2010	14:05:40	26.11	51.23	33.61	83.0	5.56	0.36	8.40	N/A	N/A
1/4/2010	14:10:40	26.32	51.22	33.60	83.0	5.54	0.35	8.40	N/A	N/A
1/4/2010	14:15:40	26.27	51.21	33.60	82.6	5.52	0.36	8.40	N/A	N/A
1/4/2010	14:20:40	26.17	51.21	33.60	82.5	5.52	0.35	8.40	N/A	N/A
1/4/2010	14:25:40	26.22	51.21	33.60	82.4	5.51	0.35	8.40	N/A	N/A

Table AII.15: (Continued) East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	14:30:40	26.08	51.21	33.60	82.4	5.53	0.35	8.41	N/A	N/A
1/4/2010	14:35:40	26.24	51.15	33.55	82.2	5.50	0.35	8.40	N/A	N/A
1/4/2010	14:40:40	26.05	51.16	33.56	82.3	5.52	0.35	8.40	N/A	N/A
1/4/2010	14:45:40	26.12	51.15	33.56	82.2	5.51	0.35	8.40	N/A	N/A
1/4/2010	14:50:40	26.02	51.17	33.58	82.5	5.54	0.35	8.41	N/A	N/A
1/4/2010	14:55:40	26.07	51.15	33.56	83.3	5.59	0.35	8.41	N/A	N/A
1/4/2010	15:00:40	25.95	51.17	33.58	82.7	5.55	0.35	8.41	N/A	N/A
1/4/2010	15:05:40	26.00	51.18	33.58	82.4	5.53	0.35	8.41	N/A	N/A
1/4/2010	15:10:40	26.02	51.22	33.61	81.9	5.50	0.35	8.41	N/A	N/A
1/4/2010	15:15:40	26.01	51.19	33.59	82.8	5.56	0.35	8.41	N/A	N/A
1/4/2010	15:20:40	25.83	51.19	33.59	82.9	5.58	0.35	8.41	N/A	N/A
1/4/2010	15:25:40	25.85	51.19	33.59	82.7	5.56	0.35	8.41	N/A	N/A
1/4/2010	15:30:40	25.86	51.20	33.60	82.3	5.54	0.35	8.42	N/A	N/A
1/4/2010	15:35:40	25.89	51.20	33.60	82.6	5.55	0.35	8.42	N/A	N/A
1/4/2010	15:40:40	25.82	51.18	33.59	82.5	5.56	0.36	8.42	N/A	N/A
1/4/2010	15:45:40	25.83	51.15	33.56	82.9	5.58	0.36	8.41	N/A	N/A
1/4/2010	15:50:40	25.86	51.15	33.56	82.9	5.58	0.36	8.41	N/A	N/A
1/4/2010	15:55:40	25.79	51.16	33.57	83.8	5.64	0.36	8.41	N/A	N/A
1/4/2010	16:00:40	25.78	51.14	33.56	83.7	5.64	0.36	8.41	N/A	N/A
1/4/2010	16:05:40	25.81	51.14	33.56	83.1	5.60	0.36	8.41	N/A	N/A
1/4/2010	16:10:40	25.83	51.14	33.56	82.7	5.57	0.36	8.41	N/A	N/A
1/4/2010	16:15:40	25.78	51.14	33.56	83.1	5.60	0.36	8.41	N/A	N/A
1/4/2010	16:20:40	25.80	51.13	33.55	83.1	5.60	0.36	8.41	N/A	N/A
1/4/2010	16:25:40	25.79	51.13	33.55	82.5	5.56	0.36	8.41	N/A	N/A
1/4/2010	16:30:40	25.77	51.12	33.55	82.0	5.52	0.36	8.41	N/A	N/A
1/4/2010	16:35:40	25.78	51.12	33.54	81.7	5.50	0.36	8.41	N/A	N/A
1/4/2010	16:40:40	25.76	51.13	33.55	82.2	5.54	0.36	8.41	N/A	N/A
1/4/2010	16:45:40	25.77	51.12	33.54	81.6	5.50	0.36	8.41	N/A	N/A
1/4/2010	16:50:40	25.76	51.12	33.55	81.4	5.49	0.36	8.41	N/A	N/A
1/4/2010	16:55:40	25.74	51.11	33.54	81.2	5.47	0.36	8.41	N/A	N/A
1/4/2010	17:00:40	25.73	51.11	33.54	81.0	5.46	0.36	8.41	N/A	N/A
1/4/2010	17:05:40	25.72	51.11	33.54	81.0	5.46	0.36	8.41	N/A	N/A
1/4/2010	17:10:40	25.71	51.11	33.53	81.1	5.47	0.36	8.41	N/A	N/A
1/4/2010	17:15:40	25.72	51.11	33.54	80.6	5.44	0.36	8.41	N/A	N/A
1/4/2010	17:20:40	25.69	51.11	33.54	80.4	5.43	0.36	8.41	N/A	N/A
1/4/2010	17:25:40	25.69	51.11	33.54	80.9	5.46	0.36	8.41	N/A	N/A
1/4/2010	17:30:40	25.69	51.10	33.53	80.8	5.45	0.36	8.41	N/A	N/A
1/4/2010	17:35:40	25.68	51.11	33.54	80.7	5.45	0.36	8.41	N/A	N/A
1/4/2010	17:40:40	25.67	51.12	33.54	80.9	5.46	0.36	8.41	N/A	N/A
1/4/2010	17:45:40	25.66	51.11	33.54	81.0	5.47	0.36	8.41	N/A	N/A

Table AII.15: (Continued) East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	17:50:40	25.65	51.10	33.53	80.5	5.44	0.36	8.41	N/A	N/A
1/4/2010	17:55:40	25.63	51.12	33.55	80.3	5.43	0.36	8.41	N/A	N/A
1/4/2010	18:00:40	25.61	51.11	33.54	80.5	5.44	0.36	8.41	N/A	N/A
1/4/2010	18:05:40	25.62	51.10	33.53	80.4	5.44	0.37	8.41	N/A	N/A
1/4/2010	18:10:40	25.58	51.10	33.54	80.2	5.42	0.37	8.41	N/A	N/A
1/4/2010	18:15:40	25.58	51.11	33.54	80.2	5.42	0.37	8.41	N/A	N/A
1/4/2010	18:20:40	25.56	51.11	33.54	79.6	5.38	0.37	8.41	N/A	N/A
1/4/2010	18:25:40	25.57	51.10	33.53	79.3	5.36	0.37	8.41	N/A	N/A
1/4/2010	18:30:40	25.54	51.10	33.53	78.9	5.34	0.37	8.40	N/A	N/A
1/4/2010	18:35:40	25.54	51.10	33.53	78.9	5.34	0.37	8.40	N/A	N/A
1/4/2010	18:40:40	25.52	51.12	33.55	79.0	5.35	0.37	8.41	N/A	N/A
1/4/2010	18:45:40	25.51	51.12	33.55	78.6	5.32	0.37	8.41	N/A	N/A
1/4/2010	18:50:40	25.51	51.11	33.54	78.2	5.30	0.37	8.40	N/A	N/A
1/4/2010	18:55:40	25.50	51.11	33.54	77.6	5.26	0.37	8.40	N/A	N/A
1/4/2010	19:00:40	25.49	51.13	33.56	78.8	5.33	0.37	8.41	N/A	N/A
1/4/2010	19:05:40	25.47	51.12	33.55	78.1	5.29	0.37	8.40	N/A	N/A
1/4/2010	19:10:40	25.47	51.12	33.55	78.3	5.30	0.37	8.40	N/A	N/A
1/4/2010	19:15:40	25.52	51.14	33.56	79.2	5.36	0.37	8.40	N/A	N/A
1/4/2010	19:20:40	25.49	51.13	33.56	78.3	5.30	0.37	8.40	N/A	N/A
1/4/2010	19:25:40	25.48	51.16	33.58	78.7	5.33	0.37	8.40	N/A	N/A
1/4/2010	19:30:40	25.58	51.19	33.60	78.7	5.32	0.37	8.40	N/A	N/A
1/4/2010	19:35:40	25.62	51.30	33.68	78.3	5.29	0.37	8.40	N/A	N/A
1/4/2010	19:40:40	25.60	51.30	33.68	79.3	5.35	0.37	8.41	N/A	N/A
1/4/2010	19:45:40	25.65	51.29	33.67	79.1	5.34	0.37	8.40	N/A	N/A
1/4/2010	19:50:40	25.64	51.26	33.65	78.7	5.31	0.37	8.40	N/A	N/A
1/4/2010	19:55:40	25.61	51.31	33.69	78.9	5.33	0.37	8.40	N/A	N/A
1/4/2010	20:00:40	25.55	51.22	33.62	77.6	5.25	0.38	8.40	N/A	N/A
1/4/2010	20:05:40	25.49	51.24	33.64	77.3	5.23	0.37	8.40	N/A	N/A
1/4/2010	20:10:40	25.53	51.15	33.57	75.3	5.10	0.37	8.40	N/A	N/A
1/4/2010	20:15:40	25.64	51.16	33.57	74.9	5.06	0.37	8.40	N/A	N/A
1/4/2010	20:20:40	25.82	50.86	33.35	72.9	4.91	0.38	8.39	N/A	N/A
1/4/2010	20:25:40	26.50	50.20	32.85	74.7	4.99	0.38	8.39	N/A	N/A
1/4/2010	20:30:40	26.71	50.06	32.74	75.3	5.02	0.38	8.38	N/A	N/A
1/4/2010	20:35:40	26.79	50.06	32.74	75.4	5.02	0.38	8.38	N/A	N/A
1/4/2010	20:40:40	26.85	50.12	32.78	75.6	5.03	0.38	8.38	N/A	N/A
1/4/2010	20:45:40	27.08	49.99	32.68	76.0	5.03	0.38	8.38	N/A	N/A
1/4/2010	20:50:40	27.04	50.06	32.73	76.8	5.09	0.38	8.37	N/A	N/A
1/4/2010	20:55:40	27.08	50.06	32.73	77.0	5.10	0.38	8.37	N/A	N/A
1/4/2010	21:00:40	26.98	50.07	32.74	76.1	5.05	0.38	8.37	N/A	N/A
1/4/2010	21:05:40	26.93	50.13	32.79	75.0	4.98	0.38	8.37	N/A	N/A

Table AII.15: (Continued) East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	21:10:40	25.66	51.18	33.59	71.3	4.82	0.38	8.35	N/A	N/A
1/4/2010	21:15:40	26.67	50.25	32.88	69.6	4.64	0.38	8.34	N/A	N/A
1/4/2010	21:20:40	25.83	50.82	33.32	71.8	4.84	0.38	8.34	N/A	N/A
1/4/2010	21:25:40	26.36	50.46	33.04	70.3	4.70	0.38	8.34	N/A	N/A
1/4/2010	21:30:40	26.15	50.60	33.15	71.2	4.78	0.38	8.34	N/A	N/A
1/4/2010	21:35:40	26.23	50.58	33.13	72.2	4.84	0.38	8.35	N/A	N/A
1/4/2010	21:40:40	26.28	50.50	33.08	72.4	4.85	0.38	8.36	N/A	N/A
1/4/2010	21:45:40	26.29	50.47	33.05	69.3	4.64	0.38	8.35	N/A	N/A
1/4/2010	21:50:40	26.43	50.54	33.10	71.0	4.74	0.38	8.35	N/A	N/A
1/4/2010	21:55:40	26.71	50.36	32.96	73.9	4.92	0.38	8.37	N/A	N/A
1/4/2010	22:00:40	26.83	50.29	32.91	73.7	4.90	0.38	8.37	N/A	N/A
1/4/2010	22:05:40	26.81	50.30	32.92	74.1	4.93	0.38	8.37	N/A	N/A
1/4/2010	22:10:40	26.88	50.26	32.88	74.4	4.94	0.38	8.37	N/A	N/A
1/4/2010	22:15:40	26.84	50.33	32.93	74.1	4.92	0.38	8.37	N/A	N/A
1/4/2010	22:20:40	26.75	50.38	32.98	73.8	4.91	0.38	8.36	N/A	N/A
1/4/2010	22:25:40	26.60	50.46	33.04	74.6	4.97	0.38	8.36	N/A	N/A
1/4/2010	22:30:40	26.62	50.45	33.03	74.0	4.93	0.38	8.37	N/A	N/A
1/4/2010	22:35:40	26.52	50.50	33.07	73.5	4.90	0.38	8.36	N/A	N/A
1/4/2010	22:40:40	26.68	50.35	32.95	73.8	4.91	0.38	8.37	N/A	N/A
1/4/2010	22:45:40	26.47	50.52	33.09	73.4	4.90	0.38	8.37	N/A	N/A
1/4/2010	22:50:40	26.49	50.49	33.06	73.0	4.87	0.38	8.36	N/A	N/A
1/4/2010	22:55:40	26.35	50.60	33.14	73.2	4.90	0.38	8.36	N/A	N/A
1/4/2010	23:00:40	26.38	50.62	33.16	72.7	4.86	0.38	8.36	N/A	N/A
1/4/2010	23:05:40	26.75	50.31	32.92	72.9	4.85	0.38	8.37	N/A	N/A
1/4/2010	23:10:40	26.32	50.62	33.16	73.1	4.89	0.38	8.36	N/A	N/A
1/4/2010	23:15:40	26.55	50.41	33.00	73.6	4.91	0.38	8.37	N/A	N/A
1/4/2010	23:20:40	26.19	50.64	33.18	72.8	4.88	0.38	8.36	N/A	N/A
1/4/2010	23:25:40	26.31	50.65	33.18	72.1	4.83	0.38	8.36	N/A	N/A
1/4/2010	23:30:40	26.26	50.66	33.19	72.4	4.85	0.38	8.36	N/A	N/A
1/4/2010	23:35:40	26.31	50.69	33.21	72.4	4.84	0.38	8.36	N/A	N/A
1/4/2010	23:40:40	26.29	50.69	33.21	73.2	4.90	0.38	8.37	N/A	N/A
1/4/2010	23:45:40	26.32	50.68	33.21	74.1	4.96	0.38	8.36	N/A	N/A
1/4/2010	23:50:40	26.28	50.66	33.19	74.0	4.95	0.38	8.37	N/A	N/A
1/4/2010	23:55:40	26.36	50.55	33.11	73.3	4.91	0.38	8.37	N/A	N/A
1/5/2010	0:00:40	26.33	50.61	33.15	75.0	5.02	0.38	8.37	N/A	N/A
1/5/2010	0:05:40	26.36	50.59	33.14	74.0	4.95	0.38	8.37	N/A	N/A
1/5/2010	0:10:40	26.26	50.73	33.24	72.3	4.84	0.38	8.36	N/A	N/A
1/5/2010	0:15:40	26.31	50.67	33.20	72.9	4.88	0.38	8.36	N/A	N/A
1/5/2010	0:20:40	26.26	50.68	33.21	71.4	4.78	0.38	8.36	N/A	N/A
1/5/2010	0:25:40	26.20	50.78	33.28	74.3	4.98	0.38	8.37	N/A	N/A

Table AII.15: (Continued) East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	0:30:40	26.25	50.71	33.23	74.5	4.99	0.38	8.38	N/A	N/A
1/5/2010	0:35:40	26.19	50.80	33.30	75.8	5.08	0.38	8.38	N/A	N/A
1/5/2010	0:40:40	26.17	50.79	33.29	75.3	5.05	0.38	8.38	N/A	N/A
1/5/2010	0:45:40	26.19	50.80	33.29	76.5	5.13	0.38	8.39	N/A	N/A
1/5/2010	0:50:40	26.16	50.78	33.28	75.9	5.09	0.38	8.39	N/A	N/A
1/5/2010	0:55:40	26.13	50.81	33.30	76.4	5.12	0.38	8.39	N/A	N/A
1/5/2010	1:00:40	26.16	50.78	33.28	78.0	5.23	0.38	8.39	N/A	N/A
1/5/2010	1:05:40	26.01	50.73	33.25	78.0	5.24	0.38	8.39	N/A	N/A
1/5/2010	1:10:40	26.00	50.70	33.23	77.7	5.22	0.38	8.39	N/A	N/A
1/5/2010	1:15:40	26.07	50.78	33.29	73.2	4.91	0.38	8.38	N/A	N/A
1/5/2010	1:20:40	26.15	50.77	33.28	77.5	5.20	0.38	8.38	N/A	N/A
1/5/2010	1:25:40	26.17	50.77	33.28	80.5	5.40	0.37	8.40	N/A	N/A
1/5/2010	1:30:40	26.01	50.64	33.18	79.2	5.33	0.38	8.39	N/A	N/A
1/5/2010	1:35:40	25.88	50.54	33.11	77.7	5.24	0.38	8.39	N/A	N/A
1/5/2010	1:40:40	25.89	50.46	33.05	78.8	5.31	0.37	8.39	N/A	N/A
1/5/2010	1:45:40	25.89	50.34	32.97	78.1	5.27	0.38	8.39	N/A	N/A
1/5/2010	1:50:40	25.85	50.20	32.87	77.7	5.25	0.38	8.39	N/A	N/A
1/5/2010	1:55:40	25.97	50.24	32.89	77.9	5.25	0.38	8.39	N/A	N/A
1/5/2010	2:00:40	25.89	50.31	32.95	78.5	5.30	0.38	8.39	N/A	N/A
1/5/2010	2:05:40	25.85	50.37	32.99	79.4	5.36	0.38	8.39	N/A	N/A
1/5/2010	2:10:40	25.94	50.37	32.99	78.1	5.27	0.37	8.39	N/A	N/A
1/5/2010	2:15:40	25.92	50.46	33.06	77.7	5.24	0.37	8.39	N/A	N/A
1/5/2010	2:20:40	25.91	50.48	33.07	77.8	5.25	0.37	8.39	N/A	N/A
1/5/2010	2:25:40	25.91	50.51	33.09	76.8	5.18	0.37	8.39	N/A	N/A
1/5/2010	2:30:40	25.92	50.41	33.02	76.0	5.13	0.37	8.39	N/A	N/A
1/5/2010	2:35:40	25.92	50.45	33.05	76.4	5.15	0.37	8.38	N/A	N/A
1/5/2010	2:40:40	25.90	50.47	33.06	75.2	5.07	0.37	8.38	N/A	N/A
1/5/2010	2:45:40	25.88	50.51	33.09	74.3	5.01	0.37	8.38	N/A	N/A
1/5/2010	2:50:40	25.87	50.49	33.08	73.8	4.98	0.37	8.38	N/A	N/A
1/5/2010	2:55:40	25.84	50.40	33.01	73.5	4.96	0.37	8.38	N/A	N/A
1/5/2010	3:00:40	25.85	50.50	33.08	73.7	4.97	0.37	8.38	N/A	N/A
1/5/2010	3:05:40	25.83	50.50	33.08	74.0	4.99	0.37	8.38	N/A	N/A
1/5/2010	3:10:40	25.75	50.41	33.02	75.3	5.09	0.37	8.39	N/A	N/A
1/5/2010	3:15:40	25.73	50.39	33.01	76.0	5.14	0.37	8.39	N/A	N/A
1/5/2010	3:20:40	25.72	50.44	33.04	75.8	5.13	0.37	8.39	N/A	N/A
1/5/2010	3:25:40	25.71	50.42	33.03	75.5	5.11	0.37	8.39	N/A	N/A
1/5/2010	3:30:40	25.71	50.43	33.04	75.5	5.11	0.37	8.39	N/A	N/A
1/5/2010	3:35:40	25.74	50.51	33.09	73.9	5.00	0.37	8.39	N/A	N/A
1/5/2010	3:40:40	25.68	50.41	33.03	74.8	5.06	0.37	8.39	N/A	N/A
1/5/2010	3:45:40	25.69	50.42	33.03	75.1	5.08	0.37	8.39	N/A	N/A

Table AII.15: (Continued) East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	3:50:40	25.70	50.40	33.02	76.2	5.16	0.37	8.39	N/A	N/A
1/5/2010	3:55:40	25.70	50.43	33.03	75.9	5.14	0.37	8.39	N/A	N/A
1/5/2010	4:00:40	25.69	50.43	33.04	75.9	5.14	0.37	8.40	N/A	N/A
1/5/2010	4:05:40	25.67	50.44	33.04	75.9	5.14	0.37	8.40	N/A	N/A
1/5/2010	4:10:40	25.65	50.38	33.00	77.1	5.22	0.37	8.40	N/A	N/A
1/5/2010	4:15:40	25.63	50.36	32.99	77.6	5.26	0.37	8.40	N/A	N/A
1/5/2010	4:20:40	25.64	50.31	32.95	77.7	5.27	0.37	8.40	N/A	N/A
1/5/2010	4:25:40	25.64	50.36	32.99	77.4	5.24	0.37	8.40	N/A	N/A
1/5/2010	4:30:40	25.63	50.29	32.94	77.5	5.25	0.37	8.40	N/A	N/A
1/5/2010	4:35:40	25.61	50.28	32.93	78.1	5.29	0.37	8.40	N/A	N/A
1/5/2010	4:40:40	25.64	50.35	32.98	78.1	5.29	0.37	8.40	N/A	N/A
1/5/2010	4:45:40	25.62	50.33	32.97	77.9	5.28	0.37	8.40	N/A	N/A
1/5/2010	4:50:40	25.61	50.35	32.98	77.2	5.24	0.37	8.40	N/A	N/A
1/5/2010	4:55:40	25.60	50.34	32.97	76.9	5.22	0.37	8.40	N/A	N/A
1/5/2010	5:00:40	25.61	50.39	33.01	76.4	5.18	0.37	8.40	N/A	N/A
1/5/2010	5:05:40	25.63	50.44	33.04	76.3	5.17	0.38	8.40	N/A	N/A
1/5/2010	5:10:40	25.65	50.45	33.06	75.1	5.09	0.38	8.39	N/A	N/A
1/5/2010	5:15:40	25.66	50.50	33.09	75.6	5.12	0.38	8.39	N/A	N/A
1/5/2010	5:20:40	25.67	50.52	33.11	74.0	5.01	0.38	8.39	N/A	N/A
1/5/2010	5:25:40	25.70	50.54	33.12	73.0	4.94	0.38	8.39	N/A	N/A
1/5/2010	5:30:40	25.70	50.57	33.14	73.0	4.94	0.38	8.38	N/A	N/A
1/5/2010	5:35:40	25.71	50.64	33.19	69.4	4.69	0.38	8.38	N/A	N/A
1/5/2010	5:40:40	25.72	50.58	33.15	71.8	4.86	0.38	8.38	N/A	N/A
1/5/2010	5:45:40	25.75	50.67	33.21	70.2	4.74	0.38	8.37	N/A	N/A
1/5/2010	5:50:40	25.77	50.76	33.28	65.9	4.45	0.38	8.35	N/A	N/A
1/5/2010	5:55:40	25.77	50.74	33.26	66.6	4.50	0.38	8.35	N/A	N/A
1/5/2010	6:00:40	25.72	50.72	33.25	67.2	4.54	0.38	8.36	N/A	N/A
1/5/2010	6:05:40	25.76	50.74	33.26	66.4	4.49	0.38	8.35	N/A	N/A
1/5/2010	6:10:40	25.74	50.73	33.26	67.7	4.58	0.38	8.36	N/A	N/A
1/5/2010	6:15:40	25.73	50.73	33.26	68.1	4.60	0.38	8.36	N/A	N/A
1/5/2010	6:20:40	25.69	50.66	33.21	69.9	4.73	0.38	8.37	N/A	N/A
1/5/2010	6:25:40	25.65	50.62	33.18	71.7	4.86	0.38	8.37	N/A	N/A
1/5/2010	6:30:40	25.66	50.61	33.17	70.4	4.77	0.38	8.37	N/A	N/A
1/5/2010	6:35:40	25.64	50.64	33.19	69.9	4.73	0.38	8.37	N/A	N/A
1/5/2010	6:40:40	25.65	50.64	33.20	70.0	4.74	0.38	8.37	N/A	N/A
1/5/2010	6:45:40	25.66	50.63	33.19	69.4	4.69	0.38	8.37	N/A	N/A
1/5/2010	6:50:40	25.58	50.58	33.15	70.1	4.75	0.38	8.37	N/A	N/A
1/5/2010	6:55:40	25.66	50.65	33.20	67.7	4.58	0.38	8.36	N/A	N/A
1/5/2010	7:00:40	25.59	50.61	33.17	69.3	4.69	0.38	8.37	N/A	N/A
1/5/2010	7:05:40	25.58	50.61	33.17	70.1	4.75	0.39	8.37	N/A	N/A

Table AII.15: (Continued) East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	7:10:40	25.58	50.62	33.18	69.8	4.73	0.39	8.37	N/A	N/A
1/5/2010	7:15:40	25.58	50.64	33.19	69.0	4.67	0.39	8.37	N/A	N/A
1/5/2010	7:20:40	25.48	50.56	33.14	69.6	4.73	0.39	8.37	N/A	N/A
1/5/2010	7:25:40	25.41	50.46	33.07	70.8	4.82	0.39	8.37	N/A	N/A
1/5/2010	7:30:40	25.39	50.41	33.03	70.3	4.78	0.39	8.37	N/A	N/A
1/5/2010	7:35:40	25.49	50.52	33.11	69.5	4.72	0.39	8.37	N/A	N/A
1/5/2010	7:40:40	25.44	50.48	33.08	69.9	4.75	0.39	8.37	N/A	N/A
1/5/2010	7:45:40	25.50	50.56	33.14	69.4	4.71	0.39	8.37	N/A	N/A
1/5/2010	7:50:40	25.49	50.54	33.13	70.3	4.77	0.39	8.37	N/A	N/A
1/5/2010	7:55:40	25.53	50.56	33.13	69.1	4.69	0.39	8.37	N/A	N/A
1/5/2010	8:00:40	25.59	50.58	33.15	66.8	4.53	0.39	8.36	N/A	N/A
1/5/2010	8:05:40	25.46	50.55	33.13	69.6	4.72	0.39	8.36	N/A	N/A
1/5/2010	8:10:40	25.32	50.38	33.01	71.5	4.87	0.39	8.37	N/A	N/A
1/5/2010	8:15:40	25.39	50.22	32.89	71.9	4.90	0.39	8.37	N/A	N/A
1/5/2010	8:20:40	25.43	50.22	32.89	71.3	4.85	0.40	8.37	N/A	N/A
1/5/2010	8:25:40	25.44	50.35	32.99	70.5	4.79	0.40	8.37	N/A	N/A
1/5/2010	8:30:40	25.54	50.35	32.98	70.8	4.81	0.40	8.37	N/A	N/A
1/5/2010	8:35:40	25.51	50.37	33.00	69.7	4.73	0.40	8.37	N/A	N/A
1/5/2010	8:40:40	25.52	50.37	33.00	70.2	4.76	0.40	8.37	N/A	N/A
1/5/2010	8:45:40	25.50	50.40	33.02	69.4	4.71	0.40	8.36	N/A	N/A
1/5/2010	8:50:40	25.52	50.42	33.03	70.2	4.77	0.40	8.36	N/A	N/A
1/5/2010	8:55:40	25.52	50.46	33.06	68.7	4.66	0.40	8.36	N/A	N/A
1/5/2010	9:00:40	25.54	50.49	33.09	67.5	4.58	0.40	8.36	N/A	N/A
1/5/2010	9:05:40	25.55	50.49	33.09	66.5	4.51	0.40	8.36	N/A	N/A
1/5/2010	9:10:40	25.57	50.48	33.08	70.1	4.75	0.40	8.36	N/A	N/A
1/5/2010	9:15:40	25.60	50.50	33.09	67.9	4.60	0.40	8.36	N/A	N/A
1/5/2010	9:20:40	25.61	50.53	33.11	67.3	4.56	0.40	8.36	N/A	N/A
1/5/2010	9:25:40	25.69	50.61	33.17	64.8	4.39	0.40	8.35	N/A	N/A
1/5/2010	9:30:40	25.69	50.62	33.17	65.3	4.42	0.40	8.35	N/A	N/A
1/5/2010	9:35:40	25.71	50.64	33.19	65.7	4.44	0.40	8.35	N/A	N/A
1/5/2010	9:40:40	25.68	50.60	33.16	66.8	4.52	0.40	8.35	N/A	N/A
1/5/2010	9:45:40	25.68	50.60	33.16	66.0	4.46	0.41	8.35	N/A	N/A
1/5/2010	9:50:40	25.67	50.58	33.15	65.7	4.45	0.41	8.35	N/A	N/A
1/5/2010	9:55:40	25.65	50.57	33.14	66.2	4.48	0.40	8.35	N/A	N/A
1/5/2010	10:00:40	25.64	50.54	33.12	66.2	4.48	0.41	8.35	N/A	N/A
1/5/2010	10:05:40	25.62	50.54	33.12	65.9	4.47	0.41	8.35	N/A	N/A
1/5/2010	10:10:40	25.65	50.55	33.12	65.6	4.44	0.41	8.34	N/A	N/A
1/5/2010	10:15:40	25.67	50.56	33.13	65.8	4.45	0.41	8.35	N/A	N/A
1/5/2010	10:20:40	25.68	50.55	33.13	66.1	4.47	0.41	8.35	N/A	N/A
1/5/2010	10:25:40	25.54	50.29	32.93	69.7	4.74	0.41	8.35	N/A	N/A

Table AII.15: (Continued) East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	10:30:40	25.53	50.22	32.89	69.4	4.72	0.41	8.35	N/A	N/A
1/5/2010	10:35:40	25.52	50.11	32.80	69.1	4.70	0.41	8.35	N/A	N/A
1/5/2010	10:40:40	25.52	50.08	32.78	70.0	4.76	0.41	8.35	N/A	N/A
1/5/2010	10:45:40	25.53	50.08	32.78	69.5	4.73	0.41	8.35	N/A	N/A
1/5/2010	10:50:40	25.57	50.15	32.84	68.1	4.62	0.41	8.35	N/A	N/A
1/5/2010	10:55:40	25.60	50.22	32.89	69.0	4.68	0.41	8.35	N/A	N/A
1/5/2010	11:00:40	25.60	50.15	32.83	67.7	4.60	0.40	8.35	N/A	N/A
1/5/2010	11:05:40	25.60	50.16	32.84	68.4	4.65	0.41	8.34	N/A	N/A
1/5/2010	11:10:40	25.63	50.18	32.86	67.5	4.58	0.41	8.34	N/A	N/A
1/5/2010	11:15:40	25.61	50.11	32.81	67.9	4.61	0.41	8.34	N/A	N/A
1/5/2010	11:20:40	25.65	50.19	32.86	66.1	4.48	0.41	8.34	N/A	N/A
1/5/2010	11:25:40	25.71	50.21	32.87	64.2	4.35	0.40	8.34	N/A	N/A
1/5/2010	11:30:40	25.74	50.23	32.89	64.6	4.37	0.40	8.34	N/A	N/A
1/5/2010	11:35:40	25.75	50.27	32.92	64.4	4.36	0.40	8.34	N/A	N/A
1/5/2010	11:40:40	25.79	50.33	32.96	64.1	4.33	0.40	8.34	N/A	N/A
1/5/2010	11:45:40	25.79	50.32	32.95	64.0	4.33	0.40	8.34	N/A	N/A
1/5/2010	11:50:40	25.79	50.32	32.95	64.1	4.34	0.40	8.34	N/A	N/A
1/5/2010	11:55:40	25.80	50.32	32.95	64.4	4.35	0.40	8.34	N/A	N/A
1/5/2010	12:00:40	25.83	50.37	32.99	64.2	4.34	0.40	8.34	N/A	N/A
1/5/2010	12:05:40	25.87	50.46	33.05	62.1	4.19	0.40	8.33	N/A	N/A
1/5/2010	12:10:40	25.89	50.47	33.06	61.9	4.17	0.40	8.33	N/A	N/A
1/5/2010	12:15:40	25.93	50.52	33.10	61.1	4.11	0.40	8.32	N/A	N/A
1/5/2010	12:20:40	25.94	50.50	33.08	60.7	4.09	0.40	8.32	N/A	N/A
1/5/2010	12:25:40	25.94	50.49	33.08	60.6	4.08	0.40	8.32	N/A	N/A
1/5/2010	12:30:40	25.94	50.50	33.08	61.6	4.15	0.40	8.32	N/A	N/A
1/5/2010	12:35:40	25.94	50.53	33.11	60.6	4.09	0.40	8.32	N/A	N/A
1/5/2010	12:40:40	25.95	50.55	33.12	59.1	3.98	0.40	8.32	N/A	N/A
1/5/2010	12:45:40	25.98	50.51	33.09	59.8	4.03	0.40	8.32	N/A	N/A
1/5/2010	12:50:40	26.00	50.53	33.10	62.8	4.23	0.40	8.32	N/A	N/A
1/5/2010	12:55:40	26.03	50.56	33.13	60.9	4.10	0.40	8.32	N/A	N/A
1/5/2010	13:00:40	26.04	50.58	33.14	62.0	4.17	0.39	8.32	N/A	N/A
1/5/2010	13:05:40	26.06	50.48	33.06	63.7	4.28	0.40	8.33	N/A	N/A
1/5/2010	13:10:40	26.07	50.54	33.11	62.2	4.18	0.39	8.32	N/A	N/A
1/5/2010	13:15:40	26.07	50.54	33.11	61.2	4.12	0.39	8.32	N/A	N/A
1/5/2010	13:20:40	26.10	50.51	33.08	61.6	4.14	0.39	8.32	N/A	N/A
1/5/2010	13:25:40	26.10	50.50	33.08	61.1	4.11	0.39	8.32	N/A	N/A
1/5/2010	13:30:40	26.11	50.49	33.07	62.2	4.18	0.39	8.32	N/A	N/A
1/5/2010	13:35:40	26.09	50.51	33.08	61.7	4.15	0.39	8.32	N/A	N/A
1/5/2010	13:40:40	26.07	50.48	33.06	58.9	3.96	0.39	8.31	N/A	N/A
1/5/2010	13:45:40	26.09	50.45	33.04	61.9	4.16	0.39	8.32	N/A	N/A

Table AII.15: (Continued) East Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	13:50:40	26.10	50.44	33.03	61.7	4.14	0.39	8.32	N/A	N/A
1/5/2010	13:55:40	26.10	50.42	33.02	62.6	4.21	0.39	8.32	N/A	N/A
1/5/2010	14:00:40	26.12	50.44	33.03	63.4	4.26	0.39	8.32	N/A	N/A
1/5/2010	14:05:40	26.11	50.45	33.04	61.3	4.12	0.39	8.32	N/A	N/A
1/5/2010	14:10:40	26.13	50.49	33.07	63.1	4.24	0.39	8.32	N/A	N/A
1/5/2010	14:15:40	26.10	50.44	33.04	63.3	4.26	0.39	8.33	N/A	N/A
1/5/2010	14:20:40	26.13	50.51	33.08	62.2	4.18	0.39	8.32	N/A	N/A
1/5/2010	14:25:40	26.11	50.52	33.10	62.9	4.23	0.39	8.33	N/A	N/A
1/5/2010	14:30:40	26.12	50.55	33.12	63.5	4.26	0.39	8.33	N/A	N/A
1/5/2010	14:35:40	26.12	50.56	33.12	64.3	4.32	0.39	8.33	N/A	N/A
1/5/2010	14:40:40	26.11	50.52	33.09	67.1	4.51	0.39	8.34	N/A	N/A
1/5/2010	14:45:40	26.12	50.52	33.09	68.1	4.58	0.39	8.34	N/A	N/A
1/5/2010	14:50:40	26.13	50.58	33.13	66.8	4.49	0.39	8.34	N/A	N/A
1/5/2010	14:55:40	26.17	50.63	33.17	65.2	4.38	0.39	8.34	N/A	N/A

Table AII.16: East Loch Platform A wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100104	10:53	5.1	20100104	13:53	4.6
20100104	11:53	5.7	20100104	14:53	5.1
20100104	12:00	5.7	20100104	15:53	4.6
20100104	12:53	4.6	20100104	16:53	7.2

Table AII.17: East Loch Platform A depth profile collected on 5 January 2011 using an YSI 6600 V2-4.

Depth m	Time hh:mm	Temp. °C	SpCond mS/cm	Sal.	pH	ORP	Chl µg/L	DO %	DO mg
surface	10:44	27.22	50.32	32.88	8.02	161.1	2.3	81.1	0.00
0.46	10:45	26.10	51.72	33.94	8.03	160.9	2.1	82.7	0.46
0.83	10:47	26.13	51.97	34.96	8.04	159.9	4.3	81.9	0.83

Table AII.18: East Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1047 on 5 January 2011 which corresponds to a similar tide at 1055 on 4 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/4/10 10:55	-86.13	40.00	1/4/10 13:55	-117.96	8.17
1/4/10 11:00	-87.91	38.22	1/4/10 14:00	-116.15	9.98
1/4/10 11:05	-86.82	39.31	1/4/10 14:05	-116.46	9.67
1/4/10 11:10	-89.99	36.14	1/4/10 14:10	-116.66	9.47
1/4/10 11:15	-90.09	36.04	1/4/10 14:15	-116.66	9.47
1/4/10 11:20	-91.80	34.34	1/4/10 14:20	-116.46	9.67
1/4/10 11:25	-91.90	34.23	1/4/10 14:25	-115.27	10.87
1/4/10 11:30	-94.87	31.26	1/4/10 14:30	-115.06	11.07
1/4/10 11:35	-95.38	30.75	1/4/10 14:35	-113.77	12.36
1/4/10 11:40	-96.57	29.56	1/4/10 14:40	-113.77	12.36
1/4/10 11:45	-97.87	28.27	1/4/10 14:45	-113.18	12.95
1/4/10 11:50	-98.65	27.48	1/4/10 14:50	-111.68	14.45
1/4/10 11:55	-100.15	25.98	1/4/10 14:55	-111.89	14.24
1/4/10 12:00	-101.24	24.89	1/4/10 15:00	-110.90	15.24
1/4/10 12:05	-102.64	23.49	1/4/10 15:05	-110.49	15.64
1/4/10 12:10	-103.02	23.11	1/4/10 15:10	-109.98	16.15
1/4/10 12:15	-104.72	21.41	1/4/10 15:15	-110.49	15.64
1/4/10 12:20	-106.71	19.43	1/4/10 15:20	-108.79	17.34
1/4/10 12:25	-107.59	18.54	1/4/10 15:25	-109.70	16.43
1/4/10 12:30	-108.10	18.03	1/4/10 15:30	-107.70	18.44
1/4/10 12:35	-108.79	17.34	1/4/10 15:35	-108.41	17.72
1/4/10 12:40	-110.59	15.54	1/4/10 15:40	-108.51	17.62
1/4/10 12:45	-111.58	14.55	1/4/10 15:45	-107.59	18.54
1/4/10 12:50	-113.28	12.85	1/4/10 15:50	-106.60	19.53
1/4/10 12:55	-112.67	13.46	1/4/10 15:55	-107.21	18.92
1/4/10 13:00	-113.08	13.05	1/4/10 16:00	-106.71	19.43
1/4/10 13:05	-113.56	12.57	1/4/10 16:05	-106.12	20.01
1/4/10 13:10	-114.38	11.76	1/4/10 16:10	-105.82	20.32
1/4/10 13:15	-114.96	11.17	1/4/10 16:15	-105.51	20.62
1/4/10 13:20	-114.96	11.17	1/4/10 16:20	-104.93	21.20
1/4/10 13:25	-115.37	10.76	1/4/10 16:25	-104.11	22.02
1/4/10 13:30	-115.67	10.46	1/4/10 16:30	-103.12	23.01
1/4/10 13:35	-116.56	9.57	1/4/10 16:35	-102.34	23.79
1/4/10 13:40	-116.46	9.67	1/4/10 16:40	-100.94	25.19
1/4/10 13:45	-117.96	8.17	1/4/10 16:45	-100.15	25.98
1/4/10 13:50	-116.46	9.67	1/4/10 16:50	-98.96	27.17

Table AII.18: (Continued) East Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1047 on 5 January 2011 which corresponds to a similar tide at 1055 on 4 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/4/10 16:55	-98.07	28.06	1/4/10 17:00	-97.05	29.08

Table AII.19: East Loch Platform B time-series radon measurements.

RAD-7 #2357				East Loch Platform B				eff=0.406 cpm/pCi/L			
Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
229	10	1	4	14	39	620	28.2	65.3	0.7	29.2	0.2
230	10	1	4	15	9	2000	27.9	77.2	0.3	18.1	0.2
231	10	1	4	15	39	2469	27.8	62.9	0.5	33.3	0.1
232	10	1	4	16	9	2402	27.8	46.3	1.0	50.0	0.3
233	10	1	4	16	39	2280	27.8	41.1	1.1	55.1	0.4
234	10	1	4	17	9	1903	27.9	32.9	0.9	63.6	0.3
235	10	1	4	17	39	1261	28.0	21.3	1.4	75.3	0.3
236	10	1	4	18	9	818	28.1	14.2	1.0	83.3	0.3
237	10	1	4	18	39	583	28.1	15.3	1.7	81.0	0.7
238	10	1	4	19	9	424	28.2	26.4	0.7	70.3	0.5
239	10	1	4	19	39	350	28.2	37.7	1.4	59.2	0.0
240	10	1	4	20	9	325	28.2	40.9	0.9	55.4	0.3
241	10	1	4	20	39	270	28.2	37.8	1.5	56.7	1.1
242	10	1	4	21	9	263	28.2	42.2	1.5	53.6	0.8
243	10	1	4	21	39	283	28.2	41.7	1.4	53.7	1.1
244	10	1	4	22	9	225	28.2	44.5	0.5	53.3	1.3
245	10	1	4	22	39	206	28.2	39.3	2.0	55.4	0.5
246	10	1	4	23	9	254	28.2	52.8	1.2	43.3	0.4
247	10	1	4	23	39	299	28.2	51.5	1.0	42.2	1.0
248	10	1	5	0	9	266	28.2	42.5	0.4	53.8	0.4
249	10	1	5	0	39	229	28.2	43.2	0.4	52.9	0.0
250	10	1	5	1	9	262	28.2	49.2	0.8	47.0	0.0
251	10	1	5	1	39	290	28.2	47.9	0.7	46.9	0.0
252	10	1	5	2	9	302	28.2	45.7	0.0	49.7	1.0
253	10	1	5	2	39	279	28.2	45.9	1.1	50.2	1.1
254	10	1	5	3	9	310	28.2	50.3	0.7	42.9	0.3
255	10	1	5	3	39	303	28.2	53.5	0.7	41.9	0.0
256	10	1	5	4	9	330	28.2	47.9	0.9	48.2	0.0
257	10	1	5	4	39	292	28.2	44.2	1.0	51.0	0.0
258	10	1	5	5	9	266	28.2	35.0	0.0	63.5	0.0
259	10	1	5	5	39	252	28.2	39.3	1.2	56.8	0.4
260	10	1	5	6	9	224	28.2	40.2	0.0	57.6	0.5
261	10	1	5	6	39	226	28.2	45.6	1.3	50.5	0.5
262	10	1	5	7	9	216	28.2	42.1	2.3	50.9	0.9
263	10	1	5	7	39	196	28.2	45.4	0.0	50.5	0.5
264	10	1	5	8	9	167	28.2	41.9	1.2	54.5	1.8
265	10	1	5	8	39	193	28.2	44.6	1.0	51.3	0.0

Table AII.19: (Continued) East Loch Platform B time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
266	10	1	5	9	9	190.0	28.2	37.4	0.5	55.8	1.1
267	10	1	5	9	39	168	28.2	35.7	1.2	59.5	0.0
268	10	1	5	10	9	307	28.2	65.8	1.0	30.6	0.0
269	10	1	5	10	39	523	28.1	69.0	0.4	27.7	0.0
270	10	1	5	11	9	733	28.1	66.2	0.1	30.8	0.1
271	10	1	5	11	39	1465	28.0	67.9	0.6	27.2	0.1
272	10	1	5	12	9	1799	27.9	57.9	0.5	38.4	0.1
273	10	1	5	12	39	1770	27.9	51.6	0.5	44.9	0.1
274	10	1	5	13	9	2196	27.8	52.4	0.3	43.8	0.2
275	10	1	5	13	39	1860	27.9	36.8	0.7	58.6	0.1
276	10	1	5	14	9	1332	28.0	19.2	0.9	74.6	1.0
277	10	1	5	14	39	1162	28.0	23.8	0.7	70.4	0.5
278	10	1	5	15	9	1144	28.0	25.4	1.5	67.1	0.5
279	10	1	5	17	35	0	0.0	0.0	0.0	0.0	0.0
280	10	1	5	17	40	1	0.0	0.0	0.0	100.0	0.0

Table AII.20: East Loch Platform B time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
229	2218	9	35.6	7	2	6.94	70	133	1308.825	136.696
230	2218	8	36.2	7	2	6.94	70	133	5036.813	263.399
231	2218	8	34.7	7	1	6.97	70	133	5083.141	264.774
232	2218	8	33.5	6	1	6.94	70	133	3632.220	225.378
233	2218	8	32.5	6	1	6.97	70	133	3049.765	207.090
234	2218	9	31.3	6	1	6.97	70	133	2033.156	170.223
235	2218	8	29.5	6	1	7.00	70	133	867.469	113.467
236	2218	8	28.0	6	1	6.97	70	133	372.633	76.579
237	2218	8	27.1	6	1	6.97	70	133	281.405	68.180
238	2218	8	26.1	6	1	6.97	70	133	358.715	75.170
239	2236	9	25.5	6	1	6.97	70	133	426.202	80.930
240	2218	8	24.9	6	1	7.00	70	133	429.431	81.210
241	2218	8	24.9	6	1	6.97	70	133	326.109	72.313
242	2218	8	24.9	6	1	7.00	70	133	355.169	74.799
243	2201	9	24.6	6	1	7.00	70	133	377.770	77.197
244	2218	9	24.6	5	1	7.00	70	133	319.369	71.613
245	2218	8	24.6	6	1	6.97	70	133	261.302	64.876

Table AII.20: (Continued) East Loch Platform B time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
246	2218	8	24.6	6	1	7.00	70	133	429.051	81.416
247	2218	8	24.6	6	1	6.97	70	133	490.778	87.113
248	2218	8	24.6	6	1	7.00	70	133	364.855	75.406
249	2218	8	24.9	6	1	7.00	70	133	319.369	70.971
250	2218	8	24.9	6	1	6.97	70	133	416.516	80.086
251	2218	8	24.9	6	1	7.00	70	133	448.804	82.865
252	2218	8	24.9	6	1	6.97	70	133	442.346	82.865
253	2218	8	24.9	6	1	6.97	70	133	410.058	80.086
254	2218	9	24.6	6	1	7.00	70	133	503.694	87.371
255	2218	8	24.6	6	1	7.00	70	133	523.066	88.903
256	2218	9	24.6	6	1	7.00	70	133	510.151	87.885
257	2218	9	24.9	6	1	7.00	70	133	416.516	80.086
258	2218	8	24.9	6	1	6.97	70	133	300.279	69.067
259	2218	8	24.6	6	1	6.97	70	133	316.143	70.971
260	2218	8	24.9	6	1	6.97	70	133	287.109	67.999
261	2218	8	24.9	6	1	6.97	70	133	329.047	72.249
262	2218	9	24.6	6	1	7.00	70	133	290.335	68.336
263	2218	9	24.6	6	1	6.97	70	133	283.883	67.660
264	2218	8	24.9	6	1	7.00	70	133	222.590	61.198
265	2218	9	25.8	6	2	7.00	70	133	277.432	66.631
266	2218	8	27.1	6	1	6.97	70	133	225.816	61.198
267	2218	8	27.7	6	1	6.97	70	133	193.557	56.843
268	2218	9	28.0	6	1	6.94	70	133	652.219	98.464
269	2218	9	28.9	6	1	7.00	70	133	1167.667	129.552
270	2218	8	30.1	6	1	6.97	70	133	1570.142	149.215
271	2218	9	30.4	7	1	6.94	70	133	3231.967	211.843
272	2218	9	32.2	7	1	6.91	70	133	3397.517	217.125
273	2218	8	33.5	7	1	6.94	70	133	2973.643	203.671
274	2201	9	34.7	8	2	6.94	70	133	3759.747	228.566
275	2218	8	35.0	77	1	6.94	70	133	2232.229	177.479
276	2218	9	35.3	86	2	6.91	70	133	812.962	111.373
277	2218	9	35.3	76	2	6.94	50	133	886.173	114.737
278	2218	8	34.7	70	2	6.91	50	133	934.864	117.619
279	2218	9	24.6	23	2	6.97	60	133	0.0000	7290.641
280	2236	12	24.6	33	2	7.00	70	133	0.0000	14581.280

Table AII.21: East Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	14:25:48	26.40	50.10	32.78	103.7	N/A	0.13	8.42	2.5	5.7
1/4/2010	14:30:48	26.41	50.26	32.90	104.5	N/A	0.13	8.43	3.1	5.1
1/4/2010	14:35:48	26.43	50.22	32.87	104.4	N/A	0.13	8.42	2.8	3.1
1/4/2010	14:40:48	26.37	50.36	32.97	104.7	N/A	0.13	8.42	2.9	2.2
1/4/2010	14:45:48	26.34	50.39	32.99	104.9	N/A	0.13	8.43	1.8	0.7
1/4/2010	14:50:48	26.42	50.32	32.94	105.0	N/A	0.13	8.42	2.7	-0.9
1/4/2010	14:55:48	26.38	50.41	33.00	105.2	N/A	0.13	8.43	3.1	-2.1
1/4/2010	15:00:48	26.46	50.07	32.75	105.2	N/A	0.13	8.42	2.0	-2.9
1/4/2010	15:05:48	26.45	50.22	32.86	105.8	N/A	0.13	8.43	4.1	-4.0
1/4/2010	15:10:48	26.46	50.22	32.86	106.0	N/A	0.13	8.43	4.0	-4.7
1/4/2010	15:15:48	26.43	50.27	32.90	105.7	N/A	0.13	8.43	3.1	-5.4
1/4/2010	15:20:48	26.40	50.27	32.90	105.4	N/A	0.13	8.43	2.7	-8.3
1/4/2010	15:25:48	26.42	50.17	32.83	105.6	N/A	0.13	8.43	2.4	-9.0
1/4/2010	15:30:48	26.41	50.00	32.70	105.7	N/A	0.13	8.43	3.5	-9.5
1/4/2010	15:35:48	26.41	50.33	32.94	105.6	N/A	0.13	8.43	2.9	-9.6
1/4/2010	15:40:48	26.39	50.35	32.96	105.3	N/A	0.13	8.43	3.4	-10.4
1/4/2010	15:45:48	26.40	50.35	32.96	105.8	N/A	0.13	8.43	3.1	-10.5
1/4/2010	15:50:48	26.41	50.33	32.95	105.5	N/A	0.13	8.43	2.8	-10.7
1/4/2010	15:55:48	26.41	50.29	32.92	105.1	N/A	0.13	8.43	2.9	-11.0
1/4/2010	16:00:48	26.43	50.17	32.83	105.9	N/A	0.14	8.43	2.9	-11.1
1/4/2010	16:05:48	26.42	50.05	32.74	105.3	N/A	0.13	8.43	2.5	-11.6
1/4/2010	16:10:48	26.44	49.77	32.53	105.7	N/A	0.14	8.42	2.6	-11.8
1/4/2010	16:15:48	26.41	49.84	32.59	107.0	N/A	0.14	8.43	4.0	-12.0
1/4/2010	16:20:48	26.42	49.54	32.37	107.3	N/A	0.14	8.43	3.2	-12.0
1/4/2010	16:25:48	26.43	49.48	32.32	107.6	N/A	0.14	8.43	3.2	-12.1
1/4/2010	16:30:48	26.47	49.50	32.34	107.5	N/A	0.14	8.43	2.7	-12.4
1/4/2010	16:35:48	26.50	49.98	32.69	107.3	N/A	0.14	8.43	3.5	-12.5
1/4/2010	16:40:48	26.48	49.95	32.67	107.1	N/A	0.14	8.43	3.6	-12.6
1/4/2010	16:45:48	26.50	50.07	32.76	106.5	N/A	0.14	8.43	2.5	-12.6
1/4/2010	16:50:48	26.49	50.19	32.84	104.8	N/A	0.14	8.42	1.9	-12.8
1/4/2010	16:55:48	26.47	50.20	32.85	105.0	N/A	0.14	8.43	2.6	-12.9
1/4/2010	17:00:48	26.46	50.20	32.85	105.1	N/A	0.14	8.43	1.8	-12.9
1/4/2010	17:05:48	26.41	50.35	32.96	103.9	N/A	0.14	8.43	2.3	-13.1
1/4/2010	17:10:48	26.40	50.32	32.94	103.9	N/A	0.14	8.43	2.6	-13.0
1/4/2010	17:15:48	26.40	50.24	32.88	103.9	N/A	0.14	8.42	1.7	-13.1
1/4/2010	17:20:48	26.33	50.30	32.93	104.0	N/A	0.14	8.43	2.5	-13.1
1/4/2010	17:25:48	26.29	50.33	32.95	104.7	N/A	0.14	8.43	2.9	-13.0
1/4/2010	17:30:48	26.28	50.31	32.94	105.5	N/A	0.14	8.44	3.0	-13.0

Table AII.21: (Continued) East Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	17:35:48	26.29	50.30	32.93	106.0	N/A	0.14	8.44	2.9	-13.1
1/4/2010	17:40:48	26.31	50.32	32.94	105.6	N/A	0.14	8.44	3.2	-13.3
1/4/2010	17:45:48	26.29	50.33	32.95	104.3	N/A	0.14	8.44	2.7	-13.5
1/4/2010	17:50:48	26.29	50.34	32.95	104.8	N/A	0.14	8.44	3.2	-13.3
1/4/2010	17:55:48	26.29	50.32	32.94	105.7	N/A	0.14	8.44	3.8	-13.4
1/4/2010	18:00:48	26.31	50.29	32.92	106.3	N/A	0.14	8.44	3.5	-13.1
1/4/2010	18:05:49	26.31	50.29	32.92	106.0	N/A	0.14	8.44	4.0	-22.6
1/4/2010	18:10:49	26.30	50.29	32.92	105.7	N/A	0.15	8.44	3.2	-22.3
1/4/2010	18:15:48	26.29	50.29	32.92	105.4	N/A	0.15	8.44	3.6	-21.9
1/4/2010	18:20:48	26.30	50.28	32.91	105.2	N/A	0.15	8.44	3.0	-21.4
1/4/2010	18:25:48	26.31	50.24	32.88	105.3	N/A	0.15	8.44	4.3	-21.0
1/4/2010	18:30:48	26.33	50.19	32.85	106.2	N/A	0.15	8.45	5.1	-20.4
1/4/2010	18:35:48	26.30	50.18	32.84	106.1	N/A	0.15	8.45	4.4	-20.0
1/4/2010	18:40:48	26.31	50.11	32.78	105.9	N/A	0.15	8.45	4.8	-19.8
1/4/2010	18:45:49	26.33	50.12	32.79	106.1	N/A	0.15	8.45	5.4	-19.5
1/4/2010	18:50:49	26.37	50.14	32.81	106.1	N/A	0.15	8.45	5.2	-19.2
1/4/2010	18:55:48	26.36	50.12	32.79	105.8	N/A	0.15	8.44	6.4	-18.9
1/4/2010	19:00:48	26.34	50.09	32.77	105.7	N/A	0.15	8.45	5.4	-18.7
1/4/2010	19:05:48	26.35	50.11	32.78	105.7	N/A	0.15	8.44	4.8	-18.4
1/4/2010	19:10:48	26.34	50.09	32.77	105.4	N/A	0.15	8.44	5.0	-18.3
1/4/2010	19:15:48	26.33	50.07	32.76	105.2	N/A	0.15	8.44	5.0	-18.1
1/4/2010	19:20:48	26.35	50.09	32.77	105.2	N/A	0.15	8.44	5.4	-17.9
1/4/2010	19:25:48	26.33	50.08	32.76	105.2	N/A	0.15	8.44	5.3	-17.8
1/4/2010	19:30:48	26.35	50.07	32.76	105.3	N/A	0.15	8.44	4.8	-17.5
1/4/2010	19:35:48	26.33	50.08	32.76	104.9	N/A	0.15	8.44	5.5	-17.4
1/4/2010	19:40:48	26.31	50.07	32.76	105.2	N/A	0.15	8.44	5.2	-17.2
1/4/2010	19:45:48	26.31	50.05	32.74	105.0	N/A	0.15	8.44	5.3	-17.2
1/4/2010	19:50:48	26.27	50.05	32.74	104.4	N/A	0.16	8.44	5.1	-17.0
1/4/2010	19:55:48	26.24	50.04	32.74	103.3	N/A	0.15	8.44	4.9	-17.0
1/4/2010	20:00:48	26.27	50.06	32.75	102.2	N/A	0.16	8.43	4.8	-17.0
1/4/2010	20:05:48	26.27	50.05	32.74	101.5	N/A	0.15	8.43	3.8	-17.0
1/4/2010	20:10:48	26.28	50.05	32.75	101.3	N/A	0.16	8.43	3.8	-17.0
1/4/2010	20:15:49	26.28	50.06	32.75	100.9	N/A	0.16	8.42	4.6	-17.1
1/4/2010	20:20:48	26.27	50.07	32.75	101.5	N/A	0.16	8.43	4.3	-16.8
1/4/2010	20:25:48	26.26	50.06	32.75	102.0	N/A	0.16	8.43	4.4	-16.8
1/4/2010	20:30:49	26.25	50.07	32.76	101.1	N/A	0.16	8.43	4.0	-16.8
1/4/2010	20:35:48	26.25	50.07	32.76	100.4	N/A	0.16	8.42	3.4	-16.8
1/4/2010	20:40:48	26.20	50.08	32.77	99.7	N/A	0.16	8.42	4.1	-16.8

Table AII.21: (Continued) East Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	20:45:49	26.21	49.92	32.65	99.4	N/A	0.16	8.42	4.6	-16.7
1/4/2010	20:50:48	26.14	49.93	32.66	98.8	N/A	0.16	8.42	4.1	-16.6
1/4/2010	20:55:48	26.16	49.93	32.66	97.0	N/A	0.16	8.41	4.6	-16.8
1/4/2010	21:00:49	26.15	49.95	32.67	96.4	N/A	0.16	8.41	4.2	-16.8
1/4/2010	21:05:48	26.14	49.95	32.67	95.6	N/A	0.16	8.41	3.7	-16.8
1/4/2010	21:10:48	26.15	49.92	32.65	94.8	N/A	0.16	8.40	3.0	-17.0
1/4/2010	21:15:49	26.02	49.61	32.43	98.0	N/A	0.16	8.41	4.9	-16.8
1/4/2010	21:20:48	25.84	49.18	32.11	97.4	N/A	0.16	8.41	4.4	-16.9
1/4/2010	21:25:48	25.65	48.65	31.74	99.1	N/A	0.16	8.41	5.2	-16.6
1/4/2010	21:30:48	25.82	48.97	31.96	97.2	N/A	0.16	8.41	4.3	-16.5
1/4/2010	21:35:49	25.75	48.93	31.94	98.5	N/A	0.16	8.41	5.4	-16.2
1/4/2010	21:40:49	25.73	48.98	31.97	100.3	N/A	0.16	8.42	5.2	-16.0
1/4/2010	21:45:49	25.70	48.91	31.92	100.1	N/A	0.16	8.42	5.5	-15.7
1/4/2010	21:50:48	25.62	48.83	31.87	100.3	N/A	0.16	8.42	4.7	-15.6
1/4/2010	21:55:48	25.68	48.79	31.84	100.5	N/A	0.16	8.42	5.6	-15.4
1/4/2010	22:00:48	25.70	48.82	31.86	100.7	N/A	0.16	8.42	5.4	-15.3
1/4/2010	22:05:48	25.67	48.78	31.83	99.8	N/A	0.16	8.42	5.7	-15.1
1/4/2010	22:10:49	25.70	48.86	31.88	100.6	N/A	0.16	8.42	5.5	-15.0
1/4/2010	22:15:48	25.70	48.83	31.87	101.3	N/A	0.16	8.42	5.6	-14.8
1/4/2010	22:20:48	25.70	48.83	31.87	100.9	N/A	0.16	8.42	6.2	-14.7
1/4/2010	22:25:49	25.67	48.83	31.87	98.5	N/A	0.16	8.41	5.0	-14.8
1/4/2010	22:30:49	25.70	48.86	31.89	98.3	N/A	0.16	8.41	5.1	-14.6
1/4/2010	22:35:48	25.70	48.85	31.88	99.7	N/A	0.16	8.42	5.4	-14.6
1/4/2010	22:40:48	25.71	48.85	31.88	99.3	N/A	0.16	8.42	5.3	-14.5
1/4/2010	22:45:48	25.70	48.90	31.91	98.1	N/A	0.16	8.41	4.7	-14.3
1/4/2010	22:50:48	25.73	48.67	31.75	96.7	N/A	0.16	8.41	3.7	-14.6
1/4/2010	22:55:49	25.53	48.60	31.70	96.9	N/A	0.16	8.40	4.5	-14.8
1/4/2010	23:00:48	25.47	48.60	31.70	99.0	N/A	0.16	8.41	5.4	-14.5
1/4/2010	23:05:49	25.53	48.70	31.77	98.3	N/A	0.16	8.41	5.0	-14.6
1/4/2010	23:10:48	25.53	48.62	31.71	97.9	N/A	0.16	8.41	6.3	-14.5
1/4/2010	23:15:48	25.46	48.54	31.66	99.7	N/A	0.16	8.42	5.6	-14.3
1/4/2010	23:20:48	25.70	48.54	31.65	99.0	N/A	0.16	8.41	4.6	-14.0
1/4/2010	23:25:48	25.70	48.64	31.72	98.5	N/A	0.16	8.41	3.9	-14.0
1/4/2010	23:30:48	25.64	48.58	31.68	98.7	N/A	0.16	8.41	5.3	-13.9
1/4/2010	23:35:48	25.63	48.64	31.73	98.6	N/A	0.16	8.41	4.9	-13.8
1/4/2010	23:40:48	25.67	48.71	31.78	97.1	N/A	0.16	8.41	4.5	-13.9
1/4/2010	23:45:48	25.69	48.89	31.91	96.3	N/A	0.16	8.40	3.6	-14.0
1/4/2010	23:50:48	25.64	48.77	31.82	97.9	N/A	0.16	8.41	4.4	-13.7

Table AII.21: (Continued) East Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	23:55:48	25.63	48.77	31.82	96.8	N/A	0.16	8.40	4.7	-13.9
1/5/2010	0:00:48	25.66	48.84	31.87	96.4	N/A	0.16	8.40	3.9	-13.9
1/5/2010	0:05:48	25.60	48.88	31.91	96.4	N/A	0.16	8.40	3.8	-13.9
1/5/2010	0:10:49	25.61	48.88	31.90	96.2	N/A	0.16	8.40	5.4	-13.8
1/5/2010	0:15:49	25.68	48.84	31.87	92.2	N/A	0.16	8.39	2.9	-13.9
1/5/2010	0:20:49	25.81	49.03	32.01	87.4	N/A	0.16	8.37	3.2	-14.8
1/5/2010	0:25:49	25.81	49.17	32.11	86.6	N/A	0.16	8.37	2.5	-15.1
1/5/2010	0:30:48	25.91	49.35	32.24	84.2	N/A	0.16	8.36	2.0	-15.3
1/5/2010	0:35:49	25.75	48.96	31.96	89.0	N/A	0.16	8.37	3.8	-15.3
1/5/2010	0:40:49	25.69	49.02	32.00	89.6	N/A	0.16	8.37	4.3	-15.4
1/5/2010	0:45:48	25.69	49.05	32.02	91.6	N/A	0.16	8.38	3.8	-15.3
1/5/2010	0:50:49	25.64	49.00	31.99	91.2	N/A	0.16	8.37	4.6	-15.1
1/5/2010	0:55:49	25.73	49.02	32.00	92.1	N/A	0.16	8.37	3.3	-15.6
1/5/2010	1:00:49	25.79	49.13	32.08	85.9	N/A	0.16	8.36	2.4	-15.7
1/5/2010	1:05:48	25.73	49.18	32.12	90.4	N/A	0.16	8.38	3.8	-15.4
1/5/2010	1:10:48	25.93	49.44	32.30	92.6	N/A	0.16	8.39	3.7	-15.4
1/5/2010	1:15:48	25.93	49.67	32.48	94.4	N/A	0.16	8.40	4.1	-15.0
1/5/2010	1:20:49	25.72	49.22	32.15	92.7	N/A	0.16	8.38	4.6	-15.2
1/5/2010	1:25:48	25.53	49.01	32.00	94.9	N/A	0.15	8.40	4.1	-14.7
1/5/2010	1:30:48	25.45	48.87	31.90	95.4	N/A	0.16	8.40	4.8	-14.3
1/5/2010	1:35:48	25.41	48.91	31.93	94.8	N/A	0.15	8.40	4.1	-13.8
1/5/2010	1:40:48	25.41	48.93	31.94	94.1	N/A	0.15	8.40	4.1	-13.1
1/5/2010	1:45:49	25.46	49.01	32.00	94.1	N/A	0.16	8.40	4.7	-13.2
1/5/2010	1:50:48	25.44	49.03	32.01	93.9	N/A	0.16	8.40	5.0	-13.3
1/5/2010	1:55:49	25.45	49.01	32.00	93.4	N/A	0.16	8.40	4.3	-13.2
1/5/2010	2:00:49	25.46	49.06	32.04	92.9	N/A	0.16	8.40	4.6	-13.3
1/5/2010	2:05:48	25.46	49.06	32.04	92.8	N/A	0.15	8.40	4.6	-13.1
1/5/2010	2:10:48	25.43	49.07	32.05	92.8	N/A	0.15	8.40	5.1	-13.1
1/5/2010	2:15:49	25.40	49.01	32.00	93.0	N/A	0.15	8.40	4.4	-13.2
1/5/2010	2:20:49	25.36	48.93	31.95	93.4	N/A	0.15	8.40	4.5	-12.9
1/5/2010	2:25:49	25.29	48.84	31.88	92.8	N/A	0.15	8.39	4.0	-12.9
1/5/2010	2:30:48	25.29	48.81	31.86	92.9	N/A	0.15	8.39	3.3	-12.8
1/5/2010	2:35:49	25.36	48.87	31.90	89.2	N/A	0.15	8.38	3.5	-12.9
1/5/2010	2:40:49	25.35	48.83	31.87	89.4	N/A	0.15	8.38	2.1	-12.9
1/5/2010	2:45:48	25.23	48.69	31.77	92.4	N/A	0.15	8.38	3.8	-12.9
1/5/2010	2:50:48	25.21	48.65	31.74	91.6	N/A	0.15	8.38	4.4	-12.8
1/5/2010	2:55:48	25.25	48.66	31.75	90.4	N/A	0.15	8.38	3.7	-12.9
1/5/2010	3:00:49	25.18	48.61	31.72	90.3	N/A	0.15	8.38	4.1	-12.8

Table AII.21: (Continued) East Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	3:05:48	25.20	48.60	31.71	89.1	N/A	0.15	8.37	3.6	-12.8
1/5/2010	3:10:49	25.24	48.63	31.73	88.1	N/A	0.15	8.37	3.9	-12.9
1/5/2010	3:15:48	25.23	48.63	31.73	87.4	N/A	0.15	8.37	3.5	-13.0
1/5/2010	3:20:48	25.23	48.64	31.73	87.5	N/A	0.15	8.37	3.2	-13.1
1/5/2010	3:25:49	25.25	48.64	31.73	86.9	N/A	0.15	8.37	3.5	-13.1
1/5/2010	3:30:48	25.26	48.66	31.75	86.5	N/A	0.15	8.37	4.2	-13.2
1/5/2010	3:35:49	25.23	48.63	31.73	85.9	N/A	0.15	8.36	3.7	-13.1
1/5/2010	3:40:48	25.26	48.70	31.78	86.4	N/A	0.15	8.36	3.1	-13.2
1/5/2010	3:45:48	25.29	48.70	31.78	86.1	N/A	0.15	8.37	3.2	-13.3
1/5/2010	3:50:48	25.33	48.77	31.83	86.0	N/A	0.15	8.37	2.7	-13.4
1/5/2010	3:55:49	25.25	48.75	31.81	86.6	N/A	0.15	8.37	3.1	-13.4
1/5/2010	4:00:48	25.24	48.74	31.81	86.7	N/A	0.15	8.37	3.2	-13.2
1/5/2010	4:05:48	25.24	48.77	31.83	87.0	N/A	0.15	8.37	4.3	-13.2
1/5/2010	4:10:49	25.23	48.81	31.86	86.6	N/A	0.15	8.37	3.5	-13.2
1/5/2010	4:15:48	25.24	48.77	31.83	86.3	N/A	0.15	8.37	3.7	-13.2
1/5/2010	4:20:48	25.23	48.78	31.84	86.5	N/A	0.15	8.37	3.5	-13.1
1/5/2010	4:25:49	25.20	48.79	31.85	86.4	N/A	0.15	8.37	3.8	-12.9
1/5/2010	4:30:49	25.22	48.86	31.90	86.6	N/A	0.15	8.37	3.6	-12.7
1/5/2010	4:35:48	25.24	48.85	31.89	86.4	N/A	0.15	8.37	3.9	-12.8
1/5/2010	4:40:48	25.21	48.86	31.90	86.3	N/A	0.15	8.37	3.7	-12.6
1/5/2010	4:45:48	25.19	48.82	31.87	85.4	N/A	0.15	8.36	3.1	-12.5
1/5/2010	4:50:49	25.21	48.83	31.88	83.5	N/A	0.15	8.35	3.4	-12.9
1/5/2010	4:55:48	25.16	48.80	31.86	83.5	N/A	0.15	8.35	2.6	-13.4
1/5/2010	5:00:48	25.15	48.79	31.85	83.2	N/A	0.15	8.35	2.8	-13.5
1/5/2010	5:05:49	25.16	48.79	31.84	83.6	N/A	0.16	8.35	2.7	-13.5
1/5/2010	5:10:48	25.17	48.86	31.90	80.8	N/A	0.16	8.34	2.6	-13.8
1/5/2010	5:15:48	25.12	48.74	31.81	83.1	N/A	0.16	8.35	4.1	-13.7
1/5/2010	5:20:48	25.16	48.80	31.85	81.6	N/A	0.16	8.34	2.3	-13.7
1/5/2010	5:25:48	25.16	48.78	31.84	80.6	N/A	0.16	8.34	2.9	-13.9
1/5/2010	5:30:48	25.22	48.80	31.85	83.3	N/A	0.16	8.35	3.1	-13.9
1/5/2010	5:35:48	25.22	48.82	31.87	83.4	N/A	0.16	8.36	3.2	-13.9
1/5/2010	5:40:48	25.20	48.80	31.86	83.7	N/A	0.16	8.36	2.7	-13.9
1/5/2010	5:45:48	25.19	48.80	31.85	83.5	N/A	0.16	8.36	2.9	-13.9
1/5/2010	5:50:48	25.19	48.81	31.86	83.7	N/A	0.16	8.35	3.3	-13.9
1/5/2010	5:55:48	25.19	48.81	31.86	83.7	N/A	0.16	8.36	2.7	-14.0
1/5/2010	6:00:49	25.19	48.81	31.86	84.0	N/A	0.16	8.36	3.1	-13.9
1/5/2010	6:05:48	25.17	48.80	31.86	83.7	N/A	0.16	8.36	3.3	-14.0
1/5/2010	6:10:48	25.17	48.80	31.85	82.6	N/A	0.16	8.35	3.1	-14.1

Table AII.21: (Continued) East Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	6:15:49	25.19	48.80	31.85	82.3	N/A	0.16	8.35	3.5	-14.2
1/5/2010	6:20:48	25.17	48.75	31.82	81.8	N/A	0.16	8.35	3.0	-14.2
1/5/2010	6:25:49	25.15	48.72	31.79	81.8	N/A	0.16	8.35	2.5	-14.2
1/5/2010	6:30:48	25.11	48.71	31.79	81.7	N/A	0.16	8.35	3.0	-14.3
1/5/2010	6:35:48	25.08	48.66	31.75	81.6	N/A	0.16	8.34	3.1	-14.4
1/5/2010	6:40:49	25.03	48.61	31.72	82.1	N/A	0.16	8.34	2.8	-14.3
1/5/2010	6:45:48	25.01	48.59	31.70	82.3	N/A	0.16	8.34	2.8	-14.3
1/5/2010	6:50:48	25.01	48.59	31.71	82.1	N/A	0.16	8.34	3.7	-14.4
1/5/2010	6:55:48	24.99	48.59	31.70	82.4	N/A	0.16	8.35	2.4	-14.4
1/5/2010	7:00:49	25.01	48.66	31.75	82.8	N/A	0.16	8.35	3.6	-14.3
1/5/2010	7:05:49	25.00	48.65	31.75	83.0	N/A	0.16	8.35	2.6	-14.4
1/5/2010	7:10:48	24.97	48.63	31.73	83.0	N/A	0.17	8.35	2.1	-14.5
1/5/2010	7:15:48	24.99	48.64	31.74	83.1	N/A	0.17	8.35	2.3	-14.4
1/5/2010	7:20:49	25.04	48.71	31.79	83.6	N/A	0.17	8.35	3.0	-14.8
1/5/2010	7:25:49	25.25	48.95	31.96	84.9	N/A	0.17	8.36	3.6	-15.0
1/5/2010	7:30:48	25.21	49.00	32.00	84.4	N/A	0.17	8.36	3.1	-15.0
1/5/2010	7:35:48	25.21	49.04	32.03	83.8	N/A	0.17	8.36	2.6	-15.0
1/5/2010	7:40:49	25.10	48.90	31.93	84.2	N/A	0.17	8.36	3.8	-15.0
1/5/2010	7:45:49	25.09	48.87	31.91	84.5	N/A	0.17	8.36	3.1	-15.0
1/5/2010	7:50:49	25.09	48.89	31.92	84.7	N/A	0.17	8.36	4.0	-14.9
1/5/2010	7:55:49	25.12	48.98	31.98	84.9	N/A	0.17	8.36	2.7	-14.7
1/5/2010	8:00:48	25.12	49.07	32.05	85.2	N/A	0.17	8.36	2.9	-14.8
1/5/2010	8:05:48	25.20	49.06	32.05	84.7	N/A	0.17	8.37	3.3	-14.9
1/5/2010	8:10:49	25.12	48.99	31.99	85.3	N/A	0.17	8.36	3.3	-14.7
1/5/2010	8:15:49	25.08	48.94	31.96	86.3	N/A	0.17	8.37	3.5	-14.5
1/5/2010	8:20:48	25.06	48.97	31.98	86.4	N/A	0.18	8.37	4.0	-14.4
1/5/2010	8:25:49	25.07	48.98	31.99	87.1	N/A	0.18	8.37	3.1	-14.2
1/5/2010	8:30:49	25.07	48.98	31.99	87.7	N/A	0.18	8.37	4.0	-14.0
1/5/2010	8:35:49	25.07	49.01	32.01	87.7	N/A	0.18	8.37	3.5	-13.8
1/5/2010	8:40:48	25.09	49.02	32.02	88.4	N/A	0.18	8.38	3.2	-13.7
1/5/2010	8:45:48	25.08	49.02	32.02	88.6	N/A	0.18	8.38	4.5	-13.5
1/5/2010	8:50:49	25.10	49.03	32.02	88.9	N/A	0.18	8.38	3.4	-13.5
1/5/2010	8:55:49	25.12	49.04	32.03	89.0	N/A	0.18	8.38	3.2	-13.4
1/5/2010	9:00:49	25.15	49.08	32.06	89.1	N/A	0.18	8.38	3.9	-13.3
1/5/2010	9:05:49	25.16	49.10	32.07	89.2	N/A	0.18	8.38	3.0	-13.2
1/5/2010	9:10:49	25.17	49.10	32.07	89.1	N/A	0.18	8.38	3.1	-13.2
1/5/2010	9:15:49	25.16	49.03	32.02	87.8	N/A	0.18	8.37	3.4	-13.2
1/5/2010	9:20:49	25.19	49.10	32.07	88.8	N/A	0.18	8.38	3.7	-13.3

Table AII.21: (Continued) East Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	9:25:49	25.19	49.10	32.07	88.9	N/A	0.18	8.38	3.7	-13.2
1/5/2010	9:30:49	25.19	49.09	32.07	89.1	N/A	0.18	8.38	3.9	-13.2
1/5/2010	9:35:48	25.17	49.07	32.05	88.9	N/A	0.18	8.37	3.7	-13.3
1/5/2010	9:40:49	25.18	49.08	32.06	89.1	N/A	0.18	8.38	3.0	-13.3
1/5/2010	9:45:49	25.17	49.11	32.08	89.2	N/A	0.19	8.38	3.6	-13.1
1/5/2010	9:50:49	25.17	49.09	32.07	89.0	N/A	0.18	8.37	3.8	-13.0
1/5/2010	9:55:48	25.17	49.10	32.07	89.1	N/A	0.19	8.38	3.4	-12.9
1/5/2010	10:00:48	25.18	49.10	32.07	89.0	N/A	0.19	8.37	3.6	-12.9
1/5/2010	10:05:48	25.19	49.10	32.08	88.6	N/A	0.19	8.37	3.9	-13.0
1/5/2010	10:10:49	25.20	49.10	32.08	88.6	N/A	0.19	8.37	4.3	-13.0
1/5/2010	10:15:49	25.20	49.09	32.07	88.7	N/A	0.19	8.37	3.6	-13.1
1/5/2010	10:20:49	25.22	49.03	32.02	86.7	N/A	0.19	8.36	3.7	-13.2
1/5/2010	10:25:49	25.21	48.89	31.92	86.5	N/A	0.19	8.36	3.1	-13.2
1/5/2010	10:30:49	25.23	49.03	32.02	86.8	N/A	0.19	8.36	3.9	-13.2
1/5/2010	10:35:48	25.25	48.99	31.99	86.0	N/A	0.18	8.36	3.4	-13.3
1/5/2010	10:40:48	25.30	49.01	32.00	83.5	N/A	0.18	8.35	2.8	-13.5
1/5/2010	10:45:49	25.29	48.95	31.96	83.7	N/A	0.18	8.34	3.5	-13.5
1/5/2010	10:50:48	25.35	48.95	31.96	84.9	N/A	0.18	8.35	3.7	-13.5
1/5/2010	10:55:49	25.34	48.93	31.95	85.4	N/A	0.18	8.35	3.2	-13.5
1/5/2010	11:00:49	25.29	48.98	31.98	84.5	N/A	0.18	8.35	2.7	-13.6
1/5/2010	11:05:49	25.26	49.05	32.04	87.5	N/A	0.18	8.36	2.9	-13.4
1/5/2010	11:10:49	25.30	49.20	32.14	87.4	N/A	0.18	8.37	2.6	-13.6
1/5/2010	11:15:49	25.32	49.16	32.12	88.4	N/A	0.18	8.37	3.6	-13.7
1/5/2010	11:20:48	25.31	49.16	32.11	87.7	N/A	0.18	8.36	2.9	-13.5
1/5/2010	11:25:49	25.39	49.38	32.27	90.1	N/A	0.18	8.38	3.2	-13.5
1/5/2010	11:30:48	25.43	49.83	32.61	91.9	N/A	0.18	8.39	4.3	-13.2
1/5/2010	11:35:49	25.43	49.59	32.43	90.5	N/A	0.18	8.38	3.9	-13.1
1/5/2010	11:40:48	25.38	49.39	32.28	91.6	N/A	0.18	8.38	3.6	-13.1
1/5/2010	11:45:48	25.41	49.39	32.28	92.8	N/A	0.18	8.39	3.7	-12.8
1/5/2010	11:50:48	25.40	49.39	32.28	93.3	N/A	0.18	8.39	3.5	-12.8
1/5/2010	11:55:49	25.42	49.41	32.30	95.2	N/A	0.18	8.40	4.0	-12.7
1/5/2010	12:00:49	25.44	49.43	32.31	95.5	N/A	0.18	8.40	3.0	-12.5
1/5/2010	12:05:49	25.45	49.42	32.30	94.7	N/A	0.18	8.39	3.6	-12.3
1/5/2010	12:10:49	25.47	49.38	32.27	94.6	N/A	0.17	8.39	3.9	-12.1
1/5/2010	12:15:49	25.51	49.37	32.26	96.0	N/A	0.17	8.39	4.1	-12.1
1/5/2010	12:20:48	25.54	49.47	32.33	96.6	N/A	0.17	8.39	3.4	-12.0
1/5/2010	12:25:48	25.55	49.46	32.33	96.2	N/A	0.17	8.40	3.8	-12.3
1/5/2010	12:30:48	25.57	49.46	32.33	96.3	N/A	0.17	8.40	3.3	-12.3

Table AII.21: (Continued) East Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2010	12:35:49	25.60	49.58	32.41	96.0	N/A	0.17	8.40	3.8	-12.3
1/5/2010	12:40:49	25.60	49.50	32.36	96.6	N/A	0.17	8.40	3.6	-12.3
1/5/2010	12:45:49	25.62	49.52	32.37	98.2	N/A	0.17	8.40	3.4	-12.2
1/5/2010	12:50:48	25.62	49.43	32.31	98.5	N/A	0.17	8.40	3.4	-12.0
1/5/2010	12:55:48	25.63	49.46	32.33	97.0	N/A	0.17	8.40	3.4	-12.1
1/5/2010	13:00:49	25.64	49.56	32.40	99.0	N/A	0.17	8.41	3.5	-12.1
1/5/2010	13:05:48	25.65	49.55	32.39	99.0	N/A	0.17	8.41	3.8	-12.0
1/5/2010	13:10:49	25.66	49.42	32.30	98.6	N/A	0.16	8.40	3.7	-12.1
1/5/2010	13:15:48	25.67	49.45	32.32	98.0	N/A	0.16	8.40	4.5	-12.1
1/5/2010	13:20:48	25.66	49.47	32.34	97.6	N/A	0.16	8.40	3.0	-13.0
1/5/2010	13:25:48	25.68	49.53	32.38	99.2	N/A	0.16	8.41	3.7	-12.6
1/5/2010	13:30:49	25.69	49.56	32.40	99.3	N/A	0.16	8.41	3.2	-12.6
1/5/2010	13:35:48	25.69	49.44	32.31	99.4	N/A	0.16	8.41	3.4	-12.7
1/5/2010	13:40:49	25.72	49.45	32.32	99.0	N/A	0.16	8.39	2.7	-12.5
1/5/2010	13:45:49	25.74	49.33	32.23	96.4	N/A	0.16	8.38	2.7	-12.6
1/5/2010	13:50:49	25.70	49.44	32.31	98.0	N/A	0.16	8.39	3.0	-12.7
1/5/2010	13:55:49	25.73	49.32	32.22	99.6	N/A	0.16	8.39	3.3	-12.7
1/5/2010	14:00:49	25.73	49.59	32.42	101.6	N/A	0.16	8.41	2.5	-12.6
1/5/2010	14:05:49	25.75	49.45	32.32	99.6	N/A	0.16	8.40	2.8	-12.5
1/5/2010	14:10:49	25.76	49.31	32.22	99.8	N/A	0.16	8.40	3.3	-12.3
1/5/2010	14:15:49	25.72	49.69	32.49	101.8	N/A	0.16	8.42	2.8	-12.3
1/5/2010	14:20:48	25.72	49.75	32.54	102.1	N/A	0.16	8.42	3.1	-12.0
1/5/2010	14:25:49	25.72	49.73	32.52	102.3	N/A	0.16	8.43	2.6	-12.1
1/5/2010	14:30:49	25.73	49.65	32.46	102.0	N/A	0.16	8.42	2.9	-12.1
1/5/2010	14:35:49	25.75	49.63	32.45	102.2	N/A	0.16	8.42	3.4	-12.3
1/5/2010	14:40:49	25.74	49.63	32.45	102.3	N/A	0.16	8.42	3.7	-12.1
1/5/2010	14:45:49	25.77	49.50	32.35	102.4	N/A	0.16	8.42	3.8	-11.8
1/5/2010	14:50:49	25.78	49.55	32.39	102.5	N/A	0.16	8.42	3.2	-11.8
1/5/2010	14:55:49	25.77	49.68	32.48	102.4	N/A	0.16	8.42	3.6	-11.7
1/5/2010	15:00:49	25.80	49.47	32.33	102.9	N/A	0.16	8.42	3.0	-11.7
1/5/2010	15:05:49	25.80	49.53	32.37	103.1	N/A	0.16	8.42	3.1	-11.6
1/5/2010	15:10:48	25.82	49.50	32.35	103.1	N/A	0.16	8.42	3.1	-11.5
1/5/2010	15:15:48	25.82	49.59	32.42	104.2	N/A	0.16	8.43	3.6	-11.5

Table AII.22: East Loch Platform B wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100104	14:53	5.1	20100105	03:53	5.1
20100104	15:53	4.6	20100105	04:53	4.1
20100104	16:53	7.2	20100105	05:53	3.6
20100104	17:53	6.2	20100105	06:00	3.6
20100104	18:00	6.2	20100105	06:53	3.6
20100104	18:53	5.1	20100105	07:53	3.6
20100104	19:53	5.7	20100105	08:53	3.6
20100104	20:53	5.1	20100105	09:53	4.6
20100104	21:53	6.7	20100105	10:53	4.1
20100104	22:53	6.2	20100105	11:53	4.1
20100104	23:53	5.7	20100105	12:00	4.1
20100105	00:00	5.7	20100105	12:53	5.1
20100105	00:53	6.7	20100105	13:53	5.1
20100105	01:53	6.7	20100105	14:53	4.6
20100105	02:53	5.1	20100105	15:53	5.7

Table AII.23: East Loch Platform B depth profile collected on 5 January 2011 using an YSI 6600 V2-4.

Depth m	Time hh:mm	Temp °C	SpCond mS/cm	Sal	pH	ORP	Chl µg/L	DO %	DO mg
0.07	14:39	25.91	50.87	33.36	8.11	128.0	1.8	101.3	6.82
0.97	14:40	25.82	51.11	33.52	8.12	128.6	1.9	101.4	6.84
1.26	14:40	25.81	51.15	33.57	8.11	128.9	2.9	100.8	6.77

Table AII.24: East Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1300 on 5 January 2010. An alternative modeled groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/4/10 14:10	-116.66	21.59	1/4/10 17:00	-97.05	41.19
1/4/10 14:15	-116.66	21.59	1/4/10 17:05	-95.58	42.67
1/4/10 14:20	-116.46	21.79	1/4/10 17:10	-95.48	42.77
1/4/10 14:25	-115.27	22.98	1/4/10 17:15	-94.67	43.58
1/4/10 14:30	-115.06	23.19	1/4/10 17:20	-94.56	43.68
1/4/10 14:35	-113.77	24.48	1/4/10 17:25	-93.40	44.85
1/4/10 14:40	-113.77	24.48	1/4/10 17:30	-92.68	45.56
1/4/10 14:45	-113.18	25.06	1/4/10 17:35	-92.79	45.46
1/4/10 14:50	-111.68	26.56	1/4/10 17:40	-92.28	45.97
1/4/10 14:55	-111.89	26.36	1/4/10 17:45	-91.90	46.35
1/4/10 15:00	-110.90	27.35	1/4/10 17:50	-92.20	46.05
1/4/10 15:05	-110.49	27.76	1/4/10 17:55	-91.01	47.24
1/4/10 15:10	-109.98	28.27	1/4/10 18:00	-91.90	46.35
1/4/10 15:15	-110.49	27.76	1/4/10 18:05	-91.19	47.06
1/4/10 15:20	-108.79	29.46	1/4/10 18:10	-91.80	46.45
1/4/10 15:25	-109.70	28.54	1/4/10 18:15	-90.91	47.34
1/4/10 15:30	-107.70	30.55	1/4/10 18:20	-90.20	48.05
1/4/10 15:35	-108.41	29.84	1/4/10 18:25	-90.20	48.05
1/4/10 15:40	-108.51	29.74	1/4/10 18:30	-89.41	48.84
1/4/10 15:45	-107.59	30.65	1/4/10 18:35	-89.20	49.04
1/4/10 15:50	-106.60	31.64	1/4/10 18:40	-88.70	49.55
1/4/10 15:55	-107.21	31.03	1/4/10 18:45	-88.42	49.83
1/4/10 16:00	-106.71	31.54	1/4/10 18:50	-87.60	50.64
1/4/10 16:05	-106.12	32.13	1/4/10 18:55	-87.12	51.13
1/4/10 16:10	-105.82	32.43	1/4/10 19:00	-86.82	51.43
1/4/10 16:15	-105.51	32.74	1/4/10 19:05	-86.13	52.12
1/4/10 16:20	-104.93	33.32	1/4/10 19:10	-86.51	51.73
1/4/10 16:25	-104.11	34.13	1/4/10 19:15	-85.32	52.93
1/4/10 16:30	-103.12	35.12	1/4/10 19:20	-85.93	52.32
1/4/10 16:35	-102.34	35.91	1/4/10 19:25	-84.94	53.31
1/4/10 16:40	-100.94	37.31	1/4/10 19:30	-85.04	53.21
1/4/10 16:45	-100.15	38.10	1/4/10 19:35	-84.63	53.61
1/4/10 16:50	-98.96	39.29	1/4/10 19:40	-84.43	53.82
1/4/10 16:55	-98.07	40.18	1/4/10 19:45	-84.33	53.92

Table AII.24: (Continued) East Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1300 on 5 January 2010. An alternative modeled groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/4/10 19:50	-84.33	53.92	1/4/10 22:40	-91.80	46.45
1/4/10 19:55	-84.12	54.12	1/4/10 22:45	-92.68	45.56
1/4/10 20:00	-84.12	54.12	1/4/10 22:50	-92.58	45.66
1/4/10 20:05	-84.43	53.82	1/4/10 22:55	-93.88	44.37
1/4/10 20:10	-83.74	54.50	1/4/10 23:00	-94.18	44.06
1/4/10 20:15	-84.33	53.92	1/4/10 23:05	-93.98	44.27
1/4/10 20:20	-84.02	54.22	1/4/10 23:10	-94.77	43.48
1/4/10 20:25	-84.73	53.51	1/4/10 23:15	-94.56	43.68
1/4/10 20:30	-84.33	53.92	1/4/10 23:20	-95.07	43.18
1/4/10 20:35	-84.33	53.92	1/4/10 23:25	-95.17	43.07
1/4/10 20:40	-84.43	53.82	1/4/10 23:30	-95.48	42.77
1/4/10 20:45	-84.33	53.92	1/4/10 23:35	-95.96	42.29
1/4/10 20:50	-85.14	53.11	1/4/10 23:40	-95.96	42.29
1/4/10 20:55	-84.84	53.41	1/4/10 23:45	-96.47	41.78
1/4/10 21:00	-85.14	53.11	1/4/10 23:50	-96.37	41.88
1/4/10 21:05	-85.62	52.62	1/4/10 23:55	-96.77	41.47
1/4/10 21:10	-85.73	52.52	1/5/10 0:00	-96.67	41.57
1/4/10 21:15	-85.93	52.32	1/5/10 0:05	-97.56	40.69
1/4/10 21:20	-86.33	51.91	1/5/10 0:10	-97.56	40.69
1/4/10 21:25	-86.51	51.73	1/5/10 0:15	-97.97	40.28
1/4/10 21:30	-86.92	51.33	1/5/10 0:20	-97.56	40.69
1/4/10 21:35	-87.71	50.54	1/5/10 0:25	-97.56	40.69
1/4/10 21:40	-87.71	50.54	1/5/10 0:30	-97.66	40.58
1/4/10 21:45	-88.01	50.24	1/5/10 0:35	-97.87	40.38
1/4/10 21:50	-88.21	50.03	1/5/10 0:40	-97.66	40.58
1/4/10 21:55	-88.32	49.93	1/5/10 0:45	-97.66	40.58
1/4/10 22:00	-89.00	49.25	1/5/10 0:50	-98.07	40.18
1/4/10 22:05	-89.31	48.94	1/5/10 0:55	-97.56	40.69
1/4/10 22:10	-89.71	48.53	1/5/10 1:00	-98.25	40.00
1/4/10 22:15	-89.71	48.53	1/5/10 1:05	-98.15	40.10
1/4/10 22:20	-90.91	47.34	1/5/10 1:10	-98.45	39.80
1/4/10 22:25	-91.08	47.16	1/5/10 1:15	-98.15	40.10
1/4/10 22:30	-91.29	46.96	1/5/10 1:20	-98.55	39.70
1/4/10 22:35	-91.49	46.76	1/5/10 1:25	-98.55	39.70

Table AII.24: (Continued) East Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1300 on 5 January 2010. An alternative modeled groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/5/10 1:30	-98.55	39.70	1/5/10 4:20	-77.67	60.57
1/5/10 1:35	-98.55	39.70	1/5/10 4:25	-76.78	61.46
1/5/10 1:40	-98.15	40.10	1/5/10 4:30	-76.17	62.07
1/5/10 1:45	-98.45	39.80	1/5/10 4:35	-75.87	62.38
1/5/10 1:50	-97.36	40.89	1/5/10 4:40	-75.18	63.06
1/5/10 1:55	-97.66	40.58	1/5/10 4:45	-75.18	63.06
1/5/10 2:00	-97.16	41.09	1/5/10 4:50	-74.40	63.85
1/5/10 2:05	-96.47	41.78	1/5/10 4:55	-73.58	64.66
1/5/10 2:10	-95.96	42.29	1/5/10 5:00	-73.20	65.04
1/5/10 2:15	-95.48	42.77	1/5/10 5:05	-73.10	65.15
1/5/10 2:20	-94.87	43.38	1/5/10 5:10	-72.69	65.55
1/5/10 2:25	-93.98	44.27	1/5/10 5:15	-71.40	66.85
1/5/10 2:30	-93.88	44.37	1/5/10 5:20	-70.92	67.33
1/5/10 2:35	-92.79	45.46	1/5/10 5:25	-70.00	68.24
1/5/10 2:40	-92.28	45.97	1/5/10 5:30	-69.72	68.52
1/5/10 2:45	-91.90	46.35	1/5/10 5:35	-68.91	69.34
1/5/10 2:50	-91.01	47.24	1/5/10 5:40	-68.33	69.92
1/5/10 2:55	-90.20	48.05	1/5/10 5:45	-67.61	70.63
1/5/10 3:00	-89.10	49.14	1/5/10 5:50	-66.83	71.42
1/5/10 3:05	-88.42	49.83	1/5/10 5:55	-66.52	71.72
1/5/10 3:10	-87.33	50.92	1/5/10 6:00	-66.73	71.52
1/5/10 3:15	-86.51	51.73	1/5/10 6:05	-65.43	72.82
1/5/10 3:20	-85.62	52.62	1/5/10 6:10	-64.85	73.40
1/5/10 3:25	-85.14	53.11	1/5/10 6:15	-65.05	73.20
1/5/10 3:30	-84.23	54.02	1/5/10 6:20	-64.74	73.50
1/5/10 3:35	-82.83	55.42	1/5/10 6:25	-64.34	73.91
1/5/10 3:40	-82.65	55.60	1/5/10 6:30	-63.75	74.49
1/5/10 3:45	-81.36	56.89	1/5/10 6:35	-63.96	74.29
1/5/10 3:50	-80.75	57.50	1/5/10 6:40	-64.34	73.91
1/5/10 3:55	-80.65	57.60	1/5/10 6:45	-63.75	74.49
1/5/10 4:00	-79.27	58.97	1/5/10 6:50	-63.75	74.49
1/5/10 4:05	-78.87	59.38	1/5/10 6:55	-64.14	74.11
1/5/10 4:10	-78.08	60.17	1/5/10 7:00	-63.75	74.49
1/5/10 4:15	-77.98	60.27	1/5/10 7:05	-64.14	74.11

Table AII.24: (Continued) East Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1300 on 5 January 2010. An alternative modeled groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/5/10 7:10	-63.55	74.70	1/5/10 10:00	-75.49	62.76
1/5/10 7:15	-64.14	74.11	1/5/10 10:05	-76.58	61.67
1/5/10 7:20	-63.96	74.29	1/5/10 10:10	-77.47	60.78
1/5/10 7:25	-64.34	73.91	1/5/10 10:15	-78.56	59.69
1/5/10 7:30	-63.75	74.49	1/5/10 10:20	-80.26	57.98
1/5/10 7:35	-63.14	75.10	1/5/10 10:25	-81.05	57.20
1/5/10 7:40	-62.26	75.99	1/5/10 10:30	-82.14	56.10
1/5/10 7:45	-63.04	75.20	1/5/10 10:35	-82.83	55.42
1/5/10 7:50	-62.36	75.89	1/5/10 10:40	-85.32	52.93
1/5/10 7:55	-63.86	74.39	1/5/10 10:45	-85.22	53.03
1/5/10 8:00	-60.96	77.29	1/5/10 10:50	-87.43	50.82
1/5/10 8:05	-62.36	75.89	1/5/10 10:55	-87.33	50.92
1/5/10 8:10	-63.04	75.20	1/5/10 11:00	-89.31	48.94
1/5/10 8:15	-62.15	76.09	1/5/10 11:05	-89.31	48.94
1/5/10 8:20	-63.04	75.20	1/5/10 11:10	-91.01	47.24
1/5/10 8:25	-63.04	75.20	1/5/10 11:15	-92.99	45.26
1/5/10 8:30	-63.04	75.20	1/5/10 11:20	-95.17	43.07
1/5/10 8:35	-63.04	75.20	1/5/10 11:25	-94.77	43.48
1/5/10 8:40	-64.03	74.21	1/5/10 11:30	-95.58	42.67
1/5/10 8:45	-64.85	73.40	1/5/10 11:35	-95.86	42.39
1/5/10 8:50	-65.23	73.02	1/5/10 11:40	-96.88	41.37
1/5/10 8:55	-65.33	72.92	1/5/10 11:45	-98.25	40.00
1/5/10 9:00	-67.34	70.91	1/5/10 11:50	-99.34	38.91
1/5/10 9:05	-67.03	71.22	1/5/10 11:55	-99.85	38.40
1/5/10 9:10	-67.61	70.63	1/5/10 12:00	-101.93	36.32
1/5/10 9:15	-67.44	70.81	1/5/10 12:05	-101.55	36.70
1/5/10 9:20	-69.32	68.93	1/5/10 12:10	-103.23	35.02
1/5/10 9:25	-69.72	68.52	1/5/10 12:15	-103.12	35.12
1/5/10 9:30	-69.90	68.35	1/5/10 12:20	-105.31	32.94
1/5/10 9:35	-71.20	67.05	1/5/10 12:25	-106.50	31.75
1/5/10 9:40	-71.50	66.75	1/5/10 12:30	-106.22	32.02
1/5/10 9:45	-72.49	65.76	1/5/10 12:35	-107.42	30.83
1/5/10 9:50	-74.40	63.85	1/5/10 12:40	-108.61	29.64
1/5/10 9:55	-74.98	63.27	1/5/10 12:45	-109.09	29.15

Table AII.24: (Continued) East Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1300 on 5 January 2010. An alternative modeled groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/5/10 12:50	-110.39	27.86	1/5/10 14:30	-120.62	17.62
1/5/10 12:55	-111.38	26.87	1/5/10 14:35	-119.63	18.61
1/5/10 13:00	-112.09	26.16	1/5/10 14:40	-119.43	18.82
1/5/10 13:05	-113.08	25.17	1/5/10 14:45	-119.63	18.61
1/5/10 13:10	-113.46	24.79	1/5/10 14:50	-119.05	19.20
1/5/10 13:15	-114.27	23.97	1/5/10 14:55	-118.54	19.71
1/5/10 13:20	-116.26	21.99	1/5/10 15:00	-117.14	21.10
1/5/10 13:25	-116.36	21.89	1/5/10 15:05	-117.14	21.10
1/5/10 13:30	-117.96	20.29	1/5/10 15:10	-116.94	21.31
1/5/10 13:35	-117.65	20.59	1/5/10 15:15	-116.26	21.99
1/5/10 13:40	-117.75	20.49	1/5/10 15:20	-115.37	22.88
1/5/10 13:45	-117.96	20.29	1/5/10 15:25	-114.27	23.97
1/5/10 13:50	-119.84	18.41	1/5/10 15:30	-114.17	24.07
1/5/10 13:55	-119.33	18.92	1/5/10 15:35	-114.17	24.07
1/5/10 14:00	-120.04	18.21	1/5/10 15:40	-112.67	25.57
1/5/10 14:05	-119.74	18.51	1/5/10 15:45	-112.09	26.16
1/5/10 14:10	-119.84	18.41	1/5/10 15:50	-112.47	25.78
1/5/10 14:15	-119.84	18.41	1/5/10 15:55	-110.39	27.86
1/5/10 14:20	-119.84	18.41	1/5/10 16:00	-110.79	27.45
1/5/10 14:25	-120.52	17.72	1/5/10 16:05	-111.28	26.97

Table AII.25: Middle Loch Platform A time-series radon measurements.

RAD-7 #2356				Middle Loch Platform A			eff=0.416 cpm/pCi/L				
Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	10	1	8	10	55	45	27.8	80.0	4.5	4.5	0.0
2	10	1	8	11	25	131	27.7	73.3	0.8	16.8	1.5
3	10	1	8	11	55	148	27.7	58.1	2.7	34.5	1.4
4	10	1	8	12	25	182	27.7	59.4	1.1	37.4	0.6
5	10	1	8	12	55	261	27.7	60.2	1.9	32.6	1.9
6	10	1	8	13	25	336	27.7	58.0	0.9	35.7	0.0
7	10	1	8	13	55	426	27.6	59.2	0.5	35.5	0.5
8	10	1	8	14	25	682	27.6	64.1	0.5	31.2	0.7
9	10	1	8	14	55	620	27.6	51.9	0.0	43.4	1.1
10	10	1	8	15	25	521	27.6	37.8	0.6	58.2	1.0
11	10	1	8	15	55	472	27.6	34.3	1.1	62.1	1.1
12	10	1	8	16	25	408	27.6	35.3	0.7	59.1	1.5
13	10	1	8	16	55	354	27.6	39.3	0.6	56.8	1.1
14	10	1	8	17	25	372	27.6	38.7	0.3	56.7	1.4
15	10	1	8	17	55	328	27.7	45.4	0.9	49.4	2.1
16	10	1	8	18	25	245	27.7	45.7	0.8	47.8	2.1
17	10	1	8	18	55	275	27.7	41.8	1.5	52.4	1.5
18	10	1	8	19	25	237	27.7	42.2	0.9	52.8	0.4
19	10	1	8	19	55	226	27.7	39.8	0.9	54.9	0.9
20	10	1	8	20	25	240	27.7	42.9	0.8	49.6	1.7
21	10	1	8	20	55	214	27.7	42.5	0.0	52.3	1.4
22	10	1	8	21	25	206	27.7	42.2	0.0	53.4	1.5
23	10	1	8	21	55	185	27.7	47.6	1.1	46.0	2.2
24	10	1	8	22	25	196	27.7	41.3	0.5	54.6	2.1
25	10	1	8	22	55	186	27.7	45.2	1.6	48.9	1.1
26	10	1	8	23	25	189	27.7	52.9	1.1	41.3	1.6
27	10	1	8	23	55	172	27.7	39.0	1.8	54.1	3.5
28	10	1	9	0	25	183	27.7	41.5	1.1	51.4	2.2
29	10	1	9	0	55	150	27.7	38.0	1.3	60.0	0.0
30	10	1	9	1	25	124	27.7	44.4	4.0	43.6	2.4
31	10	1	9	1	55	136	27.7	45.6	0.7	48.5	0.0
32	10	1	9	2	25	132	27.7	48.5	2.3	44.7	0.8
33	10	1	9	2	55	147	27.7	41.5	3.4	49.7	0.7
34	10	1	9	3	25	166	27.7	44.0	0.6	52.4	1.8
35	10	1	9	3	55	156	27.7	40.4	0.0	55.1	0.7
36	10	1	9	4	25	124	27.7	39.5	1.6	53.2	0.8
37	10	1	9	4	55	114	27.7	47.4	3.5	44.7	0.9

Table AII.25: (Continued) Middle Loch Platform A time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
38	10	1	9	5	25	142	27.7	46.5	2.8	47.2	0.7
39	10	1	9	5	55	127	27.7	44.9	0.8	48.8	0.8
40	10	1	9	6	25	147	27.7	50.4	0.0	44.9	3.4
41	10	1	9	6	55	148	27.7	54.1	0.0	43.3	0.7
42	10	1	9	7	25	162	27.7	50.6	1.2	44.5	1.9
43	10	1	9	7	55	184	27.7	50.0	0.6	44.6	0.6
44	10	1	9	8	25	213	27.7	61.0	0.5	35.7	0.5
45	10	1	9	8	55	199	27.7	41.2	2.0	52.8	2.0
46	10	1	9	9	25	207	27.7	50.7	1.5	45.4	1.0
47	10	1	9	9	55	210	27.7	52.4	0.5	43.3	1.0
48	10	1	9	10	25	232	27.7	53.0	0.4	43.5	0.4
49	10	1	9	10	55	240	27.7	49.2	0.4	45.8	1.3
50	10	1	9	11	25	232	27.7	44.0	1.3	52.2	0.9
51	10	1	9	11	56	251	27.7	52.2	0.8	45.0	0.8
52	10	1	9	12	26	246	27.7	48.4	0.8	47.6	0.8
53	10	1	9	12	56	243	27.7	42.0	2.5	52.3	0.8
54	10	1	9	13	26	239	27.7	50.2	1.3	45.2	0.4
55	10	1	9	13	56	249	27.7	47.8	0.8	47.4	0.8
56	10	1	9	14	26	235	27.7	46.4	0.9	48.1	2.6
57	10	1	9	14	56	302	27.7	48.4	2.0	44.7	2.0
58	10	1	9	15	26	236	27.7	40.7	0.9	56.4	0.0
59	10	1	9	15	56	214	27.7	38.8	0.5	57.0	0.9
60	10	1	9	16	26	209	27.7	47.9	0.0	49.3	0.5
61	10	1	9	16	56	220	27.7	41.8	0.5	55.9	0.5
62	10	1	9	17	26	174	27.7	50.6	1.2	43.7	3.5
63	10	1	9	17	56	214	27.7	46.7	0.5	48.6	1.9
64	10	1	9	18	26	180	27.7	45.6	1.1	49.5	1.7
65	10	1	9	18	56	202	27.7	43.1	2.5	47.5	3.0
66	10	1	9	19	26	185	27.7	42.7	1.1	54.6	0.0
67	10	1	9	19	56	142	27.7	37.3	2.1	56.4	2.8
68	10	1	9	20	26	184	27.7	40.8	0.6	53.8	2.2
69	10	1	9	20	56	163	27.7	57.1	0.6	38.7	0.6
70	10	1	9	21	26	158	27.7	45.6	1.9	48.7	1.9
71	10	1	9	21	56	146	27.7	49.3	1.4	46.6	1.4
72	10	1	9	22	26	128	27.7	33.6	3.1	61.0	0.0
73	10	1	9	22	56	126	27.7	42.1	0.8	50.0	2.4
74	10	1	9	23	26	140	27.7	56.4	0.7	39.3	1.4
75	10	1	9	23	56	153	27.7	47.7	0.0	46.4	0.7

Table AII.25: (Continued) Middle Loch Platform A time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
76	10	1	10	0	26	138	27.7	42.8	1.5	50.0	2.9
77	10	1	10	0	56	126	27.7	43.7	1.6	48.4	2.4
78	10	1	10	1	26	155	27.7	46.5	1.9	44.5	2.6
79	10	1	10	1	56	149	27.7	47.7	1.4	46.3	4.0
80	10	1	10	2	26	137	27.7	51.8	0.7	43.8	1.5
81	10	1	10	2	56	162	27.7	47.5	0.0	48.2	2.5
82	10	1	10	3	26	170	27.7	47.1	0.6	47.1	1.8
83	10	1	10	3	56	150	27.7	44.7	1.3	49.3	2.0
84	10	1	10	4	26	142	27.7	45.8	2.1	50.0	1.4
85	10	1	10	4	56	197	27.7	47.2	1.0	46.7	1.0
86	10	1	10	5	26	180	27.7	48.3	1.7	43.3	3.9
87	10	1	10	5	56	210	27.7	47.6	2.4	47.6	1.4
88	10	1	10	6	26	153	27.7	48.4	0.7	47.1	0.7
89	10	1	10	6	56	151	27.7	49.0	1.3	46.4	0.7
90	10	1	10	7	26	155	27.7	34.2	2.6	57.4	1.9
91	10	1	10	7	56	139	27.7	44.6	1.5	49.7	1.5
92	10	1	10	8	26	142	27.7	57.1	0.0	36.6	1.4
93	10	1	10	8	56	160	27.7	42.5	1.9	51.9	1.9
94	10	1	10	9	17	108	19.1	45.4	0.0	50.9	1.9

Table AII.26: Middle Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	9	34.4	9	2	7.03	0	5	58.672	22.373
2	2201	9	38.3	8	2	6.85	70	5	181.138	36.874
3	2218	8	41.1	8	3	6.85	70	5	210.553	39.470
4	2218	9	40.5	8	3	6.91	70	5	272.481	44.291
5	2218	9	40.5	8	3	6.88	70	5	371.900	51.510
6	2218	9	39.9	8	3	6.91	70	5	488.119	58.191
7	2218	9	39.5	8	3	6.88	70	5	623.495	65.451
8	2218	9	38.6	9	2	7.03	0	5	1006.856	82.457
9	2218	8	37.7	9	2	7.03	0	5	911.250	78.775
10	2201	9	36.8	8	2	6.91	70	5	771.535	72.668
11	2218	8	35.6	9	2	7.03	0	5	702.595	69.414
12	2218	8	34.4	8	2	7.06	0	5	592.475	64.125
13	2201	8	33.2	9	2	7.06	0	5	524.232	60.467

Table AII.26: (Continued) Middle Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
14	2218	8	31.9	8	2	6.91	70	5	545.946	61.712
15	2218	8	30.1	8	2	7.06	0	5	477.271	58.017
16	2201	8	28.3	7	1	6.94	70	5	351.755	50.202
17	2218	9	26.4	7	1	6.94	70	5	398.243	53.168
18	2218	8	24.9	6	1	6.97	70	5	348.656	49.690
19	2218	9	23.7	6	1	6.97	70	5	329.764	48.498
20	2218	9	22.8	6	1	6.94	70	5	340.908	49.483
21	2218	8	22.2	6	1	6.97	70	5	311.185	47.430
22	2218	9	21.6	6	1	6.97	70	5	301.896	46.776
23	2218	8	21.0	6	1	6.97	70	5	264.740	44.058
24	2218	8	20.7	6	1	6.97	70	5	287.963	45.777
25	2218	8	20.4	6	1	6.97	70	5	269.384	44.174
26	2201	9	20.0	6	1	6.97	70	5	274.029	44.639
27	2218	9	20.0	6	1	6.97	70	5	243.065	42.628
28	2218	8	19.7	6	1	7.00	70	5	260.095	43.705
29	2201	9	19.4	6	1	7.00	70	5	227.583	40.765
30	2218	9	19.4	6	1	7.00	70	5	167.204	35.719
31	2218	8	19.4	6	1	6.97	70	5	198.168	38.264
32	2218	9	19.4	6	1	7.00	70	5	188.879	37.576
33	2218	8	19.1	6	1	6.97	70	5	207.457	39.073
34	2201	9	18.8	6	1	6.97	70	5	244.613	42.507
35	2218	8	18.8	6	1	6.97	70	5	229.131	41.019
36	2218	8	18.8	6	1	6.97	70	5	178.041	36.445
37	2218	8	18.8	6	1	6.97	70	5	162.413	34.944
38	2218	9	18.5	6	1	7.00	70	5	204.360	38.939
39	2218	8	18.8	6	1	6.97	70	5	184.234	37.015
40	2218	8	18.8	6	1	7.00	70	5	213.650	39.994
41	2218	8	18.8	6	1	6.97	70	5	222.939	40.382
42	2218	9	19.1	6	1	7.00	70	5	236.872	41.770
43	2218	9	19.7	6	1	6.97	70	5	269.384	44.058
44	2218	8	20.7	6	1	7.00	70	5	317.378	47.645
45	2218	8	23.7	7	1	6.94	70	5	286.414	45.664
46	2218	8	25.2	7	1	6.97	70	5	306.541	46.886
47	2218	9	27.1	7	1	6.94	70	5	309.637	47.104
48	2218	9	29.2	7	1	6.91	70	5	347.107	49.587
49	2218	8	29.8	7	1	6.91	70	5	351.755	50.100

Table AII.26: (Continued) Middle Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
50	2218	8	29.5	7	1	6.91	70	5	344.007	49.483
51	2218	8	29.8	7	1	6.94	70	5	376.549	51.708
52	2218	8	32.5	7	2	6.91	70	5	364.152	50.810
53	2218	8	33.8	7	2	6.91	70	5	353.305	50.202
54	2201	9	31.6	7	2	6.94	70	5	353.305	49.998
55	2218	8	30.7	7	2	6.94	70	5	365.702	51.011
56	2218	9	30.4	7	2	6.94	70	5	339.359	49.483
57	2218	9	29.8	7	1	6.94	70	5	430.784	55.235
58	2218	8	29.8	7	1	6.94	70	5	354.854	50.100
59	2218	9	30.4	7	2	6.94	70	5	339.359	49.483
60	2218	8	29.8	7	1	6.94	70	5	314.282	47.321
61	2218	9	29.2	7	1	6.94	70	5	332.860	48.604
62	2218	8	28.9	7	1	6.94	70	5	249.258	42.990
63	2218	8	27.7	6	1	6.94	70	5	312.733	47.538
64	2218	9	26.8	6	1	6.97	70	5	263.192	43.823
65	2218	8	25.8	6	1	6.97	70	5	278.673	45.212
66	2218	9	24.9	6	1	6.97	70	5	278.673	44.754
67	2218	9	24.0	6	1	6.94	70	5	202.812	39.073
68	2218	9	23.1	6	1	6.97	70	5	266.288	44.174
69	2218	8	22.2	6	1	6.97	70	5	241.517	41.894
70	2218	8	21.6	6	1	6.97	70	5	227.583	41.145
71	2218	8	21.0	6	1	6.97	70	5	215.198	39.864
72	2218	8	20.7	6	1	6.97	70	5	187.330	37.297
73	2218	8	20.4	6	1	6.97	70	5	178.041	36.732
74	2201	9	20.0	6	1	6.97	70	5	205.909	39.073
75	2218	8	19.7	6	1	7.00	70	5	221.391	40.382
76	2218	8	19.7	6	1	6.97	70	5	195.071	38.400
77	2218	9	19.4	6	1	6.97	70	5	178.041	36.732
78	2201	9	19.4	6	1	7.00	70	5	215.198	40.124
79	2218	8	19.4	5	1	6.97	70	5	212.101	39.994
80	2218	8	19.1	6	1	7.00	70	5	201.264	38.671
81	2218	9	19.1	6	1	6.97	70	5	236.872	41.894
82	2218	8	19.1	6	1	6.97	70	5	244.613	42.507
83	2201	9	19.1	6	1	7.00	70	5	216.746	40.124
84	2218	8	19.1	6	1	7.00	70	5	209.005	39.338
85	2201	9	19.4	6	1	6.97	70	5	284.866	45.325

Table AII.26: (Continued) Middle Loch Platform A time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
86	2218	8	19.7	6	1	6.97	70	5	249.258	43.230
87	2218	8	19.7	6	1	6.97	70	5	308.089	47.104
88	2218	9	19.4	6	1	6.97	70	5	226.035	40.638
89	2218	9	19.4	6	1	7.00	70	5	221.391	40.382
90	2218	9	19.4	6	1	6.97	70	5	218.294	40.253
91	2201	9	19.7	6	1	6.97	70	5	201.264	38.671
92	2218	9	21.0	6	1	6.94	70	5	204.360	39.073
93	2218	8	23.4	6	1	6.97	70	5	232.228	41.396
94	2218	9	24.9	3	1	7.09	0	5	230.868	50.419

Table AII.27: Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	10:25:40	25.39	50.01	32.73	46.0	3.14	0.243	8.33	N/A	N/A
1/8/2010	10:30:40	25.40	50.04	32.75	45.6	3.11	0.230	8.38	N/A	N/A
1/8/2010	10:35:40	25.44	49.97	32.71	45.8	3.12	0.220	8.41	N/A	N/A
1/8/2010	10:40:40	25.45	49.83	32.60	45.4	3.09	0.223	8.42	N/A	N/A
1/8/2010	10:45:40	25.51	49.67	32.49	44.6	3.04	0.205	8.41	N/A	N/A
1/8/2010	10:50:40	25.56	49.38	32.27	43.9	2.99	0.242	8.41	N/A	N/A
1/8/2010	10:55:40	25.45	47.86	31.16	48.0	3.29	0.237	8.41	N/A	N/A
1/8/2010	11:00:40	25.54	48.39	31.54	47.0	3.22	0.235	8.40	N/A	N/A
1/8/2010	11:05:40	25.66	49.29	32.20	47.2	3.21	0.216	8.41	N/A	N/A
1/8/2010	11:10:40	25.74	49.83	32.59	47.4	3.21	0.214	8.42	N/A	N/A
1/8/2010	11:15:40	25.75	49.48	32.34	47.6	3.23	0.213	8.42	N/A	N/A
1/8/2010	11:20:40	25.74	49.47	32.33	47.8	3.25	0.213	8.41	N/A	N/A
1/8/2010	11:25:40	25.69	49.16	32.10	47.5	3.23	0.215	8.41	N/A	N/A
1/8/2010	11:30:40	25.73	49.21	32.14	47.3	3.22	0.214	8.40	N/A	N/A
1/8/2010	11:35:40	25.82	49.45	32.31	47.3	3.21	0.213	8.40	N/A	N/A
1/8/2010	11:40:40	25.79	49.08	32.05	47.7	3.24	0.211	8.40	N/A	N/A
1/8/2010	11:45:40	25.92	49.30	32.20	47.6	3.22	0.215	8.40	N/A	N/A
1/8/2010	11:50:40	25.97	49.21	32.13	47.8	3.24	0.216	8.40	N/A	N/A
1/8/2010	11:55:40	25.96	49.42	32.29	47.8	3.23	0.214	8.40	N/A	N/A
1/8/2010	12:00:40	26.04	49.66	32.47	47.0	3.17	0.211	8.39	N/A	N/A
1/8/2010	12:05:40	26.01	49.49	32.34	46.8	3.16	0.207	8.39	N/A	N/A
1/8/2010	12:10:40	26.00	49.13	32.08	47.5	3.22	0.196	8.39	N/A	N/A
1/8/2010	12:15:40	26.03	48.21	31.40	47.6	3.23	0.192	8.39	N/A	N/A
1/8/2010	12:20:40	25.97	47.99	31.25	47.4	3.23	0.183	8.39	N/A	N/A
1/8/2010	12:25:40	26.09	48.20	31.39	47.3	3.21	0.186	8.39	N/A	N/A
1/8/2010	12:30:40	26.37	49.08	32.03	48.2	3.24	0.179	8.39	N/A	N/A
1/8/2010	12:35:40	26.21	48.05	31.28	47.3	3.21	0.171	8.38	N/A	N/A
1/8/2010	12:40:40	26.33	48.01	31.25	47.8	3.23	0.162	8.38	N/A	N/A
1/8/2010	12:45:40	26.60	49.40	32.26	49.1	3.29	0.161	8.39	N/A	N/A
1/8/2010	12:50:40	26.58	48.32	31.47	48.3	3.25	0.159	8.38	N/A	N/A
1/8/2010	12:55:40	26.80	49.30	32.18	50.4	3.36	0.155	8.39	N/A	N/A
1/8/2010	13:00:40	26.64	47.48	30.86	48.3	3.26	0.150	8.37	N/A	N/A
1/8/2010	13:05:40	26.75	46.72	30.30	47.7	3.22	0.137	8.37	N/A	N/A
1/8/2010	13:10:40	26.83	46.82	30.37	47.3	3.19	0.136	8.37	N/A	N/A
1/8/2010	13:15:40	27.05	45.82	29.64	48.9	3.30	0.134	8.38	N/A	N/A
1/8/2010	13:20:40	26.86	45.89	29.69	50.6	3.42	0.139	8.39	N/A	N/A
1/8/2010	13:25:40	26.77	46.16	29.90	51.6	3.49	0.129	8.40	N/A	N/A
1/8/2010	13:30:40	26.84	47.07	30.55	47.4	3.19	0.123	8.36	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	13:35:40	27.10	45.02	29.06	54.3	3.67	0.113	8.40	N/A	N/A
1/8/2010	13:40:40	26.99	23.92	14.46	47.0	3.45	0.110	8.32	N/A	N/A
1/8/2010	13:45:40	27.62	46.06	29.80	52.6	3.51	0.110	8.37	N/A	N/A
1/8/2010	13:50:40	27.43	34.85	21.86	53.9	3.77	0.103	8.43	N/A	N/A
1/8/2010	13:55:40	27.63	43.71	28.10	53.5	3.61	0.091	8.40	N/A	N/A
1/8/2010	14:00:40	27.59	31.99	19.88	50.6	3.57	0.081	8.35	N/A	N/A
1/8/2010	14:05:40	26.99	27.54	16.87	46.9	3.40	0.077	8.31	N/A	N/A
1/8/2010	14:10:40	27.58	36.23	22.81	51.4	3.57	0.071	8.38	N/A	N/A
1/8/2010	14:15:40	27.57	33.02	20.59	50.9	3.58	0.072	8.36	N/A	N/A
1/8/2010	14:20:40	27.88	46.44	30.07	53.9	3.57	0.214	8.38	N/A	N/A
1/8/2010	14:25:40	27.56	47.38	30.76	51.6	3.43	0.203	8.37	N/A	N/A
1/8/2010	14:30:40	27.63	43.93	28.26	51.7	3.48	0.194	8.39	N/A	N/A
1/8/2010	14:35:40	28.29	48.59	31.62	51.6	3.37	0.198	8.39	N/A	N/A
1/8/2010	14:40:40	27.88	48.69	31.70	50.5	3.32	0.196	8.39	N/A	N/A
1/8/2010	14:45:40	27.67	48.73	31.74	50.6	3.33	0.198	8.39	N/A	N/A
1/8/2010	14:50:40	27.42	48.92	31.88	50.0	3.31	0.189	8.38	N/A	N/A
1/8/2010	14:55:40	27.51	48.85	31.83	50.1	3.31	0.185	8.38	N/A	N/A
1/8/2010	15:00:40	27.55	47.04	30.51	50.7	3.37	0.188	8.39	N/A	N/A
1/8/2010	15:05:40	28.11	46.23	29.91	54.5	3.61	0.192	8.43	N/A	N/A
1/8/2010	15:10:40	28.02	47.52	30.85	53.6	3.53	0.192	8.42	N/A	N/A
1/8/2010	15:15:40	27.64	47.74	31.02	52.5	3.48	0.191	8.40	N/A	N/A
1/8/2010	15:20:40	27.81	44.99	29.02	52.9	3.53	0.193	8.43	N/A	N/A
1/8/2010	15:25:40	27.87	41.54	26.55	58.2	3.94	0.191	8.48	N/A	N/A
1/8/2010	15:30:40	27.76	45.60	29.47	56.2	3.75	0.202	8.43	N/A	N/A
1/8/2010	15:35:40	27.74	47.38	30.75	52.2	3.46	0.196	8.41	N/A	N/A
1/8/2010	15:40:40	27.86	48.35	31.45	51.4	3.39	0.199	8.41	N/A	N/A
1/8/2010	15:45:40	27.90	48.52	31.58	51.3	3.38	0.192	8.41	N/A	N/A
1/8/2010	15:50:40	27.93	45.64	29.49	53.6	3.57	0.193	8.45	N/A	N/A
1/8/2010	15:55:40	28.01	47.31	30.69	53.7	3.54	0.199	8.44	N/A	N/A
1/8/2010	16:00:40	27.88	46.24	29.92	54.8	3.64	0.194	8.46	N/A	N/A
1/8/2010	16:05:40	27.91	45.79	29.59	55.7	3.71	0.200	8.47	N/A	N/A
1/8/2010	16:10:40	27.91	46.19	29.88	56.4	3.74	0.187	8.47	N/A	N/A
1/8/2010	16:15:40	27.94	46.13	29.84	56.5	3.75	0.186	8.47	N/A	N/A
1/8/2010	16:20:40	27.91	46.45	30.07	56.4	3.74	0.186	8.47	N/A	N/A
1/8/2010	16:25:40	27.92	46.57	30.16	56.0	3.71	0.186	8.47	N/A	N/A
1/8/2010	16:30:40	27.97	46.84	30.35	55.4	3.66	0.182	8.47	N/A	N/A
1/8/2010	16:35:40	27.99	46.97	30.45	54.4	3.59	0.175	8.46	N/A	N/A
1/8/2010	16:40:40	27.94	47.09	30.54	54.0	3.57	0.167	8.46	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	16:45:40	27.95	47.03	30.49	60.4	4.00	0.167	8.46	N/A	N/A
1/8/2010	16:55:40	27.94	47.31	30.70	61.9	4.09	0.168	8.46	N/A	N/A
1/8/2010	17:00:40	27.84	47.54	30.87	63.5	4.19	0.162	8.45	N/A	N/A
1/8/2010	17:05:40	27.71	47.57	30.89	60.7	4.02	0.160	8.45	N/A	N/A
1/8/2010	17:10:40	27.63	47.62	30.93	65.3	4.33	0.165	8.45	N/A	N/A
1/8/2010	17:15:40	27.55	47.56	30.89	66.0	4.39	0.171	8.46	N/A	N/A
1/8/2010	17:20:40	27.56	47.58	30.90	66.3	4.40	0.180	8.46	N/A	N/A
1/8/2010	17:25:40	27.50	47.60	30.92	65.9	4.38	0.186	8.46	N/A	N/A
1/8/2010	17:30:40	27.45	47.69	30.99	66.3	4.41	0.189	8.46	N/A	N/A
1/8/2010	17:35:40	27.38	47.76	31.04	66.0	4.39	0.194	8.46	N/A	N/A
1/8/2010	17:40:40	27.36	47.87	31.12	64.4	4.29	0.205	8.45	N/A	N/A
1/8/2010	17:45:40	27.37	47.88	31.13	64.4	4.29	0.214	8.45	N/A	N/A
1/8/2010	17:50:40	27.28	48.17	31.34	62.9	4.19	0.219	8.43	N/A	N/A
1/8/2010	17:55:40	26.98	50.10	32.76	59.0	3.91	0.224	8.39	N/A	N/A
1/8/2010	18:00:40	26.92	50.13	32.79	57.1	3.79	0.230	8.38	N/A	N/A
1/8/2010	18:05:40	26.89	50.18	32.82	55.9	3.72	0.240	8.39	N/A	N/A
1/8/2010	18:10:40	26.69	50.16	32.81	55.5	3.70	0.253	8.38	N/A	N/A
1/8/2010	18:15:40	26.61	50.14	32.80	54.9	3.66	0.259	8.38	N/A	N/A
1/8/2010	18:20:40	26.53	50.10	32.78	54.9	3.67	0.260	8.38	N/A	N/A
1/8/2010	18:25:40	27.03	48.34	31.47	56.0	3.74	0.268	8.42	N/A	N/A
1/8/2010	18:30:40	26.97	48.51	31.60	55.6	3.71	0.273	8.41	N/A	N/A
1/8/2010	18:35:40	26.66	49.13	32.06	56.0	3.75	0.286	8.39	N/A	N/A
1/8/2010	18:40:40	26.69	49.35	32.22	56.5	3.78	0.289	8.39	N/A	N/A
1/8/2010	18:45:40	26.63	50.01	32.70	55.0	3.67	0.291	8.37	N/A	N/A
1/8/2010	18:50:40	26.64	50.00	32.70	54.1	3.61	0.290	8.37	N/A	N/A
1/8/2010	18:55:40	26.64	50.03	32.72	52.0	3.47	0.297	8.36	N/A	N/A
1/8/2010	19:00:40	26.63	50.08	32.76	51.6	3.44	0.308	8.36	N/A	N/A
1/8/2010	19:05:40	26.58	50.08	32.76	48.1	3.21	0.317	8.35	N/A	N/A
1/8/2010	19:10:40	26.87	49.44	32.28	48.2	3.21	0.322	8.38	N/A	N/A
1/8/2010	19:15:40	26.88	49.29	32.17	50.1	3.34	0.318	8.40	N/A	N/A
1/8/2010	19:20:40	26.89	49.33	32.20	51.9	3.46	0.329	8.40	N/A	N/A
1/8/2010	19:25:40	26.73	49.40	32.26	53.3	3.56	0.335	8.41	N/A	N/A
1/8/2010	19:30:40	26.70	49.66	32.45	54.0	3.60	0.348	8.40	N/A	N/A
1/8/2010	19:35:40	26.63	50.04	32.72	49.9	3.33	0.355	8.34	N/A	N/A
1/8/2010	19:40:40	26.58	50.15	32.81	48.1	3.21	0.358	8.33	N/A	N/A
1/8/2010	19:45:40	26.54	49.93	32.65	46.2	3.09	0.356	8.32	N/A	N/A
1/8/2010	19:50:40	26.53	50.15	32.81	45.2	3.02	0.350	8.32	N/A	N/A
1/8/2010	19:55:40	26.56	49.86	32.60	44.9	3.00	0.346	8.32	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	20:00:40	26.49	50.17	32.83	44.5	2.97	0.348	8.34	N/A	N/A
1/8/2010	20:05:40	26.62	50.10	32.77	43.6	2.91	0.348	8.33	N/A	N/A
1/8/2010	20:15:40	26.49	50.18	32.83	44.9	3.00	0.349	8.35	N/A	N/A
1/8/2010	20:20:40	26.74	49.68	32.46	45.2	3.01	0.349	8.35	N/A	N/A
1/8/2010	20:25:40	26.72	49.66	32.44	46.6	3.11	0.349	8.37	N/A	N/A
1/8/2010	20:30:40	26.77	49.71	32.48	45.0	3.00	0.350	8.34	N/A	N/A
1/8/2010	20:35:40	26.61	49.98	32.68	46.7	3.12	0.351	8.37	N/A	N/A
1/8/2010	20:40:40	26.85	49.32	32.20	46.7	3.12	0.351	8.38	N/A	N/A
1/8/2010	20:45:40	26.49	50.19	32.84	44.9	3.00	0.352	8.35	N/A	N/A
1/8/2010	20:50:40	26.60	50.03	32.72	44.1	2.95	0.352	8.33	N/A	N/A
1/8/2010	20:55:40	26.47	50.28	32.91	43.8	2.93	0.352	8.34	N/A	N/A
1/8/2010	21:00:40	26.47	50.27	32.90	43.1	2.88	0.352	8.33	N/A	N/A
1/8/2010	21:05:40	26.43	50.30	32.92	44.0	2.94	0.353	8.35	N/A	N/A
1/8/2010	21:10:40	26.38	50.35	32.96	44.2	2.96	0.353	8.35	N/A	N/A
1/8/2010	21:15:40	26.65	49.89	32.62	44.2	2.95	0.353	8.36	N/A	N/A
1/8/2010	21:20:40	26.38	50.34	32.95	45.1	3.02	0.353	8.36	N/A	N/A
1/8/2010	21:25:40	26.69	49.79	32.54	44.4	2.97	0.353	8.36	N/A	N/A
1/8/2010	21:30:40	26.69	49.74	32.50	44.3	2.96	0.353	8.36	N/A	N/A
1/8/2010	21:35:40	26.67	49.63	32.43	45.8	3.06	0.354	8.38	N/A	N/A
1/8/2010	21:40:40	26.70	49.86	32.59	43.8	2.92	0.354	8.36	N/A	N/A
1/8/2010	21:45:40	26.67	49.93	32.65	43.3	2.89	0.354	8.36	N/A	N/A
1/8/2010	21:50:40	26.66	49.99	32.69	41.2	2.75	0.354	8.34	N/A	N/A
1/8/2010	21:55:40	26.59	50.09	32.77	40.3	2.69	0.354	8.34	N/A	N/A
1/8/2010	22:00:40	26.62	50.05	32.73	39.7	2.65	0.354	8.34	N/A	N/A
1/8/2010	22:05:40	26.57	50.16	32.82	39.2	2.61	0.355	8.34	N/A	N/A
1/8/2010	22:10:40	26.53	50.23	32.87	38.9	2.60	0.354	8.33	N/A	N/A
1/8/2010	22:15:40	26.48	50.29	32.92	40.6	2.72	0.355	8.35	N/A	N/A
1/8/2010	22:20:40	26.46	50.31	32.93	40.3	2.70	0.354	8.35	N/A	N/A
1/8/2010	22:25:40	26.49	50.27	32.90	40.3	2.69	0.355	8.35	N/A	N/A
1/8/2010	22:30:40	26.53	50.26	32.89	39.8	2.66	0.355	8.35	N/A	N/A
1/8/2010	22:35:40	26.55	50.23	32.87	39.8	2.66	0.354	8.35	N/A	N/A
1/8/2010	22:40:40	26.53	50.25	32.89	39.6	2.65	0.354	8.35	N/A	N/A
1/8/2010	22:45:40	26.54	50.21	32.86	38.9	2.60	0.355	8.35	N/A	N/A
1/8/2010	22:50:40	26.54	50.20	32.84	39.1	2.61	0.354	8.35	N/A	N/A
1/8/2010	22:55:40	26.51	50.24	32.88	40.0	2.68	0.354	8.36	N/A	N/A
1/8/2010	23:00:40	26.49	50.26	32.89	40.7	2.72	0.354	8.37	N/A	N/A
1/8/2010	23:05:40	26.45	50.30	32.92	41.1	2.75	0.353	8.37	N/A	N/A
1/8/2010	23:10:40	26.39	50.32	32.94	44.0	2.94	0.353	8.40	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	23:15:40	26.37	50.33	32.95	44.7	2.99	0.354	8.40	N/A	N/A
1/8/2010	23:20:40	26.35	50.34	32.95	43.9	2.94	0.353	8.40	N/A	N/A
1/8/2010	23:25:40	26.36	50.33	32.95	43.6	2.92	0.352	8.39	N/A	N/A
1/8/2010	23:35:40	26.36	50.36	32.97	42.5	2.85	0.353	8.38	N/A	N/A
1/8/2010	23:40:40	26.35	50.37	32.97	42.8	2.86	0.352	8.38	N/A	N/A
1/8/2010	23:45:40	26.34	50.35	32.96	43.4	2.91	0.352	8.38	N/A	N/A
1/8/2010	23:50:40	26.33	50.37	32.98	42.7	2.86	0.352	8.39	N/A	N/A
1/8/2010	23:55:40	26.34	50.39	32.99	43.4	2.91	0.352	8.39	N/A	N/A
1/9/2010	0:00:40	26.33	50.41	33.01	43.1	2.89	0.351	8.39	N/A	N/A
1/9/2010	0:05:40	26.35	50.39	32.99	44.1	2.95	0.351	8.40	N/A	N/A
1/9/2010	0:10:40	26.30	50.40	33.00	44.4	2.98	0.350	8.41	N/A	N/A
1/9/2010	0:15:40	26.31	50.38	32.99	44.2	2.96	0.350	8.40	N/A	N/A
1/9/2010	0:20:40	26.31	50.38	32.99	44.9	3.01	0.350	8.41	N/A	N/A
1/9/2010	0:25:40	26.29	50.37	32.98	45.0	3.02	0.349	8.41	N/A	N/A
1/9/2010	0:30:40	26.27	50.35	32.96	45.1	3.02	0.348	8.41	N/A	N/A
1/9/2010	0:35:40	26.22	50.34	32.96	46.0	3.08	0.348	8.41	N/A	N/A
1/9/2010	0:40:40	26.22	50.35	32.96	46.2	3.10	0.349	8.42	N/A	N/A
1/9/2010	0:45:40	26.25	50.37	32.98	45.4	3.05	0.349	8.41	N/A	N/A
1/9/2010	0:50:40	26.27	50.38	32.99	44.9	3.01	0.349	8.41	N/A	N/A
1/9/2010	0:55:40	26.29	50.42	33.01	43.4	2.91	0.349	8.40	N/A	N/A
1/9/2010	1:00:40	26.30	50.42	33.01	42.2	2.83	0.348	8.40	N/A	N/A
1/9/2010	1:05:40	26.29	50.45	33.04	42.5	2.85	0.348	8.39	N/A	N/A
1/9/2010	1:10:40	26.29	50.42	33.02	42.5	2.85	0.349	8.40	N/A	N/A
1/9/2010	1:15:40	26.29	50.40	33.00	42.5	2.85	0.347	8.40	N/A	N/A
1/9/2010	1:20:40	26.30	50.45	33.04	41.8	2.80	0.346	8.39	N/A	N/A
1/9/2010	1:25:40	26.30	50.44	33.03	41.9	2.81	0.346	8.38	N/A	N/A
1/9/2010	1:30:40	26.31	50.43	33.02	42.4	2.84	0.346	8.39	N/A	N/A
1/9/2010	1:35:40	26.30	50.42	33.01	42.0	2.81	0.345	8.39	N/A	N/A
1/9/2010	1:40:40	26.30	50.40	33.00	42.1	2.82	0.345	8.39	N/A	N/A
1/9/2010	1:45:40	26.30	50.41	33.01	42.3	2.84	0.345	8.39	N/A	N/A
1/9/2010	1:50:40	26.28	50.41	33.01	42.4	2.84	0.344	8.39	N/A	N/A
1/9/2010	1:55:40	26.26	50.40	33.00	42.2	2.83	0.344	8.39	N/A	N/A
1/9/2010	2:00:40	26.29	50.35	32.96	42.0	2.82	0.342	8.39	N/A	N/A
1/9/2010	2:05:40	26.28	50.42	33.02	42.1	2.82	0.342	8.39	N/A	N/A
1/9/2010	2:10:40	26.23	50.39	33.00	42.4	2.84	0.341	8.39	N/A	N/A
1/9/2010	2:15:40	26.31	50.43	33.02	42.3	2.83	0.340	8.39	N/A	N/A
1/9/2010	2:20:40	26.25	50.48	33.06	41.9	2.81	0.339	8.39	N/A	N/A
1/9/2010	2:25:40	26.35	50.47	33.05	40.9	2.74	0.339	8.38	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	2:30:40	26.29	50.39	32.99	40.9	2.74	0.338	8.38	N/A	N/A
1/9/2010	2:35:40	26.32	50.38	32.99	40.4	2.71	0.338	8.38	N/A	N/A
1/9/2010	2:40:40	26.19	50.62	33.16	41.7	2.80	0.339	8.39	N/A	N/A
1/9/2010	2:45:40	26.26	50.50	33.07	41.4	2.78	0.338	8.39	N/A	N/A
1/9/2010	2:55:40	26.20	50.52	33.09	42.9	2.87	0.338	8.40	N/A	N/A
1/9/2010	3:00:40	26.49	50.68	33.20	43.3	2.89	0.338	8.41	N/A	N/A
1/9/2010	3:05:40	26.34	50.81	33.30	43.5	2.91	0.337	8.41	N/A	N/A
1/9/2010	3:10:40	26.39	50.60	33.15	43.1	2.88	0.337	8.40	N/A	N/A
1/9/2010	3:15:40	26.45	50.77	33.27	43.2	2.88	0.337	8.41	N/A	N/A
1/9/2010	3:20:40	26.37	50.73	33.24	43.3	2.90	0.336	8.41	N/A	N/A
1/9/2010	3:25:40	26.42	50.74	33.24	43.3	2.89	0.336	8.41	N/A	N/A
1/9/2010	3:30:40	26.43	50.76	33.26	43.1	2.88	0.335	8.41	N/A	N/A
1/9/2010	3:35:40	26.47	50.79	33.28	43.2	2.88	0.336	8.40	N/A	N/A
1/9/2010	3:40:40	26.46	50.84	33.32	42.8	2.86	0.334	8.40	N/A	N/A
1/9/2010	3:45:40	26.26	50.92	33.38	42.8	2.87	0.335	8.40	N/A	N/A
1/9/2010	3:50:40	26.35	50.78	33.28	43.1	2.88	0.335	8.40	N/A	N/A
1/9/2010	3:55:40	26.35	50.81	33.30	42.8	2.86	0.335	8.40	N/A	N/A
1/9/2010	4:00:40	26.34	50.83	33.32	42.7	2.85	0.335	8.40	N/A	N/A
1/9/2010	4:05:40	26.34	50.84	33.32	42.8	2.86	0.335	8.40	N/A	N/A
1/9/2010	4:10:40	26.32	50.87	33.35	42.6	2.85	0.335	8.40	N/A	N/A
1/9/2010	4:15:40	26.40	50.84	33.32	43.0	2.87	0.335	8.41	N/A	N/A
1/9/2010	4:20:40	26.41	50.87	33.35	46.1	3.08	0.335	8.41	N/A	N/A
1/9/2010	4:25:40	26.53	50.97	33.41	45.6	3.04	0.335	8.41	N/A	N/A
1/9/2010	4:30:40	26.54	50.97	33.42	45.7	3.04	0.334	8.41	N/A	N/A
1/9/2010	4:35:40	26.53	51.00	33.44	45.8	3.05	0.334	8.41	N/A	N/A
1/9/2010	4:40:40	26.60	51.09	33.50	45.5	3.02	0.334	8.41	N/A	N/A
1/9/2010	4:45:40	26.54	51.08	33.49	44.4	2.95	0.334	8.40	N/A	N/A
1/9/2010	4:50:40	26.52	51.03	33.46	44.7	2.98	0.335	8.41	N/A	N/A
1/9/2010	4:55:40	26.56	51.06	33.48	42.7	2.84	0.335	8.39	N/A	N/A
1/9/2010	5:00:40	26.50	51.07	33.49	42.8	2.85	0.334	8.39	N/A	N/A
1/9/2010	5:05:40	26.45	51.04	33.46	42.2	2.81	0.335	8.39	N/A	N/A
1/9/2010	5:10:40	26.49	51.18	33.57	40.1	2.67	0.335	8.38	N/A	N/A
1/9/2010	5:15:40	26.46	51.17	33.56	38.8	2.58	0.335	8.36	N/A	N/A
1/9/2010	5:20:40	26.33	51.16	33.56	39.4	2.63	0.336	8.36	N/A	N/A
1/9/2010	5:25:40	26.33	51.15	33.55	38.8	2.59	0.335	8.35	N/A	N/A
1/9/2010	5:30:40	26.15	51.10	33.52	38.9	2.61	0.335	8.36	N/A	N/A
1/9/2010	5:35:40	26.25	51.13	33.54	37.9	2.54	0.336	8.35	N/A	N/A
1/9/2010	5:40:40	26.12	51.00	33.45	39.3	2.64	0.337	8.36	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	5:45:40	26.12	51.03	33.47	38.9	2.61	0.338	8.36	N/A	N/A
1/9/2010	5:50:40	26.19	50.81	33.31	38.8	2.60	0.338	8.35	N/A	N/A
1/9/2010	5:55:40	26.25	50.97	33.42	38.0	2.54	0.339	8.35	N/A	N/A
1/9/2010	6:00:40	26.01	50.92	33.39	38.5	2.59	0.338	8.35	N/A	N/A
1/9/2010	6:05:40	25.89	50.90	33.38	38.8	2.61	0.339	8.35	N/A	N/A
1/9/2010	6:15:40	25.93	50.86	33.35	38.6	2.60	0.339	8.36	N/A	N/A
1/9/2010	6:20:40	25.89	50.87	33.35	38.7	2.61	0.339	8.36	N/A	N/A
1/9/2010	6:25:40	25.84	50.87	33.36	38.3	2.58	0.340	8.35	N/A	N/A
1/9/2010	6:30:40	25.83	50.84	33.34	38.8	2.62	0.341	8.35	N/A	N/A
1/9/2010	6:35:40	25.88	50.81	33.31	37.9	2.55	0.342	8.35	N/A	N/A
1/9/2010	6:40:40	25.78	50.82	33.32	37.8	2.55	0.344	8.35	N/A	N/A
1/9/2010	6:45:40	25.83	50.77	33.29	37.6	2.53	0.345	8.35	N/A	N/A
1/9/2010	6:50:40	25.91	50.89	33.37	37.4	2.52	0.349	8.35	N/A	N/A
1/9/2010	6:55:40	26.21	50.85	33.33	39.1	2.62	0.349	8.35	N/A	N/A
1/9/2010	7:00:40	25.93	50.95	33.41	38.5	2.59	0.345	8.36	N/A	N/A
1/9/2010	7:05:40	26.12	50.92	33.38	39.0	2.62	0.347	8.36	N/A	N/A
1/9/2010	7:10:40	26.09	51.02	33.46	39.4	2.64	0.346	8.36	N/A	N/A
1/9/2010	7:15:40	26.07	51.00	33.45	39.3	2.63	0.349	8.36	N/A	N/A
1/9/2010	7:20:40	26.19	51.05	33.48	37.8	2.53	0.349	8.36	N/A	N/A
1/9/2010	7:25:40	26.22	51.03	33.47	38.0	2.54	0.348	8.35	N/A	N/A
1/9/2010	7:30:40	26.11	51.04	33.48	37.1	2.49	0.350	8.35	N/A	N/A
1/9/2010	7:35:40	26.07	50.98	33.43	37.0	2.49	0.350	8.35	N/A	N/A
1/9/2010	7:40:40	26.03	50.83	33.32	36.4	2.44	0.352	8.35	N/A	N/A
1/9/2010	7:45:40	25.99	50.89	33.37	37.0	2.48	0.353	8.34	N/A	N/A
1/9/2010	7:50:40	25.89	50.93	33.40	36.7	2.47	0.352	8.35	N/A	N/A
1/9/2010	7:55:40	25.89	50.83	33.33	37.7	2.54	0.351	8.34	N/A	N/A
1/9/2010	8:00:40	25.85	50.79	33.30	38.3	2.58	0.351	8.35	N/A	N/A
1/9/2010	8:05:40	25.82	50.74	33.26	39.1	2.64	0.345	8.35	N/A	N/A
1/9/2010	8:10:40	25.79	50.74	33.26	39.1	2.64	0.345	8.36	N/A	N/A
1/9/2010	8:15:40	25.79	50.69	33.22	39.9	2.69	0.341	8.37	N/A	N/A
1/9/2010	8:20:40	25.80	50.73	33.25	39.9	2.69	0.344	8.36	N/A	N/A
1/9/2010	8:25:40	25.79	50.71	33.24	41.5	2.80	0.343	8.37	N/A	N/A
1/9/2010	8:30:40	25.82	50.72	33.24	40.3	2.72	0.342	8.37	N/A	N/A
1/9/2010	8:35:40	25.85	50.75	33.27	39.1	2.64	0.338	8.37	N/A	N/A
1/9/2010	8:40:40	25.87	50.72	33.24	40.6	2.74	0.337	8.37	N/A	N/A
1/9/2010	8:45:40	25.92	50.78	33.29	39.1	2.63	0.337	8.36	N/A	N/A
1/9/2010	8:50:40	25.99	50.73	33.25	38.1	2.56	0.340	8.36	N/A	N/A
1/9/2010	8:55:40	26.02	50.77	33.28	38.9	2.62	0.340	8.36	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	9:00:40	25.96	50.78	33.29	38.6	2.60	0.341	8.36	N/A	N/A
1/9/2010	9:05:40	25.93	50.73	33.25	39.8	2.68	0.337	8.36	N/A	N/A
1/9/2010	9:10:40	25.96	50.73	33.25	40.3	2.71	0.340	8.36	N/A	N/A
1/9/2010	9:15:40	26.11	50.88	33.36	36.1	2.42	0.344	8.34	N/A	N/A
1/9/2010	9:20:40	26.11	50.84	33.33	37.7	2.53	0.347	8.34	N/A	N/A
1/9/2010	9:25:40	26.03	50.73	33.25	37.6	2.53	0.349	8.34	N/A	N/A
1/9/2010	9:35:40	26.10	50.83	33.32	38.1	2.56	0.346	8.35	N/A	N/A
1/9/2010	9:40:40	26.10	50.81	33.31	38.7	2.59	0.348	8.35	N/A	N/A
1/9/2010	9:45:40	26.09	50.79	33.29	38.5	2.59	0.355	8.35	N/A	N/A
1/9/2010	9:50:40	26.07	50.73	33.25	39.3	2.64	0.354	8.36	N/A	N/A
1/9/2010	9:55:40	26.06	50.78	33.28	39.0	2.62	0.354	8.35	N/A	N/A
1/9/2010	10:00:40	26.03	50.68	33.21	39.3	2.64	0.352	8.36	N/A	N/A
1/9/2010	10:05:40	25.80	50.72	33.25	41.6	2.81	0.354	8.37	N/A	N/A
1/9/2010	10:10:40	25.86	50.48	33.07	40.3	2.72	0.352	8.38	N/A	N/A
1/9/2010	10:15:40	25.65	50.34	32.97	44.7	3.03	0.358	8.40	N/A	N/A
1/9/2010	10:20:40	25.88	50.26	32.91	41.1	2.78	0.355	8.40	N/A	N/A
1/9/2010	10:25:40	25.77	50.43	33.04	44.3	2.99	0.357	8.38	N/A	N/A
1/9/2010	10:30:40	26.15	50.61	33.16	39.8	2.67	0.355	8.38	N/A	N/A
1/9/2010	10:35:40	26.09	50.55	33.11	41.2	2.77	0.355	8.37	N/A	N/A
1/9/2010	10:40:40	26.25	50.73	33.24	40.5	2.71	0.360	8.36	N/A	N/A
1/9/2010	10:45:40	26.23	50.79	33.29	41.7	2.79	0.358	8.37	N/A	N/A
1/9/2010	10:50:40	26.28	50.79	33.29	43.4	2.90	0.359	8.37	N/A	N/A
1/9/2010	10:55:40	26.26	50.79	33.29	42.4	2.84	0.356	8.37	N/A	N/A
1/9/2010	11:00:40	26.27	50.79	33.29	41.7	2.79	0.356	8.37	N/A	N/A
1/9/2010	11:05:40	26.27	50.80	33.29	42.8	2.86	0.358	8.37	N/A	N/A
1/9/2010	11:10:40	26.30	50.80	33.29	41.9	2.80	0.358	8.37	N/A	N/A
1/9/2010	11:15:40	26.30	50.83	33.31	42.6	2.85	0.356	8.37	N/A	N/A
1/9/2010	11:20:40	26.31	50.82	33.31	45.4	3.03	0.357	8.38	N/A	N/A
1/9/2010	11:25:40	26.28	50.71	33.23	43.2	2.89	0.357	8.38	N/A	N/A
1/9/2010	11:30:40	25.84	47.94	31.21	48.5	3.31	0.355	8.43	N/A	N/A
1/9/2010	11:35:40	25.91	46.89	30.44	64.9	4.44	0.352	8.53	N/A	N/A
1/9/2010	11:40:40	25.83	48.41	31.55	61.2	4.17	0.351	8.52	N/A	N/A
1/9/2010	11:45:40	25.95	48.51	31.63	54.4	3.69	0.348	8.47	N/A	N/A
1/9/2010	11:50:40	25.99	48.06	31.29	53.3	3.62	0.349	8.46	N/A	N/A
1/9/2010	11:55:40	26.01	48.32	31.48	49.2	3.34	0.348	8.43	N/A	N/A
1/9/2010	12:00:40	26.04	48.76	31.81	50.3	3.41	0.344	8.43	N/A	N/A
1/9/2010	12:05:40	26.08	49.22	32.14	51.8	3.50	0.343	8.42	N/A	N/A
1/9/2010	12:10:40	26.13	48.66	31.73	52.8	3.57	0.338	8.44	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	12:15:40	26.15	49.25	32.16	54.3	3.67	0.335	8.44	N/A	N/A
1/9/2010	12:20:40	26.20	49.44	32.30	53.1	3.58	0.338	8.43	N/A	N/A
1/9/2010	12:25:40	26.24	49.50	32.34	53.3	3.59	0.338	8.43	N/A	N/A
1/9/2010	12:30:40	26.28	49.03	32.00	54.2	3.66	0.340	8.45	N/A	N/A
1/9/2010	12:35:40	26.34	48.93	31.92	57.8	3.89	0.339	8.48	N/A	N/A
1/9/2010	12:40:40	26.38	48.60	31.68	68.6	4.62	0.341	8.56	N/A	N/A
1/9/2010	12:55:40	26.54	48.56	31.64	66.0	4.44	0.336	8.57	N/A	N/A
1/9/2010	13:00:40	26.61	48.03	31.26	73.4	4.94	0.338	8.64	N/A	N/A
1/9/2010	13:05:40	26.67	46.41	30.08	70.8	4.79	0.342	8.63	N/A	N/A
1/9/2010	13:10:40	26.67	48.13	31.33	65.4	4.40	0.342	8.55	N/A	N/A
1/9/2010	13:15:40	26.66	48.80	31.82	62.4	4.19	0.338	8.52	N/A	N/A
1/9/2010	13:20:40	26.49	49.50	32.34	58.2	3.90	0.331	8.47	N/A	N/A
1/9/2010	13:25:40	26.45	49.69	32.47	57.2	3.84	0.327	8.47	N/A	N/A
1/9/2010	13:30:40	26.36	49.82	32.57	55.5	3.73	0.323	8.46	N/A	N/A
1/9/2010	13:35:40	26.33	49.90	32.64	53.8	3.61	0.308	8.45	N/A	N/A
1/9/2010	13:40:40	26.37	49.86	32.60	53.5	3.59	0.308	8.45	N/A	N/A
1/9/2010	13:45:40	26.37	49.93	32.66	50.8	3.41	0.299	8.43	N/A	N/A
1/9/2010	13:50:40	26.34	49.98	32.69	48.8	3.28	0.294	8.41	N/A	N/A
1/9/2010	13:55:40	26.37	49.85	32.59	48.2	3.23	0.287	8.41	N/A	N/A
1/9/2010	14:00:40	26.41	48.48	31.59	49.3	3.32	0.285	8.43	N/A	N/A
1/9/2010	14:05:40	26.62	47.89	31.15	56.2	3.78	0.281	8.50	N/A	N/A
1/9/2010	14:10:40	26.71	48.23	31.40	60.1	4.04	0.273	8.52	N/A	N/A
1/9/2010	14:15:40	26.68	48.17	31.36	61.3	4.12	0.268	8.54	N/A	N/A
1/9/2010	14:20:40	26.67	48.76	31.79	56.2	3.77	0.265	8.49	N/A	N/A
1/9/2010	14:25:40	26.53	49.33	32.21	54.9	3.68	0.265	8.48	N/A	N/A
1/9/2010	14:30:40	26.56	49.66	32.45	51.3	3.44	0.263	8.45	N/A	N/A
1/9/2010	14:35:40	26.56	49.91	32.63	50.5	3.37	0.259	8.44	N/A	N/A
1/9/2010	14:40:40	26.57	49.91	32.64	50.0	3.34	0.247	8.44	N/A	N/A
1/9/2010	14:45:40	26.52	50.12	32.79	49.6	3.31	0.244	8.43	N/A	N/A
1/9/2010	14:50:40	26.51	50.15	32.81	48.2	3.22	0.243	8.42	N/A	N/A
1/9/2010	14:55:40	26.54	50.19	32.84	47.4	3.17	0.239	8.41	N/A	N/A
1/9/2010	15:00:40	26.55	50.36	32.96	45.9	3.06	0.239	8.39	N/A	N/A
1/9/2010	15:05:40	26.52	50.53	33.09	45.6	3.05	0.227	8.39	N/A	N/A
1/9/2010	15:10:40	26.55	50.56	33.11	45.0	3.00	0.222	8.39	N/A	N/A
1/9/2010	15:15:40	26.62	50.63	33.16	45.0	3.00	0.211	8.39	N/A	N/A
1/9/2010	15:20:40	26.64	50.72	33.22	45.2	3.01	0.213	8.39	N/A	N/A
1/9/2010	15:25:40	26.65	50.75	33.25	45.3	3.01	0.218	8.39	N/A	N/A
1/9/2010	15:30:40	26.66	50.75	33.25	45.1	3.00	0.210	8.39	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	15:35:40	26.68	50.78	33.27	45.5	3.03	0.205	8.39	N/A	N/A
1/9/2010	15:40:40	26.68	50.79	33.28	45.3	3.01	0.197	8.39	N/A	N/A
1/9/2010	15:45:40	26.70	50.80	33.28	45.1	3.00	0.196	8.38	N/A	N/A
1/9/2010	15:50:40	26.73	50.82	33.30	45.0	2.99	0.200	8.38	N/A	N/A
1/9/2010	15:55:40	26.70	50.89	33.35	45.0	2.99	0.190	8.38	N/A	N/A
1/9/2010	16:00:40	26.69	50.93	33.38	44.7	2.97	0.186	8.38	N/A	N/A
1/9/2010	16:05:40	26.68	50.97	33.41	44.5	2.96	0.176	8.38	N/A	N/A
1/9/2010	16:10:40	26.68	50.97	33.41	44.2	2.93	0.176	8.38	N/A	N/A
1/9/2010	16:15:40	26.66	50.94	33.39	44.1	2.93	0.172	8.38	N/A	N/A
1/9/2010	16:20:40	26.64	50.91	33.37	43.9	2.92	0.170	8.38	N/A	N/A
1/9/2010	16:25:40	26.62	50.96	33.41	44.1	2.93	0.166	8.38	N/A	N/A
1/9/2010	16:30:40	26.61	50.99	33.43	43.7	2.91	0.162	8.38	N/A	N/A
1/9/2010	16:35:40	26.65	50.98	33.42	43.7	2.90	0.165	8.38	N/A	N/A
1/9/2010	16:40:40	26.66	50.96	33.40	43.6	2.90	0.160	8.38	N/A	N/A
1/9/2010	16:45:40	26.65	51.03	33.45	43.2	2.87	0.166	8.38	N/A	N/A
1/9/2010	16:50:40	26.66	51.08	33.49	43.0	2.86	0.166	8.38	N/A	N/A
1/9/2010	16:55:40	26.65	51.11	33.52	43.0	2.85	0.164	8.38	N/A	N/A
1/9/2010	17:00:40	26.62	51.14	33.54	43.4	2.88	0.167	8.38	N/A	N/A
1/9/2010	17:05:40	26.60	51.17	33.56	43.2	2.87	0.170	8.38	N/A	N/A
1/9/2010	17:10:40	26.60	51.16	33.55	43.3	2.88	0.175	8.38	N/A	N/A
1/9/2010	17:15:40	26.61	51.17	33.55	43.2	2.87	0.178	8.38	N/A	N/A
1/9/2010	17:20:40	26.60	51.16	33.55	42.7	2.84	0.176	8.38	N/A	N/A
1/9/2010	17:25:40	26.58	51.13	33.53	42.4	2.82	0.174	8.38	N/A	N/A
1/9/2010	17:30:40	26.56	51.10	33.51	42.5	2.83	0.176	8.38	N/A	N/A
1/9/2010	17:35:40	26.54	51.08	33.50	42.4	2.82	0.173	8.38	N/A	N/A
1/9/2010	17:40:40	26.50	51.10	33.51	42.3	2.82	0.173	8.38	N/A	N/A
1/9/2010	17:45:40	26.47	51.09	33.50	42.4	2.82	0.172	8.38	N/A	N/A
1/9/2010	17:50:40	26.45	51.01	33.45	41.8	2.79	0.165	8.38	N/A	N/A
1/9/2010	17:55:40	26.42	51.00	33.44	41.4	2.76	0.165	8.38	N/A	N/A
1/9/2010	18:00:40	26.42	51.02	33.45	41.5	2.77	0.164	8.37	N/A	N/A
1/9/2010	18:05:40	26.39	51.00	33.44	41.0	2.74	0.170	8.37	N/A	N/A
1/9/2010	18:10:40	26.34	50.91	33.38	40.7	2.72	0.169	8.37	N/A	N/A
1/9/2010	18:15:40	26.34	50.91	33.37	40.6	2.71	0.170	8.37	N/A	N/A
1/9/2010	18:20:40	26.28	50.96	33.41	40.5	2.71	0.164	8.37	N/A	N/A
1/9/2010	18:25:40	26.20	51.00	33.44	40.9	2.74	0.167	8.38	N/A	N/A
1/9/2010	18:30:40	26.07	50.92	33.39	42.1	2.82	0.175	8.39	N/A	N/A
1/9/2010	18:35:40	26.01	50.78	33.29	42.3	2.84	0.183	8.39	N/A	N/A
1/9/2010	18:40:40	26.01	50.76	33.27	42.2	2.84	0.189	8.38	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	18:45:40	25.99	50.74	33.26	41.8	2.81	0.194	8.39	N/A	N/A
1/9/2010	18:50:40	26.00	50.74	33.26	41.6	2.80	0.201	8.39	N/A	N/A
1/9/2010	18:55:40	25.97	50.77	33.28	41.8	2.81	0.211	8.39	N/A	N/A
1/9/2010	19:00:40	25.93	50.78	33.29	42.3	2.85	0.224	8.39	N/A	N/A
1/9/2010	19:05:40	25.91	50.79	33.29	42.6	2.87	0.236	8.40	N/A	N/A
1/9/2010	19:10:40	25.89	50.79	33.29	42.4	2.86	0.243	8.40	N/A	N/A
1/9/2010	19:15:40	25.88	50.79	33.30	42.6	2.87	0.251	8.40	N/A	N/A
1/9/2010	19:20:40	25.90	50.78	33.29	42.2	2.84	0.258	8.39	N/A	N/A
1/9/2010	19:25:40	25.70	50.55	33.13	42.7	2.89	0.270	8.41	N/A	N/A
1/9/2010	19:35:40	25.58	50.12	32.81	43.8	2.97	0.287	8.41	N/A	N/A
1/9/2010	19:40:40	25.26	49.09	32.06	44.0	3.01	0.294	8.41	N/A	N/A
1/9/2010	19:45:40	25.22	48.56	31.68	43.6	3.00	0.296	8.41	N/A	N/A
1/9/2010	19:50:40	25.48	48.99	31.99	43.8	2.99	0.304	8.41	N/A	N/A
1/9/2010	19:55:40	25.44	49.33	32.24	43.4	2.97	0.312	8.41	N/A	N/A
1/9/2010	20:00:40	25.62	49.70	32.51	43.3	2.94	0.317	8.40	N/A	N/A
1/9/2010	20:05:40	25.69	50.04	32.75	43.5	2.95	0.323	8.40	N/A	N/A
1/9/2010	20:10:40	25.70	50.11	32.80	43.3	2.93	0.329	8.40	N/A	N/A
1/9/2010	20:15:40	25.72	50.21	32.87	43.1	2.92	0.337	8.40	N/A	N/A
1/9/2010	20:20:40	25.74	50.29	32.93	43.0	2.91	0.344	8.39	N/A	N/A
1/9/2010	20:25:40	25.78	50.35	32.98	42.4	2.87	0.352	8.39	N/A	N/A
1/9/2010	20:30:40	25.82	50.40	33.01	42.0	2.84	0.353	8.39	N/A	N/A
1/9/2010	20:35:40	25.84	50.45	33.05	41.8	2.82	0.347	8.39	N/A	N/A
1/9/2010	20:40:40	25.85	50.49	33.08	41.5	2.80	0.344	8.38	N/A	N/A
1/9/2010	20:45:40	25.88	50.58	33.14	40.7	2.75	0.341	8.37	N/A	N/A
1/9/2010	20:50:40	25.90	50.61	33.16	40.3	2.72	0.341	8.36	N/A	N/A
1/9/2010	20:55:40	25.87	50.51	33.09	40.8	2.75	0.341	8.38	N/A	N/A
1/9/2010	21:00:40	25.89	50.59	33.15	40.1	2.70	0.341	8.37	N/A	N/A
1/9/2010	21:05:40	25.87	50.55	33.12	40.2	2.71	0.342	8.38	N/A	N/A
1/9/2010	21:10:40	25.88	50.60	33.16	40.3	2.71	0.342	8.38	N/A	N/A
1/9/2010	21:15:40	25.88	50.64	33.18	40.3	2.72	0.342	8.39	N/A	N/A
1/9/2010	21:20:40	25.89	50.68	33.21	41.2	2.78	0.343	8.39	N/A	N/A
1/9/2010	21:25:40	25.89	50.66	33.20	41.9	2.83	0.344	8.40	N/A	N/A
1/9/2010	21:30:40	25.89	50.70	33.23	42.5	2.87	0.344	8.40	N/A	N/A
1/9/2010	21:35:40	25.89	50.65	33.20	42.5	2.87	0.344	8.40	N/A	N/A
1/9/2010	21:40:40	25.91	50.69	33.22	42.4	2.86	0.345	8.40	N/A	N/A
1/9/2010	21:45:40	25.89	50.63	33.18	42.7	2.88	0.345	8.39	N/A	N/A
1/9/2010	21:50:40	25.89	50.62	33.18	42.5	2.86	0.345	8.39	N/A	N/A
1/9/2010	21:55:40	25.91	50.65	33.19	42.5	2.86	0.346	8.39	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	22:00:40	25.89	50.66	33.20	42.7	2.88	0.345	8.39	N/A	N/A
1/9/2010	22:05:40	25.91	50.71	33.24	42.7	2.88	0.345	8.39	N/A	N/A
1/9/2010	22:10:40	25.89	50.64	33.19	42.4	2.86	0.345	8.38	N/A	N/A
1/9/2010	22:15:40	25.89	50.72	33.25	42.6	2.87	0.346	8.39	N/A	N/A
1/9/2010	22:20:40	25.91	50.74	33.26	42.4	2.86	0.346	8.38	N/A	N/A
1/9/2010	22:25:40	25.91	50.64	33.19	42.2	2.85	0.345	8.38	N/A	N/A
1/9/2010	22:30:40	25.94	50.79	33.30	42.0	2.83	0.346	8.38	N/A	N/A
1/9/2010	22:35:40	25.90	50.55	33.12	41.5	2.80	0.346	8.38	N/A	N/A
1/9/2010	22:40:40	25.88	50.56	33.13	41.2	2.78	0.346	8.38	N/A	N/A
1/9/2010	22:45:40	25.86	50.54	33.12	40.8	2.75	0.345	8.37	N/A	N/A
1/9/2010	22:55:40	25.94	50.72	33.24	40.6	2.73	0.345	8.37	N/A	N/A
1/9/2010	23:00:40	25.95	50.76	33.27	40.5	2.73	0.345	8.37	N/A	N/A
1/9/2010	23:05:40	25.86	50.56	33.13	40.2	2.71	0.345	8.37	N/A	N/A
1/9/2010	23:10:40	25.85	50.53	33.11	39.9	2.69	0.345	8.37	N/A	N/A
1/9/2010	23:15:40	25.87	50.57	33.13	39.7	2.68	0.344	8.37	N/A	N/A
1/9/2010	23:20:40	25.88	50.68	33.22	40.9	2.76	0.345	8.38	N/A	N/A
1/9/2010	23:25:40	25.90	50.71	33.24	41.7	2.81	0.345	8.38	N/A	N/A
1/9/2010	23:30:40	25.87	50.68	33.21	41.7	2.81	0.344	8.39	N/A	N/A
1/9/2010	23:35:40	25.91	50.71	33.24	42.0	2.83	0.344	8.39	N/A	N/A
1/9/2010	23:40:40	25.87	50.80	33.31	41.9	2.83	0.344	8.38	N/A	N/A
1/9/2010	23:45:40	25.83	50.72	33.25	41.7	2.82	0.344	8.39	N/A	N/A
1/9/2010	23:50:40	25.82	50.73	33.25	42.0	2.83	0.343	8.38	N/A	N/A
1/9/2010	23:55:40	25.83	50.83	33.33	42.3	2.86	0.343	8.39	N/A	N/A
1/10/2010	0:00:40	25.74	50.71	33.24	42.6	2.88	0.343	8.39	N/A	N/A
1/10/2010	0:05:40	25.71	50.75	33.28	43.0	2.91	0.343	8.40	N/A	N/A
1/10/2010	0:10:40	25.92	50.92	33.39	43.1	2.90	0.342	8.40	N/A	N/A
1/10/2010	0:15:40	25.85	50.78	33.29	43.2	2.91	0.342	8.40	N/A	N/A
1/10/2010	0:20:40	25.83	50.83	33.33	43.2	2.92	0.342	8.40	N/A	N/A
1/10/2010	0:25:40	25.85	50.81	33.32	42.8	2.89	0.341	8.39	N/A	N/A
1/10/2010	0:30:40	25.75	50.87	33.36	43.0	2.90	0.341	8.39	N/A	N/A
1/10/2010	0:35:40	25.94	50.99	33.44	43.0	2.89	0.340	8.39	N/A	N/A
1/10/2010	0:40:40	25.86	50.85	33.35	42.6	2.87	0.340	8.39	N/A	N/A
1/10/2010	0:45:40	26.01	50.96	33.42	42.3	2.84	0.340	8.39	N/A	N/A
1/10/2010	0:50:40	25.85	50.96	33.42	42.4	2.86	0.340	8.38	N/A	N/A
1/10/2010	0:55:40	25.89	50.98	33.44	42.4	2.86	0.340	8.39	N/A	N/A
1/10/2010	1:00:40	25.92	50.99	33.44	42.3	2.85	0.341	8.38	N/A	N/A
1/10/2010	1:05:40	25.90	50.97	33.43	42.1	2.83	0.340	8.38	N/A	N/A
1/10/2010	1:10:40	25.91	51.04	33.48	41.4	2.78	0.340	8.38	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	1:15:40	25.84	51.01	33.46	41.4	2.79	0.340	8.37	N/A	N/A
1/10/2010	1:20:40	26.05	51.07	33.50	41.2	2.77	0.340	8.37	N/A	N/A
1/10/2010	1:25:40	26.05	51.12	33.54	40.9	2.75	0.340	8.37	N/A	N/A
1/10/2010	1:30:40	25.78	50.94	33.41	40.7	2.75	0.339	8.37	N/A	N/A
1/10/2010	1:35:40	25.59	50.92	33.40	40.3	2.73	0.339	8.37	N/A	N/A
1/10/2010	1:40:40	25.32	50.65	33.21	39.9	2.72	0.339	8.37	N/A	N/A
1/10/2010	1:45:40	25.44	50.74	33.27	40.1	2.72	0.338	8.37	N/A	N/A
1/10/2010	1:50:40	25.17	50.75	33.29	40.1	2.74	0.338	8.37	N/A	N/A
1/10/2010	1:55:40	25.22	50.62	33.19	40.2	2.74	0.338	8.38	N/A	N/A
1/10/2010	2:00:40	25.14	50.52	33.12	40.5	2.77	0.338	8.38	N/A	N/A
1/10/2010	2:05:40	25.21	50.53	33.12	40.6	2.77	0.338	8.38	N/A	N/A
1/10/2010	2:15:40	25.26	50.64	33.20	40.7	2.77	0.337	8.38	N/A	N/A
1/10/2010	2:20:40	25.24	50.64	33.20	40.7	2.78	0.337	8.38	N/A	N/A
1/10/2010	2:25:40	25.24	50.64	33.20	40.3	2.75	0.336	8.38	N/A	N/A
1/10/2010	2:30:40	25.23	50.64	33.21	40.6	2.76	0.337	8.38	N/A	N/A
1/10/2010	2:35:40	25.22	50.62	33.19	40.4	2.76	0.337	8.38	N/A	N/A
1/10/2010	2:40:40	25.23	50.65	33.21	40.3	2.75	0.337	8.38	N/A	N/A
1/10/2010	2:45:40	25.24	50.65	33.21	39.9	2.72	0.336	8.37	N/A	N/A
1/10/2010	2:50:40	25.24	50.67	33.23	40.1	2.73	0.336	8.37	N/A	N/A
1/10/2010	2:55:40	25.16	50.67	33.23	39.7	2.71	0.336	8.37	N/A	N/A
1/10/2010	3:00:40	25.08	50.62	33.19	39.5	2.70	0.336	8.37	N/A	N/A
1/10/2010	3:05:40	25.03	50.57	33.15	40.1	2.74	0.336	8.38	N/A	N/A
1/10/2010	3:10:40	25.02	50.56	33.15	40.0	2.74	0.336	8.38	N/A	N/A
1/10/2010	3:15:40	25.12	50.60	33.18	39.1	2.67	0.336	8.37	N/A	N/A
1/10/2010	3:20:40	25.35	50.75	33.28	37.8	2.57	0.336	8.36	N/A	N/A
1/10/2010	3:25:40	25.34	50.66	33.22	38.8	2.64	0.335	8.36	N/A	N/A
1/10/2010	3:30:40	25.24	50.75	33.28	38.5	2.62	0.335	8.36	N/A	N/A
1/10/2010	3:35:40	25.17	50.77	33.30	38.9	2.65	0.335	8.36	N/A	N/A
1/10/2010	3:40:40	25.12	50.68	33.24	39.0	2.66	0.335	8.36	N/A	N/A
1/10/2010	3:45:40	25.09	50.63	33.20	39.2	2.68	0.335	8.37	N/A	N/A
1/10/2010	3:50:40	25.07	50.68	33.24	38.7	2.65	0.335	8.37	N/A	N/A
1/10/2010	3:55:40	25.06	50.65	33.21	38.8	2.66	0.338	8.37	N/A	N/A
1/10/2010	4:00:40	25.27	51.12	33.56	37.8	2.57	0.335	8.36	N/A	N/A
1/10/2010	4:05:40	25.05	50.68	33.24	39.1	2.67	0.335	8.36	N/A	N/A
1/10/2010	4:10:40	25.02	50.64	33.21	39.0	2.67	0.335	8.37	N/A	N/A
1/10/2010	4:15:40	25.24	50.80	33.32	38.2	2.60	0.335	8.36	N/A	N/A
1/10/2010	4:20:40	25.13	50.74	33.28	39.0	2.66	0.335	8.36	N/A	N/A
1/10/2010	4:25:40	25.17	50.81	33.33	38.7	2.64	0.335	8.36	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	4:30:40	25.06	50.69	33.24	39.0	2.66	0.335	8.36	N/A	N/A
1/10/2010	4:35:40	25.06	50.69	33.25	39.0	2.66	0.335	8.37	N/A	N/A
1/10/2010	4:40:40	25.09	50.82	33.34	38.7	2.64	0.335	8.36	N/A	N/A
1/10/2010	4:45:40	25.00	50.70	33.25	38.9	2.66	0.336	8.36	N/A	N/A
1/10/2010	4:50:40	25.04	50.70	33.25	38.9	2.66	0.336	8.36	N/A	N/A
1/10/2010	4:55:40	26.01	51.37	33.72	36.3	2.44	0.337	8.35	N/A	N/A
1/10/2010	5:00:40	26.15	51.72	33.98	36.0	2.41	0.337	8.34	N/A	N/A
1/10/2010	5:05:40	26.18	51.74	33.99	35.5	2.37	0.337	8.34	N/A	N/A
1/10/2010	5:10:40	25.09	50.86	33.37	37.1	2.53	0.338	8.34	N/A	N/A
1/10/2010	5:15:40	25.06	50.89	33.39	37.7	2.57	0.338	8.35	N/A	N/A
1/10/2010	5:20:40	25.02	50.85	33.36	37.6	2.57	0.338	8.35	N/A	N/A
1/10/2010	5:25:40	24.89	50.70	33.25	38.4	2.63	0.339	8.36	N/A	N/A
1/10/2010	5:35:40	24.93	50.74	33.28	38.3	2.63	0.340	8.36	N/A	N/A
1/10/2010	5:40:40	24.96	50.78	33.31	38.0	2.60	0.339	8.36	N/A	N/A
1/10/2010	5:45:40	24.87	50.70	33.26	38.2	2.62	0.340	8.36	N/A	N/A
1/10/2010	5:50:40	24.75	50.65	33.22	39.2	2.69	0.339	8.36	N/A	N/A
1/10/2010	5:55:40	24.73	50.63	33.21	39.1	2.69	0.339	8.36	N/A	N/A
1/10/2010	6:00:40	24.75	50.58	33.17	40.4	2.77	0.339	8.37	N/A	N/A
1/10/2010	6:05:40	24.74	50.60	33.19	40.5	2.78	0.340	8.37	N/A	N/A
1/10/2010	6:10:40	24.76	50.60	33.18	40.5	2.78	0.340	8.37	N/A	N/A
1/10/2010	6:15:40	24.79	50.64	33.21	39.5	2.71	0.341	8.37	N/A	N/A
1/10/2010	6:20:40	24.72	50.58	33.17	40.3	2.77	0.340	8.37	N/A	N/A
1/10/2010	6:25:40	24.74	50.58	33.17	40.2	2.77	0.341	8.38	N/A	N/A
1/10/2010	6:30:40	24.75	50.60	33.18	40.3	2.77	0.342	8.38	N/A	N/A
1/10/2010	6:35:40	24.73	50.59	33.18	40.4	2.78	0.342	8.38	N/A	N/A
1/10/2010	6:40:40	24.76	50.60	33.18	39.9	2.74	0.343	8.37	N/A	N/A
1/10/2010	6:45:40	24.41	50.27	32.95	41.7	2.89	0.344	8.39	N/A	N/A
1/10/2010	6:50:40	24.37	50.22	32.91	42.7	2.96	0.344	8.39	N/A	N/A
1/10/2010	6:55:40	24.34	50.19	32.89	42.7	2.96	0.344	8.40	N/A	N/A
1/10/2010	7:00:40	24.36	50.13	32.84	42.7	2.96	0.344	8.40	N/A	N/A
1/10/2010	7:05:40	24.38	50.13	32.84	42.9	2.97	0.344	8.40	N/A	N/A
1/10/2010	7:10:40	24.41	50.14	32.85	43.0	2.98	0.346	8.40	N/A	N/A
1/10/2010	7:15:40	24.47	50.15	32.86	43.0	2.98	0.348	8.40	N/A	N/A
1/10/2010	7:20:40	24.53	50.19	32.88	43.2	2.99	0.351	8.40	N/A	N/A
1/10/2010	7:25:40	24.55	50.20	32.90	43.0	2.97	0.351	8.40	N/A	N/A
1/10/2010	7:30:40	24.59	50.21	32.90	43.2	2.98	0.353	8.40	N/A	N/A
1/10/2010	7:35:40	24.63	50.36	33.01	37.6	2.59	0.354	8.37	N/A	N/A
1/10/2010	7:40:40	24.63	50.36	33.01	38.2	2.63	0.358	8.36	N/A	N/A

Table AII.27: (Continued) Middle Loch Platform A YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	7:45:40	24.69	50.41	33.04	35.9	2.47	0.356	8.36	N/A	N/A
1/10/2010	7:50:40	24.74	50.57	33.16	32.8	2.26	0.358	8.33	N/A	N/A
1/10/2010	7:55:40	24.81	50.56	33.15	32.2	2.21	0.362	8.32	N/A	N/A
1/10/2010	8:00:40	24.69	50.39	33.03	32.8	2.26	0.363	8.32	N/A	N/A
1/10/2010	8:05:40	24.72	50.40	33.04	32.6	2.24	0.361	8.32	N/A	N/A
1/10/2010	8:10:40	24.71	50.54	33.14	34.9	2.40	0.362	8.32	N/A	N/A
1/10/2010	8:15:40	24.76	50.46	33.08	36.1	2.48	0.365	8.34	N/A	N/A
1/10/2010	8:20:40	24.81	50.51	33.12	36.2	2.49	0.366	8.34	N/A	N/A
1/10/2010	8:25:40	24.37	50.21	32.90	40.5	2.80	0.364	8.37	N/A	N/A
1/10/2010	8:30:40	24.63	50.20	32.89	38.9	2.68	0.366	8.37	N/A	N/A
1/10/2010	8:35:40	24.67	50.21	32.90	39.0	2.69	0.366	8.37	N/A	N/A
1/10/2010	8:40:40	24.64	50.27	32.95	39.5	2.73	0.367	8.37	N/A	N/A
1/10/2010	8:45:40	24.71	50.34	32.99	38.5	2.65	0.367	8.37	N/A	N/A
1/10/2010	8:55:40	24.65	50.30	32.97	39.7	2.74	0.370	8.37	N/A	N/A
1/10/2010	9:00:40	24.51	50.25	32.93	41.1	2.84	0.371	8.38	N/A	N/A
1/10/2010	9:05:40	24.49	50.21	32.91	41.7	2.88	0.369	8.39	N/A	N/A
1/10/2010	9:10:40	24.48	50.17	32.87	41.9	2.90	0.368	8.39	N/A	N/A
1/10/2010	9:15:40	24.45	49.77	32.58	42.1	2.92	0.386	8.39	N/A	N/A

Table AII.28: Middle Loch Platform A wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100108	10:53	1.5	20100109	10:53	1.5
20100108	11:53	1.5	20100109	11:53	1.5
20100108	12:00	1.5	20100109	12:00	0.0
20100108	12:53	1.5	20100109	12:10	0.0
20100108	13:53	0.0	20100109	12:53	0.0
20100108	14:53	1.5	20100109	13:53	0.0
20100108	15:53	0.0	20100109	14:53	0.0
20100108	16:53	2.1	20100109	15:53	0.0
20100108	17:53	1.5	20100109	16:53	0.0
20100108	18:00	1.5	20100109	17:53	1.5
20100108	18:53	0.0	20100109	18:00	1.5
20100108	19:53	1.5	20100109	18:53	0.0
20100108	20:53	2.6	20100109	19:53	1.5
20100108	21:53	2.1	20100109	20:53	4.1
20100108	22:53	3.6	20100109	21:53	6.2
20100108	23:53	2.6	20100109	22:53	6.7
20100109	00:00	2.6	20100109	23:53	6.2
20100109	00:53	3.1	20100110	00:00	6.2
20100109	01:53	3.6	20100110	00:53	6.2
20100109	02:53	3.1	20100110	01:53	6.7
20100109	03:53	1.5	20100110	02:53	6.2
20100109	04:53	0.0	20100110	03:53	5.7
20100109	05:53	0.0	20100110	04:53	3.6
20100109	06:00	0.0	20100110	05:53	1.5
20100109	06:53	1.5	20100110	06:00	1.5
20100109	07:53	1.5	20100110	06:53	1.5
20100109	08:53	2.1	20100110	07:53	2.6
20100109	09:53	0.0	20100110	08:53	1.5

Table AII.29: Middle Loch Platform A depth profile collected on 19 January 2011 using an YSI 6600 V2-4.

Depth m	Time hh:mm	Temp °C	SpCond mS/cm	Sal	pH	ORP	Chl µg/L	DO %	DO mg
0.04	10:39	24.48	39.76	25.45	8.50	122.6	14.7	185.0	13.34
0.15	10:39	24.61	41.72	26.71	8.45	123.0	15.2	184.2	13.21
0.26	10:40	24.45	41.07	26.38	8.49	123.4	14.4	180.0	12.90
0.39	10:40	24.79	43.14	27.78	8.49	124.3	15.0	183.8	13.02
0.48	10:41	25.00	43.37	27.91	8.51	124.5	15.5	192.0	13.57
0.65	10:42	25.29	44.19	28.52	8.50	125.1	18.2	195.7	13.64
0.82	10:43	25.77	44.57	28.93	8.36	126.9	16.3	165.5	11.11

Table AII.30: Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/8/10 10:25	-37.47	82.02	1/8/10 13:25	-42.36	69.60
1/8/10 10:30	-37.78	81.23	1/8/10 13:30	-42.21	69.98
1/8/10 10:35	-37.39	82.22	1/8/10 13:35	-42.40	69.50
1/8/10 10:40	-37.55	81.82	1/8/10 13:40	-42.72	68.68
1/8/10 10:45	-37.74	81.33	1/8/10 13:45	-43.38	67.01
1/8/10 10:50	-37.59	81.71	1/8/10 13:50	-43.38	67.01
1/8/10 10:55	-37.70	81.43	1/8/10 13:55	-43.85	65.81
1/8/10 11:00	-37.86	81.03	1/8/10 14:00	-44.01	65.41
1/8/10 11:05	-37.94	80.82	1/8/10 14:05	-44.13	65.10
1/8/10 11:10	-38.06	80.52	1/8/10 14:10	-44.63	63.83
1/8/10 11:15	-38.10	80.42	1/8/10 14:15	-44.87	63.22
1/8/10 11:20	-37.86	81.03	1/8/10 14:20	-45.07	62.71
1/8/10 11:25	-37.86	81.03	1/8/10 14:25	-45.18	62.44
1/8/10 11:30	-38.33	79.83	1/8/10 14:30	-45.65	61.24
1/8/10 11:35	-37.82	81.13	1/8/10 14:35	-45.54	61.52
1/8/10 11:40	-38.33	79.83	1/8/10 14:40	-45.73	61.04
1/8/10 11:45	-38.25	80.04	1/8/10 14:45	-45.85	60.73
1/8/10 11:50	-38.41	79.63	1/8/10 14:50	-45.81	60.84
1/8/10 11:55	-38.72	78.84	1/8/10 14:55	-45.85	60.73
1/8/10 12:00	-39.08	77.93	1/8/10 15:00	-45.81	60.84
1/8/10 12:05	-39.19	77.65	1/8/10 15:05	-45.69	61.14
1/8/10 12:10	-39.11	77.85	1/8/10 15:10	-45.97	60.43
1/8/10 12:15	-39.11	77.85	1/8/10 15:15	-45.69	61.14
1/8/10 12:20	-39.62	76.56	1/8/10 15:20	-45.77	60.94
1/8/10 12:25	-39.90	75.85	1/8/10 15:25	-45.50	61.62
1/8/10 12:30	-39.94	75.74	1/8/10 15:30	-45.81	60.84
1/8/10 12:35	-40.60	74.07	1/8/10 15:35	-45.42	61.83
1/8/10 12:40	-40.09	75.36	1/8/10 15:40	-45.57	61.44
1/8/10 12:45	-40.29	74.86	1/8/10 15:45	-45.26	62.23
1/8/10 12:50	-41.03	72.98	1/8/10 15:50	-45.34	62.03
1/8/10 12:55	-40.76	73.66	1/8/10 15:55	-46.08	60.15
1/8/10 13:00	-41.15	72.67	1/8/10 16:00	-45.77	60.94
1/8/10 13:05	-41.31	72.27	1/8/10 16:05	-45.61	61.34
1/8/10 13:10	-41.50	71.78	1/8/10 16:10	-45.61	61.34
1/8/10 13:15	-41.66	71.38	1/8/10 16:15	-45.81	60.84
1/8/10 13:20	-42.05	70.39	1/8/10 16:20	-46.04	60.25

Table AII.30: (Continued) Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/8/10 16:25	-46.16	59.95	1/8/10 16:45	-46.83	58.24
1/8/10 16:30	-46.75	58.45	1/8/10 16:50	-46.98	57.86
1/8/10 16:35	-46.63	58.75	1/8/10 16:55	-47.06	57.66
1/8/10 16:40	-46.63	58.75	1/8/10 17:00	-47.10	57.56
1/8/10 16:45	-46.83	58.24	1/8/10 17:05	-46.95	57.94
1/8/10 16:50	-46.98	57.86	1/8/10 17:10	-46.55	58.96
1/8/10 16:55	-47.06	57.66	1/8/10 17:15	-46.75	58.45
1/8/10 17:00	-47.10	57.56	1/8/10 17:20	-46.75	58.45
1/8/10 17:05	-46.95	57.94	1/8/10 17:25	-46.48	59.13
1/8/10 17:10	-46.55	58.96	1/8/10 17:30	-46.28	59.64
1/8/10 17:15	-46.75	58.45	1/8/10 17:35	-45.81	60.84
1/8/10 17:20	-46.75	58.45	1/8/10 17:40	-45.57	61.44
1/8/10 17:25	-46.48	59.13	1/8/10 17:45	-45.46	61.72
1/8/10 17:30	-46.28	59.64	1/8/10 17:50	-44.95	63.02
1/8/10 17:35	-45.81	60.84	1/8/10 17:55	-44.75	63.53
1/8/10 17:40	-45.57	61.44	1/8/10 18:00	-44.71	63.63
1/8/10 17:45	-45.46	61.72	1/8/10 18:05	-44.09	65.20
1/8/10 17:50	-44.95	63.02	1/8/10 18:10	-43.93	65.61
1/8/10 17:55	-44.75	63.53	1/8/10 18:15	-43.70	66.19
1/8/10 18:00	-44.71	63.63	1/8/10 18:20	-43.30	67.21
1/8/10 18:05	-44.09	65.20	1/8/10 18:25	-43.07	67.79
1/8/10 18:10	-43.93	65.61	1/8/10 18:30	-42.64	68.89
1/8/10 18:15	-43.70	66.19	1/8/10 18:35	-42.64	68.89
1/8/10 18:20	-43.30	67.21	1/8/10 18:40	-42.36	69.60
1/8/10 18:25	-43.07	67.79	1/8/10 18:45	-42.13	70.18
1/8/10 18:30	-42.64	68.89	1/8/10 18:50	-41.97	70.59
1/8/10 18:35	-42.64	68.89	1/8/10 18:55	-41.66	71.38
1/8/10 18:40	-42.36	69.60	1/8/10 19:00	-41.58	71.58
1/8/10 18:45	-42.13	70.18	1/8/10 19:05	-41.46	71.88
1/8/10 18:50	-41.97	70.59	1/8/10 19:10	-41.19	72.57
1/8/10 18:55	-41.66	71.38	1/8/10 19:15	-40.76	73.66
1/8/10 16:25	-46.16	59.95	1/8/10 19:20	-40.56	74.17
1/8/10 16:30	-46.75	58.45	1/8/10 19:25	-40.33	74.75
1/8/10 16:35	-46.63	58.75	1/8/10 19:30	-40.05	75.47
1/8/10 16:40	-46.63	58.75	1/8/10 19:35	-39.66	76.46

Table AII.30: (Continued) Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/8/10 19:40	-39.39	77.14	1/8/10 22:35	-27.84	106.48
1/8/10 19:45	-38.76	78.74	1/8/10 22:40	-27.49	107.37
1/8/10 19:50	-38.61	79.12	1/8/10 22:45	-27.21	108.08
1/8/10 19:55	-38.29	79.94	1/8/10 22:50	-26.86	108.97
1/8/10 20:00	-37.74	81.33	1/8/10 22:55	-26.82	109.07
1/8/10 20:05	-37.35	82.32	1/8/10 23:00	-26.74	109.27
1/8/10 20:10	-36.92	83.42	1/8/10 23:05	-26.66	109.48
1/8/10 20:15	-36.61	84.20	1/8/10 23:10	-26.47	109.96
1/8/10 20:20	-36.06	85.60	1/8/10 23:15	-26.23	110.57
1/8/10 20:25	-35.75	86.39	1/8/10 23:20	-26.35	110.26
1/8/10 20:30	-35.47	87.10	1/8/10 23:25	-26.31	110.37
1/8/10 20:35	-35.08	88.09	1/8/10 23:30	-25.84	111.56
1/8/10 20:40	-34.73	88.98	1/8/10 23:35	-25.96	111.25
1/8/10 20:45	-34.38	89.87	1/8/10 23:40	-25.96	111.25
1/8/10 20:50	-33.95	90.96	1/8/10 23:45	-25.84	111.56
1/8/10 20:55	-33.83	91.26	1/8/10 23:50	-26.00	111.15
1/8/10 21:00	-33.79	91.37	1/8/10 23:55	-25.33	112.85
1/8/10 21:05	-33.16	92.97	1/9/10 0:00	-25.53	112.35
1/8/10 21:10	-33.24	92.76	1/9/10 0:05	-25.14	113.34
1/8/10 21:15	-32.77	93.96	1/9/10 0:10	-25.02	113.64
1/8/10 21:20	-32.77	93.96	1/9/10 0:15	-25.06	113.54
1/8/10 21:25	-32.61	94.36	1/9/10 0:20	-24.82	114.15
1/8/10 21:30	-32.30	95.15	1/9/10 0:25	-24.67	114.53
1/8/10 21:35	-31.95	96.04	1/9/10 0:30	-24.59	114.73
1/8/10 21:40	-31.56	97.03	1/9/10 0:35	-24.59	114.73
1/8/10 21:45	-31.64	96.83	1/9/10 0:40	-24.47	115.04
1/8/10 21:50	-31.05	98.33	1/9/10 0:45	-24.16	115.83
1/8/10 21:55	-30.66	99.32	1/9/10 0:50	-23.88	116.54
1/8/10 22:00	-30.07	100.81	1/9/10 0:55	-24.39	115.24
1/8/10 22:05	-30.07	100.81	1/9/10 1:00	-23.88	116.54
1/8/10 22:10	-29.52	102.21	1/9/10 1:05	-24.16	115.83
1/8/10 22:15	-29.25	102.90	1/9/10 1:10	-24.04	116.13
1/8/10 22:20	-28.78	104.09	1/9/10 1:15	-24.08	116.03
1/8/10 22:25	-28.15	105.69	1/9/10 1:20	-24.35	115.34
1/8/10 22:30	-27.99	106.10	1/9/10 1:25	-24.67	114.53

Table AII.30: (Continued) Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 1:30	-24.74	114.35	1/9/10 4:25	-32.30	95.15
1/9/10 1:35	-24.74	114.35	1/9/10 4:30	-32.30	95.15
1/9/10 1:40	-25.49	112.45	1/9/10 4:35	-32.65	94.26
1/9/10 1:45	-25.33	112.85	1/9/10 4:40	-32.97	93.45
1/9/10 1:50	-25.96	111.25	1/9/10 4:45	-33.12	93.07
1/9/10 1:55	-26.15	110.77	1/9/10 4:50	-33.32	92.56
1/9/10 2:00	-26.39	110.16	1/9/10 4:55	-33.44	92.25
1/9/10 2:05	-26.31	110.37	1/9/10 5:00	-33.95	90.96
1/9/10 2:10	-26.78	109.17	1/9/10 5:05	-33.83	91.26
1/9/10 2:15	-26.94	108.76	1/9/10 5:10	-34.18	90.38
1/9/10 2:20	-26.78	109.17	1/9/10 5:15	-34.30	90.07
1/9/10 2:25	-26.78	109.17	1/9/10 5:20	-34.46	89.66
1/9/10 2:30	-27.02	108.56	1/9/10 5:25	-34.77	88.88
1/9/10 2:35	-27.17	108.18	1/9/10 5:30	-34.73	88.98
1/9/10 2:40	-27.02	108.56	1/9/10 5:35	-35.12	87.99
1/9/10 2:45	-27.17	108.18	1/9/10 5:40	-35.12	87.99
1/9/10 2:50	-27.02	108.56	1/9/10 5:45	-35.59	86.79
1/9/10 2:55	-27.25	107.98	1/9/10 5:50	-35.79	86.29
1/9/10 3:00	-27.13	108.28	1/9/10 5:55	-36.10	85.50
1/9/10 3:05	-27.33	107.77	1/9/10 6:00	-36.37	84.81
1/9/10 3:10	-27.02	108.56	1/9/10 6:05	-36.61	84.20
1/9/10 3:15	-27.56	107.19	1/9/10 6:10	-36.84	83.62
1/9/10 3:20	-27.56	107.19	1/9/10 6:15	-37.16	82.81
1/9/10 3:25	-27.56	107.19	1/9/10 6:20	-37.51	81.92
1/9/10 3:30	-28.07	105.89	1/9/10 6:25	-37.47	82.02
1/9/10 3:35	-28.15	105.69	1/9/10 6:30	-37.63	81.61
1/9/10 3:40	-28.43	104.98	1/9/10 6:35	-38.14	80.32
1/9/10 3:45	-28.90	103.79	1/9/10 6:40	-37.82	81.13
1/9/10 3:50	-29.29	102.80	1/9/10 6:45	-37.86	81.03
1/9/10 3:55	-29.60	102.01	1/9/10 6:50	-38.21	80.14
1/9/10 4:00	-30.03	100.92	1/9/10 6:55	-37.98	80.72
1/9/10 4:05	-30.54	99.62	1/9/10 7:00	-38.06	80.52
1/9/10 4:10	-31.01	98.43	1/9/10 7:05	-38.02	80.62
1/9/10 4:15	-31.32	97.64	1/9/10 7:10	-37.90	80.93
1/9/10 4:20	-31.56	97.03	1/9/10 7:15	-37.98	80.72

Table AII.30: (Continued) Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 7:20	-37.90	80.93	1/9/10 10:15	-39.11	77.85
1/9/10 7:25	-38.21	80.14	1/9/10 10:20	-39.15	77.75
1/9/10 7:30	-38.10	80.42	1/9/10 10:25	-38.84	78.54
1/9/10 7:35	-38.57	79.22	1/9/10 10:30	-39.00	78.13
1/9/10 7:40	-38.33	79.83	1/9/10 10:35	-38.84	78.54
1/9/10 7:45	-38.57	79.22	1/9/10 10:40	-38.88	78.44
1/9/10 7:50	-38.57	79.22	1/9/10 10:45	-38.80	78.64
1/9/10 7:55	-38.88	78.44	1/9/10 10:50	-38.96	78.23
1/9/10 8:00	-39.08	77.93	1/9/10 10:55	-38.80	78.64
1/9/10 8:05	-38.88	78.44	1/9/10 11:00	-38.80	78.64
1/9/10 8:10	-39.23	77.55	1/9/10 11:05	-38.80	78.64
1/9/10 8:15	-39.31	77.35	1/9/10 11:10	-38.68	78.95
1/9/10 8:20	-39.27	77.45	1/9/10 11:15	-38.88	78.44
1/9/10 8:25	-39.58	76.66	1/9/10 11:20	-38.88	78.44
1/9/10 8:30	-39.43	77.04	1/9/10 11:25	-38.68	78.95
1/9/10 8:35	-39.58	76.66	1/9/10 11:30	-38.68	78.95
1/9/10 8:40	-39.62	76.56	1/9/10 11:35	-38.68	78.95
1/9/10 8:45	-39.74	76.25	1/9/10 11:40	-38.53	79.33
1/9/10 8:50	-39.86	75.95	1/9/10 11:45	-38.53	79.33
1/9/10 8:55	-39.94	75.74	1/9/10 11:50	-38.57	79.22
1/9/10 9:00	-39.54	76.76	1/9/10 11:55	-38.41	79.63
1/9/10 9:05	-39.86	75.95	1/9/10 12:00	-38.25	80.04
1/9/10 9:10	-39.31	77.35	1/9/10 12:05	-38.49	79.43
1/9/10 9:15	-39.31	77.35	1/9/10 12:10	-38.29	79.94
1/9/10 9:20	-39.58	76.66	1/9/10 12:15	-38.49	79.43
1/9/10 9:25	-39.11	77.85	1/9/10 12:20	-38.53	79.33
1/9/10 9:30	-39.47	76.94	1/9/10 12:25	-38.64	79.05
1/9/10 9:35	-39.31	77.35	1/9/10 12:30	-38.49	79.43
1/9/10 9:40	-39.00	78.13	1/9/10 12:35	-38.72	78.84
1/9/10 9:45	-39.39	77.14	1/9/10 12:40	-38.80	78.64
1/9/10 9:50	-39.23	77.55	1/9/10 12:45	-38.57	79.22
1/9/10 9:55	-39.04	78.03	1/9/10 12:50	-38.92	78.34
1/9/10 10:00	-39.08	77.93	1/9/10 12:55	-38.72	78.84
1/9/10 10:05	-39.08	77.93	1/9/10 13:00	-39.23	77.55
1/9/10 10:10	-39.08	77.93	1/9/10 13:05	-39.23	77.55

Table AII.30: (Continued) Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 13:10	-39.23	77.55	1/9/10 16:05	-45.50	61.62
1/9/10 13:15	-39.47	76.94	1/9/10 16:10	-45.30	62.13
1/9/10 13:20	-39.31	77.35	1/9/10 16:15	-45.77	60.94
1/9/10 13:25	-39.94	75.74	1/9/10 16:20	-45.69	61.14
1/9/10 13:30	-40.29	74.86	1/9/10 16:25	-45.69	61.14
1/9/10 13:35	-40.41	74.55	1/9/10 16:30	-45.89	60.63
1/9/10 13:40	-40.60	74.07	1/9/10 16:35	-46.16	59.95
1/9/10 13:45	-40.80	73.56	1/9/10 16:40	-45.77	60.94
1/9/10 13:50	-40.95	73.18	1/9/10 16:45	-45.97	60.43
1/9/10 13:55	-41.58	71.58	1/9/10 16:50	-45.97	60.43
1/9/10 14:00	-41.11	72.77	1/9/10 16:55	-45.73	61.04
1/9/10 14:05	-41.66	71.38	1/9/10 17:00	-45.73	61.04
1/9/10 14:10	-41.62	71.48	1/9/10 17:05	-45.65	61.24
1/9/10 14:15	-41.66	71.38	1/9/10 17:10	-45.69	61.14
1/9/10 14:20	-42.25	69.88	1/9/10 17:15	-45.54	61.52
1/9/10 14:25	-41.93	70.69	1/9/10 17:20	-45.57	61.44
1/9/10 14:30	-42.25	69.88	1/9/10 17:25	-45.77	60.94
1/9/10 14:35	-42.64	68.89	1/9/10 17:30	-45.57	61.44
1/9/10 14:40	-42.56	69.09	1/9/10 17:35	-45.89	60.63
1/9/10 14:45	-42.56	69.09	1/9/10 17:40	-46.01	60.33
1/9/10 14:50	-43.23	67.39	1/9/10 17:45	-46.01	60.33
1/9/10 14:55	-42.95	68.10	1/9/10 17:50	-46.08	60.15
1/9/10 15:00	-43.50	66.70	1/9/10 17:55	-46.32	59.54
1/9/10 15:05	-43.54	66.60	1/9/10 18:00	-46.08	60.15
1/9/10 15:10	-43.66	66.30	1/9/10 18:05	-46.20	59.84
1/9/10 15:15	-43.70	66.19	1/9/10 18:10	-46.36	59.44
1/9/10 15:20	-43.73	66.12	1/9/10 18:15	-46.36	59.44
1/9/10 15:25	-43.85	65.81	1/9/10 18:20	-46.28	59.64
1/9/10 15:30	-44.17	65.00	1/9/10 18:25	-46.20	59.84
1/9/10 15:35	-44.20	64.92	1/9/10 18:30	-45.97	60.43
1/9/10 15:40	-44.63	63.83	1/9/10 18:35	-45.73	61.04
1/9/10 15:45	-44.36	64.52	1/9/10 18:40	-45.65	61.24
1/9/10 15:50	-44.83	63.32	1/9/10 18:45	-45.26	62.23
1/9/10 15:55	-44.52	64.11	1/9/10 18:50	-44.95	63.02
1/9/10 16:00	-45.14	62.54	1/9/10 18:55	-44.75	63.53

Table AII.30: (Continued) Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 19:00	-44.05	65.31	1/9/10 21:55	-32.14	95.56
1/9/10 19:05	-43.93	65.61	1/9/10 22:00	-32.26	95.25
1/9/10 19:10	-43.46	66.80	1/9/10 22:05	-31.64	96.83
1/9/10 19:15	-43.23	67.39	1/9/10 22:10	-31.64	96.83
1/9/10 19:20	-42.72	68.68	1/9/10 22:15	-31.44	97.33
1/9/10 19:25	-42.56	69.09	1/9/10 22:20	-30.85	98.83
1/9/10 19:30	-42.21	69.98	1/9/10 22:25	-30.77	99.04
1/9/10 19:35	-41.86	70.87	1/9/10 22:30	-30.15	100.61
1/9/10 19:40	-41.74	71.17	1/9/10 22:35	-29.87	101.32
1/9/10 19:45	-41.31	72.27	1/9/10 22:40	-29.37	102.59
1/9/10 19:50	-41.23	72.47	1/9/10 22:45	-29.29	102.80
1/9/10 19:55	-40.95	73.18	1/9/10 22:50	-28.70	104.29
1/9/10 20:00	-40.84	73.46	1/9/10 22:55	-28.15	105.69
1/9/10 20:05	-40.45	74.45	1/9/10 23:00	-27.88	106.38
1/9/10 20:10	-40.21	75.06	1/9/10 23:05	-27.49	107.37
1/9/10 20:15	-39.94	75.74	1/9/10 23:10	-27.13	108.28
1/9/10 20:20	-39.74	76.25	1/9/10 23:15	-26.66	109.48
1/9/10 20:25	-39.47	76.94	1/9/10 23:20	-25.92	111.36
1/9/10 20:30	-38.96	78.23	1/9/10 23:25	-25.68	111.97
1/9/10 20:35	-38.76	78.74	1/9/10 23:30	-25.41	112.65
1/9/10 20:40	-38.41	79.63	1/9/10 23:35	-25.10	113.44
1/9/10 20:45	-37.86	81.03	1/9/10 23:40	-24.67	114.53
1/9/10 20:50	-37.43	82.12	1/9/10 23:45	-24.43	115.14
1/9/10 20:55	-36.88	83.52	1/9/10 23:50	-24.39	115.24
1/9/10 21:00	-36.45	84.61	1/9/10 23:55	-24.04	116.13
1/9/10 21:05	-35.98	85.80	1/10/10 0:00	-23.92	116.44
1/9/10 21:10	-35.39	87.30	1/10/10 0:05	-23.88	116.54
1/9/10 21:15	-34.96	88.39	1/10/10 0:10	-23.61	117.22
1/9/10 21:20	-34.46	89.66	1/10/10 0:15	-23.45	117.63
1/9/10 21:25	-34.26	90.17	1/10/10 0:20	-23.57	117.32
1/9/10 21:30	-33.59	91.87	1/10/10 0:25	-23.26	118.11
1/9/10 21:35	-33.40	92.36	1/10/10 0:30	-23.22	118.21
1/9/10 21:40	-33.08	93.17	1/10/10 0:35	-23.10	118.52
1/9/10 21:45	-32.61	94.36	1/10/10 0:40	-22.98	118.82
1/9/10 21:50	-32.42	94.85	1/10/10 0:45	-22.83	119.20

Table AII.30: (Continued) Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/10/10 0:50	-22.83	119.20	1/10/10 3:45	-25.96	111.25
1/10/10 0:55	-22.71	119.51	1/10/10 3:50	-26.00	111.15
1/10/10 1:00	-22.43	120.22	1/10/10 3:55	-25.96	111.25
1/10/10 1:05	-22.71	119.51	1/10/10 4:00	-26.39	110.16
1/10/10 1:10	-22.40	120.30	1/10/10 4:05	-26.31	110.37
1/10/10 1:15	-22.32	120.50	1/10/10 4:10	-26.66	109.48
1/10/10 1:20	-22.43	120.22	1/10/10 4:15	-26.94	108.76
1/10/10 1:25	-22.43	120.22	1/10/10 4:20	-27.13	108.28
1/10/10 1:30	-22.24	120.70	1/10/10 4:25	-27.33	107.77
1/10/10 1:35	-22.40	120.30	1/10/10 4:30	-27.92	106.28
1/10/10 1:40	-22.59	119.81	1/10/10 4:35	-28.27	105.39
1/10/10 1:45	-22.04	121.21	1/10/10 4:40	-28.35	105.18
1/10/10 1:50	-22.79	119.31	1/10/10 4:45	-29.05	103.41
1/10/10 1:55	-22.63	119.71	1/10/10 4:50	-29.29	102.80
1/10/10 2:00	-22.59	119.81	1/10/10 4:55	-29.87	101.32
1/10/10 2:05	-22.94	118.92	1/10/10 5:00	-30.30	100.23
1/10/10 2:10	-22.94	118.92	1/10/10 5:05	-30.89	98.73
1/10/10 2:15	-23.06	118.62	1/10/10 5:10	-31.05	98.33
1/10/10 2:20	-23.06	118.62	1/10/10 5:15	-31.68	96.73
1/10/10 2:25	-23.61	117.22	1/10/10 5:20	-32.18	95.46
1/10/10 2:30	-23.73	116.92	1/10/10 5:25	-32.50	94.64
1/10/10 2:35	-23.84	116.64	1/10/10 5:30	-32.69	94.16
1/10/10 2:40	-24.51	114.94	1/10/10 5:35	-33.08	93.17
1/10/10 2:45	-24.24	115.62	1/10/10 5:40	-33.55	91.98
1/10/10 2:50	-24.39	115.24	1/10/10 5:45	-33.67	91.67
1/10/10 2:55	-24.74	114.35	1/10/10 5:50	-34.02	90.78
1/10/10 3:00	-24.71	114.43	1/10/10 5:55	-34.18	90.38
1/10/10 3:05	-24.98	113.74	1/10/10 6:00	-34.46	89.66
1/10/10 3:10	-25.21	113.16	1/10/10 6:05	-34.69	89.08
1/10/10 3:15	-25.21	113.16	1/10/10 6:10	-34.92	88.50
1/10/10 3:20	-25.18	113.24	1/10/10 6:15	-35.04	88.19
1/10/10 3:25	-25.72	111.86	1/10/10 6:20	-35.00	88.29
1/10/10 3:30	-25.57	112.24	1/10/10 6:25	-35.36	87.38
1/10/10 3:35	-25.49	112.45	1/10/10 6:30	-35.67	86.59
1/10/10 3:40	-25.84	111.56	1/10/10 6:35	-35.67	86.59

Table AII.30: (Continued) Middle Loch Platform A water-level data-logger data. The groundwater impacted layer is based on a thickness of 85 cm at 1043 on 19 January 2011 which corresponds to a similar tide at 2020 on 8 January 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/10/10 6:40	-35.90	86.01	1/10/10 8:00	-39.19	77.65
1/10/10 6:45	-36.30	84.99	1/10/10 8:05	-38.68	78.95
1/10/10 6:50	-36.26	85.09	1/10/10 8:10	-38.72	78.84
1/10/10 6:55	-36.61	84.20	1/10/10 8:15	-38.72	78.84
1/10/10 7:00	-36.88	83.52	1/10/10 8:20	-38.61	79.12
1/10/10 7:05	-37.31	82.43	1/10/10 8:25	-38.64	79.05
1/10/10 7:10	-37.55	81.82	1/10/10 8:30	-38.57	79.22
1/10/10 7:15	-37.63	81.61	1/10/10 8:35	-38.41	79.63
1/10/10 7:20	-37.78	81.23	1/10/10 8:40	-38.17	80.24
1/10/10 7:25	-38.37	79.73	1/10/10 8:45	-38.41	79.63
1/10/10 7:30	-38.41	79.63	1/10/10 8:50	-38.61	79.12
1/10/10 7:35	-38.57	79.22	1/10/10 8:55	-38.33	79.83
1/10/10 7:40	-38.72	78.84	1/10/10 9:00	-38.49	79.43
1/10/10 7:45	-38.76	78.74	1/10/10 9:05	-38.64	79.05
1/10/10 7:50	-38.72	78.84	1/10/10 9:10	-38.64	79.05
1/10/10 7:55	-38.88	78.44	1/10/10 9:15	-39.11	77.85

Table AII.31: Middle Loch Platform B time-series radon measurements.

RAD-7 #2357				Middle Loch Platform B			eff=0.406 cpm/pCi/L				
Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
60	10	1	8	16	52	197	27.8	33.0	1.0	62.4	1.5
61	10	1	8	17	22	183	27.7	43.7	2.2	48.6	1.7
62	10	1	8	17	52	170	27.7	48.2	1.2	45.3	1.2
63	10	1	8	18	22	162	27.7	45.7	1.9	50.0	0.0
64	10	1	8	18	52	167	27.7	49.1	1.2	44.9	0.6
65	10	1	8	19	22	160	27.7	38.8	0.0	59.4	0.0
66	10	1	8	19	52	153	27.7	49.0	0.0	46.4	0.0
67	10	1	8	20	22	266	27.7	59.4	1.1	35.0	0.4
68	10	1	8	20	52	298	27.7	56.4	1.0	39.9	0.3
69	10	1	8	21	22	253	27.7	36.4	1.6	58.1	0.4
70	10	1	8	21	52	208	27.7	43.8	0.5	52.9	0.0
71	10	1	8	22	22	251	27.7	46.6	1.6	47.0	1.6
72	10	1	8	22	52	284	27.7	53.2	1.1	42.6	0.0
73	10	1	8	23	22	372	27.7	56.7	1.6	39.3	0.3
74	10	1	8	23	52	385	27.7	60.5	0.8	35.3	0.0
75	10	1	9	0	22	478	27.7	51.3	0.8	44.4	0.4
76	10	1	9	0	52	510	27.6	48.6	1.0	46.7	0.2
77	10	1	9	1	22	386	27.7	38.6	0.0	58.6	0.3
78	10	1	9	1	52	392	27.7	41.6	1.8	53.3	0.0
79	10	1	9	2	22	414	27.6	47.6	1.0	49.8	0.5
80	10	1	9	2	52	371	27.7	44.8	1.9	51.5	0.0
81	10	1	9	3	22	373	27.7	42.6	1.9	53.4	0.0
82	10	1	9	3	52	304	27.7	36.5	0.7	58.9	0.7
83	10	1	9	4	22	258	27.7	27.5	0.8	67.8	0.4
84	10	1	9	4	52	197	27.7	34.0	0.5	62.4	0.5
85	10	1	9	5	22	184	27.7	34.8	1.6	59.3	0.6
86	10	1	9	5	52	147	27.7	40.1	1.4	57.2	0.7
87	10	1	9	6	22	124	27.7	37.1	0.0	58.1	0.8
88	10	1	9	6	52	122	27.7	44.3	1.7	50.0	0.8
89	10	1	9	7	22	155	27.7	53.6	0.7	43.9	0.0
90	10	1	9	7	52	172	27.7	49.4	0.6	46.5	0.6
91	10	1	9	8	22	293	27.7	66.2	0.7	28.0	0.0
92	10	1	9	8	52	439	27.6	64.7	0.5	30.5	0.0
93	10	1	9	9	22	382	27.7	52.1	0.5	45.6	0.0
94	10	1	9	9	52	367	27.7	36.3	1.9	59.4	0.6
95	10	1	9	10	22	280	27.7	35.4	1.4	61.4	0.4
96	10	1	9	10	52	249	27.7	34.6	1.6	62.3	0.0

Table AII.31: (Continued) Middle Loch Platform B time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
97	10	1	9	11	22	217	27.7	45.2	0.5	51.2	0.0
98	10	1	9	11	52	237	27.7	46.8	3.0	46.8	0.4
99	10	1	9	12	22	219	27.7	45.7	3.7	47.5	0.9
100	10	1	9	12	52	218	27.7	41.3	0.0	54.1	0.5
101	10	1	9	13	22	194	27.7	40.2	1.0	56.7	1.0
102	10	1	9	13	52	209	27.7	40.2	2.4	54.6	0.0
103	10	1	9	14	22	161	27.7	43.5	1.3	49.7	0.6
104	10	1	9	14	52	169	27.7	44.4	1.8	50.9	0.6
105	10	1	9	15	22	187	27.7	47.1	2.7	47.1	0.5
106	10	1	9	15	52	258	27.7	53.1	0.8	42.6	0.0
107	10	1	9	16	22	275	27.7	60.4	0.7	35.6	0.4
108	10	1	9	16	52	332	27.7	50.6	0.9	44.0	0.6
109	10	1	9	17	22	372	27.7	56.7	1.4	38.7	0.0
110	10	1	9	17	52	439	27.7	49.2	0.7	48.1	0.2
111	10	1	9	18	22	499	27.6	54.9	0.6	40.7	0.6
112	10	1	9	18	52	576	27.6	53.3	0.9	42.9	0.4
113	10	1	9	19	22	570	27.6	45.8	1.6	48.8	0.4
114	10	1	9	19	52	665	27.6	51.0	0.5	44.8	0.2
115	10	1	9	20	22	523	27.6	36.9	1.0	58.7	0.4
116	10	1	9	20	53	484	27.6	39.1	0.4	59.3	0.2
117	10	1	9	21	23	362	27.7	27.9	0.6	68.8	1.1
118	10	1	9	21	53	275	27.7	20.4	2.9	75.6	0.0
119	10	1	9	22	23	197	27.7	29.5	0.5	66.5	1.0
120	10	1	9	22	53	164	27.7	42.7	2.5	52.5	0.6
121	10	1	9	23	23	185	27.7	51.9	1.6	42.7	1.1
122	10	1	9	23	53	195	27.7	46.2	1.0	50.8	0.5
123	10	1	10	0	23	155	27.7	39.4	0.0	54.9	0.7
124	10	1	10	0	53	153	27.7	36.0	1.3	61.5	0.0
125	10	1	10	1	23	102	27.7	30.4	1.0	64.7	2.0
126	10	1	10	1	53	113	27.7	41.6	2.7	54.0	1.8
127	10	1	10	2	23	107	27.7	51.4	0.9	45.8	0.0
128	10	1	10	2	53	123	27.7	55.3	0.8	37.4	0.8
129	10	1	10	3	23	115	27.7	37.4	1.8	56.5	0.9
130	10	1	10	3	53	92	27.7	40.2	1.1	53.3	0.0
131	10	1	10	4	23	95	27.8	48.4	0.0	47.4	1.1
132	10	1	10	4	53	125	27.7	45.6	0.8	49.6	0.0
133	10	1	10	5	23	134	27.7	47.8	0.8	44.8	0.8
134	10	1	10	5	53	147	27.7	52.4	0.7	42.9	1.4

Table AII.31: (Continued) Middle Loch Platform B time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
135	10	1	10	6	23	139	27.7	51.8	0.0	45.3	2.2
136	10	1	10	6	53	120	27.7	48.3	2.5	44.2	3.3
137	10	1	10	7	23	139	27.7	49.7	2.2	43.9	0.7
138	10	1	10	7	53	166	27.7	45.8	2.4	46.4	1.2
139	10	1	10	8	23	184	27.7	57.6	0.6	35.3	1.1
140	10	1	10	8	53	170	27.7	47.7	1.8	44.7	1.8
141	10	1	10	9	23	163	27.7	46.6	1.2	49.7	1.2
142	10	1	10	9	29	44	5.6	36.4	0.0	61.4	2.3

Table AII.32: Middle Loch Platform B time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp ℃	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
60	2218	8	29.8	9	1	7.09	0	5	294.443	46.557
61	2218	8	29.5	8	1	7.09	0	5	264.374	44.569
62	2218	9	28.3	9	1	7.09	0	5	250.127	43.215
63	2218	9	26.4	8	1	6.97	70	5	245.377	42.711
64	2218	8	25.2	7	1	6.94	70	5	246.738	42.925
65	2218	8	24.6	7	1	6.97	70	5	248.096	42.887
66	2218	8	23.7	7	1	6.97	70	5	230.714	41.479
67	2218	8	23.1	7	1	6.97	70	5	397.353	53.427
68	2201	9	22.8	7	1	7.00	70	5	454.344	56.898
69	2201	8	22.2	7	1	6.97	70	5	378.356	52.216
70	2201	9	22.2	7	1	7.00	70	5	317.912	48.122
71	2218	8	21.6	7	1	6.97	70	5	368.858	51.909
72	2218	8	21.3	6	1	6.97	70	5	430.598	55.480
73	2218	8	21.0	6	1	6.97	70	5	565.669	63.130
74	2218	8	20.7	6	1	6.97	70	5	584.683	64.126
75	2218	8	20.7	6	1	6.97	70	5	722.536	70.989
76	2218	8	20.7	6	1	6.97	70	5	770.767	73.169
77	2201	9	20.7	6	1	7.00	70	5	593.655	64.560
78	2218	8	20.7	6	1	7.00	70	5	589.437	64.373
79	2218	9	20.4	6	1	7.00	70	5	637.548	66.926
80	2218	9	20.4	6	1	7.00	70	5	565.669	63.130
81	2218	8	20.0	6	1	7.00	70	5	567.254	63.213
82	2218	9	20.0	6	1	7.00	70	5	457.510	57.177
83	2218	8	19.7	6	1	7.00	70	5	387.854	52.926
84	2218	8	19.7	6	1	6.97	70	5	298.932	46.881

Table AII.32: (Continued) Middle Loch Platform B time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
85	2218	8	19.7	6	1	7.00	70	5	273.873	44.931
86	2218	9	20.0	6	1	6.88	70	5	226.176	41.123
87	2218	8	20.0	6	1	6.97	70	5	186.467	37.637
88	2201	9	20.0	6	1	7.00	70	5	180.146	37.200
89	2201	9	20.7	6	1	7.00	70	5	238.830	42.163
90	2218	9	21.0	6	1	6.97	70	5	260.973	43.920
91	2218	9	21.6	6	1	7.00	70	5	436.930	55.862
92	2218	9	22.5	7	1	6.97	70	5	662.923	68.099
93	2218	9	23.4	7	1	7.00	70	5	591.022	64.455
94	2218	9	26.4	7	2	6.94	70	5	554.578	62.625
95	2218	8	28.6	7	1	6.94	70	5	427.817	55.434
96	2218	8	28.6	7	1	6.97	70	5	381.522	52.420
97	2218	8	28.6	7	1	6.94	70	5	330.565	49.004
98	2218	8	30.4	7	1	6.91	70	5	349.861	50.447
99	2218	8	32.5	8	1	6.97	70	5	321.365	48.499
100	2218	8	33.8	8	1	6.97	70	5	327.108	48.851
101	2201	9	34.1	8	1	6.94	70	5	296.036	46.694
102	2218	8	32.5	7	1	6.94	70	5	313.450	47.830
103	2218	8	31.0	7	1	6.97	70	5	237.462	42.073
104	2218	8	29.8	7	1	6.97	70	5	254.646	43.426
105	2201	9	29.5	7	1	6.97	70	5	277.039	45.289
106	2218	9	29.5	7	1	6.97	70	5	391.021	53.027
107	2218	8	29.5	7	1	6.97	70	5	417.933	54.707
108	2201	9	28.6	7	1	6.94	70	5	495.951	59.413
109	2218	8	27.7	6	1	6.97	70	5	562.500	62.962
110	2218	8	26.8	6	1	7.00	70	5	676.585	68.730
111	2218	8	25.8	6	1	6.97	70	5	753.321	72.592
112	2218	8	24.9	6	1	7.00	70	5	877.817	77.967
113	2218	8	24.3	6	1	6.97	70	5	854.007	77.017
114	2218	8	23.7	6	1	7.00	70	5	1009.569	83.365
115	2201	9	23.1	6	1	6.97	70	5	791.384	74.168
116	2218	9	22.5	6	1	7.00	70	5	754.907	72.447
117	2218	8	22.2	6	1	7.00	70	5	551.409	62.625
118	2218	8	21.9	6	1	7.00	70	5	418.310	54.757
119	2218	9	21.9	6	1	7.00	70	5	297.351	46.881
120	2218	8	21.9	6	1	7.00	70	5	246.960	42.838

Table AII.32: (Continued) Middle Loch Platform B time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
121	2218	8	21.6	6	1	7.00	70	5	275.208	45.129
122	2201	9	21.3	6	1	6.97	70	5	298.932	46.766
123	2201	9	21.3	6	1	6.97	70	5	230.714	41.479
124	2201	9	21.3	6	1	7.00	70	5	235.666	41.906
125	2201	8	21.0	6	1	7.00	70	5	151.702	34.447
126	2218	9	21.0	6	1	7.00	70	5	169.237	36.189
127	2218	9	21.0	5	1	7.00	70	5	164.492	35.578
128	2218	8	21.0	6	1	7.00	70	5	178.727	37.086
129	2218	8	21.0	6	1	7.00	70	5	178.727	37.086
130	2218	9	21.3	6	1	6.97	70	5	135.900	32.639
131	2218	9	21.3	6	1	6.97	70	5	143.672	33.444
132	2218	8	21.3	6	1	7.00	70	5	188.047	37.782
133	2218	9	21.6	6	1	7.00	70	5	194.543	38.530
134	2218	9	21.6	6	1	7.00	70	5	219.850	40.725
135	2218	8	21.6	6	1	7.00	70	5	211.751	40.153
136	2218	9	21.6	6	1	7.00	70	5	172.400	36.790
137	2218	9	21.9	6	1	6.97	70	5	205.615	39.369
138	2218	9	21.9	6	1	7.03	70	5	240.628	42.457
139	2218	8	22.2	6	1	6.97	70	5	268.881	44.650
140	2218	8	23.1	6	1	6.97	70	5	246.960	43.090
141	2218	8	24.6	6	1	6.97	70	5	246.738	42.925
142	2218	9	24.6	5	1	7.00	70	5	334.037	118.595

Table AII.33: Middle Loch Platform B YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	16:20:48	26.99	51.43	33.74	116.7	N/A	0.133	8.45	3.4	31.5
1/8/2010	16:25:48	26.90	51.37	33.70	117.2	N/A	0.183	8.44	3.4	20.4
1/8/2010	16:30:48	26.93	51.40	33.72	117.8	N/A	0.113	8.44	3.0	17.3
1/8/2010	16:35:48	26.95	51.41	33.73	117.3	N/A	0.130	8.43	2.6	15.4
1/8/2010	16:40:48	26.90	51.40	33.72	117.8	N/A	0.073	8.45	2.4	13.6
1/8/2010	16:45:48	26.96	51.36	33.69	121.3	N/A	0.075	8.47	3.2	12.5
1/8/2010	16:50:48	26.74	51.43	33.75	115.8	N/A	0.076	8.43	2.6	11.7
1/8/2010	16:55:48	26.75	51.37	33.70	116.7	N/A	0.078	8.44	2.9	10.6
1/8/2010	17:00:48	26.69	51.37	33.70	115.2	N/A	0.078	8.43	3.2	9.3
1/8/2010	17:05:48	26.64	51.37	33.70	113.8	N/A	0.077	8.43	3.2	8.8
1/8/2010	17:10:48	26.70	51.36	33.70	115.5	N/A	0.078	8.44	3.4	8.5
1/8/2010	17:15:48	26.66	51.37	33.70	114.4	N/A	0.077	8.43	3.1	8.5
1/8/2010	17:20:48	26.67	51.36	33.70	115.3	N/A	0.078	8.43	2.5	8.1
1/8/2010	17:25:48	26.62	51.34	33.69	112.3	N/A	0.078	8.42	3.7	4.3
1/8/2010	17:30:48	26.63	51.33	33.67	111.9	N/A	0.079	8.42	2.7	3.7
1/8/2010	17:35:48	26.61	51.32	33.67	111.8	N/A	0.079	8.42	3.5	3.9
1/8/2010	17:40:48	26.61	51.33	33.68	112.7	N/A	0.080	8.43	2.6	3.7
1/8/2010	17:45:48	26.62	51.35	33.69	113.7	N/A	0.080	8.43	2.6	4.0
1/8/2010	17:50:49	26.58	51.34	33.69	113.6	N/A	0.080	8.43	2.7	4.2
1/8/2010	17:55:48	26.53	51.33	33.68	111.8	N/A	0.080	8.42	2.6	4.5
1/8/2010	18:00:48	26.52	51.33	33.68	111.7	N/A	0.081	8.42	3.2	4.8
1/8/2010	18:05:49	26.51	51.33	33.68	111.6	N/A	0.082	8.42	2.7	4.9
1/8/2010	18:10:48	26.48	51.32	33.68	111.4	N/A	0.082	8.42	3.1	5.2
1/8/2010	18:15:48	26.46	51.32	33.68	111.3	N/A	0.082	8.42	3.1	5.3
1/8/2010	18:20:48	26.45	51.32	33.67	111.2	N/A	0.083	8.42	2.8	5.4
1/8/2010	18:25:48	26.42	51.33	33.68	111.1	N/A	0.084	8.42	3.6	5.6
1/8/2010	18:30:49	26.40	51.33	33.68	110.9	N/A	0.085	8.42	2.8	5.9
1/8/2010	18:35:48	26.42	51.33	33.68	110.9	N/A	0.085	8.42	2.3	6.0
1/8/2010	18:40:48	26.40	51.34	33.69	110.7	N/A	0.085	8.42	3.3	6.2
1/8/2010	18:45:48	26.45	51.37	33.71	110.8	N/A	0.086	8.42	3.2	6.3
1/8/2010	18:50:49	26.42	51.37	33.71	110.7	N/A	0.087	8.42	3.5	6.4
1/8/2010	18:55:48	26.42	51.38	33.72	110.7	N/A	0.087	8.42	3.2	6.3
1/8/2010	19:00:48	26.43	51.38	33.72	110.7	N/A	0.088	8.42	3.6	6.3
1/8/2010	19:05:48	26.42	51.37	33.71	110.6	N/A	0.089	8.42	3.0	6.5
1/8/2010	19:10:48	26.41	51.38	33.72	110.4	N/A	0.090	8.42	3.1	6.5
1/8/2010	19:15:48	26.44	51.41	33.74	110.9	N/A	0.090	8.42	3.2	6.5
1/8/2010	19:20:48	26.45	51.40	33.73	110.8	N/A	0.091	8.42	3.0	6.7
1/8/2010	19:25:48	26.42	51.41	33.74	111.0	N/A	0.091	8.42	2.8	6.8

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	19:30:48	26.47	51.42	33.74	111.2	N/A	0.092	8.42	3.2	6.8
1/8/2010	19:35:48	26.46	51.41	33.74	111.0	N/A	0.092	8.42	2.7	7.0
1/8/2010	19:40:48	26.49	51.42	33.75	111.3	N/A	0.092	8.42	3.4	7.0
1/8/2010	19:45:48	26.43	51.39	33.73	110.9	N/A	0.092	8.42	3.5	7.1
1/8/2010	19:50:48	26.42	51.36	33.70	111.1	N/A	0.092	8.42	2.3	6.2
1/8/2010	19:55:49	25.95	50.47	33.06	111.5	N/A	0.093	8.40	3.5	6.0
1/8/2010	20:00:48	25.90	50.05	32.75	109.5	N/A	0.093	8.39	2.7	6.0
1/8/2010	20:05:48	26.08	50.61	33.16	109.8	N/A	0.094	8.41	3.5	6.2
1/8/2010	20:10:48	26.22	50.92	33.39	109.7	N/A	0.094	8.42	3.3	6.3
1/8/2010	20:15:49	26.15	50.88	33.35	109.7	N/A	0.095	8.42	2.5	6.2
1/8/2010	20:20:49	26.25	51.08	33.50	110.0	N/A	0.095	8.42	3.4	6.4
1/8/2010	20:25:48	26.40	51.30	33.66	110.5	N/A	0.096	8.42	3.3	6.5
1/8/2010	20:30:49	26.35	51.18	33.57	109.9	N/A	0.096	8.42	3.1	6.5
1/8/2010	20:35:48	26.36	51.25	33.63	109.8	N/A	0.097	8.41	3.2	6.2
1/8/2010	20:40:48	26.33	51.26	33.63	107.1	N/A	0.097	8.41	2.1	5.9
1/8/2010	20:45:48	26.35	51.29	33.65	106.6	N/A	0.098	8.41	2.6	5.9
1/8/2010	20:50:48	26.34	51.30	33.66	106.2	N/A	0.099	8.41	2.5	5.8
1/8/2010	20:55:48	26.37	51.33	33.68	106.6	N/A	0.099	8.41	2.9	5.8
1/8/2010	21:00:49	26.37	51.34	33.69	106.5	N/A	0.099	8.41	3.1	5.6
1/8/2010	21:05:48	26.33	51.33	33.68	105.9	N/A	0.100	8.40	3.1	5.6
1/8/2010	21:10:48	26.30	51.33	33.68	104.7	N/A	0.100	8.40	3.0	5.5
1/8/2010	21:15:49	26.32	51.35	33.70	104.9	N/A	0.100	8.40	2.7	5.6
1/8/2010	21:20:49	26.33	51.36	33.71	104.5	N/A	0.100	8.40	3.3	5.5
1/8/2010	21:25:48	26.32	51.36	33.70	103.4	N/A	0.100	8.40	2.7	5.5
1/8/2010	21:30:49	26.32	51.37	33.71	103.3	N/A	0.100	8.40	3.1	5.3
1/8/2010	21:35:49	26.26	51.33	33.68	102.5	N/A	0.101	8.40	2.6	5.2
1/8/2010	21:40:49	26.21	51.29	33.66	101.8	N/A	0.101	8.40	2.9	5.2
1/8/2010	21:45:48	26.03	50.73	33.25	100.9	N/A	0.100	8.39	2.7	5.1
1/8/2010	21:50:49	25.93	50.82	33.32	98.2	N/A	0.101	8.39	2.8	4.9
1/8/2010	21:55:48	25.94	51.06	33.49	96.4	N/A	0.102	8.38	1.9	4.8
1/8/2010	22:00:49	26.11	51.26	33.64	95.7	N/A	0.102	8.38	2.5	4.8
1/8/2010	22:05:48	26.02	51.19	33.59	94.7	N/A	0.102	8.38	2.3	4.7
1/8/2010	22:10:49	25.96	51.14	33.56	95.9	N/A	0.102	8.38	2.5	4.6
1/8/2010	22:15:49	25.85	51.40	33.74	100.0	N/A	0.103	8.40	1.6	4.8
1/8/2010	22:20:49	25.72	51.26	33.65	100.1	N/A	0.103	8.41	2.5	4.9
1/8/2010	22:25:48	25.76	51.21	33.61	99.7	N/A	0.103	8.40	1.9	4.9
1/8/2010	22:30:49	25.64	51.18	33.59	100.4	N/A	0.103	8.40	2.9	5.1
1/8/2010	22:35:48	25.61	51.23	33.63	103.4	N/A	0.102	8.42	2.7	5.3

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	22:40:49	25.59	51.20	33.61	103.3	N/A	0.102	8.42	2.4	5.4
1/8/2010	22:45:49	25.60	50.66	33.21	106.1	N/A	0.103	8.43	2.7	5.7
1/8/2010	22:50:48	25.57	50.80	33.31	106.2	N/A	0.102	8.43	2.3	6.0
1/8/2010	22:55:48	25.46	50.66	33.21	105.3	N/A	0.102	8.43	2.4	6.0
1/8/2010	23:00:49	25.36	49.95	32.69	104.5	N/A	0.102	8.42	2.6	6.0
1/8/2010	23:05:48	25.31	49.96	32.70	103.7	N/A	0.102	8.42	3.0	6.0
1/8/2010	23:10:49	25.36	50.65	33.21	104.1	N/A	0.101	8.42	2.4	6.1
1/8/2010	23:15:48	25.35	50.75	33.28	104.2	N/A	0.102	8.42	2.5	6.0
1/8/2010	23:20:49	25.20	50.52	33.12	102.6	N/A	0.102	8.42	2.8	5.9
1/8/2010	23:25:48	25.24	50.54	33.13	101.6	N/A	0.102	8.41	2.7	6.0
1/8/2010	23:30:49	25.24	50.61	33.18	102.4	N/A	0.101	8.41	2.9	6.0
1/8/2010	23:35:49	25.27	50.70	33.25	102.6	N/A	0.101	8.42	2.0	6.2
1/8/2010	23:40:49	25.33	50.76	33.29	102.2	N/A	0.101	8.42	2.1	6.3
1/8/2010	23:45:49	25.35	50.61	33.18	103.4	N/A	0.101	8.42	2.1	6.3
1/8/2010	23:50:48	25.35	50.21	32.88	104.4	N/A	0.100	8.42	2.3	6.3
1/8/2010	23:55:49	25.36	50.33	32.97	104.6	N/A	0.100	8.43	2.1	6.3
1/9/2010	0:00:49	25.38	50.20	32.88	105.2	N/A	0.101	8.43	2.7	6.4
1/9/2010	0:05:49	25.37	49.90	32.66	105.7	N/A	0.098	8.43	2.7	6.5
1/9/2010	0:10:49	25.34	49.24	32.17	105.8	N/A	0.099	8.43	2.3	6.5
1/9/2010	0:15:49	25.30	49.02	32.02	105.7	N/A	0.099	8.43	2.6	6.5
1/9/2010	0:20:49	25.32	49.54	32.39	105.9	N/A	0.098	8.43	2.2	6.5
1/9/2010	0:25:49	25.31	49.50	32.36	106.1	N/A	0.098	8.44	2.6	6.4
1/9/2010	0:30:49	25.28	49.80	32.58	106.3	N/A	0.097	8.44	2.8	6.6
1/9/2010	0:35:48	25.30	49.70	32.51	106.1	N/A	0.098	8.44	2.2	6.7
1/9/2010	0:40:49	25.36	49.91	32.66	106.2	N/A	0.098	8.43	2.2	6.9
1/9/2010	0:45:49	25.29	49.73	32.53	106.0	N/A	0.098	8.43	2.6	7.0
1/9/2010	0:50:49	25.37	49.73	32.53	106.1	N/A	0.098	8.43	2.1	7.0
1/9/2010	0:55:49	25.39	49.82	32.60	106.3	N/A	0.098	8.43	3.0	6.9
1/9/2010	1:00:48	25.44	50.11	32.81	106.3	N/A	0.097	8.43	2.3	7.1
1/9/2010	1:05:48	25.36	50.14	32.83	106.2	N/A	0.098	8.44	2.0	7.0
1/9/2010	1:10:48	25.38	50.11	32.81	106.2	N/A	0.097	8.43	1.5	7.0
1/9/2010	1:15:49	25.35	50.18	32.86	106.6	N/A	0.097	8.43	2.5	7.1
1/9/2010	1:20:49	25.28	49.54	32.40	106.5	N/A	0.097	8.43	2.9	7.1
1/9/2010	1:25:49	25.22	48.80	31.85	107.0	N/A	0.099	8.43	2.9	7.2
1/9/2010	1:30:49	25.29	49.63	32.46	106.8	N/A	0.101	8.43	2.3	7.4
1/9/2010	1:35:49	25.34	50.60	33.17	106.7	N/A	0.104	8.43	2.6	7.2
1/9/2010	1:40:48	25.14	50.03	32.76	106.5	N/A	0.105	8.43	2.5	7.0
1/9/2010	1:45:48	25.23	50.56	33.15	106.9	N/A	0.107	8.43	2.4	7.0

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	1:50:49	25.23	50.57	33.15	107.0	N/A	0.109	8.43	2.6	7.0
1/9/2010	1:55:48	25.31	50.67	33.22	106.8	N/A	0.111	8.43	2.5	7.0
1/9/2010	2:00:49	25.36	50.74	33.27	106.6	N/A	0.113	8.43	2.8	7.0
1/9/2010	2:05:49	25.36	50.77	33.30	106.6	N/A	0.113	8.43	3.6	7.0
1/9/2010	2:10:49	25.28	50.63	33.19	106.1	N/A	0.113	8.43	2.5	7.1
1/9/2010	2:15:49	25.27	50.67	33.23	105.9	N/A	0.114	8.43	2.2	7.1
1/9/2010	2:20:49	25.33	50.76	33.29	106.0	N/A	0.114	8.43	2.0	7.0
1/9/2010	2:25:49	25.31	50.67	33.23	106.5	N/A	0.115	8.43	2.3	6.8
1/9/2010	2:30:49	25.39	50.87	33.37	106.7	N/A	0.116	8.44	2.6	6.7
1/9/2010	2:35:49	25.45	51.01	33.47	106.7	N/A	0.116	8.44	2.8	5.9
1/9/2010	2:40:49	25.47	50.97	33.44	106.8	N/A	0.116	8.44	2.5	5.8
1/9/2010	2:45:49	25.45	50.92	33.41	106.9	N/A	0.116	8.44	2.3	5.7
1/9/2010	2:50:49	25.36	50.72	33.26	106.1	N/A	0.117	8.43	2.2	5.8
1/9/2010	2:55:49	25.39	50.81	33.32	105.6	N/A	0.117	8.43	2.5	5.7
1/9/2010	3:00:49	25.41	50.90	33.39	105.8	N/A	0.116	8.43	2.7	6.0
1/9/2010	3:05:49	25.37	50.74	33.27	105.3	N/A	0.116	8.43	2.9	6.1
1/9/2010	3:10:48	25.23	50.77	33.30	104.4	N/A	0.115	8.43	2.8	6.2
1/9/2010	3:15:48	25.36	50.91	33.40	104.3	N/A	0.116	8.43	2.8	6.0
1/9/2010	3:20:48	25.43	50.92	33.40	104.3	N/A	0.117	8.43	2.0	5.9
1/9/2010	3:25:49	25.49	51.02	33.47	104.6	N/A	0.119	8.43	2.1	5.9
1/9/2010	3:30:49	25.42	50.97	33.44	104.1	N/A	0.121	8.43	2.9	5.9
1/9/2010	3:35:49	25.38	50.96	33.43	103.3	N/A	0.123	8.43	2.5	5.7
1/9/2010	3:40:49	25.34	50.95	33.43	103.2	N/A	0.125	8.42	2.4	5.9
1/9/2010	3:45:49	25.55	51.15	33.57	104.6	N/A	0.129	8.43	3.1	6.0
1/9/2010	3:50:49	25.47	51.15	33.57	103.0	N/A	0.132	8.43	3.1	5.9
1/9/2010	3:55:49	25.48	51.16	33.58	102.7	N/A	0.135	8.42	2.6	6.0
1/9/2010	4:00:49	25.47	51.17	33.59	102.6	N/A	0.139	8.42	1.7	5.9
1/9/2010	4:05:48	25.43	51.12	33.55	102.1	N/A	0.142	8.42	2.2	6.0
1/9/2010	4:10:49	25.22	51.00	33.47	100.1	N/A	0.144	8.41	2.3	5.9
1/9/2010	4:15:48	25.39	51.11	33.54	100.6	N/A	0.147	8.41	2.5	6.1
1/9/2010	4:20:49	25.46	51.24	33.64	100.9	N/A	0.148	8.42	1.8	6.0
1/9/2010	4:25:49	25.31	51.04	33.49	101.0	N/A	0.149	8.41	2.3	6.1
1/9/2010	4:30:49	25.29	51.07	33.52	99.1	N/A	0.150	8.41	2.4	5.9
1/9/2010	4:35:49	25.25	51.06	33.51	98.7	N/A	0.152	8.40	2.0	5.8
1/9/2010	4:40:48	25.37	51.13	33.56	99.7	N/A	0.153	8.41	2.1	5.7
1/9/2010	4:45:48	25.38	51.15	33.58	99.5	N/A	0.154	8.41	2.7	5.9
1/9/2010	4:50:48	25.44	51.19	33.60	99.7	N/A	0.154	8.41	2.3	5.9
1/9/2010	4:55:48	25.45	51.23	33.63	99.9	N/A	0.155	8.41	3.2	6.0

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	5:00:48	25.46	51.25	33.65	99.7	N/A	0.156	8.41	3.5	6.0
1/9/2010	5:05:48	25.46	51.25	33.65	99.6	N/A	0.159	8.41	2.3	6.0
1/9/2010	5:10:49	25.47	51.25	33.65	99.6	N/A	0.161	8.41	2.2	6.0
1/9/2010	5:15:49	25.46	51.26	33.65	99.3	N/A	0.161	8.41	1.7	6.1
1/9/2010	5:20:48	25.44	51.26	33.66	98.9	N/A	0.162	8.41	1.7	6.2
1/9/2010	5:25:48	25.45	51.23	33.63	99.1	N/A	0.161	8.41	2.3	6.0
1/9/2010	5:30:48	25.42	51.26	33.66	98.5	N/A	0.162	8.41	1.1	6.0
1/9/2010	5:35:48	25.36	51.25	33.65	97.8	N/A	0.162	8.41	2.1	6.0
1/9/2010	5:40:49	25.34	51.24	33.64	98.8	N/A	0.163	8.41	2.5	6.2
1/9/2010	5:45:49	25.32	51.26	33.66	98.8	N/A	0.163	8.41	2.9	6.2
1/9/2010	5:50:48	25.32	51.23	33.64	98.7	N/A	0.164	8.41	2.5	6.3
1/9/2010	5:55:49	25.33	51.23	33.64	98.8	N/A	0.164	8.41	2.7	6.2
1/9/2010	6:00:49	25.33	51.24	33.64	98.7	N/A	0.164	8.41	2.1	6.3
1/9/2010	6:05:49	25.33	51.24	33.65	98.8	N/A	0.166	8.41	1.8	6.2
1/9/2010	6:10:49	25.30	51.24	33.64	99.0	N/A	0.166	8.41	2.5	6.2
1/9/2010	6:15:49	25.30	51.24	33.64	98.9	N/A	0.167	8.41	2.5	6.2
1/9/2010	6:20:49	25.10	50.03	32.76	97.0	N/A	0.100	8.40	2.4	6.1
1/9/2010	6:25:48	25.29	51.14	33.57	98.1	N/A	0.090	8.40	2.0	6.0
1/9/2010	6:30:49	25.35	51.22	33.63	99.5	N/A	0.091	8.41	1.5	6.0
1/9/2010	6:35:48	25.32	51.28	33.67	99.8	N/A	0.092	8.41	2.6	6.1
1/9/2010	6:40:48	25.35	51.28	33.67	99.0	N/A	0.093	8.41	2.2	6.0
1/9/2010	6:45:49	25.36	51.28	33.67	99.2	N/A	0.093	8.41	1.7	6.0
1/9/2010	6:50:48	25.31	51.28	33.67	99.2	N/A	0.094	8.41	3.7	5.9
1/9/2010	6:55:49	25.26	51.22	33.63	99.2	N/A	0.094	8.41	1.4	5.9
1/9/2010	7:00:48	25.20	51.28	33.67	98.1	N/A	0.095	8.41	1.9	5.9
1/9/2010	7:05:48	25.22	51.14	33.57	97.8	N/A	0.095	8.41	2.4	5.8
1/9/2010	7:10:49	25.24	51.23	33.64	98.1	N/A	0.094	8.41	2.3	5.8
1/9/2010	7:15:48	25.26	51.26	33.66	98.8	N/A	0.094	8.41	1.3	5.9
1/9/2010	7:20:48	25.23	51.19	33.61	97.9	N/A	0.095	8.41	2.2	5.8
1/9/2010	7:25:48	25.19	51.22	33.63	95.5	N/A	0.096	8.40	2.4	5.6
1/9/2010	7:30:48	25.16	51.20	33.62	97.3	N/A	0.096	8.40	2.4	5.6
1/9/2010	7:35:49	25.22	51.20	33.61	99.6	N/A	0.097	8.42	2.8	5.7
1/9/2010	7:40:48	25.23	51.22	33.63	100.1	N/A	0.097	8.42	1.9	5.9
1/9/2010	7:45:49	25.23	51.20	33.61	100.0	N/A	0.098	8.42	2.5	6.0
1/9/2010	7:50:48	25.06	51.04	33.50	99.2	N/A	0.099	8.41	2.7	5.8
1/9/2010	7:55:49	25.07	50.90	33.40	97.6	N/A	0.098	8.41	3.0	5.7
1/9/2010	8:00:49	24.73	50.60	33.18	99.2	N/A	0.098	8.41	2.5	6.0
1/9/2010	8:05:49	24.69	49.88	32.66	98.8	N/A	0.099	8.39	2.4	6.1

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	8:10:49	24.63	50.31	32.97	97.9	N/A	0.100	8.38	2.8	6.2
1/9/2010	8:15:49	24.67	50.49	33.11	96.6	N/A	0.101	8.39	2.7	6.3
1/9/2010	8:20:49	24.80	50.52	33.12	97.7	N/A	0.101	8.40	2.8	6.3
1/9/2010	8:25:49	24.82	50.60	33.18	97.8	N/A	0.101	8.39	2.7	6.3
1/9/2010	8:30:49	24.87	50.88	33.38	96.0	N/A	0.101	8.40	2.8	6.4
1/9/2010	8:35:48	24.81	50.88	33.39	94.6	N/A	0.101	8.39	2.5	6.2
1/9/2010	8:40:49	24.81	50.87	33.38	94.8	N/A	0.101	8.39	2.4	6.0
1/9/2010	8:45:49	24.84	50.85	33.37	95.1	N/A	0.101	8.39	2.9	6.0
1/9/2010	8:50:49	24.79	50.82	33.35	93.7	N/A	0.101	8.40	3.1	5.9
1/9/2010	8:55:48	24.68	50.70	33.26	91.5	N/A	0.101	8.38	2.9	5.6
1/9/2010	9:00:48	24.76	50.66	33.23	92.7	N/A	0.101	8.38	2.8	5.2
1/9/2010	9:05:48	24.86	50.77	33.31	94.8	N/A	0.102	8.39	2.3	5.2
1/9/2010	9:10:48	24.86	50.73	33.28	93.5	N/A	0.102	8.39	3.1	5.2
1/9/2010	9:15:48	24.96	50.73	33.27	94.2	N/A	0.102	8.39	2.6	5.2
1/9/2010	9:20:48	24.99	50.65	33.22	94.1	N/A	0.102	8.39	2.7	5.2
1/9/2010	9:25:48	24.79	50.61	33.19	93.2	N/A	0.103	8.38	2.8	5.2
1/9/2010	9:30:49	24.92	50.70	33.25	92.9	N/A	0.102	8.38	1.9	5.1
1/9/2010	9:35:49	24.91	50.81	33.33	93.3	N/A	0.102	8.39	2.0	5.2
1/9/2010	9:40:49	25.00	50.83	33.35	93.4	N/A	0.103	8.39	2.3	5.2
1/9/2010	9:45:48	25.01	50.87	33.38	93.5	N/A	0.102	8.39	3.1	5.2
1/9/2010	9:50:48	24.97	50.82	33.34	93.0	N/A	0.102	8.38	2.4	5.3
1/9/2010	9:55:49	25.00	50.80	33.32	93.4	N/A	0.102	8.38	2.5	5.3
1/9/2010	10:00:49	25.04	50.83	33.34	92.8	N/A	0.102	8.38	1.9	5.3
1/9/2010	10:05:48	25.06	50.83	33.34	92.4	N/A	0.101	8.38	2.4	5.3
1/9/2010	10:10:48	25.07	50.81	33.33	92.1	N/A	0.101	8.37	1.6	5.3
1/9/2010	10:15:48	25.06	50.82	33.34	91.7	N/A	0.101	8.37	2.7	5.3
1/9/2010	10:20:49	25.06	50.78	33.31	91.9	N/A	0.101	8.37	2.8	5.2
1/9/2010	10:25:48	25.05	50.82	33.34	91.8	N/A	0.100	8.38	3.1	5.0
1/9/2010	10:30:49	25.08	50.79	33.32	91.4	N/A	0.099	8.37	1.9	5.0
1/9/2010	10:35:49	25.09	50.82	33.34	91.6	N/A	0.098	8.37	2.2	4.9
1/9/2010	10:40:49	25.09	50.82	33.34	91.5	N/A	0.098	8.37	2.3	4.9
1/9/2010	10:45:48	25.12	50.81	33.33	91.8	N/A	0.097	8.37	1.6	4.9
1/9/2010	10:50:49	25.11	50.76	33.30	92.0	N/A	0.096	8.37	2.7	4.9
1/9/2010	10:55:49	25.13	50.78	33.31	92.3	N/A	0.096	8.37	2.9	4.8
1/9/2010	11:00:48	25.16	50.80	33.32	92.4	N/A	0.096	8.37	2.9	4.5
1/9/2010	11:05:49	25.17	50.80	33.32	92.1	N/A	0.096	8.37	2.0	4.0
1/9/2010	11:10:49	25.19	50.49	33.09	92.7	N/A	0.095	8.38	2.4	3.3
1/9/2010	11:15:48	25.20	50.85	33.36	93.5	N/A	0.095	8.38	1.3	2.9

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/9/2010	11:20:48	25.18	50.00	32.74	91.3	N/A	0.094	8.37	3.0	2.5
1/9/2010	11:25:49	25.23	50.01	32.74	92.5	N/A	0.093	8.37	2.0	2.3
1/9/2010	11:30:48	25.30	50.16	32.85	94.4	N/A	0.092	8.37	3.3	2.3
1/9/2010	11:35:48	25.36	49.91	32.67	95.6	N/A	0.090	8.38	2.8	2.1
1/9/2010	11:40:49	25.42	50.35	32.99	96.9	N/A	0.089	8.39	2.8	2.0
1/9/2010	23:45:49	25.86	51.74	34.00	98.4	N/A	0.093	8.40	2.9	1.8
1/9/2010	23:50:49	25.71	51.90	34.12	98.3	N/A	0.093	8.40	3.3	1.6
1/9/2010	23:55:49	25.25	51.55	33.87	90.2	N/A	0.093	8.38	2.3	1.0
1/10/2010	0:00:48	25.38	51.52	33.85	89.7	N/A	0.093	8.38	2.1	0.6
1/10/2010	0:05:49	25.32	51.60	33.91	91.4	N/A	0.092	8.38	2.5	0.5
1/10/2010	0:10:48	25.62	51.77	34.03	99.2	N/A	0.091	8.41	2.6	1.0
1/10/2010	0:15:49	25.44	51.56	33.87	100.7	N/A	0.091	8.42	3.5	1.2
1/10/2010	0:20:49	25.46	51.53	33.85	96.6	N/A	0.091	8.41	3.2	1.5
1/10/2010	0:25:48	25.39	51.54	33.86	97.7	N/A	0.091	8.41	2.5	1.5
1/10/2010	0:30:49	25.36	51.60	33.91	99.1	N/A	0.091	8.41	3.1	1.6
1/10/2010	0:35:49	25.60	51.93	34.14	102.0	N/A	0.091	8.42	2.4	1.7
1/10/2010	0:40:48	25.63	52.00	34.20	102.0	N/A	0.090	8.42	2.6	2.0
1/10/2010	0:45:49	25.57	51.98	34.18	101.3	N/A	0.090	8.42	2.7	2.0
1/10/2010	0:50:49	25.56	52.03	34.22	100.2	N/A	0.090	8.42	2.7	2.0
1/10/2010	0:55:49	25.45	51.95	34.16	101.7	N/A	0.090	8.42	2.6	2.1
1/10/2010	1:00:48	25.44	51.91	34.13	102.8	N/A	0.091	8.43	2.3	2.3
1/10/2010	1:05:49	25.39	51.89	34.12	102.3	N/A	0.090	8.42	2.4	2.4
1/10/2010	1:10:48	25.38	51.89	34.12	102.4	N/A	0.090	8.43	2.4	2.4
1/10/2010	1:15:49	25.41	51.91	34.14	103.7	N/A	0.091	8.43	3.2	2.7
1/10/2010	1:20:49	25.42	51.93	34.15	103.9	N/A	0.090	8.43	2.6	2.7
1/10/2010	1:25:49	25.37	51.91	34.14	104.0	N/A	0.090	8.43	2.7	2.9
1/10/2010	1:30:49	25.42	51.94	34.16	103.4	N/A	0.090	8.43	2.6	3.0
1/10/2010	1:35:49	25.44	51.93	34.15	102.9	N/A	0.089	8.43	2.5	3.1
1/10/2010	1:40:49	25.50	52.00	34.20	102.3	N/A	0.088	8.43	2.0	3.1
1/10/2010	1:45:49	25.43	51.86	34.10	101.6	N/A	0.087	8.42	2.3	3.0
1/10/2010	1:50:49	25.05	51.50	33.84	95.9	N/A	0.088	8.40	3.2	2.8
1/10/2010	1:55:49	25.20	51.50	33.84	96.9	N/A	0.087	8.40	2.3	2.6
1/10/2010	2:00:49	25.11	51.70	33.98	96.5	N/A	0.087	8.40	2.5	2.6
1/10/2010	2:05:49	25.03	51.40	33.77	94.8	N/A	0.088	8.40	3.5	2.4
1/10/2010	2:10:48	25.10	51.36	33.74	94.7	N/A	0.087	8.40	3.3	2.4
1/10/2010	2:15:49	25.25	51.36	33.73	93.5	N/A	0.087	8.40	3.9	2.2
1/10/2010	2:20:49	25.03	51.40	33.76	95.6	N/A	0.087	8.40	3.6	2.1
1/10/2010	2:25:49	25.13	51.52	33.85	96.1	N/A	0.086	8.40	2.7	2.0

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	2:30:49	25.16	51.65	33.95	96.6	N/A	0.086	8.40	2.0	2.0
1/10/2010	2:35:48	25.08	51.57	33.89	95.0	N/A	0.087	8.40	2.7	1.8
1/10/2010	2:40:48	25.11	51.61	33.92	95.7	N/A	0.086	8.40	3.0	1.8
1/10/2010	2:45:49	25.17	51.67	33.97	96.9	N/A	0.086	8.41	3.3	1.8
1/10/2010	2:50:49	25.14	51.71	33.99	96.9	N/A	0.086	8.40	3.4	1.9
1/10/2010	2:55:48	25.21	51.77	34.03	97.9	N/A	0.086	8.41	2.1	2.0
1/10/2010	3:00:49	25.29	51.79	34.05	98.0	N/A	0.086	8.41	2.5	1.9
1/10/2010	3:05:49	25.27	51.86	34.10	97.6	N/A	0.086	8.41	2.9	2.0
1/10/2010	3:10:49	25.40	51.87	34.11	96.4	N/A	0.085	8.40	3.5	1.8
1/10/2010	3:15:49	25.38	51.93	34.15	96.5	N/A	0.084	8.40	2.9	1.8
1/10/2010	3:20:49	25.51	51.85	34.09	96.3	N/A	0.085	8.40	2.8	1.6
1/10/2010	3:25:49	25.35	51.97	34.18	96.0	N/A	0.085	8.40	2.7	1.7
1/10/2010	3:30:49	25.28	51.95	34.17	95.7	N/A	0.084	8.40	2.3	1.6
1/10/2010	3:35:49	25.31	51.92	34.15	96.0	N/A	0.084	8.40	2.8	1.6
1/10/2010	3:40:49	25.32	51.87	34.11	96.9	N/A	0.084	8.40	3.1	1.9
1/10/2010	3:45:48	25.26	51.93	34.15	96.4	N/A	0.084	8.40	2.8	2.0
1/10/2010	3:50:48	25.29	51.90	34.13	96.8	N/A	0.084	8.40	2.4	2.1
1/10/2010	3:55:48	25.24	51.90	34.13	96.8	N/A	0.085	8.40	2.1	2.1
1/10/2010	4:00:49	25.39	51.86	34.10	96.0	N/A	0.085	8.40	3.0	2.2
1/10/2010	4:05:48	25.27	51.90	34.13	95.6	N/A	0.084	8.40	3.2	2.1
1/10/2010	4:10:48	25.29	52.01	34.21	95.6	N/A	0.084	8.40	2.8	2.2
1/10/2010	4:15:49	25.27	51.95	34.17	94.3	N/A	0.084	8.40	3.2	2.2
1/10/2010	4:20:49	25.28	51.93	34.15	93.9	N/A	0.085	8.39	3.1	2.3
1/10/2010	4:25:48	25.17	51.89	34.13	92.8	N/A	0.085	8.39	3.1	2.1
1/10/2010	4:30:48	25.17	51.88	34.12	91.8	N/A	0.085	8.38	3.5	2.1
1/10/2010	4:35:49	25.16	51.88	34.12	91.6	N/A	0.084	8.38	3.1	2.0
1/10/2010	4:40:48	25.21	51.95	34.17	91.7	N/A	0.084	8.38	3.2	2.1
1/10/2010	4:45:49	25.20	51.91	34.14	90.8	N/A	0.085	8.38	3.4	2.0
1/10/2010	4:50:49	25.11	51.86	34.10	90.9	N/A	0.086	8.38	2.2	2.0
1/10/2010	4:55:48	25.15	51.89	34.13	91.3	N/A	0.086	8.38	3.6	2.1
1/10/2010	5:00:49	25.14	51.89	34.13	91.1	N/A	0.087	8.38	3.7	2.1
1/10/2010	5:05:48	25.17	51.91	34.14	91.0	N/A	0.087	8.38	2.9	2.0
1/10/2010	5:10:48	25.16	51.91	34.14	91.3	N/A	0.087	8.38	3.6	2.1
1/10/2010	5:15:49	25.24	51.94	34.16	91.9	N/A	0.087	8.38	3.1	2.1
1/10/2010	5:20:49	25.26	51.98	34.19	92.4	N/A	0.087	8.38	2.9	2.2
1/10/2010	5:25:49	25.39	52.08	34.26	93.4	N/A	0.087	8.39	3.4	2.1
1/10/2010	5:30:48	25.36	52.04	34.23	93.3	N/A	0.087	8.39	3.5	2.1
1/10/2010	5:35:49	25.30	52.01	34.21	92.1	N/A	0.087	8.39	2.9	2.1

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	5:40:49	25.30	52.04	34.23	92.1	N/A	0.087	8.39	3.1	2.0
1/10/2010	5:45:49	25.32	52.02	34.22	92.3	N/A	0.088	8.39	3.1	2.1
1/10/2010	5:50:48	25.31	52.05	34.24	92.4	N/A	0.088	8.39	3.4	2.3
1/10/2010	5:55:49	25.33	52.08	34.26	92.9	N/A	0.088	8.39	2.0	2.2
1/10/2010	6:00:49	25.35	52.08	34.26	93.8	N/A	0.088	8.39	2.9	2.3
1/10/2010	6:05:49	25.34	52.10	34.28	93.7	N/A	0.089	8.39	2.4	2.3
1/10/2010	6:10:49	25.35	52.09	34.27	93.8	N/A	0.089	8.39	2.9	2.4
1/10/2010	6:15:49	25.35	52.10	34.28	93.6	N/A	0.090	8.39	2.6	2.4
1/10/2010	6:20:49	25.31	52.08	34.26	92.5	N/A	0.090	8.39	3.0	2.4
1/10/2010	6:25:49	25.33	52.10	34.27	92.5	N/A	0.091	8.39	2.9	2.3
1/10/2010	6:30:48	25.35	52.11	34.29	92.3	N/A	0.091	8.39	3.0	2.3
1/10/2010	6:35:49	25.33	52.10	34.28	91.8	N/A	0.091	8.39	2.5	2.4
1/10/2010	6:40:49	25.33	52.10	34.28	92.4	N/A	0.092	8.39	3.1	2.5
1/10/2010	6:45:49	25.34	52.11	34.29	92.5	N/A	0.093	8.39	3.2	2.4
1/10/2010	6:50:49	25.30	52.12	34.29	91.8	N/A	0.094	8.39	2.8	2.5
1/10/2010	6:55:48	25.33	52.11	34.28	92.7	N/A	0.094	8.39	2.9	2.5
1/10/2010	7:00:49	25.33	52.11	34.29	92.9	N/A	0.095	8.39	2.9	2.4
1/10/2010	7:05:49	25.33	52.10	34.28	92.7	N/A	0.095	8.39	3.3	2.6
1/10/2010	7:10:49	25.33	52.11	34.28	91.8	N/A	0.096	8.39	3.9	2.5
1/10/2010	7:15:48	24.51	51.13	33.58	92.0	N/A	0.098	8.40	2.4	2.3
1/10/2010	7:20:48	24.16	50.85	33.38	98.2	N/A	0.098	8.42	2.9	3.1
1/10/2010	7:25:49	24.20	50.85	33.38	98.6	N/A	0.098	8.42	2.8	3.7
1/10/2010	7:30:49	24.25	50.86	33.39	99.9	N/A	0.099	8.42	3.3	4.1
1/10/2010	7:35:49	24.24	50.85	33.38	99.7	N/A	0.099	8.42	2.9	4.4
1/10/2010	7:40:49	24.21	50.80	33.34	99.6	N/A	0.100	8.42	1.9	4.6
1/10/2010	7:45:49	24.16	50.78	33.33	99.3	N/A	0.101	8.42	2.7	4.7
1/10/2010	7:50:49	24.21	50.81	33.35	98.7	N/A	0.101	8.42	3.1	4.9
1/10/2010	7:55:49	24.20	50.85	33.38	98.4	N/A	0.103	8.41	2.9	5.1
1/10/2010	8:00:49	24.13	50.75	33.31	98.7	N/A	0.104	8.41	2.6	5.3
1/10/2010	8:05:49	24.25	50.90	33.41	100.3	N/A	0.104	8.43	3.1	5.4
1/10/2010	8:10:49	24.28	50.87	33.39	100.7	N/A	0.105	8.43	2.7	5.5
1/10/2010	8:15:49	24.35	50.91	33.42	100.3	N/A	0.106	8.43	2.9	5.6
1/10/2010	8:20:49	24.41	50.96	33.45	100.1	N/A	0.106	8.43	3.2	5.7
1/10/2010	8:25:49	24.44	51.00	33.48	100.4	N/A	0.106	8.43	3.3	5.7
1/10/2010	8:30:49	24.45	51.01	33.49	100.5	N/A	0.107	8.43	3.5	5.8
1/10/2010	8:35:49	24.45	51.01	33.49	100.5	N/A	0.108	8.43	3.2	5.8
1/10/2010	8:40:49	24.49	51.02	33.50	100.6	N/A	0.109	8.43	2.7	5.9
1/10/2010	8:45:49	24.50	50.97	33.46	100.2	N/A	0.109	8.42	2.4	6.0

Table AII.33: (Continued) Middle Loch Platform A YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	8:50:49	24.54	50.99	33.47	99.9	N/A	0.110	8.42	3.7	6.0
1/10/2010	8:55:48	24.61	51.02	33.49	100.1	N/A	0.111	8.42	2.4	6.0
1/10/2010	9:00:49	24.61	51.01	33.49	100.2	N/A	0.112	8.42	3.7	5.9
1/10/2010	9:05:48	24.72	51.06	33.52	100.2	N/A	0.111	8.42	3.7	5.9
1/10/2010	9:10:49	24.66	51.02	33.50	100.2	N/A	0.112	8.42	2.8	5.8
1/10/2010	9:15:49	24.64	51.00	33.48	100.0	N/A	0.111	8.42	2.0	5.7
1/10/2010	9:20:49	24.71	51.09	33.55	99.9	N/A	0.111	8.41	3.0	5.7
1/10/2010	9:25:49	24.78	51.11	33.56	97.5	N/A	0.110	8.40	2.7	5.6
1/10/2010	9:30:49	24.84	51.14	33.58	98.2	N/A	0.170	8.41	3.6	5.2

Table AII.34: Middle Loch Platform B wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100108	16:53	2.1	20100109	12:53	0.0
20100108	17:53	1.5	20100109	13:53	0.0
20100108	18:00	1.5	20100109	14:53	0.0
20100108	18:53	0.0	20100109	15:53	0.0
20100108	19:53	1.5	20100109	16:53	0.0
20100108	20:53	2.6	20100109	17:53	1.5
20100108	21:53	2.1	20100109	18:00	1.5
20100108	22:53	3.6	20100109	18:53	0.0
20100108	23:53	2.6	20100109	19:53	1.5
20100109	00:00	2.6	20100109	20:53	4.1
20100109	00:53	3.1	20100109	21:53	6.2
20100109	01:53	3.6	20100109	22:53	6.7
20100109	02:53	3.1	20100109	23:53	6.2
20100109	03:53	1.5	20100110	00:00	6.2
20100109	04:53	0.0	20100110	00:53	6.2
20100109	05:53	0.0	20100110	01:53	6.7
20100109	06:00	0.0	20100110	02:53	6.2
20100109	06:53	1.5	20100110	03:53	5.7
20100109	07:53	1.5	20100110	04:53	3.6
20100109	08:53	2.1	20100110	05:53	1.5
20100109	09:53	0.0	20100110	06:00	1.5
20100109	10:53	1.5	20100110	06:53	1.5
20100109	11:53	1.5	20100110	07:53	2.6
20100109	12:00	0.0	20100110	08:53	1.5
20100109	12:10	0.0	20100110	09:53	0.0

Table AII.35: Middle Loch Platform B depth profile collected on 19 January 2011 using an YSI 6600 V2-4.

Depth m	Time hh:mm	Temp °C	SpCond mS/cm	Sal	pH	ORP	Chl µg/L	DO %	DO mg
0.097	12:35	25.29	42.60	27.47	8.46	N/A	6.2	117.8	11.85
0.873	12:35	25.64	47.22	30.85	8.38	92.0	N/A	N/A	11.73
1.362	12:36	25.06	51.36	33.81	8.10	96.7	13.1	95.3	6.44
2.274	12:37	24.99	51.84	34.12	8.03	97.9	2.3	94.0	6.40

Table AII.36: Middle Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011 which corresponds to a similar tide at 2135 on 8 January 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/8/10 16:25	-114.76	29.49	1/8/10 19:15	-103.53	40.72
1/8/10 16:30	-115.95	28.30	1/8/10 19:20	-103.02	41.23
1/8/10 16:35	-115.67	28.58	1/8/10 19:25	-102.44	41.81
1/8/10 16:40	-118.44	25.81	1/8/10 19:30	-101.73	42.52
1/8/10 16:45	-118.95	25.30	1/8/10 19:35	-100.74	43.51
1/8/10 16:50	-119.33	24.92	1/8/10 19:40	-100.05	44.20
1/8/10 16:55	-119.53	24.72	1/8/10 19:45	-98.45	45.80
1/8/10 17:00	-119.63	24.62	1/8/10 19:50	-98.07	46.18
1/8/10 17:05	-119.25	25.00	1/8/10 19:55	-97.26	46.99
1/8/10 17:10	-118.24	26.01	1/8/10 20:00	-95.86	48.39
1/8/10 17:15	-118.75	25.51	1/8/10 20:05	-94.87	49.38
1/8/10 17:20	-118.75	25.51	1/8/10 20:10	-93.78	50.47
1/8/10 17:25	-118.06	26.19	1/8/10 20:15	-92.99	51.26
1/8/10 17:30	-117.55	26.70	1/8/10 20:20	-91.59	52.66
1/8/10 17:35	-116.36	27.89	1/8/10 20:25	-90.81	53.45
1/8/10 17:40	-115.75	28.50	1/8/10 20:30	-90.09	54.16
1/8/10 17:45	-115.47	28.78	1/8/10 20:35	-89.10	55.15
1/8/10 17:50	-114.17	30.08	1/8/10 20:40	-88.21	56.04
1/8/10 17:55	-113.67	30.59	1/8/10 20:45	-87.33	56.92
1/8/10 18:00	-113.56	30.69	1/8/10 20:50	-86.23	58.02
1/8/10 18:05	-111.99	32.26	1/8/10 20:55	-85.93	58.32
1/8/10 18:10	-111.58	32.67	1/8/10 21:00	-85.83	58.42
1/8/10 18:15	-111.00	33.25	1/8/10 21:05	-84.23	60.02
1/8/10 18:20	-109.98	34.27	1/8/10 21:10	-84.43	59.82
1/8/10 18:25	-109.40	34.85	1/8/10 21:15	-83.24	61.01
1/8/10 18:30	-108.31	35.94	1/8/10 21:20	-83.24	61.01
1/8/10 18:35	-108.31	35.94	1/8/10 21:25	-82.83	61.42
1/8/10 18:40	-107.59	36.66	1/8/10 21:30	-82.04	62.21
1/8/10 18:45	-107.01	37.24	1/8/10 21:35	-81.15	63.10
1/8/10 18:50	-106.60	37.65	1/8/10 21:40	-80.16	64.09
1/8/10 18:55	-105.82	38.43	1/8/10 21:45	-80.37	63.88
1/8/10 19:00	-105.61	38.64	1/8/10 21:50	-78.87	65.38
1/8/10 19:05	-105.31	38.94	1/8/10 21:55	-77.88	66.37
1/8/10 19:10	-104.62	39.63	1/8/10 22:00	-76.38	67.87

Table AII.36: (Continued) Middle Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011 which corresponds to a similar tide at 2135 on 8 January 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/8/10 22:05	-76.38	67.87	1/9/10 0:55	-61.95	82.30
1/8/10 22:10	-74.98	69.27	1/9/10 1:00	-60.66	83.59
1/8/10 22:15	-74.30	69.96	1/9/10 1:05	-61.37	82.88
1/8/10 22:20	-73.10	71.15	1/9/10 1:10	-61.06	83.19
1/8/10 22:25	-71.50	72.75	1/9/10 1:15	-61.16	83.09
1/8/10 22:30	-71.09	73.16	1/9/10 1:20	-61.85	82.40
1/8/10 22:35	-70.71	73.54	1/9/10 1:25	-62.66	81.59
1/8/10 22:40	-69.82	74.43	1/9/10 1:30	-62.84	81.41
1/8/10 22:45	-69.11	75.14	1/9/10 1:35	-62.84	81.41
1/8/10 22:50	-68.22	76.03	1/9/10 1:40	-64.74	79.51
1/8/10 22:55	-68.12	76.13	1/9/10 1:45	-64.34	79.91
1/8/10 23:00	-67.92	76.33	1/9/10 1:50	-65.94	78.31
1/8/10 23:05	-67.72	76.53	1/9/10 1:55	-66.42	77.83
1/8/10 23:10	-67.23	77.02	1/9/10 2:00	-67.03	77.22
1/8/10 23:15	-66.62	77.63	1/9/10 2:05	-66.83	77.42
1/8/10 23:20	-66.93	77.32	1/9/10 2:10	-68.02	76.23
1/8/10 23:25	-66.83	77.42	1/9/10 2:15	-68.43	75.82
1/8/10 23:30	-65.63	78.62	1/9/10 2:20	-68.02	76.23
1/8/10 23:35	-65.94	78.31	1/9/10 2:25	-68.02	76.23
1/8/10 23:40	-65.94	78.31	1/9/10 2:30	-68.63	75.62
1/8/10 23:45	-65.63	78.62	1/9/10 2:35	-69.01	75.24
1/8/10 23:50	-66.04	78.21	1/9/10 2:40	-68.63	75.62
1/8/10 23:55	-64.34	79.91	1/9/10 2:45	-69.01	75.24
1/9/10 0:00	-64.85	79.40	1/9/10 2:50	-68.63	75.62
1/9/10 0:05	-63.86	80.39	1/9/10 2:55	-69.22	75.04
1/9/10 0:10	-63.55	80.70	1/9/10 3:00	-68.91	75.34
1/9/10 0:15	-63.65	80.60	1/9/10 3:05	-69.42	74.83
1/9/10 0:20	-63.04	81.21	1/9/10 3:10	-68.63	75.62
1/9/10 0:25	-62.66	81.59	1/9/10 3:15	-70.00	74.25
1/9/10 0:30	-62.46	81.79	1/9/10 3:20	-70.00	74.25
1/9/10 0:35	-62.46	81.79	1/9/10 3:25	-70.00	74.25
1/9/10 0:40	-62.15	82.10	1/9/10 3:30	-71.30	72.95
1/9/10 0:45	-61.37	82.88	1/9/10 3:35	-71.50	72.75
1/9/10 0:50	-60.66	83.59	1/9/10 3:40	-72.21	72.04

Table AII.36: (Continued) Middle Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011 which corresponds to a similar tide at 2135 on 8 January 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 3:45	-73.41	70.84	1/9/10 6:35	-96.88	47.37
1/9/10 3:50	-74.40	69.85	1/9/10 6:40	-96.06	48.19
1/9/10 3:55	-75.18	69.07	1/9/10 6:45	-96.16	48.09
1/9/10 4:00	-76.28	67.97	1/9/10 6:50	-97.05	47.20
1/9/10 4:05	-77.57	66.68	1/9/10 6:55	-96.47	47.78
1/9/10 4:10	-78.77	65.48	1/9/10 7:00	-96.67	47.58
1/9/10 4:15	-79.55	64.70	1/9/10 7:05	-96.57	47.68
1/9/10 4:20	-80.16	64.09	1/9/10 7:10	-96.27	47.98
1/9/10 4:25	-82.04	62.21	1/9/10 7:15	-96.47	47.78
1/9/10 4:30	-82.04	62.21	1/9/10 7:20	-96.27	47.98
1/9/10 4:35	-82.93	61.32	1/9/10 7:25	-97.05	47.20
1/9/10 4:40	-83.74	60.51	1/9/10 7:30	-96.77	47.48
1/9/10 4:45	-84.12	60.13	1/9/10 7:35	-97.97	46.28
1/9/10 4:50	-84.63	59.62	1/9/10 7:40	-97.36	46.89
1/9/10 4:55	-84.94	59.31	1/9/10 7:45	-97.97	46.28
1/9/10 5:00	-86.23	58.02	1/9/10 7:50	-97.97	46.28
1/9/10 5:05	-85.93	58.32	1/9/10 7:55	-98.76	45.49
1/9/10 5:10	-86.82	57.43	1/9/10 8:00	-99.26	44.99
1/9/10 5:15	-87.12	57.13	1/9/10 8:05	-98.76	45.49
1/9/10 5:20	-87.53	56.72	1/9/10 8:10	-99.64	44.61
1/9/10 5:25	-88.32	55.93	1/9/10 8:15	-99.85	44.40
1/9/10 5:30	-88.21	56.04	1/9/10 8:20	-99.75	44.50
1/9/10 5:35	-89.20	55.05	1/9/10 8:25	-100.53	43.72
1/9/10 5:40	-89.20	55.05	1/9/10 8:30	-100.15	44.10
1/9/10 5:45	-90.40	53.85	1/9/10 8:35	-100.53	43.72
1/9/10 5:50	-90.91	53.34	1/9/10 8:40	-100.63	43.62
1/9/10 5:55	-91.69	52.56	1/9/10 8:45	-100.94	43.31
1/9/10 6:00	-92.38	51.87	1/9/10 8:50	-101.24	43.01
1/9/10 6:05	-92.99	51.26	1/9/10 8:55	-101.45	42.80
1/9/10 6:10	-93.57	50.68	1/9/10 9:00	-100.43	43.82
1/9/10 6:15	-94.39	49.86	1/9/10 9:05	-101.24	43.01
1/9/10 6:20	-95.28	48.97	1/9/10 9:10	-99.85	44.40
1/9/10 6:25	-95.17	49.08	1/9/10 9:15	-99.85	44.40
1/9/10 6:30	-95.58	48.67	1/9/10 9:20	-100.53	43.72

Table AII.36: (Continued) Middle Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011 which corresponds to a similar tide at 2135 on 8 January 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 9:25	-99.34	44.91	1/9/10 12:15	-97.76	46.49
1/9/10 9:30	-100.25	44.00	1/9/10 12:20	-97.87	46.38
1/9/10 9:35	-99.85	44.40	1/9/10 12:25	-98.15	46.10
1/9/10 9:40	-99.06	45.19	1/9/10 12:30	-97.76	46.49
1/9/10 9:45	-100.05	44.20	1/9/10 12:35	-98.35	45.90
1/9/10 9:50	-99.64	44.61	1/9/10 12:40	-98.55	45.70
1/9/10 9:55	-99.16	45.09	1/9/10 12:45	-97.97	46.28
1/9/10 10:00	-99.26	44.99	1/9/10 12:50	-98.86	45.39
1/9/10 10:05	-99.26	44.99	1/9/10 12:55	-98.35	45.90
1/9/10 10:10	-99.26	44.99	1/9/10 13:00	-99.64	44.61
1/9/10 10:15	-99.34	44.91	1/9/10 13:05	-99.64	44.61
1/9/10 10:20	-99.44	44.81	1/9/10 13:10	-99.64	44.61
1/9/10 10:25	-98.65	45.60	1/9/10 13:15	-100.25	44.00
1/9/10 10:30	-99.06	45.19	1/9/10 13:20	-99.85	44.40
1/9/10 10:35	-98.65	45.60	1/9/10 13:25	-101.45	42.80
1/9/10 10:40	-98.76	45.49	1/9/10 13:30	-102.34	41.91
1/9/10 10:45	-98.55	45.70	1/9/10 13:35	-102.64	41.61
1/9/10 10:50	-98.96	45.29	1/9/10 13:40	-103.12	41.13
1/9/10 10:55	-98.55	45.70	1/9/10 13:45	-103.63	40.62
1/9/10 11:00	-98.55	45.70	1/9/10 13:50	-104.01	40.24
1/9/10 11:05	-98.55	45.70	1/9/10 13:55	-105.61	38.64
1/9/10 11:10	-98.25	46.00	1/9/10 14:00	-104.42	39.83
1/9/10 11:15	-98.76	45.49	1/9/10 14:05	-105.82	38.43
1/9/10 11:20	-98.76	45.49	1/9/10 14:10	-105.71	38.54
1/9/10 11:25	-98.25	46.00	1/9/10 14:15	-105.82	38.43
1/9/10 11:30	-98.25	46.00	1/9/10 14:20	-107.32	36.94
1/9/10 11:35	-98.25	46.00	1/9/10 14:25	-106.50	37.75
1/9/10 11:40	-97.87	46.38	1/9/10 14:30	-107.32	36.94
1/9/10 11:45	-97.87	46.38	1/9/10 14:35	-108.31	35.94
1/9/10 11:50	-97.97	46.28	1/9/10 14:40	-108.10	36.15
1/9/10 11:55	-97.56	46.69	1/9/10 14:45	-108.10	36.15
1/9/10 12:00	-97.16	47.10	1/9/10 14:50	-109.80	34.45
1/9/10 12:05	-97.76	46.49	1/9/10 14:55	-109.09	35.16
1/9/10 12:10	-97.26	46.99	1/9/10 15:00	-110.49	33.76

Table AII.36: (Continued) Middle Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011 which corresponds to a similar tide at 2135 on 8 January 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 15:05	-110.59	33.66	1/9/10 17:55	-117.65	26.60
1/9/10 15:10	-110.90	33.35	1/9/10 18:00	-117.04	27.21
1/9/10 15:15	-111.00	33.25	1/9/10 18:05	-117.35	26.90
1/9/10 15:20	-111.07	33.18	1/9/10 18:10	-117.75	26.50
1/9/10 15:25	-111.38	32.87	1/9/10 18:15	-117.75	26.50
1/9/10 15:30	-112.19	32.06	1/9/10 18:20	-117.55	26.70
1/9/10 15:35	-112.27	31.98	1/9/10 18:25	-117.35	26.90
1/9/10 15:40	-113.36	30.89	1/9/10 18:30	-116.76	27.49
1/9/10 15:45	-112.67	31.58	1/9/10 18:35	-116.15	28.10
1/9/10 15:50	-113.87	30.38	1/9/10 18:40	-115.95	28.30
1/9/10 15:55	-113.08	31.17	1/9/10 18:45	-114.96	29.29
1/9/10 16:00	-114.66	29.59	1/9/10 18:50	-114.17	30.08
1/9/10 16:05	-115.57	28.68	1/9/10 18:55	-113.67	30.59
1/9/10 16:10	-115.06	29.19	1/9/10 19:00	-111.89	32.36
1/9/10 16:15	-116.26	27.99	1/9/10 19:05	-111.58	32.67
1/9/10 16:20	-116.05	28.20	1/9/10 19:10	-110.39	33.86
1/9/10 16:25	-116.05	28.20	1/9/10 19:15	-109.80	34.45
1/9/10 16:30	-116.56	27.69	1/9/10 19:20	-108.51	35.74
1/9/10 16:35	-117.25	27.00	1/9/10 19:25	-108.10	36.15
1/9/10 16:40	-116.26	27.99	1/9/10 19:30	-107.21	37.04
1/9/10 16:45	-116.76	27.49	1/9/10 19:35	-106.32	37.93
1/9/10 16:50	-116.76	27.49	1/9/10 19:40	-106.02	38.23
1/9/10 16:55	-116.15	28.10	1/9/10 19:45	-104.93	39.32
1/9/10 17:00	-116.15	28.10	1/9/10 19:50	-104.72	39.53
1/9/10 17:05	-115.95	28.30	1/9/10 19:55	-104.01	40.24
1/9/10 17:10	-116.05	28.20	1/9/10 20:00	-103.73	40.52
1/9/10 17:15	-115.67	28.58	1/9/10 20:05	-102.74	41.51
1/9/10 17:20	-115.75	28.50	1/9/10 20:10	-102.13	42.12
1/9/10 17:25	-116.26	27.99	1/9/10 20:15	-101.45	42.80
1/9/10 17:30	-115.75	28.50	1/9/10 20:20	-100.94	43.31
1/9/10 17:35	-116.56	27.69	1/9/10 20:25	-100.25	44.00
1/9/10 17:40	-116.87	27.38	1/9/10 20:30	-98.96	45.29
1/9/10 17:45	-116.87	27.38	1/9/10 20:35	-98.45	45.80
1/9/10 17:50	-117.04	27.21	1/9/10 20:40	-97.56	46.69

Table AII.36: (Continued) Middle Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011 which corresponds to a similar tide at 2135 on 8 January 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 20:45	-96.16	48.09	1/9/10 23:35	-63.75	80.50
1/9/10 20:50	-95.07	49.18	1/9/10 23:40	-62.66	81.59
1/9/10 20:55	-93.68	50.57	1/9/10 23:45	-62.05	82.20
1/9/10 21:00	-92.58	51.67	1/9/10 23:50	-61.95	82.30
1/9/10 21:05	-91.39	52.86	1/9/10 23:55	-61.06	83.19
1/9/10 21:10	-89.89	54.36	1/10/10 0:00	-60.76	83.49
1/9/10 21:15	-88.80	55.45	1/10/10 0:05	-60.66	83.59
1/9/10 21:20	-87.53	56.72	1/10/10 0:10	-59.97	84.28
1/9/10 21:25	-87.02	57.23	1/10/10 0:15	-59.56	84.69
1/9/10 21:30	-85.32	58.93	1/10/10 0:20	-59.87	84.38
1/9/10 21:35	-84.84	59.41	1/10/10 0:25	-59.08	85.17
1/9/10 21:40	-84.02	60.23	1/10/10 0:30	-58.98	85.27
1/9/10 21:45	-82.83	61.42	1/10/10 0:35	-58.67	85.58
1/9/10 21:50	-82.35	61.90	1/10/10 0:40	-58.37	85.88
1/9/10 21:55	-81.64	62.61	1/10/10 0:45	-57.99	86.26
1/9/10 22:00	-81.94	62.31	1/10/10 0:50	-57.99	86.26
1/9/10 22:05	-80.37	63.88	1/10/10 0:55	-57.68	86.57
1/9/10 22:10	-80.37	63.88	1/10/10 1:00	-56.97	87.28
1/9/10 22:15	-79.86	64.39	1/10/10 1:05	-57.68	86.57
1/9/10 22:20	-78.36	65.89	1/10/10 1:10	-56.90	87.35
1/9/10 22:25	-78.16	66.09	1/10/10 1:15	-56.69	87.56
1/9/10 22:30	-76.58	67.67	1/10/10 1:20	-56.97	87.28
1/9/10 22:35	-75.87	68.38	1/10/10 1:25	-56.97	87.28
1/9/10 22:40	-74.60	69.65	1/10/10 1:30	-56.49	87.76
1/9/10 22:45	-74.40	69.85	1/10/10 1:35	-56.90	87.35
1/9/10 22:50	-72.90	71.35	1/10/10 1:40	-57.38	86.87
1/9/10 22:55	-71.50	72.75	1/10/10 1:45	-55.98	88.27
1/9/10 23:00	-70.82	73.43	1/10/10 1:50	-57.89	86.36
1/9/10 23:05	-69.82	74.43	1/10/10 1:55	-57.48	86.77
1/9/10 23:10	-68.91	75.34	1/10/10 2:00	-57.38	86.87
1/9/10 23:15	-67.72	76.53	1/10/10 2:05	-58.27	85.98
1/9/10 23:20	-65.84	78.41	1/10/10 2:10	-58.27	85.98
1/9/10 23:25	-65.23	79.02	1/10/10 2:15	-58.57	85.68
1/9/10 23:30	-64.54	79.71	1/10/10 2:20	-58.57	85.68

Table AII.36: (Continued) Middle Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011 which corresponds to a similar tide at 2135 on 8 January 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/10/10 2:25	-59.97	84.28	1/10/10 5:15	-80.47	63.78
1/10/10 2:30	-60.27	83.98	1/10/10 5:20	-81.74	62.51
1/10/10 2:35	-60.55	83.70	1/10/10 5:25	-82.55	61.70
1/10/10 2:40	-62.26	81.99	1/10/10 5:30	-83.03	61.22
1/10/10 2:45	-61.57	82.68	1/10/10 5:35	-84.02	60.23
1/10/10 2:50	-61.95	82.30	1/10/10 5:40	-85.22	59.03
1/10/10 2:55	-62.84	81.41	1/10/10 5:45	-85.52	58.73
1/10/10 3:00	-62.76	81.49	1/10/10 5:50	-86.41	57.84
1/10/10 3:05	-63.45	80.80	1/10/10 5:55	-86.82	57.43
1/10/10 3:10	-64.03	80.22	1/10/10 6:00	-87.53	56.72
1/10/10 3:15	-64.03	80.22	1/10/10 6:05	-88.11	56.14
1/10/10 3:20	-63.96	80.29	1/10/10 6:10	-88.70	55.55
1/10/10 3:25	-65.33	78.92	1/10/10 6:15	-89.00	55.25
1/10/10 3:30	-64.95	79.30	1/10/10 6:20	-88.90	55.35
1/10/10 3:35	-64.74	79.51	1/10/10 6:25	-89.81	54.44
1/10/10 3:40	-65.63	78.62	1/10/10 6:30	-90.60	53.65
1/10/10 3:45	-65.94	78.31	1/10/10 6:35	-90.60	53.65
1/10/10 3:50	-66.04	78.21	1/10/10 6:40	-91.19	53.06
1/10/10 3:55	-65.94	78.31	1/10/10 6:45	-92.20	52.05
1/10/10 4:00	-67.03	77.22	1/10/10 6:50	-92.10	52.15
1/10/10 4:05	-66.83	77.42	1/10/10 6:55	-92.99	51.26
1/10/10 4:10	-67.72	76.53	1/10/10 7:00	-93.68	50.57
1/10/10 4:15	-68.43	75.82	1/10/10 7:05	-94.77	49.48
1/10/10 4:20	-68.91	75.34	1/10/10 7:10	-95.38	48.87
1/10/10 4:25	-69.42	74.83	1/10/10 7:15	-95.58	48.67
1/10/10 4:30	-70.92	73.33	1/10/10 7:20	-95.96	48.29
1/10/10 4:35	-71.81	72.44	1/10/10 7:25	-97.46	46.79
1/10/10 4:40	-72.01	72.24	1/10/10 7:30	-97.56	46.69
1/10/10 4:45	-73.79	70.46	1/10/10 7:35	-97.97	46.28
1/10/10 4:50	-74.40	69.85	1/10/10 7:40	-98.35	45.90
1/10/10 4:55	-75.87	68.38	1/10/10 7:45	-98.45	45.80
1/10/10 5:00	-76.96	67.29	1/10/10 7:50	-98.35	45.90
1/10/10 5:05	-78.46	65.79	1/10/10 7:55	-98.76	45.49
1/10/10 5:10	-78.87	65.38	1/10/10 8:00	-99.54	44.71

Table AII.36: (Continued) Middle Loch Platform B water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011 which corresponds to a similar tide at 2135 on 8 January 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/10/10 8:05	-98.25	46.00	1/10/10 8:50	-98.07	46.18
1/10/10 8:10	-98.35	45.90	1/10/10 8:55	-97.36	46.89
1/10/10 8:15	-98.35	45.90	1/10/10 9:00	-97.76	46.49
1/10/10 8:20	-98.07	46.18	1/10/10 9:05	-98.15	46.10
1/10/10 8:25	-98.15	46.10	1/10/10 9:10	-98.15	46.10
1/10/10 8:30	-97.97	46.28	1/10/10 9:15	-99.85	44.40
1/10/10 8:35	-97.56	46.69	1/10/10 9:20	-100.53	43.72
1/10/10 8:40	-96.95	47.30	1/10/10 9:25	-99.34	44.91
1/10/10 8:45	-97.56	46.69	1/10/10 9:30	-100.25	44.00

Table AII.37: Inlet Platform time-series radon measurements.

RAD-7 #2356					Inlet Platform		eff=0.416 cpm/pCi/L				
Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
95	10	1	10	16	3	66	28.2	80.3	1.5	10.6	3.0
96	10	1	10	16	33	139	28.2	74.1	2.2	21.6	1.5
97	10	1	10	17	3	158	28.2	65.2	1.3	29.1	1.9
98	10	1	10	17	33	183	28.2	46.5	1.7	48.6	1.1
99	10	1	10	18	3	210	28.2	51.4	1.4	42.9	1.0
100	10	1	10	18	33	215	28.2	54.4	0.0	43.7	0.5
101	10	1	10	19	3	266	28.2	49.3	0.8	46.6	0.8
102	10	1	10	19	33	263	28.2	48.3	0.8	45.6	1.5
103	10	1	10	20	3	244	28.2	46.3	0.8	49.6	0.4
104	10	1	10	20	33	295	28.2	42.7	1.0	52.9	2.4
105	10	1	10	21	3	207	28.2	41.1	1.0	52.7	1.0
106	10	1	10	21	33	231	28.2	37.2	2.2	58.0	0.9
107	10	1	10	22	3	227	28.2	44.9	0.5	48.9	1.8
108	10	1	10	22	33	215	28.2	49.8	1.9	43.3	1.4
109	10	1	10	23	3	215	28.2	48.4	1.4	45.6	1.9
110	10	1	10	23	33	248	28.2	54.9	0.8	42.8	1.6
111	10	1	11	0	3	252	28.2	48.0	0.4	48.4	1.2
112	10	1	11	0	33	247	28.2	51.8	0.4	44.5	0.0
113	10	1	11	1	3	260	28.2	46.9	0.4	48.9	1.2
114	10	1	11	1	33	253	28.2	45.9	0.8	49.0	2.8
115	10	1	11	2	3	256	28.2	50.8	0.4	46.1	1.6
116	10	1	11	2	33	246	28.2	48.8	1.2	45.9	1.6
117	10	1	11	3	3	240	28.2	45.8	0.4	50.0	0.4
118	10	1	11	3	33	272	28.2	44.9	2.2	48.5	1.1
119	10	1	11	4	3	261	28.2	44.5	1.5	51.4	1.2
120	10	1	11	4	33	235	28.2	43.0	0.9	49.8	2.6
121	10	1	11	5	3	227	28.2	46.3	0.0	50.7	1.8
122	10	1	11	5	33	204	28.2	42.7	0.5	55.4	0.5
123	10	1	11	6	3	228	28.2	40.8	0.5	55.7	1.8
124	10	1	11	6	33	185	28.2	44.9	2.2	50.3	1.1
125	10	1	11	7	3	210	28.2	41.9	1.0	53.8	1.0
126	10	1	11	7	33	168	28.2	42.3	1.2	54.2	1.2
127	10	1	11	8	3	158	28.2	51.9	0.6	44.3	0.6
128	10	1	11	8	33	184	28.2	45.1	0.6	48.9	1.6
129	10	1	11	9	3	172	28.2	40.7	1.2	54.1	0.6
130	10	1	11	9	33	171	28.2	49.7	1.2	45.6	1.8
131	10	1	11	10	3	145	28.2	55.2	0.0	42.1	0.0

Table AII.37: (Continued) Inlet Platform time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
132	10	1	11	10	33	186	28.2	46.2	0.0	48.9	2.2
133	10	1	11	11	3	206	28.2	50.0	1.0	46.1	1.5
134	10	1	11	11	33	197	28.2	47.7	0.0	46.2	4.1
135	10	1	11	12	3	173	28.2	45.7	1.2	47.4	2.3
136	10	1	11	12	33	210	28.2	49.5	1.4	47.2	0.5
137	10	1	11	13	3	223	28.2	42.2	0.9	52.0	1.8
138	10	1	11	13	33	192	28.2	40.1	2.6	52.6	1.1
139	10	1	11	14	3	188	28.2	43.1	0.5	50.5	0.5
140	10	1	11	14	33	206	28.2	50.5	1.5	44.2	1.0
141	10	1	11	15	3	201	28.2	50.3	1.0	44.8	1.0
142	10	1	11	15	28	163	22.8	47.9	1.9	46.6	1.9

Table AII.38: Inlet Platform time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
95	2218	9	24.9	8	1	7.06	0	5	89.566	26.749
96	2218	9	25.8	9	1	7.09	0	5	200.563	38.216
97	2201	9	26.1	7	1	6.94	70	5	224.873	40.381
98	2218	9	25.8	7	1	6.94	70	5	262.859	43.239
99	2218	9	25.5	7	1	6.97	70	5	299.325	45.907
100	2218	9	25.2	7	1	6.91	70	5	320.596	47.285
101	2201	9	24.9	7	1	6.97	70	5	386.273	51.706
102	2218	9	24.6	7	1	6.94	70	5	372.586	51.036
103	2201	9	24.3	7	1	6.94	70	5	355.543	49.623
104	2218	9	24.0	7	1	6.94	70	5	422.771	54.388
105	2218	8	24.0	7	1	6.94	70	5	293.247	45.474
106	2218	9	23.4	7	1	6.94	70	5	332.752	48.214
107	2218	8	23.1	6	1	6.97	70	5	320.596	47.597
108	2201	9	22.8	6	1	6.97	70	5	300.844	46.229
109	2218	8	22.2	6	1	6.97	80	5	303.883	46.442
110	2218	8	21.9	6	1	6.97	70	5	364.659	50.507
111	2218	9	21.9	6	1	7.00	70	5	367.698	50.604
112	2218	8	21.6	6	1	6.97	70	5	361.620	50.018
113	2218	9	21.6	6	1	6.97	70	5	377.148	51.228
114	2218	9	21.3	6	1	6.97	70	5	358.582	50.409
115	2218	8	21.3	6	1	6.97	70	5	374.107	51.132

Table AII.38: (Continued) Inlet Platform time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
116	2218	8	21.0	6	1	6.94	70	5	350.985	49.623
117	2218	8	21.0	6	1	6.97	70	5	349.775	49.269
118	2218	8	20.7	6	1	6.97	80	5	383.231	51.706
119	2218	8	20.7	6	1	6.97	80	5	378.669	51.324
120	2218	9	20.7	6	1	6.97	80	5	326.674	48.112
121	2218	8	20.7	6	1	6.97	80	5	331.232	48.316
122	2218	9	20.7	6	1	6.97	80	5	303.883	46.122
123	2218	8	20.4	6	1	6.97	80	5	331.232	48.316
124	2218	8	20.4	6	1	6.97	80	5	265.897	43.468
125	2218	8	20.4	6	1	6.97	80	5	303.883	46.229
126	2218	9	20.7	6	1	6.97	80	5	244.626	41.836
127	2218	8	21.3	6	1	6.97	80	5	230.951	40.627
128	2218	8	22.5	6	1	6.97	80	5	261.339	43.239
129	2201	9	23.7	7	1	6.94	80	5	247.664	41.955
130	2218	8	25.2	6	1	6.97	80	5	246.145	42.073
131	2218	9	26.8	6	1	6.94	80	5	214.237	39.251
132	2201	9	28.3	6	1	6.94	80	5	265.897	43.696
133	2218	9	29.8	7	1	6.94	80	5	299.325	46.014
134	2218	8	31.3	7	2	6.91	80	5	275.014	44.705
135	2218	9	32.8	7	2	6.91	80	5	241.587	41.836
136	2218	9	35.0	7	2	6.91	80	5	308.441	46.442
137	2218	8	37.4	8	2	6.88	80	5	316.038	47.285
138	2218	9	39.9	9	2	7.03	0	5	268.936	43.696
139	2218	8	37.7	8	2	7.03	0	5	265.897	43.468
140	2218	8	35.6	9	2	7.03	0	5	294.766	45.582
141	2218	9	34.1	15	2	6.88	80	5	288.689	45.256
142	2218	9	32.8	12	2	6.15	70	5	285.218	50.626

Table AII.39: Inlet Platform YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	15:30:40	25.13	51.48	33.83	40.5	2.76	0.101	8.42	N/A	N/A
1/10/2010	15:35:40	25.08	51.21	33.62	41.0	2.80	0.103	8.39	N/A	N/A
1/10/2010	15:40:40	25.28	51.56	33.88	40.2	2.73	0.044	8.35	N/A	N/A
1/10/2010	15:45:40	25.22	51.43	33.79	40.6	2.76	0.129	8.35	N/A	N/A
1/10/2010	15:50:40	25.17	51.60	33.91	39.9	2.71	0.115	8.35	N/A	N/A
1/10/2010	15:55:40	25.18	51.40	33.76	40.5	2.75	0.116	8.35	N/A	N/A
1/10/2010	16:00:40	25.16	51.28	33.68	40.4	2.75	0.114	8.35	N/A	N/A
1/10/2010	16:05:40	25.17	51.28	33.68	40.9	2.79	0.117	8.36	N/A	N/A
1/10/2010	16:10:40	25.16	51.34	33.72	41.1	2.80	0.116	8.36	N/A	N/A
1/10/2010	16:15:40	25.19	51.27	33.67	41.5	2.82	0.116	8.36	N/A	N/A
1/10/2010	16:20:40	25.18	51.25	33.65	40.8	2.77	0.118	8.35	N/A	N/A
1/10/2010	16:25:40	25.15	51.37	33.74	41.0	2.79	0.118	8.36	N/A	N/A
1/10/2010	16:30:40	25.17	51.37	33.74	40.8	2.78	0.119	8.35	N/A	N/A
1/10/2010	16:35:40	25.16	51.31	33.70	41.4	2.82	0.119	8.36	N/A	N/A
1/10/2010	16:40:40	25.17	51.44	33.80	41.6	2.83	0.121	8.36	N/A	N/A
1/10/2010	16:45:40	25.13	51.37	33.74	40.9	2.78	0.120	8.35	N/A	N/A
1/10/2010	16:50:40	25.15	51.42	33.78	40.8	2.78	0.122	8.35	N/A	N/A
1/10/2010	16:55:40	25.18	51.17	33.59	40.9	2.78	0.123	8.35	N/A	N/A
1/10/2010	17:00:40	25.20	51.39	33.76	42.1	2.86	0.123	8.36	N/A	N/A
1/10/2010	17:05:40	25.18	51.37	33.74	41.0	2.79	0.122	8.36	N/A	N/A
1/10/2010	17:10:40	25.10	51.36	33.74	39.7	2.70	0.124	8.35	N/A	N/A
1/10/2010	17:15:40	25.12	51.43	33.78	40.6	2.76	0.123	8.35	N/A	N/A
1/10/2010	17:20:40	25.11	51.22	33.64	40.3	2.75	0.124	8.35	N/A	N/A
1/10/2010	17:25:40	25.09	51.23	33.64	40.5	2.76	0.123	8.35	N/A	N/A
1/10/2010	17:30:40	25.15	51.50	33.83	40.6	2.76	0.125	8.35	N/A	N/A
1/10/2010	17:35:40	25.11	51.44	33.80	40.4	2.75	0.124	8.35	N/A	N/A
1/10/2010	17:40:40	25.10	51.43	33.79	40.5	2.76	0.126	8.35	N/A	N/A
1/10/2010	17:45:40	25.11	51.50	33.84	40.3	2.74	0.126	8.35	N/A	N/A
1/10/2010	17:50:40	25.05	51.45	33.80	40.0	2.72	0.128	8.35	N/A	N/A
1/10/2010	17:55:40	25.12	51.52	33.86	40.0	2.72	0.129	8.35	N/A	N/A
1/10/2010	18:00:40	25.01	51.35	33.73	39.8	2.71	0.129	8.35	N/A	N/A
1/10/2010	18:05:40	25.04	51.42	33.78	40.0	2.72	0.130	8.35	N/A	N/A
1/10/2010	18:10:40	25.01	51.39	33.76	40.4	2.76	0.131	8.35	N/A	N/A
1/10/2010	18:15:40	24.88	51.24	33.65	39.9	2.73	0.131	8.35	N/A	N/A
1/10/2010	18:20:40	24.94	51.38	33.75	39.8	2.71	0.131	8.35	N/A	N/A
1/10/2010	18:25:40	24.91	51.23	33.65	39.9	2.73	0.132	8.35	N/A	N/A
1/10/2010	18:30:40	25.08	51.52	33.85	39.9	2.72	0.133	8.35	N/A	N/A
1/10/2010	18:35:40	25.08	51.48	33.82	39.8	2.71	0.134	8.34	N/A	N/A

Table AII.39: (Continued) Inlet Platform YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	18:40:40	25.09	51.54	33.87	39.8	2.71	0.133	8.34	N/A	N/A
1/10/2010	18:45:40	25.08	51.52	33.85	39.8	2.71	0.136	8.34	N/A	N/A
1/10/2010	18:50:40	25.09	51.44	33.80	41.0	2.79	0.132	8.36	N/A	N/A
1/10/2010	18:55:40	25.09	51.48	33.83	41.1	2.80	0.135	8.36	N/A	N/A
1/10/2010	19:00:40	25.07	51.44	33.79	41.1	2.80	0.136	8.36	N/A	N/A
1/10/2010	19:05:40	25.02	51.41	33.77	41.0	2.79	0.137	8.36	N/A	N/A
1/10/2010	19:10:40	25.06	51.47	33.81	40.7	2.77	0.136	8.36	N/A	N/A
1/10/2010	19:15:40	25.13	51.54	33.87	41.7	2.83	0.139	8.37	N/A	N/A
1/10/2010	19:20:40	25.17	51.58	33.90	42.2	2.87	0.140	8.37	N/A	N/A
1/10/2010	19:25:40	25.17	51.62	33.93	42.1	2.86	0.143	8.37	N/A	N/A
1/10/2010	19:30:40	25.13	51.58	33.90	41.6	2.83	0.142	8.37	N/A	N/A
1/10/2010	19:35:40	25.03	51.53	33.86	41.1	2.80	0.142	8.36	N/A	N/A
1/10/2010	19:40:40	25.09	51.53	33.86	41.4	2.82	0.140	8.36	N/A	N/A
1/10/2010	19:45:40	25.10	51.56	33.88	40.5	2.75	0.144	8.36	N/A	N/A
1/10/2010	19:50:40	25.09	51.60	33.92	40.6	2.76	0.144	8.36	N/A	N/A
1/10/2010	19:55:40	25.10	51.60	33.91	40.8	2.77	0.146	8.36	N/A	N/A
1/10/2010	20:00:40	25.07	51.59	33.91	40.5	2.76	0.147	8.36	N/A	N/A
1/10/2010	20:05:40	25.03	51.58	33.90	40.4	2.75	0.149	8.36	N/A	N/A
1/10/2010	20:10:40	25.04	51.59	33.90	40.5	2.76	0.148	8.36	N/A	N/A
1/10/2010	20:15:40	25.04	51.58	33.90	40.8	2.78	0.149	8.36	N/A	N/A
1/10/2010	20:20:40	25.04	51.59	33.91	41.0	2.80	0.150	8.37	N/A	N/A
1/10/2010	20:25:40	25.03	51.60	33.92	41.2	2.80	0.151	8.37	N/A	N/A
1/10/2010	20:30:40	25.02	51.60	33.91	41.3	2.82	0.152	8.37	N/A	N/A
1/10/2010	20:35:40	25.05	51.62	33.93	42.1	2.87	0.151	8.38	N/A	N/A
1/10/2010	20:40:40	25.00	51.61	33.92	42.1	2.87	0.151	8.38	N/A	N/A
1/10/2010	20:45:40	25.03	51.62	33.93	42.0	2.86	0.153	8.38	N/A	N/A
1/10/2010	20:50:40	25.00	51.63	33.94	41.7	2.84	0.153	8.38	N/A	N/A
1/10/2010	20:55:40	25.00	51.62	33.93	42.0	2.86	0.155	8.38	N/A	N/A
1/10/2010	21:00:40	25.01	51.62	33.93	42.0	2.86	0.155	8.38	N/A	N/A
1/10/2010	21:05:40	24.99	51.63	33.94	41.8	2.85	0.156	8.38	N/A	N/A
1/10/2010	21:10:40	24.98	51.64	33.94	41.0	2.80	0.157	8.37	N/A	N/A
1/10/2010	21:15:40	25.00	51.66	33.96	40.5	2.76	0.157	8.37	N/A	N/A
1/10/2010	21:20:40	24.93	51.63	33.94	41.1	2.81	0.157	8.37	N/A	N/A
1/10/2010	21:25:40	24.93	51.63	33.94	41.0	2.80	0.157	8.37	N/A	N/A
1/10/2010	21:30:40	24.92	51.64	33.95	40.9	2.79	0.158	8.37	N/A	N/A
1/10/2010	21:35:40	24.92	51.63	33.94	41.0	2.80	0.160	8.38	N/A	N/A
1/10/2010	21:40:40	24.96	51.73	34.01	40.4	2.76	0.159	8.37	N/A	N/A
1/10/2010	21:45:40	24.97	51.74	34.02	40.4	2.76	0.159	8.37	N/A	N/A

Table AII.39: (Continued) Inlet Platform YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	21:50:40	24.95	51.72	34.01	40.5	2.76	0.160	8.37	N/A	N/A
1/10/2010	21:55:40	24.93	51.73	34.01	40.8	2.78	0.159	8.38	N/A	N/A
1/10/2010	22:00:40	24.97	51.74	34.02	40.7	2.77	0.159	8.38	N/A	N/A
1/10/2010	22:05:40	24.96	51.74	34.02	40.9	2.79	0.160	8.38	N/A	N/A
1/10/2010	22:10:40	24.92	51.73	34.01	41.0	2.80	0.161	8.38	N/A	N/A
1/10/2010	22:15:40	24.90	51.72	34.01	41.0	2.79	0.159	8.38	N/A	N/A
1/10/2010	22:20:40	24.91	51.72	34.01	40.9	2.79	0.159	8.38	N/A	N/A
1/10/2010	22:25:40	24.87	51.70	33.99	40.6	2.77	0.159	8.37	N/A	N/A
1/10/2010	22:30:40	24.84	51.68	33.98	40.7	2.78	0.159	8.38	N/A	N/A
1/10/2010	22:35:40	24.86	51.68	33.98	40.5	2.77	0.158	8.37	N/A	N/A
1/10/2010	22:40:40	24.86	51.70	33.99	40.1	2.74	0.156	8.37	N/A	N/A
1/10/2010	22:45:40	24.83	51.68	33.98	40.0	2.73	0.158	8.37	N/A	N/A
1/10/2010	22:50:40	24.82	51.72	34.01	39.9	2.72	0.157	8.37	N/A	N/A
1/10/2010	22:55:40	24.84	51.75	34.03	39.8	2.72	0.158	8.37	N/A	N/A
1/10/2010	23:00:40	24.81	51.77	34.04	39.7	2.71	0.158	8.37	N/A	N/A
1/10/2010	23:05:40	24.87	51.70	33.99	40.6	2.77	0.158	8.38	N/A	N/A
1/10/2010	23:10:40	24.89	51.75	34.03	40.2	2.74	0.159	8.38	N/A	N/A
1/10/2010	23:15:40	24.95	51.82	34.08	40.4	2.75	0.159	8.38	N/A	N/A
1/10/2010	23:20:40	24.90	51.77	34.05	40.3	2.75	0.159	8.38	N/A	N/A
1/10/2010	23:25:40	24.80	51.76	34.04	40.1	2.74	0.159	8.38	N/A	N/A
1/10/2010	23:30:40	24.79	51.75	34.03	40.2	2.75	0.159	8.38	N/A	N/A
1/10/2010	23:35:40	24.83	51.79	34.06	40.1	2.74	0.158	8.38	N/A	N/A
1/10/2010	23:40:40	24.90	51.83	34.09	40.9	2.79	0.158	8.39	N/A	N/A
1/10/2010	23:45:40	24.91	51.86	34.11	40.9	2.79	0.160	8.39	N/A	N/A
1/10/2010	23:50:40	24.82	51.81	34.08	39.9	2.73	0.158	8.38	N/A	N/A
1/10/2010	23:55:40	24.83	51.80	34.07	39.5	2.70	0.157	8.37	N/A	N/A
1/11/2010	0:00:40	24.80	51.79	34.06	40.6	2.77	0.158	8.38	N/A	N/A
1/11/2010	0:05:40	24.84	51.82	34.08	40.8	2.78	0.158	8.38	N/A	N/A
1/11/2010	0:10:40	24.81	51.75	34.03	39.8	2.72	0.156	8.38	N/A	N/A
1/11/2010	0:15:40	24.83	51.75	34.03	39.6	2.71	0.157	8.38	N/A	N/A
1/11/2010	0:20:40	24.79	51.77	34.05	40.1	2.74	0.156	8.38	N/A	N/A
1/11/2010	0:25:40	24.81	51.75	34.03	39.7	2.71	0.156	8.38	N/A	N/A
1/11/2010	0:30:40	24.81	51.75	34.03	39.4	2.70	0.155	8.37	N/A	N/A
1/11/2010	0:35:40	24.80	51.77	34.04	39.4	2.69	0.155	8.37	N/A	N/A
1/11/2010	0:40:40	24.73	51.78	34.05	39.5	2.70	0.156	8.37	N/A	N/A
1/11/2010	0:45:40	24.73	51.78	34.05	39.5	2.70	0.155	8.38	N/A	N/A
1/11/2010	0:50:40	24.74	51.80	34.07	39.5	2.70	0.155	8.38	N/A	N/A
1/11/2010	0:55:40	24.77	51.81	34.08	39.3	2.69	0.155	8.38	N/A	N/A

Table AII.39: (Continued) Inlet Platform YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/11/2010	1:00:40	24.77	51.81	34.08	39.3	2.69	0.154	8.38	N/A	N/A
1/11/2010	1:05:40	24.71	51.80	34.07	39.3	2.69	0.154	8.38	N/A	N/A
1/11/2010	1:10:40	24.66	51.80	34.07	39.3	2.69	0.155	8.38	N/A	N/A
1/11/2010	1:15:40	24.65	51.81	34.08	39.8	2.73	0.155	8.38	N/A	N/A
1/11/2010	1:20:40	24.65	51.82	34.09	39.7	2.72	0.155	8.38	N/A	N/A
1/11/2010	1:25:40	24.63	51.83	34.09	39.6	2.71	0.154	8.38	N/A	N/A
1/11/2010	1:30:40	24.64	51.83	34.09	39.4	2.70	0.155	8.38	N/A	N/A
1/11/2010	1:35:40	24.66	51.83	34.09	39.3	2.69	0.155	8.38	N/A	N/A
1/11/2010	1:40:40	24.64	51.84	34.10	39.6	2.71	0.154	8.38	N/A	N/A
1/11/2010	1:45:40	24.65	51.83	34.09	39.4	2.70	0.151	8.38	N/A	N/A
1/11/2010	1:50:40	24.61	51.84	34.10	39.8	2.72	0.152	8.38	N/A	N/A
1/11/2010	1:55:40	24.68	51.88	34.13	39.6	2.71	0.153	8.38	N/A	N/A
1/11/2010	2:00:40	24.64	51.88	34.13	39.7	2.72	0.153	8.38	N/A	N/A
1/11/2010	2:05:40	24.67	51.88	34.13	39.9	2.73	0.153	8.39	N/A	N/A
1/11/2010	2:10:40	24.60	51.86	34.12	40.0	2.74	0.152	8.39	N/A	N/A
1/11/2010	2:15:40	24.65	51.84	34.10	39.8	2.73	0.153	8.39	N/A	N/A
1/11/2010	2:20:40	24.65	51.85	34.11	39.4	2.70	0.154	8.39	N/A	N/A
1/11/2010	2:25:40	24.60	51.85	34.11	39.4	2.70	0.154	8.38	N/A	N/A
1/11/2010	2:30:40	24.59	51.86	34.12	39.7	2.72	0.153	8.39	N/A	N/A
1/11/2010	2:35:40	24.60	51.87	34.13	39.7	2.72	0.152	8.39	N/A	N/A
1/11/2010	2:40:40	24.65	51.90	34.15	39.8	2.72	0.152	8.39	N/A	N/A
1/11/2010	2:45:40	24.68	51.91	34.15	39.9	2.73	0.152	8.39	N/A	N/A
1/11/2010	2:50:40	24.65	51.92	34.16	39.6	2.71	0.151	8.39	N/A	N/A
1/11/2010	2:55:40	24.70	51.95	34.18	39.9	2.73	0.152	8.39	N/A	N/A
1/11/2010	3:00:40	24.71	51.95	34.18	40.0	2.74	0.152	8.39	N/A	N/A
1/11/2010	3:05:40	24.67	51.95	34.18	39.9	2.73	0.152	8.39	N/A	N/A
1/11/2010	3:10:40	24.68	51.95	34.18	39.7	2.72	0.153	8.39	N/A	N/A
1/11/2010	3:15:40	24.63	51.96	34.19	39.7	2.72	0.153	8.39	N/A	N/A
1/11/2010	3:20:40	24.68	51.96	34.19	39.5	2.70	0.153	8.39	N/A	N/A
1/11/2010	3:25:40	24.65	51.94	34.18	39.6	2.71	0.152	8.39	N/A	N/A
1/11/2010	3:30:40	24.61	51.87	34.12	39.7	2.72	0.152	8.39	N/A	N/A
1/11/2010	3:35:40	24.64	51.89	34.14	39.8	2.73	0.153	8.39	N/A	N/A
1/11/2010	3:40:40	24.63	51.91	34.15	39.8	2.73	0.153	8.39	N/A	N/A
1/11/2010	3:45:40	24.61	51.90	34.15	39.3	2.69	0.153	8.39	N/A	N/A
1/11/2010	3:50:40	24.56	51.94	34.17	39.5	2.71	0.152	8.39	N/A	N/A
1/11/2010	3:55:40	24.63	51.94	34.18	39.4	2.69	0.153	8.39	N/A	N/A
1/11/2010	4:00:40	24.62	51.95	34.18	39.6	2.71	0.152	8.39	N/A	N/A
1/11/2010	4:05:40	24.57	51.94	34.18	39.5	2.71	0.151	8.39	N/A	N/A

Table AII.39: (Continued) Inlet Platform YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/11/2010	4:10:40	24.48	51.84	34.11	39.5	2.72	0.153	8.39	N/A	N/A
1/11/2010	4:15:40	24.51	51.88	34.13	39.6	2.71	0.152	8.39	N/A	N/A
1/11/2010	4:20:40	24.54	51.89	34.14	39.8	2.73	0.153	8.39	N/A	N/A
1/11/2010	4:25:40	24.56	51.91	34.16	40.1	2.75	0.152	8.40	N/A	N/A
1/11/2010	4:30:40	24.60	51.92	34.16	40.3	2.76	0.152	8.40	N/A	N/A
1/11/2010	4:35:40	24.55	51.91	34.15	40.5	2.78	0.153	8.40	N/A	N/A
1/11/2010	4:40:40	24.52	51.93	34.17	40.0	2.75	0.153	8.40	N/A	N/A
1/11/2010	4:45:40	24.48	51.94	34.18	39.8	2.73	0.153	8.39	N/A	N/A
1/11/2010	4:50:40	24.51	51.98	34.21	40.1	2.75	0.153	8.40	N/A	N/A
1/11/2010	4:55:40	24.55	52.17	34.35	39.4	2.70	0.153	8.40	N/A	N/A
1/11/2010	5:00:40	24.55	51.84	34.10	39.4	2.70	0.153	8.40	N/A	N/A
1/11/2010	5:05:40	24.58	51.92	34.16	39.2	2.69	0.154	8.40	N/A	N/A
1/11/2010	5:10:40	24.63	51.87	34.12	39.2	2.69	0.154	8.40	N/A	N/A
1/11/2010	5:15:40	24.69	51.86	34.11	39.8	2.72	0.153	8.40	N/A	N/A
1/11/2010	5:20:40	24.70	51.85	34.10	39.9	2.73	0.154	8.40	N/A	N/A
1/11/2010	5:25:40	24.63	51.92	34.16	39.3	2.69	0.153	8.40	N/A	N/A
1/11/2010	5:30:40	24.65	51.88	34.13	39.5	2.71	0.154	8.40	N/A	N/A
1/11/2010	5:35:40	24.60	51.85	34.11	39.2	2.69	0.155	8.39	N/A	N/A
1/11/2010	5:40:40	24.53	51.89	34.14	38.9	2.67	0.154	8.39	N/A	N/A
1/11/2010	5:45:40	24.52	51.90	34.15	39.4	2.70	0.155	8.39	N/A	N/A
1/11/2010	5:50:40	24.52	51.78	34.06	39.4	2.70	0.156	8.40	N/A	N/A
1/11/2010	5:55:40	24.49	51.92	34.16	40.1	2.75	0.156	8.40	N/A	N/A
1/11/2010	6:00:40	24.52	51.95	34.18	40.2	2.76	0.156	8.41	N/A	N/A
1/11/2010	6:05:40	24.63	52.01	34.23	40.1	2.75	0.158	8.41	N/A	N/A
1/11/2010	6:10:40	24.61	52.01	34.22	40.3	2.76	0.157	8.41	N/A	N/A
1/11/2010	6:15:40	24.57	52.09	34.29	40.4	2.77	0.158	8.41	N/A	N/A
1/11/2010	6:20:40	24.58	51.98	34.21	40.4	2.77	0.160	8.41	N/A	N/A
1/11/2010	6:25:40	24.60	52.05	34.25	40.2	2.76	0.159	8.41	N/A	N/A
1/11/2010	6:30:40	24.59	52.00	34.22	40.5	2.78	0.158	8.41	N/A	N/A
1/11/2010	6:35:40	24.61	52.13	34.32	40.7	2.78	0.160	8.41	N/A	N/A
1/11/2010	6:40:40	24.59	52.07	34.27	40.4	2.77	0.160	8.41	N/A	N/A
1/11/2010	6:45:40	24.56	52.03	34.24	40.1	2.75	0.161	8.41	N/A	N/A
1/11/2010	6:50:40	24.61	52.02	34.23	39.9	2.74	0.163	8.41	N/A	N/A
1/11/2010	6:55:40	24.57	52.04	34.25	39.8	2.72	0.163	8.41	N/A	N/A
1/11/2010	7:00:40	24.58	52.10	34.29	39.7	2.72	0.164	8.41	N/A	N/A
1/11/2010	7:05:40	24.62	52.11	34.30	39.6	2.71	0.165	8.41	N/A	N/A
1/11/2010	7:10:40	24.57	52.11	34.30	39.7	2.72	0.166	8.41	N/A	N/A
1/11/2010	7:15:40	24.58	52.12	34.31	39.5	2.70	0.166	8.40	N/A	N/A

Table AII.39: (Continued) Inlet Platform YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/11/2010	7:20:40	24.61	52.11	34.30	39.4	2.70	0.168	8.40	N/A	N/A
1/11/2010	7:25:40	24.60	52.03	34.24	40.0	2.74	0.168	8.41	N/A	N/A
1/11/2010	7:30:40	24.62	51.99	34.21	40.0	2.74	0.167	8.41	N/A	N/A
1/11/2010	7:35:40	24.64	51.95	34.18	40.2	2.75	0.168	8.40	N/A	N/A
1/11/2010	7:40:40	24.63	51.97	34.20	40.4	2.76	0.169	8.40	N/A	N/A
1/11/2010	7:45:40	24.65	51.97	34.20	40.4	2.77	0.169	8.40	N/A	N/A
1/11/2010	7:50:40	24.65	51.99	34.21	40.3	2.76	0.168	8.40	N/A	N/A
1/11/2010	7:55:40	24.66	51.99	34.21	40.5	2.77	0.169	8.40	N/A	N/A
1/11/2010	8:00:40	24.65	51.99	34.21	39.8	2.73	0.166	8.39	N/A	N/A
1/11/2010	8:05:40	24.65	52.00	34.22	40.5	2.77	0.166	8.39	N/A	N/A
1/11/2010	8:10:40	24.64	51.98	34.20	40.8	2.79	0.169	8.39	N/A	N/A
1/11/2010	8:15:40	24.63	51.95	34.18	40.9	2.80	0.172	8.39	N/A	N/A
1/11/2010	8:20:40	24.61	51.94	34.18	40.9	2.80	0.173	8.39	N/A	N/A
1/11/2010	8:25:40	24.68	51.93	34.17	41.3	2.83	0.174	8.39	N/A	N/A
1/11/2010	8:30:40	24.69	51.92	34.16	41.8	2.86	0.173	8.39	N/A	N/A
1/11/2010	8:35:40	24.69	51.91	34.15	41.8	2.86	0.172	8.39	N/A	N/A
1/11/2010	8:40:40	24.66	51.91	34.15	41.6	2.84	0.174	8.39	N/A	N/A
1/11/2010	8:45:40	24.67	51.88	34.13	41.6	2.85	0.174	8.39	N/A	N/A
1/11/2010	8:50:40	24.66	51.85	34.10	41.6	2.85	0.175	8.39	N/A	N/A
1/11/2010	8:55:40	24.64	51.75	34.03	41.6	2.85	0.176	8.39	N/A	N/A
1/11/2010	9:00:40	24.60	51.73	34.02	41.5	2.85	0.176	8.39	N/A	N/A
1/11/2010	9:05:40	24.60	51.72	34.01	41.3	2.83	0.177	8.39	N/A	N/A
1/11/2010	9:10:40	24.60	51.70	34.00	41.4	2.84	0.177	8.39	N/A	N/A
1/11/2010	9:15:40	24.62	51.72	34.01	41.5	2.84	0.178	8.39	N/A	N/A
1/11/2010	9:20:40	24.63	51.71	34.01	41.6	2.85	0.178	8.39	N/A	N/A
1/11/2010	9:25:40	24.60	51.69	33.99	41.8	2.86	0.178	8.39	N/A	N/A
1/11/2010	9:30:40	24.61	51.70	34.00	41.6	2.86	0.178	8.39	N/A	N/A
1/11/2010	9:35:40	24.59	51.70	34.00	41.5	2.85	0.177	8.38	N/A	N/A
1/11/2010	9:40:40	24.63	51.77	34.05	41.5	2.85	0.176	8.38	N/A	N/A
1/11/2010	9:45:40	24.64	51.77	34.05	41.5	2.84	0.177	8.38	N/A	N/A
1/11/2010	9:50:40	24.68	51.75	34.03	41.7	2.85	0.178	8.38	N/A	N/A
1/11/2010	9:55:40	24.72	51.82	34.09	41.3	2.82	0.177	8.37	N/A	N/A
1/11/2010	10:00:40	24.67	51.72	34.01	41.0	2.81	0.176	8.37	N/A	N/A
1/11/2010	10:05:40	24.65	51.72	34.01	40.9	2.81	0.176	8.37	N/A	N/A
1/11/2010	10:10:40	24.66	51.73	34.02	41.4	2.84	0.176	8.37	N/A	N/A
1/11/2010	10:15:40	24.71	51.78	34.05	41.6	2.85	0.174	8.37	N/A	N/A
1/11/2010	10:20:40	24.72	51.78	34.06	41.8	2.86	0.175	8.36	N/A	N/A
1/11/2010	10:25:40	24.70	51.81	34.08	41.8	2.86	0.175	8.36	N/A	N/A

Table AII.39: (Continued) Inlet Platform YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/11/2010	10:30:40	24.68	51.82	34.08	41.7	2.85	0.176	8.36	N/A	N/A
1/11/2010	10:35:40	24.71	51.81	34.08	41.8	2.86	0.175	8.36	N/A	N/A
1/11/2010	10:40:40	24.71	51.79	34.06	41.9	2.87	0.173	8.36	N/A	N/A
1/11/2010	10:45:40	24.73	51.78	34.05	42.0	2.87	0.173	8.35	N/A	N/A
1/11/2010	10:50:40	24.72	51.73	34.02	42.1	2.88	0.172	8.35	N/A	N/A
1/11/2010	10:55:40	24.73	51.56	33.89	42.0	2.88	0.171	8.34	N/A	N/A
1/11/2010	11:00:40	24.76	51.53	33.87	42.2	2.89	0.170	8.34	N/A	N/A
1/11/2010	11:05:40	24.76	51.52	33.86	42.1	2.88	0.168	8.34	N/A	N/A
1/11/2010	11:10:40	24.70	51.53	33.87	41.7	2.86	0.170	8.33	N/A	N/A
1/11/2010	11:15:40	24.76	51.52	33.86	41.8	2.86	0.171	8.33	N/A	N/A
1/11/2010	11:20:40	24.77	51.75	34.03	42.2	2.88	0.169	8.33	N/A	N/A
1/11/2010	11:25:40	24.71	51.56	33.89	42.1	2.88	0.168	8.33	N/A	N/A
1/11/2010	11:30:40	24.71	51.79	34.06	42.0	2.87	0.167	8.33	N/A	N/A
1/11/2010	11:35:40	24.71	51.75	34.04	41.3	2.83	0.164	8.31	N/A	N/A
1/11/2010	11:40:40	24.72	51.59	33.91	41.2	2.82	0.165	8.31	N/A	N/A
1/11/2010	11:45:40	24.79	51.51	33.86	42.1	2.88	0.162	8.31	N/A	N/A
1/11/2010	11:50:40	24.83	51.48	33.83	42.2	2.88	0.161	8.30	N/A	N/A
1/11/2010	11:55:40	24.83	51.52	33.86	42.2	2.88	0.160	8.30	N/A	N/A
1/11/2010	12:00:40	24.84	51.52	33.86	42.4	2.90	0.158	8.29	N/A	N/A
1/11/2010	12:05:40	24.83	51.50	33.85	42.3	2.89	0.158	8.28	N/A	N/A
1/11/2010	12:10:40	24.81	51.55	33.88	42.1	2.88	0.158	8.28	N/A	N/A
1/11/2010	12:15:40	24.85	51.58	33.90	42.3	2.89	0.155	8.27	N/A	N/A
1/11/2010	12:20:40	24.83	51.58	33.90	42.3	2.89	0.153	8.26	N/A	N/A
1/11/2010	12:25:40	24.88	51.55	33.88	42.4	2.89	0.153	8.25	N/A	N/A
1/11/2010	12:30:40	24.85	51.55	33.88	42.2	2.88	0.151	8.24	N/A	N/A
1/11/2010	12:35:40	24.85	51.55	33.88	41.6	2.84	0.150	8.22	N/A	N/A
1/11/2010	12:40:40	24.98	51.56	33.89	42.6	2.90	0.150	8.22	N/A	N/A
1/11/2010	12:45:40	24.96	51.54	33.87	42.8	2.92	0.149	8.21	N/A	N/A
1/11/2010	12:50:40	25.03	51.55	33.88	43.0	2.93	0.146	8.21	N/A	N/A
1/11/2010	12:55:40	24.93	51.55	33.88	42.8	2.92	0.145	8.19	N/A	N/A
1/11/2010	13:00:40	24.90	51.55	33.88	42.3	2.89	0.144	8.17	N/A	N/A
1/11/2010	13:05:40	25.01	51.57	33.89	42.7	2.91	0.143	8.17	N/A	N/A
1/11/2010	13:10:40	24.92	51.60	33.92	42.5	2.90	0.145	8.16	N/A	N/A
1/11/2010	13:15:40	24.98	51.59	33.91	42.5	2.90	0.144	8.17	N/A	N/A
1/11/2010	13:20:40	25.09	51.74	34.02	42.7	2.90	0.141	8.16	N/A	N/A
1/11/2010	13:25:40	24.97	51.60	33.91	42.1	2.87	0.146	8.16	N/A	N/A
1/11/2010	13:30:40	25.11	51.61	33.92	43.2	2.94	0.147	8.19	N/A	N/A
1/11/2010	13:35:40	25.10	51.60	33.92	43.3	2.94	0.137	8.20	N/A	N/A

Table AII.39: (Continued) Inlet Platform YSI data from the XLM-600.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/11/2010	13:40:40	25.06	51.63	33.93	42.9	2.92	0.148	8.20	N/A	N/A
1/11/2010	13:45:40	25.15	51.59	33.91	43.1	2.93	0.142	8.22	N/A	N/A
1/11/2010	13:50:40	25.04	51.63	33.94	42.3	2.88	0.143	8.22	N/A	N/A
1/11/2010	13:55:40	25.04	51.64	33.95	41.9	2.85	0.147	8.22	N/A	N/A
1/11/2010	14:00:40	25.05	51.57	33.90	42.4	2.89	0.145	8.23	N/A	N/A
1/11/2010	14:05:40	25.05	51.61	33.92	42.3	2.88	0.146	8.23	N/A	N/A
1/11/2010	14:10:40	25.07	51.72	34.00	42.6	2.90	0.148	8.24	N/A	N/A
1/11/2010	14:15:40	25.08	51.79	34.06	43.3	2.95	0.138	8.25	N/A	N/A
1/11/2010	14:20:40	25.10	51.78	34.05	43.8	2.98	0.144	8.25	N/A	N/A
1/11/2010	14:25:40	25.13	51.79	34.06	43.8	2.98	0.143	8.25	N/A	N/A
1/11/2010	14:30:40	25.15	51.79	34.05	44.0	2.99	0.144	8.26	N/A	N/A
1/11/2010	14:35:40	25.15	51.81	34.06	43.9	2.98	0.144	8.26	N/A	N/A
1/11/2010	14:40:40	25.14	51.83	34.08	43.8	2.97	0.138	8.26	N/A	N/A
1/11/2010	14:45:40	25.14	51.78	34.05	43.9	2.98	0.140	8.27	N/A	N/A
1/11/2010	14:50:40	25.15	51.81	34.07	44.2	3.00	0.139	8.27	N/A	N/A
1/11/2010	14:55:40	25.17	51.73	34.01	44.5	3.02	0.139	8.27	N/A	N/A
1/11/2010	15:00:40	25.16	51.71	33.99	44.3	3.01	0.145	8.27	N/A	N/A
1/11/2010	15:05:40	25.16	51.80	34.06	44.0	2.99	0.144	8.27	N/A	N/A
1/11/2010	15:10:40	25.18	51.77	34.04	43.9	2.98	0.139	8.27	N/A	N/A
1/11/2010	15:15:40	25.17	51.78	34.04	43.9	2.98	0.126	8.27	N/A	N/A

Table AII.40: Inlet Platform wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100110	15:53	4.6	20100111	01:09	2.6
20100110	16:53	2.6	20100111	01:53	0.0
20100110	17:53	3.1	20100111	02:53	2.1
20100110	18:00	3.1	20100111	03:53	0.0
20100110	18:53	3.6	20100111	04:53	0.0
20100110	19:53	4.1	20100111	05:53	2.1
20100110	20:53	5.1	20100111	06:00	2.1
20100110	21:53	4.1	20100111	06:53	2.1
20100110	22:53	3.6	20100111	07:53	2.6
20100110	23:07	3.6	20100111	08:53	3.6
20100110	23:53	3.6	20100111	09:53	3.1
20100111	00:00	3.1	20100111	10:53	3.6
20100111	00:09	3.1	20100111	11:53	2.1
20100111	00:25	4.6	20100111	12:00	2.1
20100111	00:32	3.6	20100111	12:53	2.1
20100111	00:34	4.1	20100111	13:53	2.6
20100111	00:42	3.1	20100111	14:53	2.1
20100111	00:46	2.6	20100111	15:53	0.0
20100111	00:53	3.1			

Table AII.41: Inlet Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/8/10 10:25	-37.47	82.02	1/8/10 13:30	-42.21	69.98
1/8/10 10:30	-37.78	81.23	1/8/10 13:35	-42.40	69.50
1/8/10 10:35	-37.39	82.22	1/8/10 13:40	-42.72	68.68
1/8/10 10:40	-37.55	81.82	1/8/10 13:45	-43.38	67.01
1/8/10 10:45	-37.74	81.33	1/8/10 13:50	-43.38	67.01
1/8/10 10:50	-37.59	81.71	1/8/10 13:55	-43.85	65.81
1/8/10 10:55	-37.70	81.43	1/8/10 14:00	-44.01	65.41
1/8/10 11:00	-37.86	81.03	1/8/10 14:05	-44.13	65.10
1/8/10 11:05	-37.94	80.82	1/8/10 14:10	-44.63	63.83
1/8/10 11:10	-38.06	80.52	1/8/10 14:15	-44.87	63.22
1/8/10 11:15	-38.10	80.42	1/8/10 14:20	-45.07	62.71
1/8/10 11:20	-37.86	81.03	1/8/10 14:25	-45.18	62.44
1/8/10 11:25	-37.86	81.03	1/8/10 14:30	-45.65	61.24
1/8/10 11:30	-38.33	79.83	1/8/10 14:35	-45.54	61.52
1/8/10 11:35	-37.82	81.13	1/8/10 14:40	-45.73	61.04
1/8/10 11:40	-38.33	79.83	1/8/10 14:45	-45.85	60.73
1/8/10 11:45	-38.25	80.04	1/8/10 14:50	-45.81	60.84
1/8/10 11:50	-38.41	79.63	1/8/10 14:55	-45.85	60.73
1/8/10 11:55	-38.72	78.84	1/8/10 15:00	-45.81	60.84
1/8/10 12:00	-39.08	77.93	1/8/10 15:05	-45.69	61.14
1/8/10 12:05	-39.19	77.65	1/8/10 15:10	-45.97	60.43
1/8/10 12:10	-39.11	77.85	1/8/10 15:15	-45.69	61.14
1/8/10 12:15	-39.11	77.85	1/8/10 15:20	-45.77	60.94
1/8/10 12:20	-39.62	76.56	1/8/10 15:25	-45.50	61.62
1/8/10 12:25	-39.90	75.85	1/8/10 15:30	-45.81	60.84
1/8/10 12:30	-39.94	75.74	1/8/10 15:35	-45.42	61.83
1/8/10 12:35	-40.60	74.07	1/8/10 15:40	-45.57	61.44
1/8/10 12:40	-40.09	75.36	1/8/10 15:45	-45.26	62.23
1/8/10 12:45	-40.29	74.86	1/8/10 15:50	-45.34	62.03
1/8/10 12:50	-41.03	72.98	1/8/10 15:55	-46.08	60.15
1/8/10 12:55	-40.76	73.66	1/8/10 16:00	-45.77	60.94
1/8/10 13:00	-41.15	72.67	1/8/10 16:05	-45.61	61.34
1/8/10 13:05	-41.31	72.27	1/8/10 16:10	-45.61	61.34
1/8/10 13:10	-41.50	71.78	1/8/10 16:15	-45.81	60.84
1/8/10 13:15	-41.66	71.38	1/8/10 16:20	-46.04	60.25
1/8/10 13:20	-42.05	70.39	1/8/10 16:25	-46.16	59.95
1/8/10 13:25	-42.36	69.60	1/8/10 16:30	-46.75	58.45

Table AII.41: (Continued) Inlet Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/8/10 16:35	-46.63	58.75	1/8/10 19:35	-39.66	76.46
1/8/10 16:40	-46.63	58.75	1/8/10 19:40	-39.39	77.14
1/8/10 16:45	-46.83	58.24	1/8/10 19:45	-38.76	78.74
1/8/10 16:50	-46.98	57.86	1/8/10 19:50	-38.61	79.12
1/8/10 16:55	-47.06	57.66	1/8/10 19:55	-38.29	79.94
1/8/10 17:00	-47.10	57.56	1/8/10 20:00	-37.74	81.33
1/8/10 17:05	-46.95	57.94	1/8/10 20:05	-37.35	82.32
1/8/10 17:10	-46.55	58.96	1/8/10 20:10	-36.92	83.42
1/8/10 17:15	-46.75	58.45	1/8/10 20:15	-36.61	84.20
1/8/10 17:20	-46.75	58.45	1/8/10 20:20	-36.06	85.60
1/8/10 17:25	-46.48	59.13	1/8/10 20:25	-35.75	86.39
1/8/10 17:30	-46.28	59.64	1/8/10 20:30	-35.47	87.10
1/8/10 17:35	-45.81	60.84	1/8/10 20:35	-35.08	88.09
1/8/10 17:40	-45.57	61.44	1/8/10 20:40	-34.73	88.98
1/8/10 17:45	-45.46	61.72	1/8/10 20:45	-34.38	89.87
1/8/10 17:50	-44.95	63.02	1/8/10 20:50	-33.95	90.96
1/8/10 17:55	-44.75	63.53	1/8/10 20:55	-33.83	91.26
1/8/10 18:00	-44.71	63.63	1/8/10 21:00	-33.79	91.37
1/8/10 18:05	-44.09	65.20	1/8/10 21:05	-33.16	92.97
1/8/10 18:10	-43.93	65.61	1/8/10 21:10	-33.24	92.76
1/8/10 18:15	-43.70	66.19	1/8/10 21:15	-32.77	93.96
1/8/10 18:20	-43.30	67.21	1/8/10 21:20	-32.77	93.96
1/8/10 18:25	-43.07	67.79	1/8/10 21:25	-32.61	94.36
1/8/10 18:30	-42.64	68.89	1/8/10 21:30	-32.30	95.15
1/8/10 18:35	-42.64	68.89	1/8/10 21:35	-31.95	96.04
1/8/10 18:40	-42.36	69.60	1/8/10 21:40	-31.56	97.03
1/8/10 18:45	-42.13	70.18	1/8/10 21:45	-31.64	96.83
1/8/10 18:50	-41.97	70.59	1/8/10 21:50	-31.05	98.33
1/8/10 18:55	-41.66	71.38	1/8/10 21:55	-30.66	99.32
1/8/10 19:00	-41.58	71.58	1/8/10 22:00	-30.07	100.81
1/8/10 19:05	-41.46	71.88	1/8/10 22:05	-30.07	100.81
1/8/10 19:10	-41.19	72.57	1/8/10 22:10	-29.52	102.21
1/8/10 19:15	-40.76	73.66	1/8/10 22:15	-29.25	102.90
1/8/10 19:20	-40.56	74.17	1/8/10 22:20	-28.78	104.09
1/8/10 19:25	-40.33	74.75	1/8/10 22:25	-28.15	105.69
1/8/10 19:30	-40.05	75.47	1/8/10 22:30	-27.99	106.10

Table AII.41: (Continued) Inlet Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/8/10 22:35	-27.84	106.48	1/9/10 1:35	-24.74	114.35
1/8/10 22:40	-27.49	107.37	1/9/10 1:40	-25.49	112.45
1/8/10 22:45	-27.21	108.08	1/9/10 1:45	-25.33	112.85
1/8/10 22:50	-26.86	108.97	1/9/10 1:50	-25.96	111.25
1/8/10 22:55	-26.82	109.07	1/9/10 1:55	-26.15	110.77
1/8/10 23:00	-26.74	109.27	1/9/10 2:00	-26.39	110.16
1/8/10 23:05	-26.66	109.48	1/9/10 2:05	-26.31	110.37
1/8/10 23:10	-26.47	109.96	1/9/10 2:10	-26.78	109.17
1/8/10 23:15	-26.23	110.57	1/9/10 2:15	-26.94	108.76
1/8/10 23:20	-26.35	110.26	1/9/10 2:20	-26.78	109.17
1/8/10 23:25	-26.31	110.37	1/9/10 2:25	-26.78	109.17
1/8/10 23:30	-25.84	111.56	1/9/10 2:30	-27.02	108.56
1/8/10 23:35	-25.96	111.25	1/9/10 2:35	-27.17	108.18
1/8/10 23:40	-25.96	111.25	1/9/10 2:40	-27.02	108.56
1/8/10 23:45	-25.84	111.56	1/9/10 2:45	-27.17	108.18
1/8/10 23:50	-26.00	111.15	1/9/10 2:50	-27.02	108.56
1/8/10 23:55	-25.33	112.85	1/9/10 2:55	-27.25	107.98
1/9/10 0:00	-25.53	112.35	1/9/10 3:00	-27.13	108.28
1/9/10 0:05	-25.14	113.34	1/9/10 3:05	-27.33	107.77
1/9/10 0:10	-25.02	113.64	1/9/10 3:10	-27.02	108.56
1/9/10 0:15	-25.06	113.54	1/9/10 3:15	-27.56	107.19
1/9/10 0:20	-24.82	114.15	1/9/10 3:20	-27.56	107.19
1/9/10 0:25	-24.67	114.53	1/9/10 3:25	-27.56	107.19
1/9/10 0:30	-24.59	114.73	1/9/10 3:30	-28.07	105.89
1/9/10 0:35	-24.59	114.73	1/9/10 3:35	-28.15	105.69
1/9/10 0:40	-24.47	115.04	1/9/10 3:40	-28.43	104.98
1/9/10 0:45	-24.16	115.83	1/9/10 3:45	-28.90	103.79
1/9/10 0:50	-23.88	116.54	1/9/10 3:50	-29.29	102.80
1/9/10 0:55	-24.39	115.24	1/9/10 3:55	-29.60	102.01
1/9/10 1:00	-23.88	116.54	1/9/10 4:00	-30.03	100.92
1/9/10 1:05	-24.16	115.83	1/9/10 4:05	-30.54	99.62
1/9/10 1:10	-24.04	116.13	1/9/10 4:10	-31.01	98.43
1/9/10 1:15	-24.08	116.03	1/9/10 4:15	-31.32	97.64
1/9/10 1:20	-24.35	115.34	1/9/10 4:20	-31.56	97.03
1/9/10 1:25	-24.67	114.53	1/9/10 4:25	-32.30	95.15
1/9/10 1:30	-24.74	114.35	1/9/10 4:30	-32.30	95.15

Table AII.41: (Continued) Inlet Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 4:35	-32.65	94.26	1/9/10 7:35	-38.57	79.22
1/9/10 4:40	-32.97	93.45	1/9/10 7:40	-38.33	79.83
1/9/10 4:45	-33.12	93.07	1/9/10 7:45	-38.57	79.22
1/9/10 4:50	-33.32	92.56	1/9/10 7:50	-38.57	79.22
1/9/10 4:55	-33.44	92.25	1/9/10 7:55	-38.88	78.44
1/9/10 5:00	-33.95	90.96	1/9/10 8:00	-39.08	77.93
1/9/10 5:05	-33.83	91.26	1/9/10 8:05	-38.88	78.44
1/9/10 5:10	-34.18	90.38	1/9/10 8:10	-39.23	77.55
1/9/10 5:15	-34.30	90.07	1/9/10 8:15	-39.31	77.35
1/9/10 5:20	-34.46	89.66	1/9/10 8:20	-39.27	77.45
1/9/10 5:25	-34.77	88.88	1/9/10 8:25	-39.58	76.66
1/9/10 5:30	-34.73	88.98	1/9/10 8:30	-39.43	77.04
1/9/10 5:35	-35.12	87.99	1/9/10 8:35	-39.58	76.66
1/9/10 5:40	-35.12	87.99	1/9/10 8:40	-39.62	76.56
1/9/10 5:45	-35.59	86.79	1/9/10 8:45	-39.74	76.25
1/9/10 5:50	-35.79	86.29	1/9/10 8:50	-39.86	75.95
1/9/10 5:55	-36.10	85.50	1/9/10 8:55	-39.94	75.74
1/9/10 6:00	-36.37	84.81	1/9/10 9:00	-39.54	76.76
1/9/10 6:05	-36.61	84.20	1/9/10 9:05	-39.86	75.95
1/9/10 6:10	-36.84	83.62	1/9/10 9:10	-39.31	77.35
1/9/10 6:15	-37.16	82.81	1/9/10 9:15	-39.31	77.35
1/9/10 6:20	-37.51	81.92	1/9/10 9:20	-39.58	76.66
1/9/10 6:25	-37.47	82.02	1/9/10 9:25	-39.11	77.85
1/9/10 6:30	-37.63	81.61	1/9/10 9:30	-39.47	76.94
1/9/10 6:35	-38.14	80.32	1/9/10 9:35	-39.31	77.35
1/9/10 6:40	-37.82	81.13	1/9/10 9:40	-39.00	78.13
1/9/10 6:45	-37.86	81.03	1/9/10 9:45	-39.39	77.14
1/9/10 6:50	-38.21	80.14	1/9/10 9:50	-39.23	77.55
1/9/10 6:55	-37.98	80.72	1/9/10 9:55	-39.04	78.03
1/9/10 7:00	-38.06	80.52	1/9/10 10:00	-39.08	77.93
1/9/10 7:05	-38.02	80.62	1/9/10 10:05	-39.08	77.93
1/9/10 7:10	-37.90	80.93	1/9/10 10:10	-39.08	77.93
1/9/10 7:15	-37.98	80.72	1/9/10 10:15	-39.11	77.85
1/9/10 7:20	-37.90	80.93	1/9/10 10:20	-39.15	77.75
1/9/10 7:25	-38.21	80.14	1/9/10 10:25	-38.84	78.54
1/9/10 7:30	-38.10	80.42	1/9/10 10:30	-39.00	78.13

Table AII.41: (Continued) Inlet Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 10:35	-38.84	78.54	1/9/10 13:35	-40.41	74.55
1/9/10 10:40	-38.88	78.44	1/9/10 13:40	-40.60	74.07
1/9/10 10:45	-38.80	78.64	1/9/10 13:45	-40.80	73.56
1/9/10 10:50	-38.96	78.23	1/9/10 13:50	-40.95	73.18
1/9/10 10:55	-38.80	78.64	1/9/10 13:55	-41.58	71.58
1/9/10 11:00	-38.80	78.64	1/9/10 14:00	-41.11	72.77
1/9/10 11:05	-38.80	78.64	1/9/10 14:05	-41.66	71.38
1/9/10 11:10	-38.68	78.95	1/9/10 14:10	-41.62	71.48
1/9/10 11:15	-38.88	78.44	1/9/10 14:15	-41.66	71.38
1/9/10 11:20	-38.88	78.44	1/9/10 14:20	-42.25	69.88
1/9/10 11:25	-38.68	78.95	1/9/10 14:25	-41.93	70.69
1/9/10 11:30	-38.68	78.95	1/9/10 14:30	-42.25	69.88
1/9/10 11:35	-38.68	78.95	1/9/10 14:35	-42.64	68.89
1/9/10 11:40	-38.53	79.33	1/9/10 14:40	-42.56	69.09
1/9/10 11:45	-38.53	79.33	1/9/10 14:45	-42.56	69.09
1/9/10 11:50	-38.57	79.22	1/9/10 14:50	-43.23	67.39
1/9/10 11:55	-38.41	79.63	1/9/10 14:55	-42.95	68.10
1/9/10 12:00	-38.25	80.04	1/9/10 15:00	-43.50	66.70
1/9/10 12:05	-38.49	79.43	1/9/10 15:05	-43.54	66.60
1/9/10 12:10	-38.29	79.94	1/9/10 15:10	-43.66	66.30
1/9/10 12:15	-38.49	79.43	1/9/10 15:15	-43.70	66.19
1/9/10 12:20	-38.53	79.33	1/9/10 15:20	-43.73	66.12
1/9/10 12:25	-38.64	79.05	1/9/10 15:25	-43.85	65.81
1/9/10 12:30	-38.49	79.43	1/9/10 15:30	-44.17	65.00
1/9/10 12:35	-38.72	78.84	1/9/10 15:35	-44.20	64.92
1/9/10 12:40	-38.80	78.64	1/9/10 15:40	-44.63	63.83
1/9/10 12:45	-38.57	79.22	1/9/10 15:45	-44.36	64.52
1/9/10 12:50	-38.92	78.34	1/9/10 15:50	-44.83	63.32
1/9/10 12:55	-38.72	78.84	1/9/10 15:55	-44.52	64.11
1/9/10 13:00	-39.23	77.55	1/9/10 16:00	-45.14	62.54
1/9/10 13:05	-39.23	77.55	1/9/10 16:05	-45.50	61.62
1/9/10 13:10	-39.23	77.55	1/9/10 16:10	-45.30	62.13
1/9/10 13:15	-39.47	76.94	1/9/10 16:15	-45.77	60.94
1/9/10 13:20	-39.31	77.35	1/9/10 16:20	-45.69	61.14
1/9/10 13:25	-39.94	75.74	1/9/10 16:25	-45.69	61.14
1/9/10 13:30	-40.29	74.86	1/9/10 16:30	-45.89	60.63

Table AII.41: (Continued) Inlet Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 16:35	-46.16	59.95	1/9/10 19:35	-41.86	70.87
1/9/10 16:40	-45.77	60.94	1/9/10 19:40	-41.74	71.17
1/9/10 16:45	-45.97	60.43	1/9/10 19:45	-41.31	72.27
1/9/10 16:50	-45.97	60.43	1/9/10 19:50	-41.23	72.47
1/9/10 16:55	-45.73	61.04	1/9/10 19:55	-40.95	73.18
1/9/10 17:00	-45.73	61.04	1/9/10 20:00	-40.84	73.46
1/9/10 17:05	-45.65	61.24	1/9/10 20:05	-40.45	74.45
1/9/10 17:10	-45.69	61.14	1/9/10 20:10	-40.21	75.06
1/9/10 17:15	-45.54	61.52	1/9/10 20:15	-39.94	75.74
1/9/10 17:20	-45.57	61.44	1/9/10 20:20	-39.74	76.25
1/9/10 17:25	-45.77	60.94	1/9/10 20:25	-39.47	76.94
1/9/10 17:30	-45.57	61.44	1/9/10 20:30	-38.96	78.23
1/9/10 17:35	-45.89	60.63	1/9/10 20:35	-38.76	78.74
1/9/10 17:40	-46.01	60.33	1/9/10 20:40	-38.41	79.63
1/9/10 17:45	-46.01	60.33	1/9/10 20:45	-37.86	81.03
1/9/10 17:50	-46.08	60.15	1/9/10 20:50	-37.43	82.12
1/9/10 17:55	-46.32	59.54	1/9/10 20:55	-36.88	83.52
1/9/10 18:00	-46.08	60.15	1/9/10 21:00	-36.45	84.61
1/9/10 18:05	-46.20	59.84	1/9/10 21:05	-35.98	85.80
1/9/10 18:10	-46.36	59.44	1/9/10 21:10	-35.39	87.30
1/9/10 18:15	-46.36	59.44	1/9/10 21:15	-34.96	88.39
1/9/10 18:20	-46.28	59.64	1/9/10 21:20	-34.46	89.66
1/9/10 18:25	-46.20	59.84	1/9/10 21:25	-34.26	90.17
1/9/10 18:30	-45.97	60.43	1/9/10 21:30	-33.59	91.87
1/9/10 18:35	-45.73	61.04	1/9/10 21:35	-33.40	92.36
1/9/10 18:40	-45.65	61.24	1/9/10 21:40	-33.08	93.17
1/9/10 18:45	-45.26	62.23	1/9/10 21:45	-32.61	94.36
1/9/10 18:50	-44.95	63.02	1/9/10 21:50	-32.42	94.85
1/9/10 18:55	-44.75	63.53	1/9/10 21:55	-32.14	95.56
1/9/10 19:00	-44.05	65.31	1/9/10 22:00	-32.26	95.25
1/9/10 19:05	-43.93	65.61	1/9/10 22:05	-31.64	96.83
1/9/10 19:10	-43.46	66.80	1/9/10 22:10	-31.64	96.83
1/9/10 19:15	-43.23	67.39	1/9/10 22:15	-31.44	97.33
1/9/10 19:20	-42.72	68.68	1/9/10 22:20	-30.85	98.83
1/9/10 19:25	-42.56	69.09	1/9/10 22:25	-30.77	99.04
1/9/10 19:30	-42.21	69.98	1/9/10 22:30	-30.15	100.61

Table AII.41: (Continued) Inlet Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/9/10 22:35	-29.87	101.32	1/10/10 1:35	-22.40	120.30
1/9/10 22:40	-29.37	102.59	1/10/10 1:40	-22.59	119.81
1/9/10 22:45	-29.29	102.80	1/10/10 1:45	-22.04	121.21
1/9/10 22:50	-28.70	104.29	1/10/10 1:50	-22.79	119.31
1/9/10 22:55	-28.15	105.69	1/10/10 1:55	-22.63	119.71
1/9/10 23:00	-27.88	106.38	1/10/10 2:00	-22.59	119.81
1/9/10 23:05	-27.49	107.37	1/10/10 2:05	-22.94	118.92
1/9/10 23:10	-27.13	108.28	1/10/10 2:10	-22.94	118.92
1/9/10 23:15	-26.66	109.48	1/10/10 2:15	-23.06	118.62
1/9/10 23:20	-25.92	111.36	1/10/10 2:20	-23.06	118.62
1/9/10 23:25	-25.68	111.97	1/10/10 2:25	-23.61	117.22
1/9/10 23:30	-25.41	112.65	1/10/10 2:30	-23.73	116.92
1/9/10 23:35	-25.10	113.44	1/10/10 2:35	-23.84	116.64
1/9/10 23:40	-24.67	114.53	1/10/10 2:40	-24.51	114.94
1/9/10 23:45	-24.43	115.14	1/10/10 2:45	-24.24	115.62
1/9/10 23:50	-24.39	115.24	1/10/10 2:50	-24.39	115.24
1/9/10 23:55	-24.04	116.13	1/10/10 2:55	-24.74	114.35
1/10/10 0:00	-23.92	116.44	1/10/10 3:00	-24.71	114.43
1/10/10 0:05	-23.88	116.54	1/10/10 3:05	-24.98	113.74
1/10/10 0:10	-23.61	117.22	1/10/10 3:10	-25.21	113.16
1/10/10 0:15	-23.45	117.63	1/10/10 3:15	-25.21	113.16
1/10/10 0:20	-23.57	117.32	1/10/10 3:20	-25.18	113.24
1/10/10 0:25	-23.26	118.11	1/10/10 3:25	-25.72	111.86
1/10/10 0:30	-23.22	118.21	1/10/10 3:30	-25.57	112.24
1/10/10 0:35	-23.10	118.52	1/10/10 3:35	-25.49	112.45
1/10/10 0:40	-22.98	118.82	1/10/10 3:40	-25.84	111.56
1/10/10 0:45	-22.83	119.20	1/10/10 3:45	-25.96	111.25
1/10/10 0:50	-22.83	119.20	1/10/10 3:50	-26.00	111.15
1/10/10 0:55	-22.71	119.51	1/10/10 3:55	-25.96	111.25
1/10/10 1:00	-22.43	120.22	1/10/10 4:00	-26.39	110.16
1/10/10 1:05	-22.71	119.51	1/10/10 4:05	-26.31	110.37
1/10/10 1:10	-22.40	120.30	1/10/10 4:10	-26.66	109.48
1/10/10 1:15	-22.32	120.50	1/10/10 4:15	-26.94	108.76
1/10/10 1:20	-22.43	120.22	1/10/10 4:20	-27.13	108.28
1/10/10 1:25	-22.43	120.22	1/10/10 4:25	-27.33	107.77
1/10/10 1:30	-22.24	120.70	1/10/10 4:30	-27.92	106.28

Table AII.41: (Continued) Inlet Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1236 on 19 January 2011.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
1/10/10 4:35	-28.27	105.39	1/10/10 7:00	-36.88	83.52
1/10/10 4:40	-28.35	105.18	1/10/10 7:05	-37.31	82.43
1/10/10 4:45	-29.05	103.41	1/10/10 7:10	-37.55	81.82
1/10/10 4:50	-29.29	102.80	1/10/10 7:15	-37.63	81.61
1/10/10 4:55	-29.87	101.32	1/10/10 7:20	-37.78	81.23
1/10/10 5:00	-30.30	100.23	1/10/10 7:25	-38.37	79.73
1/10/10 5:05	-30.89	98.73	1/10/10 7:30	-38.41	79.63
1/10/10 5:10	-31.05	98.33	1/10/10 7:35	-38.57	79.22
1/10/10 5:15	-31.68	96.73	1/10/10 7:40	-38.72	78.84
1/10/10 5:20	-32.18	95.46	1/10/10 7:45	-38.76	78.74
1/10/10 5:25	-32.50	94.64	1/10/10 7:50	-38.72	78.84
1/10/10 5:30	-32.69	94.16	1/10/10 7:55	-38.88	78.44
1/10/10 5:35	-33.08	93.17	1/10/10 8:00	-39.19	77.65
1/10/10 5:40	-33.55	91.98	1/10/10 8:05	-38.68	78.95
1/10/10 5:45	-33.67	91.67	1/10/10 8:10	-38.72	78.84
1/10/10 5:50	-34.02	90.78	1/10/10 8:15	-38.72	78.84
1/10/10 5:55	-34.18	90.38	1/10/10 8:20	-38.61	79.12
1/10/10 6:00	-34.46	89.66	1/10/10 8:25	-38.64	79.05
1/10/10 6:05	-34.69	89.08	1/10/10 8:30	-38.57	79.22
1/10/10 6:10	-34.92	88.50	1/10/10 8:35	-38.41	79.63
1/10/10 6:15	-35.04	88.19	1/10/10 8:40	-38.17	80.24
1/10/10 6:20	-35.00	88.29	1/10/10 8:45	-38.41	79.63
1/10/10 6:25	-35.36	87.38	1/10/10 8:50	-38.61	79.12
1/10/10 6:30	-35.67	86.59	1/10/10 8:55	-38.33	79.83
1/10/10 6:35	-35.67	86.59	1/10/10 9:00	-38.49	79.43
1/10/10 6:40	-35.90	86.01	1/10/10 9:05	-38.64	79.05
1/10/10 6:45	-36.30	84.99	1/10/10 9:10	-38.64	79.05
1/10/10 6:50	-36.26	85.09	1/10/10 9:15	-39.11	77.85
1/10/10 6:55	-36.61	84.20			

Table AII.42: Rainbow Bay D-Dock Platform 1 time-series measurements.

RAD-7 #2357				Rainbow Bay D-Dock 1			eff=0.406 cpm/pCi/L				
Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	10	2	25	12	18	20	28.1	80.0	5.0	0.0	0.0
2	10	2	25	12	48	84	28.0	88.1	0.0	4.8	0.0
3	10	2	25	13	18	116	27.9	63.8	0.9	31.0	0.0
4	10	2	25	13	48	136	27.9	47.8	0.0	48.5	0.0
5	10	2	25	14	18	117	27.9	47.9	2.6	46.2	0.9
6	10	2	25	14	48	136	27.9	39.0	0.0	54.4	0.7
7	10	2	25	15	18	123	27.9	36.6	1.6	56.1	2.5
8	10	2	25	15	48	112	27.9	36.6	2.7	54.5	0.9
9	10	2	25	16	18	130	27.9	50.0	1.6	44.6	0.8
10	10	2	25	16	48	128	28.0	54.7	0.8	39.9	1.6
11	10	2	25	17	18	161	28.0	50.3	1.3	44.7	0.6
12	10	2	25	17	48	248	28.0	62.1	0.4	34.3	1.6
13	10	2	25	18	18	314	28.0	49.4	0.6	44.9	0.6
14	10	2	25	18	48	276	28.0	55.8	1.1	38.8	0.7
15	10	2	25	19	18	364	28.0	56.1	1.7	39.6	0.6
16	10	2	25	19	48	451	28.0	53.9	0.5	40.4	1.6
17	10	2	25	20	18	489	28.0	47.7	0.6	48.1	0.6
18	10	2	25	20	48	443	28.0	40.9	1.1	54.0	1.6
19	10	2	25	21	18	350	28.0	37.4	0.6	57.7	0.6
20	10	2	25	21	48	353	28.0	43.1	0.9	54.7	0.3
21	10	2	25	22	18	261	28.0	36.4	0.8	58.3	1.9
22	10	2	25	22	48	239	28.0	30.1	0.8	62.8	2.1
23	10	2	25	23	18	178	28.0	37.1	0.0	60.1	0.6
24	10	2	25	23	48	177	28.0	39.0	0.0	59.9	0.0
25	10	2	26	0	18	179	28.0	44.1	2.8	50.3	1.7
26	10	2	26	0	48	160	28.0	41.9	1.3	52.5	1.3
27	10	2	26	1	18	127	28.0	39.4	1.6	54.3	0.8
28	10	2	26	1	48	110	28.0	35.5	0.0	55.5	1.8
29	10	2	26	2	18	118	28.0	43.2	1.7	55.1	0.0
30	10	2	26	2	48	111	28.0	43.3	4.5	46.0	0.0
31	10	2	26	3	18	104	28.0	51.0	0.0	46.2	1.9
32	10	2	26	3	48	99	28.0	46.5	0.0	48.5	1.0
33	10	2	26	4	18	123	28.0	42.3	0.8	55.3	0.8
34	10	2	26	4	48	105	28.0	43.8	1.9	50.5	1.0
35	10	2	26	5	18	119	28.0	53.8	0.9	42.0	0.0
36	10	2	26	5	48	145	28.0	53.8	0.7	42.8	0.7
37	10	2	26	6	18	136	28.0	47.1	0.7	44.9	1.5

Table AII.42: (Continued) Rainbow Bay D-Dock Platform 1 time-series measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
38	10	2	26	6	48	143	28.0	48.3	1.4	45.5	1.4
39	10	2	26	7	18	142	28.0	47.2	2.8	45.8	2.1
40	10	2	26	7	48	169	28.0	59.2	0.6	36.7	1.2
41	10	2	26	8	18	171	28.0	53.2	0.6	41.5	2.9
42	10	2	26	8	48	180	28.0	52.2	0.6	43.3	0.6
43	10	2	26	9	18	244	28.0	50.0	0.8	46.3	0.8
44	10	2	26	9	48	187	28.0	41.7	0.0	53.0	2.7
45	10	2	26	10	18	217	28.0	46.1	0.9	48.9	0.9
46	10	2	26	10	48	325	28.0	63.1	0.9	31.1	0.9
47	10	2	26	11	18	508	27.9	62.2	0.2	34.3	0.6
48	10	2	26	11	48	577	27.9	56.0	0.4	40.4	0.2
49	10	2	26	12	18	500	27.9	43.0	1.0	52.0	1.4
50	10	2	26	12	48	357	28.0	31.9	0.3	62.5	2.3
51	10	2	26	13	18	295	28.0	28.5	0.4	66.5	3.1
52	10	2	26	13	48	228	28.0	32.9	0.5	63.6	0.5
53	10	2	26	14	18	212	28.0	32.6	1.9	62.3	1.0
54	10	2	26	14	48	163	28.0	34.4	0.0	63.2	1.2
55	10	2	26	15	18	135	28.0	40.8	2.2	53.3	1.5
56	10	2	26	15	48	125	28.0	48.8	0.8	47.2	1.6
57	10	2	26	16	18	124	28.0	40.3	0.8	56.5	0.0
58	10	2	26	16	48	145	28.0	43.5	4.2	50.4	0.0
59	10	2	26	17	18	152	28.0	57.9	0.7	36.2	2.0
60	10	2	26	17	48	177	28.0	52.0	1.1	43.0	1.7
61	10	2	26	18	18	207	28.0	39.6	0.0	56.5	1.0
62	10	2	26	18	48	276	28.0	64.5	0.4	32.3	0.4
63	10	2	26	19	18	268	28.0	54.1	0.0	40.7	0.4
64	10	2	26	19	48	268	28.0	51.5	0.4	44.0	2.3
65	10	2	26	20	18	258	28.0	45.7	0.4	51.2	1.2
66	10	2	26	20	48	360	28.0	55.3	0.8	40.8	0.8
67	10	2	26	21	18	285	28.0	39.0	1.8	55.8	1.4
68	10	2	26	21	48	260	28.0	36.6	0.8	59.2	1.6
69	10	2	26	22	18	235	28.0	40.0	0.9	55.8	0.4
70	10	2	26	22	48	199	28.0	45.7	2.0	48.8	1.0
71	10	2	26	23	18	186	28.0	37.1	0.6	57.5	0.6
72	10	2	26	23	48	170	28.0	37.1	1.8	56.5	1.2
73	10	2	27	0	18	155	28.0	39.4	1.9	53.6	1.9
74	10	2	27	0	48	172	28.0	38.4	0.0	55.2	0.0
75	10	2	27	1	19	142	28.0	39.4	0.0	54.2	0.7

Table AII.42: (Continued) Rainbow Bay D-Dock Platform 1 time-series measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
76	10	2	27	1	49	146	28.0	45.9	2.1	46.6	2.1
77	10	2	27	2	19	141	28.0	48.2	0.0	47.5	0.7
78	10	2	27	2	49	142	28.0	47.9	0.7	47.2	0.7
79	10	2	27	3	19	160	28.0	50.6	1.3	43.1	0.6
80	10	2	27	3	49	194	28.0	56.2	0.0	38.7	0.0
81	10	2	27	4	19	243	28.0	55.2	0.4	41.6	1.7
82	10	2	27	4	49	268	28.0	54.1	0.0	42.2	1.1
83	10	2	27	5	19	276	28.0	48.9	1.1	46.8	0.4
84	10	2	27	5	49	272	28.0	47.4	1.1	47.1	1.1
85	10	2	27	6	19	355	28.0	53.3	0.9	42.0	0.9
86	10	2	27	6	49	343	28.0	50.2	0.9	43.7	0.9
87	10	2	27	7	19	360	28.0	44.5	2.0	50.6	1.4
88	10	2	27	7	49	320	28.0	42.5	1.0	52.8	1.3
89	10	2	27	8	19	319	28.0	41.7	0.6	54.2	1.3
90	10	2	27	8	49	301	28.0	39.9	0.7	54.8	1.0
91	10	2	27	9	19	306	28.0	47.4	0.3	47.7	1.3
92	10	2	27	9	49	293	28.0	43.7	0.0	53.3	1.4
93	10	2	27	10	19	274	28.0	51.1	0.0	44.2	1.5
94	10	2	27	10	49	376	28.0	51.3	0.3	44.4	0.8
95	10	2	27	11	19	504	27.9	63.9	0.2	33.1	0.2
96	10	2	27	11	49	517	27.9	49.7	0.2	46.6	0.8
97	10	2	27	12	19	391	28.0	33.8	0.3	62.7	1.3
98	10	2	27	12	49	336	28.0	33.3	0.9	60.4	2.1
99	10	2	27	13	19	296	28.0	41.6	1.0	53.4	0.7
100	10	2	27	13	49	325	27.9	41.2	1.2	54.2	0.9
101	10	2	27	14	19	281	27.9	50.5	0.7	45.9	0.7
102	10	2	27	14	49	250	27.9	46.4	1.6	48.8	1.2
103	10	2	27	15	19	251	27.9	45.0	0.8	50.6	2.4
104	10	2	27	15	49	232	27.9	38.8	2.6	51.7	2.6
105	10	2	27	16	19	252	27.9	46.0	1.2	47.2	3.2
106	10	2	27	16	49	225	27.9	48.5	0.5	45.8	1.3
107	10	2	27	17	1	92	11.4	37.0	3.3	53.3	3.3

Table AII.43: Rainbow Bay D-Dock Platform 1 time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	9	31.9	9	2	6.9	80	133	50.509	32.345

Table AII.43: (Continued) Rainbow Bay D-Dock Platform 1 time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
2	2218	9	34.7	9	2	7.0	0	133	234.852	61.317
3	2218	9	36.8	8	2	6.9	80	133	235.272	61.427
4	2218	8	38.3	8	2	7.0	0	133	206.843	58.069
5	2201	9	39.2	8	2	7.0	0	133	178.044	54.366
6	2201	8	39.9	8	2	7.0	0	133	168.807	53.180
7	2218	8	40.8	9	3	7.0	0	133	136.957	50.041
8	2218	9	40.8	7	3	6.9	80	133	127.174	47.568
9	2218	9	39.2	7	2	6.9	80	133	206.843	58.069
10	2218	9	37.1	9	2	7.0	0	133	218.984	59.831
11	2218	8	36.5	8	2	7.0	0	133	257.068	63.825
12	2218	9	33.8	9	2	7.0	0	133	482.399	85.626
13	2218	9	31.3	7	2	6.9	80	133	488.746	85.879
14	2218	8	29.5	7	1	6.9	80	133	485.573	85.371
15	2218	8	28.3	7	1	7.1	0	133	644.257	97.228
16	2218	9	27.4	7	1	6.9	80	133	759.186	105.996
17	2218	8	26.8	6	1	6.9	80	133	736.951	103.743
18	2218	8	26.4	6	1	6.9	80	133	565.419	92.530
19	2218	8	25.8	6	1	6.9	80	133	412.578	79.273
20	2218	8	25.5	6	1	6.9	80	133	482.399	84.860
21	2201	9	25.2	6	1	6.9	80	133	295.152	68.862
22	2201	9	24.9	6	1	6.9	80	133	218.789	60.895
23	2218	9	24.9	7	1	6.9	80	133	209.276	58.251
24	2218	8	24.9	6	1	6.9	80	133	218.789	59.400
25	2218	8	24.6	6	1	6.9	80	133	247.326	63.417
26	2201	8	24.6	6	1	6.9	80	133	209.276	58.637
27	2218	8	24.0	6	1	6.9	80	133	158.542	51.630
28	2218	9	23.7	6	1	6.9	80	133	120.600	46.492
29	2218	8	23.4	6	1	6.9	80	133	161.713	52.072
30	2218	9	23.1	6	1	7.0	80	133	152.337	50.779
31	2218	8	23.4	6	1	6.9	80	133	165.031	52.991
32	2218	8	23.1	6	1	7.0	80	133	145.989	49.863
33	2236	9	22.8	6	1	7.0	80	133	164.884	52.510
34	2201	9	22.8	6	1	6.9	80	133	142.816	49.863
35	2218	8	22.8	6	1	6.9	80	133	203.115	57.521
36	2218	8	22.8	6	1	6.9	80	133	247.326	62.708
37	2218	8	22.8	6	1	7.0	80	133	199.764	57.470

Table AII.43: (Continued) Rainbow Bay D-Dock Platform 1 time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
38	2218	8	22.8	6	1	7.0	80	133	215.618	59.400
39	2218	9	22.8	6	1	7.0	80	133	206.105	59.020
40	2218	9	23.1	6	1	6.9	80	133	313.914	70.075
41	2218	8	23.4	6	1	7.0	80	133	282.206	67.499
42	2218	8	24.6	6	1	6.9	80	133	298.060	68.153
43	2218	9	28.0	6	1	6.9	80	133	384.015	76.743
44	2218	8	30.1	7	1	6.9	80	133	240.985	63.064
45	2201	8	32.2	7	2	6.9	80	133	314.194	70.137
46	2218	9	33.8	7	2	6.9	80	133	647.430	97.670
47	2218	8	35.3	7	2	7.0	0	133	998.316	119.751
48	2218	8	37.1	7	2	6.9	80	133	1026.930	120.815
49	2218	8	37.4	7	2	6.9	80	133	674.022	100.244
50	2218	9	37.7	7	2	6.9	80	133	349.416	75.071
51	2218	8	36.2	6	2	6.9	80	133	253.894	65.552
52	2218	9	34.7	6	2	6.9	80	133	234.852	61.682
53	2201	9	34.7	6	2	6.9	80	133	215.810	59.453
54	2218	9	36.8	6	2	6.9	80	133	174.552	54.269
55	2218	9	38.0	6	2	6.9	80	133	171.379	53.847
56	2218	9	38.9	6	2	6.9	80	133	190.591	56.779
57	2218	9	39.9	7	2	7.0	0	133	158.684	51.677
58	2218	8	39.5	6	2	6.9	80	133	199.942	57.126
59	2218	9	38.6	6	2	6.9	80	133	276.110	66.564
60	2218	8	34.1	6	2	6.9	80	133	285.631	67.887
61	2218	8	31.0	6	2	6.9	80	133	257.068	64.175
62	2218	8	28.9	6	1	6.9	80	133	564.915	91.269
63	2201	8	27.4	6	1	6.9	80	133	460.183	83.043
64	2236	9	26.4	5	1	7.0	80	133	428.447	81.450
65	2218	8	25.5	6	1	6.9	80	133	368.147	75.879
66	2218	8	24.9	5	1	6.9	80	133	628.388	96.337
67	2201	9	24.6	5	1	6.9	80	133	345.931	73.821
68	2201	8	24.0	5	1	6.9	80	133	295.152	68.862
69	2218	8	23.7	5	1	6.9	80	133	298.326	68.214
70	2218	9	23.1	5	1	6.9	80	133	285.377	67.169
71	2218	8	22.8	5	1	6.9	80	133	215.618	59.400
72	2218	8	22.5	5	1	6.9	80	133	196.593	57.075
73	2218	9	22.2	5	1	6.9	80	133	190.251	56.677

Table AII.43: (Continued) Rainbow Bay D-Dock Platform 1 time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
74	2218	8	21.9	5	1	6.9	80	133	209.276	58.251
75	2218	9	21.9	5	1	7.0	80	133	174.397	54.220
76	2218	8	22.2	5	1	6.9	80	133	209.276	59.020
77	2218	8	21.9	5	1	6.9	80	133	215.618	59.020
78	2218	9	21.6	5	1	7.0	80	133	212.447	59.020
79	2218	8	21.0	5	1	7.0	80	133	256.839	63.768
80	2218	9	20.7	5	1	7.0	80	133	345.623	72.854
81	2218	9	20.4	5	1	7.0	80	133	418.926	80.370
82	2218	9	20.4	5	1	7.0	80	133	457.010	83.305
83	2218	9	20.4	5	1	7.0	80	133	428.447	80.370
84	2218	9	20.0	5	1	6.9	80	133	406.231	78.996
85	2201	9	20.0	5	1	7.0	80	133	596.651	94.070
86	2218	9	19.7	5	1	7.0	80	133	542.699	90.075
87	2218	9	19.4	5	1	7.0	80	133	501.441	87.136
88	2218	9	20.0	5	1	7.0	80	133	425.273	80.912
89	2218	8	21.0	5	1	7.0	80	133	415.752	80.097
90	2218	9	22.2	5	1	6.9	80	133	377.668	76.456
91	2218	8	26.1	6	1	6.9	80	133	453.836	83.305
92	2218	8	29.5	6	1	6.9	80	133	399.883	78.718
93	2218	8	31.0	6	2	6.9	80	133	437.968	81.985
94	2201	8	31.9	6	2	6.9	80	133	606.714	95.068
95	2218	8	33.2	6	2	6.9	80	133	1023.751	120.639
96	2218	9	35.6	6	2	6.9	80	133	810.734	108.692
97	2218	8	35.9	6	2	6.9	80	133	412.946	79.895
98	2218	8	35.3	6	2	6.9	80	133	346.240	74.482
99	2218	8	35.0	6	2	6.9	80	133	387.189	77.029
100	2218	8	35.3	6	2	6.9	80	133	423.232	80.585
101	2218	8	36.8	6	2	6.9	80	133	449.091	82.545
102	2201	9	35.0	6	2	6.9	80	133	365.952	75.499
103	2218	9	33.5	6	2	6.9	80	133	350.041	74.911
104	2218	9	32.5	6	2	6.9	80	133	276.851	67.409
105	2218	9	30.7	6	2	6.9	80	133	356.406	75.792
106	2218	9	29.8	5	1	6.9	80	133	343.677	73.417
107	2218	9	29.8	6	1	6.9	80	133	248.031	108.514

Table AII.44: Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	12:05:40	24.96	51.12	33.56	44.6	3.05	0.338	7.83	N/A	N/A
2/25/2010	12:10:40	24.96	51.21	33.63	49.7	3.40	0.313	8.01	N/A	N/A
2/25/2010	12:15:40	24.98	51.24	33.65	49.7	3.39	0.227	8.09	N/A	N/A
2/25/2010	12:20:40	25.00	51.26	33.67	50.5	3.45	0.224	8.13	N/A	N/A
2/25/2010	12:25:40	25.03	51.28	33.68	50.4	3.44	0.222	8.15	N/A	N/A
2/25/2010	12:30:40	25.05	51.30	33.69	50.6	3.45	0.219	8.16	N/A	N/A
2/25/2010	12:35:40	25.07	51.31	33.70	51.5	3.51	0.218	8.17	N/A	N/A
2/25/2010	12:40:40	25.08	51.30	33.69	51.5	3.51	0.217	8.17	N/A	N/A
2/25/2010	12:45:40	25.10	51.33	33.71	52.4	3.57	0.217	8.17	N/A	N/A
2/25/2010	12:50:40	25.13	51.35	33.73	52.7	3.59	0.217	8.18	N/A	N/A
2/25/2010	12:55:40	25.15	51.36	33.73	52.9	3.60	0.216	8.18	N/A	N/A
2/25/2010	13:00:40	25.15	51.37	33.74	52.9	3.60	0.215	8.18	N/A	N/A
2/25/2010	13:05:40	25.13	51.40	33.76	53.2	3.62	0.216	8.18	N/A	N/A
2/25/2010	13:10:40	25.15	51.42	33.78	53.4	3.63	0.215	8.18	N/A	N/A
2/25/2010	13:15:40	25.21	51.43	33.78	53.7	3.65	0.214	8.18	N/A	N/A
2/25/2010	13:20:40	25.21	51.45	33.80	53.3	3.62	0.213	8.18	N/A	N/A
2/25/2010	13:25:40	25.24	51.48	33.82	53.5	3.63	0.212	8.18	N/A	N/A
2/25/2010	13:30:40	25.25	51.50	33.83	53.6	3.64	0.210	8.18	N/A	N/A
2/25/2010	13:35:40	25.28	51.51	33.84	53.8	3.65	0.210	8.19	N/A	N/A
2/25/2010	13:40:40	25.30	51.52	33.85	53.7	3.64	0.209	8.19	N/A	N/A
2/25/2010	13:45:40	25.31	51.54	33.87	54.0	3.66	0.210	8.19	N/A	N/A
2/25/2010	13:50:40	25.33	51.56	33.88	53.8	3.65	0.210	8.19	N/A	N/A
2/25/2010	13:55:40	25.36	51.60	33.91	54.1	3.66	0.208	8.19	N/A	N/A
2/25/2010	14:00:40	25.34	51.56	33.88	53.7	3.64	0.208	8.19	N/A	N/A
2/25/2010	14:05:40	25.35	51.60	33.91	54.0	3.66	0.208	8.19	N/A	N/A
2/25/2010	14:10:40	25.33	51.63	33.93	54.0	3.66	0.206	8.19	N/A	N/A
2/25/2010	14:15:40	25.34	51.67	33.96	53.6	3.63	0.206	8.19	N/A	N/A
2/25/2010	14:20:40	25.34	51.69	33.98	53.7	3.64	0.206	8.19	N/A	N/A
2/25/2010	14:25:40	25.37	51.71	33.99	53.2	3.60	0.205	8.20	N/A	N/A
2/25/2010	14:30:40	25.34	51.74	34.01	53.5	3.62	0.204	8.20	N/A	N/A
2/25/2010	14:35:40	25.35	51.74	34.01	53.3	3.61	0.204	8.20	N/A	N/A
2/25/2010	14:40:40	25.34	51.81	34.06	53.2	3.60	0.204	8.20	N/A	N/A
2/25/2010	14:45:40	25.35	51.82	34.07	53.3	3.61	0.205	8.20	N/A	N/A
2/25/2010	14:50:40	25.36	51.81	34.06	52.9	3.58	0.204	8.20	N/A	N/A
2/25/2010	14:55:40	25.34	51.80	34.06	53.3	3.60	0.204	8.20	N/A	N/A
2/25/2010	15:00:40	25.37	51.83	34.08	52.8	3.57	0.204	8.20	N/A	N/A
2/25/2010	15:05:40	25.37	51.84	34.08	53.1	3.59	0.203	8.20	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	15:10:40	25.39	51.85	34.09	52.9	3.58	0.203	8.20	N/A	N/A
2/25/2010	15:15:40	25.42	51.85	34.09	52.8	3.57	0.202	8.21	N/A	N/A
2/25/2010	15:20:40	25.40	51.86	34.10	52.9	3.58	0.201	8.20	N/A	N/A
2/25/2010	15:25:40	25.40	51.88	34.11	52.5	3.55	0.203	8.21	N/A	N/A
2/25/2010	15:30:40	25.38	51.90	34.13	52.8	3.57	0.200	8.21	N/A	N/A
2/25/2010	15:35:40	25.39	51.91	34.14	52.6	3.56	0.200	8.21	N/A	N/A
2/25/2010	15:40:40	25.36	51.93	34.15	52.4	3.54	0.200	8.21	N/A	N/A
2/25/2010	15:45:40	25.37	51.92	34.14	52.5	3.55	0.201	8.21	N/A	N/A
2/25/2010	15:50:40	25.41	51.86	34.10	52.5	3.55	0.201	8.21	N/A	N/A
2/25/2010	15:55:40	25.35	51.93	34.15	52.6	3.56	0.201	8.21	N/A	N/A
2/25/2010	16:00:40	25.28	52.04	34.24	53.2	3.60	0.201	8.22	N/A	N/A
2/25/2010	16:05:40	25.24	52.03	34.23	52.8	3.58	0.201	8.22	N/A	N/A
2/25/2010	16:10:40	25.21	52.11	34.29	52.5	3.56	0.201	8.22	N/A	N/A
2/25/2010	16:15:40	25.20	52.09	34.27	52.5	3.56	0.201	8.22	N/A	N/A
2/25/2010	16:20:40	25.23	52.06	34.25	52.4	3.55	0.200	8.22	N/A	N/A
2/25/2010	16:25:40	25.21	52.09	34.27	52.6	3.56	0.201	8.23	N/A	N/A
2/25/2010	16:30:40	25.21	52.10	34.28	52.2	3.54	0.201	8.23	N/A	N/A
2/25/2010	16:35:40	25.12	52.06	34.25	52.2	3.54	0.202	8.22	N/A	N/A
2/25/2010	16:40:40	25.08	52.14	34.31	52.3	3.55	0.203	8.23	N/A	N/A
2/25/2010	16:45:40	25.04	52.22	34.37	51.9	3.53	0.202	8.23	N/A	N/A
2/25/2010	16:50:40	25.02	52.11	34.29	52.0	3.54	0.202	8.23	N/A	N/A
2/25/2010	16:55:40	24.88	52.28	34.42	50.9	3.47	0.201	8.22	N/A	N/A
2/25/2010	17:00:40	24.97	52.18	34.35	50.9	3.46	0.201	8.22	N/A	N/A
2/25/2010	17:05:40	24.85	52.23	34.38	51.2	3.49	0.203	8.22	N/A	N/A
2/25/2010	17:10:40	24.88	52.11	34.29	51.2	3.49	0.204	8.22	N/A	N/A
2/25/2010	17:15:40	24.87	52.21	34.37	50.8	3.46	0.202	8.22	N/A	N/A
2/25/2010	17:20:40	24.82	52.27	34.42	50.4	3.43	0.204	8.22	N/A	N/A
2/25/2010	17:25:40	24.83	52.20	34.36	50.6	3.45	0.204	8.23	N/A	N/A
2/25/2010	17:30:40	24.80	52.09	34.28	50.5	3.45	0.205	8.22	N/A	N/A
2/25/2010	17:35:40	24.79	52.01	34.23	50.7	3.46	0.207	8.23	N/A	N/A
2/25/2010	17:40:40	24.74	52.28	34.42	49.2	3.36	0.208	8.22	N/A	N/A
2/25/2010	17:45:40	24.73	52.29	34.43	48.8	3.33	0.208	8.23	N/A	N/A
2/25/2010	17:50:40	24.75	52.23	34.38	49.1	3.35	0.210	8.23	N/A	N/A
2/25/2010	17:55:40	24.69	52.11	34.30	49.2	3.36	0.212	8.23	N/A	N/A
2/25/2010	18:00:40	24.66	52.19	34.36	50.0	3.42	0.214	8.23	N/A	N/A
2/25/2010	18:05:40	24.62	52.25	34.40	48.7	3.33	0.215	8.23	N/A	N/A
2/25/2010	18:10:40	24.65	52.37	34.49	48.1	3.28	0.216	8.23	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	18:15:40	24.64	52.42	34.53	47.8	3.26	0.216	8.23	N/A	N/A
2/25/2010	18:20:40	24.64	52.40	34.52	47.9	3.27	0.218	8.23	N/A	N/A
2/25/2010	18:25:40	24.62	52.42	34.53	47.6	3.25	0.220	8.23	N/A	N/A
2/25/2010	18:30:40	24.61	52.46	34.56	47.5	3.25	0.221	8.23	N/A	N/A
2/25/2010	18:35:40	24.56	52.40	34.52	47.8	3.27	0.222	8.23	N/A	N/A
2/25/2010	18:40:40	24.55	52.39	34.51	46.7	3.20	0.226	8.23	N/A	N/A
2/25/2010	18:45:40	24.57	52.41	34.52	46.5	3.18	0.226	8.23	N/A	N/A
2/25/2010	18:50:40	24.58	52.38	34.50	46.5	3.18	0.225	8.23	N/A	N/A
2/25/2010	18:55:40	24.56	52.36	34.49	46.5	3.18	0.225	8.23	N/A	N/A
2/25/2010	19:00:40	24.54	52.42	34.53	46.5	3.18	0.226	8.23	N/A	N/A
2/25/2010	19:05:40	24.52	52.36	34.49	46.3	3.17	0.226	8.23	N/A	N/A
2/25/2010	19:10:40	24.50	52.34	34.47	46.1	3.16	0.226	8.23	N/A	N/A
2/25/2010	19:15:40	24.45	52.30	34.44	45.9	3.15	0.227	8.23	N/A	N/A
2/25/2010	19:20:40	24.44	52.34	34.48	46.3	3.18	0.226	8.23	N/A	N/A
2/25/2010	19:25:40	24.44	52.37	34.50	45.4	3.11	0.226	8.23	N/A	N/A
2/25/2010	19:30:40	24.45	52.44	34.55	45.6	3.13	0.225	8.24	N/A	N/A
2/25/2010	19:35:40	24.45	52.48	34.58	46.5	3.19	0.225	8.24	N/A	N/A
2/25/2010	19:40:40	24.44	52.48	34.58	47.7	3.27	0.225	8.24	N/A	N/A
2/25/2010	19:45:40	24.42	52.40	34.52	47.5	3.25	0.225	8.24	N/A	N/A
2/25/2010	19:50:40	24.39	52.33	34.47	47.1	3.24	0.226	8.24	N/A	N/A
2/25/2010	19:55:40	24.40	52.41	34.53	47.8	3.28	0.226	8.24	N/A	N/A
2/25/2010	20:00:40	24.40	52.46	34.56	47.9	3.29	0.225	8.25	N/A	N/A
2/25/2010	20:05:40	24.40	52.45	34.56	47.9	3.28	0.225	8.25	N/A	N/A
2/25/2010	20:10:40	24.40	52.47	34.57	47.4	3.25	0.225	8.25	N/A	N/A
2/25/2010	20:15:40	24.40	52.48	34.58	47.4	3.25	0.225	8.25	N/A	N/A
2/25/2010	20:20:40	24.40	52.49	34.59	47.3	3.24	0.224	8.25	N/A	N/A
2/25/2010	20:25:40	24.41	52.49	34.59	46.8	3.21	0.224	8.25	N/A	N/A
2/25/2010	20:30:40	24.41	52.48	34.58	46.2	3.17	0.223	8.24	N/A	N/A
2/25/2010	20:35:40	24.41	52.52	34.61	46.6	3.19	0.223	8.24	N/A	N/A
2/25/2010	20:40:40	24.40	52.50	34.59	47.4	3.25	0.224	8.25	N/A	N/A
2/25/2010	20:41:40	24.40	52.48	34.58	47.5	3.26	0.223	8.25	N/A	N/A
2/25/2010	20:45:40	24.40	52.52	34.61	47.9	3.29	0.223	8.25	N/A	N/A
2/25/2010	20:50:40	24.39	52.49	34.59	47.7	3.27	0.223	8.25	N/A	N/A
2/25/2010	20:55:40	24.38	52.48	34.58	47.8	3.28	0.223	8.25	N/A	N/A
2/25/2010	21:00:40	24.38	52.52	34.61	47.5	3.26	0.225	8.25	N/A	N/A
2/25/2010	21:05:40	24.35	52.49	34.59	47.4	3.25	0.224	8.25	N/A	N/A
2/25/2010	21:10:40	24.38	52.52	34.61	47.6	3.26	0.224	8.25	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	21:15:40	24.35	52.47	34.58	46.4	3.18	0.225	8.24	N/A	N/A
2/25/2010	21:20:40	24.36	52.51	34.60	46.3	3.18	0.226	8.24	N/A	N/A
2/25/2010	21:25:40	24.36	52.51	34.60	46.2	3.17	0.226	8.25	N/A	N/A
2/25/2010	21:30:40	24.30	52.43	34.55	45.6	3.14	0.227	8.24	N/A	N/A
2/25/2010	21:35:40	24.33	52.47	34.58	45.2	3.11	0.228	8.24	N/A	N/A
2/25/2010	21:40:40	24.36	52.51	34.60	45.3	3.11	0.229	8.25	N/A	N/A
2/25/2010	21:45:40	24.37	52.52	34.61	44.7	3.07	0.230	8.25	N/A	N/A
2/25/2010	21:50:40	24.38	52.53	34.62	45.0	3.09	0.229	8.25	N/A	N/A
2/25/2010	21:55:40	24.38	52.54	34.62	45.0	3.08	0.229	8.25	N/A	N/A
2/25/2010	22:00:40	24.38	52.53	34.62	45.1	3.09	0.229	8.25	N/A	N/A
2/25/2010	22:05:40	24.37	52.53	34.62	44.5	3.06	0.229	8.25	N/A	N/A
2/25/2010	22:10:40	24.38	52.54	34.62	44.8	3.07	0.228	8.25	N/A	N/A
2/25/2010	22:15:40	24.37	52.54	34.62	44.8	3.07	0.229	8.25	N/A	N/A
2/25/2010	22:20:40	24.37	52.54	34.63	45.3	3.11	0.228	8.25	N/A	N/A
2/25/2010	22:25:40	24.37	52.55	34.63	46.0	3.15	0.228	8.25	N/A	N/A
2/25/2010	22:30:40	24.36	52.56	34.64	46.5	3.19	0.227	8.25	N/A	N/A
2/25/2010	22:35:40	24.34	52.56	34.64	46.6	3.20	0.228	8.25	N/A	N/A
2/25/2010	22:40:40	24.35	52.56	34.64	46.6	3.19	0.228	8.26	N/A	N/A
2/25/2010	22:45:40	24.34	52.57	34.64	46.1	3.16	0.229	8.25	N/A	N/A
2/25/2010	22:50:40	24.33	52.56	34.64	46.2	3.17	0.229	8.25	N/A	N/A
2/25/2010	22:55:40	24.35	52.55	34.63	45.9	3.15	0.229	8.25	N/A	N/A
2/25/2010	23:00:40	24.33	52.55	34.63	46.4	3.19	0.228	8.25	N/A	N/A
2/25/2010	23:05:40	24.32	52.54	34.63	46.3	3.18	0.229	8.26	N/A	N/A
2/25/2010	23:10:40	24.32	52.54	34.63	46.0	3.16	0.229	8.25	N/A	N/A
2/25/2010	23:15:40	24.31	52.54	34.62	46.2	3.17	0.229	8.26	N/A	N/A
2/25/2010	23:20:40	24.31	52.54	34.62	46.0	3.16	0.228	8.26	N/A	N/A
2/25/2010	23:25:40	24.30	52.54	34.63	45.9	3.16	0.228	8.26	N/A	N/A
2/25/2010	23:30:40	24.31	52.54	34.63	45.6	3.13	0.228	8.26	N/A	N/A
2/25/2010	23:35:40	24.30	52.54	34.63	44.8	3.08	0.227	8.25	N/A	N/A
2/25/2010	23:40:40	24.30	52.55	34.63	44.8	3.08	0.227	8.25	N/A	N/A
2/25/2010	23:45:40	24.29	52.54	34.63	44.8	3.08	0.227	8.25	N/A	N/A
2/25/2010	23:46:40	24.29	52.54	34.63	44.7	3.07	0.227	8.25	N/A	N/A
2/25/2010	23:50:40	24.28	52.54	34.63	45.0	3.09	0.228	8.25	N/A	N/A
2/25/2010	23:55:40	24.28	52.54	34.62	45.3	3.11	0.227	8.26	N/A	N/A
2/26/2010	0:00:40	24.29	52.54	34.63	45.3	3.11	0.226	8.25	N/A	N/A
2/26/2010	0:05:40	24.28	52.53	34.62	45.4	3.12	0.227	8.26	N/A	N/A
2/26/2010	0:10:40	24.28	52.53	34.62	45.3	3.12	0.227	8.26	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	0:15:40	24.28	52.53	34.62	46.2	3.17	0.226	8.26	N/A	N/A
2/26/2010	0:20:40	24.27	52.53	34.62	46.7	3.21	0.226	8.26	N/A	N/A
2/26/2010	0:25:40	24.26	52.53	34.62	46.7	3.21	0.225	8.26	N/A	N/A
2/26/2010	0:30:40	24.26	52.53	34.62	46.7	3.21	0.225	8.26	N/A	N/A
2/26/2010	0:35:40	24.26	52.53	34.62	46.4	3.19	0.226	8.26	N/A	N/A
2/26/2010	0:40:40	24.25	52.52	34.62	46.9	3.23	0.226	8.26	N/A	N/A
2/26/2010	0:45:40	24.24	52.52	34.61	47.6	3.28	0.226	8.27	N/A	N/A
2/26/2010	0:50:40	24.24	52.52	34.61	47.9	3.30	0.224	8.27	N/A	N/A
2/26/2010	0:55:40	24.25	52.51	34.60	48.0	3.30	0.224	8.27	N/A	N/A
2/26/2010	1:00:40	24.24	52.50	34.60	48.3	3.32	0.223	8.27	N/A	N/A
2/26/2010	1:05:40	24.23	52.50	34.60	48.3	3.32	0.222	8.27	N/A	N/A
2/26/2010	1:10:40	24.25	52.50	34.59	48.0	3.30	0.223	8.27	N/A	N/A
2/26/2010	1:15:40	24.24	52.48	34.58	48.3	3.32	0.222	8.27	N/A	N/A
2/26/2010	1:20:40	24.24	52.47	34.58	48.4	3.33	0.223	8.27	N/A	N/A
2/26/2010	1:25:40	24.23	52.46	34.57	48.4	3.33	0.222	8.27	N/A	N/A
2/26/2010	1:30:40	24.23	52.46	34.57	48.3	3.33	0.221	8.27	N/A	N/A
2/26/2010	1:35:40	24.23	52.46	34.57	48.5	3.33	0.221	8.27	N/A	N/A
2/26/2010	1:40:40	24.25	52.46	34.57	48.3	3.32	0.221	8.27	N/A	N/A
2/26/2010	1:45:40	24.23	52.46	34.57	48.5	3.33	0.221	8.27	N/A	N/A
2/26/2010	1:50:40	24.24	52.45	34.56	48.3	3.32	0.220	8.27	N/A	N/A
2/26/2010	1:55:40	24.22	52.45	34.56	48.5	3.34	0.220	8.27	N/A	N/A
2/26/2010	2:00:40	24.23	52.44	34.55	48.2	3.32	0.219	8.27	N/A	N/A
2/26/2010	2:05:40	24.22	52.44	34.55	48.3	3.32	0.219	8.27	N/A	N/A
2/26/2010	2:10:40	24.23	52.44	34.55	48.3	3.32	0.219	8.27	N/A	N/A
2/26/2010	2:15:40	24.24	52.44	34.55	48.1	3.31	0.218	8.27	N/A	N/A
2/26/2010	2:20:40	24.23	52.44	34.55	48.1	3.31	0.218	8.28	N/A	N/A
2/26/2010	2:25:40	24.22	52.43	34.55	47.6	3.27	0.218	8.27	N/A	N/A
2/26/2010	2:30:40	24.21	52.43	34.55	48.1	3.31	0.217	8.28	N/A	N/A
2/26/2010	2:35:40	24.22	52.43	34.55	48.1	3.31	0.217	8.28	N/A	N/A
2/26/2010	2:40:40	24.23	52.43	34.55	48.2	3.32	0.217	8.28	N/A	N/A
2/26/2010	2:45:40	24.23	52.43	34.54	48.4	3.33	0.217	8.28	N/A	N/A
2/26/2010	2:50:40	24.23	52.42	34.54	48.3	3.32	0.216	8.28	N/A	N/A
2/26/2010	2:55:40	24.22	52.42	34.54	48.3	3.32	0.216	8.28	N/A	N/A
2/26/2010	3:00:40	24.23	52.42	34.54	48.5	3.34	0.216	8.28	N/A	N/A
2/26/2010	3:05:40	24.22	52.42	34.54	48.4	3.33	0.217	8.28	N/A	N/A
2/26/2010	3:10:40	24.22	52.42	34.54	48.2	3.32	0.216	8.28	N/A	N/A
2/26/2010	3:15:40	24.22	52.42	34.54	48.3	3.32	0.215	8.28	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	3:20:40	24.22	52.42	34.54	48.4	3.33	0.215	8.28	N/A	N/A
2/26/2010	3:25:40	24.23	52.42	34.54	48.5	3.34	0.216	8.28	N/A	N/A
2/26/2010	3:30:40	24.23	52.42	34.54	44.1	3.03	0.215	8.28	N/A	N/A
2/26/2010	3:35:40	24.22	52.41	34.53	43.9	3.02	0.216	8.28	N/A	N/A
2/26/2010	3:40:40	24.21	52.42	34.54	43.9	3.02	0.215	8.28	N/A	N/A
2/26/2010	3:45:40	24.21	52.42	34.54	44.0	3.03	0.216	8.28	N/A	N/A
2/26/2010	3:50:40	24.20	52.42	34.54	43.9	3.02	0.215	8.28	N/A	N/A
2/26/2010	3:55:40	24.20	52.42	34.54	43.7	3.01	0.215	8.28	N/A	N/A
2/26/2010	4:00:40	24.21	52.42	34.54	43.7	3.01	0.215	8.28	N/A	N/A
2/26/2010	4:05:40	24.20	52.41	34.53	43.9	3.02	0.215	8.28	N/A	N/A
2/26/2010	4:10:40	24.21	52.42	34.54	44.3	3.05	0.215	8.28	N/A	N/A
2/26/2010	4:15:40	24.20	52.42	34.54	43.7	3.01	0.215	8.28	N/A	N/A
2/26/2010	4:20:40	24.21	52.42	34.54	44.2	3.04	0.215	8.28	N/A	N/A
2/26/2010	4:25:40	24.22	52.42	34.54	44.2	3.04	0.216	8.28	N/A	N/A
2/26/2010	4:30:40	24.21	52.42	34.54	43.9	3.02	0.215	8.28	N/A	N/A
2/26/2010	4:35:40	24.20	52.42	34.54	43.9	3.02	0.215	8.28	N/A	N/A
2/26/2010	4:40:40	24.20	52.42	34.54	44.4	3.06	0.215	8.28	N/A	N/A
2/26/2010	4:45:40	24.19	52.42	34.54	44.0	3.03	0.215	8.28	N/A	N/A
2/26/2010	4:50:40	24.19	52.42	34.54	43.7	3.01	0.216	8.28	N/A	N/A
2/26/2010	4:55:40	24.18	52.42	34.54	44.7	3.08	0.215	8.28	N/A	N/A
2/26/2010	5:00:40	24.18	52.42	34.54	44.1	3.04	0.215	8.28	N/A	N/A
2/26/2010	5:05:40	24.19	52.40	34.53	43.9	3.02	0.216	8.28	N/A	N/A
2/26/2010	5:10:40	24.17	52.38	34.51	43.7	3.01	0.216	8.28	N/A	N/A
2/26/2010	5:15:40	24.18	52.40	34.53	43.6	3.00	0.218	8.28	N/A	N/A
2/26/2010	5:20:40	24.19	52.41	34.53	43.7	3.01	0.217	8.28	N/A	N/A
2/26/2010	5:25:40	24.19	52.40	34.52	43.6	3.00	0.217	8.28	N/A	N/A
2/26/2010	5:30:40	24.13	52.25	34.42	43.2	2.98	0.218	8.28	N/A	N/A
2/26/2010	5:35:40	24.19	52.41	34.53	43.2	2.97	0.218	8.28	N/A	N/A
2/26/2010	5:40:40	24.20	52.42	34.54	43.3	2.98	0.219	8.28	N/A	N/A
2/26/2010	5:45:40	24.20	52.42	34.54	43.4	2.99	0.220	8.28	N/A	N/A
2/26/2010	5:50:40	24.20	52.41	34.53	43.3	2.98	0.221	8.28	N/A	N/A
2/26/2010	5:55:40	24.20	52.42	34.54	43.5	3.00	0.223	8.28	N/A	N/A
2/26/2010	6:00:40	24.20	52.42	34.54	43.3	2.98	0.223	8.28	N/A	N/A
2/26/2010	6:05:40	24.20	52.42	34.54	43.5	3.00	0.223	8.28	N/A	N/A
2/26/2010	6:10:40	24.20	52.41	34.53	43.4	2.99	0.223	8.28	N/A	N/A
2/26/2010	6:15:40	24.20	52.41	34.53	43.2	2.98	0.224	8.28	N/A	N/A
2/26/2010	6:20:40	24.19	52.39	34.52	43.0	2.96	0.224	8.28	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	6:25:40	24.19	52.39	34.52	42.3	2.91	0.225	8.28	N/A	N/A
2/26/2010	6:30:40	24.18	52.39	34.52	41.9	2.89	0.225	8.28	N/A	N/A
2/26/2010	6:35:40	24.19	52.41	34.53	42.5	2.93	0.225	8.28	N/A	N/A
2/26/2010	6:40:40	24.19	52.41	34.53	42.8	2.95	0.225	8.28	N/A	N/A
2/26/2010	6:45:40	24.18	52.40	34.52	42.4	2.92	0.226	8.28	N/A	N/A
2/26/2010	6:50:40	24.18	52.38	34.51	42.3	2.91	0.226	8.28	N/A	N/A
2/26/2010	6:55:40	24.18	52.39	34.52	42.3	2.91	0.228	8.28	N/A	N/A
2/26/2010	7:00:40	24.17	52.38	34.51	42.2	2.91	0.229	8.28	N/A	N/A
2/26/2010	7:05:40	24.17	52.39	34.51	41.9	2.89	0.229	8.28	N/A	N/A
2/26/2010	7:10:40	24.16	52.34	34.48	42.0	2.89	0.229	8.28	N/A	N/A
2/26/2010	7:15:40	24.17	52.35	34.48	42.0	2.90	0.229	8.28	N/A	N/A
2/26/2010	7:20:40	24.18	52.38	34.51	42.1	2.90	0.229	8.28	N/A	N/A
2/26/2010	7:25:40	24.18	52.39	34.52	42.0	2.90	0.231	8.28	N/A	N/A
2/26/2010	7:30:40	24.18	52.40	34.53	42.7	2.94	0.232	8.28	N/A	N/A
2/26/2010	7:35:40	24.18	52.39	34.52	42.6	2.93	0.231	8.28	N/A	N/A
2/26/2010	7:40:40	24.18	52.40	34.52	42.3	2.91	0.232	8.28	N/A	N/A
2/26/2010	7:45:40	24.18	52.40	34.52	42.4	2.92	0.231	8.28	N/A	N/A
2/26/2010	7:50:40	24.19	52.40	34.53	42.5	2.93	0.232	8.28	N/A	N/A
2/26/2010	7:55:40	24.19	52.40	34.52	42.3	2.91	0.233	8.28	N/A	N/A
2/26/2010	8:00:40	24.20	52.41	34.53	42.2	2.90	0.233	8.28	N/A	N/A
2/26/2010	8:05:40	24.21	52.41	34.53	42.2	2.90	0.233	8.28	N/A	N/A
2/26/2010	8:10:40	24.22	52.42	34.54	42.7	2.94	0.233	8.29	N/A	N/A
2/26/2010	8:15:40	24.22	52.42	34.54	42.3	2.91	0.233	8.28	N/A	N/A
2/26/2010	8:20:40	24.21	52.40	34.52	42.5	2.93	0.234	8.28	N/A	N/A
2/26/2010	8:25:40	24.19	52.29	34.44	42.4	2.92	0.234	8.28	N/A	N/A
2/26/2010	8:30:40	24.20	52.35	34.49	42.1	2.90	0.234	8.28	N/A	N/A
2/26/2010	8:35:40	24.19	52.29	34.44	42.1	2.90	0.235	8.28	N/A	N/A
2/26/2010	8:40:40	24.20	52.34	34.48	42.3	2.91	0.236	8.28	N/A	N/A
2/26/2010	8:45:40	24.22	52.39	34.52	42.1	2.90	0.237	8.28	N/A	N/A
2/26/2010	8:50:40	24.23	52.38	34.51	42.1	2.90	0.237	8.28	N/A	N/A
2/26/2010	8:55:40	24.24	52.39	34.51	42.6	2.93	0.236	8.27	N/A	N/A
2/26/2010	9:00:40	24.25	52.38	34.51	42.5	2.92	0.236	8.27	N/A	N/A
2/26/2010	9:05:40	24.25	52.38	34.51	42.8	2.95	0.236	8.26	N/A	N/A
2/26/2010	9:10:40	24.24	52.37	34.50	43.4	2.98	0.237	8.26	N/A	N/A
2/26/2010	9:15:40	24.25	52.36	34.49	43.0	2.96	0.238	8.25	N/A	N/A
2/26/2010	9:20:40	24.25	52.38	34.51	42.9	2.95	0.237	8.25	N/A	N/A
2/26/2010	9:25:40	24.25	52.35	34.49	43.2	2.97	0.239	8.25	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	9:30:40	24.27	52.37	34.50	43.5	2.99	0.239	8.25	N/A	N/A
2/26/2010	9:35:40	24.29	52.36	34.50	43.7	3.00	0.239	8.25	N/A	N/A
2/26/2010	9:40:40	24.28	52.34	34.48	43.9	3.02	0.239	8.25	N/A	N/A
2/26/2010	9:45:40	24.31	52.36	34.50	44.6	3.06	0.238	8.25	N/A	N/A
2/26/2010	9:50:40	24.33	52.37	34.50	44.3	3.04	0.238	8.25	N/A	N/A
2/26/2010	9:55:40	24.33	52.38	34.51	44.3	3.04	0.238	8.25	N/A	N/A
2/26/2010	10:00:40	24.32	52.39	34.52	44.2	3.04	0.239	8.25	N/A	N/A
2/26/2010	10:05:40	24.33	52.35	34.48	44.8	3.08	0.239	8.25	N/A	N/A
2/26/2010	10:10:40	24.35	52.32	34.46	44.0	3.02	0.237	8.25	N/A	N/A
2/26/2010	10:15:40	24.37	52.32	34.46	44.5	3.05	0.238	8.24	N/A	N/A
2/26/2010	10:20:40	24.40	52.26	34.42	44.0	3.02	0.237	8.24	N/A	N/A
2/26/2010	10:25:40	24.40	52.39	34.51	44.4	3.05	0.238	8.24	N/A	N/A
2/26/2010	10:30:40	24.41	52.25	34.41	44.4	3.05	0.237	8.24	N/A	N/A
2/26/2010	10:35:40	24.41	52.33	34.47	44.2	3.03	0.237	8.24	N/A	N/A
2/26/2010	10:40:40	24.46	52.19	34.36	44.0	3.02	0.238	8.24	N/A	N/A
2/26/2010	10:45:40	24.47	52.16	34.34	44.0	3.02	0.239	8.24	N/A	N/A
2/26/2010	10:50:40	24.41	52.25	34.41	44.2	3.03	0.238	8.24	N/A	N/A
2/26/2010	10:55:40	24.60	51.67	33.97	44.2	3.03	0.239	8.23	N/A	N/A
2/26/2010	11:00:40	24.51	51.90	34.15	43.8	3.01	0.238	8.23	N/A	N/A
2/26/2010	11:05:40	24.60	51.52	33.86	44.1	3.03	0.238	8.23	N/A	N/A
2/26/2010	11:10:40	24.58	51.75	34.03	43.7	2.99	0.239	8.22	N/A	N/A
2/26/2010	11:15:40	24.63	52.15	34.33	44.1	3.02	0.237	8.24	N/A	N/A
2/26/2010	11:20:40	24.57	52.21	34.37	44.0	3.01	0.236	8.24	N/A	N/A
2/26/2010	11:25:40	24.64	52.22	34.38	44.1	3.02	0.235	8.24	N/A	N/A
2/26/2010	11:30:40	24.74	52.07	34.27	44.7	3.05	0.236	8.24	N/A	N/A
2/26/2010	11:35:40	24.86	52.07	34.27	44.6	3.04	0.236	8.24	N/A	N/A
2/26/2010	11:40:40	24.87	52.20	34.37	44.7	3.05	0.235	8.24	N/A	N/A
2/26/2010	11:45:40	24.90	52.22	34.37	45.4	3.09	0.233	8.25	N/A	N/A
2/26/2010	11:50:40	24.79	52.20	34.37	45.2	3.08	0.233	8.24	N/A	N/A
2/26/2010	11:55:40	24.88	52.39	34.50	45.3	3.08	0.230	8.26	N/A	N/A
2/26/2010	12:00:40	24.89	52.37	34.49	45.9	3.12	0.230	8.26	N/A	N/A
2/26/2010	12:05:40	24.80	52.26	34.40	45.1	3.07	0.230	8.26	N/A	N/A
2/26/2010	12:10:40	24.82	52.21	34.37	45.3	3.09	0.227	8.26	N/A	N/A
2/26/2010	12:15:40	24.91	52.34	34.47	45.3	3.08	0.228	8.26	N/A	N/A
2/26/2010	12:20:40	24.94	52.41	34.51	45.8	3.11	0.226	8.27	N/A	N/A
2/26/2010	12:25:40	24.94	52.46	34.55	46.2	3.14	0.225	8.28	N/A	N/A
2/26/2010	12:30:40	24.93	52.47	34.56	45.9	3.12	0.226	8.28	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	12:35:40	24.92	52.49	34.57	45.8	3.12	0.225	8.28	N/A	N/A
2/26/2010	12:40:40	24.89	52.49	34.58	45.9	3.12	0.224	8.28	N/A	N/A
2/26/2010	12:45:40	24.89	52.49	34.58	46.1	3.13	0.224	8.28	N/A	N/A
2/26/2010	12:50:40	24.88	52.49	34.58	46.2	3.14	0.223	8.28	N/A	N/A
2/26/2010	12:55:40	24.92	52.50	34.58	46.6	3.17	0.223	8.28	N/A	N/A
2/26/2010	13:00:40	24.88	52.49	34.58	46.3	3.15	0.223	8.28	N/A	N/A
2/26/2010	13:05:40	24.84	52.49	34.58	46.6	3.17	0.222	8.28	N/A	N/A
2/26/2010	13:10:40	24.82	52.49	34.58	46.0	3.13	0.220	8.28	N/A	N/A
2/26/2010	13:15:40	24.81	52.49	34.58	46.1	3.14	0.220	8.28	N/A	N/A
2/26/2010	13:20:40	24.78	52.49	34.58	46.1	3.14	0.219	8.28	N/A	N/A
2/26/2010	13:25:40	24.75	52.49	34.58	46.1	3.15	0.219	8.28	N/A	N/A
2/26/2010	13:30:40	24.74	52.49	34.58	46.2	3.15	0.217	8.28	N/A	N/A
2/26/2010	13:35:40	24.71	52.49	34.58	45.9	3.13	0.217	8.28	N/A	N/A
2/26/2010	13:40:40	24.71	52.49	34.58	45.9	3.13	0.217	8.28	N/A	N/A
2/26/2010	13:45:40	24.70	52.49	34.58	46.4	3.16	0.215	8.28	N/A	N/A
2/26/2010	13:50:40	24.69	52.49	34.58	46.8	3.20	0.215	8.28	N/A	N/A
2/26/2010	13:55:40	24.67	52.49	34.58	46.5	3.17	0.214	8.28	N/A	N/A
2/26/2010	14:00:40	24.66	52.49	34.58	46.6	3.18	0.212	8.28	N/A	N/A
2/26/2010	14:05:40	24.65	52.49	34.58	46.6	3.19	0.213	8.28	N/A	N/A
2/26/2010	14:10:40	24.65	52.49	34.58	47.0	3.21	0.213	8.28	N/A	N/A
2/26/2010	14:15:40	24.71	52.49	34.58	46.9	3.20	0.211	8.28	N/A	N/A
2/26/2010	14:20:40	24.74	52.49	34.58	47.0	3.21	0.212	8.29	N/A	N/A
2/26/2010	14:25:40	24.76	52.49	34.58	46.9	3.19	0.210	8.28	N/A	N/A
2/26/2010	14:30:40	24.77	52.49	34.58	47.1	3.21	0.212	8.28	N/A	N/A
2/26/2010	14:35:40	24.72	52.50	34.58	46.9	3.20	0.211	8.28	N/A	N/A
2/26/2010	14:40:40	24.71	52.50	34.59	47.3	3.23	0.212	8.28	N/A	N/A
2/26/2010	14:45:40	24.73	52.51	34.59	47.1	3.21	0.212	8.28	N/A	N/A
2/26/2010	14:50:40	24.73	52.51	34.60	47.7	3.25	0.211	8.28	N/A	N/A
2/26/2010	14:55:40	24.74	52.51	34.59	47.2	3.22	0.211	8.28	N/A	N/A
2/26/2010	15:00:40	24.73	52.51	34.59	47.0	3.21	0.211	8.28	N/A	N/A
2/26/2010	15:05:40	24.76	52.52	34.60	47.7	3.25	0.210	8.28	N/A	N/A
2/26/2010	15:10:40	24.75	52.52	34.60	47.3	3.22	0.210	8.28	N/A	N/A
2/26/2010	15:15:40	24.75	52.52	34.60	47.6	3.25	0.209	8.28	N/A	N/A
2/26/2010	15:20:40	24.75	52.52	34.60	47.4	3.23	0.209	8.28	N/A	N/A
2/26/2010	15:25:40	24.76	52.53	34.61	47.6	3.24	0.210	8.28	N/A	N/A
2/26/2010	15:30:40	24.77	52.53	34.61	47.5	3.24	0.210	8.29	N/A	N/A
2/26/2010	15:35:40	24.78	52.53	34.61	47.7	3.25	0.208	8.29	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	15:40:40	24.80	52.53	34.61	48.2	3.28	0.208	8.29	N/A	N/A
2/26/2010	15:45:40	24.79	52.53	34.61	47.8	3.25	0.207	8.28	N/A	N/A
2/26/2010	15:50:40	24.80	52.53	34.61	47.8	3.25	0.209	8.28	N/A	N/A
2/26/2010	15:55:40	24.81	52.54	34.61	48.0	3.27	0.209	8.28	N/A	N/A
2/26/2010	16:00:40	24.80	52.54	34.61	47.9	3.27	0.209	8.29	N/A	N/A
2/26/2010	16:05:40	24.83	52.54	34.62	47.9	3.26	0.208	8.29	N/A	N/A
2/26/2010	16:10:40	24.87	52.54	34.62	48.6	3.30	0.209	8.29	N/A	N/A
2/26/2010	16:15:40	24.87	52.54	34.62	48.0	3.26	0.209	8.29	N/A	N/A
2/26/2010	16:20:40	24.85	52.54	34.61	47.8	3.25	0.209	8.28	N/A	N/A
2/26/2010	16:25:40	24.83	52.54	34.62	47.8	3.25	0.210	8.28	N/A	N/A
2/26/2010	16:30:40	24.80	52.42	34.53	48.0	3.27	0.211	8.28	N/A	N/A
2/26/2010	16:35:40	24.80	52.45	34.55	48.1	3.28	0.210	8.28	N/A	N/A
2/26/2010	16:40:40	24.81	52.45	34.55	47.7	3.25	0.211	8.28	N/A	N/A
2/26/2010	16:45:40	24.73	52.46	34.56	47.0	3.20	0.211	8.28	N/A	N/A
2/26/2010	16:50:40	24.77	52.41	34.52	47.1	3.21	0.212	8.28	N/A	N/A
2/26/2010	16:55:40	24.72	52.40	34.51	46.8	3.19	0.212	8.28	N/A	N/A
2/26/2010	17:00:40	24.68	52.48	34.57	46.6	3.18	0.213	8.28	N/A	N/A
2/26/2010	17:05:40	24.69	52.48	34.57	46.7	3.19	0.213	8.28	N/A	N/A
2/26/2010	17:10:40	24.66	52.51	34.59	46.5	3.18	0.212	8.28	N/A	N/A
2/26/2010	17:15:40	24.65	52.51	34.60	46.7	3.19	0.213	8.28	N/A	N/A
2/26/2010	17:20:40	24.65	52.51	34.60	46.6	3.18	0.213	8.28	N/A	N/A
2/26/2010	17:25:40	24.65	52.51	34.60	46.8	3.19	0.214	8.28	N/A	N/A
2/26/2010	17:30:40	24.64	52.51	34.59	46.6	3.18	0.216	8.28	N/A	N/A
2/26/2010	17:35:40	24.62	52.41	34.52	46.8	3.20	0.216	8.28	N/A	N/A
2/26/2010	17:40:40	24.63	52.53	34.61	46.3	3.16	0.216	8.28	N/A	N/A
2/26/2010	17:45:40	24.63	52.52	34.60	46.1	3.15	0.216	8.28	N/A	N/A
2/26/2010	17:50:40	24.62	52.54	34.62	46.4	3.17	0.216	8.28	N/A	N/A
2/26/2010	17:55:40	24.62	52.54	34.62	46.4	3.17	0.216	8.29	N/A	N/A
2/26/2010	18:00:40	24.60	52.47	34.57	46.4	3.17	0.217	8.29	N/A	N/A
2/26/2010	18:05:40	24.61	52.52	34.61	46.6	3.19	0.216	8.29	N/A	N/A
2/26/2010	18:10:40	24.59	52.44	34.55	46.9	3.21	0.217	8.29	N/A	N/A
2/26/2010	18:15:40	24.59	52.47	34.57	46.5	3.18	0.217	8.29	N/A	N/A
2/26/2010	18:20:40	24.54	52.33	34.47	46.2	3.16	0.218	8.28	N/A	N/A
2/26/2010	18:25:40	24.56	52.43	34.54	46.5	3.18	0.219	8.29	N/A	N/A
2/26/2010	18:30:40	24.58	52.48	34.57	46.6	3.19	0.220	8.29	N/A	N/A
2/26/2010	18:35:40	24.56	52.49	34.58	46.5	3.18	0.220	8.29	N/A	N/A
2/26/2010	18:40:40	24.56	52.49	34.58	46.7	3.19	0.222	8.29	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	18:45:40	24.56	52.52	34.61	46.9	3.21	0.221	8.29	N/A	N/A
2/26/2010	18:50:40	24.56	52.51	34.60	46.5	3.18	0.223	8.29	N/A	N/A
2/26/2010	18:55:40	24.55	52.44	34.55	46.0	3.15	0.224	8.29	N/A	N/A
2/26/2010	19:00:40	24.54	52.47	34.57	45.8	3.14	0.225	8.29	N/A	N/A
2/26/2010	19:05:40	24.54	52.45	34.55	45.8	3.13	0.226	8.29	N/A	N/A
2/26/2010	19:10:40	24.52	52.43	34.54	46.0	3.15	0.226	8.29	N/A	N/A
2/26/2010	19:15:40	24.52	52.47	34.57	46.3	3.17	0.227	8.29	N/A	N/A
2/26/2010	19:20:40	24.53	52.51	34.60	45.7	3.13	0.229	8.29	N/A	N/A
2/26/2010	19:25:40	24.52	52.51	34.60	46.3	3.17	0.230	8.29	N/A	N/A
2/26/2010	19:30:40	24.53	52.54	34.62	46.4	3.18	0.232	8.29	N/A	N/A
2/26/2010	19:35:40	24.53	52.53	34.61	45.8	3.13	0.233	8.29	N/A	N/A
2/26/2010	19:40:40	24.52	52.50	34.59	45.7	3.13	0.234	8.28	N/A	N/A
2/26/2010	19:45:40	24.49	52.35	34.48	44.6	3.06	0.234	8.28	N/A	N/A
2/26/2010	19:50:40	24.52	52.53	34.61	44.5	3.04	0.234	8.28	N/A	N/A
2/26/2010	19:55:40	24.51	52.51	34.60	44.3	3.03	0.236	8.28	N/A	N/A
2/26/2010	20:00:40	24.49	52.44	34.55	43.7	3.00	0.236	8.28	N/A	N/A
2/26/2010	20:05:40	24.48	52.47	34.57	43.4	2.97	0.237	8.28	N/A	N/A
2/26/2010	20:10:40	24.41	52.15	34.33	43.3	2.97	0.238	8.28	N/A	N/A
2/26/2010	20:15:40	24.43	52.34	34.47	43.0	2.95	0.237	8.27	N/A	N/A
2/26/2010	20:20:40	24.41	52.35	34.48	43.8	3.00	0.239	8.27	N/A	N/A
2/26/2010	20:25:40	24.42	52.36	34.49	43.2	2.97	0.239	8.26	N/A	N/A
2/26/2010	20:30:40	24.48	52.48	34.58	43.7	3.00	0.240	8.26	N/A	N/A
2/26/2010	20:35:40	24.51	52.52	34.61	44.0	3.02	0.240	8.27	N/A	N/A
2/26/2010	20:40:40	24.50	52.50	34.59	44.1	3.02	0.239	8.27	N/A	N/A
2/26/2010	20:45:40	24.50	52.51	34.60	44.0	3.01	0.239	8.27	N/A	N/A
2/26/2010	20:50:40	24.51	52.51	34.60	44.4	3.04	0.240	8.27	N/A	N/A
2/26/2010	20:55:40	24.52	52.53	34.61	44.9	3.08	0.240	8.27	N/A	N/A
2/26/2010	21:00:40	24.51	52.53	34.62	45.2	3.09	0.241	8.27	N/A	N/A
2/26/2010	21:05:40	24.50	52.53	34.61	45.2	3.09	0.240	8.27	N/A	N/A
2/26/2010	21:10:40	24.50	52.53	34.61	44.8	3.07	0.241	8.27	N/A	N/A
2/26/2010	21:15:40	24.51	52.56	34.64	44.8	3.07	0.240	8.27	N/A	N/A
2/26/2010	21:20:40	24.51	52.55	34.63	45.7	3.13	0.241	8.27	N/A	N/A
2/26/2010	21:25:40	24.51	52.56	34.63	45.4	3.11	0.240	8.27	N/A	N/A
2/26/2010	21:30:40	24.51	52.56	34.64	45.2	3.10	0.239	8.27	N/A	N/A
2/26/2010	21:35:40	24.52	52.56	34.64	44.0	3.01	0.238	8.27	N/A	N/A
2/26/2010	21:40:40	24.51	52.56	34.64	43.4	2.97	0.238	8.27	N/A	N/A
2/26/2010	21:45:40	24.51	52.56	34.64	43.7	2.99	0.236	8.27	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	21:50:40	24.51	52.57	34.64	43.9	3.00	0.235	8.27	N/A	N/A
2/26/2010	21:55:40	24.51	52.56	34.64	43.9	3.00	0.235	8.27	N/A	N/A
2/26/2010	22:00:40	24.51	52.56	34.63	44.0	3.01	0.234	8.27	N/A	N/A
2/26/2010	22:05:40	24.51	52.56	34.64	44.1	3.02	0.234	8.28	N/A	N/A
2/26/2010	22:10:40	24.51	52.56	34.64	44.6	3.05	0.234	8.28	N/A	N/A
2/26/2010	22:15:40	24.50	52.57	34.64	44.6	3.05	0.233	8.28	N/A	N/A
2/26/2010	22:20:40	24.50	52.56	34.64	44.4	3.04	0.232	8.28	N/A	N/A
2/26/2010	22:25:40	24.50	52.56	34.64	44.5	3.05	0.232	8.28	N/A	N/A
2/26/2010	22:30:40	24.49	52.57	34.64	45.0	3.08	0.231	8.28	N/A	N/A
2/26/2010	22:35:40	24.49	52.58	34.65	45.0	3.08	0.231	8.28	N/A	N/A
2/26/2010	22:40:40	24.49	52.58	34.65	45.0	3.08	0.231	8.28	N/A	N/A
2/26/2010	22:45:40	24.48	52.59	34.66	44.6	3.06	0.231	8.28	N/A	N/A
2/26/2010	22:50:40	24.48	52.60	34.67	44.9	3.08	0.230	8.28	N/A	N/A
2/26/2010	22:55:40	24.48	52.61	34.67	45.2	3.09	0.230	8.27	N/A	N/A
2/26/2010	23:00:40	24.48	52.60	34.67	45.2	3.10	0.230	8.27	N/A	N/A
2/26/2010	23:05:40	24.48	52.62	34.68	44.9	3.08	0.229	8.27	N/A	N/A
2/26/2010	23:10:40	24.47	52.61	34.68	44.7	3.06	0.229	8.27	N/A	N/A
2/26/2010	23:15:40	24.46	52.62	34.68	45.0	3.08	0.229	8.27	N/A	N/A
2/26/2010	23:20:40	24.45	52.61	34.68	44.2	3.03	0.229	8.27	N/A	N/A
2/26/2010	23:25:40	24.45	52.62	34.68	44.9	3.07	0.229	8.27	N/A	N/A
2/26/2010	23:30:40	24.45	52.62	34.68	44.8	3.07	0.228	8.27	N/A	N/A
2/26/2010	23:35:40	24.44	52.62	34.68	44.7	3.06	0.228	8.27	N/A	N/A
2/26/2010	23:40:40	24.43	52.62	34.68	44.3	3.04	0.229	8.27	N/A	N/A
2/26/2010	23:45:40	24.41	52.61	34.67	43.8	3.00	0.228	8.27	N/A	N/A
2/26/2010	23:50:40	24.40	52.61	34.67	43.5	2.98	0.227	8.27	N/A	N/A
2/26/2010	23:55:40	24.41	52.60	34.67	43.5	2.98	0.226	8.27	N/A	N/A
2/27/2010	0:00:40	24.42	52.62	34.68	43.3	2.97	0.226	8.27	N/A	N/A
2/27/2010	0:05:40	24.42	52.61	34.67	43.2	2.96	0.225	8.27	N/A	N/A
2/27/2010	0:10:40	24.41	52.61	34.68	43.4	2.98	0.224	8.27	N/A	N/A
2/27/2010	0:15:40	24.40	52.61	34.68	43.2	2.96	0.223	8.27	N/A	N/A
2/27/2010	0:20:40	24.41	52.61	34.68	42.4	2.91	0.223	8.26	N/A	N/A
2/27/2010	0:25:40	24.39	52.60	34.67	41.9	2.87	0.222	8.26	N/A	N/A
2/27/2010	0:30:40	24.38	52.61	34.67	42.0	2.88	0.222	8.26	N/A	N/A
2/27/2010	0:35:40	24.36	52.60	34.67	41.7	2.86	0.222	8.26	N/A	N/A
2/27/2010	0:40:40	24.35	52.59	34.66	42.2	2.90	0.222	8.26	N/A	N/A
2/27/2010	0:45:40	24.32	52.58	34.66	42.0	2.88	0.222	8.26	N/A	N/A
2/27/2010	0:50:40	24.32	52.57	34.65	42.4	2.91	0.222	8.26	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	0:55:40	24.33	52.58	34.66	42.5	2.91	0.223	8.26	N/A	N/A
2/27/2010	1:00:40	24.34	52.59	34.66	42.3	2.90	0.225	8.26	N/A	N/A
2/27/2010	1:05:40	24.36	52.59	34.66	41.7	2.86	0.225	8.26	N/A	N/A
2/27/2010	1:10:40	24.37	52.58	34.65	41.8	2.87	0.225	8.26	N/A	N/A
2/27/2010	1:15:40	24.36	52.57	34.65	43.0	2.95	0.226	8.26	N/A	N/A
2/27/2010	1:20:40	24.36	52.57	34.65	42.9	2.95	0.226	8.27	N/A	N/A
2/27/2010	1:25:40	24.36	52.56	34.64	43.2	2.96	0.226	8.27	N/A	N/A
2/27/2010	1:30:40	24.35	52.57	34.65	43.6	2.99	0.227	8.27	N/A	N/A
2/27/2010	1:35:40	24.34	52.53	34.62	43.9	3.01	0.226	8.27	N/A	N/A
2/27/2010	1:40:40	24.21	51.90	34.16	43.9	3.03	0.226	8.27	N/A	N/A
2/27/2010	1:45:40	23.93	51.19	33.63	47.2	3.28	0.226	8.27	N/A	N/A
2/27/2010	1:50:40	23.90	51.38	33.78	47.5	3.30	0.226	8.27	N/A	N/A
2/27/2010	1:55:40	23.88	51.40	33.79	47.4	3.29	0.225	8.27	N/A	N/A
2/27/2010	2:00:40	23.88	51.34	33.75	47.0	3.27	0.224	8.27	N/A	N/A
2/27/2010	2:05:40	23.96	51.54	33.89	47.4	3.29	0.224	8.27	N/A	N/A
2/27/2010	2:10:40	24.18	51.73	34.03	48.6	3.36	0.223	8.28	N/A	N/A
2/27/2010	2:15:40	24.25	51.72	34.02	48.7	3.36	0.223	8.28	N/A	N/A
2/27/2010	2:20:40	24.29	51.71	34.01	48.5	3.34	0.223	8.28	N/A	N/A
2/27/2010	2:25:40	24.35	51.73	34.03	48.7	3.35	0.222	8.28	N/A	N/A
2/27/2010	2:30:40	24.46	51.75	34.04	49.2	3.38	0.222	8.29	N/A	N/A
2/27/2010	2:35:40	24.56	51.72	34.01	49.5	3.40	0.221	8.29	N/A	N/A
2/27/2010	2:40:40	24.64	51.70	34.00	49.6	3.40	0.222	8.29	N/A	N/A
2/27/2010	2:45:40	24.67	51.67	33.97	49.1	3.36	0.222	8.29	N/A	N/A
2/27/2010	2:50:40	24.68	51.67	33.98	49.1	3.36	0.222	8.29	N/A	N/A
2/27/2010	2:55:40	24.71	51.66	33.97	49.4	3.38	0.221	8.29	N/A	N/A
2/27/2010	3:00:40	24.74	51.65	33.96	49.5	3.39	0.220	8.29	N/A	N/A
2/27/2010	3:05:40	24.77	51.63	33.94	48.8	3.34	0.220	8.29	N/A	N/A
2/27/2010	3:10:40	24.79	51.61	33.93	48.7	3.33	0.220	8.29	N/A	N/A
2/27/2010	3:15:40	24.82	51.60	33.92	48.6	3.33	0.220	8.29	N/A	N/A
2/27/2010	3:20:40	24.84	51.58	33.91	48.9	3.34	0.221	8.29	N/A	N/A
2/27/2010	3:25:40	24.83	51.55	33.88	48.5	3.32	0.220	8.29	N/A	N/A
2/27/2010	3:30:40	24.82	51.52	33.86	49.1	3.36	0.219	8.29	N/A	N/A
2/27/2010	3:35:40	24.81	51.50	33.85	48.2	3.30	0.219	8.29	N/A	N/A
2/27/2010	3:40:40	24.80	51.49	33.84	48.5	3.32	0.219	8.29	N/A	N/A
2/27/2010	3:45:40	24.82	51.48	33.83	48.6	3.32	0.220	8.29	N/A	N/A
2/27/2010	3:50:40	24.80	51.47	33.82	48.1	3.29	0.221	8.29	N/A	N/A
2/27/2010	3:55:40	24.79	51.42	33.79	48.2	3.30	0.220	8.29	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	4:00:40	24.78	51.37	33.75	48.5	3.32	0.220	8.29	N/A	N/A
2/27/2010	4:05:40	24.79	51.37	33.75	48.1	3.29	0.221	8.29	N/A	N/A
2/27/2010	4:10:40	24.79	51.37	33.75	48.5	3.32	0.221	8.29	N/A	N/A
2/27/2010	4:15:40	24.79	51.38	33.76	47.9	3.28	0.222	8.29	N/A	N/A
2/27/2010	4:20:40	24.77	51.38	33.76	47.4	3.25	0.222	8.29	N/A	N/A
2/27/2010	4:25:40	24.76	51.37	33.75	48.0	3.29	0.222	8.29	N/A	N/A
2/27/2010	4:30:40	24.76	51.38	33.76	48.1	3.30	0.221	8.29	N/A	N/A
2/27/2010	4:35:40	24.74	51.38	33.76	47.3	3.24	0.222	8.29	N/A	N/A
2/27/2010	4:40:40	24.75	51.39	33.77	47.3	3.24	0.222	8.29	N/A	N/A
2/27/2010	4:45:40	24.75	51.39	33.77	47.6	3.26	0.222	8.29	N/A	N/A
2/27/2010	4:50:40	24.74	51.39	33.77	47.0	3.22	0.223	8.29	N/A	N/A
2/27/2010	4:55:40	24.74	51.39	33.77	47.7	3.27	0.222	8.29	N/A	N/A
2/27/2010	5:00:40	24.72	51.39	33.76	46.9	3.21	0.223	8.29	N/A	N/A
2/27/2010	5:05:40	24.72	51.38	33.76	47.3	3.24	0.223	8.29	N/A	N/A
2/27/2010	5:10:40	24.72	51.38	33.76	47.6	3.26	0.224	8.29	N/A	N/A
2/27/2010	5:15:40	24.71	51.39	33.76	47.7	3.27	0.223	8.29	N/A	N/A
2/27/2010	5:20:40	24.72	51.38	33.76	47.6	3.26	0.224	8.29	N/A	N/A
2/27/2010	5:25:40	24.71	51.38	33.76	47.1	3.23	0.223	8.29	N/A	N/A
2/27/2010	5:30:40	24.68	51.34	33.73	46.9	3.22	0.223	8.29	N/A	N/A
2/27/2010	5:35:40	24.68	51.34	33.73	47.5	3.26	0.224	8.29	N/A	N/A
2/27/2010	5:40:40	24.69	51.33	33.72	46.8	3.21	0.225	8.29	N/A	N/A
2/27/2010	5:45:40	24.68	51.33	33.73	47.3	3.25	0.225	8.29	N/A	N/A
2/27/2010	5:50:40	24.65	51.29	33.70	46.9	3.22	0.224	8.29	N/A	N/A
2/27/2010	5:55:40	24.66	51.31	33.71	46.9	3.22	0.225	8.29	N/A	N/A
2/27/2010	6:00:40	24.67	51.31	33.71	46.8	3.21	0.225	8.29	N/A	N/A
2/27/2010	6:05:40	24.66	51.31	33.71	46.6	3.20	0.224	8.29	N/A	N/A
2/27/2010	6:10:40	24.69	51.36	33.74	46.2	3.17	0.225	8.29	N/A	N/A
2/27/2010	6:15:40	24.70	51.38	33.76	45.9	3.15	0.223	8.29	N/A	N/A
2/27/2010	6:20:40	24.71	51.41	33.78	46.4	3.18	0.225	8.29	N/A	N/A
2/27/2010	6:25:40	24.75	51.52	33.86	46.6	3.19	0.226	8.30	N/A	N/A
2/27/2010	6:30:40	24.74	51.58	33.90	47.1	3.22	0.226	8.30	N/A	N/A
2/27/2010	6:35:40	24.72	51.55	33.88	47.0	3.22	0.226	8.30	N/A	N/A
2/27/2010	6:40:40	24.67	51.49	33.84	46.3	3.17	0.227	8.29	N/A	N/A
2/27/2010	6:45:40	24.68	51.54	33.88	45.7	3.14	0.227	8.29	N/A	N/A
2/27/2010	6:50:40	24.68	51.62	33.94	46.2	3.16	0.227	8.29	N/A	N/A
2/27/2010	6:55:40	24.65	51.59	33.92	45.6	3.12	0.226	8.29	N/A	N/A
2/27/2010	7:00:40	24.62	51.52	33.86	45.0	3.09	0.226	8.29	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	7:05:40	24.65	51.59	33.92	45.6	3.13	0.226	8.29	N/A	N/A
2/27/2010	7:10:40	24.65	51.63	33.95	45.0	3.09	0.228	8.29	N/A	N/A
2/27/2010	7:15:40	24.64	51.66	33.97	45.7	3.13	0.228	8.29	N/A	N/A
2/27/2010	7:20:40	24.63	51.65	33.96	45.8	3.14	0.228	8.29	N/A	N/A
2/27/2010	7:25:40	24.62	51.66	33.97	45.6	3.13	0.229	8.29	N/A	N/A
2/27/2010	7:30:40	24.61	51.67	33.98	45.7	3.14	0.230	8.29	N/A	N/A
2/27/2010	7:35:40	24.61	51.68	33.98	46.3	3.17	0.231	8.29	N/A	N/A
2/27/2010	7:40:40	24.61	51.65	33.96	45.9	3.15	0.232	8.29	N/A	N/A
2/27/2010	7:45:40	24.61	51.66	33.97	46.3	3.17	0.233	8.29	N/A	N/A
2/27/2010	7:50:40	24.61	51.68	33.98	47.3	3.24	0.232	8.30	N/A	N/A
2/27/2010	7:55:40	24.60	51.67	33.98	47.1	3.23	0.232	8.30	N/A	N/A
2/27/2010	8:00:40	24.61	51.65	33.96	46.7	3.20	0.232	8.29	N/A	N/A
2/27/2010	8:05:40	24.62	51.66	33.97	46.6	3.20	0.232	8.29	N/A	N/A
2/27/2010	8:10:40	24.62	51.67	33.97	46.5	3.19	0.231	8.30	N/A	N/A
2/27/2010	8:15:40	24.61	51.65	33.96	46.1	3.16	0.233	8.29	N/A	N/A
2/27/2010	8:20:40	24.62	51.66	33.97	46.4	3.18	0.233	8.29	N/A	N/A
2/27/2010	8:25:40	24.63	51.68	33.98	46.9	3.21	0.233	8.30	N/A	N/A
2/27/2010	8:30:40	24.64	51.68	33.98	46.0	3.15	0.233	8.29	N/A	N/A
2/27/2010	8:35:40	24.65	51.68	33.98	46.0	3.15	0.233	8.29	N/A	N/A
2/27/2010	8:40:40	24.61	51.63	33.94	46.3	3.17	0.233	8.30	N/A	N/A
2/27/2010	8:45:40	24.63	51.61	33.93	46.7	3.20	0.232	8.30	N/A	N/A
2/27/2010	8:50:40	24.66	51.64	33.95	46.9	3.21	0.231	8.29	N/A	N/A
2/27/2010	8:55:40	24.65	51.62	33.94	46.8	3.21	0.230	8.29	N/A	N/A
2/27/2010	9:00:40	24.65	51.60	33.92	47.7	3.27	0.230	8.28	N/A	N/A
2/27/2010	9:05:40	24.68	51.61	33.93	46.4	3.18	0.228	8.27	N/A	N/A
2/27/2010	9:10:40	24.68	51.63	33.94	46.6	3.19	0.229	8.27	N/A	N/A
2/27/2010	9:15:40	24.69	51.61	33.93	46.7	3.20	0.228	8.26	N/A	N/A
2/27/2010	9:20:40	24.69	51.60	33.92	47.1	3.23	0.227	8.25	N/A	N/A
2/27/2010	9:25:40	24.69	51.60	33.92	47.4	3.25	0.227	8.24	N/A	N/A
2/27/2010	9:30:40	24.72	51.63	33.94	47.2	3.23	0.229	8.24	N/A	N/A
2/27/2010	9:35:40	24.75	51.63	33.94	46.6	3.19	0.230	8.23	N/A	N/A
2/27/2010	9:40:40	24.75	51.64	33.95	45.9	3.14	0.230	8.22	N/A	N/A
2/27/2010	9:45:40	24.77	51.58	33.91	46.7	3.20	0.233	8.22	N/A	N/A
2/27/2010	9:50:40	24.77	51.64	33.95	47.0	3.22	0.233	8.22	N/A	N/A
2/27/2010	9:55:40	24.76	51.68	33.98	46.4	3.17	0.239	8.22	N/A	N/A
2/27/2010	10:00:40	24.77	51.62	33.94	46.0	3.15	0.236	8.22	N/A	N/A
2/27/2010	10:05:40	24.77	51.63	33.95	46.3	3.17	0.238	8.23	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	10:10:40	24.79	51.59	33.92	45.9	3.14	0.237	8.23	N/A	N/A
2/27/2010	10:15:40	24.82	51.63	33.94	46.2	3.16	0.237	8.23	N/A	N/A
2/27/2010	10:20:40	24.85	51.63	33.94	46.3	3.16	0.238	8.23	N/A	N/A
2/27/2010	10:25:40	24.89	51.53	33.86	46.2	3.15	0.236	8.23	N/A	N/A
2/27/2010	10:30:40	24.89	51.42	33.78	45.2	3.09	0.235	8.22	N/A	N/A
2/27/2010	10:35:40	24.88	51.42	33.78	45.8	3.13	0.236	8.22	N/A	N/A
2/27/2010	10:40:40	24.89	51.28	33.68	45.6	3.12	0.236	8.23	N/A	N/A
2/27/2010	10:45:40	24.89	50.91	33.41	46.0	3.15	0.236	8.23	N/A	N/A
2/27/2010	10:50:40	24.89	51.21	33.63	47.8	3.27	0.235	8.24	N/A	N/A
2/27/2010	10:55:40	24.92	51.06	33.52	47.0	3.22	0.234	8.23	N/A	N/A
2/27/2010	11:00:40	24.94	50.72	33.27	48.1	3.29	0.234	8.24	N/A	N/A
2/27/2010	11:05:40	24.99	51.07	33.52	48.3	3.30	0.232	8.25	N/A	N/A
2/27/2010	11:10:40	25.04	51.36	33.74	49.1	3.34	0.231	8.25	N/A	N/A
2/27/2010	11:15:40	25.05	51.29	33.69	48.4	3.30	0.230	8.25	N/A	N/A
2/27/2010	11:20:40	25.07	51.35	33.73	49.0	3.34	0.228	8.25	N/A	N/A
2/27/2010	11:25:40	25.12	51.33	33.72	48.9	3.33	0.227	8.25	N/A	N/A
2/27/2010	11:30:40	25.17	51.40	33.76	49.2	3.35	0.227	8.25	N/A	N/A
2/27/2010	11:35:40	25.21	51.41	33.77	49.8	3.38	0.226	8.26	N/A	N/A
2/27/2010	11:40:40	25.26	51.39	33.75	49.7	3.38	0.225	8.26	N/A	N/A
2/27/2010	11:45:40	25.29	51.36	33.73	49.2	3.34	0.224	8.26	N/A	N/A
2/27/2010	11:50:40	25.34	51.41	33.77	50.3	3.41	0.223	8.26	N/A	N/A
2/27/2010	11:55:40	25.32	51.37	33.74	50.2	3.41	0.223	8.26	N/A	N/A
2/27/2010	12:00:40	25.33	51.36	33.73	49.9	3.39	0.223	8.25	N/A	N/A
2/27/2010	12:05:40	25.41	51.36	33.73	49.9	3.38	0.221	8.25	N/A	N/A
2/27/2010	12:10:40	25.45	51.38	33.74	49.8	3.37	0.220	8.26	N/A	N/A
2/27/2010	12:15:40	25.43	51.39	33.75	49.8	3.37	0.220	8.26	N/A	N/A
2/27/2010	12:20:40	25.42	51.41	33.77	49.9	3.38	0.219	8.25	N/A	N/A
2/27/2010	12:25:40	25.48	51.24	33.64	49.5	3.35	0.219	8.25	N/A	N/A
2/27/2010	12:30:40	25.61	50.89	33.37	49.4	3.34	0.218	8.25	N/A	N/A
2/27/2010	12:35:40	25.79	51.06	33.50	51.0	3.44	0.217	8.27	N/A	N/A
2/27/2010	12:40:40	25.77	51.03	33.48	51.4	3.47	0.216	8.26	N/A	N/A
2/27/2010	12:45:40	25.77	51.11	33.54	51.0	3.44	0.216	8.26	N/A	N/A
2/27/2010	12:50:40	25.80	51.00	33.46	50.9	3.43	0.214	8.26	N/A	N/A
2/27/2010	12:55:40	25.69	50.84	33.34	50.4	3.40	0.212	8.26	N/A	N/A
2/27/2010	13:00:40	25.69	50.90	33.38	50.3	3.40	0.211	8.26	N/A	N/A
2/27/2010	13:05:40	25.60	51.08	33.52	50.1	3.38	0.210	8.25	N/A	N/A
2/27/2010	13:10:40	25.59	51.11	33.54	50.0	3.38	0.209	8.25	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	13:15:40	25.65	51.19	33.60	50.8	3.43	0.208	8.26	N/A	N/A
2/27/2010	13:20:40	25.60	51.18	33.60	50.5	3.41	0.207	8.26	N/A	N/A
2/27/2010	13:25:40	25.67	51.03	33.48	50.7	3.42	0.205	8.26	N/A	N/A
2/27/2010	13:30:40	25.58	51.32	33.69	50.9	3.44	0.205	8.26	N/A	N/A
2/27/2010	13:35:40	25.69	51.13	33.56	51.3	3.46	0.205	8.26	N/A	N/A
2/27/2010	13:40:40	25.65	51.21	33.61	50.3	3.40	0.204	8.26	N/A	N/A
2/27/2010	13:45:40	25.58	51.32	33.69	50.4	3.41	0.202	8.25	N/A	N/A
2/27/2010	13:50:40	25.80	51.08	33.51	51.5	3.47	0.202	8.26	N/A	N/A
2/27/2010	13:55:40	25.51	51.42	33.77	50.0	3.38	0.200	8.25	N/A	N/A
2/27/2010	14:00:40	25.76	51.17	33.58	51.1	3.45	0.199	8.26	N/A	N/A
2/27/2010	14:05:40	25.78	51.00	33.46	51.5	3.47	0.199	8.26	N/A	N/A
2/27/2010	14:10:40	25.76	51.11	33.54	51.2	3.45	0.197	8.26	N/A	N/A
2/27/2010	14:15:40	25.55	51.31	33.69	50.4	3.41	0.198	8.25	N/A	N/A
2/27/2010	14:20:40	25.61	51.19	33.60	50.2	3.39	0.196	8.25	N/A	N/A
2/27/2010	14:25:40	25.71	51.07	33.51	50.6	3.41	0.195	8.26	N/A	N/A
2/27/2010	14:30:40	25.73	51.09	33.52	51.2	3.45	0.195	8.26	N/A	N/A
2/27/2010	14:35:40	25.76	51.04	33.48	51.0	3.44	0.195	8.26	N/A	N/A
2/27/2010	14:40:40	25.72	51.03	33.48	50.8	3.43	0.192	8.26	N/A	N/A
2/27/2010	14:45:40	25.69	51.10	33.53	51.2	3.46	0.192	8.26	N/A	N/A
2/27/2010	14:50:40	25.67	51.09	33.53	50.8	3.43	0.192	8.26	N/A	N/A
2/27/2010	14:55:40	25.68	51.08	33.52	51.1	3.45	0.191	8.26	N/A	N/A
2/27/2010	15:00:40	25.64	51.14	33.56	50.7	3.43	0.192	8.26	N/A	N/A
2/27/2010	15:05:40	25.69	51.02	33.47	51.4	3.47	0.192	8.27	N/A	N/A
2/27/2010	15:10:40	25.68	51.05	33.49	51.1	3.45	0.192	8.26	N/A	N/A
2/27/2010	15:15:40	25.62	51.13	33.55	50.5	3.41	0.190	8.26	N/A	N/A
2/27/2010	15:20:40	25.58	51.31	33.69	50.2	3.39	0.192	8.26	N/A	N/A
2/27/2010	15:25:40	25.52	51.37	33.73	50.1	3.39	0.191	8.26	N/A	N/A
2/27/2010	15:30:40	25.66	51.09	33.53	50.9	3.44	0.190	8.27	N/A	N/A
2/27/2010	15:35:40	25.64	51.12	33.55	50.8	3.43	0.191	8.26	N/A	N/A
2/27/2010	15:40:40	25.65	51.10	33.53	50.4	3.40	0.190	8.26	N/A	N/A
2/27/2010	15:45:40	25.64	51.04	33.49	50.7	3.42	0.191	8.27	N/A	N/A
2/27/2010	15:50:40	25.56	51.27	33.66	49.1	3.32	0.192	8.26	N/A	N/A
2/27/2010	15:55:40	25.34	50.14	32.84	50.1	3.41	0.194	8.26	N/A	N/A
2/27/2010	16:00:40	25.32	50.09	32.79	50.4	3.43	0.193	8.27	N/A	N/A
2/27/2010	16:05:40	25.31	50.14	32.84	50.3	3.43	0.192	8.27	N/A	N/A
2/27/2010	16:10:40	25.42	50.51	33.10	50.3	3.42	0.192	8.27	N/A	N/A
2/27/2010	16:15:40	25.34	50.35	32.99	49.9	3.40	0.192	8.27	N/A	N/A

Table AII.44: (Continued) Rainbow Bay D-Dock Platform 1 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	16:20:40	25.34	50.52	33.11	50.1	3.41	0.191	8.27	N/A	N/A
2/27/2010	16:25:40	25.36	50.56	33.14	50.3	3.42	0.191	8.27	N/A	N/A
2/27/2010	16:30:40	25.37	50.61	33.18	49.8	3.39	0.191	8.27	N/A	N/A
2/27/2010	16:35:40	25.36	50.59	33.16	50.2	3.42	0.192	8.27	N/A	N/A
2/27/2010	16:40:40	25.38	50.70	33.25	49.2	3.34	0.191	8.27	N/A	N/A
2/27/2010	16:45:40	25.28	50.54	33.13	49.1	3.35	0.192	8.26	N/A	N/A
2/27/2010	16:50:40	25.29	50.66	33.21	48.3	3.29	0.192	8.26	N/A	N/A
2/27/2010	16:55:40	25.31	50.63	33.20	49.6	3.37	0.191	8.27	N/A	N/A
2/27/2010	17:00:40	25.32	50.66	33.21	49.9	3.40	0.249	8.27	N/A	N/A
2/27/2010	17:05:40	25.33	50.68	33.23	49.5	3.37	0.220	8.27	N/A	N/A

Table AII.45: Rainbow Bay D-Dock Platform 1 wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100225	12:00	3.1	20100226	14:53	3.6
20100225	12:53	3.1	20100226	15:53	6.7
20100225	13:53	1.5	20100226	16:53	6.7
20100225	14:53	1.5	20100226	17:53	6.7
20100225	15:53	3.1	20100226	18:00	6.7
20100225	16:53	1.5	20100226	18:53	4.6
20100225	17:53	0.0	20100226	19:53	3.6
20100225	18:00	0.0	20100226	20:53	6.7
20100225	18:53	2.1	20100226	21:53	4.1
20100225	19:53	7.2	20100226	22:53	5.1
20100225	20:53	8.2	20100226	23:53	4.6
20100225	21:53	7.7	20100227	00:00	4.6
20100225	22:53	6.2	20100227	00:53	5.1
20100225	23:53	6.7	20100227	01:53	7.2
20100226	00:00	6.7	20100227	02:53	5.1
20100226	00:53	6.7	20100227	03:53	6.2
20100226	01:53	8.7	20100227	04:53	6.7
20100226	02:53	7.2	20100227	05:53	5.1
20100226	03:53	7.2	20100227	06:00	5.1
20100226	04:53	6.2	20100227	06:53	3.6
20100226	05:53	7.2	20100227	07:53	3.1
20100226	06:00	7.2	20100227	08:53	3.1
20100226	06:53	4.6	20100227	09:53	4.1
20100226	07:53	4.6	20100227	10:53	2.1
20100226	08:53	5.7	20100227	11:53	2.6
20100226	09:53	5.7	20100227	12:00	2.6
20100226	10:53	5.7	20100227	12:53	2.6
20100226	11:53	4.1	20100227	13:53	0.0
20100226	12:00	4.1	20100227	14:53	1.5
20100226	12:53	3.6	20100227	15:53	2.1
20100226	13:53	4.1	20100227	16:53	1.5

Table AII.46: Rainbow Bay D-Dock Platform 1 depth profile collected on 5 January 2011 using an YSI 6600 V2-4.

Depth m	Time hh:mm	Temp °C	SpCond mS/cm	Sal	pH	ORP	Chl µg/L	DO %	DO mg
0.07	14:39	25.91	50.87	33.36	8.11	128.0	1.8	101.3	6.82
0.97	14:40	25.82	51.11	33.52	8.12	128.6	1.9	101.4	6.84
1.26	14:40	25.81	51.15	33.57	8.11	128.9	2.9	100.8	6.77

Table AII.47: Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/25/10 11:50	-101.73	38.63	2/25/10 14:30	-89.20	51.15
2/25/10 11:55	-101.63	38.73	2/25/10 14:35	-89.89	50.46
2/25/10 12:00	-101.04	39.31	2/25/10 14:40	-91.80	48.56
2/25/10 12:05	-100.94	39.42	2/25/10 14:45	-90.50	49.86
2/25/10 12:10	-99.95	40.41	2/25/10 14:50	-91.39	48.97
2/25/10 12:15	-100.94	39.42	2/25/10 14:55	-90.09	50.26
2/25/10 12:20	-99.64	40.71	2/25/10 15:00	-90.81	49.55
2/25/10 12:25	-98.76	41.60	2/25/10 15:05	-92.00	48.36
2/25/10 12:30	-97.46	42.90	2/25/10 15:10	-91.80	48.56
2/25/10 12:35	-98.07	42.29	2/25/10 15:15	-92.58	47.77
2/25/10 12:40	-96.77	43.58	2/25/10 15:20	-92.99	47.37
2/25/10 12:45	-96.67	43.68	2/25/10 15:25	-94.67	45.69
2/25/10 12:50	-95.48	44.88	2/25/10 15:30	-94.77	45.59
2/25/10 12:55	-93.68	46.68	2/25/10 15:35	-95.58	44.78
2/25/10 13:00	-93.40	46.96	2/25/10 15:40	-96.47	43.89
2/25/10 13:05	-93.09	47.26	2/25/10 15:45	-97.66	42.69
2/25/10 13:10	-90.91	49.45	2/25/10 15:50	-96.77	43.58
2/25/10 13:15	-90.40	49.96	2/25/10 15:55	-98.86	41.50
2/25/10 13:20	-89.71	50.64	2/25/10 16:00	-99.95	40.41
2/25/10 13:25	-89.71	50.64	2/25/10 16:05	-100.94	39.42
2/25/10 13:30	-89.51	50.85	2/25/10 16:10	-100.94	39.42
2/25/10 13:35	-88.32	52.04	2/25/10 16:15	-102.13	38.22
2/25/10 13:40	-89.20	51.15	2/25/10 16:20	-103.43	36.93
2/25/10 13:45	-88.70	51.66	2/25/10 16:25	-103.43	36.93
2/25/10 13:50	-89.51	50.85	2/25/10 16:30	-102.64	37.71
2/25/10 13:55	-89.61	50.74	2/25/10 16:35	-104.32	36.04
2/25/10 14:00	-89.51	50.85	2/25/10 16:40	-104.11	36.24
2/25/10 14:05	-88.52	51.84	2/25/10 16:45	-104.83	35.53
2/25/10 14:10	-89.99	50.36	2/25/10 16:50	-106.40	33.95
2/25/10 14:15	-90.40	49.96	2/25/10 16:55	-106.40	33.95
2/25/10 14:20	-90.81	49.55	2/25/10 17:00	-106.32	34.03
2/25/10 14:25	-90.60	49.75	2/25/10 17:05	-106.71	33.65

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/25/10 17:10	-111.38	28.98	2/25/10 18:00	-118.24	22.12
2/25/10 17:15	-109.60	30.75	2/25/10 18:05	-119.25	21.10
2/25/10 17:20	-108.89	31.47	2/25/10 18:10	-120.14	20.21
2/25/10 17:25	-111.00	29.36	2/25/10 18:15	-120.83	19.53
2/25/10 17:30	-112.27	28.09	2/25/10 18:20	-122.02	18.33
2/25/10 17:35	-113.28	27.07	2/25/10 18:25	-124.10	16.25
2/25/10 17:40	-114.55	25.80	2/25/10 18:30	-123.52	16.84
2/25/10 17:45	-114.55	25.80	2/25/10 18:35	-124.61	15.74
2/25/10 17:50	-116.56	23.79	2/25/10 18:40	-124.51	15.84
2/25/10 17:55	-116.66	23.69	2/25/10 18:45	-124.92	15.44
2/25/10 18:00	-118.24	22.12	2/25/10 18:50	-125.91	14.45
2/25/10 18:05	-119.25	21.10	2/25/10 18:55	-125.91	14.45
2/25/10 18:10	-120.14	20.21	2/25/10 19:00	-125.30	15.06
2/25/10 18:15	-120.83	19.53	2/25/10 19:05	-125.30	15.06
2/25/10 18:20	-122.02	18.33	2/25/10 19:10	-125.20	15.16
2/25/10 18:25	-124.10	16.25	2/25/10 19:15	-124.82	15.54
2/25/10 18:30	-123.52	16.84	2/25/10 19:20	-124.41	15.95
2/25/10 18:35	-124.61	15.74	2/25/10 19:25	-124.00	16.35
2/25/10 18:40	-124.51	15.84	2/25/10 19:30	-123.22	17.14
2/25/10 18:45	-124.92	15.44	2/25/10 19:35	-122.12	18.23
2/25/10 18:50	-125.91	14.45	2/25/10 19:40	-122.02	18.33
2/25/10 18:55	-125.91	14.45	2/25/10 19:45	-121.62	18.74
2/25/10 19:00	-125.30	15.06	2/25/10 19:50	-120.62	19.73
2/25/10 19:05	-125.30	15.06	2/25/10 19:55	-119.84	20.52
2/25/10 19:10	-125.20	15.16	2/25/10 20:00	-119.63	20.72
2/25/10 19:15	-124.82	15.54	2/25/10 20:05	-118.64	21.71
2/25/10 19:20	-124.41	15.95	2/25/10 20:10	-117.96	22.40
2/25/10 19:25	-124.00	16.35	2/25/10 20:15	-118.14	22.22
2/25/10 19:30	-123.22	17.14	2/25/10 20:20	-118.14	22.22
2/25/10 19:35	-122.12	18.23	2/25/10 20:25	-116.46	23.90
2/25/10 19:40	-122.02	18.33	2/25/10 20:30	-117.04	23.31
2/25/10 19:45	-121.62	18.74	2/25/10 20:35	-116.56	23.79
2/25/10 19:50	-120.62	19.73	2/25/10 20:40	-116.15	24.20
2/25/10 19:55	-119.84	20.52	2/25/10 20:45	-114.86	25.50

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/25/10 20:50	-113.77	26.59	2/25/10 23:40	-71.30	69.06
2/25/10 20:55	-112.78	27.58	2/25/10 23:45	-70.31	70.05
2/25/10 21:00	-112.78	27.58	2/25/10 23:50	-69.01	71.34
2/25/10 21:05	-111.07	29.28	2/25/10 23:55	-66.93	73.43
2/25/10 21:10	-110.08	30.27	2/26/10 0:00	-65.53	74.82
2/25/10 21:15	-108.51	31.85	2/26/10 0:05	-63.65	76.70
2/25/10 21:20	-107.21	33.14	2/26/10 0:10	-63.04	77.31
2/25/10 21:25	-105.92	34.44	2/26/10 0:15	-61.57	78.79
2/25/10 21:30	-104.83	35.53	2/26/10 0:20	-60.17	80.18
2/25/10 21:35	-102.74	37.61	2/26/10 0:25	-58.67	81.68
2/25/10 21:40	-101.04	39.31	2/26/10 0:30	-57.99	82.37
2/25/10 21:45	-99.44	40.91	2/26/10 0:35	-56.90	83.46
2/25/10 21:50	-98.25	42.11	2/26/10 0:40	-55.70	84.65
2/25/10 21:55	-97.26	43.10	2/26/10 0:45	-54.79	85.57
2/25/10 22:00	-95.76	44.60	2/26/10 0:50	-53.90	86.46
2/25/10 22:05	-94.67	45.69	2/26/10 0:55	-53.01	87.35
2/25/10 22:10	-93.09	47.26	2/26/10 1:00	-52.12	88.23
2/25/10 22:15	-92.38	47.98	2/26/10 1:05	-51.51	88.84
2/25/10 22:20	-90.91	49.45	2/26/10 1:10	-50.42	89.94
2/25/10 22:25	-89.71	50.64	2/26/10 1:15	-49.63	90.72
2/25/10 22:30	-88.90	51.46	2/26/10 1:20	-48.82	91.54
2/25/10 22:35	-87.43	52.93	2/26/10 1:25	-48.03	92.32
2/25/10 22:40	-88.21	52.14	2/26/10 1:30	-47.63	92.73
2/25/10 22:45	-86.33	54.02	2/26/10 1:35	-46.74	93.62
2/25/10 22:50	-85.32	55.04	2/26/10 1:40	-45.44	94.91
2/25/10 22:55	-84.02	56.33	2/26/10 1:45	-45.16	95.19
2/25/10 23:00	-83.24	57.12	2/26/10 1:50	-45.06	95.30
2/25/10 23:05	-82.25	58.11	2/26/10 1:55	-44.75	95.60
2/25/10 23:10	-81.56	58.80	2/26/10 2:00	-43.76	96.59
2/25/10 23:15	-79.35	61.01	2/26/10 2:05	-43.36	97.00
2/25/10 23:20	-78.26	62.10	2/26/10 2:10	-43.15	97.20
2/25/10 23:25	-76.48	63.88	2/26/10 2:15	-43.05	97.30
2/25/10 23:30	-74.68	65.68	2/26/10 2:20	-42.95	97.40
2/25/10 23:35	-73.41	66.95	2/26/10 2:25	-42.27	98.09

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/26/10 2:30	-41.76	98.60	2/26/10 5:20	-67.44	72.92
2/26/10 2:35	-42.27	98.09	2/26/10 5:25	-69.90	70.45
2/26/10 2:40	-42.67	97.68	2/26/10 5:30	-72.59	67.76
2/26/10 2:45	-42.95	97.40	2/26/10 5:35	-73.41	66.95
2/26/10 2:50	-42.57	97.79	2/26/10 5:40	-74.68	65.68
2/26/10 2:55	-42.67	97.68	2/26/10 5:45	-77.06	63.29
2/26/10 3:00	-43.56	96.79	2/26/10 5:50	-80.06	60.29
2/26/10 3:05	-44.45	95.91	2/26/10 5:55	-81.25	59.10
2/26/10 3:10	-44.45	95.91	2/26/10 6:00	-82.65	57.70
2/26/10 3:15	-44.86	95.50	2/26/10 6:05	-84.12	56.23
2/26/10 3:20	-45.16	95.19	2/26/10 6:10	-85.42	54.94
2/26/10 3:25	-46.36	94.00	2/26/10 6:15	-86.61	53.74
2/26/10 3:30	-46.94	93.42	2/26/10 6:20	-88.80	51.56
2/26/10 3:35	-47.35	93.01	2/26/10 6:25	-89.61	50.74
2/26/10 3:40	-47.55	92.81	2/26/10 6:30	-90.09	50.26
2/26/10 3:45	-47.93	92.43	2/26/10 6:35	-89.99	50.36
2/26/10 3:50	-48.54	91.82	2/26/10 6:40	-91.29	49.07
2/26/10 3:55	-49.43	90.93	2/26/10 6:45	-92.89	47.47
2/26/10 4:00	-49.33	91.03	2/26/10 6:50	-92.99	47.37
2/26/10 4:05	-49.73	90.62	2/26/10 6:55	-94.28	46.07
2/26/10 4:10	-50.62	89.73	2/26/10 7:00	-95.07	45.28
2/26/10 4:15	-51.41	88.95	2/26/10 7:05	-95.38	44.98
2/26/10 4:20	-52.12	88.23	2/26/10 7:10	-96.77	43.58
2/26/10 4:25	-52.50	87.85	2/26/10 7:15	-97.56	42.79
2/26/10 4:30	-53.80	86.56	2/26/10 7:20	-98.07	42.29
2/26/10 4:35	-55.50	84.86	2/26/10 7:25	-98.35	42.01
2/26/10 4:40	-55.88	84.48	2/26/10 7:30	-99.75	40.61
2/26/10 4:45	-57.28	83.08	2/26/10 7:35	-100.15	40.20
2/26/10 4:50	-58.57	81.78	2/26/10 7:40	-100.36	40.00
2/26/10 4:55	-59.56	80.79	2/26/10 7:45	-102.64	37.71
2/26/10 5:00	-62.15	78.20	2/26/10 7:50	-103.23	37.13
2/26/10 5:05	-63.55	76.80	2/26/10 7:55	-104.32	36.04
2/26/10 5:10	-64.64	75.71	2/26/10 8:00	-105.82	34.54
2/26/10 5:15	-66.04	74.32	2/26/10 8:05	-105.41	34.95

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/26/10 8:10	-107.49	32.86	2/26/10 11:00	-107.42	32.94
2/26/10 8:15	-107.90	32.46	2/26/10 11:05	-106.12	34.23
2/26/10 8:20	-109.19	31.16	2/26/10 11:10	-106.12	34.23
2/26/10 8:25	-110.69	29.66	2/26/10 11:15	-104.72	35.63
2/26/10 8:30	-111.28	29.08	2/26/10 11:20	-104.01	36.34
2/26/10 8:35	-111.28	29.08	2/26/10 11:25	-102.82	37.54
2/26/10 8:40	-112.67	27.68	2/26/10 11:30	-102.24	38.12
2/26/10 8:45	-113.36	27.00	2/26/10 11:35	-101.45	38.91
2/26/10 8:50	-111.79	28.57	2/26/10 11:40	-100.53	39.82
2/26/10 8:55	-112.47	27.88	2/26/10 11:45	-99.75	40.61
2/26/10 9:00	-113.97	26.39	2/26/10 11:50	-98.76	41.60
2/26/10 9:05	-114.38	25.98	2/26/10 11:55	-98.25	42.11
2/26/10 9:10	-114.38	25.98	2/26/10 12:00	-97.97	42.39
2/26/10 9:15	-116.36	24.00	2/26/10 12:05	-96.47	43.89
2/26/10 9:20	-114.48	25.88	2/26/10 12:10	-96.27	44.09
2/26/10 9:25	-114.86	25.50	2/26/10 12:15	-96.06	44.29
2/26/10 9:30	-115.06	25.29	2/26/10 12:20	-95.48	44.88
2/26/10 9:35	-116.05	24.30	2/26/10 12:25	-94.67	45.69
2/26/10 9:40	-114.07	26.28	2/26/10 12:30	-93.78	46.58
2/26/10 9:45	-115.57	24.79	2/26/10 12:35	-93.47	46.88
2/26/10 9:50	-113.18	27.17	2/26/10 12:40	-94.18	46.17
2/26/10 9:55	-112.78	27.58	2/26/10 12:45	-92.79	47.57
2/26/10 10:00	-114.17	26.18	2/26/10 12:50	-91.39	48.97
2/26/10 10:05	-113.18	27.17	2/26/10 12:55	-91.80	48.56
2/26/10 10:10	-112.78	27.58	2/26/10 13:00	-90.50	49.86
2/26/10 10:15	-111.68	28.67	2/26/10 13:05	-90.91	49.45
2/26/10 10:20	-111.99	28.37	2/26/10 13:10	-89.71	50.64
2/26/10 10:25	-111.28	29.08	2/26/10 13:15	-89.81	50.54
2/26/10 10:30	-111.48	28.87	2/26/10 13:20	-89.20	51.15
2/26/10 10:35	-110.19	30.17	2/26/10 13:25	-89.20	51.15
2/26/10 10:40	-109.88	30.48	2/26/10 13:30	-88.90	51.46
2/26/10 10:45	-109.30	31.06	2/26/10 13:35	-87.71	52.65
2/26/10 10:50	-108.31	32.05	2/26/10 13:40	-88.62	51.73
2/26/10 10:55	-107.90	32.46	2/26/10 13:45	-87.53	52.83

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/26/10 13:50	-88.32	52.04	2/26/10 16:40	-93.78	46.58
2/26/10 13:55	-88.01	52.34	2/26/10 16:45	-95.58	44.78
2/26/10 14:00	-86.82	53.54	2/26/10 16:50	-96.16	44.19
2/26/10 14:05	-85.93	54.43	2/26/10 16:55	-97.46	42.90
2/26/10 14:10	-85.93	54.43	2/26/10 17:00	-98.35	42.01
2/26/10 14:15	-85.62	54.73	2/26/10 17:05	-98.25	42.11
2/26/10 14:20	-86.82	53.54	2/26/10 17:10	-99.16	41.19
2/26/10 14:25	-86.72	53.64	2/26/10 17:15	-100.63	39.72
2/26/10 14:30	-85.42	54.94	2/26/10 17:20	-100.05	40.30
2/26/10 14:35	-85.93	54.43	2/26/10 17:25	-101.63	38.73
2/26/10 14:40	-85.42	54.94	2/26/10 17:30	-102.44	37.92
2/26/10 14:45	-86.33	54.02	2/26/10 17:35	-102.74	37.61
2/26/10 14:50	-86.82	53.54	2/26/10 17:40	-103.84	36.52
2/26/10 14:55	-86.03	54.33	2/26/10 17:45	-104.22	36.14
2/26/10 15:00	-85.42	54.94	2/26/10 17:50	-106.02	34.34
2/26/10 15:05	-85.52	54.83	2/26/10 17:55	-107.11	33.24
2/26/10 15:10	-86.03	54.33	2/26/10 18:00	-107.32	33.04
2/26/10 15:15	-85.14	55.21	2/26/10 18:05	-108.89	31.47
2/26/10 15:20	-84.12	56.23	2/26/10 18:10	-108.41	31.95
2/26/10 15:25	-85.62	54.73	2/26/10 18:15	-110.39	29.97
2/26/10 15:30	-85.52	54.83	2/26/10 18:20	-110.29	30.07
2/26/10 15:35	-84.84	55.52	2/26/10 18:25	-112.09	28.27
2/26/10 15:40	-85.22	55.14	2/26/10 18:30	-112.88	27.48
2/26/10 15:45	-85.83	54.53	2/26/10 18:35	-113.08	27.27
2/26/10 15:50	-86.23	54.12	2/26/10 18:40	-114.27	26.08
2/26/10 15:55	-87.53	52.83	2/26/10 18:45	-114.55	25.80
2/26/10 16:00	-87.33	53.03	2/26/10 18:50	-115.37	24.99
2/26/10 16:05	-88.62	51.73	2/26/10 18:55	-115.95	24.40
2/26/10 16:10	-89.00	51.35	2/26/10 19:00	-116.76	23.59
2/26/10 16:15	-89.71	50.64	2/26/10 19:05	-117.04	23.31
2/26/10 16:20	-90.70	49.65	2/26/10 19:10	-117.65	22.70
2/26/10 16:25	-92.48	47.87	2/26/10 19:15	-118.34	22.02
2/26/10 16:30	-93.09	47.26	2/26/10 19:20	-118.54	21.81
2/26/10 16:35	-93.40	46.96	2/26/10 19:25	-119.43	20.92

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/26/10 19:30	-119.43	20.92	2/26/10 22:20	-107.32	33.04
2/26/10 19:35	-119.15	21.20	2/26/10 22:25	-105.82	34.54
2/26/10 19:40	-120.04	20.32	2/26/10 22:30	-104.62	35.73
2/26/10 19:45	-121.03	19.32	2/26/10 22:35	-103.43	36.93
2/26/10 19:50	-121.03	19.32	2/26/10 22:40	-102.64	37.71
2/26/10 19:55	-120.83	19.53	2/26/10 22:45	-100.84	39.52
2/26/10 20:00	-121.03	19.32	2/26/10 22:50	-99.34	41.02
2/26/10 20:05	-122.33	18.03	2/26/10 22:55	-98.45	41.91
2/26/10 20:10	-121.82	18.54	2/26/10 23:00	-97.97	42.39
2/26/10 20:15	-121.54	18.82	2/26/10 23:05	-96.67	43.68
2/26/10 20:20	-121.92	18.44	2/26/10 23:10	-95.07	45.28
2/26/10 20:25	-121.13	19.22	2/26/10 23:15	-93.78	46.58
2/26/10 20:30	-122.43	17.93	2/26/10 23:20	-92.28	48.08
2/26/10 20:35	-122.02	18.33	2/26/10 23:25	-91.59	48.76
2/26/10 20:40	-122.02	18.33	2/26/10 23:30	-90.30	50.06
2/26/10 20:45	-121.44	18.92	2/26/10 23:35	-88.52	51.84
2/26/10 20:50	-121.13	19.22	2/26/10 23:40	-86.72	53.64
2/26/10 20:55	-121.44	18.92	2/26/10 23:45	-84.73	55.62
2/26/10 21:00	-120.52	19.83	2/26/10 23:50	-83.34	57.02
2/26/10 21:05	-120.35	20.01	2/26/10 23:55	-82.04	58.31
2/26/10 21:10	-119.74	20.62	2/27/10 0:00	-79.65	60.70
2/26/10 21:15	-119.74	20.62	2/27/10 0:05	-77.57	62.78
2/26/10 21:20	-119.25	21.10	2/27/10 0:10	-75.77	64.59
2/26/10 21:25	-118.06	22.30	2/27/10 0:15	-74.68	65.68
2/26/10 21:30	-117.25	23.11	2/27/10 0:20	-73.10	67.25
2/26/10 21:35	-116.76	23.59	2/27/10 0:25	-70.82	69.54
2/26/10 21:40	-116.26	24.10	2/27/10 0:30	-69.11	71.24
2/26/10 21:45	-115.06	25.29	2/27/10 0:35	-67.54	72.82
2/26/10 21:50	-113.87	26.49	2/27/10 0:40	-66.42	73.93
2/26/10 21:55	-112.98	27.38	2/27/10 0:45	-64.54	75.81
2/26/10 22:00	-112.09	28.27	2/27/10 0:50	-62.56	77.80
2/26/10 22:05	-109.70	30.65	2/27/10 0:55	-62.05	78.30
2/26/10 22:10	-109.70	30.65	2/27/10 1:00	-60.38	79.98
2/26/10 22:15	-108.51	31.85	2/27/10 1:05	-59.28	81.07

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 1:10	-58.67	81.68	2/27/10 4:00	-46.25	94.10
2/27/10 1:15	-57.38	82.98	2/27/10 4:05	-46.63	93.72
2/27/10 1:20	-56.79	83.56	2/27/10 4:10	-47.14	93.21
2/27/10 1:25	-55.60	84.75	2/27/10 4:15	-47.93	92.43
2/27/10 1:30	-54.69	85.67	2/27/10 4:20	-47.93	92.43
2/27/10 1:35	-54.99	85.36	2/27/10 4:25	-49.02	91.33
2/27/10 1:40	-54.10	86.25	2/27/10 4:30	-49.73	90.62
2/27/10 1:45	-53.42	86.94	2/27/10 4:35	-50.11	90.24
2/27/10 1:50	-52.91	87.45	2/27/10 4:40	-50.72	89.63
2/27/10 1:55	-52.50	87.85	2/27/10 4:45	-51.71	88.64
2/27/10 2:00	-52.50	87.85	2/27/10 4:50	-51.92	88.44
2/27/10 2:05	-51.71	88.64	2/27/10 4:55	-52.91	87.45
2/27/10 2:10	-51.21	89.15	2/27/10 5:00	-53.70	86.66
2/27/10 2:15	-50.72	89.63	2/27/10 5:05	-54.79	85.57
2/27/10 2:20	-50.42	89.94	2/27/10 5:10	-56.29	84.07
2/27/10 2:25	-50.01	90.34	2/27/10 5:15	-57.07	83.28
2/27/10 2:30	-49.33	91.03	2/27/10 5:20	-59.08	81.28
2/27/10 2:35	-48.23	92.12	2/27/10 5:25	-60.17	80.18
2/27/10 2:40	-47.83	92.53	2/27/10 5:30	-61.57	78.79
2/27/10 2:45	-47.24	93.11	2/27/10 5:35	-63.75	76.60
2/27/10 2:50	-46.63	93.72	2/27/10 5:40	-65.43	74.93
2/27/10 2:55	-45.54	94.81	2/27/10 5:45	-67.44	72.92
2/27/10 3:00	-45.16	95.19	2/27/10 5:50	-69.72	70.63
2/27/10 3:05	-44.65	95.70	2/27/10 5:55	-71.60	68.75
2/27/10 3:10	-45.06	95.30	2/27/10 6:00	-73.30	67.05
2/27/10 3:15	-44.15	96.21	2/27/10 6:05	-75.29	65.07
2/27/10 3:20	-44.25	96.11	2/27/10 6:10	-76.78	63.57
2/27/10 3:25	-44.15	96.21	2/27/10 6:15	-78.87	61.49
2/27/10 3:30	-44.25	96.11	2/27/10 6:20	-79.76	60.60
2/27/10 3:35	-44.04	96.31	2/27/10 6:25	-81.56	58.80
2/27/10 3:40	-44.15	96.21	2/27/10 6:30	-83.24	57.12
2/27/10 3:45	-44.45	95.91	2/27/10 6:35	-84.02	56.33
2/27/10 3:50	-44.55	95.80	2/27/10 6:40	-85.14	55.21
2/27/10 3:55	-45.34	95.02	2/27/10 6:45	-85.62	54.73

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 6:50	-86.72	53.64	2/27/10 9:35	-114.76	25.60
2/27/10 6:55	-87.33	53.03	2/27/10 9:40	-116.36	24.00
2/27/10 7:00	-88.90	51.46	2/27/10 9:45	-116.87	23.49
2/27/10 7:05	-89.20	51.15	2/27/10 9:50	-115.06	25.29
2/27/10 7:10	-90.20	50.16	2/27/10 9:55	-116.26	24.10
2/27/10 7:15	-91.49	48.86	2/27/10 10:00	-117.04	23.31
2/27/10 7:20	-92.68	47.67	2/27/10 10:05	-117.35	23.01
2/27/10 7:25	-93.09	47.26	2/27/10 10:10	-117.45	22.91
2/27/10 7:30	-95.28	45.08	2/27/10 10:15	-117.65	22.70
2/27/10 7:35	-96.27	44.09	2/27/10 10:20	-117.96	22.40
2/27/10 7:40	-96.88	43.48	2/27/10 10:25	-117.55	22.80
2/27/10 7:45	-97.97	42.39	2/27/10 10:30	-117.14	23.21
2/27/10 7:50	-99.34	41.02	2/27/10 10:35	-116.56	23.79
2/27/10 7:55	-101.24	39.11	2/27/10 10:40	-116.26	24.10
2/27/10 8:00	-101.93	38.43	2/27/10 10:45	-115.75	24.61
2/27/10 8:05	-103.43	36.93	2/27/10 10:50	-114.96	25.40
2/27/10 8:10	-104.72	35.63	2/27/10 10:55	-114.66	25.70
2/27/10 8:15	-106.32	34.03	2/27/10 11:00	-112.98	27.38
2/27/10 8:20	-107.90	32.46	2/27/10 11:05	-112.88	27.48
2/27/10 8:25	-108.41	31.95	2/27/10 11:10	-112.47	27.88
2/27/10 8:30	-108.89	31.47	2/27/10 11:15	-111.28	29.08
2/27/10 8:35	-110.39	29.97	2/27/10 11:20	-110.19	30.17
2/27/10 8:40	-110.59	29.76	2/27/10 11:25	-110.08	30.27
2/27/10 8:45	-111.89	28.47	2/27/10 11:30	-108.79	31.57
2/27/10 8:50	-112.47	27.88	2/27/10 11:35	-105.51	34.84
2/27/10 8:55	-111.89	28.47	2/27/10 11:40	-106.81	33.55
2/27/10 9:00	-113.56	26.79	2/27/10 11:45	-105.51	34.84
2/27/10 9:05	-112.67	27.68	2/27/10 11:50	-106.50	33.85
2/27/10 9:10	-114.55	25.80	2/27/10 11:55	-106.12	34.23
2/27/10 9:15	-113.87	26.49	2/27/10 12:00	-105.13	35.22
2/27/10 9:20	-113.36	27.00	2/27/10 12:05	-101.35	39.01
2/27/10 9:25	-113.67	26.69	2/27/10 12:10	-95.17	45.18
2/27/10 9:30	-115.16	25.19	2/27/10 12:15	-90.30	50.06

Table AII.47: (Continued) Rainbow Bay D-Dock Platform 1 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1440 on 5 January 2011 which corresponds to a similar tide at 1942 on 26 February 2010. An alternative groundwater-impacted layer of 140 cm requires addition of 100 cm to the groundwater-impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 12:20	-87.91	52.45	2/27/10 14:45	-80.85	59.51
2/27/10 12:25	-91.69	48.66	2/27/10 14:50	-72.90	67.46
2/27/10 12:30	-94.39	45.97	2/27/10 14:55	-76.17	64.18
2/27/10 12:35	-93.29	47.06	2/27/10 15:00	-80.75	59.61
2/27/10 12:40	-96.88	43.48	2/27/10 15:05	-80.06	60.29
2/27/10 12:45	-93.78	46.58	2/27/10 15:10	-85.04	55.32
2/27/10 12:50	-97.76	42.59	2/27/10 15:15	-76.78	63.57
2/27/10 12:55	-95.58	44.78	2/27/10 15:20	-80.26	60.09
2/27/10 13:00	-90.81	49.55	2/27/10 15:25	-83.34	57.02
2/27/10 13:05	-96.67	43.68	2/27/10 15:30	-86.51	53.84
2/27/10 13:10	-96.95	43.40	2/27/10 15:35	-83.85	56.51
2/27/10 13:15	-106.22	34.13	2/27/10 15:40	-78.16	62.20
2/27/10 13:20	-102.54	37.82	2/27/10 15:45	-76.17	64.18
2/27/10 13:25	-101.24	39.11	2/27/10 15:50	-77.77	62.58
2/27/10 13:30	-100.53	39.82	2/27/10 15:55	-83.24	57.12
2/27/10 13:35	-93.29	47.06	2/27/10 16:00	-76.28	64.08
2/27/10 13:40	-98.35	42.01	2/27/10 16:05	-76.68	63.67
2/27/10 13:45	-90.40	49.96	2/27/10 16:10	-78.26	62.10
2/27/10 13:50	-90.09	50.26	2/27/10 16:15	-77.77	62.58
2/27/10 13:55	-87.53	52.83	2/27/10 16:20	-81.25	59.10
2/27/10 14:00	-80.85	59.51	2/27/10 16:25	-80.06	60.29
2/27/10 14:05	-83.24	57.12	2/27/10 16:30	-75.87	64.49
2/27/10 14:10	-80.37	59.99	2/27/10 16:35	-76.58	63.77
2/27/10 14:15	-80.26	60.09	2/27/10 16:40	-72.01	68.35
2/27/10 14:20	-74.40	65.96	2/27/10 16:45	-76.48	63.88
2/27/10 14:25	-74.78	65.58	2/27/10 16:50	-79.86	60.50
2/27/10 14:30	-76.48	63.88	2/27/10 16:55	-79.96	60.40
2/27/10 14:35	-82.83	57.53	2/27/10 17:00	-80.47	59.89
2/27/10 14:40	-82.83	57.53			

Table AII.48: Rainbow Bay D-Dock Platform 2 time-series radon measurements.

RAD-7 #2356				Rainbow Bay D-Dock 2			eff=0.416 cpm/pCi/L				
Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
108	10	2	27	18	1	174	27.7	44.8	0.0	52.3	1.2
109	10	2	27	18	31	199	27.7	45.2	1.0	50.3	0.5
110	10	2	27	19	1	283	27.7	63.3	1.4	31.1	1.1
111	10	2	27	19	31	305	27.7	54.1	1.3	40.3	1.7
112	10	2	27	20	1	341	27.7	44.3	1.2	49.9	1.2
113	10	2	27	20	31	397	27.6	45.6	1.0	46.9	1.5
114	10	2	27	21	1	465	27.6	53.1	0.9	40.7	1.7
115	10	2	27	21	31	451	27.6	53.4	0.7	40.4	1.6
116	10	2	27	22	1	492	27.6	52.2	0.2	44.9	1.2
117	10	2	27	22	31	533	27.6	52.5	0.6	44.1	1.0
118	10	2	27	23	1	595	27.6	51.1	0.2	45.1	1.2
119	10	2	27	23	31	532	27.6	41.7	1.0	55.5	0.2
120	10	2	28	0	1	498	27.6	38.4	1.4	57.0	1.2
121	10	2	28	0	31	443	27.6	41.1	1.4	52.4	1.6
122	10	2	28	1	1	334	27.7	37.1	0.9	59.6	0.6
123	10	2	28	1	31	283	27.7	38.9	0.7	56.5	0.7
124	10	2	28	2	1	254	27.7	35.1	1.2	61.8	0.8
125	10	2	28	2	31	258	27.7	46.1	0.0	49.6	2.3
126	10	2	28	3	1	188	27.7	42.6	0.0	53.7	0.5
127	10	2	28	3	31	177	27.7	39.0	0.6	57.6	1.7
128	10	2	28	4	1	173	27.7	42.8	3.5	52.0	0.0
129	10	2	28	4	31	152	27.7	44.1	1.3	51.3	2.0
130	10	2	28	5	1	184	27.7	45.1	0.0	49.5	3.3
131	10	2	28	5	31	163	27.7	51.5	1.2	45.4	0.0
132	10	2	28	6	1	178	27.7	50.0	0.6	46.1	0.6
133	10	2	28	6	31	187	27.7	50.8	1.1	44.4	2.2
134	10	2	28	7	1	218	27.7	49.6	0.5	46.8	1.4
135	10	2	28	7	31	265	27.7	54.0	0.4	40.8	1.9
136	10	2	28	8	2	321	27.7	51.7	1.3	42.7	0.6
137	10	2	28	8	32	297	27.7	55.9	1.0	38.7	1.4
138	10	2	28	9	2	273	27.7	55.0	1.1	40.3	1.8
139	10	2	28	9	32	281	27.7	49.1	1.4	46.3	0.4
140	10	2	28	10	2	431	27.6	59.2	1.2	37.6	0.2
141	10	2	28	10	32	500	27.6	53.2	1.0	41.8	0.8
142	10	2	28	11	2	531	27.6	50.5	0.8	45.4	1.0
143	10	2	28	11	32	492	27.6	44.7	0.8	50.8	1.2
144	10	2	28	12	2	470	27.6	42.8	0.4	54.1	1.1

Table AII.48: (Continued) Rainbow Bay D-Dock Platform 2 time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
145	10	2	28	12	32	410	27.6	41.0	0.7	54.4	1.0
146	10	2	28	13	2	371	27.6	46.1	1.1	51.0	0.6
147	10	2	28	13	32	333	27.7	36.9	1.8	56.5	2.1
148	10	2	28	14	2	299	27.7	32.5	0.3	63.2	1.4
149	10	2	28	14	32	253	27.7	33.6	0.4	61.7	2.4
150	10	2	28	15	2	202	27.7	32.7	0.5	62.4	2.0
151	10	2	28	15	32	159	27.7	44.0	1.9	52.2	1.3
152	10	2	28	16	2	169	27.7	43.2	1.8	48.5	3.0
153	10	2	28	16	32	150	27.7	40.7	0.7	54.0	2.0
154	10	2	28	17	2	149	27.7	41.0	1.4	51.7	2.7
155	10	2	28	17	32	126	27.7	39.7	0.8	52.4	3.2
156	10	2	28	18	2	126	27.7	38.1	0.8	56.4	1.6
157	10	2	28	18	32	130	27.7	43.1	1.6	52.3	0.8
158	10	2	28	19	2	131	27.7	48.9	1.5	44.3	3.1
159	10	2	28	19	32	147	27.7	54.4	2.1	42.2	0.0
160	10	2	28	20	2	173	27.7	50.9	2.9	40.5	1.2
161	10	2	28	20	32	182	27.7	55.5	0.0	42.9	0.0
162	10	2	28	21	2	192	27.7	46.9	0.5	47.4	2.6
163	10	2	28	21	32	210	27.7	45.3	0.5	50.5	1.4
164	10	2	28	22	2	188	27.7	53.7	1.1	42.6	1.1
165	10	2	28	22	32	235	27.7	42.1	0.4	53.6	2.1
166	10	2	28	23	2	169	27.7	51.5	0.0	42.0	1.8
167	10	2	28	23	32	208	27.7	56.3	0.5	39.0	2.4
168	10	3	1	0	2	191	27.7	42.9	2.1	52.4	1.1
169	10	3	1	0	32	187	27.7	41.2	0.0	53.0	3.8
170	10	3	1	1	2	158	27.7	49.4	1.9	43.1	3.8
171	10	3	1	1	32	166	27.7	41.0	3.0	52.4	0.6
172	10	3	1	2	2	130	27.7	36.9	0.0	56.9	1.6
173	10	3	1	2	32	121	27.7	45.5	1.7	47.9	3.3
174	10	3	1	3	2	136	27.7	41.9	0.0	53.0	3.0
175	10	3	1	3	32	150	27.7	40.0	2.7	51.3	3.3
176	10	3	1	4	2	138	27.7	50.0	0.7	41.3	1.5
177	10	3	1	4	32	136	27.7	43.4	1.5	50.7	0.7
178	10	3	1	5	2	139	27.7	43.9	2.2	51.1	2.2
179	10	3	1	5	32	123	27.7	52.0	1.6	39.0	4.1
180	10	3	1	6	2	127	27.7	44.1	0.8	48.8	2.4
181	10	3	1	6	32	131	27.7	39.7	2.3	52.7	1.5

Table AII.48: (Continued) Rainbow Bay D-Dock Platform 2 time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
182	10	3	1	7	2	134	27.7	53.0	0.8	42.5	0.8
183	10	3	1	7	32	114	27.7	46.5	3.5	43.0	3.5
184	10	3	1	8	2	153	27.7	47.7	1.3	45.8	2.0
185	10	3	1	8	32	153	27.7	46.4	1.3	46.4	2.0
186	10	3	1	9	2	173	27.7	47.4	0.6	45.7	2.3
187	10	3	1	9	32	163	27.7	41.7	1.9	49.7	1.2
188	10	3	1	10	2	134	27.7	41.8	3.0	50.0	1.5
189	10	3	1	10	32	119	27.7	34.5	0.0	58.8	3.4
190	10	3	1	11	2	122	27.7	41.0	3.3	50.0	2.5
191	10	3	1	11	32	105	27.7	41.0	2.9	51.4	3.8
192	10	3	1	12	2	85	27.7	38.8	2.4	51.8	3.5
193	10	3	1	12	32	94	27.7	39.4	4.3	48.9	5.3
194	10	3	1	13	2	69	27.7	44.9	2.9	44.9	1.5
195	10	3	1	13	32	95	27.7	41.1	2.1	46.3	2.1
196	10	3	1	14	2	75	27.7	36.0	2.7	61.3	0.0
197	10	3	1	14	32	75	27.7	40.0	0.0	50.7	2.7
198	10	3	1	15	2	74	27.7	33.8	2.7	58.1	2.7
199	10	3	1	15	32	58	27.7	41.4	3.5	50.0	3.5
200	10	3	1	16	2	62	27.7	40.3	3.2	53.2	1.6
201	10	3	1	16	32	70	27.7	28.6	1.4	64.3	2.9
202	10	3	1	17	2	76	27.7	40.8	0.0	50.0	5.3
203	10	3	1	17	32	69	27.7	33.3	2.9	53.6	1.5
204	10	3	1	18	2	60	27.7	38.3	1.7	51.7	6.7
205	10	3	1	18	32	63	27.7	44.5	1.6	46.0	0.0
206	10	3	1	19	2	79	27.7	39.3	3.8	49.4	2.5
207	10	3	1	19	32	82	27.7	56.1	1.2	36.6	2.5
208	10	3	1	20	2	97	27.7	55.7	2.1	36.1	1.0
209	10	3	1	20	32	101	27.7	34.7	3.0	55.5	0.0
210	10	3	1	21	2	117	27.7	50.4	2.6	41.9	1.7
211	10	3	1	21	32	116	27.7	42.3	0.0	51.7	0.0
212	10	3	1	22	2	104	27.7	48.1	1.9	42.3	1.9
213	10	3	1	22	32	108	27.7	46.3	0.9	50.0	0.9
214	10	3	1	23	2	90	27.7	45.6	1.1	46.7	2.2
215	10	3	1	23	33	119	27.7	40.3	0.9	52.1	2.5
216	10	3	2	0	3	101	27.7	40.6	2.0	50.5	1.0
217	10	3	2	0	33	96	27.7	37.5	3.1	52.1	2.1
218	10	3	2	1	3	99	27.7	38.4	7.1	42.4	7.1

Table AII.48: (Continued) Rainbow Bay D-Dock Platform 2 time-series radon measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
219	10	3	2	1	33	87	27.7	50.6	2.3	40.2	2.3
220	10	3	2	2	3	92	27.7	37.0	2.2	52.2	3.3
221	10	3	2	2	33	88	27.7	38.6	2.3	52.3	1.1
222	10	3	2	3	3	86	27.7	31.4	3.5	59.3	1.2
223	10	3	2	3	33	91	27.7	39.6	4.4	50.6	2.2
224	10	3	2	4	3	88	27.7	44.3	1.1	46.6	3.4
225	10	3	2	4	33	78	27.7	38.5	3.9	51.3	2.6
226	10	3	2	5	3	67	27.7	38.8	3.0	49.3	3.0
227	10	3	2	5	33	68	27.7	36.8	0.0	58.8	3.0
228	10	3	2	6	3	58	27.7	50.0	0.0	43.1	1.7
229	10	3	2	6	33	74	27.7	47.3	1.4	39.2	6.8
230	10	3	2	7	3	67	27.7	41.8	1.5	53.7	0.0
231	10	3	2	7	33	83	27.7	44.6	1.2	44.6	4.8
232	10	3	2	8	3	56	27.7	39.3	5.4	44.7	5.4
233	10	3	2	8	33	76	27.7	40.8	1.3	54.0	1.3
234	10	3	2	9	3	65	27.7	36.9	4.6	50.8	6.2
235	10	3	2	9	33	71	27.7	42.3	0.0	52.1	4.2
236	10	3	2	10	3	51	27.7	37.3	0.0	49.0	7.9
237	10	3	2	10	33	54	27.7	38.9	0.0	59.3	0.0
238	10	3	2	10	35	1	1.9	100.0	0.0	0.0	0.0

Table AII.49: Rainbow Bay D-Dock Platform 2 time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
108	2218	8	29.2	6	1	6.9	80	133	246.795	63.386
109	2218	9	28.6	6	1	6.9	80	133	288.722	67.621
110	2218	9	27.4	5	1	6.9	80	133	571.543	92.819
111	2218	8	26.1	5	1	6.9	80	133	520.168	89.410
112	2218	8	25.2	5	1	6.9	80	133	478.426	85.855
113	2201	9	24.6	5	1	6.9	80	133	572.059	93.616
114	2218	9	24.0	5	1	6.9	80	133	780.957	108.057
115	2218	8	23.7	5	1	6.9	80	133	761.674	106.830
116	2201	9	23.4	5	1	6.9	80	133	817.047	109.970
117	2201	9	23.1	5	1	6.9	80	133	891.032	114.469
118	2218	9	23.1	5	1	6.9	80	133	968.233	119.156
119	2218	8	23.1	5	1	6.9	80	133	710.895	102.505

Table AII.49: (Continued) Rainbow Bay D-Dock Platform 2 time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
120	2218	8	23.1	5	1	7.0	80	133	604.743	95.810
121	2218	8	22.8	5	1	7.0	80	133	575.273	93.853
122	2218	8	22.5	5	1	7.0	80	133	394.943	78.220
123	2218	8	22.8	5	1	6.9	80	133	349.990	74.384
124	2218	9	22.8	5	1	7.0	80	133	282.561	67.345
125	2218	9	22.8	5	1	6.9	80	133	372.466	77.062
126	2218	8	22.8	5	1	7.0	80	133	256.642	64.160
127	2218	9	22.5	5	1	7.0	80	133	214.937	60.479
128	2218	8	22.5	5	1	6.9	80	133	237.393	61.981
129	2218	9	22.5	5	1	6.9	80	133	211.729	59.712
130	2201	9	22.2	5	1	6.9	80	133	256.642	65.569
131	2218	9	22.2	5	1	7.0	80	133	269.474	65.569
132	2218	8	21.9	5	1	6.9	80	133	285.514	67.284
133	2218	8	21.9	5	1	6.9	80	133	298.346	69.607
134	2218	8	21.6	5	1	7.0	80	133	343.568	73.775
135	2218	9	21.3	5	1	7.0	80	133	452.739	83.751
136	2218	8	21.6	5	1	7.0	80	133	529.801	89.658
137	2218	8	21.6	5	1	6.9	80	133	526.590	89.658
138	2218	9	21.9	5	1	6.9	80	133	475.215	85.595
139	2218	9	22.5	5	1	7.0	80	133	439.895	82.134
140	2218	8	23.4	5	1	6.9	80	133	819.523	109.270
141	2218	8	23.7	5	1	7.0	80	133	849.214	111.753
142	2218	8	24.6	5	1	6.9	80	133	855.648	112.146
143	2218	8	25.2	5	1	6.9	80	133	698.028	102.505
144	2218	9	26.4	5	1	7.0	80	133	639.549	98.007
145	2201	9	27.4	5	1	7.0	80	133	533.493	90.234
146	2218	9	27.4	5	1	6.9	80	133	546.348	90.725
147	2218	8	27.1	5	1	6.9	80	133	382.099	78.507
148	2218	8	26.4	5	1	6.9	80	133	305.037	70.318
149	2218	9	26.1	5	1	6.9	80	133	263.295	66.321
150	2218	8	26.8	5	1	6.9	80	133	205.313	59.324
151	2201	9	27.4	5	1	6.9	80	133	221.353	60.479
152	2218	8	28.0	5	1	6.9	80	133	227.769	61.981
153	2218	8	28.0	5	1	6.9	80	133	192.481	57.342
154	2218	8	28.0	5	1	6.9	80	133	189.273	57.342
155	2218	8	27.1	5	1	6.9	80	133	153.985	52.683

Table AII.49: (Continued) Rainbow Bay D-Dock Platform 2 time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
156	2218	9	26.1	5	1	6.9	80	133	150.777	51.328
157	2218	8	25.2	5	1	6.9	80	133	179.649	54.856
158	2218	9	23.7	5	1	6.9	80	133	198.897	58.540
159	2218	9	22.5	5	1	6.9	80	133	256.642	64.160
160	2218	8	21.9	5	1	6.9	80	133	279.098	66.945
161	2218	9	21.3	5	1	7.0	80	133	324.010	71.215
162	2218	9	21.0	5	1	7.0	80	133	282.306	67.957
163	2218	8	21.0	5	1	7.0	80	133	301.554	69.607
164	2218	8	21.0	5	1	7.0	80	133	320.802	71.215
165	2218	9	21.0	4	1	7.0	80	133	311.459	70.960
166	2201	9	21.0	5	1	6.9	80	133	275.890	66.945
167	2218	9	21.0	5	1	6.9	80	133	368.922	76.407
168	2218	9	21.0	5	1	7.0	80	133	259.850	64.869
169	2218	8	21.0	5	1	6.9	80	133	234.185	63.803
170	2218	9	21.0	5	1	7.0	80	133	240.601	64.160
171	2218	8	21.0	5	1	6.9	80	133	218.145	59.712
172	2218	8	21.0	5	1	6.9	80	133	150.777	51.328
173	2218	8	21.0	5	1	7.0	80	133	169.872	54.807
174	2218	8	20.7	5	1	6.9	80	133	176.441	55.699
175	2218	9	20.4	5	1	6.9	80	133	186.065	56.936
176	2218	9	20.4	5	1	7.0	80	133	218.145	60.096
177	2218	9	20.4	6	1	7.0	80	133	189.273	56.114
178	2218	8	20.4	6	1	6.9	80	133	189.273	57.342
179	2218	9	20.7	6	1	7.0	80	133	198.897	58.540
180	2218	8	20.7	6	1	7.0	80	133	176.441	55.279
181	2218	9	20.7	6	1	6.9	80	133	163.609	53.125
182	2218	8	20.7	7	1	6.9	80	133	224.561	60.858
183	2218	9	20.7	7	1	7.0	80	133	163.462	53.950
184	2218	8	21.3	7	1	6.9	80	133	227.769	61.981
185	2218	8	22.8	8	1	7.0	80	133	224.561	61.235
186	2218	9	24.6	9	1	7.1	0	133	256.642	65.220
187	2218	8	24.3	9	1	6.9	80	133	214.937	60.096
188	2218	9	28.3	16	1	6.9	80	133	176.441	55.279
189	2201	9	30.1	20	1	6.9	80	133	125.113	48.489
190	2218	8	29.8	24	1	6.9	80	133	153.985	52.683
191	2218	8	30.1	27	1	6.9	80	133	131.410	49.412

Table AII.49: (Continued) Rainbow Bay D-Dock Platform 2 time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
192	2218	8	30.4	30	2	6.9	80	133	102.564	44.334
193	2218	9	31.3	32	2	6.9	80	133	108.974	46.442
194	2218	9	32.5	34	2	6.9	80	133	96.154	42.672
195	2218	9	32.5	35	2	6.9	80	133	121.795	46.952
196	2218	8	31.6	37	2	6.9	80	133	86.538	40.330
197	2218	9	30.7	40	2	6.9	80	133	92.949	42.101
198	2201	9	31.0	42	2	6.9	80	133	76.923	39.096
199	2218	9	31.3	44	2	6.9	80	133	73.718	38.462
200	2218	9	31.3	46	2	6.9	80	133	80.128	39.096
201	2218	9	30.1	48	2	6.9	80	133	60.897	35.786
202	2218	8	29.5	48	1	6.9	80	133	92.949	43.234
203	2218	9	28.3	48	1	6.9	80	133	70.513	37.814
204	2201	9	27.4	49	1	6.9	80	133	67.308	38.462
205	2218	8	26.1	48	1	6.9	80	133	89.744	40.931
206	2218	8	24.9	49	1	6.9	80	133	96.154	43.234
207	2218	9	24.3	49	1	6.9	80	133	144.231	50.357
208	2218	9	24.0	49	1	7.0	80	133	173.077	53.950
209	2218	8	23.7	50	1	6.9	80	133	112.180	44.872
210	2218	9	23.4	51	1	6.9	80	133	186.065	56.114
211	2218	8	23.1	52	1	7.0	80	133	157.193	51.784
212	2218	9	23.1	53	1	7.0	80	133	157.051	52.189
213	2218	9	23.1	53	1	6.9	80	133	160.401	52.236
214	2218	8	22.8	55	1	6.9	80	133	128.205	47.953
215	2218	8	22.5	56	1	6.9	80	133	147.569	51.784
216	2218	8	22.5	56	1	6.9	80	133	131.410	47.953
217	2218	8	22.5	57	1	6.9	80	133	112.180	45.402
218	2218	8	22.2	58	1	7.0	80	133	112.180	47.456
219	2218	9	21.9	58	1	6.9	80	133	137.821	49.887
220	2218	8	21.9	59	1	6.9	80	133	102.564	44.872
221	2218	9	21.6	60	1	7.0	80	133	108.974	44.334
222	2218	8	21.6	60	1	6.9	80	133	86.538	40.330
223	2218	8	21.6	61	1	6.9	80	133	112.180	45.402
224	2218	9	21.6	61	1	7.0	80	133	121.795	47.456
225	2218	8	21.9	61	1	6.9	80	133	92.949	42.101
226	2218	8	21.6	62	1	7.0	80	133	80.128	39.719
227	2218	8	21.6	63	1	7.0	80	133	76.923	39.719

Table AII.49: (Continued) Rainbow Bay D-Dock Platform 2 time-series radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
228	2218	8	21.6	63	1	6.9	80	133	92.949	41.521
229	2218	9	21.6	64	1	7.0	80	133	105.769	45.402
230	2218	8	21.6	64	1	7.0	80	133	89.744	40.931
231	2218	8	21.9	64	1	7.0	80	133	112.180	46.442
232	2218	9	22.8	64	1	7.0	80	133	64.103	37.814
233	2218	8	26.8	59	1	6.9	80	133	99.359	42.672
234	2218	8	26.4	62	1	6.9	80	133	70.513	39.096
235	2218	9	27.1	63	1	6.9	80	133	92.949	42.672
236	2218	8	27.7	63	1	6.9	80	133	54.487	35.786
237	2218	8	29.8	62	1	6.9	80	133	67.308	36.477
238	2201	9	29.8	62	1	6.9	80	133	45.034	217.444

Table AII.50: Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	18:00:40	25.46	51.11	33.54	46.6	3.16	0.208	8.20	N/A	N/A
2/27/2010	18:05:40	25.42	51.25	33.64	47.9	3.24	0.206	8.21	N/A	N/A
2/27/2010	18:10:40	25.33	51.30	33.68	46.9	3.19	0.207	8.21	N/A	N/A
2/27/2010	18:15:40	25.17	51.60	33.91	46.7	3.17	0.206	8.21	N/A	N/A
2/27/2010	18:20:40	25.15	51.67	33.97	46.6	3.16	0.207	8.21	N/A	N/A
2/27/2010	18:25:40	25.35	51.24	33.64	46.5	3.16	0.207	8.22	N/A	N/A
2/27/2010	18:30:40	25.27	51.31	33.69	45.7	3.11	0.208	8.22	N/A	N/A
2/27/2010	18:35:40	25.27	51.30	33.69	45.2	3.07	0.209	8.22	N/A	N/A
2/27/2010	18:40:40	25.22	51.36	33.73	44.7	3.04	0.210	8.22	N/A	N/A
2/27/2010	18:45:40	25.24	51.48	33.82	45.6	3.10	0.210	8.23	N/A	N/A
2/27/2010	18:50:40	25.18	51.46	33.81	45.8	3.11	0.211	8.23	N/A	N/A
2/27/2010	18:55:40	25.11	51.20	33.62	45.6	3.11	0.212	8.23	N/A	N/A
2/27/2010	19:00:40	25.13	51.17	33.60	46.1	3.14	0.213	8.24	N/A	N/A
2/27/2010	19:05:40	25.24	51.38	33.74	45.5	3.09	0.214	8.24	N/A	N/A
2/27/2010	19:10:40	25.19	51.35	33.73	45.6	3.10	0.215	8.24	N/A	N/A
2/27/2010	19:15:40	25.13	51.52	33.86	44.3	3.01	0.215	8.23	N/A	N/A
2/27/2010	19:20:40	25.10	51.63	33.94	45.2	3.08	0.218	8.24	N/A	N/A
2/27/2010	19:25:40	25.13	51.51	33.85	44.5	3.03	0.214	8.24	N/A	N/A
2/27/2010	19:30:40	25.21	51.50	33.84	45.2	3.07	0.219	8.24	N/A	N/A
2/27/2010	19:35:40	25.17	51.40	33.77	45.7	3.11	0.215	8.25	N/A	N/A
2/27/2010	19:40:40	25.16	51.43	33.79	45.4	3.09	0.224	8.24	N/A	N/A
2/27/2010	19:45:40	25.02	51.38	33.75	44.9	3.06	0.222	8.24	N/A	N/A
2/27/2010	19:50:40	25.12	51.38	33.75	45.3	3.08	0.218	8.24	N/A	N/A
2/27/2010	19:55:40	25.05	51.31	33.70	44.9	3.06	0.224	8.25	N/A	N/A
2/27/2010	20:00:40	24.93	51.31	33.71	44.4	3.03	0.220	8.24	N/A	N/A
2/27/2010	20:05:40	25.16	51.55	33.87	44.5	3.03	0.231	8.24	N/A	N/A
2/27/2010	20:10:40	25.16	51.52	33.85	44.5	3.02	0.230	8.25	N/A	N/A
2/27/2010	20:15:40	24.73	51.23	33.65	44.3	3.03	0.228	8.24	N/A	N/A
2/27/2010	20:20:40	24.82	51.19	33.62	43.8	3.00	0.233	8.24	N/A	N/A
2/27/2010	20:25:40	24.96	51.22	33.64	44.5	3.04	0.233	8.24	N/A	N/A
2/27/2010	20:30:40	25.13	51.60	33.92	44.7	3.04	0.240	8.25	N/A	N/A
2/27/2010	20:35:40	24.83	51.28	33.68	43.7	2.99	0.241	8.24	N/A	N/A
2/27/2010	20:40:40	24.80	51.22	33.64	43.5	2.98	0.236	8.24	N/A	N/A
2/27/2010	20:45:40	24.83	51.15	33.59	43.0	2.94	0.240	8.24	N/A	N/A
2/27/2010	20:50:40	24.86	51.34	33.73	44.0	3.01	0.234	8.25	N/A	N/A
2/27/2010	20:55:40	24.93	51.36	33.74	43.9	3.00	0.240	8.25	N/A	N/A
2/27/2010	21:00:40	25.01	51.38	33.75	43.5	2.97	0.240	8.25	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	21:05:40	25.05	51.48	33.82	43.6	2.97	0.235	8.25	N/A	N/A
2/27/2010	21:10:40	25.03	51.48	33.82	43.9	2.99	0.235	8.25	N/A	N/A
2/27/2010	21:15:40	25.09	51.61	33.92	44.6	3.03	0.233	8.25	N/A	N/A
2/27/2010	21:20:40	25.05	51.54	33.87	43.4	2.96	0.244	8.25	N/A	N/A
2/27/2010	21:25:40	24.94	51.29	33.68	43.3	2.96	0.240	8.24	N/A	N/A
2/27/2010	21:30:40	25.02	51.54	33.87	43.7	2.98	0.250	8.25	N/A	N/A
2/27/2010	21:35:40	24.71	51.18	33.61	44.1	3.02	0.241	8.25	N/A	N/A
2/27/2010	21:40:40	24.83	51.31	33.70	43.2	2.95	0.246	8.25	N/A	N/A
2/27/2010	21:45:40	24.91	51.42	33.79	42.9	2.93	0.247	8.24	N/A	N/A
2/27/2010	21:50:40	24.86	51.44	33.80	43.1	2.94	0.241	8.25	N/A	N/A
2/27/2010	21:55:40	24.94	51.46	33.81	41.8	2.85	0.247	8.24	N/A	N/A
2/27/2010	22:00:40	24.98	51.53	33.86	41.5	2.83	0.240	8.24	N/A	N/A
2/27/2010	22:05:40	24.98	51.58	33.90	41.9	2.86	0.247	8.24	N/A	N/A
2/27/2010	22:10:40	25.00	51.62	33.93	42.3	2.88	0.242	8.25	N/A	N/A
2/27/2010	22:15:40	25.01	51.62	33.93	42.2	2.88	0.237	8.25	N/A	N/A
2/27/2010	22:20:40	25.01	51.47	33.82	41.8	2.85	0.235	8.24	N/A	N/A
2/27/2010	22:25:40	24.99	51.52	33.86	42.0	2.86	0.234	8.25	N/A	N/A
2/27/2010	22:30:40	24.97	51.54	33.87	42.0	2.87	0.231	8.25	N/A	N/A
2/27/2010	22:35:40	25.00	51.62	33.93	42.0	2.87	0.231	8.25	N/A	N/A
2/27/2010	22:40:40	24.90	51.46	33.81	40.9	2.79	0.230	8.24	N/A	N/A
2/27/2010	22:45:40	24.82	51.46	33.81	42.0	2.87	0.230	8.24	N/A	N/A
2/27/2010	22:50:40	24.82	51.36	33.74	42.8	2.93	0.232	8.24	N/A	N/A
2/27/2010	22:55:40	24.96	51.52	33.86	41.8	2.85	0.229	8.25	N/A	N/A
2/27/2010	23:00:40	24.99	51.67	33.97	42.8	2.91	0.229	8.25	N/A	N/A
2/27/2010	23:05:40	24.97	51.69	33.99	45.2	3.08	0.229	8.26	N/A	N/A
2/27/2010	23:10:40	24.97	51.75	34.02	46.4	3.16	0.228	8.27	N/A	N/A
2/27/2010	23:15:40	24.96	51.67	33.97	44.1	3.01	0.226	8.26	N/A	N/A
2/27/2010	23:20:40	24.98	51.70	33.99	44.7	3.04	0.226	8.26	N/A	N/A
2/27/2010	23:25:40	24.98	51.69	33.98	44.3	3.02	0.225	8.26	N/A	N/A
2/27/2010	23:30:40	24.92	51.64	33.94	43.6	2.97	0.226	8.25	N/A	N/A
2/27/2010	23:35:40	24.73	51.49	33.84	42.2	2.89	0.226	8.24	N/A	N/A
2/27/2010	23:40:40	24.75	51.51	33.86	41.7	2.86	0.225	8.24	N/A	N/A
2/27/2010	23:45:40	24.80	51.54	33.87	42.7	2.92	0.223	8.25	N/A	N/A
2/27/2010	23:50:40	24.77	51.54	33.88	42.1	2.88	0.224	8.25	N/A	N/A
2/27/2010	23:55:40	24.57	51.49	33.84	42.8	2.94	0.223	8.25	N/A	N/A
2/28/2010	0:00:40	24.67	51.34	33.73	43.9	3.01	0.225	8.25	N/A	N/A
2/28/2010	0:05:40	24.75	51.22	33.64	44.0	3.02	0.225	8.25	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	0:10:40	24.97	51.68	33.97	46.1	3.14	0.223	8.27	N/A	N/A
2/28/2010	0:15:40	24.91	51.65	33.96	45.4	3.10	0.224	8.27	N/A	N/A
2/28/2010	0:20:40	24.96	51.71	34.00	45.8	3.12	0.224	8.27	N/A	N/A
2/28/2010	0:25:40	24.93	51.73	34.01	46.5	3.17	0.223	8.27	N/A	N/A
2/28/2010	0:30:40	24.95	51.68	33.98	45.7	3.12	0.225	8.27	N/A	N/A
2/28/2010	0:35:40	24.80	51.69	33.98	45.8	3.13	0.223	8.27	N/A	N/A
2/28/2010	0:40:40	24.74	51.61	33.93	45.5	3.11	0.223	8.26	N/A	N/A
2/28/2010	0:45:40	24.80	51.64	33.95	45.7	3.13	0.223	8.27	N/A	N/A
2/28/2010	0:50:40	24.74	51.65	33.96	45.4	3.11	0.226	8.27	N/A	N/A
2/28/2010	0:55:40	24.73	51.61	33.93	45.3	3.10	0.222	8.26	N/A	N/A
2/28/2010	1:00:40	24.78	51.60	33.92	45.0	3.07	0.222	8.26	N/A	N/A
2/28/2010	1:05:40	24.78	51.65	33.96	45.0	3.08	0.220	8.27	N/A	N/A
2/28/2010	1:10:40	24.79	51.65	33.96	45.4	3.10	0.221	8.27	N/A	N/A
2/28/2010	1:15:40	24.78	51.66	33.96	45.4	3.11	0.223	8.27	N/A	N/A
2/28/2010	1:20:40	24.78	51.67	33.97	45.0	3.08	0.223	8.26	N/A	N/A
2/28/2010	1:25:40	24.78	51.69	33.98	44.1	3.02	0.217	8.26	N/A	N/A
2/28/2010	1:30:40	24.77	51.67	33.97	44.6	3.05	0.223	8.26	N/A	N/A
2/28/2010	1:35:40	24.76	51.67	33.97	45.1	3.08	0.215	8.27	N/A	N/A
2/28/2010	1:40:40	24.77	51.68	33.98	45.3	3.10	0.216	8.27	N/A	N/A
2/28/2010	1:45:40	24.77	51.68	33.98	45.4	3.11	0.216	8.27	N/A	N/A
2/28/2010	1:50:40	24.77	51.69	33.99	45.3	3.10	0.216	8.27	N/A	N/A
2/28/2010	1:55:40	24.77	51.70	33.99	44.6	3.05	0.215	8.26	N/A	N/A
2/28/2010	2:00:40	24.79	51.72	34.01	44.0	3.01	0.215	8.26	N/A	N/A
2/28/2010	2:05:40	24.78	51.71	34.00	44.4	3.03	0.213	8.26	N/A	N/A
2/28/2010	2:10:40	24.76	51.71	34.00	44.4	3.03	0.218	8.26	N/A	N/A
2/28/2010	2:15:40	24.75	51.72	34.01	44.4	3.04	0.222	8.26	N/A	N/A
2/28/2010	2:20:40	24.76	51.73	34.02	44.1	3.02	0.211	8.26	N/A	N/A
2/28/2010	2:25:40	24.76	51.73	34.02	44.5	3.04	0.214	8.26	N/A	N/A
2/28/2010	2:30:40	24.77	51.74	34.02	43.9	3.00	0.213	8.26	N/A	N/A
2/28/2010	2:35:40	24.74	51.74	34.03	44.6	3.05	0.213	8.26	N/A	N/A
2/28/2010	2:40:40	24.72	51.72	34.01	44.6	3.05	0.212	8.26	N/A	N/A
2/28/2010	2:45:40	24.74	51.72	34.01	44.5	3.05	0.211	8.26	N/A	N/A
2/28/2010	2:50:40	24.73	51.73	34.02	44.2	3.02	0.211	8.26	N/A	N/A
2/28/2010	2:55:40	24.73	51.74	34.03	44.8	3.06	0.211	8.27	N/A	N/A
2/28/2010	3:00:40	24.71	51.73	34.02	44.6	3.05	0.210	8.27	N/A	N/A
2/28/2010	3:05:40	24.70	51.72	34.01	44.9	3.08	0.209	8.27	N/A	N/A
2/28/2010	3:10:40	24.68	51.70	34.00	45.8	3.14	0.208	8.27	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	3:15:40	24.69	51.72	34.01	44.9	3.07	0.209	8.27	N/A	N/A
2/28/2010	3:20:40	24.68	51.73	34.02	44.8	3.07	0.208	8.26	N/A	N/A
2/28/2010	3:25:40	24.66	51.71	34.01	45.1	3.09	0.208	8.26	N/A	N/A
2/28/2010	3:30:40	24.63	51.70	34.00	45.4	3.11	0.209	8.26	N/A	N/A
2/28/2010	3:35:40	24.63	51.70	34.00	45.3	3.10	0.209	8.26	N/A	N/A
2/28/2010	3:40:40	24.64	51.71	34.01	44.8	3.07	0.208	8.26	N/A	N/A
2/28/2010	3:45:40	24.61	51.71	34.00	44.6	3.06	0.208	8.26	N/A	N/A
2/28/2010	3:50:40	24.61	51.70	34.00	44.7	3.07	0.208	8.26	N/A	N/A
2/28/2010	3:55:40	24.63	51.71	34.00	44.9	3.08	0.209	8.26	N/A	N/A
2/28/2010	4:00:40	24.64	51.71	34.00	44.8	3.07	0.209	8.26	N/A	N/A
2/28/2010	4:05:40	24.63	51.71	34.00	45.4	3.11	0.209	8.27	N/A	N/A
2/28/2010	4:10:40	24.63	51.71	34.00	45.0	3.08	0.210	8.27	N/A	N/A
2/28/2010	4:15:40	24.61	51.70	34.00	44.9	3.08	0.209	8.26	N/A	N/A
2/28/2010	4:20:40	24.59	51.69	33.99	45.0	3.09	0.210	8.26	N/A	N/A
2/28/2010	4:25:40	24.57	51.70	34.00	44.6	3.06	0.209	8.26	N/A	N/A
2/28/2010	4:30:40	24.59	51.69	33.99	43.9	3.01	0.209	8.26	N/A	N/A
2/28/2010	4:35:40	24.58	51.69	33.99	44.5	3.05	0.211	8.26	N/A	N/A
2/28/2010	4:40:40	24.57	51.69	33.99	44.5	3.06	0.210	8.26	N/A	N/A
2/28/2010	4:45:40	24.57	51.69	33.99	43.6	2.99	0.210	8.26	N/A	N/A
2/28/2010	4:50:40	24.57	51.70	34.00	43.6	2.99	0.209	8.26	N/A	N/A
2/28/2010	4:55:40	24.58	51.70	34.00	43.5	2.99	0.211	8.26	N/A	N/A
2/28/2010	5:00:40	24.59	51.72	34.01	43.7	3.00	0.210	8.26	N/A	N/A
2/28/2010	5:05:40	24.59	51.71	34.01	43.7	3.00	0.210	8.26	N/A	N/A
2/28/2010	5:10:40	24.59	51.72	34.02	44.6	3.06	0.210	8.26	N/A	N/A
2/28/2010	5:15:40	24.57	51.71	34.01	44.8	3.07	0.212	8.26	N/A	N/A
2/28/2010	5:20:40	24.57	51.72	34.01	44.6	3.06	0.213	8.27	N/A	N/A
2/28/2010	5:25:40	24.55	51.72	34.01	45.0	3.09	0.213	8.27	N/A	N/A
2/28/2010	5:30:40	24.57	51.71	34.01	43.3	2.97	0.214	8.26	N/A	N/A
2/28/2010	5:35:40	24.56	51.71	34.01	44.0	3.02	0.215	8.26	N/A	N/A
2/28/2010	5:40:40	24.54	51.71	34.01	43.2	2.97	0.215	8.25	N/A	N/A
2/28/2010	5:45:40	24.55	51.71	34.01	43.0	2.95	0.215	8.25	N/A	N/A
2/28/2010	5:50:40	24.54	51.71	34.01	42.5	2.92	0.216	8.25	N/A	N/A
2/28/2010	5:55:40	24.53	51.71	34.01	43.1	2.96	0.216	8.25	N/A	N/A
2/28/2010	6:00:40	24.51	51.71	34.01	43.0	2.95	0.217	8.25	N/A	N/A
2/28/2010	6:05:40	24.48	51.68	33.98	42.9	2.95	0.219	8.25	N/A	N/A
2/28/2010	6:10:40	24.48	51.67	33.98	42.6	2.93	0.219	8.25	N/A	N/A
2/28/2010	6:15:40	24.51	51.70	34.00	43.3	2.97	0.222	8.25	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	6:20:40	24.51	51.69	33.99	43.7	3.00	0.223	8.26	N/A	N/A
2/28/2010	6:25:40	24.50	51.67	33.97	43.1	2.96	0.224	8.25	N/A	N/A
2/28/2010	6:30:40	24.50	51.68	33.98	42.9	2.95	0.226	8.25	N/A	N/A
2/28/2010	6:35:40	24.50	51.69	33.99	43.2	2.97	0.227	8.25	N/A	N/A
2/28/2010	6:40:40	24.49	51.68	33.98	43.1	2.96	0.228	8.25	N/A	N/A
2/28/2010	6:45:40	24.50	51.67	33.98	43.0	2.96	0.229	8.25	N/A	N/A
2/28/2010	6:50:40	24.50	51.68	33.99	43.0	2.95	0.230	8.26	N/A	N/A
2/28/2010	6:55:40	24.50	51.68	33.99	42.2	2.90	0.230	8.25	N/A	N/A
2/28/2010	7:00:40	24.51	51.68	33.98	42.0	2.88	0.232	8.26	N/A	N/A
2/28/2010	7:05:40	24.50	51.69	33.99	43.1	2.96	0.233	8.26	N/A	N/A
2/28/2010	7:10:40	24.51	51.69	33.99	42.9	2.95	0.232	8.26	N/A	N/A
2/28/2010	7:15:40	24.48	51.68	33.99	44.1	3.03	0.233	8.26	N/A	N/A
2/28/2010	7:20:40	24.46	51.67	33.98	44.0	3.03	0.234	8.26	N/A	N/A
2/28/2010	7:25:40	24.47	51.68	33.99	43.3	2.98	0.236	8.26	N/A	N/A
2/28/2010	7:30:40	24.50	51.66	33.97	42.0	2.89	0.237	8.26	N/A	N/A
2/28/2010	7:35:40	24.48	51.68	33.98	42.9	2.95	0.238	8.26	N/A	N/A
2/28/2010	7:40:40	24.47	51.70	34.00	42.9	2.95	0.239	8.26	N/A	N/A
2/28/2010	7:45:40	24.47	51.69	33.99	43.2	2.97	0.240	8.26	N/A	N/A
2/28/2010	7:50:40	24.44	51.67	33.98	42.2	2.90	0.241	8.26	N/A	N/A
2/28/2010	7:55:40	24.48	51.68	33.99	42.2	2.90	0.241	8.26	N/A	N/A
2/28/2010	8:00:40	24.47	51.66	33.97	42.4	2.91	0.244	8.26	N/A	N/A
2/28/2010	8:05:40	24.48	51.66	33.97	42.1	2.90	0.244	8.25	N/A	N/A
2/28/2010	8:10:40	24.49	51.68	33.98	42.2	2.90	0.246	8.26	N/A	N/A
2/28/2010	8:15:40	24.48	51.70	34.00	42.6	2.93	0.246	8.26	N/A	N/A
2/28/2010	8:20:40	24.48	51.70	34.00	42.3	2.91	0.250	8.26	N/A	N/A
2/28/2010	8:25:40	24.48	51.69	33.99	41.8	2.87	0.251	8.26	N/A	N/A
2/28/2010	8:30:40	24.48	51.69	33.99	42.3	2.91	0.251	8.26	N/A	N/A
2/28/2010	8:35:40	24.47	51.69	34.00	41.4	2.85	0.252	8.25	N/A	N/A
2/28/2010	8:40:40	24.48	51.69	33.99	41.6	2.86	0.254	8.25	N/A	N/A
2/28/2010	8:45:40	24.45	51.70	34.00	41.5	2.85	0.253	8.25	N/A	N/A
2/28/2010	8:50:40	24.46	51.68	33.99	42.5	2.92	0.255	8.26	N/A	N/A
2/28/2010	8:55:40	24.47	51.68	33.99	42.7	2.94	0.255	8.26	N/A	N/A
2/28/2010	9:00:40	24.44	51.69	33.99	43.0	2.96	0.255	8.26	N/A	N/A
2/28/2010	9:05:40	24.45	51.68	33.98	43.2	2.97	0.257	8.26	N/A	N/A
2/28/2010	9:10:40	24.43	51.70	34.00	43.6	3.00	0.257	8.26	N/A	N/A
2/28/2010	9:15:40	24.43	51.69	33.99	43.2	2.97	0.257	8.26	N/A	N/A
2/28/2010	9:20:40	24.06	50.32	32.99	43.7	3.04	0.258	8.25	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	9:25:40	24.11	50.82	33.36	43.8	3.04	0.261	8.25	N/A	N/A
2/28/2010	9:30:40	24.11	50.75	33.31	43.7	3.03	0.257	8.25	N/A	N/A
2/28/2010	9:35:40	24.22	50.81	33.35	43.5	3.01	0.261	8.25	N/A	N/A
2/28/2010	9:40:40	24.15	50.87	33.40	43.9	3.04	0.263	8.25	N/A	N/A
2/28/2010	9:45:40	24.16	50.95	33.45	43.7	3.03	0.269	8.25	N/A	N/A
2/28/2010	9:50:40	24.32	51.10	33.56	43.1	2.98	0.277	8.25	N/A	N/A
2/28/2010	9:55:40	24.31	51.10	33.56	42.9	2.96	0.285	8.25	N/A	N/A
2/28/2010	10:00:40	24.27	50.68	33.25	43.7	3.03	0.290	8.25	N/A	N/A
2/28/2010	10:05:40	24.12	50.76	33.32	43.4	3.02	0.286	8.25	N/A	N/A
2/28/2010	10:10:40	24.15	50.58	33.18	44.0	3.06	0.268	8.25	N/A	N/A
2/28/2010	10:15:40	24.11	50.72	33.28	45.1	3.13	0.251	8.26	N/A	N/A
2/28/2010	10:20:40	24.17	50.69	33.26	44.0	3.06	0.245	8.25	N/A	N/A
2/28/2010	10:25:40	24.14	50.60	33.20	45.3	3.15	0.262	8.26	N/A	N/A
2/28/2010	10:30:40	24.16	50.62	33.21	45.5	3.16	0.282	8.26	N/A	N/A
2/28/2010	10:35:40	24.25	50.57	33.17	44.9	3.11	0.254	8.25	N/A	N/A
2/28/2010	10:40:40	24.22	50.81	33.35	44.8	3.10	0.275	8.26	N/A	N/A
2/28/2010	10:45:40	24.25	50.89	33.41	44.8	3.10	0.294	8.26	N/A	N/A
2/28/2010	10:50:40	24.29	50.91	33.42	45.3	3.13	0.292	8.26	N/A	N/A
2/28/2010	10:55:40	24.34	50.95	33.45	45.0	3.11	0.291	8.26	N/A	N/A
2/28/2010	11:00:40	24.37	51.02	33.50	44.7	3.08	0.286	8.26	N/A	N/A
2/28/2010	11:05:40	24.42	51.04	33.52	45.1	3.11	0.295	8.26	N/A	N/A
2/28/2010	11:10:40	24.41	51.07	33.54	45.3	3.13	0.267	8.26	N/A	N/A
2/28/2010	11:15:40	24.38	51.09	33.55	44.9	3.10	0.268	8.26	N/A	N/A
2/28/2010	11:20:40	24.36	51.03	33.51	45.7	3.16	0.270	8.26	N/A	N/A
2/28/2010	11:25:40	24.44	51.13	33.58	45.2	3.12	0.270	8.26	N/A	N/A
2/28/2010	11:30:40	24.40	51.17	33.61	46.1	3.18	0.265	8.26	N/A	N/A
2/28/2010	11:35:40	24.40	51.12	33.58	45.9	3.17	0.261	8.26	N/A	N/A
2/28/2010	11:40:40	24.44	51.12	33.57	45.7	3.15	0.260	8.26	N/A	N/A
2/28/2010	11:45:40	24.50	51.17	33.61	45.3	3.12	0.260	8.26	N/A	N/A
2/28/2010	11:50:40	24.50	51.12	33.57	45.2	3.12	0.259	8.25	N/A	N/A
2/28/2010	11:55:40	24.54	51.10	33.56	44.6	3.07	0.254	8.25	N/A	N/A
2/28/2010	12:00:40	24.56	51.18	33.61	44.9	3.09	0.257	8.25	N/A	N/A
2/28/2010	12:05:40	24.61	51.23	33.65	45.3	3.11	0.256	8.25	N/A	N/A
2/28/2010	12:10:40	24.52	51.22	33.65	44.9	3.09	0.258	8.25	N/A	N/A
2/28/2010	12:15:40	24.54	51.22	33.64	45.8	3.15	0.255	8.25	N/A	N/A
2/28/2010	12:20:40	24.51	51.22	33.64	45.8	3.15	0.257	8.25	N/A	N/A
2/28/2010	12:25:40	24.53	51.23	33.65	45.5	3.13	0.256	8.25	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	12:30:40	24.56	51.26	33.68	44.7	3.07	0.250	8.25	N/A	N/A
2/28/2010	12:35:40	24.52	51.28	33.69	45.5	3.13	0.249	8.25	N/A	N/A
2/28/2010	12:40:40	24.52	51.24	33.66	45.7	3.14	0.251	8.25	N/A	N/A
2/28/2010	12:45:40	24.52	51.29	33.69	45.5	3.13	0.249	8.25	N/A	N/A
2/28/2010	12:50:40	24.60	51.37	33.76	45.2	3.10	0.248	8.25	N/A	N/A
2/28/2010	12:55:40	24.60	51.46	33.82	44.8	3.08	0.247	8.25	N/A	N/A
2/28/2010	13:00:40	24.48	51.39	33.77	45.7	3.14	0.247	8.25	N/A	N/A
2/28/2010	13:05:40	24.54	51.39	33.77	45.5	3.13	0.245	8.26	N/A	N/A
2/28/2010	13:10:40	24.55	51.40	33.78	45.6	3.14	0.245	8.26	N/A	N/A
2/28/2010	13:15:40	24.49	51.36	33.75	45.8	3.15	0.245	8.25	N/A	N/A
2/28/2010	13:20:40	24.53	51.43	33.80	46.4	3.19	0.248	8.26	N/A	N/A
2/28/2010	13:25:40	24.53	51.52	33.87	47.2	3.25	0.244	8.26	N/A	N/A
2/28/2010	13:30:40	24.55	51.51	33.86	46.1	3.16	0.247	8.26	N/A	N/A
2/28/2010	13:35:40	24.41	51.42	33.79	46.8	3.22	0.247	8.26	N/A	N/A
2/28/2010	13:40:40	24.38	51.42	33.79	47.2	3.26	0.245	8.26	N/A	N/A
2/28/2010	13:45:40	24.43	51.54	33.88	47.4	3.27	0.244	8.26	N/A	N/A
2/28/2010	13:50:40	24.39	51.46	33.83	46.9	3.23	0.245	8.26	N/A	N/A
2/28/2010	13:55:40	24.41	51.58	33.91	47.1	3.25	0.244	8.26	N/A	N/A
2/28/2010	14:00:40	24.43	51.62	33.95	46.8	3.22	0.244	8.26	N/A	N/A
2/28/2010	14:05:40	24.37	51.53	33.88	47.2	3.25	0.242	8.26	N/A	N/A
2/28/2010	14:10:40	24.39	51.58	33.91	47.2	3.25	0.242	8.26	N/A	N/A
2/28/2010	14:15:40	24.44	51.62	33.94	47.0	3.24	0.243	8.26	N/A	N/A
2/28/2010	14:20:40	24.40	51.61	33.94	47.5	3.27	0.241	8.26	N/A	N/A
2/28/2010	14:25:40	24.39	51.63	33.95	47.5	3.27	0.241	8.26	N/A	N/A
2/28/2010	14:30:40	24.40	51.61	33.93	47.1	3.24	0.243	8.26	N/A	N/A
2/28/2010	14:35:40	24.44	51.64	33.96	46.9	3.23	0.242	8.26	N/A	N/A
2/28/2010	14:40:40	24.48	51.71	34.01	47.0	3.23	0.241	8.26	N/A	N/A
2/28/2010	14:45:40	24.41	51.70	34.01	48.0	3.30	0.241	8.26	N/A	N/A
2/28/2010	14:50:40	24.44	51.77	34.06	48.3	3.32	0.240	8.26	N/A	N/A
2/28/2010	14:55:40	24.45	51.77	34.05	47.8	3.29	0.237	8.26	N/A	N/A
2/28/2010	15:00:40	24.48	51.82	34.09	47.7	3.28	0.236	8.26	N/A	N/A
2/28/2010	15:05:40	24.54	51.90	34.15	48.1	3.30	0.236	8.26	N/A	N/A
2/28/2010	15:10:40	24.53	51.90	34.15	47.7	3.27	0.237	8.26	N/A	N/A
2/28/2010	15:15:40	24.56	51.94	34.18	47.7	3.27	0.232	8.26	N/A	N/A
2/28/2010	15:20:40	24.58	51.97	34.20	48.2	3.31	0.234	8.26	N/A	N/A
2/28/2010	15:25:40	24.58	51.98	34.21	47.9	3.28	0.235	8.26	N/A	N/A
2/28/2010	15:30:40	24.61	52.00	34.22	47.8	3.27	0.237	8.26	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	15:35:40	24.62	52.02	34.23	48.0	3.29	0.234	8.26	N/A	N/A
2/28/2010	15:40:40	24.62	52.03	34.24	48.5	3.32	0.234	8.26	N/A	N/A
2/28/2010	15:45:40	24.62	52.04	34.25	48.3	3.31	0.234	8.26	N/A	N/A
2/28/2010	15:50:40	24.65	52.06	34.26	48.5	3.32	0.234	8.26	N/A	N/A
2/28/2010	15:55:40	24.64	52.07	34.27	48.5	3.32	0.233	8.26	N/A	N/A
2/28/2010	16:00:40	24.65	52.10	34.29	48.2	3.30	0.233	8.26	N/A	N/A
2/28/2010	16:05:40	24.67	52.13	34.31	48.5	3.32	0.234	8.26	N/A	N/A
2/28/2010	16:10:40	24.66	52.12	34.31	48.4	3.31	0.234	8.26	N/A	N/A
2/28/2010	16:15:40	24.65	52.12	34.31	47.9	3.27	0.234	8.25	N/A	N/A
2/28/2010	16:20:40	24.66	52.14	34.32	48.1	3.29	0.232	8.25	N/A	N/A
2/28/2010	16:25:40	24.65	52.12	34.30	48.0	3.28	0.233	8.25	N/A	N/A
2/28/2010	16:30:40	24.67	52.16	34.33	48.0	3.28	0.234	8.26	N/A	N/A
2/28/2010	16:35:40	24.67	52.14	34.32	48.0	3.28	0.235	8.25	N/A	N/A
2/28/2010	16:40:40	24.66	52.16	34.34	48.4	3.31	0.236	8.26	N/A	N/A
2/28/2010	16:45:40	24.66	52.16	34.34	48.6	3.32	0.237	8.26	N/A	N/A
2/28/2010	16:50:40	24.67	52.18	34.35	48.4	3.31	0.235	8.25	N/A	N/A
2/28/2010	16:55:40	24.67	52.18	34.35	48.2	3.30	0.237	8.25	N/A	N/A
2/28/2010	17:00:40	24.67	52.18	34.35	48.0	3.28	0.237	8.25	N/A	N/A
2/28/2010	17:05:40	24.67	52.19	34.36	48.0	3.28	0.237	8.25	N/A	N/A
2/28/2010	17:10:40	24.65	52.20	34.36	48.3	3.30	0.237	8.25	N/A	N/A
2/28/2010	17:15:40	24.64	52.20	34.36	48.3	3.30	0.238	8.25	N/A	N/A
2/28/2010	17:20:40	24.61	52.21	34.37	48.1	3.29	0.240	8.25	N/A	N/A
2/28/2010	17:25:40	24.63	52.21	34.37	47.9	3.28	0.239	8.25	N/A	N/A
2/28/2010	17:30:40	24.63	52.22	34.38	47.5	3.25	0.241	8.25	N/A	N/A
2/28/2010	17:35:40	24.62	52.23	34.39	47.2	3.23	0.243	8.25	N/A	N/A
2/28/2010	17:40:40	24.60	52.23	34.39	48.1	3.29	0.243	8.25	N/A	N/A
2/28/2010	17:45:40	24.60	52.22	34.39	47.2	3.23	0.244	8.25	N/A	N/A
2/28/2010	17:50:40	24.59	52.24	34.39	47.6	3.26	0.243	8.25	N/A	N/A
2/28/2010	17:55:40	24.58	52.24	34.39	47.1	3.23	0.243	8.25	N/A	N/A
2/28/2010	18:00:40	24.59	52.24	34.40	47.5	3.25	0.242	8.25	N/A	N/A
2/28/2010	18:05:40	24.59	52.24	34.40	47.7	3.27	0.243	8.25	N/A	N/A
2/28/2010	18:10:40	24.55	52.24	34.40	47.2	3.23	0.242	8.25	N/A	N/A
2/28/2010	18:15:40	24.54	52.25	34.40	47.1	3.23	0.245	8.25	N/A	N/A
2/28/2010	18:20:40	24.53	52.25	34.40	47.4	3.25	0.246	8.25	N/A	N/A
2/28/2010	18:25:40	24.54	52.24	34.40	47.2	3.23	0.244	8.25	N/A	N/A
2/28/2010	18:30:40	24.51	52.25	34.41	46.9	3.21	0.246	8.25	N/A	N/A
2/28/2010	18:35:40	24.55	52.26	34.41	47.3	3.24	0.245	8.25	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	18:40:40	24.49	52.22	34.39	48.0	3.29	0.245	8.25	N/A	N/A
2/28/2010	18:45:40	24.51	52.21	34.38	47.9	3.28	0.246	8.25	N/A	N/A
2/28/2010	18:50:40	24.51	52.21	34.38	48.2	3.30	0.247	8.25	N/A	N/A
2/28/2010	18:55:40	24.53	52.23	34.39	49.4	3.39	0.248	8.25	N/A	N/A
2/28/2010	19:00:40	24.51	52.22	34.38	50.3	3.45	0.248	8.25	N/A	N/A
2/28/2010	19:05:40	24.50	52.20	34.37	50.4	3.46	0.247	8.25	N/A	N/A
2/28/2010	19:10:40	24.50	52.20	34.37	50.6	3.47	0.247	8.25	N/A	N/A
2/28/2010	19:15:40	24.45	52.17	34.35	50.2	3.44	0.248	8.25	N/A	N/A
2/28/2010	19:20:40	24.50	52.19	34.36	51.0	3.50	0.250	8.26	N/A	N/A
2/28/2010	19:25:40	24.59	52.22	34.38	50.3	3.44	0.250	8.26	N/A	N/A
2/28/2010	19:30:40	24.62	52.27	34.42	50.4	3.45	0.249	8.26	N/A	N/A
2/28/2010	19:35:40	24.60	52.25	34.40	50.6	3.47	0.250	8.26	N/A	N/A
2/28/2010	19:40:40	24.59	52.27	34.42	49.9	3.42	0.249	8.25	N/A	N/A
2/28/2010	19:45:40	24.59	52.27	34.42	49.2	3.37	0.249	8.25	N/A	N/A
2/28/2010	19:50:40	24.58	52.25	34.41	49.3	3.37	0.251	8.25	N/A	N/A
2/28/2010	19:55:40	24.59	52.26	34.42	48.5	3.32	0.251	8.25	N/A	N/A
2/28/2010	20:00:40	24.58	52.27	34.42	48.5	3.32	0.252	8.25	N/A	N/A
2/28/2010	20:05:40	24.57	52.26	34.41	48.3	3.31	0.252	8.25	N/A	N/A
2/28/2010	20:10:40	24.58	52.25	34.41	47.5	3.25	0.253	8.25	N/A	N/A
2/28/2010	20:15:40	24.59	52.27	34.42	48.4	3.31	0.252	8.25	N/A	N/A
2/28/2010	20:20:40	24.58	52.27	34.42	47.4	3.24	0.254	8.25	N/A	N/A
2/28/2010	20:25:40	24.58	52.28	34.42	46.7	3.20	0.255	8.25	N/A	N/A
2/28/2010	20:30:40	24.58	52.26	34.41	45.8	3.13	0.255	8.25	N/A	N/A
2/28/2010	20:35:40	24.58	52.26	34.42	45.6	3.12	0.254	8.25	N/A	N/A
2/28/2010	20:40:40	24.56	52.27	34.42	45.7	3.13	0.259	8.25	N/A	N/A
2/28/2010	20:45:40	24.55	52.30	34.44	47.8	3.27	0.256	8.26	N/A	N/A
2/28/2010	20:50:40	24.53	52.29	34.43	47.2	3.23	0.258	8.26	N/A	N/A
2/28/2010	20:55:40	24.54	52.30	34.44	47.4	3.24	0.260	8.26	N/A	N/A
2/28/2010	21:00:40	24.55	52.32	34.46	46.5	3.18	0.259	8.26	N/A	N/A
2/28/2010	21:05:40	24.54	52.34	34.47	46.2	3.16	0.259	8.26	N/A	N/A
2/28/2010	21:10:40	24.53	52.35	34.48	45.2	3.09	0.260	8.25	N/A	N/A
2/28/2010	21:15:40	24.54	52.34	34.47	45.2	3.10	0.262	8.25	N/A	N/A
2/28/2010	21:20:40	24.54	52.32	34.46	44.3	3.03	0.265	8.25	N/A	N/A
2/28/2010	21:25:40	24.52	52.32	34.46	45.5	3.11	0.268	8.25	N/A	N/A
2/28/2010	21:30:40	24.52	52.33	34.47	45.3	3.10	0.263	8.25	N/A	N/A
2/28/2010	21:35:40	24.53	52.35	34.48	45.6	3.12	0.261	8.25	N/A	N/A
2/28/2010	21:40:40	24.53	52.36	34.49	45.9	3.14	0.263	8.26	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	21:45:40	24.54	52.36	34.49	45.8	3.13	0.269	8.26	N/A	N/A
2/28/2010	21:50:40	24.54	52.36	34.49	45.6	3.12	0.268	8.26	N/A	N/A
2/28/2010	21:55:40	24.54	52.36	34.49	45.2	3.09	0.263	8.26	N/A	N/A
2/28/2010	22:00:40	24.54	52.34	34.47	45.3	3.10	0.263	8.26	N/A	N/A
2/28/2010	22:05:40	24.54	52.37	34.49	45.6	3.12	0.265	8.26	N/A	N/A
2/28/2010	22:10:40	24.54	52.38	34.50	45.8	3.13	0.268	8.26	N/A	N/A
2/28/2010	22:15:40	24.54	52.37	34.50	45.2	3.09	0.268	8.26	N/A	N/A
2/28/2010	22:20:40	24.54	52.37	34.50	44.6	3.05	0.265	8.26	N/A	N/A
2/28/2010	22:25:40	24.54	52.38	34.50	44.0	3.01	0.268	8.26	N/A	N/A
2/28/2010	22:30:40	24.53	52.38	34.50	44.2	3.03	0.265	8.26	N/A	N/A
2/28/2010	22:35:40	24.53	52.38	34.50	44.3	3.03	0.269	8.26	N/A	N/A
2/28/2010	22:40:40	24.52	52.38	34.50	44.2	3.03	0.270	8.26	N/A	N/A
2/28/2010	22:45:40	24.52	52.38	34.51	44.2	3.03	0.275	8.26	N/A	N/A
2/28/2010	22:50:40	24.52	52.39	34.51	45.0	3.08	0.270	8.26	N/A	N/A
2/28/2010	22:55:40	24.52	52.38	34.50	44.3	3.03	0.265	8.26	N/A	N/A
2/28/2010	23:00:40	24.53	52.32	34.46	43.3	2.97	0.266	8.25	N/A	N/A
2/28/2010	23:05:40	24.51	52.37	34.50	44.1	3.02	0.271	8.26	N/A	N/A
2/28/2010	23:10:40	24.51	52.39	34.51	45.0	3.08	0.271	8.26	N/A	N/A
2/28/2010	23:15:40	24.51	52.38	34.51	44.8	3.07	0.264	8.26	N/A	N/A
2/28/2010	23:20:40	24.50	52.37	34.50	44.7	3.06	0.263	8.26	N/A	N/A
2/28/2010	23:25:40	24.45	52.36	34.49	45.8	3.14	0.263	8.26	N/A	N/A
2/28/2010	23:30:40	24.47	52.38	34.50	45.8	3.14	0.263	8.27	N/A	N/A
2/28/2010	23:35:40	24.49	52.38	34.50	45.1	3.09	0.262	8.26	N/A	N/A
2/28/2010	23:40:40	24.48	52.38	34.50	45.2	3.10	0.262	8.26	N/A	N/A
2/28/2010	23:45:40	24.47	52.38	34.51	45.9	3.15	0.265	8.27	N/A	N/A
2/28/2010	23:50:40	24.44	52.38	34.50	44.9	3.08	0.262	8.26	N/A	N/A
2/28/2010	23:55:40	24.44	52.38	34.51	45.4	3.11	0.263	8.26	N/A	N/A
3/1/2010	0:00:40	24.40	52.40	34.52	45.4	3.11	0.261	8.27	N/A	N/A
3/1/2010	0:05:40	24.42	52.40	34.52	45.2	3.10	0.262	8.26	N/A	N/A
3/1/2010	0:10:40	24.36	52.35	34.49	44.5	3.06	0.262	8.26	N/A	N/A
3/1/2010	0:15:40	24.37	52.36	34.49	44.6	3.06	0.261	8.26	N/A	N/A
3/1/2010	0:20:40	24.41	52.41	34.53	45.4	3.12	0.262	8.27	N/A	N/A
3/1/2010	0:25:40	24.42	52.42	34.54	45.2	3.10	0.262	8.27	N/A	N/A
3/1/2010	0:30:40	24.44	52.42	34.53	45.0	3.09	0.261	8.27	N/A	N/A
3/1/2010	0:35:40	24.44	52.43	34.54	44.7	3.07	0.261	8.27	N/A	N/A
3/1/2010	0:40:40	24.43	52.43	34.54	45.1	3.09	0.260	8.27	N/A	N/A
3/1/2010	0:45:40	24.42	52.43	34.54	45.5	3.12	0.260	8.27	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
3/1/2010	0:50:40	24.40	52.43	34.55	45.1	3.09	0.265	8.27	N/A	N/A
3/1/2010	0:55:40	24.37	52.43	34.55	45.2	3.10	0.259	8.27	N/A	N/A
3/1/2010	1:00:40	24.38	52.42	34.54	44.7	3.07	0.258	8.27	N/A	N/A
3/1/2010	1:05:40	24.35	52.41	34.53	44.9	3.09	0.257	8.27	N/A	N/A
3/1/2010	1:10:40	24.34	52.41	34.53	45.1	3.10	0.258	8.27	N/A	N/A
3/1/2010	1:15:40	24.35	52.42	34.53	45.4	3.11	0.256	8.27	N/A	N/A
3/1/2010	1:20:40	24.34	52.41	34.53	45.1	3.10	0.255	8.27	N/A	N/A
3/1/2010	1:25:40	24.35	52.41	34.53	45.3	3.11	0.254	8.27	N/A	N/A
3/1/2010	1:30:40	24.35	52.41	34.53	45.2	3.11	0.253	8.27	N/A	N/A
3/1/2010	1:35:40	24.35	52.41	34.53	45.1	3.10	0.254	8.27	N/A	N/A
3/1/2010	1:40:40	24.34	52.42	34.54	45.5	3.13	0.252	8.27	N/A	N/A
3/1/2010	1:45:40	24.33	52.42	34.54	45.3	3.11	0.253	8.27	N/A	N/A
3/1/2010	1:50:40	24.30	52.41	34.53	44.9	3.09	0.252	8.27	N/A	N/A
3/1/2010	1:55:40	24.28	52.41	34.53	45.1	3.10	0.249	8.27	N/A	N/A
3/1/2010	2:00:40	24.28	52.42	34.54	45.5	3.13	0.249	8.27	N/A	N/A
3/1/2010	2:05:40	24.30	52.42	34.54	45.6	3.13	0.250	8.27	N/A	N/A
3/1/2010	2:10:40	24.30	52.43	34.54	45.7	3.14	0.247	8.27	N/A	N/A
3/1/2010	2:15:40	24.28	52.42	34.54	45.5	3.13	0.248	8.27	N/A	N/A
3/1/2010	2:20:40	24.25	52.41	34.53	45.8	3.15	0.249	8.27	N/A	N/A
3/1/2010	2:25:40	24.29	52.42	34.54	46.1	3.17	0.246	8.27	N/A	N/A
3/1/2010	2:30:40	24.30	52.43	34.55	45.7	3.14	0.245	8.27	N/A	N/A
3/1/2010	2:35:40	24.30	52.43	34.55	45.7	3.14	0.244	8.27	N/A	N/A
3/1/2010	2:40:40	24.28	52.42	34.54	45.3	3.11	0.243	8.27	N/A	N/A
3/1/2010	2:45:40	24.28	52.43	34.54	44.9	3.08	0.243	8.27	N/A	N/A
3/1/2010	2:50:40	24.23	52.44	34.55	45.5	3.13	0.243	8.27	N/A	N/A
3/1/2010	2:55:40	24.20	52.43	34.55	45.2	3.11	0.244	8.27	N/A	N/A
3/1/2010	3:00:40	24.24	52.43	34.54	45.4	3.12	0.245	8.27	N/A	N/A
3/1/2010	3:05:40	24.24	52.43	34.55	45.3	3.12	0.245	8.27	N/A	N/A
3/1/2010	3:10:40	24.21	52.43	34.55	45.3	3.12	0.243	8.27	N/A	N/A
3/1/2010	3:15:40	24.25	52.43	34.54	45.4	3.12	0.243	8.27	N/A	N/A
3/1/2010	3:20:40	24.23	52.43	34.55	45.5	3.13	0.243	8.27	N/A	N/A
3/1/2010	3:25:40	24.21	52.43	34.55	45.5	3.13	0.244	8.27	N/A	N/A
3/1/2010	3:30:40	24.17	52.43	34.55	45.5	3.14	0.245	8.27	N/A	N/A
3/1/2010	3:35:40	24.20	52.43	34.55	45.5	3.13	0.244	8.27	N/A	N/A
3/1/2010	3:40:40	24.19	52.42	34.54	45.7	3.14	0.244	8.27	N/A	N/A
3/1/2010	3:45:40	24.18	52.43	34.55	45.6	3.14	0.243	8.27	N/A	N/A
3/1/2010	3:50:40	24.18	52.43	34.55	45.6	3.14	0.243	8.27	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
3/1/2010	3:55:40	24.17	52.42	34.54	45.5	3.13	0.242	8.27	N/A	N/A
3/1/2010	4:00:40	24.16	52.42	34.54	45.6	3.14	0.244	8.27	N/A	N/A
3/1/2010	4:05:40	24.12	52.42	34.54	45.4	3.13	0.245	8.27	N/A	N/A
3/1/2010	4:10:40	24.11	52.39	34.52	45.9	3.16	0.247	8.27	N/A	N/A
3/1/2010	4:15:40	24.11	52.39	34.52	46.0	3.18	0.246	8.27	N/A	N/A
3/1/2010	4:20:40	24.07	52.38	34.52	46.2	3.19	0.247	8.27	N/A	N/A
3/1/2010	4:25:40	24.07	52.38	34.51	45.9	3.17	0.246	8.27	N/A	N/A
3/1/2010	4:30:40	24.06	52.38	34.51	46.2	3.19	0.246	8.27	N/A	N/A
3/1/2010	4:35:40	24.05	52.38	34.51	46.3	3.20	0.247	8.28	N/A	N/A
3/1/2010	4:40:40	24.04	52.38	34.51	46.1	3.19	0.248	8.27	N/A	N/A
3/1/2010	4:45:40	24.04	52.37	34.50	46.2	3.19	0.250	8.27	N/A	N/A
3/1/2010	4:50:40	24.00	52.38	34.51	46.2	3.19	0.250	8.27	N/A	N/A
3/1/2010	4:55:40	23.99	52.37	34.51	46.3	3.20	0.250	8.27	N/A	N/A
3/1/2010	5:00:40	24.03	52.35	34.49	46.8	3.23	0.250	8.28	N/A	N/A
3/1/2010	5:05:40	24.02	52.36	34.50	46.7	3.23	0.250	8.28	N/A	N/A
3/1/2010	5:10:40	24.00	52.37	34.50	46.9	3.24	0.250	8.28	N/A	N/A
3/1/2010	5:15:40	24.03	52.36	34.50	47.1	3.25	0.249	8.27	N/A	N/A
3/1/2010	5:20:40	24.01	52.36	34.50	47.2	3.26	0.250	8.27	N/A	N/A
3/1/2010	5:25:40	24.04	52.37	34.50	47.5	3.28	0.251	8.27	N/A	N/A
3/1/2010	5:30:40	24.01	52.37	34.51	47.0	3.24	0.251	8.27	N/A	N/A
3/1/2010	5:35:40	24.01	52.37	34.50	47.0	3.25	0.252	8.27	N/A	N/A
3/1/2010	5:40:40	24.01	52.37	34.51	47.2	3.26	0.254	8.27	N/A	N/A
3/1/2010	5:45:40	24.00	52.36	34.50	47.2	3.26	0.252	8.27	N/A	N/A
3/1/2010	5:50:40	24.02	52.36	34.50	46.8	3.23	0.253	8.27	N/A	N/A
3/1/2010	5:55:40	24.02	52.36	34.50	46.7	3.23	0.256	8.27	N/A	N/A
3/1/2010	6:00:40	23.99	52.36	34.50	46.7	3.23	0.255	8.27	N/A	N/A
3/1/2010	6:05:40	24.02	52.36	34.50	46.8	3.23	0.256	8.27	N/A	N/A
3/1/2010	6:10:40	24.03	52.36	34.50	47.2	3.26	0.258	8.27	N/A	N/A
3/1/2010	6:15:40	24.00	52.36	34.50	47.4	3.27	0.259	8.27	N/A	N/A
3/1/2010	6:20:40	24.03	52.36	34.49	47.5	3.28	0.258	8.27	N/A	N/A
3/1/2010	6:25:40	23.99	52.36	34.50	47.5	3.28	0.258	8.27	N/A	N/A
3/1/2010	6:30:40	24.01	52.35	34.49	47.2	3.26	0.258	8.27	N/A	N/A
3/1/2010	6:35:40	24.02	52.32	34.47	47.7	3.30	0.259	8.27	N/A	N/A
3/1/2010	6:40:40	24.04	52.34	34.48	47.3	3.26	0.261	8.27	N/A	N/A
3/1/2010	6:45:40	24.04	52.34	34.49	47.3	3.27	0.262	8.27	N/A	N/A
3/1/2010	6:50:40	24.04	52.34	34.49	47.2	3.26	0.262	8.27	N/A	N/A
3/1/2010	6:55:40	24.05	52.35	34.49	47.1	3.25	0.264	8.27	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
3/1/2010	7:00:40	24.05	52.34	34.48	47.0	3.24	0.263	8.27	N/A	N/A
3/1/2010	7:05:40	24.04	52.34	34.49	46.8	3.23	0.263	8.27	N/A	N/A
3/1/2010	7:10:40	24.04	52.34	34.48	46.7	3.23	0.265	8.27	N/A	N/A
3/1/2010	7:15:40	24.04	52.34	34.48	46.5	3.21	0.267	8.26	N/A	N/A
3/1/2010	7:20:40	24.05	52.34	34.48	46.4	3.20	0.268	8.26	N/A	N/A
3/1/2010	7:25:40	24.05	52.34	34.48	46.4	3.20	0.268	8.26	N/A	N/A
3/1/2010	7:30:40	24.05	52.34	34.48	46.6	3.22	0.269	8.26	N/A	N/A
3/1/2010	7:35:40	24.05	52.33	34.48	46.4	3.21	0.271	8.26	N/A	N/A
3/1/2010	7:40:40	24.05	52.34	34.48	46.4	3.20	0.270	8.26	N/A	N/A
3/1/2010	7:45:40	24.05	52.35	34.49	47.4	3.27	0.273	8.26	N/A	N/A
3/1/2010	7:50:40	24.05	52.35	34.49	47.0	3.24	0.274	8.26	N/A	N/A
3/1/2010	7:55:40	24.03	52.32	34.47	46.5	3.21	0.275	8.26	N/A	N/A
3/1/2010	8:00:40	24.05	52.35	34.49	47.6	3.28	0.275	8.27	N/A	N/A
3/1/2010	8:05:40	24.05	52.35	34.49	47.5	3.28	0.275	8.27	N/A	N/A
3/1/2010	8:10:40	24.05	52.35	34.49	47.6	3.29	0.276	8.27	N/A	N/A
3/1/2010	8:15:40	24.05	52.35	34.49	46.6	3.22	0.275	8.26	N/A	N/A
3/1/2010	8:20:40	24.04	52.35	34.49	47.7	3.29	0.274	8.27	N/A	N/A
3/1/2010	8:25:40	24.04	52.34	34.48	47.1	3.25	0.276	8.26	N/A	N/A
3/1/2010	8:30:40	24.04	52.35	34.49	47.7	3.29	0.275	8.27	N/A	N/A
3/1/2010	8:35:40	24.05	52.35	34.49	47.0	3.25	0.279	8.27	N/A	N/A
3/1/2010	8:40:40	24.06	52.35	34.49	46.8	3.23	0.278	8.26	N/A	N/A
3/1/2010	8:45:40	24.06	52.36	34.50	46.8	3.23	0.278	8.26	N/A	N/A
3/1/2010	8:50:40	24.06	52.36	34.50	47.5	3.28	0.279	8.27	N/A	N/A
3/1/2010	8:55:40	24.05	52.36	34.50	47.2	3.26	0.279	8.27	N/A	N/A
3/1/2010	9:00:40	24.05	52.36	34.50	47.1	3.25	0.280	8.26	N/A	N/A
3/1/2010	9:05:40	24.05	52.36	34.50	47.4	3.27	0.281	8.27	N/A	N/A
3/1/2010	9:10:40	24.04	52.36	34.50	47.0	3.25	0.282	8.26	N/A	N/A
3/1/2010	9:15:40	24.05	52.36	34.50	46.9	3.24	0.285	8.26	N/A	N/A
3/1/2010	9:20:40	24.05	52.37	34.51	47.0	3.24	0.284	8.27	N/A	N/A
3/1/2010	9:25:40	24.05	52.37	34.50	46.8	3.23	0.286	8.27	N/A	N/A
3/1/2010	9:30:40	24.06	52.37	34.50	46.8	3.23	0.286	8.27	N/A	N/A
3/1/2010	9:35:40	24.07	52.37	34.50	46.9	3.24	0.289	8.27	N/A	N/A
3/1/2010	9:40:40	24.07	52.37	34.50	47.1	3.25	0.292	8.26	N/A	N/A
3/1/2010	9:45:40	24.07	52.36	34.50	47.3	3.26	0.292	8.26	N/A	N/A
3/1/2010	9:50:40	24.07	52.37	34.51	47.2	3.26	0.289	8.26	N/A	N/A
3/1/2010	9:55:40	24.09	52.38	34.51	47.3	3.26	0.292	8.27	N/A	N/A
3/1/2010	10:00:40	24.10	52.38	34.51	47.3	3.26	0.289	8.27	N/A	N/A

Table AII.50: (Continued) Rainbow Bay D-Dock Platform 2 YSI data from the XLM-600. Only data for five minute increments are reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
3/1/2010	10:05:40	24.11	52.39	34.52	47.2	3.25	0.291	8.26	N/A	N/A
3/1/2010	10:10:40	24.11	52.39	34.52	47.2	3.25	0.293	8.26	N/A	N/A
3/1/2010	10:15:40	24.11	52.39	34.52	47.2	3.26	0.290	8.26	N/A	N/A
3/1/2010	10:20:40	24.10	52.40	34.52	47.2	3.25	0.293	8.26	N/A	N/A
3/1/2010	10:25:40	24.12	52.39	34.52	47.2	3.26	0.291	8.26	N/A	N/A
3/1/2010	10:30:40	24.11	52.39	34.52	47.5	3.28	0.297	8.26	N/A	N/A
3/1/2010	10:35:40	24.10	52.39	34.52	47.3	3.26	0.297	8.26	N/A	N/A
3/1/2010	10:40:40	24.10	52.39	34.52	47.6	3.28	0.300	8.26	N/A	N/A
3/1/2010	10:45:40	24.11	52.39	34.52	47.2	3.25	0.298	8.26	N/A	N/A
3/1/2010	10:50:40	24.12	52.40	34.53	47.1	3.25	0.298	8.26	N/A	N/A
3/1/2010	10:55:40	24.10	52.40	34.53	47.6	3.28	0.302	8.26	N/A	N/A
3/1/2010	11:05:40	24.12	52.40	34.53	47.3	3.26	0.303	8.26	N/A	N/A

Table AII.51: Rainbow Bay D-Dock Platform 2 wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100227	17:53	2.10	20100301	00:53	9.30
20100227	18:00	2.10	20100301	01:53	6.70
20100227	18:53	0.00	20100301	02:53	8.20
20100227	19:53	1.50	20100301	03:53	8.20
20100227	20:53	2.60	20100301	04:53	5.70
20100227	21:53	4.10	20100301	05:53	4.60
20100227	22:53	5.70	20100301	06:00	4.60
20100227	23:53	5.70	20100301	06:53	6.70
20100228	00:00	5.70	20100301	07:53	9.30
20100228	00:53	5.10	20100301	08:53	6.70
20100228	01:53	5.10	20100301	09:53	4.60
20100228	02:53	5.10	20100301	10:53	6.70
20100228	03:53	3.10	20100301	11:53	6.20
20100228	04:53	2.10	20100301	12:00	6.20
20100228	05:53	3.60	20100301	12:53	6.20
20100228	06:00	3.60	20100301	13:53	8.70
20100228	06:53	2.60	20100301	14:53	7.70
20100228	07:53	2.10	20100301	15:53	5.10
20100228	08:53	2.60	20100301	16:53	8.20
20100228	09:53	2.60	20100301	17:53	6.20
20100228	10:53	3.10	20100301	18:00	6.20
20100228	11:53	2.60	20100301	18:53	8.70
20100228	12:00	2.60	20100301	19:53	7.70
20100228	12:53	3.10	20100301	20:53	7.70
20100228	13:53	2.10	20100301	21:53	6.70
20100228	14:53	2.60	20100301	22:53	8.70
20100228	15:53	4.60	20100301	23:53	9.80
20100228	16:53	3.10	20100302	00:00	9.80
20100228	17:53	3.60	20100302	00:53	11.80
20100228	18:00	3.60	20100302	01:53	7.70
20100228	18:53	3.60	20100302	02:53	5.70
20100228	19:53	6.70	20100302	03:53	9.80
20100228	20:53	6.20	20100302	04:53	8.20
20100228	21:53	6.70	20100302	05:53	7.20
20100228	22:53	8.20	20100302	06:00	7.20
20100228	23:53	7.70	20100302	06:53	7.70
20100301	00:00	7.70	20100302	07:53	8.20

Table AII.51: (Continued) Rainbow Bay D-Dock Platform 2 wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100302	08:53	7.70	20100302	10:53	7.20
20100302	09:53	5.70			

Table AII.52: Rainbow Bay D-Dock Platform 2 depth profile collected on 5 January 2011 using the YSI 6600 V2-4.

Depth m	Time hh:mm	Temp °C	SpCond mS/cm	Sal	pH	ORP	Chl µg/L	DO %	DO mg
0.040	15:16	26.10	50.47	33.06	8.11	127.3	2.2	102.4	6.88
0.450	15:17	26.01	50.81	33.31	8.11	127.6	2.3	101.6	6.83
1.141	15:17	25.87	51.13	33.55	8.12	127.9	3.1	101.2	6.81
1.355	15:18	25.87	50.94	33.41	8.12	127.8	7.3	100.6	6.77

Table AII.53: Rainbow Bay D-Dock Platform 2 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1518 on 5 January 2011 which corresponds to a similar tide at 1810 on 27 February 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 17:35	-89.00	50.26	2/27/10 20:25	-117.65	21.61
2/27/10 17:40	-86.92	52.34	2/27/10 20:30	-120.14	19.12
2/27/10 17:45	-93.68	45.59	2/27/10 20:35	-119.25	20.01
2/27/10 17:50	-92.00	47.26	2/27/10 20:40	-118.14	21.13
2/27/10 17:55	-93.68	45.59	2/27/10 20:45	-119.25	20.01
2/27/10 18:00	-91.49	47.77	2/27/10 20:50	-116.76	22.50
2/27/10 18:05	-92.00	47.26	2/27/10 20:55	-119.84	19.43
2/27/10 18:10	-99.26	40.00	2/27/10 21:00	-119.15	20.11
2/27/10 18:15	-100.43	38.83	2/27/10 21:05	-118.06	21.20
2/27/10 18:20	-96.16	43.10	2/27/10 21:10	-117.96	21.31
2/27/10 18:25	-93.57	45.69	2/27/10 21:15	-116.15	23.11
2/27/10 18:30	-96.27	43.00	2/27/10 21:20	-120.14	19.12
2/27/10 18:35	-98.76	40.51	2/27/10 21:25	-118.44	20.82
2/27/10 18:40	-101.24	38.02	2/27/10 21:30	-122.02	17.24
2/27/10 18:45	-98.35	40.91	2/27/10 21:35	-118.64	20.62
2/27/10 18:50	-99.34	39.92	2/27/10 21:40	-120.93	18.33
2/27/10 18:55	-100.43	38.83	2/27/10 21:45	-121.23	18.03
2/27/10 19:00	-100.36	38.91	2/27/10 21:50	-119.53	19.73
2/27/10 19:05	-99.95	39.31	2/27/10 21:55	-120.93	18.33
2/27/10 19:10	-100.84	38.43	2/27/10 22:00	-117.35	21.92
2/27/10 19:15	-105.21	34.06	2/27/10 22:05	-120.35	18.92
2/27/10 19:20	-104.42	34.84	2/27/10 22:10	-118.64	20.62
2/27/10 19:25	-109.50	29.76	2/27/10 22:15	-117.96	21.31
2/27/10 19:30	-107.42	31.85	2/27/10 22:20	-115.85	23.41
2/27/10 19:35	-110.08	29.18	2/27/10 22:25	-114.66	24.61
2/27/10 19:40	-115.27	24.00	2/27/10 22:30	-111.79	27.48
2/27/10 19:45	-109.70	29.56	2/27/10 22:35	-107.42	31.85
2/27/10 19:50	-111.38	27.88	2/27/10 22:40	-109.88	29.38
2/27/10 19:55	-110.29	28.98	2/27/10 22:45	-106.91	32.35
2/27/10 20:00	-113.87	25.40	2/27/10 22:50	-109.09	30.17
2/27/10 20:05	-118.64	20.62	2/27/10 22:55	-106.60	32.66
2/27/10 20:10	-115.37	23.90	2/27/10 23:00	-102.03	37.23
2/27/10 20:15	-115.57	23.69	2/27/10 23:05	-105.41	33.85
2/27/10 20:20	-117.65	21.61	2/27/10 23:10	-102.13	37.13

Table AII.53: (Continued) Rainbow Bay D-Dock Platform 2 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1518 on 5 January 2011 which corresponds to a similar tide at 1810 on 27 February 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 23:15	-102.54	36.72	2/28/10 2:05	-64.14	75.13
2/27/10 23:20	-101.14	38.12	2/28/10 2:10	-61.75	77.52
2/27/10 23:25	-100.43	38.83	2/28/10 2:15	-54.99	84.27
2/27/10 23:30	-101.04	38.22	2/28/10 2:20	-55.60	83.66
2/27/10 23:35	-100.43	38.83	2/28/10 2:25	-55.30	83.97
2/27/10 23:40	-101.73	37.54	2/28/10 2:30	-55.50	83.76
2/27/10 23:45	-99.44	39.82	2/28/10 2:35	-51.82	87.45
2/27/10 23:50	-99.06	40.20	2/28/10 2:40	-47.45	91.82
2/27/10 23:55	-96.47	42.79	2/28/10 2:45	-46.84	92.43
2/28/10 0:00	-96.16	43.10	2/28/10 2:50	-49.12	90.14
2/28/10 0:05	-93.40	45.87	2/28/10 2:55	-47.04	92.22
2/28/10 0:10	-90.70	48.56	2/28/10 3:00	-44.15	95.12
2/28/10 0:15	-85.93	53.34	2/28/10 3:05	-42.27	97.00
2/28/10 0:20	-87.12	52.14	2/28/10 3:10	-43.46	95.80
2/28/10 0:25	-87.33	51.94	2/28/10 3:15	-49.94	89.33
2/28/10 0:30	-82.55	56.71	2/28/10 3:20	-49.94	89.33
2/28/10 0:35	-78.77	60.50	2/28/10 3:25	-48.74	90.52
2/28/10 0:40	-73.58	65.68	2/28/10 3:30	-43.76	95.50
2/28/10 0:45	-74.50	64.77	2/28/10 3:35	-46.43	92.83
2/28/10 0:50	-71.30	67.97	2/28/10 3:40	-45.75	93.52
2/28/10 0:55	-70.51	68.75	2/28/10 3:45	-50.72	88.54
2/28/10 1:00	-67.92	71.34	2/28/10 3:50	-49.12	90.14
2/28/10 1:05	-67.03	72.23	2/28/10 3:55	-47.83	91.44
2/28/10 1:10	-68.33	70.94	2/28/10 4:00	-48.34	90.93
2/28/10 1:15	-67.61	71.65	2/28/10 4:05	-47.83	91.44
2/28/10 1:20	-65.84	73.43	2/28/10 4:10	-52.50	86.76
2/28/10 1:25	-64.24	75.03	2/28/10 4:15	-49.94	89.33
2/28/10 1:30	-61.26	78.00	2/28/10 4:20	-49.94	89.33
2/28/10 1:35	-65.43	73.83	2/28/10 4:25	-44.55	94.71
2/28/10 1:40	-67.03	72.23	2/28/10 4:30	-45.75	93.52
2/28/10 1:45	-64.95	74.32	2/28/10 4:35	-45.85	93.42
2/28/10 1:50	-61.95	77.31	2/28/10 4:40	-45.85	93.42
2/28/10 1:55	-60.38	78.89	2/28/10 4:45	-48.74	90.52
2/28/10 2:00	-65.15	74.11	2/28/10 4:50	-47.83	91.44

Table AII.53: (Continued) Rainbow Bay D-Dock Platform 2 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1518 on 5 January 2011 which corresponds to a similar tide at 1810 on 27 February 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/28/10 4:55	-47.93	91.33	2/28/10 7:45	-88.62	50.64
2/28/10 5:00	-43.76	95.50	2/28/10 7:50	-94.77	44.50
2/28/10 5:05	-47.55	91.71	2/28/10 7:55	-100.15	39.11
2/28/10 5:10	-47.63	91.64	2/28/10 8:00	-99.64	39.62
2/28/10 5:15	-49.12	90.14	2/28/10 8:05	-101.55	37.71
2/28/10 5:20	-49.63	89.63	2/28/10 8:10	-103.33	35.94
2/28/10 5:25	-50.32	88.95	2/28/10 8:15	-106.81	32.46
2/28/10 5:30	-55.80	83.46	2/28/10 8:20	-109.19	30.07
2/28/10 5:35	-56.29	82.98	2/28/10 8:25	-111.68	27.58
2/28/10 5:40	-57.38	81.88	2/28/10 8:30	-110.19	29.08
2/28/10 5:45	-60.86	78.40	2/28/10 8:35	-110.59	28.67
2/28/10 5:50	-64.14	75.13	2/28/10 8:40	-110.90	28.37
2/28/10 5:55	-64.24	75.03	2/28/10 8:45	-110.79	28.47
2/28/10 6:00	-66.24	73.02	2/28/10 8:50	-112.98	26.28
2/28/10 6:05	-68.73	70.53	2/28/10 8:55	-109.70	29.56
2/28/10 6:10	-75.39	63.88	2/28/10 9:00	-108.79	30.48
2/28/10 6:15	-74.98	64.28	2/28/10 9:05	-108.31	30.96
2/28/10 6:20	-74.88	64.38	2/28/10 9:10	-107.90	31.36
2/28/10 6:25	-74.09	65.17	2/28/10 9:15	-110.08	29.18
2/28/10 6:30	-76.28	62.99	2/28/10 9:20	-112.09	27.17
2/28/10 6:35	-79.07	60.19	2/28/10 9:25	-112.47	26.79
2/28/10 6:40	-76.96	62.30	2/28/10 9:30	-111.48	27.78
2/28/10 6:45	-79.27	59.99	2/28/10 9:35	-114.38	24.89
2/28/10 6:50	-75.77	63.50	2/28/10 9:40	-114.76	24.51
2/28/10 6:55	-79.27	59.99	2/28/10 9:45	-118.85	20.42
2/28/10 7:00	-76.48	62.78	2/28/10 9:50	-121.34	17.93
2/28/10 7:05	-77.67	61.59	2/28/10 9:55	-124.21	15.06
2/28/10 7:10	-75.29	63.98	2/28/10 10:00	-126.39	12.87
2/28/10 7:15	-73.89	65.37	2/28/10 10:05	-129.29	9.98
2/28/10 7:20	-76.89	62.38	2/28/10 10:10	-131.37	7.89
2/28/10 7:25	-77.27	62.00	2/28/10 10:15	-134.06	5.20
2/28/10 7:30	-85.22	54.05	2/28/10 10:20	-134.54	4.72
2/28/10 7:35	-84.02	55.24	2/28/10 10:25	-132.16	7.11
2/28/10 7:40	-87.71	51.56	2/28/10 10:30	-130.78	8.48

Table AII.53: (Continued) Rainbow Bay D-Dock Platform 2 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1518 on 5 January 2011 which corresponds to a similar tide at 1810 on 27 February 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/28/10 10:35	-134.26	5.00	2/28/10 13:25	-93.78	45.49
2/28/10 10:40	-131.37	7.89	2/28/10 13:30	-90.91	48.36
2/28/10 10:45	-128.09	11.17	2/28/10 13:35	-92.38	46.88
2/28/10 10:50	-126.21	13.05	2/28/10 13:40	-94.49	44.78
2/28/10 10:55	-126.29	12.97	2/28/10 13:45	-91.49	47.77
2/28/10 11:00	-126.70	12.57	2/28/10 13:50	-90.91	48.36
2/28/10 11:05	-122.91	16.35	2/28/10 13:55	-89.71	49.55
2/28/10 11:10	-117.86	21.41	2/28/10 14:00	-90.20	49.07
2/28/10 11:15	-117.96	21.31	2/28/10 14:05	-89.41	49.86
2/28/10 11:20	-116.76	22.50	2/28/10 14:10	-88.11	51.15
2/28/10 11:25	-115.95	23.31	2/28/10 14:15	-88.21	51.05
2/28/10 11:30	-115.95	23.31	2/28/10 14:20	-88.90	50.36
2/28/10 11:35	-115.47	23.79	2/28/10 14:25	-88.21	51.05
2/28/10 11:40	-115.95	23.31	2/28/10 14:30	-86.13	53.13
2/28/10 11:45	-116.66	22.60	2/28/10 14:35	-84.73	54.53
2/28/10 11:50	-115.47	23.79	2/28/10 14:40	-84.02	55.24
2/28/10 11:55	-115.95	23.31	2/28/10 14:45	-83.54	55.72
2/28/10 12:00	-115.47	23.79	2/28/10 14:50	-80.26	59.00
2/28/10 12:05	-116.66	22.60	2/28/10 14:55	-80.16	59.10
2/28/10 12:10	-117.14	22.12	2/28/10 15:00	-80.37	58.90
2/28/10 12:15	-116.76	22.50	2/28/10 15:05	-79.27	59.99
2/28/10 12:20	-117.45	21.81	2/28/10 15:10	-76.17	63.09
2/28/10 12:25	-116.26	23.01	2/28/10 15:15	-76.38	62.89
2/28/10 12:30	-112.98	26.28	2/28/10 15:20	-74.40	64.87
2/28/10 12:35	-113.97	25.29	2/28/10 15:25	-73.89	65.37
2/28/10 12:40	-111.79	27.48	2/28/10 15:30	-72.69	66.57
2/28/10 12:45	-112.47	26.79	2/28/10 15:35	-71.09	68.17
2/28/10 12:50	-108.51	30.75	2/28/10 15:40	-73.20	66.06
2/28/10 12:55	-105.61	33.65	2/28/10 15:45	-71.60	67.66
2/28/10 13:00	-103.53	35.73	2/28/10 15:50	-72.01	67.25
2/28/10 13:05	-101.83	37.43	2/28/10 15:55	-72.29	66.97
2/28/10 13:10	-100.94	38.32	2/28/10 16:00	-72.69	66.57
2/28/10 13:15	-98.86	40.41	2/28/10 16:05	-72.69	66.57
2/28/10 13:20	-97.26	42.01	2/28/10 16:10	-73.48	65.78

Table AII.53: (Continued) Rainbow Bay D-Dock Platform 2 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1518 on 5 January 2011 which corresponds to a similar tide at 1810 on 27 February 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/28/10 16:15	-71.20	68.07	2/28/10 19:05	-86.03	53.23
2/28/10 16:20	-74.68	64.59	2/28/10 19:10	-88.80	50.46
2/28/10 16:25	-73.99	65.27	2/28/10 19:15	-90.50	48.76
2/28/10 16:30	-72.21	67.05	2/28/10 19:20	-92.68	46.58
2/28/10 16:35	-74.68	64.59	2/28/10 19:25	-91.29	47.98
2/28/10 16:40	-74.09	65.17	2/28/10 19:30	-90.30	48.97
2/28/10 16:45	-74.40	64.87	2/28/10 19:35	-90.91	48.36
2/28/10 16:50	-73.69	65.58	2/28/10 19:40	-93.88	45.38
2/28/10 16:55	-73.10	66.16	2/28/10 19:45	-93.98	45.28
2/28/10 17:00	-72.01	67.25	2/28/10 19:50	-92.38	46.88
2/28/10 17:05	-72.80	66.47	2/28/10 19:55	-93.57	45.69
2/28/10 17:10	-74.40	64.87	2/28/10 20:00	-95.28	43.99
2/28/10 17:15	-74.50	64.77	2/28/10 20:05	-98.86	40.41
2/28/10 17:20	-74.68	64.59	2/28/10 20:10	-99.44	39.82
2/28/10 17:25	-71.40	67.86	2/28/10 20:15	-97.97	41.30
2/28/10 17:30	-73.48	65.78	2/28/10 20:20	-99.34	39.92
2/28/10 17:35	-71.60	67.66	2/28/10 20:25	-102.82	36.44
2/28/10 17:40	-73.99	65.27	2/28/10 20:30	-103.43	35.83
2/28/10 17:45	-72.80	66.47	2/28/10 20:35	-106.22	33.04
2/28/10 17:50	-72.01	67.25	2/28/10 20:40	-105.92	33.35
2/28/10 17:55	-74.50	64.77	2/28/10 20:45	-107.01	32.25
2/28/10 18:00	-75.77	63.50	2/28/10 20:50	-109.60	29.66
2/28/10 18:05	-77.37	61.89	2/28/10 20:55	-111.28	27.99
2/28/10 18:10	-76.96	62.30	2/28/10 21:00	-112.57	26.69
2/28/10 18:15	-77.37	61.89	2/28/10 21:05	-110.49	28.77
2/28/10 18:20	-77.37	61.89	2/28/10 21:10	-111.28	27.99
2/28/10 18:25	-81.84	57.42	2/28/10 21:15	-112.88	26.39
2/28/10 18:30	-81.84	57.42	2/28/10 21:20	-115.75	23.52
2/28/10 18:35	-83.24	56.03	2/28/10 21:25	-117.45	21.81
2/28/10 18:40	-82.65	56.61	2/28/10 21:30	-112.78	26.49
2/28/10 18:45	-85.32	53.94	2/28/10 21:35	-111.28	27.99
2/28/10 18:50	-88.21	51.05	2/28/10 21:40	-114.48	24.79
2/28/10 18:55	-89.71	49.55	2/28/10 21:45	-117.45	21.81
2/28/10 19:00	-89.20	50.06	2/28/10 21:50	-116.66	22.60

Table AII.53: (Continued) Rainbow Bay D-Dock Platform 2 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1518 on 5 January 2011 which corresponds to a similar tide at 1810 on 27 February 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/28/10 21:55	-114.17	25.09	3/1/10 0:45	-90.91	48.36
2/28/10 22:00	-114.17	25.09	3/1/10 0:50	-91.19	48.08
2/28/10 22:05	-114.55	24.71	3/1/10 0:55	-92.99	46.27
2/28/10 22:10	-117.45	21.81	3/1/10 1:00	-90.91	48.36
2/28/10 22:15	-115.85	23.41	3/1/10 1:05	-88.90	50.36
2/28/10 22:20	-116.26	23.01	3/1/10 1:10	-87.60	51.66
2/28/10 22:25	-116.15	23.11	3/1/10 1:15	-85.93	53.34
2/28/10 22:30	-114.96	24.30	3/1/10 1:20	-86.51	52.75
2/28/10 22:35	-117.55	21.71	3/1/10 1:25	-84.73	54.53
2/28/10 22:40	-116.36	22.91	3/1/10 1:30	-82.25	57.02
2/28/10 22:45	-119.43	19.83	3/1/10 1:35	-81.74	57.53
2/28/10 22:50	-117.04	22.22	3/1/10 1:40	-78.16	61.11
2/28/10 22:55	-118.64	20.62	3/1/10 1:45	-77.57	61.69
2/28/10 23:00	-116.66	22.60	3/1/10 1:50	-77.67	61.59
2/28/10 23:05	-117.55	21.71	3/1/10 1:55	-75.08	64.18
2/28/10 23:10	-118.75	20.52	3/1/10 2:00	-72.80	66.47
2/28/10 23:15	-114.27	24.99	3/1/10 2:05	-70.61	68.65
2/28/10 23:20	-111.79	27.48	3/1/10 2:10	-71.50	67.76
2/28/10 23:25	-112.37	26.89	3/1/10 2:15	-73.48	65.78
2/28/10 23:30	-113.77	25.50	3/1/10 2:20	-68.81	70.45
2/28/10 23:35	-111.99	27.27	3/1/10 2:25	-68.91	70.35
2/28/10 23:40	-108.79	30.48	3/1/10 2:30	-65.74	73.53
2/28/10 23:45	-105.82	33.45	3/1/10 2:35	-68.22	71.04
2/28/10 23:50	-105.71	33.55	3/1/10 2:40	-64.95	74.32
2/28/10 23:55	-104.32	34.95	3/1/10 2:45	-66.14	73.12
3/1/10 0:00	-101.24	38.02	3/1/10 2:50	-65.15	74.11
3/1/10 0:05	-100.74	38.53	3/1/10 2:55	-63.55	75.71
3/1/10 0:10	-98.86	40.41	3/1/10 3:00	-63.86	75.41
3/1/10 0:15	-99.34	39.92	3/1/10 3:05	-62.05	77.21
3/1/10 0:20	-95.58	43.68	3/1/10 3:10	-61.37	77.90
3/1/10 0:25	-94.56	44.70	3/1/10 3:15	-59.36	79.90
3/1/10 0:30	-95.48	43.78	3/1/10 3:20	-59.56	79.70
3/1/10 0:35	-94.28	44.98	3/1/10 3:25	-59.08	80.18
3/1/10 0:40	-93.40	45.87	3/1/10 3:30	-60.27	78.99

Table AII.53: (Continued) Rainbow Bay D-Dock Platform 2 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1518 on 5 January 2011 which corresponds to a similar tide at 1810 on 27 February 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
3/1/10 3:35	-59.08	80.18	3/1/10 6:25	-72.59	66.67
3/1/10 3:40	-57.89	81.38	3/1/10 6:30	-73.00	66.26
3/1/10 3:45	-57.07	82.19	3/1/10 6:35	-76.07	63.19
3/1/10 3:50	-55.80	83.46	3/1/10 6:40	-77.57	61.69
3/1/10 3:55	-56.49	82.77	3/1/10 6:45	-78.16	61.11
3/1/10 4:00	-54.79	84.48	3/1/10 6:50	-78.36	60.90
3/1/10 4:05	-55.60	83.66	3/1/10 6:55	-77.98	61.29
3/1/10 4:10	-53.90	85.36	3/1/10 7:00	-80.95	58.31
3/1/10 4:15	-53.49	85.77	3/1/10 7:05	-81.84	57.42
3/1/10 4:20	-53.90	85.36	3/1/10 7:10	-82.75	56.51
3/1/10 4:25	-55.80	83.46	3/1/10 7:15	-83.03	56.23
3/1/10 4:30	-54.61	84.65	3/1/10 7:20	-85.14	54.12
3/1/10 4:35	-54.00	85.26	3/1/10 7:25	-84.63	54.63
3/1/10 4:40	-56.49	82.77	3/1/10 7:30	-86.51	52.75
3/1/10 4:45	-54.41	84.86	3/1/10 7:35	-87.12	52.14
3/1/10 4:50	-56.59	82.67	3/1/10 7:40	-86.23	53.03
3/1/10 4:55	-56.18	83.08	3/1/10 7:45	-88.90	50.36
3/1/10 5:00	-55.80	83.46	3/1/10 7:50	-90.09	49.17
3/1/10 5:05	-56.97	82.29	3/1/10 7:55	-92.68	46.58
3/1/10 5:10	-57.68	81.58	3/1/10 8:00	-93.40	45.87
3/1/10 5:15	-59.87	79.40	3/1/10 8:05	-94.56	44.70
3/1/10 5:20	-59.56	79.70	3/1/10 8:10	-94.56	44.70
3/1/10 5:25	-60.17	79.09	3/1/10 8:15	-97.05	42.21
3/1/10 5:30	-60.96	78.30	3/1/10 8:20	-99.26	40.00
3/1/10 5:35	-61.06	78.20	3/1/10 8:25	-100.94	38.32
3/1/10 5:40	-61.57	77.69	3/1/10 8:30	-101.45	37.82
3/1/10 5:45	-62.46	76.80	3/1/10 8:35	-101.83	37.43
3/1/10 5:50	-63.96	75.31	3/1/10 8:40	-106.32	32.94
3/1/10 5:55	-64.74	74.52	3/1/10 8:45	-106.60	32.66
3/1/10 6:00	-64.85	74.42	3/1/10 8:50	-110.19	29.08
3/1/10 6:05	-66.34	72.92	3/1/10 8:55	-109.80	29.46
3/1/10 6:10	-67.23	72.03	3/1/10 9:00	-110.39	28.87
3/1/10 6:15	-71.02	68.24	3/1/10 9:05	-111.48	27.78
3/1/10 6:20	-70.51	68.75	3/1/10 9:10	-113.77	25.50

Table AII.53: (Continued) Rainbow Bay D-Dock Platform 2 water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1518 on 5 January 2011 which corresponds to a similar tide at 1810 on 27 February 2010. An alternative groundwater impacted layer of 140 cm requires addition of 100 cm to the groundwater impacted layer.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
3/1/10 9:15	-114.96	24.30	3/1/10 10:00	-118.34	20.92
3/1/10 9:20	-115.06	24.20	3/1/10 10:05	-121.23	18.03
3/1/10 9:25	-115.57	23.69	3/1/10 10:10	-120.14	19.12
3/1/10 9:30	-116.46	22.80	3/1/10 10:15	-118.85	20.42
3/1/10 9:35	-118.44	20.82	3/1/10 10:20	-120.35	18.92
3/1/10 9:40	-119.25	20.01	3/1/10 10:25	-119.74	19.53
3/1/10 9:45	-118.75	20.52	3/1/10 10:30	-122.12	17.14
3/1/10 9:50	-118.75	20.52	3/1/10 10:35	-119.53	19.73
3/1/10 9:55	-118.95	20.32	3/1/10 10:40	-117.55	21.71

Table AII.54: Rainbow Bay B-Dock Platform time-series measurements.

RAD-7 #2357				Rainbow Bay B-Dock			eff=0.406 cpm/pCi/L				
Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	10	2	25	11	10	27	28.2	77.8	3.7	0.0	0.0
2	10	2	25	11	40	105	28.0	87.6	1.0	9.5	0.0
3	10	2	25	12	10	135	27.9	69.6	0.0	29.6	0.0
4	10	2	25	12	40	190	27.9	58.4	1.1	33.7	0.5
5	10	2	25	13	10	172	27.9	45.4	4.7	45.9	0.6
6	10	2	25	13	40	180	27.9	42.8	2.2	50.0	0.0
7	10	2	25	14	10	176	27.9	41.5	1.1	55.1	0.0
8	10	2	25	14	40	163	27.9	42.3	1.2	54.6	0.0
9	10	2	25	15	10	142	27.9	38.7	2.1	55.6	0.0
10	10	2	25	15	40	129	28.0	42.6	0.0	55.1	0.0
11	10	2	25	16	10	102	28.0	31.4	2.0	59.8	1.0
12	10	2	25	16	40	118	28.0	41.5	1.7	52.6	0.0
13	10	2	25	17	10	122	28.0	45.1	0.8	49.2	0.0
14	10	2	25	17	41	157	28.0	59.2	2.6	31.2	1.3
15	10	2	25	18	11	232	28.0	61.7	0.9	33.2	0.9
16	10	2	25	18	41	212	28.0	51.9	0.0	44.4	0.0
17	10	2	25	19	11	451	28.0	63.0	0.0	33.3	0.0
18	10	2	25	19	41	446	28.0	55.6	0.2	39.9	0.2
19	10	2	25	20	11	383	28.0	38.4	1.6	57.5	0.5
20	10	2	25	20	41	278	28.0	32.0	1.1	66.6	0.0
21	10	2	25	21	11	222	28.0	27.9	1.8	67.1	0.9
22	10	2	25	21	41	170	28.0	27.7	2.4	67.7	0.0
23	10	2	25	22	11	202	28.0	45.1	2.5	48.5	1.0
24	10	2	25	22	41	189	28.0	49.7	1.1	46.0	0.0
25	10	2	25	23	11	194	28.0	43.3	2.6	53.6	0.5
26	10	2	25	23	41	177	28.0	45.8	1.1	50.9	1.1
27	10	2	26	0	11	156	28.0	43.6	1.9	53.2	0.0
28	10	2	26	0	41	159	28.0	37.1	1.3	56.0	1.3
29	10	2	26	1	11	133	28.0	40.6	1.5	54.1	0.8
30	10	2	26	1	41	133	28.0	42.1	4.5	49.6	0.8
31	10	2	26	2	11	95	28.0	40.0	3.2	50.5	3.2
32	10	2	26	2	41	116	28.0	40.5	0.0	56.9	0.0
33	10	2	26	3	11	114	28.0	45.6	0.9	49.1	2.6
34	10	2	26	3	41	108	28.0	41.7	1.9	50.0	1.9
35	10	2	26	4	11	103	28.0	50.5	0.0	46.6	2.0
36	10	2	26	4	41	121	28.0	45.5	1.7	44.6	0.0
37	10	2	26	5	11	98	28.0	49.0	2.1	47.0	1.0

Table AII.54: (Continued) Rainbow Bay B-Dock Platform time-series measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
38	10	2	26	5	41	117	28.0	41.0	2.6	51.3	1.7
39	10	2	26	6	11	111	28.0	51.4	2.7	37.9	0.9
40	10	2	26	6	41	111	28.0	56.8	1.8	37.9	0.9
41	10	2	26	7	11	202	28.0	58.4	0.0	36.2	0.5
42	10	2	26	7	41	209	28.0	55.5	1.0	40.7	0.0
43	10	2	26	8	11	161	28.0	42.9	0.6	54.7	0.0
44	10	2	26	8	41	136	28.0	31.6	1.5	61.0	0.7
45	10	2	26	9	11	170	28.0	45.9	3.5	45.3	1.8
46	10	2	26	9	41	187	28.0	43.3	1.1	49.7	1.6
47	10	2	26	10	11	146	28.0	50.0	2.8	44.5	0.7
48	10	2	26	10	41	168	28.0	44.1	3.0	50.6	0.6
49	10	2	26	11	11	153	28.0	51.6	1.3	45.8	0.7
50	10	2	26	11	41	210	28.0	51.4	0.0	42.9	0.0
51	10	2	26	12	11	217	28.0	43.8	0.9	49.8	0.9
52	10	2	26	12	41	198	28.0	41.9	0.0	55.1	1.0
53	10	2	26	13	11	169	28.0	36.7	1.2	58.0	0.6
54	10	2	26	13	41	145	28.0	41.4	1.4	56.6	0.0
55	10	2	26	14	11	147	28.0	45.6	0.7	52.4	0.0
56	10	2	26	14	41	128	28.0	42.2	3.1	51.6	0.8
57	10	2	26	15	11	139	28.0	37.4	0.7	57.6	0.0
58	10	2	26	15	41	127	28.0	41.0	1.6	55.9	0.0
59	10	2	26	16	11	143	28.0	44.8	2.8	48.3	0.7
60	10	2	26	16	41	110	28.0	43.6	0.0	50.0	0.9
61	10	2	26	17	11	120	28.0	42.5	3.3	49.2	0.0
62	10	2	26	17	41	154	28.0	59.1	2.0	33.8	0.7
63	10	2	26	18	11	206	28.0	57.3	1.5	37.4	1.5
64	10	2	26	18	41	184	28.0	50.0	0.6	45.7	0.6
65	10	2	26	19	11	239	28.0	51.5	1.3	43.5	0.4
66	10	2	26	19	41	250	28.0	50.4	0.4	45.2	0.4
67	10	2	26	20	11	312	28.0	50.7	1.3	44.2	0.3
68	10	2	26	20	41	396	28.0	57.8	0.5	37.9	0.5
69	10	2	26	21	11	356	28.0	41.9	1.1	53.4	0.3
70	10	2	26	21	41	286	28.0	37.8	1.1	59.1	1.1
71	10	2	26	22	11	237	28.0	36.3	0.0	61.6	0.4
72	10	2	26	22	41	211	28.0	36.0	0.5	61.6	0.5
73	10	2	26	23	11	161	28.0	39.1	0.0	57.2	1.3
74	10	2	26	23	41	145	28.0	40.0	0.7	57.3	0.0
75	10	2	27	0	11	131	28.0	45.8	0.8	47.3	1.5

Table AII.54: (Continued) Rainbow Bay B-Dock Platform time-series measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
76	10	2	27	0	41	129	28.0	46.5	2.3	46.5	1.6
77	10	2	27	1	11	130	28.0	44.6	2.3	50.8	0.8
78	10	2	27	1	41	110	28.0	38.2	0.9	54.6	0.9
79	10	2	27	2	11	125	28.0	42.4	0.0	53.6	0.8
80	10	2	27	2	41	143	28.0	50.4	0.0	44.8	1.4
81	10	2	27	3	11	187	28.0	62.0	2.2	33.2	0.5
82	10	2	27	3	41	216	28.0	53.7	0.9	41.7	1.4
83	10	2	27	4	11	277	28.0	50.9	1.5	43.7	1.1
84	10	2	27	4	41	281	28.0	57.3	1.1	38.8	0.4
85	10	2	27	5	11	304	28.0	47.7	0.7	48.4	0.7
86	10	2	27	5	41	332	28.0	44.9	0.9	50.0	0.9
87	10	2	27	6	11	326	28.0	48.2	2.5	46.9	0.9
88	10	2	27	6	41	288	28.0	42.0	0.7	53.8	0.0
89	10	2	27	7	11	283	28.0	38.2	0.4	59.4	1.1
90	10	2	27	7	41	230	28.0	43.9	1.3	52.6	0.4
91	10	2	27	8	11	222	28.0	41.9	0.0	55.9	0.0
92	10	2	27	8	41	194	28.0	40.2	1.0	57.2	0.5
93	10	2	27	9	11	197	28.0	48.2	0.0	48.2	0.5
94	10	2	27	9	41	192	28.0	46.4	0.5	49.0	1.6
95	10	2	27	10	11	186	28.0	46.2	2.2	50.0	0.6
96	10	2	27	10	42	199	28.0	53.8	1.0	40.7	1.0
97	10	2	27	11	12	354	28.0	60.5	0.0	36.2	0.6
98	10	2	27	11	42	314	28.0	51.6	0.3	44.6	0.0
99	10	2	27	12	12	306	28.0	43.5	0.7	50.3	0.3
100	10	2	27	12	42	326	27.9	47.3	0.9	47.9	0.6
101	10	2	27	13	12	306	27.9	49.0	1.0	45.4	0.7
102	10	2	27	13	42	315	27.9	43.8	1.0	50.5	0.6
103	10	2	27	14	12	271	27.9	49.1	1.1	47.2	0.4
104	10	2	27	14	42	290	27.9	42.1	2.1	52.4	1.0
105	10	2	27	15	12	252	27.9	43.3	1.2	52.4	0.4
106	10	2	27	15	42	252	27.9	45.6	0.4	52.0	0.0
107	10	2	27	16	12	262	27.9	44.3	1.5	51.2	0.8
108	10	2	27	16	42	251	27.9	41.8	0.0	53.8	0.4
109	10	2	27	17	12	241	28.0	47.3	1.7	46.9	2.1
110	10	2	27	17	42	236	28.0	42.8	0.9	54.2	0.9
111	10	2	27	18	12	226	28.0	43.4	0.0	52.2	0.9
112	10	2	27	18	42	230	28.0	47.8	0.9	47.8	0.9
113	10	2	27	19	12	203	28.0	45.8	2.0	48.8	0.5

Table AII.54: (Continued) Rainbow Bay B-Dock Platform time-series measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
114	10	2	27	19	42	194	28.0	51.0	1.6	45.9	1.0
115	10	2	27	20	12	226	28.0	47.4	1.3	46.9	0.5
116	10	2	27	20	42	231	28.0	49.8	1.3	46.8	1.3
117	10	2	27	21	12	197	28.0	43.2	1.5	51.3	0.5
118	10	2	27	21	42	215	28.0	45.1	0.5	50.7	0.5
119	10	2	27	22	12	231	28.0	45.5	1.7	49.4	0.4
120	10	2	27	22	42	272	28.0	48.9	0.0	46.7	0.7
121	10	2	27	23	12	326	28.0	54.9	0.6	41.1	1.2
122	10	2	27	23	42	299	28.0	44.8	1.4	49.5	1.0
123	10	2	28	0	12	266	28.0	38.0	0.8	56.4	1.9
124	10	2	28	0	42	254	28.0	42.1	0.4	53.6	2.4
125	10	2	28	1	12	251	28.0	48.6	0.8	47.8	0.0
126	10	2	28	1	42	269	28.0	43.9	0.0	51.3	0.4
127	10	2	28	2	12	235	28.0	41.3	1.3	51.9	1.3
128	10	2	28	2	42	188	28.0	38.3	0.5	59.6	0.0
129	10	2	28	3	12	179	28.0	46.9	2.2	48.6	1.1
130	10	2	28	3	42	208	28.0	45.2	1.9	51.5	0.5
131	10	2	28	4	12	208	28.0	44.7	0.5	50.0	0.5
132	10	2	28	4	42	214	28.0	48.1	0.9	48.1	0.9
133	10	2	28	5	12	208	28.0	40.4	1.0	54.3	0.5
134	10	2	28	5	42	209	28.0	46.4	0.5	48.8	0.5
135	10	2	28	6	12	173	28.0	44.5	2.9	46.3	0.6
136	10	2	28	6	42	193	28.0	42.5	1.0	54.9	0.0
137	10	2	28	7	12	189	28.0	43.9	1.6	50.3	1.1
138	10	2	28	7	42	195	28.0	48.2	0.5	48.7	0.0
139	10	2	28	8	12	197	28.0	50.8	0.0	47.2	0.0
140	10	2	28	8	42	199	28.0	44.2	0.5	52.3	1.0
141	10	2	28	9	12	205	28.0	47.8	0.5	47.8	0.0
142	10	2	28	9	42	276	28.0	55.1	0.0	41.3	0.7
143	10	2	28	10	12	313	28.0	58.2	1.3	38.0	0.3
144	10	2	28	10	42	339	28.0	49.6	1.2	44.6	0.6
145	10	2	28	11	12	359	28.0	50.7	0.6	44.9	0.3
146	10	2	28	11	42	337	28.0	39.2	0.6	58.2	0.6
147	10	2	28	12	12	291	28.0	34.7	0.0	61.5	0.0
148	10	2	28	12	42	255	28.0	42.0	0.8	54.5	0.0
149	10	2	28	13	12	259	28.0	42.9	2.3	51.4	0.8
150	10	2	28	13	42	206	28.0	36.4	2.9	57.3	1.0
151	10	2	28	14	12	185	28.0	40.6	2.7	51.4	2.7

Table AII.54: (Continued) Rainbow Bay B-Dock Platform time-series measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
152	10	2	28	14	42	175	28.0	45.7	0.6	51.4	1.2
153	10	2	28	15	12	181	28.0	40.3	1.1	55.3	1.7
154	10	2	28	15	42	145	28.0	40.0	1.4	51.7	2.1
155	10	2	28	16	12	134	28.0	50.8	0.8	43.3	1.5
156	10	2	28	16	42	137	28.0	38.0	0.7	56.2	1.5
157	10	2	28	17	12	109	28.0	43.1	0.9	51.4	2.8
158	10	2	28	17	42	141	28.0	41.1	0.7	54.6	1.4
159	10	2	28	18	12	153	28.0	37.9	1.3	55.6	2.0
160	10	2	28	18	42	107	28.0	45.8	2.8	47.7	0.0
161	10	2	28	19	12	118	28.0	36.5	0.9	60.2	0.9
162	10	2	28	19	42	159	28.0	51.6	0.6	44.0	0.6
163	10	2	28	20	12	155	28.0	45.8	2.6	46.5	0.7
164	10	2	28	20	42	177	28.0	53.1	0.6	41.8	1.1
165	10	2	28	21	12	195	28.0	53.9	1.6	42.1	0.5
166	10	2	28	21	42	197	28.0	51.8	0.0	44.7	0.0
167	10	2	28	22	12	229	28.0	59.4	0.4	37.6	1.3
168	10	2	28	22	42	256	28.0	51.2	1.2	44.5	0.8
169	10	2	28	23	12	240	28.0	47.1	1.7	47.1	0.4
170	10	2	28	23	42	293	28.0	50.5	0.7	44.0	1.4
171	10	3	1	0	12	283	28.0	48.8	2.1	46.3	0.7
172	10	3	1	0	42	257	28.0	39.3	1.2	57.6	0.4
173	10	3	1	1	12	211	28.0	36.5	0.0	62.1	0.5
174	10	3	1	1	42	190	28.0	38.4	1.6	57.9	0.0
175	10	3	1	2	12	177	28.0	40.1	0.0	57.6	0.6
176	10	3	1	2	42	137	28.0	40.9	1.5	56.2	0.7
177	10	3	1	3	12	143	28.0	35.7	2.1	55.3	2.8
178	10	3	1	3	43	135	28.0	41.5	1.5	54.1	2.2
179	10	3	1	4	13	122	28.0	45.9	1.7	45.9	0.8
180	10	3	1	4	43	130	28.0	48.5	0.0	50.0	0.0
181	10	3	1	5	13	118	28.0	48.3	0.9	45.8	2.6
182	10	3	1	5	43	123	28.0	48.0	1.6	45.5	0.8
183	10	3	1	6	13	128	28.0	44.5	2.4	49.2	0.0
184	10	3	1	6	43	111	28.0	45.1	1.8	49.6	0.0
185	10	3	1	7	13	122	28.0	44.3	1.7	51.7	0.0
186	10	3	1	7	43	111	28.0	40.6	1.8	50.5	2.7
187	10	3	1	8	13	152	28.0	52.0	4.0	37.5	2.6
188	10	3	1	8	43	188	28.0	58.5	1.6	33.0	1.1
189	10	3	1	9	13	246	28.0	58.5	0.4	39.0	0.4

Table AII.54: (Continued) Rainbow Bay B-Dock Platform time-series measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
190	10	3	1	9	43	273	28.0	57.9	1.1	38.1	0.0
191	10	3	1	10	13	295	28.0	51.2	0.7	45.1	0.4
192	10	3	1	10	43	290	28.0	38.6	2.1	56.6	0.0
193	10	3	1	11	13	251	28.0	41.4	0.8	55.8	0.4
194	10	3	1	11	43	238	28.0	45.0	0.9	50.4	0.0
195	10	3	1	12	13	240	28.0	46.7	0.4	49.6	1.3
196	10	3	1	12	43	244	28.0	48.8	1.2	47.1	0.4
197	10	3	1	13	13	248	28.0	46.0	1.6	49.2	0.8
198	10	3	1	13	43	190	28.0	44.2	1.1	51.6	0.0
199	10	3	1	14	13	167	27.9	30.0	2.4	65.3	0.6
200	10	3	1	14	43	141	27.9	26.3	3.6	66.7	1.4
201	10	3	1	15	13	108	28.0	29.6	2.8	63.0	2.8
202	10	3	1	15	43	71	28.0	32.4	0.0	64.8	0.0
203	10	3	1	16	13	77	28.0	37.7	2.6	53.3	2.6
204	10	3	1	16	43	60	28.0	38.3	1.7	53.3	1.7
205	10	3	1	17	13	61	28.0	39.4	1.7	49.2	3.3
206	10	3	1	17	43	59	28.0	35.6	1.7	47.5	5.1
207	10	3	1	18	13	61	28.0	47.6	1.7	41.0	4.9
208	10	3	1	18	43	73	28.0	43.8	1.4	45.2	2.8
209	10	3	1	19	13	74	28.0	43.3	1.4	41.9	6.8
210	10	3	1	19	43	65	28.0	38.5	0.0	52.3	4.6
211	10	3	1	20	13	71	28.0	62.0	1.4	32.4	0.0
212	10	3	1	20	43	72	28.0	58.3	0.0	30.6	5.6
213	10	3	1	21	13	115	28.0	50.4	0.9	38.3	4.4
214	10	3	1	21	43	140	28.0	45.0	1.4	49.3	0.7
215	10	3	1	22	13	115	28.0	43.5	1.8	51.3	0.0
216	10	3	1	22	43	155	28.0	45.8	1.9	45.8	2.6
217	10	3	1	23	13	158	28.0	40.5	1.9	55.7	0.0
218	10	3	1	23	43	150	28.0	44.7	1.3	49.3	2.0
219	10	3	2	0	13	173	28.0	43.9	1.7	48.0	1.7
220	10	3	2	0	43	140	28.0	37.2	0.7	56.4	1.4
221	10	3	2	1	13	111	28.0	29.7	0.9	63.1	1.8
222	10	3	2	1	43	98	28.0	36.7	2.1	56.1	2.1
223	10	3	2	2	13	92	28.0	39.1	3.3	53.3	2.2
224	10	3	2	2	43	104	28.0	33.7	2.9	60.6	1.9
225	10	3	2	3	13	76	28.0	39.5	2.6	46.1	0.0
226	10	3	2	3	43	88	28.0	39.8	2.3	48.9	5.7
227	10	3	2	4	13	79	28.0	38.0	0.0	54.4	3.8

Table AII.54: (Continued) Rainbow Bay B-Dock Platform time-series measurements.

Test #	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
228	10	3	2	4	43	49	28.0	32.7	4.1	61.2	2.1
229	10	3	2	5	13	83	28.0	39.8	6.0	45.8	1.2
230	10	3	2	5	43	73	28.0	39.7	1.4	45.2	5.5
231	10	3	2	6	13	81	28.0	35.8	2.5	51.9	2.5
232	10	3	2	6	43	58	28.0	37.9	3.5	46.6	3.5
233	10	3	2	7	13	71	28.0	40.9	2.8	47.9	4.2
234	10	3	2	7	43	58	28.0	48.3	5.2	37.9	3.5
235	10	3	2	8	13	51	28.0	51.0	0.0	43.1	2.0
236	10	3	2	8	43	67	28.0	35.8	3.0	58.2	3.0
237	10	3	2	9	13	67	28.0	35.8	4.5	53.7	3.0
238	10	3	2	9	43	78	28.0	41.0	2.6	46.2	3.9
239	10	3	2	10	13	56	28.0	42.9	3.6	42.9	1.8
240	10	3	2	10	43	71	28.0	25.4	1.4	63.4	0.0
241	10	3	2	10	48	12	4.2	50.0	8.3	41.7	0.0

Table AII.55: Rainbow Bay B-Dock Platform time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	8	31.0	9.0	2.0	6.9	70	133	67.745	36.714
2	2218	9	33.5	9.0	2.0	6.9	70	133	299.437	69.285
3	2218	8	35.3	9.0	2.0	7.0	0	133	306.494	70.081
4	2218	8	35.9	8.0	2.0	6.9	70	133	361.924	75.534
5	2218	9	36.2	8.0	2.0	7.0	0	133	254.325	64.482
6	2218	8	36.5	8.0	2.0	6.9	70	133	251.064	64.114
7	2218	8	36.2	8.0	1.0	6.9	70	133	238.022	62.618
8	2218	8	35.9	7.0	1.0	6.9	70	133	224.980	61.081
9	2236	8	35.6	8.0	1.0	7.1	0	133	179.332	55.321
10	2218	8	35.3	9.0	1.0	7.1	0	133	178.852	55.173
11	2218	8	34.1	7.0	1.0	6.9	70	133	104.152	43.904
12	2218	8	32.8	8.0	1.0	7.1	0	133	159.483	52.539
13	2218	8	31.6	9.0	1.0	7.1	0	133	178.852	55.173
14	2218	9	30.1	8.0	1.0	7.1	0	133	298.903	69.497
15	2218	9	28.6	7.0	1.0	7.0	70	133	461.351	84.473
16	2218	8	27.7	7.0	1.0	6.9	70	133	357.384	74.957
17	2218	8	26.8	7.0	1.0	7.0	70	133	924.349	116.403
18	2218	8	26.4	7.0	1.0	7.0	70	133	807.178	109.228
19	2218	8	25.8	7.0	1.0	6.9	70	133	474.770	85.625

Table AII.55: (Continued) Rainbow Bay B-Dock Platform time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
20	2218	8	25.5	7.0	1.0	6.9	70	133	289.414	68.203
21	2218	8	25.2	7.0	1.0	6.9	70	133	198.186	58.073
22	2201	9	24.9	6.0	1.0	7.0	70	133	152.701	51.517
23	2218	8	24.9	6.0	1.0	6.9	70	133	292.405	69.161
24	2218	9	24.6	6.0	1.0	6.9	70	133	305.401	69.832
25	2218	8	24.6	6.0	1.0	6.9	70	133	272.912	66.406
26	2218	9	24.6	6.0	1.0	7.0	70	133	259.916	65.697
27	2218	9	24.3	6.0	1.0	7.0	70	133	220.929	60.473
28	2218	8	24.3	6.0	1.0	7.0	70	133	188.439	56.830
29	2218	8	24.0	6.0	1.0	7.0	70	133	172.194	54.688
30	2218	8	23.7	6.0	1.0	7.0	70	133	178.692	55.556
31	2201	9	23.4	6.0	1.0	7.0	70	133	120.318	47.637
32	2218	8	23.1	6.0	1.0	7.0	70	133	152.701	51.517
33	2201	9	23.4	6.0	1.0	7.0	70	133	165.696	54.248
34	2218	8	23.1	6.0	1.0	7.0	70	133	142.954	50.569
35	2201	9	23.1	6.0	1.0	7.0	70	133	165.696	53.803
36	2218	8	23.1	6.0	1.0	7.0	70	133	178.692	55.124
37	2218	8	23.1	6.0	1.0	7.0	70	133	156.089	52.030
38	2218	8	22.8	6.0	1.0	7.0	70	133	152.701	51.983
39	2218	8	22.8	6.0	1.0	7.0	70	133	182.103	56.034
40	2218	9	22.8	6.0	1.0	7.0	70	133	201.435	58.481
41	2218	9	22.8	6.0	1.0	7.0	70	133	383.376	77.382
42	2218	8	23.1	6.0	1.0	7.0	70	133	376.878	76.783
43	2218	8	25.2	6.0	1.0	6.9	70	133	224.178	60.863
44	2201	9	29.8	7.0	1.0	6.9	70	133	139.705	49.600
45	2218	8	33.5	7.0	1.0	6.9	70	133	250.392	64.675
46	2218	9	34.1	7.0	1.0	6.9	70	133	259.916	65.697
47	2218	8	35.9	7.0	1.0	6.9	70	133	237.385	62.451
48	2201	9	36.8	7.0	1.0	6.9	70	133	240.422	62.771
49	2218	8	37.4	7.0	2.0	6.9	70	133	253.644	64.675
50	2218	9	39.9	8.0	2.0	7.0	0	133	351.200	74.404
51	2201	9	38.9	7.0	2.0	6.9	70	133	305.674	70.227
52	2218	9	38.9	7.0	2.0	6.9	70	133	266.652	66.465
53	2201	9	37.1	7.0	1.0	7.0	0	133	198.363	58.125
54	2218	8	35.3	7.0	1.0	6.9	70	133	194.937	57.248
55	2218	8	33.8	7.0	1.0	6.9	70	133	217.680	60.081

Table AII.55: (Continued) Rainbow Bay B-Dock Platform time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
56	2218	8	34.7	7.0	1.0	6.9	70	133	175.600	54.736
57	2218	9	34.7	6.0	1.0	6.9	70	133	168.945	53.803
58	2218	8	34.7	7.0	1.0	6.9	70	133	169.096	53.851
59	2218	9	34.7	7.0	1.0	6.9	70	133	204.684	58.886
60	2201	9	33.5	7.0	1.0	6.9	70	133	152.837	52.030
61	2218	9	31.6	6.0	1.0	6.9	70	133	165.844	53.403
62	2218	8	29.5	6.0	1.0	7.0	70	133	295.918	68.885
63	2218	8	28.3	6.0	1.0	6.9	70	133	376.878	77.679
64	2218	8	27.1	6.0	1.0	6.9	70	133	295.654	69.161
65	2201	9	26.1	6.0	1.0	6.9	70	133	399.621	78.855
66	2218	8	25.2	5.0	1.0	7.0	70	133	409.368	79.725
67	2218	8	24.9	5.0	1.0	7.0	70	133	513.792	88.512
68	2218	8	24.3	5.0	1.0	6.9	70	133	742.083	105.231
69	2218	8	24.0	5.0	1.0	7.0	70	133	484.525	86.157
70	2218	9	23.7	5.0	1.0	7.0	70	133	344.696	74.715
71	2218	8	23.4	5.0	1.0	7.0	70	133	276.161	67.106
72	2218	8	22.8	5.0	1.0	6.9	70	133	246.920	63.517
73	2201	9	22.5	5.0	1.0	7.0	70	133	201.435	58.481
74	2201	9	22.2	5.0	1.0	6.9	70	133	188.439	56.409
75	2218	8	21.9	5.0	1.0	7.0	70	133	191.688	57.248
76	2201	9	21.6	5.0	1.0	7.0	70	133	191.688	57.248
77	2218	8	21.6	5.0	1.0	7.0	70	133	188.439	56.409
78	2218	8	21.6	5.0	1.0	6.9	70	133	133.207	49.107
79	2218	9	21.6	5.0	1.0	7.0	70	133	172.194	54.248
80	2218	9	21.3	5.0	1.0	6.9	70	133	230.675	62.395
81	2218	8	21.0	5.0	1.0	7.0	70	133	376.878	76.783
82	2201	9	20.7	5.0	1.0	6.9	70	133	370.380	77.083
83	2201	9	20.4	5.0	1.0	7.0	70	133	455.259	84.277
84	2218	8	20.4	5.0	1.0	7.0	70	133	523.081	89.203
85	2218	8	20.4	5.0	1.0	7.0	70	133	468.266	85.088
86	2218	9	20.0	5.0	1.0	7.0	70	133	478.022	86.422
87	2218	9	20.0	5.0	1.0	7.0	70	133	507.288	88.512
88	2218	8	19.7	5.0	1.0	7.0	70	133	393.474	78.339
89	2218	9	19.7	5.0	1.0	7.0	70	133	347.638	74.648
90	2218	8	20.0	5.0	1.0	7.0	70	133	328.144	72.123
91	2218	9	23.4	6.0	1.0	7.0	70	133	302.152	69.497

Table AII.55: (Continued) Rainbow Bay B-Dock Platform time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
92	2218	8	29.5	7.0	1.0	6.9	70	133	253.418	64.252
93	2218	8	34.7	7.0	1.0	6.9	70	133	308.925	70.227
94	2218	8	38.3	7.0	2.0	6.9	70	133	285.908	68.484
95	2218	8	38.9	7.0	2.0	6.9	70	133	276.407	67.166
96	2218	9	39.5	7.0	2.0	6.9	70	133	344.696	74.404
97	2218	8	39.2	7.0	2.0	6.9	70	133	693.262	101.958
98	2218	9	41.1	7.0	2.0	6.9	70	133	526.799	89.537
99	2218	8	39.9	7.0	2.0	6.9	70	133	432.496	81.789
100	2201	9	38.6	7.0	2.0	6.9	70	133	498.868	87.970
101	2218	9	38.0	7.0	1.0	6.9	70	133	485.825	86.654
102	2218	8	36.8	7.0	2.0	6.9	70	133	446.699	83.404
103	2218	9	38.0	7.0	2.0	6.9	70	133	433.656	82.009
104	2218	8	36.5	6.0	1.0	6.9	70	133	394.529	79.138
105	2218	8	34.7	6.0	1.0	6.9	70	133	352.142	74.916
106	2218	8	33.5	6.0	1.0	6.9	70	133	374.966	76.756
107	2218	8	31.9	6.0	1.0	6.9	70	133	374.966	77.058
108	2218	8	30.4	6.0	1.0	6.9	70	133	339.100	73.660
109	2218	8	29.8	6.0	1.0	6.9	70	133	364.207	76.551
110	2218	8	29.5	6.0	1.0	6.9	70	133	325.185	72.188
111	2201	8	28.9	6.0	1.0	6.9	70	133	315.429	71.215
112	2218	9	27.7	5.0	1.0	7.0	70	133	354.135	74.957
113	2218	8	26.4	6.0	1.0	6.9	70	133	302.152	69.497
114	2218	8	25.2	5.0	1.0	6.9	70	133	318.397	71.477
115	2218	8	24.6	5.0	1.0	7.0	70	133	347.638	74.026
116	2218	9	24.0	5.0	1.0	7.0	70	133	367.131	76.783
117	2218	8	23.4	5.0	1.0	7.0	70	133	276.161	66.757
118	2218	8	23.1	5.0	1.0	7.0	70	133	315.148	70.824
119	2218	8	22.8	5.0	1.0	7.0	70	133	341.140	73.398
120	2218	9	22.5	5.0	1.0	7.0	70	133	429.244	81.789
121	2218	8	22.8	5.0	1.0	7.0	70	133	575.577	94.002
122	2201	9	22.8	5.0	1.0	7.0	70	133	432.496	82.349
123	2218	8	22.5	5.0	1.0	7.0	70	133	321.646	72.444
124	2236	9	22.2	5.0	1.0	7.0	70	133	337.891	74.338
125	2218	8	22.2	5.0	1.0	7.0	70	133	396.372	78.563
126	2201	9	22.2	5.0	1.0	6.9	70	133	383.376	77.382
127	2218	8	22.5	5.0	1.0	7.0	70	133	311.899	71.151

Table AII.55: (Continued) Rainbow Bay B-Dock Platform time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
128	2218	9	22.5	5.0	1.0	7.0	70	133	233.924	62.016
129	2218	9	22.2	5.0	1.0	6.9	70	133	269.663	66.406
130	2218	8	22.2	5.0	1.0	7.0	70	133	305.401	69.832
131	2218	8	22.2	5.0	1.0	7.0	70	133	302.152	69.497
132	2218	8	22.2	5.0	1.0	7.0	70	133	331.393	72.764
133	2218	8	21.9	5.0	1.0	7.0	70	133	272.912	66.406
134	2218	8	21.9	5.0	1.0	7.0	70	133	315.148	70.824
135	2201	9	21.6	5.0	1.0	7.0	70	133	250.169	63.886
136	2218	8	21.6	5.0	1.0	7.0	70	133	266.414	65.697
137	2218	8	21.3	5.0	1.0	7.0	70	133	266.414	66.052
138	2218	9	21.3	5.0	1.0	7.0	70	133	305.401	69.832
139	2218	9	21.3	5.0	1.0	7.0	70	133	324.895	71.801
140	2218	9	21.6	5.0	1.0	7.0	70	133	282.659	68.142
141	2218	8	21.9	5.0	1.0	6.9	70	133	318.397	71.151
142	2218	8	22.8	5.0	1.0	7.0	70	133	491.029	86.950
143	2218	8	23.4	5.0	1.0	6.9	70	133	591.836	94.484
144	2236	9	24.0	6.0	1.0	7.1	0	133	543.058	91.052
145	2218	8	24.9	6.0	1.0	6.9	70	133	591.836	94.484
146	2201	9	25.8	6.0	1.0	7.0	70	133	425.992	81.789
147	2218	8	26.8	6.0	1.0	6.9	70	133	328.437	72.188
148	2218	9	27.4	6.0	1.0	7.0	70	133	347.638	74.026
149	2218	8	27.4	5.0	1.0	7.0	70	133	357.703	75.332
150	2218	8	26.8	5.0	1.0	7.0	70	133	240.422	63.145
151	2218	8	26.1	6.0	1.0	7.0	70	133	237.173	63.517
152	2218	8	26.4	5.0	1.0	7.0	70	133	256.667	65.339
153	2218	8	27.7	6.0	1.0	6.9	70	133	230.675	62.771
154	2218	8	28.3	6.0	1.0	6.9	70	133	185.355	56.881
155	2218	8	28.3	6.0	1.0	6.9	70	133	217.680	60.863
156	2218	8	27.7	5.0	1.0	7.0	70	133	165.696	53.803
157	2218	9	26.8	5.0	1.0	7.0	70	133	149.585	52.030
158	2218	8	25.5	5.0	1.0	7.0	70	133	185.190	56.409
159	2218	8	24.6	5.0	1.0	6.9	70	133	181.941	56.830
160	2218	8	23.7	5.0	1.0	7.0	70	133	159.341	52.492
161	2218	8	22.5	5.0	1.0	7.0	70	133	139.705	49.600
162	2218	8	21.6	5.0	1.0	7.0	70	133	266.414	65.697
163	2218	8	21.3	5.0	1.0	7.0	70	133	227.426	61.634

Table AII.55: (Continued) Rainbow Bay B-Dock Platform time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
164	2218	8	21.0	5.0	1.0	7.0	70	133	302.152	69.832
165	2218	8	20.7	5.0	1.0	7.0	70	133	341.140	73.398
166	2218	8	20.7	5.0	1.0	7.0	70	133	331.393	72.444
167	2218	8	20.7	5.0	1.0	7.0	70	133	438.608	82.831
168	2218	8	20.7	5.0	1.0	7.0	70	133	422.363	81.153
169	2218	8	20.7	5.0	1.0	7.0	70	133	367.131	75.876
170	2218	8	20.7	5.0	1.0	7.0	70	133	474.770	86.157
171	2218	8	21.0	5.0	1.0	7.0	70	133	445.106	83.382
172	2218	8	21.0	4.0	1.0	7.0	70	133	324.895	72.123
173	2201	9	21.0	5.0	1.0	7.0	70	133	250.169	63.886
174	2218	8	21.0	5.0	1.0	7.0	70	133	237.173	62.395
175	2218	8	20.7	5.0	1.0	6.9	70	133	230.675	61.634
176	2218	8	20.7	5.0	1.0	7.0	70	133	181.941	55.556
177	2218	8	20.7	5.0	1.0	7.0	70	133	159.199	53.803
178	2218	8	20.4	5.0	1.0	7.0	70	133	178.692	55.984
179	2218	8	20.4	5.0	1.0	7.0	70	133	181.941	55.556
180	2218	8	20.4	5.0	1.0	7.0	70	133	204.684	58.481
181	2218	8	20.4	5.0	1.0	7.0	70	133	178.692	56.409
182	2218	9	20.7	5.0	1.0	7.0	70	133	191.688	56.830
183	2218	8	20.7	5.0	1.0	7.0	70	133	185.190	55.984
184	2218	8	20.7	5.0	1.0	7.0	70	133	162.447	52.902
185	2218	8	20.7	5.0	1.0	7.0	70	133	175.443	54.688
186	2218	8	21.0	5.0	1.0	7.0	70	133	142.954	51.045
187	2218	8	21.9	5.0	1.0	6.9	70	133	250.169	64.979
188	2218	8	23.7	5.0	1.0	6.9	70	133	354.135	74.957
189	2218	9	24.9	5.0	1.0	7.0	70	133	464.600	84.743
190	2218	9	26.1	8.0	1.0	7.1	0	133	513.792	88.512
191	2218	8	29.2	6.0	1.0	6.9	70	133	487.777	86.687
192	2218	8	29.8	7.0	1.0	7.1	0	133	364.207	75.639
193	2218	8	29.2	6.0	1.0	6.9	70	133	334.940	73.147
194	2236	8	29.8	6.0	1.0	6.9	70	133	347.948	74.092
195	2201	9	30.1	6.0	1.0	6.9	70	133	360.955	75.944
196	2218	8	31.0	6.0	1.0	6.9	70	133	386.970	77.748
197	2218	8	31.9	7.0	1.0	6.9	70	133	367.459	76.551
198	2218	8	31.9	8.0	1.0	6.9	70	133	272.912	66.406
199	2218	8	31.3	26.0	1.0	6.9	70	133	163.029	53.091

Table AII.55: (Continued) Rainbow Bay B-Dock Platform time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
200	2218	8	31.6	42.0	1.0	6.9	70	133	117.381	47.246
201	2218	8	31.6	47.0	1.0	6.9	70	133	100.897	44.466
202	2218	9	31.3	49.0	1.0	7.0	70	133	74.859	38.399
203	2218	8	30.4	49.0	1.0	6.9	70	133	91.052	42.126
204	2218	8	29.5	48.0	1.0	6.9	70	133	74.792	38.365
205	2218	8	28.3	48.0	1.0	6.9	70	133	74.792	39.022
206	2218	8	27.4	49.0	1.0	6.9	70	133	65.037	37.694
207	2218	8	26.1	49.0	1.0	6.9	70	133	91.052	42.715
208	2218	8	25.2	49.0	1.0	6.9	70	133	100.807	43.865
209	2218	8	24.3	50.0	1.0	7.0	70	133	97.555	44.426
210	2218	8	24.0	51.0	1.0	7.0	70	133	74.792	40.298
211	2218	8	23.7	52.0	1.0	7.0	70	133	142.954	50.087
212	2218	8	23.1	53.0	1.0	6.9	70	133	130.074	49.644
213	2201	9	23.1	54.0	1.0	6.9	70	133	178.692	56.830
214	2218	8	22.8	54.0	1.0	7.0	70	133	204.684	58.481
215	2201	9	23.1	56.0	1.0	7.0	70	133	162.447	52.902
216	2218	8	22.8	56.0	1.0	7.0	70	133	224.178	62.016
217	2218	8	22.5	57.0	1.0	6.9	70	133	207.933	58.886
218	2218	8	22.5	58.0	1.0	7.0	70	133	214.431	60.473
219	2218	8	22.5	58.0	1.0	7.0	70	133	243.671	63.886
220	2218	8	22.2	59.0	1.0	7.0	70	133	165.696	54.248
221	2201	9	22.2	59.0	1.0	7.0	70	133	103.966	44.387
222	2218	9	21.9	60.0	1.0	7.0	70	133	113.713	46.023
223	2218	9	21.6	60.0	1.0	7.0	70	133	113.815	46.064
224	2218	8	21.6	61.0	1.0	7.0	70	133	110.464	45.485
225	2218	8	21.6	61.0	1.0	7.0	70	133	97.468	42.677
226	2236	8	21.6	61.0	1.0	7.0	70	133	107.215	46.023
227	2218	8	21.3	61.0	1.0	7.0	70	133	91.052	43.294
228	2218	8	21.6	62.0	1.0	7.0	70	133	48.734	33.289
229	2218	8	21.3	62.0	1.0	7.0	70	133	103.966	44.387
230	2218	8	21.6	62.0	1.0	7.0	70	133	87.722	42.677
231	2218	8	21.6	62.0	1.0	7.0	70	133	90.971	42.088
232	2218	8	21.6	62.0	1.0	7.0	70	133	68.228	37.661
233	2218	8	21.6	63.0	1.0	7.0	70	133	90.971	42.677
234	2218	8	22.2	63.0	1.0	7.0	70	133	87.722	41.490
235	2218	8	23.4	63.0	1.0	7.0	70	133	84.548	40.298

Table AII.55: (Continued) Rainbow Bay B-Dock Platform time-series measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
236	2218	8	26.4	63.0	1.0	6.9	70	133	74.792	39.022
237	2236	9	26.8	63.0	1.0	6.9	70	133	74.792	39.022
238	2201	9	28.0	63.0	1.0	6.9	70	133	97.555	44.426
239	2218	8	28.6	63.0	1.0	7.0	70	133	78.044	39.022
240	2218	8	30.1	64.0	1.0	6.9	70	133	58.533	34.853
241	2218	8	30.4	64.0	1.0	6.3	60	133	127.906	155.438

Table AII.56: Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	11:00:48	24.80	52.00	34.22	104.3	N/A	N/A	0.198	8.51	1.1
2/25/2010	11:05:48	24.78	51.99	34.21	104.3	N/A	N/A	0.189	8.51	1.4
2/25/2010	11:10:48	24.78	51.97	34.19	103.8	N/A	N/A	0.139	8.51	0.6
2/25/2010	11:15:48	24.82	51.96	34.18	104.3	N/A	N/A	0.130	8.51	0.7
2/25/2010	11:20:49	24.81	52.04	34.25	104.4	N/A	N/A	0.130	8.51	1.0
2/25/2010	11:25:49	24.84	52.00	34.21	104.3	N/A	N/A	0.129	8.51	1.0
2/25/2010	11:30:49	24.84	52.03	34.24	104.4	N/A	N/A	0.129	8.51	0.6
2/25/2010	11:35:48	24.86	52.04	34.25	104.5	N/A	N/A	0.127	8.50	0.7
2/25/2010	11:40:48	24.88	52.05	34.25	104.5	N/A	N/A	0.124	8.50	1.1
2/25/2010	11:45:48	24.86	52.05	34.25	104.3	N/A	N/A	0.123	8.50	2.6
2/25/2010	11:50:48	24.86	52.04	34.24	104.0	N/A	N/A	0.149	8.50	2.2
2/25/2010	11:55:48	24.88	52.05	34.25	104.0	N/A	N/A	0.122	8.50	2.3
2/25/2010	12:00:48	24.90	52.07	34.27	104.1	N/A	N/A	0.122	8.50	1.4
2/25/2010	12:05:48	24.91	52.09	34.28	104.2	N/A	N/A	0.121	8.50	1.3
2/25/2010	12:10:48	24.89	52.11	34.29	104.1	N/A	N/A	0.121	8.50	1.3
2/25/2010	12:15:48	24.91	52.11	34.29	103.8	N/A	N/A	0.121	8.49	0.9
2/25/2010	12:20:48	24.89	52.11	34.30	102.2	N/A	N/A	0.121	8.49	1.3
2/25/2010	12:25:48	24.93	52.15	34.33	103.7	N/A	N/A	0.120	8.49	0.6
2/25/2010	12:30:48	24.94	52.18	34.35	103.8	N/A	N/A	0.120	8.49	1.3
2/25/2010	12:35:49	24.95	52.21	34.37	103.5	N/A	N/A	0.118	8.49	1.1
2/25/2010	12:40:48	24.97	52.24	34.39	104.0	N/A	N/A	0.120	8.49	1.4
2/25/2010	12:45:48	25.00	52.23	34.38	103.9	N/A	N/A	0.120	8.49	1.0
2/25/2010	12:50:48	25.02	52.25	34.40	103.7	N/A	N/A	0.119	8.49	1.2
2/25/2010	12:55:48	25.03	52.25	34.40	101.8	N/A	N/A	0.118	8.49	1.0
2/25/2010	13:00:48	25.06	52.26	34.40	102.7	N/A	N/A	0.117	8.49	0.8
2/25/2010	13:05:48	25.08	52.28	34.41	101.4	N/A	N/A	0.118	8.48	1.4
2/25/2010	13:10:48	25.12	52.30	34.43	100.7	N/A	N/A	0.117	8.48	1.7
2/25/2010	13:15:48	25.13	52.32	34.45	103.8	N/A	N/A	0.115	8.49	0.5
2/25/2010	13:20:49	25.14	52.34	34.46	103.0	N/A	N/A	0.114	8.49	1.3
2/25/2010	13:25:48	25.15	52.38	34.49	104.0	N/A	N/A	0.111	8.49	1.1
2/25/2010	13:30:48	25.15	52.40	34.50	103.2	N/A	N/A	0.113	8.49	0.9
2/25/2010	13:35:48	25.15	52.42	34.52	102.0	N/A	N/A	0.112	8.48	1.6
2/25/2010	13:40:48	25.10	52.44	34.54	101.4	N/A	N/A	0.112	8.48	1.1
2/25/2010	13:45:49	25.14	52.47	34.56	103.2	N/A	N/A	0.110	8.49	1.0
2/25/2010	13:50:48	25.14	52.55	34.61	104.3	N/A	N/A	0.111	8.49	1.0
2/25/2010	13:55:48	25.16	52.56	34.62	103.3	N/A	N/A	0.110	8.49	0.9
2/25/2010	14:00:48	25.17	52.57	34.63	104.3	N/A	N/A	0.110	8.49	2.1

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	14:05:48	25.18	52.59	34.64	103.7	N/A	N/A	0.109	8.49	1.5
2/25/2010	14:10:48	25.18	52.60	34.65	103.9	N/A	N/A	0.105	8.49	1.1
2/25/2010	14:15:48	25.16	52.60	34.65	104.2	N/A	N/A	0.109	8.49	0.6
2/25/2010	14:20:48	25.18	52.62	34.67	104.2	N/A	N/A	0.155	8.49	1.0
2/25/2010	14:25:48	25.19	52.62	34.67	104.2	N/A	N/A	0.106	8.49	1.5
2/25/2010	14:30:48	25.21	52.64	34.68	104.3	N/A	N/A	0.105	8.49	1.1
2/25/2010	14:35:48	25.18	52.66	34.69	104.1	N/A	N/A	0.104	8.49	1.2
2/25/2010	14:40:49	25.19	52.67	34.70	104.2	N/A	N/A	0.105	8.49	1.2
2/25/2010	14:45:48	25.17	52.67	34.70	103.9	N/A	N/A	0.104	8.49	1.7
2/25/2010	14:50:49	25.19	52.70	34.72	104.1	N/A	N/A	0.105	8.49	0.5
2/25/2010	14:55:48	25.16	52.73	34.75	104.1	N/A	N/A	0.105	8.49	1.2
2/25/2010	15:00:49	25.15	52.75	34.76	104.2	N/A	N/A	0.104	8.49	1.3
2/25/2010	15:05:48	25.17	52.76	34.77	104.3	N/A	N/A	0.105	8.49	1.5
2/25/2010	15:10:48	25.20	52.77	34.78	104.1	N/A	N/A	0.105	8.49	1.8
2/25/2010	15:15:48	25.17	52.80	34.80	104.8	N/A	N/A	0.102	8.49	1.9
2/25/2010	15:20:48	25.17	52.82	34.82	105.0	N/A	N/A	0.102	8.49	0.8
2/25/2010	15:25:48	25.19	52.84	34.83	104.9	N/A	N/A	0.101	8.49	0.7
2/25/2010	15:30:48	25.17	52.86	34.84	105.0	N/A	N/A	0.102	8.49	0.4
2/25/2010	15:35:48	25.16	52.87	34.85	105.0	N/A	N/A	0.101	8.49	1.0
2/25/2010	15:40:48	25.14	52.90	34.87	105.3	N/A	N/A	0.101	8.49	1.2
2/25/2010	15:45:48	25.13	52.92	34.89	104.9	N/A	N/A	0.101	8.49	1.9
2/25/2010	15:50:48	25.14	52.92	34.89	105.0	N/A	N/A	0.102	8.49	1.4
2/25/2010	15:55:49	25.14	52.93	34.90	104.7	N/A	N/A	0.102	8.49	2.2
2/25/2010	16:00:48	25.12	52.96	34.92	104.3	N/A	N/A	0.102	8.49	1.1
2/25/2010	16:05:48	25.10	52.97	34.93	103.2	N/A	N/A	0.099	8.49	1.9
2/25/2010	16:10:49	25.08	53.01	34.95	103.7	N/A	N/A	0.100	8.49	1.9
2/25/2010	16:15:48	25.06	53.01	34.96	103.5	N/A	N/A	0.100	8.49	1.0
2/25/2010	16:20:49	25.04	53.03	34.97	104.2	N/A	N/A	0.100	8.49	1.3
2/25/2010	16:25:48	25.04	53.05	34.99	104.8	N/A	N/A	0.100	8.50	1.8
2/25/2010	16:30:48	25.04	53.09	35.02	105.0	N/A	N/A	0.102	8.50	2.1
2/25/2010	16:35:48	25.02	53.09	35.02	104.9	N/A	N/A	0.102	8.50	1.6
2/25/2010	16:40:48	25.01	53.09	35.02	104.8	N/A	N/A	0.102	8.50	2.2
2/25/2010	16:45:48	24.95	53.13	35.05	104.4	N/A	N/A	0.101	8.50	1.6
2/25/2010	16:50:48	24.94	53.13	35.05	104.1	N/A	N/A	0.101	8.50	1.6
2/25/2010	16:55:48	24.91	53.10	35.03	104.6	N/A	N/A	0.100	8.50	1.9
2/25/2010	17:00:49	24.91	53.11	35.04	104.6	N/A	N/A	0.102	8.50	1.7
2/25/2010	17:01:16	24.91	53.11	35.03	104.5	N/A	N/A	0.101	8.50	2.1

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	17:02:16	24.92	53.11	35.03	104.6	N/A	N/A	0.102	8.49	1.7
2/25/2010	17:03:16	24.93	53.10	35.03	104.4	N/A	N/A	0.102	8.49	1.9
2/25/2010	17:04:16	24.93	53.10	35.03	104.5	N/A	N/A	0.102	8.49	2.3
2/25/2010	17:05:48	24.91	53.13	35.05	104.5	N/A	N/A	0.101	8.50	2.2
2/25/2010	17:05:48	24.91	53.13	35.05	104.5	N/A	N/A	0.101	8.50	2.2
2/25/2010	17:10:49	24.88	53.13	35.05	104.6	N/A	N/A	0.102	8.50	1.6
2/25/2010	17:15:49	24.87	53.15	35.07	104.5	N/A	N/A	0.103	8.50	1.7
2/25/2010	17:20:48	24.87	53.13	35.05	104.6	N/A	N/A	0.103	8.50	2.3
2/25/2010	17:25:49	24.83	53.15	35.07	104.6	N/A	N/A	0.102	8.50	2.3
2/25/2010	17:30:48	24.79	53.16	35.07	104.4	N/A	N/A	0.102	8.50	2.6
2/25/2010	17:35:48	24.76	53.12	35.04	104.4	N/A	N/A	0.104	8.50	2.4
2/25/2010	17:40:48	24.73	53.18	35.09	103.9	N/A	N/A	0.104	8.50	1.4
2/25/2010	17:45:48	24.74	53.19	35.10	100.2	N/A	N/A	0.104	8.49	1.8
2/25/2010	17:50:49	24.70	53.17	35.08	103.8	N/A	N/A	0.104	8.50	2.1
2/25/2010	17:55:49	24.66	53.20	35.11	103.1	N/A	N/A	0.106	8.50	2.6
2/25/2010	18:00:48	24.68	53.23	35.13	102.7	N/A	N/A	0.105	8.50	2.7
2/25/2010	18:05:49	24.66	53.26	35.15	101.2	N/A	N/A	0.106	8.50	1.6
2/25/2010	18:10:49	24.59	52.51	34.60	99.9	N/A	N/A	0.106	8.48	1.7
2/25/2010	18:15:49	24.58	52.58	34.65	99.6	N/A	N/A	0.106	8.49	1.0
2/25/2010	17:10:49	24.88	53.13	35.05	104.6	N/A	N/A	0.102	8.50	1.6
2/25/2010	17:15:49	24.87	53.15	35.07	104.5	N/A	N/A	0.103	8.50	1.7
2/25/2010	17:20:48	24.87	53.13	35.05	104.6	N/A	N/A	0.103	8.50	2.3
2/25/2010	17:25:49	24.83	53.15	35.07	104.6	N/A	N/A	0.102	8.50	2.3
2/25/2010	17:30:48	24.79	53.16	35.07	104.4	N/A	N/A	0.102	8.50	2.6
2/25/2010	17:35:48	24.76	53.12	35.04	104.4	N/A	N/A	0.104	8.50	2.4
2/25/2010	17:40:48	24.73	53.18	35.09	103.9	N/A	N/A	0.104	8.50	1.4
2/25/2010	17:45:48	24.74	53.19	35.10	100.2	N/A	N/A	0.104	8.49	1.8
2/25/2010	17:50:49	24.70	53.17	35.08	103.8	N/A	N/A	0.104	8.50	2.1
2/25/2010	17:55:49	24.66	53.20	35.11	103.1	N/A	N/A	0.106	8.50	2.6
2/25/2010	18:00:48	24.68	53.23	35.13	102.7	N/A	N/A	0.105	8.50	2.7
2/25/2010	18:05:49	24.66	53.26	35.15	101.2	N/A	N/A	0.106	8.50	1.6
2/25/2010	18:10:49	24.59	52.51	34.60	99.9	N/A	N/A	0.106	8.48	1.7
2/25/2010	18:15:49	24.58	52.58	34.65	99.6	N/A	N/A	0.106	8.49	1.0
2/25/2010	18:20:49	24.45	51.75	34.04	98.8	N/A	N/A	0.107	8.47	1.9
2/25/2010	18:25:49	24.48	52.19	34.36	97.0	N/A	N/A	0.107	8.48	0.8
2/25/2010	18:30:49	24.44	52.21	34.38	98.9	N/A	N/A	0.106	8.48	2.6
2/25/2010	18:35:49	24.44	52.05	34.26	97.5	N/A	N/A	0.109	8.47	2.0

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	18:40:49	24.48	52.39	34.51	98.8	N/A	N/A	0.109	8.48	2.4
2/25/2010	18:45:49	24.54	52.99	34.96	99.7	N/A	N/A	0.109	8.49	2.5
2/25/2010	18:50:49	24.47	52.87	34.87	98.2	N/A	N/A	0.110	8.49	2.0
2/25/2010	18:55:49	24.50	52.99	34.95	96.8	N/A	N/A	0.111	8.49	1.5
2/25/2010	19:00:49	24.46	52.86	34.86	99.9	N/A	N/A	0.111	8.49	2.9
2/25/2010	19:05:49	24.48	52.91	34.90	96.0	N/A	N/A	0.112	8.48	1.5
2/25/2010	19:10:49	24.41	52.69	34.73	96.0	N/A	N/A	0.111	8.48	2.0
2/25/2010	19:15:49	24.25	52.27	34.42	97.8	N/A	N/A	0.113	8.48	2.4
2/25/2010	19:20:49	24.23	52.01	34.23	97.1	N/A	N/A	0.113	8.47	3.2
2/25/2010	19:25:49	24.33	52.46	34.57	95.7	N/A	N/A	0.114	8.48	2.0
2/25/2010	19:30:49	24.41	52.87	34.87	95.2	N/A	N/A	0.114	8.48	2.0
2/25/2010	19:35:49	24.44	53.03	34.99	95.2	N/A	N/A	0.115	8.48	1.1
2/25/2010	19:40:49	24.46	53.12	35.05	94.9	N/A	N/A	0.116	8.48	1.8
2/25/2010	19:45:49	24.44	53.00	34.96	94.9	N/A	N/A	0.117	8.49	1.2
2/25/2010	19:50:49	24.45	53.15	35.07	96.3	N/A	N/A	0.118	8.48	1.6
2/25/2010	19:55:49	24.40	52.79	34.81	94.8	N/A	N/A	0.118	8.48	1.3
2/25/2010	20:00:49	24.21	52.58	34.66	96.4	N/A	N/A	0.120	8.48	1.9
2/25/2010	20:05:49	24.30	52.91	34.90	95.4	N/A	N/A	0.120	8.48	2.0
2/25/2010	20:10:49	24.26	52.50	34.60	95.2	N/A	N/A	0.121	8.48	1.3
2/25/2010	20:15:49	24.34	52.92	34.91	96.2	N/A	N/A	0.121	8.49	1.8
2/25/2010	20:20:49	24.28	52.58	34.66	95.0	N/A	N/A	0.121	8.48	1.9
2/25/2010	20:25:49	24.37	53.12	35.06	95.2	N/A	N/A	0.120	8.49	0.7
2/25/2010	20:30:49	24.38	53.00	34.97	95.7	N/A	N/A	0.121	8.49	1.9
2/25/2010	20:35:49	24.35	53.16	35.09	95.9	N/A	N/A	0.121	8.49	1.2
2/25/2010	20:40:49	24.37	53.27	35.16	95.9	N/A	N/A	0.123	8.49	1.6
2/25/2010	20:45:49	24.38	53.48	35.32	95.6	N/A	N/A	0.122	8.49	1.2
2/25/2010	20:50:49	24.38	53.44	35.29	97.0	N/A	N/A	0.123	8.49	1.6
2/25/2010	20:55:49	24.37	53.48	35.32	97.6	N/A	N/A	0.124	8.50	0.5
2/25/2010	21:00:49	24.37	53.50	35.34	97.3	N/A	N/A	0.124	8.50	2.0
2/25/2010	21:05:49	24.36	53.48	35.32	96.9	N/A	N/A	0.126	8.50	1.8
2/25/2010	21:10:49	24.36	53.51	35.35	96.5	N/A	N/A	0.126	8.50	0.9
2/25/2010	21:15:49	24.36	53.53	35.36	96.8	N/A	N/A	0.126	8.50	1.9
2/25/2010	21:20:49	24.34	53.43	35.29	96.1	N/A	N/A	0.127	8.50	1.4
2/25/2010	21:25:49	24.31	53.30	35.19	96.9	N/A	N/A	0.128	8.49	1.2
2/25/2010	21:30:49	24.27	53.27	35.17	95.3	N/A	N/A	0.128	8.49	0.8
2/25/2010	21:35:49	24.13	53.17	35.10	93.5	N/A	N/A	0.129	8.49	1.1
2/25/2010	21:40:49	24.14	53.24	35.15	94.3	N/A	N/A	0.130	8.49	2.0

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/25/2010	21:45:49	24.08	53.21	35.13	94.3	N/A	N/A	0.130	8.49	1.5
2/25/2010	21:50:49	24.12	53.22	35.14	92.5	N/A	N/A	0.130	8.49	1.2
2/25/2010	21:55:49	24.14	53.26	35.17	92.7	N/A	N/A	0.130	8.49	0.5
2/25/2010	22:00:49	24.09	53.27	35.17	93.7	N/A	N/A	0.130	8.49	2.0
2/25/2010	22:05:49	24.13	53.25	35.15	93.6	N/A	N/A	0.130	8.49	0.7
2/25/2010	22:10:49	24.04	53.06	35.02	95.6	N/A	N/A	0.130	8.50	2.0
2/25/2010	22:15:49	24.05	53.14	35.08	95.9	N/A	N/A	0.130	8.49	1.3
2/25/2010	22:20:49	24.13	53.30	35.19	94.9	N/A	N/A	0.130	8.49	2.7
2/25/2010	22:25:49	24.16	53.38	35.25	96.3	N/A	N/A	0.129	8.50	1.5
2/25/2010	22:30:49	24.09	53.30	35.20	95.3	N/A	N/A	0.130	8.50	1.3
2/25/2010	22:35:48	24.05	53.27	35.17	96.0	N/A	N/A	0.129	8.50	1.5
2/25/2010	22:40:49	24.17	53.43	35.29	97.4	N/A	N/A	0.130	8.49	1.9
2/25/2010	22:45:49	24.16	53.46	35.31	98.1	N/A	N/A	0.131	8.50	2.2
2/25/2010	22:50:49	24.20	53.48	35.33	96.2	N/A	N/A	0.131	8.50	1.6
2/25/2010	22:55:49	24.18	53.45	35.30	94.6	N/A	N/A	0.131	8.49	1.1
2/25/2010	23:00:49	24.17	53.40	35.27	96.1	N/A	N/A	0.131	8.49	0.9
2/25/2010	23:05:49	24.05	53.35	35.23	98.0	N/A	N/A	0.131	8.49	1.3
2/25/2010	23:10:49	23.94	53.25	35.16	94.9	N/A	N/A	0.131	8.49	2.3
2/25/2010	23:15:49	24.13	53.42	35.28	95.7	N/A	N/A	0.130	8.50	1.3
2/25/2010	23:20:49	24.19	53.46	35.31	98.4	N/A	N/A	0.131	8.50	1.9
2/25/2010	23:25:49	24.15	53.33	35.21	94.6	N/A	N/A	0.129	8.49	1.1
2/25/2010	23:30:49	24.01	53.28	35.18	95.9	N/A	N/A	0.130	8.50	1.4
2/25/2010	23:35:49	24.18	53.47	35.32	97.1	N/A	N/A	0.130	8.50	1.5
2/25/2010	23:40:49	24.21	53.49	35.34	97.4	N/A	N/A	0.130	8.50	1.8
2/25/2010	23:45:49	24.14	53.38	35.25	95.5	N/A	N/A	0.128	8.50	1.8
2/25/2010	23:50:49	24.04	53.29	35.19	95.5	N/A	N/A	0.129	8.50	1.5
2/25/2010	23:55:49	24.11	53.43	35.29	96.2	N/A	N/A	0.129	8.50	1.8
2/26/2010	0:00:48	24.17	53.47	35.32	98.6	N/A	N/A	0.129	8.51	1.8
2/26/2010	0:05:49	24.18	53.49	35.33	96.9	N/A	N/A	0.129	8.50	1.5
2/26/2010	0:10:49	24.19	53.49	35.33	97.8	N/A	N/A	0.129	8.51	1.4
2/26/2010	0:15:49	24.21	53.49	35.33	95.3	N/A	N/A	0.129	8.50	1.0
2/26/2010	0:20:49	24.22	53.49	35.33	96.6	N/A	N/A	0.128	8.50	1.7
2/26/2010	0:25:49	24.22	53.48	35.32	97.4	N/A	N/A	0.128	8.50	1.6
2/26/2010	0:30:49	24.22	53.49	35.33	98.7	N/A	N/A	0.128	8.50	2.3
2/26/2010	0:35:49	24.21	53.50	35.34	95.0	N/A	N/A	0.129	8.50	0.6
2/26/2010	0:40:48	24.20	53.46	35.31	95.9	N/A	N/A	0.128	8.50	1.4
2/26/2010	0:45:49	24.19	53.45	35.30	96.4	N/A	N/A	0.128	8.50	1.5

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	0:50:49	24.19	53.44	35.30	96.1	N/A	N/A	0.127	8.50	1.5
2/26/2010	0:55:49	24.21	53.45	35.30	96.1	N/A	N/A	0.127	8.50	1.8
2/26/2010	1:00:49	24.22	53.46	35.31	97.2	N/A	N/A	0.126	8.50	2.0
2/26/2010	1:05:49	24.20	53.45	35.30	96.1	N/A	N/A	0.127	8.50	1.1
2/26/2010	1:10:49	24.20	53.44	35.30	97.0	N/A	N/A	0.127	8.50	1.6
2/26/2010	1:15:49	24.20	53.44	35.30	95.9	N/A	N/A	0.126	8.50	1.2
2/26/2010	1:20:49	24.21	53.43	35.29	96.5	N/A	N/A	0.125	8.50	1.1
2/26/2010	1:25:49	24.21	53.43	35.29	96.4	N/A	N/A	0.126	8.50	1.3
2/26/2010	1:30:49	24.21	53.44	35.29	96.8	N/A	N/A	0.125	8.50	1.6
2/26/2010	1:35:49	24.21	53.44	35.30	96.3	N/A	N/A	0.126	8.50	1.5
2/26/2010	1:40:49	24.21	53.44	35.30	97.3	N/A	N/A	0.125	8.50	1.7
2/26/2010	1:45:49	24.21	53.44	35.30	97.1	N/A	N/A	0.124	8.50	1.5
2/26/2010	1:50:48	24.20	53.45	35.30	97.9	N/A	N/A	0.124	8.50	2.1
2/26/2010	1:55:49	24.18	53.45	35.31	96.3	N/A	N/A	0.123	8.50	1.2
2/26/2010	2:00:49	24.18	53.44	35.29	97.7	N/A	N/A	0.123	8.50	1.7
2/26/2010	2:05:49	24.16	53.43	35.29	96.1	N/A	N/A	0.123	8.50	1.1
2/26/2010	2:10:49	24.16	53.41	35.28	96.0	N/A	N/A	0.123	8.49	1.0
2/26/2010	2:15:49	24.16	53.41	35.27	95.5	N/A	N/A	0.123	8.49	0.5
2/26/2010	2:20:49	24.17	53.41	35.27	95.8	N/A	N/A	0.123	8.50	1.4
2/26/2010	2:25:49	24.17	53.41	35.27	96.0	N/A	N/A	0.122	8.50	1.3
2/26/2010	2:30:49	24.17	53.41	35.27	96.5	N/A	N/A	0.121	8.50	1.5
2/26/2010	2:35:48	24.17	53.41	35.28	96.0	N/A	N/A	0.121	8.50	1.2
2/26/2010	2:40:49	24.17	53.42	35.28	96.1	N/A	N/A	0.121	8.50	0.6
2/26/2010	2:45:49	24.17	53.42	35.28	95.8	N/A	N/A	0.120	8.50	1.5
2/26/2010	2:50:49	24.17	53.42	35.28	96.1	N/A	N/A	0.120	8.50	1.8
2/26/2010	2:55:49	24.17	53.42	35.28	97.2	N/A	N/A	0.120	8.50	1.4
2/26/2010	3:00:49	24.17	53.42	35.28	96.1	N/A	N/A	0.120	8.50	1.1
2/26/2010	3:05:49	24.18	53.43	35.29	96.4	N/A	N/A	0.120	8.50	0.4
2/26/2010	3:10:49	24.17	53.42	35.28	96.4	N/A	N/A	0.120	8.50	1.0
2/26/2010	3:15:49	24.18	53.43	35.29	96.0	N/A	N/A	0.119	8.50	1.2
2/26/2010	3:20:49	24.18	53.43	35.29	95.9	N/A	N/A	0.120	8.49	1.5
2/26/2010	3:25:49	24.16	53.42	35.28	95.6	N/A	N/A	0.120	8.50	0.9
2/26/2010	3:30:49	24.15	53.41	35.28	94.3	N/A	N/A	0.119	8.49	1.1
2/26/2010	3:35:49	24.17	53.42	35.28	94.9	N/A	N/A	0.119	8.49	1.2
2/26/2010	3:40:49	24.16	53.41	35.27	94.8	N/A	N/A	0.120	8.49	1.0
2/26/2010	3:45:49	24.16	53.41	35.27	94.3	N/A	N/A	0.120	8.49	1.3
2/26/2010	3:50:49	24.14	53.40	35.27	94.3	N/A	N/A	0.119	8.49	0.9

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	3:55:49	24.14	53.40	35.27	95.0	N/A	N/A	0.119	8.49	0.8
2/26/2010	4:00:49	24.15	53.40	35.27	94.2	N/A	N/A	0.119	8.49	0.9
2/26/2010	4:05:49	24.14	53.39	35.26	93.8	N/A	N/A	0.119	8.49	1.4
2/26/2010	4:10:49	24.14	53.38	35.25	93.5	N/A	N/A	0.120	8.49	0.9
2/26/2010	4:15:49	24.13	53.37	35.24	95.2	N/A	N/A	0.120	8.49	0.9
2/26/2010	4:20:49	24.14	53.37	35.25	94.5	N/A	N/A	0.120	8.49	0.4
2/26/2010	4:25:49	24.12	53.34	35.22	95.4	N/A	N/A	0.120	8.49	0.7
2/26/2010	4:30:49	23.87	53.13	35.07	94.7	N/A	N/A	0.119	8.50	0.8
2/26/2010	4:35:49	23.83	53.05	35.01	96.6	N/A	N/A	0.119	8.50	1.1
2/26/2010	4:40:49	23.85	53.14	35.08	96.5	N/A	N/A	0.119	8.50	2.5
2/26/2010	4:45:49	23.73	52.76	34.80	94.0	N/A	N/A	0.120	8.50	1.2
2/26/2010	4:50:49	24.08	53.01	34.98	95.8	N/A	N/A	0.119	8.49	1.4
2/26/2010	4:55:49	23.81	51.30	33.72	96.6	N/A	N/A	0.119	8.50	1.2
2/26/2010	5:00:49	23.85	52.16	34.35	96.9	N/A	N/A	0.120	8.50	1.4
2/26/2010	5:05:49	23.71	52.57	34.66	95.1	N/A	N/A	0.119	8.50	2.0
2/26/2010	5:10:49	24.11	53.01	34.98	94.9	N/A	N/A	0.120	8.49	0.9
2/26/2010	5:15:48	24.02	53.01	34.98	94.5	N/A	N/A	0.121	8.49	0.8
2/26/2010	5:20:49	24.13	53.24	35.15	93.8	N/A	N/A	0.120	8.49	1.2
2/26/2010	5:25:49	24.11	53.13	35.07	93.1	N/A	N/A	0.120	8.48	1.1
2/26/2010	5:30:49	24.13	53.39	35.26	93.9	N/A	N/A	0.122	8.49	0.9
2/26/2010	5:35:49	23.98	53.05	35.01	92.5	N/A	N/A	0.121	8.49	1.0
2/26/2010	5:40:49	23.59	52.59	34.68	96.1	N/A	N/A	0.122	8.50	1.5
2/26/2010	5:45:49	23.67	52.34	34.49	94.3	N/A	N/A	0.122	8.50	1.5
2/26/2010	5:50:49	23.75	52.66	34.72	93.8	N/A	N/A	0.123	8.50	1.4
2/26/2010	5:55:49	23.82	51.14	33.60	94.1	N/A	N/A	0.126	8.49	1.7
2/26/2010	6:00:48	23.68	52.15	34.35	92.6	N/A	N/A	0.127	8.49	0.8
2/26/2010	6:05:49	23.87	52.60	34.68	93.5	N/A	N/A	0.126	8.49	1.5
2/26/2010	6:10:49	23.84	52.90	34.90	94.1	N/A	N/A	0.127	8.49	1.5
2/26/2010	6:15:49	23.77	52.69	34.75	93.4	N/A	N/A	0.127	8.49	1.4
2/26/2010	6:20:49	23.77	52.58	34.67	95.9	N/A	N/A	0.127	8.50	1.6
2/26/2010	6:25:49	23.82	52.80	34.83	93.4	N/A	N/A	0.127	8.49	1.1
2/26/2010	6:30:49	23.82	52.94	34.93	93.3	N/A	N/A	0.127	8.50	0.8
2/26/2010	6:35:49	23.83	53.03	35.00	93.5	N/A	N/A	0.128	8.49	0.4
2/26/2010	6:40:49	23.65	52.67	34.73	97.0	N/A	N/A	0.128	8.49	1.6
2/26/2010	6:45:49	23.72	52.86	34.87	94.8	N/A	N/A	0.127	8.49	1.9
2/26/2010	6:50:49	23.79	52.87	34.88	96.1	N/A	N/A	0.130	8.49	1.8
2/26/2010	6:55:49	23.66	52.67	34.73	92.7	N/A	N/A	0.130	8.48	1.6

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	7:00:48	23.70	52.66	34.73	92.4	N/A	N/A	0.130	8.48	1.4
2/26/2010	7:05:49	23.81	52.87	34.88	90.8	N/A	N/A	0.129	8.48	1.5
2/26/2010	7:10:49	23.77	52.59	34.67	92.5	N/A	N/A	0.131	8.48	0.9
2/26/2010	7:15:49	23.74	52.61	34.69	91.0	N/A	N/A	0.131	8.48	1.2
2/26/2010	7:20:49	23.66	52.62	34.70	93.7	N/A	N/A	0.133	8.48	1.3
2/26/2010	7:25:49	23.81	52.58	34.66	91.2	N/A	N/A	0.134	8.47	1.0
2/26/2010	7:30:49	24.04	53.07	35.02	91.2	N/A	N/A	0.133	8.48	1.5
2/26/2010	7:35:49	23.96	52.85	34.86	91.5	N/A	N/A	0.135	8.48	0.7
2/26/2010	7:40:49	24.10	53.26	35.16	91.8	N/A	N/A	0.133	8.48	1.9
2/26/2010	7:45:49	23.90	52.65	34.71	92.2	N/A	N/A	0.135	8.48	0.9
2/26/2010	7:50:49	23.87	52.33	34.48	93.5	N/A	N/A	0.135	8.48	0.9
2/26/2010	7:55:48	24.07	53.14	35.07	93.4	N/A	N/A	0.135	8.48	1.1
2/26/2010	8:00:49	24.11	53.32	35.21	93.2	N/A	N/A	0.134	8.49	1.0
2/26/2010	8:05:49	24.10	53.21	35.13	93.6	N/A	N/A	0.134	8.49	0.2
2/26/2010	8:10:49	24.14	53.23	35.14	93.3	N/A	N/A	0.135	8.48	0.8
2/26/2010	8:15:49	23.76	51.66	33.98	95.0	N/A	N/A	0.136	8.48	1.2
2/26/2010	8:20:49	23.43	52.14	34.35	92.6	N/A	N/A	0.135	8.46	0.7
2/26/2010	8:25:49	23.91	52.28	34.44	94.7	N/A	N/A	0.135	8.48	1.5
2/26/2010	8:30:49	23.67	52.37	34.52	94.4	N/A	N/A	0.136	8.47	0.9
2/26/2010	8:35:48	23.84	52.81	34.84	96.0	N/A	N/A	0.135	8.48	0.5
2/26/2010	8:40:49	23.79	52.42	34.55	96.5	N/A	N/A	0.135	8.48	1.1
2/26/2010	8:45:48	23.67	52.02	34.25	96.7	N/A	N/A	0.136	8.47	1.4
2/26/2010	8:50:49	24.13	52.94	34.93	95.4	N/A	N/A	0.137	8.48	0.9
2/26/2010	8:55:49	24.14	52.83	34.84	95.4	N/A	N/A	0.136	8.49	0.9
2/26/2010	9:00:49	24.17	53.15	35.08	95.9	N/A	N/A	0.137	8.49	0.7
2/26/2010	9:05:49	23.98	52.51	34.61	96.0	N/A	N/A	0.137	8.48	1.3
2/26/2010	9:10:49	23.96	52.36	34.50	95.8	N/A	N/A	0.137	8.48	1.5
2/26/2010	9:15:49	23.98	52.05	34.27	96.2	N/A	N/A	0.138	8.47	1.4
2/26/2010	9:20:48	24.11	52.84	34.85	96.1	N/A	N/A	0.138	8.48	1.1
2/26/2010	9:25:49	24.06	52.19	34.37	95.8	N/A	N/A	0.139	8.48	0.1
2/26/2010	9:30:49	24.13	52.59	34.67	96.7	N/A	N/A	0.138	8.48	1.2
2/26/2010	9:35:49	24.15	52.36	34.50	96.9	N/A	N/A	0.139	8.48	0.8
2/26/2010	9:40:49	24.15	52.29	34.45	95.7	N/A	N/A	0.139	8.48	1.0
2/26/2010	9:45:49	24.15	52.59	34.66	97.4	N/A	N/A	0.139	8.48	0.5
2/26/2010	9:50:49	24.24	53.06	35.01	98.3	N/A	N/A	0.139	8.49	0.6
2/26/2010	9:55:49	24.22	52.49	34.59	98.0	N/A	N/A	0.138	8.48	0.8
2/26/2010	10:00:49	24.20	52.84	34.85	97.2	N/A	N/A	0.140	8.48	1.2

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	10:05:49	24.32	52.80	34.82	97.1	N/A	N/A	0.139	8.48	0.9
2/26/2010	10:10:49	24.29	53.00	34.97	96.6	N/A	N/A	0.139	8.48	1.2
2/26/2010	10:15:49	24.33	52.64	34.70	96.9	N/A	N/A	0.140	8.48	1.1
2/26/2010	10:20:49	24.32	52.92	34.90	96.7	N/A	N/A	0.138	8.48	1.7
2/26/2010	10:25:49	24.39	53.05	35.00	97.7	N/A	N/A	0.139	8.47	0.7
2/26/2010	10:30:49	24.43	52.73	34.77	97.4	N/A	N/A	0.139	8.47	0.5
2/26/2010	10:35:49	24.37	53.26	35.16	97.0	N/A	N/A	0.139	8.48	0.8
2/26/2010	10:40:49	24.36	52.85	34.85	96.2	N/A	N/A	0.139	8.48	0.5
2/26/2010	10:45:49	24.41	52.93	34.91	96.9	N/A	N/A	0.139	8.48	0.7
2/26/2010	10:50:48	24.55	52.41	34.52	96.4	N/A	N/A	0.140	8.46	0.5
2/26/2010	10:55:49	24.56	52.90	34.89	97.5	N/A	N/A	0.139	8.47	1.2
2/26/2010	11:00:49	24.61	52.99	34.95	98.5	N/A	N/A	0.139	8.48	0.8
2/26/2010	11:05:49	24.54	53.23	35.14	98.2	N/A	N/A	0.139	8.48	1.4
2/26/2010	11:10:48	24.63	53.27	35.16	97.5	N/A	N/A	0.138	8.48	1.1
2/26/2010	11:15:48	24.64	53.35	35.22	98.0	N/A	N/A	0.137	8.48	1.1
2/26/2010	11:20:49	24.71	53.33	35.21	98.9	N/A	N/A	0.137	8.48	1.4
2/26/2010	11:25:48	24.93	52.51	34.59	99.4	N/A	N/A	0.137	8.47	1.0
2/26/2010	11:30:48	24.65	53.19	35.10	98.8	N/A	N/A	0.136	8.48	1.6
2/26/2010	11:35:49	24.85	53.04	34.98	98.8	N/A	N/A	0.136	8.48	1.1
2/26/2010	11:40:48	24.88	53.11	35.04	98.2	N/A	N/A	0.136	8.48	1.1
2/26/2010	11:45:49	24.91	53.20	35.11	98.1	N/A	N/A	0.134	8.48	1.2
2/26/2010	11:50:48	24.84	53.38	35.24	98.8	N/A	N/A	0.133	8.48	0.6
2/26/2010	11:55:48	24.79	53.38	35.24	98.7	N/A	N/A	0.133	8.48	0.7
2/26/2010	12:00:49	24.80	53.39	35.24	97.9	N/A	N/A	0.132	8.48	0.6
2/26/2010	12:05:49	24.77	53.42	35.27	98.6	N/A	N/A	0.131	8.49	0.8
2/26/2010	12:10:49	24.75	53.37	35.23	99.9	N/A	N/A	0.130	8.49	1.0
2/26/2010	12:15:49	24.79	53.26	35.15	99.5	N/A	N/A	0.130	8.49	0.7
2/26/2010	12:20:49	25.02	53.18	35.08	99.7	N/A	N/A	0.129	8.48	1.2
2/26/2010	12:25:49	24.86	53.42	35.27	100.5	N/A	N/A	0.128	8.49	1.5
2/26/2010	12:30:48	24.90	53.39	35.24	101.0	N/A	N/A	0.127	8.49	1.3
2/26/2010	12:35:49	24.81	53.37	35.23	100.0	N/A	N/A	0.127	8.48	0.6
2/26/2010	12:40:49	24.74	53.36	35.23	99.2	N/A	N/A	0.126	8.48	1.3
2/26/2010	12:45:49	24.84	53.19	35.10	99.3	N/A	N/A	0.125	8.48	0.7
2/26/2010	12:50:49	24.77	53.36	35.23	99.1	N/A	N/A	0.126	8.48	1.9
2/26/2010	12:55:48	24.86	53.14	35.06	99.7	N/A	N/A	0.125	8.48	1.1
2/26/2010	13:00:48	24.82	53.38	35.24	99.3	N/A	N/A	0.124	8.48	1.7
2/26/2010	13:05:49	24.76	53.39	35.25	98.9	N/A	N/A	0.124	8.48	1.1

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	13:10:48	24.78	53.39	35.24	98.7	N/A	N/A	0.121	8.48	1.1
2/26/2010	13:15:49	24.73	53.39	35.25	99.1	N/A	N/A	0.121	8.48	1.3
2/26/2010	13:20:49	24.76	53.37	35.23	99.1	N/A	N/A	0.121	8.48	1.5
2/26/2010	13:25:48	24.71	53.40	35.26	98.3	N/A	N/A	0.120	8.48	0.9
2/26/2010	13:30:48	24.72	53.42	35.27	98.7	N/A	N/A	0.118	8.48	0.8
2/26/2010	13:35:48	24.68	53.42	35.27	99.0	N/A	N/A	0.118	8.48	1.0
2/26/2010	13:40:48	24.68	53.42	35.27	98.5	N/A	N/A	0.118	8.48	1.4
2/26/2010	13:45:49	24.66	53.42	35.27	99.0	N/A	N/A	0.117	8.48	1.9
2/26/2010	13:50:49	24.68	53.42	35.27	98.6	N/A	N/A	0.116	8.48	1.2
2/26/2010	13:55:49	24.65	53.43	35.28	98.5	N/A	N/A	0.114	8.48	1.3
2/26/2010	14:00:49	24.65	53.43	35.28	99.0	N/A	N/A	0.114	8.48	1.6
2/26/2010	14:05:49	24.60	53.44	35.29	99.7	N/A	N/A	0.113	8.49	1.8
2/26/2010	14:10:49	24.64	53.44	35.29	99.7	N/A	N/A	0.113	8.49	1.1
2/26/2010	14:15:49	24.68	53.45	35.29	100.1	N/A	N/A	0.113	8.49	1.4
2/26/2010	14:20:49	24.72	53.46	35.30	100.4	N/A	N/A	0.113	8.49	1.3
2/26/2010	14:25:49	24.75	53.47	35.31	100.4	N/A	N/A	0.113	8.49	1.5
2/26/2010	14:30:49	24.70	53.46	35.30	100.6	N/A	N/A	0.113	8.49	1.4
2/26/2010	14:35:49	24.67	53.46	35.30	100.5	N/A	N/A	0.113	8.49	1.3
2/26/2010	14:40:49	24.68	53.47	35.31	100.8	N/A	N/A	0.113	8.49	1.3
2/26/2010	14:45:48	24.68	53.45	35.30	100.8	N/A	N/A	0.113	8.49	1.1
2/26/2010	14:50:48	24.68	53.46	35.30	101.2	N/A	N/A	0.112	8.49	1.3
2/26/2010	14:55:49	24.67	53.47	35.31	101.4	N/A	N/A	0.112	8.49	1.5
2/26/2010	15:00:49	24.68	53.46	35.30	101.3	N/A	N/A	0.113	8.49	1.2
2/26/2010	15:05:49	24.67	53.47	35.31	101.2	N/A	N/A	0.111	8.49	1.8
2/26/2010	15:10:49	24.66	53.46	35.30	101.2	N/A	N/A	0.111	8.49	1.3
2/26/2010	15:15:48	24.66	53.47	35.31	101.5	N/A	N/A	0.111	8.49	1.3
2/26/2010	15:20:48	24.65	53.47	35.31	101.6	N/A	N/A	0.111	8.49	1.3
2/26/2010	15:25:49	24.66	53.48	35.32	101.8	N/A	N/A	0.110	8.49	1.4
2/26/2010	15:30:49	24.61	53.48	35.32	102.1	N/A	N/A	0.110	8.50	1.3
2/26/2010	15:35:48	24.61	53.48	35.32	102.4	N/A	N/A	0.110	8.50	1.8
2/26/2010	15:40:49	24.60	53.48	35.32	102.7	N/A	N/A	0.109	8.50	2.2
2/26/2010	15:45:49	24.62	53.49	35.32	102.7	N/A	N/A	0.109	8.50	1.9
2/26/2010	15:50:49	24.61	53.50	35.33	102.8	N/A	N/A	0.110	8.50	2.6
2/26/2010	15:55:49	24.63	53.50	35.33	102.8	N/A	N/A	0.109	8.50	1.9
2/26/2010	16:00:49	24.64	53.50	35.33	102.8	N/A	N/A	0.111	8.50	1.8
2/26/2010	16:05:49	24.64	53.50	35.33	102.7	N/A	N/A	0.111	8.50	1.2
2/26/2010	16:10:48	24.64	53.51	35.34	102.8	N/A	N/A	0.110	8.50	2.3

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	16:15:49	24.62	53.51	35.34	103.1	N/A	N/A	0.111	8.50	2.0
2/26/2010	16:20:49	24.63	53.51	35.34	102.8	N/A	N/A	0.110	8.50	1.9
2/26/2010	16:25:48	24.62	53.52	35.35	102.4	N/A	N/A	0.111	8.50	2.6
2/26/2010	16:30:49	24.61	53.51	35.34	102.7	N/A	N/A	0.111	8.50	2.0
2/26/2010	16:35:48	24.60	53.51	35.34	102.8	N/A	N/A	0.110	8.50	2.0
2/26/2010	16:40:48	24.58	53.52	35.35	102.9	N/A	N/A	0.112	8.50	1.6
2/26/2010	16:45:49	24.57	53.52	35.34	103.1	N/A	N/A	0.111	8.50	1.7
2/26/2010	16:50:49	24.55	53.51	35.34	103.1	N/A	N/A	0.112	8.50	3.2
2/26/2010	16:55:48	24.56	53.51	35.34	103.2	N/A	N/A	0.110	8.50	1.9
2/26/2010	17:00:49	24.63	53.47	35.31	103.3	N/A	N/A	0.113	8.50	2.0
2/26/2010	17:05:49	24.64	53.35	35.22	103.4	N/A	N/A	0.114	8.50	1.7
2/26/2010	17:10:49	24.61	53.34	35.21	103.1	N/A	N/A	0.113	8.50	1.9
2/26/2010	17:15:49	24.59	53.46	35.30	103.2	N/A	N/A	0.113	8.50	2.5
2/26/2010	17:20:49	24.49	53.21	35.12	103.0	N/A	N/A	0.113	8.50	2.0
2/26/2010	17:25:49	24.49	53.23	35.14	102.7	N/A	N/A	0.116	8.50	2.0
2/26/2010	17:30:49	24.49	53.19	35.10	102.2	N/A	N/A	0.114	8.50	2.1
2/26/2010	17:35:48	24.48	53.20	35.11	102.2	N/A	N/A	0.114	8.50	1.9
2/26/2010	17:40:49	24.45	53.15	35.08	102.0	N/A	N/A	0.114	8.50	2.0
2/26/2010	17:45:49	24.47	53.30	35.19	102.4	N/A	N/A	0.114	8.50	1.9
2/26/2010	17:50:49	24.46	53.28	35.17	100.8	N/A	N/A	0.116	8.50	1.7
2/26/2010	17:55:49	24.43	53.24	35.14	100.9	N/A	N/A	0.116	8.50	1.2
2/26/2010	18:00:49	24.41	53.24	35.14	100.3	N/A	N/A	0.116	8.49	1.5
2/26/2010	18:05:49	24.49	53.29	35.18	99.7	N/A	N/A	0.116	8.49	1.9
2/26/2010	18:10:49	24.41	53.21	35.12	97.5	N/A	N/A	0.117	8.49	0.9
2/26/2010	18:15:48	24.30	53.12	35.06	101.2	N/A	N/A	0.117	8.50	1.8
2/26/2010	18:20:49	24.29	53.10	35.04	99.9	N/A	N/A	0.117	8.50	1.7
2/26/2010	18:25:49	24.35	53.18	35.10	99.3	N/A	N/A	0.118	8.49	1.3
2/26/2010	18:30:49	24.30	53.11	35.05	99.8	N/A	N/A	0.119	8.49	1.8
2/26/2010	18:35:49	24.24	53.09	35.03	100.0	N/A	N/A	0.120	8.49	1.9
2/26/2010	18:40:49	24.42	53.24	35.14	99.9	N/A	N/A	0.122	8.49	1.8
2/26/2010	18:45:49	24.18	52.70	34.75	99.3	N/A	N/A	0.121	8.48	1.6
2/26/2010	18:50:49	24.45	53.24	35.14	100.3	N/A	N/A	0.121	8.49	2.0
2/26/2010	18:55:49	24.11	52.79	34.82	99.0	N/A	N/A	0.122	8.48	1.6
2/26/2010	19:00:49	24.20	52.72	34.76	98.8	N/A	N/A	0.123	8.48	2.5
2/26/2010	19:05:49	24.17	52.95	34.93	100.4	N/A	N/A	0.123	8.48	1.9
2/26/2010	19:10:49	24.35	53.09	35.03	97.6	N/A	N/A	0.123	8.49	2.2
2/26/2010	19:15:49	24.38	53.18	35.10	98.1	N/A	N/A	0.123	8.49	1.5

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	19:20:49	24.36	53.30	35.19	100.4	N/A	N/A	0.125	8.50	1.6
2/26/2010	19:25:49	24.36	53.30	35.19	97.1	N/A	N/A	0.125	8.48	0.5
2/26/2010	19:30:49	24.31	53.19	35.11	99.2	N/A	N/A	0.126	8.49	2.1
2/26/2010	19:35:49	24.27	52.97	34.95	97.2	N/A	N/A	0.126	8.48	1.5
2/26/2010	19:40:49	24.32	53.08	35.03	96.6	N/A	N/A	0.126	8.48	2.1
2/26/2010	19:45:49	24.31	53.13	35.07	99.5	N/A	N/A	0.128	8.49	2.9
2/26/2010	19:50:49	24.12	52.54	34.63	98.0	N/A	N/A	0.127	8.47	1.7
2/26/2010	19:55:49	24.14	52.46	34.57	98.5	N/A	N/A	0.127	8.48	2.3
2/26/2010	20:00:49	24.16	52.59	34.66	98.1	N/A	N/A	0.129	8.48	2.6
2/26/2010	20:05:49	24.11	52.76	34.79	96.2	N/A	N/A	0.129	8.48	1.4
2/26/2010	20:10:49	24.06	52.75	34.79	96.2	N/A	N/A	0.130	8.48	1.9
2/26/2010	20:15:49	24.29	53.12	35.05	95.3	N/A	N/A	0.130	8.48	1.1
2/26/2010	20:20:49	24.22	53.08	35.03	95.0	N/A	N/A	0.130	8.48	1.1
2/26/2010	20:25:49	24.31	53.28	35.18	96.0	N/A	N/A	0.131	8.49	1.1
2/26/2010	20:30:49	24.30	53.34	35.22	96.5	N/A	N/A	0.132	8.49	1.4
2/26/2010	20:35:48	24.22	53.31	35.20	95.0	N/A	N/A	0.133	8.48	1.3
2/26/2010	20:40:49	24.27	53.17	35.09	97.2	N/A	N/A	0.131	8.48	1.7
2/26/2010	20:45:49	23.99	52.39	34.52	96.5	N/A	N/A	0.132	8.47	0.8
2/26/2010	20:50:49	23.85	52.41	34.54	96.2	N/A	N/A	0.134	8.47	1.9
2/26/2010	20:55:49	24.00	52.85	34.86	94.5	N/A	N/A	0.134	8.47	0.8
2/26/2010	21:00:49	23.82	52.42	34.54	94.8	N/A	N/A	0.134	8.47	1.8
2/26/2010	21:05:49	24.37	52.76	34.79	95.2	N/A	N/A	0.134	8.48	1.1
2/26/2010	21:10:49	24.36	53.27	35.16	95.2	N/A	N/A	0.135	8.48	2.0
2/26/2010	21:15:49	24.33	53.20	35.12	96.2	N/A	N/A	0.135	8.48	1.2
2/26/2010	21:20:49	24.29	52.33	34.47	96.2	N/A	N/A	0.136	8.48	0.6
2/26/2010	21:25:49	24.34	52.65	34.70	94.3	N/A	N/A	0.136	8.48	1.0
2/26/2010	21:30:48	24.03	52.83	34.84	93.9	N/A	N/A	0.137	8.47	1.7
2/26/2010	21:35:49	23.98	52.91	34.90	92.7	N/A	N/A	0.136	8.47	0.8
2/26/2010	21:40:49	24.18	52.96	34.94	92.3	N/A	N/A	0.136	8.47	1.6
2/26/2010	21:45:49	24.26	53.03	34.99	95.1	N/A	N/A	0.136	8.47	1.8
2/26/2010	21:50:49	24.19	52.99	34.96	96.0	N/A	N/A	0.135	8.47	2.0
2/26/2010	21:55:49	24.37	53.44	35.30	96.6	N/A	N/A	0.135	8.49	1.2
2/26/2010	22:00:49	24.35	53.46	35.31	98.5	N/A	N/A	0.135	8.50	2.6
2/26/2010	22:05:49	24.36	53.51	35.35	98.5	N/A	N/A	0.136	8.50	2.3
2/26/2010	22:10:49	24.38	53.53	35.36	98.4	N/A	N/A	0.135	8.50	3.1
2/26/2010	22:15:49	24.35	53.55	35.37	97.9	N/A	N/A	0.135	8.50	2.5
2/26/2010	22:20:49	24.37	53.56	35.39	98.2	N/A	N/A	0.134	8.50	2.3

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/26/2010	22:25:49	24.35	53.56	35.39	98.6	N/A	N/A	0.134	8.50	1.8
2/26/2010	22:30:49	24.34	53.56	35.38	97.0	N/A	N/A	0.133	8.49	1.7
2/26/2010	22:35:49	24.35	53.56	35.38	96.8	N/A	N/A	0.134	8.49	1.6
2/26/2010	22:40:49	24.34	53.57	35.39	97.5	N/A	N/A	0.134	8.50	2.0
2/26/2010	22:45:49	24.35	53.56	35.38	97.3	N/A	N/A	0.133	8.50	2.6
2/26/2010	22:50:49	24.33	53.57	35.39	96.7	N/A	N/A	0.133	8.49	1.7
2/26/2010	22:55:49	24.33	53.56	35.39	96.1	N/A	N/A	0.133	8.49	1.2
2/26/2010	23:00:49	24.33	53.57	35.39	96.1	N/A	N/A	0.133	8.49	1.9
2/26/2010	23:05:49	24.33	53.57	35.39	94.8	N/A	N/A	0.132	8.49	1.0
2/26/2010	23:10:49	24.33	53.58	35.39	95.1	N/A	N/A	0.132	8.49	1.9
2/26/2010	23:15:49	24.34	53.57	35.39	94.7	N/A	N/A	0.132	8.49	1.4
2/26/2010	23:20:49	24.36	53.58	35.39	95.2	N/A	N/A	0.131	8.48	1.2
2/26/2010	23:25:49	24.36	53.60	35.41	95.4	N/A	N/A	0.132	8.49	1.4
2/26/2010	23:30:48	24.35	53.60	35.41	95.5	N/A	N/A	0.131	8.49	1.6
2/26/2010	23:35:48	24.37	53.60	35.41	94.3	N/A	N/A	0.132	8.49	1.7
2/26/2010	23:40:49	24.37	53.60	35.41	93.0	N/A	N/A	0.131	8.48	1.5
2/26/2010	23:45:49	24.39	53.60	35.41	95.8	N/A	N/A	0.131	8.49	1.4
2/26/2010	23:50:49	24.38	53.62	35.43	93.8	N/A	N/A	0.130	8.48	0.9
2/26/2010	23:55:49	24.38	53.62	35.42	93.5	N/A	N/A	0.130	8.48	1.5
2/27/2010	0:00:49	24.37	53.62	35.42	93.1	N/A	N/A	0.129	8.48	0.4
2/27/2010	0:05:49	24.37	53.61	35.42	92.9	N/A	N/A	0.128	8.48	1.3
2/27/2010	0:10:49	24.37	53.61	35.42	92.3	N/A	N/A	0.128	8.48	2.0
2/27/2010	0:15:49	24.37	53.61	35.42	91.7	N/A	N/A	0.127	8.48	1.1
2/27/2010	0:20:49	24.34	53.63	35.43	92.8	N/A	N/A	0.127	8.48	1.1
2/27/2010	0:25:49	24.33	53.62	35.43	92.9	N/A	N/A	0.126	8.48	1.3
2/27/2010	0:30:49	24.32	53.61	35.42	92.4	N/A	N/A	0.126	8.48	1.1
2/27/2010	0:35:49	24.31	53.60	35.41	90.8	N/A	N/A	0.126	8.48	1.2
2/27/2010	0:40:49	24.30	53.60	35.41	91.0	N/A	N/A	0.127	8.48	1.7
2/27/2010	0:45:49	24.29	53.60	35.42	90.7	N/A	N/A	0.127	8.48	1.1
2/27/2010	0:50:49	24.29	53.60	35.41	89.6	N/A	N/A	0.127	8.47	1.2
2/27/2010	0:55:49	24.27	53.59	35.40	89.2	N/A	N/A	0.128	8.47	0.7
2/27/2010	1:00:49	24.27	53.59	35.40	90.1	N/A	N/A	0.129	8.47	0.6
2/27/2010	1:05:49	24.27	53.59	35.40	90.0	N/A	N/A	0.129	8.47	1.5
2/27/2010	1:10:49	24.27	53.59	35.40	92.6	N/A	N/A	0.131	8.48	1.0
2/27/2010	1:15:49	24.27	53.58	35.40	92.3	N/A	N/A	0.133	8.48	1.3
2/27/2010	1:20:49	24.21	53.45	35.30	93.7	N/A	N/A	0.131	8.48	1.4
2/27/2010	1:25:49	24.13	53.23	35.14	94.9	N/A	N/A	0.132	8.49	1.3

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	1:30:49	24.08	53.14	35.08	96.2	N/A	N/A	0.130	8.49	1.7
2/27/2010	1:35:49	24.01	52.99	34.97	99.7	N/A	N/A	0.131	8.50	1.9
2/27/2010	1:40:49	24.06	53.07	35.02	101.3	N/A	N/A	0.129	8.50	2.3
2/27/2010	1:45:49	24.09	53.05	35.01	101.1	N/A	N/A	0.131	8.50	2.2
2/27/2010	1:50:49	24.10	52.98	34.96	102.0	N/A	N/A	0.131	8.51	1.7
2/27/2010	1:55:49	24.23	52.79	34.81	103.0	N/A	N/A	0.129	8.51	1.9
2/27/2010	2:00:49	24.28	52.78	34.81	102.3	N/A	N/A	0.130	8.50	2.2
2/27/2010	2:05:49	24.37	52.77	34.79	103.3	N/A	N/A	0.129	8.51	1.8
2/27/2010	2:10:49	24.50	52.71	34.75	103.2	N/A	N/A	0.128	8.51	2.0
2/27/2010	2:15:49	24.57	52.73	34.76	103.2	N/A	N/A	0.129	8.51	1.7
2/27/2010	2:20:49	24.62	52.69	34.73	103.8	N/A	N/A	0.128	8.50	2.5
2/27/2010	2:25:49	24.66	52.66	34.70	102.6	N/A	N/A	0.128	8.50	2.2
2/27/2010	2:30:49	24.75	52.65	34.70	102.9	N/A	N/A	0.127	8.50	2.0
2/27/2010	2:35:49	24.76	52.64	34.69	101.8	N/A	N/A	0.127	8.50	1.4
2/27/2010	2:40:49	24.79	52.63	34.68	102.5	N/A	N/A	0.127	8.50	1.3
2/27/2010	2:45:49	24.83	52.61	34.67	101.6	N/A	N/A	0.127	8.50	1.7
2/27/2010	2:50:49	24.84	52.60	34.66	100.9	N/A	N/A	0.126	8.50	1.8
2/27/2010	2:55:49	24.82	52.59	34.66	101.6	N/A	N/A	0.125	8.49	1.9
2/27/2010	3:00:49	24.79	52.51	34.59	101.9	N/A	N/A	0.124	8.50	1.5
2/27/2010	3:05:49	24.79	52.48	34.57	101.6	N/A	N/A	0.125	8.50	1.0
2/27/2010	3:10:49	24.81	52.48	34.57	101.5	N/A	N/A	0.124	8.49	1.3
2/27/2010	3:15:48	24.80	52.47	34.56	100.2	N/A	N/A	0.124	8.49	1.3
2/27/2010	3:20:49	24.80	52.41	34.52	101.6	N/A	N/A	0.124	8.50	2.3
2/27/2010	3:25:49	24.77	52.42	34.52	100.0	N/A	N/A	0.124	8.49	1.3
2/27/2010	3:30:49	24.77	52.40	34.51	99.5	N/A	N/A	0.123	8.49	1.1
2/27/2010	3:35:49	24.78	52.37	34.49	101.0	N/A	N/A	0.124	8.49	1.6
2/27/2010	3:40:49	24.77	52.35	34.48	101.3	N/A	N/A	0.124	8.49	1.5
2/27/2010	3:45:49	24.79	52.35	34.47	100.1	N/A	N/A	0.124	8.49	0.6
2/27/2010	3:50:49	24.78	52.35	34.48	100.6	N/A	N/A	0.124	8.49	1.3
2/27/2010	3:55:48	24.78	52.37	34.49	98.4	N/A	N/A	0.125	8.49	1.5
2/27/2010	4:00:49	24.79	52.38	34.50	99.3	N/A	N/A	0.124	8.48	2.0
2/27/2010	4:05:49	24.79	52.40	34.51	99.6	N/A	N/A	0.125	8.49	2.3
2/27/2010	4:10:49	24.78	52.40	34.52	100.5	N/A	N/A	0.125	8.49	1.9
2/27/2010	4:15:49	24.77	52.40	34.51	99.4	N/A	N/A	0.126	8.48	1.2
2/27/2010	4:20:49	24.76	52.40	34.51	99.3	N/A	N/A	0.126	8.48	1.2
2/27/2010	4:25:48	24.76	52.39	34.51	98.7	N/A	N/A	0.126	8.48	1.3
2/27/2010	4:30:49	24.75	52.40	34.51	99.0	N/A	N/A	0.126	8.49	1.3

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	4:35:49	24.75	52.40	34.51	97.5	N/A	N/A	0.126	8.48	0.9
2/27/2010	4:40:49	24.76	52.40	34.51	97.7	N/A	N/A	0.126	8.48	0.6
2/27/2010	4:45:49	24.76	52.39	34.51	97.5	N/A	N/A	0.126	8.48	1.2
2/27/2010	4:50:49	24.75	52.38	34.50	97.9	N/A	N/A	0.127	8.48	0.9
2/27/2010	4:55:48	24.74	52.37	34.49	99.6	N/A	N/A	0.127	8.49	1.7
2/27/2010	5:00:49	24.74	52.37	34.49	99.6	N/A	N/A	0.127	8.48	1.8
2/27/2010	5:05:49	24.75	52.41	34.52	99.7	N/A	N/A	0.129	8.49	1.9
2/27/2010	5:10:49	24.76	52.41	34.52	99.2	N/A	N/A	0.129	8.49	0.8
2/27/2010	5:15:49	24.73	52.45	34.55	97.4	N/A	N/A	0.128	8.48	1.1
2/27/2010	5:20:48	24.72	52.41	34.52	97.3	N/A	N/A	0.129	8.48	1.4
2/27/2010	5:25:49	24.69	52.40	34.51	97.5	N/A	N/A	0.129	8.48	1.1
2/27/2010	5:30:49	24.67	52.37	34.49	97.5	N/A	N/A	0.129	8.48	1.1
2/27/2010	5:35:48	24.67	52.38	34.50	98.2	N/A	N/A	0.130	8.48	1.3
2/27/2010	5:40:48	24.67	52.38	34.50	99.5	N/A	N/A	0.130	8.49	1.8
2/27/2010	5:45:48	24.65	52.37	34.49	100.1	N/A	N/A	0.130	8.49	1.5
2/27/2010	5:50:48	24.64	52.38	34.50	99.5	N/A	N/A	0.129	8.49	0.8
2/27/2010	5:55:49	24.63	52.37	34.49	98.7	N/A	N/A	0.129	8.49	1.7
2/27/2010	6:00:49	24.64	52.38	34.50	100.7	N/A	N/A	0.130	8.49	2.2
2/27/2010	6:05:49	24.60	52.39	34.51	100.9	N/A	N/A	0.129	8.49	2.7
2/27/2010	6:10:49	24.71	52.48	34.58	100.6	N/A	N/A	0.129	8.49	1.5
2/27/2010	6:15:48	24.62	52.49	34.58	98.4	N/A	N/A	0.129	8.48	0.8
2/27/2010	6:20:48	24.59	52.41	34.52	99.8	N/A	N/A	0.130	8.49	1.4
2/27/2010	6:25:49	24.62	52.42	34.53	99.1	N/A	N/A	0.130	8.49	1.0
2/27/2010	6:30:49	24.58	52.42	34.53	100.5	N/A	N/A	0.130	8.49	1.7
2/27/2010	6:35:48	24.56	52.42	34.53	98.2	N/A	N/A	0.131	8.49	0.5
2/27/2010	6:40:49	24.51	52.42	34.53	98.1	N/A	N/A	0.131	8.49	1.2
2/27/2010	6:45:49	24.49	52.37	34.50	100.3	N/A	N/A	0.131	8.49	1.9
2/27/2010	6:50:49	24.52	52.42	34.53	98.6	N/A	N/A	0.131	8.49	1.1
2/27/2010	6:55:49	24.64	52.48	34.58	100.0	N/A	N/A	0.131	8.49	0.0
2/27/2010	7:00:48	24.58	52.48	34.58	97.0	N/A	N/A	0.131	8.48	1.8
2/27/2010	7:05:49	24.56	52.47	34.57	100.4	N/A	N/A	0.132	8.48	2.0
2/27/2010	7:10:49	24.71	52.53	34.61	101.2	N/A	N/A	0.133	8.49	2.4
2/27/2010	7:15:49	24.72	52.60	34.66	101.1	N/A	N/A	0.134	8.49	1.4
2/27/2010	7:20:49	24.53	52.58	34.65	98.6	N/A	N/A	0.133	8.49	1.0
2/27/2010	7:25:49	24.47	52.44	34.55	98.4	N/A	N/A	0.135	8.48	1.0
2/27/2010	7:30:49	24.56	52.45	34.56	97.1	N/A	N/A	0.135	8.48	0.8
2/27/2010	7:35:49	24.66	52.54	34.62	99.3	N/A	N/A	0.137	8.48	1.1

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	7:40:49	24.64	52.56	34.64	98.7	N/A	N/A	0.135	8.49	0.8
2/27/2010	7:45:49	24.68	52.62	34.68	100.5	N/A	N/A	0.137	8.49	2.0
2/27/2010	7:50:49	24.64	52.58	34.65	99.4	N/A	N/A	0.136	8.49	0.6
2/27/2010	7:55:49	24.67	52.64	34.69	100.3	N/A	N/A	0.136	8.49	1.0
2/27/2010	8:00:49	24.67	52.61	34.67	100.0	N/A	N/A	0.135	8.49	0.8
2/27/2010	8:05:48	24.64	52.56	34.64	99.9	N/A	N/A	0.134	8.49	0.6
2/27/2010	8:10:49	24.62	52.60	34.67	100.3	N/A	N/A	0.134	8.49	0.5
2/27/2010	8:15:49	24.67	52.63	34.69	100.9	N/A	N/A	0.134	8.49	0.5
2/27/2010	8:20:49	24.73	52.63	34.69	101.3	N/A	N/A	0.134	8.50	1.8
2/27/2010	8:25:49	24.73	52.67	34.71	102.4	N/A	N/A	0.133	8.50	1.7
2/27/2010	8:30:48	24.74	52.68	34.72	102.8	N/A	N/A	0.133	8.50	1.3
2/27/2010	8:35:48	24.76	52.68	34.72	103.6	N/A	N/A	0.132	8.50	1.1
2/27/2010	8:40:49	24.78	52.65	34.70	103.1	N/A	N/A	0.132	8.50	0.5
2/27/2010	8:45:49	24.75	52.62	34.67	103.0	N/A	N/A	0.133	8.50	1.6
2/27/2010	8:50:49	24.75	52.61	34.67	102.5	N/A	N/A	0.133	8.49	0.8
2/27/2010	8:55:49	24.78	52.62	34.67	102.3	N/A	N/A	0.133	8.49	0.7
2/27/2010	9:00:49	24.80	52.60	34.66	102.4	N/A	N/A	0.133	8.49	0.7
2/27/2010	9:05:49	24.84	52.60	34.66	102.9	N/A	N/A	0.131	8.49	1.1
2/27/2010	9:10:49	24.86	52.58	34.64	102.8	N/A	N/A	0.131	8.49	0.8
2/27/2010	9:15:49	24.90	52.56	34.63	103.8	N/A	N/A	0.130	8.49	0.7
2/27/2010	9:20:49	24.89	52.54	34.61	103.2	N/A	N/A	0.130	8.49	1.0
2/27/2010	9:25:49	24.87	52.51	34.59	103.0	N/A	N/A	0.130	8.49	0.8
2/27/2010	9:30:49	24.88	52.57	34.64	102.3	N/A	N/A	0.130	8.49	1.7
2/27/2010	9:35:49	24.88	52.55	34.62	102.6	N/A	N/A	0.130	8.49	0.5
2/27/2010	9:40:48	24.92	52.51	34.59	102.9	N/A	N/A	0.130	8.48	1.0
2/27/2010	9:45:48	24.89	52.57	34.64	101.0	N/A	N/A	0.131	8.48	0.9
2/27/2010	9:50:49	24.97	52.54	34.61	102.1	N/A	N/A	0.131	8.48	0.9
2/27/2010	9:55:49	24.87	52.52	34.60	101.9	N/A	N/A	0.131	8.48	1.5
2/27/2010	10:00:49	24.90	52.46	34.56	100.2	N/A	N/A	0.131	8.48	0.9
2/27/2010	10:05:49	24.94	52.04	34.24	99.3	N/A	N/A	0.131	8.47	0.8
2/27/2010	10:10:49	25.00	52.24	34.39	98.4	N/A	N/A	0.131	8.47	0.6
2/27/2010	10:15:49	25.00	51.58	33.90	99.6	N/A	N/A	0.132	8.47	1.0
2/27/2010	10:20:48	24.30	50.39	33.04	97.3	N/A	N/A	0.131	8.42	0.7
2/27/2010	10:25:49	24.67	51.15	33.59	96.7	N/A	N/A	0.131	8.45	0.8
2/27/2010	10:30:49	24.75	51.17	33.60	94.0	N/A	N/A	0.130	8.44	1.3
2/27/2010	10:35:49	24.73	51.23	33.65	95.4	N/A	N/A	0.129	8.45	1.3
2/27/2010	10:40:49	24.64	50.83	33.36	95.7	N/A	N/A	0.128	8.45	0.2

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	10:45:48	24.84	51.50	33.85	98.2	N/A	N/A	0.130	8.46	1.5
2/27/2010	10:50:49	24.87	52.22	34.38	100.5	N/A	N/A	0.130	8.47	1.8
2/27/2010	10:55:49	24.83	50.44	33.07	100.4	N/A	N/A	0.130	8.47	1.6
2/27/2010	11:00:49	25.00	52.01	34.22	102.0	N/A	N/A	0.130	8.47	0.9
2/27/2010	11:05:49	25.05	51.93	34.16	101.4	N/A	N/A	0.130	8.48	1.0
2/27/2010	11:10:49	24.92	51.32	33.71	101.0	N/A	N/A	0.130	8.47	0.7
2/27/2010	11:15:49	24.94	50.43	33.06	100.5	N/A	N/A	0.129	8.45	0.1
2/27/2010	11:20:49	25.15	51.20	33.61	104.5	N/A	N/A	0.128	8.48	2.1
2/27/2010	11:25:49	25.14	51.42	33.78	103.8	N/A	N/A	0.127	8.47	2.3
2/27/2010	11:30:49	25.27	50.77	33.30	104.9	N/A	N/A	0.127	8.48	1.6
2/27/2010	11:35:48	25.34	51.56	33.88	104.9	N/A	N/A	0.126	8.48	1.1
2/27/2010	11:40:48	25.30	51.31	33.70	104.9	N/A	N/A	0.127	8.48	1.1
2/27/2010	11:45:49	25.28	50.94	33.42	103.9	N/A	N/A	0.125	8.47	0.2
2/27/2010	11:50:48	25.10	50.58	33.16	101.6	N/A	N/A	0.125	8.44	1.2
2/27/2010	11:55:48	25.28	51.13	33.56	103.6	N/A	N/A	0.123	8.47	1.6
2/27/2010	12:00:48	25.34	51.12	33.55	103.0	N/A	N/A	0.123	8.48	1.4
2/27/2010	12:05:48	25.35	51.72	34.00	103.0	N/A	N/A	0.122	8.48	0.9
2/27/2010	12:10:49	25.33	51.66	33.95	102.0	N/A	N/A	0.122	8.48	1.0
2/27/2010	12:15:49	25.33	51.58	33.89	102.8	N/A	N/A	0.121	8.47	1.3
2/27/2010	12:20:49	25.30	50.46	33.07	102.5	N/A	N/A	0.121	8.47	1.8
2/27/2010	12:25:49	25.39	51.50	33.84	103.9	N/A	N/A	0.120	8.47	1.3
2/27/2010	12:30:48	25.42	51.77	34.03	103.5	N/A	N/A	0.119	8.48	1.2
2/27/2010	12:35:48	25.43	51.06	33.50	105.5	N/A	N/A	0.118	8.48	0.7
2/27/2010	12:40:48	25.44	51.15	33.57	105.0	N/A	N/A	0.118	8.48	0.8
2/27/2010	12:45:48	25.48	51.36	33.72	103.3	N/A	N/A	0.116	8.48	0.6
2/27/2010	12:50:49	25.60	51.17	33.58	107.2	N/A	N/A	0.115	8.49	1.6
2/27/2010	12:55:48	25.55	51.73	34.00	104.3	N/A	N/A	0.113	8.48	0.7
2/27/2010	13:00:48	25.36	50.29	32.94	103.3	N/A	N/A	0.113	8.46	1.4
2/27/2010	13:05:48	25.87	51.34	33.71	108.1	N/A	N/A	0.110	8.49	2.5
2/27/2010	13:10:49	25.86	51.04	33.48	108.5	N/A	N/A	0.110	8.49	2.6
2/27/2010	13:15:48	25.57	51.49	33.82	104.2	N/A	N/A	0.108	8.48	1.2
2/27/2010	13:20:48	25.51	51.94	34.15	102.4	N/A	N/A	0.107	8.47	0.7
2/27/2010	13:25:49	25.51	52.21	34.36	105.1	N/A	N/A	0.107	8.48	1.3
2/27/2010	13:30:49	25.46	52.16	34.32	100.9	N/A	N/A	0.106	8.47	0.7
2/27/2010	13:35:49	25.51	50.08	32.78	101.7	N/A	N/A	0.105	8.47	1.2
2/27/2010	13:40:49	25.65	49.94	32.68	104.1	N/A	N/A	0.105	8.47	1.1
2/27/2010	13:45:48	25.65	50.52	33.10	104.2	N/A	N/A	0.103	8.47	0.9

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	13:50:49	25.76	51.16	33.58	105.9	N/A	N/A	0.102	8.48	1.6
2/27/2010	13:55:49	25.73	51.70	33.97	107.3	N/A	N/A	0.102	8.48	1.8
2/27/2010	14:00:49	25.71	51.94	34.15	106.5	N/A	N/A	0.101	8.48	1.7
2/27/2010	14:05:49	25.59	51.47	33.81	104.7	N/A	N/A	0.099	8.48	1.2
2/27/2010	14:10:49	25.60	51.70	33.97	106.0	N/A	N/A	0.099	8.48	1.3
2/27/2010	14:15:49	25.64	51.45	33.79	105.6	N/A	N/A	0.099	8.48	1.9
2/27/2010	14:20:49	25.78	51.67	33.95	105.4	N/A	N/A	0.097	8.48	1.5
2/27/2010	14:25:49	25.57	48.42	31.57	105.8	N/A	N/A	0.097	8.48	0.9
2/27/2010	14:30:48	25.63	49.70	32.51	106.0	N/A	N/A	0.098	8.48	2.1
2/27/2010	14:35:49	25.58	50.20	32.87	107.4	N/A	N/A	0.098	8.48	1.0
2/27/2010	14:40:49	25.59	51.87	34.10	105.9	N/A	N/A	0.095	8.48	0.9
2/27/2010	14:45:48	25.46	48.38	31.54	105.6	N/A	N/A	0.094	8.48	0.9
2/27/2010	14:50:49	25.47	50.18	32.86	104.3	N/A	N/A	0.092	8.48	0.0
2/27/2010	14:55:48	25.62	49.39	32.27	106.8	N/A	N/A	0.093	8.48	1.4
2/27/2010	15:00:48	25.49	50.83	33.34	106.7	N/A	N/A	0.093	8.48	1.3
2/27/2010	15:05:48	25.63	52.06	34.24	108.0	N/A	N/A	0.094	8.49	1.2
2/27/2010	15:10:48	25.57	51.08	33.52	106.9	N/A	N/A	0.093	8.49	1.3
2/27/2010	15:15:48	25.63	51.62	33.92	106.8	N/A	N/A	0.093	8.49	1.2
2/27/2010	15:20:48	25.60	50.99	33.45	107.1	N/A	N/A	0.093	8.49	1.7
2/27/2010	15:25:49	25.60	51.29	33.67	107.2	N/A	N/A	0.093	8.48	2.0
2/27/2010	15:30:49	25.59	51.96	34.17	107.4	N/A	N/A	0.094	8.49	1.3
2/27/2010	15:35:49	25.56	51.76	34.02	106.3	N/A	N/A	0.093	8.48	1.1
2/27/2010	15:40:49	25.49	51.78	34.04	105.4	N/A	N/A	0.092	8.48	1.0
2/27/2010	15:45:49	25.34	49.73	32.53	106.1	N/A	N/A	0.093	8.48	0.2
2/27/2010	15:50:49	25.45	49.14	32.10	108.4	N/A	N/A	0.093	8.49	1.8
2/27/2010	15:55:49	25.48	52.18	34.33	107.7	N/A	N/A	0.093	8.49	1.7
2/27/2010	16:00:49	25.51	52.17	34.33	105.5	N/A	N/A	0.093	8.49	1.5
2/27/2010	16:05:49	25.50	52.18	34.33	105.3	N/A	N/A	0.094	8.49	0.9
2/27/2010	16:10:49	25.45	51.78	34.04	103.9	N/A	N/A	0.094	8.48	1.0
2/27/2010	16:15:48	25.50	52.10	34.27	104.0	N/A	N/A	0.093	8.48	1.1
2/27/2010	16:20:49	25.50	51.45	33.80	107.2	N/A	N/A	0.093	8.49	2.2
2/27/2010	16:25:49	25.47	51.53	33.85	105.9	N/A	N/A	0.093	8.49	1.1
2/27/2010	16:30:49	25.48	51.68	33.97	107.5	N/A	N/A	0.093	8.49	2.7
2/27/2010	16:35:49	25.41	51.79	34.05	104.5	N/A	N/A	0.093	8.48	1.2
2/27/2010	16:40:49	25.28	52.31	34.43	103.7	N/A	N/A	0.094	8.48	1.2
2/27/2010	16:45:48	25.34	52.44	34.53	106.1	N/A	N/A	0.132	8.49	1.3
2/27/2010	16:50:49	25.35	51.40	33.76	105.1	N/A	N/A	0.093	8.48	1.3

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	16:55:49	25.43	51.71	33.98	106.2	N/A	N/A	0.094	8.49	1.6
2/27/2010	17:00:49	25.37	51.67	33.96	104.2	N/A	N/A	0.093	8.48	1.4
2/27/2010	17:05:49	25.40	51.94	34.16	104.3	N/A	N/A	0.094	8.49	1.2
2/27/2010	17:10:48	25.37	52.05	34.24	105.0	N/A	N/A	0.095	8.48	1.6
2/27/2010	17:15:49	25.32	51.79	34.05	104.7	N/A	N/A	0.095	8.48	1.2
2/27/2010	17:20:48	25.39	52.06	34.25	104.5	N/A	N/A	0.095	8.49	1.2
2/27/2010	17:25:48	25.27	51.62	33.92	104.2	N/A	N/A	0.096	8.48	0.9
2/27/2010	17:30:48	25.30	52.38	34.49	103.2	N/A	N/A	0.097	8.48	1.5
2/27/2010	17:35:49	25.25	51.91	34.14	103.6	N/A	N/A	0.097	8.48	0.8
2/27/2010	17:40:49	25.36	51.74	34.01	106.3	N/A	N/A	0.097	8.49	2.2
2/27/2010	17:45:49	25.23	52.27	34.41	103.9	N/A	N/A	0.098	8.48	1.3
2/27/2010	17:50:49	25.30	52.06	34.25	105.0	N/A	N/A	0.098	8.49	1.0
2/27/2010	17:55:49	25.21	51.99	34.20	104.5	N/A	N/A	0.098	8.49	1.2
2/27/2010	18:00:49	25.16	51.90	34.13	103.9	N/A	N/A	0.099	8.48	0.6
2/27/2010	18:05:48	25.19	52.19	34.35	103.4	N/A	N/A	0.099	8.48	1.2
2/27/2010	18:10:49	25.16	52.00	34.21	103.9	N/A	N/A	0.099	8.49	1.1
2/27/2010	18:15:49	25.17	52.03	34.23	102.7	N/A	N/A	0.100	8.48	0.8
2/27/2010	18:20:49	25.14	52.10	34.29	102.6	N/A	N/A	0.101	8.48	1.0
2/27/2010	18:25:49	25.20	52.07	34.26	102.3	N/A	N/A	0.101	8.49	1.1
2/27/2010	18:30:49	24.98	52.06	34.26	105.0	N/A	N/A	0.102	8.49	1.9
2/27/2010	18:35:49	24.99	51.99	34.21	102.4	N/A	N/A	0.102	8.48	1.6
2/27/2010	18:40:49	25.08	52.20	34.36	100.3	N/A	N/A	0.102	8.48	1.0
2/27/2010	18:45:49	25.11	52.32	34.45	99.3	N/A	N/A	0.102	8.48	1.2
2/27/2010	18:50:48	25.08	52.37	34.49	100.9	N/A	N/A	0.104	8.48	1.1
2/27/2010	18:55:49	25.08	52.49	34.57	102.4	N/A	N/A	0.104	8.48	1.2
2/27/2010	19:00:49	24.84	51.86	34.11	101.0	N/A	N/A	0.105	8.48	1.0
2/27/2010	19:05:48	24.80	51.63	33.94	99.2	N/A	N/A	0.106	8.47	0.6
2/27/2010	19:10:49	25.04	52.29	34.42	100.8	N/A	N/A	0.108	8.48	1.1
2/27/2010	19:15:49	24.88	52.47	34.56	102.0	N/A	N/A	0.109	8.49	1.6
2/27/2010	19:20:49	24.82	52.12	34.30	100.9	N/A	N/A	0.110	8.48	1.2
2/27/2010	19:25:49	24.76	51.88	34.13	98.7	N/A	N/A	0.110	8.48	1.2
2/27/2010	19:30:49	24.92	52.30	34.43	99.5	N/A	N/A	0.110	8.48	1.1
2/27/2010	19:35:49	25.05	52.55	34.62	100.5	N/A	N/A	0.112	8.49	0.9
2/27/2010	19:40:49	24.98	52.46	34.55	99.3	N/A	N/A	0.112	8.48	1.4
2/27/2010	19:45:49	24.94	52.27	34.41	99.1	N/A	N/A	0.113	8.48	0.8
2/27/2010	19:50:49	23.69	50.97	33.48	99.5	N/A	N/A	0.112	8.49	2.1
2/27/2010	19:55:49	24.14	51.60	33.93	100.8	N/A	N/A	0.113	8.49	1.9

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	20:00:49	24.14	51.82	34.10	101.9	N/A	N/A	0.114	8.49	2.0
2/27/2010	20:05:49	24.38	51.88	34.14	100.4	N/A	N/A	0.114	8.48	1.5
2/27/2010	20:10:49	24.44	52.02	34.23	99.7	N/A	N/A	0.115	8.49	1.5
2/27/2010	20:15:49	24.52	52.08	34.28	99.6	N/A	N/A	0.116	8.49	0.6
2/27/2010	20:20:49	24.60	52.17	34.35	99.8	N/A	N/A	0.116	8.49	1.5
2/27/2010	20:25:49	24.41	52.02	34.24	99.3	N/A	N/A	0.117	8.48	1.2
2/27/2010	20:30:49	24.46	51.89	34.14	98.9	N/A	N/A	0.117	8.48	2.2
2/27/2010	20:35:49	24.44	51.89	34.14	97.8	N/A	N/A	0.117	8.47	1.1
2/27/2010	20:40:49	24.62	52.04	34.25	97.8	N/A	N/A	0.118	8.47	1.4
2/27/2010	20:45:49	24.75	52.21	34.37	99.1	N/A	N/A	0.118	8.48	0.5
2/27/2010	20:50:49	24.79	52.32	34.45	99.9	N/A	N/A	0.119	8.48	0.9
2/27/2010	20:55:49	24.32	52.08	34.28	100.9	N/A	N/A	0.118	8.49	1.4
2/27/2010	21:00:49	24.47	52.24	34.40	100.7	N/A	N/A	0.118	8.49	1.6
2/27/2010	21:05:49	24.68	52.26	34.41	97.1	N/A	N/A	0.118	8.48	1.9
2/27/2010	21:10:49	24.57	52.36	34.49	95.6	N/A	N/A	0.118	8.48	0.0
2/27/2010	21:15:49	24.47	52.36	34.49	95.5	N/A	N/A	0.119	8.47	0.9
2/27/2010	21:20:49	24.30	52.06	34.27	99.8	N/A	N/A	0.120	8.48	2.0
2/27/2010	21:25:49	24.52	52.11	34.30	99.5	N/A	N/A	0.121	8.48	1.9
2/27/2010	21:30:49	24.69	52.30	34.44	99.3	N/A	N/A	0.122	8.48	0.7
2/27/2010	21:35:49	24.70	52.44	34.54	98.4	N/A	N/A	0.120	8.48	1.2
2/27/2010	21:40:49	24.73	52.42	34.53	98.6	N/A	N/A	0.121	8.48	1.3
2/27/2010	21:45:48	24.83	52.60	34.66	100.7	N/A	N/A	0.121	8.49	1.4
2/27/2010	21:50:49	24.72	52.50	34.59	99.7	N/A	N/A	0.121	8.48	1.9
2/27/2010	21:55:49	24.48	52.13	34.32	97.7	N/A	N/A	0.121	8.47	0.3
2/27/2010	22:00:49	24.50	52.16	34.34	98.0	N/A	N/A	0.121	8.47	1.1
2/27/2010	22:05:49	24.50	52.12	34.31	98.1	N/A	N/A	0.121	8.47	1.8
2/27/2010	22:10:49	24.58	52.29	34.44	98.6	N/A	N/A	0.120	8.47	1.6
2/27/2010	22:15:49	24.48	51.37	33.76	97.2	N/A	N/A	0.120	8.46	1.3
2/27/2010	22:20:49	24.26	51.29	33.70	92.2	N/A	N/A	0.119	8.45	1.6
2/27/2010	22:25:49	24.30	51.63	33.95	94.5	N/A	N/A	0.119	8.46	1.4
2/27/2010	22:30:49	24.49	52.11	34.31	97.2	N/A	N/A	0.119	8.47	1.5
2/27/2010	22:35:49	24.44	52.07	34.28	97.8	N/A	N/A	0.120	8.47	1.4
2/27/2010	22:40:49	24.54	52.33	34.47	99.8	N/A	N/A	0.120	8.48	2.1
2/27/2010	22:45:49	24.72	52.50	34.59	100.6	N/A	N/A	0.120	8.49	1.3
2/27/2010	22:50:49	24.76	52.58	34.65	102.1	N/A	N/A	0.120	8.49	2.0
2/27/2010	22:55:49	24.74	52.59	34.66	98.7	N/A	N/A	0.120	8.48	1.5
2/27/2010	23:00:49	24.76	52.61	34.67	101.0	N/A	N/A	0.119	8.48	1.7

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/27/2010	23:05:49	24.76	52.61	34.67	100.0	N/A	N/A	0.119	8.48	1.2
2/27/2010	23:10:49	24.65	52.54	34.62	98.9	N/A	N/A	0.118	8.48	1.7
2/27/2010	23:15:49	24.47	52.12	34.32	96.7	N/A	N/A	0.117	8.47	1.1
2/27/2010	23:20:49	24.35	52.03	34.25	96.6	N/A	N/A	0.116	8.47	1.1
2/27/2010	23:25:49	24.25	51.84	34.11	97.5	N/A	N/A	0.116	8.47	0.6
2/27/2010	23:30:49	24.69	52.12	34.31	97.0	N/A	N/A	0.116	8.47	0.0
2/27/2010	23:35:48	24.78	52.34	34.47	97.0	N/A	N/A	0.116	8.47	1.3
2/27/2010	23:40:48	24.73	52.52	34.60	97.4	N/A	N/A	0.115	8.47	0.6
2/27/2010	23:45:49	24.67	52.40	34.51	96.1	N/A	N/A	0.114	8.47	0.8
2/27/2010	23:50:48	24.65	52.47	34.57	96.7	N/A	N/A	0.114	8.47	0.5
2/27/2010	23:55:49	24.66	52.40	34.51	96.0	N/A	N/A	0.114	8.47	1.4
2/28/2010	0:00:49	24.71	52.55	34.63	97.9	N/A	N/A	0.114	8.47	1.1
2/28/2010	0:05:49	24.67	52.40	34.52	97.2	N/A	N/A	0.114	8.47	0.9
2/28/2010	0:10:49	24.66	52.45	34.55	95.8	N/A	N/A	0.113	8.47	1.0
2/28/2010	0:15:49	24.50	52.53	34.62	95.1	N/A	N/A	0.114	8.46	0.7
2/28/2010	0:20:49	24.11	52.20	34.38	97.2	N/A	N/A	0.114	8.47	0.9
2/28/2010	0:25:49	24.67	52.28	34.43	96.2	N/A	N/A	0.114	8.47	0.8
2/28/2010	0:30:49	24.70	52.54	34.62	94.0	N/A	N/A	0.113	8.46	1.2
2/28/2010	0:35:49	24.73	52.61	34.67	95.5	N/A	N/A	0.113	8.47	1.6
2/28/2010	0:40:49	24.43	52.60	34.67	96.3	N/A	N/A	0.114	8.48	1.2
2/28/2010	0:45:49	24.33	52.42	34.53	96.3	N/A	N/A	0.113	8.47	0.7
2/28/2010	0:50:49	24.61	52.49	34.58	96.2	N/A	N/A	0.112	8.47	1.3
2/28/2010	0:55:49	24.58	52.53	34.62	98.8	N/A	N/A	0.112	8.48	1.3
2/28/2010	1:00:49	24.66	52.60	34.67	98.1	N/A	N/A	0.112	8.48	1.5
2/28/2010	1:05:48	24.66	52.61	34.67	98.1	N/A	N/A	0.111	8.48	0.6
2/28/2010	1:10:48	24.66	52.62	34.68	99.8	N/A	N/A	0.112	8.48	1.4
2/28/2010	1:15:49	24.66	52.62	34.68	100.3	N/A	N/A	0.111	8.49	1.4
2/28/2010	1:20:49	24.66	52.64	34.69	100.7	N/A	N/A	0.109	8.49	1.6
2/28/2010	1:25:49	24.64	52.65	34.70	101.1	N/A	N/A	0.107	8.49	2.4
2/28/2010	1:30:49	24.64	52.66	34.71	100.0	N/A	N/A	0.106	8.49	1.2
2/28/2010	1:35:48	24.63	52.65	34.70	102.8	N/A	N/A	0.106	8.49	2.7
2/28/2010	1:40:49	24.65	52.65	34.70	99.6	N/A	N/A	0.106	8.48	0.8
2/28/2010	1:45:48	24.64	52.66	34.71	98.4	N/A	N/A	0.105	8.48	0.4
2/28/2010	1:50:49	24.64	52.66	34.70	98.8	N/A	N/A	0.105	8.48	0.9
2/28/2010	1:55:48	24.61	52.65	34.70	101.7	N/A	N/A	0.105	8.49	2.5
2/28/2010	2:00:49	24.62	52.66	34.71	101.3	N/A	N/A	0.105	8.49	1.5
2/28/2010	2:05:49	24.61	52.66	34.71	101.6	N/A	N/A	0.103	8.49	1.2

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	2:10:49	24.62	52.67	34.71	99.8	N/A	N/A	0.104	8.48	1.6
2/28/2010	2:15:49	24.62	52.67	34.72	99.2	N/A	N/A	0.104	8.48	2.1
2/28/2010	2:20:49	24.62	52.66	34.71	100.0	N/A	N/A	0.103	8.48	1.7
2/28/2010	2:25:48	24.62	52.67	34.72	98.5	N/A	N/A	0.103	8.49	1.6
2/28/2010	2:30:49	24.62	52.67	34.72	97.8	N/A	N/A	0.103	8.48	1.7
2/28/2010	2:35:49	24.62	52.67	34.72	96.5	N/A	N/A	0.102	8.47	1.3
2/28/2010	2:40:49	24.60	52.67	34.71	95.7	N/A	N/A	0.102	8.47	1.6
2/28/2010	2:45:49	24.59	52.66	34.71	96.9	N/A	N/A	0.101	8.47	1.8
2/28/2010	2:50:49	24.55	52.66	34.71	97.7	N/A	N/A	0.101	8.48	1.5
2/28/2010	2:55:49	24.59	52.66	34.71	95.6	N/A	N/A	0.101	8.47	0.6
2/28/2010	3:00:49	24.58	52.66	34.71	95.7	N/A	N/A	0.101	8.47	1.3
2/28/2010	3:05:49	24.58	52.66	34.71	95.4	N/A	N/A	0.100	8.47	1.5
2/28/2010	3:10:49	24.55	52.66	34.71	98.5	N/A	N/A	0.099	8.48	1.7
2/28/2010	3:15:49	24.52	52.67	34.71	97.7	N/A	N/A	0.098	8.48	1.3
2/28/2010	3:20:49	24.52	52.66	34.71	97.1	N/A	N/A	0.098	8.48	1.6
2/28/2010	3:25:49	24.53	52.67	34.72	95.6	N/A	N/A	0.098	8.47	1.2
2/28/2010	3:30:48	24.53	52.67	34.72	93.8	N/A	N/A	0.098	8.47	1.1
2/28/2010	3:35:49	24.55	52.67	34.71	96.0	N/A	N/A	0.098	8.47	1.2
2/28/2010	3:40:49	24.55	52.67	34.72	95.5	N/A	N/A	0.097	8.47	1.3
2/28/2010	3:45:49	24.54	52.67	34.72	97.2	N/A	N/A	0.097	8.48	1.9
2/28/2010	3:50:49	24.53	52.66	34.71	94.3	N/A	N/A	0.097	8.47	0.7
2/28/2010	3:55:49	24.52	52.67	34.72	95.0	N/A	N/A	0.098	8.47	1.1
2/28/2010	4:00:49	24.48	52.68	34.73	94.6	N/A	N/A	0.098	8.47	1.2
2/28/2010	4:05:49	24.51	52.66	34.71	95.3	N/A	N/A	0.098	8.47	0.8
2/28/2010	4:10:49	24.52	52.67	34.72	96.0	N/A	N/A	0.099	8.48	-0.2
2/28/2010	4:15:49	24.51	52.67	34.72	95.4	N/A	N/A	0.098	8.47	0.8
2/28/2010	4:20:49	24.50	52.68	34.72	96.9	N/A	N/A	0.098	8.48	1.5
2/28/2010	4:25:49	24.50	52.68	34.73	94.5	N/A	N/A	0.099	8.47	1.1
2/28/2010	4:30:49	24.48	52.68	34.73	96.1	N/A	N/A	0.099	8.48	1.5
2/28/2010	4:35:49	24.50	52.68	34.72	95.3	N/A	N/A	0.100	8.47	1.3
2/28/2010	4:40:49	24.47	52.69	34.73	95.7	N/A	N/A	0.099	8.47	1.4
2/28/2010	4:45:48	24.48	52.68	34.72	96.0	N/A	N/A	0.099	8.48	1.3
2/28/2010	4:50:49	24.48	52.69	34.73	95.4	N/A	N/A	0.099	8.47	1.6
2/28/2010	4:55:49	24.47	52.70	34.74	94.0	N/A	N/A	0.100	8.47	0.8
2/28/2010	5:00:49	24.45	52.68	34.73	94.7	N/A	N/A	0.100	8.48	0.9
2/28/2010	5:05:49	24.42	52.68	34.73	96.0	N/A	N/A	0.100	8.48	1.5
2/28/2010	5:10:49	24.44	52.68	34.73	95.7	N/A	N/A	0.100	8.47	0.5

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	5:15:49	24.42	52.69	34.73	96.7	N/A	N/A	0.102	8.48	1.2
2/28/2010	5:20:49	24.41	52.68	34.73	95.1	N/A	N/A	0.102	8.47	0.9
2/28/2010	5:25:49	24.39	52.68	34.73	97.7	N/A	N/A	0.103	8.48	2.1
2/28/2010	5:30:49	24.40	52.67	34.72	97.7	N/A	N/A	0.104	8.48	1.8
2/28/2010	5:35:49	24.38	52.68	34.73	96.8	N/A	N/A	0.105	8.48	1.2
2/28/2010	5:40:49	24.39	52.68	34.73	96.9	N/A	N/A	0.105	8.48	1.8
2/28/2010	5:45:49	24.38	52.68	34.73	96.6	N/A	N/A	0.105	8.48	1.5
2/28/2010	5:50:49	24.39	52.68	34.73	95.1	N/A	N/A	0.105	8.47	1.7
2/28/2010	5:55:48	24.38	52.68	34.73	94.5	N/A	N/A	0.105	8.47	1.5
2/28/2010	6:00:49	24.38	52.67	34.72	95.2	N/A	N/A	0.107	8.47	1.8
2/28/2010	6:05:49	24.37	52.68	34.73	99.1	N/A	N/A	0.108	8.49	1.9
2/28/2010	6:10:49	24.35	52.68	34.73	98.0	N/A	N/A	0.109	8.48	1.6
2/28/2010	6:15:49	24.36	52.68	34.73	95.4	N/A	N/A	0.112	8.48	1.1
2/28/2010	6:20:49	24.35	52.67	34.72	93.1	N/A	N/A	0.113	8.47	1.1
2/28/2010	6:25:49	24.34	52.66	34.71	96.0	N/A	N/A	0.116	8.48	1.9
2/28/2010	6:30:48	24.32	52.63	34.69	98.5	N/A	N/A	0.117	8.49	2.1
2/28/2010	6:35:49	24.32	52.63	34.69	95.6	N/A	N/A	0.117	8.47	2.0
2/28/2010	6:40:49	24.31	52.60	34.67	94.9	N/A	N/A	0.118	8.47	1.4
2/28/2010	6:45:49	24.38	52.63	34.69	95.6	N/A	N/A	0.119	8.47	1.3
2/28/2010	6:50:49	24.37	52.64	34.70	94.8	N/A	N/A	0.121	8.47	1.0
2/28/2010	6:55:49	24.41	52.65	34.70	95.1	N/A	N/A	0.121	8.48	1.3
2/28/2010	7:00:49	24.37	52.63	34.69	92.2	N/A	N/A	0.122	8.46	1.5
2/28/2010	7:05:49	24.40	52.67	34.72	95.0	N/A	N/A	0.123	8.48	1.8
2/28/2010	7:10:49	24.39	52.68	34.73	92.2	N/A	N/A	0.123	8.47	1.2
2/28/2010	7:15:48	24.39	52.67	34.72	94.0	N/A	N/A	0.123	8.47	1.9
2/28/2010	7:20:49	24.38	52.68	34.73	94.4	N/A	N/A	0.124	8.47	1.5
2/28/2010	7:25:49	24.37	52.67	34.72	93.5	N/A	N/A	0.126	8.47	1.1
2/28/2010	7:30:49	24.36	52.61	34.68	95.5	N/A	N/A	0.127	8.48	1.4
2/28/2010	7:35:48	24.35	52.66	34.72	93.5	N/A	N/A	0.128	8.47	2.0
2/28/2010	7:40:49	24.36	52.63	34.69	96.7	N/A	N/A	0.129	8.48	2.2
2/28/2010	7:45:48	24.37	52.66	34.72	93.8	N/A	N/A	0.131	8.47	1.4
2/28/2010	7:50:48	24.37	52.67	34.72	95.4	N/A	N/A	0.132	8.48	1.9
2/28/2010	7:55:49	24.37	52.69	34.73	93.0	N/A	N/A	0.133	8.47	0.6
2/28/2010	8:00:49	24.36	52.66	34.71	91.4	N/A	N/A	0.132	8.47	2.0
2/28/2010	8:05:49	24.36	52.68	34.73	91.2	N/A	N/A	0.134	8.46	0.6
2/28/2010	8:10:49	24.37	52.67	34.72	91.0	N/A	N/A	0.134	8.46	1.2
2/28/2010	8:15:49	24.37	52.67	34.72	91.7	N/A	N/A	0.135	8.47	0.7

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	8:20:49	24.33	52.65	34.71	90.7	N/A	N/A	0.138	8.46	0.9
2/28/2010	8:25:49	24.32	52.68	34.73	91.6	N/A	N/A	0.136	8.46	1.7
2/28/2010	8:30:49	24.30	52.69	34.73	90.9	N/A	N/A	0.138	8.46	0.9
2/28/2010	8:35:49	24.30	52.66	34.71	90.5	N/A	N/A	0.138	8.46	1.1
2/28/2010	8:40:49	24.26	52.57	34.65	89.1	N/A	N/A	0.139	8.45	0.3
2/28/2010	8:45:49	24.22	51.76	34.05	89.1	N/A	N/A	0.138	8.46	1.7
2/28/2010	8:50:49	24.08	51.71	34.01	90.0	N/A	N/A	0.140	8.45	1.0
2/28/2010	8:55:49	24.23	52.30	34.45	88.2	N/A	N/A	0.141	8.45	1.2
2/28/2010	9:00:49	24.04	51.76	34.05	89.1	N/A	N/A	0.141	8.45	0.8
2/28/2010	9:05:49	23.89	51.48	33.85	89.4	N/A	N/A	0.142	8.44	0.3
2/28/2010	9:10:49	23.89	51.17	33.62	94.9	N/A	N/A	0.142	8.47	1.7
2/28/2010	9:15:49	24.15	52.13	34.32	98.6	N/A	N/A	0.143	8.49	1.4
2/28/2010	9:20:48	23.83	51.18	33.63	99.4	N/A	N/A	0.142	8.48	1.7
2/28/2010	9:25:49	23.56	49.75	32.58	98.5	N/A	N/A	0.143	8.47	1.9
2/28/2010	9:30:49	23.56	49.93	32.72	99.5	N/A	N/A	0.142	8.48	1.7
2/28/2010	9:35:48	23.60	50.30	32.99	100.6	N/A	N/A	0.141	8.49	1.8
2/28/2010	9:40:49	23.68	50.46	33.11	100.7	N/A	N/A	0.143	8.49	2.4
2/28/2010	9:45:49	23.67	50.47	33.11	101.0	N/A	N/A	0.143	8.49	1.3
2/28/2010	9:50:48	23.71	50.58	33.19	100.8	N/A	N/A	0.144	8.49	2.5
2/28/2010	9:55:48	23.67	50.68	33.26	101.3	N/A	N/A	0.144	8.49	2.5
2/28/2010	10:00:49	23.68	50.65	33.24	101.2	N/A	N/A	0.144	8.49	1.9
2/28/2010	10:05:49	23.71	50.65	33.25	100.7	N/A	N/A	0.144	8.48	1.9
2/28/2010	10:10:49	23.76	50.80	33.35	100.6	N/A	N/A	0.146	8.49	1.2
2/28/2010	10:15:49	23.81	50.89	33.42	99.9	N/A	N/A	0.145	8.48	0.5
2/28/2010	10:20:49	23.76	50.81	33.36	100.1	N/A	N/A	0.145	8.49	1.4
2/28/2010	10:25:49	23.82	50.96	33.47	100.6	N/A	N/A	0.146	8.49	1.1
2/28/2010	10:30:49	23.81	50.84	33.38	101.0	N/A	N/A	0.146	8.49	2.0
2/28/2010	10:35:49	23.83	50.89	33.42	101.4	N/A	N/A	0.144	8.48	2.1
2/28/2010	10:40:49	23.92	51.06	33.54	101.2	N/A	N/A	0.146	8.49	1.3
2/28/2010	10:45:49	23.88	51.02	33.51	101.5	N/A	N/A	0.146	8.49	1.6
2/28/2010	10:50:49	23.88	51.03	33.52	101.7	N/A	N/A	0.146	8.49	1.5
2/28/2010	10:55:48	24.03	51.40	33.79	101.8	N/A	N/A	0.146	8.49	1.1
2/28/2010	11:00:49	24.06	51.36	33.76	101.3	N/A	N/A	0.147	8.49	1.6
2/28/2010	11:05:49	24.06	51.48	33.85	100.8	N/A	N/A	0.145	8.49	0.9
2/28/2010	11:10:49	24.01	51.37	33.76	100.7	N/A	N/A	0.146	8.49	1.5
2/28/2010	11:15:49	23.89	51.19	33.64	102.0	N/A	N/A	0.146	8.49	1.6
2/28/2010	11:20:49	23.97	51.25	33.68	101.8	N/A	N/A	0.146	8.49	1.6

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	11:25:49	24.08	51.40	33.79	101.3	N/A	N/A	0.144	8.49	0.8
2/28/2010	11:30:49	23.92	51.31	33.72	101.3	N/A	N/A	0.145	8.49	0.9
2/28/2010	11:35:49	24.03	51.37	33.76	100.4	N/A	N/A	0.143	8.49	1.0
2/28/2010	11:40:49	23.90	51.32	33.73	101.2	N/A	N/A	0.142	8.49	0.8
2/28/2010	11:45:49	23.89	51.24	33.68	101.4	N/A	N/A	0.141	8.49	0.8
2/28/2010	11:50:49	23.89	51.27	33.69	101.0	N/A	N/A	0.140	8.49	0.2
2/28/2010	11:55:49	23.95	51.35	33.76	101.6	N/A	N/A	0.138	8.49	1.4
2/28/2010	12:00:49	23.95	51.38	33.77	101.6	N/A	N/A	0.138	8.49	1.8
2/28/2010	12:05:49	24.02	51.44	33.82	101.7	N/A	N/A	0.138	8.49	2.1
2/28/2010	12:10:49	24.04	51.50	33.86	102.5	N/A	N/A	0.136	8.49	1.2
2/28/2010	12:15:49	24.11	51.54	33.89	102.5	N/A	N/A	0.136	8.49	1.0
2/28/2010	12:20:49	24.29	51.81	34.08	101.4	N/A	N/A	0.135	8.49	0.9
2/28/2010	12:25:49	24.30	51.88	34.14	103.1	N/A	N/A	0.135	8.49	1.3
2/28/2010	12:30:48	23.95	51.52	33.88	101.9	N/A	N/A	0.134	8.49	0.7
2/28/2010	12:35:48	24.04	51.60	33.93	101.8	N/A	N/A	0.133	8.49	1.0
2/28/2010	12:40:49	24.13	51.65	33.97	102.7	N/A	N/A	0.134	8.49	0.9
2/28/2010	12:45:49	24.01	51.59	33.93	102.0	N/A	N/A	0.132	8.49	1.1
2/28/2010	12:50:49	24.05	51.65	33.97	101.9	N/A	N/A	0.131	8.49	0.7
2/28/2010	12:55:49	24.10	51.76	34.05	102.0	N/A	N/A	0.130	8.49	1.0
2/28/2010	13:00:49	24.17	51.92	34.17	102.8	N/A	N/A	0.129	8.49	1.8
2/28/2010	13:05:48	24.31	52.08	34.28	102.8	N/A	N/A	0.128	8.49	0.6
2/28/2010	13:10:48	24.31	52.13	34.32	103.5	N/A	N/A	0.128	8.49	1.7
2/28/2010	13:15:49	24.32	52.23	34.40	103.2	N/A	N/A	0.127	8.49	1.4
2/28/2010	13:20:49	24.23	52.15	34.34	102.9	N/A	N/A	0.128	8.49	1.7
2/28/2010	13:25:49	24.09	52.00	34.23	102.5	N/A	N/A	0.128	8.49	2.1
2/28/2010	13:30:49	24.01	51.95	34.19	101.8	N/A	N/A	0.127	8.49	1.2
2/28/2010	13:35:49	24.09	52.02	34.25	102.8	N/A	N/A	0.127	8.49	1.3
2/28/2010	13:40:49	24.17	52.11	34.31	101.9	N/A	N/A	0.128	8.49	0.7
2/28/2010	13:45:49	24.04	52.01	34.24	102.3	N/A	N/A	0.128	8.49	1.1
2/28/2010	13:50:49	24.16	52.15	34.34	102.3	N/A	N/A	0.128	8.49	2.0
2/28/2010	13:55:48	24.22	52.28	34.43	103.0	N/A	N/A	0.127	8.49	1.8
2/28/2010	14:00:49	24.30	52.49	34.59	102.3	N/A	N/A	0.128	8.49	2.4
2/28/2010	14:05:49	24.44	52.74	34.77	102.5	N/A	N/A	0.126	8.49	3.0
2/28/2010	14:10:49	24.42	52.71	34.75	102.0	N/A	N/A	0.126	8.49	1.8
2/28/2010	14:15:49	24.23	52.42	34.54	101.3	N/A	N/A	0.126	8.49	1.9
2/28/2010	14:20:49	24.12	52.27	34.43	102.3	N/A	N/A	0.126	8.49	1.8
2/28/2010	14:25:49	24.17	52.35	34.49	102.5	N/A	N/A	0.126	8.49	1.9

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	14:30:49	24.14	52.36	34.50	102.6	N/A	N/A	0.124	8.49	1.8
2/28/2010	14:35:49	24.19	52.38	34.51	103.1	N/A	N/A	0.125	8.49	0.8
2/28/2010	14:40:48	24.26	52.47	34.57	102.9	N/A	N/A	0.123	8.49	1.7
2/28/2010	14:45:49	24.27	52.50	34.60	102.4	N/A	N/A	0.123	8.49	2.1
2/28/2010	14:50:49	24.31	52.51	34.61	102.6	N/A	N/A	0.123	8.49	2.1
2/28/2010	14:55:49	24.33	52.52	34.61	102.8	N/A	N/A	0.121	8.49	1.9
2/28/2010	15:00:49	24.31	52.54	34.62	102.6	N/A	N/A	0.122	8.49	2.4
2/28/2010	15:05:49	24.31	52.54	34.62	102.6	N/A	N/A	0.120	8.49	1.7
2/28/2010	15:10:49	24.32	52.56	34.64	102.6	N/A	N/A	0.119	8.49	2.0
2/28/2010	15:15:49	24.34	52.57	34.65	102.4	N/A	N/A	0.119	8.49	2.6
2/28/2010	15:20:49	24.28	52.61	34.68	102.4	N/A	N/A	0.119	8.49	2.1
2/28/2010	15:25:49	24.32	52.67	34.72	102.5	N/A	N/A	0.118	8.49	2.8
2/28/2010	15:30:49	24.34	52.72	34.76	102.7	N/A	N/A	0.119	8.49	2.0
2/28/2010	15:35:49	24.37	52.76	34.79	102.5	N/A	N/A	0.118	8.49	2.2
2/28/2010	15:40:49	24.38	52.78	34.80	102.6	N/A	N/A	0.120	8.49	1.6
2/28/2010	15:45:49	24.39	52.80	34.82	102.7	N/A	N/A	0.120	8.49	2.4
2/28/2010	15:50:49	24.38	52.82	34.83	102.7	N/A	N/A	0.120	8.49	2.7
2/28/2010	15:55:49	24.40	52.84	34.84	102.5	N/A	N/A	0.118	8.49	2.0
2/28/2010	16:00:49	24.41	52.86	34.86	102.0	N/A	N/A	0.118	8.49	2.0
2/28/2010	16:05:49	24.37	52.83	34.84	102.3	N/A	N/A	0.118	8.49	2.1
2/28/2010	16:10:49	24.40	52.90	34.89	102.9	N/A	N/A	0.120	8.49	2.3
2/28/2010	16:15:49	24.40	52.93	34.91	102.9	N/A	N/A	0.117	8.49	2.1
2/28/2010	16:20:48	24.46	52.93	34.92	102.2	N/A	N/A	0.119	8.49	2.1
2/28/2010	16:25:48	24.42	52.93	34.92	102.4	N/A	N/A	0.119	8.49	2.8
2/28/2010	16:30:49	24.42	52.94	34.92	103.1	N/A	N/A	0.120	8.49	2.5
2/28/2010	16:35:49	24.42	52.97	34.94	102.8	N/A	N/A	0.120	8.49	2.3
2/28/2010	16:40:49	24.42	52.99	34.96	102.9	N/A	N/A	0.120	8.49	2.6
2/28/2010	16:45:49	24.49	53.05	35.00	103.3	N/A	N/A	0.120	8.50	2.6
2/28/2010	16:50:48	24.48	53.07	35.01	102.9	N/A	N/A	0.121	8.50	3.4
2/28/2010	16:55:49	24.46	53.08	35.02	101.9	N/A	N/A	0.121	8.49	1.7
2/28/2010	17:00:49	24.42	53.02	34.98	101.8	N/A	N/A	0.123	8.49	2.2
2/28/2010	17:05:49	24.44	53.07	35.02	103.2	N/A	N/A	0.123	8.49	2.6
2/28/2010	17:10:49	24.44	53.06	35.01	103.1	N/A	N/A	0.121	8.50	3.3
2/28/2010	17:15:49	24.40	53.09	35.03	103.0	N/A	N/A	0.123	8.50	3.3
2/28/2010	17:20:49	24.48	53.10	35.04	101.2	N/A	N/A	0.123	8.49	1.5
2/28/2010	17:25:49	24.44	53.07	35.02	100.2	N/A	N/A	0.123	8.49	1.3
2/28/2010	17:30:49	24.41	53.10	35.04	102.1	N/A	N/A	0.124	8.49	2.4

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	17:35:49	24.39	53.11	35.04	102.4	N/A	N/A	0.126	8.49	2.8
2/28/2010	17:40:49	24.44	53.12	35.05	101.6	N/A	N/A	0.128	8.49	2.2
2/28/2010	17:45:49	24.49	53.16	35.08	100.8	N/A	N/A	0.127	8.49	2.0
2/28/2010	17:50:49	24.44	53.17	35.09	103.3	N/A	N/A	0.128	8.50	2.0
2/28/2010	17:55:49	24.50	53.18	35.09	103.5	N/A	N/A	0.127	8.50	3.8
2/28/2010	18:00:49	24.46	53.18	35.09	103.3	N/A	N/A	0.127	8.50	3.9
2/28/2010	18:05:49	24.47	53.18	35.09	103.5	N/A	N/A	0.128	8.50	3.3
2/28/2010	18:10:49	24.42	53.14	35.07	103.2	N/A	N/A	0.127	8.50	3.5
2/28/2010	18:15:49	24.43	53.16	35.09	103.1	N/A	N/A	0.127	8.50	2.7
2/28/2010	18:20:49	24.38	53.17	35.09	102.9	N/A	N/A	0.128	8.50	2.6
2/28/2010	18:25:49	24.42	53.19	35.10	102.8	N/A	N/A	0.129	8.50	3.3
2/28/2010	18:30:49	24.37	53.20	35.12	102.9	N/A	N/A	0.131	8.50	3.8
2/28/2010	18:35:49	24.41	53.20	35.11	102.6	N/A	N/A	0.131	8.50	3.7
2/28/2010	18:40:49	24.42	53.20	35.11	102.3	N/A	N/A	0.130	8.50	3.4
2/28/2010	18:45:49	24.43	53.21	35.12	102.7	N/A	N/A	0.130	8.50	3.9
2/28/2010	18:50:49	24.39	53.20	35.12	102.0	N/A	N/A	0.130	8.50	3.6
2/28/2010	18:55:49	24.37	53.18	35.10	101.9	N/A	N/A	0.131	8.50	3.5
2/28/2010	19:00:49	24.34	53.16	35.09	101.8	N/A	N/A	0.132	8.50	3.6
2/28/2010	19:05:49	24.33	53.10	35.04	101.8	N/A	N/A	0.133	8.50	3.6
2/28/2010	19:10:49	24.34	53.19	35.10	101.7	N/A	N/A	0.132	8.50	4.0
2/28/2010	19:15:48	24.34	53.17	35.09	101.8	N/A	N/A	0.133	8.50	4.2
2/28/2010	19:20:49	24.33	53.19	35.11	101.6	N/A	N/A	0.134	8.50	3.5
2/28/2010	19:25:49	24.34	53.22	35.13	101.0	N/A	N/A	0.136	8.49	4.1
2/28/2010	19:30:49	24.39	53.22	35.13	101.3	N/A	N/A	0.135	8.50	4.2
2/28/2010	19:35:49	24.35	53.21	35.12	101.0	N/A	N/A	0.134	8.49	3.7
2/28/2010	19:40:49	24.36	53.23	35.14	100.6	N/A	N/A	0.134	8.49	4.2
2/28/2010	19:45:49	24.41	53.24	35.14	100.5	N/A	N/A	0.136	8.49	3.6
2/28/2010	19:50:49	24.41	53.26	35.16	99.2	N/A	N/A	0.134	8.49	3.3
2/28/2010	19:55:49	24.42	53.26	35.16	98.3	N/A	N/A	0.137	8.49	2.7
2/28/2010	20:00:49	24.39	53.29	35.18	98.1	N/A	N/A	0.137	8.49	3.7
2/28/2010	20:05:49	24.41	53.30	35.19	99.0	N/A	N/A	0.136	8.49	4.1
2/28/2010	20:10:49	24.37	53.27	35.17	97.4	N/A	N/A	0.135	8.49	5.0
2/28/2010	20:15:49	24.40	53.28	35.17	96.6	N/A	N/A	0.137	8.48	3.2
2/28/2010	20:20:49	24.37	53.29	35.18	97.4	N/A	N/A	0.139	8.49	3.9
2/28/2010	20:25:49	24.36	53.27	35.17	95.9	N/A	N/A	0.139	8.48	3.6
2/28/2010	20:30:49	24.30	53.26	35.16	97.4	N/A	N/A	0.141	8.48	4.9
2/28/2010	20:35:49	24.31	53.29	35.18	96.2	N/A	N/A	0.142	8.48	2.5

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	20:40:49	24.31	53.28	35.17	94.7	N/A	N/A	0.140	8.48	3.1
2/28/2010	20:45:49	24.33	53.31	35.19	97.1	N/A	N/A	0.140	8.49	4.9
2/28/2010	20:50:48	24.27	53.24	35.14	94.6	N/A	N/A	0.142	8.48	2.3
2/28/2010	20:55:49	24.22	53.23	35.14	95.0	N/A	N/A	0.143	8.48	2.5
2/28/2010	21:00:49	24.15	53.19	35.11	94.0	N/A	N/A	0.144	8.47	2.6
2/28/2010	21:05:49	24.21	53.20	35.12	93.0	N/A	N/A	0.142	8.47	1.8
2/28/2010	21:10:49	24.18	53.19	35.11	94.6	N/A	N/A	0.145	8.47	2.3
2/28/2010	21:15:49	24.27	53.21	35.12	95.8	N/A	N/A	0.146	8.48	2.1
2/28/2010	21:20:48	24.35	53.32	35.20	94.0	N/A	N/A	0.146	8.48	2.3
2/28/2010	21:25:48	23.94	52.93	34.93	95.3	N/A	N/A	0.145	8.47	4.2
2/28/2010	21:30:49	23.98	52.98	34.96	94.5	N/A	N/A	0.145	8.47	3.1
2/28/2010	21:35:49	23.98	53.02	34.99	93.7	N/A	N/A	0.145	8.47	3.5
2/28/2010	21:40:48	24.05	53.18	35.10	96.5	N/A	N/A	0.148	8.48	3.8
2/28/2010	21:45:49	24.03	53.15	35.08	95.1	N/A	N/A	0.148	8.47	2.9
2/28/2010	21:50:49	24.11	53.20	35.12	92.9	N/A	N/A	0.148	8.47	2.1
2/28/2010	21:55:49	24.07	53.14	35.08	93.1	N/A	N/A	0.147	8.47	2.0
2/28/2010	22:00:49	24.17	53.21	35.13	93.2	N/A	N/A	0.146	8.47	1.7
2/28/2010	22:05:49	24.11	53.24	35.15	94.5	N/A	N/A	0.148	8.48	2.8
2/28/2010	22:10:49	24.16	53.25	35.16	93.7	N/A	N/A	0.149	8.48	1.9
2/28/2010	22:15:49	24.28	53.31	35.20	93.7	N/A	N/A	0.148	8.48	2.3
2/28/2010	22:20:49	24.31	53.32	35.21	94.1	N/A	N/A	0.146	8.48	2.4
2/28/2010	22:25:49	24.30	53.33	35.21	94.7	N/A	N/A	0.148	8.48	2.4
2/28/2010	22:30:49	24.29	53.33	35.21	94.6	N/A	N/A	0.149	8.48	3.0
2/28/2010	22:35:49	24.27	53.32	35.21	95.3	N/A	N/A	0.148	8.48	1.7
2/28/2010	22:40:49	24.13	53.26	35.17	96.7	N/A	N/A	0.149	8.48	3.4
2/28/2010	22:45:49	24.16	53.26	35.17	96.5	N/A	N/A	0.149	8.48	3.2
2/28/2010	22:50:49	24.03	53.17	35.10	95.2	N/A	N/A	0.147	8.48	3.1
2/28/2010	22:55:49	24.03	53.18	35.11	94.9	N/A	N/A	0.146	8.48	2.7
2/28/2010	23:00:49	24.06	53.21	35.13	96.0	N/A	N/A	0.148	8.48	3.8
2/28/2010	23:05:49	24.11	53.25	35.16	96.3	N/A	N/A	0.149	8.48	3.2
2/28/2010	23:10:49	23.91	52.79	34.82	95.0	N/A	N/A	0.148	8.47	3.6
2/28/2010	23:15:49	23.99	52.94	34.93	94.8	N/A	N/A	0.148	8.47	3.3
2/28/2010	23:20:49	23.98	52.91	34.91	95.4	N/A	N/A	0.147	8.47	3.6
2/28/2010	23:25:49	24.01	53.07	35.03	94.9	N/A	N/A	0.146	8.48	2.9
2/28/2010	23:30:49	24.05	53.04	35.00	94.2	N/A	N/A	0.148	8.47	2.2
2/28/2010	23:35:49	24.17	53.22	35.13	94.4	N/A	N/A	0.147	8.47	2.9
2/28/2010	23:40:49	24.16	53.16	35.09	91.2	N/A	N/A	0.146	8.47	1.9

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
2/28/2010	23:45:49	23.85	52.92	34.91	93.4	N/A	N/A	0.146	8.47	3.0
2/28/2010	23:50:48	24.04	53.13	35.07	93.6	N/A	N/A	0.147	8.47	2.4
2/28/2010	23:55:49	24.14	53.20	35.12	93.6	N/A	N/A	0.147	8.47	2.7
3/1/2010	0:00:49	24.23	53.31	35.20	94.2	N/A	N/A	0.147	8.47	2.4
3/1/2010	0:05:49	23.98	53.15	35.09	93.6	N/A	N/A	0.146	8.47	2.8
3/1/2010	0:10:49	24.05	53.19	35.11	92.5	N/A	N/A	0.146	8.47	1.9
3/1/2010	0:15:49	24.27	53.39	35.26	93.2	N/A	N/A	0.146	8.47	2.3
3/1/2010	0:20:49	24.20	53.33	35.22	92.2	N/A	N/A	0.145	8.47	1.9
3/1/2010	0:25:49	24.15	53.22	35.13	92.7	N/A	N/A	0.145	8.47	2.1
3/1/2010	0:30:49	24.18	53.33	35.21	94.2	N/A	N/A	0.145	8.47	2.2
3/1/2010	0:35:49	24.12	53.34	35.22	94.8	N/A	N/A	0.145	8.48	2.9
3/1/2010	0:40:49	24.18	53.36	35.24	94.4	N/A	N/A	0.144	8.48	1.9
3/1/2010	0:45:49	24.18	53.38	35.25	93.9	N/A	N/A	0.146	8.48	3.2
3/1/2010	0:50:49	24.11	53.38	35.26	96.5	N/A	N/A	0.144	8.49	3.6
3/1/2010	0:55:49	24.15	53.38	35.25	96.3	N/A	N/A	0.143	8.49	3.6
3/1/2010	1:00:49	24.09	53.38	35.26	96.4	N/A	N/A	0.142	8.49	3.8
3/1/2010	1:05:49	24.11	53.38	35.25	96.3	N/A	N/A	0.142	8.49	2.9
3/1/2010	1:10:49	24.14	53.38	35.25	95.8	N/A	N/A	0.140	8.49	3.0
3/1/2010	1:15:49	24.17	53.38	35.25	93.3	N/A	N/A	0.141	8.48	1.3
3/1/2010	1:20:49	24.17	53.38	35.25	92.1	N/A	N/A	0.138	8.47	2.3
3/1/2010	1:25:49	24.17	53.38	35.25	91.7	N/A	N/A	0.139	8.47	2.1
3/1/2010	1:30:49	24.15	53.39	35.26	93.6	N/A	N/A	0.138	8.48	1.5
3/1/2010	1:35:49	24.16	53.39	35.26	91.9	N/A	N/A	0.138	8.47	1.7
3/1/2010	1:40:49	24.18	53.39	35.26	91.7	N/A	N/A	0.137	8.47	1.5
3/1/2010	1:45:49	24.11	53.40	35.26	94.9	N/A	N/A	0.135	8.48	3.3
3/1/2010	1:50:49	24.07	53.38	35.25	95.6	N/A	N/A	0.135	8.49	4.2
3/1/2010	1:55:49	24.14	53.41	35.27	95.2	N/A	N/A	0.134	8.48	3.9
3/1/2010	2:00:48	24.13	53.42	35.28	94.8	N/A	N/A	0.134	8.48	2.5
3/1/2010	2:05:49	24.16	53.43	35.29	91.5	N/A	N/A	0.133	8.48	3.2
3/1/2010	2:10:49	24.15	53.42	35.29	94.6	N/A	N/A	0.134	8.48	3.1
3/1/2010	2:15:49	24.14	53.44	35.29	94.6	N/A	N/A	0.132	8.48	4.0
3/1/2010	2:20:49	24.12	53.44	35.30	94.5	N/A	N/A	0.129	8.48	3.3
3/1/2010	2:25:49	24.10	53.45	35.30	93.4	N/A	N/A	0.132	8.48	3.0
3/1/2010	2:30:49	24.12	53.42	35.29	92.3	N/A	N/A	0.130	8.47	2.8
3/1/2010	2:35:49	24.09	53.42	35.29	93.9	N/A	N/A	0.128	8.48	3.2
3/1/2010	2:40:49	24.14	53.42	35.28	91.5	N/A	N/A	0.130	8.47	1.9
3/1/2010	2:45:49	24.14	53.42	35.28	92.9	N/A	N/A	0.127	8.48	2.9

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
3/1/2010	2:50:49	24.08	53.42	35.28	93.3	N/A	N/A	0.131	8.48	3.0
3/1/2010	2:55:48	24.04	53.42	35.28	94.9	N/A	N/A	0.129	8.48	2.8
3/1/2010	3:00:49	24.09	53.43	35.29	91.4	N/A	N/A	0.132	8.47	1.6
3/1/2010	3:05:49	24.11	53.42	35.29	91.3	N/A	N/A	0.129	8.47	1.6
3/1/2010	3:10:49	24.12	53.42	35.29	90.8	N/A	N/A	0.127	8.47	2.3
3/1/2010	3:15:49	24.07	53.42	35.28	91.5	N/A	N/A	0.131	8.47	1.6
3/1/2010	3:20:49	24.07	53.41	35.28	91.8	N/A	N/A	0.131	8.47	2.5
3/1/2010	3:25:49	24.07	53.42	35.28	91.5	N/A	N/A	0.129	8.47	2.6
3/1/2010	3:30:49	24.06	53.41	35.28	91.4	N/A	N/A	0.130	8.47	2.5
3/1/2010	3:35:49	24.04	53.41	35.28	91.6	N/A	N/A	0.130	8.47	2.3
3/1/2010	3:40:49	23.97	53.39	35.27	93.3	N/A	N/A	0.130	8.48	3.3
3/1/2010	3:45:49	23.98	53.39	35.27	91.7	N/A	N/A	0.130	8.47	3.2
3/1/2010	3:50:49	23.97	53.39	35.26	91.4	N/A	N/A	0.126	8.47	2.0
3/1/2010	3:55:49	23.97	53.38	35.26	91.3	N/A	N/A	0.127	8.47	2.4
3/1/2010	4:00:49	23.93	53.39	35.27	92.5	N/A	N/A	0.129	8.47	2.5
3/1/2010	4:05:49	23.97	53.40	35.27	94.4	N/A	N/A	0.130	8.48	3.1
3/1/2010	4:10:49	23.95	53.42	35.29	93.9	N/A	N/A	0.127	8.48	2.5
3/1/2010	4:15:49	23.98	53.42	35.28	93.5	N/A	N/A	0.132	8.48	1.9
3/1/2010	4:20:49	24.00	53.42	35.28	93.6	N/A	N/A	0.133	8.48	2.2
3/1/2010	4:25:49	23.99	53.42	35.28	94.5	N/A	N/A	0.132	8.48	2.3
3/1/2010	4:30:49	23.99	53.42	35.28	93.4	N/A	N/A	0.133	8.48	2.5
3/1/2010	4:35:49	24.03	53.42	35.28	93.2	N/A	N/A	0.132	8.48	1.9
3/1/2010	4:40:49	24.01	53.42	35.28	93.1	N/A	N/A	0.135	8.48	2.3
3/1/2010	4:45:49	24.00	53.41	35.28	92.9	N/A	N/A	0.133	8.48	2.1
3/1/2010	4:50:49	24.00	53.41	35.28	93.6	N/A	N/A	0.137	8.48	2.7
3/1/2010	4:55:49	24.00	53.41	35.28	93.2	N/A	N/A	0.138	8.48	2.9
3/1/2010	5:00:49	23.99	53.41	35.28	93.6	N/A	N/A	0.137	8.48	2.8
3/1/2010	5:05:49	24.01	53.41	35.28	92.8	N/A	N/A	0.137	8.48	2.4
3/1/2010	5:10:49	24.00	53.41	35.28	92.9	N/A	N/A	0.137	8.48	1.9
3/1/2010	5:15:49	23.99	53.41	35.28	92.7	N/A	N/A	0.137	8.47	2.3
3/1/2010	5:20:49	23.99	53.41	35.28	91.9	N/A	N/A	0.137	8.48	1.6
3/1/2010	5:25:49	23.97	53.41	35.27	93.0	N/A	N/A	0.136	8.48	2.5
3/1/2010	5:30:49	23.97	53.40	35.27	91.9	N/A	N/A	0.138	8.48	2.2
3/1/2010	5:35:49	24.00	53.40	35.27	92.3	N/A	N/A	0.140	8.48	1.7
3/1/2010	5:40:49	24.00	53.40	35.27	92.0	N/A	N/A	0.141	8.47	2.5
3/1/2010	5:45:49	24.00	53.40	35.27	91.1	N/A	N/A	0.141	8.47	1.8
3/1/2010	5:50:49	23.92	53.31	35.21	94.4	N/A	N/A	0.141	8.48	3.4

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
3/1/2010	5:55:49	23.89	53.33	35.22	95.2	N/A	N/A	0.140	8.48	3.3
3/1/2010	6:00:49	23.91	53.38	35.26	94.7	N/A	N/A	0.142	8.48	2.9
3/1/2010	6:05:49	23.79	53.08	35.04	93.9	N/A	N/A	0.143	8.48	2.1
3/1/2010	6:10:49	23.78	53.20	35.13	95.2	N/A	N/A	0.145	8.48	2.9
3/1/2010	6:15:49	23.80	53.25	35.16	95.3	N/A	N/A	0.144	8.48	2.9
3/1/2010	6:20:49	23.84	53.31	35.20	93.5	N/A	N/A	0.145	8.48	2.8
3/1/2010	6:25:49	23.91	53.36	35.25	92.8	N/A	N/A	0.145	8.48	2.9
3/1/2010	6:30:49	23.97	53.40	35.27	92.4	N/A	N/A	0.145	8.48	3.1
3/1/2010	6:35:49	23.53	52.71	34.76	93.5	N/A	N/A	0.146	8.49	2.7
3/1/2010	6:40:49	23.77	53.18	35.11	91.9	N/A	N/A	0.146	8.48	1.7
3/1/2010	6:45:49	23.86	53.28	35.19	92.1	N/A	N/A	0.148	8.47	3.0
3/1/2010	6:50:49	23.87	53.31	35.20	91.6	N/A	N/A	0.149	8.47	1.7
3/1/2010	6:55:49	23.92	53.32	35.21	90.8	N/A	N/A	0.150	8.47	2.1
3/1/2010	7:00:49	23.95	53.34	35.22	90.8	N/A	N/A	0.149	8.47	1.6
3/1/2010	7:05:48	23.94	53.34	35.23	90.3	N/A	N/A	0.149	8.47	2.6
3/1/2010	7:10:49	23.80	53.21	35.13	92.5	N/A	N/A	0.151	8.47	2.3
3/1/2010	7:15:49	23.65	53.01	34.99	92.8	N/A	N/A	0.153	8.48	2.8
3/1/2010	7:20:49	23.79	53.16	35.10	93.3	N/A	N/A	0.154	8.48	2.0
3/1/2010	7:25:49	23.88	53.22	35.14	89.9	N/A	N/A	0.155	8.47	1.3
3/1/2010	7:30:49	23.65	52.97	34.96	91.4	N/A	N/A	0.157	8.47	2.0
3/1/2010	7:35:49	23.68	52.94	34.93	93.9	N/A	N/A	0.158	8.48	2.0
3/1/2010	7:40:49	23.74	53.08	35.04	94.0	N/A	N/A	0.158	8.48	1.9
3/1/2010	7:45:49	23.77	53.10	35.05	93.9	N/A	N/A	0.158	8.48	2.0
3/1/2010	7:50:49	23.72	53.08	35.04	94.4	N/A	N/A	0.160	8.48	2.7
3/1/2010	7:55:49	23.86	53.30	35.20	95.1	N/A	N/A	0.160	8.48	2.7
3/1/2010	8:00:49	23.65	53.04	35.01	93.6	N/A	N/A	0.159	8.48	2.3
3/1/2010	8:05:48	23.84	53.19	35.12	93.2	N/A	N/A	0.159	8.47	2.5
3/1/2010	8:10:49	23.76	53.02	34.99	94.7	N/A	N/A	0.160	8.48	2.8
3/1/2010	8:15:49	23.79	53.24	35.15	95.1	N/A	N/A	0.161	8.48	2.9
3/1/2010	8:20:49	23.70	53.05	35.02	94.0	N/A	N/A	0.159	8.48	2.2
3/1/2010	8:25:49	23.66	52.88	34.89	94.7	N/A	N/A	0.160	8.47	2.5
3/1/2010	8:30:49	23.79	52.88	34.89	94.6	N/A	N/A	0.161	8.48	2.1
3/1/2010	8:35:48	23.79	52.93	34.93	94.5	N/A	N/A	0.162	8.47	1.8
3/1/2010	8:40:49	23.76	52.60	34.68	94.2	N/A	N/A	0.160	8.46	2.3
3/1/2010	8:45:49	24.00	53.13	35.07	94.3	N/A	N/A	0.161	8.48	2.4
3/1/2010	8:50:49	23.65	52.62	34.70	94.4	N/A	N/A	0.160	8.47	2.5
3/1/2010	8:55:49	23.76	52.89	34.89	94.5	N/A	N/A	0.162	8.47	2.2

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
3/1/2010	9:00:49	23.82	53.16	35.09	94.5	N/A	N/A	0.161	8.47	2.5
3/1/2010	9:05:49	23.79	53.09	35.05	93.8	N/A	N/A	0.162	8.47	2.0
3/1/2010	9:10:49	23.80	53.15	35.09	94.7	N/A	N/A	0.162	8.47	2.7
3/1/2010	9:15:49	23.73	53.04	35.01	93.3	N/A	N/A	0.162	8.47	1.2
3/1/2010	9:20:49	23.78	53.15	35.09	94.2	N/A	N/A	0.163	8.47	2.3
3/1/2010	9:25:49	23.87	53.23	35.15	94.8	N/A	N/A	0.164	8.48	2.9
3/1/2010	9:30:49	23.77	53.03	35.00	94.9	N/A	N/A	0.164	8.47	1.4
3/1/2010	9:35:49	23.95	53.22	35.14	95.0	N/A	N/A	0.164	8.47	2.0
3/1/2010	9:40:49	23.95	53.22	35.13	95.0	N/A	N/A	0.163	8.47	3.2
3/1/2010	9:45:49	23.98	53.20	35.12	95.2	N/A	N/A	0.164	8.47	0.5
3/1/2010	9:50:49	24.00	53.20	35.12	94.4	N/A	N/A	0.163	8.47	1.2
3/1/2010	9:55:49	23.98	53.28	35.18	94.8	N/A	N/A	0.162	8.47	1.2
3/1/2010	10:00:49	23.99	53.32	35.21	95.0	N/A	N/A	0.161	8.48	2.0
3/1/2010	10:05:49	24.01	53.34	35.22	95.3	N/A	N/A	0.159	8.48	2.1
3/1/2010	10:10:49	23.99	53.29	35.19	95.0	N/A	N/A	0.158	8.47	2.0
3/1/2010	10:15:49	23.97	53.25	35.16	94.9	N/A	N/A	0.158	8.47	1.8
3/1/2010	10:20:49	24.01	53.27	35.18	95.0	N/A	N/A	0.158	8.47	2.5
3/1/2010	10:25:49	24.01	53.29	35.19	95.1	N/A	N/A	0.159	8.48	1.9
3/1/2010	10:30:49	24.01	53.33	35.22	94.9	N/A	N/A	0.161	8.48	2.0
3/1/2010	10:35:49	24.02	53.33	35.22	94.9	N/A	N/A	0.160	8.48	2.5
3/1/2010	10:40:49	23.98	53.35	35.23	95.0	N/A	N/A	0.156	8.48	2.8
3/1/2010	10:45:49	24.01	53.30	35.19	94.8	N/A	N/A	0.158	8.48	3.0
3/1/2010	10:50:49	23.99	53.36	35.24	94.9	N/A	N/A	0.159	8.48	2.5
3/1/2010	10:55:49	23.99	53.26	35.17	94.9	N/A	N/A	0.160	8.47	3.0
3/1/2010	11:00:49	23.99	53.35	35.24	95.0	N/A	N/A	0.158	8.47	2.2
3/1/2010	11:05:49	24.00	53.37	35.25	94.9	N/A	N/A	0.159	8.48	2.2
3/1/2010	11:10:49	24.00	53.38	35.26	95.1	N/A	N/A	0.157	8.48	2.3
3/1/2010	11:15:49	24.00	53.36	35.24	95.1	N/A	N/A	0.157	8.47	1.8
3/1/2010	11:20:49	24.01	53.36	35.24	95.1	N/A	N/A	0.158	8.47	2.4
3/1/2010	11:25:49	24.04	53.35	35.23	95.2	N/A	N/A	0.158	8.47	2.4
3/1/2010	11:30:49	24.04	53.36	35.24	95.3	N/A	N/A	0.158	8.47	2.9
3/1/2010	11:35:49	24.03	53.29	35.19	95.3	N/A	N/A	0.155	8.47	2.1
3/1/2010	11:40:49	24.02	53.31	35.20	95.5	N/A	N/A	0.156	8.48	1.9
3/1/2010	11:45:49	24.03	53.33	35.22	95.5	N/A	N/A	0.155	8.48	2.3
3/1/2010	11:50:49	24.01	53.32	35.21	95.5	N/A	N/A	0.154	8.48	2.2
3/1/2010	11:55:49	24.04	53.27	35.18	95.6	N/A	N/A	0.152	8.47	2.4
3/1/2010	12:00:49	24.03	53.27	35.17	95.7	N/A	N/A	0.152	8.47	2.4

Table AII.56: (Continued) Rainbow Bay B-Dock Platform YSI data from the 6920 V2. Only data for five minute increments are reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
3/1/2010	12:05:49	24.07	53.27	35.17	95.8	N/A	N/A	0.151	8.47	2.2
3/1/2010	12:10:48	24.09	53.32	35.21	95.9	N/A	N/A	0.151	8.48	2.3
3/1/2010	12:15:49	24.06	53.35	35.23	96.0	N/A	N/A	0.149	8.48	2.2
3/1/2010	12:20:48	24.08	53.36	35.24	96.0	N/A	N/A	0.150	8.48	2.5
3/1/2010	12:25:49	24.12	53.34	35.22	96.0	N/A	N/A	0.148	8.48	2.1
3/1/2010	12:30:49	24.14	53.36	35.24	96.2	N/A	N/A	0.146	8.48	2.8
3/1/2010	12:35:48	24.15	53.37	35.25	96.3	N/A	N/A	0.148	8.48	2.1
3/1/2010	12:40:49	24.16	53.35	35.23	96.4	N/A	N/A	0.147	8.48	2.0
3/1/2010	12:45:49	24.21	53.33	35.21	96.6	N/A	N/A	0.146	8.48	1.8
3/1/2010	12:50:49	24.23	53.38	35.25	96.8	N/A	N/A	0.144	8.48	1.5
3/1/2010	12:55:49	24.24	53.37	35.25	96.8	N/A	N/A	0.145	8.48	1.5
3/1/2010	13:00:49	24.20	53.40	35.26	96.8	N/A	N/A	0.145	8.48	1.9
3/1/2010	13:05:49	24.18	53.42	35.28	96.7	N/A	N/A	0.143	8.48	2.7
3/1/2010	13:10:49	24.22	53.42	35.28	96.9	N/A	N/A	0.145	8.48	2.5
3/1/2010	13:15:49	24.22	53.42	35.28	97.1	N/A	N/A	0.144	8.48	2.5
3/1/2010	13:20:49	24.21	53.41	35.27	97.0	N/A	N/A	0.140	8.48	2.3
3/1/2010	13:25:49	24.22	53.42	35.28	96.9	N/A	N/A	0.141	8.48	2.5
3/1/2010	13:30:49	24.18	53.43	35.29	96.6	N/A	N/A	0.142	8.48	2.8
3/1/2010	13:35:49	24.20	53.43	35.29	96.6	N/A	N/A	0.141	8.48	2.0
3/1/2010	13:40:49	24.20	53.43	35.29	96.5	N/A	N/A	0.141	8.48	3.1
3/1/2010	13:45:49	24.20	53.44	35.29	96.3	N/A	N/A	0.141	8.48	2.1

Table AII.57: Rainbow Bay B-Dock Platform wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100225	10:53	3.1	20100226	17:53	6.7
20100225	11:53	3.1	20100226	18:00	6.7
20100225	12:00	3.1	20100226	18:53	4.6
20100225	12:53	3.1	20100226	19:53	3.6
20100225	13:53	1.5	20100226	20:53	6.7
20100225	14:53	1.5	20100226	21:53	4.1
20100225	15:53	3.1	20100226	22:53	5.1
20100225	16:53	1.5	20100226	23:53	4.6
20100225	17:53	0.0	20100227	00:00	4.6
20100225	18:00	0.0	20100227	00:53	5.1
20100225	18:53	2.1	20100227	01:53	7.2
20100225	19:53	7.2	20100227	02:53	5.1
20100225	20:53	8.2	20100227	03:53	6.2
20100225	21:53	7.7	20100227	04:53	6.7
20100225	22:53	6.2	20100227	05:53	5.1
20100225	23:53	6.7	20100227	06:00	5.1
20100226	00:00	6.7	20100227	06:53	3.6
20100226	00:53	6.7	20100227	07:53	3.1
20100226	01:53	8.7	20100227	08:53	3.1
20100226	02:53	7.2	20100227	09:53	4.1
20100226	03:53	7.2	20100227	10:53	2.1
20100226	04:53	6.2	20100227	11:53	2.6
20100226	05:53	7.2	20100227	12:00	2.6
20100226	06:00	7.2	20100227	12:53	2.6
20100226	06:53	4.6	20100227	13:53	0.0
20100226	07:53	4.6	20100227	14:53	1.5
20100226	08:53	5.7	20100227	15:53	2.1
20100226	09:53	5.7	20100227	16:53	1.5
20100226	10:53	5.7	20100227	17:53	2.1
20100226	11:53	4.1	20100227	18:00	2.1
20100226	12:00	4.1	20100227	18:53	0.0
20100226	12:53	3.6	20100227	19:53	1.5
20100226	13:53	4.1	20100227	20:53	2.6
20100226	14:53	3.6	20100227	21:53	4.1
20100226	15:53	6.7	20100227	22:53	5.7
20100226	16:53	6.7	20100227	23:53	5.7

Table AII.57: (Continued) Rainbow Bay B-Dock Platform wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100228	00:00	5.7	20100301	06:00	4.6
20100228	00:53	5.1	20100301	06:53	6.7
20100228	01:53	5.1	20100301	07:53	9.3
20100228	02:53	5.1	20100301	08:53	6.7
20100228	03:53	3.1	20100301	09:53	4.6
20100228	04:53	2.1	20100301	10:53	6.7
20100228	05:53	3.6	20100301	11:53	6.2
20100228	06:00	3.6	20100301	12:00	6.2
20100228	06:53	2.6	20100301	12:53	6.2
20100228	07:53	2.1	20100301	13:53	8.7
20100228	08:53	2.6	20100301	14:53	7.7
20100228	09:53	2.6	20100301	15:53	5.1
20100228	10:53	3.1	20100301	16:53	8.2
20100228	11:53	2.6	20100301	17:53	6.2
20100228	12:00	2.6	20100301	18:00	6.2
20100228	12:53	3.1	20100301	18:53	8.7
20100228	13:53	2.1	20100301	19:53	7.7
20100228	14:53	2.6	20100301	20:53	7.7
20100228	15:53	4.6	20100301	21:53	6.7
20100228	16:53	3.1	20100301	22:53	8.7
20100228	17:53	3.6	20100301	23:53	9.8
20100228	18:00	3.6	20100302	00:00	9.8
20100228	18:53	3.6	20100302	00:53	11.8
20100228	19:53	6.7	20100302	01:53	7.7
20100228	20:53	6.2	20100302	02:53	5.7
20100228	21:53	6.7	20100302	03:53	9.8
20100228	22:53	8.2	20100302	04:53	8.2
20100228	23:53	7.7	20100302	05:53	7.2
20100301	00:00	7.7	20100302	06:00	7.2
20100301	00:53	9.3	20100302	06:53	7.7
20100301	01:53	6.7	20100302	07:53	8.2
20100301	02:53	8.2	20100302	08:53	7.7
20100301	03:53	8.2	20100302	09:53	5.7
20100301	04:53	5.7	20100302	10:53	7.2
20100301	05:53	4.6			

Table AII.58: Rainbow Bay B-Dock Platform depth profile collected on 5 January 2011 using an YSI 6600 V2-4.

Depth m	Time hh:mm	Temp °C	SpCond mS/cm	Sal	pH	ORP	Chl µg/L	DO %	DO mg
0.070	14:58	25.96	50.12	32.85	8.10	128.0	2.3	99.7	6.60
0.307	14:59	26.04	50.75	33.27	8.11	128.0	1.5	100.0	6.73
1.305	15:00	25.81	51.18	33.60	8.12	128.4	2.5	101.6	6.85
2.847	15:01	25.08	52.08	34.28	8.10	129.6	3.6	93.8	6.36
3.418	15:03	25.00	52.31	34.44	8.10	129.1	8.5	89.2	6.06
5.288	15:04	24.99	52.39	34.50	8.10	129.4	7.0	89.6	6.09
5.359	15:06	25.03	50.12	32.82	8.09	130.2	6.6	84.2	5.76

Table AII.59: Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/25/10 11:30	-103.02	36.42	2/25/10 14:30	-89.20	50.24
2/25/10 11:35	-102.13	37.31	2/25/10 14:35	-89.89	49.55
2/25/10 11:40	-101.45	37.99	2/25/10 14:40	-91.80	47.65
2/25/10 11:45	-101.63	37.82	2/25/10 14:45	-90.50	48.94
2/25/10 11:50	-101.73	37.71	2/25/10 14:50	-91.39	48.05
2/25/10 11:55	-101.63	37.82	2/25/10 14:55	-90.09	49.35
2/25/10 12:00	-101.04	38.40	2/25/10 15:00	-90.81	48.64
2/25/10 12:05	-100.94	38.50	2/25/10 15:05	-92.00	47.44
2/25/10 12:10	-99.95	39.49	2/25/10 15:10	-91.80	47.65
2/25/10 12:15	-100.94	38.50	2/25/10 15:15	-92.58	46.86
2/25/10 12:20	-99.64	39.80	2/25/10 15:20	-92.99	46.45
2/25/10 12:25	-98.76	40.69	2/25/10 15:25	-94.67	44.78
2/25/10 12:30	-97.46	41.98	2/25/10 15:30	-94.77	44.67
2/25/10 12:35	-98.07	41.37	2/25/10 15:35	-95.58	43.86
2/25/10 12:40	-96.77	42.67	2/25/10 15:40	-96.47	42.97
2/25/10 12:45	-96.67	42.77	2/25/10 15:45	-97.66	41.78
2/25/10 12:50	-95.48	43.96	2/25/10 15:50	-96.77	42.67
2/25/10 12:55	-93.68	45.77	2/25/10 15:55	-98.86	40.58
2/25/10 13:00	-93.40	46.05	2/25/10 16:00	-99.95	39.49
2/25/10 13:05	-93.09	46.35	2/25/10 16:05	-100.94	38.50
2/25/10 13:10	-90.91	48.53	2/25/10 16:10	-100.94	38.50
2/25/10 13:15	-90.40	49.04	2/25/10 16:15	-102.13	37.31
2/25/10 13:20	-89.71	49.73	2/25/10 16:20	-103.43	36.01
2/25/10 13:25	-89.71	49.73	2/25/10 16:25	-103.43	36.01
2/25/10 13:30	-89.51	49.93	2/25/10 16:30	-102.64	36.80
2/25/10 13:35	-88.32	51.13	2/25/10 16:35	-104.32	35.12
2/25/10 13:40	-89.20	50.24	2/25/10 16:40	-104.11	35.33
2/25/10 13:45	-88.70	50.74	2/25/10 16:45	-104.83	34.62
2/25/10 13:50	-89.51	49.93	2/25/10 16:50	-106.40	33.04
2/25/10 13:55	-89.61	49.83	2/25/10 16:55	-106.40	33.04
2/25/10 14:00	-89.51	49.93	2/25/10 17:00	-106.32	33.12
2/25/10 14:05	-88.52	50.92	2/25/10 17:05	-106.71	32.74
2/25/10 14:10	-89.99	49.45	2/25/10 17:10	-111.38	28.06
2/25/10 14:15	-90.40	49.04	2/25/10 17:15	-109.60	29.84
2/25/10 14:20	-90.81	48.64	2/25/10 17:20	-108.89	30.55
2/25/10 14:25	-90.60	48.84	2/25/10 17:25	-111.00	28.44

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/25/10 17:30	-112.27	27.17	2/25/10 20:25	-116.46	22.98
2/25/10 17:35	-113.28	26.16	2/25/10 20:30	-117.04	22.40
2/25/10 17:40	-114.55	24.89	2/25/10 20:35	-116.56	22.88
2/25/10 17:45	-114.55	24.89	2/25/10 20:40	-116.15	23.29
2/25/10 17:50	-116.56	22.88	2/25/10 20:45	-114.86	24.58
2/25/10 17:55	-116.66	22.78	2/25/10 20:50	-113.77	25.67
2/25/10 18:00	-118.24	21.20	2/25/10 20:55	-112.78	26.67
2/25/10 18:05	-119.25	20.19	2/25/10 21:00	-112.78	26.67
2/25/10 18:10	-120.14	19.30	2/25/10 21:05	-111.07	28.37
2/25/10 18:15	-120.83	18.61	2/25/10 21:10	-110.08	29.36
2/25/10 18:20	-122.02	17.42	2/25/10 21:15	-108.51	30.93
2/25/10 18:25	-124.10	15.34	2/25/10 21:20	-107.21	32.23
2/25/10 18:30	-123.52	15.92	2/25/10 21:25	-105.92	33.52
2/25/10 18:35	-124.61	14.83	2/25/10 21:30	-104.83	34.62
2/25/10 18:40	-124.51	14.93	2/25/10 21:35	-102.74	36.70
2/25/10 18:45	-124.92	14.52	2/25/10 21:40	-101.04	38.40
2/25/10 18:50	-125.91	13.53	2/25/10 21:45	-99.44	40.00
2/25/10 18:55	-125.91	13.53	2/25/10 21:50	-98.25	41.19
2/25/10 19:00	-125.30	14.14	2/25/10 21:55	-97.26	42.18
2/25/10 19:05	-125.30	14.14	2/25/10 22:00	-95.76	43.68
2/25/10 19:10	-125.20	14.24	2/25/10 22:05	-94.67	44.78
2/25/10 19:15	-124.82	14.63	2/25/10 22:10	-93.09	46.35
2/25/10 19:20	-124.41	15.03	2/25/10 22:15	-92.38	47.06
2/25/10 19:25	-124.00	15.44	2/25/10 22:20	-90.91	48.53
2/25/10 19:30	-123.22	16.23	2/25/10 22:25	-89.71	49.73
2/25/10 19:35	-122.12	17.32	2/25/10 22:30	-88.90	50.54
2/25/10 19:40	-122.02	17.42	2/25/10 22:35	-87.43	52.01
2/25/10 19:45	-121.62	17.83	2/25/10 22:40	-88.21	51.23
2/25/10 19:50	-120.62	18.82	2/25/10 22:45	-86.33	53.11
2/25/10 19:55	-119.84	19.60	2/25/10 22:50	-85.32	54.12
2/25/10 20:00	-119.63	19.81	2/25/10 22:55	-84.02	55.42
2/25/10 20:05	-118.64	20.80	2/25/10 23:00	-83.24	56.21
2/25/10 20:10	-117.96	21.48	2/25/10 23:05	-82.25	57.20
2/25/10 20:15	-118.14	21.31	2/25/10 23:10	-81.56	57.88
2/25/10 20:20	-118.14	21.31	2/25/10 23:15	-79.35	60.09

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/25/10 23:20	-78.26	61.18	2/26/10 2:15	-43.05	96.39
2/25/10 23:25	-76.48	62.96	2/26/10 2:20	-42.95	96.49
2/25/10 23:30	-74.68	64.77	2/26/10 2:25	-42.27	97.18
2/25/10 23:35	-73.41	66.04	2/26/10 2:30	-41.76	97.68
2/25/10 23:40	-71.30	68.14	2/26/10 2:35	-42.27	97.18
2/25/10 23:45	-70.31	69.13	2/26/10 2:40	-42.67	96.77
2/25/10 23:50	-69.01	70.43	2/26/10 2:45	-42.95	96.49
2/25/10 23:55	-66.93	72.51	2/26/10 2:50	-42.57	96.87
2/26/10 0:00	-65.53	73.91	2/26/10 2:55	-42.67	96.77
2/26/10 0:05	-63.65	75.79	2/26/10 3:00	-43.56	95.88
2/26/10 0:10	-63.04	76.40	2/26/10 3:05	-44.45	94.99
2/26/10 0:15	-61.57	77.87	2/26/10 3:10	-44.45	94.99
2/26/10 0:20	-60.17	79.27	2/26/10 3:15	-44.86	94.58
2/26/10 0:25	-58.67	80.77	2/26/10 3:20	-45.16	94.28
2/26/10 0:30	-57.99	81.45	2/26/10 3:25	-46.36	93.09
2/26/10 0:35	-56.90	82.55	2/26/10 3:30	-46.94	92.50
2/26/10 0:40	-55.70	83.74	2/26/10 3:35	-47.35	92.10
2/26/10 0:45	-54.79	84.65	2/26/10 3:40	-47.55	91.89
2/26/10 0:50	-53.90	85.54	2/26/10 3:45	-47.93	91.51
2/26/10 0:55	-53.01	86.43	2/26/10 3:50	-48.54	90.90
2/26/10 1:00	-52.12	87.32	2/26/10 3:55	-49.43	90.01
2/26/10 1:05	-51.51	87.93	2/26/10 4:00	-49.33	90.11
2/26/10 1:10	-50.42	89.02	2/26/10 4:05	-49.73	89.71
2/26/10 1:15	-49.63	89.81	2/26/10 4:10	-50.62	88.82
2/26/10 1:20	-48.82	90.62	2/26/10 4:15	-51.41	88.03
2/26/10 1:25	-48.03	91.41	2/26/10 4:20	-52.12	87.32
2/26/10 1:30	-47.63	91.82	2/26/10 4:25	-52.50	86.94
2/26/10 1:35	-46.74	92.71	2/26/10 4:30	-53.80	85.64
2/26/10 1:40	-45.44	94.00	2/26/10 4:35	-55.50	83.94
2/26/10 1:45	-45.16	94.28	2/26/10 4:40	-55.88	83.56
2/26/10 1:50	-45.06	94.38	2/26/10 4:45	-57.28	82.16
2/26/10 1:55	-44.75	94.69	2/26/10 4:50	-58.57	80.87
2/26/10 2:00	-43.76	95.68	2/26/10 4:55	-59.56	79.88
2/26/10 2:05	-43.36	96.08	2/26/10 5:00	-62.15	77.29
2/26/10 2:10	-43.15	96.29	2/26/10 5:05	-63.55	75.89

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/26/10 5:10	-64.64	74.80	2/26/10 8:05	-105.41	34.03
2/26/10 5:15	-66.04	73.40	2/26/10 8:10	-107.49	31.95
2/26/10 5:20	-67.44	72.00	2/26/10 8:15	-107.90	31.54
2/26/10 5:25	-69.90	69.54	2/26/10 8:20	-109.19	30.25
2/26/10 5:30	-72.59	66.85	2/26/10 8:25	-110.69	28.75
2/26/10 5:35	-73.41	66.04	2/26/10 8:30	-111.28	28.16
2/26/10 5:40	-74.68	64.77	2/26/10 8:35	-111.28	28.16
2/26/10 5:45	-77.06	62.38	2/26/10 8:40	-112.67	26.77
2/26/10 5:50	-80.06	59.38	2/26/10 8:45	-113.36	26.08
2/26/10 5:55	-81.25	58.19	2/26/10 8:50	-111.79	27.66
2/26/10 6:00	-82.65	56.79	2/26/10 8:55	-112.47	26.97
2/26/10 6:05	-84.12	55.32	2/26/10 9:00	-113.97	25.47
2/26/10 6:10	-85.42	54.02	2/26/10 9:05	-114.38	25.06
2/26/10 6:15	-86.61	52.83	2/26/10 9:10	-114.38	25.06
2/26/10 6:20	-88.80	50.64	2/26/10 9:15	-116.36	23.08
2/26/10 6:25	-89.61	49.83	2/26/10 9:20	-114.48	24.96
2/26/10 6:30	-90.09	49.35	2/26/10 9:25	-114.86	24.58
2/26/10 6:35	-89.99	49.45	2/26/10 9:30	-115.06	24.38
2/26/10 6:40	-91.29	48.15	2/26/10 9:35	-116.05	23.39
2/26/10 6:45	-92.89	46.55	2/26/10 9:40	-114.07	25.37
2/26/10 6:50	-92.99	46.45	2/26/10 9:45	-115.57	23.87
2/26/10 6:55	-94.28	45.16	2/26/10 9:50	-113.18	26.26
2/26/10 7:00	-95.07	44.37	2/26/10 9:55	-112.78	26.67
2/26/10 7:05	-95.38	44.06	2/26/10 10:00	-114.17	25.27
2/26/10 7:10	-96.77	42.67	2/26/10 10:05	-113.18	26.26
2/26/10 7:15	-97.56	41.88	2/26/10 10:10	-112.78	26.67
2/26/10 7:20	-98.07	41.37	2/26/10 10:15	-111.68	27.76
2/26/10 7:25	-98.35	41.09	2/26/10 10:20	-111.99	27.45
2/26/10 7:30	-99.75	39.70	2/26/10 10:25	-111.28	28.16
2/26/10 7:35	-100.15	39.29	2/26/10 10:30	-111.48	27.96
2/26/10 7:40	-100.36	39.09	2/26/10 10:35	-110.19	29.26
2/26/10 7:45	-102.64	36.80	2/26/10 10:40	-109.88	29.56
2/26/10 7:50	-103.23	36.22	2/26/10 10:45	-109.30	30.14
2/26/10 7:55	-104.32	35.12	2/26/10 10:50	-108.31	31.14
2/26/10 8:00	-105.82	33.62	2/26/10 10:55	-107.90	31.54

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/26/10 11:00	-107.42	32.02	2/26/10 13:55	-88.01	51.43
2/26/10 11:05	-106.12	33.32	2/26/10 14:00	-86.82	52.62
2/26/10 11:10	-106.12	33.32	2/26/10 14:05	-85.93	53.51
2/26/10 11:15	-104.72	34.72	2/26/10 14:10	-85.93	53.51
2/26/10 11:20	-104.01	35.43	2/26/10 14:15	-85.62	53.82
2/26/10 11:25	-102.82	36.62	2/26/10 14:20	-86.82	52.62
2/26/10 11:30	-102.24	37.21	2/26/10 14:25	-86.72	52.73
2/26/10 11:35	-101.45	37.99	2/26/10 14:30	-85.42	54.02
2/26/10 11:40	-100.53	38.91	2/26/10 14:35	-85.93	53.51
2/26/10 11:45	-99.75	39.70	2/26/10 14:40	-85.42	54.02
2/26/10 11:50	-98.76	40.69	2/26/10 14:45	-86.33	53.11
2/26/10 11:55	-98.25	41.19	2/26/10 14:50	-86.82	52.62
2/26/10 12:00	-97.97	41.47	2/26/10 14:55	-86.03	53.41
2/26/10 12:05	-96.47	42.97	2/26/10 15:00	-85.42	54.02
2/26/10 12:10	-96.27	43.18	2/26/10 15:05	-85.52	53.92
2/26/10 12:15	-96.06	43.38	2/26/10 15:10	-86.03	53.41
2/26/10 12:20	-95.48	43.96	2/26/10 15:15	-85.14	54.30
2/26/10 12:25	-94.67	44.78	2/26/10 15:20	-84.12	55.32
2/26/10 12:30	-93.78	45.66	2/26/10 15:25	-85.62	53.82
2/26/10 12:35	-93.47	45.97	2/26/10 15:30	-85.52	53.92
2/26/10 12:40	-94.18	45.26	2/26/10 15:35	-84.84	54.61
2/26/10 12:45	-92.79	46.65	2/26/10 15:40	-85.22	54.22
2/26/10 12:50	-91.39	48.05	2/26/10 15:45	-85.83	53.61
2/26/10 12:55	-91.80	47.65	2/26/10 15:50	-86.23	53.21
2/26/10 13:00	-90.50	48.94	2/26/10 15:55	-87.53	51.91
2/26/10 13:05	-90.91	48.53	2/26/10 16:00	-87.33	52.12
2/26/10 13:10	-89.71	49.73	2/26/10 16:05	-88.62	50.82
2/26/10 13:15	-89.81	49.63	2/26/10 16:10	-89.00	50.44
2/26/10 13:20	-89.20	50.24	2/26/10 16:15	-89.71	49.73
2/26/10 13:25	-89.20	50.24	2/26/10 16:20	-90.70	48.74
2/26/10 13:30	-88.90	50.54	2/26/10 16:25	-92.48	46.96
2/26/10 13:35	-87.71	51.73	2/26/10 16:30	-93.09	46.35
2/26/10 13:40	-88.62	50.82	2/26/10 16:35	-93.40	46.05
2/26/10 13:45	-87.53	51.91	2/26/10 16:40	-93.78	45.66
2/26/10 13:50	-88.32	51.13	2/26/10 16:45	-95.58	43.86

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/26/10 16:50	-96.16	43.28	2/26/10 19:45	-121.03	18.41
2/26/10 16:55	-97.46	41.98	2/26/10 19:50	-121.03	18.41
2/26/10 17:00	-98.35	41.09	2/26/10 19:55	-120.83	18.61
2/26/10 17:05	-98.25	41.19	2/26/10 20:00	-121.03	18.41
2/26/10 17:10	-99.16	40.28	2/26/10 20:05	-122.33	17.11
2/26/10 17:15	-100.63	38.81	2/26/10 20:10	-121.82	17.62
2/26/10 17:20	-100.05	39.39	2/26/10 20:15	-121.54	17.90
2/26/10 17:25	-101.63	37.82	2/26/10 20:20	-121.92	17.52
2/26/10 17:30	-102.44	37.00	2/26/10 20:25	-121.13	18.31
2/26/10 17:35	-102.74	36.70	2/26/10 20:30	-122.43	17.01
2/26/10 17:40	-103.84	35.61	2/26/10 20:35	-122.02	17.42
2/26/10 17:45	-104.22	35.22	2/26/10 20:40	-122.02	17.42
2/26/10 17:50	-106.02	33.42	2/26/10 20:45	-121.44	18.00
2/26/10 17:55	-107.11	32.33	2/26/10 20:50	-121.13	18.31
2/26/10 18:00	-107.32	32.13	2/26/10 20:55	-121.44	18.00
2/26/10 18:05	-108.89	30.55	2/26/10 21:00	-120.52	18.92
2/26/10 18:10	-108.41	31.03	2/26/10 21:05	-120.35	19.10
2/26/10 18:15	-110.39	29.05	2/26/10 21:10	-119.74	19.71
2/26/10 18:20	-110.29	29.15	2/26/10 21:15	-119.74	19.71
2/26/10 18:25	-112.09	27.35	2/26/10 21:20	-119.25	20.19
2/26/10 18:30	-112.88	26.56	2/26/10 21:25	-118.06	21.38
2/26/10 18:35	-113.08	26.36	2/26/10 21:30	-117.25	22.19
2/26/10 18:40	-114.27	25.17	2/26/10 21:35	-116.76	22.68
2/26/10 18:45	-114.55	24.89	2/26/10 21:40	-116.26	23.19
2/26/10 18:50	-115.37	24.07	2/26/10 21:45	-115.06	24.38
2/26/10 18:55	-115.95	23.49	2/26/10 21:50	-113.87	25.57
2/26/10 19:00	-116.76	22.68	2/26/10 21:55	-112.98	26.46
2/26/10 19:05	-117.04	22.40	2/26/10 22:00	-112.09	27.35
2/26/10 19:10	-117.65	21.79	2/26/10 22:05	-109.70	29.74
2/26/10 19:15	-118.34	21.10	2/26/10 22:10	-109.70	29.74
2/26/10 19:20	-118.54	20.90	2/26/10 22:15	-108.51	30.93
2/26/10 19:25	-119.43	20.01	2/26/10 22:20	-107.32	32.13
2/26/10 19:30	-119.43	20.01	2/26/10 22:25	-105.82	33.62
2/26/10 19:35	-119.15	20.29	2/26/10 22:30	-104.62	34.82
2/26/10 19:40	-120.04	19.40	2/26/10 22:35	-103.43	36.01

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/26/10 22:40	-102.64	36.80	2/27/10 1:35	-54.99	84.45
2/26/10 22:45	-100.84	38.60	2/27/10 1:40	-54.10	85.34
2/26/10 22:50	-99.34	40.10	2/27/10 1:45	-53.42	86.02
2/26/10 22:55	-98.45	40.99	2/27/10 1:50	-52.91	86.53
2/26/10 23:00	-97.97	41.47	2/27/10 1:55	-52.50	86.94
2/26/10 23:05	-96.67	42.77	2/27/10 2:00	-52.50	86.94
2/26/10 23:10	-95.07	44.37	2/27/10 2:05	-51.71	87.73
2/26/10 23:15	-93.78	45.66	2/27/10 2:10	-51.21	88.23
2/26/10 23:20	-92.28	47.16	2/27/10 2:15	-50.72	88.72
2/26/10 23:25	-91.59	47.85	2/27/10 2:20	-50.42	89.02
2/26/10 23:30	-90.30	49.14	2/27/10 2:25	-50.01	89.43
2/26/10 23:35	-88.52	50.92	2/27/10 2:30	-49.33	90.11
2/26/10 23:40	-86.72	52.73	2/27/10 2:35	-48.23	91.21
2/26/10 23:45	-84.73	54.71	2/27/10 2:40	-47.83	91.61
2/26/10 23:50	-83.34	56.10	2/27/10 2:45	-47.24	92.20
2/26/10 23:55	-82.04	57.40	2/27/10 2:50	-46.63	92.81
2/27/10 0:00	-79.65	59.79	2/27/10 2:55	-45.54	93.90
2/27/10 0:05	-77.57	61.87	2/27/10 3:00	-45.16	94.28
2/27/10 0:10	-75.77	63.67	2/27/10 3:05	-44.65	94.79
2/27/10 0:15	-74.68	64.77	2/27/10 3:10	-45.06	94.38
2/27/10 0:20	-73.10	66.34	2/27/10 3:15	-44.15	95.30
2/27/10 0:25	-70.82	68.63	2/27/10 3:20	-44.25	95.19
2/27/10 0:30	-69.11	70.33	2/27/10 3:25	-44.15	95.30
2/27/10 0:35	-67.54	71.90	2/27/10 3:30	-44.25	95.19
2/27/10 0:40	-66.42	73.02	2/27/10 3:35	-44.04	95.40
2/27/10 0:45	-64.54	74.90	2/27/10 3:40	-44.15	95.30
2/27/10 0:50	-62.56	76.88	2/27/10 3:45	-44.45	94.99
2/27/10 0:55	-62.05	77.39	2/27/10 3:50	-44.55	94.89
2/27/10 1:00	-60.38	79.07	2/27/10 3:55	-45.34	94.10
2/27/10 1:05	-59.28	80.16	2/27/10 4:00	-46.25	93.19
2/27/10 1:10	-58.67	80.77	2/27/10 4:05	-46.63	92.81
2/27/10 1:15	-57.38	82.06	2/27/10 4:10	-47.14	92.30
2/27/10 1:20	-56.79	82.65	2/27/10 4:15	-47.93	91.51
2/27/10 1:25	-55.60	83.84	2/27/10 4:20	-47.93	91.51
2/27/10 1:30	-54.69	84.75	2/27/10 4:25	-49.02	90.42

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 4:30	-49.73	89.71	2/27/10 7:25	-93.09	46.35
2/27/10 4:35	-50.11	89.33	2/27/10 7:30	-95.28	44.17
2/27/10 4:40	-50.72	88.72	2/27/10 7:35	-96.27	43.18
2/27/10 4:45	-51.71	87.73	2/27/10 7:40	-96.88	42.57
2/27/10 4:50	-51.92	87.52	2/27/10 7:45	-97.97	41.47
2/27/10 4:55	-52.91	86.53	2/27/10 7:50	-99.34	40.10
2/27/10 5:00	-53.70	85.75	2/27/10 7:55	-101.24	38.20
2/27/10 5:05	-54.79	84.65	2/27/10 8:00	-101.93	37.51
2/27/10 5:10	-56.29	83.15	2/27/10 8:05	-103.43	36.01
2/27/10 5:15	-57.07	82.37	2/27/10 8:10	-104.72	34.72
2/27/10 5:20	-59.08	80.36	2/27/10 8:15	-106.32	33.12
2/27/10 5:25	-60.17	79.27	2/27/10 8:20	-107.90	31.54
2/27/10 5:30	-61.57	77.87	2/27/10 8:25	-108.41	31.03
2/27/10 5:35	-63.75	75.69	2/27/10 8:30	-108.89	30.55
2/27/10 5:40	-65.43	74.01	2/27/10 8:35	-110.39	29.05
2/27/10 5:45	-67.44	72.00	2/27/10 8:40	-110.59	28.85
2/27/10 5:50	-69.72	69.72	2/27/10 8:45	-111.89	27.55
2/27/10 5:55	-71.60	67.84	2/27/10 8:50	-112.47	26.97
2/27/10 6:00	-73.30	66.14	2/27/10 8:55	-111.89	27.55
2/27/10 6:05	-75.29	64.16	2/27/10 9:00	-113.56	25.88
2/27/10 6:10	-76.78	62.66	2/27/10 9:05	-112.67	26.77
2/27/10 6:15	-78.87	60.57	2/27/10 9:10	-114.55	24.89
2/27/10 6:20	-79.76	59.69	2/27/10 9:15	-113.87	25.57
2/27/10 6:25	-81.56	57.88	2/27/10 9:20	-113.36	26.08
2/27/10 6:30	-83.24	56.21	2/27/10 9:25	-113.67	25.78
2/27/10 6:35	-84.02	55.42	2/27/10 9:30	-115.16	24.28
2/27/10 6:40	-85.14	54.30	2/27/10 9:35	-114.76	24.68
2/27/10 6:45	-85.62	53.82	2/27/10 9:40	-116.36	23.08
2/27/10 6:50	-86.72	52.73	2/27/10 9:45	-116.87	22.58
2/27/10 6:55	-87.33	52.12	2/27/10 9:50	-115.06	24.38
2/27/10 7:00	-88.90	50.54	2/27/10 9:55	-116.26	23.19
2/27/10 7:05	-89.20	50.24	2/27/10 10:00	-117.04	22.40
2/27/10 7:10	-90.20	49.25	2/27/10 10:05	-117.35	22.09
2/27/10 7:15	-91.49	47.95	2/27/10 10:10	-117.45	21.99
2/27/10 7:20	-92.68	46.76	2/27/10 10:15	-117.65	21.79

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 10:20	-117.96	21.48	2/27/10 13:15	-106.22	33.22
2/27/10 10:25	-117.55	21.89	2/27/10 13:20	-102.54	36.90
2/27/10 10:30	-117.14	22.30	2/27/10 13:25	-101.24	38.20
2/27/10 10:35	-116.56	22.88	2/27/10 13:30	-100.53	38.91
2/27/10 10:40	-116.26	23.19	2/27/10 13:35	-93.29	46.15
2/27/10 10:45	-115.75	23.69	2/27/10 13:40	-98.35	41.09
2/27/10 10:50	-114.96	24.48	2/27/10 13:45	-90.40	49.04
2/27/10 10:55	-114.66	24.79	2/27/10 13:50	-90.09	49.35
2/27/10 11:00	-112.98	26.46	2/27/10 13:55	-87.53	51.91
2/27/10 11:05	-112.88	26.56	2/27/10 14:00	-80.85	58.59
2/27/10 11:10	-112.47	26.97	2/27/10 14:05	-83.24	56.21
2/27/10 11:15	-111.28	28.16	2/27/10 14:10	-80.37	59.08
2/27/10 11:20	-110.19	29.26	2/27/10 14:15	-80.26	59.18
2/27/10 11:25	-110.08	29.36	2/27/10 14:20	-74.40	65.04
2/27/10 11:30	-108.79	30.65	2/27/10 14:25	-74.78	64.66
2/27/10 11:35	-105.51	33.93	2/27/10 14:30	-76.48	62.96
2/27/10 11:40	-106.81	32.63	2/27/10 14:35	-82.83	56.61
2/27/10 11:45	-105.51	33.93	2/27/10 14:40	-82.83	56.61
2/27/10 11:50	-106.50	32.94	2/27/10 14:45	-80.85	58.59
2/27/10 11:55	-106.12	33.32	2/27/10 14:50	-72.90	66.54
2/27/10 12:00	-105.13	34.31	2/27/10 14:55	-76.17	63.27
2/27/10 12:05	-101.35	38.10	2/27/10 15:00	-80.75	58.69
2/27/10 12:10	-95.17	44.27	2/27/10 15:05	-80.06	59.38
2/27/10 12:15	-90.30	49.14	2/27/10 15:10	-85.04	54.40
2/27/10 12:20	-87.91	51.53	2/27/10 15:15	-76.78	62.66
2/27/10 12:25	-91.69	47.75	2/27/10 15:20	-80.26	59.18
2/27/10 12:30	-94.39	45.05	2/27/10 15:25	-83.34	56.10
2/27/10 12:35	-93.29	46.15	2/27/10 15:30	-86.51	52.93
2/27/10 12:40	-96.88	42.57	2/27/10 15:35	-83.85	55.60
2/27/10 12:45	-93.78	45.66	2/27/10 15:40	-78.16	61.29
2/27/10 12:50	-97.76	41.68	2/27/10 15:45	-76.17	63.27
2/27/10 12:55	-95.58	43.86	2/27/10 15:50	-77.77	61.67
2/27/10 13:00	-90.81	48.64	2/27/10 15:55	-83.24	56.21
2/27/10 13:05	-96.67	42.77	2/27/10 16:00	-76.28	63.16
2/27/10 13:10	-96.95	42.49	2/27/10 16:05	-76.68	62.76

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 16:10	-78.26	61.18	2/27/10 19:05	-99.95	39.49
2/27/10 16:15	-77.77	61.67	2/27/10 19:10	-100.84	38.60
2/27/10 16:20	-81.25	58.19	2/27/10 19:15	-105.21	34.23
2/27/10 16:25	-80.06	59.38	2/27/10 19:20	-104.42	35.02
2/27/10 16:30	-75.87	63.57	2/27/10 19:25	-109.50	29.94
2/27/10 16:35	-76.58	62.86	2/27/10 19:30	-107.42	32.02
2/27/10 16:40	-72.01	67.43	2/27/10 19:35	-110.08	29.36
2/27/10 16:45	-76.48	62.96	2/27/10 19:40	-115.27	24.18
2/27/10 16:50	-79.86	59.58	2/27/10 19:45	-109.70	29.74
2/27/10 16:55	-79.96	59.48	2/27/10 19:50	-111.38	28.06
2/27/10 17:00	-80.47	58.97	2/27/10 19:55	-110.29	29.15
2/27/10 17:05	-79.07	60.37	2/27/10 20:00	-113.87	25.57
2/27/10 17:10	-82.45	56.99	2/27/10 20:05	-118.64	20.80
2/27/10 17:15	-81.94	57.50	2/27/10 20:10	-115.37	24.07
2/27/10 17:20	-83.74	55.70	2/27/10 20:15	-115.57	23.87
2/27/10 17:25	-82.45	56.99	2/27/10 20:20	-117.65	21.79
2/27/10 17:30	-87.43	52.01	2/27/10 20:25	-117.65	21.79
2/27/10 17:35	-89.00	50.44	2/27/10 20:30	-120.14	19.30
2/27/10 17:40	-86.92	52.52	2/27/10 20:35	-119.25	20.19
2/27/10 17:45	-93.68	45.77	2/27/10 20:40	-118.14	21.31
2/27/10 17:50	-92.00	47.44	2/27/10 20:45	-119.25	20.19
2/27/10 17:55	-93.68	45.77	2/27/10 20:50	-116.76	22.68
2/27/10 18:00	-91.49	47.95	2/27/10 20:55	-119.84	19.60
2/27/10 18:05	-92.00	47.44	2/27/10 21:00	-119.15	20.29
2/27/10 18:10	-99.26	40.18	2/27/10 21:05	-118.06	21.38
2/27/10 18:15	-100.43	39.01	2/27/10 21:10	-117.96	21.48
2/27/10 18:20	-96.16	43.28	2/27/10 21:15	-116.15	23.29
2/27/10 18:25	-93.57	45.87	2/27/10 21:20	-120.14	19.30
2/27/10 18:30	-96.27	43.18	2/27/10 21:25	-118.44	21.00
2/27/10 18:35	-98.76	40.69	2/27/10 21:30	-122.02	17.42
2/27/10 18:40	-101.24	38.20	2/27/10 21:35	-118.64	20.80
2/27/10 18:45	-98.35	41.09	2/27/10 21:40	-120.93	18.51
2/27/10 18:50	-99.34	40.10	2/27/10 21:45	-121.23	18.21
2/27/10 18:55	-100.43	39.01	2/27/10 21:50	-119.53	19.91
2/27/10 19:00	-100.36	39.09	2/27/10 21:55	-120.93	18.51

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/27/10 22:00	-117.35	22.09	2/28/10 0:55	-70.51	68.93
2/27/10 22:05	-120.35	19.10	2/28/10 1:00	-67.92	71.52
2/27/10 22:10	-118.64	20.80	2/28/10 1:05	-67.03	72.41
2/27/10 22:15	-117.96	21.48	2/28/10 1:10	-68.33	71.12
2/27/10 22:20	-115.85	23.59	2/28/10 1:15	-67.61	71.83
2/27/10 22:25	-114.66	24.79	2/28/10 1:20	-65.84	73.60
2/27/10 22:30	-111.79	27.66	2/28/10 1:25	-64.24	75.20
2/27/10 22:35	-107.42	32.02	2/28/10 1:30	-61.26	78.18
2/27/10 22:40	-109.88	29.56	2/28/10 1:35	-65.43	74.01
2/27/10 22:45	-106.91	32.53	2/28/10 1:40	-67.03	72.41
2/27/10 22:50	-109.09	30.35	2/28/10 1:45	-64.95	74.49
2/27/10 22:55	-106.60	32.84	2/28/10 1:50	-61.95	77.49
2/27/10 23:00	-102.03	37.41	2/28/10 1:55	-60.38	79.07
2/27/10 23:05	-105.41	34.03	2/28/10 2:00	-65.15	74.29
2/27/10 23:10	-102.13	37.31	2/28/10 2:05	-64.14	75.31
2/27/10 23:15	-102.54	36.90	2/28/10 2:10	-61.75	77.69
2/27/10 23:20	-101.14	38.30	2/28/10 2:15	-54.99	84.45
2/27/10 23:25	-100.43	39.01	2/28/10 2:20	-55.60	83.84
2/27/10 23:30	-101.04	38.40	2/28/10 2:25	-55.30	84.15
2/27/10 23:35	-100.43	39.01	2/28/10 2:30	-55.50	83.94
2/27/10 23:40	-101.73	37.71	2/28/10 2:35	-51.82	87.63
2/27/10 23:45	-99.44	40.00	2/28/10 2:40	-47.45	91.99
2/27/10 23:50	-99.06	40.38	2/28/10 2:45	-46.84	92.60
2/27/10 23:55	-96.47	42.97	2/28/10 2:50	-49.12	90.32
2/28/10 0:00	-96.16	43.28	2/28/10 2:55	-47.04	92.40
2/28/10 0:05	-93.40	46.05	2/28/10 3:00	-44.15	95.30
2/28/10 0:10	-90.70	48.74	2/28/10 3:05	-42.27	97.18
2/28/10 0:15	-85.93	53.51	2/28/10 3:10	-43.46	95.98
2/28/10 0:20	-87.12	52.32	2/28/10 3:15	-49.94	89.50
2/28/10 0:25	-87.33	52.12	2/28/10 3:20	-49.94	89.50
2/28/10 0:30	-82.55	56.89	2/28/10 3:25	-48.74	90.70
2/28/10 0:35	-78.77	60.68	2/28/10 3:30	-43.76	95.68
2/28/10 0:40	-73.58	65.86	2/28/10 3:35	-46.43	93.01
2/28/10 0:45	-74.50	64.94	2/28/10 3:40	-45.75	93.70
2/28/10 0:50	-71.30	68.14	2/28/10 3:45	-50.72	88.72

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/28/10 3:50	-49.12	90.32	2/28/10 6:45	-79.27	60.17
2/28/10 3:55	-47.83	91.61	2/28/10 6:50	-75.77	63.67
2/28/10 4:00	-48.34	91.10	2/28/10 6:55	-79.27	60.17
2/28/10 4:05	-47.83	91.61	2/28/10 7:00	-76.48	62.96
2/28/10 4:10	-52.50	86.94	2/28/10 7:05	-77.67	61.77
2/28/10 4:15	-49.94	89.50	2/28/10 7:10	-75.29	64.16
2/28/10 4:20	-49.94	89.50	2/28/10 7:15	-73.89	65.55
2/28/10 4:25	-44.55	94.89	2/28/10 7:20	-76.89	62.56
2/28/10 4:30	-45.75	93.70	2/28/10 7:25	-77.27	62.17
2/28/10 4:35	-45.85	93.59	2/28/10 7:30	-85.22	54.22
2/28/10 4:40	-45.85	93.59	2/28/10 7:35	-84.02	55.42
2/28/10 4:45	-48.74	90.70	2/28/10 7:40	-87.71	51.73
2/28/10 4:50	-47.83	91.61	2/28/10 7:45	-88.62	50.82
2/28/10 4:55	-47.93	91.51	2/28/10 7:50	-94.77	44.67
2/28/10 5:00	-43.76	95.68	2/28/10 7:55	-100.15	39.29
2/28/10 5:05	-47.55	91.89	2/28/10 8:00	-99.64	39.80
2/28/10 5:10	-47.63	91.82	2/28/10 8:05	-101.55	37.89
2/28/10 5:15	-49.12	90.32	2/28/10 8:10	-103.33	36.11
2/28/10 5:20	-49.63	89.81	2/28/10 8:15	-106.81	32.63
2/28/10 5:25	-50.32	89.12	2/28/10 8:20	-109.19	30.25
2/28/10 5:30	-55.80	83.64	2/28/10 8:25	-111.68	27.76
2/28/10 5:35	-56.29	83.15	2/28/10 8:30	-110.19	29.26
2/28/10 5:40	-57.38	82.06	2/28/10 8:35	-110.59	28.85
2/28/10 5:45	-60.86	78.58	2/28/10 8:40	-110.90	28.54
2/28/10 5:50	-64.14	75.31	2/28/10 8:45	-110.79	28.65
2/28/10 5:55	-64.24	75.20	2/28/10 8:50	-112.98	26.46
2/28/10 6:00	-66.24	73.20	2/28/10 8:55	-109.70	29.74
2/28/10 6:05	-68.73	70.71	2/28/10 9:00	-108.79	30.65
2/28/10 6:10	-75.39	64.05	2/28/10 9:05	-108.31	31.14
2/28/10 6:15	-74.98	64.46	2/28/10 9:10	-107.90	31.54
2/28/10 6:20	-74.88	64.56	2/28/10 9:15	-110.08	29.36
2/28/10 6:25	-74.09	65.35	2/28/10 9:20	-112.09	27.35
2/28/10 6:30	-76.28	63.16	2/28/10 9:25	-112.47	26.97
2/28/10 6:35	-79.07	60.37	2/28/10 9:30	-111.48	27.96
2/28/10 6:40	-76.96	62.48	2/28/10 9:35	-114.38	25.06

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/28/10 9:40	-114.76	24.68	2/28/10 12:35	-113.97	25.47
2/28/10 9:45	-118.85	20.59	2/28/10 12:40	-111.79	27.66
2/28/10 9:50	-121.34	18.11	2/28/10 12:45	-112.47	26.97
2/28/10 9:55	-124.21	15.24	2/28/10 12:50	-108.51	30.93
2/28/10 10:00	-126.39	13.05	2/28/10 12:55	-105.61	33.83
2/28/10 10:05	-129.29	10.16	2/28/10 13:00	-103.53	35.91
2/28/10 10:10	-131.37	8.07	2/28/10 13:05	-101.83	37.61
2/28/10 10:15	-134.06	5.38	2/28/10 13:10	-100.94	38.50
2/28/10 10:20	-134.54	4.90	2/28/10 13:15	-98.86	40.58
2/28/10 10:25	-132.16	7.28	2/28/10 13:20	-97.26	42.18
2/28/10 10:30	-130.78	8.66	2/28/10 13:25	-93.78	45.66
2/28/10 10:35	-134.26	5.18	2/28/10 13:30	-90.91	48.53
2/28/10 10:40	-131.37	8.07	2/28/10 13:35	-92.38	47.06
2/28/10 10:45	-128.09	11.35	2/28/10 13:40	-94.49	44.95
2/28/10 10:50	-126.21	13.23	2/28/10 13:45	-91.49	47.95
2/28/10 10:55	-126.29	13.15	2/28/10 13:50	-90.91	48.53
2/28/10 11:00	-126.70	12.75	2/28/10 13:55	-89.71	49.73
2/28/10 11:05	-122.91	16.53	2/28/10 14:00	-90.20	49.25
2/28/10 11:10	-117.86	21.59	2/28/10 14:05	-89.41	50.03
2/28/10 11:15	-117.96	21.48	2/28/10 14:10	-88.11	51.33
2/28/10 11:20	-116.76	22.68	2/28/10 14:15	-88.21	51.23
2/28/10 11:25	-115.95	23.49	2/28/10 14:20	-88.90	50.54
2/28/10 11:30	-115.95	23.49	2/28/10 14:25	-88.21	51.23
2/28/10 11:35	-115.47	23.97	2/28/10 14:30	-86.13	53.31
2/28/10 11:40	-115.95	23.49	2/28/10 14:35	-84.73	54.71
2/28/10 11:45	-116.66	22.78	2/28/10 14:40	-84.02	55.42
2/28/10 11:50	-115.47	23.97	2/28/10 14:45	-83.54	55.90
2/28/10 11:55	-115.95	23.49	2/28/10 14:50	-80.26	59.18
2/28/10 12:00	-115.47	23.97	2/28/10 14:55	-80.16	59.28
2/28/10 12:05	-116.66	22.78	2/28/10 15:00	-80.37	59.08
2/28/10 12:10	-117.14	22.30	2/28/10 15:05	-79.27	60.17
2/28/10 12:15	-116.76	22.68	2/28/10 15:10	-76.17	63.27
2/28/10 12:20	-117.45	21.99	2/28/10 15:15	-76.38	63.06
2/28/10 12:25	-116.26	23.19	2/28/10 15:20	-74.40	65.04
2/28/10 12:30	-112.98	26.46	2/28/10 15:25	-73.89	65.55

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/28/10 15:30	-72.69	66.75	2/28/10 18:25	-81.84	57.60
2/28/10 15:35	-71.09	68.35	2/28/10 18:30	-81.84	57.60
2/28/10 15:40	-73.20	66.24	2/28/10 18:35	-83.24	56.21
2/28/10 15:45	-71.60	67.84	2/28/10 18:40	-82.65	56.79
2/28/10 15:50	-72.01	67.43	2/28/10 18:45	-85.32	54.12
2/28/10 15:55	-72.29	67.15	2/28/10 18:50	-88.21	51.23
2/28/10 16:00	-72.69	66.75	2/28/10 18:55	-89.71	49.73
2/28/10 16:05	-72.69	66.75	2/28/10 19:00	-89.20	50.24
2/28/10 16:10	-73.48	65.96	2/28/10 19:05	-86.03	53.41
2/28/10 16:15	-71.20	68.24	2/28/10 19:10	-88.80	50.64
2/28/10 16:20	-74.68	64.77	2/28/10 19:15	-90.50	48.94
2/28/10 16:25	-73.99	65.45	2/28/10 19:20	-92.68	46.76
2/28/10 16:30	-72.21	67.23	2/28/10 19:25	-91.29	48.15
2/28/10 16:35	-74.68	64.77	2/28/10 19:30	-90.30	49.14
2/28/10 16:40	-74.09	65.35	2/28/10 19:35	-90.91	48.53
2/28/10 16:45	-74.40	65.04	2/28/10 19:40	-93.88	45.56
2/28/10 16:50	-73.69	65.76	2/28/10 19:45	-93.98	45.46
2/28/10 16:55	-73.10	66.34	2/28/10 19:50	-92.38	47.06
2/28/10 17:00	-72.01	67.43	2/28/10 19:55	-93.57	45.87
2/28/10 17:05	-72.80	66.64	2/28/10 20:00	-95.28	44.17
2/28/10 17:10	-74.40	65.04	2/28/10 20:05	-98.86	40.58
2/28/10 17:15	-74.50	64.94	2/28/10 20:10	-99.44	40.00
2/28/10 17:20	-74.68	64.77	2/28/10 20:15	-97.97	41.47
2/28/10 17:25	-71.40	68.04	2/28/10 20:20	-99.34	40.10
2/28/10 17:30	-73.48	65.96	2/28/10 20:25	-102.82	36.62
2/28/10 17:35	-71.60	67.84	2/28/10 20:30	-103.43	36.01
2/28/10 17:40	-73.99	65.45	2/28/10 20:35	-106.22	33.22
2/28/10 17:45	-72.80	66.64	2/28/10 20:40	-105.92	33.52
2/28/10 17:50	-72.01	67.43	2/28/10 20:45	-107.01	32.43
2/28/10 17:55	-74.50	64.94	2/28/10 20:50	-109.60	29.84
2/28/10 18:00	-75.77	63.67	2/28/10 20:55	-111.28	28.16
2/28/10 18:05	-77.37	62.07	2/28/10 21:00	-112.57	26.87
2/28/10 18:10	-76.96	62.48	2/28/10 21:05	-110.49	28.95
2/28/10 18:15	-77.37	62.07	2/28/10 21:10	-111.28	28.16
2/28/10 18:20	-77.37	62.07	2/28/10 21:15	-112.88	26.56

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/dd/yy hh:mm	Air Space cm	GW Impacted Layer cm
2/28/10 21:20	-115.75	23.69	3/1/10 0:15	-99.34	40.10
2/28/10 21:25	-117.45	21.99	3/1/10 0:20	-95.58	43.86
2/28/10 21:30	-112.78	26.67	3/1/10 0:25	-94.56	44.88
2/28/10 21:35	-111.28	28.16	3/1/10 0:30	-95.48	43.96
2/28/10 21:40	-114.48	24.96	3/1/10 0:35	-94.28	45.16
2/28/10 21:45	-117.45	21.99	3/1/10 0:40	-93.40	46.05
2/28/10 21:50	-116.66	22.78	3/1/10 0:45	-90.91	48.53
2/28/10 21:55	-114.17	25.27	3/1/10 0:50	-91.19	48.26
2/28/10 22:00	-114.17	25.27	3/1/10 0:55	-92.99	46.45
2/28/10 22:05	-114.55	24.89	3/1/10 1:00	-90.91	48.53
2/28/10 22:10	-117.45	21.99	3/1/10 1:05	-88.90	50.54
2/28/10 22:15	-115.85	23.59	3/1/10 1:10	-87.60	51.84
2/28/10 22:20	-116.26	23.19	3/1/10 1:15	-85.93	53.51
2/28/10 22:25	-116.15	23.29	3/1/10 1:20	-86.51	52.93
2/28/10 22:30	-114.96	24.48	3/1/10 1:25	-84.73	54.71
2/28/10 22:35	-117.55	21.89	3/1/10 1:30	-82.25	57.20
2/28/10 22:40	-116.36	23.08	3/1/10 1:35	-81.74	57.70
2/28/10 22:45	-119.43	20.01	3/1/10 1:40	-78.16	61.29
2/28/10 22:50	-117.04	22.40	3/1/10 1:45	-77.57	61.87
2/28/10 22:55	-118.64	20.80	3/1/10 1:50	-77.67	61.77
2/28/10 23:00	-116.66	22.78	3/1/10 1:55	-75.08	64.36
2/28/10 23:05	-117.55	21.89	3/1/10 2:00	-72.80	66.64
2/28/10 23:10	-118.75	20.70	3/1/10 2:05	-70.61	68.83
2/28/10 23:15	-114.27	25.17	3/1/10 2:10	-71.50	67.94
2/28/10 23:20	-111.79	27.66	3/1/10 2:15	-73.48	65.96
2/28/10 23:25	-112.37	27.07	3/1/10 2:20	-68.81	70.63
2/28/10 23:30	-113.77	25.67	3/1/10 2:25	-68.91	70.53
2/28/10 23:35	-111.99	27.45	3/1/10 2:30	-65.74	73.71
2/28/10 23:40	-108.79	30.65	3/1/10 2:35	-68.22	71.22
2/28/10 23:45	-105.82	33.62	3/1/10 2:40	-64.95	74.49
2/28/10 23:50	-105.71	33.73	3/1/10 2:45	-66.14	73.30
2/28/10 23:55	-104.32	35.12	3/1/10 2:50	-65.15	74.29
3/1/10 0:00	-101.24	38.20	3/1/10 2:55	-63.55	75.89
3/1/10 0:05	-100.74	38.70	3/1/10 3:00	-63.86	75.59
3/1/10 0:10	-98.86	40.58	3/1/10 3:05	-62.05	77.39

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
3/1/10 3:10	-61.37	78.07	3/1/10 6:05	-66.34	73.10
3/1/10 3:15	-59.36	80.08	3/1/10 6:10	-67.23	72.21
3/1/10 3:20	-59.56	79.88	3/1/10 6:15	-71.02	68.42
3/1/10 3:25	-59.08	80.36	3/1/10 6:20	-70.51	68.93
3/1/10 3:30	-60.27	79.17	3/1/10 6:25	-72.59	66.85
3/1/10 3:35	-59.08	80.36	3/1/10 6:30	-73.00	66.44
3/1/10 3:40	-57.89	81.55	3/1/10 6:35	-76.07	63.37
3/1/10 3:45	-57.07	82.37	3/1/10 6:40	-77.57	61.87
3/1/10 3:50	-55.80	83.64	3/1/10 6:45	-78.16	61.29
3/1/10 3:55	-56.49	82.95	3/1/10 6:50	-78.36	61.08
3/1/10 4:00	-54.79	84.65	3/1/10 6:55	-77.98	61.46
3/1/10 4:05	-55.60	83.84	3/1/10 7:00	-80.95	58.49
3/1/10 4:10	-53.90	85.54	3/1/10 7:05	-81.84	57.60
3/1/10 4:15	-53.49	85.95	3/1/10 7:10	-82.75	56.69
3/1/10 4:20	-53.90	85.54	3/1/10 7:15	-83.03	56.41
3/1/10 4:25	-55.80	83.64	3/1/10 7:20	-85.14	54.30
3/1/10 4:30	-54.61	84.83	3/1/10 7:25	-84.63	54.81
3/1/10 4:35	-54.00	85.44	3/1/10 7:30	-86.51	52.93
3/1/10 4:40	-56.49	82.95	3/1/10 7:35	-87.12	52.32
3/1/10 4:45	-54.41	85.03	3/1/10 7:40	-86.23	53.21
3/1/10 4:50	-56.59	82.85	3/1/10 7:45	-88.90	50.54
3/1/10 4:55	-56.18	83.26	3/1/10 7:50	-90.09	49.35
3/1/10 5:00	-55.80	83.64	3/1/10 7:55	-92.68	46.76
3/1/10 5:05	-56.97	82.47	3/1/10 8:00	-93.40	46.05
3/1/10 5:10	-57.68	81.76	3/1/10 8:05	-94.56	44.88
3/1/10 5:15	-59.87	79.57	3/1/10 8:10	-94.56	44.88
3/1/10 5:20	-59.56	79.88	3/1/10 8:15	-97.05	42.39
3/1/10 5:25	-60.17	79.27	3/1/10 8:20	-99.26	40.18
3/1/10 5:30	-60.96	78.48	3/1/10 8:25	-100.94	38.50
3/1/10 5:35	-61.06	78.38	3/1/10 8:30	-101.45	37.99
3/1/10 5:40	-61.57	77.87	3/1/10 8:35	-101.83	37.61
3/1/10 5:45	-62.46	76.98	3/1/10 8:40	-106.32	33.12
3/1/10 5:50	-63.96	75.48	3/1/10 8:45	-106.60	32.84
3/1/10 5:55	-64.74	74.70	3/1/10 8:50	-110.19	29.26
3/1/10 6:00	-64.85	74.59	3/1/10 8:55	-109.80	29.64

Table AII.59: (Continued) Rainbow Bay B-Dock Platform water-level data-logger data. The groundwater impacted layer is based on a thickness of 40 cm at 1506 on 5 January 2011 which corresponds to a similar tide at 2235 on 25 February 2010.

Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm	Date and Time m/d/yy hh:mm	Air Space cm	GW Impacted Layer cm
3/1/10 9:00	-110.39	29.05	3/1/10 11:15	-124.51	14.93
3/1/10 9:05	-111.48	27.96	3/1/10 11:20	-123.72	15.72
3/1/10 9:10	-113.77	25.67	3/1/10 11:25	-125.91	13.53
3/1/10 9:15	-114.96	24.48	3/1/10 11:30	-126.29	13.15
3/1/10 9:20	-115.06	24.38	3/1/10 11:35	-125.91	13.53
3/1/10 9:25	-115.57	23.87	3/1/10 11:40	-125.50	13.94
3/1/10 9:30	-116.46	22.98	3/1/10 11:45	-124.00	15.44
3/1/10 9:35	-118.44	21.00	3/1/10 11:50	-124.41	15.03
3/1/10 9:40	-119.25	20.19	3/1/10 11:55	-120.62	18.82
3/1/10 9:45	-118.75	20.70	3/1/10 12:00	-120.14	19.30
3/1/10 9:50	-118.75	20.70	3/1/10 12:05	-117.96	21.48
3/1/10 9:55	-118.95	20.49	3/1/10 12:10	-117.55	21.89
3/1/10 10:00	-118.34	21.10	3/1/10 12:15	-118.85	20.59
3/1/10 10:05	-121.23	18.21	3/1/10 12:20	-115.16	24.28
3/1/10 10:10	-120.14	19.30	3/1/10 12:25	-113.97	25.47
3/1/10 10:15	-118.85	20.59	3/1/10 12:30	-114.27	25.17
3/1/10 10:20	-120.35	19.10	3/1/10 12:35	-110.90	28.54
3/1/10 10:25	-119.74	19.71	3/1/10 12:40	-109.50	29.94
3/1/10 10:30	-122.12	17.32	3/1/10 12:45	-107.80	31.64
3/1/10 10:35	-119.53	19.91	3/1/10 12:50	-107.49	31.95
3/1/10 10:40	-117.55	21.89	3/1/10 12:55	-107.70	31.75
3/1/10 10:45	-122.81	16.63	3/1/10 13:00	-108.10	31.34
3/1/10 10:50	-123.32	16.12	3/1/10 13:05	-107.90	31.54
3/1/10 10:55	-124.31	15.13	3/1/10 13:10	-105.21	34.23
3/1/10 11:00	-123.93	15.51	3/1/10 13:15	-103.23	36.22
3/1/10 11:05	-124.71	14.73	3/1/10 13:20	-105.31	34.13
3/1/10 11:10	-125.40	14.04	3/1/10 13:25	-103.33	36.11

Table AII.60: 2010 West Loch surface water survey radon measurements.

RAD-7 #2357				West Loch Surface				eff=0.406 cpm/pCi/L			
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
51	10	1	2	11	27	1	4.6	0.0	0.0	0.0	0.0
52	10	1	2	11	32	2	4.6	50.0	0.0	0.0	0.0
53	10	1	2	11	37	2	4.6	100.0	0.0	0.0	0.0
54	10	1	2	11	42	14	4.6	100.0	0.0	0.0	0.0
55	10	1	2	11	47	19	4.6	84.2	0.0	0.0	0.0
56	10	1	2	11	52	24	4.6	95.8	0.0	0.0	0.0
57	10	1	2	11	57	25	4.6	84.0	0.0	8.0	0.0
58	10	1	2	12	2	31	4.6	87.1	0.0	12.9	0.0
59	10	1	2	12	7	32	4.6	81.3	0.0	9.4	0.0
60	10	1	2	12	12	27	4.6	63.0	0.0	33.3	0.0
61	10	1	2	12	17	24	4.6	62.5	4.2	29.2	0.0
62	10	1	2	12	22	21	4.6	66.7	4.8	23.8	4.8
63	10	1	2	12	27	16	4.6	37.5	0.0	62.5	0.0
64	10	1	2	12	32	22	4.6	18.2	0.0	68.2	4.6
65	10	1	2	12	37	13	4.6	53.9	0.0	38.5	0.0
66	10	1	2	12	42	13	4.6	7.7	0.0	92.3	0.0
67	10	1	2	12	47	17	4.6	35.3	5.9	47.1	0.0
68	10	1	2	12	52	20	4.6	25.0	0.0	70.0	0.0
69	10	1	2	12	58	18	4.6	27.8	5.6	66.7	0.0
70	10	1	2	13	3	16	4.6	37.5	6.3	43.8	12.5
71	10	1	2	13	8	25	4.6	28.0	4.0	68.0	0.0
72	10	1	2	13	13	16	4.6	31.3	0.0	68.8	0.0
73	10	1	2	13	18	13	4.6	30.8	0.0	53.9	0.0
74	10	1	2	13	23	33	4.6	48.5	0.0	51.5	0.0
75	10	1	2	13	28	21	4.6	38.1	4.8	57.2	0.0
76	10	1	2	13	33	19	4.6	47.4	0.0	47.4	0.0
77	10	1	2	13	38	10	4.6	40.0	0.0	60.0	0.0
78	10	1	2	13	43	16	4.6	25.0	0.0	68.8	0.0
79	10	1	2	13	48	16	4.6	68.8	0.0	25.0	0.0
80	10	1	2	13	53	11	4.6	54.6	0.0	36.4	0.0
81	10	1	2	13	58	26	4.6	57.7	0.0	38.5	0.0
82	10	1	2	14	3	25	4.6	64.0	0.0	32.0	0.0
83	10	1	2	14	8	42	4.6	57.2	2.4	38.1	0.0
84	10	1	2	14	13	31	4.6	67.8	0.0	29.0	0.0
85	10	1	2	14	18	41	4.6	70.7	0.0	14.6	0.0
86	10	1	2	14	23	38	4.6	52.6	7.9	29.0	0.0
87	10	1	2	14	28	73	4.5	69.9	0.0	28.8	0.0

Table AII.60: (Continued) 2010 West Loch surface water survey radon measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
88	10	1	2	14	33	73	4.5	76.7	0.0	16.5	0.0
89	10	1	2	14	38	72	4.5	66.7	1.4	25.0	0.0
90	10	1	2	14	43	63	4.6	73.0	0.0	23.8	0.0
91	10	1	2	14	48	69	4.6	56.5	0.0	37.7	0.0
92	10	1	2	14	53	83	4.5	62.7	0.0	32.5	1.2
93	10	1	2	14	58	80	4.5	72.5	0.0	21.3	0.0
94	10	1	2	15	3	86	4.5	65.1	1.2	31.4	0.0
95	10	1	2	15	8	84	4.5	61.9	0.0	36.9	0.0
96	10	1	2	15	13	72	4.5	48.6	2.8	44.5	0.0
97	10	1	2	15	18	71	4.6	45.1	1.4	52.1	1.4
98	10	1	2	15	23	36	4.6	30.6	2.8	63.9	0.0
99	10	1	2	15	28	30	4.6	23.3	0.0	70.0	0.0
100	10	1	2	15	33	41	4.6	14.6	2.5	80.5	0.0
101	10	1	2	15	38	36	4.6	19.5	0.0	80.6	0.0
102	10	1	2	15	43	52	4.6	28.9	5.8	61.6	0.0
103	10	1	2	15	48	49	4.6	18.4	0.0	81.6	0.0
104	10	1	2	15	53	47	4.6	19.2	4.3	72.4	2.1
105	10	1	2	15	58	41	4.6	24.4	0.0	75.6	0.0
106	10	1	2	16	3	33	4.6	21.2	0.0	78.8	0.0
107	10	1	2	16	8	38	4.6	31.6	0.0	65.8	0.0
108	10	1	2	16	8	2	0.1	0.0	0.0	100.0	0.0

Table AII.61: 2010 West Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp ℃	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
51	2201	9	31.6	43	2	7	50	5	0.000	37.554
52	2218	9	31.9	24	2	6.9	70	5	9.439	45.575
53	2218	9	32.2	15	2	6.9	70	5	18.878	51.575
54	2218	9	32.2	12	2	6.9	70	5	132.145	91.991
55	2218	9	32.2	11	2	6.9	70	5	151.022	96.713
56	2218	9	32.8	10	2	6.9	70	5	217.095	111.360
57	2218	9	32.8	9	2	6.9	70	5	217.095	111.360
58	2218	9	33.2	9	2	6.9	70	5	292.606	125.667
59	2218	9	32.8	9	2	6.9	70	5	273.728	122.276
60	2218	9	32.5	8	2	6.9	70	5	244.099	116.344
61	2218	8	32.2	8	2	6.9	70	5	209.913	110.602
62	2218	9	31.9	8	2	6.9	70	5	181.288	104.425

Table AII.61: (Continued) 2010 West Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
63	2218	9	31.9	8	2	6.9	70	5	152.664	97.764
64	2201	8	32.2	8	2	6.9	70	5	171.747	104.425
65	2218	8	32.5	8	2	6.9	70	5	114.498	87.888
66	2218	9	32.5	7	2	6.9	70	5	122.706	89.512
67	2218	8	32.5	7	2	6.9	70	5	132.145	91.991
68	2218	9	32.5	7	2	6.9	70	5	181.288	104.425
69	2201	9	32.8	7	2	6.9	70	5	162.205	100.045
70	2218	8	32.8	7	2	6.9	70	5	112.661	91.499
71	2218	9	32.5	7	2	6.9	70	5	227.758	113.879
72	2218	9	32.5	7	2	6.9	70	5	152.664	97.764
73	2218	9	32.5	7	2	6.9	70	5	104.956	85.188
74	2218	8	32.8	7	2	6.9	70	5	314.869	130.355
75	2218	8	33.2	7	2	6.9	70	5	190.830	106.532
76	2201	9	33.5	7	2	6.9	70	5	171.747	102.264
77	2218	8	33.5	7	1	6.9	70	5	95.415	82.374
78	2218	8	33.5	7	1	6.9	70	5	143.122	95.415
79	2218	8	33.5	7	1	6.9	70	5	143.122	95.415
80	2218	8	33.2	7	1	6.9	70	5	95.415	82.374
81	2218	8	33.5	7	1	6.9	70	5	238.537	116.388
82	2218	8	33.2	7	1	6.9	70	5	228.996	114.498
83	2218	9	32.8	6	1	6.9	70	5	381.660	141.274
84	2218	9	32.5	6	1	6.9	70	5	286.245	125.333
85	2218	8	32.2	6	1	6.9	70	5	333.952	133.581
86	2218	8	31.9	6	1	6.9	70	5	295.786	127.033
87	2218	9	31.6	6	1	6.9	70	5	690.742	183.123
88	2218	8	31.6	6	1	6.9	70	5	652.367	178.569
89	2218	8	31.3	6	1	6.9	70	5	633.180	176.242
90	2218	8	31.3	6	1	6.9	70	5	582.031	169.343
91	2218	9	31.3	6	1	6.9	70	5	620.197	174.114
92	2201	8	31.3	6	1	6.9	70	5	748.303	190.803
93	2201	9	31.3	6	1	6.9	70	5	719.523	186.458
94	2218	8	31.3	6	1	6.9	70	5	796.272	195.041
95	2218	8	31.6	6	1	6.9	70	5	796.272	195.041
96	2218	8	31.6	6	1	6.9	70	5	642.773	177.410
97	2218	8	31.6	6	1	6.9	70	5	658.363	178.743
98	2218	9	31.3	6	1	7	70	5	324.411	131.980

Table AII.61: (Continued) 2010 West Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
99	2201	9	31.3	6	1	6.9	70	5	267.162	121.848
100	2218	8	31.3	6	1	6.9	70	5	372.118	139.774
101	2218	8	31	6	1	6.9	70	5	343.494	135.160
102	2218	8	31	6	1	6.9	70	5	448.450	151.294
103	2218	8	31	6	1	6.9	70	5	467.533	154.020
104	2201	9	31	6	1	6.9	70	5	410.284	145.665
105	2218	8	31	6	1	6.9	70	5	391.201	142.755
106	2218	9	31	6	1	6.9	70	5	314.869	130.355
107	2218	9	30.7	6	1	6.9	70	5	353.035	136.718
108	2218	9	30.7	6	1	6.9	70	5	877.818	2398.242

Table AII.62: 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	11:15:48	24.57	40.44	25.84	72.2	N/A	0.100	7.75	3.8	122.1
1/2/2010	11:16:16	24.83	42.79	27.51	60.4	N/A	0.086	7.73	4.2	115.8
1/2/2010	11:17:16	25.62	49.90	32.65	67.2	N/A	0.111	8.04	6.0	100.2
1/2/2010	11:18:16	25.48	50.57	33.15	63.9	N/A	0.115	8.11	4.0	85.4
1/2/2010	11:19:16	25.46	49.72	32.52	63.2	N/A	0.081	8.12	3.8	75.7
1/2/2010	11:20:48	24.46	44.72	28.90	53.7	N/A	0.037	8.00	2.9	69.3
1/2/2010	11:21:16	24.47	40.33	25.77	57.9	N/A	0.023	8.00	3.2	67.3
1/2/2010	11:22:16	24.69	49.78	32.58	58.6	N/A	0.076	7.99	3.9	66.3
1/2/2010	11:23:16	24.83	49.65	32.48	62.4	N/A	0.130	8.06	3.4	62.7
1/2/2010	11:24:16	24.94	50.52	33.12	66.1	N/A	0.132	8.11	3.2	60.2
1/2/2010	11:25:48	25.07	51.19	33.61	69.8	N/A	0.103	8.15	1.1	58.1
1/2/2010	11:26:16	25.12	51.27	33.67	70.6	N/A	0.111	8.16	2.8	57.5
1/2/2010	11:27:16	24.63	46.29	30.04	61.6	N/A	0.077	8.04	2.7	54.4
1/2/2010	11:28:16	24.62	46.71	30.34	56.4	N/A	0.053	8.02	3.1	53.5
1/2/2010	11:29:16	24.37	46.22	30.00	52.7	N/A	0.115	7.91	2.9	53.8
1/2/2010	11:30:48	24.34	49.29	32.23	57.3	N/A	0.068	7.98	3.1	51.7
1/2/2010	11:31:16	24.28	48.11	31.37	53.8	N/A	0.041	7.95	3.4	51.6
1/2/2010	11:32:16	24.04	47.07	30.61	52.1	N/A	0.024	7.90	2.8	51.3
1/2/2010	11:33:16	24.25	47.52	30.94	55.3	N/A	0.016	7.93	2.6	50.2
1/2/2010	11:34:16	24.50	47.54	30.95	54.8	N/A	0.035	7.96	3.9	48.2
1/2/2010	11:35:48	25.78	47.26	30.72	76.2	N/A	0.019	8.14	3.0	45.8
1/2/2010	11:36:16	25.95	47.76	31.08	79.6	N/A	0.012	8.17	2.6	45.5
1/2/2010	11:37:16	25.89	48.48	31.61	80.2	N/A	0.013	8.19	4.4	44.7
1/2/2010	11:38:16	26.01	48.56	31.66	79.3	N/A	0.018	8.19	4.0	43.5
1/2/2010	11:39:16	26.01	14.35	8.30	79.2	N/A	0.003	8.17	8.1	42.5
1/2/2010	11:40:48	26.47	14.93	8.66	83.8	N/A	-0.003	8.17	33.0	41.6
1/2/2010	11:41:16	26.39	41.88	26.83	82.6	N/A	-0.002	8.13	13.1	41.7
1/2/2010	11:42:16	26.34	34.32	21.52	80.8	N/A	-0.001	8.12	22.7	38.8
1/2/2010	11:43:16	26.01	22.18	13.33	79.9	N/A	-0.005	8.14	53.1	37.6
1/2/2010	11:44:16	25.72	13.79	7.95	80.2	N/A	-0.002	8.15	51.4	36.6
1/2/2010	11:45:48	25.59	1.38	0.69	82.2	N/A	-0.001	8.15	255.2	36.8
1/2/2010	11:46:16	25.72	42.31	27.15	81.5	N/A	0.013	8.14	136.3	37.1
1/2/2010	11:47:16	25.63	0.49	0.24	83.5	N/A	-0.002	8.14	197.6	37.0
1/2/2010	11:48:16	25.40	0.30	0.14	84.7	N/A	-0.002	8.15	243.4	37.4
1/2/2010	11:49:16	25.51	23.68	14.32	84.3	N/A	-0.002	8.16	3.4	37.4
1/2/2010	11:50:48	25.48	24.13	14.62	84.3	N/A	-0.002	8.17	3.5	37.4
1/2/2010	11:51:16	25.44	24.55	14.90	83.2	N/A	-0.002	8.17	4.4	37.5
1/2/2010	11:52:16	25.48	47.04	30.57	81.9	N/A	-0.002	8.16	5.2	37.2

Table AII.62: (Continued) 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	11:53:16	25.54	47.14	30.63	82.0	N/A	-0.002	8.15	4.1	37.6
1/2/2010	11:54:16	25.57	47.41	30.83	83.5	N/A	-0.002	8.17	4.8	37.2
1/2/2010	11:55:48	25.54	48.73	31.80	81.0	N/A	-0.002	8.15	5.3	37.5
1/2/2010	11:56:16	25.54	48.53	31.65	80.8	N/A	-0.003	8.15	5.8	37.5
1/2/2010	11:57:16	25.64	47.22	30.69	84.1	N/A	-0.002	8.16	4.6	37.2
1/2/2010	11:58:16	25.63	46.58	30.23	84.8	N/A	-0.003	8.16	4.2	37.0
1/2/2010	11:59:16	25.63	47.70	31.04	83.7	N/A	-0.003	8.16	4.5	37.5
1/2/2010	12:00:49	25.65	45.63	29.54	83.5	N/A	-0.003	8.17	3.5	36.6
1/2/2010	12:01:16	25.67	45.76	29.63	84.7	N/A	-0.003	8.16	3.6	36.5
1/2/2010	12:02:16	25.69	47.22	30.69	85.0	N/A	0.000	8.18	4.1	35.6
1/2/2010	12:03:16	25.68	46.74	30.34	85.4	N/A	-0.012	8.18	3.5	34.1
1/2/2010	12:04:16	25.65	48.31	31.49	86.6	N/A	-0.013	8.20	5.0	23.5
1/2/2010	12:05:48	25.47	49.32	32.23	88.2	N/A	-0.012	8.22	4.6	16.9
1/2/2010	12:06:16	25.35	49.29	32.21	88.3	N/A	-0.012	8.22	7.1	16.4
1/2/2010	12:07:16	25.26	4.46	2.37	89.6	N/A	-0.014	8.24	11.1	14.5
1/2/2010	12:08:16	25.10	15.56	9.07	88.4	N/A	-0.009	8.21	9.9	12.8
1/2/2010	12:09:16	25.09	50.46	33.07	89.9	N/A	0.002	8.22	2.9	15.6
1/2/2010	12:10:49	25.01	50.42	33.05	82.7	N/A	0.029	8.21	2.8	20.4
1/2/2010	12:11:16	25.00	50.61	33.18	85.6	N/A	0.037	8.22	2.8	21.7
1/2/2010	12:12:16	25.16	50.80	33.33	76.4	N/A	0.029	8.16	3.9	23.2
1/2/2010	12:13:16	25.17	50.69	33.24	74.4	N/A	0.019	8.16	3.4	23.3
1/2/2010	12:14:16	25.22	50.59	33.17	74.3	N/A	0.010	8.16	2.2	20.9
1/2/2010	12:15:48	25.20	5.40	2.91	85.4	N/A	0.009	8.23	24.2	12.6
1/2/2010	12:16:16	25.23	2.79	1.44	83.7	N/A	-0.004	8.20	39.9	10.3
1/2/2010	12:17:16	25.46	2.27	1.16	86.3	N/A	-0.009	8.23	13.7	5.7
1/2/2010	12:18:16	25.70	5.29	2.84	90.2	N/A	0.004	8.21	46.6	4.3
1/2/2010	12:19:16	25.14	45.07	29.15	103.1	N/A	-0.001	8.36	75.8	4.5
1/2/2010	12:20:48	25.00	7.49	4.13	105.9	N/A	0.002	8.37	163.1	4.5
1/2/2010	12:21:16	25.05	2.79	1.44	106.0	N/A	-0.001	8.37	130.9	4.8
1/2/2010	12:22:16	25.08	6.23	3.39	106.2	N/A	-0.007	8.36	162.3	5.3
1/2/2010	12:23:16	25.00	2.75	1.42	105.9	N/A	-0.007	8.36	235.0	5.7
1/2/2010	12:24:16	24.95	43.56	28.06	100.7	N/A	0.009	8.34	163.0	5.6
1/2/2010	12:25:48	24.89	42.15	27.05	103.0	N/A	-0.006	8.35	77.9	5.1
1/2/2010	12:26:16	25.01	15.58	9.09	103.1	N/A	-0.007	8.35	112.3	5.4
1/2/2010	12:27:16	25.24	1.87	0.95	98.4	N/A	-0.009	8.32	164.8	5.1
1/2/2010	12:28:16	25.42	27.37	16.78	98.4	N/A	-0.009	8.32	187.1	5.1
1/2/2010	12:29:16	25.44	51.33	33.71	89.8	N/A	-0.007	8.24	4.6	4.6

Table AII.62: (Continued) 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	12:30:48	25.42	51.39	33.75	89.4	N/A	-0.007	8.26	3.6	3.0
1/2/2010	12:31:16	25.40	51.40	33.76	91.2	N/A	-0.007	8.27	4.7	2.9
1/2/2010	12:32:16	25.49	51.37	33.74	91.3	N/A	0.004	8.27	4.5	2.3
1/2/2010	12:33:16	25.74	51.30	33.68	91.4	N/A	-0.012	8.26	3.4	1.6
1/2/2010	12:34:16	25.72	51.32	33.69	94.6	N/A	-0.017	8.27	3.9	1.2
1/2/2010	12:35:48	25.60	51.36	33.72	95.8	N/A	-0.015	8.28	4.6	0.8
1/2/2010	12:36:16	25.57	51.33	33.70	95.6	N/A	-0.013	8.28	4.9	0.7
1/2/2010	12:37:16	25.54	51.39	33.75	95.8	N/A	-0.009	8.29	5.0	0.4
1/2/2010	12:38:16	25.54	51.39	33.75	95.4	N/A	-0.014	8.29	5.8	0.1
1/2/2010	12:39:16	25.55	51.40	33.75	94.2	N/A	-0.012	8.27	5.1	0.1
1/2/2010	12:40:49	25.57	51.38	33.74	93.6	N/A	-0.016	8.28	5.0	-0.8
1/2/2010	12:41:16	25.54	15.42	8.98	93.8	N/A	-0.009	8.28	51.5	-0.7
1/2/2010	12:42:16	26.06	15.28	8.88	94.8	N/A	-0.007	8.27	11.2	-1.0
1/2/2010	12:43:16	25.48	1.11	0.55	95.1	N/A	-0.006	8.28	50.4	-0.6
1/2/2010	12:44:16	25.54	45.91	29.74	95.1	N/A	-0.006	8.28	24.7	-1.8
1/2/2010	12:45:49	25.55	15.42	8.98	95.0	N/A	-0.007	8.28	6.5	-4.3
1/2/2010	12:46:16	25.57	51.38	33.74	95.0	N/A	-0.007	8.28	8.5	-4.6
1/2/2010	12:47:16	25.59	15.51	9.04	95.4	N/A	-0.009	8.28	41.9	-5.3
1/2/2010	12:48:16	25.61	46.87	30.44	95.5	N/A	-0.007	8.28	20.9	-5.8
1/2/2010	12:49:16	25.79	51.26	33.64	95.6	N/A	-0.006	8.28	13.2	-6.3
1/2/2010	12:50:49	25.93	47.61	30.97	95.8	N/A	-0.008	8.28	5.7	-6.9
1/2/2010	12:51:16	25.89	51.35	33.71	97.6	N/A	-0.014	8.29	5.4	-7.0
1/2/2010	12:52:16	25.30	51.37	33.74	97.9	N/A	-0.012	8.30	4.3	-6.6
1/2/2010	12:53:16	25.33	11.91	6.79	95.3	N/A	0.018	8.29	85.9	-7.0
1/2/2010	12:54:16	25.54	28.24	17.37	96.0	N/A	0.015	8.27	50.8	-6.9
1/2/2010	12:55:49	25.42	15.46	9.00	97.6	N/A	-0.006	8.30	66.7	-7.4
1/2/2010	12:56:16	25.54	50.29	32.94	111.4	N/A	-0.012	8.36	40.2	-7.4
1/2/2010	12:57:16	25.66	49.94	32.68	136.2	N/A	-0.014	8.42	5.5	-7.6
1/2/2010	12:58:16	25.62	2.68	1.38	112.7	N/A	-0.016	8.36	66.8	-7.4
1/2/2010	12:59:16	25.37	25.79	15.73	103.3	N/A	-0.011	8.34	7.6	-7.5
1/2/2010	13:00:48	25.04	50.67	33.23	100.4	N/A	0.017	8.33	4.6	-8.4
1/2/2010	13:01:16	25.00	50.61	33.19	99.5	N/A	0.014	8.31	5.4	-8.1
1/2/2010	13:02:16	24.93	24.38	14.80	95.9	N/A	-0.014	8.30	4.5	-8.6
1/2/2010	13:03:16	24.91	7.03	3.86	94.2	N/A	-0.009	8.29	25.7	-9.0
1/2/2010	13:04:16	24.84	3.27	1.71	93.9	N/A	-0.011	8.30	39.5	-9.3
1/2/2010	13:05:48	24.95	2.51	1.29	105.5	N/A	-0.010	8.36	38.4	-9.9
1/2/2010	13:06:16	24.96	11.27	6.40	107.3	N/A	-0.004	8.37	19.2	-9.7

Table AII.62: (Continued) 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	13:07:16	24.93	50.76	33.30	107.6	N/A	0.010	8.36	6.5	-9.8
1/2/2010	13:08:16	25.43	50.50	33.10	104.6	N/A	-0.001	8.32	4.1	-10.4
1/2/2010	13:09:16	26.02	3.52	1.84	115.0	N/A	-0.013	8.38	17.1	-10.8
1/2/2010	13:10:48	25.08	50.87	33.37	105.8	N/A	0.005	8.36	5.1	-11.1
1/2/2010	13:11:16	25.25	50.77	33.30	106.3	N/A	-0.004	8.35	5.2	-11.5
1/2/2010	13:12:16	25.12	31.88	19.85	102.9	N/A	0.014	8.29	27.7	-11.8
1/2/2010	13:13:16	25.91	39.36	25.05	108.6	N/A	-0.011	8.34	7.3	-12.5
1/2/2010	13:14:16	25.63	50.73	33.26	110.3	N/A	-0.012	8.34	3.3	-12.5
1/2/2010	13:15:48	24.80	50.72	33.27	106.5	N/A	-0.001	8.37	7.7	-12.9
1/2/2010	13:16:16	25.35	39.38	25.08	110.2	N/A	-0.003	8.39	8.2	-12.9
1/2/2010	13:17:16	25.24	28.70	17.68	107.8	N/A	-0.004	8.37	14.7	-13.2
1/2/2010	13:18:16	25.22	15.26	8.88	107.3	N/A	-0.009	8.36	8.9	-13.4
1/2/2010	13:19:16	25.45	49.13	32.09	112.7	N/A	0.005	8.39	5.5	-13.6
1/2/2010	13:20:48	25.77	24.58	14.92	121.0	N/A	0.003	8.41	22.5	-14.2
1/2/2010	13:21:16	25.62	22.55	13.57	127.1	N/A	0.005	8.43	18.4	-14.0
1/2/2010	13:22:16	25.53	25.14	15.29	119.9	N/A	0.005	8.40	13.1	-13.5
1/2/2010	13:23:16	25.05	28.66	17.66	113.5	N/A	0.005	8.38	15.7	-13.8
1/2/2010	13:24:16	25.16	50.36	33.00	117.1	N/A	0.005	8.39	7.5	-14.0
1/2/2010	13:25:48	25.02	50.70	33.25	112.9	N/A	-0.013	8.39	5.7	-15.0
1/2/2010	13:26:16	25.11	50.66	33.22	113.4	N/A	-0.013	8.39	5.9	-15.0
1/2/2010	13:27:16	25.20	50.76	33.29	115.3	N/A	-0.014	8.39	5.7	-15.0
1/2/2010	13:28:16	25.18	50.77	33.30	116.4	N/A	-0.014	8.39	6.1	-14.8
1/2/2010	13:29:16	25.23	50.77	33.30	116.1	N/A	-0.014	8.40	6.4	-15.0
1/2/2010	13:30:48	25.46	50.76	33.29	115.2	N/A	-0.014	8.39	5.6	-15.7
1/2/2010	13:31:16	25.45	50.77	33.30	115.2	N/A	-0.014	8.39	4.9	-16.0
1/2/2010	13:32:16	25.39	50.78	33.31	115.4	N/A	-0.015	8.39	5.8	-17.2
1/2/2010	13:33:16	25.70	5.80	3.13	115.7	N/A	-0.012	8.39	86.5	-18.2
1/2/2010	13:34:16	25.21	6.47	3.53	116.7	N/A	-0.007	8.41	92.8	-20.1
1/2/2010	13:35:48	24.86	5.88	3.19	105.4	N/A	-0.011	8.37	136.0	-20.4
1/2/2010	13:36:16	24.96	2.48	1.27	101.2	N/A	-0.009	8.35	124.2	-20.1
1/2/2010	13:37:16	24.89	2.48	1.28	106.5	N/A	-0.008	8.39	146.6	-20.1
1/2/2010	13:38:16	25.42	2.84	1.47	116.0	N/A	-0.013	8.40	114.1	-19.8
1/2/2010	13:39:16	24.99	2.92	1.51	107.4	N/A	0.004	8.39	119.3	-20.0
1/2/2010	13:40:48	25.09	2.86	1.48	104.8	N/A	-0.020	8.38	136.2	-20.1
1/2/2010	13:41:16	25.22	1.97	1.00	107.0	N/A	-0.014	8.39	123.1	-20.0
1/2/2010	13:42:16	25.38	9.17	5.12	110.1	N/A	-0.016	8.39	3.3	-20.8
1/2/2010	13:43:16	25.17	34.08	21.37	98.3	N/A	-0.016	8.35	3.4	-22.3

Table AII.62: (Continued) 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	13:44:16	25.14	50.91	33.40	109.2	N/A	-0.015	8.40	4.4	-25.5
1/2/2010	13:45:49	25.27	27.90	17.15	108.8	N/A	-0.022	8.39	3.8	-23.9
1/2/2010	13:46:16	25.05	50.84	33.36	105.8	N/A	-0.016	8.38	3.2	-23.4
1/2/2010	13:47:16	24.95	50.27	32.94	105.0	N/A	-0.016	8.38	3.3	-23.8
1/2/2010	13:48:16	25.02	38.67	24.58	105.5	N/A	-0.016	8.38	4.9	-23.7
1/2/2010	13:49:16	24.72	50.62	33.20	107.1	N/A	0.014	8.39	6.4	-23.4
1/2/2010	13:50:49	24.57	50.66	33.23	93.7	N/A	0.006	8.34	3.1	-23.5
1/2/2010	13:51:16	24.65	50.77	33.31	101.6	N/A	0.008	8.38	4.4	-23.1
1/2/2010	13:52:16	24.65	50.54	33.15	89.4	N/A	0.005	8.31	2.7	-23.3
1/2/2010	13:53:16	24.65	23.09	13.94	94.5	N/A	-0.009	8.35	20.7	-23.9
1/2/2010	13:54:16	24.67	15.85	9.26	102.3	N/A	-0.008	8.37	17.4	-23.6
1/2/2010	13:55:49	25.11	22.96	13.85	102.1	N/A	-0.003	8.38	19.9	-23.1
1/2/2010	13:56:16	25.15	41.75	26.77	99.6	N/A	-0.002	8.33	7.9	-22.9
1/2/2010	13:57:16	25.42	43.12	27.74	106.9	N/A	-0.005	8.40	18.1	-22.7
1/2/2010	13:58:16	25.41	29.67	18.34	110.9	N/A	-0.005	8.41	13.1	-21.7
1/2/2010	13:59:16	25.09	8.03	4.44	103.2	N/A	-0.015	8.39	13.0	-21.9
1/2/2010	14:00:48	24.89	48.97	31.99	107.1	N/A	-0.018	8.40	52.5	-21.9
1/2/2010	14:01:16	24.87	50.87	33.38	105.9	N/A	-0.018	8.40	79.2	-21.9
1/2/2010	14:02:16	24.80	50.80	33.33	102.2	N/A	-0.018	8.36	26.2	-21.5
1/2/2010	14:03:16	24.79	50.80	33.33	100.4	N/A	-0.018	8.36	27.3	-22.0
1/2/2010	14:04:16	24.75	50.71	33.27	100.0	N/A	-0.017	8.35	29.7	-21.7
1/2/2010	14:05:48	24.80	50.80	33.33	99.6	N/A	-0.018	8.37	3.8	-22.2
1/2/2010	14:06:16	24.82	50.81	33.34	100.3	N/A	-0.018	8.38	4.7	-22.3
1/2/2010	14:07:16	24.85	28.11	17.29	106.5	N/A	-0.018	8.40	4.8	-22.0
1/2/2010	14:08:16	24.83	15.64	9.12	117.3	N/A	-0.019	8.44	9.9	-21.1
1/2/2010	14:09:16	24.85	50.67	33.24	112.3	N/A	-0.018	8.39	5.8	-20.3
1/2/2010	14:10:48	24.85	35.40	22.29	114.4	N/A	-0.018	8.43	6.6	-20.7
1/2/2010	14:11:16	24.83	15.64	9.12	111.8	N/A	-0.018	8.41	156.7	-20.5
1/2/2010	14:12:16	24.81	51.05	33.51	110.7	N/A	-0.018	8.42	85.7	-20.6
1/2/2010	14:13:16	24.81	51.05	33.52	109.1	N/A	-0.018	8.41	89.6	-20.4
1/2/2010	14:14:16	24.65	50.61	33.20	103.3	N/A	-0.018	8.36	89.6	-20.9
1/2/2010	14:15:48	24.95	2.63	1.36	114.3	N/A	-0.005	8.42	39.6	-21.0
1/2/2010	14:16:16	25.46	2.79	1.44	116.1	N/A	-0.006	8.43	85.4	-20.9
1/2/2010	14:17:16	25.29	6.94	3.80	112.5	N/A	-0.013	8.41	115.7	-20.6
1/2/2010	14:18:16	25.29	15.73	9.18	112.2	N/A	-0.020	8.40	11.9	-20.1
1/2/2010	14:19:16	25.49	9.19	5.13	116.5	N/A	-0.019	8.42	17.4	-20.4
1/2/2010	14:20:48	25.18	1.28	0.64	108.7	N/A	-0.020	8.37	90.1	-20.3

Table AII.62: (Continued) 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	14:21:16	25.15	1.94	0.99	111.3	N/A	-0.020	8.37	41.2	-19.8
1/2/2010	14:22:16	25.10	38.18	24.23	112.6	N/A	-0.022	8.27	11.8	-19.5
1/2/2010	14:23:16	25.19	7.78	4.30	110.7	N/A	-0.019	8.37	20.6	-19.2
1/2/2010	14:24:16	25.36	14.20	8.21	110.5	N/A	-0.022	8.33	25.3	-20.9
1/2/2010	14:25:48	25.19	15.61	9.10	111.0	N/A	-0.007	8.42	12.9	-25.0
1/2/2010	14:26:16	25.07	15.19	8.84	109.2	N/A	-0.010	8.40	18.1	-25.1
1/2/2010	14:27:16	24.88	26.60	16.28	102.2	N/A	-0.011	8.38	11.2	-25.8
1/2/2010	14:28:16	25.00	23.55	14.24	111.4	N/A	-0.010	8.42	9.6	-25.6
1/2/2010	14:29:16	24.95	46.21	29.97	101.2	N/A	-0.016	8.13	11.9	-25.3
1/2/2010	14:30:48	24.88	49.96	32.71	99.4	N/A	-0.020	8.28	5.9	-25.4
1/2/2010	14:31:16	24.89	50.16	32.86	100.7	N/A	-0.020	8.31	4.9	-25.5
1/2/2010	14:32:16	24.85	50.85	33.37	106.1	N/A	-0.020	8.38	6.3	-25.4
1/2/2010	14:33:16	25.00	7.09	3.89	108.1	N/A	0.000	8.37	73.2	-25.6
1/2/2010	14:34:16	24.99	3.19	1.66	113.8	N/A	-0.016	8.44	110.5	-26.1
1/2/2010	14:35:48	25.03	49.07	32.06	103.2	N/A	-0.014	8.40	28.2	-26.6
1/2/2010	14:36:16	25.20	51.09	33.53	109.0	N/A	-0.005	8.42	3.8	-26.2
1/2/2010	14:37:16	25.13	50.75	33.29	111.6	N/A	-0.002	8.42	4.1	-25.6
1/2/2010	14:38:16	25.51	49.09	32.06	107.9	N/A	-0.022	8.29	3.9	-25.5
1/2/2010	14:39:16	24.94	51.08	33.53	111.8	N/A	-0.009	8.42	5.4	-25.1
1/2/2010	14:40:48	24.98	50.98	33.46	108.4	N/A	-0.023	8.41	3.4	-25.6
1/2/2010	14:41:16	24.98	50.93	33.43	106.8	N/A	-0.010	8.40	2.8	-25.6
1/2/2010	14:42:16	25.31	43.89	28.29	102.5	N/A	-0.023	8.20	67.2	-26.7
1/2/2010	14:43:16	25.21	47.48	30.89	104.7	N/A	-0.024	8.29	69.2	-26.2
1/2/2010	14:44:16	25.14	0.91	0.44	101.3	N/A	-0.025	8.34	70.1	-26.7
1/2/2010	14:45:48	25.32	50.49	33.09	102.6	N/A	-0.024	8.36	5.2	-27.2
1/2/2010	14:46:16	25.31	50.54	33.13	104.2	N/A	-0.024	8.36	6.2	-27.1
1/2/2010	14:47:16	25.18	50.70	33.25	107.9	N/A	-0.025	8.39	6.6	-27.0
1/2/2010	14:48:16	25.72	36.26	22.88	121.6	N/A	-0.025	8.43	2.8	-26.8
1/2/2010	14:49:16	25.19	27.21	16.68	117.4	N/A	-0.026	8.42	61.4	-28.4
1/2/2010	14:50:49	25.38	26.72	16.35	121.4	N/A	-0.026	8.45	10.4	-28.7
1/2/2010	14:51:16	25.44	51.01	33.47	121.5	N/A	-0.026	8.44	15.8	-28.1
1/2/2010	14:52:16	25.35	50.81	33.32	119.6	N/A	-0.026	8.39	50.4	-27.3
1/2/2010	14:53:16	25.08	2.19	1.12	112.2	N/A	-0.010	8.42	57.2	-27.0
1/2/2010	14:54:16	24.88	3.98	2.10	106.3	N/A	-0.016	8.40	81.2	-27.0
1/2/2010	14:55:48	24.96	4.49	2.39	113.1	N/A	-0.015	8.43	81.5	-27.8
1/2/2010	14:56:16	24.88	44.52	28.75	104.4	N/A	-0.021	8.11	65.5	-26.6
1/2/2010	14:57:16	24.86	51.14	33.58	109.9	N/A	-0.026	8.41	6.0	-26.4

Table AII.62: (Continued) 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	14:58:16	24.83	1.32	0.66	111.3	N/A	-0.025	8.41	27.3	-26.4
1/2/2010	14:59:16	24.96	51.12	33.56	111.2	N/A	-0.025	8.41	7.7	-26.8
1/2/2010	15:00:48	24.89	49.36	32.27	108.5	N/A	-0.019	8.34	13.4	-26.2
1/2/2010	15:01:16	25.15	50.90	33.39	112.0	N/A	-0.009	8.44	17.9	-26.4
1/2/2010	15:02:16	25.12	51.40	33.77	115.9	N/A	-0.014	8.45	12.4	-25.9
1/2/2010	15:03:16	25.16	7.10	3.90	115.3	N/A	-0.010	8.45	82.9	-25.6
1/2/2010	15:04:16	25.46	51.29	33.68	113.5	N/A	-0.024	8.43	2.1	-25.3
1/2/2010	15:05:48	25.29	38.32	24.33	116.4	N/A	-0.019	8.46	35.9	-25.8
1/2/2010	15:06:16	25.31	49.47	32.34	116.5	N/A	-0.019	8.45	12.1	-25.3
1/2/2010	15:07:16	25.29	50.63	33.20	112.8	N/A	-0.020	8.43	12.9	-25.5
1/2/2010	15:08:16	25.19	0.74	0.36	112.7	N/A	-0.025	8.42	215.3	-25.1
1/2/2010	15:09:16	25.21	2.74	1.42	112.3	N/A	-0.026	8.42	241.2	-24.8
1/2/2010	15:10:48	25.23	3.13	1.63	113.9	N/A	-0.025	8.43	130.3	-25.0
1/2/2010	15:11:16	25.32	1.94	0.99	111.9	N/A	-0.025	8.42	132.9	-24.8
1/2/2010	15:12:16	25.44	1.79	0.90	112.5	N/A	-0.024	8.43	180.5	-24.8
1/2/2010	15:13:16	25.41	2.48	1.28	114.1	N/A	-0.024	8.43	151.9	-24.4
1/2/2010	15:14:16	25.43	1.52	0.76	114.0	N/A	-0.025	8.42	82.2	-24.5
1/2/2010	15:15:49	25.40	4.40	2.34	114.8	N/A	-0.027	8.43	80.7	-25.3
1/2/2010	15:16:16	25.39	2.28	1.17	115.2	N/A	-0.027	8.43	152.8	-24.8
1/2/2010	15:17:16	25.65	1.29	0.64	115.7	N/A	-0.027	8.43	29.7	-25.0
1/2/2010	15:18:16	25.48	1.51	0.76	115.3	N/A	-0.027	8.43	21.7	-24.7
1/2/2010	15:19:16	25.55	50.98	33.45	115.5	N/A	-0.018	8.43	6.3	-24.8
1/2/2010	15:20:48	25.43	50.99	33.46	116.8	N/A	-0.017	8.44	4.6	-25.0
1/2/2010	15:21:16	25.47	45.86	29.71	116.9	N/A	-0.009	8.44	5.5	-24.5
1/2/2010	15:22:16	25.56	51.19	33.60	116.6	N/A	-0.015	8.44	5.4	-24.6
1/2/2010	15:23:16	25.51	23.55	14.23	116.2	N/A	-0.003	8.44	45.4	-24.5
1/2/2010	15:24:16	25.38	7.67	4.23	116.1	N/A	-0.003	8.43	78.4	-24.5
1/2/2010	15:25:49	25.26	6.69	3.65	115.9	N/A	-0.005	8.44	76.0	-24.6
1/2/2010	15:26:16	25.43	5.18	2.78	115.3	N/A	-0.006	8.44	112.6	-24.7
1/2/2010	15:27:16	25.25	7.16	3.93	115.8	N/A	-0.004	8.44	75.0	-24.4
1/2/2010	15:28:16	25.23	32.61	20.36	116.3	N/A	-0.009	8.44	59.8	-23.9
1/2/2010	15:29:16	25.23	18.30	10.82	116.5	N/A	-0.012	8.44	16.1	-23.7
1/2/2010	15:30:48	25.16	14.60	8.47	118.4	N/A	-0.012	8.45	13.9	-24.0
1/2/2010	15:31:16	25.10	14.26	8.25	118.7	N/A	-0.011	8.45	7.6	-23.9
1/2/2010	15:32:16	25.26	51.39	33.75	117.1	N/A	-0.024	8.43	7.7	-24.1
1/2/2010	15:33:16	24.96	40.65	25.98	119.6	N/A	-0.025	8.46	84.4	-24.7
1/2/2010	15:34:16	25.11	31.01	19.26	116.4	N/A	-0.025	8.45	148.0	-25.0

Table AII.62: (Continued) 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	15:35:48	25.18	1.88	0.95	118.5	N/A	-0.021	8.44	63.4	-24.7
1/2/2010	15:36:16	25.24	9.01	5.03	116.1	N/A	-0.020	8.43	109.4	-24.7
1/2/2010	15:37:16	25.31	6.53	3.56	115.6	N/A	-0.024	8.43	126.5	-25.0
1/2/2010	15:38:16	25.46	7.62	4.20	114.4	N/A	-0.028	8.41	138.0	-24.7
1/2/2010	15:39:16	25.46	3.07	1.60	115.1	N/A	-0.031	8.42	148.1	-24.6
1/2/2010	15:40:48	25.42	1.87	0.95	110.4	N/A	-0.026	8.39	115.8	-25.2
1/2/2010	15:41:16	25.40	15.47	9.01	114.9	N/A	-0.027	8.42	132.8	-25.3
1/2/2010	15:42:16	25.38	4.76	2.54	116.0	N/A	-0.026	8.41	117.4	-24.7
1/2/2010	15:43:16	25.51	4.05	2.14	115.8	N/A	-0.022	8.42	192.6	-25.4
1/2/2010	15:44:16	25.60	15.41	8.97	116.8	N/A	-0.014	8.42	147.5	-25.1
1/2/2010	15:45:48	25.89	15.33	8.92	135.4	N/A	-0.025	8.47	21.7	-24.8
1/2/2010	15:46:16	25.62	10.11	5.69	122.6	N/A	-0.007	8.43	102.7	-24.8
1/2/2010	15:47:16	25.66	11.89	6.78	118.9	N/A	-0.014	8.43	71.6	-24.8
1/2/2010	15:48:16	25.93	8.12	4.50	120.3	N/A	-0.012	8.43	20.7	-24.7
1/2/2010	15:49:16	25.99	33.90	21.23	121.1	N/A	-0.016	8.43	45.3	-24.9
1/2/2010	15:50:48	26.05	10.64	6.01	119.3	N/A	-0.026	8.44	149.8	-25.8
1/2/2010	15:51:16	26.35	6.95	3.80	131.3	N/A	-0.027	8.47	115.4	-25.5
1/2/2010	15:52:16	25.74	6.38	3.47	117.4	N/A	-0.026	8.39	178.4	-25.0
1/2/2010	15:53:16	25.45	6.06	3.29	113.2	N/A	-0.026	8.38	224.2	-24.8
1/2/2010	15:54:16	25.74	5.68	3.07	116.3	N/A	-0.026	8.40	184.5	-25.4
1/2/2010	15:55:48	25.76	3.12	1.62	114.0	N/A	-0.026	8.38	86.2	-25.4
1/2/2010	15:56:16	25.87	0.82	0.40	113.0	N/A	-0.026	8.37	59.1	-27.3
1/2/2010	15:57:16	26.08	9.54	5.34	107.3	N/A	-0.026	8.34	210.7	-26.7
1/2/2010	15:58:16	25.82	9.59	5.37	116.2	N/A	-0.026	8.39	82.6	-26.9
1/2/2010	15:59:16	26.13	6.71	3.66	117.0	N/A	-0.023	8.39	159.3	-27.0
1/2/2010	16:00:48	26.26	7.40	4.06	96.3	N/A	-0.023	8.20	120.1	-26.9
1/2/2010	16:01:16	26.28	43.96	28.32	94.7	N/A	-0.024	8.16	27.7	-27.2
1/2/2010	16:02:16	26.27	46.74	30.33	96.6	N/A	-0.023	8.22	50.5	-27.1
1/2/2010	16:03:16	26.19	42.75	27.46	86.6	N/A	-0.023	8.06	12.0	-27.3
1/2/2010	16:04:16	26.30	1.08	0.53	102.8	N/A	-0.024	8.19	34.3	-27.2
1/2/2010	16:05:48	26.15	38.65	24.54	78.9	N/A	-0.023	7.93	9.1	-27.3
1/2/2010	16:06:16	26.43	41.18	26.33	78.4	N/A	-0.020	7.96	11.4	-27.0
1/2/2010	16:07:16	26.31	42.97	27.61	82.2	N/A	-0.011	7.96	12.2	-27.2
1/2/2010	16:08:16	26.40	40.57	25.89	91.6	N/A	-0.010	8.10	13.7	-28.0
1/2/2010	16:09:16	26.51	45.46	29.40	89.2	N/A	-0.015	8.13	14.5	-26.9
1/2/2010	16:10:48	26.33	39.98	25.48	79.5	N/A	-0.017	7.97	5.2	-28.3
1/2/2010	16:11:16	26.29	41.23	26.37	83.0	N/A	0.014	8.02	5.5	-28.0

Table AII.62: (Continued) 2010 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/2/2010	16:19:16	20.83	0.62	0.30	99.3	N/A	-0.023	7.26	5.9	-15.1
1/2/2010	16:20:48	21.67	0.64	0.31	98.9	N/A	-0.023	7.52	6.7	-21.3
1/2/2010	16:12:16	26.25	43.33	27.87	93.6	N/A	0.006	8.13	7.8	-27.7
1/2/2010	16:13:16	26.16	43.46	27.96	89.4	N/A	-0.005	8.09	7.4	-27.8
1/2/2010	16:14:16	23.20	0.70	0.34	98.5	N/A	-0.023	8.07	5.4	-19.7
1/2/2010	16:15:48	22.03	0.68	0.33	99.7	N/A	-0.022	7.87	6.8	-18.7
1/2/2010	16:16:16	21.81	0.69	0.34	99.8	N/A	-0.022	7.79	6.6	-20.8
1/2/2010	16:17:16	21.65	0.63	0.31	99.5	N/A	-0.022	7.63	7.0	-15.9
1/2/2010	16:18:16	21.58	0.57	0.28	99.1	N/A	-0.021	7.50	6.6	-15.9

Table AII.63: 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	11:23	21.37049	158.00734	1.3	8	0:00:30	1.0	232
1/2/2010	11:24	21.37048	158.00735	1.2	1	0:00:30	0.1	211
1/2/2010	11:24	21.37047	158.00735	1.2	1	0:00:30	0.1	170
1/2/2010	11:25	21.37048	158.00735	1.2	1	0:00:30	0.1	348
1/2/2010	11:25	21.37047	158.00736	1.3	2	0:00:30	0.2	228
1/2/2010	11:26	21.37046	158.00737	1.3	2	0:00:28	0.2	250
1/2/2010	11:26	21.37046	158.00739	1.2				
1/2/2010	11:27	21.37045	158.00739	1.3	1	0:00:30	0.1	172
1/2/2010	11:27	21.37041	158.00755	1.2	17	0:00:30	2.0	254
1/2/2010	11:28	21.37054	158.00787	1.0	37	0:00:30	4.0	295
1/2/2010	11:28	21.37071	158.00828	0.6	45	0:00:30	5.0	293
1/2/2010	11:29	21.37082	158.00864		40	0:00:30	5.0	289
1/2/2010	11:29	21.37079	158.00868		5	0:00:30	0.6	227
1/2/2010	11:30	21.37067	158.00861		15	0:00:30	2.0	149
1/2/2010	11:30	21.37064	158.00867		7	0:00:30	0.9	246
1/2/2010	11:31	21.37062	158.00867		2	0:00:30	0.2	166
1/2/2010	11:31	21.37062	158.00866		1	0:00:30	0.1	82
1/2/2010	11:32	21.37063	158.00866	0.7	1	0:00:30	0.1	51
1/2/2010	11:32	21.37059	158.00860	0.7	7	0:00:30	0.9	124
1/2/2010	11:33	21.37044	158.00848	0.9	21	0:00:30	3.0	145
1/2/2010	11:33	21.37026	158.00844	1.1	20	0:00:30	2.0	169
1/2/2010	11:34	21.37021	158.00863	1.3	20	0:00:30	2.0	256
1/2/2010	11:34	21.37025	158.00896	1.2	35	0:00:30	4.0	277
1/2/2010	11:35	21.37038	158.00930	1.2	37	0:00:30	4.0	292
1/2/2010	11:35	21.37041	158.00967	1.0	39	0:00:30	5.0	275
1/2/2010	11:36	21.37028	158.00997	1.2	34	0:00:30	4.0	246
1/2/2010	11:36	21.37019	158.01031	1.4	36	0:00:30	4.0	253
1/2/2010	11:37	21.37030	158.01063	1.3	36	0:00:30	4.0	290
1/2/2010	11:37	21.37040	158.01095	1.2	34	0:00:30	4.0	288
1/2/2010	11:38	21.37042	158.01131	1.2	38	0:00:30	5.0	273
1/2/2010	11:38	21.37039	158.01170	1.3	40	0:00:30	5.0	267
1/2/2010	11:39	21.37039	158.01208	1.2	39	0:00:30	5.0	269
1/2/2010	11:39	21.37032	158.01240	1.1	34	0:00:30	4.0	256
1/2/2010	11:40	21.37021	158.01270	1.1	33	0:00:30	4.0	248
1/2/2010	11:40	21.37012	158.01303	1.2	35	0:00:30	4.0	254
1/2/2010	11:41	21.37013	158.01338	1.1	36	0:00:30	4.0	272
1/2/2010	11:41	21.37019	158.01369	0.8	33	0:00:30	4.0	282
1/2/2010	11:42	21.37004	158.01392	1.1	29	0:00:30	4.0	234

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	11:42	21.36984	158.01419	1.3	36	0:00:30	4.0	232
1/2/2010	11:43	21.36969	158.01450	1.4	36	0:00:30	4.0	243
1/2/2010	11:43	21.36962	158.01487	1.5	39	0:00:30	5.0	259
1/2/2010	11:44	21.36956	158.01524	1.5	39	0:00:30	5.0	259
1/2/2010	11:44	21.36951	158.01561	1.5	39	0:00:30	5.0	262
1/2/2010	11:45	21.36946	158.01596	1.5	37	0:00:30	4.0	261
1/2/2010	11:45	21.36946	158.01619	1.5	24	0:00:30	3.0	271
1/2/2010	11:46	21.36979	158.01640		42	0:00:30	5.0	329
1/2/2010	11:46	21.37011	158.01664	1.3	44	0:00:30	5.0	326
1/2/2010	11:47	21.37035	158.01696	1.3	43	0:00:30	5.0	308
1/2/2010	11:47	21.37054	158.01730		41	0:00:30	5.0	301
1/2/2010	11:48	21.37063	158.01766		39	0:00:30	5.0	286
1/2/2010	11:48	21.37057	158.01801		37	0:00:30	4.0	260
1/2/2010	11:49	21.37050	158.01818		19	0:00:30	2.0	244
1/2/2010	11:49	21.37048	158.01817	1.2	2	0:00:30	0.2	170
1/2/2010	11:50	21.37048	158.01817	1.3	1	0:00:30	0.1	82
1/2/2010	11:50	21.37050	158.01816	1.2	2	0:00:30	0.3	23
1/2/2010	11:51	21.37053	158.01815	1.3	4	0:00:30	0.4	12
1/2/2010	11:51	21.37054	158.01817	1.3	2	0:00:30	0.2	311
1/2/2010	11:52	21.37060	158.01815	1.2	6	0:00:30	0.8	18
1/2/2010	11:52	21.37065	158.01814	1.3	6	0:00:30	0.7	12
1/2/2010	11:53	21.37068	158.01813	1.3	4	0:00:30	0.5	8
1/2/2010	11:53	21.37072	158.01815	1.3	5	0:00:30	0.6	338
1/2/2010	11:54	21.37075	158.01816	1.3	4	0:00:30	0.5	338
1/2/2010	11:54	21.37080	158.01819	1.2	5	0:00:30	0.6	334
1/2/2010	11:55	21.37084	158.01821	1.3	5	0:00:30	0.6	334
1/2/2010	11:55	21.37087	158.01823	1.3	4	0:00:30	0.5	327
1/2/2010	11:56	21.37090	158.01825	1.2	4	0:00:30	0.5	327
1/2/2010	11:56	21.37092	158.01827	1.2	4	0:00:30	0.4	328
1/2/2010	11:57	21.37096	158.01829	1.4	5	0:00:30	0.5	332
1/2/2010	11:57	21.37100	158.01830	1.3	5	0:00:30	0.6	342
1/2/2010	11:58	21.37104	158.01830	1.3	4	0:00:30	0.5	3
1/2/2010	11:58	21.37107	158.01828	1.3	4	0:00:30	0.5	25
1/2/2010	11:59	21.37111	158.01828	1.2	4	0:00:30	0.5	7
1/2/2010	11:59	21.37114	158.01828	1.3	4	0:00:30	0.4	0
1/2/2010	12:00	21.37119	158.01828	1.4	5	0:00:30	0.6	1
1/2/2010	12:00	21.37122	158.01828	1.3	4	0:00:30	0.5	2
1/2/2010	12:01	21.37124	158.01822	1.3	6	0:00:30	0.8	73

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	12:01	21.37112	158.01815	1.2	15	0:00:30	2.0	152
1/2/2010	12:02	21.37094	158.01805	1.3	23	0:00:30	3.0	152
1/2/2010	12:02	21.37071	158.01800	1.2	26	0:00:30	3.0	168
1/2/2010	12:03	21.37050	158.01795	1.2	24	0:00:30	3.0	167
1/2/2010	12:03	21.37034	158.01784	1.3	21	0:00:30	3.0	148
1/2/2010	12:04	21.37017	158.01771	1.3	23	0:00:30	3.0	145
1/2/2010	12:04	21.36997	158.01760	1.3	25	0:00:30	3.0	154
1/2/2010	12:05	21.36976	158.01751	1.3	25	0:00:30	3.0	158
1/2/2010	12:05	21.36954	158.01746	1.3	25	0:00:30	3.0	168
1/2/2010	12:06	21.36933	158.01741	1.3	24	0:00:30	3.0	167
1/2/2010	12:06	21.36914	158.01733	1.4	23	0:00:30	3.0	160
1/2/2010	12:07	21.36896	158.01725	1.3	22	0:00:30	3.0	156
1/2/2010	12:07	21.36878	158.01713	1.4	23	0:00:30	3.0	150
1/2/2010	12:08	21.36860	158.01702	1.4	23	0:00:30	3.0	150
1/2/2010	12:08	21.36844	158.01689	1.5	23	0:00:30	3.0	143
1/2/2010	12:09	21.36832	158.01672	1.5	22	0:00:30	3.0	126
1/2/2010	12:09	21.36821	158.01655	1.5	21	0:00:30	3.0	126
1/2/2010	12:10	21.36809	158.01636	1.5	23	0:00:30	3.0	122
1/2/2010	12:10	21.36797	158.01618	1.5	24	0:00:30	3.0	126
1/2/2010	12:11	21.36777	158.01587	1.6	39	0:00:30	5.0	124
1/2/2010	12:11	21.36754	158.01555	1.6	41	0:00:30	5.0	127
1/2/2010	12:12	21.36729	158.01528	1.7	40	0:00:30	5.0	136
1/2/2010	12:12	21.36704	158.01501	1.7	39	0:00:30	5.0	134
1/2/2010	12:13	21.36685	158.01472	1.6	37	0:00:30	4.0	124
1/2/2010	12:13	21.36679	158.01439	1.7	35	0:00:30	4.0	101
1/2/2010	12:14	21.36666	158.01408	1.3	35	0:00:30	4.0	115
1/2/2010	12:14	21.36660	158.01380	1.8	30	0:00:30	4.0	104
1/2/2010	12:15	21.36642	158.01360	1.7	29	0:00:30	3.0	134
1/2/2010	12:15	21.36619	158.01332	1.8	39	0:00:30	5.0	132
1/2/2010	12:16	21.36600	158.01295	1.9	43	0:00:30	5.0	118
1/2/2010	12:16	21.36575	158.01262	2.0	44	0:00:30	5.0	130
1/2/2010	12:17	21.36548	158.01231	2.1	44	0:00:30	5.0	132
1/2/2010	12:17	21.36530	158.01192	2.1	45	0:00:30	5.0	117
1/2/2010	12:18	21.36506	158.01157	1.9	45	0:00:30	5.0	126
1/2/2010	12:18	21.36477	158.01130	1.5	42	0:00:30	5.0	139
1/2/2010	12:19	21.36447	158.01112	1.9	39	0:00:30	5.0	151
1/2/2010	12:19	21.36414	158.01122	0.9	38	0:00:30	5.0	195
1/2/2010	12:20	21.36385	158.01123	2.1	32	0:00:30	4.0	182

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	12:20	21.36352	158.01136	1.8	40	0:00:30	5.0	200
1/2/2010	12:21	21.36320	158.01151	2.1	38	0:00:30	5.0	205
1/2/2010	12:21	21.36302	158.01190	2.1	45	0:00:30	5.0	243
1/2/2010	12:22	21.36290	158.01229	2.0	42	0:00:30	5.0	252
1/2/2010	12:22	21.36281	158.01266	2.2	40	0:00:30	5.0	255
1/2/2010	12:23	21.36286	158.01309	2.2	45	0:00:30	5.0	277
1/2/2010	12:23	21.36302	158.01349	2.3	45	0:00:30	5.0	293
1/2/2010	12:24	21.36335	158.01378	1.9	47	0:00:30	6.0	321
1/2/2010	12:24	21.36372	158.01399	1.8	46	0:00:30	6.0	332
1/2/2010	12:25	21.36404	158.01426	1.5	46	0:00:30	5.0	322
1/2/2010	12:25	21.36424	158.01458	1.5	40	0:00:30	5.0	303
1/2/2010	12:26	21.36439	158.01489	1.5	36	0:00:30	4.0	299
1/2/2010	12:26	21.36443	158.01525	1.5	37	0:00:30	4.0	277
1/2/2010	12:27	21.36444	158.01561	1.5	38	0:00:30	5.0	271
1/2/2010	12:27	21.36455	158.01595	1.4	37	0:00:30	4.0	290
1/2/2010	12:28	21.36466	158.01629	1.1	38	0:00:30	5.0	289
1/2/2010	12:28	21.36472	158.01660	1.0	33	0:00:30	4.0	280
1/2/2010	12:29	21.36476	158.01690	0.9	31	0:00:30	4.0	279
1/2/2010	12:29	21.36467	158.01688	1.0	10	0:00:30	1.2	167
1/2/2010	12:30	21.36463	158.01686	1.0	5	0:00:30	0.6	161
1/2/2010	12:30	21.36466	158.01686	1.0	4	0:00:30	0.5	0
1/2/2010	12:31	21.36464	158.01683	1.0	4	0:00:30	0.5	132
1/2/2010	12:31	21.36467	158.01682	1.0	4	0:00:30	0.4	16
1/2/2010	12:32	21.36470	158.01683	0.9	4	0:00:30	0.5	351
1/2/2010	12:32	21.36473	158.01682	0.8	3	0:00:30	0.4	20
1/2/2010	12:33	21.36476	158.01684	0.8	5	0:00:30	0.6	325
1/2/2010	12:33	21.36480	158.01684	0.8	4	0:00:30	0.5	6
1/2/2010	12:34	21.36480	158.01684	0.8	1	0:00:30	0.1	354
1/2/2010	12:34	21.36480	158.01684	0.8	0	0:00:30	0.0	13
1/2/2010	12:35	21.36480	158.01684	0.8	0	0:00:30	0.0	180
1/2/2010	12:35	21.36480	158.01684	0.8	0	0:00:30	0.0	70
1/2/2010	12:36	21.36480	158.01684	0.8	0	0:00:30	0.0	53
1/2/2010	12:36	21.36480	158.01684	0.8	0	0:00:30	0.0	0
1/2/2010	12:37	21.36480	158.01684	0.7	0	0:00:30	0.0	308
1/2/2010	12:37	21.36480	158.01684	0.7	0	0:00:30	0.0	293
1/2/2010	12:38	21.36480	158.01684	0.7	0	0:00:30	0.0	270
1/2/2010	12:38	21.36481	158.01684	0.7	0	0:00:30	0.0	298
1/2/2010	12:39	21.36481	158.01684	0.7	0	0:00:30	0.0	317

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	12:39	21.36481	158.01684	0.7	0	0:00:30	0.0	307
1/2/2010	12:40	21.36481	158.01685	0.7	0	0:00:30	0.0	292
1/2/2010	12:40	21.36481	158.01685	0.7	0	0:00:30	0.0	270
1/2/2010	12:41	21.36481	158.01685	0.7	0	0:00:30	0.0	290
1/2/2010	12:41	21.36483	158.01685		3	0:00:30	0.3	347
1/2/2010	12:42	21.36483	158.01685		0	0:00:30	0.0	213
1/2/2010	12:42	21.36496	158.01664		26	0:00:30	3.0	57
1/2/2010	12:43	21.36492	158.01670		8	0:00:30	0.9	240
1/2/2010	12:43	21.36491	158.01673		3	0:00:30	0.4	240
1/2/2010	12:44	21.36490	158.01676		3	0:00:30	0.3	243
1/2/2010	12:44	21.36490	158.01675		1	0:00:30	0.2	45
1/2/2010	12:45	21.36490	158.01676		1	0:00:30	0.2	242
1/2/2010	12:45	21.36489	158.01677		2	0:00:30	0.2	237
1/2/2010	12:46	21.36488	158.01679		2	0:00:30	0.2	234
1/2/2010	12:46	21.36487	158.01679		1	0:00:30	0.2	231
1/2/2010	12:47	21.36487	158.01680		1	0:00:30	0.1	240
1/2/2010	12:47	21.36487	158.01681		1	0:00:30	0.1	239
1/2/2010	12:48	21.36486	158.01681		1	0:00:30	0.1	236
1/2/2010	12:48	21.36486	158.01682	0.7	1	0:00:30	0.1	245
1/2/2010	12:49	21.36486	158.01682	0.7	0	0:00:30	0.1	243
1/2/2010	12:49	21.36486	158.01683	0.7	0	0:00:30	0.0	242
1/2/2010	12:50	21.36486	158.01683	0.7	0	0:00:30	0.0	242
1/2/2010	12:50	21.36486	158.01683	0.7	0	0:00:30	0.0	255
1/2/2010	12:51	21.36484	158.01687	0.7	4	0:00:30	0.5	250
1/2/2010	12:51	21.36472	158.01673	0.9	20	0:00:30	2.0	134
1/2/2010	12:52	21.36452	158.01661	1.2	25	0:00:30	3.0	153
1/2/2010	12:52	21.36432	158.01670	1.4	24	0:00:30	3.0	202
1/2/2010	12:53	21.36435	158.01688	1.3	19	0:00:30	2.0	281
1/2/2010	12:53	21.36429	158.01736	1.3	50	0:00:30	6.0	262
1/2/2010	12:54	21.36439	158.01778	1.1	45	0:00:30	5.0	285
1/2/2010	12:54	21.36428	158.01818	1.1	43	0:00:30	5.0	253
1/2/2010	12:55	21.36408	158.01855	1.2	45	0:00:30	5.0	240
1/2/2010	12:55	21.36388	158.01887	1.3	40	0:00:30	5.0	237
1/2/2010	12:56	21.36373	158.01922	1.2	40	0:00:30	5.0	245
1/2/2010	12:56	21.36364	158.01958	1.1	38	0:00:30	5.0	255
1/2/2010	12:57	21.36341	158.01969		28	0:00:30	3.0	204
1/2/2010	12:57	21.36360	158.01968	1.0	21	0:00:30	3.0	5
1/2/2010	12:58	21.36356	158.01937	1.2	32	0:00:30	4.0	98

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	12:58	21.36324	158.01913	1.0	44	0:00:30	5.0	145
1/2/2010	12:59	21.36297	158.01917	0.7	30	0:00:30	4.0	189
1/2/2010	12:59	21.36273	158.01920	0.9	27	0:00:30	3.0	186
1/2/2010	13:00	21.36245	158.01932	1.6	34	0:00:30	4.0	201
1/2/2010	13:00	21.36219	158.01953	1.5	36	0:00:30	4.0	217
1/2/2010	13:01	21.36193	158.01976	1.5	37	0:00:30	4.0	220
1/2/2010	13:01	21.36162	158.01993	1.4	40	0:00:30	5.0	207
1/2/2010	13:02	21.36128	158.02003	1.3	39	0:00:30	5.0	196
1/2/2010	13:02	21.36105	158.01991	1.2	29	0:00:30	3.0	154
1/2/2010	13:03	21.36078	158.01969	1.3	38	0:00:30	5.0	143
1/2/2010	13:03	21.36055	158.01939	1.4	40	0:00:30	5.0	130
1/2/2010	13:04	21.36025	158.01933	1.4	34	0:00:30	4.0	169
1/2/2010	13:04	21.35990	158.01935	1.4	39	0:00:30	5.0	183
1/2/2010	13:05	21.35955	158.01939	1.3	39	0:00:30	5.0	185
1/2/2010	13:05	21.35923	158.01930	1.2	37	0:00:30	4.0	165
1/2/2010	13:06	21.35893	158.01910	1.2	39	0:00:30	5.0	148
1/2/2010	13:06	21.35864	158.01891	1.3	38	0:00:30	5.0	149
1/2/2010	13:07	21.35835	158.01871	1.3	39	0:00:30	5.0	148
1/2/2010	13:07	21.35809	158.01854	1.3	34	0:00:30	4.0	149
1/2/2010	13:08	21.35792	158.01825	1.1	35	0:00:30	4.0	122
1/2/2010	13:08	21.35799	158.01798	1.3	29	0:00:30	4.0	75
1/2/2010	13:09	21.35813	158.01771	1.6	32	0:00:30	4.0	61
1/2/2010	13:09	21.35806	158.01734	1.8	39	0:00:30	5.0	101
1/2/2010	13:10	21.35800	158.01697	1.8	39	0:00:30	5.0	100
1/2/2010	13:10	21.35789	158.01664	1.8	36	0:00:30	4.0	110
1/2/2010	13:11	21.35765	158.01662	0.7	27	0:00:30	3.0	175
1/2/2010	13:11	21.35778	158.01641	0.8	26	0:00:30	3.0	56
1/2/2010	13:12	21.35807	158.01621	2.0	39	0:00:30	5.0	33
1/2/2010	13:12	21.35820	158.01578	2.2	46	0:00:30	6.0	72
1/2/2010	13:13	21.35822	158.01535	2.2	45	0:00:30	5.0	88
1/2/2010	13:13	21.35838	158.01504	2.3	37	0:00:30	4.0	61
1/2/2010	13:14	21.35854	158.01482	2.4	29	0:00:30	4.0	52
1/2/2010	13:14	21.35866	158.01466	2.5	21	0:00:30	3.0	49
1/2/2010	13:15	21.35896	158.01433	2.7	48	0:00:30	6.0	46
1/2/2010	13:15	21.35933	158.01394	3.1	57	0:00:30	7.0	45
1/2/2010	13:16	21.35934	158.01357	3.3	39	0:00:30	5.0	88
1/2/2010	13:16	21.35908	158.01336	3.2	37	0:00:30	4.0	144
1/2/2010	13:17	21.35877	158.01325	2.6	36	0:00:30	4.0	162

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	13:17	21.35843	158.01334	2.1	39	0:00:30	5.0	194
1/2/2010	13:18	21.35809	158.01344	3.1	40	0:00:30	5.0	194
1/2/2010	13:18	21.35776	158.01350	1.7	37	0:00:30	4.0	190
1/2/2010	13:19	21.35750	158.01327	2.2	37	0:00:30	4.0	140
1/2/2010	13:19	21.35731	158.01293	3.1	41	0:00:30	5.0	121
1/2/2010	13:20	21.35700	158.01275	2.8	39	0:00:30	5.0	152
1/2/2010	13:20	21.35673	158.01253	1.8	38	0:00:30	5.0	141
1/2/2010	13:21	21.35663	158.01215	3.2	40	0:00:30	5.0	107
1/2/2010	13:21	21.35650	158.01177	3.3	43	0:00:30	5.0	110
1/2/2010	13:22	21.35639	158.01138	3.3	42	0:00:30	5.0	107
1/2/2010	13:22	21.35633	158.01098	3.2	42	0:00:30	5.0	100
1/2/2010	13:23	21.35635	158.01056	3.2	43	0:00:30	5.0	86
1/2/2010	13:23	21.35644	158.01013	3.3	46	0:00:30	6.0	77
1/2/2010	13:24	21.35653	158.00972	3.0	44	0:00:30	5.0	77
1/2/2010	13:24	21.35674	158.00940	2.2	40	0:00:30	5.0	55
1/2/2010	13:25	21.35707	158.00918	3.4	44	0:00:30	5.0	32
1/2/2010	13:25	21.35737	158.00896	3.7	40	0:00:30	5.0	34
1/2/2010	13:26	21.35750	158.00882	3.1	21	0:00:30	3.0	46
1/2/2010	13:26	21.35758	158.00870	2.0	15	0:00:30	2.0	55
1/2/2010	13:27	21.35763	158.00865	1.6	7	0:00:30	0.9	44
1/2/2010	13:27	21.35768	158.00863	1.4	6	0:00:30	0.8	22
1/2/2010	13:28	21.35775	158.00861	1.3	8	0:00:30	1.0	13
1/2/2010	13:28	21.35782	158.00857	1.3	9	0:00:30	1.1	23
1/2/2010	13:29	21.35788	158.00856	1.4	6	0:00:30	0.7	9
1/2/2010	13:29	21.35790	158.00856	1.6	3	0:00:30	0.3	12
1/2/2010	13:30	21.35795	158.00855	1.8	5	0:00:30	0.7	9
1/2/2010	13:30	21.35799	158.00854	2.2	5	0:00:30	0.6	10
1/2/2010	13:31	21.35802	158.00853	2.4	4	0:00:30	0.5	17
1/2/2010	13:31	21.35805	158.00852	2.9	4	0:00:30	0.4	25
1/2/2010	13:32	21.35813	158.00851	3.4	8	0:00:30	1.0	5
1/2/2010	13:32	21.35819	158.00851	3.9	7	0:00:30	0.8	4
1/2/2010	13:33	21.35823	158.00851	4.4	5	0:00:30	0.6	354
1/2/2010	13:33	21.35821	158.00816	3.0	37	0:00:30	4.0	95
1/2/2010	13:34	21.35814	158.00771	5.4	47	0:00:30	6.0	99
1/2/2010	13:34	21.35773	158.00761	1.4	47	0:00:30	6.0	167
1/2/2010	13:35	21.35750	158.00723	2.2	47	0:00:30	6.0	122
1/2/2010	13:35	21.35717	158.00695	1.0	46	0:00:30	6.0	142
1/2/2010	13:36	21.35689	158.00663	2.3	46	0:00:30	6.0	133

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	13:36	21.35645	158.00653	2.8	50	0:00:30	6.0	168
1/2/2010	13:37	21.35603	158.00650	1.0	47	0:00:30	6.0	176
1/2/2010	13:37	21.35575	158.00611	5.4	51	0:00:30	6.0	128
1/2/2010	13:38	21.35539	158.00580	6.1	52	0:00:30	6.0	142
1/2/2010	13:38	21.35518	158.00538	2.1	50	0:00:30	6.0	118
1/2/2010	13:39	21.35530	158.00490	2.4	51	0:00:30	6.0	75
1/2/2010	13:39	21.35519	158.00442	2.1	51	0:00:30	6.0	104
1/2/2010	13:40	21.35500	158.00398	3.4	51	0:00:30	6.0	115
1/2/2010	13:40	21.35457	158.00395	4.3	47	0:00:30	6.0	177
1/2/2010	13:41	21.35419	158.00381	5.0	45	0:00:30	5.0	162
1/2/2010	13:41	21.35382	158.00381	5.2	41	0:00:30	5.0	179
1/2/2010	13:42	21.35364	158.00371	3.0	23	0:00:30	3.0	153
1/2/2010	13:42	21.35369	158.00370	5.1	6	0:00:30	0.7	12
1/2/2010	13:43	21.35362	158.00395	1.1	28	0:00:30	3.0	254
1/2/2010	13:43	21.35362	158.00398	1.0	3	0:00:30	0.3	269
1/2/2010	13:44	21.35374	158.00391	2.4	15	0:00:30	2.0	29
1/2/2010	13:44	21.35380	158.00380	5.6	13	0:00:30	2.0	63
1/2/2010	13:45	21.35363	158.00372	2.9	20	0:00:30	2.0	158
1/2/2010	13:45	21.35353	158.00338	2.6	37	0:00:30	4.0	107
1/2/2010	13:46	21.35345	158.00316	1.2	25	0:00:30	3.0	111
1/2/2010	13:46	21.35333	158.00299	1.4	22	0:00:30	3.0	128
1/2/2010	13:47	21.35318	158.00281	1.5	26	0:00:30	3.0	131
1/2/2010	13:47	21.35299	158.00266	1.3	26	0:00:30	3.0	144
1/2/2010	13:48	21.35284	158.00251	2.1	23	0:00:30	3.0	136
1/2/2010	13:48	21.35276	158.00222	4.9	31	0:00:30	4.0	106
1/2/2010	13:49	21.35251	158.00192	4.9	42	0:00:30	5.0	132
1/2/2010	13:49	21.35218	158.00164	5.6	47	0:00:30	6.0	142
1/2/2010	13:50	21.35210	158.00121	8.4	46	0:00:30	5.0	102
1/2/2010	13:50	21.35218	158.00078	8.9	46	0:00:30	5.0	78
1/2/2010	13:51	21.35235	158.00044	10.6	40	0:00:30	5.0	63
1/2/2010	13:51	21.35248	158.00007	10.5	40	0:00:30	5.0	68
1/2/2010	13:52	21.35261	157.99971	10.8	40	0:00:30	5.0	69
1/2/2010	13:52	21.35277	157.99933	10.7	43	0:00:30	5.0	67
1/2/2010	13:53	21.35296	157.99897	10.9	43	0:00:30	5.0	60
1/2/2010	13:53	21.35313	157.99861	11.0	42	0:00:30	5.0	62
1/2/2010	13:54	21.35326	157.99822	10.9	43	0:00:30	5.0	71
1/2/2010	13:54	21.35341	157.99784	10.7	42	0:00:30	5.0	67
1/2/2010	13:55	21.35356	157.99746	10.8	42	0:00:30	5.0	68

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	13:55	21.35372	157.99709	10.7	43	0:00:30	5.0	65
1/2/2010	13:56	21.35391	157.99671	10.8	44	0:00:30	5.0	61
1/2/2010	13:56	21.35395	157.99633	9.8	40	0:00:30	5.0	84
1/2/2010	13:57	21.35390	157.99594	7.7	42	0:00:30	5.0	98
1/2/2010	13:57	21.35389	157.99554	6.5	42	0:00:30	5.0	92
1/2/2010	13:58	21.35384	157.99514	5.9	41	0:00:30	5.0	97
1/2/2010	13:58	21.35373	157.99476	5.0	41	0:00:30	5.0	108
1/2/2010	13:59	21.35361	157.99438	5.8	42	0:00:30	5.0	108
1/2/2010	13:59	21.35351	157.99401	5.3	41	0:00:30	5.0	107
1/2/2010	14:00	21.35338	157.99389	3.7	19	0:00:30	2.0	139
1/2/2010	14:00	21.35335	157.99392	1.4	5	0:00:30	0.6	232
1/2/2010	14:01	21.35335	157.99393	1.5	1	0:00:30	0.1	240
1/2/2010	14:01	21.35335	157.99393	1.5	0	0:00:30	0.0	340
1/2/2010	14:02	21.35335	157.99394		1	0:00:30	0.1	241
1/2/2010	14:02	21.35335	157.99394	1.4	0	0:00:30	0.0	4
1/2/2010	14:03	21.35335	157.99393	1.4	0	0:00:30	0.0	42
1/2/2010	14:03	21.35336	157.99393	1.3	0	0:00:30	0.0	36
1/2/2010	14:04	21.35336	157.99393	1.3	0	0:00:30	0.0	41
1/2/2010	14:04	21.35336	157.99393	1.5	0	0:00:30	0.0	191
1/2/2010	14:05	21.35335	157.99393	1.5	0	0:00:30	0.0	193
1/2/2010	14:05	21.35335	157.99393	1.5	0	0:00:30	0.0	58
1/2/2010	14:06	21.35336	157.99393	1.5	0	0:00:30	0.1	46
1/2/2010	14:06	21.35336	157.99393	1.5	0	0:00:30	0.0	63
1/2/2010	14:07	21.35336	157.99392	1.5	0	0:00:30	0.0	60
1/2/2010	14:07	21.35336	157.99392	1.6	1	0:00:30	0.1	54
1/2/2010	14:08	21.35353	157.99390	5.7	18	0:00:30	2.0	7
1/2/2010	14:08	21.35353	157.99378	8.9	12	0:00:30	1.5	86
1/2/2010	14:09	21.35355	157.99386	9.3	8	0:00:30	1.0	283
1/2/2010	14:09	21.35336	157.99392	1.2	22	0:00:30	3.0	197
1/2/2010	14:10	21.35337	157.99392	1.2	0	0:00:30	0.0	336
1/2/2010	14:10	21.35337	157.99392	1.6	1	0:00:30	0.1	356
1/2/2010	14:11	21.35337	157.99392	1.6	0	0:00:30	0.0	18
1/2/2010	14:11	21.35338	157.99392	1.6	1	0:00:30	0.1	53
1/2/2010	14:12	21.35338	157.99391	1.6	0	0:00:30	0.0	70
1/2/2010	14:12	21.35337	157.99392	1.6	0	0:00:30	0.0	220
1/2/2010	14:13	21.35337	157.99392	1.3	1	0:00:30	0.1	228
1/2/2010	14:13	21.35337	157.99392	1.3	0	0:00:30	0.0	212
1/2/2010	14:14	21.35337	157.99392	1.3	0	0:00:30	0.0	192

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	14:14	21.35337	157.99392	1.5	0	0:00:30	0.0	45
1/2/2010	14:15	21.35337	157.99392	1.6	0	0:00:30	0.0	15
1/2/2010	14:15	21.35348	157.99392	5.6	13	0:00:30	2.0	0
1/2/2010	14:16	21.35336	157.99370	6.2	26	0:00:30	3.0	120
1/2/2010	14:16	21.35322	157.99329	9.5	46	0:00:30	5.0	111
1/2/2010	14:17	21.35293	157.99298	9.6	46	0:00:30	6.0	135
1/2/2010	14:17	21.35258	157.99278	8.8	44	0:00:30	5.0	152
1/2/2010	14:18	21.35221	157.99274	4.7	41	0:00:30	5.0	174
1/2/2010	14:18	21.35192	157.99285	5.3	34	0:00:30	4.0	199
1/2/2010	14:19	21.35160	157.99292	4.9	37	0:00:30	4.0	193
1/2/2010	14:19	21.35126	157.99290	3.8	37	0:00:30	4.0	177
1/2/2010	14:20	21.35098	157.99271	5.1	37	0:00:30	4.0	148
1/2/2010	14:20	21.35066	157.99256	7.9	39	0:00:30	5.0	157
1/2/2010	14:21	21.35033	157.99259	8.1	36	0:00:30	4.0	185
1/2/2010	14:21	21.35004	157.99265	6.7	33	0:00:30	4.0	190
1/2/2010	14:22	21.34969	157.99256	4.1	40	0:00:30	5.0	167
1/2/2010	14:22	21.34941	157.99242	3.4	35	0:00:30	4.0	156
1/2/2010	14:23	21.34910	157.99230	3.6	36	0:00:30	4.0	159
1/2/2010	14:23	21.34879	157.99207	3.0	42	0:00:30	5.0	146
1/2/2010	14:24	21.34875	157.99170	6.8	39	0:00:30	5.0	96
1/2/2010	14:24	21.34884	157.99132	10.1	40	0:00:30	5.0	76
1/2/2010	14:25	21.34886	157.99091	10.2	42	0:00:30	5.0	86
1/2/2010	14:25	21.34888	157.99051	11.2	42	0:00:30	5.0	87
1/2/2010	14:26	21.34891	157.99011	11.8	41	0:00:30	5.0	85
1/2/2010	14:26	21.34894	157.98971	12.4	41	0:00:30	5.0	86
1/2/2010	14:27	21.34893	157.98932	12.6	40	0:00:30	5.0	91
1/2/2010	14:27	21.34892	157.98892	11.3	42	0:00:30	5.0	92
1/2/2010	14:28	21.34894	157.98852	10.9	41	0:00:30	5.0	87
1/2/2010	14:28	21.34894	157.98813	11.1	40	0:00:30	5.0	90
1/2/2010	14:29	21.34887	157.98776	10.6	39	0:00:30	5.0	101
1/2/2010	14:29	21.34894	157.98740	10.3	38	0:00:30	5.0	79
1/2/2010	14:30	21.34901	157.98729	10.6	14	0:00:30	2.0	53
1/2/2010	14:30	21.34894	157.98730	10.5	8	0:00:30	0.9	188
1/2/2010	14:31	21.34886	157.98733	8.2	10	0:00:30	1.2	200
1/2/2010	14:31	21.34887	157.98733	8.3	1	0:00:30	0.1	21
1/2/2010	14:32	21.34887	157.98733	8.1	1	0:00:30	0.1	21
1/2/2010	14:32	21.34888	157.98733	8.2	1	0:00:30	0.1	1
1/2/2010	14:33	21.34900	157.98731	10.3	13	0:00:30	2.0	9

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	14:33	21.34901	157.98763	10.6	33	0:00:30	4.0	271
1/2/2010	14:34	21.34894	157.98816	10.8	56	0:00:30	7.0	263
1/2/2010	14:34	21.34895	157.98870	11.1	55	0:00:30	7.0	271
1/2/2010	14:35	21.34890	157.98912	11.1	44	0:00:30	5.0	263
1/2/2010	14:35	21.34890	157.98953	11.7	42	0:00:30	5.0	270
1/2/2010	14:36	21.34888	157.98991	11.4	40	0:00:30	5.0	267
1/2/2010	14:36	21.34888	157.99029	10.9	39	0:00:30	5.0	269
1/2/2010	14:37	21.34886	157.99069	10.7	42	0:00:30	5.0	267
1/2/2010	14:37	21.34887	157.99110	10.3	42	0:00:30	5.0	271
1/2/2010	14:38	21.34877	157.99140	9.3	33	0:00:30	4.0	252
1/2/2010	14:38	21.34860	157.99139	2.7	20	0:00:30	2.0	175
1/2/2010	14:39	21.34859	157.99141	2.6	3	0:00:30	0.3	249
1/2/2010	14:39	21.34856	157.99140	2.1	3	0:00:30	0.4	160
1/2/2010	14:40	21.34856	157.99140	2.1	0	0:00:30	0.0	202
1/2/2010	14:40	21.34856	157.99140	2.2	1	0:00:30	0.1	89
1/2/2010	14:41	21.34856	157.99139	2.3	1	0:00:30	0.1	67
1/2/2010	14:41	21.34858	157.99138	2.4	3	0:00:30	0.3	34
1/2/2010	14:42	21.34858	157.99137	2.7	1	0:00:30	0.1	24
1/2/2010	14:42	21.34859	157.99137		1	0:00:30	0.1	51
1/2/2010	14:43	21.34859	157.99136	3.1	1	0:00:30	0.1	55
1/2/2010	14:43	21.34860	157.99135	3.3	1	0:00:30	0.1	43
1/2/2010	14:44	21.34860	157.99135	3.5	1	0:00:30	0.1	54
1/2/2010	14:44	21.34865	157.99130	4.0	7	0:00:30	0.9	46
1/2/2010	14:45	21.34869	157.99132	4.9	6	0:00:30	0.7	338
1/2/2010	14:45	21.34872	157.99133	6.6	3	0:00:30	0.3	326
1/2/2010	14:46	21.34872	157.99134	7.0	1	0:00:30	0.1	314
1/2/2010	14:46	21.34873	157.99134	8.9	1	0:00:30	0.1	358
1/2/2010	14:47	21.34874	157.99135	8.7	1	0:00:30	0.2	344
1/2/2010	14:47	21.34875	157.99135	8.3	1	0:00:30	0.1	340
1/2/2010	14:48	21.34877	157.99140	9.4	6	0:00:30	0.7	295
1/2/2010	14:48	21.34858	157.99141	2.9	21	0:00:30	3.0	184
1/2/2010	14:49	21.34853	157.99140	2.2	6	0:00:30	0.7	170
1/2/2010	14:49	21.34852	157.99140	1.0	1	0:00:30	0.2	155
1/2/2010	14:50	21.34851	157.99140	2.2	1	0:00:30	0.1	158
1/2/2010	14:50	21.34851	157.99140	2.2	0	0:00:30	0.0	216
1/2/2010	14:51	21.34851	157.99140	2.2	0	0:00:30	0.1	310
1/2/2010	14:51	21.34854	157.99140	2.2	3	0:00:30	0.4	357
1/2/2010	14:52	21.34866	157.99150	3.3	16	0:00:30	2.0	321

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	14:52	21.34888	157.99129	10.2	33	0:00:30	4.0	42
1/2/2010	14:53	21.34897	157.99087	11.8	45	0:00:30	5.0	77
1/2/2010	14:53	21.34899	157.99036	12.4	52	0:00:30	6.0	87
1/2/2010	14:54	21.34903	157.98985	13.4	54	0:00:30	6.0	86
1/2/2010	14:54	21.34895	157.98934	12.9	53	0:00:30	6.0	100
1/2/2010	14:55	21.34893	157.98882	11.5	54	0:00:30	7.0	92
1/2/2010	14:55	21.34892	157.98829	10.8	54	0:00:30	7.0	91
1/2/2010	14:56	21.34897	157.98777	10.5	54	0:00:30	6.0	85
1/2/2010	14:56	21.34892	157.98734	10.3	45	0:00:30	5.0	96
1/2/2010	14:57	21.34886	157.98734	8.0	7	0:00:30	0.9	179
1/2/2010	14:57	21.34890	157.98733	9.9	5	0:00:30	0.6	8
1/2/2010	14:58	21.34885	157.98732	8.8	5	0:00:30	0.7	170
1/2/2010	14:58	21.34886	157.98732	8.7	0	0:00:30	0.1	7
1/2/2010	14:59	21.34886	157.98732	8.1	1	0:00:30	0.1	358
1/2/2010	14:59	21.34898	157.98733	9.7	13	0:00:30	2.0	355
1/2/2010	15:00	21.34906	157.98733	10.4	9	0:00:30	1.0	0
1/2/2010	15:00	21.34907	157.98692	10.5	42	0:00:30	5.0	88
1/2/2010	15:01	21.34917	157.98662	10.2	33	0:00:30	4.0	70
1/2/2010	15:01	21.34952	157.98655	14.7	40	0:00:30	5.0	12
1/2/2010	15:02	21.34993	157.98644	15.0	47	0:00:30	6.0	13
1/2/2010	15:02	21.35031	157.98634	14.4	43	0:00:30	5.0	14
1/2/2010	15:03	21.35073	157.98653	12.7	51	0:00:30	6.0	338
1/2/2010	15:03	21.35113	157.98677	8.4	51	0:00:30	6.0	331
1/2/2010	15:04	21.35136	157.98690	0.9	29	0:00:30	3.0	333
1/2/2010	15:04	21.35133	157.98688	3.2	4	0:00:30	0.4	156
1/2/2010	15:05	21.35123	157.98699	4.9	16	0:00:30	2.0	224
1/2/2010	15:05	21.35126	157.98746	4.6	49	0:00:30	6.0	273
1/2/2010	15:06	21.35127	157.98791	4.8	47	0:00:30	6.0	272
1/2/2010	15:06	21.35127	157.98834	5.0	44	0:00:30	5.0	270
1/2/2010	15:07	21.35139	157.98873	6.8	43	0:00:30	5.0	288
1/2/2010	15:07	21.35161	157.98905	7.9	42	0:00:30	5.0	306
1/2/2010	15:08	21.35190	157.98930	9.1	42	0:00:30	5.0	321
1/2/2010	15:08	21.35227	157.98940	7.0	42	0:00:30	5.0	345
1/2/2010	15:09	21.35268	157.98940	4.4	46	0:00:30	6.0	1
1/2/2010	15:09	21.35314	157.98944	4.7	51	0:00:30	6.0	355
1/2/2010	15:10	21.35354	157.98955	5.2	46	0:00:30	6.0	345
1/2/2010	15:10	21.35395	157.98969	5.9	48	0:00:30	6.0	343
1/2/2010	15:11	21.35432	157.98985	5.7	44	0:00:30	5.0	339

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	15:11	21.35465	157.99005	5.1	42	0:00:30	5.0	329
1/2/2010	15:12	21.35495	157.99032	4.4	44	0:00:30	5.0	320
1/2/2010	15:12	21.35518	157.99066	4.6	44	0:00:30	5.0	307
1/2/2010	15:13	21.35540	157.99102	3.4	44	0:00:30	5.0	303
1/2/2010	15:13	21.35570	157.99133	2.4	46	0:00:30	6.0	316
1/2/2010	15:14	21.35589	157.99173	1.7	47	0:00:30	6.0	297
1/2/2010	15:14	21.35606	157.99211	1.4	44	0:00:30	5.0	295
1/2/2010	15:15	21.35615	157.99246	1.8	37	0:00:30	4.0	286
1/2/2010	15:15	21.35638	157.99283	1.3	46	0:00:30	5.0	304
1/2/2010	15:16	21.35650	157.99317	1.6	38	0:00:30	5.0	290
1/2/2010	15:16	21.35671	157.99349	1.6	40	0:00:30	5.0	306
1/2/2010	15:17	21.35707	157.99355	1.9	41	0:00:30	5.0	351
1/2/2010	15:17	21.35733	157.99322	4.6	45	0:00:30	5.0	50
1/2/2010	15:18	21.35745	157.99287	5.2	39	0:00:30	5.0	70
1/2/2010	15:18	21.35755	157.99250	3.6	39	0:00:30	5.0	74
1/2/2010	15:19	21.35767	157.99212	2.5	42	0:00:30	5.0	70
1/2/2010	15:19	21.35784	157.99174	2.7	44	0:00:30	5.0	64
1/2/2010	15:20	21.35792	157.99140	2.0	37	0:00:30	4.0	76
1/2/2010	15:20	21.35796	157.99106	2.7	36	0:00:30	4.0	83
1/2/2010	15:21	21.35795	157.99069	2.1	38	0:00:30	5.0	91
1/2/2010	15:21	21.35799	157.99025	2.3	46	0:00:30	6.0	85
1/2/2010	15:22	21.35823	157.98989	2.6	46	0:00:30	5.0	54
1/2/2010	15:22	21.35841	157.98958	3.5	38	0:00:30	5.0	57
1/2/2010	15:23	21.35852	157.98996	4.1	41	0:00:30	5.0	288
1/2/2010	15:23	21.35866	157.99046	4.7	54	0:00:30	7.0	287
1/2/2010	15:24	21.35871	157.99095	5.4	50	0:00:30	6.0	276
1/2/2010	15:24	21.35867	157.99147	5.8	55	0:00:30	7.0	265
1/2/2010	15:25	21.35847	157.99192	6.0	52	0:00:30	6.0	244
1/2/2010	15:25	21.35830	157.99241	6.3	54	0:00:30	7.0	250
1/2/2010	15:26	21.35816	157.99294	6.8	56	0:00:30	7.0	254
1/2/2010	15:26	21.35791	157.99339	7.2	55	0:00:30	7.0	240
1/2/2010	15:27	21.35778	157.99390	7.8	55	0:00:30	7.0	254
1/2/2010	15:27	21.35767	157.99443	9.0	56	0:00:30	7.0	258
1/2/2010	15:28	21.35753	157.99496	9.1	57	0:00:30	7.0	255
1/2/2010	15:28	21.35737	157.99548	9.6	56	0:00:30	7.0	250
1/2/2010	15:29	21.35697	157.99569	10.2	50	0:00:30	6.0	206
1/2/2010	15:29	21.35654	157.99586	10.4	50	0:00:30	6.0	202
1/2/2010	15:30	21.35612	157.99606	11.8	51	0:00:30	6.0	203

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	15:30	21.35567	157.99621	13.9	52	0:00:30	6.0	197
1/2/2010	15:31	21.35522	157.99632	15.1	51	0:00:30	6.0	193
1/2/2010	15:31	21.35476	157.99636	16.6	52	0:00:30	6.0	184
1/2/2010	15:32	21.35428	157.99640	13.7	53	0:00:30	6.0	185
1/2/2010	15:32	21.35390	157.99650	10.6	43	0:00:30	5.0	193
1/2/2010	15:33	21.35389	157.99649	10.8	2	0:00:30	0.2	157
1/2/2010	15:33	21.35389	157.99649	11.3	1	0:00:30	0.1	100
1/2/2010	15:34	21.35390	157.99648		1	0:00:30	0.1	23
1/2/2010	15:34	21.35390	157.99648		1	0:00:30	0.1	0
1/2/2010	15:35	21.35404	157.99651	11.2	16	0:00:30	2.0	351
1/2/2010	15:35	21.35419	157.99680	14.2	35	0:00:30	4.0	298
1/2/2010	15:36	21.35440	157.99719	16.9	46	0:00:30	6.0	300
1/2/2010	15:36	21.35468	157.99764	15.9	55	0:00:30	7.0	303
1/2/2010	15:37	21.35503	157.99797	14.9	52	0:00:30	6.0	318
1/2/2010	15:37	21.35537	157.99830	14.8	51	0:00:30	6.0	318
1/2/2010	15:38	21.35572	157.99869	11.2	56	0:00:30	7.0	314
1/2/2010	15:38	21.35603	157.99910	11.0	54	0:00:30	7.0	309
1/2/2010	15:39	21.35633	157.99951	11.2	55	0:00:30	7.0	309
1/2/2010	15:39	21.35667	157.99991	6.1	56	0:00:30	7.0	312
1/2/2010	15:40	21.35703	158.00028	10.9	56	0:00:30	7.0	317
1/2/2010	15:40	21.35745	158.00056	5.6	54	0:00:30	7.0	328
1/2/2010	15:41	21.35782	158.00088	5.1	53	0:00:30	6.0	321
1/2/2010	15:41	21.35821	158.00114	2.1	52	0:00:30	6.0	328
1/2/2010	15:42	21.35861	158.00135	1.3	49	0:00:30	6.0	334
1/2/2010	15:42	21.35897	158.00152	6.6	44	0:00:30	5.0	336
1/2/2010	15:43	21.35925	158.00123	6.0	43	0:00:30	5.0	44
1/2/2010	15:43	21.35961	158.00092	3.9	51	0:00:30	6.0	38
1/2/2010	15:44	21.35991	158.00058	2.0	49	0:00:30	6.0	47
1/2/2010	15:44	21.36030	158.00038	1.5	49	0:00:30	6.0	26
1/2/2010	15:45	21.36068	158.00037	1.3	42	0:00:30	5.0	1
1/2/2010	15:45	21.36110	158.00041	1.0	46	0:00:30	6.0	356
1/2/2010	15:46	21.36132	158.00063	1.6	34	0:00:30	4.0	317
1/2/2010	15:46	21.36174	158.00082	1.5	51	0:00:30	6.0	337
1/2/2010	15:47	21.36215	158.00103	1.5	51	0:00:30	6.0	334
1/2/2010	15:47	21.36255	158.00125	1.6	50	0:00:30	6.0	333
1/2/2010	15:48	21.36291	158.00152	2.2	49	0:00:30	6.0	326
1/2/2010	15:48	21.36328	158.00182	2.2	51	0:00:30	6.0	322
1/2/2010	15:49	21.36354	158.00218	1.6	48	0:00:30	6.0	308

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	15:49	21.36375	158.00259	1.3	48	0:00:30	6.0	299
1/2/2010	15:50	21.36393	158.00300	1.2	47	0:00:30	6.0	295
1/2/2010	15:50	21.36402	158.00341	1.1	44	0:00:30	5.0	283
1/2/2010	15:51	21.36420	158.00380	2.0	45	0:00:30	5.0	297
1/2/2010	15:51	21.36444	158.00417	2.8	47	0:00:30	6.0	305
1/2/2010	15:52	21.36480	158.00448	2.2	51	0:00:30	6.0	321
1/2/2010	15:52	21.36519	158.00467	2.2	49	0:00:30	6.0	335
1/2/2010	15:53	21.36564	158.00473	3.8	50	0:00:30	6.0	354
1/2/2010	15:53	21.36609	158.00475	3.7	51	0:00:30	6.0	357
1/2/2010	15:54	21.36655	158.00483	3.6	52	0:00:30	6.0	352
1/2/2010	15:54	21.36697	158.00502	2.6	51	0:00:30	6.0	337
1/2/2010	15:55	21.36738	158.00496	2.3	45	0:00:30	5.0	8
1/2/2010	15:55	21.36774	158.00486	2.6	42	0:00:30	5.0	14
1/2/2010	15:56	21.36792	158.00454	2.2	39	0:00:30	5.0	60
1/2/2010	15:56	21.36811	158.00424	2.1	38	0:00:30	5.0	55
1/2/2010	15:57	21.36838	158.00403	1.6	37	0:00:30	4.0	37
1/2/2010	15:57	21.36871	158.00420	1.4	41	0:00:30	5.0	334
1/2/2010	15:58	21.36892	158.00443	1.5	34	0:00:30	4.0	314
1/2/2010	15:58	21.36922	158.00465	1.9	40	0:00:30	5.0	326
1/2/2010	15:59	21.36955	158.00483	1.9	41	0:00:30	5.0	333
1/2/2010	15:59	21.36990	158.00511	1.8	49	0:00:30	6.0	323
1/2/2010	16:00	21.37024	158.00540	1.6	48	0:00:30	6.0	322
1/2/2010	16:00	21.37047	158.00576	1.3	45	0:00:30	5.0	304
1/2/2010	16:01	21.37070	158.00611	1.2	44	0:00:30	5.0	305
1/2/2010	16:01	21.37093	158.00631	1.0	33	0:00:30	4.0	321
1/2/2010	16:02	21.37116	158.00643	0.9	28	0:00:30	3.0	334
1/2/2010	16:02	21.37122	158.00644	1.0	7	0:00:30	0.9	349
1/2/2010	16:03	21.37127	158.00651	0.9	9	0:00:30	1.1	306
1/2/2010	16:03	21.37136	158.00662	1.0	15	0:00:30	2.0	313
1/2/2010	16:04	21.37135	158.00664		3	0:00:30	0.3	235
1/2/2010	16:04	21.37138	158.00670		8	0:00:30	0.9	302
1/2/2010	16:05	21.37152	158.00681		18	0:00:30	2.0	324
1/2/2010	16:05	21.37170	158.00692	1.0	23	0:00:30	3.0	330
1/2/2010	16:06	21.37177	158.00694		9	0:00:30	1.0	341
1/2/2010	16:06	21.37180	158.00695	0.8	3	0:00:30	0.4	354
1/2/2010	16:07	21.37180	158.00694	0.9	1	0:00:30	0.1	114
1/2/2010	16:07	21.37180	158.00694	0.9	0	0:00:30	0.0	86
1/2/2010	16:08	21.37180	158.00693	0.9	0	0:00:30	0.0	55

Table AII.63: (Continued) 2010 West Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/2/2010	16:08	21.37182	158.00692	0.8	3	0:00:30	0.3	28
1/2/2010	16:09	21.37183	158.00690	0.8	3	0:00:30	0.3	65
1/2/2010	16:09	21.37184	158.00688	0.9	2	0:00:30	0.3	53
1/2/2010	16:11	21.37172	158.00687					
1/2/2010	16:11	21.37158	158.00684	0.9	15	0:00:30	2.0	168
1/2/2010	16:12	21.37146	158.00675	0.9	17	0:00:30	2.0	147
1/2/2010	16:12	21.37134	158.00664	0.9	18	0:00:30	2.0	141
1/2/2010	16:13	21.37125	158.00650	0.7	18	0:00:30	2.0	125
1/2/2010	16:13	21.37110	158.00653	0.8	16	0:00:30	2.0	190
1/2/2010	16:14	21.37093	158.00660		21	0:00:30	2.0	202

Table AII.64: 2010 West Loch surface water radon survey wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100102	11:53	1.5	20100102	13:53	2.1
20100102	12:00	1.5	20100102	14:53	0.0
20100102	12:53	0.0	20100102	15:53	1.5

Table AII.65: 2010 East Loch surface water survey radon measurements.

RAD-7 #2357			East Loch Surface Survey				eff=0.406 cpm/pCi/L				
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
190	10	1	4	10	24	15	4.6	46.7	6.7	46.7	0.0
191	10	1	4	10	29	14	4.6	35.7	14.3	50.0	0.0
192	10	1	4	10	34	7	4.6	14.3	14.3	57.2	14.3
193	10	1	4	10	39	21	4.6	38.1	0.0	57.2	0.0
194	10	1	4	10	44	18	4.6	44.5	11.1	44.5	0.0
195	10	1	4	10	49	13	4.6	38.5	0.0	46.2	15.4
196	10	1	4	10	54	19	4.6	68.4	5.3	26.3	0.0
197	10	1	4	10	59	20	4.6	50.0	0.0	50.0	0.0
198	10	1	4	11	4	28	4.6	46.4	0.0	53.6	0.0
199	10	1	4	11	9	27	4.6	59.3	3.7	33.3	0.0
200	10	1	4	11	14	24	4.6	54.2	4.2	41.7	0.0
201	10	1	4	11	19	32	4.6	40.6	0.0	46.9	0.0
202	10	1	4	11	24	17	4.6	47.1	0.0	53.0	0.0
203	10	1	4	11	29	23	4.6	47.8	0.0	43.5	0.0
204	10	1	4	11	34	31	4.6	51.6	6.5	35.5	0.0
205	10	1	4	11	39	69	4.6	72.5	0.0	21.8	0.0
206	10	1	4	11	44	92	4.5	83.7	1.1	10.9	0.0
207	10	1	4	11	49	117	4.5	84.6	0.9	11.1	0.0
208	10	1	4	11	54	100	4.5	80.0	0.0	12.0	0.0
209	10	1	4	11	59	87	4.5	69.0	0.0	28.7	0.0
210	10	1	4	12	4	94	4.5	75.5	0.0	23.4	0.0
211	10	1	4	12	9	91	4.5	64.8	2.2	31.9	0.0
212	10	1	4	12	14	88	4.5	63.6	0.0	35.2	1.1
213	10	1	4	12	19	113	4.5	51.3	0.0	48.7	0.0
214	10	1	4	12	24	80	4.5	52.5	0.0	40.0	1.3
215	10	1	4	12	29	87	4.5	50.6	1.2	46.0	0.0
216	10	1	4	12	34	115	4.5	51.3	0.0	44.4	0.0
217	10	1	4	12	39	106	4.5	51.9	1.0	45.3	0.0
218	10	1	4	12	44	90	4.5	42.2	0.0	54.5	0.0
219	10	1	4	12	49	71	4.5	36.6	1.4	54.9	0.0
220	10	1	4	12	54	69	4.6	30.4	0.0	59.4	2.9
221	10	1	4	12	59	71	4.5	36.6	1.4	59.2	0.0
222	10	1	4	13	4	89	4.5	24.7	2.3	70.8	0.0
223	10	1	4	13	9	59	4.6	33.9	0.0	66.1	0.0
224	10	1	4	13	14	51	4.6	23.5	2.0	72.6	2.0
225	10	1	4	13	19	50	4.6	24.0	2.0	70.0	0.0
226	10	1	4	13	24	49	4.6	34.7	2.1	57.2	0.0

Table AII.65 (Continued) 2010 East Loch surface water survey radon measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
227	10	1	4	13	29	66	4.6	47.0	0.0	53.0	0.0
228	10	1	4	13	33	50	3.0	40.0	2.0	50.0	4.0

Table AII.66: 2010 East Loch surface water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
190	2218	8	29.2	7	2	7	70	5	131.438	91.499
191	2218	8	29.5	6	2	7	70	5	113.267	86.943
192	2218	8	29.8	6	2	7	70	5	47.194	65.119
193	2218	8	30.4	6	2	7	70	5	189.798	105.956
194	2218	8	30.7	6	2	7	70	5	152.664	97.764
195	2218	8	31.0	5	2	7	70	5	95.415	85.188
196	2218	8	31.3	6	2	7	70	5	171.747	102.264
197	2218	9	31.3	5	2	7	70	5	190.830	106.532
198	2218	9	31.3	5	2	7	70	5	267.162	121.848
199	2218	8	31.6	5	2	7	70	5	238.537	116.388
200	2218	9	31.6	5	2	7	70	5	219.454	112.570
201	2218	9	31.6	5	2	7	70	5	267.162	121.848
202	2218	9	31.6	5	2	7	70	5	162.205	100.045
203	2201	8	31.9	5	2	7	70	5	200.371	108.590
204	2218	8	31.9	5	2	7	70	5	257.620	120.061
205	2218	8	31.9	5	1	7	70	5	620.197	174.114
206	2201	9	31.9	5	2	7	70	5	834.646	199.180
207	2218	9	31.9	5	2	7	70	5	1074.487	223.151
208	2218	8	31.9	5	1	7	70	5	882.614	204.223
209	2201	9	31.9	5	2	7	70	5	815.459	197.123
210	2218	8	31.9	5	1	7	70	5	892.208	205.215
211	2218	9	31.6	5	1	7	70	5	844.240	200.200
212	2201	8	31.6	5	1	7	70	5	834.646	199.180
213	2218	9	31.3	5	2	7	70	5	1084.081	224.051
214	2201	9	31.3	5	1	7	70	5	709.929	185.354
215	2218	8	31.3	5	1	7	70	5	805.865	196.085
216	2218	8	31.0	5	1	7	70	5	1055.300	221.338
217	2218	9	31.0	5	1	7	70	5	988.144	214.860
218	2201	9	31.0	5	1	7	70	5	834.646	199.180
219	2218	8	31.0	5	1	7	70	5	623.586	175.065
220	2218	8	31.0	5	2	7	70	5	582.031	170.550

Table AII.66: (Continued) 2010 East Loch surface water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
221	2201	9	31.0	5	1	7	70	5	652.367	178.569
222	2218	8	31.0	5	1	7	70	5	815.459	197.123
223	2201	9	31.3	5	1	7	70	5	562.948	166.899
224	2218	9	31.3	5	1	7	70	5	467.533	154.020
225	2218	8	31.6	5	1	7	70	5	448.450	151.294
226	2218	8	31.9	5	1	7	70	5	429.367	148.510
227	2218	8	32.2	5	2	7	70	5	629.739	175.284
228	2218	8	32.2	5	1	7	70	5	633.180	226.093

Table AII.67: 2010 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	10:07:16	25.47	52.06	34.25	100.1	N/A	0.046	8.45	2.1	-11.3
1/4/2010	10:08:16	25.46	52.06	34.24	100.1	N/A	0.008	8.45	1.4	-8.4
1/4/2010	10:09:16	25.46	52.05	34.24	100.2	N/A	0.115	8.45	2.1	-6.7
1/4/2010	10:10:48	25.46	52.04	34.23	100.2	N/A	0.123	8.45	1.9	-5.2
1/4/2010	10:11:16	25.46	52.05	34.23	100.3	N/A	0.093	8.44	1.8	-4.8
1/4/2010	10:12:16	25.46	52.04	34.23	100.2	N/A	0.088	8.44	1.7	-4.4
1/4/2010	10:13:16	25.46	52.04	34.23	100.2	N/A	0.095	8.44	1.6	-4.2
1/4/2010	10:14:16	25.45	52.06	34.24	100.5	N/A	0.089	8.44	2.5	-4.0
1/4/2010	10:15:48	25.43	52.07	34.26	101.1	N/A	0.050	8.45	1.6	-3.7
1/4/2010	10:16:16	25.42	52.08	34.26	101.3	N/A	0.057	8.44	1.9	-3.3
1/4/2010	10:17:16	25.42	52.09	34.27	101.4	N/A	0.074	8.45	1.7	-3.4
1/4/2010	10:18:16	25.42	52.09	34.27	101.5	N/A	0.031	8.44	1.8	-3.1
1/4/2010	10:19:16	25.43	52.10	34.27	101.6	N/A	0.091	8.44	1.0	-3.1
1/4/2010	10:20:49	25.43	52.12	34.29	101.5	N/A	0.093	8.45	2.8	-3.1
1/4/2010	10:21:16	25.44	52.13	34.29	101.4	N/A	0.091	8.44	1.3	-2.8
1/4/2010	10:22:16	25.41	52.11	34.29	101.6	N/A	0.072	8.45	2.6	-3.0
1/4/2010	10:23:16	25.44	45.54	29.48	100.3	N/A	0.028	8.44	1.2	-3.3
1/4/2010	10:24:16	25.43	51.95	34.16	100.3	N/A	0.085	8.44	2.9	-3.5
1/4/2010	10:25:48	25.44	51.94	34.16	100.2	N/A	0.020	8.44	2.7	-4.4
1/4/2010	10:26:16	25.43	51.95	34.16	100.2	N/A	0.095	8.44	1.7	-4.3
1/4/2010	10:27:16	25.43	51.95	34.16	100.2	N/A	0.102	8.44	1.9	-4.6
1/4/2010	10:28:16	25.43	51.95	34.17	100.2	N/A	0.165	8.44	3.2	-4.5
1/4/2010	10:29:16	25.42	51.95	34.17	100.2	N/A	0.088	8.44	2.0	-4.9
1/4/2010	10:30:48	25.42	51.95	34.16	100.3	N/A	0.079	8.44	1.0	-5.1
1/4/2010	10:31:16	25.43	51.93	34.15	100.4	N/A	0.071	8.44	1.4	-5.0
1/4/2010	10:32:16	25.44	51.92	34.14	100.4	N/A	0.063	8.44	1.6	-5.2
1/4/2010	10:33:16	25.44	51.90	34.13	100.5	N/A	0.006	8.44	16.7	-5.2
1/4/2010	10:34:16	25.42	47.05	30.57	100.1	N/A	0.014	8.44	4.3	-5.7
1/4/2010	10:35:48	25.46	51.69	33.97	98.2	N/A	0.088	8.44	2.9	-6.4
1/4/2010	10:36:16	25.45	51.68	33.96	98.6	N/A	0.092	8.44	1.7	-6.7
1/4/2010	10:37:16	25.47	51.74	34.00	98.8	N/A	0.025	8.44	1.7	-7.0
1/4/2010	10:38:16	25.49	51.75	34.01	98.9	N/A	0.064	8.44	2.3	-7.1
1/4/2010	10:39:16	25.53	51.80	34.05	99.5	N/A	0.032	8.44	13.0	-7.3
1/4/2010	10:40:48	25.60	51.84	34.08	99.5	N/A	0.125	8.44	1.3	-7.5
1/4/2010	10:41:16	25.68	51.84	34.08	99.3	N/A	0.077	8.43	4.7	-7.3
1/4/2010	10:42:16	25.74	51.87	34.10	99.8	N/A	0.117	8.43	1.1	-7.4
1/4/2010	10:43:16	25.67	51.90	34.12	100.7	N/A	0.125	8.43	1.5	-7.9
1/4/2010	10:44:16	25.64	51.82	34.07	99.3	N/A	0.074	8.44	2.3	-8.1

Table AII.67: (Continued) 2010 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	10:45:48	25.61	51.87	34.10	100.2	N/A	0.075	8.44	2.4	-8.5
1/4/2010	10:46:16	25.65	51.88	34.11	99.5	N/A	0.152	8.43	1.9	-8.3
1/4/2010	10:47:16	25.67	51.85	34.09	98.3	N/A	0.088	8.43	0.5	-8.8
1/4/2010	10:48:16	25.85	51.85	34.08	98.8	N/A	0.089	8.42	3.7	-8.9
1/4/2010	10:49:16	25.78	51.93	34.14	101.6	N/A	0.172	8.43	1.7	-9.2
1/4/2010	10:50:48	25.73	51.92	34.13	101.6	N/A	0.100	8.44	1.8	-9.5
1/4/2010	10:51:16	25.73	51.93	34.14	101.7	N/A	0.117	8.44	2.1	-9.0
1/4/2010	10:52:16	25.78	51.91	34.13	101.1	N/A	0.102	8.44	1.6	-9.1
1/4/2010	10:53:16	25.73	51.93	34.14	101.7	N/A	0.092	8.44	2.7	-9.0
1/4/2010	10:54:16	25.77	51.93	34.14	101.5	N/A	0.116	8.44	2.8	-8.9
1/4/2010	10:55:48	25.75	51.92	34.14	101.6	N/A	0.081	8.44	2.4	-9.3
1/4/2010	10:56:16	25.73	51.93	34.14	102.0	N/A	0.112	8.44	2.2	-9.2
1/4/2010	10:57:16	25.74	51.93	34.15	102.1	N/A	0.105	8.44	2.3	-9.1
1/4/2010	10:58:16	25.76	51.94	34.15	102.1	N/A	0.130	8.43	2.8	-9.0
1/4/2010	10:59:16	25.76	51.94	34.15	102.0	N/A	0.127	8.44	1.8	-9.0
1/4/2010	11:00:48	25.76	51.94	34.15	102.1	N/A	0.121	8.44	3.8	-9.5
1/4/2010	11:01:16	25.75	51.94	34.15	102.2	N/A	0.124	8.44	1.5	-9.1
1/4/2010	11:02:16	25.78	51.93	34.14	102.1	N/A	0.122	8.44	2.2	-9.3
1/4/2010	11:03:16	25.78	51.94	34.15	102.0	N/A	0.121	8.44	1.4	-9.4
1/4/2010	11:04:16	25.78	51.93	34.14	102.1	N/A	0.127	8.44	2.5	-9.5
1/4/2010	11:05:48	25.75	51.95	34.15	102.0	N/A	0.142	8.44	3.0	-9.8
1/4/2010	11:06:16	25.76	51.96	34.16	102.1	N/A	0.148	8.44	1.6	-9.6
1/4/2010	11:07:16	25.80	51.94	34.15	101.9	N/A	0.144	8.43	1.7	-9.3
1/4/2010	11:08:16	25.79	51.95	34.16	101.9	N/A	0.145	8.43	2.3	-9.5
1/4/2010	11:09:16	25.79	51.96	34.16	102.2	N/A	0.138	8.44	2.5	-9.8
1/4/2010	11:10:49	25.78	51.96	34.16	101.9	N/A	0.097	8.44	2.0	-10.2
1/4/2010	11:11:16	25.83	51.94	34.15	101.9	N/A	0.077	8.44	1.9	-9.9
1/4/2010	11:12:16	25.78	51.95	34.16	102.0	N/A	0.046	8.44	2.5	-10.1
1/4/2010	11:13:16	25.77	51.96	34.16	102.1	N/A	0.027	8.44	1.9	-10.1
1/4/2010	11:14:16	25.79	51.96	34.16	102.2	N/A	0.084	8.43	2.0	-10.0
1/4/2010	11:15:48	25.78	51.95	34.16	102.1	N/A	0.081	8.44	2.0	-10.5
1/4/2010	11:16:16	25.80	51.95	34.16	102.3	N/A	0.094	8.44	2.8	-10.2
1/4/2010	11:17:16	25.78	51.96	34.16	102.2	N/A	0.094	8.44	1.9	-10.3
1/4/2010	11:18:16	25.82	51.96	34.16	102.3	N/A	0.114	8.43	2.1	-10.2
1/4/2010	11:19:16	25.81	51.94	34.15	102.3	N/A	0.040	8.44	2.0	-10.6
1/4/2010	11:20:48	25.89	51.87	34.09	99.6	N/A	0.011	8.43	2.0	-11.8
1/4/2010	11:21:16	25.90	51.84	34.07	98.1	N/A	0.016	8.42	2.1	-12.0

Table AII.67: (Continued) 2010 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	11:22:16	25.87	51.68	33.96	89.2	N/A	0.018	8.38	2.8	-12.3
1/4/2010	11:23:16	25.92	51.62	33.91	83.3	N/A	0.016	8.36	2.0	-13.4
1/4/2010	11:24:16	25.89	51.55	33.86	83.7	N/A	0.018	8.36	2.2	-14.0
1/4/2010	11:25:48	25.76	51.44	33.78	85.1	N/A	0.019	8.37	2.5	-14.8
1/4/2010	11:26:16	25.76	51.45	33.78	84.3	N/A	0.034	8.36	3.2	-14.7
1/4/2010	11:27:16	25.77	51.43	33.77	82.1	N/A	0.016	8.36	1.9	-15.4
1/4/2010	11:28:16	25.83	51.30	33.68	81.3	N/A	0.020	8.36	3.3	-15.7
1/4/2010	11:29:16	26.01	51.34	33.70	84.5	N/A	0.017	8.37	2.2	-16.1
1/4/2010	11:30:48	26.05	43.59	28.06	90.0	N/A	0.027	8.36	1.7	-17.8
1/4/2010	11:31:16	27.84	43.73	28.11	99.3	N/A	0.065	8.39	1.5	-17.5
1/4/2010	11:32:16	27.90	45.62	29.47	101.1	N/A	0.118	8.40	1.7	-15.9
1/4/2010	11:33:16	27.08	43.89	28.25	100.1	N/A	0.159	8.40	1.9	-15.8
1/4/2010	11:34:16	24.70	39.14	24.92	97.7	N/A	0.147	8.38	1.6	-15.7
1/4/2010	11:35:48	24.09	35.06	22.07	98.2	N/A	0.156	8.36	1.2	-15.4
1/4/2010	11:36:16	24.35	40.01	25.54	98.7	N/A	0.163	8.36	1.7	-13.5
1/4/2010	11:37:16	24.84	39.75	25.35	98.8	N/A	0.185	8.37	2.3	-12.8
1/4/2010	11:38:16	26.80	44.77	28.89	98.5	N/A	0.154	8.38	0.5	-12.6
1/4/2010	11:39:16	26.89	45.07	29.10	98.5	N/A	0.155	8.38	1.9	-12.6
1/4/2010	11:40:48	26.94	45.42	29.35	98.6	N/A	0.151	8.39	1.5	-13.7
1/4/2010	11:41:16	29.52	49.25	32.06	101.6	N/A	0.147	8.38	0.7	-13.7
1/4/2010	11:42:16	30.15	48.96	31.83	102.9	N/A	0.134	8.37	1.4	-14.6
1/4/2010	11:43:16	29.53	49.33	32.12	102.8	N/A	0.064	8.39	1.6	-15.6
1/4/2010	11:44:16	29.64	48.98	31.86	102.5	N/A	0.049	8.38	1.6	-16.6
1/4/2010	11:45:48	28.69	49.14	32.01	99.9	N/A	0.045	8.39	1.1	-16.7
1/4/2010	11:46:16	28.72	49.18	32.04	100.0	N/A	0.085	8.39	1.6	-16.5
1/4/2010	11:47:16	28.43	49.44	32.23	99.8	N/A	0.060	8.39	1.7	-16.3
1/4/2010	11:48:16	27.85	46.77	30.30	98.9	N/A	0.074	8.37	2.1	-16.4
1/4/2010	11:49:16	27.64	47.08	30.54	98.5	N/A	0.044	8.37	2.8	-15.9
1/4/2010	11:50:48	28.08	49.15	32.03	99.7	N/A	0.055	8.39	2.3	-15.6
1/4/2010	11:51:16	27.97	48.44	31.52	99.4	N/A	0.055	8.38	1.2	-15.5
1/4/2010	11:52:16	27.93	48.65	31.67	98.2	N/A	0.086	8.37	2.4	-16.1
1/4/2010	11:53:16	27.83	47.89	31.12	96.9	N/A	0.054	8.34	2.9	-16.4
1/4/2010	11:54:16	28.36	49.75	32.47	100.1	N/A	0.035	8.39	1.6	-16.8
1/4/2010	11:55:48	28.44	49.62	32.37	100.6	N/A	0.080	8.39	1.6	-16.9
1/4/2010	11:56:16	28.40	49.66	32.40	100.8	N/A	0.064	8.39	1.6	-16.7
1/4/2010	11:57:16	28.30	49.72	32.45	101.4	N/A	0.129	8.39	1.7	-16.7
1/4/2010	11:58:16	28.47	49.60	32.35	101.5	N/A	0.113	8.39	2.2	-16.9

Table AII.67: (Continued) 2010 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	11:59:16	28.81	49.54	32.30	102.1	N/A	0.072	8.39	2.1	-16.6
1/4/2010	12:00:48	28.67	49.66	32.39	102.3	N/A	0.088	8.40	1.4	-17.2
1/4/2010	12:01:16	28.41	49.70	32.43	102.2	N/A	0.056	8.40	1.9	-17.2
1/4/2010	12:02:16	28.24	50.02	32.67	102.5	N/A	0.073	8.40	1.8	-17.0
1/4/2010	12:03:16	28.31	49.78	32.49	102.0	N/A	0.077	8.39	0.7	-16.9
1/4/2010	12:04:16	28.27	49.83	32.53	102.1	N/A	0.061	8.39	1.7	-17.1
1/4/2010	12:05:48	28.30	49.68	32.42	101.5	N/A	0.106	8.40	1.5	-17.5
1/4/2010	12:06:16	28.43	49.56	32.32	101.8	N/A	0.126	8.40	1.8	-17.5
1/4/2010	12:07:16	28.31	49.48	32.27	101.8	N/A	0.114	8.40	1.3	-17.6
1/4/2010	12:08:16	28.23	49.65	32.40	100.7	N/A	0.159	8.39	1.8	-17.4
1/4/2010	12:09:16	28.02	49.65	32.40	100.8	N/A	0.094	8.39	1.9	-17.3
1/4/2010	12:10:48	27.36	49.46	32.28	97.1	N/A	0.120	8.39	2.0	-17.7
1/4/2010	12:11:16	27.35	49.58	32.37	95.8	N/A	0.146	8.38	1.9	-17.6
1/4/2010	12:12:16	27.31	49.62	32.40	98.6	N/A	0.096	8.39	1.9	-17.6
1/4/2010	12:13:16	27.23	49.74	32.49	98.1	N/A	0.062	8.39	2.0	-18.2
1/4/2010	12:14:16	27.17	49.27	32.15	93.9	N/A	0.055	8.36	2.2	-19.4
1/4/2010	12:15:48	26.98	47.92	31.17	87.2	N/A	0.040	8.29	3.0	-20.6
1/4/2010	12:16:16	26.72	47.30	30.73	87.4	N/A	0.046	8.28	3.6	-20.4
1/4/2010	12:17:16	25.59	38.01	24.10	99.5	N/A	0.063	8.32	4.3	-22.2
1/4/2010	12:18:16	25.55	32.10	20.00	97.2	N/A	0.110	8.25	4.1	-22.5
1/4/2010	12:19:16	25.19	23.39	14.13	92.7	N/A	0.121	8.16	3.2	-24.3
1/4/2010	12:20:48	25.18	21.96	13.19	91.9	N/A	0.163	8.12	2.7	-27.6
1/4/2010	12:21:16	25.12	22.44	13.51	91.6	N/A	0.134	8.11	1.8	-28.3
1/4/2010	12:22:16	25.08	21.64	12.98	90.2	N/A	0.135	8.09	2.1	-30.3
1/4/2010	12:23:16	25.24	20.82	12.45	86.2	N/A	0.122	8.01	1.7	-30.5
1/4/2010	12:24:16	25.71	27.45	16.83	87.5	N/A	0.136	8.08	2.9	-27.4
1/4/2010	12:25:48	26.51	39.18	24.91	94.5	N/A	0.110	8.27	3.9	-26.1
1/4/2010	12:26:16	26.24	36.09	22.75	94.3	N/A	0.119	8.25	3.4	-27.4
1/4/2010	12:27:16	26.06	34.63	21.73	94.7	N/A	0.123	8.24	3.3	-27.2
1/4/2010	12:28:16	26.61	49.13	32.06	94.0	N/A	0.106	8.32	4.4	-24.1
1/4/2010	12:29:16	26.54	49.06	32.01	93.4	N/A	0.128	8.33	4.2	-24.8
1/4/2010	12:30:48	26.51	49.17	32.09	94.2	N/A	0.085	8.35	4.6	-25.8
1/4/2010	12:31:16	26.51	49.22	32.13	95.5	N/A	0.098	8.35	5.0	-25.6
1/4/2010	12:32:16	26.45	49.35	32.23	96.9	N/A	0.018	8.36	3.5	-25.8
1/4/2010	12:33:16	26.58	49.33	32.21	98.4	N/A	0.054	8.37	5.0	-25.9
1/4/2010	12:34:16	26.54	49.33	32.21	99.4	N/A	0.094	8.37	4.5	-25.9
1/4/2010	12:35:48	26.83	49.63	32.42	101.2	N/A	0.093	8.39	2.8	-25.9

Table AII.67: (Continued) 2010 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	12:36:16	26.75	49.57	32.38	101.2	N/A	0.074	8.39	3.0	-25.8
1/4/2010	12:37:16	26.49	49.81	32.56	101.8	N/A	0.059	8.39	3.0	-25.5
1/4/2010	12:38:16	26.36	50.34	32.95	103.2	N/A	0.088	8.41	2.0	-25.1
1/4/2010	12:39:16	26.34	50.24	32.88	102.9	N/A	0.059	8.41	2.5	-25.1
1/4/2010	12:40:48	26.29	50.56	33.12	100.6	N/A	0.050	8.41	2.8	-25.2
1/4/2010	12:41:16	26.38	50.46	33.04	100.3	N/A	0.056	8.40	3.1	-25.0
1/4/2010	12:42:16	26.46	50.24	32.88	100.4	N/A	0.055	8.39	3.2	-24.8
1/4/2010	12:43:16	26.39	50.00	32.70	99.4	N/A	0.052	8.39	2.7	-25.2
1/4/2010	12:44:16	26.10	49.72	32.51	102.9	N/A	0.077	8.41	2.8	-25.2
1/4/2010	12:45:48	26.05	49.61	32.42	104.6	N/A	0.088	8.42	3.9	-24.8
1/4/2010	12:46:16	26.06	49.62	32.43	104.7	N/A	0.071	8.41	3.7	-24.6
1/4/2010	12:47:16	26.03	49.58	32.40	104.8	N/A	0.071	8.41	3.4	-24.2
1/4/2010	12:48:16	26.06	49.61	32.42	105.0	N/A	0.057	8.41	3.6	-24.0
1/4/2010	12:49:16	26.03	49.56	32.39	105.4	N/A	0.090	8.42	3.4	-24.2
1/4/2010	12:50:48	26.02	49.50	32.35	105.4	N/A	0.091	8.42	3.3	-24.0
1/4/2010	12:51:16	25.95	49.42	32.29	105.4	N/A	0.091	8.42	3.6	-23.9
1/4/2010	12:52:16	25.97	49.44	32.30	105.5	N/A	0.043	8.41	3.0	-23.6
1/4/2010	12:53:16	26.10	48.60	31.69	100.4	N/A	0.045	8.36	4.3	-24.0
1/4/2010	12:54:16	26.21	48.70	31.76	99.8	N/A	0.039	8.37	4.7	-24.3
1/4/2010	12:55:48	25.86	49.07	32.03	103.5	N/A	0.115	8.41	3.8	-24.1
1/4/2010	12:56:16	25.81	49.06	32.03	103.7	N/A	0.092	8.41	3.8	-24.0
1/4/2010	12:57:16	26.61	48.70	31.75	98.5	N/A	0.101	8.35	3.7	-24.4
1/4/2010	12:58:16	26.04	48.76	31.81	101.5	N/A	0.095	8.39	4.5	-24.2
1/4/2010	12:59:16	26.83	48.15	31.34	96.7	N/A	0.088	8.32	5.4	-24.7
1/4/2010	13:00:48	26.07	48.76	31.80	101.0	N/A	0.032	8.39	4.5	-24.4
1/4/2010	13:01:16	25.97	48.88	31.90	103.0	N/A	0.040	8.40	2.3	-24.0
1/4/2010	13:02:16	25.90	49.02	32.00	104.0	N/A	0.050	8.40	2.7	-23.3
1/4/2010	13:03:16	26.13	49.59	32.41	104.5	N/A	0.044	8.41	3.8	-23.5
1/4/2010	13:04:16	26.08	50.07	32.76	103.5	N/A	0.060	8.42	1.5	-23.3
1/4/2010	13:05:48	26.10	50.16	32.83	103.7	N/A	0.026	8.42	3.3	-23.3
1/4/2010	13:06:16	26.09	50.18	32.85	103.8	N/A	0.044	8.42	3.1	-23.0
1/4/2010	13:07:16	26.09	50.29	32.92	104.4	N/A	0.053	8.42	3.3	-22.8
1/4/2010	13:08:16	26.06	50.45	33.04	104.6	N/A	0.035	8.42	2.5	-22.9
1/4/2010	13:09:16	26.10	50.47	33.05	104.5	N/A	0.041	8.43	2.7	-23.3
1/4/2010	13:10:48	26.21	50.40	33.00	104.7	N/A	0.030	8.43	2.8	-23.3
1/4/2010	13:11:16	26.40	50.11	32.78	104.2	N/A	0.025	8.41	2.0	-23.1
1/4/2010	13:12:16	26.43	49.83	32.58	104.3	N/A	0.054	8.41	2.2	-23.1

Table AII.67: (Continued) 2010 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/4/2010	13:13:16	26.43	49.86	32.60	104.5	N/A	0.052	8.41	2.8	-22.6
1/4/2010	13:14:16	26.44	50.00	32.70	105.8	N/A	0.049	8.41	3.3	-22.5
1/4/2010	13:15:48	26.44	49.95	32.66	105.1	N/A	0.019	8.42	2.6	-22.5
1/4/2010	13:16:16	26.45	49.86	32.60	105.1	N/A	0.017	8.41	2.5	-22.4
1/4/2010	13:17:16	26.18	50.05	32.74	100.5	N/A	0.081	8.38	2.1	-23.6
1/4/2010	13:18:16	26.15	50.06	32.75	97.1	N/A	0.053	8.37	2.3	-24.5
1/4/2010	13:19:16	26.17	50.17	32.83	100.6	N/A	0.032	8.39	3.0	-24.7
1/4/2010	13:20:48	26.19	50.25	32.89	100.8	N/A	0.035	8.40	4.4	-24.7
1/4/2010	13:21:16	26.18	50.30	32.93	101.4	N/A	0.035	8.40	3.2	-24.4
1/4/2010	13:22:16	26.21	50.33	32.95	102.1	N/A	0.045	8.40	3.2	-24.2
1/4/2010	13:23:16	26.30	50.28	32.91	101.8	N/A	0.090	8.38	3.7	-24.0
1/4/2010	13:24:16	26.27	50.22	32.87	100.6	N/A	0.091	8.38	2.0	-24.2
1/4/2010	13:25:48	26.23	50.18	32.84	100.0	N/A	0.088	8.38	2.6	-24.5
1/4/2010	13:26:16	26.23	50.18	32.84	100.1	N/A	0.088	8.38	3.2	-24.3
1/4/2010	13:27:16	26.21	50.17	32.83	100.0	N/A	0.086	8.38	2.3	-24.6
1/4/2010	13:28:16	26.21	50.18	32.84	100.1	N/A	0.091	8.39	2.8	-25.1
1/4/2010	13:29:16	26.23	50.16	32.82	99.9	N/A	0.083	8.38	3.2	-25.3
1/4/2010	13:30:48	26.24	50.16	32.83	100.4	N/A	0.122	8.39	3.7	-26.2
1/4/2010	13:31:16	26.26	50.17	32.83	100.3	N/A	0.107	8.38	3.5	-26.0
1/4/2010	13:32:16	26.30	50.18	32.84	101.1	N/A	0.099	8.39	3.1	-26.4
1/4/2010	13:33:16	26.31	50.17	32.83	100.9	N/A	0.119	8.39	3.0	-26.6
1/4/2010	13:34:16	26.30	50.13	32.80	100.4	N/A	0.082	8.39	3.0	-26.3
1/4/2010	13:35:48	26.32	50.13	32.80	100.2	N/A	0.116	8.39	3.1	-26.9
1/4/2010	13:36:16	26.27	50.13	32.81	99.9	N/A	0.094	8.38	3.4	-26.7
1/4/2010	13:37:16	26.36	50.15	32.81	100.0	N/A	0.087	8.38	3.4	-27.0

Table AII.68: 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	10:20	21.37559	157.96246	12.1	25	0:01:00	1.5	44
1/4/2010	10:21	21.37567	157.96241	12.2	10	0:00:30	1.2	29
1/4/2010	10:21	21.37577	157.96236	12.2	13	0:00:30	2.0	24
1/4/2010	10:22	21.37585	157.96229	12.3	11	0:00:30	1.3	38
1/4/2010	10:22	21.37595	157.96221	12.1	14	0:00:30	2.0	40
1/4/2010	10:23	21.37602	157.96215	12.1	10	0:00:30	1.3	38
1/4/2010	10:23	21.37624	157.96221	11.8	25	0:00:30	3.0	346
1/4/2010	10:24	21.37661	157.96228	11.5	42	0:00:30	5.0	350
1/4/2010	10:24	21.37675	157.96231	11.3	16	0:00:30	2.0	348
1/4/2010	10:25	21.37684	157.96233	11.3	11	0:00:30	1.3	351
1/4/2010	10:25	21.37694	157.96229	11.4	11	0:00:30	1.4	21
1/4/2010	10:26	21.37706	157.96214	11.6	21	0:01:00	1.2	48
1/4/2010	10:27	21.37715	157.96204	11.5	14	0:00:30	2.0	48
1/4/2010	10:27	21.37718	157.96196	11.6	8	0:00:30	1.0	67
1/4/2010	10:28	21.37723	157.96184	11.6	14	0:00:30	2.0	66
1/4/2010	10:28	21.37735	157.96173	11.6	17	0:00:30	2.0	40
1/4/2010	10:29	21.37743	157.96164	11.8	13	0:00:30	2.0	43
1/4/2010	10:29	21.37751	157.96154	11.6	14	0:00:30	2.0	53
1/4/2010	10:30	21.37758	157.96147	12.0	11	0:00:30	1.3	44
1/4/2010	10:30	21.37764	157.96143	12.2	8	0:00:30	1.0	26
1/4/2010	10:31	21.37776	157.96144	11.5	13	0:00:30	2.0	355
1/4/2010	10:31	21.37794	157.96154	11.6	22	0:00:30	3.0	335
1/4/2010	10:32	21.37809	157.96161	11.2	19	0:00:30	2.0	337
1/4/2010	10:32	21.37821	157.96161	10.7	13	0:00:30	2.0	359
1/4/2010	10:33	21.37843	157.96162	11.4	25	0:01:00	1.5	357
1/4/2010	10:34	21.37865	157.96186	10.9	35	0:00:30	4.0	314
1/4/2010	10:34	21.37888	157.96210	10.5	35	0:00:30	4.0	317
1/4/2010	10:35	21.37916	157.96243	11.1	47	0:00:30	6.0	312
1/4/2010	10:35	21.37942	157.96271	11.3	40	0:00:30	5.0	314
1/4/2010	10:36	21.37964	157.96295	11.1	35	0:00:30	4.0	315
1/4/2010	10:36	21.37988	157.96318	10.9	36	0:00:30	4.0	318
1/4/2010	10:37	21.38011	157.96375	11.0	64	0:01:00	4.0	294
1/4/2010	10:38	21.38020	157.96405	10.9	33	0:00:30	4.0	288
1/4/2010	10:38	21.38027	157.96433	10.4	30	0:00:30	4.0	285
1/4/2010	10:39	21.38038	157.96468	10.5	38	0:00:30	5.0	288
1/4/2010	10:39	21.38043	157.96515	10.7	50	0:00:30	6.0	276
1/4/2010	10:40	21.38037	157.96559	10.8	46	0:00:30	6.0	262
1/4/2010	10:40	21.38029	157.96603	10.6	46	0:00:30	6.0	259
1/4/2010	10:41	21.38028	157.96624	8.7	22	0:00:30	3.0	269

Table AII.68 (Continued) East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	10:41	21.38034	157.96635	7.9	12	0:00:30	1.5	299
1/4/2010	10:42	21.38033	157.96656	4.5	22	0:00:30	3.0	268
1/4/2010	10:42	21.38037	157.96653	4.8	5	0:00:30	0.7	40
1/4/2010	10:43	21.38040	157.96650	5.7	5	0:00:30	0.6	39
1/4/2010	10:43	21.38045	157.96660	2.1	13	0:00:30	2.0	298
1/4/2010	10:44	21.38043	157.96635	7.9	27	0:00:30	3.0	95
1/4/2010	10:44	21.38051	157.96625	8.5	13	0:00:30	2.0	52
1/4/2010	10:45	21.38075	157.96646	7.6	35	0:00:30	4.0	321
1/4/2010	10:45	21.38091	157.96667	1.5	28	0:00:30	3.0	310
1/4/2010	10:46	21.38089	157.96653	5.5	15	0:00:30	2.0	98
1/4/2010	10:46	21.38107	157.96668	1.8	26	0:00:30	3.0	322
1/4/2010	10:47	21.38119	157.96666	2.3	14	0:00:30	2.0	8
1/4/2010	10:47	21.38144	157.96685	1.7	33	0:00:30	4.0	326
1/4/2010	10:48	21.38164	157.96714	1.5	38	0:00:30	5.0	305
1/4/2010	10:48	21.38180	157.96739	1.3	31	0:00:30	4.0	305
1/4/2010	10:49	21.38203	157.96765	1.2	38	0:00:30	5.0	313
1/4/2010	10:49	21.38211	157.96779	1.0	17	0:00:30	2.0	302
1/4/2010	10:50	21.38213	157.96784	1.0	6	0:00:30	0.7	290
1/4/2010	10:50	21.38213	157.96786	1.0	1	0:00:30	0.2	304
1/4/2010	10:51	21.38214	157.96787	1.0	2	0:00:30	0.2	308
1/4/2010	10:51	21.38214	157.96787	1.0	1	0:00:30	0.1	274
1/4/2010	10:52	21.38214	157.96787	1.0	1	0:00:30	0.1	155
1/4/2010	10:52	21.38213	157.96786	1.1	1	0:00:30	0.1	107
1/4/2010	10:53	21.38215	157.96787	1.0	2	0:00:30	0.3	331
1/4/2010	10:53	21.38215	157.96788	1.1	1	0:00:30	0.1	252
1/4/2010	10:54	21.38213	157.96787	1.0	3	0:00:30	0.4	145
1/4/2010	10:54	21.38213	157.96786	1.0	1	0:00:30	0.1	24
1/4/2010	10:55	21.38214	157.96786	1.0	1	0:00:30	0.1	22
1/4/2010	10:55	21.38215	157.96785	1.0	1	0:00:30	0.1	55
1/4/2010	10:56	21.38215	157.96786	1.1	1	0:00:30	0.1	283
1/4/2010	10:56	21.38215	157.96786	1.0	0	0:00:30	0.0	40
1/4/2010	10:57	21.38215	157.96787	1.0	1	0:00:30	0.1	332
1/4/2010	10:57	21.38215	157.96786	1.0	1	0:00:30	0.1	178
1/4/2010	10:58	21.38215	157.96787	1.0	0	0:00:30	0.0	251
1/4/2010	10:58	21.38215	157.96787	1.0	0	0:00:30	0.0	287
1/4/2010	10:59	21.38216	157.96787	1.0	1	0:00:30	0.1	10
1/4/2010	10:59	21.38216	157.96787	1.0	0	0:00:30	0.0	103
1/4/2010	11:00	21.38216	157.96787	1.0	0	0:00:30	0.0	324

Table AII.68 (Continued) 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	11:00	21.38216	157.96787	1.0	0	0:00:30	0.0	272
1/4/2010	11:01	21.38216	157.96786	1.0	1	0:00:30	0.1	92
1/4/2010	11:01	21.38216	157.96786	1.0	0	0:00:30	0.0	207
1/4/2010	11:02	21.38217	157.96785	1.0	2	0:00:30	0.2	46
1/4/2010	11:02	21.38216	157.96784	1.0	1	0:00:30	0.1	131
1/4/2010	11:03	21.38216	157.96785	1.0	1	0:00:30	0.1	290
1/4/2010	11:03	21.38217	157.96786	1.0	1	0:00:30	0.2	306
1/4/2010	11:04	21.38216	157.96786	1.0	2	0:00:30	0.2	161
1/4/2010	11:04	21.38216	157.96786	1.0	0	0:00:30	0.1	135
1/4/2010	11:05	21.38214	157.96785	1.0	2	0:00:30	0.2	158
1/4/2010	11:05	21.38213	157.96786	0.9	1	0:00:30	0.1	220
1/4/2010	11:06	21.38215	157.96786	1.0	2	0:00:30	0.2	340
1/4/2010	11:06	21.38215	157.96786	0.9	1	0:00:30	0.1	47
1/4/2010	11:07	21.38215	157.96784	0.9	1	0:00:30	0.2	108
1/4/2010	11:07	21.38214	157.96784	1.0	1	0:00:30	0.1	173
1/4/2010	11:08	21.38214	157.96783	0.9	1	0:00:30	0.1	120
1/4/2010	11:08	21.38214	157.96784	0.9	1	0:00:30	0.1	347
1/4/2010	11:09	21.38215	157.96786	0.9	3	0:00:30	0.3	303
1/4/2010	11:09	21.38216	157.96786	1.0	0	0:00:30	0.0	58
1/4/2010	11:10	21.38216	157.96786	1.0	1	0:00:30	0.1	272
1/4/2010	11:10	21.38216	157.96788	0.9	2	0:00:30	0.2	273
1/4/2010	11:11	21.38216	157.96788	1.0	0	0:00:30	0.0	59
1/4/2010	11:11	21.38214	157.96786	1.0	3	0:00:30	0.3	129
1/4/2010	11:12	21.38215	157.96786	1.0	1	0:00:30	0.1	313
1/4/2010	11:12	21.38216	157.96789	1.0	3	0:00:30	0.3	304
1/4/2010	11:13	21.38217	157.96788	1.1	1	0:00:30	0.1	48
1/4/2010	11:13	21.38215	157.96788	1.0	1	0:00:30	0.2	165
1/4/2010	11:14	21.38215	157.96787	1.0	1	0:00:30	0.1	113
1/4/2010	11:14	21.38215	157.96787	1.0	0	0:00:30	0.0	98
1/4/2010	11:15	21.38215	157.96787	1.0	0	0:00:30	0.0	169
1/4/2010	11:15	21.38215	157.96787	1.0	0	0:00:30	0.1	9
1/4/2010	11:16	21.38216	157.96788	1.0	1	0:00:30	0.1	283
1/4/2010	11:16	21.38214	157.96786	1.0	2	0:00:30	0.3	132
1/4/2010	11:17	21.38215	157.96787	1.0	1	0:00:30	0.2	318
1/4/2010	11:17	21.38216	157.96788	0.9	2	0:00:30	0.2	325
1/4/2010	11:18	21.38215	157.96788	1.0	1	0:00:30	0.2	170
1/4/2010	11:18	21.38215	157.96786	0.9	1	0:00:30	0.2	115
1/4/2010	11:19	21.38216	157.96785	0.9	1	0:00:30	0.2	48

Table AII.68 (Continued) 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	11:19	21.38220	157.96781	1.1	7	0:00:30	0.8	42
1/4/2010	11:20	21.38246	157.96789	1.2	30	0:00:30	4.0	343
1/4/2010	11:20	21.38277	157.96800	1.3	36	0:00:30	4.0	342
1/4/2010	11:21	21.38302	157.96817	1.3	33	0:00:30	4.0	328
1/4/2010	11:21	21.38333	157.96828	1.4	36	0:00:30	4.0	343
1/4/2010	11:22	21.38365	157.96840	1.4	38	0:00:30	5.0	340
1/4/2010	11:22	21.38400	157.96848	1.3	40	0:00:30	5.0	349
1/4/2010	11:23	21.38434	157.96850	1.2	38	0:00:30	5.0	357
1/4/2010	11:23	21.38452	157.96823	1.0	34	0:00:30	4.0	53
1/4/2010	11:24	21.38447	157.96796	1.0	29	0:00:30	3.0	103
1/4/2010	11:24	21.38442	157.96768	1.1	30	0:00:30	4.0	99
1/4/2010	11:25	21.38437	157.96736	1.0	33	0:00:30	4.0	100
1/4/2010	11:25	21.38425	157.96706	1.1	34	0:00:30	4.0	113
1/4/2010	11:26	21.38418	157.96671	1.2	37	0:00:30	4.0	103
1/4/2010	11:26	21.38420	157.96635	1.1	37	0:00:30	4.0	86
1/4/2010	11:27	21.38424	157.96600	1.0	36	0:00:30	4.0	84
1/4/2010	11:27	21.38415	157.96565	1.4	38	0:00:30	5.0	105
1/4/2010	11:28	21.38421	157.96529	1.6	38	0:00:30	5.0	80
1/4/2010	11:28	21.38446	157.96503	1.6	39	0:00:30	5.0	44
1/4/2010	11:29	21.38478	157.96484	1.3	41	0:00:30	5.0	30
1/4/2010	11:29	21.38511	157.96465	1.5	41	0:00:30	5.0	28
1/4/2010	11:30	21.38540	157.96445	1.5	39	0:00:30	5.0	32
1/4/2010	11:30	21.38572	157.96428	1.6	40	0:00:30	5.0	27
1/4/2010	11:31	21.38604	157.96411	1.6	40	0:00:30	5.0	26
1/4/2010	11:31	21.38636	157.96392	1.3	40	0:00:30	5.0	28
1/4/2010	11:32	21.38654	157.96362	1.4	37	0:00:30	4.0	58
1/4/2010	11:32	21.38670	157.96330	1.1	38	0:00:30	5.0	61
1/4/2010	11:33	21.38681	157.96300	1.0	34	0:00:30	4.0	70
1/4/2010	11:33	21.38667	157.96277	1.6	29	0:00:30	3.0	123
1/4/2010	11:34	21.38681	157.96251	1.4	31	0:00:30	4.0	59
1/4/2010	11:34	21.38691	157.96220	1.5	34	0:00:30	4.0	71
1/4/2010	11:35	21.38687	157.96188	1.6	34	0:00:30	4.0	97
1/4/2010	11:35	21.38682	157.96154	2.3	36	0:00:30	4.0	99
1/4/2010	11:36	21.38672	157.96119	6.0	37	0:00:30	4.0	108
1/4/2010	11:36	21.38655	157.96092	6.3	34	0:00:30	4.0	124
1/4/2010	11:37	21.38630	157.96076	5.4	33	0:00:30	4.0	149
1/4/2010	11:37	21.38605	157.96062	5.1	31	0:00:30	4.0	152
1/4/2010	11:38	21.38577	157.96053	5.0	33	0:00:30	4.0	164

Table AII.68 (Continued) 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	11:38	21.38551	157.96044	4.4	31	0:00:30	4.0	162
1/4/2010	11:39	21.38527	157.96035	3.1	28	0:00:30	3.0	161
1/4/2010	11:39	21.38503	157.96031	4.3	27	0:00:30	3.0	170
1/4/2010	11:40	21.38480	157.96027	4.9	26	0:00:30	3.0	172
1/4/2010	11:40	21.38453	157.96027	5.3	30	0:00:30	4.0	179
1/4/2010	11:41	21.38437	157.96003	3.9	30	0:00:30	4.0	126
1/4/2010	11:41	21.38460	157.95984	4.5	32	0:00:30	4.0	38
1/4/2010	11:42	21.38488	157.95981	4.2	31	0:00:30	4.0	6
1/4/2010	11:42	21.38516	157.95988	3.2	33	0:00:30	4.0	346
1/4/2010	11:43	21.38544	157.95994	2.8	32	0:00:30	4.0	349
1/4/2010	11:43	21.38569	157.95995	2.8	28	0:00:30	3.0	358
1/4/2010	11:44	21.38597	157.95992	3.1	31	0:00:30	4.0	7
1/4/2010	11:44	21.38626	157.95989	3.4	32	0:00:30	4.0	5
1/4/2010	11:45	21.38657	157.95985	3.0	35	0:00:30	4.0	7
1/4/2010	11:45	21.38683	157.95967	1.1	34	0:00:30	4.0	33
1/4/2010	11:46	21.38671	157.95953	1.0	19	0:00:30	2.0	131
1/4/2010	11:46	21.38658	157.95946	1.5	16	0:00:30	2.0	154
1/4/2010	11:47	21.38659	157.95939	1.3	7	0:00:30	0.9	83
1/4/2010	11:47	21.38664	157.95933	1.0	8	0:00:30	0.9	50
1/4/2010	11:48	21.38661	157.95929	0.9	6	0:00:30	0.7	123
1/4/2010	11:48	21.38659	157.95926	1.0	4	0:00:30	0.4	134
1/4/2010	11:49	21.38655	157.95922	1.1	6	0:00:30	0.7	125
1/4/2010	11:49	21.38653	157.95916	1.1	7	0:00:30	0.8	116
1/4/2010	11:50	21.38653	157.95912	0.9	4	0:00:30	0.4	90
1/4/2010	11:50	21.38649	157.95915	1.1	5	0:00:30	0.6	219
1/4/2010	11:51	21.38650	157.95920	1.2	5	0:00:30	0.6	276
1/4/2010	11:51	21.38651	157.95915	1.0	5	0:00:30	0.6	68
1/4/2010	11:52	21.38647	157.95910	1.1	7	0:00:30	0.9	128
1/4/2010	11:52	21.38649	157.95908	1.0	3	0:00:30	0.3	50
1/4/2010	11:53	21.38649	157.95913	1.1	5	0:00:30	0.6	274
1/4/2010	11:53	21.38645	157.95911	1.2	6	0:00:30	0.7	160
1/4/2010	11:54	21.38639	157.95908	1.3	7	0:00:30	0.8	154
1/4/2010	11:54	21.38622	157.95896	1.6	23	0:00:30	3.0	146
1/4/2010	11:55	21.38610	157.95878	0.8	23	0:00:30	3.0	127
1/4/2010	11:55	21.38603	157.95886	1.4	11	0:00:30	1.3	226
1/4/2010	11:56	21.38585	157.95882	1.8	20	0:00:30	2.0	168
1/4/2010	11:56	21.38565	157.95860	0.9	31	0:00:30	4.0	134
1/4/2010	11:57	21.38552	157.95866	0.6	16	0:00:30	2.0	202

Table AII.68 (Continued) 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	11:57	21.38540	157.95842	0.7	29	0:00:30	3.0	119
1/4/2010	11:58	21.38532	157.95839	0.6	10	0:00:30	1.1	162
1/4/2010	11:58	21.38516	157.95842	0.7	17	0:00:30	2.0	190
1/4/2010	11:59	21.38498	157.95848	0.9	21	0:00:30	3.0	198
1/4/2010	11:59	21.38471	157.95853	1.0	31	0:00:30	4.0	190
1/4/2010	12:00	21.38446	157.95835	0.9	34	0:00:30	4.0	146
1/4/2010	12:00	21.38424	157.95814	1.0	33	0:00:30	4.0	139
1/4/2010	12:01	21.38403	157.95788	1.1	35	0:00:30	4.0	131
1/4/2010	12:01	21.38397	157.95751	1.0	40	0:00:30	5.0	100
1/4/2010	12:02	21.38385	157.95723	1.0	32	0:00:30	4.0	114
1/4/2010	12:02	21.38374	157.95692	0.9	34	0:00:30	4.0	112
1/4/2010	12:03	21.38354	157.95678	0.9	26	0:00:30	3.0	146
1/4/2010	12:03	21.38328	157.95675	1.2	29	0:00:30	3.0	175
1/4/2010	12:04	21.38311	157.95654	1.3	30	0:00:30	4.0	131
1/4/2010	12:04	21.38305	157.95619	1.1	37	0:00:30	4.0	100
1/4/2010	12:05	21.38291	157.95585	1.3	38	0:00:30	5.0	114
1/4/2010	12:05	21.38281	157.95549	1.1	39	0:00:30	5.0	107
1/4/2010	12:06	21.38269	157.95516	0.9	37	0:00:30	4.0	111
1/4/2010	12:06	21.38247	157.95491	0.9	35	0:00:30	4.0	134
1/4/2010	12:07	21.38222	157.95479	0.9	31	0:00:30	4.0	154
1/4/2010	12:07	21.38200	157.95460	1.1	31	0:00:30	4.0	142
1/4/2010	12:08	21.38192	157.95426	1.0	37	0:00:30	4.0	103
1/4/2010	12:08	21.38185	157.95396	0.8	32	0:00:30	4.0	105
1/4/2010	12:09	21.38163	157.95387	0.9	27	0:00:30	3.0	159
1/4/2010	12:09	21.38139	157.95368	1.5	33	0:00:30	4.0	142
1/4/2010	12:10	21.38131	157.95332	1.5	38	0:00:30	5.0	104
1/4/2010	12:10	21.38129	157.95295	1.4	38	0:00:30	5.0	93
1/4/2010	12:11	21.38117	157.95267	1.2	32	0:00:30	4.0	114
1/4/2010	12:11	21.38105	157.95236	0.8	34	0:00:30	4.0	114
1/4/2010	12:12	21.38083	157.95217	0.8	32	0:00:30	4.0	139
1/4/2010	12:12	21.38061	157.95193	1.7	34	0:00:30	4.0	135
1/4/2010	12:13	21.38050	157.95160	2.2	37	0:00:30	4.0	110
1/4/2010	12:13	21.38044	157.95120	2.0	42	0:00:30	5.0	99
1/4/2010	12:14	21.38044	157.95079	2.2	43	0:00:30	5.0	90
1/4/2010	12:14	21.38051	157.95040	2.2	41	0:00:30	5.0	79
1/4/2010	12:15	21.38055	157.95003	2.0	39	0:00:30	5.0	84
1/4/2010	12:15	21.38056	157.94966	1.6	38	0:00:30	5.0	88
1/4/2010	12:16	21.38054	157.94930	1.8	38	0:00:30	5.0	93

Table AII.68 (Continued) 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	12:16	21.38054	157.94893	1.9	38	0:00:30	5.0	90
1/4/2010	12:17	21.38054	157.94856	2.1	38	0:00:30	5.0	90
1/4/2010	12:17	21.38057	157.94821	1.6	37	0:00:30	4.0	85
1/4/2010	12:18	21.38056	157.94786	1.9	36	0:00:30	4.0	91
1/4/2010	12:18	21.38051	157.94753	1.9	35	0:00:30	4.0	99
1/4/2010	12:19	21.38053	157.94718	1.7	37	0:00:30	4.0	88
1/4/2010	12:19	21.38056	157.94682	1.8	37	0:00:30	4.0	84
1/4/2010	12:20	21.38057	157.94647	1.7	37	0:00:30	4.0	89
1/4/2010	12:20	21.38051	157.94613	1.4	35	0:00:30	4.0	101
1/4/2010	12:21	21.38039	157.94588	0.6	29	0:00:30	4.0	117
1/4/2010	12:21	21.38018	157.94593	0.6	23	0:00:30	3.0	193
1/4/2010	12:22	21.37999	157.94574	1.5	29	0:00:30	3.0	137
1/4/2010	12:22	21.37979	157.94550	1.3	33	0:00:30	4.0	132
1/4/2010	12:23	21.37956	157.94531	2.0	33	0:00:30	4.0	143
1/4/2010	12:23	21.37932	157.94519	2.6	29	0:00:30	3.0	154
1/4/2010	12:24	21.37906	157.94506	3.0	32	0:00:30	4.0	156
1/4/2010	12:24	21.37884	157.94485	2.6	33	0:00:30	4.0	137
1/4/2010	12:25	21.37859	157.94464	2.7	34	0:00:30	4.0	142
1/4/2010	12:25	21.37840	157.94441	2.4	33	0:00:30	4.0	131
1/4/2010	12:26	21.37829	157.94411	1.6	34	0:00:30	4.0	112
1/4/2010	12:26	21.37816	157.94383	1.8	32	0:00:30	4.0	117
1/4/2010	12:27	21.37796	157.94360	1.9	32	0:00:30	4.0	132
1/4/2010	12:27	21.37775	157.94338	1.7	33	0:00:30	4.0	135
1/4/2010	12:28	21.37757	157.94325	0.9	24	0:00:30	3.0	148
1/4/2010	12:28	21.37737	157.94338	1.6	26	0:00:30	3.0	210
1/4/2010	12:29	21.37720	157.94341	0.6	19	0:00:30	2.0	191
1/4/2010	12:29	21.37720	157.94358	0.7	18	0:00:30	2.0	270
1/4/2010	12:30	21.37703	157.94359	0.6	19	0:00:30	2.0	183
1/4/2010	12:30	21.37705	157.94378	4.4	19	0:00:30	2.0	277
1/4/2010	12:31	21.37698	157.94387	MD	12	0:00:30	1.5	229
1/4/2010	12:31	21.37686	157.94381	0.5	14	0:00:30	2.0	153
1/4/2010	12:32	21.37688	157.94404	1.4	24	0:00:30	3.0	276
1/4/2010	12:32	21.37673	157.94407	0.8	18	0:00:30	2.0	191
1/4/2010	12:33	21.37650	157.94402	0.5	26	0:00:30	3.0	168
1/4/2010	12:33	21.37632	157.94407	0.5	21	0:00:30	2.0	196
1/4/2010	12:34	21.37620	157.94414	0.8	15	0:00:30	2.0	207
1/4/2010	12:34	21.37606	157.94407	3.4	17	0:00:30	2.0	157
1/4/2010	12:35	21.37589	157.94397	5.8	22	0:00:30	3.0	149

Table AII.68 (Continued) 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	12:35	21.37577	157.94369	2.0	32	0:00:30	4.0	115
1/4/2010	12:36	21.37565	157.94344	0.6	29	0:00:30	3.0	118
1/4/2010	12:36	21.37548	157.94334	0.6	22	0:00:30	3.0	152
1/4/2010	12:37	21.37525	157.94325	2.1	27	0:00:30	3.0	159
1/4/2010	12:37	21.37506	157.94307	1.6	29	0:00:30	3.0	139
1/4/2010	12:38	21.37485	157.94294	3.5	27	0:00:30	3.0	149
1/4/2010	12:38	21.37467	157.94271	2.3	31	0:00:30	4.0	130
1/4/2010	12:39	21.37449	157.94247	3.9	32	0:00:30	4.0	129
1/4/2010	12:39	21.37429	157.94220	6.6	35	0:00:30	4.0	129
1/4/2010	12:40	21.37409	157.94195	6.1	35	0:00:30	4.0	132
1/4/2010	12:40	21.37395	157.94169	6.7	32	0:00:30	4.0	119
1/4/2010	12:41	21.37407	157.94135	6.6	37	0:00:30	4.0	68
1/4/2010	12:41	21.37429	157.94093	6.5	50	0:00:30	6.0	61
1/4/2010	12:42	21.37450	157.94049	6.3	52	0:00:30	6.0	63
1/4/2010	12:42	21.37478	157.94007	6.2	53	0:00:30	6.0	55
1/4/2010	12:43	21.37506	157.93966	6.0	53	0:00:30	6.0	53
1/4/2010	12:43	21.37536	157.93927	5.4	52	0:00:30	6.0	50
1/4/2010	12:44	21.37566	157.93887	4.8	53	0:00:30	6.0	51
1/4/2010	12:44	21.37580	157.93864	4.5	29	0:00:30	3.0	56
1/4/2010	12:45	21.37588	157.93850	4.6	17	0:00:30	2.0	58
1/4/2010	12:45	21.37595	157.93837	4.4	15	0:00:30	2.0	62
1/4/2010	12:46	21.37598	157.93830	4.4	9	0:00:30	1.0	63
1/4/2010	12:46	21.37604	157.93826	4.3	8	0:00:30	0.9	34
1/4/2010	12:47	21.37604	157.93813	4.3	13	0:00:30	2.0	91
1/4/2010	12:47	21.37606	157.93803	4.3	10	0:00:30	1.2	76
1/4/2010	12:48	21.37611	157.93799	4.3	7	0:00:30	0.9	40
1/4/2010	12:48	21.37617	157.93795	3.9	8	0:00:30	0.9	29
1/4/2010	12:49	21.37623	157.93789	3.3	9	0:00:30	1.1	47
1/4/2010	12:49	21.37626	157.93776	3.6	13	0:00:30	2.0	73
1/4/2010	12:50	21.37633	157.93769	3.2	11	0:00:30	1.3	46
1/4/2010	12:50	21.37642	157.93767	2.0	10	0:00:30	1.3	11
1/4/2010	12:51	21.37648	157.93757	2.3	12	0:00:30	1.5	57
1/4/2010	12:51	21.37649	157.93748	3.2	10	0:00:30	1.1	83
1/4/2010	12:52	21.37657	157.93743	3.0	10	0:00:30	1.2	28
1/4/2010	12:52	21.37665	157.93738	2.6	11	0:00:30	1.3	28
1/4/2010	12:53	21.37670	157.93708	3.5	32	0:00:30	4.0	80
1/4/2010	12:53	21.37678	157.93680	2.9	30	0:00:30	4.0	74
1/4/2010	12:54	21.37674	157.93655	2.6	27	0:00:30	3.0	99

Table AII.68 (Continued) 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	12:54	21.37652	157.93643	2.6	27	0:00:30	3.0	154
1/4/2010	12:55	21.37634	157.93616	2.3	35	0:00:30	4.0	125
1/4/2010	12:55	21.37613	157.93594	1.7	33	0:00:30	4.0	137
1/4/2010	12:56	21.37596	157.93598	2.2	19	0:00:30	2.0	194
1/4/2010	12:56	21.37580	157.93594	2.4	19	0:00:30	2.0	168
1/4/2010	12:57	21.37558	157.93571	1.8	34	0:00:30	4.0	135
1/4/2010	12:57	21.37542	157.93541	1.3	35	0:00:30	4.0	120
1/4/2010	12:58	21.37519	157.93521	2.1	33	0:00:30	4.0	141
1/4/2010	12:58	21.37493	157.93503	1.9	34	0:00:30	4.0	147
1/4/2010	12:59	21.37469	157.93484	1.9	34	0:00:30	4.0	144
1/4/2010	12:59	21.37442	157.93481	2.2	30	0:00:30	4.0	175
1/4/2010	13:00	21.37428	157.93509	2.6	32	0:00:30	4.0	242
1/4/2010	13:00	21.37426	157.93541	2.9	34	0:00:30	4.0	265
1/4/2010	13:01	21.37423	157.93575	3.3	35	0:00:30	4.0	264
1/4/2010	13:01	21.37422	157.93607	3.8	34	0:00:30	4.0	268
1/4/2010	13:02	21.37421	157.93640	4.4	34	0:00:30	4.0	269
1/4/2010	13:02	21.37435	157.93669	4.8	34	0:00:30	4.0	297
1/4/2010	13:03	21.37433	157.93697	5.0	28	0:00:30	3.0	266
1/4/2010	13:03	21.37412	157.93706	5.3	25	0:00:30	3.0	203
1/4/2010	13:04	21.37390	157.93722	5.6	29	0:00:30	4.0	213
1/4/2010	13:04	21.37376	157.93747	5.9	31	0:00:30	4.0	240
1/4/2010	13:05	21.37360	157.93769	6.1	29	0:00:30	3.0	232
1/4/2010	13:05	21.37346	157.93793	6.2	29	0:00:30	3.0	238
1/4/2010	13:06	21.37330	157.93819	6.4	33	0:00:30	4.0	235
1/4/2010	13:06	21.37310	157.93841	6.4	32	0:00:30	4.0	226
1/4/2010	13:07	21.37293	157.93866	6.9	32	0:00:30	4.0	234
1/4/2010	13:07	21.37272	157.93886	7.2	31	0:00:30	4.0	223
1/4/2010	13:08	21.37251	157.93907	6.8	32	0:00:30	4.0	222
1/4/2010	13:08	21.37227	157.93905	6.3	27	0:00:30	3.0	175
1/4/2010	13:09	21.37203	157.93885	4.3	34	0:00:30	4.0	142
1/4/2010	13:09	21.37180	157.93863	3.6	35	0:00:30	4.0	138
1/4/2010	13:10	21.37169	157.93830	2.7	35	0:00:30	4.0	109
1/4/2010	13:10	21.37173	157.93795	2.4	37	0:00:30	4.0	83
1/4/2010	13:11	21.37183	157.93757	4.3	41	0:00:30	5.0	74
1/4/2010	13:11	21.37191	157.93721	5.2	39	0:00:30	5.0	78
1/4/2010	13:12	21.37193	157.93681	5.5	42	0:00:30	5.0	86
1/4/2010	13:12	21.37202	157.93645	5.0	38	0:00:30	5.0	76
1/4/2010	13:13	21.37206	157.93638	4.8	8	0:00:30	1.0	57

Table AII.68 (Continued) 2010 East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	13:13	21.37207	157.93638	4.8	1	0:00:30	0.1	350
1/4/2010	13:14	21.37206	157.93639	4.8	0	0:00:30	0.1	235
1/4/2010	13:14	21.37206	157.93639	4.8	1	0:00:30	0.1	204
1/4/2010	13:15	21.37206	157.93639	4.7	0	0:00:30	0.0	216
1/4/2010	13:15	21.37215	157.93639	3.9	11	0:00:30	1.3	2
1/4/2010	13:16	21.37208	157.93641	4.7	9	0:00:30	1.1	195
1/4/2010	13:16	21.37181	157.93646	5.1	30	0:00:30	4.0	189
1/4/2010	13:17	21.37151	157.93638	5.0	34	0:00:30	4.0	167
1/4/2010	13:17	21.37124	157.93637	2.9	30	0:00:30	4.0	179
1/4/2010	13:18	21.37120	157.93635	2.3	5	0:00:30	0.6	145
1/4/2010	13:18	21.37120	157.93635	2.3	0	0:00:30	0.0	188
1/4/2010	13:19	21.37119	157.93635	2.4	1	0:00:30	0.1	232
1/4/2010	13:19	21.37119	157.93636	2.3	1	0:00:30	0.1	233
1/4/2010	13:20	21.37119	157.93636	2.3	0	0:00:30	0.0	236
1/4/2010	13:20	21.37119	157.93636	2.3	0	0:00:30	0.0	133
1/4/2010	13:21	21.37119	157.93636	2.3	0	0:00:30	0.0	81
1/4/2010	13:21	21.37119	157.93636	2.3	0	0:00:30	0.0	233
1/4/2010	13:22	21.37119	157.93636	2.3	0	0:00:30	0.0	356
1/4/2010	13:22	21.37119	157.93636	2.3	0	0:00:30	0.0	31
1/4/2010	13:23	21.37119	157.93636	2.3	0	0:00:30	0.0	69
1/4/2010	13:23	21.37119	157.93636	2.3	0	0:00:30	0.0	87
1/4/2010	13:24	21.37119	157.93635	2.3	0	0:00:30	0.0	87
1/4/2010	13:24	21.37119	157.93635	2.2	0	0:00:30	0.0	93
1/4/2010	13:25	21.37119	157.93635	2.3	0	0:00:30	0.0	92
1/4/2010	13:25	21.37119	157.93635	2.2	0	0:00:30	0.0	133
1/4/2010	13:26	21.37119	157.93635	2.3	0	0:00:30	0.0	108
1/4/2010	13:26	21.37119	157.93635	2.3	0	0:00:30	0.0	76
1/4/2010	13:27	21.37119	157.93635	2.3	0	0:00:30	0.0	187
1/4/2010	13:27	21.37119	157.93635	2.2	0	0:00:30	0.0	199
1/4/2010	13:28	21.37119	157.93635	2.3	0	0:00:30	0.0	217
1/4/2010	13:28	21.37119	157.93635	2.2	0	0:00:30	0.0	250
1/4/2010	13:29	21.37119	157.93635	2.2	0	0:00:30	0.0	163
1/4/2010	13:29	21.37119	157.93635	2.3	0	0:00:30	0.0	59
1/4/2010	13:30	21.37119	157.93634	2.3	0	0:00:30	0.0	48
1/4/2010	13:30	21.37119	157.93634	2.3	0	0:00:30	0.0	32
1/4/2010	13:31	21.37119	157.93634	2.2	0	0:00:30	0.0	40
1/4/2010	13:31	21.37119	157.93634	2.3	0	0:00:30	0.0	57
1/4/2010	13:32	21.37119	157.93634	2.3	0	0:00:30	0.0	54

Table AII.68 (Continued) East Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/4/2010	13:32	21.37119	157.93634	2.2	0	0:00:30	0.0	13
1/4/2010	13:33	21.37119	157.93634	2.3	0	0:00:30	0.0	54
1/4/2010	13:33	21.37119	157.93634	2.3	0	0:00:30	0.0	54
1/4/2010	13:34	21.37119	157.93634	2.2	0	0:00:30	0.0	290
1/4/2010	13:32	21.37119	157.93634	2.3	0	0:00:30	0.0	54
1/4/2010	13:32	21.37119	157.93634	2.2	0	0:00:30	0.0	13
1/4/2010	13:33	21.37119	157.93634	2.3	0	0:00:30	0.0	54
1/4/2010	13:33	21.37119	157.93634	2.3	0	0:00:30	0.0	54
1/4/2010	13:34	21.37119	157.93634	2.2	0	0:00:30	0.0	290

Table AII.69: 2010 East Loch surface water radon survey wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100104	09:53	5.7	20100104	12:00	5.7
20100104	10:53	5.1	20100104	12:53	4.6
20100104	11:53	5.7	20100104	13:53	4.6

Table AII.70: 2010 Middle Loch surface water survey radon measurements.

RAD-7 #2357				Middle Loch Surface			eff=0.406 cpm/pCi/L				
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	10	1	8	10	58	3	4.6	66.7	33.3	0.0	0.0
2	10	1	8	11	3	2	4.6	50.0	50.0	0.0	0.0
3	10	1	8	11	8	12	4.6	100.0	0.0	0.0	0.0
4	10	1	8	11	13	14	4.6	92.9	0.0	0.0	0.0
5	10	1	8	11	18	14	4.6	85.7	0.0	7.2	0.0
6	10	1	8	11	23	13	4.6	84.6	0.0	0.0	0.0
7	10	1	8	11	28	16	4.6	75.0	0.0	12.5	0.0
8	10	1	8	11	33	22	4.6	68.2	0.0	22.7	0.0
9	10	1	8	11	38	17	4.6	76.5	0.0	17.7	0.0
10	10	1	8	11	43	27	4.6	74.1	0.0	25.9	0.0
11	10	1	8	11	48	22	4.6	59.1	0.0	31.8	0.0
12	10	1	8	11	53	22	4.6	72.7	0.0	22.7	0.0
13	10	1	8	11	58	17	4.6	64.7	0.0	35.3	0.0
14	10	1	8	12	3	19	4.6	47.4	5.3	42.1	0.0
15	10	1	8	12	8	21	4.6	52.4	0.0	42.9	0.0
16	10	1	8	12	13	15	4.6	20.0	0.0	66.7	0.0
17	10	1	8	12	18	22	4.6	31.8	0.0	63.6	0.0
18	10	1	8	12	23	21	4.6	38.1	0.0	61.9	0.0
19	10	1	8	12	29	14	4.6	42.9	0.0	57.2	0.0
20	10	1	8	12	34	17	4.6	35.3	0.0	58.8	0.0
21	10	1	8	12	39	25	4.6	36.0	0.0	56.0	0.0
22	10	1	8	12	44	16	4.6	31.3	0.0	68.8	0.0
23	10	1	8	12	49	10	4.6	30.0	10.0	60.0	0.0
24	10	1	8	12	54	14	4.6	14.3	0.0	85.7	0.0
25	10	1	8	12	59	6	4.6	16.7	0.0	83.3	0.0
26	10	1	8	13	4	9	4.6	0.0	0.0	100.0	0.0
27	10	1	8	13	9	8	4.6	0.0	0.0	100.0	0.0
28	10	1	8	13	14	9	4.6	0.0	11.1	77.8	0.0
29	10	1	8	13	19	8	4.6	12.5	0.0	87.5	0.0
30	10	1	8	13	24	9	4.6	33.3	0.0	55.6	0.0
31	10	1	8	13	29	12	4.6	50.0	0.0	41.7	0.0
32	10	1	8	13	34	13	4.6	53.9	7.7	38.5	0.0
33	10	1	8	13	39	14	4.6	28.6	0.0	57.2	0.0
34	10	1	8	13	44	16	4.6	50.0	0.0	50.0	0.0
35	10	1	8	13	49	12	4.6	58.3	0.0	41.7	0.0
36	10	1	8	13	54	17	4.6	70.6	0.0	23.5	0.0
37	10	1	8	13	59	28	4.6	82.2	0.0	14.3	0.0

Table AII.70: (Continued) 2010 Middle Loch surface water survey radon measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
38	10	1	8	14	4	27	4.6	85.2	0.0	11.1	0.0
39	10	1	8	14	9	28	4.6	67.9	0.0	17.9	0.0
40	10	1	8	14	14	30	4.6	80.0	0.0	16.7	0.0
41	10	1	8	14	19	39	4.6	71.8	2.6	23.1	0.0
42	10	1	8	14	24	36	4.6	75.0	0.0	19.5	0.0
43	10	1	8	14	29	57	4.6	75.5	0.0	15.8	0.0
44	10	1	8	14	34	101	4.6	82.2	0.0	10.9	0.0
45	10	1	8	14	39	102	4.6	77.5	2.0	18.6	0.0
46	10	1	8	14	44	87	4.5	75.9	2.3	19.6	0.0
47	10	1	8	14	49	76	4.5	59.2	0.0	39.5	0.0
48	10	1	8	14	54	78	4.5	61.6	1.3	34.6	0.0
49	10	1	8	14	59	54	4.6	53.7	0.0	42.6	0.0
50	10	1	8	15	4	64	4.6	40.6	1.6	54.7	0.0
51	10	1	8	15	9	59	4.6	35.6	0.0	59.3	0.0
52	10	1	8	15	14	71	4.5	46.5	1.4	47.9	0.0
53	10	1	8	15	19	79	4.5	49.4	0.0	46.8	0.0
54	10	1	8	15	24	68	4.6	38.2	0.0	61.8	0.0
55	10	1	8	15	29	58	4.6	39.7	3.5	55.2	1.7
56	10	1	8	15	34	68	4.6	41.2	0.0	53.0	0.0
57	10	1	8	15	39	60	4.6	33.3	0.0	63.3	0.0
58	10	1	8	15	44	41	4.6	31.7	4.9	61.0	2.5
59	10	1	8	15	47	32	3	15.6	6.3	65.6	3.1

Table AII.71: 2010 Middle Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	8	33.2	31	2	6.9	70	5	18.777	51.299
2	2218	8	33.5	26	2	6.9	70	5	9.439	45.575
3	2218	9	33.5	23	2	6.9	70	5	113.879	87.413
4	2218	9	33.5	21	2	6.9	70	5	124.039	90.485
5	2218	8	33.8	19	2	6.9	70	5	124.039	90.485
6	2218	9	33.8	18	2	6.9	70	5	104.956	85.188
7	2218	8	33.8	17	2	7.0	70	5	133.581	92.991
8	2218	9	33.8	16	2	6.9	70	5	190.830	106.532
9	2201	9	33.5	15	2	7.0	70	5	152.664	97.764
10	2218	8	33.5	15	2	6.9	70	5	257.620	120.061
11	2218	8	33.5	14	1	7.0	70	5	190.830	106.532

Table AII.71. (Continued) 2010 Middle Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
12	2218	8	33.2	13	2	7.0	70	5	200.371	108.590
13	2218	8	32.8	13	2	7.0	70	5	162.205	100.045
14	2218	9	32.8	12	1	7.0	70	5	162.205	100.045
15	2218	8	32.5	12	1	7.0	70	5	190.830	106.532
16	2218	8	31.9	12	1	6.9	70	5	124.039	90.485
17	2218	8	31.9	11	1	6.9	70	5	200.371	108.590
18	2218	8	31.9	11	1	6.9	70	5	200.371	108.590
19	2218	8	31.9	11	2	7.0	70	5	133.581	92.991
20	2218	9	31.6	10	1	6.9	70	5	152.664	97.764
21	2218	8	31.3	10	1	6.3	60	5	219.454	112.570
22	2201	9	31.0	10	1	6.2	60	5	152.664	97.764
23	2218	8	30.7	10	1	6.2	60	5	85.873	79.429
24	2218	8	30.7	10	1	6.2	60	5	133.581	92.991
25	2218	8	30.7	9	1	6.2	60	5	57.249	69.572
26	2218	8	30.7	9	1	6.2	60	5	85.873	79.429
27	2218	8	31.3	9	1	6.2	60	5	76.332	76.332
28	2218	9	31.6	9	1	6.9	70	5	66.790	73.058
29	2218	8	32.2	9	1	6.9	70	5	76.332	76.332
30	2218	8	32.5	9	2	6.9	70	5	76.332	76.332
31	2218	9	32.8	8	2	6.9	70	5	104.956	85.188
32	2218	8	33.2	8	1	6.9	70	5	114.498	87.888
33	2218	8	33.5	8	1	6.9	70	5	114.498	87.888
34	2218	8	33.8	8	2	6.9	70	5	152.664	97.764
35	2218	8	34.1	8	1	6.9	70	5	114.498	87.888
36	2218	9	34.1	8	2	6.9	70	5	152.664	97.764
37	2201	9	34.4	8	1	6.9	70	5	257.620	120.061
38	2218	9	34.4	8	1	6.9	70	5	248.079	118.241
39	2218	8	34.7	8	1	6.9	70	5	228.996	114.498
40	2236	9	35.0	8	1	6.9	70	5	276.703	123.605
41	2218	9	34.7	8	1	6.9	70	5	353.035	136.718
42	2218	9	34.7	8	1	6.9	70	5	324.411	131.980
43	2218	8	34.7	7	1	6.9	70	5	496.158	158.009
44	2218	8	34.4	7	1	6.9	70	5	896.900	205.081
45	2218	9	34.4	7	1	6.9	70	5	935.066	208.956
46	2218	8	34.1	7	1	6.9	70	5	796.272	195.041
47	2218	9	34.1	7	1	6.9	70	5	719.523	186.458

Table AII.71. (Continued) 2010 Middle Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
48	2218	8	33.8	7	1	6.9	70	5	719.523	186.458
49	2201	8	33.8	7	1	6.9	70	5	496.158	158.009
50	2218	8	33.5	7	1	6.9	70	5	582.031	169.343
51	2218	8	33.2	7	1	6.9	70	5	534.324	163.156
52	2218	8	32.8	7	1	6.9	70	5	642.773	177.410
53	2218	8	32.8	7	1	6.9	70	5	729.116	187.555
54	2218	8	32.5	7	1	6.9	70	5	648.822	177.598
55	2218	9	32.5	7	1	6.9	70	5	524.782	161.887
56	2218	8	32.2	6	1	7.0	70	5	610.656	172.935
57	2218	8	31.9	7	1	7.0	70	5	553.407	165.662
58	2218	8	31.9	6	1	6.9	70	5	353.035	138.256
59	2218	8	31.9	7	1	7.0	70	5	371.110	176.881

Table AII.72: 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	10:45:48	25.83	28.90	17.81	102.0	N/A	0.051	7.81	4.0	102.4
1/8/2010	10:46:46	25.66	49.73	32.52	107.3	N/A	0.117	8.27	4.8	119.4
1/8/2010	10:47:46	25.46	45.38	29.36	106.5	N/A	0.103	8.28	7.4	118.2
1/8/2010	10:48:46	25.57	47.50	30.90	104.1	N/A	0.129	8.28	5.3	116.9
1/8/2010	10:49:46	25.50	44.04	28.40	104.7	N/A	0.058	8.30	9.6	113.7
1/8/2010	10:50:48	25.59	48.58	31.68	103.4	N/A	0.141	8.32	7.7	111.1
1/8/2010	10:51:46	25.47	48.55	31.67	111.0	N/A	0.141	8.36	12.2	108.8
1/8/2010	10:52:46	25.39	48.47	31.61	112.4	N/A	0.162	8.35	11.7	108.0
1/8/2010	10:53:46	25.58	50.14	32.83	112.8	N/A	0.476	8.39	3.3	105.3
1/8/2010	10:54:46	25.60	50.16	32.84	113.4	N/A	0.491	8.40	3.5	103.5
1/8/2010	10:55:48	25.59	50.15	32.83	113.5	N/A	0.498	8.40	4.5	102.7
1/8/2010	10:56:46	25.61	50.21	32.88	114.0	N/A	0.516	8.40	3.6	101.8
1/8/2010	10:57:46	25.60	50.23	32.89	112.9	N/A	0.515	8.40	4.2	101.7
1/8/2010	10:58:46	25.01	0.52	0.25	110.2	N/A	0.034	8.39	6.8	96.6
1/8/2010	10:59:46	25.50	48.75	31.81	114.5	N/A	0.163	8.38	7.2	98.8
1/8/2010	11:00:48	25.37	48.15	31.38	116.4	N/A	0.168	8.41	11.7	95.0
1/8/2010	11:01:46	25.22	35.34	22.25	119.7	N/A	0.093	8.39	14.0	90.8
1/8/2010	11:02:46	24.90	22.01	13.23	99.8	N/A	0.063	8.16	36.6	96.8
1/8/2010	11:03:46	25.19	30.25	18.74	113.2	N/A	0.035	8.30	20.1	87.3
1/8/2010	11:04:46	25.14	32.43	20.23	102.3	N/A	0.070	8.25	115.2	85.9
1/8/2010	11:05:49	25.48	30.88	19.16	86.4	N/A	0.044	8.14	3.0	87.5
1/8/2010	11:06:46	25.79	46.81	30.39	91.3	N/A	0.058	8.26	2.3	91.6
1/8/2010	11:07:46	25.83	47.51	30.90	93.5	N/A	0.051	8.30	3.4	90.1
1/8/2010	11:08:46	25.41	48.83	31.87	93.7	N/A	0.124	8.31	3.6	89.4
1/8/2010	11:09:46	25.75	49.36	32.25	94.6	N/A	0.098	8.31	3.4	89.5
1/8/2010	11:10:48	25.78	48.18	31.39	93.3	N/A	0.087	8.30	3.5	89.8
1/8/2010	11:11:46	25.79	43.45	27.97	93.1	N/A	0.040	8.29	5.9	90.0
1/8/2010	11:12:46	25.80	45.48	29.43	93.4	N/A	0.042	8.30	6.3	90.1
1/8/2010	11:13:46	25.55	48.73	31.79	94.0	N/A	0.094	8.31	5.3	89.7
1/8/2010	11:14:46	25.49	48.81	31.85	94.8	N/A	0.094	8.32	3.9	90.8
1/8/2010	11:15:48	25.58	48.85	31.88	95.3	N/A	0.096	8.32	3.8	91.2
1/8/2010	11:16:46	25.72	48.81	31.85	95.2	N/A	0.096	8.32	4.1	91.7
1/8/2010	11:17:46	25.80	48.69	31.76	94.8	N/A	0.098	8.32	4.3	92.2
1/8/2010	11:18:46	25.99	48.55	31.65	94.4	N/A	0.102	8.32	6.7	92.1
1/8/2010	11:19:46	25.90	48.54	31.65	94.1	N/A	0.100	8.32	4.9	92.3
1/8/2010	11:20:49	26.03	48.54	31.64	93.9	N/A	0.106	8.32	6.0	92.1
1/8/2010	11:21:46	26.04	48.59	31.68	93.6	N/A	0.106	8.32	3.8	92.7

Table AII.72: (Continued) 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one-minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	11:22:46	26.06	48.35	31.51	96.1	N/A	0.103	8.32	3.3	90.1
1/8/2010	11:23:46	25.97	39.55	25.18	94.9	N/A	0.027	8.28	5.9	88.0
1/8/2010	11:24:46	26.04	46.27	29.99	93.1	N/A	0.072	8.30	3.8	89.7
1/8/2010	11:25:48	25.84	45.75	29.62	95.7	N/A	0.139	8.31	4.6	86.9
1/8/2010	11:26:46	26.06	43.63	28.09	95.0	N/A	0.107	8.30	3.8	85.4
1/8/2010	11:27:46	25.89	32.79	20.47	78.1	N/A	0.106	8.11	7.2	83.3
1/8/2010	11:28:46	25.35	41.36	26.48	108.2	N/A	0.141	8.37	18.6	81.8
1/8/2010	11:29:46	25.50	26.87	16.45	108.0	N/A	0.126	8.24	13.5	76.4
1/8/2010	11:30:48	25.76	29.68	18.34	115.2	N/A	0.140	8.33	25.8	79.5
1/8/2010	11:31:46	25.54	22.12	13.30	118.3	N/A	0.119	8.34	17.5	72.1
1/8/2010	11:32:46	25.77	23.22	14.02	131.7	N/A	0.138	8.43	32.5	74.8
1/8/2010	11:33:46	25.54	38.26	24.28	101.6	N/A	0.103	8.26	22.4	81.5
1/8/2010	11:34:46	25.88	50.68	33.22	125.5	N/A	0.108	8.43	7.9	75.7
1/8/2010	11:35:48	25.71	49.62	32.44	116.4	N/A	0.133	8.44	15.2	73.2
1/8/2010	11:36:16	25.67	49.03	32.01	123.2	N/A	0.147	8.45	16.8	73.8
1/8/2010	11:37:46	25.89	48.27	31.45	137.9	N/A	0.131	8.48	19.7	74.0
1/8/2010	11:38:46	25.88	47.72	31.05	120.7	N/A	0.115	8.44	9.6	75.0
1/8/2010	11:39:46	25.84	48.76	31.81	123.6	N/A	0.135	8.45	19.7	75.3
1/8/2010	11:40:48	25.89	49.03	32.01	124.8	N/A	0.141	8.43	17.4	75.9
1/8/2010	11:41:46	25.87	48.89	31.91	119.8	N/A	0.116	8.43	15.6	76.4
1/8/2010	11:42:46	25.74	41.82	26.80	123.2	N/A	0.106	8.41	12.4	73.0
1/8/2010	11:43:46	25.83	31.54	19.61	107.0	N/A	0.124	8.25	15.2	76.3
1/8/2010	11:44:46	26.27	45.40	29.35	117.9	N/A	0.108	8.40	18.8	75.0
1/8/2010	11:45:49	25.90	50.26	32.91	111.1	N/A	0.111	8.41	4.5	68.8
1/8/2010	11:46:46	26.12	50.91	33.38	108.8	N/A	0.120	8.40	3.0	66.1
1/8/2010	11:47:46	26.65	51.43	33.75	108.7	N/A	0.116	8.40	2.8	64.0
1/8/2010	11:48:46	26.55	51.35	33.69	107.6	N/A	0.107	8.39	2.5	62.4
1/8/2010	11:49:46	26.22	50.67	33.20	109.0	N/A	0.097	8.41	3.0	61.0
1/8/2010	11:50:48	26.21	50.82	33.31	111.8	N/A	0.088	8.42	3.5	58.4
1/8/2010	11:51:46	26.20	51.06	33.49	109.9	N/A	0.164	8.41	3.8	59.1
1/8/2010	11:52:46	26.22	51.24	33.62	108.4	N/A	0.146	8.40	3.0	61.2
1/8/2010	11:53:46	26.19	51.05	33.48	108.9	N/A	0.123	8.41	2.6	61.8
1/8/2010	11:54:46	26.18	51.11	33.53	108.0	N/A	0.127	8.40	2.4	62.4
1/8/2010	11:55:49	26.23	51.19	33.58	108.5	N/A	0.128	8.41	3.3	62.2
1/8/2010	11:56:46	26.26	51.26	33.63	109.1	N/A	0.123	8.41	4.5	62.0
1/8/2010	11:57:46	26.26	51.24	33.62	109.3	N/A	0.122	8.41	5.1	62.2
1/8/2010	11:58:46	26.31	51.44	33.76	109.1	N/A	0.158	8.40	4.6	62.3

Table AII.72: (Continued) 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one-minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	11:59:46	26.26	51.07	33.50	110.1	N/A	0.101	8.42	2.9	61.9
1/8/2010	12:00:48	26.16	51.04	33.48	109.4	N/A	0.086	8.42	2.2	58.9
1/8/2010	12:01:46	26.06	51.14	33.55	108.6	N/A	0.085	8.42	2.6	57.4
1/8/2010	12:02:46	25.96	49.01	31.99	108.6	N/A	0.087	8.42	3.1	57.1
1/8/2010	12:03:46	26.17	44.81	28.93	107.7	N/A	0.078	8.38	3.0	55.3
1/8/2010	12:04:46	25.93	39.05	24.83	104.5	N/A	0.080	8.34	2.7	56.3
1/8/2010	12:05:48	26.16	47.18	30.65	99.3	N/A	0.076	8.32	3.8	59.3
1/8/2010	12:06:46	26.39	50.26	32.90	109.3	N/A	0.073	8.41	3.9	55.5
1/8/2010	12:07:46	25.66	50.42	33.03	109.9	N/A	0.063	8.43	2.2	54.3
1/8/2010	12:08:46	25.42	50.47	33.07	109.3	N/A	0.072	8.43	1.5	53.3
1/8/2010	12:09:46	25.54	50.52	33.10	109.6	N/A	0.080	8.43	2.6	51.8
1/8/2010	12:10:48	25.45	50.38	33.01	108.8	N/A	0.085	8.44	3.3	50.4
1/8/2010	12:11:46	25.22	50.13	32.83	107.4	N/A	0.080	8.43	33.9	50.4
1/8/2010	12:12:46	25.30	50.30	32.95	101.8	N/A	0.137	8.40	1.9	51.1
1/8/2010	12:13:46	25.34	50.30	32.95	101.4	N/A	0.109	8.40	1.4	52.7
1/8/2010	12:14:46	25.29	50.32	32.97	100.6	N/A	0.125	8.40	8.7	54.3
1/8/2010	12:15:49	25.30	50.32	32.96	100.1	N/A	0.105	8.40	2.1	55.6
1/8/2010	12:16:46	25.33	50.32	32.96	100.1	N/A	0.076	8.40	4.9	56.7
1/8/2010	12:17:46	25.35	50.32	32.96	100.4	N/A	0.128	8.40	2.0	57.6
1/8/2010	12:18:46	25.32	50.32	32.96	100.1	N/A	0.135	8.40	8.5	57.7
1/8/2010	12:19:46	25.25	50.33	32.97	99.3	N/A	0.115	8.40	5.1	58.1
1/8/2010	12:20:48	25.30	50.32	32.96	99.1	N/A	0.135	8.40	3.7	58.6
1/8/2010	12:21:46	25.39	50.31	32.95	100.5	N/A	0.087	8.41	1.4	53.2
1/8/2010	12:22:46	25.51	50.41	33.03	102.1	N/A	0.082	8.40	1.8	49.7
1/8/2010	12:23:46	25.50	50.55	33.13	104.7	N/A	0.085	8.42	1.4	47.4
1/8/2010	12:24:46	25.39	50.60	33.17	104.4	N/A	0.074	8.42	1.5	45.9
1/8/2010	12:25:49	25.48	50.69	33.23	106.1	N/A	0.078	8.43	2.1	44.7
1/8/2010	12:26:46	25.69	50.91	33.39	107.5	N/A	0.074	8.42	2.0	44.3
1/8/2010	12:27:46	26.25	51.19	33.58	108.1	N/A	0.084	8.41	2.2	43.9
1/8/2010	12:28:46	26.17	51.25	33.63	108.3	N/A	0.087	8.41	2.2	43.5
1/8/2010	12:29:46	25.74	50.93	33.40	106.8	N/A	0.087	8.42	1.5	43.9
1/8/2010	12:30:49	25.51	50.69	33.23	103.3	N/A	0.086	8.42	1.7	43.6
1/8/2010	12:31:46	25.82	50.96	33.42	105.3	N/A	0.093	8.43	2.1	43.5
1/8/2010	12:32:46	25.77	50.91	33.39	105.9	N/A	0.045	8.42	1.7	44.4
1/8/2010	12:33:46	25.64	50.88	33.37	105.6	N/A	0.020	8.43	1.8	45.0
1/8/2010	12:34:46	25.49	50.78	33.30	105.2	N/A	0.023	8.43	1.0	45.3
1/8/2010	12:35:48	25.43	50.69	33.23	107.3	N/A	0.049	8.44	2.0	45.5

Table AII.72: (Continued) 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one-minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	12:36:46	25.43	50.65	33.21	108.2	N/A	0.034	8.44	9.6	46.7
1/8/2010	12:37:46	25.34	0.89	0.43	107.8	N/A	0.014	8.43	74.9	49.2
1/8/2010	12:38:46	25.45	30.34	18.80	108.1	N/A	0.016	8.44	434.9	47.8
1/8/2010	12:39:46	25.55	17.95	10.59	108.4	N/A	0.016	8.44	425.0	47.4
1/8/2010	12:40:49	25.55	21.06	12.60	107.3	N/A	0.016	8.44	423.4	47.5
1/8/2010	12:41:46	25.44	30.96	19.22	107.3	N/A	0.016	8.44	417.7	47.5
1/8/2010	12:42:46	25.50	42.33	27.17	107.8	N/A	0.016	8.44	500.0	45.8
1/8/2010	12:43:46	25.47	46.49	30.17	107.3	N/A	0.016	8.44	480.5	45.2
1/8/2010	12:44:46	25.44	34.76	21.84	107.1	N/A	0.016	8.44	341.3	45.5
1/8/2010	12:45:48	25.41	47.33	30.77	105.8	N/A	0.015	8.43	195.1	43.7
1/8/2010	12:46:46	25.48	40.29	25.71	105.9	N/A	0.016	8.43	317.2	43.6
1/8/2010	12:47:46	25.52	18.03	10.64	105.8	N/A	0.016	8.43	415.1	43.7
1/8/2010	12:48:46	25.58	0.63	0.30	104.9	N/A	0.016	8.42	124.5	45.1
1/8/2010	12:49:46	25.64	27.16	16.64	105.3	N/A	0.014	8.42	17.6	47.4
1/8/2010	12:50:49	25.65	51.41	33.76	105.4	N/A	0.016	8.43	2.4	48.0
1/8/2010	12:51:46	25.64	28.94	17.84	105.4	N/A	0.017	8.43	1.3	48.7
1/8/2010	12:52:46	25.67	51.39	33.75	105.4	N/A	0.008	8.43	0.8	49.3
1/8/2010	12:53:46	25.67	51.39	33.74	105.5	N/A	0.006	8.42	1.4	49.7
1/8/2010	12:54:46	25.76	51.38	33.73	105.7	N/A	0.007	8.43	2.1	49.9
1/8/2010	12:55:49	25.78	51.35	33.71	105.7	N/A	0.005	8.43	1.2	50.2
1/8/2010	12:56:46	25.85	15.33	8.92	105.6	N/A	0.005	8.41	0.9	50.7
1/8/2010	12:57:46	25.77	2.54	1.30	105.9	N/A	0.004	8.41	22.1	50.7
1/8/2010	12:58:46	25.72	51.33	33.70	105.1	N/A	0.014	8.41	1.0	51.0
1/8/2010	12:59:46	25.71	42.49	27.28	106.3	N/A	0.011	8.43	143.3	52.7
1/8/2010	13:00:48	25.58	10.93	6.19	105.5	N/A	0.010	8.43	103.2	53.6
1/8/2010	13:01:46	24.96	0.63	0.30	105.2	N/A	0.011	8.44	166.4	54.4
1/8/2010	13:02:46	24.85	2.39	1.23	105.4	N/A	0.010	8.44	174.5	56.9
1/8/2010	13:03:46	24.37	0.85	0.41	106.2	N/A	0.010	8.40	181.9	60.2
1/8/2010	13:04:46	22.98	0.78	0.38	106.4	N/A	0.010	8.08	134.0	65.1
1/8/2010	13:05:48	23.62	0.79	0.39	103.7	N/A	0.010	7.91	110.7	70.4
1/8/2010	13:06:46	23.87	0.85	0.41	105.3	N/A	0.009	8.28	87.4	74.6
1/8/2010	13:07:46	23.18	0.37	0.17	104.3	N/A	0.010	8.12	122.6	78.0
1/8/2010	13:08:46	22.96	0.31	0.15	103.1	N/A	0.009	7.88	241.6	81.6
1/8/2010	13:09:46	22.68	0.28	0.13	103.4	N/A	0.009	7.80	244.6	86.2
1/8/2010	13:10:49	22.69	0.25	0.12	103.8	N/A	0.009	7.89	219.9	90.3
1/8/2010	13:11:46	22.66	0.23	0.11	103.8	N/A	0.009	8.16	247.7	85.0
1/8/2010	13:12:46	25.92	2.56	1.31	105.4	N/A	0.009	8.41	112.7	79.3

Table AII.72: (Continued) 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one-minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	13:13:46	25.90	50.76	33.27	111.9	N/A	0.147	8.43	1.8	70.1
1/8/2010	13:14:46	25.96	50.78	33.29	116.5	N/A	0.125	8.45	1.2	66.5
1/8/2010	13:15:49	25.94	50.79	33.30	117.0	N/A	0.152	8.45	1.7	63.5
1/8/2010	13:16:46	25.97	50.78	33.29	114.6	N/A	0.079	8.45	1.1	61.4
1/8/2010	13:17:46	26.08	50.34	32.96	113.7	N/A	0.055	8.42	183.6	56.8
1/8/2010	13:18:46	26.07	50.84	33.33	112.2	N/A	0.093	8.39	1.1	54.1
1/8/2010	13:19:46	26.10	50.48	33.07	115.8	N/A	0.042	8.40	1.4	51.5
1/8/2010	13:20:48	26.36	50.61	33.15	120.4	N/A	0.032	8.46	2.0	49.3
1/8/2010	13:21:46	26.16	51.27	33.64	113.8	N/A	0.053	8.42	7.1	49.1
1/8/2010	13:22:46	26.09	51.31	33.68	114.0	N/A	0.059	8.44	8.8	48.3
1/8/2010	13:23:46	25.97	51.31	33.68	118.5	N/A	0.045	8.45	14.1	47.4
1/8/2010	13:24:46	25.92	51.33	33.69	114.3	N/A	0.050	8.44	14.6	46.9
1/8/2010	13:25:48	25.76	51.02	33.47	110.0	N/A	0.026	8.43	20.4	46.5
1/8/2010	13:26:46	25.81	50.61	33.17	105.6	N/A	0.039	8.40	21.4	46.1
1/8/2010	13:27:46	25.77	50.40	33.01	103.4	N/A	0.034	8.39	4.7	46.0
1/8/2010	13:28:46	26.27	50.40	33.00	122.8	N/A	0.034	8.45	28.0	45.0
1/8/2010	13:29:46	26.24	50.48	33.06	119.3	N/A	0.024	8.44	14.1	44.8
1/8/2010	13:30:48	26.31	50.39	32.99	117.8	N/A	0.029	8.42	2.1	43.8
1/8/2010	13:31:46	26.44	50.53	33.09	114.8	N/A	0.030	8.42	8.1	43.6
1/8/2010	13:32:46	26.66	50.40	32.99	114.8	N/A	0.024	8.37	3.8	43.4
1/8/2010	13:33:46	26.39	50.42	33.01	109.8	N/A	0.027	8.37	15.2	43.1
1/8/2010	13:34:46	26.04	50.08	32.77	109.3	N/A	0.035	8.40	21.5	42.5
1/8/2010	13:35:48	25.86	50.05	32.75	104.9	N/A	0.031	8.39	9.8	41.6
1/8/2010	13:36:46	25.90	50.12	32.80	99.6	N/A	0.025	8.36	14.0	41.8
1/8/2010	13:37:46	26.76	50.16	32.81	131.9	N/A	0.041	8.45	19.6	40.6
1/8/2010	13:38:46	26.66	50.12	32.79	119.4	N/A	0.063	8.40	3.9	40.6
1/8/2010	13:39:46	26.44	50.10	32.78	118.4	N/A	0.042	8.40	4.0	39.7
1/8/2010	13:40:48	26.76	50.25	32.88	121.7	N/A	0.044	8.42	9.9	39.1
1/8/2010	13:41:46	26.48	50.23	32.87	114.1	N/A	0.044	8.40	13.3	38.9
1/8/2010	13:42:46	26.44	50.47	33.05	110.3	N/A	0.042	8.40	3.6	36.7
1/8/2010	13:43:46	26.69	50.28	32.90	113.7	N/A	0.046	8.40	12.1	34.8
1/8/2010	13:44:46	26.82	50.18	32.82	117.8	N/A	0.047	8.42	10.2	34.1
1/8/2010	13:45:48	26.76	50.22	32.86	117.2	N/A	0.050	8.41	1.9	32.5
1/8/2010	13:46:46	26.74	49.89	32.61	115.2	N/A	0.056	8.40	1.6	31.6
1/8/2010	13:47:46	26.48	51.44	33.76	93.0	N/A	0.025	8.35	9.9	31.8
1/8/2010	13:48:46	26.52	51.33	33.68	101.5	N/A	0.026	8.39	23.8	31.2
1/8/2010	13:49:46	27.17	50.89	33.33	108.3	N/A	0.031	8.40	16.0	31.2

Table AII.72: (Continued) 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one-minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	13:50:48	27.12	50.60	33.12	121.1	N/A	0.053	8.42	10.8	30.6
1/8/2010	13:51:46	26.86	49.21	32.11	114.4	N/A	0.062	8.42	15.3	30.8
1/8/2010	13:52:46	25.98	27.16	16.63	69.4	N/A	0.105	8.05	1.7	28.6
1/8/2010	13:53:46	27.16	39.52	25.14	86.4	N/A	0.067	8.28	3.2	31.9
1/8/2010	13:54:46	26.96	48.01	31.23	60.0	N/A	0.087	8.18	3.6	32.2
1/8/2010	13:55:49	26.44	40.37	25.75	63.5	N/A	0.076	8.07	2.6	29.4
1/8/2010	13:56:46	25.77	33.73	21.12	49.3	N/A	0.079	7.97	2.2	29.3
1/8/2010	13:57:46	26.95	39.39	25.05	50.8	N/A	0.087	8.09	2.6	32.3
1/8/2010	13:58:46	26.42	40.27	25.69	59.7	N/A	0.096	8.08	2.6	34.6
1/8/2010	13:59:46	27.24	48.17	31.34	55.7	N/A	0.123	8.14	3.7	33.8
1/8/2010	14:00:48	27.42	50.34	32.93	66.7	N/A	0.121	8.21	3.2	32.9
1/8/2010	14:01:46	27.11	46.98	30.48	69.0	N/A	0.146	8.21	3.9	32.7
1/8/2010	14:02:46	27.13	46.46	30.11	61.8	N/A	0.130	8.18	2.5	32.0
1/8/2010	14:03:46	26.88	40.18	25.61	72.9	N/A	0.045	8.20	3.7	30.8
1/8/2010	14:04:46	26.97	45.85	29.67	70.7	N/A	0.075	8.20	3.8	29.8
1/8/2010	14:05:48	27.01	48.58	31.65	84.6	N/A	0.085	8.24	4.0	28.3
1/8/2010	14:06:46	27.19	47.52	30.87	103.3	N/A	0.110	8.37	7.0	27.6
1/8/2010	14:07:46	27.17	45.77	29.60	110.4	N/A	0.062	8.37	5.2	27.7
1/8/2010	14:08:46	27.11	45.29	29.26	155.3	N/A	0.067	8.57	9.9	26.7
1/8/2010	14:09:46	27.15	42.24	27.07	166.5	N/A	0.058	8.63	13.7	25.1
1/8/2010	14:10:48	27.27	37.74	23.88	180.1	N/A	0.055	8.68	32.0	23.7
1/8/2010	14:11:46	27.07	33.36	20.84	156.4	N/A	0.040	8.57	16.4	22.8
1/8/2010	14:12:46	27.06	39.73	25.28	131.8	N/A	0.118	8.43	9.6	27.8
1/8/2010	14:13:46	27.10	29.36	18.10	129.4	N/A	0.122	8.46	9.3	25.6
1/8/2010	14:14:46	27.25	36.26	22.84	125.6	N/A	0.113	8.44	26.8	28.0
1/8/2010	14:15:48	27.38	39.37	25.03	124.5	N/A	0.101	8.43	9.9	27.3
1/8/2010	14:16:46	27.35	41.23	26.34	127.9	N/A	0.066	8.42	7.9	29.1
1/8/2010	14:17:46	27.17	30.65	18.97	133.2	N/A	0.028	8.48	11.3	26.7
1/8/2010	14:18:46	27.59	38.60	24.48	133.5	N/A	0.144	8.44	4.8	29.2
1/8/2010	14:19:46	27.32	33.30	20.79	133.3	N/A	0.080	8.50	8.9	23.7
1/8/2010	14:20:48	27.12	32.45	20.21	137.9	N/A	0.153	8.51	13.5	25.4
1/8/2010	14:21:46	27.05	30.22	18.69	132.6	N/A	0.062	8.46	10.1	24.2
1/8/2010	14:22:46	27.26	22.75	13.68	116.9	N/A	0.063	8.28	5.0	24.4
1/8/2010	14:23:46	27.25	33.87	21.18	153.1	N/A	0.062	8.56	36.1	24.9
1/8/2010	14:24:46	27.35	39.32	24.99	153.8	N/A	0.077	8.62	34.7	19.3
1/8/2010	14:25:49	26.74	17.64	10.38	103.9	N/A	0.057	8.12	3.1	15.0
1/8/2010	14:26:46	27.35	36.88	23.27	109.3	N/A	0.145	8.33	14.2	23.4

Table AII.72: (Continued) 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one-minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	14:27:46	26.80	19.08	11.30	102.8	N/A	0.135	8.15	1.3	20.5
1/8/2010	14:28:46	26.76	18.54	10.95	99.4	N/A	0.103	8.13	2.3	22.6
1/8/2010	14:29:46	26.67	16.36	9.56	98.9	N/A	0.109	8.10	1.7	22.6
1/8/2010	14:30:48	26.61	15.06	8.74	97.8	N/A	0.082	8.07	1.6	19.1
1/8/2010	14:31:46	26.91	20.47	12.20	104.2	N/A	0.099	8.19	2.8	23.7
1/8/2010	14:32:46	26.66	18.88	11.17	102.5	N/A	0.074	8.15	3.7	21.5
1/8/2010	14:33:46	26.92	14.09	8.13	116.7	N/A	0.055	8.37	20.5	20.6
1/8/2010	14:34:46	27.22	42.17	27.01	144.2	N/A	0.023	8.51	29.7	21.8
1/8/2010	14:35:48	27.04	15.52	9.03	113.8	N/A	0.026	8.32	30.1	8.4
1/8/2010	14:36:46	28.01	43.51	27.95	110.6	N/A	0.050	8.30	9.4	14.2
1/8/2010	14:37:46	26.84	48.51	31.60	106.0	N/A	0.155	8.33	2.4	10.3
1/8/2010	14:38:46	27.03	44.22	28.49	104.7	N/A	0.109	8.32	2.9	8.6
1/8/2010	14:39:46	27.39	26.74	16.33	104.8	N/A	0.158	8.29	7.6	5.2
1/8/2010	14:40:48	27.95	46.12	29.84	107.7	N/A	0.148	8.30	6.8	8.1
1/8/2010	14:41:46	27.34	42.63	27.34	105.0	N/A	0.082	8.32	2.9	1.8
1/8/2010	14:42:46	26.91	48.32	31.46	105.2	N/A	0.101	8.34	3.2	3.4
1/8/2010	14:43:46	26.94	48.42	31.53	107.5	N/A	0.109	8.34	3.2	5.0
1/8/2010	14:44:46	26.95	48.32	31.46	106.1	N/A	0.191	8.34	3.0	6.2
1/8/2010	14:45:48	26.96	49.83	32.56	113.7	N/A	0.157	8.38	4.2	6.5
1/8/2010	14:46:46	27.00	49.69	32.46	112.0	N/A	0.117	8.37	4.5	7.5
1/8/2010	14:47:46	27.05	49.49	32.31	111.1	N/A	0.052	8.37	2.7	8.6
1/8/2010	14:48:46	27.04	49.16	32.07	110.2	N/A	0.053	8.35	2.8	9.9
1/8/2010	14:49:46	27.09	48.79	31.80	109.1	N/A	-0.002	8.35	4.0	10.5
1/8/2010	14:50:48	27.06	48.76	31.78	107.4	N/A	-0.009	8.35	2.9	10.3
1/8/2010	14:51:46	27.04	49.04	31.98	107.8	N/A	-0.009	8.36	3.3	10.5
1/8/2010	14:52:46	27.09	48.95	31.92	107.0	N/A	-0.009	8.35	2.5	11.0
1/8/2010	14:53:46	27.09	48.78	31.79	107.2	N/A	-0.009	8.35	4.1	11.1
1/8/2010	14:54:46	27.11	48.80	31.80	106.4	N/A	-0.009	8.34	5.4	11.4
1/8/2010	14:55:48	27.09	48.86	31.85	106.3	N/A	-0.009	8.35	4.9	11.5
1/8/2010	14:56:46	27.06	48.74	31.76	105.9	N/A	-0.010	8.35	5.4	11.8
1/8/2010	14:57:46	27.07	48.63	31.68	105.7	N/A	-0.010	8.34	4.5	12.1
1/8/2010	14:58:46	27.07	48.56	31.63	105.6	N/A	-0.009	8.34	5.6	12.1
1/8/2010	14:59:46	27.05	48.57	31.64	106.1	N/A	-0.009	8.34	3.9	11.9
1/8/2010	15:00:48	27.01	48.47	31.57	106.2	N/A	-0.009	8.35	4.5	11.8
1/8/2010	15:01:46	27.00	48.48	31.58	106.4	N/A	-0.009	8.35	5.0	11.8
1/8/2010	15:02:46	26.97	48.44	31.54	106.9	N/A	-0.009	8.34	4.5	11.8
1/8/2010	15:03:46	27.06	48.08	31.28	106.3	N/A	-0.008	8.34	3.3	11.3

Table AII.72: (Continued) 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one-minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	15:04:46	27.15	47.86	31.12	105.5	N/A	-0.009	8.34	2.6	9.7
1/8/2010	15:05:48	27.32	44.35	28.58	104.9	N/A	-0.009	8.33	3.0	5.6
1/8/2010	15:06:46	27.09	33.85	21.17	100.5	N/A	-0.009	8.29	2.7	1.8
1/8/2010	15:07:46	26.97	29.00	17.86	99.1	N/A	-0.010	8.25	3.5	-1.6
1/8/2010	15:08:46	27.11	33.70	21.07	102.7	N/A	-0.002	8.30	5.2	-2.3
1/8/2010	15:09:46	27.13	31.14	19.31	103.5	N/A	-0.008	8.30	4.8	-1.1
1/8/2010	15:10:48	26.98	26.27	16.02	102.6	N/A	-0.009	8.27	5.7	-5.4
1/8/2010	15:11:46	26.90	47.92	31.17	106.9	N/A	0.004	8.34	3.3	0.0
1/8/2010	15:12:46	26.76	48.01	31.24	109.5	N/A	0.016	8.34	5.5	0.4
1/8/2010	15:13:46	26.65	48.51	31.61	105.4	N/A	0.015	8.32	3.0	1.6
1/8/2010	15:14:46	26.46	45.07	29.11	98.0	N/A	0.016	8.26	4.1	2.3
1/8/2010	15:15:48	26.54	44.78	28.91	97.8	N/A	0.022	8.28	3.0	2.6
1/8/2010	15:16:46	26.60	46.60	30.22	94.9	N/A	0.023	8.26	2.9	3.6
1/8/2010	15:17:46	26.59	46.68	30.27	97.0	N/A	0.019	8.23	3.0	4.2
1/8/2010	15:18:46	26.47	46.87	30.42	90.5	N/A	0.018	8.16	3.4	5.1
1/8/2010	15:19:46	26.68	48.06	31.27	91.2	N/A	0.019	8.21	3.6	5.0
1/8/2010	15:21:46	26.79	49.20	32.11	89.8	N/A	0.021	8.26	3.6	5.0
1/8/2010	15:22:46	26.51	51.36	33.70	109.2	N/A	0.066	8.40	7.5	4.0
1/8/2010	15:23:46	26.34	51.27	33.64	110.2	N/A	0.039	8.41	2.0	3.8
1/8/2010	15:24:46	26.29	51.25	33.62	110.9	N/A	0.011	8.41	2.0	4.7
1/8/2010	15:25:48	26.39	51.29	33.66	110.5	N/A	0.019	8.41	2.9	4.7
1/8/2010	15:26:46	27.01	51.29	33.64	111.6	N/A	0.030	8.39	2.7	5.1
1/8/2010	15:27:46	27.29	51.01	33.42	108.6	N/A	0.018	8.37	2.6	5.4
1/8/2010	15:28:46	26.44	51.32	33.68	110.4	N/A	0.027	8.41	2.3	5.6
1/8/2010	15:29:46	26.61	51.35	33.69	112.2	N/A	0.017	8.41	2.7	5.5
1/8/2010	15:30:48	26.72	51.32	33.66	113.0	N/A	0.019	8.41	2.1	5.6
1/8/2010	15:31:46	26.42	51.21	33.60	111.9	N/A	0.032	8.41	2.9	6.0
1/8/2010	15:32:46	26.50	51.19	33.58	112.3	N/A	0.033	8.41	2.2	6.1
1/8/2010	15:33:46	26.48	51.23	33.61	113.7	N/A	0.027	8.41	1.9	6.3
1/8/2010	15:34:46	26.47	51.21	33.59	115.6	N/A	0.045	8.42	2.5	6.2
1/8/2010	15:35:48	26.06	51.11	33.53	111.4	N/A	0.033	8.43	1.7	6.1
1/8/2010	15:36:46	26.00	51.00	33.45	109.7	N/A	0.031	8.42	1.9	6.3
1/8/2010	15:37:46	26.03	50.94	33.40	110.3	N/A	0.028	8.43	2.3	6.2
1/8/2010	15:38:46	26.04	50.94	33.40	110.4	N/A	0.025	8.43	1.2	6.5
1/8/2010	15:39:46	26.08	50.82	33.31	110.7	N/A	0.023	8.42	1.5	6.5
1/8/2010	15:40:48	25.93	51.02	33.46	109.6	N/A	0.037	8.43	1.0	6.3
1/8/2010	15:41:46	25.92	51.04	33.48	109.3	N/A	0.044	8.43	1.6	6.3

Table AII.72: (Continued) 2010 Middle Loch surface water survey YSI data from the 6920 V2. Only data for one-minute intervals is reported.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/8/2010	15:42:46	25.83	51.08	33.51	109.6	N/A	0.023	8.43	1.7	6.7
1/8/2010	15:43:46	25.83	51.16	33.57	110.6	N/A	0.035	8.44	2.9	6.6
1/8/2010	15:44:46	25.84	51.14	33.56	110.6	N/A	0.118	8.43	3.0	7.1
1/8/2010	15:45:48	25.84	51.17	33.58	110.8	N/A	0.094	8.44	1.8	7.4
1/8/2010	15:46:46	25.84	51.15	33.56	110.8	N/A	0.120	8.44	2.1	7.8
1/8/2010	15:47:46	25.83	51.13	33.55	110.3	N/A	0.023	8.44	1.6	7.7
1/8/2010	15:48:46	25.84	51.13	33.55	110.8	N/A	0.040	8.44	0.4	7.9
1/8/2010	15:49:46	25.86	51.09	33.52	109.7	N/A	0.039	8.43	1.9	8.0
1/8/2010	15:50:48	25.85	51.15	33.56	110.7	N/A	0.045	8.44	1.9	7.8
1/8/2010	15:51:46	26.01	50.95	33.41	110.4	N/A	0.042	8.43	6.2	7.9
1/8/2010	15:52:46	25.91	49.22	32.15	109.4	N/A	0.074	8.43	210.5	8.1

Table AII.73: 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	10:58	21.38805	157.98893		18	0:00:30	2.0	305
1/8/2010	10:58	21.38805	157.98894		1	0:00:30	0.1	300
1/8/2010	10:59	21.38806	157.98894		0	0:00:30	0.0	328
1/8/2010	10:59	21.38806	157.98896	5.4	2	0:00:30	0.3	284
1/8/2010	11:00	21.38806	157.98896	5.4	0	0:00:30	0.0	177
1/8/2010	11:00	21.38806	157.98896	1.0	1	0:00:30	0.1	94
1/8/2010	11:01	21.38806	157.98896	0.5	1	0:00:30	0.1	284
1/8/2010	11:01	21.38801	157.98898	1.6	6	0:00:30	0.7	198
1/8/2010	11:02	21.38797	157.98900	3.6	5	0:00:30	0.6	197
1/8/2010	11:02	21.38784	157.98894	6.2	15	0:00:30	2.0	157
1/8/2010	11:03	21.38764	157.98935	7.2	48	0:00:30	6.0	242
1/8/2010	11:03	21.38732	157.98987	6.9	65	0:00:30	8.0	236
1/8/2010	11:04	21.38706	157.99038	6.7	60	0:00:30	7.0	242
1/8/2010	11:04	21.38687	157.99086	6.7	54	0:00:30	7.0	246
1/8/2010	11:05	21.38677	157.99136	6.7	52	0:00:30	6.0	258
1/8/2010	11:05	21.38682	157.99175	1.0	41	0:00:30	5.0	278
1/8/2010	11:06	21.38681	157.99180	0.7	5	0:00:30	0.6	254
1/8/2010	11:06	21.38686	157.99190		11	0:00:30	1.4	297
1/8/2010	11:07	21.38687	157.99190		1	0:00:30	0.2	325
1/8/2010	11:07	21.38687	157.99190		0	0:00:30	0.0	12
1/8/2010	11:08	21.38687	157.99191		1	0:00:30	0.1	312
1/8/2010	11:08	21.38688	157.99191		1	0:00:30	0.1	311
1/8/2010	11:09	21.38688	157.99192		1	0:00:30	0.1	333
1/8/2010	11:09	21.38689	157.99192		1	0:00:30	0.1	319
1/8/2010	11:10	21.38689	157.99193		1	0:00:30	0.1	305
1/8/2010	11:10	21.38689	157.99193		1	0:00:30	0.1	314
1/8/2010	11:11	21.38690	157.99194		1	0:00:30	0.1	321
1/8/2010	11:11	21.38690	157.99194	0.9	1	0:00:30	0.1	324
1/8/2010	11:12	21.38691	157.99194		1	0:00:30	0.1	321
1/8/2010	11:12	21.38691	157.99195		0	0:00:30	0.1	325
1/8/2010	11:13	21.38691	157.99195		0	0:00:30	0.0	322
1/8/2010	11:13	21.38691	157.99195		0	0:00:30	0.0	300
1/8/2010	11:14	21.38692	157.99195		0	0:00:30	0.0	329
1/8/2010	11:14	21.38692	157.99195		0	0:00:30	0.0	339
1/8/2010	11:15	21.38692	157.99195		0	0:00:30	0.0	307
1/8/2010	11:15	21.38692	157.99195		0	0:00:30	0.0	313
1/8/2010	11:16	21.38692	157.99195		0	0:00:30	0.0	315
1/8/2010	11:16	21.38692	157.99195		0	0:00:30	0.0	311

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	11:17	21.38692	157.99196	1.0	0	0:00:30	0.0	286
1/8/2010	11:17	21.38692	157.99196	1.0	0	0:00:30	0.0	313
1/8/2010	11:18	21.38692	157.99196	1.0	0	0:00:30	0.0	343
1/8/2010	11:18	21.38692	157.99196	1.0	0	0:00:30	0.0	0
1/8/2010	11:19	21.38693	157.99196	1.0	0	0:00:30	0.0	347
1/8/2010	11:19	21.38693	157.99196	1.0	0	0:00:30	0.0	345
1/8/2010	11:20	21.38693	157.99196	1.0	0	0:00:30	0.0	335
1/8/2010	11:20	21.38693	157.99196	1.0	0	0:00:30	0.0	260
1/8/2010	11:21	21.38693	157.99196	1.0	0	0:00:30	0.0	282
1/8/2010	11:21	21.38693	157.99196	1.0	0	0:00:30	0.0	306
1/8/2010	11:22	21.38693	157.99196	1.0	0	0:00:30	0.0	25
1/8/2010	11:22	21.38693	157.99196	1.0	0	0:00:30	0.0	137
1/8/2010	11:23	21.38693	157.99196	1.0	0	0:00:30	0.0	270
1/8/2010	11:23	21.38693	157.99196	1.0	0	0:00:30	0.0	0
1/8/2010	11:24	21.38693	157.99196	1.0	0	0:00:30	0.0	13
1/8/2010	11:24	21.38693	157.99196	1.0	0	0:00:30	0.0	335
1/8/2010	11:25	21.38693	157.99196	1.0	0	0:00:30	0.0	8
1/8/2010	11:25	21.38693	157.99196	1.0	0	0:00:30	0.0	0
1/8/2010	11:26	21.38693	157.99196	1.0	0	0:00:30	0.0	62
1/8/2010	11:26	21.38697	157.99190		8	0:00:30	0.9	53
1/8/2010	11:27	21.38698	157.99184		7	0:00:30	0.8	79
1/8/2010	11:27	21.38701	157.99174		11	0:00:30	1.3	74
1/8/2010	11:28	21.38702	157.99159		15	0:00:30	2.0	87
1/8/2010	11:28	21.38694	157.99141	5.5	21	0:00:30	2.0	116
1/8/2010	11:29	21.38683	157.99133	6.2	14	0:00:30	2.0	147
1/8/2010	11:29	21.38678	157.99127	6.4	8	0:00:30	1.0	131
1/8/2010	11:30	21.38671	157.99124	6.5	8	0:00:30	1.0	154
1/8/2010	11:30	21.38661	157.99105	6.6	22	0:00:30	3.0	119
1/8/2010	11:31	21.38650	157.99083	6.6	26	0:00:30	3.0	119
1/8/2010	11:31	21.38643	157.99070	6.6	15	0:00:30	2.0	119
1/8/2010	11:32	21.38637	157.99062	6.5	11	0:00:30	1.4	129
1/8/2010	11:32	21.38640	157.99041	6.5	22	0:00:30	3.0	83
1/8/2010	11:33	21.38646	157.99026	6.4	17	0:00:30	2.0	65
1/8/2010	11:33	21.38654	157.99003	6.0	26	0:00:30	3.0	71
1/8/2010	11:34	21.38652	157.98986	6.3	18	0:00:30	2.0	97
1/8/2010	11:34	21.38650	157.98983	6.4	4	0:00:30	0.4	122
1/8/2010	11:35	21.38650	157.98983	6.2	0	0:00:30	0.0	321
1/8/2010	11:35	21.38648	157.98985	6.5	3	0:00:30	0.4	227

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	11:36	21.38646	157.98984	6.5	3	0:00:30	0.3	164
1/8/2010	11:36	21.38644	157.98985	6.6	3	0:00:30	0.3	187
1/8/2010	11:37	21.38643	157.98988	6.6	4	0:00:30	0.4	252
1/8/2010	11:37	21.38643	157.98989	6.4	1	0:00:30	0.2	269
1/8/2010	11:38	21.38643	157.98990	6.5	1	0:00:30	0.1	285
1/8/2010	11:38	21.38643	157.98990	6.4	0	0:00:30	0.0	300
1/8/2010	11:39	21.38643	157.98990	6.5	0	0:00:30	0.0	90
1/8/2010	11:39	21.38643	157.98990	6.4	0	0:00:30	0.0	152
1/8/2010	11:40	21.38643	157.98990	6.4	0	0:00:30	0.0	106
1/8/2010	11:40	21.38643	157.98990	6.6	0	0:00:30	0.0	351
1/8/2010	11:41	21.38643	157.98990	6.6	0	0:00:30	0.0	331
1/8/2010	11:41	21.38643	157.98990	6.4	0	0:00:30	0.0	309
1/8/2010	11:42	21.38644	157.98990	6.4	0	0:00:30	0.0	332
1/8/2010	11:42	21.38644	157.98990	6.5	0	0:00:30	0.0	345
1/8/2010	11:43	21.38643	157.98991	6.5	1	0:00:30	0.1	225
1/8/2010	11:43	21.38634	157.98958	6.6	36	0:00:30	4.0	108
1/8/2010	11:44	21.38616	157.98923	6.8	41	0:00:30	5.0	118
1/8/2010	11:44	21.38598	157.98887	7.2	43	0:00:30	5.0	119
1/8/2010	11:45	21.38578	157.98851	7.0	44	0:00:30	5.0	120
1/8/2010	11:45	21.38557	157.98815	7.0	44	0:00:30	5.0	122
1/8/2010	11:46	21.38536	157.98779	7.1	44	0:00:30	5.0	122
1/8/2010	11:46	21.38513	157.98742	7.0	46	0:00:30	5.0	124
1/8/2010	11:47	21.38488	157.98713	6.9	41	0:00:30	5.0	131
1/8/2010	11:47	21.38463	157.98683	7.1	42	0:00:30	5.0	132
1/8/2010	11:48	21.38439	157.98651	7.2	43	0:00:30	5.0	130
1/8/2010	11:48	21.38417	157.98614	7.3	46	0:00:30	5.0	122
1/8/2010	11:49	21.38397	157.98583	7.4	39	0:00:30	5.0	125
1/8/2010	11:49	21.38370	157.98547	7.5	48	0:00:30	6.0	128
1/8/2010	11:50	21.38339	157.98516	7.3	47	0:00:30	6.0	137
1/8/2010	11:50	21.38301	157.98494	7.4	48	0:00:30	6.0	152
1/8/2010	11:51	21.38262	157.98479	7.4	47	0:00:30	6.0	160
1/8/2010	11:51	21.38225	157.98458	7.7	47	0:00:30	6.0	152
1/8/2010	11:52	21.38207	157.98447	7.6	22	0:00:30	3.0	151
1/8/2010	11:52	21.38208	157.98452	7.5	4	0:00:30	0.5	282
1/8/2010	11:53	21.38213	157.98454	7.4	6	0:00:30	0.8	335
1/8/2010	11:53	21.38217	157.98456	7.5	4	0:00:30	0.5	342
1/8/2010	11:54	21.38220	157.98457	7.5	4	0:00:30	0.5	332
1/8/2010	11:54	21.38223	157.98460	7.4	5	0:00:30	0.6	325

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	11:55	21.38225	157.98465	7.4	5	0:00:30	0.7	293
1/8/2010	11:55	21.38228	157.98468	7.5	4	0:00:30	0.5	312
1/8/2010	11:56	21.38230	157.98473	7.4	6	0:00:30	0.7	292
1/8/2010	11:56	21.38233	157.98477	7.3	6	0:00:30	0.7	303
1/8/2010	11:57	21.38234	157.98483	7.3	6	0:00:30	0.7	288
1/8/2010	11:57	21.38236	157.98489	7.3	7	0:00:30	0.8	285
1/8/2010	11:58	21.38235	157.98494	7.3	5	0:00:30	0.6	264
1/8/2010	11:58	21.38235	157.98499	7.5	5	0:00:30	0.6	268
1/8/2010	11:59	21.38235	157.98501	7.3	2	0:00:30	0.3	276
1/8/2010	11:59	21.38235	157.98503	7.3	2	0:00:30	0.2	255
1/8/2010	12:00	21.38232	157.98507	7.4	6	0:00:30	0.7	231
1/8/2010	12:00	21.38209	157.98496	7.3	27	0:00:30	3.0	156
1/8/2010	12:01	21.38178	157.98469	7.4	44	0:00:30	5.0	141
1/8/2010	12:01	21.38143	157.98442	7.4	48	0:00:30	6.0	144
1/8/2010	12:02	21.38106	157.98416	7.4	50	0:00:30	6.0	147
1/8/2010	12:02	21.38070	157.98389	7.4	48	0:00:30	6.0	145
1/8/2010	12:03	21.38040	157.98355	7.4	48	0:00:30	6.0	134
1/8/2010	12:03	21.38005	157.98329	7.3	48	0:00:30	6.0	144
1/8/2010	12:04	21.37941	157.98287	7.4				
1/8/2010	12:04	21.37904	157.98260	7.5	49	0:00:30	6.0	146
1/8/2010	12:05	21.37869	157.98232	7.6	48	0:00:30	6.0	144
1/8/2010	12:05	21.37833	157.98209	7.9	47	0:00:30	6.0	150
1/8/2010	12:06	21.37793	157.98187	8.9	50	0:00:30	6.0	153
1/8/2010	12:06	21.37752	157.98173	9.0	48	0:00:30	6.0	162
1/8/2010	12:07	21.37712	157.98157	9.0	47	0:00:30	6.0	159
1/8/2010	12:07	21.37674	157.98140	9.2	47	0:00:30	6.0	157
1/8/2010	12:08	21.37635	157.98124	9.2	46	0:00:30	6.0	159
1/8/2010	12:08	21.37597	157.98104	9.2	47	0:00:30	6.0	154
1/8/2010	12:09	21.37554	157.98083	9.4	53	0:00:30	6.0	155
1/8/2010	12:09	21.37514	157.98056	9.4	53	0:00:30	6.0	148
1/8/2010	12:10	21.37481	157.98020	9.7	53	0:00:30	6.0	135
1/8/2010	12:10	21.37446	157.97983	10.9	54	0:00:30	6.0	135
1/8/2010	12:11	21.37409	157.97949	10.9	54	0:00:30	7.0	140
1/8/2010	12:11	21.37369	157.97940	10.6	45	0:00:30	5.0	168
1/8/2010	12:12	21.37327	157.97967	10.8	54	0:00:30	7.0	211
1/8/2010	12:12	21.37301	157.97983	11.0	34	0:00:30	4.0	209
1/8/2010	12:13	21.37297	157.97995	11.3	13	0:00:30	2.0	253
1/8/2010	12:13	21.37297	157.98003	11.3	9	0:00:30	1.1	271

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	12:14	21.37299	157.98010	10.9	8	0:00:30	0.9	287
1/8/2010	12:14	21.37302	157.98017	11.0	7	0:00:30	0.9	293
1/8/2010	12:15	21.37305	157.98022	11.0	6	0:00:30	0.8	297
1/8/2010	12:15	21.37307	157.98026	10.8	5	0:00:30	0.6	299
1/8/2010	12:16	21.37308	157.98030	10.9	5	0:00:30	0.6	290
1/8/2010	12:16	21.37310	157.98034	11.2	5	0:00:30	0.6	302
1/8/2010	12:17	21.37314	157.98038	11.1	6	0:00:30	0.7	312
1/8/2010	12:17	21.37318	157.98042	11.0	6	0:00:30	0.7	317
1/8/2010	12:18	21.37322	157.98046	10.8	6	0:00:30	0.7	324
1/8/2010	12:18	21.37326	157.98049	10.8	6	0:00:30	0.7	321
1/8/2010	12:19	21.37330	157.98052	10.9	5	0:00:30	0.6	320
1/8/2010	12:19	21.37333	157.98056	10.7	6	0:00:30	0.7	316
1/8/2010	12:20	21.37336	157.98059	10.8	4	0:00:30	0.5	314
1/8/2010	12:20	21.37339	157.98062	10.6	5	0:00:30	0.6	322
1/8/2010	12:21	21.37344	157.98065	10.7	6	0:00:30	0.7	326
1/8/2010	12:21	21.37323	157.98052	10.4	26	0:00:30	3.0	149
1/8/2010	12:22	21.37286	157.98016	10.8	56	0:00:30	7.0	138
1/8/2010	12:22	21.37254	157.97974	10.6	56	0:00:30	7.0	130
1/8/2010	12:23	21.37225	157.97928	10.8	58	0:00:30	7.0	123
1/8/2010	12:23	21.37198	157.97881	10.5	57	0:00:30	7.0	122
1/8/2010	12:24	21.37168	157.97836	10.7	57	0:00:30	7.0	125
1/8/2010	12:24	21.37146	157.97788	11.2	56	0:00:30	7.0	117
1/8/2010	12:25	21.37115	157.97743	11.2	58	0:00:30	7.0	126
1/8/2010	12:25	21.37085	157.97701	11.5	55	0:00:30	7.0	127
1/8/2010	12:26	21.37045	157.97668	11.4	56	0:00:30	7.0	143
1/8/2010	12:26	21.37009	157.97631	11.7	56	0:00:30	7.0	136
1/8/2010	12:27	21.36978	157.97588	11.6	56	0:00:30	7.0	127
1/8/2010	12:27	21.36956	157.97540	11.6	56	0:00:30	7.0	117
1/8/2010	12:28	21.36930	157.97493	11.5	56	0:00:30	7.0	120
1/8/2010	12:28	21.36899	157.97455	11.6	53	0:00:30	6.0	132
1/8/2010	12:29	21.36856	157.97427	11.6	55	0:00:30	7.0	149
1/8/2010	12:29	21.36811	157.97404	12.6	56	0:00:30	7.0	155
1/8/2010	12:30	21.36770	157.97379	12.6	53	0:00:30	6.0	150
1/8/2010	12:30	21.36744	157.97331	12.5	57	0:00:30	7.0	120
1/8/2010	12:31	21.36718	157.97286	12.5	56	0:00:30	7.0	122
1/8/2010	12:31	21.36675	157.97258	12.5	55	0:00:30	7.0	149
1/8/2010	12:32	21.36632	157.97232	12.4	55	0:00:30	7.0	152
1/8/2010	12:32	21.36584	157.97218	12.5	55	0:00:30	7.0	164

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	12:33	21.36538	157.97197	12.6	55	0:00:30	7.0	157
1/8/2010	12:33	21.36492	157.97177	12.6	56	0:00:30	7.0	157
1/8/2010	12:34	21.36443	157.97169	12.3	56	0:00:30	7.0	172
1/8/2010	12:34	21.36393	157.97167	12.3	55	0:00:30	7.0	178
1/8/2010	12:35	21.36343	157.97155	12.1	56	0:00:30	7.0	168
1/8/2010	12:35	21.36298	157.97134	12.1	55	0:00:30	7.0	156
1/8/2010	12:36	21.36258	157.97119	12.5	47	0:00:30	6.0	161
1/8/2010	12:36	21.36223	157.97108	13.0	41	0:00:30	5.0	164
1/8/2010	12:37	21.36211	157.97111	13.1	14	0:00:30	2.0	193
MISSING 40 MINUTES OF DATA								
1/8/2010	13:17	21.36684	157.97671					
1/8/2010	13:17	21.36672	157.97704		36	0:00:31	4.0	248
1/8/2010	13:18	21.36684	157.97766	16.4	66	0:00:30	8.0	281
1/8/2010	13:18	21.36690	157.97840	5.2	77	0:00:30	9.0	275
1/8/2010	13:19	21.36676	157.97873		38	0:00:30	5.0	245
1/8/2010	13:19	21.36674	157.97887		14	0:00:30	2.0	264
1/8/2010	13:20	21.36660	157.97910		29	0:00:30	3.0	235
1/8/2010	13:20	21.36650	157.97934		27	0:00:30	3.0	247
1/8/2010	13:21	21.36634	157.97960	9.0	33	0:00:30	4.0	236
1/8/2010	13:21	21.36618	157.97983	6.0	29	0:00:30	3.0	233
1/8/2010	13:22	21.36618	157.98007	6.0	26	0:00:30	3.0	269
1/8/2010	13:22	21.36627	157.98032	14.3	27	0:00:30	3.0	291
1/8/2010	13:23	21.36639	157.98058	13.5	30	0:00:30	4.0	297
1/8/2010	13:23	21.36648	157.98085	7.0	30	0:00:30	4.0	289
1/8/2010	13:24	21.36663	157.98113	17.2	33	0:00:30	4.0	300
1/8/2010	13:24	21.36684	157.98152		47	0:00:30	6.0	300
1/8/2010	13:25	21.36713	157.98178		42	0:00:30	5.0	320
1/8/2010	13:25	21.36750	157.98195	1.6	45	0:00:30	5.0	337
1/8/2010	13:26	21.36794	157.98203	1.6	49	0:00:30	6.0	350
1/8/2010	13:26	21.36825	157.98226	2.1	42	0:00:30	5.0	326
1/8/2010	13:27	21.36853	157.98227	0.8	31	0:00:30	4.0	357
1/8/2010	13:27	21.36870	157.98248		29	0:00:30	3.0	313
1/8/2010	13:28	21.36898	157.98278	2.0	44	0:00:30	5.0	314
1/8/2010	13:28	21.36925	157.98320	2.0	53	0:00:30	6.0	304
1/8/2010	13:29	21.36936	157.98367	2.1	50	0:00:30	6.0	284
1/8/2010	13:29	21.36965	157.98396	1.3	44	0:00:30	5.0	317
1/8/2010	13:30	21.36999	157.98425	1.1	48	0:00:30	6.0	322
1/8/2010	13:30	21.37031	157.98460	1.1	51	0:00:30	6.0	314

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	13:31	21.37058	157.98491		44	0:00:30	5.0	313
1/8/2010	13:31	21.37054	157.98529	1.0	39	0:00:30	5.0	264
1/8/2010	13:32	21.37081	157.98561		45	0:00:30	5.0	311
1/8/2010	13:32	21.37093	157.98609	1.4	51	0:00:30	6.0	285
1/8/2010	13:33	21.37119	157.98647		48	0:00:30	6.0	306
1/8/2010	13:33	21.37153	157.98671		46	0:00:30	6.0	327
1/8/2010	13:34	21.37195	157.98684		48	0:00:30	6.0	343
1/8/2010	13:34	21.37235	157.98691		46	0:00:30	5.0	351
1/8/2010	13:35	21.37278	157.98689		48	0:00:30	6.0	2
1/8/2010	13:35	21.37326	157.98691		53	0:00:30	6.0	359
1/8/2010	13:36	21.37371	157.98683		51	0:00:30	6.0	9
1/8/2010	13:36	21.37418	157.98692		53	0:00:30	6.0	349
1/8/2010	13:37	21.37463	157.98721		58	0:00:30	7.0	329
1/8/2010	13:37	21.37499	157.98757		55	0:00:30	7.0	317
1/8/2010	13:38	21.37533	157.98787		49	0:00:30	6.0	321
1/8/2010	13:38	21.37546	157.98800	3.8	20	0:00:30	2.0	317
1/8/2010	13:39	21.37558	157.98814		19	0:00:30	2.0	315
1/8/2010	13:39	21.37573	157.98839		31	0:00:30	4.0	301
1/8/2010	13:40	21.37583	157.98864	16.3	28	0:00:30	3.0	295
1/8/2010	13:40	21.37584	157.98895	11.7	32	0:00:30	4.0	271
1/8/2010	13:41	21.37609	157.98914	9.7	34	0:00:30	4.0	324
1/8/2010	13:41	21.37635	157.98934		36	0:00:30	4.0	325
1/8/2010	13:42	21.37665	157.98953		38	0:00:30	5.0	330
1/8/2010	13:42	21.37697	157.98960		37	0:00:30	4.0	347
1/8/2010	13:43	21.37737	157.98982		50	0:00:30	6.0	333
1/8/2010	13:43	21.37778	157.99007		52	0:00:30	6.0	330
1/8/2010	13:44	21.37809	157.99033		44	0:00:30	5.0	322
1/8/2010	13:44	21.37844	157.99045	1.4	41	0:00:30	5.0	344
1/8/2010	13:45	21.37879	157.99067	1.4	45	0:00:30	5.0	329
1/8/2010	13:45	21.37917	157.99070	4.3	42	0:00:30	5.0	356
1/8/2010	13:46	21.37951	157.99078	1.5	38	0:00:30	5.0	348
1/8/2010	13:46	21.37993	157.99057		52	0:00:30	6.0	24
1/8/2010	13:47	21.38036	157.99037		52	0:00:30	6.0	23
1/8/2010	13:47	21.38062	157.99061	1.7	38	0:00:30	5.0	318
1/8/2010	13:48	21.38082	157.99103	2.1	48	0:00:30	6.0	297
1/8/2010	13:48	21.38114	157.99113		38	0:00:30	5.0	344
1/8/2010	13:49	21.38148	157.99111	1.4	38	0:00:30	5.0	2
1/8/2010	13:49	21.38186	157.99111	1.4	42	0:00:30	5.0	0

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	13:50	21.38229	157.99121		48	0:00:30	6.0	347
1/8/2010	13:50	21.38267	157.99127		44	0:00:30	5.0	351
1/8/2010	13:51	21.38308	157.99132		46	0:00:30	6.0	354
1/8/2010	13:51	21.38342	157.99134	1.3	37	0:00:30	4.0	356
1/8/2010	13:52	21.38377	157.99135	1.7	39	0:00:30	5.0	359
1/8/2010	13:52	21.38405	157.99163	1.5	43	0:00:30	5.0	317
1/8/2010	13:53	21.38399	157.99190	3.5	29	0:00:30	3.0	256
1/8/2010	13:53	21.38399	157.99192	2.0	2	0:00:30	0.2	300
1/8/2010	13:54	21.38400	157.99193	5.1	2	0:00:30	0.2	302
1/8/2010	13:54	21.38384	157.99214	14.2	28	0:00:30	3.0	230
1/8/2010	13:55	21.38372	157.99227	1.9	19	0:00:30	2.0	225
1/8/2010	13:55	21.38379	157.99215	0.6	15	0:00:30	2.0	60
MISSING 1 MINUTE OF DATA								
1/8/2010	13:57	21.38347	157.99265	6.2	63	0:01:30	3.0	236
1/8/2010	13:57	21.38338	157.99273	1.1	12	0:00:30	1.5	219
1/8/2010	13:58	21.38336	157.99275	2.8	4	0:00:30	0.5	225
1/8/2010	13:58	21.38330	157.99281	2.3	8	0:00:30	1.0	221
1/8/2010	13:59	21.38333	157.99280	1.8	3	0:00:30	0.4	13
1/8/2010	13:59	21.38336	157.99277	1.8	4	0:00:30	0.5	51
1/8/2010	14:00	21.38341	157.99269	1.8	10	0:00:30	1.2	51
1/8/2010	14:00	21.38343	157.99267	1.9	3	0:00:30	0.3	46
1/8/2010	14:01	21.38345	157.99265	1.9	3	0:00:30	0.3	40
1/8/2010	14:01	21.38349	157.99262	1.9	6	0:00:30	0.7	40
1/8/2010	14:02	21.38347	157.99263	1.8	2	0:00:30	0.3	210
1/8/2010	14:02	21.38349	157.99263	1.8	2	0:00:30	0.2	359
1/8/2010	14:03	21.38354	157.99258	2.1	8	0:00:30	0.9	40
1/8/2010	14:03	21.38350	157.99259	2.1	5	0:00:30	0.5	194
1/8/2010	14:04	21.38359	157.99248	0.9	16	0:00:30	2.0	51
1/8/2010	14:04	21.38379	157.99219	16.5	37	0:00:30	4.0	53
1/8/2010	14:05	21.38399	157.99188	17.6	40	0:00:30	5.0	55
1/8/2010	14:05	21.38420	157.99159	12.4	39	0:00:30	5.0	53
1/8/2010	14:06	21.38444	157.99149	9.9	29	0:00:30	3.0	20
1/8/2010	14:06	21.38470	157.99160	2.5	30	0:00:30	4.0	339
1/8/2010	14:07	21.38494	157.99160	13.0	27	0:00:30	3.0	359
1/8/2010	14:07	21.38519	157.99157	6.4	29	0:00:30	3.0	7
1/8/2010	14:08	21.38551	157.99160	17.0	35	0:00:30	4.0	355
1/8/2010	14:08	21.38586	157.99162	14.4	39	0:00:30	5.0	357
1/8/2010	14:09	21.38625	157.99167	12.7	43	0:00:30	5.0	353

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	14:09	21.38669	157.99162		49	0:00:30	6.0	7
1/8/2010	14:10	21.38702	157.99129		50	0:00:30	6.0	43
1/8/2010	14:10	21.38721	157.99084		51	0:00:30	6.0	65
1/8/2010	14:11	21.38736	157.99040		49	0:00:30	6.0	70
1/8/2010	14:11	21.38754	157.99001	1.4	45	0:00:30	5.0	64
1/8/2010	14:12	21.38771	157.98956		50	0:00:30	6.0	68
1/8/2010	14:12	21.38784	157.98911		50	0:00:30	6.0	72
1/8/2010	14:13	21.38787	157.98882	5.9	30	0:00:30	4.0	84
1/8/2010	14:13	21.38787	157.98892	6.4	10	0:00:30	1.2	269
1/8/2010	14:14	21.38802	157.98893	9.7	17	0:00:30	2.0	356
1/8/2010	14:14	21.38806	157.98892		5	0:00:30	0.5	3
1/8/2010	14:15	21.38807	157.98892		1	0:00:30	0.1	8
1/8/2010	14:15	21.38808	157.98892		1	0:00:30	0.1	6
1/8/2010	14:16	21.38808	157.98892		0	0:00:30	0.1	7
1/8/2010	14:16	21.38808	157.98892	1.0	0	0:00:30	0.0	321
1/8/2010	14:17	21.38809	157.98893	1.0	0	0:00:30	0.0	306
1/8/2010	14:17	21.38809	157.98893	1.0	0	0:00:30	0.0	319
1/8/2010	14:18	21.38809	157.98893	1.0	0	0:00:30	0.0	315
MISSING 8 MINUTES OF DATA								
1/8/2010	14:26	21.38765	157.98505	1.2				
1/8/2010	14:27	21.38765	157.98504	0.9	1	0:00:30	0.1	89
1/8/2010	14:27	21.38762	157.98509	1.0	6	0:00:30	0.7	234
1/8/2010	14:28	21.38761	157.98511	1.1	2	0:00:30	0.3	240
1/8/2010	14:28	21.38761	157.98512	1.2	1	0:00:30	0.1	229
1/8/2010	14:29	21.38761	157.98511	1.2	1	0:00:30	0.2	48
1/8/2010	14:29	21.38763	157.98508	1.0	3	0:00:30	0.4	67
1/8/2010	14:30	21.38763	157.98505	0.8	3	0:00:30	0.4	73
1/8/2010	14:30	21.38763	157.98506	0.6	1	0:00:30	0.1	234
1/8/2010	14:31	21.38760	157.98515	0.8	10	0:00:30	1.1	255
1/8/2010	14:31	21.38760	157.98519	0.9	4	0:00:30	0.5	262
1/8/2010	14:32	21.38761	157.98520	0.8	1	0:00:30	0.1	324
1/8/2010	14:32	21.38762	157.98521	0.9	1	0:00:30	0.2	316
1/8/2010	14:33	21.38755	157.98529	1.0	12	0:00:30	1.4	231
1/8/2010	14:33	21.38745	157.98542	1.0	17	0:00:30	2.0	230
1/8/2010	14:34	21.38735	157.98551	5.9	15	0:00:30	2.0	219
1/8/2010	14:34	21.38703	157.98580	0.6	47	0:00:30	6.0	221
1/8/2010	14:35	21.38668	157.98602	1.3	45	0:00:30	5.0	210
1/8/2010	14:35	21.38654	157.98587		22	0:00:30	3.0	137

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	14:36	21.38630	157.98549		47	0:00:30	6.0	124
1/8/2010	14:36	21.38592	157.98533	1.4	46	0:00:30	5.0	158
1/8/2010	14:37	21.38550	157.98520	1.6	49	0:00:30	6.0	164
1/8/2010	14:37	21.38526	157.98515	1.6	26	0:00:30	3.0	170
1/8/2010	14:38	21.38534	157.98510	0.9	10	0:00:30	1.3	35
1/8/2010	14:38	21.38536	157.98507	0.8	3	0:00:30	0.4	52
1/8/2010	14:39	21.38545	157.98517	2.8	15	0:00:30	2.0	314
1/8/2010	14:39	21.38552	157.98518	1.9	8	0:00:30	0.9	357
1/8/2010	14:40	21.38553	157.98515	1.3	3	0:00:30	0.4	69
1/8/2010	14:40	21.38553	157.98514	1.1	1	0:00:30	0.2	64
1/8/2010	14:41	21.38555	157.98513	0.9	1	0:00:30	0.2	26
1/8/2010	14:41	21.38556	157.98520	2.2	7	0:00:30	0.8	282
1/8/2010	14:42	21.38528	157.98507	3.6	34	0:00:30	4.0	157
1/8/2010	14:42	21.38503	157.98496	1.9	30	0:00:30	4.0	158
1/8/2010	14:43	21.38478	157.98474	1.6	36	0:00:30	4.0	140
1/8/2010	14:43	21.38454	157.98456	1.0	32	0:00:30	4.0	145
1/8/2010	14:44	21.38443	157.98434	5.7	26	0:00:30	3.0	119
1/8/2010	14:44	21.38439	157.98418	7.1	17	0:00:30	2.0	104
1/8/2010	14:45	21.38443	157.98409		10	0:00:30	1.2	66
1/8/2010	14:45	21.38444	157.98410		2	0:00:30	0.3	346
1/8/2010	14:46	21.38447	157.98416		7	0:00:30	0.8	293
1/8/2010	14:46	21.38449	157.98415		3	0:00:30	0.3	10
1/8/2010	14:47	21.38449	157.98416		1	0:00:30	0.1	316
1/8/2010	14:47	21.38450	157.98416		0	0:00:30	0.0	342
1/8/2010	14:48	21.38450	157.98416		0	0:00:30	0.0	329
1/8/2010	14:48	21.38450	157.98416		0	0:00:30	0.0	248
1/8/2010	14:49	21.38450	157.98416		0	0:00:30	0.0	197
1/8/2010	14:49	21.38449	157.98416		0	0:00:30	0.0	169
1/8/2010	14:50	21.38450	157.98416		0	0:00:30	0.0	22
1/8/2010	14:50	21.38450	157.98416		0	0:00:30	0.0	14
1/8/2010	14:51	21.38450	157.98416		0	0:00:30	0.0	0
1/8/2010	14:51	21.38450	157.98416		0	0:00:30	0.0	347
1/8/2010	14:52	21.38450	157.98416		0	0:00:30	0.0	282
1/8/2010	14:52	21.38450	157.98416		0	0:00:30	0.0	242
1/8/2010	14:53	21.38450	157.98416		0	0:00:30	0.0	303
1/8/2010	14:53	21.38450	157.98416		0	0:00:30	0.0	306
1/8/2010	14:54	21.38450	157.98416		0	0:00:30	0.0	255
1/8/2010	14:54	21.38450	157.98416		0	0:00:30	0.0	250

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	14:55	21.38450	157.98416		0	0:00:30	0.0	250
1/8/2010	14:55	21.38450	157.98416		0	0:00:30	0.0	233
1/8/2010	14:56	21.38450	157.98416		0	0:00:30	0.0	234
1/8/2010	14:56	21.38450	157.98417		0	0:00:30	0.0	234
1/8/2010	14:57	21.38450	157.98417		0	0:00:30	0.0	231
1/8/2010	14:57	21.38450	157.98417		0	0:00:30	0.0	223
1/8/2010	14:58	21.38449	157.98417		0	0:00:30	0.0	216
1/8/2010	14:58	21.38449	157.98417		0	0:00:30	0.0	193
1/8/2010	14:59	21.38449	157.98417		0	0:00:30	0.0	180
1/8/2010	14:59	21.38449	157.98417		0	0:00:30	0.0	191
1/8/2010	15:00	21.38449	157.98417		0	0:00:30	0.0	180
1/8/2010	15:00	21.38449	157.98417		0	0:00:30	0.0	193
1/8/2010	15:01	21.38449	157.98417		0	0:00:30	0.0	270
1/8/2010	15:01	21.38449	157.98417		0	0:00:30	0.0	180
1/8/2010	15:02	21.38449	157.98417		0	0:00:30	0.0	193
1/8/2010	15:02	21.38449	157.98417		0	0:00:30	0.0	180
1/8/2010	15:03	21.38449	157.98417		0	0:00:30	0.0	180
1/8/2010	15:03	21.38449	157.98417		0	0:00:30	0.0	172
1/8/2010	15:04	21.38449	157.98417		0	0:00:30	0.0	161
1/8/2010	15:04	21.38449	157.98417		0	0:00:30	0.0	160
1/8/2010	15:05	21.38449	157.98417		0	0:00:30	0.0	137
1/8/2010	15:05	21.38449	157.98417		0	0:00:30	0.0	75
1/8/2010	15:06	21.38449	157.98417		0	0:00:30	0.0	49
1/8/2010	15:06	21.38449	157.98417		0	0:00:30	0.0	62
1/8/2010	15:07	21.38449	157.98417		0	0:00:30	0.0	67
1/8/2010	15:07	21.38449	157.98417		0	0:00:30	0.0	90
1/8/2010	15:08	21.38449	157.98417		0	0:00:30	0.0	54
1/8/2010	15:08	21.38449	157.98416		0	0:00:30	0.0	70
1/8/2010	15:09	21.38449	157.98416		0	0:00:30	0.0	62
1/8/2010	15:09	21.38449	157.98416		0	0:00:30	0.0	70
1/8/2010	15:10	21.38449	157.98416		0	0:00:30	0.0	70
1/8/2010	15:10	21.38449	157.98416		0	0:00:30	0.0	70
1/8/2010	15:11	21.38449	157.98416		0	0:00:30	0.0	54
1/8/2010	15:11	21.38443	157.98429		14	0:00:30	2.0	243
1/8/2010	15:12	21.38435	157.98427	5.2	9	0:00:30	1.1	169
1/8/2010	15:12	21.38413	157.98404	12.1	34	0:00:30	4.0	136
1/8/2010	15:13	21.38380	157.98399	5.6	37	0:00:30	4.0	171
1/8/2010	15:13	21.38362	157.98379	9.5	29	0:00:30	3.0	134

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	15:14	21.38337	157.98351	1.6	40	0:00:30	5.0	134
1/8/2010	15:14	21.38304	157.98331	1.2	43	0:00:30	5.0	151
1/8/2010	15:15	21.38273	157.98317	1.7	37	0:00:30	4.0	156
1/8/2010	15:15	21.38242	157.98294	1.2	42	0:00:30	5.0	146
1/8/2010	15:16	21.38219	157.98267	1.5	38	0:00:30	5.0	132
1/8/2010	15:16	21.38188	157.98251	1.6	38	0:00:30	5.0	155
1/8/2010	15:17	21.38169	157.98223	2.2	37	0:00:30	4.0	126
1/8/2010	15:17	21.38141	157.98203	1.1	38	0:00:30	5.0	147
1/8/2010	15:18	21.38113	157.98191	1.5	34	0:00:30	4.0	158
1/8/2010	15:18	21.38086	157.98162	1.4	42	0:00:30	5.0	136
1/8/2010	15:19	21.38056	157.98140		40	0:00:30	5.0	145
1/8/2010	15:19	21.38025	157.98116	0.7	43	0:00:30	5.0	144
1/8/2010	15:20	21.37995	157.98089	1.6	43	0:00:30	5.0	140
1/8/2010	15:20	21.37968	157.98060		43	0:00:30	5.0	135
1/8/2010	15:21	21.37941	157.98036		39	0:00:30	5.0	140
1/8/2010	15:21	21.37909	157.98016		40	0:00:30	5.0	150
1/8/2010	15:22	21.37877	157.97998	1.5	41	0:00:30	5.0	152
1/8/2010	15:22	21.37846	157.97982		38	0:00:30	5.0	154
1/8/2010	15:23	21.37839	157.97948		36	0:00:30	4.0	102
1/8/2010	15:23	21.37842	157.97945		5	0:00:30	0.5	43
1/8/2010	15:24	21.37830	157.97950		15	0:00:30	2.0	203
1/8/2010	15:24	21.37829	157.97950	3.6	1	0:00:30	0.1	174
1/8/2010	15:25	21.37821	157.97925	8.6	28	0:00:30	3.0	108
1/8/2010	15:25	21.37815	157.97899	2.1	27	0:00:30	3.0	104
1/8/2010	15:26	21.37816	157.97871		29	0:00:30	4.0	88
1/8/2010	15:26	21.37819	157.97830		42	0:00:30	5.0	86
1/8/2010	15:27	21.37805	157.97798		36	0:00:30	4.0	114
1/8/2010	15:27	21.37782	157.97773		36	0:00:30	4.0	136
1/8/2010	15:28	21.37770	157.97744		33	0:00:30	4.0	114
1/8/2010	15:28	21.37750	157.97747	1.5	23	0:00:30	3.0	187
1/8/2010	15:29	21.37717	157.97764		41	0:00:30	5.0	207
1/8/2010	15:29	21.37676	157.97768		46	0:00:30	6.0	185
1/8/2010	15:30	21.37636	157.97752		48	0:00:30	6.0	160
1/8/2010	15:30	21.37597	157.97730		49	0:00:30	6.0	152
1/8/2010	15:31	21.37556	157.97715		48	0:00:30	6.0	161
1/8/2010	15:31	21.37520	157.97697		44	0:00:30	5.0	155
1/8/2010	15:32	21.37485	157.97675	1.4	46	0:00:30	5.0	149
1/8/2010	15:32	21.37466	157.97643		39	0:00:30	5.0	123

Table AII.73: (Continued) 2010 Middle Loch surface water radon survey global positioning system data.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/8/2010	15:33	21.37452	157.97613		35	0:00:30	4.0	116
1/8/2010	15:33	21.37443	157.97573		43	0:00:30	5.0	104
1/8/2010	15:34	21.37418	157.97542		42	0:00:30	5.0	131
1/8/2010	15:34	21.37385	157.97523		42	0:00:30	5.0	152
1/8/2010	15:35	21.37350	157.97522	0.8	39	0:00:30	5.0	178
1/8/2010	15:35	21.37317	157.97506		40	0:00:30	5.0	155
1/8/2010	15:36	21.37286	157.97495		37	0:00:30	4.0	163
1/8/2010	15:36	21.37254	157.97475		41	0:00:30	5.0	149
1/8/2010	15:37	21.37237	157.97446		35	0:00:30	4.0	122
1/8/2010	15:37	21.37210	157.97426		37	0:00:30	4.0	146
1/8/2010	15:38	21.37186	157.97400	10.7	38	0:00:30	5.0	135
1/8/2010	15:38	21.37160	157.97369	14.5	44	0:00:30	5.0	131
1/8/2010	15:39	21.37131	157.97341	16.2	44	0:00:30	5.0	139
1/8/2010	15:39	21.37114	157.97304	19.6	42	0:00:30	5.0	116
1/8/2010	15:40	21.37097	157.97265	12.5	45	0:00:30	5.0	115
1/8/2010	15:40	21.37077	157.97227	15.5	45	0:00:30	5.0	120
1/8/2010	15:41	21.37062	157.97188	12.2	44	0:00:30	5.0	113
1/8/2010	15:41	21.37039	157.97152	17.0	45	0:00:30	5.0	124
1/8/2010	15:42	21.37017	157.97118	23.3	43	0:00:30	5.0	125
1/8/2010	15:42	21.36990	157.97091	12.6	41	0:00:30	5.0	137
1/8/2010	15:43	21.36970	157.97051	12.9	47	0:00:30	6.0	117
1/8/2010	15:43	21.36950	157.97011	13.4	46	0:00:30	6.0	118
1/8/2010	15:44	21.36948	157.96968	25.6	45	0:00:30	5.0	93
1/8/2010	15:44	21.36945	157.96922	12.6	48	0:00:30	6.0	95
1/8/2010	15:45	21.36946	157.96907		16	0:00:30	2.0	85
1/8/2010	15:45	21.36949	157.96908	13.0	4	0:00:30	0.5	343
1/8/2010	15:46	21.36935	157.96907	13.4	16	0:00:30	2.0	175
1/8/2010	15:46	21.36941	157.96912	22.4	8	0:00:30	1.0	317
1/8/2010	15:47	21.36949	157.96917	20.1	11	0:00:30	1.3	331
1/8/2010	15:47	21.36955	157.96923	27.6	9	0:00:30	1.0	315
1/8/2010	15:48	21.36953	157.96952		30	0:00:30	4.0	266
1/8/2010	15:48	21.36954	157.96999		49	0:00:30	6.0	271
1/8/2010	15:49	21.36971	157.97046		52	0:00:30	6.0	292

Table AII.74: 2010 Middle Loch surface water radon survey wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20100108	10:53	1.5	20100108	13:53	0
20100108	11:53	1.5	20100108	14:53	1.5
20100108	12:00	1.5	20100108	15:53	0
20100108	12:53	1.5			

Table AII.75: 2010 Entrance surface water radon survey measurements.

RAD-7 #2357					Entrance Surface		eff=0.406 cpm/pCi/L				
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
146	10	1	10	10	56	8	4.6	37.5	0.0	62.5	0.0
147	10	1	10	11	1	15	4.6	46.7	0.0	40.0	6.7
148	10	1	10	11	6	14	4.6	35.7	0.0	64.3	0.0
149	10	1	10	11	11	15	4.6	33.3	0.0	66.7	0.0
150	10	1	10	11	16	27	4.6	81.5	0.0	14.8	0.0
151	10	1	10	11	21	52	4.6	84.6	0.0	11.6	0.0
152	10	1	10	11	26	56	4.6	82.2	1.8	12.5	0.0
153	10	1	10	11	31	76	4.6	92.1	0.0	5.3	0.0
154	10	1	10	11	36	76	4.5	84.2	0.0	13.2	0.0
155	10	1	10	11	41	85	4.5	76.5	1.2	17.7	0.0
156	10	1	10	11	46	74	4.5	67.6	0.0	29.7	0.0
157	10	1	10	11	51	75	4.5	81.3	0.0	17.3	0.0
158	10	1	10	11	56	57	4.6	64.9	0.0	33.3	0.0
159	10	1	10	12	1	40	4.6	20.0	0.0	80.0	0.0
160	10	1	10	12	6	33	4.6	24.3	0.0	75.8	0.0
161	10	1	10	12	11	33	4.6	27.3	3.0	69.7	0.0
162	10	1	10	12	16	60	4.6	35.0	0.0	65.0	0.0
163	10	1	10	12	21	44	4.6	50.0	2.3	38.6	0.0
164	10	1	10	12	26	52	4.6	38.5	0.0	57.7	1.9
165	10	1	10	12	31	47	4.6	46.8	0.0	51.1	2.1
166	10	1	10	12	36	58	4.6	41.4	1.7	51.7	0.0
167	10	1	10	12	41	48	4.6	35.4	0.0	58.3	0.0
168	10	1	10	12	46	60	4.6	41.7	0.0	55.0	0.0
169	10	1	10	12	51	53	4.6	43.4	1.9	43.4	1.9
170	10	1	10	12	56	43	4.6	51.2	2.3	44.2	0.0
171	10	1	10	13	1	47	4.6	25.5	0.0	68.1	2.1
172	10	1	10	13	6	53	4.6	30.2	0.0	66.1	1.9
173	10	1	10	13	11	49	4.6	42.9	0.0	51.0	0.0
174	10	1	10	13	16	41	4.6	43.9	2.5	53.7	0.0
175	10	1	10	13	21	39	4.6	23.1	5.1	66.7	2.6
176	10	1	10	13	26	49	4.6	55.1	2.1	42.9	0.0
177	10	1	10	13	31	68	4.6	70.6	0.0	28.0	1.5
178	10	1	10	13	36	103	4.5	75.7	1.0	18.5	0.0
179	10	1	10	13	41	126	4.5	69.1	0.8	25.4	0.0
180	10	1	10	13	46	99	4.5	74.8	2.0	21.2	1.0
181	10	1	10	13	51	86	4.5	55.8	1.2	38.4	1.2
182	10	1	10	13	56	72	4.5	38.9	1.4	55.6	0.0

Table AII.75: (Continued) 2010 Entrance surface water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
183	10	1	10	14	1	79	4.5	54.4	1.3	43.1	0.0
184	10	1	10	14	6	78	4.5	48.7	0.0	47.4	0.0
185	10	1	10	14	11	77	4.5	55.9	3.9	39.0	0.0
186	10	1	10	14	16	65	4.6	43.1	3.1	44.6	1.6
187	10	1	10	14	21	87	4.5	40.2	0.0	52.9	0.0
188	10	1	10	14	26	65	4.6	36.9	0.0	53.9	3.1
189	10	1	10	14	31	60	4.6	45.0	1.7	48.3	0.0
190	10	1	10	14	33	33	1.8	39.4	0.0	54.6	0.0

Table AII.76: 2010 Entrance surface water radon survey measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
146	2218	8	27.1	6	2	7.0	70	5	75.107	75.107
147	2218	8	27.1	5	2	7.0	70	5	122.706	89.512
148	2218	9	27.1	5	2	7.0	70	5	132.145	91.991
149	2218	8	27.1	5	2	7.0	70	5	141.584	94.389
150	2218	9	27.4	5	2	7.0	70	5	245.411	116.970
151	2218	8	27.4	5	2	7.0	70	5	477.075	155.363
152	2218	8	27.7	5	2	7.0	70	5	505.699	159.314
153	2218	9	28.0	5	1	6.9	70	5	706.071	184.347
154	2218	8	28.0	5	2	7.0	70	5	709.929	185.354
155	2218	8	28.3	5	2	7.0	70	5	767.491	191.873
156	2201	9	28.3	5	1	7.0	70	5	690.742	183.123
157	2218	8	28.3	5	1	6.9	70	5	709.929	185.354
158	2218	8	28.0	5	1	7.0	70	5	534.324	163.156
159	2218	8	28.0	5	1	7.0	70	5	381.660	141.274
160	2218	9	28.0	5	1	6.9	70	5	314.869	130.355
161	2218	8	27.7	5	1	7.0	70	5	305.328	128.706
162	2218	8	27.7	5	1	7.0	70	5	572.490	168.126
163	2218	9	27.4	5	1	7.0	70	5	372.118	139.774
164	2218	8	27.4	5	2	7.0	70	5	477.075	155.363
165	2218	9	27.4	5	1	7.0	70	5	438.909	149.909
166	2218	8	27.1	5	1	7.0	70	5	515.241	160.606
167	2218	8	27.4	5	1	7.0	70	5	429.367	148.510
168	2218	8	27.4	5	1	6.9	70	5	553.407	165.662
169	2218	9	27.7	5	1	7.0	70	5	438.909	149.909
170	2201	9	28.0	5	1	7.0	70	5	391.201	142.755

Table AII.76 (Continued): 2010 Entrance surface water radon survey measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
171	2218	9	28.0	5	1	6.9	70	5	410.284	147.096
172	2218	8	28.0	5	1	7.0	70	5	486.616	156.692
173	2218	8	28.0	5	1	7.0	70	5	438.909	149.909
174	2218	8	27.7	5	1	6.9	70	5	381.660	141.274
175	2218	8	27.4	5	1	6.9	70	5	333.952	133.581
176	2218	8	27.4	5	1	7.0	70	5	457.992	152.664
177	2218	9	27.1	5	1	7.0	70	5	639.280	176.445
178	2218	9	26.8	5	1	7.0	70	5	930.582	209.132
179	2218	8	26.8	5	1	7.0	70	5	1141.642	229.373
180	2201	9	26.8	5	1	6.9	70	5	901.802	207.183
181	2218	8	26.4	5	1	7.0	70	5	777.084	192.935
182	2218	8	26.4	5	1	7.0	70	5	652.367	178.569
183	2218	8	26.1	5	1	7.0	70	5	738.710	188.645
184	2218	8	26.1	5	1	7.0	70	5	719.523	186.458
185	2218	8	25.8	5	1	7.0	70	5	700.335	184.242
186	2218	9	25.5	5	1	7.0	70	5	543.865	164.415
187	2218	9	25.5	5	1	7.0	70	5	777.084	192.935
188	2218	8	25.5	5	1	7.0	70	5	553.407	166.899
189	2218	8	25.2	5	1	6.9	70	5	534.324	163.156
190	2218	9	25.2	5	1	7.0	70	5	725.662	311.653

Table AII.77: 2010 Entrance surface water survey YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	10:51:46	25.21	52.33	34.45	103.5	N/A	0.121	8.43	2.3	20.9
1/10/2010	10:52:46	25.19	52.35	34.47	103.6	N/A	0.140	8.43	1.6	20.2
1/10/2010	10:53:46	25.17	52.36	34.47	103.6	N/A	0.148	8.43	2.4	19.7
1/10/2010	10:54:46	25.18	52.36	34.47	103.6	N/A	0.091	8.43	2.8	19.0
1/10/2010	10:55:49	25.23	52.27	34.41	103.7	N/A	0.089	8.44	1.9	17.6
1/10/2010	10:56:46	25.21	52.24	34.38	103.6	N/A	0.133	8.44	1.7	16.8
1/10/2010	10:57:46	25.21	52.38	34.49	103.5	N/A	0.115	8.43	2.0	16.2
1/10/2010	10:58:46	25.19	52.46	34.55	103.2	N/A	0.100	8.43	2.5	15.9
1/10/2010	10:59:46	25.20	52.40	34.51	103.3	N/A	0.109	8.43	2.2	15.4
1/10/2010	11:00:48	25.19	52.25	34.39	103.6	N/A	0.107	8.44	2.1	14.6
1/10/2010	11:01:46	25.20	52.25	34.39	103.5	N/A	0.128	8.43	2.1	14.3
1/10/2010	11:02:46	25.18	52.19	34.35	103.4	N/A	0.112	8.43	2.2	13.8
1/10/2010	11:03:46	25.18	52.10	34.28	103.0	N/A	0.086	8.43	2.7	13.5
1/10/2010	11:04:46	25.11	52.14	34.32	102.3	N/A	0.068	8.43	2.0	13.0
1/10/2010	11:05:48	25.13	51.97	34.19	102.5	N/A	0.081	8.44	2.3	12.6
1/10/2010	11:06:46	25.13	51.90	34.13	103.1	N/A	0.077	8.44	1.4	12.4
1/10/2010	11:07:46	25.12	51.84	34.09	103.0	N/A	0.081	8.43	1.7	12.3
1/10/2010	11:08:46	25.10	51.41	33.77	100.1	N/A	0.088	8.41	1.4	12.0
1/10/2010	11:09:46	25.07	51.58	33.90	100.1	N/A	0.080	8.41	2.1	11.8
1/10/2010	11:10:49	25.04	51.08	33.53	97.5	N/A	0.065	8.38	1.6	11.4
1/10/2010	11:11:46	25.03	51.34	33.72	98.4	N/A	0.055	8.40	1.5	11.2
1/10/2010	11:12:46	25.04	50.80	33.33	97.1	N/A	0.060	8.37	1.1	11.1
1/10/2010	11:13:46	25.12	51.21	33.63	97.8	N/A	0.062	8.38	2.2	11.1
1/10/2010	11:14:46	25.09	51.01	33.48	98.3	N/A	0.059	8.37	1.3	10.7
1/10/2010	11:15:48	25.14	51.59	33.90	99.8	N/A	0.061	8.40	0.6	10.5
1/10/2010	11:16:46	25.25	51.89	34.12	102.9	N/A	0.063	8.43	1.3	10.3
1/10/2010	11:17:46	25.23	51.68	33.97	101.9	N/A	0.061	8.42	1.5	10.3
1/10/2010	11:18:46	25.27	51.52	33.85	104.1	N/A	0.061	8.42	1.5	9.8
1/10/2010	11:19:46	25.25	51.68	33.97	103.1	N/A	0.056	8.42	1.7	9.8
1/10/2010	11:20:48	25.24	51.54	33.87	104.1	N/A	0.063	8.42	0.6	9.4
1/10/2010	11:21:46	25.29	47.61	30.99	98.3	N/A	0.066	8.33	1.7	9.2
1/10/2010	11:22:46	25.20	47.76	31.09	96.8	N/A	0.060	8.29	1.2	9.4
1/10/2010	11:23:46	25.14	49.73	32.54	96.3	N/A	0.067	8.35	0.9	9.5
1/10/2010	11:24:46	25.13	51.11	33.55	98.7	N/A	0.096	8.38	1.1	7.7
1/10/2010	11:25:49	25.21	50.82	33.33	100.7	N/A	0.101	8.39	2.3	4.9
1/10/2010	11:26:46	25.22	48.94	31.96	98.3	N/A	0.117	8.32	1.6	3.5
1/10/2010	11:27:46	25.26	49.74	32.54	99.5	N/A	0.116	8.37	1.5	3.3
1/10/2010	11:28:46	25.22	49.86	32.63	99.9	N/A	0.115	8.35	1.7	3.1

Table AII.77: (Continued) 2010 Entrance surface water survey YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	11:29:46	25.14	50.15	32.84	99.0	N/A	0.105	8.38	1.3	2.6
1/10/2010	11:30:49	25.15	49.91	32.67	99.7	N/A	0.101	8.38	1.0	2.1
1/10/2010	11:31:46	25.16	50.36	33.00	99.8	N/A	0.090	8.38	2.0	2.5
1/10/2010	11:32:46	25.05	50.84	33.35	98.3	N/A	0.089	8.38	1.6	2.3
1/10/2010	11:33:46	25.13	51.40	33.77	100.3	N/A	0.096	8.40	1.6	2.1
1/10/2010	11:34:46	25.15	51.57	33.89	100.5	N/A	0.075	8.40	2.0	2.1
1/10/2010	11:35:49	25.28	51.80	34.06	102.1	N/A	0.085	8.43	2.3	1.5
1/10/2010	11:36:46	25.32	51.77	34.03	103.6	N/A	0.066	8.44	2.4	-12.9
1/10/2010	11:37:46	25.33	51.76	34.02	103.8	N/A	0.077	8.43	2.0	-6.8
1/10/2010	11:38:46	25.24	51.69	33.98	103.9	N/A	0.068	8.44	2.1	-4.8
1/10/2010	11:39:46	25.21	51.64	33.94	103.6	N/A	0.048	8.43	2.6	-3.4
1/10/2010	11:40:49	25.16	51.49	33.83	101.6	N/A	0.066	8.42	2.4	-2.7
1/10/2010	11:41:46	25.18	51.55	33.87	101.1	N/A	0.048	8.41	1.8	-2.1
1/10/2010	11:42:46	25.36	51.80	34.05	104.4	N/A	0.064	8.44	2.8	-1.6
1/10/2010	11:43:46	25.36	51.42	33.77	103.0	N/A	0.059	8.40	1.1	-1.3
1/10/2010	11:44:46	25.25	51.42	33.78	104.5	N/A	0.058	8.40	1.8	-1.0
1/10/2010	11:45:49	25.19	51.56	33.88	103.6	N/A	0.073	8.43	1.7	-1.1
1/10/2010	11:46:46	25.21	51.55	33.87	104.7	N/A	0.098	8.42	1.2	-0.6
1/10/2010	11:47:46	25.19	51.54	33.87	104.8	N/A	0.062	8.43	1.7	-0.7
1/10/2010	11:48:46	25.18	51.24	33.64	100.4	N/A	0.061	8.41	1.0	-0.5
1/10/2010	11:49:46	25.18	51.60	33.91	103.6	N/A	0.108	8.43	2.2	-0.6
1/10/2010	11:50:49	25.26	51.64	33.94	103.4	N/A	0.112	8.44	2.9	-0.5
1/10/2010	11:51:46	25.22	51.41	33.77	103.4	N/A	0.107	8.43	3.0	-0.4
1/10/2010	11:52:46	25.21	51.39	33.75	103.7	N/A	0.130	8.43	1.9	-0.5
1/10/2010	11:53:46	25.20	51.37	33.74	104.0	N/A	0.098	8.43	2.2	-0.7
1/10/2010	11:54:46	25.21	32.14	20.03	103.4	N/A	0.136	8.43	10.9	-0.5
1/10/2010	11:55:49	25.26	51.40	33.76	103.9	N/A	0.101	8.44	2.2	-0.8
1/10/2010	11:56:46	25.28	51.35	33.73	103.8	N/A	0.098	8.43	1.8	-0.5
1/10/2010	11:57:46	25.31	51.26	33.66	104.0	N/A	0.107	8.43	2.3	-0.7
1/10/2010	11:58:46	25.41	51.25	33.65	104.5	N/A	0.114	8.43	1.7	-0.9
1/10/2010	11:59:46	25.37	51.07	33.51	104.5	N/A	0.104	8.43	2.7	-0.9
1/10/2010	12:00:49	25.35	51.06	33.51	103.7	N/A	0.101	8.43	2.5	-1.0
1/10/2010	12:01:46	25.29	50.95	33.43	101.3	N/A	0.102	8.42	2.0	-0.8
1/10/2010	12:02:46	25.15	50.69	33.24	103.3	N/A	0.062	8.43	2.5	-1.0
1/10/2010	12:03:46	25.22	50.67	33.22	105.6	N/A	0.080	8.43	2.5	-0.7
1/10/2010	12:04:46	25.42	50.94	33.42	106.6	N/A	0.064	8.42	1.8	-0.9
1/10/2010	12:05:49	25.31	51.03	33.49	101.5	N/A	0.019	8.41	2.3	-1.5

Table AII.77: (Continued) 2010 Entrance surface water survey YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	12:06:46	25.13	50.70	33.25	99.4	N/A	0.034	8.40	1.9	-1.4
1/10/2010	12:07:46	25.14	50.67	33.23	99.5	N/A	0.045	8.40	1.0	-1.4
1/10/2010	12:08:46	25.18	50.58	33.16	89.3	N/A	0.055	8.37	1.4	-1.6
1/10/2010	12:09:46	25.21	50.65	33.21	105.8	N/A	0.052	8.43	1.8	-1.8
1/10/2010	12:10:48	25.20	50.70	33.25	100.4	N/A	0.048	8.42	2.5	-2.2
1/10/2010	12:11:46	25.13	50.71	33.26	104.0	N/A	0.041	8.39	1.5	-1.9
1/10/2010	12:12:46	25.37	51.55	33.87	100.8	N/A	0.052	8.41	2.3	-1.6
1/10/2010	12:13:46	25.19	50.80	33.32	100.9	N/A	0.059	8.42	2.0	-2.0
1/10/2010	12:14:46	25.13	50.89	33.39	104.7	N/A	0.054	8.43	1.1	-2.0
1/10/2010	12:15:49	25.06	50.96	33.44	99.6	N/A	0.058	8.41	2.4	-2.1
1/10/2010	12:16:46	25.05	51.02	33.49	106.2	N/A	0.063	8.43	1.3	-1.8
1/10/2010	12:17:46	25.11	51.03	33.49	101.3	N/A	0.072	8.42	2.2	-1.7
1/10/2010	12:18:46	25.14	51.08	33.53	101.4	N/A	0.062	8.42	2.1	-2.0
1/10/2010	12:19:46	25.13	51.14	33.57	100.5	N/A	0.107	8.42	2.3	-1.9
1/10/2010	12:20:49	25.26	51.32	33.71	99.2	N/A	0.101	8.42	2.9	-1.8
1/10/2010	12:21:46	25.20	51.22	33.63	99.5	N/A	0.082	8.42	2.7	-1.7
1/10/2010	12:22:46	25.20	51.28	33.67	99.8	N/A	0.094	8.41	2.5	-1.3
1/10/2010	12:23:46	24.93	50.84	33.36	101.1	N/A	0.070	8.41	2.2	-1.4
1/10/2010	12:24:46	25.21	50.95	33.43	101.2	N/A	0.059	8.43	2.8	-1.7
1/10/2010	12:25:48	25.07	50.98	33.46	103.2	N/A	0.057	8.43	2.3	-1.6
1/10/2010	12:26:46	25.27	51.50	33.84	105.5	N/A	0.059	8.44	1.7	-1.3
1/10/2010	12:27:46	25.23	51.65	33.95	107.4	N/A	0.052	8.45	2.3	-1.4
1/10/2010	12:28:46	25.22	51.66	33.96	106.5	N/A	0.055	8.43	2.6	-1.3
1/10/2010	12:29:46	25.31	51.74	34.01	107.9	N/A	0.046	8.44	1.8	-1.6
1/10/2010	12:30:48	25.28	51.75	34.02	104.3	N/A	0.062	8.43	2.0	-1.8
1/10/2010	12:31:46	25.20	51.71	33.99	102.3	N/A	0.064	8.43	2.1	-1.8
1/10/2010	12:32:46	25.19	51.72	34.00	102.8	N/A	0.056	8.43	2.4	-1.6
1/10/2010	12:33:46	25.24	51.67	33.96	108.2	N/A	0.059	8.44	1.6	-1.8
1/10/2010	12:34:46	25.31	51.68	33.97	107.0	N/A	0.055	8.44	2.2	-1.6
1/10/2010	12:35:49	25.34	51.66	33.95	111.9	N/A	0.041	8.47	2.8	-1.6
1/10/2010	12:36:46	25.25	51.57	33.89	112.4	N/A	0.041	8.43	1.5	-0.9
1/10/2010	12:37:46	25.35	51.16	33.58	106.1	N/A	0.040	8.44	1.1	-1.1
1/10/2010	12:38:46	25.21	51.73	34.01	102.1	N/A	0.064	8.42	1.8	-1.0
1/10/2010	12:39:46	25.25	51.77	34.03	103.5	N/A	0.059	8.42	1.9	-1.4
1/10/2010	12:40:48	25.29	51.90	34.13	101.5	N/A	0.052	8.42	1.4	-1.7
1/10/2010	12:41:46	25.16	51.85	34.09	100.6	N/A	0.053	8.42	1.9	-1.5
1/10/2010	12:42:46	25.18	51.84	34.09	97.9	N/A	0.039	8.40	1.6	-1.3

Table AII.77: (Continued) 2010 Entrance surface water survey YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	12:43:46	25.18	51.85	34.10	98.4	N/A	0.030	8.41	2.2	-1.2
1/10/2010	12:44:46	25.20	51.89	34.12	99.6	N/A	0.063	8.41	2.1	-1.2
1/10/2010	12:45:48	25.19	51.83	34.08	99.9	N/A	0.036	8.42	2.2	-1.3
1/10/2010	12:46:46	25.19	51.83	34.08	100.2	N/A	0.042	8.41	1.5	-1.0
1/10/2010	12:47:46	25.20	51.86	34.10	100.3	N/A	0.048	8.42	2.3	-1.1
1/10/2010	12:48:46	25.33	52.02	34.22	100.9	N/A	0.066	8.42	2.5	-1.2
1/10/2010	12:49:46	25.34	52.05	34.24	101.8	N/A	0.067	8.42	2.5	-1.2
1/10/2010	12:50:48	25.30	52.06	34.25	101.6	N/A	0.058	8.42	2.3	-1.4
1/10/2010	12:51:46	25.32	52.16	34.32	102.4	N/A	0.055	8.42	2.2	-1.3
1/10/2010	12:52:46	25.26	52.09	34.27	101.6	N/A	0.059	8.42	2.5	-1.6
1/10/2010	12:53:46	25.25	52.22	34.37	101.0	N/A	0.062	8.41	2.4	-1.3
1/10/2010	12:54:46	25.02	52.17	34.33	103.6	N/A	0.066	8.42	3.4	-1.5
1/10/2010	12:55:48	25.01	52.15	34.33	103.3	N/A	0.064	8.42	3.1	-1.9
1/10/2010	12:56:46	24.97	52.17	34.34	103.5	N/A	0.049	8.42	2.7	-1.9
1/10/2010	12:57:46	24.91	52.20	34.36	105.5	N/A	0.047	8.42	4.4	-2.0
1/10/2010	12:58:46	24.88	52.23	34.39	107.1	N/A	0.048	8.42	2.7	-1.9
1/10/2010	12:59:46	24.83	51.99	34.21	107.9	N/A	0.043	8.40	3.8	-1.6
1/10/2010	13:00:48	24.84	52.14	34.32	107.1	N/A	0.058	8.41	4.7	-2.0
1/10/2010	13:01:46	24.88	52.18	34.35	108.5	N/A	0.054	8.41	5.2	-2.0
1/10/2010	13:02:46	24.86	52.20	34.36	109.0	N/A	0.055	8.41	5.3	-1.8
1/10/2010	13:03:46	24.85	52.23	34.38	108.3	N/A	0.050	8.41	4.1	-2.1
1/10/2010	13:04:46	24.87	52.27	34.42	108.2	N/A	0.053	8.41	4.3	-2.2
1/10/2010	13:05:49	24.82	52.24	34.39	108.6	N/A	0.046	8.42	4.5	-2.2
1/10/2010	13:06:46	24.80	52.22	34.38	109.1	N/A	0.050	8.42	4.3	-2.0
1/10/2010	13:07:46	24.81	52.20	34.37	108.7	N/A	0.062	8.41	4.9	-1.6
1/10/2010	13:08:46	24.79	52.17	34.34	109.8	N/A	0.053	8.42	4.4	-1.8
1/10/2010	13:09:46	24.78	52.08	34.28	108.6	N/A	0.053	8.40	4.9	-1.5
1/10/2010	13:10:49	24.75	52.10	34.29	110.0	N/A	0.052	8.42	5.1	-1.7
1/10/2010	13:11:46	24.72	52.13	34.32	110.9	N/A	0.048	8.43	6.2	-1.7
1/10/2010	13:12:46	24.75	52.00	34.21	110.3	N/A	0.064	8.41	5.2	-1.6
1/10/2010	13:13:46	24.80	51.67	33.97	108.4	N/A	0.060	8.37	4.7	-1.9
1/10/2010	13:14:46	24.84	52.05	34.25	108.6	N/A	0.047	8.40	6.2	-2.2
1/10/2010	13:15:48	24.87	52.05	34.25	111.1	N/A	0.053	8.42	5.2	-2.6
1/10/2010	13:16:46	25.06	51.95	34.18	112.8	N/A	0.048	8.40	3.9	-2.6
1/10/2010	13:17:46	25.12	51.44	33.79	118.4	N/A	0.056	8.39	2.1	-2.5
1/10/2010	13:18:46	25.11	52.12	34.30	114.9	N/A	0.050	8.43	3.3	-2.5
1/10/2010	13:19:46	25.08	52.26	34.40	112.7	N/A	0.051	8.42	2.9	-2.4

Table AII.77: (Continued) 2010 Entrance surface water survey YSI data from the 6920 V2.

Date m/d/y	Time hh:mm:ss	Temp C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	13:20:49	25.03	52.26	34.40	112.3	N/A	0.048	8.42	3.2	-2.8
1/10/2010	13:21:46	25.02	52.27	34.41	107.6	N/A	0.035	8.41	3.8	-2.9
1/10/2010	13:22:46	24.99	52.03	34.23	103.6	N/A	0.033	8.38	1.8	-2.9
1/10/2010	13:23:46	24.97	50.56	33.15	94.7	N/A	0.050	8.29	2.7	-2.9
1/10/2010	13:24:46	25.00	51.93	34.16	98.3	N/A	0.047	8.32	2.5	-3.1
1/10/2010	13:25:49	24.95	50.32	32.98	99.0	N/A	0.032	8.29	2.0	-3.2
1/10/2010	13:26:46	24.80	49.99	32.74	96.5	N/A	0.047	8.27	2.4	-2.9
1/10/2010	13:27:46	25.04	51.88	34.12	102.6	N/A	0.051	8.38	2.1	-3.0
1/10/2010	13:28:46	24.87	52.24	34.39	93.9	N/A	0.053	8.37	2.9	-4.2
1/10/2010	13:29:46	24.93	52.29	34.43	110.1	N/A	0.046	8.42	3.1	-3.6
1/10/2010	13:30:49	24.89	52.29	34.43	108.5	N/A	0.043	8.42	4.3	-3.5
1/10/2010	13:31:46	24.88	52.28	34.42	108.4	N/A	0.046	8.42	3.2	-3.1
1/10/2010	13:32:46	24.86	52.27	34.41	110.0	N/A	0.044	8.42	4.3	-2.9
1/10/2010	13:33:46	25.06	52.15	34.32	126.3	N/A	0.061	8.48	1.6	-2.7
1/10/2010	13:34:46	25.13	52.23	34.38	112.3	N/A	0.051	8.44	3.0	-2.4
1/10/2010	13:35:49	25.12	52.21	34.37	112.8	N/A	0.036	8.44	2.7	-2.6
1/10/2010	13:36:46	25.17	52.33	34.45	105.3	N/A	0.047	8.43	3.7	-2.6
1/10/2010	13:37:46	25.18	52.30	34.43	105.6	N/A	0.058	8.43	3.3	-2.6
1/10/2010	13:38:46	25.18	52.30	34.43	105.5	N/A	0.057	8.43	3.5	-2.8
1/10/2010	13:39:46	25.12	52.25	34.39	101.5	N/A	0.052	8.41	1.7	-2.9
1/10/2010	13:40:48	25.03	52.20	34.36	103.5	N/A	0.058	8.42	2.7	-3.0
1/10/2010	13:41:46	25.00	52.17	34.34	101.4	N/A	0.057	8.41	3.0	-2.7
1/10/2010	13:42:46	24.98	52.18	34.35	101.7	N/A	0.048	8.41	4.0	-2.9
1/10/2010	13:43:46	25.09	52.21	34.36	103.0	N/A	0.047	8.43	2.5	-3.1
1/10/2010	13:44:46	25.10	52.28	34.41	103.3	N/A	0.044	8.42	3.4	-2.9
1/10/2010	13:45:49	25.11	52.23	34.38	103.3	N/A	0.052	8.43	3.3	-3.1
1/10/2010	13:46:46	25.05	52.29	34.42	103.0	N/A	0.048	8.43	3.7	-2.9
1/10/2010	13:47:46	25.11	52.30	34.43	103.2	N/A	0.048	8.43	3.1	-2.9
1/10/2010	13:48:46	25.05	52.32	34.45	102.1	N/A	0.046	8.39	2.6	-2.7
1/10/2010	13:49:46	25.06	52.35	34.47	102.8	N/A	0.053	8.38	4.3	-2.9
1/10/2010	13:50:49	25.05	52.33	34.45	104.3	N/A	0.052	8.39	3.9	-3.0
1/10/2010	13:51:46	25.04	52.34	34.46	106.1	N/A	0.059	8.39	5.1	-2.6
1/10/2010	13:52:46	25.12	52.36	34.47	105.0	N/A	0.087	8.38	4.1	-2.6
1/10/2010	13:53:46	25.27	52.41	34.51	101.9	N/A	0.068	8.37	4.5	-2.6
1/10/2010	13:54:46	25.25	52.40	34.50	99.4	N/A	0.066	8.36	4.3	-3.0
1/10/2010	13:55:48	25.19	52.39	34.50	98.2	N/A	0.093	8.36	4.2	-3.1
1/10/2010	13:56:46	25.22	52.41	34.51	98.8	N/A	0.019	8.36	4.0	-2.9

Table AII.77: (Continued) 2010 Entrance surface water survey YSI data from the 6920 V2.

Date m/d/y	Time hh:mm:ss	Temp C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	13:57:46	25.22	52.43	34.52	99.2	N/A	0.045	8.36	4.6	-2.6
1/10/2010	13:58:46	25.22	52.44	34.53	99.5	N/A	0.060	8.36	4.9	-2.6
1/10/2010	13:59:46	25.22	52.43	34.52	99.3	N/A	0.056	8.36	4.6	-2.4
1/10/2010	14:00:49	25.24	52.42	34.52	99.4	N/A	0.066	8.36	3.9	-2.4
1/10/2010	14:01:46	25.23	52.42	34.52	99.3	N/A	0.073	8.36	4.2	-2.3
1/10/2010	14:02:46	25.23	52.43	34.52	99.3	N/A	0.077	8.36	4.4	-2.0
1/10/2010	14:03:46	25.23	52.42	34.52	99.3	N/A	0.053	8.36	4.4	-2.1
1/10/2010	14:04:46	25.22	52.42	34.52	99.5	N/A	0.067	8.35	3.7	-1.8
1/10/2010	14:05:49	25.22	52.42	34.51	99.4	N/A	0.080	8.36	4.2	-2.1
1/10/2010	14:06:46	25.19	52.39	34.50	99.2	N/A	0.146	8.36	4.5	-1.8
1/10/2010	14:07:46	25.16	52.31	34.44	99.8	N/A	0.095	8.37	3.7	-2.3
1/10/2010	14:08:46	25.04	52.25	34.40	104.7	N/A	0.091	8.39	4.8	-2.4
1/10/2010	14:09:46	25.02	52.26	34.40	105.9	N/A	0.041	8.39	4.5	-2.4
1/10/2010	14:10:49	25.06	52.35	34.47	103.9	N/A	0.045	8.39	2.9	-2.6
1/10/2010	14:11:46	25.09	52.32	34.45	101.7	N/A	0.041	8.37	3.0	-2.7
1/10/2010	14:12:46	25.07	52.38	34.49	102.1	N/A	0.021	8.38	3.9	-2.9
1/10/2010	14:13:46	25.03	52.32	34.44	101.3	N/A	0.030	8.38	3.4	-3.0
1/10/2010	14:14:46	25.05	52.29	34.42	102.9	N/A	0.027	8.42	3.6	-3.1
1/10/2010	14:15:48	25.07	52.42	34.52	102.8	N/A	0.026	8.40	4.0	-3.0
1/10/2010	14:16:46	25.15	52.57	34.63	102.7	N/A	0.031	8.41	3.0	-2.7
1/10/2010	14:17:46	25.13	52.66	34.70	102.6	N/A	0.030	8.41	3.2	-5.4
1/10/2010	14:18:46	25.09	52.58	34.64	102.7	N/A	0.045	8.42	3.4	-6.7
1/10/2010	14:19:46	25.11	52.64	34.69	102.7	N/A	0.059	8.41	3.8	-7.0
1/10/2010	14:20:49	25.12	52.63	34.68	102.9	N/A	0.093	8.42	3.5	-7.4
1/10/2010	14:21:46	25.21	52.81	34.80	102.8	N/A	0.128	8.41	3.7	-7.4
1/10/2010	14:22:46	25.09	52.54	34.61	103.1	N/A	0.073	8.42	3.6	-6.7
1/10/2010	14:23:46	25.11	52.30	34.43	104.3	N/A	0.018	8.43	4.0	-6.2
1/10/2010	14:24:46	25.16	52.30	34.43	104.4	N/A	0.019	8.43	3.1	-5.4
1/10/2010	14:25:48	25.10	52.26	34.40	104.3	N/A	0.012	8.43	3.5	-5.2
1/10/2010	14:26:46	25.07	52.27	34.41	104.4	N/A	0.011	8.43	3.0	-4.8
1/10/2010	14:27:46	25.08	52.31	34.44	104.3	N/A	0.041	8.43	2.3	-4.6
1/10/2010	14:28:46	25.05	52.31	34.44	104.2	N/A	0.044	8.43	2.6	-4.3
1/10/2010	14:29:46	25.06	52.31	34.44	104.2	N/A	0.020	8.43	3.6	-4.2
1/10/2010	14:30:49	25.03	52.32	34.44	102.7	N/A	0.027	8.43	2.4	-4.2
1/10/2010	14:31:46	25.02	52.32	34.45	102.5	N/A	0.030	8.42	2.2	-3.8
1/10/2010	14:32:46	24.99	52.35	34.47	95.9	N/A	0.056	8.40	1.7	-3.9
1/10/2010	14:33:46	25.04	52.33	34.46	103.6	N/A	0.149	8.43	2.6	-3.9

Table AII.77: (Continued) 2010 Entrance surface water survey YSI data from the 6920 V2.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/10/2010	14:34:46	25.03	52.32	34.45	104.2	N/A	0.102	8.43	3.4	-3.6
1/10/2010	14:34:46	25.03	52.32	34.45	104.2	N/A	0.102	8.43	3.4	-3.6
1/10/2010	14:35:48	25.05	52.32	34.45	104.3	N/A	0.085	8.43	3.3	-3.7
1/10/2010	14:36:46	25.05	52.34	34.46	104.3	N/A	0.090	8.43	3.3	-3.4
1/10/2010	14:36:46	25.05	52.34	34.46	104.3	N/A	0.090	8.43	3.3	-3.4
1/10/2010	14:37:46	25.06	52.35	34.47	104.3	N/A	0.079	8.43	3.5	-3.4
1/10/2010	14:38:46	25.12	52.38	34.49	104.3	N/A	0.008	8.43	4.4	-3.2
1/10/2010	14:39:46	25.11	52.39	34.49	104.4	N/A	0.034	8.43	4.2	-3.3
1/10/2010	14:40:48	25.10	52.29	34.42	104.2	N/A	-0.001	8.43	3.9	-3.7
1/10/2010	14:41:46	25.12	52.36	34.47	103.7	N/A	0.006	8.43	3.5	-3.5
1/10/2010	14:42:46	25.12	52.48	34.56	103.0	N/A	0.109	8.42	4.4	-3.9
1/10/2010	14:43:46	25.12	52.47	34.55	103.2	N/A	0.089	8.42	4.2	-4.2
1/10/2010	14:44:46	25.11	52.44	34.53	103.3	N/A	0.066	8.42	4.6	-4.1

Table AII.78: 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	10:46	21.32631	157.96739	19.0				
1/10/2010	10:46	21.32633	157.96731	19.8	8	0:00:30	1.0	73
1/10/2010	10:47	21.32636	157.96724	19.6	9	0:00:30	1.0	69
1/10/2010	10:47	21.32632	157.96712	19.9	13	0:00:30	2.0	108
1/10/2010	10:48	21.32631	157.96700	18.9	12	0:00:30	1.5	94
1/10/2010	10:48	21.32627	157.96690	18.7	12	0:00:30	1.4	116
1/10/2010	10:49	21.32626	157.96682	17.4	8	0:00:30	1.0	96
1/10/2010	10:49	21.32627	157.96678	16.4	5	0:00:30	0.6	70
1/10/2010	10:50	21.32624	157.96670	16.1	9	0:00:30	1.1	116
1/10/2010	10:51	21.32633	157.96660	13.5	14	0:01:00	0.8	45
1/10/2010	10:51	21.32636	157.96656	12.3	6	0:00:30	0.7	50
1/10/2010	10:52	21.32636	157.96646	15.4	11	0:00:30	1.3	91
1/10/2010	10:52	21.32640	157.96638	16.2	9	0:00:30	1.1	63
1/10/2010	10:53	21.32636	157.96629	16.3	9	0:00:30	1.1	116
1/10/2010	10:53	21.32639	157.96623	15.4	7	0:00:30	0.8	67
1/10/2010	10:54	21.32646	157.96619	14.6	9	0:00:30	1.1	30
1/10/2010	10:54	21.32643	157.96609	13.5	11	0:00:30	1.3	106
1/10/2010	10:55	21.32643	157.96626	15.4	18	0:00:30	2.0	269
1/10/2010	10:55	21.32645	157.96659	12.0	34	0:00:30	4.0	274
1/10/2010	10:56	21.32653	157.96691	16.5	34	0:00:30	4.0	285
1/10/2010	10:56	21.32664	157.96722	17.5	34	0:00:30	4.0	290
1/10/2010	10:57	21.32651	157.96742	18.6	26	0:00:30	3.0	236
1/10/2010	10:57	21.32623	157.96747	19.6	31	0:00:30	4.0	188
1/10/2010	10:58	21.32599	157.96764	19.6	32	0:00:30	4.0	214
1/10/2010	10:58	21.32580	157.96769	16.6	22	0:00:30	3.0	193
1/10/2010	10:59	21.32578	157.96765	17.3	4	0:00:30	0.5	126
1/10/2010	10:59	21.32584	157.96749	21.0	18	0:00:30	2.0	70
1/10/2010	11:00	21.32621	157.96748	19.2	41	0:00:30	5.0	2
1/10/2010	11:00	21.32655	157.96741	18.4	39	0:00:30	5.0	11
1/10/2010	11:01	21.32690	157.96736	16.5	39	0:00:30	5.0	7
1/10/2010	11:01	21.32724	157.96737	15.9	38	0:00:30	5.0	358
1/10/2010	11:02	21.32765	157.96741	16.1	46	0:00:30	6.0	355
1/10/2010	11:02	21.32817	157.96754	19.9	59	0:00:30	7.0	347
1/10/2010	11:03	21.32865	157.96772	23.7	57	0:00:30	7.0	340
1/10/2010	11:03	21.32915	157.96789	24.4	58	0:00:30	7.0	343
1/10/2010	11:04	21.32965	157.96781	7.6	56	0:00:30	7.0	8
1/10/2010	11:04	21.33010	157.96756	7.7	56	0:00:30	7.0	28
1/10/2010	11:05	21.33048	157.96763	7.6	44	0:00:30	5.0	351
1/10/2010	11:05	21.33071	157.96801	7.3	47	0:00:30	6.0	302

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	11:06	21.33096	157.96838	6.9	47	0:00:30	6.0	307
1/10/2010	11:06	21.33125	157.96872	7.0	48	0:00:30	6.0	312
1/10/2010	11:07	21.33163	157.96877	7.0	43	0:00:30	5.0	353
1/10/2010	11:07	21.33197	157.96882	9.8	38	0:00:30	5.0	352
1/10/2010	11:08	21.33241	157.96878	8.8	49	0:00:30	6.0	4
1/10/2010	11:08	21.33287	157.96876	8.5	52	0:00:30	6.0	3
1/10/2010	11:09	21.33335	157.96870	10.0	53	0:00:30	6.0	6
1/10/2010	11:09	21.33383	157.96869	10.2	53	0:00:30	6.0	1
1/10/2010	11:10	21.33425	157.96864	8.1	48	0:00:30	6.0	6
1/10/2010	11:10	21.33461	157.96866	8.6	40	0:00:30	5.0	357
1/10/2010	11:11	21.33500	157.96865	10.2	43	0:00:30	5.0	1
1/10/2010	11:11	21.33538	157.96864	9.9	42	0:00:30	5.0	2
1/10/2010	11:12	21.33570	157.96859	8.3	36	0:00:30	4.0	8
1/10/2010	11:12	21.33604	157.96856	6.9	38	0:00:30	5.0	4
1/10/2010	11:13	21.33641	157.96851	5.6	41	0:00:30	5.0	8
1/10/2010	11:13	21.33658	157.96827	7.8	31	0:00:30	4.0	53
1/10/2010	11:14	21.33692	157.96825	8.8	37	0:00:30	4.0	4
1/10/2010	11:14	21.33728	157.96819	5.2	41	0:00:30	5.0	8
1/10/2010	11:15	21.33763	157.96817	6.9	40	0:00:30	5.0	3
1/10/2010	11:15	21.33800	157.96811	8.9	41	0:00:30	5.0	8
1/10/2010	11:16	21.33835	157.96796	6.0	42	0:00:30	5.0	22
1/10/2010	11:16	21.33863	157.96772	5.0	40	0:00:30	5.0	38
1/10/2010	11:17	21.33887	157.96745	4.0	39	0:00:30	5.0	47
1/10/2010	11:17	21.33914	157.96720	5.8	39	0:00:30	5.0	41
1/10/2010	11:18	21.33936	157.96692	4.7	39	0:00:30	5.0	50
1/10/2010	11:18	21.33963	157.96665	5.5	41	0:00:30	5.0	43
1/10/2010	11:19	21.33987	157.96638	4.6	38	0:00:30	5.0	47
1/10/2010	11:19	21.34011	157.96611	4.8	39	0:00:30	5.0	45
1/10/2010	11:20	21.34037	157.96584	4.5	40	0:00:30	5.0	45
1/10/2010	11:20	21.34063	157.96556	4.3	41	0:00:30	5.0	46
1/10/2010	11:21	21.34089	157.96528	4.7	41	0:00:30	5.0	44
1/10/2010	11:21	21.34117	157.96500	3.4	42	0:00:30	5.0	43
1/10/2010	11:22	21.34143	157.96474	4.7	40	0:00:30	5.0	43
1/10/2010	11:22	21.34175	157.96472	4.7	35	0:00:30	4.0	3
1/10/2010	11:23	21.34210	157.96474	4.6	40	0:00:30	5.0	357
1/10/2010	11:23	21.34246	157.96479	4.6	40	0:00:30	5.0	354
1/10/2010	11:24	21.34281	157.96483	4.1	39	0:00:30	5.0	353
1/10/2010	11:24	21.34296	157.96494	7.3	21	0:00:30	2.0	327

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	11:25	21.34275	157.96484	2.9	25	0:00:30	3.0	156
1/10/2010	11:25	21.34254	157.96482	4.1	24	0:00:30	3.0	175
1/10/2010	11:26	21.34231	157.96479	2.8	25	0:00:30	3.0	173
1/10/2010	11:26	21.34211	157.96476	3.5	23	0:00:30	3.0	174
1/10/2010	11:27	21.34189	157.96475	4.4	24	0:00:30	3.0	176
1/10/2010	11:27	21.34173	157.96478	6.2	18	0:00:30	2.0	192
1/10/2010	11:28	21.34187	157.96479	7.1	15	0:00:30	2.0	357
1/10/2010	11:28	21.34211	157.96477	5.5	27	0:00:30	3.0	4
1/10/2010	11:29	21.34239	157.96480	5.5	32	0:00:30	4.0	356
1/10/2010	11:29	21.34270	157.96483	6.2	34	0:00:30	4.0	354
1/10/2010	11:30	21.34296	157.96487	6.0	30	0:00:30	4.0	352
1/10/2010	11:30	21.34313	157.96509	7.5	29	0:00:30	3.0	309
1/10/2010	11:31	21.34347	157.96521	3.9	40	0:00:30	5.0	342
1/10/2010	11:31	21.34373	157.96544	8.2	38	0:00:30	5.0	320
1/10/2010	11:32	21.34405	157.96564	9.6	40	0:00:30	5.0	330
1/10/2010	11:32	21.34436	157.96585	9.3	41	0:00:30	5.0	327
1/10/2010	11:33	21.34468	157.96606	9.7	41	0:00:30	5.0	329
1/10/2010	11:33	21.34500	157.96626	9.5	42	0:00:30	5.0	330
1/10/2010	11:34	21.34531	157.96621	6.9	35	0:00:30	4.0	9
1/10/2010	11:34	21.34554	157.96626	15.8	26	0:00:30	3.0	349
1/10/2010	11:35	21.34579	157.96652	16.6	39	0:00:30	5.0	316
1/10/2010	11:35	21.34602	157.96676	13.6	36	0:00:30	4.0	316
1/10/2010	11:36	21.34626	157.96702	12.2	38	0:00:30	5.0	315
1/10/2010	11:36	21.34653	157.96725	7.8	38	0:00:30	5.0	321
1/10/2010	11:37	21.34682	157.96747	7.5	39	0:00:30	5.0	325
1/10/2010	11:37	21.34711	157.96769	8.7	40	0:00:30	5.0	324
1/10/2010	11:38	21.34741	157.96786	5.8	37	0:00:30	4.0	332
1/10/2010	11:38	21.34772	157.96803	7.0	39	0:00:30	5.0	334
1/10/2010	11:39	21.34809	157.96809	10.5	42	0:00:30	5.0	351
1/10/2010	11:39	21.34841	157.96818	12.2	37	0:00:30	4.0	344
1/10/2010	11:40	21.34864	157.96808	10.1	28	0:00:30	3.0	24
1/10/2010	11:40	21.34898	157.96799	10.6	39	0:00:30	5.0	12
1/10/2010	11:41	21.34937	157.96792	10.9	45	0:00:30	5.0	10
1/10/2010	11:41	21.34975	157.96780	7.4	44	0:00:30	5.0	16
1/10/2010	11:42	21.35001	157.96764	1.6	33	0:00:30	4.0	30
1/10/2010	11:42	21.35002	157.96788	13.0	24	0:00:30	3.0	274
1/10/2010	11:43	21.35023	157.96765	13.5	33	0:00:30	4.0	45
1/10/2010	11:43	21.35029	157.96727	5.1	41	0:00:30	5.0	80

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	11:44	21.35035	157.96695	2.5	34	0:00:30	4.0	80
1/10/2010	11:44	21.35056	157.96674	2.1	32	0:00:30	4.0	43
1/10/2010	11:45	21.35080	157.96659	4.5	31	0:00:30	4.0	29
1/10/2010	11:45	21.35101	157.96624	4.6	43	0:00:30	5.0	58
1/10/2010	11:46	21.35104	157.96589	5.4	36	0:00:30	4.0	85
1/10/2010	11:46	21.35115	157.96558	3.1	35	0:00:30	4.0	68
1/10/2010	11:47	21.35117	157.96565	6.6	8	0:00:30	0.9	283
1/10/2010	11:47	21.35133	157.96539	4.4	33	0:00:30	4.0	57
1/10/2010	11:48	21.35153	157.96507	11.3	39	0:00:30	5.0	56
1/10/2010	11:48	21.35165	157.96474	8.2	37	0:00:30	4.0	68
1/10/2010	11:49	21.35188	157.96462	12.2	28	0:00:30	3.0	28
1/10/2010	11:49	21.35226	157.96468	13.4	43	0:00:30	5.0	351
1/10/2010	11:50	21.35265	157.96483	13.9	47	0:00:30	6.0	341
1/10/2010	11:50	21.35314	157.96506	14.7	59	0:00:30	7.0	336
1/10/2010	11:51	21.35363	157.96529	15.5	60	0:00:30	7.0	337
1/10/2010	11:51	21.35414	157.96548	15.8	60	0:00:30	7.0	341
1/10/2010	11:52	21.35451	157.96583	16.0	55	0:00:30	7.0	318
1/10/2010	11:52	21.35481	157.96627	8.4	56	0:00:30	7.0	306
1/10/2010	11:53	21.35519	157.96662	3.0	57	0:00:30	7.0	320
1/10/2010	11:53	21.35564	157.96685	2.6	55	0:00:30	7.0	335
1/10/2010	11:54	21.35606	157.96715	3.9	55	0:00:30	7.0	326
1/10/2010	11:54	21.35636	157.96757	9.5	56	0:00:30	7.0	308
1/10/2010	11:55	21.35693	157.96803	13.7	79	0:00:30	10.0	323
1/10/2010	11:55	21.35753	157.96854	13.3	84	0:00:30	10.0	322
1/10/2010	11:56	21.35800	157.96900	13.2	71	0:00:30	9.0	318
1/10/2010	11:56	21.35838	157.96948	13.9	65	0:00:30	8.0	310
1/10/2010	11:57	21.35881	157.96990	14.7	64	0:00:30	8.0	318
1/10/2010	11:57	21.35924	157.97030	15.2	64	0:00:30	8.0	319
1/10/2010	11:58	21.35972	157.97064	15.2	64	0:00:30	8.0	326
1/10/2010	11:58	21.36017	157.97104	14.2	65	0:00:30	8.0	321
1/10/2010	11:59	21.36056	157.97148	12.8	63	0:00:30	8.0	314
1/10/2010	11:59	21.36100	157.97189	12.7	65	0:00:30	8.0	319
1/10/2010	12:00	21.36146	157.97228	12.7	64	0:00:30	8.0	321
1/10/2010	12:00	21.36192	157.97264	13.3	64	0:00:30	8.0	324
1/10/2010	12:01	21.36236	157.97306	13.2	65	0:00:30	8.0	319
1/10/2010	12:01	21.36273	157.97352	13.1	64	0:00:30	8.0	311
1/10/2010	12:02	21.36302	157.97405	12.6	63	0:00:30	8.0	301
1/10/2010	12:02	21.36313	157.97442	11.6	41	0:00:30	5.0	288

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	12:03	21.36302	157.97475	2.2	36	0:00:30	4.0	249
1/10/2010	12:03	21.36296	157.97481	1.5	9	0:00:30	1.1	222
1/10/2010	12:04	21.36267	157.97491	1.3	33	0:00:30	4.0	199
1/10/2010	12:04	21.36248	157.97492	1.2	21	0:00:30	3.0	184
1/10/2010	12:05	21.36217	157.97504	1.2	37	0:00:30	4.0	199
1/10/2010	12:05	21.36184	157.97516	1.1	39	0:00:30	5.0	199
1/10/2010	12:06	21.36183	157.97510	1.3	6	0:00:30	0.8	94
1/10/2010	12:06	21.36171	157.97513	1.3	13	0:00:30	2.0	192
1/10/2010	12:07	21.36163	157.97532	0.8	22	0:00:30	3.0	245
1/10/2010	12:07	21.36157	157.97534	1.0	7	0:00:30	0.8	196
1/10/2010	12:08	21.36132	157.97550	1.0	32	0:00:30	4.0	211
1/10/2010	12:08	21.36105	157.97561	1.2	33	0:00:30	4.0	200
1/10/2010	12:09	21.36070	157.97553	1.4	40	0:00:30	5.0	169
1/10/2010	12:09	21.36035	157.97545	1.1	39	0:00:30	5.0	168
1/10/2010	12:10	21.36014	157.97533	1.4	27	0:00:30	3.0	152
1/10/2010	12:10	21.35989	157.97508	1.5	39	0:00:30	5.0	137
1/10/2010	12:11	21.35967	157.97480	1.9	37	0:00:30	4.0	131
1/10/2010	12:11	21.35972	157.97478	2.6	6	0:00:30	0.8	27
1/10/2010	12:12	21.35953	157.97459	2.3	28	0:00:30	3.0	138
1/10/2010	12:12	21.35945	157.97465	1.4	11	0:00:30	1.3	215
1/10/2010	12:13	21.35950	157.97455	2.7	12	0:00:30	1.4	62
1/10/2010	12:13	21.35927	157.97430	4.3	37	0:00:30	4.0	135
1/10/2010	12:14	21.35898	157.97405	1.9	41	0:00:30	5.0	140
1/10/2010	12:14	21.35872	157.97382	5.6	37	0:00:30	4.0	141
1/10/2010	12:15	21.35838	157.97383	2.0	38	0:00:30	5.0	182
1/10/2010	12:15	21.35808	157.97363	2.2	40	0:00:30	5.0	148
1/10/2010	12:16	21.35774	157.97368	1.6	38	0:00:30	5.0	188
1/10/2010	12:16	21.35737	157.97365	1.7	41	0:00:30	5.0	176
1/10/2010	12:17	21.35704	157.97360	1.5	38	0:00:30	5.0	172
1/10/2010	12:17	21.35681	157.97333	2.5	38	0:00:30	5.0	132
1/10/2010	12:18	21.35648	157.97322	1.6	38	0:00:30	5.0	163
1/10/2010	12:18	21.35648	157.97318	1.8	5	0:00:30	0.6	88
1/10/2010	12:19	21.35633	157.97285	4.4	38	0:00:30	5.0	116
1/10/2010	12:19	21.35625	157.97250	8.4	37	0:00:30	4.0	105
1/10/2010	12:20	21.35623	157.97245	8.0	6	0:00:30	0.7	106
1/10/2010	12:20	21.35623	157.97241	8.5	4	0:00:30	0.5	88
1/10/2010	12:21	21.35625	157.97236	8.9	5	0:00:30	0.6	65
1/10/2010	12:21	21.35626	157.97234	9.2	3	0:00:30	0.3	69

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	12:22	21.35627	157.97232	9.3	2	0:00:30	0.2	70
1/10/2010	12:22	21.35627	157.97232	9.4	1	0:00:30	0.1	52
1/10/2010	12:23	21.35624	157.97235	9.5	5	0:00:30	0.6	224
1/10/2010	12:23	21.35596	157.97220	5.1	35	0:00:30	4.0	154
1/10/2010	12:24	21.35570	157.97189	3.1	43	0:00:30	5.0	131
1/10/2010	12:24	21.35548	157.97156	3.9	43	0:00:30	5.0	126
1/10/2010	12:25	21.35514	157.97139	9.7	42	0:00:30	5.0	156
1/10/2010	12:25	21.35477	157.97125	11.2	44	0:00:30	5.0	161
1/10/2010	12:26	21.35439	157.97115	10.7	44	0:00:30	5.0	167
1/10/2010	12:26	21.35402	157.97101	11.3	43	0:00:30	5.0	160
1/10/2010	12:27	21.35366	157.97089	9.7	42	0:00:30	5.0	163
1/10/2010	12:27	21.35328	157.97076	10.8	44	0:00:30	5.0	162
1/10/2010	12:28	21.35292	157.97064	11.0	42	0:00:30	5.0	163
1/10/2010	12:28	21.35287	157.97052	11.4	14	0:00:30	2.0	113
1/10/2010	12:29	21.35283	157.97041	13.4	12	0:00:30	1.4	111
1/10/2010	12:29	21.35251	157.97052	12.7	37	0:00:30	4.0	198
1/10/2010	12:30	21.35229	157.97073	5.7	33	0:00:30	4.0	221
1/10/2010	12:30	21.35227	157.97062	12.2	12	0:00:30	1.5	98
1/10/2010	12:31	21.35202	157.97079	7.4	33	0:00:30	4.0	213
1/10/2010	12:31	21.35171	157.97092	5.7	38	0:00:30	5.0	201
1/10/2010	12:32	21.35139	157.97107	2.1	38	0:00:30	5.0	203
1/10/2010	12:32	21.35109	157.97123	2.9	37	0:00:30	4.0	207
1/10/2010	12:33	21.35090	157.97151	2.4	36	0:00:30	4.0	234
1/10/2010	12:33	21.35062	157.97173	2.2	40	0:00:30	5.0	216
1/10/2010	12:34	21.35030	157.97193	2.0	41	0:00:30	5.0	210
1/10/2010	12:34	21.34999	157.97211	1.8	39	0:00:30	5.0	208
1/10/2010	12:35	21.34969	157.97232	1.6	40	0:00:30	5.0	213
1/10/2010	12:35	21.34933	157.97233	1.9	40	0:00:30	5.0	181
1/10/2010	12:36	21.34898	157.97225	3.4	40	0:00:30	5.0	168
1/10/2010	12:36	21.34870	157.97241	1.7	35	0:00:30	4.0	209
1/10/2010	12:37	21.34840	157.97225	2.6	38	0:00:30	5.0	154
1/10/2010	12:37	21.34808	157.97205	4.5	41	0:00:30	5.0	150
1/10/2010	12:38	21.34772	157.97188	4.7	44	0:00:30	5.0	156
1/10/2010	12:38	21.34736	157.97168	4.8	44	0:00:30	5.0	152
1/10/2010	12:39	21.34702	157.97146	5.4	44	0:00:30	5.0	149
1/10/2010	12:39	21.34663	157.97139	3.4	44	0:00:30	5.0	170
1/10/2010	12:40	21.34626	157.97138	2.7	41	0:00:30	5.0	180
1/10/2010	12:40	21.34589	157.97129	9.1	43	0:00:30	5.0	167

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	12:41	21.34553	157.97131	12.6	41	0:00:30	5.0	182
1/10/2010	12:41	21.34540	157.97162	6.5	35	0:00:30	4.0	246
1/10/2010	12:42	21.34529	157.97199	7.2	40	0:00:30	5.0	253
1/10/2010	12:42	21.34505	157.97200	6.0	26	0:00:30	3.0	182
1/10/2010	12:43	21.34502	157.97194	6.6	7	0:00:30	0.9	123
1/10/2010	12:43	21.34503	157.97189	6.7	5	0:00:30	0.6	68
1/10/2010	12:44	21.34503	157.97188	6.7	0	0:00:30	0.0	106
1/10/2010	12:44	21.34504	157.97187	5.8	1	0:00:30	0.2	59
1/10/2010	12:45	21.34506	157.97184	6.1	4	0:00:30	0.5	50
1/10/2010	12:45	21.34508	157.97182	6.9	3	0:00:30	0.4	41
1/10/2010	12:46	21.34508	157.97182	7.2	0	0:00:30	0.0	109
1/10/2010	12:46	21.34509	157.97182	7.4	1	0:00:30	0.1	64
1/10/2010	12:47	21.34509	157.97181	7.5	1	0:00:30	0.1	47
1/10/2010	12:47	21.34510	157.97180	7.1	1	0:00:30	0.2	54
1/10/2010	12:48	21.34511	157.97179	6.8	1	0:00:30	0.1	61
1/10/2010	12:48	21.34505	157.97161	7.8	19	0:00:30	2.0	107
1/10/2010	12:49	21.34490	157.97124	7.7	42	0:00:30	5.0	114
1/10/2010	12:49	21.34458	157.97118	13.2	37	0:00:30	4.0	170
1/10/2010	12:50	21.34420	157.97115	13.0	43	0:00:30	5.0	177
1/10/2010	12:50	21.34386	157.97102	13.3	40	0:00:30	5.0	160
1/10/2010	12:51	21.34350	157.97111	12.6	40	0:00:30	5.0	193
1/10/2010	12:51	21.34326	157.97128	12.0	32	0:00:30	4.0	213
1/10/2010	12:52	21.34289	157.97133	11.1	42	0:00:30	5.0	187
1/10/2010	12:52	21.34251	157.97133	8.6	42	0:00:30	5.0	180
1/10/2010	12:53	21.34215	157.97128	11.9	41	0:00:30	5.0	173
1/10/2010	12:53	21.34178	157.97128	12.0	41	0:00:30	5.0	180
1/10/2010	12:54	21.34151	157.97147	12.9	35	0:00:30	4.0	214
1/10/2010	12:54	21.34155	157.97181	12.8	36	0:00:30	4.0	276
1/10/2010	12:55	21.34155	157.97219	12.3	39	0:00:30	5.0	270
1/10/2010	12:55	21.34166	157.97253	12.7	37	0:00:30	4.0	289
1/10/2010	12:56	21.34177	157.97282	12.2	33	0:00:30	4.0	292
1/10/2010	12:56	21.34183	157.97318	12.6	37	0:00:30	4.0	279
1/10/2010	12:57	21.34196	157.97349	12.7	36	0:00:30	4.0	295
1/10/2010	12:57	21.34224	157.97371	11.3	38	0:00:30	5.0	324
1/10/2010	12:58	21.34251	157.97396	12.2	40	0:00:30	5.0	319
1/10/2010	12:58	21.34276	157.97421	12.2	39	0:00:30	5.0	317
1/10/2010	12:59	21.34301	157.97448	12.9	39	0:00:30	5.0	315
1/10/2010	12:59	21.34325	157.97472	12.9	37	0:00:30	4.0	316

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	13:00	21.34358	157.97481	4.6	39	0:00:30	5.0	346
1/10/2010	13:00	21.34385	157.97505	4.4	38	0:00:30	5.0	320
1/10/2010	13:01	21.34414	157.97527	5.7	40	0:00:30	5.0	324
1/10/2010	13:01	21.34447	157.97543	2.2	40	0:00:30	5.0	337
1/10/2010	13:02	21.34473	157.97568	2.2	38	0:00:30	5.0	317
1/10/2010	13:02	21.34503	157.97588	2.6	40	0:00:30	5.0	328
1/10/2010	13:03	21.34539	157.97599	1.9	41	0:00:30	5.0	345
1/10/2010	13:03	21.34569	157.97623	3.3	41	0:00:30	5.0	323
1/10/2010	13:04	21.34598	157.97648	3.3	42	0:00:30	5.0	321
1/10/2010	13:04	21.34606	157.97684	3.9	38	0:00:30	5.0	282
1/10/2010	13:05	21.34616	157.97719	8.2	38	0:00:30	5.0	288
1/10/2010	13:05	21.34644	157.97746	9.5	42	0:00:30	5.0	319
1/10/2010	13:06	21.34680	157.97744	1.8	40	0:00:30	5.0	2
1/10/2010	13:06	21.34694	157.97753	0.9	18	0:00:30	2.0	329
1/10/2010	13:07	21.34712	157.97777	6.7	32	0:00:30	4.0	309
1/10/2010	13:07	21.34745	157.97787	6.6	38	0:00:30	5.0	344
1/10/2010	13:08	21.34763	157.97820	6.9	40	0:00:30	5.0	301
1/10/2010	13:08	21.34783	157.97853	9.1	40	0:00:30	5.0	302
1/10/2010	13:09	21.34816	157.97872	9.4	43	0:00:30	5.0	332
1/10/2010	13:09	21.34847	157.97890	7.2	39	0:00:30	5.0	331
1/10/2010	13:10	21.34873	157.97919	10.0	41	0:00:30	5.0	314
1/10/2010	13:10	21.34904	157.97943	9.6	42	0:00:30	5.0	325
1/10/2010	13:11	21.34934	157.97965	9.6	41	0:00:30	5.0	325
1/10/2010	13:11	21.34954	157.97995	11.2	39	0:00:30	5.0	306
1/10/2010	13:12	21.34958	157.98031	15.6	38	0:00:30	5.0	276
1/10/2010	13:12	21.34948	157.98066	15.4	37	0:00:30	4.0	253
1/10/2010	13:13	21.34932	157.98101	15.0	41	0:00:30	5.0	245
1/10/2010	13:13	21.34920	157.98138	15.9	40	0:00:30	5.0	250
1/10/2010	13:14	21.34891	157.98163	13.7	41	0:00:30	5.0	219
1/10/2010	13:14	21.34859	157.98177	12.6	38	0:00:30	5.0	203
1/10/2010	13:15	21.34827	157.98160	9.5	40	0:00:30	5.0	154
1/10/2010	13:15	21.34792	157.98145	2.5	41	0:00:30	5.0	159
1/10/2010	13:16	21.34757	157.98133	2.6	41	0:00:30	5.0	161
1/10/2010	13:16	21.34723	157.98114	2.4	43	0:00:30	5.0	153
1/10/2010	13:17	21.34693	157.98091	2.4	41	0:00:30	5.0	145
1/10/2010	13:17	21.34664	157.98064	2.3	43	0:00:30	5.0	140
1/10/2010	13:18	21.34631	157.98045	2.3	42	0:00:30	5.0	151
1/10/2010	13:18	21.34596	157.98027	2.1	42	0:00:30	5.0	154

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	13:19	21.34568	157.98003	2.6	41	0:00:30	5.0	142
1/10/2010	13:19	21.34535	157.97986	2.2	41	0:00:30	5.0	154
1/10/2010	13:20	21.34508	157.97961	2.5	39	0:00:30	5.0	138
1/10/2010	13:20	21.34479	157.97938	2.4	40	0:00:30	5.0	144
1/10/2010	13:21	21.34449	157.97916	2.4	41	0:00:30	5.0	145
1/10/2010	13:21	21.34424	157.97895	4.6	36	0:00:30	4.0	143
1/10/2010	13:22	21.34394	157.97882	2.4	35	0:00:30	4.0	158
1/10/2010	13:22	21.34371	157.97852	7.1	41	0:00:30	5.0	130
1/10/2010	13:23	21.34352	157.97826	9.0	34	0:00:30	4.0	127
1/10/2010	13:23	21.34328	157.97797	9.7	40	0:00:30	5.0	132
1/10/2010	13:24	21.34297	157.97773	10.1	42	0:00:30	5.0	144
1/10/2010	13:24	21.34265	157.97754	7.9	42	0:00:30	5.0	151
1/10/2010	13:25	21.34236	157.97728	9.9	41	0:00:30	5.0	140
1/10/2010	13:25	21.34200	157.97715	6.0	43	0:00:30	5.0	162
1/10/2010	13:26	21.34168	157.97697	2.8	40	0:00:30	5.0	152
1/10/2010	13:26	21.34136	157.97676	3.5	41	0:00:30	5.0	150
1/10/2010	13:27	21.34102	157.97660	3.2	41	0:00:30	5.0	155
1/10/2010	13:27	21.34071	157.97638	2.1	41	0:00:30	5.0	147
1/10/2010	13:28	21.34043	157.97613	2.9	41	0:00:30	5.0	141
1/10/2010	13:28	21.34011	157.97592	2.2	41	0:00:30	5.0	148
1/10/2010	13:29	21.33989	157.97559	2.0	42	0:00:30	5.0	125
1/10/2010	13:29	21.33971	157.97524	2.2	42	0:00:30	5.0	120
1/10/2010	13:30	21.33957	157.97487	3.8	41	0:00:30	5.0	112
1/10/2010	13:30	21.33941	157.97449	3.9	43	0:00:30	5.0	113
1/10/2010	13:31	21.33911	157.97440	1.6	35	0:00:30	4.0	165
1/10/2010	13:31	21.33900	157.97432	1.2	15	0:00:30	2.0	147
1/10/2010	13:32	21.33899	157.97423	1.5	9	0:00:30	1.1	98
1/10/2010	13:32	21.33898	157.97414	1.3	9	0:00:30	1.1	94
1/10/2010	13:33	21.33907	157.97407	7.3	13	0:00:30	2.0	38
1/10/2010	13:33	21.33879	157.97386	3.7	37	0:00:30	4.0	146
1/10/2010	13:34	21.33846	157.97368	2.4	42	0:00:30	5.0	152
1/10/2010	13:34	21.33813	157.97350	1.5	41	0:00:30	5.0	153
1/10/2010	13:35	21.33790	157.97324	3.4	37	0:00:30	4.0	134
1/10/2010	13:35	21.33758	157.97309	4.0	39	0:00:30	5.0	156
1/10/2010	13:36	21.33725	157.97292	4.4	41	0:00:30	5.0	154
1/10/2010	13:36	21.33689	157.97275	4.5	44	0:00:30	5.0	156
1/10/2010	13:37	21.33651	157.97263	3.4	44	0:00:30	5.0	164
1/10/2010	13:37	21.33616	157.97249	2.8	42	0:00:30	5.0	160

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	13:38	21.33580	157.97240	2.0	41	0:00:30	5.0	166
1/10/2010	13:38	21.33550	157.97222	1.7	39	0:00:30	5.0	151
1/10/2010	13:39	21.33514	157.97209	2.7	42	0:00:30	5.0	161
1/10/2010	13:39	21.33476	157.97206	1.9	42	0:00:30	5.0	176
1/10/2010	13:40	21.33438	157.97206	3.6	42	0:00:30	5.0	179
1/10/2010	13:40	21.33414	157.97229	6.7	37	0:00:30	4.0	221
1/10/2010	13:41	21.33401	157.97265	5.9	40	0:00:30	5.0	249
1/10/2010	13:41	21.33398	157.97304	4.8	40	0:00:30	5.0	265
1/10/2010	13:42	21.33372	157.97308	9.3	29	0:00:30	3.0	189
1/10/2010	13:42	21.33335	157.97305	9.5	41	0:00:30	5.0	176
1/10/2010	13:43	21.33298	157.97300	9.7	41	0:00:30	5.0	173
1/10/2010	13:43	21.33260	157.97290	9.9	44	0:00:30	5.0	167
1/10/2010	13:44	21.33225	157.97273	9.7	43	0:00:30	5.0	156
1/10/2010	13:44	21.33188	157.97265	9.9	43	0:00:30	5.0	169
1/10/2010	13:45	21.33156	157.97246	2.3	40	0:00:30	5.0	151
1/10/2010	13:45	21.33126	157.97224	4.9	41	0:00:30	5.0	145
1/10/2010	13:46	21.33088	157.97212	7.3	43	0:00:30	5.0	164
1/10/2010	13:46	21.33050	157.97208	7.2	43	0:00:30	5.0	175
1/10/2010	13:47	21.33012	157.97211	4.9	42	0:00:30	5.0	183
1/10/2010	13:47	21.32979	157.97196	6.5	39	0:00:30	5.0	156
1/10/2010	13:48	21.32947	157.97174	15.7	43	0:00:30	5.0	148
1/10/2010	13:48	21.32912	157.97182	4.9	39	0:00:30	5.0	192
1/10/2010	13:49	21.32883	157.97205	3.9	40	0:00:30	5.0	218
1/10/2010	13:49	21.32857	157.97231	3.5	40	0:00:30	5.0	222
1/10/2010	13:50	21.32828	157.97251	3.5	38	0:00:30	5.0	213
1/10/2010	13:50	21.32800	157.97275	3.9	40	0:00:30	5.0	219
1/10/2010	13:51	21.32772	157.97300	4.1	40	0:00:30	5.0	220
1/10/2010	13:51	21.32744	157.97323	3.6	40	0:00:30	5.0	218
1/10/2010	13:52	21.32712	157.97344	4.2	41	0:00:30	5.0	211
1/10/2010	13:52	21.32678	157.97359	4.2	42	0:00:30	5.0	202
1/10/2010	13:53	21.32651	157.97365	3.6	30	0:00:30	4.0	193
1/10/2010	13:53	21.32636	157.97335	3.1	36	0:00:30	4.0	117
1/10/2010	13:54	21.32603	157.97333	2.5	38	0:00:30	5.0	178
1/10/2010	13:54	21.32568	157.97345	1.8	41	0:00:30	5.0	198
1/10/2010	13:55	21.32535	157.97364	2.4	41	0:00:30	5.0	208
1/10/2010	13:55	21.32521	157.97394	3.3	35	0:00:30	4.0	242
1/10/2010	13:56	21.32516	157.97422	3.8	29	0:00:30	4.0	260
1/10/2010	13:56	21.32511	157.97427	3.6	7	0:00:30	0.9	225

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	13:57	21.32511	157.97427	3.7	0	0:00:30	0.0	43
1/10/2010	13:57	21.32511	157.97427	3.7	0	0:00:30	0.1	163
1/10/2010	13:58	21.32511	157.97427	3.8	0	0:00:30	0.0	82
1/10/2010	13:58	21.32511	157.97427	3.8	0	0:00:30	0.0	250
1/10/2010	13:59	21.32510	157.97428	3.8	1	0:00:30	0.1	235
1/10/2010	13:59	21.32510	157.97428	3.7	0	0:00:30	0.0	184
1/10/2010	14:00	21.32510	157.97428	3.7	0	0:00:30	0.0	57
1/10/2010	14:00	21.32510	157.97427	3.8	0	0:00:30	0.0	76
1/10/2010	14:01	21.32510	157.97427	3.8	0	0:00:30	0.0	25
1/10/2010	14:01	21.32511	157.97427	3.7	0	0:00:30	0.0	292
1/10/2010	14:02	21.32511	157.97427	3.8	0	0:00:30	0.0	278
1/10/2010	14:02	21.32510	157.97428	3.7	0	0:00:30	0.0	256
1/10/2010	14:03	21.32510	157.97428	3.7	0	0:00:30	0.0	257
1/10/2010	14:03	21.32510	157.97428	3.7	0	0:00:30	0.0	237
1/10/2010	14:04	21.32510	157.97428	3.7	0	0:00:30	0.0	229
1/10/2010	14:04	21.32510	157.97428	3.7	0	0:00:30	0.0	223
1/10/2010	14:05	21.32510	157.97428	3.7	0	0:00:30	0.0	223
1/10/2010	14:05	21.32510	157.97428	3.8	0	0:00:30	0.0	223
1/10/2010	14:06	21.32510	157.97428	3.7	0	0:00:30	0.0	213
1/10/2010	14:06	21.32510	157.97428	3.7	0	0:00:30	0.0	217
1/10/2010	14:07	21.32516	157.97417	3.6	13	0:00:30	2.0	58
1/10/2010	14:07	21.32532	157.97421	3.9	18	0:00:30	2.0	348
1/10/2010	14:08	21.32564	157.97431	3.8	37	0:00:30	4.0	344
1/10/2010	14:08	21.32597	157.97436	4.0	37	0:00:30	4.0	351
1/10/2010	14:09	21.32630	157.97435	6.2	37	0:00:30	4.0	2
1/10/2010	14:09	21.32658	157.97414	6.5	38	0:00:30	5.0	35
1/10/2010	14:10	21.32687	157.97395	3.5	39	0:00:30	5.0	31
1/10/2010	14:10	21.32714	157.97373	2.8	38	0:00:30	5.0	37
1/10/2010	14:11	21.32740	157.97350	2.7	37	0:00:30	4.0	40
1/10/2010	14:11	21.32764	157.97324	2.6	37	0:00:30	4.0	46
1/10/2010	14:12	21.32787	157.97299	3.0	37	0:00:30	4.0	46
1/10/2010	14:12	21.32813	157.97278	2.2	37	0:00:30	4.0	36
1/10/2010	14:13	21.32837	157.97254	3.7	37	0:00:30	4.0	42
1/10/2010	14:13	21.32864	157.97229	4.0	39	0:00:30	5.0	41
1/10/2010	14:14	21.32884	157.97202	4.2	36	0:00:30	4.0	53
1/10/2010	14:14	21.32869	157.97169	4.9	38	0:00:30	5.0	115
1/10/2010	14:15	21.32849	157.97136	12.8	41	0:00:30	5.0	123
1/10/2010	14:15	21.32823	157.97106	12.7	43	0:00:30	5.0	133

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	14:16	21.32798	157.97077	8.8	41	0:00:30	5.0	134
1/10/2010	14:16	21.32767	157.97052	8.1	43	0:00:30	5.0	142
1/10/2010	14:17	21.32732	157.97036	9.8	43	0:00:30	5.0	157
1/10/2010	14:17	21.32692	157.97031	11.0	45	0:00:30	5.0	173
1/10/2010	14:18	21.32652	157.97031	9.5	45	0:00:30	5.0	180
1/10/2010	14:18	21.32626	157.97034	6.8	29	0:00:30	3.0	186
1/10/2010	14:19	21.32632	157.97024	11.4	12	0:00:30	1.4	56
1/10/2010	14:19	21.32635	157.97029	10.0	6	0:00:30	0.7	301
1/10/2010	14:20	21.32628	157.97037	4.7	11	0:00:30	1.3	222
1/10/2010	14:20	21.32621	157.97037	5.2	8	0:00:30	0.9	187
1/10/2010	14:21	21.32617	157.97031	8.9	8	0:00:30	1.0	123
1/10/2010	14:21	21.32628	157.97038	5.0	14	0:00:30	2.0	329
1/10/2010	14:22	21.32629	157.97019	13.1	19	0:00:30	2.0	84
1/10/2010	14:22	21.32611	157.97017	14.0	21	0:00:30	3.0	173
1/10/2010	14:23	21.32588	157.96992	12.9	36	0:00:30	4.0	134
1/10/2010	14:23	21.32591	157.96944	14.6	50	0:00:30	6.0	86
1/10/2010	14:24	21.32588	157.96898	15.9	48	0:00:30	6.0	94
1/10/2010	14:24	21.32575	157.96853	15.4	49	0:00:30	6.0	107
1/10/2010	14:25	21.32551	157.96814	13.0	49	0:00:30	6.0	124
1/10/2010	14:25	21.32530	157.96771	12.8	50	0:00:30	6.0	118
1/10/2010	14:26	21.32510	157.96727	15.7	50	0:00:30	6.0	115
1/10/2010	14:26	21.32490	157.96684	18.2	50	0:00:30	6.0	117
1/10/2010	14:27	21.32470	157.96641	2.9	50	0:00:30	6.0	116
1/10/2010	14:27	21.32462	157.96632	1.6	14	0:00:30	2.0	133
1/10/2010	14:28	21.32453	157.96633	1.5	11	0:00:30	1.3	188
1/10/2010	14:28	21.32419	157.96638	2.3	38	0:00:30	5.0	188
1/10/2010	14:29	21.32384	157.96648	0.9	41	0:00:30	5.0	195
1/10/2010	14:29	21.32355	157.96668	2.3	38	0:00:30	5.0	213
1/10/2010	14:30	21.32320	157.96680	9.2	40	0:00:30	5.0	197
1/10/2010	14:30	21.32286	157.96669	4.9	39	0:00:30	5.0	163
1/10/2010	14:31	21.32251	157.96658	5.7	41	0:00:30	5.0	164
1/10/2010	14:31	21.32217	157.96665	12.6	39	0:00:30	5.0	190
1/10/2010	14:32	21.32184	157.96661	12.2	37	0:00:30	4.0	174
1/10/2010	14:32	21.32153	157.96654	12.0	36	0:00:30	4.0	168
1/10/2010	14:33	21.32134	157.96660	12.1	22	0:00:30	3.0	198
1/10/2010	14:33	21.32143	157.96689	12.5	31	0:00:30	4.0	289
1/10/2010	14:34	21.32154	157.96718	13.1	33	0:00:30	4.0	292
1/10/2010	14:34	21.32161	157.96750	14.4	34	0:00:30	4.0	282

Table AII.78: (Continued) 2010 Entrance surface water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time	Leg Speed kph	Leg Course °
1/10/2010	14:35	21.32175	157.96772	13.8	27	0:00:30	3.0	305

Table AII.79: 2010 Entrance surface water radon survey wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed (m/s)	Date yyyymmdd	Time hh:mm	Wind Speed (m/s)
20100110	10:53	2.1	20100110	12:53	0.0
20100110	11:53	0.0	20100110	13:53	2.6
20100110	12:00	0.0	20100110	14:53	0.0

Table AII.80: 2011 East Loch surface water radon survey measurements.

RAD-7 #2540				East Loch Surface				eff=0.383 cpm/pCi/L			
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	11	1	5	10	33	1	4.6	100.0	0.0	0.0	0.0
2	11	1	5	10	38	16	4.6	87.5	0.0	0.0	0.0
3	11	1	5	10	43	31	4.6	90.3	0.0	6.5	0.0
4	11	1	5	10	48	57	4.6	94.7	0.0	1.8	0.0
5	11	1	5	10	53	89	4.6	94.4	0.0	3.4	0.0
6	11	1	5	10	58	75	4.6	88.0	0.0	5.3	0.0
7	11	1	5	11	3	84	4.6	73.8	0.0	17.9	0.0
8	11	1	5	11	8	78	4.6	82.1	0.0	9.0	0.0
9	11	1	5	11	13	90	4.6	84.5	0.0	10.0	0.0
10	11	1	5	11	18	98	4.6	72.5	0.0	25.5	1.0
11	11	1	5	11	23	109	4.6	78.0	0.0	15.6	0.0
12	11	1	5	11	28	101	4.6	66.3	0.0	32.7	0.0
13	11	1	5	11	33	97	4.6	65.0	1.0	33.0	0.0
14	11	1	5	11	38	104	4.6	56.7	0.0	39.4	0.0
15	11	1	5	11	43	102	4.6	48.1	0.0	51.0	0.0
16	11	1	5	11	48	78	4.6	38.5	0.0	55.1	1.3
17	11	1	5	11	53	103	4.6	50.5	0.0	45.6	0.0
18	11	1	5	11	58	113	4.6	53.1	0.9	45.1	0.9
19	11	1	5	12	3	115	4.6	53.9	0.0	43.5	0.0
20	11	1	5	12	8	112	4.6	56.3	0.9	38.4	0.0
21	11	1	5	12	13	106	4.6	57.6	0.0	40.6	1.0
22	11	1	5	12	18	110	4.6	51.8	0.0	47.3	0.0
23	11	1	5	12	23	117	4.6	50.4	0.9	45.3	0.9
24	11	1	5	12	28	114	4.6	53.5	0.0	45.6	0.0
25	11	1	5	12	33	96	4.6	44.8	1.1	51.1	1.1
26	11	1	5	12	38	83	4.6	50.6	0.0	49.4	0.0
27	11	1	5	12	43	105	4.6	33.3	1.9	63.8	0.0
28	11	1	5	12	48	108	4.6	29.6	0.0	64.8	0.0
29	11	1	5	12	53	92	4.6	48.9	0.0	47.8	0.0
30	11	1	5	12	58	102	4.6	46.1	2.0	50.0	0.0
31	11	1	5	13	3	92	4.6	32.6	0.0	67.4	0.0
32	11	1	5	13	8	94	4.6	35.1	2.1	58.5	0.0
33	11	1	5	13	13	92	4.6	40.2	2.2	56.5	1.1
34	11	1	5	13	18	101	4.6	40.6	1.0	58.4	0.0
35	11	1	5	13	23	75	4.6	42.7	0.0	56.0	0.0
36	11	1	5	13	28	65	4.6	43.1	0.0	56.9	0.0
37	11	1	5	13	33	68	4.6	33.8	1.5	55.9	0.0

Table AII.80: (Continued) 2011 East Loch surface water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
38	11	1	5	13	38	94	4.6	34.1	1.1	62.8	0.0
39	11	1	5	13	43	83	4.6	48.2	0.0	50.6	0.0
40	11	1	5	13	48	59	4.6	27.1	5.1	62.7	1.7
41	11	1	5	13	53	65	4.6	36.9	1.6	61.6	0.0
42	11	1	5	13	58	68	4.6	36.8	0.0	60.3	1.5
43	11	1	5	14	3	61	4.6	37.7	0.0	60.7	0.0
44	11	1	5	14	8	76	4.6	38.2	2.6	59.2	0.0
45	11	1	5	14	13	68	4.6	30.9	1.5	64.7	0.0
46	11	1	5	14	18	49	4.6	30.6	0.0	63.3	0.0
47	11	1	5	14	23	66	4.6	40.9	1.5	57.6	0.0
48	11	1	5	14	28	57	4.6	29.8	0.0	66.7	1.8
49	11	1	5	14	34	58	4.6	41.4	1.7	56.9	0.0
50	11	1	5	14	39	57	4.6	35.1	0.0	64.9	0.0
51	11	1	5	14	44	49	4.6	40.8	2.1	55.1	2.1
52	11	1	5	14	49	59	4.6	42.4	1.7	49.2	1.7
53	11	1	5	14	54	64	4.6	45.3	0.0	50.0	1.6
54	11	1	5	14	59	59	4.6	37.3	0.0	57.6	1.7
55	11	1	5	15	4	60	4.6	40.0	0.0	56.7	0.0
56	11	1	5	15	9	56	4.6	44.7	0.0	51.8	0.0
57	11	1	5	15	14	53	4.6	43.4	0.0	56.6	0.0
58	11	1	5	15	19	46	4.6	39.1	2.2	52.2	0.0
59	11	1	5	15	24	38	4.6	42.1	5.3	52.6	0.0
60	11	1	5	15	28	37	4.4	51.4	5.4	43.3	0.0

Table AII.81: 2011 East Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	7	32.2	23	1	7	50	133	20.664	99.776
2	2236	8	32.5	14	1	7	50	133	289.301	201.394
3	2218	8	32.5	11	1	7	50	133	581.712	265.309
4	2218	7	32.8	9	1	7	50	133	1127.937	351.591
5	2218	7	32.8	9	1	7	50	133	1754.569	426.926
6	2218	7	33.5	9	1	7	40	133	1371.179	381.659
7	2236	8	33.5	8	1	7	40	133	1281.189	369.365
8	2218	8	34.1	7	1	7	40	133	1322.517	374.531
9	2218	8	34.4	7	1	7	40	133	1570.489	403.986
10	2218	8	34.7	7	1	7	40	133	1475.056	394.122

Table AII.81: (Continued) 2011 East Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
11	2218	7	35.3	6	1	7	40	133	1765.912	426.878
12	2218	8	36.2	6	1	7	40	133	1391.954	384.188
13	2218	8	36.8	6	1	7	40	133	1308.852	373.958
14	2201	8	36.8	6	1	7	40	133	1225.750	363.403
15	2201	8	36.8	6	2	7	40	133	1017.996	335.360
16	2218	7	37.1	6	2	7	40	133	626.632	274.371
17	2218	8	37.1	5	2	7	40	133	1092.065	347.785
18	2218	8	37.4	5	2	7	40	133	1253.264	368.052
19	2218	7	37.4	5	2	7	40	133	1288.077	371.351
20	2218	8	37.4	5	2	7	40	133	1315.927	375.979
21	2236	8	37.4	5	2	7	40	133	1260.075	372.731
22	2218	8	36.8	5	2	7	40	133	1197.071	361.884
23	2218	7	36.8	5	2	7	40	133	1239.074	367.353
24	2218	8	37.1	5	2	7	40	133	1281.076	372.731
25	2236	8	37.1	5	2	7	40	133	898.172	318.883
26	2218	8	37.1	5	2	7	40	133	877.284	315.715
27	2218	8	36.8	5	2	7	40	133	731.071	292.428
28	2218	7	36.5	5	2	7	40	133	672.040	283.289
29	2218	7	36.2	5	2	7	40	133	939.948	325.110
30	2218	8	35.6	5	2	7	40	133	987.059	333.004
31	2236	8	35.3	4	2	7	40	133	626.632	274.371
32	2236	8	35.3	4	2	7	40	133	689.295	285.366
33	2218	8	35.3	4	2	7	40	133	772.846	299.297
34	2218	8	35.3	4	2	7	40	133	856.397	312.511
35	2218	8	35.3	4	2	7	40	133	668.407	281.757
36	2218	8	35.0	4	2	7	40	133	584.856	266.743
37	2218	8	34.4	4	1	7	40	133	480.418	246.433
38	2218	8	33.8	4	1	7	40	133	668.407	281.757
39	2236	8	33.2	4	1	7	40	133	835.509	309.269
40	2218	8	32.8	4	1	7	40	133	334.204	214.020
41	2218	8	32.8	4	1	7	40	133	501.306	250.653
42	2218	8	32.8	4	1	7	40	133	522.193	254.789
43	2218	8	33.2	4	1	7	40	133	480.418	246.433
44	2218	8	33.2	4	1	7	40	133	605.744	270.589
45	2218	7	33.5	4	1	7	40	133	438.642	237.720
46	2218	7	33.5	4	1	7	40	133	313.316	208.877

Table AII.81: (Continued) 2011 East Loch surface water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
47	2218	7	33.5	4	1	7	40	133	563.969	262.830
48	2218	8	33.5	4	1	7	40	133	355.091	219.014
49	2218	7	34.1	4	1	7	40	133	501.306	250.653
50	2218	8	34.4	4	1	7	40	133	417.755	233.215
51	2218	7	35.0	4	1	7	40	133	417.755	233.215
52	2218	8	35.6	4	1	7	50	133	501.306	254.789
53	2201	7	36.2	4	1	7	40	133	605.744	270.589
54	2218	8	36.5	4	1	7	50	133	459.530	242.124
55	2218	8	36.8	4	1	7	40	133	501.306	250.653
56	2218	8	37.4	4	1	7	50	133	522.193	254.789
57	2218	7	37.4	4	1	7	40	133	480.418	246.433
58	2218	7	37.1	4	2	7	40	133	375.979	223.871
59	2218	8	36.8	4	2	7	40	133	334.204	214.020
60	2218	7	36.5	4	2	7	40	133	414.804	238.933

Table AII.82: 2011 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2011	10:27:28	24.08	0.006	0.00	103.6	8.71	0.022	6.69	-0.4	-67.7
1/5/2011	10:29:01	24.13	0.006	0.00	103.6	8.70	0.021	6.69	-0.1	-63.8
1/5/2011	10:30:28	24.17	0.006	0.00	103.5	8.69	0.022	6.70	0.0	-66.7
1/5/2011	10:31:28	24.21	0.007	0.00	103.4	8.67	0.021	6.70	-0.4	-67.6
1/5/2011	10:32:28	24.24	0.006	0.00	103.2	8.65	0.020	6.71	-0.5	-68.1
1/5/2011	10:34:01	25.14	0.007	0.00	101.7	8.38	0.020	6.77	0.0	-64.2
1/5/2011	10:35:28	27.25	49.290	32.16	82.0	5.43	0.031	7.97	1.3	-107.0
1/5/2011	10:36:28	27.41	48.200	31.36	83.1	5.51	0.030	8.03	0.9	-111.5
1/5/2011	10:37:28	27.51	48.200	31.36	82.9	5.50	0.034	8.05	0.7	-113.5
1/5/2011	10:39:01	27.56	48.350	31.46	82.7	5.47	0.037	8.07	0.7	-114.9
1/5/2011	10:40:28	27.60	48.480	31.56	83.3	5.51	0.019	8.08	0.8	-115.8
1/5/2011	10:41:28	27.40	49.490	32.30	81.4	5.38	0.015	8.09	1.3	-116.8
1/5/2011	10:42:28	27.39	49.490	32.30	80.9	5.35	0.020	8.09	0.9	-116.9
1/5/2011	10:44:01	27.30	49.630	32.40	81.4	5.38	0.015	8.09	1.1	-116.7
1/5/2011	10:45:28	27.31	49.380	32.23	81.5	5.40	0.018	8.10	1.6	-117.2
1/5/2011	10:46:28	27.17	49.830	32.55	81.1	5.37	0.016	8.10	0.7	-117.4
1/5/2011	10:47:28	26.27	50.840	33.32	82.9	5.55	0.057	8.10	2.4	-115.4
1/5/2011	10:49:01	27.52	49.290	32.15	83.3	5.50	0.030	8.05	1.2	-111.0
1/5/2011	10:50:28	27.84	18.730	11.06	85.8	6.34	0.019	8.04	0.8	-108.9
1/5/2011	10:51:28	27.87	0.732	0.35	85.8	6.72	0.019	8.04	0.4	-108.6
1/5/2011	10:52:28	28.05	50.000	32.66	84.1	5.48	0.012	8.03	0.3	-109.1
1/5/2011	10:54:01	27.27	51.190	33.55	68.5	4.50	0.055	8.01	1.5	-114.0
1/5/2011	10:55:28	26.35	51.840	34.06	79.1	5.26	0.064	8.05	2.1	-110.8
1/5/2011	10:56:28	26.57	51.690	33.94	78.8	5.23	0.059	8.04	3.1	-109.5
1/5/2011	10:57:28	27.53	50.670	33.17	80.7	5.29	0.073	8.04	2.6	-108.8
1/5/2011	10:59:01	28.29	49.900	32.57	85.4	5.55	0.068	8.04	1.4	-108.1
1/5/2011	11:00:28	28.31	49.710	32.44	86.3	5.61	0.056	8.05	1.1	-109.4
1/5/2011	11:01:28	26.50	51.560	33.85	82.9	5.51	0.021	8.06	1.8	-110.7
1/5/2011	11:02:28	28.03	49.900	32.58	82.3	5.37	0.017	8.04	0.9	-109.6
1/5/2011	11:04:01	26.93	51.200	33.57	80.0	5.29	0.026	8.05	1.6	-110.6
1/5/2011	11:05:28	27.85	50.120	32.75	83.1	5.43	0.015	8.05	0.4	-110.0
1/5/2011	11:06:28	27.98	50.100	32.74	82.7	5.40	0.025	8.05	1.3	-110.2
1/5/2011	11:07:28	28.07	50.140	32.76	85.1	5.54	0.028	8.05	0.9	-110.1
1/5/2011	11:09:01	28.23	49.900	32.58	85.5	5.56	0.036	8.06	0.7	-110.0
1/5/2011	11:10:28	28.02	50.100	32.73	84.4	5.50	0.016	8.06	1.5	-111.7
1/5/2011	11:11:28	27.76	49.950	32.63	86.1	5.65	0.021	8.06	0.6	-111.5
1/5/2011	11:12:28	27.60	2.551	1.31	86.5	6.77	0.079	8.07	3.9	-110.6
1/5/2011	11:14:01	27.50	29.340	18.08	84.7	6.05	0.054	8.06	1.0	-109.7

Table AII.82: (Continued) 2011 East Loch surface water survey YSI data from the 6920 V2

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2011	11:15:28	28.13	50.490	33.02	83.0	5.40	0.022	8.06	1.4	-110.2
1/5/2011	11:16:28	27.22	51.310	33.65	78.1	5.13	0.066	8.06	1.1	-111.8
1/5/2011	11:17:28	27.34	51.210	33.56	78.7	5.17	0.033	8.06	1.5	-110.8
1/5/2011	11:19:01	27.57	14.880	8.62	85.2	6.40	0.025	8.07	2.1	-109.1
1/5/2011	11:20:28	27.54	6.203	3.36	87.7	6.79	0.040	8.08	3.0	-108.6
1/5/2011	11:21:28	26.85	51.230	33.60	90.4	5.98	0.055	8.09	5.3	-107.5
1/5/2011	11:22:28	26.17	51.560	33.86	86.2	5.76	0.043	8.09	1.2	-106.9
1/5/2011	11:24:01	25.97	51.630	33.92	85.3	5.72	0.044	8.09	0.9	-104.9
1/5/2011	11:25:28	26.24	51.470	33.79	87.5	5.85	0.020	8.08	0.5	-103.8
1/5/2011	11:26:28	26.35	51.380	33.72	88.7	5.91	0.013	8.08	1.0	-103.3
1/5/2011	11:27:28	26.36	51.320	33.68	88.2	5.88	0.021	8.07	0.2	-103.6
1/5/2011	11:29:01	26.39	51.370	33.71	88.6	5.90	0.043	8.08	0.8	-103.1
1/5/2011	11:30:28	26.43	51.390	33.73	89.2	5.94	0.041	8.08	1.3	-103.6
1/5/2011	11:31:28	26.66	51.250	33.61	91.7	6.09	0.050	8.08	1.0	-103.4
1/5/2011	11:32:28	25.38	51.040	33.50	94.2	6.39	0.045	8.11	0.7	-102.0
1/5/2011	11:34:01	25.37	50.840	33.35	94.2	6.40	0.030	8.10	1.7	-99.3
1/5/2011	11:35:28	25.30	51.040	33.49	94.0	6.39	0.018	8.10	2.5	-98.8
1/5/2011	11:36:28	25.37	51.260	33.66	94.6	6.42	0.024	8.11	7.9	-98.9
1/5/2011	11:37:28	25.72	43.400	27.93	97.5	6.79	0.034	8.10	110.2	-98.0
1/5/2011	11:39:01	25.76	3.906	2.06	98.1	7.90	0.059	8.09	12.8	-97.4
1/5/2011	11:40:28	30.05	4.332	2.28	89.4	6.67	0.043	8.02	67.5	-105.2
1/5/2011	11:41:28	30.12	47.550	30.80	88.3	5.63	0.021	8.04	32.6	-109.4
1/5/2011	11:42:28	30.29	50.300	32.81	88.8	5.58	0.025	8.05	2.2	-111.2
1/5/2011	11:44:01	28.45	50.030	32.66	86.6	5.61	0.079	8.08	19.5	-111.0
1/5/2011	11:45:28	28.32	1.422	0.71	88.2	6.84	0.011	8.07	0.8	-109.3
1/5/2011	11:46:28	27.72	46.960	30.45	91.6	6.08	0.044	8.07	0.8	-107.1
1/5/2011	11:47:28	27.82	48.950	31.90	93.8	6.17	0.056	8.07	1.0	-105.7
1/5/2011	11:49:01	27.01	34.550	21.66	92.5	6.53	0.013	8.10	0.7	-106.4
1/5/2011	11:50:28	27.67	46.210	29.90	92.3	6.15	0.008	8.08	0.8	-105.7
1/5/2011	11:51:28	27.98	48.360	31.46	93.0	6.11	0.024	8.07	1.1	-105.3
1/5/2011	11:52:28	27.87	46.850	30.37	94.6	6.27	-0.002	8.08	1.6	-105.2
1/5/2011	11:54:01	27.67	45.040	29.06	93.6	6.27	-0.005	8.07	1.3	-103.4
1/5/2011	11:55:28	27.75	45.540	29.42	94.6	6.31	0.000	8.07	1.3	-103.8
1/5/2011	11:56:28	27.97	47.720	30.99	94.7	6.24	0.024	8.07	1.3	-103.6
1/5/2011	11:57:28	27.44	0.631	0.30	91.9	7.25	0.002	8.08	7.1	-105.4
1/5/2011	11:59:01	28.11	50.570	33.08	90.1	5.86	0.002	8.07	1.1	-105.5
1/5/2011	12:00:28	29.87	44.120	28.33	88.9	5.77	0.023	8.04	28.0	-107.6

Table AII.82: (Continued) 2011 East Loch surface water survey YSI data from the 6920 V2

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2011	12:01:28	29.26	50.740	33.16	85.0	5.42	0.006	8.05	8.1	-110.9
1/5/2011	12:02:28	27.88	51.180	33.53	85.2	5.54	0.008	8.07	1.5	-110.6
1/5/2011	12:04:01	29.36	50.750	33.17	86.3	5.50	0.017	8.04	3.2	-108.4
1/5/2011	12:05:28	27.87	3.600	1.88	92.3	7.16	0.004	8.10	17.9	-109.0
1/5/2011	12:06:28	28.35	51.100	33.46	95.0	6.14	0.017	8.09	1.0	-107.4
1/5/2011	12:07:28	28.20	2.306	1.18	90.8	7.04	0.003	8.08	19.9	-107.7
1/5/2011	12:09:01	28.16	51.140	33.49	89.7	5.81	0.003	8.08	3.3	-107.9
1/5/2011	12:10:28	28.05	51.190	33.53	89.5	5.81	0.011	8.08	1.2	-107.9
1/5/2011	12:11:28	27.79	47.730	31.00	89.7	5.93	-0.006	8.08	1.6	-107.3
1/5/2011	12:12:28	27.81	4.422	2.34	91.9	7.13	0.009	8.09	5.9	-106.3
1/5/2011	12:14:01	27.50	3.296	1.72	94.8	7.42	0.031	8.12	8.8	-105.4
1/5/2011	12:15:28	27.76	28.520	17.52	91.5	6.52	0.001	8.08	2.6	-105.7
1/5/2011	12:16:28	27.56	51.430	33.73	93.2	6.09	-0.001	8.09	0.7	-105.0
1/5/2011	12:17:28	27.60	51.350	33.67	94.5	6.17	0.016	8.08	1.2	-104.2
1/5/2011	12:19:01	27.58	50.920	33.34	92.5	6.06	0.002	8.04	9.8	-105.2
1/5/2011	12:20:28	27.77	51.380	33.68	92.0	5.99	0.012	8.08	0.8	-104.4
1/5/2011	12:21:28	27.35	47.730	31.02	95.9	6.38	0.002	8.12	0.7	-103.9
1/5/2011	12:22:28	26.54	7.440	4.09	99.7	7.83	0.028	8.15	4.0	-102.2
1/5/2011	12:24:01	27.20	22.760	13.69	97.7	7.19	0.018	8.11	14.6	-100.5
1/5/2011	12:25:28	26.71	50.850	33.32	80.0	5.31	0.022	8.00	1.2	-105.8
1/5/2011	12:26:28	26.63	50.510	33.07	72.6	4.83	0.021	7.95	4.4	-107.9
1/5/2011	12:27:28	26.67	11.140	6.31	71.4	5.53	0.002	7.91	2.8	-113.7
1/5/2011	12:29:01	26.96	1.536	0.77	95.2	7.56	-0.002	8.13	7.5	-103.3
1/5/2011	12:30:28	26.15	3.782	1.99	100.8	8.07	-0.001	8.16	18.5	-100.6
1/5/2011	12:31:28	25.92	2.183	1.11	102.7	8.30	-0.004	8.17	7.3	-98.7
1/5/2011	12:32:28	25.87	1.257	0.62	103.8	8.41	-0.003	8.17	8.7	-97.4
1/5/2011	12:34:01	26.10	2.113	1.08	103.4	8.32	-0.006	8.16	5.4	-96.3
1/5/2011	12:35:28	25.35	34.840	21.89	92.4	6.70	0.006	8.03	0.0	-97.8
1/5/2011	12:36:28	25.49	37.220	23.55	93.8	6.72	0.020	8.08	0.9	-97.5
1/5/2011	12:37:28	25.50	36.390	22.97	93.5	6.72	0.024	8.06	1.0	-96.9
1/5/2011	12:39:01	25.83	42.800	27.50	93.8	6.54	0.046	8.09	1.1	-96.8
1/5/2011	12:40:28	25.85	42.930	27.59	96.1	6.69	0.039	8.11	0.5	-97.2
1/5/2011	12:41:28	25.80	40.400	25.79	95.9	6.75	0.039	8.11	1.0	-97.4
1/5/2011	12:42:28	25.55	36.560	23.09	92.5	6.64	0.025	8.07	1.1	-97.4
1/5/2011	12:44:01	25.54	29.590	18.29	91.9	6.78	0.003	7.97	1.1	-96.3
1/5/2011	12:45:28	26.00	41.580	26.62	87.7	6.12	0.059	7.97	1.5	-98.4
1/5/2011	12:46:28	25.86	42.480	27.27	88.9	6.20	0.023	7.99	2.3	-98.6

Table AII.82: (Continued) 2011 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2011	12:47:28	25.81	41.930	26.88	95.4	6.67	0.014	8.08	2.3	-98.3
1/5/2011	12:49:01	26.58	48.070	31.29	95.6	6.44	0.000	8.09	3.4	-98.1
1/5/2011	12:50:28	26.49	2.115	1.08	97.1	7.76	0.001	8.10	2.8	-99.1
1/5/2011	12:51:28	26.28	2.211	1.13	97.2	7.80	0.009	8.10	2.0	-99.4
1/5/2011	12:52:28	26.26	11.300	6.41	98.8	7.70	0.009	8.12	2.4	-98.9
1/5/2011	12:54:01	26.20	1.616	0.81	98.2	7.90	0.002	8.10	4.6	-98.3
1/5/2011	12:55:28	26.26	42.170	27.04	101.1	7.01	0.002	8.14	32.4	-98.1
1/5/2011	12:56:28	26.29	15.200	8.83	100.7	7.73	-0.005	8.13	9.3	-97.4
1/5/2011	12:57:28	26.30	2.800	1.45	100.4	8.04	0.005	8.13	2.6	-97.2
1/5/2011	12:59:01	26.11	4.983	2.67	101.0	8.06	-0.009	8.14	6.1	-96.4
1/5/2011	13:00:28	26.30	2.363	1.21	100.8	8.08	-0.007	8.13	16.4	-96.9
1/5/2011	13:01:28	26.28	3.994	2.11	104.0	8.29	-0.007	8.16	9.9	-96.4
1/5/2011	13:02:28	25.89	5.135	2.75	99.7	7.98	0.023	8.12	10.6	-96.7
1/5/2011	13:04:01	26.18	24.180	14.64	98.8	7.36	0.004	8.11	9.1	-96.1
1/5/2011	13:05:28	25.59	34.410	21.60	101.0	7.31	0.049	8.08	0.7	-95.6
1/5/2011	13:06:28	25.56	34.260	21.49	101.1	7.32	0.046	8.07	1.4	-95.0
1/5/2011	13:07:28	25.59	34.150	21.41	100.8	7.30	0.055	8.07	1.1	-94.8
1/5/2011	13:09:01	25.62	34.030	21.33	101.2	7.33	0.060	8.06	1.1	-94.3
1/5/2011	13:10:28	25.90	38.580	24.50	100.7	7.13	0.028	8.08	0.9	-95.5
1/5/2011	13:11:28	25.88	41.370	26.48	100.1	7.01	0.023	8.08	0.7	-96.0
1/5/2011	13:12:28	25.76	34.500	21.65	99.6	7.18	0.019	8.13	1.1	-97.0
1/5/2011	13:14:01	25.74	35.340	22.23	100.8	7.25	0.044	8.08	0.7	-95.0
1/5/2011	13:15:28	25.99	49.110	32.06	98.9	6.70	0.026	8.09	0.8	-96.6
1/5/2011	13:16:28	26.05	49.870	32.62	98.5	6.64	0.024	8.10	0.8	-97.1
1/5/2011	13:17:28	25.99	44.570	28.76	99.6	6.87	0.010	8.11	0.9	-97.0
1/5/2011	13:19:01	25.94	7.241	3.97	100.2	7.95	0.011	8.10	142.0	-95.9
1/5/2011	13:20:28	26.05	50.490	33.07	101.3	6.82	0.000	8.13	38.9	-95.6
1/5/2011	13:21:28	26.10	50.430	33.02	101.5	6.83	0.021	8.13	0.7	-95.2
1/5/2011	13:22:28	26.07	50.560	33.12	101.3	6.81	0.035	8.13	1.0	-95.2
1/5/2011	13:24:01	26.04	50.650	33.19	101.2	6.81	0.036	8.13	1.0	-94.7
1/5/2011	13:25:28	26.04	50.630	33.17	101.4	6.82	0.029	8.13	0.9	-94.8
1/5/2011	13:26:28	26.04	50.670	33.21	101.6	6.83	0.018	8.13	0.5	-94.8
1/5/2011	13:27:28	26.05	50.680	33.21	101.8	6.84	0.007	8.13	1.0	-94.7
1/5/2011	13:29:01	26.05	50.710	33.23	102.0	6.85	-0.003	8.13	1.1	-94.1
1/5/2011	13:30:28	26.06	50.750	33.26	102.0	6.85	-0.020	8.13	0.4	-94.5
1/5/2011	13:31:28	26.05	50.750	33.26	102.0	6.85	0.003	8.14	0.9	-94.4
1/5/2011	13:32:28	26.05	50.740	33.25	102.0	6.85	0.010	8.14	1.1	-94.3

Table AII.82: (Continued) 2011 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2011	13:34:01	26.13	45.030	29.09	100.8	6.93	0.046	8.12	1.0	-94.0
1/5/2011	13:35:28	26.08	45.310	29.30	100.2	6.88	0.004	8.11	1.3	-95.0
1/5/2011	13:36:28	25.91	42.220	27.08	100.7	7.02	0.000	8.09	3.9	-94.7
1/5/2011	13:37:28	26.06	3.045	1.58	101.6	8.16	-0.013	8.13	166.9	-95.2
1/5/2011	13:39:01	26.22	50.840	33.33	101.8	6.82	-0.006	8.13	1.1	-94.4
1/5/2011	13:40:28	26.25	50.910	33.38	101.3	6.78	0.027	8.13	1.4	-94.8
1/5/2011	13:41:28	26.25	51.100	33.52	100.1	6.69	0.055	8.12	1.1	-95.2
1/5/2011	13:42:28	26.22	51.100	33.52	100.1	6.69	0.028	8.13	1.4	-95.3
1/5/2011	13:44:01	26.16	51.050	33.48	100.7	6.74	0.031	8.13	1.0	-94.7
1/5/2011	13:45:28	26.20	51.080	33.51	100.4	6.72	0.047	8.13	1.2	-95.0
1/5/2011	13:46:28	26.14	50.980	33.43	100.7	6.75	-0.006	8.13	0.5	-95.0
1/5/2011	13:47:28	26.15	50.940	33.40	102.9	6.90	-0.006	8.14	1.4	-94.2
1/5/2011	13:49:01	26.13	51.030	33.47	101.4	6.79	-0.016	8.13	1.3	-94.0
1/5/2011	13:50:28	26.14	50.020	32.73	102.2	6.88	-0.017	8.13	1.4	-94.1
1/5/2011	13:51:28	26.30	50.780	33.28	102.4	6.85	-0.014	8.14	18.4	-94.1
1/5/2011	13:52:28	26.30	50.940	33.40	102.0	6.82	0.029	8.13	0.7	-94.2
1/5/2011	13:54:01	26.18	51.050	33.48	100.6	6.74	0.053	8.13	0.6	-94.0
1/5/2011	13:55:28	26.13	51.020	33.46	101.2	6.78	0.005	8.13	1.1	-94.2
1/5/2011	13:56:28	26.25	51.070	33.50	100.3	6.71	0.000	8.13	4.4	-94.3
1/5/2011	13:57:28	26.31	50.680	33.21	102.5	6.86	0.006	8.14	3.0	-94.0
1/5/2011	13:59:01	26.23	50.580	33.13	103.2	6.92	0.047	8.15	0.8	-93.5
1/5/2011	14:00:28	26.23	50.580	33.13	103.1	6.91	0.007	8.15	1.2	-94.0
1/5/2011	14:01:28	26.20	50.600	33.15	103.0	6.91	0.006	8.15	0.6	-93.9
1/5/2011	14:02:28	26.20	50.610	33.16	103.0	6.91	0.028	8.15	1.1	-93.9
1/5/2011	14:04:01	26.19	50.680	33.21	102.8	6.89	0.020	8.14	1.3	-93.8
1/5/2011	14:05:28	26.18	47.170	30.65	102.4	6.97	-0.018	8.14	5.7	-94.4
1/5/2011	14:06:28	26.24	50.610	33.15	103.5	6.93	-0.020	8.15	9.7	-94.7
1/5/2011	14:07:28	26.24	50.690	33.22	103.2	6.91	-0.021	8.14	1.6	-94.4
1/5/2011	14:09:01	26.21	50.620	33.16	103.2	6.92	-0.020	8.14	1.8	-93.8
1/5/2011	14:10:28	26.25	50.630	33.17	103.0	6.90	-0.019	8.14	1.1	-93.6
1/5/2011	14:11:28	26.04	50.830	33.32	102.6	6.89	-0.025	8.14	43.8	-93.9
1/5/2011	14:12:28	26.40	49.800	32.56	102.1	6.85	-0.038	8.13	30.1	-94.4
1/5/2011	14:14:01	26.38	51.020	33.45	100.5	6.71	-0.004	8.13	1.1	-94.2
1/5/2011	14:15:28	26.25	4.018	2.12	100.5	8.02	-0.017	8.13	6.6	-94.8
1/5/2011	14:16:28	26.20	50.900	33.37	102.7	6.88	-0.006	8.14	13.0	-94.2
1/5/2011	14:17:28	26.16	1.505	0.75	102.6	8.27	-0.020	8.14	4.1	-94.1
1/5/2011	14:19:01	26.08	14.460	8.37	102.1	7.89	-0.005	8.13	3.6	-93.0

Table AII.82: (Continued) 2011 East Loch surface water survey YSI data from the 6920 V2

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2011	14:20:28	25.97	50.200	32.86	100.4	6.77	0.028	8.12	0.2	-93.9
1/5/2011	14:21:28	25.88	50.460	33.05	101.2	6.83	0.029	8.13	3.9	-93.6
1/5/2011	14:22:28	25.78	50.550	33.12	101.8	6.88	0.050	8.13	1.3	-93.3
1/5/2011	14:24:01	25.82	50.610	33.16	100.9	6.81	0.070	8.13	1.7	-92.5
1/5/2011	14:25:28	25.82	50.570	33.14	101.1	6.83	0.107	8.13	0.7	-93.0
1/5/2011	14:26:28	25.87	50.500	33.09	100.8	6.80	0.009	8.13	1.2	-93.0
1/5/2011	14:27:28	25.85	50.560	33.13	101.9	6.88	-0.021	8.13	1.2	-92.8
1/5/2011	14:29:01	25.88	26.740	16.36	102.2	7.58	-0.030	8.13	1.4	-92.0
1/5/2011	14:30:28	25.82	50.620	33.18	101.9	6.88	-0.029	8.13	1.3	-91.4
1/5/2011	14:31:28	25.82	27.010	16.54	101.8	7.55	-0.029	8.13	1.2	-90.6
1/5/2011	14:32:28	25.86	50.540	33.11	101.9	6.88	-0.029	8.12	1.1	-88.9
1/5/2011	14:34:01	25.80	49.900	32.64	102.0	6.90	-0.029	8.12	1.6	-90.3
1/5/2011	14:35:28	25.84	49.990	32.71	101.8	6.89	-0.029	8.12	1.1	-88.7
1/5/2011	14:36:28	25.93	50.420	33.03	101.7	6.85	-0.029	8.10	1.6	-88.9
1/5/2011	14:37:28	25.88	50.240	32.90	101.7	6.87	-0.029	8.11	0.7	-90.4
1/5/2011	14:39:01	25.87	25.520	15.54	101.4	7.55	-0.030	8.11	1.1	-91.6
1/5/2011	14:40:28	26.01	50.130	32.81	101.8	6.86	-0.027	8.09	1.0	-93.9
1/5/2011	14:41:28	25.67	0.478	0.23	102.4	8.35	-0.028	8.12	1.2	-96.0
1/5/2011	14:42:28	25.96	50.330	32.96	101.9	6.87	-0.023	8.11	0.9	-95.7
1/5/2011	14:44:01	25.87	50.500	33.09	102.2	6.90	-0.004	8.13	1.4	-97.2
1/5/2011	14:45:28	25.87	50.430	33.03	102.3	6.90	-0.015	8.14	1.3	-97.3
1/5/2011	14:46:28	25.89	50.080	32.77	102.2	6.90	-0.026	8.13	0.8	-96.9
1/5/2011	14:47:28	25.89	50.260	32.91	102.2	6.90	-0.026	8.13	1.1	-96.6
1/5/2011	14:49:01	25.90	50.350	32.97	102.1	6.89	-0.026	8.12	1.7	-95.8
1/5/2011	14:50:28	25.92	50.160	32.83	102.0	6.89	-0.026	8.12	1.1	-95.9
1/5/2011	14:51:28	25.92	50.230	32.89	102.0	6.89	-0.026	8.11	1.6	-95.6
1/5/2011	14:52:28	25.89	49.970	32.69	102.1	6.90	-0.026	8.11	1.0	-94.5
1/5/2011	14:54:01	25.92	50.340	32.96	102.1	6.89	-0.026	8.11	1.4	-93.0
1/5/2011	14:55:28	25.93	45.630	29.53	102.0	7.02	-0.026	8.10	1.4	-93.0
1/5/2011	14:56:28	25.93	50.330	32.95	102.2	6.89	-0.026	8.10	1.5	-90.8
1/5/2011	14:57:28	25.93	50.280	32.92	102.2	6.89	-0.026	8.10	1.1	-89.4
1/5/2011	14:59:01	25.91	44.510	28.72	102.1	7.05	-0.026	8.09	1.6	-87.7
1/5/2011	15:00:28	25.93	30.480	18.88	102.1	7.45	-0.027	8.10	1.0	-89.4
1/5/2011	15:01:28	25.93	30.720	19.05	102.1	7.45	-0.027	8.10	1.0	-90.4
1/5/2011	15:02:28	25.90	48.380	31.53	102.4	6.97	-0.026	8.10	1.5	-90.3
1/5/2011	15:04:01	25.94	50.190	32.86	102.2	6.90	-0.026	8.11	1.5	-90.8
1/5/2011	15:05:28	25.94	50.300	32.93	102.3	6.90	-0.026	8.12	1.3	-94.1

Table AII.82: (Continued) 2011 East Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/5/2011	15:06:28	25.94	50.310	32.94	102.4	6.90	-0.026	8.12	1.3	-94.1
1/5/2011	15:07:28	25.94	50.290	32.93	102.3	6.90	-0.026	8.12	1.2	-93.9
1/5/2011	15:09:01	25.95	50.310	32.94	102.5	6.91	-0.026	8.11	1.2	-92.6
1/5/2011	15:10:28	25.93	50.280	32.92	102.5	6.91	-0.026	8.11	1.0	-93.4
1/5/2011	15:11:28	25.93	50.240	32.89	102.4	6.91	-0.026	8.11	0.7	-93.1
1/5/2011	15:12:28	25.91	50.190	32.86	102.6	6.93	-0.026	8.11	1.0	-92.8
1/5/2011	15:14:01	25.91	50.260	32.90	102.4	6.91	-0.026	8.11	1.3	-91.5
1/5/2011	15:15:28	25.92	50.220	32.88	102.5	6.92	-0.026	8.11	1.2	-92.7
1/5/2011	15:16:28	25.93	50.250	32.90	102.6	6.93	-0.026	8.11	1.3	-92.2
1/5/2011	15:17:28	25.95	50.280	32.92	102.7	6.93	-0.026	8.11	1.6	-91.9
1/5/2011	15:19:01	25.95	50.330	32.96	102.8	6.93	-0.016	8.10	1.5	-90.8
1/5/2011	15:20:28	25.95	50.310	32.94	102.8	6.93	-0.018	8.11	1.0	-91.9
1/5/2011	15:21:28	25.97	50.320	32.95	102.8	6.93	-0.026	8.11	1.1	-91.7
1/5/2011	15:22:28	25.98	50.320	32.95	102.9	6.94	-0.023	8.11	1.0	-91.6
1/5/2011	15:24:01	26.04	50.440	33.04	104.5	7.03	-0.021	8.11	0.8	-92.5
1/5/2011	15:25:28	25.80	1.230	0.61	101.9	8.27	-0.022	8.10	208.3	-92.7
1/5/2011	15:26:28	21.68	0.751	0.37	101.6	8.92	-0.021	7.81	-0.6	-91.4
1/5/2011	15:27:28	21.19	0.647	0.31	101.8	9.03	-0.021	7.48	-0.6	-89.5
1/5/2011	15:29:01	21.08	0.608	0.30	104.8	9.31	-0.021	7.32	-0.6	-84.5

Table AII.83: 2011 East Loch deep water radon survey measurements.

RAD-7 #2356				East Loch Deep				eff=0.416 cpm/pCi/L			
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	11	1	5	13	33	2	4.6	0.0	0.0	0.0	0.0
2	11	1	5	13	38	2	4.6	100.0	0.0	0.0	0.0
3	11	1	5	13	43	6	4.6	16.7	0.0	33.3	0.0
4	11	1	5	13	48	12	4.6	58.3	0.0	25.0	0.0
5	11	1	5	13	53	7	4.6	71.4	0.0	14.3	0.0
6	11	1	5	13	58	8	4.6	75.0	0.0	0.0	0.0
7	11	1	5	14	3	7	4.6	85.7	0.0	14.3	0.0
8	11	1	5	14	8	13	4.6	61.6	7.7	7.7	0.0
9	11	1	5	14	12	11	3.2	90.9	0.0	0.0	0.0

Table AII.84: 2011 East Loch deep water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	9	38.0	18	2	6.9	70	133	0.000	76.100
2	2218	9	37.7	13	2	6.9	70	133	38.255	104.514
3	2218	9	37.4	11	2	6.9	70	133	19.127	92.355
4	2218	8	37.1	10	2	6.9	70	133	134.615	147.247
5	2218	9	37.1	10	2	6.9	70	133	96.676	133.394
6	2218	9	37.1	9	2	6.9	70	133	116.012	140.983
7	2218	8	36.8	9	2	6.9	70	133	116.012	140.983
8	2218	8	36.5	9	2	6.9	70	133	154.682	154.682
9	2218	9	36.2	8	2	6.9	70	133	273.669	236.265

Table AII.85: 2011 East Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/5/2011 13:28	1	26.29	50.58	1/5/2011 13:44	466	24.92	51.76
1/5/2011 13:28	169	25.82	51.04	1/5/2011 13:45	448	24.93	51.79
1/5/2011 13:29	425	25.42	51.78	1/5/2011 13:45	478	24.89	51.76
1/5/2011 13:29	-17	25.90	0.12	1/5/2011 13:46	478	24.87	51.75
1/5/2011 13:30	-17	24.89	0.12	1/5/2011 13:46	279	25.32	51.37
1/5/2011 13:30	-16	24.53	0.09	1/5/2011 13:47	494	24.90	51.69
1/5/2011 13:28	1	26.29	50.58	1/5/2011 13:47	495	24.88	51.75
1/5/2011 13:28	169	25.82	51.04	1/5/2011 13:48	492	24.85	51.75
1/5/2011 13:29	425	25.42	51.78	1/5/2011 13:48	473	24.87	51.74
1/5/2011 13:29	-17	25.90	0.12	1/5/2011 13:49	467	24.92	51.74
1/5/2011 13:30	-17	24.89	0.12	1/5/2011 13:49	495	24.95	51.79
1/5/2011 13:31	356	25.62	51.34	1/5/2011 13:50	489	24.97	39.42
1/5/2011 13:31	364	25.44	51.45	1/5/2011 13:50	236	25.56	51.30
1/5/2011 13:32	362	25.47	51.47	1/5/2011 13:51	6	26.27	50.73
1/5/2011 13:32	361	25.53	51.44	1/5/2011 13:51	425	25.39	51.57
1/5/2011 13:33	353	25.57	51.47	1/5/2011 13:52	499	25.02	51.78
1/5/2011 13:33	346	25.62	51.32	1/5/2011 13:52	438	25.06	51.72
1/5/2011 13:34	331	25.68	51.22	1/5/2011 13:53	462	25.09	51.74
1/5/2011 13:34	248	25.86	51.10	1/5/2011 13:53	499	25.00	51.75
1/5/2011 13:35	227	26.06	50.89	1/5/2011 13:54	501	24.99	51.75
1/5/2011 13:35	224	26.05	50.90	1/5/2011 13:54	502	24.99	51.73
1/5/2011 13:36	247	26.00	50.99	1/5/2011 13:55	503	24.98	51.72
1/5/2011 13:36	0	26.22	47.30	1/5/2011 13:55	381	25.13	51.72
1/5/2011 13:37	-17	26.06	37.62	1/5/2011 13:56	271	25.42	51.28
1/5/2011 13:37	-17	26.10	50.68	1/5/2011 13:56	355	25.28	51.56
1/5/2011 13:38	-11	26.14	50.75	1/5/2011 13:57	481	25.09	51.78
1/5/2011 13:38	312	25.53	51.20	1/5/2011 13:57	220	25.36	51.36
1/5/2011 13:39	423	25.19	51.72	1/5/2011 13:58	224	25.40	51.34
1/5/2011 13:39	457	25.13	51.76	1/5/2011 13:58	303	25.38	51.28
1/5/2011 13:40	444	25.12	51.72	1/5/2011 13:59	475	25.03	51.83
1/5/2011 13:40	447	25.08	51.73	1/5/2011 13:59	484	24.97	51.82
1/5/2011 13:41	450	25.09	51.70	1/5/2011 14:00	498	24.96	51.81
1/5/2011 13:41	465	25.00	51.71	1/5/2011 14:00	495	24.99	51.86
1/5/2011 13:42	452	24.99	51.71	1/5/2011 14:01	497	25.00	51.87
1/5/2011 13:42	456	25.00	51.70	1/5/2011 14:01	495	25.03	51.86
1/5/2011 13:43	424	25.11	51.68	1/5/2011 14:02	496	25.02	51.90
1/5/2011 13:43	464	25.02	51.77	1/5/2011 14:02	492	25.00	51.85
1/5/2011 13:44	465	24.98	51.75	1/5/2011 14:03	496	24.99	51.84

Table AII.85: (Continued) 2011 East Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/5/2011 14:03	495	25.04	51.85	1/5/2011 14:09	521	24.89	51.57
1/5/2011 14:04	499	25.06	51.81	1/5/2011 14:09	521	24.93	43.91
1/5/2011 14:04	507	25.04	51.85	1/5/2011 14:10	478	24.96	36.35
1/5/2011 14:05	512	25.04	51.87	1/5/2011 14:10	197	25.62	51.36
1/5/2011 14:05	104	26.21	51.02	1/5/2011 14:11	-17	25.64	0.15
1/5/2011 14:06	142	26.06	51.06	1/5/2011 14:11	-16	25.00	0.13
1/5/2011 14:06	94	26.12	50.80	1/5/2011 14:12	-16	24.41	0.12
1/5/2011 14:07	521	24.87	51.84	1/5/2011 14:12	-15	24.11	0.12
1/5/2011 14:07	516	24.82	51.84	1/5/2011 14:13	-14	23.88	0.12
1/5/2011 14:08	634	24.79	37.92	1/5/2011 14:13	-13	23.72	0.12
1/5/2011 14:08	47	26.04	50.98				

Table AII.86: 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	10:28:36	21.38228	157.96618		56.08	0:00:30	7.41	297.4
1/5/2011	10:29:06	21.38253	157.96670		59.74	0:00:30	7.41	296.9
1/5/2011	10:29:36	21.38280	157.96703		45.42	0:00:30	5.56	312.0
1/5/2011	10:30:06	21.38300	157.96728		35.36	0:00:30	3.70	309.9
1/5/2011	10:30:36	21.38323	157.96750		34.44	0:00:30	3.70	320.0
1/5/2011	10:31:06	21.38348	157.96767	1.28	32.31	0:00:30	3.70	328.1
1/5/2011	10:31:36	21.38375	157.96780	1.22	32.31	0:00:30	3.70	336.1
1/5/2011	10:32:06	21.38400	157.96777	1.01	27.74	0:00:30	3.70	4.9
1/5/2011	10:32:36	21.38412	157.96778	0.98	12.19	0:00:30	1.48	357.1
1/5/2011	10:33:06	21.38417	157.96785	1.01	9.14	0:00:30	1.11	308.1
1/5/2011	10:33:36	21.38402	157.96788	0.98	17.07	0:00:30	2.04	195.2
1/5/2011	10:34:06	21.38383	157.96787	1.16	20.42	0:00:30	2.41	171.1
1/5/2011	10:34:36	21.38380	157.96777	1.31	9.75	0:00:30	1.11	112.6
1/5/2011	10:35:06	21.38382	157.96773	1.19	4.57	0:00:30	0.56	64.0
1/5/2011	10:35:36	21.38385	157.96772	1.16	4.27	0:00:30	0.56	20.4
1/5/2011	10:36:06	21.38390	157.96770	1.10	4.57	0:00:30	0.56	21.8
1/5/2011	10:36:36	21.38392	157.96770	1.04	2.74	0:00:30	0.37	18.0
1/5/2011	10:37:06	21.38393	157.96768	1.13	2.74	0:00:30	0.37	11.3
1/5/2011	10:37:36	21.38397	157.96768	1.01	2.13	0:00:30	0.19	13.6
1/5/2011	10:38:06	21.38398	157.96768	1.13	2.13	0:00:30	0.19	350.2
1/5/2011	10:38:36	21.38400	157.96768	1.16	2.74	0:00:30	0.37	358.8
1/5/2011	10:39:06	21.38403	157.96770	1.07	2.44	0:00:30	0.37	343.9
1/5/2011	10:39:36	21.38405	157.96770	1.04	1.83	0:00:30	0.19	343.7
1/5/2011	10:40:06	21.38408	157.96772	1.13	4.27	0:00:30	0.56	333.4
1/5/2011	10:40:36	21.38410	157.96773	1.04	3.05	0:00:30	0.37	327.9
1/5/2011	10:41:06	21.38412	157.96775	1.10	2.74	0:00:30	0.37	335.0
1/5/2011	10:41:36	21.38415	157.96777	1.10	3.66	0:00:30	0.37	335.7
1/5/2011	10:42:06	21.38417	157.96777	1.01	2.74	0:00:30	0.37	329.6
1/5/2011	10:42:36	21.38420	157.96777	1.01	2.44	0:00:30	0.37	3.6
1/5/2011	10:43:06	21.38422	157.96778	1.01	2.13	0:00:30	0.19	338.8
1/5/2011	10:43:36	21.38423	157.96782	1.07	3.66	0:00:30	0.37	297.0
1/5/2011	10:44:06	21.38423	157.96782	1.10	1.22	0:00:30	0.19	345.5
1/5/2011	10:44:36	21.38427	157.96782	1.04	2.74	0:00:30	0.37	8.6
1/5/2011	10:45:06	21.38428	157.96780	1.04	1.52	0:00:30	0.19	19.2
1/5/2011	10:45:36	21.38428	157.96782	1.07	1.52	0:00:30	0.19	317.3
1/5/2011	10:46:06	21.38430	157.96782	1.01	1.22	0:00:30	0.19	329.7
1/5/2011	10:46:36	21.38432	157.96782	1.04	2.74	0:00:30	0.37	350.8
1/5/2011	10:47:06	21.38430	157.96783	1.07	2.13	0:00:30	0.19	224.6

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	10:47:36	21.38422	157.96782	0.98	9.45	0:00:30	1.11	169.4
1/5/2011	10:48:06	21.38407	157.96777	0.85	17.98	0:00:30	2.22	161.2
1/5/2011	10:48:36	21.38395	157.96760	1.04	21.64	0:00:30	2.59	125.3
1/5/2011	10:49:06	21.38395	157.96747	1.07	12.50	0:00:30	1.48	91.9
1/5/2011	10:49:36	21.38392	157.96725	1.04	24.08	0:00:30	3.70	101.1
1/5/2011	10:50:06	21.38393	157.96702	1.13	23.77	0:00:30	3.70	83.6
1/5/2011	10:50:36	21.38395	157.96677	1.04	25.30	0:00:30	3.70	86.3
1/5/2011	10:51:06	21.38395	157.96655	1.10	22.56	0:00:30	2.78	92.2
1/5/2011	10:51:36	21.38410	157.96642	1.07	22.86	0:00:30	2.78	39.5
1/5/2011	10:52:06	21.38432	157.96632	0.94	25.91	0:00:30	3.70	25.8
1/5/2011	10:52:36	21.38443	157.96632	0.85	13.41	0:00:30	1.67	357.5
1/5/2011	10:53:06	21.38447	157.96633	0.76	5.49	0:00:30	0.74	336.7
1/5/2011	10:53:36	21.38448	157.96638	0.79	4.88	0:00:30	0.56	291.1
1/5/2011	10:54:06	21.38450	157.96642	0.76	4.27	0:00:30	0.56	297.6
1/5/2011	10:54:36	21.38448	157.96643	0.79	3.66	0:00:30	0.37	229.1
1/5/2011	10:55:06	21.38447	157.96643	0.88	2.44	0:00:30	0.37	182.9
1/5/2011	10:55:36	21.38442	157.96645	0.91	4.88	0:00:30	0.56	185.3
1/5/2011	10:56:06	21.38440	157.96645	0.91	1.83	0:00:30	0.19	190.9
1/5/2011	10:56:36	21.38440	157.96645	0.94	0.91	0:00:30	0.19	242.4
1/5/2011	10:57:06	21.38440	157.96647	0.85	0.61	0:00:30	0.00	252.7
1/5/2011	10:57:36	21.38440	157.96647	0.88	0.91	0:00:30	0.19	284.6
1/5/2011	10:58:06	21.38440	157.96648	0.91	0.91	0:00:30	0.19	306.0
1/5/2011	10:58:36	21.38442	157.96648	0.88	0.91	0:00:30	0.19	309.8
1/5/2011	10:59:06	21.38442	157.96648	0.82	0.91	0:00:30	0.19	307.4
1/5/2011	10:59:36	21.38445	157.96655	0.82	7.01	0:00:30	0.74	304.6
1/5/2011	11:00:06	21.38447	157.96657	0.88	2.44	0:00:30	0.37	301.8
1/5/2011	11:00:36	21.38445	157.96658	0.98	3.05	0:00:30	0.37	247.7
1/5/2011	11:01:06	21.38440	157.96660	0.94	6.10	0:00:30	0.74	193.8
1/5/2011	11:01:36	21.38435	157.96662		5.18	0:00:30	0.56	195.3
1/5/2011	11:02:06	21.38427	157.96665	1.01	9.45	0:00:30	1.11	197.2
1/5/2011	11:02:36	21.38397	157.96673	1.04	35.05	0:00:30	3.70	195.8
1/5/2011	11:03:06	21.38383	157.96680	1.10	17.37	0:00:30	2.04	199.8
1/5/2011	11:03:36	21.38387	157.96678	1.04	5.18	0:00:30	0.56	14.5
1/5/2011	11:04:06	21.38390	157.96678	1.07	2.74	0:00:30	0.37	358.1
1/5/2011	11:04:36	21.38393	157.96678	1.04	4.27	0:00:30	0.56	354.4
1/5/2011	11:05:06	21.38397	157.96678	1.07	3.05	0:00:30	0.37	356.2
1/5/2011	11:05:36	21.38400	157.96680	1.16	3.66	0:00:30	0.37	349.6
1/5/2011	11:06:06	21.38403	157.96680	1.07	4.27	0:00:30	0.56	2.0

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	11:06:36	21.38407	157.96678	1.07	3.96	0:00:30	0.56	10.2
1/5/2011	11:07:06	21.38410	157.96678	1.01	2.74	0:00:30	0.37	11.6
1/5/2011	11:07:36	21.38413	157.96677	1.04	3.96	0:00:30	0.56	10.9
1/5/2011	11:08:06	21.38415	157.96677	0.98	2.13	0:00:30	0.19	33.0
1/5/2011	11:08:36	21.38417	157.96677	1.01	3.05	0:00:30	0.37	351.0
1/5/2011	11:09:06	21.38418	157.96677	0.98	0.91	0:00:30	0.19	19.7
1/5/2011	11:09:36	21.38418	157.96677	1.07	0.61	0:00:30	0.00	33.5
1/5/2011	11:10:06	21.38415	157.96682	0.76	5.79	0:00:30	0.74	241.4
1/5/2011	11:10:36	21.38392	157.96683	0.67	26.21	0:00:30	3.70	186.3
1/5/2011	11:11:06	21.38367	157.96690	1.13	29.57	0:00:30	3.70	193.9
1/5/2011	11:11:36	21.38342	157.96692	1.22	27.13	0:00:30	3.70	183.3
1/5/2011	11:12:06	21.38340	157.96677	1.07	15.85	0:00:30	1.85	96.7
1/5/2011	11:12:36	21.38345	157.96625	1.10	53.04	0:00:30	5.56	83.8
1/5/2011	11:13:06	21.38363	157.96577	1.31	54.25	0:00:30	7.41	68.5
1/5/2011	11:13:36	21.38392	157.96538	1.25	51.51	0:00:30	5.56	52.4
1/5/2011	11:14:06	21.38422	157.96520	1.31	38.40	0:00:30	3.70	29.3
1/5/2011	11:14:36	21.38455	157.96492	1.10	48.16	0:00:30	5.56	38.0
1/5/2011	11:15:06	21.38478	157.96482	1.10	26.82	0:00:30	3.70	23.0
1/5/2011	11:15:36	21.38497	157.96472	1.10	23.47	0:00:30	3.70	23.6
1/5/2011	11:16:06	21.38505	157.96473	1.04	9.75	0:00:30	1.11	347.7
1/5/2011	11:16:36	21.38507	157.96480	1.04	7.01	0:00:30	0.93	275.7
1/5/2011	11:17:06	21.38500	157.96488	1.07	10.06	0:00:30	1.11	230.2
1/5/2011	11:17:36	21.38490	157.96470	1.25	21.64	0:00:30	2.59	121.6
1/5/2011	11:18:06	21.38493	157.96445	1.22	26.52	0:00:30	3.70	84.6
1/5/2011	11:18:36	21.38503	157.96412	1.40	36.27	0:00:30	3.70	71.6
1/5/2011	11:19:06	21.38527	157.96380	1.68	42.06	0:00:30	5.56	49.2
1/5/2011	11:19:36	21.38563	157.96363	1.49	43.59	0:00:30	5.56	24.6
1/5/2011	11:20:06	21.38597	157.96340	1.74	44.20	0:00:30	5.56	32.5
1/5/2011	11:20:36	21.38630	157.96323	1.52	41.76	0:00:30	5.56	26.0
1/5/2011	11:21:06	21.38667	157.96313	1.13	41.76	0:00:30	5.56	12.2
1/5/2011	11:21:36	21.38685	157.96313	0.88	20.12	0:00:30	2.41	3.8
1/5/2011	11:22:06	21.38682	157.96310	1.01	4.57	0:00:30	0.56	141.7
1/5/2011	11:22:36	21.38680	157.96308	1.04	3.05	0:00:30	0.37	135.3
1/5/2011	11:23:06	21.38678	157.96308	1.04	1.22	0:00:30	0.19	157.1
1/5/2011	11:23:36	21.38678	157.96307	1.04	0.61	0:00:30	0.00	37.0
1/5/2011	11:24:06	21.38680	157.96307	1.01	0.30	0:00:30	0.00	14.4
1/5/2011	11:24:36	21.38680	157.96307	0.94	0.30	0:00:30	0.00	31.8
1/5/2011	11:25:06	21.38680	157.96307	0.98	0.61	0:00:30	0.00	54.4

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	11:25:36	21.38680	157.96307	0.98	0.91	0:00:30	0.19	52.6
1/5/2011	11:26:06	21.38685	157.96303	0.94	6.10	0:00:30	0.74	36.3
1/5/2011	11:26:36	21.38683	157.96300	0.94	3.66	0:00:30	0.37	111.8
1/5/2011	11:27:06	21.38683	157.96297	0.94	2.44	0:00:30	0.37	88.7
1/5/2011	11:27:36	21.38682	157.96295	1.10	3.35	0:00:30	0.37	131.5
1/5/2011	11:28:06	21.38682	157.96293	0.98	1.52	0:00:30	0.19	68.2
1/5/2011	11:28:36	21.38682	157.96293	1.04	0.30	0:00:30	0.00	129.3
1/5/2011	11:29:06	21.38680	157.96288	1.19	5.79	0:00:30	0.74	108.9
1/5/2011	11:29:36	21.38678	157.96287	1.22	3.05	0:00:30	0.37	144.8
1/5/2011	11:30:06	21.38680	157.96285	1.19	2.13	0:00:30	0.19	34.5
1/5/2011	11:30:36	21.38690	157.96280	0.94	13.41	0:00:30	1.67	21.3
1/5/2011	11:31:06	21.38677	157.96255	1.40	29.87	0:00:30	3.70	121.0
1/5/2011	11:31:36	21.38662	157.96218	1.98	42.06	0:00:30	5.56	113.3
1/5/2011	11:32:06	21.38650	157.96182	1.55	40.54	0:00:30	5.56	109.0
1/5/2011	11:32:36	21.38638	157.96147	2.44	36.88	0:00:30	3.70	109.3
1/5/2011	11:33:06	21.38635	157.96108	5.12	40.23	0:00:30	5.56	96.3
1/5/2011	11:33:36	21.38637	157.96085	4.88	24.08	0:00:30	3.70	87.2
1/5/2011	11:34:06	21.38633	157.96087	5.00	2.74	0:00:30	0.37	194.8
1/5/2011	11:34:36	21.38632	157.96088	5.00	3.05	0:00:30	0.37	228.8
1/5/2011	11:35:06	21.38637	157.96087	5.24	6.40	0:00:30	0.74	13.7
1/5/2011	11:35:36	21.38642	157.96087	5.27	5.18	0:00:30	0.56	358.0
1/5/2011	11:36:06	21.38632	157.96095	5.27	14.02	0:00:30	1.67	215.3
1/5/2011	11:36:36	21.38608	157.96098	4.85	24.99	0:00:30	3.70	186.1
1/5/2011	11:37:06	21.38555	157.96107	3.72	60.05	0:00:30	7.41	188.9
1/5/2011	11:37:36	21.38513	157.96105	2.35	47.24	0:00:30	5.56	177.2
1/5/2011	11:38:06	21.38490	157.96093	3.87	27.74	0:00:30	3.70	155.6
1/5/2011	11:38:36	21.38457	157.96077	4.48	41.76	0:00:30	5.56	157.0
1/5/2011	11:39:06	21.38423	157.96042	5.06	52.73	0:00:30	5.56	134.2
1/5/2011	11:39:36	21.38420	157.95995	4.36	47.85	0:00:30	5.56	94.0
1/5/2011	11:40:06	21.38472	157.95997	3.32	57.00	0:00:30	7.41	357.3
1/5/2011	11:40:36	21.38520	157.96007	2.13	55.17	0:00:30	7.41	349.9
1/5/2011	11:41:06	21.38558	157.96012	1.83	42.37	0:00:30	5.56	352.8
1/5/2011	11:41:36	21.38607	157.96015	2.19	54.25	0:01:00	3.70	356.3
1/5/2011	11:42:06	21.38633	157.96012	2.68	30.48	0:00:30	3.70	6.3
1/5/2011	11:42:36	21.38658	157.96015	1.98	27.43	0:00:30	3.70	354.1
1/5/2011	11:43:06	21.38682	157.96023	0.88	28.04	0:00:30	3.70	341.8
1/5/2011	11:43:36	21.38690	157.96027	0.91	9.75	0:00:30	1.11	337.3
1/5/2011	11:44:06	21.38685	157.96023	0.91	6.40	0:00:30	0.74	151.6

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	11:44:36	21.38670	157.96018	1.31	18.59	0:00:30	2.22	160.0
1/5/2011	11:45:06	21.38692	157.96003	1.52	28.65	0:00:30	3.70	32.5
1/5/2011	11:45:36	21.38707	157.95983	0.76	27.13	0:00:30	3.70	49.0
1/5/2011	11:46:06	21.38713	157.95980	0.67	6.71	0:00:30	0.74	22.5
1/5/2011	11:46:36	21.38707	157.95977	0.67	8.84	0:00:30	1.11	146.2
1/5/2011	11:47:06	21.38698	157.95970	0.70	10.97	0:00:30	1.30	147.7
1/5/2011	11:47:36	21.38687	157.95970	0.91	11.89	0:00:30	1.48	177.0
1/5/2011	11:48:06	21.38688	157.95962	0.70	8.53	0:00:30	0.93	76.0
1/5/2011	11:48:36	21.38700	157.95942		24.08	0:00:30	3.70	61.2
1/5/2011	11:49:06	21.38702	157.95940		3.35	0:00:30	0.37	40.3
1/5/2011	11:49:36	21.38702	157.95940		0.91	0:00:30	0.19	232.9
1/5/2011	11:50:06	21.38702	157.95940		0.30	0:00:30	0.00	86.2
1/5/2011	11:50:36	21.38702	157.95940		0.30	0:00:30	0.00	99.4
1/5/2011	11:51:06	21.38702	157.95940		0.30	0:00:30	0.00	106.6
1/5/2011	11:51:36	21.38702	157.95938		0.30	0:00:30	0.00	114.6
1/5/2011	11:52:06	21.38702	157.95938		0.30	0:00:30	0.00	115.9
1/5/2011	11:52:36	21.38702	157.95938		0.30	0:00:30	0.00	88.1
1/5/2011	11:53:06	21.38700	157.95938		0.00	0:00:30	0.00	129.9
1/5/2011	11:53:36	21.38700	157.95938		0.00	0:00:30	0.00	145.1
1/5/2011	11:54:06	21.38700	157.95938		0.30	0:00:30	0.00	69.2
1/5/2011	11:54:36	21.38702	157.95938		0.30	0:00:30	0.00	47.1
1/5/2011	11:55:06	21.38702	157.95938		0.00	0:00:30	0.00	34.9
1/5/2011	11:55:36	21.38702	157.95938		0.00	0:00:30	0.00	31.8
1/5/2011	11:56:06	21.38702	157.95938		0.00	0:00:30	0.00	348.7
1/5/2011	11:56:36	21.38703	157.95940		2.13	0:00:30	0.19	321.8
1/5/2011	11:57:06	21.38687	157.95948	0.76	20.12	0:00:30	2.41	206.9
1/5/2011	11:57:36	21.38665	157.95952	1.40	24.38	0:00:30	3.70	190.5
1/5/2011	11:58:06	21.38648	157.95952	2.47	18.29	0:00:30	2.22	178.4
1/5/2011	11:58:36	21.38640	157.95955	2.56	9.45	0:00:30	1.11	198.4
1/5/2011	11:59:06	21.38602	157.95960	2.99	43.89	0:00:30	5.56	186.9
1/5/2011	11:59:36	21.38548	157.95963	3.17	59.13	0:00:30	7.41	184.0
1/5/2011	12:00:06	21.38505	157.95975	3.32	49.99	0:00:30	5.56	193.8
1/5/2011	12:00:36	21.38462	157.96002	3.57	55.78	0:00:30	7.41	208.5
1/5/2011	12:01:06	21.38455	157.96010	3.44	10.67	0:00:30	1.30	235.9
1/5/2011	12:01:36	21.38455	157.96008	3.44	1.22	0:00:30	0.19	128.2
1/5/2011	12:02:06	21.38455	157.96008	3.44	0.91	0:00:30	0.19	137.0
1/5/2011	12:02:36	21.38450	157.96007	3.44	4.27	0:00:30	0.56	162.5
1/5/2011	12:03:06	21.38437	157.96003	3.84	16.76	0:00:30	2.04	166.2

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	12:03:36	21.38417	157.95998	4.51	21.34	0:00:30	2.59	165.6
1/5/2011	12:04:06	21.38447	157.95977	3.96	38.40	0:00:30	3.70	34.3
1/5/2011	12:04:36	21.38493	157.95945	3.75	61.87	0:00:30	7.41	31.4
1/5/2011	12:05:06	21.38542	157.95910	3.23	65.53	0:00:30	7.41	34.0
1/5/2011	12:05:36	21.38585	157.95872	1.40	61.87	0:00:30	7.41	39.3
1/5/2011	12:06:06	21.38573	157.95857	0.73	21.64	0:00:30	2.59	128.9
1/5/2011	12:06:36	21.38548	157.95843	0.67	30.48	0:00:30	3.70	155.6
1/5/2011	12:07:06	21.38513	157.95840	0.76	39.01	0:00:30	5.56	175.0
1/5/2011	12:07:36	21.38482	157.95833	0.82	36.88	0:00:30	3.70	168.4
1/5/2011	12:08:06	21.38448	157.95822	0.82	38.40	0:00:30	3.70	162.0
1/5/2011	12:08:36	21.38420	157.95818	1.34	32.00	0:00:30	3.70	173.8
1/5/2011	12:09:06	21.38402	157.95800	1.49	28.35	0:00:30	3.70	135.9
1/5/2011	12:09:36	21.38385	157.95782	1.22	26.82	0:00:30	3.70	133.8
1/5/2011	12:10:06	21.38368	157.95763	1.40	25.60	0:00:30	3.70	132.4
1/5/2011	12:10:36	21.38352	157.95742	1.74	28.35	0:00:30	3.70	131.4
1/5/2011	12:11:06	21.38325	157.95713	3.23	42.67	0:00:30	5.56	135.0
1/5/2011	12:11:36	21.38293	157.95670	2.65	57.30	0:00:30	7.41	128.1
1/5/2011	12:12:06	21.38272	157.95627	2.53	51.21	0:00:30	5.56	118.4
1/5/2011	12:12:36	21.38273	157.95590	2.10	37.49	0:00:30	3.70	87.5
1/5/2011	12:13:06	21.38263	157.95560	1.46	32.92	0:00:30	3.70	108.2
1/5/2011	12:13:36	21.38242	157.95520	1.22	47.85	0:00:30	5.56	120.6
1/5/2011	12:14:06	21.38230	157.95485	0.98	38.71	0:00:30	5.56	111.1
1/5/2011	12:14:36	21.38235	157.95455	0.76	32.00	0:00:30	3.70	77.5
1/5/2011	12:15:06	21.38247	157.95423	0.64	34.44	0:00:30	3.70	69.6
1/5/2011	12:15:36	21.38260	157.95407		24.08	0:00:30	3.70	49.5
1/5/2011	12:16:06	21.38272	157.95390		20.73	0:00:30	2.41	51.8
1/5/2011	12:16:36	21.38278	157.95380		13.41	0:00:30	1.67	53.2
1/5/2011	12:17:06	21.38280	157.95380		0.30	0:00:30	0.00	303.0
1/5/2011	12:17:36	21.38277	157.95383		3.35	0:00:30	0.37	221.2
1/5/2011	12:18:06	21.38275	157.95387		3.96	0:00:30	0.56	247.4
1/5/2011	12:18:36	21.38268	157.95393		10.67	0:00:30	1.30	225.5
1/5/2011	12:19:06	21.38257	157.95415		26.52	0:00:30	3.70	239.7
1/5/2011	12:19:36	21.38237	157.95430	0.79	27.13	0:00:30	3.70	215.3
1/5/2011	12:20:06	21.38223	157.95432	0.73	16.15	0:00:30	1.85	181.0
1/5/2011	12:20:36	21.38215	157.95435	1.01	9.45	0:00:30	1.11	205.6
1/5/2011	12:21:06	21.38198	157.95418	1.01	24.38	0:00:30	3.70	138.0
1/5/2011	12:21:36	21.38163	157.95403	1.22	43.59	0:00:30	5.56	157.2
1/5/2011	12:22:06	21.38142	157.95363	1.55	47.24	0:00:30	5.56	118.8

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	12:22:36	21.38148	157.95313	1.28	51.82	0:00:30	5.56	82.1
1/5/2011	12:23:06	21.38182	157.95273	0.58	55.17	0:00:30	7.41	47.3
1/5/2011	12:23:36	21.38215	157.95250	0.64	44.20	0:00:30	5.56	33.4
1/5/2011	12:24:06	21.38242	157.95230	0.79	35.97	0:00:30	3.70	36.5
1/5/2011	12:24:36	21.38252	157.95222	0.64	13.72	0:00:30	1.67	36.6
1/5/2011	12:25:06	21.38252	157.95220		2.74	0:00:30	0.37	83.1
1/5/2011	12:25:36	21.38257	157.95217		6.40	0:00:30	0.74	24.0
1/5/2011	12:26:06	21.38260	157.95215		3.96	0:00:30	0.37	26.2
1/5/2011	12:26:36	21.38260	157.95215		0.61	0:00:30	0.00	9.4
1/5/2011	12:27:06	21.38255	157.95233		20.42	0:00:30	2.41	252.2
1/5/2011	12:27:36	21.38222	157.95260	0.52	45.72	0:00:30	5.56	217.4
1/5/2011	12:28:06	21.38195	157.95280		36.27	0:00:30	3.70	215.0
1/5/2011	12:28:36	21.38158	157.95298	1.16	45.11	0:00:30	5.56	203.3
1/5/2011	12:29:06	21.38132	157.95310	1.74	31.09	0:00:30	3.70	202.9
1/5/2011	12:29:36	21.38125	157.95270	1.22	42.37	0:00:30	5.56	100.2
1/5/2011	12:30:06	21.38102	157.95223	0.85	54.86	0:00:30	7.41	118.4
1/5/2011	12:30:36	21.38082	157.95177	0.73	52.73	0:00:30	5.56	115.0
1/5/2011	12:31:06	21.38053	157.95138	1.34	51.51	0:00:30	5.56	129.8
1/5/2011	12:31:36	21.38047	157.95088	2.23	53.04	0:00:30	5.56	96.4
1/5/2011	12:32:06	21.38055	157.95033	2.10	57.30	0:00:30	7.41	81.4
1/5/2011	12:32:36	21.38053	157.94975	2.01	59.44	0:00:30	7.41	92.2
1/5/2011	12:33:06	21.38057	157.94922	1.80	57.00	0:00:30	7.41	85.9
1/5/2011	12:33:36	21.38065	157.94867	1.89	57.30	0:00:30	7.41	81.5
1/5/2011	12:34:06	21.38065	157.94810	1.25	58.83	0:00:30	7.41	89.8
1/5/2011	12:34:36	21.38067	157.94777	1.77	34.44	0:00:30	3.70	86.1
1/5/2011	12:35:06	21.38067	157.94768	1.80	7.92	0:00:30	0.93	83.2
1/5/2011	12:35:36	21.38068	157.94763	1.80	5.49	0:00:30	0.74	79.7
1/5/2011	12:36:06	21.38073	157.94760	1.71	6.71	0:00:30	0.74	40.2
1/5/2011	12:36:36	21.38077	157.94757	1.68	5.79	0:00:30	0.74	35.8
1/5/2011	12:37:06	21.38080	157.94753	1.71	4.88	0:00:30	0.56	35.5
1/5/2011	12:37:36	21.38085	157.94752	1.55	4.88	0:00:30	0.56	27.8
1/5/2011	12:38:06	21.38088	157.94747	1.31	5.49	0:00:30	0.74	44.4
1/5/2011	12:38:36	21.38092	157.94745	1.13	4.88	0:00:30	0.56	20.5
1/5/2011	12:39:06	21.38098	157.94747	0.94	6.40	0:00:30	0.74	356.5
1/5/2011	12:39:36	21.38103	157.94747	0.88	5.49	0:00:30	0.56	346.7
1/5/2011	12:40:06	21.38107	157.94747	0.88	4.27	0:00:30	0.56	357.7
1/5/2011	12:40:36	21.38110	157.94748	0.82	3.66	0:00:30	0.37	335.8
1/5/2011	12:41:06	21.38113	157.94752	0.88	5.18	0:00:30	0.56	332.6

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	12:41:36	21.38115	157.94750	0.88	3.05	0:00:30	0.37	39.0
1/5/2011	12:42:06	21.38120	157.94750	0.85	4.27	0:00:30	0.56	359.0
1/5/2011	12:42:36	21.38117	157.94740	0.73	10.36	0:00:30	1.30	107.8
1/5/2011	12:43:06	21.38117	157.94732	0.70	7.92	0:00:30	0.93	95.0
1/5/2011	12:43:36	21.38120	157.94728	0.55	5.49	0:00:30	0.56	38.5
1/5/2011	12:44:06	21.38120	157.94732	0.64	2.74	0:00:30	0.37	287.5
1/5/2011	12:44:36	21.38125	157.94733	0.61	4.88	0:00:30	0.56	335.6
1/5/2011	12:45:06	21.38127	157.94737	0.64	3.35	0:00:30	0.37	313.3
1/5/2011	12:45:36	21.38128	157.94738	0.61	3.05	0:00:30	0.37	293.6
1/5/2011	12:46:06	21.38127	157.94742	0.61	3.05	0:00:30	0.37	253.4
1/5/2011	12:46:36	21.38110	157.94745	0.76	20.12	0:00:30	2.41	192.2
1/5/2011	12:47:06	21.38093	157.94735	0.94	20.12	0:00:30	2.41	148.5
1/5/2011	12:47:36	21.38087	157.94735	1.40	7.92	0:00:30	0.93	171.9
1/5/2011	12:48:06	21.38065	157.94727	1.62	25.60	0:00:30	3.70	160.2
1/5/2011	12:48:36	21.38033	157.94725	2.19	35.36	0:00:30	3.70	179.0
1/5/2011	12:49:06	21.38000	157.94703	3.17	43.59	0:00:30	5.56	148.8
1/5/2011	12:49:36	21.37968	157.94670	3.99	49.07	0:00:30	5.56	135.4
1/5/2011	12:50:06	21.37952	157.94630	3.99	45.72	0:00:30	5.56	115.6
1/5/2011	12:50:36	21.37937	157.94585	3.69	49.68	0:00:30	5.56	109.8
1/5/2011	12:51:06	21.37912	157.94550	3.66	45.72	0:00:30	5.56	125.3
1/5/2011	12:51:36	21.37885	157.94517	3.54	45.72	0:00:30	5.56	131.3
1/5/2011	12:52:06	21.37855	157.94495	3.47	40.54	0:00:30	5.56	146.7
1/5/2011	12:52:36	21.37827	157.94473	3.35	38.10	0:00:30	3.70	142.7
1/5/2011	12:53:06	21.37817	157.94433	2.71	42.06	0:00:30	5.56	107.8
1/5/2011	12:53:36	21.37802	157.94393	2.23	45.11	0:00:30	5.56	111.2
1/5/2011	12:54:06	21.37770	157.94370	2.32	42.06	0:00:30	5.56	144.9
1/5/2011	12:54:36	21.37735	157.94380	2.65	40.23	0:00:30	5.56	194.7
1/5/2011	12:55:06	21.37717	157.94405	3.20	33.22	0:00:30	3.70	229.6
1/5/2011	12:55:36	21.37690	157.94430	3.54	38.71	0:00:30	5.56	223.5
1/5/2011	12:56:06	21.37658	157.94445	2.07	39.01	0:00:30	5.56	202.3
1/5/2011	12:56:36	21.37625	157.94435	7.56	38.40	0:00:30	3.70	164.0
1/5/2011	12:57:06	21.37583	157.94415	8.87	51.21	0:00:30	5.56	157.6
1/5/2011	12:57:36	21.37542	157.94387	10.09	55.17	0:00:30	7.41	147.2
1/5/2011	12:58:06	21.37503	157.94353	10.18	53.34	0:00:30	5.56	140.6
1/5/2011	12:58:36	21.37468	157.94305	9.30	64.62	0:00:30	7.41	128.6
1/5/2011	12:59:06	21.37425	157.94242	8.63	80.47	0:00:30	9.26	125.8
1/5/2011	12:59:36	21.37385	157.94187	7.16	73.46	0:00:30	9.26	127.5
1/5/2011	13:00:06	21.37385	157.94118	7.04	69.80	0:00:30	9.26	91.1

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	13:00:36	21.37402	157.94048	7.04	74.98	0:00:30	9.26	75.0
1/5/2011	13:01:06	21.37432	157.93983	6.95	76.20	0:00:30	9.26	63.5
1/5/2011	13:01:36	21.37472	157.93922	8.56	77.72	0:00:30	9.26	55.1
1/5/2011	13:02:06	21.37527	157.93885	5.33	72.24	0:00:30	9.26	31.7
1/5/2011	13:02:36	21.37567	157.93830	4.79	71.32	0:00:30	9.26	52.6
1/5/2011	13:03:06	21.37608	157.93773	4.42	74.98	0:00:30	9.26	51.6
1/5/2011	13:03:36	21.37635	157.93712	4.11	70.71	0:00:30	9.26	64.1
1/5/2011	13:04:06	21.37652	157.93670	3.26	47.24	0:00:30	5.56	68.2
1/5/2011	13:04:36	21.37655	157.93650	2.99	20.42	0:00:30	2.41	81.3
1/5/2011	13:05:06	21.37653	157.93645	2.93	4.88	0:00:30	0.56	98.3
1/5/2011	13:05:36	21.37657	157.93640	2.93	7.01	0:00:30	0.74	62.7
1/5/2011	13:06:06	21.37657	157.93635	2.74	5.18	0:00:30	0.56	77.4
1/5/2011	13:06:36	21.37662	157.93627	2.53	8.84	0:00:30	1.11	62.6
1/5/2011	13:07:06	21.37663	157.93618	2.35	8.84	0:00:30	1.11	74.5
1/5/2011	13:07:36	21.37667	157.93613	2.13	7.32	0:00:30	0.93	54.0
1/5/2011	13:08:06	21.37673	157.93610	1.92	7.01	0:00:30	0.93	22.4
1/5/2011	13:08:36	21.37680	157.93610	1.55	7.62	0:00:30	0.93	3.9
1/5/2011	13:09:06	21.37685	157.93608	1.25	5.79	0:00:30	0.74	20.2
1/5/2011	13:09:36	21.37687	157.93613	1.43	5.79	0:00:30	0.74	290.7
1/5/2011	13:10:06	21.37687	157.93612	1.31	0.91	0:00:30	0.19	66.3
1/5/2011	13:10:36	21.37672	157.93627	2.44	21.95	0:00:30	2.59	221.7
1/5/2011	13:11:06	21.37667	157.93633	2.62	9.75	0:00:30	1.11	232.2
1/5/2011	13:11:36	21.37668	157.93638	2.65	4.88	0:00:30	0.56	279.9
1/5/2011	13:12:06	21.37670	157.93642	1.43	3.66	0:00:30	0.37	317.7
1/5/2011	13:12:36	21.37675	157.93638	2.50	5.79	0:00:30	0.74	26.6
1/5/2011	13:13:06	21.37678	157.93635	2.47	5.79	0:00:30	0.74	50.9
1/5/2011	13:13:36	21.37682	157.93638	2.29	6.10	0:00:30	0.74	324.8
1/5/2011	13:14:06	21.37682	157.93643	2.47	6.40	0:00:30	0.74	258.3
1/5/2011	13:14:36	21.37683	157.93642	2.44	2.44	0:00:30	0.19	50.8
1/5/2011	13:15:06	21.37685	157.93640	2.32	3.96	0:00:30	0.56	40.5
1/5/2011	13:15:36	21.37688	157.93637	2.19	4.57	0:00:30	0.56	44.7
1/5/2011	13:16:06	21.37693	157.93635	2.07	6.40	0:00:30	0.74	15.6
1/5/2011	13:16:36	21.37697	157.93635	1.95	3.96	0:00:30	0.56	349.1
1/5/2011	13:17:06	21.37678	157.93638	0.82	21.95	0:00:30	2.59	189.3
1/5/2011	13:17:36	21.37660	157.93652	3.08	24.38	0:00:30	3.70	213.0
1/5/2011	13:18:06	21.37630	157.93662	3.35	33.83	0:00:30	3.70	198.0
1/5/2011	13:18:36	21.37593	157.93698	3.99	56.69	0:00:30	7.41	223.4
1/5/2011	13:19:06	21.37557	157.93730	4.60	52.43	0:00:30	5.56	218.7

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	13:19:36	21.37523	157.93752	4.82	43.59	0:00:30	5.56	208.9
1/5/2011	13:20:06	21.37495	157.93770	5.55	35.97	0:00:30	3.70	212.7
1/5/2011	13:20:36	21.37490	157.93775	5.76	7.62	0:00:30	0.93	217.3
1/5/2011	13:21:06	21.37488	157.93768	5.70	6.10	0:00:30	0.74	111.1
1/5/2011	13:21:36	21.37490	157.93760	5.64	8.84	0:00:30	1.11	80.4
1/5/2011	13:22:06	21.37493	157.93753	5.67	7.92	0:00:30	0.93	57.8
1/5/2011	13:22:36	21.37495	157.93748	6.40	5.49	0:00:30	0.74	68.1
1/5/2011	13:23:06	21.37498	157.93743	8.72	7.92	0:00:30	0.93	56.7
1/5/2011	13:23:36	21.37505	157.93737	6.89	9.14	0:00:30	1.11	37.3
1/5/2011	13:24:06	21.37512	157.93733	5.36	7.32	0:00:30	0.93	32.2
1/5/2011	13:24:36	21.37517	157.93727	5.24	9.75	0:00:30	1.11	51.5
1/5/2011	13:25:06	21.37522	157.93718	5.00	9.45	0:00:30	1.11	54.5
1/5/2011	13:25:36	21.37525	157.93715	5.00	6.71	0:00:30	0.74	41.6
1/5/2011	13:26:06	21.37532	157.93708	5.00	8.84	0:00:30	1.11	39.0
1/5/2011	13:26:36	21.37537	157.93705	5.00	7.92	0:00:30	0.93	40.5
1/5/2011	13:27:06	21.37540	157.93698	4.85	7.32	0:00:30	0.93	69.8
1/5/2011	13:27:36	21.37547	157.93695	4.72	8.23	0:00:30	0.93	25.5
1/5/2011	13:28:06	21.37552	157.93690	4.60	7.62	0:00:30	0.93	41.8
1/5/2011	13:28:36	21.37557	157.93685	4.48	7.92	0:00:30	0.93	40.1
1/5/2011	13:29:06	21.37560	157.93680	4.48	6.10	0:00:30	0.74	46.7
1/5/2011	13:29:36	21.37567	157.93677	4.45	8.53	0:00:30	0.93	25.8
1/5/2011	13:30:06	21.37570	157.93672	4.27	7.01	0:00:30	0.74	53.5
1/5/2011	13:30:36	21.37575	157.93667	4.05	7.01	0:00:30	0.74	39.2
1/5/2011	13:31:06	21.37580	157.93662	3.99	7.92	0:00:30	0.93	54.7
1/5/2011	13:31:36	21.37585	157.93655	3.87	7.92	0:00:30	0.93	47.7
1/5/2011	13:32:06	21.37590	157.93650	3.75	8.53	0:00:30	0.93	41.2
1/5/2011	13:32:36	21.37595	157.93643	3.51	8.84	0:00:30	1.11	44.1
1/5/2011	13:33:06	21.37602	157.93638	3.41	7.92	0:00:30	0.93	43.4
1/5/2011	13:33:36	21.37607	157.93633	3.23	7.62	0:00:30	0.93	43.8
1/5/2011	13:34:06	21.37610	157.93628	3.17	7.92	0:00:30	0.93	46.8
1/5/2011	13:34:36	21.37617	157.93622	2.96	8.53	0:00:30	1.11	47.1
1/5/2011	13:35:06	21.37618	157.93617	2.80	6.40	0:00:30	0.74	58.1
1/5/2011	13:35:36	21.37620	157.93610	2.62	6.71	0:00:30	0.74	80.1
1/5/2011	13:36:06	21.37605	157.93610	2.83	17.07	0:00:30	2.04	180.3
1/5/2011	13:36:36	21.37567	157.93643	3.84	54.56	0:00:30	7.41	217.4
1/5/2011	13:37:06	21.37523	157.93683	4.66	64.31	0:00:30	7.41	221.4
1/5/2011	13:37:36	21.37482	157.93723	5.67	60.35	0:00:30	7.41	222.0
1/5/2011	13:38:06	21.37467	157.93733	5.91	20.73	0:00:30	2.41	210.0

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	13:38:36	21.37462	157.93730	6.04	5.18	0:00:30	0.56	149.7
1/5/2011	13:39:06	21.37463	157.93725	5.85	5.79	0:00:30	0.74	77.8
1/5/2011	13:39:36	21.37465	157.93720	6.13	4.88	0:00:30	0.56	60.8
1/5/2011	13:40:06	21.37470	157.93715	6.07	7.32	0:00:30	0.93	46.2
1/5/2011	13:40:36	21.37468	157.93707	5.94	10.06	0:00:30	1.11	104.7
1/5/2011	13:41:06	21.37465	157.93705	5.91	2.44	0:00:30	0.37	167.4
1/5/2011	13:41:36	21.37470	157.93700	5.82	7.32	0:00:30	0.93	53.4
1/5/2011	13:42:06	21.37473	157.93693	5.52	7.62	0:00:30	0.93	56.4
1/5/2011	13:42:36	21.37480	157.93692	5.39	8.53	0:00:30	0.93	20.3
1/5/2011	13:43:06	21.37487	157.93695	5.33	8.23	0:00:30	0.93	329.8
1/5/2011	13:43:36	21.37485	157.93698	5.67	4.27	0:00:30	0.56	242.9
1/5/2011	13:44:06	21.37485	157.93697	5.39	2.13	0:00:30	0.19	82.8
1/5/2011	13:44:36	21.37488	157.93693	5.27	4.27	0:00:30	0.56	42.7
1/5/2011	13:45:06	21.37493	157.93690	5.21	7.01	0:00:30	0.74	43.9
1/5/2011	13:45:36	21.37497	157.93685	5.15	6.71	0:00:30	0.74	52.9
1/5/2011	13:46:06	21.37483	157.93677	5.06	17.37	0:00:30	2.04	150.4
1/5/2011	13:46:36	21.37478	157.93677	5.12	4.88	0:00:30	0.56	195.8
1/5/2011	13:47:06	21.37478	157.93677	5.24	0.30	0:00:30	0.00	77.9
1/5/2011	13:47:36	21.37483	157.93675	5.24	5.49	0:00:30	0.74	17.1
1/5/2011	13:48:06	21.37488	157.93672	4.82	7.01	0:00:30	0.93	34.7
1/5/2011	13:48:36	21.37495	157.93668	4.85	7.62	0:00:30	0.93	30.2
1/5/2011	13:49:06	21.37498	157.93665	4.94	6.10	0:00:30	0.74	35.1
1/5/2011	13:49:36	21.37505	157.93662	4.82	7.01	0:00:30	0.93	29.0
1/5/2011	13:50:06	21.37508	157.93678	4.79	17.68	0:00:30	2.04	286.5
1/5/2011	13:50:36	21.37483	157.93708	5.52	41.76	0:00:30	5.56	228.6
1/5/2011	13:51:06	21.37468	157.93713	6.04	17.37	0:00:30	2.04	196.7
1/5/2011	13:51:36	21.37465	157.93712	5.91	4.57	0:00:30	0.56	168.0
1/5/2011	13:52:06	21.37457	157.93710	5.85	9.75	0:00:30	1.11	166.1
1/5/2011	13:52:36	21.37452	157.93707	5.73	6.10	0:00:30	0.74	151.1
1/5/2011	13:53:06	21.37455	157.93702	5.88	6.10	0:00:30	0.74	51.1
1/5/2011	13:53:36	21.37458	157.93698	5.61	4.27	0:00:30	0.56	49.4
1/5/2011	13:54:06	21.37462	157.93697	5.55	6.10	0:00:30	0.74	30.9
1/5/2011	13:54:36	21.37465	157.93695	5.55	3.35	0:00:30	0.37	5.1
1/5/2011	13:55:06	21.37453	157.93688	5.46	15.85	0:00:30	1.85	150.2
1/5/2011	13:55:36	21.37442	157.93703	5.73	19.51	0:00:30	2.41	233.3
1/5/2011	13:56:06	21.37448	157.93717	6.00	15.24	0:00:30	1.85	292.3
1/5/2011	13:56:36	21.37453	157.93717	5.91	6.71	0:00:30	0.74	1.8
1/5/2011	13:57:06	21.37472	157.93720	5.85	20.73	0:00:30	2.41	351.2

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	13:57:36	21.37488	157.93737	6.55	24.99	0:00:30	3.70	316.3
1/5/2011	13:58:06	21.37500	157.93753	5.55	21.03	0:00:30	2.59	307.2
1/5/2011	13:58:36	21.37505	157.93757	5.30	7.92	0:00:30	0.93	320.6
1/5/2011	13:59:06	21.37510	157.93753	5.24	6.71	0:00:30	0.74	37.6
1/5/2011	13:59:36	21.37515	157.93750	5.18	7.01	0:00:30	0.93	23.3
1/5/2011	14:00:06	21.37522	157.93747	5.21	7.32	0:00:30	0.93	35.3
1/5/2011	14:00:36	21.37523	157.93743	4.94	4.57	0:00:30	0.56	40.0
1/5/2011	14:01:06	21.37527	157.93738	4.97	7.01	0:00:30	0.74	66.2
1/5/2011	14:01:36	21.37530	157.93732	5.00	6.71	0:00:30	0.74	55.5
1/5/2011	14:02:06	21.37533	157.93727	4.94	6.40	0:00:30	0.74	56.0
1/5/2011	14:02:36	21.37535	157.93722	5.06	6.10	0:00:30	0.74	71.9
1/5/2011	14:03:06	21.37538	157.93717	5.27	6.10	0:00:30	0.74	45.4
1/5/2011	14:03:36	21.37542	157.93713	5.52	5.49	0:00:30	0.74	58.8
1/5/2011	14:04:06	21.37545	157.93710	5.61	5.18	0:00:30	0.56	46.8
1/5/2011	14:04:36	21.37548	157.93705	5.36	5.49	0:00:30	0.74	47.0
1/5/2011	14:05:06	21.37532	157.93710	5.61	17.98	0:00:30	2.22	194.2
1/5/2011	14:05:36	21.37520	157.93737	5.27	30.78	0:00:30	3.70	243.5
1/5/2011	14:06:06	21.37505	157.93740	6.25	17.68	0:00:30	2.04	195.6
1/5/2011	14:06:36	21.37503	157.93740	6.89	1.52	0:00:30	0.19	169.1
1/5/2011	14:07:06	21.37505	157.93737	6.46	3.96	0:00:30	0.56	66.7
1/5/2011	14:07:36	21.37507	157.93733	5.58	3.96	0:00:30	0.56	55.8
1/5/2011	14:08:06	21.37512	157.93725	5.27	9.75	0:00:30	1.11	58.2
1/5/2011	14:08:36	21.37515	157.93718	5.30	8.53	0:00:30	0.93	58.5
1/5/2011	14:09:06	21.37523	157.93712	5.18	10.67	0:00:30	1.30	43.4
1/5/2011	14:09:36	21.37527	157.93708	5.15	6.40	0:00:30	0.74	40.1
1/5/2011	14:10:06	21.37533	157.93703	5.33	8.53	0:00:30	1.11	31.8
1/5/2011	14:10:36	21.37542	157.93708	5.52	10.06	0:00:30	1.11	330.4
1/5/2011	14:11:06	21.37490	157.93720	5.55	58.22	0:00:30	7.41	192.2
1/5/2011	14:11:36	21.37433	157.93745	6.22	68.88	0:00:30	7.41	202.3
1/5/2011	14:12:06	21.37397	157.93763	6.49	44.81	0:00:30	5.56	203.9
1/5/2011	14:12:36	21.37385	157.93762	6.52	12.80	0:00:30	1.48	172.9
1/5/2011	14:13:06	21.37383	157.93753	6.43	7.62	0:00:30	0.93	102.7
1/5/2011	14:13:36	21.37382	157.93745	6.31	10.06	0:00:30	1.11	105.4
1/5/2011	14:14:06	21.37385	157.93738	6.25	7.62	0:00:30	0.93	52.9
1/5/2011	14:14:36	21.37392	157.93732	6.19	9.75	0:00:30	1.11	47.2
1/5/2011	14:15:06	21.37355	157.93730	5.15	40.23	0:00:30	5.56	176.6
1/5/2011	14:15:36	21.37303	157.93747	0.91	60.35	0:00:30	7.41	197.5
1/5/2011	14:16:06	21.37293	157.93767	0.91	23.47	0:00:30	3.70	240.4

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	14:16:36	21.37277	157.93780	0.94	22.86	0:00:30	2.78	216.5
1/5/2011	14:17:06	21.37242	157.93785	0.94	38.71	0:00:30	5.56	186.6
1/5/2011	14:17:36	21.37200	157.93765	1.86	50.29	0:00:30	5.56	156.5
1/5/2011	14:18:06	21.37168	157.93740	6.13	44.20	0:00:30	5.56	142.7
1/5/2011	14:18:36	21.37138	157.93702	5.97	52.12	0:00:30	5.56	130.5
1/5/2011	14:19:06	21.37103	157.93668	5.12	51.51	0:00:30	5.56	138.6
1/5/2011	14:19:36	21.37098	157.93657	4.36	12.19	0:00:30	1.48	116.3
1/5/2011	14:20:06	21.37100	157.93660	4.48	2.74	0:00:30	0.37	276.0
1/5/2011	14:20:36	21.37095	157.93665	4.60	7.62	0:00:30	0.93	228.6
1/5/2011	14:21:06	21.37100	157.93667	4.91	6.71	0:00:30	0.74	356.2
1/5/2011	14:21:36	21.37092	157.93658	3.08	13.11	0:00:30	1.67	142.2
1/5/2011	14:22:06	21.37090	157.93658	2.90	2.44	0:00:30	0.37	202.1
1/5/2011	14:22:36	21.37088	157.93658	2.74	1.22	0:00:30	0.19	121.9
1/5/2011	14:23:06	21.37088	157.93655	2.96	2.74	0:00:30	0.37	86.8
1/5/2011	14:23:36	21.37090	157.93655	3.08	0.91	0:00:30	0.19	345.4
1/5/2011	14:24:06	21.37093	157.93657	3.23	4.27	0:00:30	0.56	357.2
1/5/2011	14:24:36	21.37090	157.93658	2.96	5.18	0:00:30	0.56	203.4
1/5/2011	14:25:06	21.37093	157.93658	3.23	3.96	0:00:30	0.56	344.5
1/5/2011	14:25:36	21.37097	157.93658	3.75	3.96	0:00:30	0.56	3.7
1/5/2011	14:26:06	21.37097	157.93662	4.30	3.05	0:00:30	0.37	275.4
1/5/2011	14:26:36	21.37083	157.93677	4.72	21.03	0:00:30	2.59	227.4
1/5/2011	14:27:06	21.37083	157.93677	4.79	0.61	0:00:30	0.00	75.5
1/5/2011	14:27:36	21.37083	157.93677	4.79	0.61	0:00:30	0.00	149.0
1/5/2011	14:28:06	21.37085	157.93677	4.82	1.22	0:00:30	0.19	351.7
1/5/2011	14:28:36	21.37085	157.93677	4.82	0.00	0:00:30	0.00	278.1
1/5/2011	14:29:06	21.37085	157.93677	4.75	0.30	0:00:30	0.00	249.4
1/5/2011	14:29:36	21.37085	157.93677	4.66	0.91	0:00:30	0.19	265.9
1/5/2011	14:30:06	21.37085	157.93677	4.79	0.30	0:00:30	0.00	335.7
1/5/2011	14:30:36	21.37085	157.93677	4.72	0.30	0:00:30	0.00	16.7
1/5/2011	14:31:06	21.37085	157.93677	4.75	0.30	0:00:30	0.00	313.7
1/5/2011	14:31:36	21.37085	157.93677	4.82	0.00	0:00:30	0.00	330.8
1/5/2011	14:32:06	21.37085	157.93677	4.85	0.00	0:00:30	0.00	259.9
1/5/2011	14:32:36	21.37085	157.93677	4.79	0.00	0:00:30	0.00	203.3
1/5/2011	14:33:06	21.37085	157.93678	4.75	0.30	0:00:30	0.00	207.6
1/5/2011	14:33:36	21.37085	157.93678	4.79	0.00	0:00:30	0.00	250.3
1/5/2011	14:34:06	21.37085	157.93678	4.79	0.00	0:00:30	0.00	58.5
1/5/2011	14:34:36	21.37085	157.93677	4.79	0.30	0:00:30	0.00	33.6
1/5/2011	14:35:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	18.4

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	14:35:36	21.37085	157.93677	4.82	0.30	0:00:30	0.00	43.0
1/5/2011	14:36:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	40.0
1/5/2011	14:36:36	21.37085	157.93677	4.72	0.00	0:00:30	0.00	61.8
1/5/2011	14:37:06	21.37085	157.93677	4.79	0.00	0:00:30	0.00	121.5
1/5/2011	14:37:36	21.37085	157.93677	4.79	0.00	0:00:30	0.00	61.8
1/5/2011	14:38:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	81.3
1/5/2011	14:38:36	21.37085	157.93677	4.72	0.00	0:00:30	0.00	81.3
1/5/2011	14:39:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	70.3
1/5/2011	14:39:36	21.37085	157.93677	4.72	0.00	0:00:30	0.00	70.3
1/5/2011	14:40:06	21.37085	157.93677	4.79	0.00	0:00:30	0.00	270.0
1/5/2011	14:40:36	21.37085	157.93677	4.79	0.00	0:00:30	0.00	25.0
1/5/2011	14:41:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	47.4
1/5/2011	14:41:36	21.37085	157.93677	4.66	0.00	0:00:30	0.00	59.2
1/5/2011	14:42:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	66.8
1/5/2011	14:42:36	21.37085	157.93677	4.72	0.00	0:00:30	0.00	83.9
1/5/2011	14:43:06	21.37085	157.93677	4.66	0.00	0:00:30	0.00	47.4
1/5/2011	14:43:36	21.37085	157.93677	4.60	0.00	0:00:30	0.00	50.1
1/5/2011	14:44:06	21.37085	157.93677	4.57	0.00	0:00:30	0.00	57.2
1/5/2011	14:44:36	21.37085	157.93677	4.63	0.00	0:00:30	0.00	305.6
1/5/2011	14:45:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	282.1
1/5/2011	14:45:36	21.37085	157.93677	4.72	0.00	0:00:30	0.00	302.8
1/5/2011	14:46:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	293.2
1/5/2011	14:46:36	21.37085	157.93677	4.69	0.00	0:00:30	0.00	270.0
1/5/2011	14:47:06	21.37085	157.93677	4.66	0.00	0:00:30	0.00	241.8
1/5/2011	14:47:36	21.37085	157.93677	4.66	0.00	0:00:30	0.00	259.9
1/5/2011	14:48:06	21.37085	157.93677	4.66	0.00	0:00:30	0.00	305.6
1/5/2011	14:48:36	21.37085	157.93677	4.69	0.00	0:00:30	0.00	289.7
1/5/2011	14:49:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	270.0
1/5/2011	14:49:36	21.37085	157.93677	4.66	0.00	0:00:30	0.00	289.7
1/5/2011	14:50:06	21.37085	157.93677	4.66	0.00	0:00:30	0.00	285.0
1/5/2011	14:50:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	270.0
1/5/2011	14:51:06	21.37085	157.93677	4.66	0.00	0:00:30	0.00	75.0
1/5/2011	14:51:36	21.37085	157.93677	4.72	0.00	0:00:30	0.00	57.2
1/5/2011	14:52:06	21.37085	157.93677	4.79	0.00	0:00:30	0.00	54.4
1/5/2011	14:52:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	65.3
1/5/2011	14:53:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	43.0
1/5/2011	14:53:36	21.37085	157.93677	4.79	0.00	0:00:30	0.00	61.8
1/5/2011	14:54:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	25.0

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	14:54:36	21.37085	157.93677	4.72	0.00	0:00:30	0.00	90.0
1/5/2011	14:55:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	61.8
1/5/2011	14:55:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	90.0
1/5/2011	14:56:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	90.0
1/5/2011	14:56:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	79.9
1/5/2011	14:57:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	75.0
1/5/2011	14:57:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	66.8
1/5/2011	14:58:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	57.2
1/5/2011	14:58:36	21.37085	157.93677	4.69	0.00	0:00:30	0.00	61.8
1/5/2011	14:59:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	61.8
1/5/2011	14:59:36	21.37087	157.93677	4.66	0.00	0:00:30	0.00	43.0
1/5/2011	15:00:06	21.37087	157.93677	4.75	0.00	0:00:30	0.00	137.0
1/5/2011	15:00:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	109.7
1/5/2011	15:01:06	21.37085	157.93677	4.79	0.00	0:00:30	0.00	137.0
1/5/2011	15:01:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	137.0
1/5/2011	15:02:06	21.37085	157.93677	4.79	0.00	0:00:30	0.00	162.8
1/5/2011	15:02:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	211.8
1/5/2011	15:03:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	166.9
1/5/2011	15:03:36	21.37085	157.93677	4.79	0.00	0:00:30	0.00	105.0
1/5/2011	15:04:06	21.37085	157.93677	4.79	0.00	0:00:30	0.00	125.6
1/5/2011	15:04:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	137.0
1/5/2011	15:05:06	21.37085	157.93677	4.82	0.00	0:00:30	0.00	180.0
1/5/2011	15:05:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	197.2
1/5/2011	15:06:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	180.0
1/5/2011	15:06:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	162.8
1/5/2011	15:07:06	21.37085	157.93677	4.79	0.00	0:00:30	0.00	118.2
1/5/2011	15:07:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	125.6
1/5/2011	15:08:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	162.8
1/5/2011	15:08:36	21.37085	157.93677	4.72	0.00	0:00:30	0.00	137.0
1/5/2011	15:09:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	137.0
1/5/2011	15:09:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	125.6
1/5/2011	15:10:06	21.37085	157.93677	4.79	0.00	0:00:30	0.00	125.6
1/5/2011	15:10:36	21.37085	157.93677	4.79	0.00	0:00:30	0.00	122.8
1/5/2011	15:11:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	180.0
1/5/2011	15:11:36	21.37085	157.93677	4.82	0.00	0:00:30	0.00	0.0
1/5/2011	15:12:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	0.0
1/5/2011	15:12:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	234.4
1/5/2011	15:13:06	21.37085	157.93677	4.75	0.00	0:00:30	0.00	234.4

Table AII.86: (Continued) 2011 East Loch surface and deep water surveys global positioning system data.

Date m/d/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/5/2011	15:13:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	162.8
1/5/2011	15:14:06	21.37085	157.93677	4.72	0.00	0:00:30	0.00	128.8
1/5/2011	15:14:36	21.37085	157.93677	4.75	0.00	0:00:30	0.00	118.2
1/5/2011	15:15:06	21.37085	157.93675	4.75	0.00	0:00:30	0.00	130.7
1/5/2011	15:15:36	21.37085	157.93675	4.79	0.00	0:00:30	0.00	130.7
1/5/2011	15:16:06	21.37085	157.93675	4.72	0.00	0:00:30	0.00	118.2
1/5/2011	15:16:36	21.37085	157.93675	4.75	0.00	0:00:30	0.00	98.7
1/5/2011	15:17:06	21.37085	157.93675	4.75	0.00	0:00:30	0.00	107.1
1/5/2011	15:17:36	21.37085	157.93675	4.79	0.00	0:00:30	0.00	107.1
1/5/2011	15:18:06	21.37085	157.93675	4.72	0.00	0:00:30	0.00	90.0
1/5/2011	15:18:36	21.37085	157.93675	4.75	0.00	0:00:30	0.00	118.2
1/5/2011	15:19:06	21.37085	157.93675	4.63	0.00	0:00:30	0.00	107.1
1/5/2011	15:19:36	21.37085	157.93675	4.69	0.00	0:00:30	0.00	128.8
1/5/2011	15:20:06	21.37085	157.93675	4.63	0.00	0:00:30	0.00	122.8
1/5/2011	15:20:36	21.37085	157.93675	4.63	0.00	0:00:30	0.00	113.2
1/5/2011	15:21:06	21.37085	157.93675	4.72	0.00	0:00:30	0.00	118.2
1/5/2011	15:21:36	21.37085	157.93675	4.75	0.00	0:00:30	0.00	148.2
1/5/2011	15:22:06	21.37085	157.93675	4.66	0.00	0:00:30	0.00	180.0
1/5/2011	15:22:36	21.37085	157.93673	4.66	1.52	0:00:30	0.19	113.0
1/5/2011	15:23:06	21.37107	157.93672	5.52	24.08	0:00:30	3.70	4.7
1/5/2011	15:23:36	21.37123	157.93685	6.10	23.47	0:00:30	3.70	324.1
1/5/2011	15:24:06	21.37140	157.93702	6.16	24.99	0:00:30	3.70	316.9
1/5/2011	15:24:36	21.37162	157.93735	6.37	42.98	0:00:30	5.56	305.7
1/5/2011	15:25:06	21.37155	157.93793	5.49	60.66	0:00:30	7.41	262.3
1/5/2011	15:25:36	21.37147	157.93870	6.46	80.47	0:00:30	9.26	264.0
1/5/2011	15:26:06	21.37145	157.93948	7.44	81.08	0:00:30	9.26	268.8
1/5/2011	15:26:36	21.37168	157.94022	7.74	79.25	0:00:30	9.26	288.9
1/5/2011	15:27:06	21.37197	157.94105	10.06	90.83	0:00:30	11.11	289.4
1/5/2011	15:27:36	21.37205	157.94193	10.55	93.27	0:00:30	11.11	276.2
1/5/2011	15:28:06	21.37223	157.94280	11.80	91.74	0:00:30	11.11	283.4

AII.87: 2011 East Loch surface and deep water radon survey wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20110105	10:53	1.52	20110105	13:53	1.83
20110105	11:53	2.13	20110105	14:53	2.44
20110105	12:53	2.74	20110105	15:53	2.74

Table AII.88: 2011 West Loch surface water radon survey measurements.

RAD-7 #2356				East Loch Deep				eff=0.416 cpm/pCi/L			
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
61	11	1	7	10	21	2	4.6	100.0	0.0	0.0	0.0
62	11	1	7	10	26	0	4.7	0.0	0.0	0.0	0.0
63	11	1	7	10	31	0	4.7	0.0	0.0	0.0	0.0
64	11	1	7	10	36	3	4.7	0.0	33.3	66.7	0.0
65	11	1	7	10	42	0	4.7	0.0	0.0	0.0	0.0
66	11	1	7	10	47	2	4.7	100.0	0.0	0.0	0.0
67	11	1	7	10	52	7	4.6	100.0	0.0	0.0	0.0
68	11	1	7	10	57	19	4.6	94.7	5.3	0.0	0.0
69	11	1	7	11	2	44	4.6	93.2	0.0	2.3	0.0
70	11	1	7	11	7	59	4.6	89.8	0.0	3.4	0.0
71	11	1	7	11	12	95	4.6	90.5	0.0	3.2	0.0
72	11	1	7	11	17	103	4.6	93.2	0.0	4.9	0.0
73	11	1	7	11	22	97	4.6	79.4	0.0	15.5	0.0
74	11	1	7	11	27	114	4.6	86.9	0.0	11.4	0.0
75	11	1	7	11	32	124	4.6	83.1	0.8	11.3	0.0
76	11	1	7	11	37	127	4.6	84.3	0.8	14.2	0.0
77	11	1	7	11	42	147	4.6	81.0	0.0	13.6	0.7
78	11	1	7	11	47	178	4.6	78.1	0.6	15.2	0.6
79	11	1	7	11	52	243	4.6	75.3	0.4	19.8	0.0
80	11	1	7	11	57	296	4.6	74.7	0.4	18.9	0.0
81	11	1	7	12	2	320	4.6	77.5	0.0	19.1	1.0
82	11	1	7	12	7	340	4.6	75.0	0.0	22.1	0.3
83	11	1	7	12	12	294	4.6	68.7	0.0	27.9	0.0
84	11	1	7	12	17	287	4.6	66.6	0.4	30.7	0.4
85	11	1	7	12	22	315	4.6	55.6	0.6	39.7	0.3
86	11	1	7	12	27	236	4.6	52.6	0.0	44.9	1.3
87	11	1	7	12	32	222	4.6	42.4	0.5	54.5	0.0
88	11	1	7	12	37	230	4.6	38.3	1.3	57.8	0.4
89	11	1	7	12	42	201	4.6	39.8	1.0	57.7	0.0
90	11	1	7	12	47	182	4.6	33.5	0.6	63.2	0.0
91	11	1	7	12	52	194	4.6	27.8	0.0	71.1	0.0
92	11	1	7	12	57	174	4.6	23.6	1.7	73.6	0.6
93	11	1	7	13	2	167	4.6	17.4	0.6	79.7	0.6
94	11	1	7	13	7	145	4.6	22.8	2.1	73.8	0.0
95	11	1	7	13	12	141	4.6	12.8	0.7	86.5	0.0
96	11	1	7	13	17	138	4.6	13.1	0.7	84.8	0.0
97	11	1	7	13	22	132	4.6	14.4	0.0	83.3	0.8

Table AII.88: (Continued) 2011 West Loch surface water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
98	11	1	7	13	27	111	4.6	9.9	1.8	86.5	0.9
99	11	1	7	13	32	112	4.6	12.5	0.9	84.8	0.0
100	11	1	7	13	37	102	4.6	13.7	1.0	85.3	0.0
101	11	1	7	13	42	117	4.6	23.9	0.0	74.4	0.0
102	11	1	7	13	47	104	4.6	19.2	1.9	76.0	0.0
103	11	1	7	13	52	89	4.6	27.0	1.1	71.9	0.0
104	11	1	7	13	57	116	4.6	24.2	0.0	73.3	0.0
105	11	1	7	14	2	88	4.6	35.2	2.3	59.1	1.1
106	11	1	7	14	7	133	4.6	41.4	1.5	52.6	0.0
107	11	1	7	14	12	89	4.6	46.1	0.0	51.7	0.0
108	11	1	7	14	17	98	4.6	43.9	3.1	50.0	0.0
109	11	1	7	14	22	90	4.6	37.8	2.2	56.7	0.0
110	11	1	7	14	27	87	4.6	40.2	1.2	56.3	1.2
111	11	1	7	14	32	84	4.6	39.3	0.0	59.5	1.2
112	11	1	7	14	37	69	4.6	43.5	0.0	53.6	0.0
113	11	1	7	14	42	94	4.6	43.6	1.1	54.3	0.0
114	11	1	7	14	47	91	4.6	39.6	0.0	57.2	1.1
115	11	1	7	14	52	87	4.6	41.4	3.5	51.7	0.0
116	11	1	7	14	57	92	4.6	43.5	0.0	55.4	0.0
117	11	1	7	15	2	73	4.6	43.8	1.4	53.4	0.0
118	11	1	7	15	7	86	4.6	39.5	1.2	55.8	2.3
119	11	1	7	15	12	78	4.6	48.7	1.3	46.2	0.0
120	11	1	7	15	17	69	4.6	46.4	0.0	49.3	0.0
121	11	1	7	15	22	104	4.6	52.9	1.9	41.4	0.0
122	11	1	7	15	27	105	4.6	56.2	1.0	41.0	0.0
123	11	1	7	15	32	128	4.6	64.9	0.0	32.8	0.0
124	11	1	7	15	37	116	4.6	68.1	0.0	29.3	0.9
125	11	1	7	15	42	121	4.6	65.3	1.7	30.6	0.0
126	11	1	7	15	47	130	4.6	52.3	0.0	43.9	0.0
127	11	1	7	15	52	97	4.6	46.4	2.1	51.6	0.0

Table AII.89: 2011 West Loch surface water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
61	2236	8	25.2	15	1	7	40	133	41.329	112.912
62	2218	8	25.2	11	1	7	40	133	0.000	82.218
63	2218	7	25.2	9	1	7	40	133	0.000	82.218

Table AII.89: (Continued) 2011 West Loch surface water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
64	2218	7	25.2	8	1	7	40	133	0.000	82.218
65	2218	7	25.2	7	1	7	40	133	0.000	82.218
66	2218	8	25.2	6	1	7	40	133	41.109	112.311
67	2218	7	25.5	6	1	7	40	133	144.650	158.224
68	2218	8	25.8	6	1	7	40	133	373.958	222.667
69	2218	7	25.8	5	1	7	40	133	856.397	312.511
70	2236	8	26.1	5	1	7	40	133	1107.050	348.761
71	2218	8	26.4	5	1	7	40	133	1796.345	431.431
72	2218	8	26.4	5	1	7	40	133	2016.120	455.679
73	2218	7	26.8	5	1	7	40	133	1608.355	410.726
74	2218	8	26.8	5	1	7	40	133	2079.124	462.028
75	2218	7	27.1	4	1	7	40	133	2151.436	467.803
76	2218	7	27.4	4	1	7	40	133	2222.971	473.360
77	2218	7	27.7	4	1	7	40	133	2472.276	496.718
78	2218	7	27.7	4	1	7	40	133	2903.394	536.069
79	2218	7	28.0	4	1	7	40	133	3822.454	608.445
80	2201	7	28.3	4	1	7	40	133	4616.188	664.216
81	2218	7	28.3	4	1	7	40	133	5166.307	706.120
82	2218	7	28.3	4	1	7	40	133	5305.483	710.183
83	2218	7	28.3	4	1	7	40	133	4219.322	636.984
84	2218	8	28.3	4	1	7	40	133	3968.668	620.633
85	2218	8	28.3	4	1	7	40	133	3655.353	595.990
86	2218	8	28.6	4	1	7	40	133	2569.191	510.704
87	2218	7	28.9	4	1	7	40	133	1963.446	448.952
88	2201	7	29.2	4	1	7	40	133	1838.120	435.884
89	2218	8	29.2	4	1	7	40	133	1671.018	417.755
90	2218	8	29.5	4	1	7	40	133	1274.151	370.716
91	2218	7	29.8	4	1	7	40	133	1127.937	351.591
92	2218	7	29.8	4	1	7	40	133	851.793	310.831
93	2218	8	29.8	4	1	7	40	133	605.744	270.589
94	2218	7	29.8	4	1	7	40	133	685.589	283.832
95	2218	8	29.8	4	1	7	40	133	373.958	222.667
96	2218	7	29.8	4	1	7	40	133	373.958	222.667
97	2201	8	29.8	4	1	7	40	133	396.867	228.601
98	2218	7	29.8	4	1	7	40	133	207.754	185.487
99	2201	8	29.8	4	1	7	40	133	290.856	202.477

Table AII.89: (Continued) 2011 West Loch surface water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
100	2218	7	30.1	4	1	7	40	133	290.856	202.477
101	2218	8	30.1	4	1	7	40	133	584.856	266.743
102	2218	7	30.1	3	1	7	40	133	417.755	233.215
103	2218	7	30.4	4	1	7	40	133	501.306	250.653
104	2201	8	30.4	3	1	7	40	133	588.035	268.193
105	2218	7	30.4	3	1	7	40	133	647.520	278.093
106	2218	7	30.4	4	1	7	40	133	1155.069	356.320
107	2218	7	30.4	3	1	7	40	133	856.397	312.511
108	2218	7	30.1	3	1	7	40	133	903.054	320.616
109	2236	8	30.1	3	1	7	40	133	710.183	288.922
110	2218	7	30.1	3	1	7	40	133	710.183	292.428
111	2218	8	30.1	3	1	7	40	133	668.407	285.366
112	2201	8	29.8	3	1	7	40	133	626.632	274.371
113	2218	7	29.5	3	1	7	40	133	856.397	312.511
114	2218	7	29.2	3	1	7	40	133	731.071	295.886
115	2218	7	29.2	3	1	7	40	133	751.958	295.886
116	2218	8	28.9	3	1	7.1	40	133	835.509	309.269
117	2218	7	28.9	3	1	7	40	133	668.407	281.757
118	2218	7	28.9	3	1	7	40	133	689.295	288.922
119	2236	8	28.6	3	1	7	40	133	793.734	302.663
120	2218	8	28.6	3	1	7	40	133	668.407	281.757
121	2201	7	28.9	3	1	7	40	133	1155.069	356.320
122	2218	7	28.6	3	1	7	40	133	1239.074	367.353
123	2236	8	28.6	3	1	7	40	133	1743.104	426.962
124	2218	8	28.6	3	1	7	40	133	1659.099	417.684
125	2218	8	28.6	3	1	7	40	133	1659.099	417.684
126	2218	8	28.9	3	1	7	40	133	1428.085	390.902
127	2218	7	28.9	3	1	7	40	133	939.948	325.110

Table AII.90: 2011 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/7/2011	10:37:58	22.14	42.95	27.68	100.6	7.47	0.017	8.13	24.1	-73.0
1/7/2011	10:38:58	22.27	27.95	17.22	93.3	7.35	0.028	8.10	60.1	-74.3
1/7/2011	10:39:58	21.61	38.25	24.34	91.6	7.00	0.051	8.03	3.5	-73.1
1/7/2011	10:41:58	22.42	43.28	27.91	88.6	6.54	0.207	8.08	6.5	-75.9
1/7/2011	10:42:58	22.37	42.86	27.61	87.0	6.43	0.186	8.07	6.5	-75.9
1/7/2011	10:43:58	22.35	42.46	27.32	87.9	6.52	0.171	8.07	6.0	-76.3
1/7/2011	10:44:58	22.49	43.59	28.13	88.5	6.51	0.192	8.09	6.3	-76.8
1/7/2011	10:46:58	22.26	42.01	27.00	87.8	6.53	0.176	8.08	6.2	-77.3
1/7/2011	10:47:58	22.45	43.31	27.92	87.6	6.46	0.206	8.08	6.6	-77.0
1/7/2011	10:48:58	22.42	43.12	27.79	87.1	6.43	0.234	8.08	6.4	-77.1
1/7/2011	10:49:58	22.48	43.42	28.01	87.5	6.45	0.259	8.09	6.9	-77.5
1/7/2011	10:51:58	22.33	42.64	27.45	87.5	6.48	0.270	8.08	7.4	-77.7
1/7/2011	10:52:58	22.27	42.38	27.26	87.3	6.49	0.260	8.07	7.0	-77.0
1/7/2011	10:53:58	22.23	42.09	27.05	87.1	6.48	0.229	8.07	7.2	-77.0
1/7/2011	10:54:58	22.36	42.90	27.63	87.6	6.48	0.248	8.09	7.8	-77.1
1/7/2011	10:56:58	22.37	43.10	27.78	88.3	6.53	0.265	8.10	7.4	-77.6
1/7/2011	10:57:58	22.28	42.64	27.45	88.3	6.55	0.224	8.09	7.4	-77.2
1/7/2011	10:58:58	22.35	42.98	27.69	88.4	6.54	0.224	8.10	8.1	-77.0
1/7/2011	10:59:58	22.37	43.16	27.82	88.4	6.53	0.222	8.10	7.6	-77.0
1/7/2011	11:01:58	22.33	43.07	27.76	87.9	6.50	0.223	8.10	7.3	-77.7
1/7/2011	11:02:58	22.30	43.02	27.72	87.6	6.48	0.230	8.09	8.5	-77.5
1/7/2011	11:03:58	22.32	43.03	27.73	88.1	6.52	0.248	8.10	7.6	-77.5
1/7/2011	11:04:58	22.34	43.16	27.82	88.2	6.53	0.249	8.10	8.4	-77.4
1/7/2011	11:06:58	22.37	43.25	27.88	88.4	6.53	0.238	8.10	7.9	-78.1
1/7/2011	11:07:58	22.38	43.41	28.00	88.2	6.51	0.240	8.10	7.7	-77.8
1/7/2011	11:08:58	22.35	43.25	27.88	88.4	6.53	0.236	8.10	7.5	-77.8
1/7/2011	11:09:58	22.38	43.15	27.82	88.4	6.53	0.225	8.10	7.6	-77.9
1/7/2011	11:11:58	22.36	43.30	27.92	88.5	6.54	0.242	8.10	7.5	-77.9
1/7/2011	11:12:58	22.35	43.29	27.91	88.7	6.55	0.242	8.10	7.4	-77.5
1/7/2011	11:13:58	22.40	43.57	28.11	88.7	6.54	0.233	8.11	8.0	-77.6
1/7/2011	11:14:58	22.38	43.37	27.97	88.6	6.54	0.242	8.11	7.6	-77.6
1/7/2011	11:16:58	22.36	43.26	27.89	88.7	6.55	0.228	8.11	7.4	-77.8
1/7/2011	11:17:58	22.33	42.74	27.52	88.8	6.58	0.236	8.10	7.6	-77.4
1/7/2011	11:18:58	22.40	43.41	28.00	88.7	6.54	0.235	8.11	7.7	-77.3
1/7/2011	11:19:58	22.33	43.04	27.73	88.8	6.57	0.232	8.11	7.5	-77.5
1/7/2011	11:21:58	22.31	43.06	27.75	88.9	6.58	0.244	8.11	7.4	-77.8
1/7/2011	11:22:58	22.24	42.82	27.58	88.9	6.60	0.239	8.10	7.5	-77.4
1/7/2011	11:23:58	22.32	43.02	27.72	89.0	6.58	0.236	8.10	8.2	-77.1

Table AII.90: (Continued) 2011 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/7/2011	11:24:58	22.33	43.28	27.91	88.9	6.57	0.238	8.11	9.0	-77.2
1/7/2011	11:26:58	22.37	43.45	28.03	88.5	6.53	0.238	8.11	8.0	-78.0
1/7/2011	11:27:58	22.34	43.34	27.95	88.6	6.55	0.233	8.11	8.6	-77.8
1/7/2011	11:28:58	22.35	43.36	27.96	88.4	6.53	0.184	8.10	8.1	-77.6
1/7/2011	11:29:58	21.85	39.56	25.26	88.9	6.73	0.134	8.06	7.1	-76.7
1/7/2011	11:31:58	21.74	40.61	26.01	89.8	6.79	0.180	8.09	7.6	-76.5
1/7/2011	11:32:58	22.14	41.68	26.76	87.8	6.56	0.159	8.09	7.3	-76.5
1/7/2011	11:33:58	22.54	39.32	25.08	85.1	6.37	0.112	7.88	4.6	-75.6
1/7/2011	11:34:58	22.81	39.82	25.44	86.0	6.39	0.201	7.90	4.6	-77.1
1/7/2011	11:36:58	22.72	41.40	26.56	86.0	6.36	0.200	7.96	4.5	-79.2
1/7/2011	11:37:58	22.62	41.39	26.55	88.2	6.54	0.153	8.05	5.5	-80.5
1/7/2011	11:38:58	22.39	43.11	27.78	91.3	6.74	0.037	8.10	4.8	-79.9
1/7/2011	11:39:58	22.74	43.13	27.80	89.8	6.59	0.239	8.09	5.1	-79.7
1/7/2011	11:41:58	23.08	40.20	25.70	85.1	6.28	0.243	7.92	4.5	-81.1
1/7/2011	11:42:28	22.82	42.91	27.63	89.0	6.53	0.288	8.07	4.5	-81.4
1/7/2011	11:42:58	22.74	43.31	27.92	89.6	6.57	0.293	8.10	6.2	-81.0
1/7/2011	11:43:58	22.83	43.01	27.71	89.5	6.56	0.281	8.08	6.0	-80.7
1/7/2011	11:44:58	22.92	40.68	26.04	88.3	6.53	0.158	8.02	6.2	-82.7
1/7/2011	11:46:58	22.43	43.21	27.86	93.4	6.89	0.274	8.12	5.6	-80.1
1/7/2011	11:47:58	22.51	42.93	27.65	93.3	6.88	0.281	8.11	4.3	-79.4
1/7/2011	11:48:58	22.63	41.87	26.89	92.7	6.86	0.275	8.11	4.4	-79.5
1/7/2011	11:49:58	23.03	40.85	26.16	86.5	6.38	0.143	7.93	3.3	-79.7
1/7/2011	11:51:58	22.58	43.45	28.03	91.2	6.71	0.279	8.10	5.9	-81.2
1/7/2011	11:52:58	22.65	43.40	27.99	90.8	6.67	0.291	8.10	6.5	-81.2
1/7/2011	11:53:58	22.56	41.84	26.87	90.0	6.66	0.245	8.03	4.9	-79.7
1/7/2011	11:54:58	22.70	41.46	26.60	87.9	6.50	0.267	7.99	4.5	-79.7
1/7/2011	11:56:58	22.78	43.25	27.88	90.6	6.64	0.255	8.07	6.6	-80.8
1/7/2011	11:57:58	22.72	42.44	27.30	90.3	6.65	0.249	8.05	5.9	-80.5
1/7/2011	11:58:58	22.66	42.52	27.36	90.0	6.64	0.244	8.04	5.2	-80.3
1/7/2011	11:59:58	22.47	39.52	25.22	87.8	6.57	0.012	7.97	4.6	-79.9
1/7/2011	12:01:58	22.62	43.71	28.21	96.2	7.06	0.203	8.13	6.5	-79.2
1/7/2011	12:02:58	22.61	43.69	28.20	96.4	7.08	0.230	8.14	6.2	-78.6
1/7/2011	12:03:58	22.56	43.61	28.14	96.7	7.11	0.179	8.14	6.4	-78.6
1/7/2011	12:04:58	22.59	43.65	28.17	96.7	7.10	0.227	8.14	6.0	-78.3
1/7/2011	12:06:58	22.44	43.13	27.80	96.0	7.09	0.140	8.12	6.5	-78.6
1/7/2011	12:07:58	22.42	43.44	28.02	95.5	7.04	0.220	8.13	6.3	-78.4
1/7/2011	12:08:58	22.44	43.25	27.89	95.5	7.04	0.224	8.12	6.9	-78.1

Table AII.90: (Continued) 2011 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/7/2011	12:09:58	22.46	42.79	27.56	94.0	6.95	0.183	8.10	6.4	-78.0
1/7/2011	12:11:58	22.54	43.01	27.71	93.7	6.91	0.203	8.11	6.5	-78.6
1/7/2011	12:12:58	22.48	43.35	27.96	94.3	6.95	0.211	8.12	6.6	-78.6
1/7/2011	12:13:58	22.61	42.93	27.65	93.8	6.91	0.194	8.11	5.6	-78.5
1/7/2011	12:14:58	22.29	4.80	2.57	91.4	7.83	-0.007	8.05	9.9	-79.0
1/7/2011	12:16:58	22.66	43.78	28.26	98.0	7.19	0.125	8.14	5.4	-78.7
1/7/2011	12:17:58	22.67	43.79	28.27	98.0	7.19	0.153	8.14	6.1	-78.3
1/7/2011	12:18:58	22.67	43.78	28.26	97.8	7.17	0.233	8.14	4.9	-78.2
1/7/2011	12:19:58	22.81	44.08	28.48	97.7	7.14	0.208	8.14	7.4	-78.1
1/7/2011	12:21:58	22.80	44.16	28.53	97.4	7.11	0.231	8.14	8.1	-78.9
1/7/2011	12:22:58	23.08	44.70	28.92	97.3	7.06	0.231	8.13	9.1	-78.4
1/7/2011	12:23:58	23.38	46.09	29.92	98.1	7.03	0.248	8.12	7.9	-78.2
1/7/2011	12:24:58	22.66	43.72	28.22	97.8	7.17	0.236	8.14	6.1	-78.4
1/7/2011	12:26:58	22.78	44.07	28.47	98.2	7.18	0.288	8.14	6.4	-78.8
1/7/2011	12:27:58	22.66	43.68	28.19	98.0	7.19	0.221	8.14	6.0	-78.4
1/7/2011	12:28:58	22.63	43.67	28.19	97.8	7.18	0.208	8.14	6.6	-78.4
1/7/2011	12:29:58	22.64	43.66	28.17	98.1	7.20	0.157	8.14	6.4	-78.4
1/7/2011	12:31:58	22.66	43.66	28.17	98.2	7.21	0.205	8.15	6.6	-78.7
1/7/2011	12:32:58	22.67	43.65	28.17	98.1	7.20	0.234	8.15	6.5	-78.5
1/7/2011	12:33:58	22.67	43.62	28.15	98.2	7.20	0.170	8.14	5.9	-78.6
1/7/2011	12:34:58	22.62	43.54	28.09	98.2	7.21	0.174	8.14	5.5	-78.7
1/7/2011	12:36:58	22.64	43.28	27.91	98.3	7.22	0.003	8.14	5.6	-79.4
1/7/2011	12:37:58	22.80	43.89	28.34	98.9	7.23	0.015	8.14	5.0	-79.0
1/7/2011	12:38:58	22.77	43.81	28.28	98.5	7.21	0.014	8.15	24.5	-79.4
1/7/2011	12:39:58	22.75	43.78	28.26	98.9	7.24	0.209	8.15	3.9	-78.9
1/7/2011	12:41:58	22.76	43.75	28.24	99.0	7.25	0.188	8.15	4.3	-79.1
1/7/2011	12:42:58	22.82	43.79	28.27	99.1	7.25	0.204	8.15	3.8	-78.9
1/7/2011	12:43:58	22.95	44.09	28.48	99.5	7.25	0.188	8.15	6.8	-78.9
1/7/2011	12:44:58	22.88	43.90	28.35	98.9	7.22	0.198	8.14	4.9	-79.2
1/7/2011	12:46:58	24.51	48.76	31.84	95.5	6.64	0.202	8.10	10.7	-79.3
1/7/2011	12:47:58	23.68	46.49	30.20	95.6	6.81	0.196	8.13	10.9	-81.2
1/7/2011	12:48:58	22.94	44.02	28.43	98.6	7.19	0.215	8.15	5.3	-81.4
1/7/2011	12:49:58	21.06	0.61	0.30	99.8	8.88	-0.026	7.41	-0.1	-74.3
1/7/2011	12:51:58	19.95	0.63	0.31	104.2	9.46	-0.026	7.12	0.3	-83.9
1/7/2011	12:52:58	20.61	0.59	0.29	103.4	9.27	-0.025	7.11	0.0	-80.0
1/7/2011	12:53:58	20.61	0.60	0.29	103.7	9.30	-0.026	6.98	-0.3	-83.7
1/7/2011	12:54:58	20.67	0.62	0.30	103.6	9.28	-0.026	6.98	0.1	-84.5

Table AII.90: (Continued) 2011 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/7/2011	12:56:58	20.50	0.63	0.30	103.2	9.28	-0.026	6.95	0.6	-77.0
1/7/2011	12:57:58	20.79	0.63	0.31	103.2	9.22	-0.026	6.94	0.4	-79.0
1/7/2011	12:58:58	20.89	0.62	0.30	103.4	9.22	-0.027	6.92	0.3	-79.8
1/7/2011	12:59:58	20.81	0.64	0.31	103.7	9.26	-0.027	6.94	0.8	-76.7
1/7/2011	13:01:58	20.95	0.51	0.24	103.1	9.19	-0.027	7.10	0.4	-66.5
1/7/2011	13:02:58	21.34	0.45	0.22	103.2	9.13	-0.027	7.16	-0.1	-65.7
1/7/2011	13:03:58	23.96	48.92	31.97	104.5	7.33	0.074	8.20	1.0	-73.5
1/7/2011	13:04:58	24.12	49.01	32.03	98.3	6.87	0.115	8.12	2.2	-71.2
1/7/2011	13:06:58	24.18	49.25	32.21	97.5	6.80	0.172	8.13	2.0	-77.6
1/7/2011	13:07:58	24.10	48.87	31.93	97.4	6.82	0.204	8.13	2.6	-78.4
1/7/2011	13:08:58	24.20	49.35	32.28	97.2	6.78	0.183	8.13	2.4	-79.2
1/7/2011	13:09:58	24.22	49.46	32.36	97.2	6.77	0.188	8.13	1.7	-79.8
1/7/2011	13:11:58	24.22	49.44	32.34	97.0	6.76	0.196	8.14	1.7	-81.1
1/7/2011	13:12:58	24.15	49.15	32.13	97.3	6.79	0.187	8.14	2.0	-80.9
1/7/2011	13:13:58	24.42	49.65	32.49	96.5	6.69	0.170	8.13	1.9	-81.0
1/7/2011	13:14:58	24.18	49.26	32.21	97.1	6.78	0.184	8.14	2.6	-81.5
1/7/2011	13:16:58	24.08	46.73	30.37	97.2	6.87	0.003	8.15	3.5	-82.9
1/7/2011	13:17:58	24.07	41.63	26.70	97.2	7.01	0.001	8.15	5.9	-82.6
1/7/2011	13:18:58	24.00	2.56	1.32	97.7	8.16	0.010	8.15	43.8	-82.0
1/7/2011	13:19:58	24.14	2.98	1.55	97.2	8.09	0.003	8.14	45.5	-81.4
1/7/2011	13:21:58	24.41	49.91	32.68	95.2	6.60	0.155	8.13	1.5	-82.3
1/7/2011	13:22:58	24.41	49.81	32.61	94.8	6.57	0.177	8.13	1.7	-82.7
1/7/2011	13:23:58	24.38	49.72	32.54	94.8	6.58	0.206	8.13	1.7	-83.1
1/7/2011	13:24:58	24.37	49.71	32.54	94.8	6.58	0.157	8.13	2.1	-83.3
1/7/2011	13:26:58	24.32	49.51	32.39	94.9	6.60	0.167	8.14	1.7	-83.9
1/7/2011	13:27:58	24.33	49.55	32.42	94.9	6.60	0.170	8.14	1.7	-83.6
1/7/2011	13:28:58	24.35	49.65	32.49	94.8	6.58	0.172	8.13	1.5	-83.7
1/7/2011	13:29:58	24.36	49.65	32.50	94.8	6.58	0.179	8.13	1.9	-83.7
1/7/2011	13:31:58	24.22	41.62	26.69	95.7	6.89	-0.007	8.15	30.5	-84.9
1/7/2011	13:32:58	23.94	4.28	2.27	97.7	8.13	-0.009	8.15	46.3	-84.0
1/7/2011	13:33:58	23.80	46.90	30.50	99.1	7.03	-0.001	8.15	88.1	-83.0
1/7/2011	13:34:58	23.81	46.87	30.48	99.5	7.06	0.241	8.15	3.3	-82.1
1/7/2011	13:36:58	23.87	47.00	30.57	99.8	7.07	0.276	8.15	2.9	-82.0
1/7/2011	13:37:58	23.85	46.92	30.51	99.6	7.06	0.206	8.15	2.6	-81.7
1/7/2011	13:38:58	23.93	47.13	30.66	100.4	7.10	0.271	8.15	2.6	-81.7
1/7/2011	13:39:58	23.87	46.99	30.56	100.0	7.09	0.037	8.15	2.1	-82.2
1/7/2011	13:41:58	23.73	15.97	9.34	101.4	8.13	-0.009	8.17	41.2	-82.7

Table AII.90: (Continued) 2011 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/7/2011	13:42:28	23.74	14.67	8.52	101.4	8.17	-0.007	8.16	42.7	-82.3
1/7/2011	13:42:58	23.73	9.08	5.08	101.5	8.35	-0.004	8.16	20.7	-82.2
1/7/2011	13:43:28	23.78	46.61	30.29	101.9	7.24	0.015	8.16	11.4	-82.0
1/7/2011	13:43:58	23.83	46.70	30.35	102.4	7.27	0.145	8.16	3.8	-81.5
1/7/2011	13:44:28	23.85	45.89	29.76	102.1	7.27	-0.002	8.15	5.6	-81.6
1/7/2011	13:44:58	23.83	15.21	8.86	101.4	8.14	-0.007	8.15	33.7	-82.0
1/7/2011	13:46:58	23.63	46.05	29.89	101.0	7.21	0.115	8.16	5.0	-82.3
1/7/2011	13:47:58	23.76	46.29	30.06	100.2	7.13	0.239	8.14	4.0	-82.1
1/7/2011	13:48:58	23.90	46.56	30.25	103.3	7.32	0.251	8.14	3.3	-82.1
1/7/2011	13:49:58	23.91	46.53	30.22	102.8	7.29	0.247	8.13	2.8	-82.3
1/7/2011	13:51:58	23.59	42.91	27.62	102.3	7.40	0.003	8.17	158.2	-83.1
1/7/2011	13:52:58	23.52	35.45	22.35	102.2	7.63	0.005	8.16	119.7	-82.4
1/7/2011	13:53:58	23.61	45.97	29.83	96.8	6.92	0.164	8.11	4.2	-82.2
1/7/2011	13:54:58	23.68	46.15	29.96	96.2	6.86	0.236	8.11	4.3	-82.5
1/7/2011	13:56:58	23.70	46.23	30.01	97.7	6.96	0.241	8.12	4.5	-83.3
1/7/2011	13:57:58	24.01	47.10	30.64	100.4	7.09	0.263	8.13	4.1	-83.3
1/7/2011	13:58:58	23.68	46.18	29.97	98.3	7.01	0.246	8.13	5.1	-84.4
1/7/2011	13:59:58	23.71	46.22	30.01	99.3	7.08	0.268	8.14	4.5	-83.7
1/7/2011	14:01:58	23.54	32.95	20.62	101.7	7.67	-0.033	8.16	105.6	-84.4
1/7/2011	14:02:58	23.73	42.77	27.52	103.7	7.49	-0.031	8.17	203.0	-82.8
1/7/2011	14:03:58	24.36	40.67	26.01	105.2	7.58	-0.005	8.17	180.6	-82.0
1/7/2011	14:04:58	24.49	43.54	28.06	102.7	7.30	-0.007	8.17	167.7	-83.1
1/7/2011	14:06:58	24.60	13.14	7.56	97.6	7.78	-0.035	8.15	99.9	-84.7
1/7/2011	14:07:58	24.43	16.78	9.85	97.8	7.72	0.036	8.15	169.2	-84.2
1/7/2011	14:08:58	24.59	5.48	2.96	97.8	8.01	0.037	8.14	53.2	-83.7
1/7/2011	14:09:58	24.73	50.69	33.25	93.0	6.39	-0.006	8.13	42.3	-84.6
1/7/2011	14:11:58	24.83	51.60	33.92	92.5	6.32	0.207	8.15	1.1	-86.4
1/7/2011	14:12:58	24.82	51.66	33.96	92.6	6.33	0.235	8.15	1.4	-86.2
1/7/2011	14:13:58	24.83	51.66	33.96	92.8	6.34	0.198	8.15	0.9	-86.2
1/7/2011	14:14:58	24.83	51.54	33.87	92.7	6.34	0.225	8.15	1.3	-86.2
1/7/2011	14:16:58	24.82	51.67	33.97	92.6	6.33	0.215	8.15	1.5	-86.9
1/7/2011	14:17:58	24.82	51.60	33.92	92.4	6.31	0.207	8.15	0.9	-86.5
1/7/2011	14:18:58	24.83	51.65	33.96	92.9	6.35	0.211	8.15	1.4	-86.5
1/7/2011	14:19:58	24.83	51.68	33.98	92.7	6.33	0.181	8.15	1.3	-86.7
1/7/2011	14:21:58	24.84	51.68	33.98	92.0	6.29	0.121	8.15	0.9	-87.3
1/7/2011	14:22:58	24.82	51.28	33.69	92.1	6.30	0.036	8.15	1.3	-87.0
1/7/2011	14:23:58	24.68	45.64	29.56	94.7	6.65	0.006	8.16	27.8	-87.3

Table AII.90: (Continued) 2011 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/7/2011	14:24:58	24.64	10.72	6.07	96.2	7.73	0.006	8.16	10.2	-86.2
1/7/2011	14:26:58	24.53	2.67	1.38	97.2	8.04	-0.009	8.15	67.9	-96.6
1/7/2011	14:27:58	24.52	2.56	1.32	97.0	8.03	-0.032	8.15	108.5	-89.2
1/7/2011	14:28:58	24.48	8.18	4.54	97.2	7.90	-0.035	8.14	91.0	-87.5
1/7/2011	14:29:58	24.52	1.61	0.81	97.0	8.05	-0.001	8.15	129.0	-86.3
1/7/2011	14:31:58	24.52	3.23	1.69	96.4	7.96	-0.032	8.14	39.7	-85.4
1/7/2011	14:32:58	24.52	49.92	32.69	93.1	6.44	-0.036	8.12	16.0	-85.9
1/7/2011	14:33:58	24.64	51.24	33.66	95.2	6.54	0.190	8.14	1.3	-85.9
1/7/2011	14:34:58	24.61	50.96	33.45	94.2	6.48	0.210	8.14	1.0	-85.6
1/7/2011	14:36:58	24.65	51.29	33.70	96.2	6.60	0.210	8.15	1.9	-85.3
1/7/2011	14:37:58	24.65	51.31	33.71	96.2	6.60	0.218	8.15	1.8	-85.0
1/7/2011	14:38:58	24.64	51.30	33.70	96.1	6.60	0.183	8.15	2.2	-84.9
1/7/2011	14:39:58	24.62	51.24	33.66	95.2	6.54	0.096	8.14	1.6	-85.4
1/7/2011	14:41:58	24.57	49.87	32.65	96.6	6.68	-0.003	8.15	10.6	-85.6
1/7/2011	14:42:58	24.56	51.29	33.69	98.0	6.73	0.045	8.15	10.3	-84.8
1/7/2011	14:43:58	24.55	51.20	33.63	97.9	6.73	0.017	8.15	17.1	-84.5
1/7/2011	14:44:58	24.53	50.36	33.01	97.2	6.71	0.011	8.15	17.6	-84.7
1/7/2011	14:46:58	24.54	51.13	33.58	97.6	6.72	0.136	8.14	1.7	-84.8
1/7/2011	14:47:58	24.62	51.20	33.63	97.1	6.67	0.213	8.14	1.6	-84.4
1/7/2011	14:48:28	24.64	51.34	33.73	96.5	6.62	0.259	8.15	1.7	-84.6
1/7/2011	14:48:58	24.63	51.25	33.67	96.5	6.63	0.192	8.14	1.4	-84.6
1/7/2011	14:49:58	24.61	51.18	33.61	96.7	6.65	0.182	8.14	1.4	-84.6
1/7/2011	14:51:58	24.64	51.35	33.74	96.4	6.62	0.078	8.15	1.5	-85.1
1/7/2011	14:52:58	24.65	51.37	33.76	95.6	6.56	0.067	8.14	1.6	-84.9
1/7/2011	14:53:58	24.68	51.37	33.75	95.2	6.53	0.028	8.14	2.1	-84.9
1/7/2011	14:54:58	24.67	51.39	33.77	95.5	6.55	0.083	8.15	1.7	-85.0
1/7/2011	14:56:58	24.66	50.99	33.48	95.8	6.58	-0.001	8.15	2.8	-85.2
1/7/2011	14:57:58	24.67	51.40	33.77	97.0	6.65	0.000	8.16	17.9	-87.6
1/7/2011	14:58:58	24.66	50.91	33.42	96.9	6.66	0.007	8.16	21.7	-89.4
1/7/2011	14:59:58	24.53	50.89	33.40	97.1	6.69	0.008	8.17	30.3	-99.8
1/7/2011	15:01:58	24.64	49.92	32.69	97.3	6.72	0.005	8.16	12.3	-86.7
1/7/2011	15:02:58	24.59	50.85	33.37	97.6	6.72	0.001	8.16	5.2	-85.4
1/7/2011	15:03:58	24.66	51.46	33.82	97.0	6.65	0.124	8.16	1.9	-84.8
1/7/2011	15:04:58	24.71	51.04	33.51	95.3	6.54	0.106	8.14	1.3	-85.1
1/7/2011	15:06:58	24.69	51.08	33.54	94.8	6.51	0.182	8.14	1.5	-85.0
1/7/2011	15:07:58	24.69	51.15	33.59	94.8	6.51	0.180	8.14	1.9	-84.6
1/7/2011	15:08:58	24.64	51.02	33.50	94.7	6.51	0.135	8.14	1.1	-84.4

Table AII.90: (Continued) 2011 West Loch surface water survey YSI data from the 6920 V2.

Date m/d/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/7/2011	15:09:58	24.61	51.07	33.53	95.2	6.55	0.131	8.14	1.2	-84.0
1/7/2011	15:11:58	24.56	49.73	32.55	92.2	6.38	-0.006	8.08	1.7	-84.6
1/7/2011	15:12:58	24.47	49.54	32.41	93.6	6.49	0.116	8.12	1.4	-84.7
1/7/2011	15:13:58	24.66	49.88	32.66	93.5	6.45	0.106	8.10	2.4	-84.0
1/7/2011	15:14:58	24.64	50.24	32.92	92.9	6.40	0.120	8.11	1.5	-84.2
1/7/2011	15:16:58	24.55	49.95	32.71	94.9	6.56	0.131	8.12	1.7	-85.0
1/7/2011	15:17:58	24.56	50.03	32.77	95.1	6.57	0.121	8.12	1.8	-84.6
1/7/2011	15:18:58	24.54	49.90	32.67	95.4	6.60	0.126	8.13	1.8	-84.9
1/7/2011	15:19:58	24.50	49.80	32.60	96.0	6.65	0.144	8.13	1.8	-85.0
1/7/2011	15:21:58	24.26	46.42	30.14	93.6	6.60	-0.007	8.08	4.0	-85.9
1/7/2011	15:22:58	24.20	48.56	31.70	95.7	6.70	0.002	8.13	7.6	-84.8
1/7/2011	15:23:58	24.22	47.61	31.00	97.3	6.83	0.002	8.11	3.8	-84.2
1/7/2011	15:24:58	24.25	49.19	32.16	99.2	6.92	0.121	8.16	2.6	-83.7
1/7/2011	15:26:58	24.43	49.86	32.65	97.3	6.75	0.115	8.14	3.0	-84.2
1/7/2011	15:27:58	24.45	49.95	32.71	97.1	6.72	0.126	8.15	2.2	-83.8
1/7/2011	15:28:58	24.44	49.85	32.64	97.1	6.73	0.138	8.15	2.5	-83.7
1/7/2011	15:29:58	24.42	49.70	32.53	97.4	6.76	0.129	8.15	2.9	-83.7
1/7/2011	15:31:58	24.31	49.49	32.38	97.9	6.81	0.139	8.16	2.3	-83.9
1/7/2011	15:32:58	24.44	49.95	32.71	97.4	6.75	0.164	8.14	2.0	-83.5
1/7/2011	15:33:58	24.38	49.54	32.41	97.3	6.76	0.186	8.14	1.8	-83.5
1/7/2011	15:34:58	24.44	49.93	32.70	97.1	6.73	0.161	8.14	2.0	-83.8
1/7/2011	15:36:58	24.16	49.13	32.12	98.5	6.88	0.015	8.16	169.4	-84.2
1/7/2011	15:37:58	24.42	8.08	4.48	99.8	8.12	0.011	8.16	151.6	-83.4
1/7/2011	15:38:58	24.49	50.49	33.11	101.1	6.98	0.075	8.17	3.3	-82.9
1/7/2011	15:39:58	24.42	50.48	33.10	100.8	6.97	0.132	8.17	1.3	-82.8
1/7/2011	15:41:58	24.42	50.74	33.29	99.6	6.88	0.144	8.17	1.4	-83.2
1/7/2011	15:42:58	24.52	51.10	33.56	99.5	6.85	0.148	8.16	1.7	-82.6
1/7/2011	15:43:58	24.48	51.05	33.52	99.1	6.83	0.148	8.16	1.3	-82.8

Table AII.91: 2011 West Loch intermediate depth water radon survey measurements.

RAD-7 #2357				West Loch Intermediate				eff=0.409 cpm/pCi/L			
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
28	11	1	7	11	11	2	4.6	0.0	0.0	50.0	0.0
29	11	1	7	11	16	6	4.7	83.3	0.0	0.0	0.0
30	11	1	7	11	21	13	4.6	100.0	0.0	0.0	0.0
31	11	1	7	11	26	19	4.6	57.9	0.0	15.8	0.0
32	11	1	7	11	31	14	4.6	78.6	0.0	7.2	0.0
33	11	1	7	11	36	8	4.6	75.0	0.0	0.0	0.0
34	11	1	7	11	41	15	4.6	73.3	0.0	13.3	0.0
35	11	1	7	11	46	21	4.6	66.7	0.0	14.3	0.0
36	11	1	7	11	51	21	4.6	76.2	0.0	19.1	0.0
37	11	1	7	11	56	32	4.6	75.0	0.0	15.6	0.0
38	11	1	7	12	1	34	4.6	82.4	0.0	14.7	0.0
39	11	1	7	12	6	45	4.6	77.8	0.0	13.3	0.0
40	11	1	7	12	11	41	4.6	61.0	0.0	34.2	2.5
41	11	1	7	12	16	33	4.6	54.6	0.0	30.3	0.0
42	11	1	7	12	21	28	4.6	50.0	0.0	42.9	0.0
43	11	1	7	12	26	29	4.6	55.2	0.0	37.9	0.0
44	11	1	7	12	31	32	4.6	53.1	0.0	43.8	0.0
45	11	1	7	12	36	29	4.6	58.6	0.0	37.9	0.0
46	11	1	7	12	41	33	4.6	39.4	6.1	39.4	3.0
47	11	1	7	12	46	25	4.6	48.0	0.0	44.0	0.0
48	11	1	7	12	52	17	4.6	35.3	5.9	58.8	0.0
49	11	1	7	12	57	26	4.6	50.0	3.9	46.2	0.0
50	11	1	7	13	2	30	4.6	30.0	6.7	63.3	0.0
51	11	1	7	13	7	17	4.6	11.8	0.0	82.4	0.0
52	11	1	7	13	12	16	4.6	6.3	0.0	81.3	6.3
53	11	1	7	13	17	11	4.6	9.1	0.0	90.9	0.0
54	11	1	7	13	22	13	4.6	0.0	0.0	100.0	0.0
55	11	1	7	13	27	26	4.6	38.5	7.7	53.9	0.0
56	11	1	7	13	32	38	4.6	39.5	2.6	57.9	0.0
57	11	1	7	13	37	36	4.6	75.0	0.0	19.5	0.0
58	11	1	7	13	42	32	4.6	56.3	0.0	31.3	0.0
59	11	1	7	13	47	27	4.6	66.7	0.0	33.3	0.0
60	11	1	7	13	52	28	4.6	39.3	0.0	53.6	0.0
61	11	1	7	13	57	45	4.6	62.2	2.2	33.3	0.0
62	11	1	7	14	2	51	4.6	72.6	0.0	19.6	0.0
63	11	1	7	14	7	79	4.6	70.9	1.3	19.0	1.3
64	11	1	7	14	12	85	4.6	75.3	0.0	22.4	0.0

Table AII.91: (Continued) 2011 West Loch intermediate depth water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
65	11	1	7	14	17	67	4.6	73.1	1.5	25.4	0.0
66	11	1	7	14	22	63	4.6	50.8	1.6	44.5	0.0
67	11	1	7	14	27	46	4.6	52.2	2.2	39.1	0.0
68	11	1	7	14	32	53	4.6	51.0	1.9	45.3	0.0
69	11	1	7	14	37	42	4.6	45.3	2.4	50.0	0.0
70	11	1	7	14	42	47	4.6	29.8	4.3	59.6	0.0
71	11	1	7	14	47	41	4.6	46.4	2.5	46.4	0.0
72	11	1	7	14	52	56	4.6	37.5	0.0	57.2	0.0
73	11	1	7	14	57	45	4.6	35.6	2.2	55.6	0.0
74	11	1	7	15	2	40	4.6	47.5	0.0	47.5	0.0
75	11	1	7	15	7	37	4.6	51.4	0.0	43.3	0.0
76	11	1	7	15	12	38	4.6	39.5	2.6	55.3	0.0
77	11	1	7	15	17	58	4.6	41.4	1.7	44.8	0.0
78	11	1	7	15	22	65	4.6	69.2	0.0	26.2	0.0
79	11	1	7	15	27	91	4.6	59.4	0.0	38.5	0.0
80	11	1	7	15	32	114	4.6	69.3	0.9	27.2	0.0
81	11	1	7	15	37	83	4.6	66.3	0.0	26.5	0.0
82	11	1	7	15	42	76	4.6	54.0	0.0	38.2	0.0
83	11	1	7	15	47	75	4.6	42.7	1.3	50.7	0.0
84	11	1	7	15	52	61	4.6	36.1	1.7	55.8	0.0
85	11	1	7	15	56	33	2.6	33.3	3.0	60.6	0.0

Table AII.92: 2011 West Loch intermediate depth water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
28	2218	9	25.8	14	2	7.0	70	133	0.000	77.403
29	2218	8	25.8	9	2	7.0	70	133	96.239	132.790
30	2218	9	25.8	8	2	7.0	70	133	251.559	183.509
31	2218	8	25.8	7	2	7.0	70	133	212.858	172.767
32	2218	8	26.1	6	2	7.0	70	133	215.159	174.635
33	2201	9	26.4	6	2	7.0	70	133	117.359	142.621
34	2201	8	26.4	5	2	6.9	70	133	215.159	174.635
35	2218	8	26.8	5	2	7.0	70	133	273.839	190.630
36	2184	8	27.1	5	2	7.0	70	133	312.959	200.415
37	2218	8	27.4	5	2	7.0	70	133	469.438	234.719
38	2218	8	27.4	4	2	7.0	70	133	547.677	249.786

Table AII.92: (Continued) 2011 West Loch intermediate depth water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
39	2218	9	27.4	4	2	7.0	70	133	684.597	273.839
40	2218	8	27.4	4	2	7.0	70	133	469.438	238.593
41	2218	8	27.4	4	2	6.9	70	133	352.078	209.639
42	2218	8	28.0	4	2	6.9	70	133	273.839	190.630
43	2218	8	28.9	4	2	6.9	70	133	312.959	200.415
44	2218	8	29.5	4	2	7.0	70	133	332.518	205.091
45	2218	8	29.5	4	2	7.0	70	133	332.518	205.091
46	2218	8	29.8	4	2	7.0	70	133	254.279	185.493
47	2218	8	30.1	4	2	6.9	70	133	234.719	180.168
48	2218	8	30.4	4	2	6.9	70	133	117.359	142.621
49	2218	8	30.7	4	2	7.0	70	133	254.279	185.493
50	2218	8	30.1	4	2	6.9	70	133	176.039	162.828
51	2218	9	29.8	4	2	6.9	70	133	39.120	106.877
52	2201	9	29.8	4	2	7.0	70	133	19.560	94.444
53	2218	8	29.8	3	2	7.0	70	133	19.560	94.444
54	2201	9	29.5	3	2	7.0	70	133	0.000	78.240
55	2218	8	29.2	3	2	7.0	70	133	195.599	168.866
56	2218	9	29.2	3	2	7.0	70	133	293.399	195.599
57	2218	8	29.5	3	2	7.0	70	133	528.117	246.122
58	2218	8	29.5	3	2	6.9	70	133	352.078	209.639
59	2218	8	29.5	3	2	7.0	70	133	352.078	209.639
60	2218	8	29.8	3	2	6.9	70	133	215.159	174.635
61	2201	9	29.8	3	2	7.0	70	133	547.677	249.786
62	2236	9	29.8	3	2	6.9	70	133	723.716	280.270
63	2218	8	29.5	3	2	7.0	70	133	1075.795	334.468
64	2218	8	29.2	3	2	6.9	70	133	1251.834	354.514
65	2218	8	29.2	3	2	7.0	70	133	958.435	315.739
66	2218	8	29.2	3	2	7.0	70	133	625.917	263.846
67	2218	8	29.2	3	2	7.0	70	133	469.438	234.719
68	2218	9	28.9	3	2	7.0	70	133	528.117	246.122
69	2201	9	28.6	3	2	7.0	70	133	371.638	214.069
70	2218	8	28.3	3	2	7.0	70	133	273.839	190.630
71	2218	9	28.3	3	2	7.0	70	133	371.638	214.069
72	2218	8	28.3	3	2	7.0	70	133	410.758	222.608
73	2218	9	28.0	3	2	7.0	70	133	312.959	200.415
74	2218	8	28.0	3	2	7.0	70	133	371.638	214.069

Table AII.92: (Continued) 2011 West Loch intermediate depth water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
75	2218	8	28.0	2	2	7.0	70	133	371.638	214.069
76	2201	9	28.0	2	2	7.0	70	133	293.399	195.599
77	2218	8	28.0	2	2	7.0	70	133	469.438	234.719
78	2218	8	27.7	2	2	7.0	70	133	880.196	304.443
79	2218	8	27.7	2	2	7.0	70	133	1056.235	329.240
80	2218	8	28.0	2	2	7.0	70	133	1553.630	391.132
81	2201	9	28.3	2	2	6.9	70	133	1075.795	331.866
82	2218	9	28.6	2	2	7.0	70	133	801.956	292.645
83	2218	8	29.2	2	2	7.0	70	133	625.917	263.846
84	2218	8	29.2	3	2	6.5	60	133	430.318	226.732
85	2218	8	29.2	3	2	6.4	0	133	375.513	304.787

Table AII.93: 2011 West Loch intermediate depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 11:07	-6.0	21.57	37.10	1/7/2011 11:26	146.8	25.35	51.40
1/7/2011 11:08	-3.8	21.31	38.06	1/7/2011 11:27	147.1	25.34	51.20
1/7/2011 11:08	-4.1	21.56	39.14	1/7/2011 11:27	148.2	25.36	51.36
1/7/2011 11:09	-4.2	21.37	37.05	1/7/2011 11:28	146.9	25.33	51.20
1/7/2011 11:09	81.1	23.72	48.34	1/7/2011 11:28	149.3	25.34	51.33
1/7/2011 11:10	119.7	24.92	50.42	1/7/2011 11:29	148.7	25.38	51.40
1/7/2011 11:10	124.7	25.02	50.63	1/7/2011 11:29	152.6	25.37	51.31
1/7/2011 11:11	127.9	25.08	50.73	1/7/2011 11:30	152.9	25.41	51.52
1/7/2011 11:11	129.2	25.11	50.75	1/7/2011 11:30	152.9	25.41	51.46
1/7/2011 11:12	129.3	25.10	50.72	1/7/2011 11:31	154.0	25.40	51.42
1/7/2011 11:12	131.2	25.14	50.76	1/7/2011 11:31	155.9	25.27	51.20
1/7/2011 11:13	133.5	25.08	50.70	1/7/2011 11:32	150.7	25.25	51.21
1/7/2011 11:13	133.8	25.18	50.97	1/7/2011 11:32	155.0	25.37	51.42
1/7/2011 11:14	133.3	25.19	50.89	1/7/2011 11:33	157.8	25.42	51.57
1/7/2011 11:14	134.2	25.04	50.64	1/7/2011 11:33	73.8	22.89	45.36
1/7/2011 11:15	135.0	25.13	50.93	1/7/2011 11:34	129.5	25.06	51.12
1/7/2011 11:15	136.1	25.14	50.91	1/7/2011 11:34	157.6	25.19	51.34
1/7/2011 11:16	137.0	25.15	51.09	1/7/2011 11:35	149.3	25.31	51.50
1/7/2011 11:16	138.3	25.28	51.25	1/7/2011 11:35	155.5	25.43	51.78
1/7/2011 11:17	138.5	25.29	51.19	1/7/2011 11:36	159.1	25.28	51.72
1/7/2011 11:17	138.8	25.31	51.23	1/7/2011 11:36	159.3	25.22	51.65
1/7/2011 11:18	139.4	25.30	51.17	1/7/2011 11:37	152.7	25.22	51.74
1/7/2011 11:18	138.7	25.27	51.16	1/7/2011 11:37	47.2	23.88	44.69
1/7/2011 11:19	139.2	25.31	51.30	1/7/2011 11:38	41.9	22.84	44.34
1/7/2011 11:19	141.6	25.35	51.19	1/7/2011 11:38	11.5	22.37	43.22
1/7/2011 11:20	141.1	25.35	51.23	1/7/2011 11:39	36.1	22.41	43.69
1/7/2011 11:20	142.4	25.37	51.34	1/7/2011 11:39	104.9	23.35	49.17
1/7/2011 11:21	141.4	25.37	51.35	1/7/2011 11:40	164.7	25.17	51.97
1/7/2011 11:21	143.1	25.34	51.17	1/7/2011 11:40	170.5	25.31	52.28
1/7/2011 11:22	141.7	25.32	51.20	1/7/2011 11:41	150.0	25.09	51.41
1/7/2011 11:22	143.3	25.31	51.22	1/7/2011 11:41	139.2	25.03	51.30
1/7/2011 11:23	143.6	25.28	51.08	1/7/2011 11:42	131.4	25.16	51.42
1/7/2011 11:23	143.4	25.29	51.25	1/7/2011 11:42	123.7	25.17	51.20
1/7/2011 11:24	145.0	25.34	51.31	1/7/2011 11:43	116.9	25.03	51.03
1/7/2011 11:24	143.9	25.33	51.25	1/7/2011 11:43	117.3	25.07	51.12
1/7/2011 11:25	144.5	25.25	51.10	1/7/2011 11:44	114.2	24.91	52.14
1/7/2011 11:25	145.8	25.36	51.42	1/7/2011 11:44	141.5	25.10	52.50
1/7/2011 11:26	145.9	25.33	51.17	1/7/2011 11:45	6.7	22.88	43.55

Table AII.93 (Continued): 2011 West Loch intermediate depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 11:45	53.8	22.66	44.66	1/7/2011 12:04	181.3	25.46	52.78
1/7/2011 11:46	147.1	25.10	51.71	1/7/2011 12:05	183.4	25.46	52.65
1/7/2011 11:46	158.1	25.02	51.49	1/7/2011 12:05	182.1	25.45	52.70
1/7/2011 11:47	163.7	25.20	51.92	1/7/2011 12:06	182.9	25.47	52.76
1/7/2011 11:47	165.1	25.13	51.76	1/7/2011 12:06	163.1	25.48	52.66
1/7/2011 11:48	155.3	25.25	51.93	1/7/2011 12:07	141.8	25.13	52.08
1/7/2011 11:48	140.6	25.14	51.60	1/7/2011 12:07	142.7	24.95	51.12
1/7/2011 11:49	128.3	25.03	50.72	1/7/2011 12:08	187.2	25.40	52.75
1/7/2011 11:49	154.3	25.16	51.98	1/7/2011 12:08	179.7	25.37	52.80
1/7/2011 11:50	167.6	25.21	52.20	1/7/2011 12:09	180.3	25.34	53.21
1/7/2011 11:50	29.5	22.76	43.89	1/7/2011 12:09	182.6	25.31	53.36
1/7/2011 11:51	27.7	22.70	43.69	1/7/2011 12:10	188.4	25.36	53.27
1/7/2011 11:51	151.5	25.34	52.18	1/7/2011 12:10	181.9	25.35	53.01
1/7/2011 11:52	176.2	25.42	52.43	1/7/2011 12:11	177.9	25.36	53.20
1/7/2011 11:52	176.3	25.48	52.46	1/7/2011 12:11	181.5	25.34	53.04
1/7/2011 11:53	168.5	25.34	52.58	1/7/2011 12:12	181.1	25.37	52.98
1/7/2011 11:53	175.9	25.38	52.36	1/7/2011 12:12	178.1	25.36	53.03
1/7/2011 11:54	176.0	25.39	52.83	1/7/2011 12:13	180.2	25.39	53.29
1/7/2011 11:54	176.0	25.38	52.85	1/7/2011 12:13	180.9	25.39	53.34
1/7/2011 11:55	177.8	25.41	52.87	1/7/2011 12:14	141.3	25.39	52.47
1/7/2011 11:55	161.8	25.38	52.38	1/7/2011 12:14	-5.8	22.57	43.37
1/7/2011 11:56	177.3	25.37	52.82	1/7/2011 12:15	-9.7	22.47	43.61
1/7/2011 11:56	178.1	25.37	52.56	1/7/2011 12:15	-7.2	22.68	44.57
1/7/2011 11:57	142.7	25.44	52.30	1/7/2011 12:16	81.9	24.69	51.48
1/7/2011 11:57	147.0	24.87	51.69	1/7/2011 12:16	64.9	23.36	44.44
1/7/2011 11:58	175.5	25.47	52.56	1/7/2011 12:17	126.0	25.19	52.17
1/7/2011 11:58	179.0	25.32	52.56	1/7/2011 12:17	198.4	25.39	52.91
1/7/2011 11:59	103.6	24.61	45.05	1/7/2011 12:18	190.8	25.40	52.92
1/7/2011 11:59	23.4	22.89	43.82	1/7/2011 12:18	183.0	25.49	52.84
1/7/2011 12:00	-0.8	22.47	43.16	1/7/2011 12:19	182.2	25.41	52.84
1/7/2011 12:00	40.8	22.62	44.51	1/7/2011 12:19	180.6	25.40	52.85
1/7/2011 12:01	135.9	25.14	52.14	1/7/2011 12:20	181.7	25.46	52.82
1/7/2011 12:01	182.2	25.42	52.82	1/7/2011 12:20	181.2	25.40	52.87
1/7/2011 12:02	184.0	25.37	52.84	1/7/2011 12:21	180.0	25.44	52.87
1/7/2011 12:02	167.5	25.53	52.66	1/7/2011 12:21	180.7	25.52	52.84
1/7/2011 12:03	183.3	25.38	52.88	1/7/2011 12:22	179.7	25.49	52.86
1/7/2011 12:03	121.8	25.43	51.61	1/7/2011 12:22	179.8	25.46	52.92
1/7/2011 12:04	136.8	25.18	51.63	1/7/2011 12:23	180.5	25.54	52.79

Table AII.93 (Continued): 2011 West Loch intermediate depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 12:23	177.8	25.50	52.83	1/7/2011 12:42	169.0	25.34	52.85
1/7/2011 12:24	180.4	25.46	52.86	1/7/2011 12:43	172.1	25.35	52.84
1/7/2011 12:24	178.9	25.44	52.93	1/7/2011 12:43	173.2	25.33	52.83
1/7/2011 12:25	178.6	25.45	52.90	1/7/2011 12:44	176.5	25.35	52.83
1/7/2011 12:25	177.7	25.51	52.68	1/7/2011 12:44	178.0	25.35	52.84
1/7/2011 12:26	172.3	25.48	52.75	1/7/2011 12:45	175.8	25.36	52.86
1/7/2011 12:26	172.0	25.51	52.86	1/7/2011 12:45	175.4	25.37	52.79
1/7/2011 12:27	174.1	25.55	52.72	1/7/2011 12:46	178.0	25.38	52.80
1/7/2011 12:27	177.6	25.45	52.85	1/7/2011 12:46	175.6	25.37	52.80
1/7/2011 12:28	178.4	25.44	52.91	1/7/2011 12:47	175.1	25.37	52.84
1/7/2011 12:28	179.2	25.49	52.87	1/7/2011 12:47	174.4	25.42	53.14
1/7/2011 12:29	179.8	25.48	52.85	1/7/2011 12:48	175.1	25.45	53.04
1/7/2011 12:29	184.4	25.52	52.72	1/7/2011 12:48	174.6	25.45	53.21
1/7/2011 12:30	175.8	25.50	52.60	1/7/2011 12:49	176.6	25.38	52.89
1/7/2011 12:30	183.3	25.51	52.63	1/7/2011 12:49	-12.0	23.05	44.80
1/7/2011 12:31	183.8	25.51	52.58	1/7/2011 12:50	-8.2	22.99	44.84
1/7/2011 12:31	179.8	25.52	52.66	1/7/2011 12:50	-20.0	22.91	0.14
1/7/2011 12:32	177.0	25.51	52.54	1/7/2011 12:51	-20.1	22.69	0.16
1/7/2011 12:32	179.4	25.52	52.66	1/7/2011 12:51	-20.0	22.88	2.74
1/7/2011 12:33	176.5	25.50	52.58	1/7/2011 12:52	-20.3	22.51	0.32
1/7/2011 12:33	122.6	24.41	49.90	1/7/2011 12:52	-20.1	21.48	0.38
1/7/2011 12:34	182.5	25.51	52.75	1/7/2011 12:53	-20.1	21.48	0.32
1/7/2011 12:34	158.8	25.46	52.30	1/7/2011 12:53	-20.3	21.35	0.33
1/7/2011 12:35	46.9	22.89	44.56	1/7/2011 12:54	-22.8	21.74	0.16
1/7/2011 12:35	45.6	22.61	44.65	1/7/2011 12:54	-19.9	22.23	0.24
1/7/2011 12:36	0.6	22.49	44.53	1/7/2011 12:55	-20.0	22.52	0.24
1/7/2011 12:36	-4.4	22.66	44.67	1/7/2011 12:55	-19.4	22.63	0.21
1/7/2011 12:37	-10.4	22.74	44.69	1/7/2011 12:56	-20.1	22.65	0.17
1/7/2011 12:37	29.6	22.79	44.89	1/7/2011 12:56	-20.1	22.55	0.18
1/7/2011 12:38	-7.2	22.85	44.80	1/7/2011 12:57	-20.7	22.45	0.15
1/7/2011 12:38	-13.1	22.81	44.74	1/7/2011 12:57	-20.3	22.38	0.12
1/7/2011 12:39	60.4	22.78	44.96	1/7/2011 12:58	-21.4	22.32	0.12
1/7/2011 12:39	180.5	25.30	53.23	1/7/2011 12:58	-21.2	22.38	0.13
1/7/2011 12:40	185.8	25.34	53.22	1/7/2011 12:59	-20.9	22.59	0.13
1/7/2011 12:40	187.2	25.38	53.18	1/7/2011 12:59	-21.0	22.79	0.14
1/7/2011 12:41	179.9	25.37	53.10	1/7/2011 13:00	-20.0	23.22	0.13
1/7/2011 12:41	172.0	25.38	53.04	1/7/2011 13:00	-20.3	23.52	0.13
1/7/2011 12:42	166.1	25.37	52.97	1/7/2011 13:01	-20.2	23.84	0.10

Table AII.93 (Continued): 2011 West Loch intermediate depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 13:01	-20.2	24.15	0.10	1/7/2011 13:20	-20.3	24.31	1.36
1/7/2011 13:02	-19.7	24.20	0.10	1/7/2011 13:21	-13.7	24.25	50.28
1/7/2011 13:02	-20.2	24.11	0.10	1/7/2011 13:21	54.7	24.44	51.47
1/7/2011 13:03	-20.2	23.99	0.10	1/7/2011 13:22	23.6	24.49	51.27
1/7/2011 13:03	-20.0	23.96	0.10	1/7/2011 13:22	24.9	24.43	51.09
1/7/2011 13:04	-20.4	23.98	0.10	1/7/2011 13:23	25.0	24.42	51.08
1/7/2011 13:04	-19.9	24.01	0.10	1/7/2011 13:23	22.5	24.41	51.04
1/7/2011 13:05	-20.4	24.03	0.10	1/7/2011 13:24	21.9	24.39	50.99
1/7/2011 13:05	-20.0	24.04	0.09	1/7/2011 13:24	22.0	24.40	50.99
1/7/2011 13:06	-13.6	24.13	49.96	1/7/2011 13:25	24.2	24.39	50.97
1/7/2011 13:06	-8.3	24.14	49.96	1/7/2011 13:25	22.8	24.36	50.87
1/7/2011 13:07	-10.7	24.08	49.81	1/7/2011 13:26	20.8	24.37	50.84
1/7/2011 13:07	-13.9	24.08	49.84	1/7/2011 13:26	23.2	24.38	50.85
1/7/2011 13:08	-12.8	24.17	50.34	1/7/2011 13:27	23.9	24.35	50.85
1/7/2011 13:08	-11.8	24.19	50.22	1/7/2011 13:27	23.4	24.37	50.84
1/7/2011 13:09	-13.3	24.18	50.15	1/7/2011 13:28	22.7	24.37	50.87
1/7/2011 13:09	-14.3	24.18	50.12	1/7/2011 13:28	26.1	24.38	50.98
1/7/2011 13:10	-18.6	24.19	46.53	1/7/2011 13:29	25.7	24.37	50.97
1/7/2011 13:10	-14.5	24.08	49.82	1/7/2011 13:29	24.4	24.38	50.90
1/7/2011 13:11	-13.0	24.24	50.54	1/7/2011 13:30	21.1	24.38	50.89
1/7/2011 13:11	-16.7	24.22	50.42	1/7/2011 13:30	23.9	24.39	50.92
1/7/2011 13:12	-11.7	24.17	50.13	1/7/2011 13:31	-13.5	24.39	50.84
1/7/2011 13:12	-8.1	24.22	50.38	1/7/2011 13:31	-19.4	24.41	25.42
1/7/2011 13:13	-7.5	24.17	50.19	1/7/2011 13:32	-18.3	24.25	0.88
1/7/2011 13:13	-10.1	24.18	50.18	1/7/2011 13:32	-22.1	23.99	11.08
1/7/2011 13:14	38.6	24.28	50.93	1/7/2011 13:33	-24.2	23.90	2.98
1/7/2011 13:14	90.6	24.34	51.09	1/7/2011 13:33	-19.0	23.83	1.18
1/7/2011 13:15	73.5	24.44	50.88	1/7/2011 13:34	14.2	23.84	48.16
1/7/2011 13:15	20.5	24.15	50.09	1/7/2011 13:34	24.1	23.88	48.17
1/7/2011 13:16	-15.6	24.14	50.07	1/7/2011 13:35	38.1	23.84	48.29
1/7/2011 13:16	-8.6	24.12	49.94	1/7/2011 13:35	8.5	23.82	48.02
1/7/2011 13:17	-10.3	24.13	50.08	1/7/2011 13:36	10.7	23.82	48.00
1/7/2011 13:17	-14.0	24.16	50.15	1/7/2011 13:36	38.5	23.86	48.22
1/7/2011 13:18	-11.2	24.13	49.91	1/7/2011 13:37	36.1	23.87	48.20
1/7/2011 13:18	-22.7	24.07	0.34	1/7/2011 13:37	35.6	23.94	48.46
1/7/2011 13:19	-22.6	24.07	0.57	1/7/2011 13:38	41.1	24.32	50.58
1/7/2011 13:19	-22.2	24.05	0.28	1/7/2011 13:38	40.3	24.51	50.83
1/7/2011 13:20	-20.1	24.22	0.83	1/7/2011 13:39	36.3	24.06	48.63

Table AII.93 (Continued): 2011 West Loch intermediate depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 13:39	0.9	24.38	48.81	1/7/2011 13:58	10.0	23.92	48.15
1/7/2011 13:40	-7.1	23.90	48.31	1/7/2011 13:59	11.1	23.88	47.64
1/7/2011 13:40	-11.8	23.83	47.92	1/7/2011 13:59	11.6	23.89	48.01
1/7/2011 13:41	-14.8	23.80	47.40	1/7/2011 14:00	3.5	23.84	47.48
1/7/2011 13:41	-18.5	23.76	46.17	1/7/2011 14:00	-18.0	23.79	47.54
1/7/2011 13:42	-19.2	23.77	46.87	1/7/2011 14:01	-19.1	23.55	13.22
1/7/2011 13:42	-21.3	23.76	45.49	1/7/2011 14:01	7.1	24.07	50.88
1/7/2011 13:43	-19.0	23.79	46.97	1/7/2011 14:02	-20.6	23.54	0.79
1/7/2011 13:43	-6.3	23.83	47.81	1/7/2011 14:02	-20.1	23.65	4.00
1/7/2011 13:44	-11.6	23.85	47.82	1/7/2011 14:03	-20.1	23.81	8.70
1/7/2011 13:44	-18.5	23.86	47.26	1/7/2011 14:03	-19.6	24.23	5.76
1/7/2011 13:45	-20.1	23.85	1.00	1/7/2011 14:04	-20.2	24.36	6.44
1/7/2011 13:45	-18.5	23.84	23.99	1/7/2011 14:04	-19.8	24.40	4.25
1/7/2011 13:46	-20.9	23.65	45.95	1/7/2011 14:05	-21.0	24.50	2.32
1/7/2011 13:46	-15.7	23.60	45.70	1/7/2011 14:05	-20.4	24.60	1.95
1/7/2011 13:47	-5.4	23.65	47.26	1/7/2011 14:06	-22.4	24.66	13.84
1/7/2011 13:47	-10.0	23.65	47.25	1/7/2011 14:06	-21.3	24.62	6.00
1/7/2011 13:48	-13.2	23.89	48.06	1/7/2011 14:07	-19.3	24.63	2.88
1/7/2011 13:48	-11.4	24.05	48.13	1/7/2011 14:07	-19.8	24.49	1.56
1/7/2011 13:49	-11.0	24.09	47.87	1/7/2011 14:08	-22.1	24.47	1.29
1/7/2011 13:49	-10.5	24.05	47.87	1/7/2011 14:08	-18.6	24.62	1.50
1/7/2011 13:50	-19.3	23.72	47.14	1/7/2011 14:09	-23.1	24.64	25.76
1/7/2011 13:50	-19.9	23.70	1.40	1/7/2011 14:09	-19.5	24.49	0.92
1/7/2011 13:51	-18.9	23.63	3.95	1/7/2011 14:10	-19.8	24.40	0.16
1/7/2011 13:51	-19.9	23.60	0.19	1/7/2011 14:10	-19.9	24.67	0.14
1/7/2011 13:52	-20.1	23.63	0.55	1/7/2011 14:11	-20.2	24.81	0.14
1/7/2011 13:52	-21.2	23.57	0.55	1/7/2011 14:11	-20.0	24.96	0.13
1/7/2011 13:53	-21.2	23.54	0.26	1/7/2011 14:12	-20.0	25.20	0.13
1/7/2011 13:53	12.3	23.62	47.18	1/7/2011 14:12	-20.0	25.34	0.13
1/7/2011 13:54	17.0	23.67	47.34	1/7/2011 14:13	-19.8	25.52	0.13
1/7/2011 13:54	14.4	23.68	47.29	1/7/2011 14:13	-19.7	25.61	0.12
1/7/2011 13:55	12.0	23.72	47.48	1/7/2011 14:14	-20.0	25.76	0.12
1/7/2011 13:55	11.6	23.70	47.38	1/7/2011 14:14	-19.8	25.92	0.13
1/7/2011 13:56	12.3	23.71	47.51	1/7/2011 14:15	-20.0	26.08	0.13
1/7/2011 13:56	8.0	23.72	47.46	1/7/2011 14:15	-20.0	26.20	0.14
1/7/2011 13:57	9.9	23.73	47.58	1/7/2011 14:16	-19.9	26.27	0.14
1/7/2011 13:57	8.7	23.78	47.97	1/7/2011 14:16	-19.5	26.38	0.14
1/7/2011 13:58	8.9	23.93	47.99	1/7/2011 14:17	-19.5	26.43	0.14

Table AII.93 (Continued): 2011 West Loch intermediate depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 14:17	-19.5	26.48	0.14	1/7/2011 14:36	-4.4	24.58	52.36
1/7/2011 14:18	-19.6	26.44	0.14	1/7/2011 14:37	-1.8	24.59	52.29
1/7/2011 14:18	-19.6	26.40	0.13	1/7/2011 14:37	-0.8	24.63	52.52
1/7/2011 14:19	-19.4	26.39	0.14	1/7/2011 14:38	-0.7	24.64	52.50
1/7/2011 14:19	-19.8	26.39	0.14	1/7/2011 14:38	2.4	24.68	52.67
1/7/2011 14:20	-19.6	26.38	0.15	1/7/2011 14:39	2.4	24.69	52.68
1/7/2011 14:20	-19.8	26.32	0.15	1/7/2011 14:39	61.1	24.67	52.90
1/7/2011 14:21	-19.7	26.29	0.16	1/7/2011 14:40	50.5	24.64	52.76
1/7/2011 14:21	-19.9	26.24	0.16	1/7/2011 14:40	-5.3	24.61	52.54
1/7/2011 14:22	-19.5	26.30	0.17	1/7/2011 14:41	-6.6	24.62	52.58
1/7/2011 14:22	-19.9	26.29	0.17	1/7/2011 14:41	-15.9	24.56	52.46
1/7/2011 14:23	-19.7	26.00	0.14	1/7/2011 14:42	-13.2	24.60	52.56
1/7/2011 14:23	-19.7	25.93	0.16	1/7/2011 14:42	-17.8	24.61	52.46
1/7/2011 14:24	-19.8	25.80	0.16	1/7/2011 14:43	61.4	24.62	52.86
1/7/2011 14:24	-19.7	25.70	0.16	1/7/2011 14:43	-6.6	24.60	52.60
1/7/2011 14:25	-19.7	25.60	0.16	1/7/2011 14:44	-13.9	24.56	29.98
1/7/2011 14:25	-19.7	25.44	0.16	1/7/2011 14:44	-18.7	24.56	51.42
1/7/2011 14:26	-19.7	25.35	0.17	1/7/2011 14:45	-8.6	24.58	52.59
1/7/2011 14:26	-19.7	25.27	0.17	1/7/2011 14:45	-2.3	24.55	52.65
1/7/2011 14:27	-19.5	25.17	0.17	1/7/2011 14:46	29.2	24.58	52.76
1/7/2011 14:27	-19.8	25.13	0.17	1/7/2011 14:46	8.6	24.57	52.63
1/7/2011 14:28	-19.7	25.05	0.17	1/7/2011 14:47	44.9	24.62	52.76
1/7/2011 14:28	-19.7	24.94	0.17	1/7/2011 14:47	48.0	24.61	52.66
1/7/2011 14:29	-20.1	24.84	0.17	1/7/2011 14:48	45.5	24.67	52.88
1/7/2011 14:29	-20.0	24.77	0.16	1/7/2011 14:48	49.9	24.68	52.92
1/7/2011 14:30	-19.9	24.71	0.17	1/7/2011 14:49	50.3	24.69	52.87
1/7/2011 14:30	-19.9	24.63	0.17	1/7/2011 14:49	49.0	24.68	52.91
1/7/2011 14:31	-19.7	24.43	0.17	1/7/2011 14:50	53.1	24.64	52.71
1/7/2011 14:31	-20.0	24.27	0.17	1/7/2011 14:50	-10.8	24.63	52.60
1/7/2011 14:32	-19.9	24.25	0.18	1/7/2011 14:51	5.6	24.64	52.72
1/7/2011 14:32	-19.8	24.15	0.17	1/7/2011 14:51	32.9	24.65	52.81
1/7/2011 14:33	-19.8	24.22	0.18	1/7/2011 14:52	29.1	24.67	52.82
1/7/2011 14:33	-19.8	24.25	0.22	1/7/2011 14:52	-19.6	23.79	0.18
1/7/2011 14:34	-4.4	24.64	52.32	1/7/2011 14:53	-19.4	23.17	0.15
1/7/2011 14:34	-4.7	24.52	51.93	1/7/2011 14:53	-19.4	22.63	0.15
1/7/2011 14:35	-1.9	24.65	52.49	1/7/2011 14:54	-19.6	22.41	0.15
1/7/2011 14:35	-1.6	24.53	52.09	1/7/2011 14:54	-19.4	22.15	0.14
1/7/2011 14:36	-2.1	24.51	52.26	1/7/2011 14:55	-19.6	22.07	0.14

Table AII.93 (Continued): 2011 West Loch intermediate depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 14:55	-19.6	21.95	0.15	1/7/2011 15:14	12.6	24.62	51.62
1/7/2011 14:56	-19.2	21.91	0.16	1/7/2011 15:15	12.2	24.62	51.59
1/7/2011 14:56	-19.3	21.94	0.16	1/7/2011 15:15	11.9	24.62	51.32
1/7/2011 14:57	-19.6	21.95	0.16	1/7/2011 15:16	13.6	24.56	51.25
1/7/2011 14:57	-19.4	21.91	0.16	1/7/2011 15:16	12.4	24.57	51.37
1/7/2011 14:58	-19.8	21.88	0.16	1/7/2011 15:17	14.9	24.47	51.25
1/7/2011 14:58	-19.6	21.90	0.17	1/7/2011 15:17	14.0	24.49	51.04
1/7/2011 14:59	-19.6	21.92	0.17	1/7/2011 15:18	14.7	24.49	51.00
1/7/2011 14:59	-19.8	21.88	0.17	1/7/2011 15:18	15.1	24.47	51.05
1/7/2011 15:00	-19.5	21.79	0.17	1/7/2011 15:19	14.5	24.46	51.02
1/7/2011 15:00	-19.7	21.84	0.18	1/7/2011 15:19	13.8	24.44	51.06
1/7/2011 15:01	-19.6	21.86	0.17	1/7/2011 15:20	-11.7	24.51	51.32
1/7/2011 15:01	-19.6	21.78	0.17	1/7/2011 15:20	-18.8	24.48	10.74
1/7/2011 15:02	-19.6	21.75	0.17	1/7/2011 15:21	8.0	24.47	51.03
1/7/2011 15:02	-19.7	21.68	0.17	1/7/2011 15:21	-18.9	24.40	4.53
1/7/2011 15:03	-19.4	21.68	0.18	1/7/2011 15:22	-18.6	23.33	0.59
1/7/2011 15:03	-19.5	21.71	0.17	1/7/2011 15:22	-19.6	23.96	0.88
1/7/2011 15:04	-19.5	21.70	0.17	1/7/2011 15:23	-19.5	24.24	7.59
1/7/2011 15:04	-19.5	21.70	0.17	1/7/2011 15:23	-19.6	24.25	8.70
1/7/2011 15:05	-19.6	21.65	0.16	1/7/2011 15:24	-19.4	24.12	4.21
1/7/2011 15:05	-10.6	24.45	52.16	1/7/2011 15:24	13.7	24.38	51.24
1/7/2011 15:06	-9.2	24.69	51.93	1/7/2011 15:25	14.3	24.29	50.70
1/7/2011 15:06	-6.1	24.69	52.09	1/7/2011 15:25	17.4	24.46	51.60
1/7/2011 15:07	-5.1	24.70	52.13	1/7/2011 15:26	12.3	24.49	51.51
1/7/2011 15:07	-5.0	24.70	52.12	1/7/2011 15:26	17.0	24.54	51.77
1/7/2011 15:08	-1.0	24.69	52.11	1/7/2011 15:27	16.8	24.51	51.61
1/7/2011 15:08	1.9	24.66	52.05	1/7/2011 15:27	18.5	24.49	51.50
1/7/2011 15:09	2.5	24.64	52.10	1/7/2011 15:28	15.7	24.49	51.51
1/7/2011 15:09	1.2	24.62	51.95	1/7/2011 15:28	17.0	24.42	51.21
1/7/2011 15:10	4.7	24.59	51.92	1/7/2011 15:29	19.5	24.42	51.37
1/7/2011 15:10	5.9	24.54	51.83	1/7/2011 15:29	19.1	24.46	51.46
1/7/2011 15:11	-19.3	24.30	5.30	1/7/2011 15:30	13.3	24.46	51.44
1/7/2011 15:11	-19.5	24.21	6.72	1/7/2011 15:30	18.8	24.53	51.04
1/7/2011 15:12	-20.0	24.44	1.18	1/7/2011 15:31	21.2	24.44	51.52
1/7/2011 15:12	-19.1	24.12	5.93	1/7/2011 15:31	16.8	24.45	51.37
1/7/2011 15:13	7.6	24.53	50.80	1/7/2011 15:32	15.8	24.46	51.54
1/7/2011 15:13	8.7	24.59	51.05	1/7/2011 15:32	171.7	24.69	53.00
1/7/2011 15:14	11.6	24.59	51.28	1/7/2011 15:33	189.0	24.71	53.17

Table AII.93 (Continued): 2011 West Loch intermediate depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 15:33	186.7	24.72	53.20	1/7/2011 15:46	-19.4	22.67	0.16
1/7/2011 15:34	185.8	24.74	53.37	1/7/2011 15:47	-19.4	22.16	0.20
1/7/2011 15:34	188.0	24.75	53.44	1/7/2011 15:47	-19.6	21.85	0.22
1/7/2011 15:35	193.9	24.75	53.46	1/7/2011 15:48	-19.5	21.61	0.22
1/7/2011 15:35	183.2	24.75	53.41	1/7/2011 15:48	-19.0	21.38	0.16
1/7/2011 15:36	51.9	24.54	51.52	1/7/2011 15:49	-19.4	21.32	0.18
1/7/2011 15:36	-20.2	24.14	13.46	1/7/2011 15:49	-19.1	21.14	0.25
1/7/2011 15:37	-19.6	24.25	50.66	1/7/2011 15:50	-19.5	21.06	0.24
1/7/2011 15:37	-21.1	24.49	14.60	1/7/2011 15:50	-19.6	21.01	0.26
1/7/2011 15:38	-19.7	24.47	3.42	1/7/2011 15:51	-19.5	20.98	0.26
1/7/2011 15:38	-4.6	24.52	51.81	1/7/2011 15:51	-19.6	21.00	0.26
1/7/2011 15:39	30.0	24.64	52.83	1/7/2011 15:52	-19.8	20.98	0.26
1/7/2011 15:39	36.6	24.60	52.76	1/7/2011 15:52	-19.5	21.08	0.26
1/7/2011 15:40	35.7	24.53	52.60	1/7/2011 15:53	-19.6	21.16	0.25
1/7/2011 15:40	35.2	24.51	52.64	1/7/2011 15:53	-19.4	21.18	0.25
1/7/2011 15:41	34.2	24.50	52.60	1/7/2011 15:54	-19.6	21.25	0.26
1/7/2011 15:41	33.1	24.50	52.61	1/7/2011 15:54	-19.7	21.31	0.26
1/7/2011 15:42	30.4	24.51	52.64	1/7/2011 15:55	-19.5	21.33	0.25
1/7/2011 15:42	31.8	24.52	52.66	1/7/2011 15:55	-19.7	21.30	0.18
1/7/2011 15:43	32.3	24.50	52.60	1/7/2011 15:56	-19.7	21.38	0.18
1/7/2011 15:43	31.3	24.52	52.76	1/7/2011 15:56	-19.7	21.33	0.16
1/7/2011 15:44	33.6	24.50	52.63	1/7/2011 15:57	-19.7	21.32	0.16
1/7/2011 15:44	-19.7	24.45	0.82	1/7/2011 15:57	-19.7	21.32	0.17
1/7/2011 15:45	-19.3	24.12	0.13	1/7/2011 15:58	-19.8	21.34	0.14
1/7/2011 15:45	-19.2	23.90	0.13	1/7/2011 15:58	-19.7	21.58	0.15
1/7/2011 15:46	-19.5	23.53	0.13	1/7/2011 15:58	-19.7	21.58	0.15

Table AII.94: 2011 West Loch deep water radon survey measurements.

RAD-7 #2356				West Loch Deep				eff=0.416 cpm/pCi/L			
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
10	11	1	7	10	47	5	4.6	40.0	0.0	60.0	0.0
11	11	1	7	10	52	6	4.6	50.0	0.0	50.0	0.0
12	11	1	7	10	57	4	4.6	25.0	0.0	75.0	0.0
13	11	1	7	11	2	13	4.6	38.5	7.7	53.9	0.0
14	11	1	7	11	7	14	4.6	64.3	7.2	28.6	0.0
15	11	1	7	11	12	7	4.6	0.0	0.0	71.4	0.0
16	11	1	7	11	17	8	4.6	37.5	12.5	50.0	0.0
17	11	1	7	11	22	10	4.6	20.0	0.0	60.0	0.0
18	11	1	7	11	27	8	4.6	75.0	0.0	25.0	0.0
19	11	1	7	11	32	21	4.6	61.9	0.0	28.6	4.8
20	11	1	7	11	37	9	4.6	55.6	0.0	44.5	0.0
21	11	1	7	11	42	18	4.6	66.7	0.0	33.3	0.0
22	11	1	7	11	47	19	4.6	63.2	5.3	26.3	0.0
23	11	1	7	11	52	29	4.6	75.9	0.0	17.3	0.0
24	11	1	7	11	57	31	4.6	67.8	0.0	29.0	3.2
25	11	1	7	12	2	18	4.6	88.9	0.0	11.1	0.0
26	11	1	7	12	7	40	4.6	70.0	5.0	22.5	0.0
27	11	1	7	12	12	24	4.6	87.5	0.0	12.5	0.0
28	11	1	7	12	17	30	4.6	60.0	3.3	30.0	0.0
29	11	1	7	12	22	24	4.6	58.3	0.0	37.5	0.0
30	11	1	7	12	27	34	4.6	38.2	0.0	47.1	5.9
31	11	1	7	12	32	27	4.6	55.6	0.0	40.8	0.0
32	11	1	7	12	37	13	4.6	53.9	0.0	46.2	0.0
33	11	1	7	12	42	26	4.6	42.3	0.0	57.7	0.0
34	11	1	7	12	47	33	4.6	33.3	6.1	60.6	0.0
35	11	1	7	12	52	19	4.6	26.3	0.0	73.7	0.0
36	11	1	7	12	57	21	4.6	28.6	0.0	71.4	0.0
37	11	1	7	13	2	12	4.6	16.7	0.0	83.3	0.0
38	11	1	7	13	8	15	4.6	20.0	0.0	80.0	0.0
39	11	1	7	13	13	19	4.6	15.8	0.0	84.2	0.0
40	11	1	7	13	18	6	4.6	16.7	0.0	83.3	0.0
41	11	1	7	13	23	16	4.6	25.0	12.5	62.5	0.0
42	11	1	7	13	28	13	4.6	30.8	0.0	61.6	0.0
43	11	1	7	13	33	12	4.6	8.3	0.0	66.7	0.0
44	11	1	7	13	38	14	4.6	28.6	0.0	71.4	0.0
45	11	1	7	13	43	17	4.6	17.7	11.8	70.6	0.0
46	11	1	7	13	48	20	4.6	50.0	0.0	35.0	5.0

Table AII.94: (Continued) 2011 West Loch deep water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
47	11	1	7	13	53	40	4.6	57.5	0.0	37.5	0.0
48	11	1	7	13	58	33	4.6	69.7	0.0	27.3	3.0
49	11	1	7	14	3	34	4.6	55.9	0.0	35.3	0.0
50	11	1	7	14	8	30	4.6	73.3	0.0	20.0	0.0
51	11	1	7	14	13	45	4.6	71.1	2.2	17.8	0.0
52	11	1	7	14	18	38	4.6	68.4	2.6	23.7	2.6
53	11	1	7	14	23	32	4.6	68.8	0.0	28.1	0.0
54	11	1	7	14	28	37	4.6	54.1	0.0	29.7	2.7
55	11	1	7	14	33	29	4.6	55.2	0.0	41.4	0.0
56	11	1	7	14	38	34	4.6	44.1	0.0	53.0	0.0
57	11	1	7	14	43	24	4.6	58.3	0.0	37.5	0.0
58	11	1	7	14	48	28	4.6	32.2	3.6	53.6	3.6
59	11	1	7	14	53	40	4.6	42.5	7.5	47.5	2.5
60	11	1	7	14	58	32	4.6	43.8	0.0	40.6	6.3
61	11	1	7	15	3	27	4.6	22.2	3.7	63.0	7.4
62	11	1	7	15	8	25	4.6	36.0	0.0	56.0	4.0
63	11	1	7	15	13	19	4.6	42.1	0.0	52.6	5.3
64	11	1	7	15	18	24	4.6	33.3	0.0	54.2	8.3
65	11	1	7	15	23	27	4.6	18.5	0.0	74.1	0.0
66	11	1	7	15	28	28	4.6	53.6	3.6	39.3	0.0
67	11	1	7	15	33	33	4.6	51.5	0.0	42.4	0.0
68	11	1	7	15	38	22	4.6	45.5	0.0	54.6	0.0
69	11	1	7	15	43	27	4.6	51.9	0.0	48.2	0.0
70	11	1	7	15	48	25	4.6	28.0	0.0	64.0	4.0
71	11	1	7	15	53	21	4.6	38.1	0.0	52.4	0.0
72	11	1	7	15	57	12	3.7	8.3	0.0	91.7	0.0

Table AII.95: 2011 West Loch deep water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
10	2218	8	24.3	18	1	6.9	70	133	38.050	103.955
11	2201	9	24.6	14	1	6.9	70	133	57.382	114.764
12	2218	9	24.9	11	1	6.9	70	133	19.127	92.355
13	2201	9	25.2	10	1	6.9	70	133	96.676	133.394
14	2218	8	25.5	10	1	6.9	70	133	174.018	160.958
15	2218	8	25.5	9	1	6.9	70	133	0.000	77.341
16	2218	8	25.5	9	1	6.9	70	133	57.075	114.151

Table AII.95: (Continued) 2011 West Loch deep water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
17	2218	8	25.5	8	1	6.9	70	133	38.050	103.955
18	2218	9	25.8	8	1	6.9	70	133	114.151	138.722
19	2218	9	26.1	8	1	6.9	70	133	250.000	182.371
20	2218	9	26.1	8	1	6.9	70	133	96.676	133.394
21	2218	8	26.8	8	1	6.9	70	133	232.024	178.099
22	2218	8	26.8	7	1	6.9	70	133	232.024	178.099
23	2218	9	27.1	7	1	6.9	70	133	425.376	224.128
24	2201	9	27.4	7	1	6.9	70	133	406.041	220.052
25	2218	8	27.4	7	1	6.9	70	133	309.365	198.113
26	2201	9	27.4	7	1	6.9	70	133	541.388	246.918
27	2218	9	27.1	7	1	6.9	70	133	406.041	220.052
28	2201	9	27.1	7	1	6.9	70	133	348.035	207.232
29	2201	9	27.7	7	1	6.9	70	133	270.694	188.441
30	2218	8	28.3	7	1	6.9	70	133	232.024	183.363
31	2218	8	28.9	7	1	6.9	70	133	290.029	193.353
32	2218	8	29.2	7	1	6.9	70	133	135.347	148.047
33	2218	8	29.2	7	2	6.9	70	133	212.688	172.629
34	2218	8	29.5	7	2	6.9	70	133	212.688	172.629
35	2218	8	29.8	7	2	6.9	70	133	96.676	133.394
36	2218	8	30.1	7	2	6.9	70	133	116.012	140.983
37	2218	8	29.5	7	2	6.9	70	133	38.671	105.650
38	2218	9	29.2	6	2	6.9	70	133	58.006	116.012
39	2218	9	29.2	7	1	6.9	70	133	58.006	116.012
40	2218	9	29.2	7	1	6.9	70	133	19.335	93.359
41	2218	9	28.9	6	1	6.9	70	133	77.341	125.141
42	2218	8	28.6	6	1	6.9	70	133	77.341	125.141
43	2218	8	28.9	6	1	6.9	70	133	19.335	93.359
44	2201	8	28.9	6	1	6.9	70	133	77.341	125.141
45	2218	9	29.2	6	1	6.9	70	133	58.006	116.012
46	2218	8	29.2	6	1	6.9	70	133	193.353	166.926
47	2218	8	29.2	6	1	6.9	70	133	444.712	228.117
48	2218	8	29.5	6	1	6.9	70	133	444.712	228.117
49	2218	8	29.5	6	1	6.9	70	133	367.371	211.611
50	2218	8	29.2	6	1	6.9	70	133	425.376	224.128
51	2218	8	29.2	6	1	6.9	70	133	618.729	260.816
52	2218	8	28.9	6	1	6.9	70	133	502.717	239.609

Table AII.95: (Continued) 2011 West Loch deep water survey radon measurements continued. All "Units Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
53	2218	9	28.9	6	1	6.9	70	133	425.376	224.128
54	2236	9	28.9	6	1	6.9	70	133	367.371	215.881
55	2218	9	28.6	6	1	6.9	70	133	309.365	198.113
56	2218	8	28.3	6	1	6.9	70	133	290.029	193.353
57	2218	9	28.3	6	1	6.9	70	133	270.694	188.441
58	2218	9	28.0	6	1	6.9	70	133	174.018	160.958
59	2218	8	28.0	6	1	6.9	70	133	328.700	202.736
60	2218	8	28.0	6	1	6.9	70	133	251.359	188.441
61	2201	9	27.7	6	1	6.9	70	133	96.676	148.047
62	2218	8	27.7	6	1	6.9	70	133	174.018	160.958
63	2218	9	27.7	6	1	6.9	70	133	154.682	154.682
64	2218	8	27.7	6	1	6.9	70	133	135.347	154.682
65	2218	8	27.7	6	1	6.9	70	133	96.676	133.394
66	2201	9	27.7	6	1	6.9	70	133	290.029	193.353
67	2218	9	28.0	6	1	6.9	70	133	328.700	202.736
68	2218	9	28.0	6	1	6.9	70	133	193.353	166.926
69	2218	9	28.6	6	1	6.9	70	133	270.694	188.441
70	2218	8	29.2	6	1	6.9	70	133	135.347	148.047
71	2201	9	29.5	6	1	6.5	70	133	154.682	154.682
72	2218	8	29.2	6	1	6.2	70	133	24.038	116.068

Table AII.96: 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 10:43	32	22.47	44.00	1/7/2011 11:02	416	25.09	52.75
1/7/2011 10:44	90	22.70	45.37	1/7/2011 11:03	416	25.09	52.76
1/7/2011 10:44	415	24.92	52.67	1/7/2011 11:03	415	25.10	52.74
1/7/2011 10:45	399	24.98	52.80	1/7/2011 11:04	417	25.10	52.76
1/7/2011 10:45	395	25.00	52.82	1/7/2011 11:04	417	25.10	52.75
1/7/2011 10:46	400	25.01	52.82	1/7/2011 11:05	418	25.11	52.71
1/7/2011 10:46	405	25.01	52.82	1/7/2011 11:05	415	25.11	52.70
1/7/2011 10:47	406	25.01	52.81	1/7/2011 11:06	416	25.12	52.71
1/7/2011 10:47	403	25.01	52.82	1/7/2011 11:06	416	25.12	52.69
1/7/2011 10:48	402	25.02	52.82	1/7/2011 11:07	416	25.12	52.70
1/7/2011 10:48	400	25.02	52.82	1/7/2011 11:07	416	25.12	52.69
1/7/2011 10:49	400	25.03	52.82	1/7/2011 11:08	416	25.13	52.69
1/7/2011 10:49	419	25.03	52.82	1/7/2011 11:08	416	25.13	52.69
1/7/2011 10:50	418	25.03	52.82	1/7/2011 11:09	415	25.13	52.69
1/7/2011 10:50	419	25.03	52.83	1/7/2011 11:09	416	25.13	52.70
1/7/2011 10:51	417	25.03	52.82	1/7/2011 11:10	417	25.12	52.69
1/7/2011 10:51	417	25.03	52.81	1/7/2011 11:10	417	25.12	52.68
1/7/2011 10:52	417	25.04	52.82	1/7/2011 11:11	417	25.11	52.69
1/7/2011 10:52	418	25.04	52.82	1/7/2011 11:11	417	25.11	52.69
1/7/2011 10:53	418	25.04	52.82	1/7/2011 11:12	417	25.11	52.68
1/7/2011 10:53	417	25.04	52.82	1/7/2011 11:12	418	25.10	52.72
1/7/2011 10:54	417	25.05	52.82	1/7/2011 11:13	418	25.11	52.68
1/7/2011 10:54	418	25.05	52.77	1/7/2011 11:13	417	25.11	52.68
1/7/2011 10:55	419	25.05	52.76	1/7/2011 11:14	416	25.11	52.67
1/7/2011 10:55	419	25.05	52.74	1/7/2011 11:14	417	25.11	52.68
1/7/2011 10:56	418	25.06	52.72	1/7/2011 11:15	416	25.11	52.67
1/7/2011 10:56	418	25.06	52.67	1/7/2011 11:15	415	25.11	52.68
1/7/2011 10:57	416	25.07	52.76	1/7/2011 11:16	415	25.11	52.69
1/7/2011 10:57	418	25.07	52.75	1/7/2011 11:16	415	25.11	52.68
1/7/2011 10:58	418	25.07	52.74	1/7/2011 11:17	415	25.11	52.68
1/7/2011 10:58	418	25.07	52.74	1/7/2011 11:17	414	25.11	52.68
1/7/2011 10:59	417	25.07	52.74	1/7/2011 11:18	414	25.11	52.68
1/7/2011 10:59	416	25.07	52.75	1/7/2011 11:18	413	25.11	52.68
1/7/2011 11:00	416	25.07	52.76	1/7/2011 11:19	412	25.11	52.71
1/7/2011 11:00	417	25.07	52.75	1/7/2011 11:19	411	25.11	52.69
1/7/2011 11:01	416	25.07	52.74	1/7/2011 11:20	412	25.12	52.62
1/7/2011 11:01	415	25.08	52.76	1/7/2011 11:20	419	25.13	52.68
1/7/2011 11:02	415	25.09	52.75	1/7/2011 11:21	419	25.13	52.69

Table AII.96: (Continued) 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 11:21	419	25.13	52.66	1/7/2011 11:40	107	24.71	50.15
1/7/2011 11:22	419	25.14	52.68	1/7/2011 11:41	132	23.05	43.87
1/7/2011 11:22	420	25.15	52.62	1/7/2011 11:41	110	24.02	47.19
1/7/2011 11:23	418	25.15	52.66	1/7/2011 11:42	107	24.77	49.62
1/7/2011 11:23	418	25.15	52.68	1/7/2011 11:42	113	24.01	48.18
1/7/2011 11:24	415	25.16	52.68	1/7/2011 11:43	106	24.59	50.46
1/7/2011 11:24	412	25.16	52.60	1/7/2011 11:43	111	24.65	49.42
1/7/2011 11:25	413	25.16	52.62	1/7/2011 11:44	107	25.03	50.16
1/7/2011 11:25	413	25.17	52.61	1/7/2011 11:44	119	24.99	50.54
1/7/2011 11:26	413	25.17	52.60	1/7/2011 11:45	113	24.28	47.92
1/7/2011 11:26	413	25.17	52.59	1/7/2011 11:45	79	22.75	44.28
1/7/2011 11:27	416	25.17	52.62	1/7/2011 11:46	113	24.73	50.03
1/7/2011 11:27	416	25.18	52.63	1/7/2011 11:46	119	24.74	49.78
1/7/2011 11:28	416	25.18	52.63	1/7/2011 11:47	158	25.16	50.80
1/7/2011 11:28	419	25.18	52.64	1/7/2011 11:47	160	25.16	50.87
1/7/2011 11:29	420	25.17	52.62	1/7/2011 11:48	158	25.19	51.02
1/7/2011 11:29	419	25.17	52.62	1/7/2011 11:48	152	25.18	50.62
1/7/2011 11:30	420	25.17	52.60	1/7/2011 11:49	134	25.10	50.46
1/7/2011 11:30	420	25.16	52.61	1/7/2011 11:49	102	23.86	46.62
1/7/2011 11:31	419	25.16	52.62	1/7/2011 11:50	78	22.97	43.92
1/7/2011 11:31	420	25.16	52.62	1/7/2011 11:50	142	25.38	50.94
1/7/2011 11:32	416	25.15	52.68	1/7/2011 11:51	86	22.86	44.38
1/7/2011 11:32	421	25.15	52.62	1/7/2011 11:51	136	25.27	51.28
1/7/2011 11:33	371	25.17	52.62	1/7/2011 11:52	164	25.42	51.35
1/7/2011 11:33	151	25.36	51.10	1/7/2011 11:52	186	25.38	51.37
1/7/2011 11:34	151	25.08	50.83	1/7/2011 11:53	179	25.28	51.52
1/7/2011 11:34	155	25.14	50.90	1/7/2011 11:53	181	25.33	51.29
1/7/2011 11:35	137	25.17	50.86	1/7/2011 11:54	181	25.37	51.71
1/7/2011 11:35	127	25.09	50.58	1/7/2011 11:54	183	25.34	51.74
1/7/2011 11:36	125	25.03	50.57	1/7/2011 11:55	182	25.38	51.72
1/7/2011 11:36	117	25.13	50.88	1/7/2011 11:55	179	25.36	51.52
1/7/2011 11:37	120	24.98	50.36	1/7/2011 11:56	183	25.37	51.68
1/7/2011 11:37	114	25.10	50.86	1/7/2011 11:56	181	25.35	51.58
1/7/2011 11:38	107	24.32	46.91	1/7/2011 11:57	170	25.28	51.29
1/7/2011 11:38	42	22.53	43.33	1/7/2011 11:57	153	24.76	50.64
1/7/2011 11:39	40	22.47	43.45	1/7/2011 11:58	181	25.43	51.37
1/7/2011 11:39	79	23.13	45.84	1/7/2011 11:58	187	25.32	51.39
1/7/2011 11:40	97	24.50	49.58	1/7/2011 11:59	182	25.41	51.41

Table AII.96: (Continued) 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 11:59	71	22.95	43.86	1/7/2011 12:18	762	24.94	52.75
1/7/2011 12:00	-7	22.60	42.16	1/7/2011 12:19	763	24.95	52.75
1/7/2011 12:00	13	22.57	43.85	1/7/2011 12:19	765	24.94	52.74
1/7/2011 12:01	166	25.36	51.74	1/7/2011 12:20	769	24.94	52.75
1/7/2011 12:01	428	25.09	52.68	1/7/2011 12:20	767	24.93	52.74
1/7/2011 12:02	647	25.00	52.72	1/7/2011 12:21	767	24.93	52.74
1/7/2011 12:02	688	24.98	52.71	1/7/2011 12:21	767	24.92	52.74
1/7/2011 12:03	757	24.95	52.70	1/7/2011 12:22	767	24.93	52.73
1/7/2011 12:03	765	24.95	52.68	1/7/2011 12:22	767	24.92	52.74
1/7/2011 12:04	633	25.03	52.74	1/7/2011 12:23	766	24.92	52.72
1/7/2011 12:04	728	24.98	52.70	1/7/2011 12:23	766	24.92	52.73
1/7/2011 12:05	766	24.96	52.69	1/7/2011 12:24	764	24.91	52.74
1/7/2011 12:05	766	24.97	52.71	1/7/2011 12:24	767	24.91	52.73
1/7/2011 12:06	767	24.95	52.69	1/7/2011 12:25	767	24.91	52.72
1/7/2011 12:06	767	24.95	52.69	1/7/2011 12:25	767	24.91	52.73
1/7/2011 12:07	659	24.99	52.72	1/7/2011 12:26	760	24.91	52.72
1/7/2011 12:07	682	24.97	52.67	1/7/2011 12:26	758	24.89	52.76
1/7/2011 12:08	755	24.95	52.68	1/7/2011 12:27	760	24.88	52.74
1/7/2011 12:08	769	24.95	52.70	1/7/2011 12:27	763	24.88	52.76
1/7/2011 12:09	767	24.95	52.69	1/7/2011 12:28	768	24.88	52.75
1/7/2011 12:09	770	24.95	52.70	1/7/2011 12:28	765	24.89	52.76
1/7/2011 12:10	773	24.96	52.70	1/7/2011 12:29	760	24.89	52.76
1/7/2011 12:10	768	24.96	52.68	1/7/2011 12:29	762	24.90	52.71
1/7/2011 12:11	769	24.96	52.69	1/7/2011 12:30	730	24.92	52.72
1/7/2011 12:11	769	24.96	52.70	1/7/2011 12:30	766	24.92	52.71
1/7/2011 12:12	769	24.96	44.60	1/7/2011 12:31	766	24.93	52.72
1/7/2011 12:12	716	24.97	28.37	1/7/2011 12:31	764	24.94	52.73
1/7/2011 12:13	675	24.98	26.05	1/7/2011 12:32	762	24.95	52.73
1/7/2011 12:13	617	24.99	25.46	1/7/2011 12:32	757	24.95	52.69
1/7/2011 12:14	545	25.01	25.11	1/7/2011 12:33	758	24.96	52.69
1/7/2011 12:14	453	25.04	25.44	1/7/2011 12:33	732	24.96	52.69
1/7/2011 12:15	58	22.48	43.82	1/7/2011 12:34	718	24.97	52.69
1/7/2011 12:15	40	22.65	43.99	1/7/2011 12:34	751	24.95	52.68
1/7/2011 12:16	109	25.40	51.18	1/7/2011 12:35	721	24.98	52.70
1/7/2011 12:16	202	25.40	51.71	1/7/2011 12:35	185	25.36	51.58
1/7/2011 12:17	161	25.47	51.34	1/7/2011 12:36	-2	22.53	43.76
1/7/2011 12:17	187	25.50	51.58	1/7/2011 12:36	-13	22.64	44.02
1/7/2011 12:18	779	24.97	52.72	1/7/2011 12:37	-11	22.69	44.00

Table AII.96: (Continued) 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 12:37	-10	22.76	44.02	1/7/2011 12:56	-18	21.70	0.13
1/7/2011 12:38	-1	22.83	44.11	1/7/2011 12:57	-20	21.99	0.13
1/7/2011 12:38	-5	22.86	44.10	1/7/2011 12:57	-19	21.91	0.12
1/7/2011 12:39	9	22.79	44.03	1/7/2011 12:58	-18	21.76	0.12
1/7/2011 12:39	628	25.02	52.75	1/7/2011 12:58	-19	21.72	0.12
1/7/2011 12:40	763	24.89	52.78	1/7/2011 12:59	-19	21.85	0.13
1/7/2011 12:40	764	24.91	52.70	1/7/2011 12:59	-18	21.93	0.12
1/7/2011 12:41	766	24.92	52.72	1/7/2011 13:00	-18	22.27	0.12
1/7/2011 12:41	765	24.92	52.70	1/7/2011 13:00	-18	22.41	0.11
1/7/2011 12:42	757	24.92	52.72	1/7/2011 13:01	-19	22.58	0.11
1/7/2011 12:42	755	24.89	52.76	1/7/2011 13:01	-19	22.82	0.12
1/7/2011 12:43	746	24.90	52.70	1/7/2011 13:02	-19	23.07	0.12
1/7/2011 12:43	747	24.91	52.72	1/7/2011 13:02	-18	23.28	0.11
1/7/2011 12:44	738	24.93	52.72	1/7/2011 13:03	-20	23.43	0.11
1/7/2011 12:44	754	24.93	52.71	1/7/2011 13:03	-18	23.49	0.11
1/7/2011 12:45	755	24.93	52.71	1/7/2011 13:04	-18	23.57	0.11
1/7/2011 12:45	759	24.93	52.72	1/7/2011 13:04	-18	23.63	0.11
1/7/2011 12:46	764	24.93	52.73	1/7/2011 13:05	-19	24.31	0.12
1/7/2011 12:46	767	24.93	52.74	1/7/2011 13:05	-19	24.58	0.10
1/7/2011 12:47	767	24.91	52.72	1/7/2011 13:06	-19	24.33	0.11
1/7/2011 12:47	765	24.92	52.71	1/7/2011 13:06	-10	24.13	49.16
1/7/2011 12:48	765	24.92	52.71	1/7/2011 13:07	-12	24.09	49.07
1/7/2011 12:48	765	24.90	52.71	1/7/2011 13:07	-12	24.09	49.09
1/7/2011 12:49	763	24.92	52.72	1/7/2011 13:08	-8	24.17	49.49
1/7/2011 12:49	-2	23.21	0.83	1/7/2011 13:08	-9	24.21	49.56
1/7/2011 12:50	12	23.01	44.09	1/7/2011 13:09	-10	24.19	49.50
1/7/2011 12:50	11	22.95	44.17	1/7/2011 13:09	-9	24.19	49.55
1/7/2011 12:51	12	22.93	44.15	1/7/2011 13:10	42	24.18	49.52
1/7/2011 12:51	7	22.91	44.15	1/7/2011 13:10	482	24.74	51.99
1/7/2011 12:52	-19	22.96	9.67	1/7/2011 13:11	688	24.76	52.10
1/7/2011 12:52	-9	22.69	0.16	1/7/2011 13:11	695	24.76	52.18
1/7/2011 12:53	-16	22.19	0.09	1/7/2011 13:12	752	24.78	52.61
1/7/2011 12:53	-11	21.49	0.10	1/7/2011 13:12	758	24.78	52.61
1/7/2011 12:54	-20	21.41	0.11	1/7/2011 13:13	759	24.78	52.60
1/7/2011 12:54	-12	21.82	0.12	1/7/2011 13:13	740	24.78	52.60
1/7/2011 12:55	-15	21.89	0.12	1/7/2011 13:14	688	24.78	52.52
1/7/2011 12:55	-17	21.83	0.13	1/7/2011 13:14	673	24.78	52.63
1/7/2011 12:56	-13	21.65	0.12	1/7/2011 13:15	670	24.78	52.65

Table AII.96: (Continued) 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 13:15	318	24.76	51.95	1/7/2011 13:34	90	24.36	51.97
1/7/2011 13:16	-17	24.14	33.85	1/7/2011 13:35	136	24.92	51.70
1/7/2011 13:16	-19	24.15	20.33	1/7/2011 13:35	152	24.93	51.74
1/7/2011 13:17	-18	24.10	11.39	1/7/2011 13:36	109	24.98	51.68
1/7/2011 13:17	-16	24.13	36.55	1/7/2011 13:36	90	24.88	51.66
1/7/2011 13:18	-18	24.10	24.83	1/7/2011 13:37	74	24.88	51.48
1/7/2011 13:18	-18	24.07	3.02	1/7/2011 13:37	79	24.95	51.26
1/7/2011 13:19	-18	24.03	3.33	1/7/2011 13:38	41	24.05	48.41
1/7/2011 13:19	-19	24.00	2.12	1/7/2011 13:38	47	24.26	47.56
1/7/2011 13:20	-18	24.18	3.30	1/7/2011 13:39	41	24.28	48.38
1/7/2011 13:20	-19	24.27	3.24	1/7/2011 13:39	-8	24.08	47.30
1/7/2011 13:21	-20	24.28	45.29	1/7/2011 13:40	-14	23.87	46.36
1/7/2011 13:21	392	24.74	51.96	1/7/2011 13:40	-10	23.82	47.04
1/7/2011 13:22	548	24.77	52.13	1/7/2011 13:41	-19	23.79	0.62
1/7/2011 13:22	637	24.79	52.28	1/7/2011 13:41	-18	23.79	2.35
1/7/2011 13:23	704	24.79	52.40	1/7/2011 13:42	-19	23.75	3.27
1/7/2011 13:23	721	24.79	52.46	1/7/2011 13:42	-19	23.77	0.85
1/7/2011 13:24	739	24.79	52.48	1/7/2011 13:43	-19	23.75	0.54
1/7/2011 13:24	749	24.79	52.51	1/7/2011 13:43	-9	23.79	46.85
1/7/2011 13:25	734	24.79	52.47	1/7/2011 13:44	2	23.84	46.96
1/7/2011 13:25	737	24.78	52.52	1/7/2011 13:44	-19	23.86	0.53
1/7/2011 13:26	746	24.79	52.52	1/7/2011 13:45	-18	23.85	0.67
1/7/2011 13:26	741	24.78	52.53	1/7/2011 13:45	-19	23.89	1.12
1/7/2011 13:27	732	24.79	52.46	1/7/2011 13:46	-19	23.68	0.37
1/7/2011 13:27	748	24.78	52.46	1/7/2011 13:46	-19	23.61	14.60
1/7/2011 13:28	747	24.78	52.55	1/7/2011 13:47	51	24.76	49.10
1/7/2011 13:28	669	24.79	52.37	1/7/2011 13:47	60	24.63	48.78
1/7/2011 13:29	742	24.78	52.56	1/7/2011 13:48	61	24.28	48.09
1/7/2011 13:29	749	24.78	52.59	1/7/2011 13:48	35	24.34	47.65
1/7/2011 13:30	741	24.78	52.54	1/7/2011 13:49	32	24.20	47.01
1/7/2011 13:30	753	24.78	52.54	1/7/2011 13:49	50	24.44	47.80
1/7/2011 13:31	2	24.38	49.86	1/7/2011 13:50	5	24.26	47.08
1/7/2011 13:31	-17	24.38	49.09	1/7/2011 13:50	-18	23.67	3.96
1/7/2011 13:32	-17	24.26	44.12	1/7/2011 13:51	-16	23.72	46.48
1/7/2011 13:32	-17	24.00	47.94	1/7/2011 13:51	-18	23.62	6.04
1/7/2011 13:33	-19	23.94	41.01	1/7/2011 13:52	-18	23.59	5.19
1/7/2011 13:33	-18	23.81	0.47	1/7/2011 13:52	-18	23.57	5.48
1/7/2011 13:34	2	23.82	47.17	1/7/2011 13:53	-18	23.48	1.01

Table AII.96: (Continued) 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 13:53	-18	23.54	10.09	1/7/2011 14:12	-19	23.24	0.11
1/7/2011 13:54	70	23.63	50.30	1/7/2011 14:13	-20	23.44	0.11
1/7/2011 13:54	187	25.16	51.94	1/7/2011 14:13	-19	23.43	0.10
1/7/2011 13:55	174	25.21	51.79	1/7/2011 14:14	-19	23.70	0.12
1/7/2011 13:55	150	25.26	51.65	1/7/2011 14:14	-20	23.91	0.12
1/7/2011 13:56	126	25.25	51.60	1/7/2011 14:15	-20	24.23	0.12
1/7/2011 13:56	104	25.22	51.36	1/7/2011 14:15	-21	24.49	0.12
1/7/2011 13:57	108	25.22	51.38	1/7/2011 14:16	-20	24.69	0.12
1/7/2011 13:57	93	25.12	51.00	1/7/2011 14:16	-20	24.92	0.12
1/7/2011 13:58	91	25.13	51.02	1/7/2011 14:17	-20	25.05	0.12
1/7/2011 13:58	87	25.14	51.05	1/7/2011 14:17	-19	25.21	0.12
1/7/2011 13:59	88	25.13	50.94	1/7/2011 14:18	-19	25.17	0.12
1/7/2011 13:59	76	25.09	50.75	1/7/2011 14:18	-20	25.17	0.12
1/7/2011 14:00	-11	23.82	46.45	1/7/2011 14:19	-20	25.11	0.12
1/7/2011 14:00	-13	23.92	46.67	1/7/2011 14:19	-20	25.32	0.13
1/7/2011 14:01	-18	23.52	0.51	1/7/2011 14:20	-19	25.39	0.13
1/7/2011 14:01	-19	23.07	0.77	1/7/2011 14:20	-20	25.37	0.13
1/7/2011 14:02	-18	23.54	2.13	1/7/2011 14:21	-19	25.39	0.13
1/7/2011 14:02	-18	23.65	3.95	1/7/2011 14:21	-19	25.39	0.14
1/7/2011 14:03	-18	23.75	7.52	1/7/2011 14:22	-19	25.41	0.14
1/7/2011 14:03	-18	24.06	2.36	1/7/2011 14:22	-19	25.43	0.14
1/7/2011 14:04	-17	24.39	2.94	1/7/2011 14:23	-19	25.34	0.14
1/7/2011 14:04	-18	24.44	3.84	1/7/2011 14:23	-19	25.19	0.14
1/7/2011 14:05	-18	24.50	2.02	1/7/2011 14:24	-20	25.05	0.13
1/7/2011 14:05	-18	24.54	3.88	1/7/2011 14:24	-20	24.97	0.14
1/7/2011 14:06	-18	24.59	2.49	1/7/2011 14:25	-19	24.85	0.14
1/7/2011 14:06	-18	24.60	1.44	1/7/2011 14:25	-18	24.70	0.14
1/7/2011 14:07	-17	24.61	1.93	1/7/2011 14:26	-19	24.66	0.15
1/7/2011 14:07	-18	24.43	4.36	1/7/2011 14:26	-19	24.56	0.15
1/7/2011 14:08	-18	24.42	2.91	1/7/2011 14:27	-19	24.51	0.15
1/7/2011 14:08	-17	24.50	2.22	1/7/2011 14:27	-20	24.43	0.15
1/7/2011 14:09	-18	24.58	2.26	1/7/2011 14:28	-19	24.41	0.15
1/7/2011 14:09	-17	24.59	6.48	1/7/2011 14:28	-20	24.27	0.15
1/7/2011 14:10	-19	24.25	0.12	1/7/2011 14:29	-20	24.20	0.16
1/7/2011 14:10	-20	23.74	0.11	1/7/2011 14:29	-20	24.15	0.16
1/7/2011 14:11	-20	23.18	0.08	1/7/2011 14:30	-19	24.07	0.16
1/7/2011 14:11	-20	22.94	0.08	1/7/2011 14:30	-19	23.93	0.16
1/7/2011 14:12	-19	23.04	0.10	1/7/2011 14:31	-19	23.76	0.16

Table AII.96: (Continued) 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 14:31	-19	23.63	0.16	1/7/2011 14:50	361	24.80	51.86
1/7/2011 14:32	-19	23.50	0.16	1/7/2011 14:51	92	24.66	51.63
1/7/2011 14:32	-19	23.47	0.16	1/7/2011 14:51	103	24.69	51.64
1/7/2011 14:33	-19	23.43	0.16	1/7/2011 14:52	-18	23.71	2.67
1/7/2011 14:33	-20	23.41	0.15	1/7/2011 14:52	42	24.64	51.57
1/7/2011 14:34	55	24.62	51.61	1/7/2011 14:53	30	24.67	51.65
1/7/2011 14:34	732	24.85	52.54	1/7/2011 14:53	40	24.64	51.58
1/7/2011 14:35	749	24.89	52.54	1/7/2011 14:54	28	24.64	51.60
1/7/2011 14:35	750	24.90	52.51	1/7/2011 14:54	-8	24.63	51.66
1/7/2011 14:36	750	24.89	52.52	1/7/2011 14:55	-18	23.39	0.22
1/7/2011 14:36	709	24.90	52.49	1/7/2011 14:55	-18	22.87	0.19
1/7/2011 14:37	612	24.88	52.32	1/7/2011 14:56	-19	22.04	0.16
1/7/2011 14:37	639	24.88	52.36	1/7/2011 14:56	-18	21.60	0.16
1/7/2011 14:38	606	24.87	52.31	1/7/2011 14:57	-18	21.37	0.16
1/7/2011 14:38	601	24.88	52.32	1/7/2011 14:57	-18	21.34	0.17
1/7/2011 14:39	-11	24.68	51.48	1/7/2011 14:58	-19	21.26	0.18
1/7/2011 14:39	-7	24.67	51.60	1/7/2011 14:58	-18	21.29	0.18
1/7/2011 14:40	-6	24.62	51.44	1/7/2011 14:59	-19	21.33	0.18
1/7/2011 14:40	-18	24.56	1.02	1/7/2011 14:59	-19	21.30	0.18
1/7/2011 14:41	-18	24.59	1.34	1/7/2011 15:00	-19	21.25	0.18
1/7/2011 14:41	-20	24.54	15.46	1/7/2011 15:00	-19	21.34	0.19
1/7/2011 14:42	-19	24.57	8.58	1/7/2011 15:01	-19	21.39	0.19
1/7/2011 14:42	-14	24.58	42.59	1/7/2011 15:01	-18	21.36	0.19
1/7/2011 14:43	-15	24.57	51.52	1/7/2011 15:02	-19	21.32	0.19
1/7/2011 14:43	-10	24.59	51.54	1/7/2011 15:02	-19	21.34	0.20
1/7/2011 14:44	-19	24.55	7.93	1/7/2011 15:03	-18	21.32	0.20
1/7/2011 14:44	-19	24.54	6.83	1/7/2011 15:03	-20	21.35	0.20
1/7/2011 14:45	-19	24.52	6.05	1/7/2011 15:04	-19	21.35	0.20
1/7/2011 14:45	-18	24.54	10.21	1/7/2011 15:04	-19	21.41	0.20
1/7/2011 14:46	-18	24.47	4.08	1/7/2011 15:05	-18	21.47	0.20
1/7/2011 14:46	-19	24.56	5.08	1/7/2011 15:05	176	24.62	51.78
1/7/2011 14:47	268	24.64	51.67	1/7/2011 15:06	205	24.69	51.76
1/7/2011 14:47	379	24.72	51.85	1/7/2011 15:06	210	24.68	51.80
1/7/2011 14:48	376	24.80	51.89	1/7/2011 15:07	211	24.73	51.90
1/7/2011 14:48	389	24.83	51.97	1/7/2011 15:07	211	24.73	51.84
1/7/2011 14:49	394	24.82	51.92	1/7/2011 15:08	211	24.73	51.84
1/7/2011 14:49	393	24.81	51.87	1/7/2011 15:08	217	24.74	51.84
1/7/2011 14:50	382	24.81	51.88	1/7/2011 15:09	217	24.74	51.82

Table AII.96: (Continued) 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 15:09	215	24.74	51.81	1/7/2011 15:28	418	24.75	52.08
1/7/2011 15:10	217	24.74	51.84	1/7/2011 15:29	427	24.75	52.06
1/7/2011 15:10	-3	24.55	50.90	1/7/2011 15:29	434	24.75	52.08
1/7/2011 15:11	-12	24.50	50.51	1/7/2011 15:30	4	24.48	50.26
1/7/2011 15:11	-17	24.25	49.51	1/7/2011 15:30	7	24.44	50.14
1/7/2011 15:12	-18	24.38	8.39	1/7/2011 15:31	4	24.42	50.10
1/7/2011 15:12	-18	24.45	8.31	1/7/2011 15:31	7	24.39	49.90
1/7/2011 15:13	-1	24.49	49.64	1/7/2011 15:32	5	24.44	50.28
1/7/2011 15:13	92	24.66	51.30	1/7/2011 15:32	165	24.70	51.60
1/7/2011 15:14	212	24.71	51.82	1/7/2011 15:33	162	24.69	51.41
1/7/2011 15:14	218	24.72	51.88	1/7/2011 15:33	164	24.68	51.61
1/7/2011 15:15	219	24.74	51.98	1/7/2011 15:34	162	24.71	51.76
1/7/2011 15:15	221	24.74	51.92	1/7/2011 15:34	165	24.72	51.92
1/7/2011 15:16	221	24.74	51.88	1/7/2011 15:35	165	24.74	51.96
1/7/2011 15:16	218	24.74	51.12	1/7/2011 15:35	-18	24.55	0.66
1/7/2011 15:17	220	24.74	51.82	1/7/2011 15:36	17	24.49	50.39
1/7/2011 15:17	220	24.74	51.85	1/7/2011 15:36	-17	24.23	4.84
1/7/2011 15:18	221	24.74	51.89	1/7/2011 15:37	-19	24.15	30.26
1/7/2011 15:18	221	24.74	51.91	1/7/2011 15:37	-18	24.38	5.55
1/7/2011 15:19	223	24.73	51.86	1/7/2011 15:38	-18	24.46	14.30
1/7/2011 15:19	223	24.74	51.90	1/7/2011 15:38	-13	24.54	50.47
1/7/2011 15:20	85	24.72	50.93	1/7/2011 15:39	50	24.65	51.66
1/7/2011 15:20	-9	24.48	49.74	1/7/2011 15:39	138	24.64	51.72
1/7/2011 15:21	-16	24.64	48.21	1/7/2011 15:40	145	24.63	51.74
1/7/2011 15:21	172	24.74	51.71	1/7/2011 15:40	148	24.62	51.72
1/7/2011 15:22	-18	24.30	46.61	1/7/2011 15:41	148	24.60	51.69
1/7/2011 15:22	-19	24.25	45.62	1/7/2011 15:41	158	24.60	51.68
1/7/2011 15:23	-19	24.24	21.60	1/7/2011 15:42	148	24.59	51.66
1/7/2011 15:23	-18	24.28	6.18	1/7/2011 15:42	149	24.60	51.67
1/7/2011 15:24	-18	24.24	48.42	1/7/2011 15:43	149	24.60	51.65
1/7/2011 15:24	110	24.43	50.77	1/7/2011 15:43	-3	24.47	50.91
1/7/2011 15:25	187	24.72	51.97	1/7/2011 15:44	5	24.46	51.18
1/7/2011 15:25	91	24.75	51.64	1/7/2011 15:44	-18	24.42	0.26
1/7/2011 15:26	413	24.76	52.11	1/7/2011 15:45	-19	23.50	0.15
1/7/2011 15:26	414	24.75	52.10	1/7/2011 15:45	-18	23.04	0.16
1/7/2011 15:27	419	24.76	52.11	1/7/2011 15:46	-18	22.46	0.14
1/7/2011 15:27	420	24.76	52.10	1/7/2011 15:46	-19	21.64	0.12
1/7/2011 15:28	417	24.76	52.10	1/7/2011 15:47	-19	21.11	0.14

Table AII.96: (Continued) 2011 West Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/d/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/7/2011 15:47	-18	21.01	0.16	1/7/2011 15:53	-19	20.71	0.18
1/7/2011 15:48	-19	21.04	0.16	1/7/2011 15:54	-19	20.74	0.18
1/7/2011 15:48	-18	21.17	0.18	1/7/2011 15:54	-19	20.78	0.18
1/7/2011 15:49	-18	21.02	0.19	1/7/2011 15:55	-19	20.82	0.18
1/7/2011 15:49	-19	20.78	0.19	1/7/2011 15:55	-19	20.83	0.18
1/7/2011 15:50	-19	20.57	0.19	1/7/2011 15:56	-18	20.88	0.18
1/7/2011 15:50	-19	20.47	0.18	1/7/2011 15:56	-19	20.88	0.18
1/7/2011 15:51	-19	20.47	0.18	1/7/2011 15:57	-19	20.91	0.18
1/7/2011 15:51	-19	20.53	0.18	1/7/2011 15:57	-19	20.92	0.18
1/7/2011 15:52	-19	20.55	0.18	1/7/2011 15:58	-19	20.99	0.18
1/7/2011 15:52	-19	20.64	0.18	1/7/2011 15:58	-19	20.99	0.18
1/7/2011 15:53	-19	20.70	0.18				

Table AII.97: 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	11:08	21.35120	157.98955	4.08				
1/7/2011	11:08	21.34875	157.99105	4.21	370.40	0:00:30	37.04	209.7
1/7/2011	11:09	21.34882	157.99102	4.21	7.32	0:01:00	0.37	31.6
1/7/2011	11:10	21.34877	157.99112	4.11	11.28	0:00:30	1.30	247.0
1/7/2011	11:11	21.34878	157.99113	4.08	2.74	0:01:00	0.19	295.9
1/7/2011	11:11	21.34877	157.99122	4.08	8.84	0:00:30	1.11	253.3
1/7/2011	11:12	21.34875	157.99125	4.11	2.44	0:00:30	0.37	259.6
1/7/2011	11:12	21.34877	157.99125	4.08	0.91	0:00:30	0.19	347.6
1/7/2011	11:13	21.34877	157.99125	4.27	0.91	0:01:00	0.00	15.7
1/7/2011	11:14	21.34877	157.99125	4.30	0.30	0:00:30	0.00	202.5
1/7/2011	11:14	21.34877	157.99125	4.05	0.61	0:00:30	0.00	216.6
1/7/2011	11:15	21.34883	157.99120	4.18				
1/7/2011	11:16	21.34880	157.99122	4.05	3.35	0:00:30	0.37	191.9
1/7/2011	11:17	21.34875	157.99125	4.18				
1/7/2011	11:18	21.34900	157.99102	4.08				
1/7/2011	11:19	21.34900	157.99102	4.05				
1/7/2011	11:19	21.34873	157.99128	3.96	39.01	0:00:30	5.56	222.6
1/7/2011	11:21	21.34870	157.99132	3.99				
1/7/2011	11:21	21.34877	157.99123	4.02				
1/7/2011	11:23	21.34907	157.99103	4.05				
1/7/2011	11:25	21.34877	157.99125	4.15				
1/7/2011	11:26	21.34872	157.99128	4.05	6.10	0:00:30	0.74	211.0
1/7/2011	11:27	21.34872	157.99128	4.02				
1/7/2011	11:27	21.34875	157.99127	4.05	3.66	0:00:30	0.37	23.7
1/7/2011	11:28	21.34890	157.99122	4.11				
1/7/2011	11:30	21.34872	157.99132	4.18	22.56	0:02:00	0.74	207.5
1/7/2011	11:31	21.34868	157.99118	4.18	15.24	0:01:00	0.93	102.1
1/7/2011	11:33	21.34895	157.99112	3.81				
1/7/2011	11:34	21.34897	157.99177	2.50	67.97	0:01:00	3.70	271.0
1/7/2011	11:38	21.34863	157.99157	3.84				
1/7/2011	11:39	21.34897	157.99218	3.26	75.29	0:01:30	3.70	300.1
1/7/2011	11:41	21.34895	157.99223	2.47	6.10	0:00:30	0.74	241.6
1/7/2011	11:42	21.34893	157.99222	1.65				
1/7/2011	11:42	21.34893	157.99222	1.58	0.00	0:00:30	0.00	167.9
1/7/2011	11:43	21.34887	157.99223	1.49	7.32	0:00:30	0.93	194.4
1/7/2011	11:44	21.34877	157.99225	1.77	10.67	0:01:00	0.56	189.4
1/7/2011	11:44	21.34875	157.99223	1.31	2.44	0:00:30	0.37	160.7

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	11:45	21.34883	157.99222	2.23	10.06	0:00:30	1.30	15.3
1/7/2011	11:46	21.34910	157.99232	2.32	30.48	0:01:30	1.30	337.9
1/7/2011	11:46	21.34905	157.99233	1.80	5.18	0:01:30	0.19	194.5
1/7/2011	11:48	21.34902	157.99233	1.62	3.35	0:00:30	0.37	176.6
1/7/2011	11:49	21.34880	157.99223	1.83	26.52	0:00:30	3.70	159.2
1/7/2011	11:49	21.34882	157.99213	2.65	11.58	0:00:30	1.48	80.8
1/7/2011	11:51	21.34868	157.99178	5.15	38.10	0:01:30	1.48	110.8
1/7/2011	11:51	21.34868	157.99173	5.03	5.49	0:00:30	0.74	88.4
1/7/2011	11:52	21.34870	157.99172	4.42	2.44	0:00:30	0.37	80.2
1/7/2011	11:53	21.34873	157.99158	5.24	12.80	0:01:00	0.74	73.8
1/7/2011	11:53	21.34875	157.99162	5.33	4.27	0:00:30	0.56	308.7
1/7/2011	11:54	21.34873	157.99165	4.51	3.35	0:00:30	0.37	253.7
1/7/2011	11:55	21.34873	157.99178	4.30	14.02	0:01:00	0.93	266.5
1/7/2011	11:55	21.34875	157.99185	5.67	6.10	0:00:30	0.74	280.3
1/7/2011	11:57	21.34858	157.99162	3.02	29.26	0:01:30	1.11	126.0
1/7/2011	11:57	21.34860	157.99155	3.44	6.40	0:00:30	0.74	76.2
1/7/2011	11:58	21.34865	157.99160	3.99	7.62	0:00:30	0.93	317.3
1/7/2011	11:59	21.34882	157.99173	4.79	22.86	0:01:00	1.30	326.6
1/7/2011	12:00	21.34908	157.99172	10.91	28.35	0:01:00	1.67	1.7
1/7/2011	12:00	21.34938	157.99163	13.47	35.36	0:00:30	3.70	15.2
1/7/2011	12:01	21.34947	157.99158	13.69	9.14	0:00:30	1.11	26.0
1/7/2011	12:02	21.34947	157.99168	13.62	10.06	0:01:00	0.56	271.8
1/7/2011	12:02	21.34945	157.99173	12.10	5.18	0:00:30	0.56	260.2
1/7/2011	12:05	21.34928	157.99188	10.73	24.99	0:02:30	0.56	217.0
1/7/2011	12:05	21.34927	157.99190	10.49	2.13	0:00:30	0.19	213.2
1/7/2011	12:06	21.34923	157.99190	10.24	3.05	0:00:30	0.37	180.8
1/7/2011	12:06	21.34918	157.99190	10.12	6.10	0:00:30	0.74	187.2
1/7/2011	12:07	21.34903	157.99188	10.06	15.85	0:01:00	0.93	174.7
1/7/2011	12:08	21.34902	157.99190	7.77	1.22	0:00:30	0.19	209.6
1/7/2011	12:08	21.34902	157.99190	9.72	1.83	0:00:30	0.19	202.2
1/7/2011	12:09	21.34900	157.99190	8.81	1.22	0:01:00	0.00	195.7
1/7/2011	12:10	21.34898	157.99192	8.05	0.91	0:00:30	0.19	209.6
1/7/2011	12:11	21.34892	157.99178	7.80				
1/7/2011	12:11	21.34887	157.99190	7.19	14.33	0:00:30	1.67	241.3
1/7/2011	12:12	21.34892	157.99195	6.25	8.23	0:00:30	0.93	312.6
1/7/2011	12:13	21.34887	157.99198	5.09	5.49	0:01:00	0.37	209.1
1/7/2011	12:13	21.34887	157.99203	4.51	6.10	0:00:30	0.74	260.2

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	12:14	21.34882	157.99200	4.48	6.71	0:00:30	0.74	143.3
1/7/2011	12:14	21.34902	157.99200	9.14	23.77	0:00:30	3.70	0.4
1/7/2011	12:16	21.35000	157.99185	13.35	109.12	0:01:30	3.70	8.0
1/7/2011	12:18	21.35013	157.99160	13.90	31.39	0:02:00	0.93	59.1
1/7/2011	12:18	21.35013	157.99158	7.65				
1/7/2011	12:19	21.35000	157.99178	7.68				
1/7/2011	12:20	21.34998	157.99180	7.80				
1/7/2011	12:21	21.34990	157.99175	7.77	10.36	0:01:00	0.56	148.6
1/7/2011	12:21	21.34990	157.99177	7.53	2.44	0:00:30	0.37	289.6
1/7/2011	12:22	21.34987	157.99178	7.77	5.18	0:01:00	0.37	183.1
1/7/2011	12:24	21.34975	157.99180	7.80	13.11	0:02:00	0.37	192.9
1/7/2011	12:25	21.34973	157.99180	7.80	1.52	0:00:30	0.19	135.4
1/7/2011	12:26	21.34977	157.99180	7.62	3.96	0:01:30	0.19	348.1
1/7/2011	12:27	21.34978	157.99182	7.68	1.83	0:00:30	0.19	316.2
1/7/2011	12:29	21.34980	157.99183	7.44				
1/7/2011	12:29	21.34982	157.99208	7.56	25.30	0:00:30	3.70	272.3
1/7/2011	12:30	21.34975	157.99205	7.68	7.32	0:01:00	0.37	156.1
1/7/2011	12:31	21.34973	157.99205	7.68	1.52	0:00:30	0.19	190.6
1/7/2011	12:31	21.34975	157.99212	7.62	6.71	0:00:30	0.74	282.4
1/7/2011	12:34	21.34963	157.99230	9.36	22.86	0:02:30	0.56	237.2
1/7/2011	12:35	21.34947	157.99215	8.47	24.08	0:01:00	1.48	141.4
1/7/2011	12:35	21.34942	157.99205	10.18	12.19	0:00:30	1.48	122.9
1/7/2011	12:36	21.34945	157.99185	13.01	22.25	0:00:30	2.59	80.0
1/7/2011	12:36	21.34977	157.99162	13.56	42.98	0:00:30	5.56	34.3
1/7/2011	12:37	21.35028	157.99103	13.14	82.91	0:01:00	5.56	46.4
1/7/2011	12:38	21.35047	157.99102	13.32	21.34	0:00:30	2.59	7.1
1/7/2011	12:40	21.35098	157.99032	14.17	91.44	0:02:00	2.78	51.5
1/7/2011	12:40	21.35098	157.99033	14.08	0.61	0:00:30	0.00	263.5
1/7/2011	12:41	21.35098	157.99033	13.96	0.91	0:00:30	0.19	256.5
1/7/2011	12:41	21.35097	157.99033	14.02	0.91	0:00:30	0.19	226.8
1/7/2011	12:42	21.35097	157.99035	13.93	1.22	0:00:30	0.19	217.9
1/7/2011	12:43	21.35083	157.99047	7.47	18.90	0:01:00	1.11	219.7
1/7/2011	12:43	21.35080	157.99048	7.38	4.57	0:00:30	0.56	214.6
1/7/2011	12:44	21.35073	157.99048	7.22	6.71	0:00:30	0.74	176.6
1/7/2011	12:44	21.35067	157.99052	7.44	7.92	0:00:30	0.93	203.4
1/7/2011	12:45	21.35065	157.99053	7.47	2.74	0:00:30	0.37	220.1
1/7/2011	12:45	21.35062	157.99053	7.47	3.66	0:00:30	0.37	182.3

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	12:46	21.35055	157.99053	7.62	8.53	0:00:30	0.93	183.2
1/7/2011	12:46	21.35052	157.99053	7.74	2.74	0:00:30	0.37	175.1
1/7/2011	12:47	21.35050	157.99053	7.77	2.13	0:00:30	0.19	175.4
1/7/2011	12:47	21.35048	157.99053	7.77	1.83	0:00:30	0.19	153.3
1/7/2011	12:48	21.35042	157.99048	7.77	10.36	0:00:30	1.30	150.3
1/7/2011	12:48	21.35040	157.99047	7.59	2.13	0:00:30	0.19	145.7
1/7/2011	12:49	21.35037	157.99047	7.62	3.05	0:00:30	0.37	160.1
1/7/2011	12:49	21.35035	157.99047	13.93	2.74	0:00:30	0.37	180.4
1/7/2011	12:50	21.35023	157.99050		12.19	0:00:30	1.48	196.8
1/7/2011	12:50	21.35023	157.99050		1.52	0:00:30	0.19	203.2
1/7/2011	12:51	21.35020	157.99050		2.74	0:00:30	0.37	187.4
1/7/2011	12:51	21.35007	157.99052		15.85	0:00:30	1.85	184.5
1/7/2011	12:52	21.35003	157.99012		42.06	0:00:30	5.56	93.5
1/7/2011	12:52	21.35010	157.98897		118.26	0:00:30	14.82	86.3
1/7/2011	12:53	21.34995	157.98795		106.68	0:00:30	12.96	99.3
1/7/2011	12:53	21.34990	157.98698		101.19	0:00:30	12.96	93.3
1/7/2011	12:54	21.34998	157.98605		96.62	0:00:30	11.11	84.9
1/7/2011	12:54	21.34993	157.98508		100.89	0:00:30	12.96	92.3
1/7/2011	12:55	21.34995	157.98405		106.38	0:00:30	12.96	89.6
1/7/2011	12:55	21.34990	157.98300		110.34	0:00:30	12.96	92.7
1/7/2011	12:56	21.34942	157.98195		121.62	0:00:30	14.82	116.6
1/7/2011	12:57	21.34542	157.97833					
1/7/2011	12:57	21.34360	157.97707		185.20	0:00:30	29.63	146.8
1/7/2011	12:58	21.34148	157.97525		370.40	0:00:30	37.04	141.4
1/7/2011	12:58	21.33952	157.97353		370.40	0:00:30	33.34	140.8
1/7/2011	12:59	21.33597	157.97090		555.60	0:01:00	29.63	145.5
1/7/2011	13:01	21.33127	157.97012		555.60	0:01:30	20.37	171.0
1/7/2011	13:02	21.33015	157.97022					
1/7/2011	13:02	21.32970	157.97073		71.63	0:00:30	9.26	227.4
1/7/2011	13:03	21.32943	157.97090		34.44	0:00:30	3.70	210.3
1/7/2011	13:03	21.32930	157.97103	27.46	21.95	0:00:30	2.59	222.7
1/7/2011	13:04	21.32925	157.97110	27.07	8.23	0:00:30	0.93	240.0
1/7/2011	13:05	21.32910	157.97112	25.73	17.98	0:01:00	1.11	184.7
1/7/2011	13:05	21.32905	157.97125	24.20	14.94	0:00:30	1.85	253.3
1/7/2011	13:06	21.32902	157.97135	21.95	9.75	0:00:30	1.11	245.1
1/7/2011	13:06	21.32898	157.97143	18.75	9.75	0:00:30	1.11	242.7
1/7/2011	13:08	21.32895	157.97147	12.83	4.88	0:01:30	0.19	224.3

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	13:08	21.32885	157.97148	11.67	10.97	0:00:30	1.30	194.2
1/7/2011	13:09	21.32872	157.97145	10.33	14.63	0:00:30	1.67	166.3
1/7/2011	13:09	21.32863	157.97135	12.01	14.63	0:00:30	1.85	133.4
1/7/2011	13:10	21.32862	157.97132	13.17	4.57	0:00:30	0.56	121.5
1/7/2011	13:12	21.32873	157.97160	8.29				
1/7/2011	13:13	21.32867	157.97150	5.85				
1/7/2011	13:14	21.32870	157.97160	6.25	10.97	0:01:00	0.74	296.4
1/7/2011	13:16	21.32933	157.97165	14.36				
1/7/2011	13:17	21.32962	157.97180	12.22	35.97	0:00:30	3.70	335.5
1/7/2011	13:18	21.33058	157.97205	10.18				
1/7/2011	13:20	21.33230	157.97240	9.81	185.20	0:01:30	7.41	349.1
1/7/2011	13:54	21.33367	157.97315	9.51				
1/7/2011	13:24	21.33328	157.97307	10.36	43.89	0:01:30	1.67	169.4
1/7/2011	13:24	21.33325	157.97310	10.33	4.57	0:00:30	0.56	226.0
1/7/2011	13:25	21.33325	157.97308	10.21	2.44	0:00:30	0.37	120.4
1/7/2011	13:25	21.33318	157.97310	10.36	6.40	0:00:30	0.74	188.5
1/7/2011	13:26	21.33317	157.97310	10.30	2.44	0:00:30	0.37	209.0
1/7/2011	13:27	21.33310	157.97310	10.06	7.01	0:01:00	0.37	176.0
1/7/2011	13:30	21.33287	157.97295	10.06				
1/7/2011	13:32	21.33328	157.97243	9.39	70.71	0:01:30	3.70	49.2
1/7/2011	13:32	21.33363	157.97233	9.36	40.84	0:00:30	5.56	14.1
1/7/2011	13:33	21.33440	157.97220	2.44				
1/7/2011	13:34	21.33537	157.97223	1.52				
1/7/2011	13:37	21.33503	157.97222	0.88	36.88	0:03:00	0.74	175.7
1/7/2011	13:39	21.33493	157.97235	0.85	18.59	0:01:30	0.74	231.2
1/7/2011	13:39	21.33483	157.97225	1.19	14.63	0:00:30	1.85	134.5
1/7/2011	13:40	21.33477	157.97207	1.83	21.34	0:00:30	2.59	110.0
1/7/2011	13:40	21.33502	157.97203	2.62	28.04	0:00:30	3.70	7.2
1/7/2011	13:41	21.33537	157.97208	6.74	38.71	0:00:30	5.56	350.1
1/7/2011	13:42	21.33600	157.97247	1.95	80.77	0:01:00	5.56	330.4
1/7/2011	13:42	21.33625	157.97270	2.65	37.19	0:00:30	3.70	320.6
1/7/2011	13:43	21.33658	157.97298	1.74	46.33	0:00:30	5.56	320.8
1/7/2011	13:44	21.33702	157.97332	1.46	59.13	0:01:00	3.70	324.6
1/7/2011	13:45	21.33798	157.97380	0.85	119.79	0:01:30	5.56	335.0
1/7/2011	13:46	21.33837	157.97387	0.94	43.89	0:00:30	5.56	351.1
1/7/2011	13:46	21.33850	157.97405	0.67	23.47	0:00:30	3.70	305.9
1/7/2011	13:47	21.33847	157.97415	0.79	11.28	0:00:30	1.30	257.6

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	13:47	21.33847	157.97417	0.82	1.22	0:00:30	0.19	245.0
1/7/2011	13:48	21.33847	157.97417	0.88	1.22	0:00:30	0.19	159.0
1/7/2011	13:48	21.33845	157.97415	0.82	2.13	0:00:30	0.19	157.5
1/7/2011	13:49	21.33843	157.97415	0.82	1.83	0:00:30	0.19	149.8
1/7/2011	13:49	21.33842	157.97417	0.85	1.83	0:00:30	0.19	219.0
1/7/2011	13:50	21.33843	157.97403	0.79	12.50	0:00:30	1.48	82.2
1/7/2011	13:50	21.33838	157.97388	0.91	17.37	0:00:30	2.04	106.5
1/7/2011	13:51	21.33875	157.97392	1.34	39.62	0:00:30	5.56	354.0
1/7/2011	13:51	21.33920	157.97413	5.94	55.78	0:00:30	7.41	335.7
1/7/2011	13:52	21.33962	157.97452	6.07	60.66	0:00:30	7.41	320.4
1/7/2011	13:52	21.33997	157.97500	9.85	63.40	0:00:30	7.41	307.9
1/7/2011	13:53	21.34012	157.97550	6.31	54.25	0:00:30	7.41	287.5
1/7/2011	13:53	21.34010	157.97572	2.93	22.25	0:00:30	2.59	265.8
1/7/2011	13:54	21.34008	157.97580	2.04	9.75	0:00:30	1.11	256.7
1/7/2011	13:54	21.34005	157.97585	1.95	6.10	0:00:30	0.74	233.1
1/7/2011	13:55	21.34003	157.97587	1.62	3.05	0:00:30	0.37	216.3
1/7/2011	13:55	21.34000	157.97590	1.28	3.96	0:00:30	0.56	228.8
1/7/2011	13:56	21.33998	157.97590	1.16	2.13	0:00:30	0.19	209.3
1/7/2011	13:56	21.33998	157.97590	1.25	1.52	0:00:30	0.19	111.1
1/7/2011	13:57	21.33998	157.97588	1.22	0.91	0:00:30	0.19	109.3
1/7/2011	13:57	21.33995	157.97588	1.16	3.66	0:00:30	0.37	164.8
1/7/2011	13:58	21.33992	157.97587	1.13	2.74	0:00:30	0.37	150.3
1/7/2011	13:58	21.33990	157.97585	1.01	2.74	0:00:30	0.37	168.1
1/7/2011	13:59	21.33990	157.97585	0.98	1.52	0:00:30	0.19	127.2
1/7/2011	13:59	21.33988	157.97582	0.88	3.96	0:00:30	0.37	119.6
1/7/2011	14:00	21.33988	157.97580	0.98	2.44	0:00:30	0.37	51.1
1/7/2011	14:00	21.34007	157.97572	2.19	21.34	0:00:30	2.59	24.1
1/7/2011	14:01	21.34030	157.97542	11.19	40.84	0:00:30	5.56	49.5
1/7/2011	14:01	21.34025	157.97497	12.83	46.02	0:00:30	5.56	97.7
1/7/2011	14:02	21.34002	157.97440	13.69	64.62	0:00:30	7.41	113.2
1/7/2011	14:02	21.33990	157.97373	13.87	70.71	0:00:30	9.26	101.4
1/7/2011	14:03	21.33980	157.97302	13.47	74.98	0:00:30	9.26	98.2
1/7/2011	14:03	21.33975	157.97232	12.71	73.46	0:00:30	9.26	94.2
1/7/2011	14:04	21.33980	157.97165	13.14	68.58	0:00:30	7.41	86.0
1/7/2011	14:04	21.34005	157.97107	13.01	67.36	0:00:30	7.41	63.9
1/7/2011	14:05	21.34048	157.97052	14.97	74.37	0:00:30	9.26	50.3
1/7/2011	14:05	21.34095	157.96993	15.00	79.55	0:00:30	9.26	49.8

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	14:06	21.34143	157.96947	14.51	73.76	0:00:30	9.26	41.5
1/7/2011	14:06	21.34198	157.96900	12.92	76.50	0:00:30	9.26	38.5
1/7/2011	14:07	21.34258	157.96855	12.74	82.30	0:00:30	9.26	35.2
1/7/2011	14:07	21.34320	157.96810	14.05	83.52	0:00:30	9.26	33.8
1/7/2011	14:08	21.34383	157.96763	13.84	83.82	0:00:30	9.26	34.3
1/7/2011	14:08	21.34447	157.96720	15.67	85.34	0:00:30	11.11	32.8
1/7/2011	14:09	21.34500	157.96668	15.91	78.33	0:00:30	9.26	42.3
1/7/2011	14:09	21.34530	157.96628	9.11	53.04	0:00:30	5.56	49.8
1/7/2011	14:10	21.34543	157.96617	8.81	18.90	0:00:30	2.22	40.5
1/7/2011	14:10	21.34543	157.96613	7.68	3.66	0:00:30	0.37	68.8
1/7/2011	14:11	21.34543	157.96613	7.62	0.30	0:00:30	0.00	206.4
1/7/2011	14:11	21.34545	157.96615	7.47	0.61	0:00:30	0.00	289.9
1/7/2011	14:12	21.34545	157.96615	6.86	0.00	0:00:30	0.00	354.1
1/7/2011	14:12	21.34543	157.96615	6.74	0.30	0:00:30	0.00	142.8
1/7/2011	14:13	21.34543	157.96615	6.77	0.61	0:00:30	0.00	187.4
1/7/2011	14:13	21.34543	157.96615	6.83	0.30	0:00:30	0.00	194.3
1/7/2011	14:14	21.34543	157.96615	6.77	0.30	0:00:30	0.00	141.6
1/7/2011	14:14	21.34543	157.96615	6.64	0.30	0:00:30	0.00	127.5
1/7/2011	14:15	21.34543	157.96615	6.61	0.00	0:00:30	0.00	137.0
1/7/2011	14:15	21.34543	157.96615	6.37	0.30	0:00:30	0.00	168.3
1/7/2011	14:16	21.34542	157.96610	6.40	3.66	0:00:30	0.37	107.9
1/7/2011	14:16	21.34543	157.96610	6.19	1.52	0:00:30	0.19	45.0
1/7/2011	14:17	21.34543	157.96607	6.46	2.44	0:00:30	0.37	69.7
1/7/2011	14:17	21.34543	157.96607	6.49	0.61	0:00:30	0.00	70.0
1/7/2011	14:18	21.34543	157.96607	6.40	0.30	0:00:30	0.00	303.0
1/7/2011	14:18	21.34543	157.96608	6.52	0.91	0:00:30	0.19	266.8
1/7/2011	14:19	21.34543	157.96608	6.55	0.61	0:00:30	0.00	261.2
1/7/2011	14:19	21.34543	157.96608	6.43	0.30	0:00:30	0.00	260.4
1/7/2011	14:20	21.34543	157.96610	6.10	0.30	0:00:30	0.00	259.9
1/7/2011	14:20	21.34543	157.96610	6.37	0.00	0:00:30	0.00	54.4
1/7/2011	14:21	21.34543	157.96608	6.25	0.30	0:00:30	0.00	62.5
1/7/2011	14:21	21.34543	157.96608	6.49	0.30	0:00:30	0.00	98.3
1/7/2011	14:22	21.34543	157.96608	6.25	0.30	0:00:30	0.00	92.7
1/7/2011	14:22	21.34543	157.96608	6.46	0.61	0:00:30	0.00	219.4
1/7/2011	14:23	21.34553	157.96640	16.61	33.53	0:00:30	3.70	291.1
1/7/2011	14:23	21.34573	157.96695	14.11	62.18	0:00:30	7.41	290.5
1/7/2011	14:24	21.34605	157.96738	13.53	56.08	0:00:30	7.41	308.7

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	14:24	21.34635	157.96777	15.09	53.04	0:00:30	5.56	309.4
1/7/2011	14:25	21.34662	157.96818	14.54	52.12	0:00:30	5.56	303.3
1/7/2011	14:25	21.34700	157.96847	14.08	52.43	0:00:30	5.56	326.9
1/7/2011	14:26	21.34743	157.96858	14.30	49.99	0:00:30	5.56	345.2
1/7/2011	14:26	21.34787	157.96870	15.33	49.68	0:00:30	5.56	347.0
1/7/2011	14:27	21.34830	157.96870	14.87	47.85	0:00:30	5.56	359.4
1/7/2011	14:27	21.34875	157.96868	15.48	49.99	0:00:30	5.56	1.8
1/7/2011	14:28	21.34918	157.96863	15.09	49.38	0:00:30	5.56	7.1
1/7/2011	14:28	21.34962	157.96852	14.94	48.77	0:00:30	5.56	13.3
1/7/2011	14:29	21.35000	157.96827	15.00	49.68	0:00:30	5.56	32.6
1/7/2011	14:29	21.35032	157.96795	15.15	48.77	0:00:30	5.56	42.5
1/7/2011	14:30	21.35067	157.96768	15.03	46.94	0:00:30	5.56	35.4
1/7/2011	14:30	21.35095	157.96732	15.67	49.38	0:00:30	5.56	49.4
1/7/2011	14:31	21.35113	157.96690	15.33	47.55	0:00:30	5.56	63.5
1/7/2011	14:31	21.35135	157.96650	15.48	47.55	0:00:30	5.56	61.8
1/7/2011	14:32	21.35163	157.96597	14.23	63.40	0:00:30	7.41	60.0
1/7/2011	14:32	21.35183	157.96547	13.78	58.22	0:00:30	7.41	65.9
1/7/2011	14:33	21.35175	157.96515	12.31	33.53	0:00:30	3.70	107.9
1/7/2011	14:33	21.35165	157.96512	12.34	10.97	0:00:30	1.30	161.2
1/7/2011	14:34	21.35160	157.96510	11.89	5.49	0:00:30	0.56	167.9
1/7/2011	14:34	21.35157	157.96510	10.64	4.27	0:00:30	0.56	158.9
1/7/2011	14:35	21.35152	157.96505	8.90	7.62	0:00:30	0.93	149.0
1/7/2011	14:35	21.35152	157.96510	7.68	4.27	0:00:30	0.56	273.2
1/7/2011	14:36	21.35153	157.96515	6.68	5.49	0:00:30	0.74	283.9
1/7/2011	14:36	21.35155	157.96518	6.52	4.57	0:00:30	0.56	318.6
1/7/2011	14:37	21.35157	157.96520	6.13	2.44	0:00:30	0.37	293.0
1/7/2011	14:37	21.35152	157.96520	4.02	5.49	0:00:30	0.74	184.1
1/7/2011	14:38	21.35152	157.96520	3.99	0.91	0:00:30	0.19	330.8
1/7/2011	14:38	21.35153	157.96520	4.75	0.91	0:00:30	0.19	21.5
1/7/2011	14:39	21.35157	157.96520	6.10	2.74	0:00:30	0.37	349.6
1/7/2011	14:39	21.35162	157.96525	6.83	8.53	0:00:30	1.11	329.1
1/7/2011	14:40	21.35150	157.96538	5.88	19.51	0:00:30	2.41	226.7
1/7/2011	14:40	21.35140	157.96573	11.73	37.49	0:00:30	3.70	252.4
1/7/2011	14:41	21.35117	157.96605	9.91	42.37	0:00:30	5.56	232.7
1/7/2011	14:41	21.35093	157.96638	3.35	42.06	0:00:30	5.56	232.0
1/7/2011	14:42	21.35075	157.96673	8.47	42.98	0:00:30	5.56	241.8
1/7/2011	14:42	21.35052	157.96707	11.92	43.59	0:00:30	5.56	231.6

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	14:43	21.35053	157.96713	13.50	6.40	0:00:30	0.74	293.5
1/7/2011	14:43	21.35040	157.96735	12.86	27.43	0:00:30	3.70	237.1
1/7/2011	14:44	21.35022	157.96770	13.53	42.06	0:00:30	5.56	241.5
1/7/2011	14:44	21.34998	157.96805	14.60	44.20	0:00:30	5.56	232.9
1/7/2011	14:45	21.34968	157.96817	14.87	34.75	0:00:30	3.70	200.7
1/7/2011	14:45	21.34957	157.96825	16.00	17.07	0:00:30	2.04	212.3
1/7/2011	14:46	21.34967	157.96827	15.33	11.89	0:00:30	1.48	349.9
1/7/2011	14:46	21.34965	157.96805	14.20	22.86	0:00:30	2.78	92.2
1/7/2011	14:47	21.34958	157.96798	13.32	10.97	0:00:30	1.30	137.0
1/7/2011	14:47	21.34952	157.96795	12.37	7.62	0:00:30	0.93	153.3
1/7/2011	14:48	21.34948	157.96793	11.67	5.18	0:00:30	0.56	153.7
1/7/2011	14:48	21.34943	157.96792	11.58	5.49	0:00:30	0.74	170.4
1/7/2011	14:49	21.34938	157.96793	11.73	5.49	0:00:30	0.74	192.3
1/7/2011	14:49	21.34933	157.96797	11.22	6.10	0:00:30	0.74	217.6
1/7/2011	14:50	21.34927	157.96793	10.85	8.23	0:00:30	0.93	162.4
1/7/2011	14:50	21.34908	157.96807	13.35	24.38	0:00:30	3.70	212.2
1/7/2011	14:51	21.34890	157.96812	13.53	22.25	0:00:30	2.59	194.9
1/7/2011	14:51	21.34877	157.96817	11.92	14.63	0:00:30	1.67	196.6
1/7/2011	14:52	21.34865	157.96818	12.50	13.41	0:00:30	1.67	191.9
1/7/2011	14:52	21.34855	157.96822	12.95	12.19	0:00:30	1.48	194.3
1/7/2011	14:53	21.34843	157.96825	12.77	12.19	0:00:30	1.48	197.9
1/7/2011	14:53	21.34835	157.96827	12.65	10.06	0:00:30	1.30	191.0
1/7/2011	14:54	21.34828	157.96825	12.59	8.23	0:00:30	0.93	169.5
1/7/2011	14:54	21.34822	157.96825	12.74	6.40	0:00:30	0.74	174.3
1/7/2011	14:55	21.34815	157.96823	12.71	7.62	0:00:30	0.93	170.0
1/7/2011	14:55	21.34808	157.96827	12.89	7.92	0:00:30	0.93	195.0
1/7/2011	14:56	21.34803	157.96827	13.05	5.18	0:00:30	0.56	198.2
1/7/2011	14:56	21.34785	157.96822	12.83	21.64	0:00:30	2.59	164.9
1/7/2011	14:57	21.34747	157.96810	12.07	44.50	0:00:30	5.56	162.9
1/7/2011	14:57	21.34713	157.96785	12.34	45.72	0:00:30	5.56	146.3
1/7/2011	14:58	21.34677	157.96758	12.74	47.85	0:00:30	5.56	146.2
1/7/2011	14:58	21.34640	157.96740	14.51	46.63	0:00:30	5.56	153.6
1/7/2011	14:59	21.34602	157.96713	13.87	48.77	0:00:30	5.56	147.4
1/7/2011	14:59	21.34572	157.96683	15.00	45.72	0:00:30	5.56	137.1
1/7/2011	15:00	21.34540	157.96658	16.37	44.50	0:00:30	5.56	145.3
1/7/2011	15:00	21.34505	157.96638	12.53	43.89	0:00:30	5.56	150.3
1/7/2011	15:01	21.34472	157.96618	11.13	42.67	0:00:30	5.56	151.1

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	15:01	21.34438	157.96595	10.85	43.59	0:00:30	5.56	147.8
1/7/2011	15:02	21.34407	157.96573	10.85	42.67	0:00:30	5.56	146.7
1/7/2011	15:02	21.34372	157.96553	10.00	43.59	0:00:30	5.56	152.2
1/7/2011	15:03	21.34338	157.96532	7.07	43.59	0:00:30	5.56	148.6
1/7/2011	15:03	21.34317	157.96508	6.68	34.44	0:00:30	3.70	135.2
1/7/2011	15:04	21.34315	157.96500	4.75	8.23	0:00:30	0.93	92.3
1/7/2011	15:04	21.34300	157.96495	7.89	19.20	0:00:30	2.22	162.7
1/7/2011	15:05	21.34295	157.96490	7.62	7.01	0:00:30	0.93	142.3
1/7/2011	15:05	21.34292	157.96488	6.52	3.05	0:00:30	0.37	132.2
1/7/2011	15:06	21.34290	157.96487	6.64	2.44	0:00:30	0.37	145.2
1/7/2011	15:06	21.34290	157.96487	7.01	0.30	0:00:30	0.00	226.5
1/7/2011	15:07	21.34290	157.96488	7.32	0.91	0:00:30	0.19	219.5
1/7/2011	15:07	21.34288	157.96488	7.53	0.91	0:00:30	0.19	214.3
1/7/2011	15:08	21.34288	157.96488	7.74	1.22	0:00:30	0.19	214.9
1/7/2011	15:08	21.34287	157.96490	8.02	0.91	0:00:30	0.19	211.6
1/7/2011	15:09	21.34287	157.96490	8.23	0.91	0:00:30	0.19	210.9
1/7/2011	15:09	21.34285	157.96490	8.44	0.91	0:00:30	0.19	219.0
1/7/2011	15:10	21.34285	157.96492	8.75	0.91	0:00:30	0.19	224.9
1/7/2011	15:10	21.34278	157.96495	9.66	8.53	0:00:30	1.11	205.5
1/7/2011	15:11	21.34250	157.96487	8.29	32.00	0:00:30	3.70	166.2
1/7/2011	15:11	21.34223	157.96482	7.10	30.78	0:00:30	3.70	169.5
1/7/2011	15:12	21.34188	157.96482	7.65	38.40	0:00:30	3.70	178.7
1/7/2011	15:12	21.34160	157.96493	7.96	34.14	0:00:30	3.70	201.1
1/7/2011	15:13	21.34155	157.96485	7.89	9.75	0:00:30	1.11	122.8
1/7/2011	15:13	21.34155	157.96477	6.71	8.84	0:00:30	1.11	95.3
1/7/2011	15:14	21.34153	157.96477	6.68	0.61	0:00:30	0.00	195.1
1/7/2011	15:14	21.34153	157.96477	6.43	0.91	0:00:30	0.19	96.1
1/7/2011	15:15	21.34153	157.96475	6.22	0.91	0:00:30	0.19	87.5
1/7/2011	15:15	21.34155	157.96475	6.04	0.61	0:00:30	0.00	56.0
1/7/2011	15:16	21.34155	157.96477	6.89	2.13	0:00:30	0.19	289.5
1/7/2011	15:16	21.34155	157.96478	7.62	1.22	0:00:30	0.19	282.1
1/7/2011	15:17	21.34155	157.96478	7.77	0.91	0:00:30	0.19	273.6
1/7/2011	15:17	21.34155	157.96480	7.83	0.30	0:00:30	0.00	291.9
1/7/2011	15:18	21.34155	157.96480	7.77	0.30	0:00:30	0.00	351.5
1/7/2011	15:18	21.34157	157.96480	7.77	0.30	0:00:30	0.00	330.1
1/7/2011	15:19	21.34157	157.96480	7.74	0.61	0:00:30	0.00	335.4
1/7/2011	15:19	21.34157	157.96480	7.77	0.61	0:00:30	0.00	353.5

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	15:20	21.34162	157.96480	7.77	5.18	0:00:30	0.56	348.4
1/7/2011	15:20	21.34135	157.96495	7.92	33.83	0:00:30	3.70	206.6
1/7/2011	15:21	21.34123	157.96505	7.92	15.54	0:00:30	1.85	221.4
1/7/2011	15:21	21.34103	157.96525	7.44	29.87	0:00:30	3.70	221.3
1/7/2011	15:22	21.34077	157.96552	6.61	41.15	0:00:30	5.56	222.0
1/7/2011	15:22	21.34047	157.96577	4.63	42.06	0:00:30	5.56	220.5
1/7/2011	15:23	21.34022	157.96605	5.91	40.23	0:00:30	5.56	225.5
1/7/2011	15:23	21.33998	157.96635	6.43	40.84	0:00:30	5.56	228.3
1/7/2011	15:24	21.33980	157.96652	6.68	26.82	0:00:30	3.70	222.6
1/7/2011	15:24	21.33977	157.96657	6.83	5.18	0:00:30	0.56	239.1
1/7/2011	15:25	21.33990	157.96653	8.35	14.02	0:00:30	1.67	14.8
1/7/2011	15:25	21.33985	157.96645	5.97	9.14	0:00:30	1.11	125.3
1/7/2011	15:26	21.33985	157.96643	5.91	2.44	0:00:30	0.37	110.6
1/7/2011	15:26	21.33985	157.96640	5.49	3.05	0:00:30	0.37	61.0
1/7/2011	15:27	21.33987	157.96638	5.00	3.05	0:00:30	0.37	59.1
1/7/2011	15:27	21.33987	157.96638	5.09	0.30	0:00:30	0.00	264.4
1/7/2011	15:28	21.33987	157.96638	5.33	0.30	0:00:30	0.00	301.0
1/7/2011	15:28	21.33988	157.96638	5.97	0.61	0:00:30	0.00	357.2
1/7/2011	15:29	21.33988	157.96638	5.67	0.91	0:00:30	0.19	352.4
1/7/2011	15:29	21.33988	157.96638	5.49	0.30	0:00:30	0.00	33.1
1/7/2011	15:30	21.33992	157.96635	5.15	4.88	0:00:30	0.56	59.4
1/7/2011	15:30	21.33987	157.96637	4.42	4.27	0:00:30	0.56	202.6
1/7/2011	15:31	21.33993	157.96645	7.65	11.89	0:00:30	1.48	301.0
1/7/2011	15:31	21.33998	157.96635	7.07	13.11	0:00:30	1.67	57.1
1/7/2011	15:32	21.34000	157.96630	5.64	5.79	0:00:30	0.74	89.2
1/7/2011	15:32	21.34000	157.96627	5.12	3.96	0:00:30	0.56	64.8
1/7/2011	15:33	21.34002	157.96623	4.72	2.74	0:00:30	0.37	85.9
1/7/2011	15:33	21.34003	157.96622	4.85	2.44	0:00:30	0.37	33.6
1/7/2011	15:34	21.34005	157.96620	4.72	3.05	0:00:30	0.37	33.8
1/7/2011	15:34	21.34007	157.96618	4.30	1.83	0:00:30	0.19	56.2
1/7/2011	15:35	21.34007	157.96617	4.54	2.74	0:00:30	0.37	62.4
1/7/2011	15:35	21.34007	157.96615	3.93	0.91	0:00:30	0.19	78.7
1/7/2011	15:36	21.34017	157.96632	9.69	19.20	0:00:30	2.22	302.4
1/7/2011	15:36	21.34060	157.96673	11.61	65.84	0:00:30	7.41	317.8
1/7/2011	15:37	21.34092	157.96707	12.56	48.16	0:00:30	5.56	315.5
1/7/2011	15:37	21.34128	157.96767	14.63	74.68	0:00:30	9.26	303.3
1/7/2011	15:38	21.34138	157.96835	12.50	72.24	0:00:30	9.26	278.5

Table AII.97: (Continued) 2011 West Loch surface, intermediate-depth, and deep water radon survey global positioning system data. The GPS was malfunctioning resulting in sporadic data gaps of variable lengths.

Date m/d/yyyy	Time hh:mm	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/7/2011	15:38	21.34145	157.96863	12.65	30.48	0:00:30	3.70	285.3
1/7/2011	15:39	21.34148	157.96877	13.11	13.11	0:00:30	1.48	287.6
1/7/2011	15:39	21.34152	157.96883	13.14	7.62	0:00:30	0.93	296.0
1/7/2011	15:40	21.34155	157.96887	13.08	5.79	0:00:30	0.74	313.1
1/7/2011	15:40	21.34157	157.96890	13.23	3.96	0:00:30	0.37	299.2
1/7/2011	15:41	21.34158	157.96892	13.44	3.96	0:00:30	0.56	316.9
1/7/2011	15:41	21.34160	157.96892	13.59	1.22	0:00:30	0.19	4.1
1/7/2011	15:42	21.34162	157.96892	13.56	1.52	0:00:30	0.19	43.6
1/7/2011	15:42	21.34163	157.96890	13.62	1.83	0:00:30	0.19	14.4
1/7/2011	15:43	21.34165	157.96892	13.72	2.74	0:00:30	0.37	356.7
1/7/2011	15:43	21.34167	157.96890	13.53	1.83	0:00:30	0.19	21.2
1/7/2011	15:44	21.34168	157.96890	13.41	1.83	0:00:30	0.19	16.1
1/7/2011	15:44	21.34170	157.96890		2.44	0:00:30	0.37	344.8
1/7/2011	15:45	21.34172	157.96890		1.83	0:00:30	0.19	24.1
1/7/2011	15:45	21.34173	157.96892		1.83	0:00:30	0.19	290.3
1/7/2011	15:46	21.34295	157.96922		138.99	0:00:30	16.67	346.9
1/7/2011	15:46	21.34548	157.96985		370.40	0:00:30	35.19	346.9
1/7/2011	15:47	21.34800	157.96977		370.40	0:00:30	33.34	1.9
1/7/2011	15:47	21.35042	157.96848		370.40	0:00:30	35.19	26.5
1/7/2011	15:48	21.35233	157.96643		370.40	0:00:30	35.19	44.9
1/7/2011	15:48	21.35332	157.96460		185.20	0:00:30	25.93	60.1
1/7/2011	15:49	21.35353	157.96400		66.45	0:00:30	7.41	67.8
1/7/2011	15:49	21.35378	157.96343		65.84	0:00:30	7.41	65.2
1/7/2011	15:50	21.35408	157.96288		65.53	0:00:30	7.41	59.4
1/7/2011	15:50	21.35438	157.96235		63.70	0:00:30	7.41	59.3
1/7/2011	15:51	21.35478	157.96190		64.62	0:00:30	7.41	46.3
1/7/2011	15:51	21.35510	157.96130		71.32	0:00:30	9.26	60.3
1/7/2011	15:52	21.35538	157.96058		81.69	0:00:30	9.26	66.4
1/7/2011	15:52	21.35563	157.95987		79.55	0:00:30	9.26	70.6
1/7/2011	15:53	21.35600	157.95922		78.94	0:00:30	9.26	57.4
1/7/2011	15:53	21.35638	157.95857		80.16	0:00:30	9.26	58.7
1/7/2011	15:54	21.35675	157.95777		91.44	0:00:30	11.11	63.2
1/7/2011	15:54	21.35725	157.95697		100.58	0:00:30	12.96	56.5
1/7/2011	15:55	21.35782	157.95620		100.58	0:00:30	12.96	51.5
1/7/2011	15:55	21.35800	157.95523		102.11	0:00:30	12.96	78.6
1/7/2011	15:56	21.35788	157.95423		104.24	0:00:30	12.96	96.8
1/7/2011	15:56	21.35765	157.95348		81.99	0:00:24	12.96	108.3

Table AII. 98: 2011 West Loch surface, intermediate depth, and deep water radon survey wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:mm	Wind Speed m/s	Date yyyymmdd	Time hh:mm	Wind Speed m/s
20110107	10:53	2.13	20110107	13:53	0.00
20110107	11:53	2.13	20110107	14:53	2.13
20110107	12:53	2.44	20110107	15:53	0.00

Table AII.99: 2011 Middle Loch surface water radon survey measurements.

RAD-7 #2356				East Loch Deep				eff=0.416 cpm/pCi/L			
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	11	1	19	9	16	1	4.6	0.0	100.0	0.0	0.0
2	11	1	19	9	21	3	4.7	66.7	0.0	33.3	0.0
3	11	1	19	9	26	0	4.7	0.0	0.0	0.0	0.0
4	11	1	19	9	31	4	4.7	50.0	25.0	25.0	0.0
5	11	1	19	9	36	10	4.6	90.0	0.0	0.0	0.0
6	11	1	19	9	41	11	4.6	72.7	9.1	18.2	0.0
7	11	1	19	9	46	10	4.6	90.0	0.0	0.0	0.0
8	11	1	19	9	51	11	4.6	72.7	0.0	18.2	0.0
9	11	1	19	9	56	15	4.6	86.7	0.0	13.3	0.0
10	11	1	19	10	1	19	4.6	79.0	5.3	10.5	0.0
11	11	1	19	10	6	26	4.6	65.4	3.9	26.9	0.0
12	11	1	19	10	11	17	4.6	76.5	0.0	17.7	0.0
13	11	1	19	10	16	24	4.6	54.2	4.2	29.2	0.0
14	11	1	19	10	21	19	4.6	68.4	0.0	26.3	0.0
15	11	1	19	10	26	24	4.6	58.3	0.0	41.7	0.0
16	11	1	19	10	31	21	4.6	66.7	0.0	33.3	0.0
17	11	1	19	10	36	23	4.6	78.3	0.0	21.8	0.0
18	11	1	19	10	41	32	4.6	71.9	0.0	25.0	0.0
19	11	1	19	10	46	38	4.6	68.4	2.6	29.0	0.0
20	11	1	19	10	51	34	4.6	76.5	0.0	17.7	0.0
21	11	1	19	10	56	40	4.6	57.5	0.0	35.0	2.5
22	11	1	19	11	1	36	4.6	52.8	0.0	36.1	0.0
23	11	1	19	11	6	50	4.6	72.0	0.0	22.0	0.0
24	11	1	19	11	11	48	4.6	62.5	2.1	22.9	2.1
25	11	1	19	11	16	51	4.6	60.8	0.0	39.2	0.0
26	11	1	19	11	21	45	4.6	51.1	2.2	46.7	0.0
27	11	1	19	11	26	39	4.6	53.9	0.0	43.6	0.0
28	11	1	19	11	31	37	4.6	46.0	0.0	48.7	0.0
29	11	1	19	11	36	39	4.6	23.1	0.0	69.2	5.1
30	11	1	19	11	41	48	4.6	45.8	2.1	50.0	0.0
31	11	1	19	11	46	27	4.6	48.2	3.7	48.2	0.0
32	11	1	19	11	51	51	4.6	58.8	0.0	41.2	0.0
33	11	1	19	11	56	36	4.6	61.1	0.0	36.1	0.0
34	11	1	19	12	1	56	4.6	64.3	3.6	30.4	0.0
35	11	1	19	12	6	50	4.6	56.0	2.0	42.0	0.0
36	11	1	19	12	11	70	4.6	67.2	1.4	28.6	1.4
37	11	1	19	12	16	48	4.6	43.8	0.0	52.1	2.1

Table AII.99: (Continued) 2011 Middle Loch surface water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
38	11	1	19	12	21	67	4.6	71.7	0.0	23.9	3.0
39	11	1	19	12	26	70	4.6	57.2	1.4	38.6	0.0
40	11	1	19	12	31	73	4.6	60.3	0.0	34.3	0.0
41	11	1	19	12	36	88	4.6	58.0	0.0	39.8	0.0
42	11	1	19	12	41	78	4.6	57.7	0.0	41.0	0.0
43	11	1	19	12	46	80	4.6	53.8	0.0	42.5	1.3
44	11	1	19	12	51	67	4.6	50.8	0.0	46.3	0.0
45	11	1	19	12	56	69	4.6	47.8	4.4	47.8	0.0

Table AII.100: 2011 Middle Loch surface water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	7	27.1	21	1	6.7	40	133	0.000	82.657
2	2218	7	27.4	14	1	6.7	40	133	41.109	112.311
3	2218	7	27.4	11	1	6.7	40	133	0.000	82.218
4	2218	7	27.7	9	1	6.7	40	133	41.109	112.311
5	2236	8	28.0	8	1	6.7	40	133	185.979	172.021
6	2218	8	28.3	8	1	6.7	40	133	165.315	165.315
7	2236	8	28.6	7	1	6.7	40	133	185.979	172.021
8	2218	7	28.6	7	1	6.8	40	133	165.315	165.315
9	2218	7	28.9	7	1	6.8	40	133	268.636	195.966
10	2218	8	29.2	6	1	6.8	40	133	309.965	206.643
11	2236	8	29.2	6	1	6.8	40	133	351.294	216.671
12	2218	7	30.1	6	1	6.8	40	133	268.636	195.966
13	2218	8	31.0	6	1	6.7	40	133	268.636	195.966
14	2218	8	31.9	6	1	6.8	40	133	268.636	195.966
15	2218	7	32.5	6	1	6.7	40	133	290.856	202.477
16	2218	7	32.8	6	1	6.8	40	133	289.301	201.394
17	2218	8	33.5	6	1	6.8	40	133	371.958	221.476
18	2218	7	33.8	5	1	6.8	40	133	475.280	243.797
19	2236	8	34.1	5	1	6.8	40	133	540.161	257.456
20	2218	8	33.8	5	1	6.8	40	133	540.161	257.456
21	2218	8	33.8	5	1	6.8	40	133	477.835	245.108
22	2218	7	33.2	5	1	6.8	40	133	394.733	227.372
23	2218	8	32.8	5	1	6.8	40	133	747.916	294.295
24	2218	7	32.8	5	1	6.8	40	133	623.263	272.896
25	2218	7	33.8	5	1	6.8	40	133	644.038	276.598

Table AII.100: (Continued) 2011 Middle Loch surface water survey radon measurements continued. All "Unit Byte" = 254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
26	2201	8	35.3	6	1	6.8	40	133	477.835	245.108
27	2236	8	37.1	5	1	6.8	40	133	436.284	236.442
28	2218	8	38.3	5	1	6.8	40	133	353.182	217.836
29	2236	8	38.0	4	1	6.8	40	133	166.203	172.946
30	2201	8	37.7	5	2	6.8	40	133	457.060	240.822
31	2218	7	38.3	5	2	6.8	40	133	268.636	195.966
32	2201	7	38.6	4	2	6.8	40	133	623.263	272.896
33	2218	7	37.4	4	2	6.8	40	133	457.060	240.822
34	2218	7	36.5	4	2	6.8	40	133	747.916	294.295
35	2218	7	35.3	4	2	6.8	40	133	581.712	265.309
36	2218	7	34.4	4	2	6.8	40	133	976.445	329.424
37	2218	8	34.1	4	2	6.8	40	133	436.284	236.442
38	2218	7	35.3	4	1	6.8	40	133	976.445	332.407
39	2218	8	37.1	4	1	6.8	40	133	831.017	307.606
40	2218	8	37.1	4	2	6.8	40	133	914.119	320.283
41	2218	7	36.2	4	2	6.8	40	133	1059.547	341.178
42	2218	7	36.5	4	2	6.8	40	133	934.895	323.363
43	2218	8	36.5	4	2	6.8	40	133	893.344	317.168
44	2218	7	36.2	4	2	6.8	40	133	706.365	287.369
45	2218	7	36.5	4	2	6.8	40	133	685.589	283.832

Table AII.101: 2011 Middle Loch surface water survey YSI data from the 6920 V2. Only data for every one-minute interval is reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/19/2011	9:11:00	22.18	0.004	0.00	102.4	N/A	0.020	6.64	0.2	-55.0
1/19/2011	9:12:00	22.17	0.005	0.00	104.1	N/A	0.020	6.69	-0.1	-68.1
1/19/2011	9:13:00	22.16	0.006	0.00	105.2	N/A	0.020	6.70	0.2	-62.0
1/19/2011	9:14:00	22.89	0.004	0.00	104.8	N/A	0.019	6.67	0.3	-55.8
1/19/2011	9:16:00	24.51	0.002	0.00	100.0	N/A	0.020	6.61	0.4	-57.9
1/19/2011	9:17:00	24.85	43.110	27.74	190.6	N/A	0.036	8.49	9.7	-62.3
1/19/2011	9:18:00	24.74	43.040	27.69	195.3	N/A	0.078	8.58	13.5	-68.1
1/19/2011	9:19:00	24.85	42.930	27.61	195.5	N/A	0.016	8.60	10.0	-69.9
1/19/2011	9:21:00	24.90	42.740	27.48	201.3	N/A	0.017	8.59	9.2	-68.2
1/19/2011	9:22:00	24.97	43.180	27.79	203.4	N/A	0.017	8.60	9.1	-69.0
1/19/2011	9:23:00	25.08	43.200	27.80	203.2	N/A	0.018	8.58	10.0	-70.9
1/19/2011	9:24:00	25.01	43.190	27.79	202.6	N/A	0.018	8.59	10.8	-72.3
1/19/2011	9:26:00	25.05	43.230	27.82	203.5	N/A	0.019	8.59	9.5	-72.4
1/19/2011	9:27:00	25.00	43.120	27.75	202.5	N/A	0.018	8.59	10.4	-72.1
1/19/2011	9:28:00	25.05	43.280	27.86	203.6	N/A	0.018	8.59	9.2	-71.8
1/19/2011	9:29:00	25.04	43.250	27.84	204.5	N/A	0.018	8.59	9.6	-70.9
1/19/2011	9:31:00	25.05	43.310	27.88	204.8	N/A	0.018	8.59	9.0	-70.4
1/19/2011	9:32:00	25.06	43.310	27.88	206.7	N/A	0.018	8.59	10.9	-70.3
1/19/2011	9:33:00	25.04	43.200	27.80	207.1	N/A	0.019	8.59	11.9	-70.0
1/19/2011	9:34:00	25.04	43.220	27.82	205.8	N/A	0.019	8.59	11.7	-69.8
1/19/2011	9:36:00	25.07	43.130	27.75	201.1	N/A	0.020	8.58	8.4	-69.1
1/19/2011	9:37:00	25.07	43.250	27.84	201.4	N/A	0.019	8.58	8.0	-68.4
1/19/2011	9:38:00	25.04	43.190	27.80	201.3	N/A	0.019	8.57	7.5	-68.2
1/19/2011	9:39:00	25.06	43.260	27.85	201.7	N/A	0.020	8.57	7.8	-68.8
1/19/2011	9:41:00	25.11	43.240	27.83	205.6	N/A	0.019	8.58	8.5	-69.9
1/19/2011	9:42:00	25.06	43.280	27.86	206.5	N/A	0.019	8.57	10.8	-69.8
1/19/2011	9:43:00	25.05	43.130	27.75	205.1	N/A	0.018	8.57	9.2	-69.9
1/19/2011	9:44:00	25.09	43.140	27.75	203.9	N/A	0.018	8.56	8.3	-68.8
1/19/2011	9:47:00	24.95	43.240	27.84	189.7	N/A	0.019	8.49	12.3	-66.2
1/19/2011	9:48:00	24.79	42.710	27.45	194.0	N/A	0.019	8.50	13.1	-64.5
1/19/2011	9:49:00	24.72	42.920	27.61	191.2	N/A	0.020	8.50	12.7	-64.8
1/19/2011	9:51:00	24.76	27.580	16.94	200.6	N/A	0.020	8.53	8.4	-66.6
1/19/2011	9:52:00	24.45	4.456	2.37	199.2	N/A	0.020	8.52	12.8	-74.7
1/19/2011	9:53:00	23.72	26.620	16.31	147.5	N/A	0.019	8.23	7.3	-69.5
1/19/2011	9:54:00	24.09	14.290	8.28	170.0	N/A	0.019	8.18	8.2	-69.9
1/19/2011	9:56:01	24.53	40.120	25.62	180.2	N/A	0.020	8.11	11.2	-67.8
1/19/2011	9:57:00	25.05	41.890	26.87	190.8	N/A	0.020	8.37	11.6	-62.3

Table AII.101: (Continued) 2011 Middle Loch surface water survey YSI data from the 6920 V2. Only data for every one-minute interval is reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/19/2011	9:58:00	25.28	42.840	27.54	195.3	N/A	0.020	8.43	12.6	-60.9
1/19/2011	9:59:00	25.38	37.190	23.53	200.3	N/A	0.021	8.44	13.9	-60.1
1/19/2011	10:01:01	23.39	19.840	11.83	170.0	N/A	0.021	8.43	11.5	-60.1
1/19/2011	10:02:00	23.41	14.030	8.12	145.5	N/A	0.021	8.30	6.8	-72.8
1/19/2011	10:03:00	22.58	0.227	0.11	119.6	N/A	0.021	7.97	4.9	-69.1
1/19/2011	10:04:00	24.86	41.430	26.54	191.9	N/A	0.020	8.40	7.6	-66.8
1/19/2011	10:06:01	24.91	41.720	26.74	191.6	N/A	0.021	8.46	10.4	-66.9
1/19/2011	10:07:00	25.13	42.580	27.35	197.6	N/A	0.017	8.47	11.8	-66.5
1/19/2011	10:08:00	25.24	43.440	27.97	202.1	N/A	0.018	8.50	11.9	-66.2
1/19/2011	10:09:00	24.20	33.750	21.16	189.4	N/A	0.020	8.48	9.2	-67.3
1/19/2011	10:11:01	22.91	0.308	0.15	105.0	N/A	0.021	7.90	272.1	-69.5
1/19/2011	10:12:00	24.13	25.320	15.43	159.6	N/A	0.020	8.01	32.9	-72.3
1/19/2011	10:13:00	24.94	33.750	21.15	181.7	N/A	0.020	8.39	12.3	-65.9
1/19/2011	10:14:00	24.74	31.150	19.36	201.8	N/A	0.021	8.49	12.5	-62.3
1/19/2011	10:16:01	25.26	37.570	23.80	209.3	N/A	0.021	8.50	14.3	-59.5
1/19/2011	10:17:00	25.21	27.580	16.93	212.1	N/A	0.021	8.51	13.7	-58.8
1/19/2011	10:18:00	23.26	15.860	9.28	210.9	N/A	0.021	8.34	11.5	-63.2
1/19/2011	10:19:00	25.00	25.160	15.31	200.7	N/A	0.021	8.15	10.5	-66.5
1/19/2011	10:21:00	24.96	16.830	9.88	205.5	N/A	0.021	8.46	11.8	-59.4
1/19/2011	10:22:00	25.09	22.570	13.60	208.8	N/A	0.021	8.47	13.4	-59.1
1/19/2011	10:23:00	25.10	31.950	19.90	209.4	N/A	0.021	8.49	12.1	-57.8
1/19/2011	10:24:00	24.97	18.790	11.13	210.9	N/A	0.021	8.47	12.7	-58.8
1/19/2011	10:26:00	23.80	8.813	4.92	138.1	N/A	0.021	8.18	10.5	-63.4
1/19/2011	10:27:00	23.13	0.140	0.07	133.7	N/A	0.021	8.22	9.9	-66.8
1/19/2011	10:28:00	22.64	0.114	0.05	121.1	N/A	0.021	8.06	11.0	-67.8
1/19/2011	10:29:00	22.89	0.110	0.05	158.1	N/A	0.021	8.05	12.0	-70.3
1/19/2011	10:31:00	25.25	42.880	27.57	191.1	N/A	0.028	8.41	10.4	-65.8
1/19/2011	10:32:00	22.95	13.950	8.08	108.3	N/A	0.024	7.96	5.1	-70.9
1/19/2011	10:33:00	24.30	34.810	21.89	158.7	N/A	0.030	8.37	8.6	-73.2
1/19/2011	10:34:00	24.14	26.920	16.50	170.5	N/A	0.028	8.39	8.8	-73.3
1/19/2011	10:36:00	24.42	33.050	20.67	175.3	N/A	0.027	8.50	11.0	-72.1
1/19/2011	10:37:00	24.41	35.660	22.49	171.1	N/A	0.022	8.46	10.9	-73.6
1/19/2011	10:38:00	24.27	35.300	22.23	184.7	N/A	0.022	8.49	10.0	-72.4
1/19/2011	10:39:00	24.15	35.270	22.22	167.0	N/A	0.047	8.45	11.9	-73.2
1/19/2011	10:41:01	24.04	14.500	8.41	106.2	N/A	0.013	7.96	65.3	-79.1
1/19/2011	10:42:00	24.00	33.470	20.97	172.5	N/A	0.016	8.40	11.1	-72.1
1/19/2011	10:43:00	23.46	9.404	5.28	119.7	N/A	0.018	8.16	4.6	-75.0

Table AII.101: (Continued) 2011 Middle Loch surface water survey YSI data from the 6920 V2. Only data for every one-minute interval is reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/19/2011	10:44:00	23.53	0.433	0.21	122.5	N/A	0.018	8.17	10.9	-75.1
1/19/2011	10:47:00	25.06	42.410	27.23	202.6	N/A	0.019	8.49	8.1	-71.7
1/19/2011	10:48:00	24.29	40.060	25.58	184.6	N/A	0.017	8.51	6.8	-73.2
1/19/2011	10:49:00	24.02	37.020	23.44	177.8	N/A	0.018	8.41	8.3	-75.1
1/19/2011	10:52:00	24.71	39.880	25.44	178.2	N/A	0.017	8.41	7.9	-74.2
1/19/2011	10:53:00	24.88	40.470	25.86	179.6	N/A	0.018	8.40	8.8	-74.3
1/19/2011	10:54:00	25.36	44.060	28.41	187.5	N/A	0.017	8.44	13.4	-73.9
1/19/2011	10:56:00	25.47	44.590	28.79	178.4	N/A	0.022	8.43	17.8	-74.8
1/19/2011	10:57:00	25.47	44.550	28.76	178.6	N/A	0.064	8.43	17.7	-75.0
1/19/2011	10:58:00	25.48	44.460	28.70	179.5	N/A	0.075	8.44	18.0	-75.1
1/19/2011	10:59:00	25.50	44.430	28.67	179.5	N/A	0.047	8.46	17.9	-74.6
1/19/2011	11:01:00	25.60	43.960	28.34	180.5	N/A	0.018	8.48	18.5	-74.5
1/19/2011	11:02:00	25.58	43.970	28.34	181.8	N/A	0.032	8.48	18.8	-74.6
1/19/2011	11:03:00	25.55	41.570	26.62	179.7	N/A	0.018	8.44	18.8	-75.7
1/19/2011	11:04:00	23.94	18.720	11.10	183.1	N/A	0.018	8.62	8.8	-80.3
1/19/2011	11:06:00	24.06	40.820	26.12	188.8	N/A	0.018	8.62	15.9	-76.4
1/19/2011	11:07:00	24.32	43.640	28.13	200.4	N/A	0.019	8.59	9.2	-70.9
1/19/2011	11:08:00	24.26	41.770	26.80	196.4	N/A	0.022	8.61	10.7	-71.1
1/19/2011	11:09:00	24.48	42.140	27.06	199.1	N/A	0.023	8.58	12.1	-70.7
1/19/2011	11:11:01	23.81	40.710	26.05	192.7	N/A	0.020	8.63	10.8	-72.9
1/19/2011	11:12:00	23.85	40.640	26.00	183.2	N/A	0.012	8.62	11.2	-73.3
1/19/2011	11:13:00	24.23	40.920	26.19	200.6	N/A	0.022	8.62	13.0	-70.7
1/19/2011	11:14:00	24.69	42.310	27.17	206.1	N/A	0.023	8.61	14.0	-69.2
1/19/2011	11:16:00	24.81	43.120	27.75	210.2	N/A	0.014	8.59	9.9	-69.8
1/19/2011	11:17:00	24.48	41.810	26.82	201.1	N/A	0.014	8.62	8.7	-71.4
1/19/2011	11:18:00	24.27	41.910	26.89	204.5	N/A	0.020	8.63	9.6	-71.0
1/19/2011	11:19:00	24.65	42.350	27.20	213.0	N/A	0.020	8.62	10.8	-70.9
1/19/2011	11:22:00	23.80	1.282	0.64	177.7	N/A	0.016	8.63	101.1	-78.6
1/19/2011	11:23:00	23.48	4.284	2.28	160.3	N/A	0.016	8.62	220.8	-82.3
1/19/2011	11:24:00	24.00	37.070	23.48	185.1	N/A	-0.002	8.63	121.0	-75.9
1/19/2011	11:26:00	23.72	1.576	0.79	128.8	N/A	0.014	8.26	67.5	-76.0
1/19/2011	11:27:00	24.36	41.250	26.42	157.4	N/A	0.011	8.43	13.7	-78.2
1/19/2011	11:28:00	24.07	35.820	22.60	175.0	N/A	0.011	8.56	8.2	-77.3
1/19/2011	11:29:00	24.09	28.220	17.38	168.6	N/A	0.011	8.45	6.4	-79.5
1/19/2011	11:31:01	24.04	30.410	18.86	182.9	N/A	0.012	8.60	11.7	-76.1
1/19/2011	11:32:00	24.12	30.480	18.92	186.2	N/A	0.011	8.63	10.0	-76.6
1/19/2011	11:33:00	24.20	26.640	16.31	187.8	N/A	0.013	8.60	9.0	-76.4

Table AII.101: (Continued) 2011 Middle Loch surface water survey YSI data from the 6920 V2. Only data for every one-minute interval is reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/19/2011	11:34:00	24.16	28.250	17.40	183.2	N/A	0.015	8.48	8.1	-78.3
1/19/2011	11:36:00	24.19	30.890	19.19	178.9	N/A	0.015	8.55	8.9	-77.0
1/19/2011	11:37:00	24.28	26.450	16.18	187.9	N/A	0.015	8.55	11.0	-76.4
1/19/2011	11:38:00	24.28	36.930	23.37	177.4	N/A	0.013	8.53	8.2	-76.5
1/19/2011	11:39:00	24.33	32.370	20.21	175.7	N/A	0.012	8.58	8.2	-76.2
1/19/2011	11:41:00	24.04	14.500	8.41	106.2	N/A	0.013	7.96	65.3	-79.1
1/19/2011	11:42:00	23.87	30.550	18.96	130.1	N/A	0.037	8.05	15.3	-81.7
1/19/2011	11:43:00	24.12	30.850	19.16	147.4	N/A	0.011	8.36	9.6	-80.6
1/19/2011	11:44:00	24.06	21.950	13.20	154.5	N/A	0.007	8.35	11.0	-81.2
1/19/2011	11:46:01	23.98	19.100	11.34	152.6	N/A	0.008	8.26	12.0	-80.5
1/19/2011	11:47:00	23.95	27.690	17.02	153.6	N/A	0.008	8.34	12.2	-79.3
1/19/2011	11:48:00	24.03	24.350	14.79	149.5	N/A	0.011	8.38	14.3	-79.9
1/19/2011	11:49:00	23.94	30.990	19.27	144.4	N/A	0.010	8.28	10.8	-80.0
1/19/2011	11:52:00	24.00	32.290	20.16	158.0	N/A	0.031	8.37	10.1	-78.0
1/19/2011	11:53:00	24.04	33.660	21.10	157.3	N/A	0.026	8.37	10.5	-78.6
1/19/2011	11:54:00	24.04	21.610	12.98	172.1	N/A	0.020	8.40	10.3	-77.5
1/19/2011	11:57:00	24.49	0.957	0.47	159.4	N/A	0.009	8.42	6.7	-80.7
1/19/2011	11:58:00	24.11	31.420	19.56	143.4	N/A	0.013	8.43	7.3	-82.2
1/19/2011	11:59:00	24.29	36.910	23.36	170.2	N/A	0.020	8.51	8.1	-77.6
1/19/2011	12:01:01	24.65	18.250	10.79	198.3	N/A	0.018	8.57	7.1	-73.1
1/19/2011	12:02:00	24.47	40.000	25.53	186.3	N/A	0.038	8.58	7.5	-74.2
1/19/2011	12:03:00	24.63	36.600	23.14	157.7	N/A	0.039	8.45	6.9	-76.5
1/19/2011	12:04:00	24.71	39.090	24.89	161.9	N/A	0.040	8.48	7.3	-77.2
1/19/2011	12:06:01	24.56	30.790	19.12	155.3	N/A	0.039	8.47	5.4	-77.6
1/19/2011	12:07:00	24.48	13.210	7.60	158.9	N/A	0.039	8.44	6.2	-77.6
1/19/2011	12:08:00	24.73	13.960	8.07	171.6	N/A	0.039	8.48	7.1	-76.4
1/19/2011	12:09:00	24.87	14.530	8.43	172.4	N/A	0.039	8.48	6.7	-76.8
1/19/2011	12:11:00	23.48	18.450	10.93	113.1	N/A	0.044	8.13	4.5	-81.2
1/19/2011	12:12:00	22.75	13.410	7.74	95.0	N/A	0.043	7.84	4.3	-79.5
1/19/2011	12:13:00	23.77	23.240	14.05	115.6	N/A	0.041	8.16	4.8	-79.8
1/19/2011	12:14:00	23.25	21.300	12.78	122.8	N/A	0.038	8.27	6.2	-81.4
1/19/2011	12:16:00	25.58	42.590	27.36	173.3	N/A	0.282	8.41	10.2	-77.6
1/19/2011	12:17:00	25.70	45.090	29.15	190.1	N/A	0.340	8.46	11.8	-77.8
1/19/2011	12:18:00	25.80	44.950	29.04	185.3	N/A	0.318	8.45	13.1	-79.2
1/19/2011	12:19:00	25.85	44.730	28.89	185.2	N/A	0.279	8.44	12.0	-80.7
1/19/2011	12:21:00	25.20	42.930	27.61	183.7	N/A	0.278	8.46	10.6	-79.7
1/19/2011	12:22:00	25.88	45.060	29.12	187.2	N/A	0.269	8.45	11.7	-79.5

Table AII.101: (Continued) 2011 Middle Loch surface water survey YSI data from the 6920 V2. Only data for every one-minute interval is reported.

Date m/dd/yyyy	Time hh:mm:ss	Temp °C	SpCond mS/cm	Sal	DOsat %	DO mg/L	Depth m	pH	Chl µg/L	ORP mv
1/19/2011	12:23:00	25.70	45.290	29.29	184.9	N/A	0.296	8.47	12.9	-79.7
1/19/2011	12:24:00	25.64	46.050	29.84	191.6	N/A	0.289	8.49	12.5	-79.1
1/19/2011	12:26:01	23.06	17.290	10.19	145.1	N/A	0.063	8.27	6.7	-81.9
1/19/2011	12:27:00	24.89	32.380	20.20	119.2	N/A	0.035	8.15	4.2	-81.9
1/19/2011	12:28:00	25.20	40.210	25.67	175.0	N/A	0.041	8.50	6.1	-78.4
1/19/2011	12:29:00	25.19	39.250	24.99	177.4	N/A	0.037	8.55	6.5	-78.8
1/19/2011	12:31:01	25.01	18.960	11.24	169.0	N/A	0.036	8.53	6.3	-79.8
1/19/2011	12:32:00	25.07	15.320	8.92	172.9	N/A	0.036	8.55	6.9	-79.5
1/19/2011	12:33:00	25.00	40.240	25.69	165.0	N/A	0.035	8.53	6.5	-80.1
1/19/2011	12:34:00	25.41	41.750	26.76	179.6	N/A	0.332	8.50	7.5	-78.7
1/19/2011	12:36:01	25.85	45.230	29.24	178.2	N/A	0.320	8.48	10.5	-79.5
1/19/2011	12:37:00	25.25	39.510	25.17	176.2	N/A	0.039	8.54	24.3	-80.3
1/19/2011	12:38:00	25.14	37.650	23.86	173.5	N/A	0.034	8.59	62.1	-80.3
1/19/2011	12:39:00	25.24	37.540	23.78	182.3	N/A	0.034	8.60	119.2	-78.8
1/19/2011	12:41:01	25.22	39.990	25.51	191.1	N/A	0.037	8.63	84.6	-77.5
1/19/2011	12:42:00	25.05	41.190	26.36	191.7	N/A	0.178	8.63	20.3	-77.1
1/19/2011	12:43:00	25.03	40.730	26.04	195.3	N/A	0.169	8.65	8.5	-76.4
1/19/2011	12:44:00	25.01	41.210	26.38	186.3	N/A	0.183	8.66	7.7	-75.4
1/19/2011	12:46:00	25.05	41.560	26.63	188.0	N/A	0.303	8.63	7.7	-76.7
1/19/2011	12:47:00	25.51	45.110	29.16	191.5	N/A	0.285	8.53	6.6	-76.2
1/19/2011	12:48:00	25.19	43.540	28.04	191.1	N/A	0.287	8.55	7.0	-76.6
1/19/2011	12:49:00	25.20	43.840	28.25	179.3	N/A	0.289	8.56	6.7	-77.6
1/19/2011	12:51:00	25.48	44.650	28.83	189.0	N/A	0.285	8.49	7.7	-75.6
1/19/2011	12:52:00	25.41	44.420	28.67	188.2	N/A	0.289	8.55	7.0	-76.0
1/19/2011	12:53:00	25.18	42.400	27.23	185.7	N/A	0.293	8.60	7.1	-76.8
1/19/2011	12:54:00	25.21	42.240	27.11	175.1	N/A	0.295	8.61	7.5	-76.9
1/19/2011	12:56:00	25.18	41.230	26.39	184.8	N/A	0.293	8.64	9.5	-76.1
1/19/2011	12:57:00	24.63	0.690	0.34	166.0	N/A	-0.005	8.63	34.0	-79.4

Table AII.102: 2011 Middle Loch intermediate depth water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	11	1	19	9	20	2	4.6	100.0	0.0	0.0	0.0
2	11	1	19	9	25	8	4.6	100.0	0.0	0.0	0.0
3	11	1	19	9	30	13	4.6	53.9	0.0	15.4	0.0
4	11	1	19	9	35	8	4.6	75.0	0.0	0.0	0.0
5	11	1	19	9	40	12	4.6	83.3	0.0	0.0	0.0
6	11	1	19	9	45	7	4.6	85.7	0.0	14.3	0.0
7	11	1	19	9	50	17	4.6	70.6	0.0	17.7	0.0
8	11	1	19	9	55	16	4.6	62.5	0.0	31.3	0.0
9	11	1	19	10	0	13	4.6	76.9	0.0	23.1	0.0
10	11	1	19	10	5	28	4.6	67.9	0.0	28.6	0.0
11	11	1	19	10	10	35	4.6	94.3	2.9	0.0	0.0
12	11	1	19	10	15	47	4.6	78.7	0.0	10.7	0.0
13	11	1	19	10	20	52	4.6	82.7	0.0	11.6	0.0
14	11	1	19	10	25	49	4.6	67.4	2.1	26.5	0.0
15	11	1	19	10	30	40	4.6	42.5	0.0	47.5	0.0
16	11	1	19	10	35	41	4.6	65.9	0.0	31.7	0.0
17	11	1	19	10	40	48	4.6	64.6	0.0	29.2	0.0
18	11	1	19	10	45	53	4.6	56.6	1.9	34.0	0.0
19	11	1	19	10	50	65	4.6	75.4	0.0	21.6	0.0
20	11	1	19	10	55	63	4.6	66.7	0.0	30.2	0.0
21	11	1	19	11	0	79	4.6	49.4	0.0	43.1	1.3
22	11	1	19	11	5	64	4.6	57.8	0.0	32.8	1.6
23	11	1	19	11	10	44	4.6	43.2	0.0	54.6	0.0
24	11	1	19	11	15	42	4.6	50.0	0.0	45.3	0.0
25	11	1	19	11	20	46	4.6	28.3	4.4	65.2	0.0
26	11	1	19	11	25	32	4.6	25.0	0.0	68.8	0.0
27	11	1	19	11	30	38	4.6	29.0	0.0	68.4	0.0
28	11	1	19	11	35	44	4.6	34.1	2.3	61.4	0.0
29	11	1	19	11	40	48	4.6	35.4	0.0	62.5	0.0
30	11	1	19	11	45	50	4.6	38.0	2.0	58.0	0.0
31	11	1	19	11	50	46	4.6	54.4	2.2	41.3	0.0
32	11	1	19	11	55	55	4.6	61.8	0.0	36.4	0.0
33	11	1	19	12	0	50	4.6	50.0	2.0	42.0	0.0
34	11	1	19	12	5	67	4.6	65.7	1.5	29.9	0.0
35	11	1	19	12	10	73	4.6	57.5	0.0	39.7	0.0
36	11	1	19	12	15	70	4.6	54.3	1.4	41.4	0.0
37	11	1	19	12	20	65	4.6	55.4	1.6	38.5	0.0
38	11	1	19	12	26	77	4.6	50.7	1.3	42.9	0.0

Table AII.102: (Continued) 2011 Middle Loch intermediate depth water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
39	11	1	19	12	31	54	4.6	55.6	0.0	40.8	0.0
40	11	1	19	12	36	74	4.6	40.6	1.4	56.8	0.0
41	11	1	19	12	41	61	4.6	49.2	0.0	49.2	0.0
42	11	1	19	12	46	46	4.6	34.8	0.0	65.2	0.0
43	11	1	19	12	51	54	4.6	42.6	0.0	51.9	0.0
44	11	1	19	12	56	58	4.6	48.3	0.0	48.3	0.0
45	11	1	19	12	56	7	0.7	57.2	0.0	42.9	0.0

Table AII.103: 2011 Middle Loch intermediate depth water radon survey measurements continued. All "Unit Byte"=254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	8	24.9	18	2	6.97	70	133	38.701	105.734
2	2218	9	25.5	11	2	6.97	70	133	154.806	154.806
3	2201	9	26.1	9	2	6.94	70	133	135.455	148.166
4	2218	8	27.4	7	2	6.97	70	133	116.104	141.096
5	2218	9	28.0	6	2	6.94	70	133	193.507	167.060
6	2218	9	28.9	6	2	6.94	70	133	116.104	141.096
7	2218	9	29.5	5	2	6.94	70	133	232.209	178.241
8	2201	9	29.8	5	2	6.94	70	133	193.507	167.060
9	2218	9	30.1	5	2	6.94	70	133	193.507	167.060
10	2218	8	30.1	5	2	6.94	70	133	367.663	211.779
11	2218	8	30.4	4	2	6.94	70	133	638.573	264.368
12	2218	9	30.7	4	2	6.94	70	133	719.826	278.764
13	2218	8	31.0	4	2	6.91	70	133	836.554	297.006
14	2218	9	31.3	4	2	6.94	70	133	642.007	265.789
15	2201	9	31.3	4	2	6.94	70	133	328.962	202.898
16	2218	9	31.3	4	2	6.94	70	133	522.469	243.490
17	2218	8	31.0	4	2	6.94	70	133	599.872	257.630
18	2218	9	31.3	4	2	6.91	70	133	583.642	255.548
19	2218	8	31.6	3	2	6.91	70	133	953.282	314.041
20	2201	9	31.9	3	2	6.94	70	133	817.099	294.056
21	2218	9	32.5	4	2	6.94	70	133	758.735	284.995
22	2218	8	33.2	3	2	6.91	70	133	719.826	278.764
23	2201	9	33.5	3	2	6.91	70	133	369.640	212.918
24	2201	8	34.1	3	2	6.91	70	133	408.550	221.411
25	2218	8	34.4	3	2	6.94	70	133	252.912	184.495

Table AII.103: (Continued) 2011 Middle Loch intermediate depth water radon survey measurements continued. All "Unit Byte"=254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
26	2218	8	34.7	3	2	6.91	70	133	154.806	154.806
27	2218	9	34.4	3	2	6.91	70	133	214.002	173.696
28	2218	8	34.4	3	2	6.91	70	133	290.261	193.507
29	2218	9	34.7	3	2	6.94	70	133	330.731	203.989
30	2218	9	34.7	3	2	6.94	70	133	369.640	212.918
31	2218	9	34.7	3	2	6.91	70	133	486.369	237.310
32	2236	9	35.0	3	2	6.91	70	133	661.461	269.101
33	2218	8	35.3	3	2	6.94	70	133	486.369	237.310
34	2218	8	35.6	3	2	6.88	70	133	856.009	299.922
35	2218	8	36.2	3	2	6.88	70	133	817.099	294.056
36	2201	9	36.5	3	2	6.91	70	133	739.280	281.899
37	2218	9	36.8	3	2	6.91	70	133	700.371	275.587
38	2218	9	37.1	3	2	6.91	70	133	758.735	284.995
39	2218	9	37.4	3	2	6.91	70	133	583.642	255.548
40	2218	9	37.4	3	2	6.88	70	133	583.642	255.548
41	2218	8	37.7	3	2	6.91	70	133	583.642	255.548
42	2218	9	38.0	3	2	6.91	70	133	311.276	199.337
43	2218	9	38.3	3	2	6.88	70	133	447.459	229.526
44	2218	9	38.6	3	2	6.67	60	133	544.733	248.444
45	2218	8	38.9	3	2	6.61	60	133	499.115	807.585

Table AII.104: 2011 Middle Loch intermediate-depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/19/2011 9:19	43.4	24.93	43.80	1/19/2011 9:38	53.0	25.04	44.96
1/19/2011 9:19	44.0	24.94	43.86	1/19/2011 9:38	52.4	25.04	44.89
1/19/2011 9:20	46.3	24.94	44.01	1/19/2011 9:39	51.3	25.04	44.84
1/19/2011 9:20	43.8	24.96	44.24	1/19/2011 9:39	52.2	25.00	44.19
1/19/2011 9:21	42.7	25.00	44.41	1/19/2011 9:40	52.6	24.97	43.96
1/19/2011 9:21	44.0	24.94	44.04	1/19/2011 9:40	51.9	24.97	44.64
1/19/2011 9:22	42.1	24.94	44.02	1/19/2011 9:41	53.5	25.02	44.76
1/19/2011 9:22	44.4	24.94	43.64	1/19/2011 9:41	52.1	25.03	44.79
1/19/2011 9:23	42.8	24.97	43.60	1/19/2011 9:42	53.0	25.03	44.91
1/19/2011 9:23	41.9	24.94	43.54	1/19/2011 9:42	53.1	25.03	44.70
1/19/2011 9:24	43.4	24.97	43.59	1/19/2011 9:43	54.2	24.96	44.15
1/19/2011 9:24	43.8	24.97	43.79	1/19/2011 9:43	54.8	24.97	44.64
1/19/2011 9:25	44.6	24.97	44.53	1/19/2011 9:44	54.5	25.01	44.60
1/19/2011 9:25	44.0	25.00	44.58	1/19/2011 9:44	34.2	24.77	43.65
1/19/2011 9:26	43.6	24.94	43.74	1/19/2011 9:45	11.4	25.07	44.07
1/19/2011 9:26	44.6	24.96	43.74	1/19/2011 9:45	38.1	25.17	44.51
1/19/2011 9:27	44.4	24.98	43.72	1/19/2011 9:46	53.0	25.16	45.86
1/19/2011 9:27	42.8	24.95	43.68	1/19/2011 9:46	60.0	25.14	46.00
1/19/2011 9:28	44.2	24.93	43.68	1/19/2011 9:47	59.4	25.13	46.92
1/19/2011 9:28	45.1	24.95	43.74	1/19/2011 9:47	57.2	25.16	45.66
1/19/2011 9:29	45.9	24.96	43.79	1/19/2011 9:48	55.5	25.18	44.36
1/19/2011 9:29	43.7	24.96	43.80	1/19/2011 9:48	53.9	25.17	44.13
1/19/2011 9:30	48.1	24.93	43.73	1/19/2011 9:49	54.8	25.17	44.14
1/19/2011 9:30	52.0	24.95	44.25	1/19/2011 9:49	58.2	25.13	43.94
1/19/2011 9:31	53.6	24.98	44.52	1/19/2011 9:50	58.7	25.09	43.96
1/19/2011 9:31	54.0	25.01	44.76	1/19/2011 9:50	13.5	25.13	44.90
1/19/2011 9:32	53.8	25.03	44.98	1/19/2011 9:51	20.8	24.93	43.89
1/19/2011 9:32	52.6	25.03	44.56	1/19/2011 9:51	-2.7	24.68	43.32
1/19/2011 9:33	53.0	24.99	44.59	1/19/2011 9:52	7.9	24.88	44.04
1/19/2011 9:33	52.4	25.01	44.85	1/19/2011 9:52	17.5	25.00	44.04
1/19/2011 9:34	52.2	25.03	44.79	1/19/2011 9:53	36.6	25.14	45.02
1/19/2011 9:34	52.6	24.99	43.95	1/19/2011 9:53	50.9	25.26	45.54
1/19/2011 9:35	51.8	24.94	43.83	1/19/2011 9:54	56.5	25.36	45.72
1/19/2011 9:35	52.6	24.93	43.85	1/19/2011 9:54	54.6	25.37	45.56
1/19/2011 9:36	53.2	24.94	44.36	1/19/2011 9:55	54.9	25.38	46.10
1/19/2011 9:36	53.0	24.95	44.46	1/19/2011 9:55	55.1	25.34	46.39
1/19/2011 9:37	52.2	24.99	44.82	1/19/2011 9:56	49.4	25.36	46.29
1/19/2011 9:37	52.4	25.02	45.03	1/19/2011 9:56	50.5	25.28	46.48

Table AII.104: (Continued) 2011 Middle Loch intermediate-depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/19/2011 9:57	49.5	25.20	46.63	1/19/2011 10:16	124.0	24.76	50.39
1/19/2011 9:57	50.0	25.21	46.53	1/19/2011 10:16	120.6	24.76	50.29
1/19/2011 9:58	49.0	25.29	46.39	1/19/2011 10:17	123.8	24.76	50.74
1/19/2011 9:58	48.4	25.36	46.25	1/19/2011 10:17	121.2	24.72	51.08
1/19/2011 9:59	49.4	25.38	46.14	1/19/2011 10:18	121.1	24.71	51.05
1/19/2011 9:59	50.3	25.37	46.24	1/19/2011 10:18	122.3	24.71	51.29
1/19/2011 10:00	51.9	25.33	46.36	1/19/2011 10:19	122.8	24.71	51.62
1/19/2011 10:00	42.8	25.35	45.24	1/19/2011 10:19	122.6	24.71	51.50
1/19/2011 10:01	17.5	25.09	39.62	1/19/2011 10:20	121.7	24.72	51.26
1/19/2011 10:01	12.7	25.12	43.72	1/19/2011 10:20	122.3	24.71	51.26
1/19/2011 10:02	50.9	25.04	48.15	1/19/2011 10:21	121.4	24.71	51.55
1/19/2011 10:02	10.3	24.68	43.75	1/19/2011 10:21	118.9	24.71	51.40
1/19/2011 10:03	10.8	24.32	43.89	1/19/2011 10:22	121.5	24.71	51.50
1/19/2011 10:03	27.9	25.29	44.29	1/19/2011 10:22	119.5	24.73	51.90
1/19/2011 10:04	50.7	25.27	44.40	1/19/2011 10:23	119.7	24.74	51.96
1/19/2011 10:04	65.5	25.38	46.48	1/19/2011 10:23	118.7	24.72	51.74
1/19/2011 10:05	54.9	25.24	46.08	1/19/2011 10:24	118.3	24.71	51.51
1/19/2011 10:05	64.1	25.21	46.89	1/19/2011 10:24	119.3	24.72	51.54
1/19/2011 10:06	64.9	25.23	46.69	1/19/2011 10:25	121.7	24.72	51.77
1/19/2011 10:06	65.3	25.21	47.08	1/19/2011 10:25	124.5	24.73	51.93
1/19/2011 10:07	63.7	25.22	46.83	1/19/2011 10:26	117.4	24.74	51.87
1/19/2011 10:07	63.0	25.26	46.79	1/19/2011 10:26	123.9	24.75	51.98
1/19/2011 10:08	63.6	25.15	47.54	1/19/2011 10:27	126.0	24.75	51.97
1/19/2011 10:08	43.3	25.21	44.14	1/19/2011 10:27	127.6	24.74	51.78
1/19/2011 10:09	8.5	23.01	16.88	1/19/2011 10:28	124.8	24.73	51.71
1/19/2011 10:09	48.8	25.12	46.04	1/19/2011 10:28	124.1	24.73	51.74
1/19/2011 10:10	8.7	24.66	44.00	1/19/2011 10:29	124.0	24.73	51.78
1/19/2011 10:10	-5.8	22.98	14.00	1/19/2011 10:29	121.0	24.73	51.74
1/19/2011 10:11	15.8	24.91	43.83	1/19/2011 10:30	121.0	24.74	51.74
1/19/2011 10:11	52.3	25.34	44.93	1/19/2011 10:30	42.6	25.09	44.38
1/19/2011 10:12	54.4	25.33	45.56	1/19/2011 10:31	15.6	24.69	41.27
1/19/2011 10:12	54.4	25.33	45.55	1/19/2011 10:31	4.6	23.00	13.47
1/19/2011 10:13	90.7	24.88	48.67	1/19/2011 10:32	28.2	24.25	41.88
1/19/2011 10:13	123.2	24.82	49.21	1/19/2011 10:32	29.6	25.17	45.32
1/19/2011 10:14	122.3	24.83	48.98	1/19/2011 10:33	41.5	25.17	46.97
1/19/2011 10:14	122.7	24.77	50.48	1/19/2011 10:33	33.6	25.18	44.02
1/19/2011 10:15	123.8	24.73	50.81	1/19/2011 10:34	31.3	25.19	45.95
1/19/2011 10:15	122.8	24.75	50.40	1/19/2011 10:34	35.1	25.28	45.24

Table AII.104: (Continued) 2011 Middle Loch intermediate-depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/19/2011 10:35	34.1	25.23	44.31	1/19/2011 10:54	57.5	25.99	46.50
1/19/2011 10:35	33.4	25.13	43.87	1/19/2011 10:54	56.9	26.02	46.37
1/19/2011 10:36	34.0	24.88	43.76	1/19/2011 10:55	53.8	26.01	46.44
1/19/2011 10:36	34.8	25.13	42.47	1/19/2011 10:55	53.6	25.80	46.63
1/19/2011 10:37	36.1	24.88	41.78	1/19/2011 10:56	53.8	25.81	46.75
1/19/2011 10:37	36.0	25.03	44.50	1/19/2011 10:56	54.6	25.85	46.74
1/19/2011 10:38	34.9	24.71	42.53	1/19/2011 10:57	52.3	25.85	46.63
1/19/2011 10:38	32.4	24.71	43.07	1/19/2011 10:57	52.9	25.81	46.63
1/19/2011 10:39	35.0	24.78	43.14	1/19/2011 10:58	54.4	25.87	46.63
1/19/2011 10:39	38.2	24.58	42.66	1/19/2011 10:58	54.8	25.84	46.56
1/19/2011 10:40	38.4	24.63	43.05	1/19/2011 10:59	54.2	25.90	46.51
1/19/2011 10:40	38.2	24.50	42.70	1/19/2011 10:59	55.0	25.87	46.44
1/19/2011 10:41	41.8	24.39	43.06	1/19/2011 11:00	54.8	25.89	46.45
1/19/2011 10:41	41.5	24.87	43.07	1/19/2011 11:00	55.2	25.91	46.41
1/19/2011 10:42	33.5	24.46	42.45	1/19/2011 11:01	34.6	25.65	45.79
1/19/2011 10:42	21.6	24.16	31.37	1/19/2011 11:01	32.8	25.67	44.06
1/19/2011 10:43	26.0	23.78	24.46	1/19/2011 11:02	35.4	25.61	43.98
1/19/2011 10:43	6.0	23.72	22.24	1/19/2011 11:02	38.7	25.67	45.62
1/19/2011 10:44	4.7	23.80	23.92	1/19/2011 11:03	11.6	24.80	42.92
1/19/2011 10:44	0.6	23.85	20.24	1/19/2011 11:03	5.1	24.40	42.46
1/19/2011 10:45	0.1	24.00	1.46	1/19/2011 11:04	33.5	24.50	42.57
1/19/2011 10:45	-0.9	24.37	2.40	1/19/2011 11:04	4.0	24.14	41.88
1/19/2011 10:46	2.2	24.73	36.95	1/19/2011 11:05	1.5	23.85	39.52
1/19/2011 10:46	0.1	25.14	43.54	1/19/2011 11:05	20.8	24.33	42.47
1/19/2011 10:47	-1.7	25.11	43.49	1/19/2011 11:06	51.6	25.09	45.84
1/19/2011 10:47	4.4	24.40	41.18	1/19/2011 11:06	70.2	25.25	46.87
1/19/2011 10:48	6.8	24.56	42.71	1/19/2011 11:07	70.8	24.87	50.27
1/19/2011 10:48	0.2	24.20	29.92	1/19/2011 11:07	74.0	25.10	47.85
1/19/2011 10:49	-1.0	23.92	8.96	1/19/2011 11:08	73.4	25.08	48.54
1/19/2011 10:49	0.2	23.79	21.14	1/19/2011 11:08	163.7	24.80	51.37
1/19/2011 10:50	1.8	23.82	37.93	1/19/2011 11:09	153.6	24.81	51.32
1/19/2011 10:50	7.9	24.32	40.02	1/19/2011 11:09	210.9	24.79	52.61
1/19/2011 10:51	20.6	24.97	41.70	1/19/2011 11:10	217.8	24.80	52.83
1/19/2011 10:51	50.9	25.30	46.03	1/19/2011 11:10	218.7	24.82	53.10
1/19/2011 10:52	52.1	25.44	45.37	1/19/2011 11:11	220.2	24.82	53.09
1/19/2011 10:52	36.3	25.27	44.22	1/19/2011 11:11	221.2	24.83	53.20
1/19/2011 10:53	56.9	25.90	46.57	1/19/2011 11:12	237.4	24.83	53.21
1/19/2011 10:53	56.3	25.86	46.56	1/19/2011 11:12	238.8	24.83	53.26

Table AII.104: (Continued) 2011 Middle Loch intermediate-depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/19/2011 11:13	236.6	24.83	53.26	1/19/2011 11:32	201.7	24.75	52.16
1/19/2011 11:13	237.3	24.82	53.29	1/19/2011 11:32	201.6	24.75	52.20
1/19/2011 11:14	237.4	24.83	53.25	1/19/2011 11:33	202.3	24.76	52.34
1/19/2011 11:14	235.4	24.82	53.25	1/19/2011 11:33	201.9	24.76	52.32
1/19/2011 11:15	189.2	24.81	52.84	1/19/2011 11:34	202.5	24.76	52.28
1/19/2011 11:15	140.8	24.79	50.80	1/19/2011 11:34	202.8	24.76	52.28
1/19/2011 11:16	213.7	24.80	52.97	1/19/2011 11:35	202.4	24.76	52.26
1/19/2011 11:16	243.2	24.82	53.37	1/19/2011 11:35	202.4	24.76	52.29
1/19/2011 11:17	244.2	24.82	53.40	1/19/2011 11:36	200.7	24.77	52.32
1/19/2011 11:17	243.0	24.83	53.36	1/19/2011 11:36	201.8	24.76	52.19
1/19/2011 11:18	245.2	24.83	53.37	1/19/2011 11:37	201.7	24.76	52.15
1/19/2011 11:18	244.8	24.83	53.32	1/19/2011 11:37	202.4	24.75	52.01
1/19/2011 11:19	245.5	24.83	53.32	1/19/2011 11:38	201.0	24.75	52.01
1/19/2011 11:19	245.2	24.83	53.38	1/19/2011 11:38	202.1	24.75	52.01
1/19/2011 11:20	244.7	24.83	53.30	1/19/2011 11:39	202.8	24.75	52.08
1/19/2011 11:20	244.7	24.83	53.28	1/19/2011 11:39	35.9	24.47	41.43
1/19/2011 11:21	42.6	25.19	45.76	1/19/2011 11:40	1.9	24.03	14.11
1/19/2011 11:21	8.4	24.32	40.48	1/19/2011 11:40	2.8	24.13	14.98
1/19/2011 11:22	4.2	24.05	42.37	1/19/2011 11:41	19.6	24.03	16.17
1/19/2011 11:22	-1.6	24.40	2.82	1/19/2011 11:41	40.3	23.85	33.92
1/19/2011 11:23	2.8	24.00	41.75	1/19/2011 11:42	40.0	24.12	41.50
1/19/2011 11:23	1.5	23.96	40.25	1/19/2011 11:42	40.1	25.19	41.50
1/19/2011 11:24	0.6	24.01	29.99	1/19/2011 11:43	40.8	24.22	41.73
1/19/2011 11:24	0.3	23.95	23.65	1/19/2011 11:43	44.9	24.13	42.04
1/19/2011 11:25	0.7	23.95	33.03	1/19/2011 11:44	43.1	24.17	41.80
1/19/2011 11:25	0.6	23.61	25.38	1/19/2011 11:44	42.1	24.19	41.81
1/19/2011 11:26	26.1	24.04	26.18	1/19/2011 11:45	43.7	24.19	41.90
1/19/2011 11:26	224.8	24.75	52.66	1/19/2011 11:45	45.1	24.21	41.99
1/19/2011 11:27	229.2	24.79	52.98	1/19/2011 11:46	44.8	24.25	41.96
1/19/2011 11:27	230.5	24.79	52.68	1/19/2011 11:46	44.0	24.32	42.14
1/19/2011 11:28	200.0	24.75	51.96	1/19/2011 11:47	44.9	24.33	41.98
1/19/2011 11:28	201.6	24.74	52.00	1/19/2011 11:47	45.8	24.89	46.33
1/19/2011 11:29	201.0	24.74	52.12	1/19/2011 11:48	46.2	25.29	48.53
1/19/2011 11:29	202.8	24.75	52.30	1/19/2011 11:48	46.2	25.19	48.92
1/19/2011 11:30	201.9	24.76	52.35	1/19/2011 11:49	45.3	25.14	47.96
1/19/2011 11:30	201.8	24.76	52.28	1/19/2011 11:49	43.8	25.18	48.17
1/19/2011 11:31	202.7	24.76	52.26	1/19/2011 11:50	47.8	25.53	47.00
1/19/2011 11:31	201.3	24.74	52.11	1/19/2011 11:50	47.8	24.82	44.00

Table AII.104: (Continued) 2011 Middle Loch intermediate-depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/19/2011 11:51	46.2	25.09	47.16	1/19/2011 12:10	-1.2	24.85	1.56
1/19/2011 11:51	45.2	24.93	44.34	1/19/2011 12:10	-1.8	24.42	9.50
1/19/2011 11:52	46.0	24.87	45.48	1/19/2011 12:11	-1.7	24.06	1.89
1/19/2011 11:52	48.3	24.97	47.21	1/19/2011 12:11	-2.3	23.22	0.98
1/19/2011 11:53	44.9	25.29	45.56	1/19/2011 12:12	-1.7	23.21	1.01
1/19/2011 11:53	48.7	24.99	43.82	1/19/2011 12:12	0.9	23.69	0.68
1/19/2011 11:54	21.7	24.60	35.72	1/19/2011 12:13	-2.4	23.08	1.41
1/19/2011 11:54	32.4	24.32	30.32	1/19/2011 12:13	-2.4	22.94	0.66
1/19/2011 11:55	1.2	24.30	15.82	1/19/2011 12:14	-0.2	23.01	1.60
1/19/2011 11:55	1.9	24.06	14.47	1/19/2011 12:14	26.9	24.88	44.26
1/19/2011 11:56	1.1	23.95	17.31	1/19/2011 12:15	54.1	25.72	45.94
1/19/2011 11:56	34.7	24.22	32.42	1/19/2011 12:15	32.2	25.38	42.64
1/19/2011 11:57	3.9	24.00	18.88	1/19/2011 12:16	54.1	25.59	46.18
1/19/2011 11:57	3.5	24.05	31.03	1/19/2011 12:16	49.8	25.63	46.97
1/19/2011 11:58	2.8	24.13	35.92	1/19/2011 12:17	51.4	25.46	49.15
1/19/2011 11:58	4.8	24.16	36.80	1/19/2011 12:17	90.7	25.20	50.92
1/19/2011 11:59	4.2	24.37	37.93	1/19/2011 12:18	89.5	24.95	51.27
1/19/2011 11:59	4.0	24.73	42.35	1/19/2011 12:18	92.4	25.05	51.26
1/19/2011 12:00	2.9	24.81	42.09	1/19/2011 12:19	92.1	25.18	50.42
1/19/2011 12:00	3.6	24.73	41.96	1/19/2011 12:19	92.8	25.08	50.94
1/19/2011 12:01	1.3	24.56	41.56	1/19/2011 12:20	93.4	25.07	50.97
1/19/2011 12:01	3.3	24.67	41.03	1/19/2011 12:20	84.8	24.93	50.64
1/19/2011 12:02	4.1	24.71	40.66	1/19/2011 12:21	85.6	25.43	48.43
1/19/2011 12:02	1.2	24.63	16.66	1/19/2011 12:21	84.0	25.42	48.26
1/19/2011 12:03	-0.6	24.75	4.13	1/19/2011 12:22	88.9	25.47	48.16
1/19/2011 12:03	0.4	24.64	15.23	1/19/2011 12:22	85.8	24.99	50.29
1/19/2011 12:04	1.8	24.66	13.58	1/19/2011 12:23	89.7	24.93	50.56
1/19/2011 12:04	0.4	24.85	3.49	1/19/2011 12:23	90.2	24.96	51.07
1/19/2011 12:05	0.0	24.79	0.55	1/19/2011 12:24	24.3	25.07	48.65
1/19/2011 12:05	-0.4	24.72	2.02	1/19/2011 12:24	31.7	25.55	47.27
1/19/2011 12:06	-1.6	24.78	1.11	1/19/2011 12:25	26.3	25.65	46.88
1/19/2011 12:06	-2.1	24.61	1.42	1/19/2011 12:25	-0.8	23.69	16.62
1/19/2011 12:07	-1.2	24.90	1.47	1/19/2011 12:26	-3.4	22.33	1.77
1/19/2011 12:07	-0.2	24.93	1.29	1/19/2011 12:26	1.2	24.26	5.36
1/19/2011 12:08	0.2	25.03	2.64	1/19/2011 12:27	-1.0	25.08	4.14
1/19/2011 12:08	0.2	24.89	3.44	1/19/2011 12:27	-2.3	25.20	0.10
1/19/2011 12:09	0.0	25.00	9.72	1/19/2011 12:28	0.2	25.25	4.96
1/19/2011 12:09	-0.8	24.94	1.20	1/19/2011 12:28	-1.8	25.12	3.65

Table AII.104: (Continued) 2011 Middle Loch intermediate-depth water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm	Date & Time m/dd/yyyy hh:mm	Water Head m	Temp °C	SpCond mS/cm
1/19/2011 12:29	0.1	25.12	0.36	1/19/2011 12:45	27.7	25.22	41.23
1/19/2011 12:29	0.0	24.98	0.28	1/19/2011 12:46	25.7	25.23	41.22
1/19/2011 12:30	-1.7	24.75	3.14	1/19/2011 12:46	29.1	25.22	41.24
1/19/2011 12:30	-0.9	24.97	0.23	1/19/2011 12:47	29.8	25.08	41.90
1/19/2011 12:31	0.1	25.10	4.11	1/19/2011 12:47	30.2	24.94	42.42
1/19/2011 12:31	-0.5	25.06	2.60	1/19/2011 12:48	29.4	24.90	42.19
1/19/2011 12:32	-0.7	24.99	10.01	1/19/2011 12:48	30.8	24.90	42.28
1/19/2011 12:32	-1.3	25.00	5.25	1/19/2011 12:49	29.2	24.89	43.09
1/19/2011 12:33	2.8	25.14	41.02	1/19/2011 12:49	29.1	24.99	43.99
1/19/2011 12:33	27.9	25.52	44.66	1/19/2011 12:50	30.2	24.97	43.80
1/19/2011 12:34	19.8	25.33	42.07	1/19/2011 12:50	28.9	25.08	44.21
1/19/2011 12:34	16.4	25.28	41.56	1/19/2011 12:51	28.6	25.05	43.95
1/19/2011 12:35	26.7	25.49	44.14	1/19/2011 12:51	29.1	24.99	43.68
1/19/2011 12:35	31.4	25.38	42.59	1/19/2011 12:52	28.1	24.92	43.47
1/19/2011 12:36	19.5	25.88	46.18	1/19/2011 12:52	27.9	24.93	43.60
1/19/2011 12:36	-1.5	25.38	13.89	1/19/2011 12:53	28.7	24.91	43.43
1/19/2011 12:37	-0.5	25.05	0.80	1/19/2011 12:53	27.1	24.87	43.29
1/19/2011 12:37	-0.5	25.05	0.72	1/19/2011 12:54	27.9	24.85	43.24
1/19/2011 12:38	-0.3	25.11	0.72	1/19/2011 12:54	27.6	24.83	43.02
1/19/2011 12:38	0.3	25.14	3.10	1/19/2011 12:55	27.9	24.85	42.56
1/19/2011 12:39	-0.4	25.16	0.63	1/19/2011 12:55	29.1	24.82	42.72
1/19/2011 12:39	-0.9	25.15	0.46	1/19/2011 12:56	27.4	24.86	42.44
1/19/2011 12:40	-0.7	25.24	0.32	1/19/2011 12:56	27.5	24.80	42.66
1/19/2011 12:40	-0.5	25.20	1.33	1/19/2011 12:57	29.4	24.77	42.83
1/19/2011 12:41	-0.7	25.08	2.30	1/19/2011 12:57	27.7	24.72	42.76
1/19/2011 12:41	6.4	25.09	41.08	1/19/2011 12:58	26.3	24.62	42.55
1/19/2011 12:42	23.5	25.08	41.18	1/19/2011 12:48	29.4	24.90	42.19
1/19/2011 12:42	4.5	25.06	41.01	1/19/2011 12:48	30.8	24.90	42.28
1/19/2011 12:43	22.8	25.06	41.04	1/19/2011 12:49	29.2	24.89	43.09
1/19/2011 12:43	26.0	25.08	41.03	1/19/2011 12:49	29.1	24.99	43.99
1/19/2011 12:44	1.8	25.10	41.17	1/19/2011 12:50	30.2	24.97	43.80
1/19/2011 12:44	0.7	25.15	25.07	1/19/2011 12:50	28.9	25.08	44.21
1/19/2011 12:45	9.8	25.22	41.30	1/19/2011 12:51	28.6	25.05	43.95

Table AII.105: 2011 Middle Loch deep water radon survey measurements.

RAD-7 #2357				West Loch Intermediate			eff=0.409 cpm/pCi/L				
Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
1	11	1	19	9	22	2	4.6	0.0	50.0	0.0	0.0
2	11	1	19	9	27	2	4.6	50.0	0.0	0.0	0.0
3	11	1	19	9	32	1	4.6	100.0	0.0	0.0	0.0
4	11	1	19	9	37	2	4.6	100.0	0.0	0.0	0.0
5	11	1	19	9	42	8	4.6	100.0	0.0	0.0	0.0
6	11	1	19	9	47	5	4.6	100.0	0.0	0.0	0.0
7	11	1	19	9	52	12	4.6	83.3	0.0	8.3	0.0
8	11	1	19	9	57	4	4.6	50.0	0.0	0.0	0.0
9	11	1	19	10	2	11	4.6	72.7	0.0	27.3	0.0
10	11	1	19	10	7	20	4.6	90.0	0.0	10.0	0.0
11	11	1	19	10	12	26	4.6	80.8	0.0	7.7	0.0
12	11	1	19	10	17	20	4.6	80.0	0.0	10.0	0.0
13	11	1	19	10	22	18	4.6	83.3	0.0	5.6	0.0
14	11	1	19	10	27	15	4.6	66.7	0.0	26.7	0.0
15	11	1	19	10	32	26	4.6	80.8	0.0	15.4	0.0
16	11	1	19	10	37	13	4.6	76.9	7.7	15.4	0.0
17	11	1	19	10	42	25	4.6	84.0	0.0	12.0	4.0
18	11	1	19	10	47	24	4.6	70.8	4.2	20.8	0.0
19	11	1	19	10	52	36	4.6	66.7	0.0	27.8	0.0
20	11	1	19	10	57	49	4.6	61.2	2.1	34.7	0.0
21	11	1	19	11	2	32	4.6	65.6	0.0	28.1	0.0
22	11	1	19	11	7	45	4.6	62.2	0.0	35.6	2.2
23	11	1	19	11	12	33	4.6	66.7	3.0	27.3	0.0
24	11	1	19	11	17	31	4.6	74.2	0.0	22.6	0.0
25	11	1	19	11	22	27	4.6	55.6	0.0	40.8	0.0
26	11	1	19	11	27	36	4.6	52.8	0.0	41.7	0.0
27	11	1	19	11	32	34	4.6	41.2	3.0	47.1	3.0
28	11	1	19	11	37	29	4.6	41.4	3.5	55.2	0.0
29	11	1	19	11	42	22	4.6	27.3	4.6	59.1	0.0
30	11	1	19	11	47	37	4.6	37.9	0.0	62.2	0.0
31	11	1	19	11	52	28	4.6	53.6	0.0	39.3	0.0
32	11	1	19	11	57	39	4.6	56.4	5.1	35.9	0.0
33	11	1	19	12	2	41	4.6	43.9	0.0	53.7	0.0
34	11	1	19	12	7	35	4.6	48.6	0.0	42.9	2.9
35	11	1	19	12	12	35	4.6	45.7	0.0	51.4	0.0
36	11	1	19	12	17	53	4.6	64.2	0.0	35.9	0.0
37	11	1	19	12	22	58	4.6	55.2	0.0	43.1	0.0

Table AII.105: (Continued) 2011 Middle Loch deep water radon survey measurements.

Test Num	Yr	Mon	Date	Hr	Min	Tot Cnt	Live Time	Win A%	Win B%	Win C%	Win D%
38	11	1	19	12	27	42	4.6	64.3	2.4	31.0	0.0
39	11	1	19	12	32	44	4.6	59.1	0.0	38.6	2.3
40	11	1	19	12	37	52	4.6	57.7	0.0	38.5	0.0
41	11	1	19	12	43	58	4.6	53.5	1.7	37.9	1.7
42	11	1	19	12	48	49	4.6	57.2	2.1	38.8	0.0
43	11	1	19	12	53	50	4.6	58.0	0.0	40.0	0.0
44	11	1	19	12	58	48	4.6	37.5	2.1	56.3	0.0
45	11	1	19	13	0	14	1.8	50.0	0.0	50.0	0.0

Table AII.106: 2011 Middle Loch deep water radon survey measurements continued. All "Unit Byte"=254.

Test #	High Vol V	HV duty V	Temp ℃	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
1	2218	9	26.1	19	1	6.9	70	133	0.000	76.100
2	2218	9	26.4	14	1	6.9	70	133	19.127	92.355
3	2218	9	27.4	11	1	6.9	70	133	19.127	92.355
4	2218	9	28.0	10	1	6.9	70	133	38.255	104.514
5	2218	9	29.2	10	2	6.9	70	133	153.019	153.019
6	2218	9	30.1	9	2	6.9	70	133	95.637	131.959
7	2218	9	30.7	9	2	6.9	70	133	191.274	165.131
8	2218	9	31.0	8	2	6.9	70	133	38.255	104.514
9	2218	9	31.3	8	2	6.9	70	133	153.019	153.019
10	2218	8	31.3	8	2	6.9	70	133	344.293	205.003
11	2218	9	31.3	8	2	6.9	70	133	403.846	218.862
12	2218	9	31.6	8	2	6.9	70	133	307.692	197.043
13	2218	9	31.9	8	2	6.9	70	133	286.911	191.274
14	2218	9	31.9	8	2	6.9	70	133	191.274	165.131
15	2218	9	31.9	7	2	6.9	70	133	401.675	217.686
16	2201	9	31.9	7	2	6.9	70	133	191.274	165.131
17	2218	9	32.2	7	2	6.9	70	133	403.846	218.862
18	2218	8	32.2	7	2	6.9	70	133	326.923	201.640
19	2218	9	32.2	7	2	6.9	70	133	461.539	230.769
20	2218	9	32.2	7	2	6.9	70	133	576.923	252.606
21	2201	8	32.5	7	2	6.9	70	133	403.846	218.862
22	2218	9	32.8	7	2	6.9	70	133	538.462	245.583
23	2218	8	33.2	7	2	6.9	70	133	423.077	222.917
24	2218	9	33.2	7	2	6.9	70	133	442.308	226.884
25	2218	8	33.8	7	2	6.9	70	133	288.462	192.308

Table AII.106: (Continued) 2011 Middle Loch deep water radon survey measurements continued. All "Unit Byte"=254.

Test #	High Vol V	HV duty V	Temp °C	R Hum %	Leak Curr mA	Batt Vol V	Pump Curr mA	Flags Byte	Activity Con. Bq/m3	Error Bq/m3 2sigma
26	2218	8	33.8	7	2	6.9	70	133	365.385	210.467
27	2218	8	33.5	7	2	6.9	70	133	250.000	187.422
28	2218	9	33.8	7	2	6.9	70	133	230.769	177.137
29	2218	9	34.4	7	2	6.9	70	133	115.385	140.221
30	2218	9	34.7	7	2	6.9	70	133	269.231	187.422
31	2218	8	34.7	7	2	6.9	70	133	288.462	192.308
32	2218	9	35.0	7	2	6.9	70	133	423.077	222.917
33	2218	9	35.3	7	2	6.9	70	133	346.154	206.112
34	2201	9	35.6	7	2	6.9	70	133	326.923	201.640
35	2218	9	35.9	7	2	6.9	70	133	307.692	197.043
36	2218	9	36.2	7	2	6.9	70	133	653.846	266.003
37	2218	8	36.5	7	2	6.9	70	133	615.385	259.406
38	2218	9	37.1	7	2	6.9	70	133	519.231	241.981
39	2218	9	37.4	7	2	6.9	70	133	500.000	238.314
40	2218	9	37.4	7	2	6.9	70	133	576.923	252.606
41	2218	8	37.7	7	2	6.9	70	133	596.154	256.033
42	2201	9	38.3	7	2	6.9	70	133	538.462	245.583
43	2218	9	38.6	7	2	6.9	70	133	557.692	249.124
44	2218	8	38.9	7	2	6.6	70	133	346.154	206.112
45	2218	9	39.2	10	2	6.4	70	133	345.887	378.344

Table AII.107: 2011 Middle Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm	Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm
1/19/11 9:19	34	24.88	45.42	1/19/11 9:38	412	24.73	52.37
1/19/11 9:19	28	24.91	45.38	1/19/11 9:38	411	24.73	51.12
1/19/11 9:20	28	24.88	42.64	1/19/11 9:39	412	24.73	53.46
1/19/11 9:20	29	24.9	44.59	1/19/11 9:39	409	24.73	56.47
1/19/11 9:21	30	24.94	42.3	1/19/11 9:40	411	24.72	54.27
1/19/11 9:21	33	24.93	44.79	1/19/11 9:40	409	24.71	55.88
1/19/11 9:22	30	24.93	41.21	1/19/11 9:41	409	24.71	47.97
1/19/11 9:22	27	24.97	41.13	1/19/11 9:41	407	24.72	54.5
1/19/11 9:23	30	25	47.35	1/19/11 9:42	405	24.73	53.31
1/19/11 9:23	29	24.99	46.19	1/19/11 9:42	404	24.74	55.01
1/19/11 9:24	29	24.96	41.97	1/19/11 9:43	401	24.75	52.75
1/19/11 9:24	27	24.96	47.38	1/19/11 9:43	402	24.74	54.08
1/19/11 9:25	28	25.01	42.58	1/19/11 9:44	401	24.74	53.09
1/19/11 9:25	28	25.04	43.03	1/19/11 9:44	401	24.75	52.72
1/19/11 9:26	27	25.04	44.46	1/19/11 9:45	402	24.75	55.53
1/19/11 9:26	32	25.03	46.47	1/19/11 9:45	404	24.75	54.68
1/19/11 9:27	31	25.02	44.02	1/19/11 9:46	87	25.01	47.85
1/19/11 9:27	32	25.01	43.26	1/19/11 9:46	42	24.86	44.81
1/19/11 9:28	30	25.01	45.63	1/19/11 9:47	87	25.12	48.57
1/19/11 9:28	200	24.76	53.7	1/19/11 9:47	86	25.21	44.14
1/19/11 9:29	265	24.82	53.91	1/19/11 9:48	98	25.09	49.31
1/19/11 9:29	453	24.71	52.88	1/19/11 9:48	101	25.04	51.04
1/19/11 9:30	443	24.71	43.05	1/19/11 9:49	101	25.06	49.21
1/19/11 9:30	440	24.71	48.22	1/19/11 9:49	98	25.08	47.28
1/19/11 9:31	412	24.71	52.65	1/19/11 9:50	94	25.12	47.3
1/19/11 9:31	411	24.74	51.51	1/19/11 9:50	94	25.18	47.85
1/19/11 9:32	411	24.76	53.33	1/19/11 9:51	99	25.15	45.82
1/19/11 9:32	410	24.77	54.07	1/19/11 9:51	99	25.17	48.69
1/19/11 9:33	410	24.78	55.51	1/19/11 9:52	42	25.15	49.1
1/19/11 9:33	410	24.78	53.98	1/19/11 9:52	58	25.03	50.44
1/19/11 9:34	412	24.77	56.56	1/19/11 9:53	3	24.76	44.21
1/19/11 9:34	412	24.77	55.05	1/19/11 9:53	4	24.51	42.45
1/19/11 9:35	412	24.76	52.64	1/19/11 9:54	43	25.13	42.3
1/19/11 9:35	412	24.76	52.89	1/19/11 9:54	58	25.26	47.2
1/19/11 9:36	411	24.76	55.76	1/19/11 9:55	131	24.89	50.31
1/19/11 9:36	411	24.76	52.13	1/19/11 9:55	135	24.93	50.34
1/19/11 9:37	411	24.76	53.69	1/19/11 9:56	137	24.89	46.91
1/19/11 9:37	412	24.74	54.39	1/19/11 9:56	137	24.88	48.19

Table AII.107: (Continued) 2011 Middle Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm	Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm
1/19/11 9:57	136	24.85	50.52	1/19/11 10:16	666	24.62	58.32
1/19/11 9:57	130	24.89	51.6	1/19/11 10:16	630	24.61	54.86
1/19/11 9:58	129	24.9	45.67	1/19/11 10:17	631	24.61	56.83
1/19/11 9:58	131	24.88	48.87	1/19/11 10:17	631	24.61	54.35
1/19/11 9:59	128	24.89	50.4	1/19/11 10:18	630	24.61	55.22
1/19/11 9:59	131	24.9	50.85	1/19/11 10:18	630	24.61	53.73
1/19/11 10:00	129	24.89	53.94	1/19/11 10:19	629	24.62	52.86
1/19/11 10:00	130	24.89	49.95	1/19/11 10:19	629	24.62	54.42
1/19/11 10:01	132	24.92	51.19	1/19/11 10:20	631	24.61	54.98
1/19/11 10:01	130	24.97	50.45	1/19/11 10:20	631	24.61	57.94
1/19/11 10:02	49	25.36	46.08	1/19/11 10:21	631	24.61	52.78
1/19/11 10:02	35	25.37	44.32	1/19/11 10:21	630	24.61	54.2
1/19/11 10:03	38	25.21	46.39	1/19/11 10:22	632	24.61	53.73
1/19/11 10:03	47	25.13	45.84	1/19/11 10:22	631	24.61	51.75
1/19/11 10:04	33	25.26	49.56	1/19/11 10:23	629	24.6	53.74
1/19/11 10:04	19	24.91	42.38	1/19/11 10:23	629	24.61	55.15
1/19/11 10:05	49	25.34	45.16	1/19/11 10:24	629	24.61	54.8
1/19/11 10:05	97	25.26	46.02	1/19/11 10:24	629	24.61	53.32
1/19/11 10:06	95	25.37	47.21	1/19/11 10:25	629	24.61	55.11
1/19/11 10:06	94	25.31	49.02	1/19/11 10:25	650	24.61	54.68
1/19/11 10:07	97	25.11	48.96	1/19/11 10:26	651	24.61	48.14
1/19/11 10:07	99	25.1	53.16	1/19/11 10:26	651	24.61	55.5
1/19/11 10:08	98	25.09	48.46	1/19/11 10:27	656	24.61	55.99
1/19/11 10:08	98	25.13	47.81	1/19/11 10:27	655	24.61	52.46
1/19/11 10:09	97	25.08	46.78	1/19/11 10:28	676	24.61	58.24
1/19/11 10:09	98	25.04	49.96	1/19/11 10:28	677	24.61	54.66
1/19/11 10:10	40	22.28	8.23	1/19/11 10:29	688	24.62	54.16
1/19/11 10:10	21	24.23	32.74	1/19/11 10:29	685	24.62	42.47
1/19/11 10:11	34	24.88	47.54	1/19/11 10:30	683	24.63	45.38
1/19/11 10:11	5	24.92	43.28	1/19/11 10:30	682	24.63	43.67
1/19/11 10:12	8	24.03	28.03	1/19/11 10:31	682	24.63	43.41
1/19/11 10:12	28	24.94	44.09	1/19/11 10:31	545	24.63	41.7
1/19/11 10:13	132	24.85	51.26	1/19/11 10:32	56	25.37	44.03
1/19/11 10:13	504	24.65	54.25	1/19/11 10:32	47	25.16	43.69
1/19/11 10:14	668	24.62	53.58	1/19/11 10:33	30	24.77	42.15
1/19/11 10:14	669	24.63	53.59	1/19/11 10:33	47	25	43.84
1/19/11 10:15	668	24.63	53.36	1/19/11 10:34	50	25.23	46.22
1/19/11 10:15	666	24.62	54.42	1/19/11 10:34	82	25.16	48.56

Table AII.107: (Continued) 2011 Middle Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm	Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm
1/19/11 10:35	66	25.18	49.45	1/19/11 10:54	36	25	44.67
1/19/11 10:35	62	25.33	47.5	1/19/11 10:54	37	25.37	44.9
1/19/11 10:36	72	25.17	49.4	1/19/11 10:55	36	25.19	39.48
1/19/11 10:36	72	25.03	49.94	1/19/11 10:55	36	25.02	41.76
1/19/11 10:37	71	25.16	46.52	1/19/11 10:56	34	25.24	45.46
1/19/11 10:37	72	25.39	46.95	1/19/11 10:56	33	25.28	41.87
1/19/11 10:38	58	25.76	45.54	1/19/11 10:57	35	25.43	44.32
1/19/11 10:38	73	25.36	46.9	1/19/11 10:57	34	25.42	46.36
1/19/11 10:39	76	25.3	51.3	1/19/11 10:58	32	25.35	42.35
1/19/11 10:39	70	25.58	44.49	1/19/11 10:58	30	25.33	42.15
1/19/11 10:40	78	25.29	44.95	1/19/11 10:59	32	25.36	44.61
1/19/11 10:40	71	25.5	44.03	1/19/11 10:59	34	25.39	47.44
1/19/11 10:41	76	25.8	47.18	1/19/11 11:00	34	25.44	44.33
1/19/11 10:41	80	25.82	49.26	1/19/11 11:00	32	25.47	44.1
1/19/11 10:42	80	25.63	50.7	1/19/11 11:01	35	25.5	43.81
1/19/11 10:42	82	25.32	48.68	1/19/11 11:01	35	25.53	45.62
1/19/11 10:43	82	25.05	49.46	1/19/11 11:02	35	25.62	45.56
1/19/11 10:43	44	24.51	42.69	1/19/11 11:02	35	25.62	42.87
1/19/11 10:44	43	24.06	26.96	1/19/11 11:03	34	25.62	45.03
1/19/11 10:44	45	23.79	25.61	1/19/11 11:03	33	25.58	45.34
1/19/11 10:45	28	24.3	43.19	1/19/11 11:04	34	25.61	43.8
1/19/11 10:45	10	24.25	38.72	1/19/11 11:04	30	25.09	42.47
1/19/11 10:46	2	24.48	43.34	1/19/11 11:05	30	24.15	41.75
1/19/11 10:46	7	25.01	41.76	1/19/11 11:05	40	24.24	42.64
1/19/11 10:47	8	25.09	41.24	1/19/11 11:06	19	24.49	42.56
1/19/11 10:47	5	24.96	41.62	1/19/11 11:06	11	23.91	42.06
1/19/11 10:48	3	25.26	46.29	1/19/11 11:07	19	24.17	41.73
1/19/11 10:48	6	25.11	45.44	1/19/11 11:07	34	24.39	43.55
1/19/11 10:49	18	24.67	42.24	1/19/11 11:08	37	24.5	42.46
1/19/11 10:49	20	24.71	43.46	1/19/11 11:08	35	24.53	42.98
1/19/11 10:50	21	24.83	43.01	1/19/11 11:09	196	24.78	50.33
1/19/11 10:50	10	24.3	40.04	1/19/11 11:09	773	24.64	47.75
1/19/11 10:51	17	24.59	40.53	1/19/11 11:10	771	24.64	48.31
1/19/11 10:51	12	23.96	39.9	1/19/11 11:10	769	24.64	48.01
1/19/11 10:52	31	25.25	48.85	1/19/11 11:11	771	24.64	49.51
1/19/11 10:52	35	25.32	44.25	1/19/11 11:11	739	24.63	55.42
1/19/11 10:53	36	25.16	43.94	1/19/11 11:12	740	24.63	54.78
1/19/11 10:53	36	25.33	44.89	1/19/11 11:12	742	24.63	55.02

Table AII.107: (Continued) 2011 Middle Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm	Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm
1/19/11 11:13	742	24.63	57.46	1/19/11 11:32	615	24.66	52.44
1/19/11 11:13	742	24.63	53.63	1/19/11 11:32	615	24.67	54.29
1/19/11 11:14	741	24.63	52.49	1/19/11 11:33	615	24.67	56.54
1/19/11 11:14	742	24.63	56.34	1/19/11 11:33	614	24.67	52.51
1/19/11 11:15	741	24.63	54.94	1/19/11 11:34	616	24.67	53.52
1/19/11 11:15	741	24.63	53.68	1/19/11 11:34	616	24.66	57.31
1/19/11 11:16	735	24.63	55.66	1/19/11 11:35	616	24.66	52.11
1/19/11 11:16	673	24.62	55.29	1/19/11 11:35	616	24.67	51.89
1/19/11 11:17	700	24.63	56.58	1/19/11 11:36	615	24.67	54.48
1/19/11 11:17	652	24.62	51.85	1/19/11 11:36	614	24.66	56.64
1/19/11 11:18	740	24.63	52.74	1/19/11 11:37	615	24.67	54.43
1/19/11 11:18	747	24.63	53.32	1/19/11 11:37	614	24.67	53.49
1/19/11 11:19	748	24.63	52.4	1/19/11 11:38	614	24.66	56.16
1/19/11 11:19	749	24.63	54.08	1/19/11 11:38	613	24.66	55.82
1/19/11 11:20	747	24.63	51.6	1/19/11 11:39	616	24.66	56.96
1/19/11 11:20	748	24.63	53.62	1/19/11 11:39	616	24.66	51.29
1/19/11 11:21	750	24.63	54.66	1/19/11 11:40	615	24.66	53.79
1/19/11 11:21	745	24.63	54.3	1/19/11 11:40	616	24.66	56.4
1/19/11 11:22	548	24.62	54.36	1/19/11 11:41	38	24.53	40.45
1/19/11 11:22	46	25.18	47.24	1/19/11 11:41	11	24.12	24.71
1/19/11 11:23	34	25.28	43.33	1/19/11 11:42	16	24.17	19.21
1/19/11 11:23	10	24.42	43.45	1/19/11 11:42	36	23.92	30.97
1/19/11 11:24	0	24.7	31.58	1/19/11 11:43	151	24.8	51.01
1/19/11 11:24	6	24.41	44.55	1/19/11 11:43	122	25.17	53.56
1/19/11 11:25	3	24.18	40.68	1/19/11 11:44	130	24.83	52.14
1/19/11 11:25	4	24.11	43.18	1/19/11 11:44	131	24.89	50.03
1/19/11 11:26	4	24.1	39.81	1/19/11 11:45	131	24.88	51.6
1/19/11 11:26	4	24.08	40.27	1/19/11 11:45	131	24.87	53.08
1/19/11 11:27	10	23.65	38.65	1/19/11 11:46	128	24.87	51.61
1/19/11 11:27	41	23.88	39.42	1/19/11 11:46	131	24.87	56.89
1/19/11 11:28	51	24.44	43.67	1/19/11 11:47	131	24.87	60.35
1/19/11 11:28	626	24.64	52.53	1/19/11 11:47	132	24.87	52.06
1/19/11 11:29	615	24.65	52.57	1/19/11 11:48	132	24.87	51.63
1/19/11 11:29	616	24.66	53.42	1/19/11 11:48	131	24.93	50.64
1/19/11 11:30	616	24.66	52.09	1/19/11 11:49	132	24.9	49.81
1/19/11 11:30	616	24.66	56.28	1/19/11 11:49	132	24.84	55.15
1/19/11 11:31	614	24.66	51.36	1/19/11 11:50	132	24.85	60.39
1/19/11 11:31	614	24.66	50.61	1/19/11 11:50	130	24.84	51.75

Table AII.107: (Continued) 2011 Middle Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm	Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm
1/19/11 11:51	131	24.83	53.31	1/19/11 12:10	9	25.39	43.15
1/19/11 11:51	130	24.83	53.5	1/19/11 12:10	6	25.47	47.31
1/19/11 11:52	129	24.91	57.43	1/19/11 12:11	10	25.34	43.57
1/19/11 11:52	129	24.85	50.1	1/19/11 12:11	8	25.22	41.65
1/19/11 11:53	129	24.84	51.76	1/19/11 12:12	10	25	40.81
1/19/11 11:53	129	24.83	53.01	1/19/11 12:12	11	24.81	41.54
1/19/11 11:54	129	24.81	55.32	1/19/11 12:13	14	24.48	38.8
1/19/11 11:54	129	24.8	54.65	1/19/11 12:13	9	24.25	34.99
1/19/11 11:55	128	24.83	50.35	1/19/11 12:14	4	23.76	29.12
1/19/11 11:55	39	25.43	46.42	1/19/11 12:14	7	23.79	26.99
1/19/11 11:56	48	24.4	30.2	1/19/11 12:15	8	23.16	23.42
1/19/11 11:56	44	24.33	36.48	1/19/11 12:15	1	23.48	28.88
1/19/11 11:57	15	24.37	31.85	1/19/11 12:16	48	25.44	46.04
1/19/11 11:57	14	24.39	26.16	1/19/11 12:16	50	25.61	44.77
1/19/11 11:58	27	24.42	35.84	1/19/11 12:17	54	25.43	45.89
1/19/11 11:58	13	24.14	29.4	1/19/11 12:17	55	25.64	44.71
1/19/11 11:59	14	24.28	38.78	1/19/11 12:18	53	25.66	47.22
1/19/11 11:59	19	24.21	43.54	1/19/11 12:18	57	25.41	50.34
1/19/11 12:00	18	24.16	39.64	1/19/11 12:19	342	24.81	54.31
1/19/11 12:00	11	24.48	43.94	1/19/11 12:19	341	24.78	54.38
1/19/11 12:01	7	24.75	45.04	1/19/11 12:20	342	24.77	51.93
1/19/11 12:01	8	24.96	45.19	1/19/11 12:20	341	24.77	55.26
1/19/11 12:02	14	25.15	45.24	1/19/11 12:21	342	24.78	62.69
1/19/11 12:02	10	24.78	43.54	1/19/11 12:21	341	24.77	59.36
1/19/11 12:03	9	24.76	40.96	1/19/11 12:22	336	24.76	53.75
1/19/11 12:03	14	24.84	44.1	1/19/11 12:22	332	24.77	55.48
1/19/11 12:04	10	24.89	40.67	1/19/11 12:23	335	24.79	53.23
1/19/11 12:04	7	24.94	43.24	1/19/11 12:23	342	24.8	51.3
1/19/11 12:05	11	25.04	42.79	1/19/11 12:24	339	24.79	58.9
1/19/11 12:05	14	25.04	41.14	1/19/11 12:24	341	24.79	60
1/19/11 12:06	11	25.11	43.02	1/19/11 12:25	342	24.79	57.44
1/19/11 12:06	5	24.98	39.71	1/19/11 12:25	41	25.26	53.39
1/19/11 12:07	10	24.99	41.81	1/19/11 12:26	44	25.39	49.21
1/19/11 12:07	8	25.05	40.96	1/19/11 12:26	40	25.64	48.32
1/19/11 12:08	7	24.88	40.74	1/19/11 12:27	25	25.35	50.98
1/19/11 12:08	5	25.09	42.37	1/19/11 12:27	27	23.09	22.68
1/19/11 12:09	4	25.27	43.89	1/19/11 12:28	-2	23.9	30.25
1/19/11 12:09	4	25.44	42.88	1/19/11 12:28	-9	25.16	50.33

Table AII.107: (Continued) 2011 Middle Loch deep water radon survey conductivity-temperature-depth diver data.

Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm	Date & Time m/dd/yy hh:mm	Water Head cm	Temp °C	SpCond mS/cm
1/19/11 12:29	-2	25.57	50.55	1/19/11 12:46	28	25.07	47.34
1/19/11 12:29	2	25.42	43.21	1/19/11 12:46	44	25.08	45.58
1/19/11 12:30	6	25.45	44.5	1/19/11 12:47	50	25.02	46.12
1/19/11 12:30	8	25.31	43.33	1/19/11 12:47	51	25.07	45.07
1/19/11 12:31	7	25.38	44.45	1/19/11 12:48	51	25.03	41.66
1/19/11 12:31	7	25	37.09	1/19/11 12:48	51	25.07	44.02
1/19/11 12:32	12	25.67	45.31	1/19/11 12:49	53	25.22	42.9
1/19/11 12:32	2	25.19	40.09	1/19/11 12:49	53	25.25	52.13
1/19/11 12:33	3	25.23	41.39	1/19/11 12:50	230	24.96	51.18
1/19/11 12:33	6	25.13	40.93	1/19/11 12:50	577	24.67	56.26
1/19/11 12:34	2	25.04	39.76	1/19/11 12:51	575	24.67	57.58
1/19/11 12:34	28	25.18	42.87	1/19/11 12:51	574	24.66	54.12
1/19/11 12:35	51	25.87	50.32	1/19/11 12:52	575	24.66	51.56
1/19/11 12:35	44	25.89	48.98	1/19/11 12:52	574	24.66	54.02
1/19/11 12:36	44	25.91	46.44	1/19/11 12:53	572	24.66	54.6
1/19/11 12:36	49	25.89	45.18	1/19/11 12:53	574	24.66	54.78
1/19/11 12:37	51	25.76	50.88	1/19/11 12:54	572	24.66	56.4
1/19/11 12:37	45	25.9	48.31	1/19/11 12:54	573	24.66	58.8
1/19/11 12:38	26	25.68	44.18	1/19/11 12:55	573	24.65	56.82
1/19/11 12:38	7	25.18	43.69	1/19/11 12:55	573	24.65	55.45
1/19/11 12:39	7	25.15	43.61	1/19/11 12:56	573	24.65	63.72
1/19/11 12:39	2	25.27	43.6	1/19/11 12:56	574	24.65	54.37
1/19/11 12:40	2	25.37	39.5	1/19/11 12:57	584	24.65	55.69
1/19/11 12:40	6	25.4	41.94	1/19/11 12:57	30	24.93	39.88
1/19/11 12:41	4	25.41	49.46	1/19/11 12:58	29	24.86	43.02
1/19/11 12:41	7	25.36	42.57	1/19/11 12:58	3	24.9	41.9
1/19/11 12:42	8	25.33	41.46	1/19/11 12:59	2	24.92	43.98
1/19/11 12:42	9	25.2	43.08	1/19/11 12:59	2	24.74	25.5
1/19/11 12:43	44	25.08	49.7	1/19/11 13:00	2	25.01	42
1/19/11 12:43	51	25.15	45.37	1/19/11 13:00	2	25.02	0.96
1/19/11 12:44	45	25.09	46.44	1/19/11 13:01	4	25.13	42.3
1/19/11 12:44	52	25	45.24	1/19/11 13:01	4	25.24	45.02
1/19/11 12:45	52	24.98	44.95	1/19/11 13:02	2	25.29	43.82
1/19/11 12:45	40	25	45.09	1/19/11 13:02	-2	25.04	0.54

Table AII.108: 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	9:16:29	21.38540	157.98542	3.69	1.52	0:00:30	0.19	145.7
1/19/2011	9:16:59	21.38540	157.98542	3.84	0.61	0:00:30	0.00	188.6
1/19/2011	9:17:29	21.38538	157.98542	3.96	0.61	0:00:30	0.00	208.9
1/19/2011	9:17:59	21.38538	157.98543	3.93	0.61	0:00:30	0.00	186.9
1/19/2011	9:18:29	21.38538	157.98543	3.84	0.61	0:00:30	0.00	201.9
1/19/2011	9:18:59	21.38538	157.98543	3.96	0.30	0:00:30	0.00	146.2
1/19/2011	9:19:29	21.38538	157.98542	3.90	0.30	0:00:30	0.00	94.1
1/19/2011	9:19:59	21.38538	157.98542	4.11	0.30	0:00:30	0.00	116.0
1/19/2011	9:20:29	21.38538	157.98542	3.96	0.30	0:00:30	0.00	121.9
1/19/2011	9:20:59	21.38537	157.98542	3.99	0.30	0:00:30	0.00	122.8
1/19/2011	9:21:29	21.38537	157.98542	4.05	0.00	0:00:30	0.00	124.6
1/19/2011	9:21:59	21.38537	157.98542	4.05	0.30	0:00:30	0.00	93.2
1/19/2011	9:22:29	21.38537	157.98542	4.27	0.00	0:00:30	0.00	118.2
1/19/2011	9:22:59	21.38537	157.98542	4.18	0.30	0:00:30	0.00	148.2
1/19/2011	9:23:29	21.38537	157.98542	4.18	0.30	0:00:30	0.00	137.0
1/19/2011	9:23:59	21.38537	157.98540	4.18	0.30	0:00:30	0.00	129.6
1/19/2011	9:24:29	21.38537	157.98540	4.15	0.30	0:00:30	0.00	134.8
1/19/2011	9:24:59	21.38537	157.98540	4.08	0.30	0:00:30	0.00	148.6
1/19/2011	9:25:29	21.38537	157.98540	4.24	0.30	0:00:30	0.00	161.1
1/19/2011	9:25:59	21.38535	157.98540	4.21	0.30	0:00:30	0.00	157.5
1/19/2011	9:26:29	21.38535	157.98540	4.39	0.30	0:00:30	0.00	157.8
1/19/2011	9:26:59	21.38535	157.98540	4.27	0.30	0:00:30	0.00	151.1
1/19/2011	9:27:29	21.38535	157.98540	4.27	0.30	0:00:30	0.00	145.1
1/19/2011	9:27:59	21.38535	157.98540	4.24	0.30	0:00:30	0.00	141.2
1/19/2011	9:28:29	21.38535	157.98540	4.24	0.30	0:00:30	0.00	132.3
1/19/2011	9:28:59	21.38535	157.98538	4.08	0.30	0:00:30	0.00	134.9
1/19/2011	9:29:29	21.38535	157.98538	4.11	0.30	0:00:30	0.00	141.1
1/19/2011	9:29:59	21.38533	157.98538	4.15	0.30	0:00:30	0.00	143.3
1/19/2011	9:30:29	21.38533	157.98538	4.05	0.30	0:00:30	0.00	144.0
1/19/2011	9:30:59	21.38525	157.98532	3.90	11.28	0:00:30	1.30	144.7
1/19/2011	9:31:29	21.38525	157.98532	3.90	0.61	0:00:30	0.00	128.2
1/19/2011	9:31:59	21.38525	157.98532	3.84	0.30	0:00:30	0.00	121.5
1/19/2011	9:32:29	21.38525	157.98532	3.96	0.30	0:00:30	0.00	87.5
1/19/2011	9:32:59	21.38525	157.98530	3.96	0.61	0:00:30	0.00	81.9
1/19/2011	9:33:29	21.38525	157.98530	4.02	0.30	0:00:30	0.00	86.2
1/19/2011	9:33:59	21.38525	157.98530	3.99	0.30	0:00:30	0.00	127.7
1/19/2011	9:34:29	21.38525	157.98530	4.02	0.30	0:00:30	0.00	145.7
1/19/2011	9:34:59	21.38525	157.98530	3.99	0.30	0:00:30	0.00	142.2

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	9:35:29	21.38525	157.98530	3.90	0.30	0:00:30	0.00	113.2
1/19/2011	9:35:59	21.38525	157.98530	3.66	0.30	0:00:30	0.00	111.9
1/19/2011	9:36:29	21.38523	157.98528	3.72	0.30	0:00:30	0.00	126.6
1/19/2011	9:36:59	21.38523	157.98528	3.66	0.30	0:00:30	0.00	114.5
1/19/2011	9:37:29	21.38523	157.98528	3.69	0.30	0:00:30	0.00	115.5
1/19/2011	9:37:59	21.38523	157.98528	3.81	0.30	0:00:30	0.00	128.2
1/19/2011	9:38:29	21.38523	157.98528	3.63	0.30	0:00:30	0.00	136.0
1/19/2011	9:38:59	21.38523	157.98528	3.72	0.30	0:00:30	0.00	124.0
1/19/2011	9:39:29	21.38523	157.98527	3.63	0.30	0:00:30	0.00	136.1
1/19/2011	9:39:59	21.38523	157.98527	3.69	0.30	0:00:30	0.00	137.0
1/19/2011	9:40:29	21.38523	157.98527	3.66	0.30	0:00:30	0.00	134.3
1/19/2011	9:40:59	21.38522	157.98527	3.51	0.30	0:00:30	0.00	143.7
1/19/2011	9:41:29	21.38522	157.98527	3.57	0.30	0:00:30	0.00	143.3
1/19/2011	9:41:59	21.38522	157.98527	3.63	0.00	0:00:30	0.00	144.4
1/19/2011	9:42:29	21.38522	157.98527	3.69	0.00	0:00:30	0.00	142.2
1/19/2011	9:42:59	21.38522	157.98527	3.81	0.00	0:00:30	0.00	140.0
1/19/2011	9:43:29	21.38522	157.98527	3.66	0.00	0:00:30	0.00	133.7
1/19/2011	9:43:59	21.38522	157.98527	3.66	0.00	0:00:30	0.00	121.5
1/19/2011	9:44:29	21.38522	157.98527	3.60	0.00	0:00:30	0.00	114.7
1/19/2011	9:44:59	21.38532	157.98533	4.18	12.50	0:00:30	1.48	324.7
1/19/2011	9:45:29	21.38548	157.98517	1.37	26.52	0:00:30	3.70	42.7
1/19/2011	9:45:59	21.38553	157.98505	0.70	12.19	0:00:30	1.48	65.9
1/19/2011	9:46:29	21.38552	157.98508	0.82	3.96	0:00:30	0.37	255.1
1/19/2011	9:46:59	21.38552	157.98510	0.88	1.22	0:00:30	0.19	263.8
1/19/2011	9:47:29	21.38553	157.98510	0.91	0.91	0:00:30	0.19	335.0
1/19/2011	9:47:59	21.38558	157.98512	0.94	6.10	0:00:30	0.74	349.7
1/19/2011	9:48:29	21.38558	157.98512	0.88	0.91	0:00:30	0.19	323.9
1/19/2011	9:48:59	21.38562	157.98515	0.98	3.96	0:00:30	0.56	310.2
1/19/2011	9:49:29	21.38563	157.98515	1.16	2.44	0:00:30	0.37	335.7
1/19/2011	9:49:59	21.38565	157.98517	1.10	2.74	0:00:30	0.37	319.7
1/19/2011	9:50:29	21.38567	157.98520	1.28	3.66	0:00:30	0.37	312.6
1/19/2011	9:50:59	21.38562	157.98537	2.16	18.59	0:00:30	2.22	252.1
1/19/2011	9:51:29	21.38580	157.98548	2.04	22.56	0:00:30	2.78	329.3
1/19/2011	9:51:59	21.38622	157.98563	1.52	48.77	0:00:30	5.56	341.0
1/19/2011	9:52:29	21.38652	157.98567	1.49	35.05	0:00:30	3.70	355.2
1/19/2011	9:52:59	21.38670	157.98565	1.62	20.42	0:00:30	2.41	4.0
1/19/2011	9:53:29	21.38682	157.98562	1.77	12.80	0:00:30	1.48	13.8
1/19/2011	9:53:59	21.38688	157.98558	1.86	8.53	0:00:30	1.11	26.9

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	9:54:29	21.38693	157.98555	1.80	5.79	0:00:30	0.74	39.1
1/19/2011	9:54:59	21.38698	157.98552	1.77	6.10	0:00:30	0.74	25.0
1/19/2011	9:55:29	21.38700	157.98550	1.80	3.66	0:00:30	0.37	50.6
1/19/2011	9:55:59	21.38702	157.98548	1.65	2.74	0:00:30	0.37	31.3
1/19/2011	9:56:29	21.38703	157.98547	1.58	2.44	0:00:30	0.37	37.5
1/19/2011	9:56:59	21.38705	157.98545	1.55	1.52	0:00:30	0.19	38.5
1/19/2011	9:57:29	21.38707	157.98545	1.55	1.22	0:00:30	0.19	35.9
1/19/2011	9:57:59	21.38707	157.98545	1.52	0.91	0:00:30	0.19	41.3
1/19/2011	9:58:29	21.38707	157.98543	1.46	0.61	0:00:30	0.00	33.2
1/19/2011	9:58:59	21.38708	157.98543	1.49	0.61	0:00:30	0.00	40.1
1/19/2011	9:59:29	21.38708	157.98543	1.49	0.61	0:00:30	0.00	49.2
1/19/2011	9:59:59	21.38708	157.98543	1.52	0.61	0:00:30	0.00	48.4
1/19/2011	10:00:29	21.38708	157.98542	1.55	0.61	0:00:30	0.00	44.1
1/19/2011	10:00:59	21.38713	157.98550	1.89	9.75	0:00:30	1.11	298.5
1/19/2011	10:01:29	21.38712	157.98573	1.71	24.38	0:00:30	3.70	266.3
1/19/2011	10:01:59	21.38703	157.98595	1.71	23.77	0:00:30	3.70	245.7
1/19/2011	10:02:29	21.38700	157.98607	1.49	12.50	0:00:30	1.48	254.4
1/19/2011	10:02:59	21.38722	157.98617	1.34	26.52	0:00:30	3.70	338.8
1/19/2011	10:03:29	21.38748	157.98627	1.13	30.48	0:00:30	3.70	339.2
1/19/2011	10:03:59	21.38760	157.98632	0.94	14.94	0:00:30	1.85	335.0
1/19/2011	10:04:29	21.38767	157.98637	0.82	9.45	0:00:30	1.11	337.7
1/19/2011	10:04:59	21.38767	157.98637	0.70	0.91	0:00:30	0.19	190.7
1/19/2011	10:05:29	21.38762	157.98632	0.88	6.40	0:00:30	0.74	145.4
1/19/2011	10:05:59	21.38758	157.98632	0.91	4.88	0:00:30	0.56	173.5
1/19/2011	10:06:29	21.38755	157.98633	0.98	2.74	0:00:30	0.37	219.9
1/19/2011	10:06:59	21.38755	157.98635	1.01	1.83	0:00:30	0.19	223.2
1/19/2011	10:07:29	21.38753	157.98635	1.10	0.91	0:00:30	0.19	212.5
1/19/2011	10:07:59	21.38753	157.98637	1.07	0.61	0:00:30	0.00	226.1
1/19/2011	10:08:29	21.38753	157.98637	1.01	0.30	0:00:30	0.00	247.6
1/19/2011	10:08:59	21.38740	157.98637	1.31	14.94	0:00:30	1.85	184.2
1/19/2011	10:09:29	21.38715	157.98645	1.28	29.57	0:00:30	3.70	196.6
1/19/2011	10:09:59	21.38700	157.98653	2.29	17.68	0:00:30	2.04	207.1
1/19/2011	10:10:29	21.38698	157.98688	5.15	36.27	0:00:30	3.70	266.5
1/19/2011	10:10:59	21.38717	157.98730	6.34	48.16	0:00:30	5.56	294.0
1/19/2011	10:11:29	21.38723	157.98750	6.37	21.95	0:00:30	2.59	290.5
1/19/2011	10:11:59	21.38728	157.98755	6.31	7.01	0:00:30	0.93	318.2
1/19/2011	10:12:29	21.38732	157.98755	6.34	4.57	0:00:30	0.56	3.9
1/19/2011	10:12:59	21.38733	157.98753	6.22	2.13	0:00:30	0.19	24.0

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	10:13:29	21.38733	157.98753	6.25	0.61	0:00:30	0.00	16.8
1/19/2011	10:13:59	21.38735	157.98753	6.55	0.30	0:00:30	0.00	21.1
1/19/2011	10:14:29	21.38735	157.98753	6.22	0.30	0:00:30	0.00	325.7
1/19/2011	10:14:59	21.38735	157.98757	6.37	3.05	0:00:30	0.37	279.1
1/19/2011	10:15:29	21.38735	157.98758	6.31	1.52	0:00:30	0.19	240.9
1/19/2011	10:15:59	21.38735	157.98760	6.31	1.83	0:00:30	0.19	276.9
1/19/2011	10:16:29	21.38735	157.98762	6.28	1.52	0:00:30	0.19	270.8
1/19/2011	10:16:59	21.38735	157.98762	6.34	1.22	0:00:30	0.19	257.8
1/19/2011	10:17:29	21.38733	157.98768	6.31	5.79	0:00:30	0.74	250.3
1/19/2011	10:17:59	21.38732	157.98770	6.34	3.66	0:00:30	0.37	258.7
1/19/2011	10:18:29	21.38732	157.98775	6.49	4.27	0:00:30	0.56	254.9
1/19/2011	10:18:59	21.38732	157.98777	6.40	2.13	0:00:30	0.19	274.9
1/19/2011	10:19:29	21.38732	157.98778	6.52	0.61	0:00:30	0.00	279.9
1/19/2011	10:19:59	21.38732	157.98778	6.46	1.22	0:00:30	0.19	288.9
1/19/2011	10:20:29	21.38733	157.98783	6.43	3.96	0:00:30	0.56	286.8
1/19/2011	10:20:59	21.38732	157.98783	6.49	0.61	0:00:30	0.00	249.9
1/19/2011	10:21:29	21.38735	157.98787	6.52	3.66	0:00:30	0.37	301.7
1/19/2011	10:21:59	21.38737	157.98790	6.49	4.88	0:00:30	0.56	308.5
1/19/2011	10:22:29	21.38737	157.98790	6.46	0.91	0:00:30	0.19	303.1
1/19/2011	10:22:59	21.38738	157.98790	6.52	1.22	0:00:30	0.19	6.2
1/19/2011	10:23:29	21.38740	157.98793	6.49	2.44	0:00:30	0.37	307.4
1/19/2011	10:23:59	21.38740	157.98795	6.61	2.74	0:00:30	0.37	274.8
1/19/2011	10:24:29	21.38742	157.98798	6.52	3.66	0:00:30	0.37	307.5
1/19/2011	10:24:59	21.38745	157.98800	6.46	3.35	0:00:30	0.37	321.5
1/19/2011	10:25:29	21.38747	157.98802	6.49	3.05	0:00:30	0.37	309.9
1/19/2011	10:25:59	21.38748	157.98803	6.43	3.05	0:00:30	0.37	325.1
1/19/2011	10:26:29	21.38752	157.98805	6.46	2.74	0:00:30	0.37	348.4
1/19/2011	10:26:59	21.38752	157.98805	6.46	1.83	0:00:30	0.19	332.6
1/19/2011	10:27:29	21.38753	157.98807	6.43	2.13	0:00:30	0.19	332.4
1/19/2011	10:27:59	21.38755	157.98807	6.43	1.83	0:00:30	0.19	327.6
1/19/2011	10:28:29	21.38758	157.98808	6.46	2.44	0:00:30	0.37	332.7
1/19/2011	10:28:59	21.38760	157.98810	6.37	3.05	0:00:30	0.37	321.1
1/19/2011	10:29:29	21.38762	157.98812	6.37	2.44	0:00:30	0.37	325.7
1/19/2011	10:29:59	21.38763	157.98813	6.34	2.44	0:00:30	0.37	335.7
1/19/2011	10:30:29	21.38765	157.98815	6.58	3.35	0:00:30	0.37	318.9
1/19/2011	10:30:59	21.38763	157.98818	6.34	4.88	0:00:30	0.56	231.0
1/19/2011	10:31:29	21.38773	157.98837	6.98	21.95	0:00:30	2.59	301.3
1/19/2011	10:31:59	21.38795	157.98857	5.97	32.00	0:00:30	3.70	317.5

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	10:32:29	21.38805	157.98865	0.73	13.72	0:00:30	1.67	323.1
1/19/2011	10:32:59	21.38803	157.98865	1.34	1.22	0:00:30	0.19	183.5
1/19/2011	10:33:29	21.38803	157.98867	1.22	0.91	0:00:30	0.19	218.7
1/19/2011	10:33:59	21.38802	157.98868	0.88	1.83	0:00:30	0.19	258.7
1/19/2011	10:34:29	21.38798	157.98867	2.74	3.96	0:00:30	0.56	178.2
1/19/2011	10:34:59	21.38797	157.98868	3.72	1.83	0:00:30	0.19	184.2
1/19/2011	10:35:29	21.38797	157.98868	3.81	0.30	0:00:30	0.00	221.8
1/19/2011	10:35:59	21.38798	157.98872	3.26	3.66	0:00:30	0.37	289.3
1/19/2011	10:36:29	21.38802	157.98873	0.49	4.88	0:00:30	0.56	338.2
1/19/2011	10:36:59	21.38798	157.98873	2.59	4.88	0:00:30	0.56	189.9
1/19/2011	10:37:29	21.38797	157.98877	4.24	3.96	0:00:30	0.56	233.8
1/19/2011	10:37:59	21.38795	157.98878	3.63	2.44	0:00:30	0.37	264.8
1/19/2011	10:38:29	21.38797	157.98883	1.95	4.88	0:00:30	0.56	279.1
1/19/2011	10:38:59	21.38797	157.98888	3.05	3.96	0:00:30	0.56	266.9
1/19/2011	10:39:29	21.38797	157.98890	3.26	3.05	0:00:30	0.37	278.5
1/19/2011	10:39:59	21.38797	157.98893	3.20	2.44	0:00:30	0.37	270.9
1/19/2011	10:40:29	21.38797	157.98898	2.50	5.79	0:00:30	0.74	279.0
1/19/2011	10:40:59	21.38798	157.98902	1.52	2.74	0:00:30	0.37	290.3
1/19/2011	10:41:29	21.38797	157.98903	2.50	2.13	0:00:30	0.19	239.5
1/19/2011	10:41:59	21.38797	157.98903	2.99	1.22	0:00:30	0.19	255.8
1/19/2011	10:42:29	21.38785	157.98900	5.67	13.72	0:00:30	1.67	165.4
1/19/2011	10:42:59	21.38768	157.98897	6.52	19.51	0:00:30	2.41	168.8
1/19/2011	10:43:29	21.38753	157.98902	6.40	16.15	0:00:30	1.85	195.8
1/19/2011	10:43:59	21.38753	157.98875	6.55	27.13	0:00:30	3.70	92.0
1/19/2011	10:44:29	21.38752	157.98840	6.34	35.97	0:00:30	3.70	92.9
1/19/2011	10:44:59	21.38743	157.98803	6.58	38.71	0:00:30	5.56	102.7
1/19/2011	10:45:29	21.38738	157.98772	6.61	34.14	0:00:30	3.70	99.3
1/19/2011	10:45:59	21.38732	157.98737	6.19	36.27	0:00:30	3.70	101.8
1/19/2011	10:46:29	21.38723	157.98702	5.00	38.40	0:00:30	3.70	105.2
1/19/2011	10:46:59	21.38710	157.98668	2.80	37.19	0:00:30	3.70	111.9
1/19/2011	10:47:29	21.38690	157.98638	1.92	39.32	0:00:30	5.56	127.2
1/19/2011	10:47:59	21.38677	157.98608	1.95	34.14	0:00:30	3.70	114.6
1/19/2011	10:48:29	21.38668	157.98582	2.19	28.96	0:00:30	3.70	110.3
1/19/2011	10:48:59	21.38638	157.98583	1.71	32.61	0:00:30	3.70	182.1
1/19/2011	10:49:29	21.38605	157.98585	3.23	37.49	0:00:30	3.70	183.4
1/19/2011	10:49:59	21.38590	157.98558	2.26	31.70	0:00:30	3.70	120.4
1/19/2011	10:50:29	21.38583	157.98528	1.37	32.00	0:00:30	3.70	102.8
1/19/2011	10:50:59	21.38583	157.98513	0.79	15.24	0:00:30	1.85	91.6

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	10:51:29	21.38582	157.98507	0.58	7.32	0:00:30	0.93	103.5
1/19/2011	10:51:59	21.38582	157.98503	0.55	3.35	0:00:30	0.37	110.2
1/19/2011	10:52:29	21.38582	157.98502	0.52	1.83	0:00:30	0.19	84.7
1/19/2011	10:52:59	21.38582	157.98500	0.00	2.74	0:00:30	0.37	85.4
1/19/2011	10:53:29	21.38582	157.98495	0.00	4.27	0:00:30	0.56	77.9
1/19/2011	10:53:59	21.38582	157.98495	0.00	0.30	0:00:30	0.00	189.2
1/19/2011	10:54:29	21.38582	157.98495	0.00	0.30	0:00:30	0.00	188.6
1/19/2011	10:54:59	21.38582	157.98495	0.00	0.30	0:00:30	0.00	251.0
1/19/2011	10:55:29	21.38582	157.98495	0.00	0.00	0:00:30	0.00	185.9
1/19/2011	10:55:59	21.38582	157.98495	0.00	0.00	0:00:30	0.00	140.8
1/19/2011	10:56:29	21.38582	157.98495	0.00	0.00	0:00:30	0.00	137.0
1/19/2011	10:56:59	21.38582	157.98495	0.00	0.00	0:00:30	0.00	159.6
1/19/2011	10:57:29	21.38582	157.98495	0.85	0.00	0:00:30	0.00	211.8
1/19/2011	10:57:59	21.38582	157.98495	0.00	0.30	0:00:30	0.00	230.6
1/19/2011	10:58:29	21.38582	157.98495	0.00	0.30	0:00:30	0.00	245.7
1/19/2011	10:58:59	21.38582	157.98497	0.00	0.00	0:00:30	0.00	240.0
1/19/2011	10:59:29	21.38582	157.98497	0.00	0.00	0:00:30	0.00	234.4
1/19/2011	10:59:59	21.38582	157.98497	0.00	0.00	0:00:30	0.00	229.3
1/19/2011	11:00:29	21.38582	157.98497	0.88	0.00	0:00:30	0.00	255.0
1/19/2011	11:00:59	21.38582	157.98497	0.00	0.30	0:00:30	0.00	249.2
1/19/2011	11:01:29	21.38582	157.98497	0.00	0.00	0:00:30	0.00	273.8
1/19/2011	11:01:59	21.38582	157.98497	0.00	0.30	0:00:30	0.00	266.6
1/19/2011	11:02:29	21.38582	157.98497	0.88	0.00	0:00:30	0.00	247.6
1/19/2011	11:02:59	21.38582	157.98503	0.00	7.32	0:00:30	0.93	276.3
1/19/2011	11:03:29	21.38585	157.98528	1.28	25.60	0:00:30	3.70	277.3
1/19/2011	11:03:59	21.38573	157.98555	2.71	30.48	0:00:30	3.70	244.6
1/19/2011	11:04:29	21.38563	157.98560	3.32	11.58	0:00:30	1.30	206.1
1/19/2011	11:04:59	21.38537	157.98570	6.31	31.09	0:00:30	3.70	200.6
1/19/2011	11:05:29	21.38503	157.98585	7.07	40.23	0:00:30	5.56	203.2
1/19/2011	11:05:59	21.38478	157.98588	7.25	29.26	0:00:30	3.70	184.2
1/19/2011	11:06:29	21.38467	157.98585	7.25	13.11	0:00:30	1.67	166.2
1/19/2011	11:06:59	21.38465	157.98585	7.32	2.44	0:00:30	0.19	174.1
1/19/2011	11:07:29	21.38465	157.98587	7.28	2.13	0:00:30	0.19	305.3
1/19/2011	11:07:59	21.38467	157.98585	7.28	1.52	0:00:30	0.19	24.5
1/19/2011	11:08:29	21.38467	157.98583	7.32	2.44	0:00:30	0.37	80.7
1/19/2011	11:08:59	21.38467	157.98583	7.32	0.61	0:00:30	0.00	250.7
1/19/2011	11:09:29	21.38467	157.98583	7.32	0.91	0:00:30	0.19	272.5
1/19/2011	11:09:59	21.38467	157.98585	7.25	0.91	0:00:30	0.19	288.5

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	11:10:29	21.38473	157.98590	7.22	7.62	0:00:30	0.93	320.1
1/19/2011	11:10:59	21.38475	157.98593	7.25	3.66	0:00:30	0.37	309.1
1/19/2011	11:11:29	21.38475	157.98592	7.25	0.61	0:00:30	0.00	70.0
1/19/2011	11:11:59	21.38478	157.98595	7.28	5.18	0:00:30	0.56	328.5
1/19/2011	11:12:29	21.38482	157.98598	7.28	4.27	0:00:30	0.56	313.3
1/19/2011	11:12:59	21.38483	157.98595	7.22	2.74	0:00:30	0.37	54.5
1/19/2011	11:13:29	21.38485	157.98593	7.16	3.05	0:00:30	0.37	43.5
1/19/2011	11:13:59	21.38485	157.98593	7.07	0.91	0:00:30	0.19	358.7
1/19/2011	11:14:29	21.38487	157.98593	7.07	0.61	0:00:30	0.00	15.3
1/19/2011	11:14:59	21.38490	157.98593	7.35	5.18	0:00:30	0.56	355.0
1/19/2011	11:15:29	21.38495	157.98595	7.10	3.96	0:00:30	0.56	335.7
1/19/2011	11:15:59	21.38488	157.98587	7.25	10.97	0:00:30	1.30	123.1
1/19/2011	11:16:29	21.38485	157.98583	0.00	5.79	0:00:30	0.74	150.1
1/19/2011	11:16:59	21.38482	157.98583	7.19	2.74	0:00:30	0.37	160.3
1/19/2011	11:17:29	21.38480	157.98582	7.22	1.83	0:00:30	0.19	158.1
1/19/2011	11:17:59	21.38480	157.98582	7.25	0.91	0:00:30	0.19	155.7
1/19/2011	11:18:29	21.38480	157.98582	7.16	0.30	0:00:30	0.00	270.0
1/19/2011	11:18:59	21.38480	157.98582	7.10	0.30	0:00:30	0.00	3.8
1/19/2011	11:19:29	21.38480	157.98582	7.10	0.30	0:00:30	0.00	39.9
1/19/2011	11:19:59	21.38480	157.98582	7.07	0.30	0:00:30	0.00	29.8
1/19/2011	11:20:29	21.38482	157.98582	7.25	1.52	0:00:30	0.19	9.6
1/19/2011	11:20:59	21.38480	157.98578	7.28	3.05	0:00:30	0.37	131.3
1/19/2011	11:21:29	21.38473	157.98577	7.32	7.32	0:00:30	0.93	159.2
1/19/2011	11:21:59	21.38482	157.98600	7.28	24.99	0:00:30	3.70	290.4
1/19/2011	11:22:29	21.38500	157.98638	7.25	45.42	0:00:30	5.56	296.7
1/19/2011	11:22:59	21.38520	157.98685	7.16	53.04	0:00:30	5.56	294.5
1/19/2011	11:23:29	21.38545	157.98722	6.98	46.94	0:00:30	5.56	305.8
1/19/2011	11:23:59	21.38572	157.98760	6.98	49.38	0:00:30	5.56	307.1
1/19/2011	11:24:29	21.38598	157.98797	7.07	49.07	0:00:30	5.56	308.8
1/19/2011	11:24:59	21.38628	157.98832	6.95	48.46	0:00:30	5.56	311.6
1/19/2011	11:25:29	21.38658	157.98865	7.01	48.77	0:00:30	5.56	314.9
1/19/2011	11:25:59	21.38688	157.98893	6.37	45.11	0:00:30	5.56	318.6
1/19/2011	11:26:29	21.38700	157.98907	5.97	17.98	0:00:30	2.22	310.0
1/19/2011	11:26:59	21.38700	157.98908	5.85	2.44	0:00:30	0.19	296.9
1/19/2011	11:27:29	21.38700	157.98910	5.79	1.52	0:00:30	0.19	235.2
1/19/2011	11:27:59	21.38698	157.98912	5.79	1.22	0:00:30	0.19	239.4
1/19/2011	11:28:29	21.38698	157.98912	5.79	0.61	0:00:30	0.00	269.1
1/19/2011	11:28:59	21.38700	157.98912	5.94	0.61	0:00:30	0.00	291.0

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	11:29:29	21.38700	157.98913	5.91	0.61	0:00:30	0.00	279.4
1/19/2011	11:29:59	21.38700	157.98913	5.79	0.61	0:00:30	0.00	280.0
1/19/2011	11:30:29	21.38700	157.98915	5.79	0.91	0:00:30	0.19	283.8
1/19/2011	11:30:59	21.38700	157.98915	5.85	0.91	0:00:30	0.19	283.0
1/19/2011	11:31:29	21.38700	157.98917	5.91	0.91	0:00:30	0.19	283.4
1/19/2011	11:31:59	21.38700	157.98917	5.88	0.91	0:00:30	0.19	286.9
1/19/2011	11:32:29	21.38703	157.98927	5.91	11.28	0:00:30	1.30	285.9
1/19/2011	11:32:59	21.38703	157.98928	5.88	1.22	0:00:30	0.19	301.8
1/19/2011	11:33:29	21.38703	157.98930	5.85	0.91	0:00:30	0.19	280.2
1/19/2011	11:33:59	21.38703	157.98930	5.85	0.61	0:00:30	0.00	272.9
1/19/2011	11:34:29	21.38703	157.98930	6.00	0.91	0:00:30	0.19	275.7
1/19/2011	11:34:59	21.38705	157.98932	6.10	0.91	0:00:30	0.19	298.0
1/19/2011	11:35:29	21.38705	157.98932	6.00	0.91	0:00:30	0.19	306.0
1/19/2011	11:35:59	21.38705	157.98933	6.04	0.91	0:00:30	0.19	309.1
1/19/2011	11:36:29	21.38710	157.98940	6.16	9.14	0:00:30	1.11	311.3
1/19/2011	11:36:59	21.38710	157.98938	6.07	0.61	0:00:30	0.00	134.6
1/19/2011	11:37:29	21.38710	157.98938	6.00	0.30	0:00:30	0.00	102.1
1/19/2011	11:37:59	21.38710	157.98938	6.04	0.30	0:00:30	0.00	357.7
1/19/2011	11:38:29	21.38712	157.98940	6.10	1.83	0:00:30	0.19	320.0
1/19/2011	11:38:59	21.38712	157.98940	6.13	0.61	0:00:30	0.00	355.5
1/19/2011	11:39:29	21.38713	157.98940	6.19	0.61	0:00:30	0.00	358.4
1/19/2011	11:39:59	21.38718	157.98947	6.25	8.23	0:00:30	0.93	311.0
1/19/2011	11:40:29	21.38747	157.98970	6.49	40.23	0:00:30	5.56	321.7
1/19/2011	11:40:59	21.38773	157.98987	6.13	34.75	0:00:30	3.70	330.0
1/19/2011	11:41:29	21.38788	157.98995	5.24	18.90	0:00:30	2.22	332.1
1/19/2011	11:41:59	21.38792	157.98997	2.19	3.96	0:00:30	0.56	333.2
1/19/2011	11:42:29	21.38790	157.98997	4.60	1.52	0:00:30	0.19	157.8
1/19/2011	11:42:59	21.38788	157.98997	5.12	1.52	0:00:30	0.19	201.6
1/19/2011	11:43:29	21.38788	157.98998	5.36	0.91	0:00:30	0.19	196.5
1/19/2011	11:43:59	21.38787	157.98998	5.39	2.13	0:00:30	0.19	203.6
1/19/2011	11:44:29	21.38787	157.98998	5.46	0.30	0:00:30	0.00	245.9
1/19/2011	11:44:59	21.38787	157.98998	5.39	0.30	0:00:30	0.00	304.9
1/19/2011	11:45:29	21.38787	157.99002	5.43	2.74	0:00:30	0.37	269.1
1/19/2011	11:45:59	21.38785	157.99003	5.30	2.13	0:00:30	0.19	251.8
1/19/2011	11:46:29	21.38787	157.99005	5.27	0.91	0:00:30	0.19	301.9
1/19/2011	11:46:59	21.38787	157.99005	5.12	0.91	0:00:30	0.19	288.2
1/19/2011	11:47:29	21.38787	157.99005	5.03	0.61	0:00:30	0.00	275.2
1/19/2011	11:47:59	21.38787	157.99010	4.97	4.88	0:00:30	0.56	276.8

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	11:48:29	21.38785	157.99015	5.12	4.27	0:00:30	0.56	244.8
1/19/2011	11:48:59	21.38782	157.99018	5.27	5.18	0:00:30	0.56	228.4
1/19/2011	11:49:29	21.38777	157.99018	5.58	6.40	0:00:30	0.74	180.7
1/19/2011	11:49:59	21.38773	157.99020	5.76	4.88	0:00:30	0.56	207.9
1/19/2011	11:50:29	21.38772	157.99020	5.85	0.91	0:00:30	0.19	148.2
1/19/2011	11:50:59	21.38772	157.99018	5.97	1.83	0:00:30	0.19	76.7
1/19/2011	11:51:29	21.38772	157.99018	5.85	0.00	0:00:30	0.00	174.1
1/19/2011	11:51:59	21.38773	157.99018	5.94	0.30	0:00:30	0.00	299.4
1/19/2011	11:52:29	21.38770	157.99018	5.24	2.44	0:00:30	0.37	192.7
1/19/2011	11:52:59	21.38768	157.99017	6.40	3.96	0:00:30	0.56	141.8
1/19/2011	11:53:29	21.38767	157.99017	5.67	1.22	0:00:30	0.19	211.7
1/19/2011	11:53:59	21.38765	157.99017	6.28	1.83	0:00:30	0.19	193.7
1/19/2011	11:54:29	21.38758	157.99002	6.61	18.59	0:00:30	2.22	116.2
1/19/2011	11:54:59	21.38743	157.99005	6.55	16.76	0:00:30	2.04	190.5
1/19/2011	11:55:29	21.38730	157.98982	6.34	26.82	0:00:30	3.70	120.9
1/19/2011	11:55:59	21.38708	157.98955	6.07	38.10	0:00:30	3.70	131.5
1/19/2011	11:56:29	21.38685	157.98928	5.76	36.58	0:00:30	3.70	133.3
1/19/2011	11:56:59	21.38677	157.98935	6.00	11.58	0:00:30	1.48	210.6
1/19/2011	11:57:29	21.38655	157.98903	6.89	39.93	0:00:30	5.56	126.6
1/19/2011	11:57:59	21.38630	157.98873	7.04	41.15	0:00:30	5.56	131.4
1/19/2011	11:58:29	21.38608	157.98843	7.22	39.62	0:00:30	5.56	128.6
1/19/2011	11:58:59	21.38588	157.98815	7.16	37.49	0:00:30	3.70	127.6
1/19/2011	11:59:29	21.38567	157.98787	6.83	37.80	0:00:30	3.70	129.7
1/19/2011	11:59:59	21.38543	157.98755	7.01	41.76	0:00:30	5.56	127.8
1/19/2011	12:00:29	21.38522	157.98723	6.98	40.54	0:00:30	5.56	125.9
1/19/2011	12:00:59	21.38503	157.98693	6.83	37.49	0:00:30	3.70	123.3
1/19/2011	12:01:29	21.38483	157.98662	7.25	40.54	0:00:30	5.56	124.5
1/19/2011	12:01:59	21.38458	157.98630	7.19	41.45	0:00:30	5.56	129.9
1/19/2011	12:02:29	21.38440	157.98597	7.53	40.23	0:00:30	5.56	120.5
1/19/2011	12:02:59	21.38417	157.98567	7.74	40.84	0:00:30	5.56	128.8
1/19/2011	12:03:29	21.38392	157.98538	7.50	40.84	0:00:30	5.56	135.0
1/19/2011	12:03:59	21.38367	157.98512	7.41	39.62	0:00:30	5.56	134.1
1/19/2011	12:04:29	21.38340	157.98485	7.38	40.23	0:00:30	5.56	137.7
1/19/2011	12:04:59	21.38310	157.98463	7.25	39.62	0:00:30	5.56	145.9
1/19/2011	12:05:29	21.38280	157.98437	7.13	44.20	0:00:30	5.56	139.4
1/19/2011	12:05:59	21.38252	157.98408	7.28	43.28	0:00:30	5.56	137.8
1/19/2011	12:06:29	21.38215	157.98387	7.22	45.72	0:00:30	5.56	151.4
1/19/2011	12:06:59	21.38180	157.98363	7.22	46.02	0:00:30	5.56	148.9

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	12:07:29	21.38147	157.98338	7.07	45.72	0:00:30	5.56	144.6
1/19/2011	12:07:59	21.38113	157.98312	7.13	46.02	0:00:30	5.56	143.8
1/19/2011	12:08:29	21.38078	157.98288	7.07	45.72	0:00:30	5.56	148.9
1/19/2011	12:08:59	21.38043	157.98272	7.10	43.59	0:00:30	5.56	155.0
1/19/2011	12:09:29	21.38007	157.98253	7.10	44.50	0:00:30	5.56	156.2
1/19/2011	12:09:59	21.37973	157.98232	7.04	42.98	0:00:30	5.56	147.1
1/19/2011	12:10:29	21.37943	157.98203	7.16	43.89	0:00:30	5.56	139.6
1/19/2011	12:10:59	21.37910	157.98180	7.32	45.11	0:00:30	5.56	147.9
1/19/2011	12:11:29	21.37872	157.98163	7.41	45.42	0:00:30	5.56	157.4
1/19/2011	12:11:59	21.37838	157.98142	8.99	43.28	0:00:30	5.56	147.9
1/19/2011	12:12:29	21.37815	157.98110	8.87	42.06	0:00:30	5.56	129.5
1/19/2011	12:12:59	21.37797	157.98078	8.63	39.62	0:00:30	5.56	121.0
1/19/2011	12:13:29	21.37820	157.98052	8.38	37.80	0:00:30	3.70	47.4
1/19/2011	12:13:59	21.37850	157.98025	8.11	42.67	0:00:30	5.56	37.7
1/19/2011	12:14:29	21.37880	157.98000	2.59	43.28	0:00:30	5.56	37.6
1/19/2011	12:14:59	21.37880	157.98000	2.62	1.52	0:00:30	0.19	181.4
1/19/2011	12:15:29	21.37873	157.98008	7.13	10.36	0:00:30	1.30	234.7
1/19/2011	12:15:59	21.37880	157.98003	4.05	8.53	0:00:30	0.93	36.1
1/19/2011	12:16:29	21.37883	157.98005	3.90	4.27	0:00:30	0.56	340.9
1/19/2011	12:16:59	21.37887	157.98008	4.36	4.88	0:00:30	0.56	312.9
1/19/2011	12:17:29	21.37883	157.98013	5.94	5.79	0:00:30	0.74	228.0
1/19/2011	12:17:59	21.37883	157.98015	7.25	1.83	0:00:30	0.19	284.1
1/19/2011	12:18:29	21.37885	157.98017	7.68	2.74	0:00:30	0.37	321.6
1/19/2011	12:18:59	21.37888	157.98017	7.53	3.96	0:00:30	0.56	349.0
1/19/2011	12:19:29	21.37892	157.98018	7.22	4.27	0:00:30	0.56	336.0
1/19/2011	12:19:59	21.37895	157.98020	7.07	3.96	0:00:30	0.37	346.8
1/19/2011	12:20:29	21.37900	157.98022	6.64	4.57	0:00:30	0.56	333.1
1/19/2011	12:20:59	21.37905	157.98023	5.76	6.40	0:00:30	0.74	336.1
1/19/2011	12:21:29	21.37910	157.98027	4.48	6.71	0:00:30	0.74	339.3
1/19/2011	12:21:59	21.37915	157.98030	5.09	6.71	0:00:30	0.74	326.6
1/19/2011	12:22:29	21.37918	157.98033	5.24	4.57	0:00:30	0.56	310.9
1/19/2011	12:22:59	21.37922	157.98037	5.39	4.88	0:00:30	0.56	312.6
1/19/2011	12:23:29	21.37923	157.98038	5.70	3.35	0:00:30	0.37	319.4
1/19/2011	12:23:59	21.37925	157.98040	6.00	2.44	0:00:30	0.37	316.6
1/19/2011	12:24:29	21.37927	157.98042	6.10	2.74	0:00:30	0.37	323.1
1/19/2011	12:24:59	21.37928	157.98045	6.31	3.35	0:00:30	0.37	308.4
1/19/2011	12:25:29	21.37927	157.98047	7.04	3.05	0:00:30	0.37	206.9
1/19/2011	12:25:59	21.37917	157.98060	9.17	17.98	0:00:30	2.22	234.9

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	12:26:29	21.37875	157.98052	8.81	47.24	0:00:30	5.56	170.1
1/19/2011	12:26:59	21.37837	157.98042	8.41	45.11	0:00:30	5.56	165.5
1/19/2011	12:27:29	21.37800	157.98022	8.14	45.42	0:00:30	5.56	154.1
1/19/2011	12:27:59	21.37765	157.98013	8.63	40.23	0:00:30	5.56	166.4
1/19/2011	12:28:29	21.37730	157.98002	8.87	39.62	0:00:30	5.56	162.0
1/19/2011	12:28:59	21.37698	157.97982	8.81	41.45	0:00:30	5.56	151.2
1/19/2011	12:29:29	21.37670	157.97963	8.93	37.19	0:00:30	3.70	147.6
1/19/2011	12:29:59	21.37643	157.97940	9.17	37.80	0:00:30	3.70	141.5
1/19/2011	12:30:29	21.37608	157.97917	9.72	45.11	0:00:30	5.56	146.9
1/19/2011	12:30:59	21.37582	157.97892	10.24	39.93	0:00:30	5.56	138.5
1/19/2011	12:31:29	21.37563	157.97852	10.76	46.33	0:00:30	5.56	116.7
1/19/2011	12:31:59	21.37557	157.97807	10.79	46.94	0:00:30	5.56	98.7
1/19/2011	12:32:29	21.37552	157.97763	10.64	45.11	0:00:30	5.56	98.7
1/19/2011	12:32:59	21.37538	157.97725	6.07	41.76	0:00:30	5.56	109.8
1/19/2011	12:33:29	21.37542	157.97702	3.20	25.30	0:00:30	3.70	81.2
1/19/2011	12:33:59	21.37543	157.97698	2.99	3.66	0:00:30	0.37	66.5
1/19/2011	12:34:29	21.37538	157.97697	2.96	4.57	0:00:30	0.56	173.3
1/19/2011	12:34:59	21.37537	157.97697	2.93	2.44	0:00:30	0.37	151.5
1/19/2011	12:35:29	21.37537	157.97695	2.90	0.61	0:00:30	0.00	127.8
1/19/2011	12:35:59	21.37537	157.97698	3.23	2.74	0:00:30	0.37	283.7
1/19/2011	12:36:29	21.37545	157.97698	3.02	7.92	0:00:30	0.93	354.4
1/19/2011	12:36:59	21.37560	157.97727	3.60	33.22	0:00:30	3.70	302.6
1/19/2011	12:37:29	21.37553	157.97773	10.64	49.07	0:00:30	5.56	261.7
1/19/2011	12:37:59	21.37532	157.97812	10.94	47.55	0:00:30	5.56	238.2
1/19/2011	12:38:29	21.37505	157.97847	10.76	47.24	0:00:30	5.56	230.9
1/19/2011	12:38:59	21.37483	157.97888	10.79	48.77	0:00:30	5.56	241.5
1/19/2011	12:39:29	21.37465	157.97930	10.73	48.16	0:00:30	5.56	243.2
1/19/2011	12:39:59	21.37433	157.97960	10.79	46.02	0:00:30	5.56	221.0
1/19/2011	12:40:29	21.37400	157.97988	10.70	47.24	0:00:30	5.56	219.6
1/19/2011	12:40:59	21.37378	157.98028	10.85	47.24	0:00:30	5.56	239.2
1/19/2011	12:41:29	21.37343	157.98048	10.73	45.11	0:00:30	5.56	209.3
1/19/2011	12:41:59	21.37325	157.98050	10.45	19.81	0:00:30	2.41	181.6
1/19/2011	12:42:29	21.37320	157.98048	10.49	6.40	0:00:30	0.74	169.5
1/19/2011	12:42:59	21.37307	157.98047	10.49	14.33	0:00:30	1.67	176.9
1/19/2011	12:43:29	21.37300	157.98047	10.30	7.62	0:00:30	0.93	167.8
1/19/2011	12:43:59	21.37297	157.98042	10.58	5.49	0:00:30	0.74	132.5
1/19/2011	12:44:29	21.37282	157.98028	10.73	21.64	0:00:30	2.59	139.9
1/19/2011	12:44:59	21.37257	157.98022	10.64	29.26	0:00:30	3.70	164.5

Table AII.108: (Continued) 2011 Middle Loch surface, intermediate-depth, and deep water radon survey global positioning system data.

Date m/dd/yyyy	Time hh:mm:ss	Latitude °N	Longitude °W	Depth m	Leg Length m	Leg Time h:mm:ss	Leg Speed kph	Leg Course °
1/19/2011	12:45:29	21.37243	157.98023	10.67	14.94	0:00:30	1.85	189.0
1/19/2011	12:45:59	21.37242	157.98028	10.82	5.79	0:00:30	0.74	249.4
1/19/2011	12:46:29	21.37243	157.98033	10.67	4.57	0:00:30	0.56	275.7
1/19/2011	12:46:59	21.37245	157.98037	10.58	5.49	0:00:30	0.56	303.1
1/19/2011	12:47:29	21.37247	157.98040	10.58	4.27	0:00:30	0.56	298.3
1/19/2011	12:47:59	21.37248	157.98043	10.55	3.05	0:00:30	0.37	310.8
1/19/2011	12:48:29	21.37250	157.98045	10.58	2.74	0:00:30	0.37	293.9
1/19/2011	12:48:59	21.37248	157.98045	10.64	1.83	0:00:30	0.19	187.0
1/19/2011	12:49:29	21.37250	157.98048	10.64	3.05	0:00:30	0.37	292.5
1/19/2011	12:49:59	21.37252	157.98050	10.97	3.66	0:00:30	0.37	318.6
1/19/2011	12:50:29	21.37253	157.98052	10.58	2.13	0:00:30	0.19	304.1
1/19/2011	12:50:59	21.37253	157.98053	10.55	2.13	0:00:30	0.19	306.9
1/19/2011	12:51:29	21.37257	157.98055	11.06	3.05	0:00:30	0.37	323.8
1/19/2011	12:51:59	21.37258	157.98057	10.61	3.05	0:00:30	0.37	330.7
1/19/2011	12:52:29	21.37260	157.98058	10.55	1.83	0:00:30	0.19	339.1
1/19/2011	12:52:59	21.37262	157.98060	10.79	3.05	0:00:30	0.37	329.5
1/19/2011	12:53:29	21.37265	157.98060	10.61	3.05	0:00:30	0.37	337.2
1/19/2011	12:53:59	21.37267	157.98062	10.79	2.13	0:00:30	0.19	326.3
1/19/2011	12:54:29	21.37268	157.98062	10.79	2.13	0:00:30	0.19	338.6
1/19/2011	12:54:59	21.37270	157.98063	10.88	2.44	0:00:30	0.37	319.6
1/19/2011	12:55:29	21.37272	157.98065	10.85	1.83	0:00:30	0.19	339.8
1/19/2011	12:55:59	21.37273	157.98065	10.82	2.44	0:00:30	0.37	336.0
1/19/2011	12:56:29	21.37275	157.98067	10.79	1.52	0:00:30	0.19	324.5
1/19/2011	12:56:59	21.37277	157.98067	10.82	2.44	0:00:30	0.37	336.0
1/19/2011	12:57:29	21.37278	157.98068	10.61	1.83	0:00:30	0.19	352.2
1/19/2011	12:57:59	21.37282	157.98068	0.00	4.27	0:00:30	0.56	345.2

Table AII.109: 2011 Middle Loch surface, intermediate depth, and deep water radon survey wind speed data from Honolulu International United States Air Force #911820, NCDC #22521 weather station located at 21.238°N; 157.943°W.

Date yyyymmdd	Time hh:ss	Wind Speed m/s	Date yyyymmdd	Time hh:ss	Wind Speed m/s
20110119	08:53	0.91	20110119	11:53	2.13
20110119	09:53	0.00	20110119	12:53	2.44
20110119	10:53	1.83			

Table AII.110: Raw and decay corrected results for radon grab samples for the Kalaeloa Unit of the Pearl Harbor National Wildlife Refuge.

Sample Name	Taps Pool SG1	Roberts Pool SG2	Papa Bear Pool SG3	Taps Pool SG4	Roberts Pool SG5
Size (ml)	250	250	250	250	250
Raw Results					
RUN 1 (Bq/m3)					
RUN 2 (Bq/m3)					
RUN 3 (Bq/m3)					
RUN 4 (Bq/m3)					
MEAN (Bq/m3)	4,390	4,160	4,343	4,623	4,415
STDEV (Bq/m3)	553	626	519	306	394
MAX (Bq/m3)					
MIN (Bq/m3)					
Sample Time	10/13/2009 14:18	10/13/2009 15:12	10/13/2009 15:35	10/13/2009 16:57	10/13/2009 17:18
Rn Start Time	10/13/2009 14:20	10/13/2009 15:15	10/13/2009 16:15	10/13/2009 17:15	10/13/2009 18:15
Decay Time (hours)	0.0	0.1	0.7	0.3	1.0
Decay Correction Factor	1.00	1.00	1.01	1.00	1.01
Decay Corrected Results					
RUN 1 (Bq/m3)					
RUN 2 (Bq/m3)					
RUN 3 (Bq/m3)					
RUN 4 (Bq/m3)					
MEAN (Bq/m3)	4,390	4,160	4,343	4,623	4,415
STDEV (Bq/m3)	553	626	519	306	394
MAX (Bq/m3)					
MIN (Bq/m3)					
MEAN (dpm/m3)	263,400	249,600	260,550	277,350	264,900
STDEV (dpm/m3)	33,192	37,563	31,148	18,346	23,611
MAX (dpm/m3)					
MIN (dpm/m3)					

Table AII.111: Raw and decay corrected results for radon grab samples for Pearl Harbor spring and pore-water samples.

Sample Name	MLC-1	MLC-2	MLC-3	MLC-4	EC-1
Size (ml)	250	250	250	250	250
Raw Results					
RUN 1 (Bq/m3)	1,247	1,600	176	0	88
RUN 2 (Bq/m3)	1,432	1,790	442	177	88
RUN 3 (Bq/m3)	1,162	984	266	176	88
RUN 4 (Bq/m3)	1,432	1,790	89	88	176
MEAN (Bq/m3)	1,318	1,541	243	110	110
STDEV (Bq/m3)	136	382	151	85	44
MAX (Bq/m3)	1,432	1,790	442	177	176
MIN (Bq/m3)	1,162	984	89	0	88
Sample Time	1/8/2010 10:18	1/8/2010 10:32	1/8/2010 11:16	1/8/2010 14:59	1/10/2010 13:35
Rn Start Time	1/9/2010 10:47	1/9/2010 12:08	1/9/2010 13:09	1/9/2010 14:09	1/11/2010 9:04
Decay Time (hours)	24.5	25.6	25.9	23.2	19.5
Decay Correction Factor	1.20	1.21	1.22	1.19	1.16
Decay Corrected Results					
RUN 1 (Bq/m3)	1,500	1,941	214	0	102
RUN 2 (Bq/m3)	1,723	2,172	537	211	102
RUN 3 (Bq/m3)	1,398	1,194	323	210	102
RUN 4 (Bq/m3)	1,723	2,172	108	105	204
MEAN (Bq/m3)	1,586	1,870	296	131	127
STDEV (Bq/m3)	163	463	184	101	51
MAX (Bq/m3)	1,723	2,172	537	211	204
MIN (Bq/m3)	1,398	1,194	108	0	102
MEAN (dpm/m3)	95,152	112,183	17,737	7,880	7,646
STDEV (dpm/m3)	9,810	27,808	11,023	6,041	3,059
MAX (dpm/m3)	103,365	130,310	32,246	12,651	12,234
MIN (dpm/m3)	83,867	71,634	6,456	0	6,117

Table AII.112: Raw and decay corrected results for radon grab samples for City and County of Honolulu Board of Water supply samples and Waiau Spring Complex Samples.

Sample Name	Waipio Heights II-1	Waipahu I-1	Waipahu IV-2	Hoaeae P-2	Kunia I-P2
Well ID #	2500-01	2400-02	2301-44	2301-35	2302-02
SIZE (ml)	40 (NO Bubbler)	250	250	250	250
Raw Results					
RUN 1 (Bq/m3)	1,370	1,500	1,140	2,220	1,410
RUN 2 (Bq/m3)	1,840	1,010	1,560	1,820	1,600
RUN 3 (Bq/m3)	0	1,760	1,720	1,990	1,600
RUN 4 (Bq/m3)	920	1,260	1,310	2,650	1,510
MEAN (Bq/m3)	1,033	1,383	1,433	2,170	1,530
STDEV (Bq/m3)	784	321	258	360	91
MAX (Bq/m3)	1,840	1,760	1,720	2,650	1,600
MIN (Bq/m3)	0	1,010	1,140	1,820	1,410
SAMPLE TIME	1/28/2010 8:14	1/28/2010 8:51	1/28/2010 9:12	1/28/2010 9:40	1/28/2010 10:05
Rn START TIME	1/29/2010 15:08	1/28/2010 16:16	1/28/2010 16:51	1/28/2010 15:42	1/28/2010 15:02
Decay Time (hours)	30.9	7.4	7.6	6.0	4.9
Decay Correction Factor	1.26	1.06	1.06	1.05	1.04
Decay Corrected Results					
RUN 1 (Bq/m3)	1,730	1,586	1,208	2,324	1,464
RUN 2 (Bq/m3)	2,324	1,068	1,653	1,905	1,661
RUN 3 (Bq/m3)	0	1,861	1,822	2,083	1,661
RUN 4 (Bq/m3)	1,162	1,333	1,388	2,774	1,568
MEAN (Bq/m3)	1,304	1,462	1,518	2,271	1,588
STDEV (Bq/m3)	990	340	273	376	94
MAX (Bq/m3)	2,324	1,861	1,822	2,774	1,661
MIN (Bq/m3)	0	1,068	1,208	1,905	1,464
MEAN (dpm/m3)	78,235	87,729	91,062	136,270	95,297
STDEV (dpm/m3)	59,417	20,401	16,392	22,578	5,640
MAX (dpm/m3)	139,420	111,684	109,338	166,413	99,657
MIN (dpm/m3)	0	64,092	72,469	114,291	87,823

Table AII.112: (Continued) Raw and decay corrected results for radon grab samples for City and County of Honolulu Board of Water supply samples and Waiau Spring Complex Samples.

Sample Name	Waiau HECO 2A	Waiau Spring HECO	Kaahumanu I-1	Manana Well	Aiea Heights 2
Well ID #	2357-11		2357-24	2458-05	2355-07
Size (ml)	250	250	40 (NO Bubbler)	40 (NO Bubbler)	40 (NO Bubbler)
Raw Results					
RUN 1 (Bq/m3)	5,540	3,670	4,200	1,820	933
RUN 2 (Bq/m3)	5,680	4,260	6,130	920	1,890
RUN 3 (Bq/m3)	6,340	3,600	2,360	920	943
RUN 4 (Bq/m3)	6,840	4,530	4,720	1,840	1,420
MEAN (Bq/m3)	6,100	4,015	4,353	1,375	1,297
STDEV (Bq/m3)	604	453	1,559	525	456
MAX (Bq/m3)	6,840	4,530	6,130	1,840	1,890
MIN (Bq/m3)	5,540	3,600	2,360	920	933
SAMPLE TIME	1/28/2010 10:40	1/28/2010 11:11	1/28/2010 11:38	1/28/2010 12:45	1/28/2010 13:14
Rn START TIME	1/28/2010 14:26	1/29/2010 11:21	1/29/2010 14:12	1/29/2010 17:28	1/29/2010 16:44
Decay Time (hours)	3.8	24.2	26.6	28.7	27.5
Decay Correction Factor	1.03	1.20	1.22	1.24	1.23
Decay Corrected Results					
RUN 1 (Bq/m3)	5,700	4,405	5,041	2,184	1,148
RUN 2 (Bq/m3)	5,844	5,113	7,358	1,104	2,326
RUN 3 (Bq/m3)	6,523	4,321	2,833	1,104	1,161
RUN 4 (Bq/m3)	7,037	5,437	5,665	2,208	1,748
MEAN (Bq/m3)	6,276	4,819	5,224	1,650	1,596
STDEV (Bq/m3)	622	544	1,871	631	562
MAX (Bq/m3)	7,037	5,437	7,358	2,208	2,326
MIN (Bq/m3)	5,700	4,321	2,833	1,104	1,148
MEAN (dpm/m3)	376,562	289,140	313,445	99,020	95,748
STDEV (dpm/m3)	37,299	32,646	112,244	37,840	33,697
MAX (dpm/m3)	422,243	326,227	441,451	132,507	139,578
MIN (dpm/m3)	341,992	259,253	169,955	66,254	68,903

Table AII.113: Raw and decay corrected results for radon grab samples for City and County of Honolulu Board of Water supply samples.

Sample Name	Waiau SPRING HECO 1	Waiau SPRING HECO 2	Waiau SPRING HECO 3
Size (ml)	250	250	250
Raw Results			
RUN 1 (Bq/m3)	3,160	6,180	7,820
RUN 2 (Bq/m3)	3,280	8,180	7,410
RUN 3 (Bq/m3)	4,100	7,430	7,820
RUN 4 (Bq/m3)	3,280	6,330	8,980
MEAN (Bq/m3)	3,455	7,030	8,008
STDEV (Bq/m3)	434	948	677
MAX (Bq/m3)	4,100	8,180	8,980
MIN (Bq/m3)	3,160	6,180	7,410
SAMPLE TIME	2/9/2010 9:08	2/9/2010 9:40	2/9/2010 10:12
Rn START TIME	2/9/2010 12:37	2/9/2010 13:04	2/9/2010 13:50
Decay Time (hours)	3.5	3.4	3.6
Decay Correction Factor	1.03	1.03	1.03
Decay Corrected Results			
RUN 1 (Bq/m3)	3,889	7,607	9,625
RUN 2 (Bq/m3)	4,037	10,068	9,121
RUN 3 (Bq/m3)	5,046	9,145	9,625
RUN 4 (Bq/m3)	4,037	7,791	11,053
MEAN (Bq/m3)	4,253	8,653	9,856
STDEV (Bq/m3)	534	1,167	833
MAX (Bq/m3)	5,046	10,068	11,053
MIN (Bq/m3)	3,889	7,607	9,121
MEAN (dpm/m3)	255,155	519,172	591,361
STDEV (dpm/m3)	32,030	69,996	49,962
MAX (dpm/m3)	302,789	604,101	663,181
MIN (dpm/m3)	233,369	456,399	547,235

Table AII.114: Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples.

Sample	ID	Sample #	Amplitude	Area Vs	Loop uL
9/15/2011	17	199.5 ppm Reference Gas 40	2072	19.192	500
9/15/2011	17	BLANK	19	0.172	5000
9/15/2011	17	40 um 0.06% NIST-3 (P)	1959	18.176	5000
9/15/2011	17	40 um 0.08% NIST-3 (P)	1977	18.287	5000
9/15/2011	17	40 um UH NaNO3	1131	10.41	5000
9/15/2011	17	40 um 0.00% NIST-3 (P)	1897	17.466	5000
9/15/2011	17	BLANK DUP 3	39	0.353	5000
9/15/2011	17	199.5 ppm Reference Gas 41	2255	20.834	500
9/16/2011	17	199.5 ppm Reference Gas 42	2530	23.391	500
9/16/2011	17	BLANK DUP 2	60	0.527	5000
9/16/2011	17	40 um UH NaNO3 DUP 1	1141	10.481	5000
9/16/2011	17	40 um 0.00% NIST-3 (P) DUP 1	2030	18.793	5000
9/16/2011	17	40 um 0.06% NIST-3 (P) DUP 1	1994	18.381	5000
9/16/2011	17	40 um 0.08% NIST-3 (P) DUP 1	2114	19.528	5000
9/16/2011	17	40 um 0.08% NIST-3 (P) DUP 2	2153	19.932	5000
9/16/2011	17	40 um 0.08% NIST-3 (P) DUP 3	1853	17.129	5000
9/16/2011	17	Manana Well	1744	16.117	5000
9/16/2011	17	Manana Well DUP	1751	16.24	5000
9/16/2011	17	BLANK DUP 1	57	0.508	5000
9/16/2011	17	199.5 ppm Reference Gas 43	2204	20.463	500
9/26/2011	18	199.5 ppm Reference Gas 44	2687	24.794	500
9/26/2011	18	40 um 0.08% NIST-3 (P)	3002	27.825	5000
9/26/2011	18	40 um UH NaNO3	2297	21.193	5000
9/26/2011	18	BLANK	216	1.926	5000
9/26/2011	18	Honokohau	3221	29.706	5000
9/26/2011	18	Kahaluu Shaft	3334	30.802	5000
9/26/2011	18	40 um 0.00% NIST-3 (P)	3345	30.928	5000
9/26/2011	18	Kahaluu A	2730	25.178	5000
9/26/2011	18	40 um 0.06% NIST-3 (P)	2779	25.632	5000
9/26/2011	18	Keahuola QLT-1	3054	32.388	5000
9/26/2011	18	Keahuola QLT-1 DUP 1	3474	32.049	5000
9/26/2011	18	199.5 ppm Reference Gas 45	2742	25.308	500
9/27/2011	18	199.5 ppm Reference Gas 46	1836	16.846	500
9/27/2011	18	40 um UH NaNO3 DUP 1	2414	22.185	5000
9/27/2011	18	KAHO 3	3532	32.597	5000
9/27/2011	18	40 um 0.00% NIST-3 DUP 1 (P)	3387	31.299	5000
9/27/2011	18	Kahaluu A DUP 1	3503	32.369	5000
9/27/2011	18	40 um 0.08% NIST-3 DUP 1 (P)	3118	28.828	5000
9/27/2011	18	Kahaluu Shaft DUP 1	3259	30.101	5000

Table AII.114: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples.

Sample	ID	Sample #	Amplitude	Area Vs	Loop uL
9/27/2011	18	40 um 0.06% NIST-3 DUP 1 (P)	2975	27.45	5000
9/27/2011	18	Honokohau DUP 1	3455	31.93	5000
9/27/2011	18	BLANK DUP 1	182	1.633	5000
9/27/2011	18	KAHO 3 DUP 1	3605	33.32	5000
9/27/2011	18	Keahuola QLT-1 DUP 1 Reinject	2421	22.235	5000
9/27/2011	18	199.5 ppm Reference Gas 47	2581	23.792	500
11/11/2011	RG	199.5 ppm Reference Gas 5	2961	26.245	500
11/11/2011	RG	199.5 ppm Reference Gas 6	1997	24.55	500
11/11/2011	RG	199.5 ppm Reference Gas 7	2948	25.998	500
11/11/2011	RG	199.5 ppm Reference Gas 8	2983	26.337	500
11/11/2011	RG	199.5 ppm Reference Gas 9	2314	20.3785	500
11/11/2011	23	WLT5 DUP	3588	31.639	5000
11/11/2011	23	BLANK	202	1.737	5000
11/11/2011	23	EL2-4-1	2369	20.793	5000
11/11/2011	23	40 um 0.00% NIST-3 (P)	2966	26.340	5000
11/12/2011	RG	199.5 ppm Reference Gas 12	2584	22.867	500
11/12/2011	RG	199.5 ppm Reference Gas 13	2446	21.712	500
11/12/2011	23	WL 1-6-1	1559	13.563	5000
11/12/2011	23	40 um UH NaNO3 DUP	1917	16.964	5000
11/12/2011	23	EL 5-1-1	3424	30.088	5000
11/12/2011	23	MLC3	N/A	N/A	5000
11/12/2011	22	40 um 0.08% NIST-3 (P)	2228	19.539	5000
11/12/2011	23	WL 1-5-1	1516	13.430	5000
11/12/2011	23	HIT2 DUP	1914	21.686	5000
11/12/2011	RG	199.5 ppm Reference Gas 14	2467	21.705	500
11/14/2011	RG	199.5 ppm Reference Gas 15	1663	14.592	500
11/14/2011	23	40 um 0.00% NIST-3 (P) DUP	2576	22.937	5000
11/14/2011	23	MLC2	2077	18.507	5000
11/14/2011	23	WLT5	2527	22.527	5000
11/14/2011	23	40 um 0.06% NIST-3 (P)	2245	19.828	5000
11/14/2011	23	HIT2	2887	25.732	5000
11/14/2011	23	WLT6	2259	19.930	5000
11/14/2011	23	40 um UH NaNO3	1852	16.333	5000
11/14/2011	23	MLC2 DUP	2454	21.788	5000
11/14/2011	23	BLANK DUP	148	1.280	5000
11/14/2011	23	40 um UH NANO3 REINJECT	1413	12.437	5000
11/14/2011	RG	199.5 ppm Reference Gas 16	2441	21.699	500
11/16/2011	RG	199.5 ppm Reference Gas 17	2529	21.872	500
11/16/2011	RG	199.5 ppm Reference Gas 18	1979	17.618	500

Table AII.114: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples.

Sample	ID	Sample #	Amplitude	Area Vs	Loop uL
11/16/2011	24	BLANK DUP	5558	49.463	5000
11/16/2011	24	Ainakoa Well 2	9076	82.452	5000
11/16/2011	24	40 um 0.08% NIST-3 (P)	9699	88.188	5000
11/16/2011	24	40 um UH NaNO3	7598	68.732	5000
11/16/2011	25	BLANK	49	0.51	5000
11/16/2011	25	MLT8	302	2.533	5000
11/16/2011	RG	199.5 ppm Reference Gas 19	2398	21.204	500
11/16/2011	RG	199.5 ppm Reference Gas 20	2478	21.641	500
11/16/2011	RG	199.5 ppm Reference Gas 21	2489	21.721	500
11/16/2011	RG	199.5 ppm Reference Gas 22	0	0	500
11/16/2011	RG	199.5 ppm Reference Gas 23	2371	20.89	500
11/16/2011	RG	199.5 ppm Reference Gas 24	2371	20.89	500
11/17/2011	RG	199.5 ppm Reference Gas 25	2523	21.854	500
11/17/2011	RG	199.5 ppm Reference Gas 26	2360	21.179	500
11/17/2011	RG	199.5 ppm Reference Gas 27 (No Slurry)	2411	21.284	500
11/17/2011	RG	199.5 ppm Reference Gas 28 (No Slurry)	2329	20.206	500
11/18/2011	RG	199.5 ppm Reference Gas 29	N/A	N/A	500
11/18/2011	RG	199.5 ppm Reference Gas 30	N/A	N/A	500
11/20/2011	RG	199.5 ppm Reference Gas 31 (No Slurry)	N/A	N/A	500
11/21/2011	RG	199.5 ppm Reference Gas 32	1803	15.886	500
11/21/2011	25	Kunawai Spring	320	2.783	5000
11/21/2011	25	20 um 0.08% NIST-3 (W)	279	2.42	5000
11/21/2011	26	Manana Well	3147	28.079	5000
11/21/2011	26	BLANK	31	0.273	5000
11/21/2011	26	40 um UH NaNO3	N/A	N/A	5000
11/21/2011	26	40 um UH NaNO3 REINJECT	2149	18.923	5000
11/21/2011	26	WLT1 DUP	4208	37.683	5000
11/21/2011	26	"20" um 0.00% NIST-3 DUP (W)	2894	25.831	5000
11/21/2011	26	Bakken Pond	3417	30.553	5000
11/21/2011	26	"20" um 0.08% NIST-3 (W)	2361	20.958	5000
11/21/2011	26	MLC1	3027	26.685	5000
11/21/2011	RG	199.5 ppm Reference Gas 33	2961	26.369	500
11/22/2011	RG	199.5 ppm Reference Gas 34	2590	23.13	500
11/22/2011	26	"20" um 0.00% NIST-3 (W)	2682	23.895	5000
11/22/2011	26	Manana Well DUP	3378	30.231	5000
11/22/2011	26	SG6	3655	32.706	5000

Table AII.114: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples.

Sample	ID	Sample #	Amplitude	Area Vs	Loop uL
11/22/2011	26	WLT1	3987	35.613	5000
11/22/2011	26	Waiau Spring HECO	3141	28.154	5000
11/22/2011	RG	199.5 ppm Reference Gas 35	2796	24.935	500
11/23/2011	RG	199.5 ppm Reference Gas 36	2332	20.694	500
11/23/2011	26	SG5	3969	35.274	5000
11/23/2011	26	EL4-1-1	3093	27.061	5000
11/23/2011	26	MLT7	3689	32.605	5000
11/23/2011	26	"20" um 0.06% NIST-3 (W)	2556	22.656	5000
11/23/2011	26	40 um UH NaNO3 DUP	2426	21.519	5000
11/23/2011	26	"20" um 0.06% NIST-3 DUP (W)	2813	24.94	5000
11/23/2011	26	BLANK DUP	40	0.361	5000
11/23/2011	26	MLC1 REINJECT	1998	17.713	5000
11/23/2011	26	SG5 REINJECT	2604	23.205	5000
11/23/2011	26	Manana Well DUP REINJECT	2281	20.411	5000
11/23/2011	RG	199.5 ppm Reference Gas 37	2332	20.694	500
11/25/2011	RG	199.5 ppm Reference Gas 38	1938	16.811	500
11/25/2011	27	MLT8	2834	25.092	5000
11/25/2011	27	BLANK DUP	64	0.549	5000
11/25/2011	27	"20" um 0.00% NIST-3 (W)	2535	22.065	5000
11/25/2011	27	ML1-6-1	3238	28.604	5000
11/25/2011	27	ML1-9-1	1377	12.109	5000
11/25/2011	27	"20" um 0.06% NIST-3 (W)	2613	23.153	5000
11/25/2011	27	WLT7	3173	28.18	5000
11/25/2011	27	40 um UH NaNO3 DUP	632	5.547	5000
11/25/2011	27	Waiau HECO 2A	3261	28.837	5000
11/25/2011	27	"20" um 0.08% NIST-3 (W) DUP	2336	20.581	5000
11/25/2011	27	Kunawai Spring DUP	2844	25.11	5000
11/25/2011	27	WLC2	3639	32.196	5000
11/25/2011	27	40 um UH NaNO3	2346	21.6	5000
11/25/2011	27	"20" um 0.00% NIST-3 (W) DUP	2655	23.611	5000
11/25/2011	27	Kunawai Spring	3001	26.639	5000
11/25/2011	27	Palolo Well 2	2911	25.861	5000
11/25/2011	27	Kaahumanu 1-1	3355	30.101	5000
11/25/2011	27	MLT8 DUP	3220	28.572	5000
11/25/2011	27	"20" um 0.08% NIST-3 (W)	2335	20.646	5000
11/25/2011	27	BLANK	71	0.602	5000
11/25/2011	RG	199.5 ppm Reference Gas 39	2893	25.571	500
11/25/2011	RG	199.5 ppm Reference Gas 40	2915	25.782	500
11/28/2011	RG	199.5 ppm Reference Gas 40	2491	22.029	500

Table AII.114: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples.

Sample	ID	Sample #	Amplitude	Area Vs	Loop uL
11/28/2011	28	PUHO	3544	31.433	5000
11/28/2011	28	BLANK	41	0.366	5000
11/28/2011	28	40 um UH NaNO3 DUP	2735	24.203	5000
11/28/2011	28	Kailua Lava Tube	3997	35.632	5000
11/28/2011	28	"20" um 0.08% NIST-3 (W) DUP	2168	19.162	5000
11/28/2011	28	Moanalua Well 2	3114	27.64	5000
11/28/2011	28	Ainakoa Well 1 DUP	3418	30.368	5000
11/28/2011	28	"20" um 0.00% NIST-3 (W) DUP	2595	23.037	5000
11/28/2011	28	Ainakoa Well 2	3826	34.113	5000
11/28/2011	28	Hind Well	3736	33.245	5000
11/28/2011	29	Kunia I-P2	4354	38.843	5000
11/28/2011	29	BLANK	64	0.544	5000
11/28/2011	29	"20" um 0.00% NIST-3 (W) DUP	2435	21.502	5000
11/28/2011	29	Waipio Heights II-1	3448	30.7	5000
11/28/2011	29	Hoaeae P2	3672	32.677	5000
11/28/2011	28	10 um UH NaNO3 DUP	788	6.882	5000
11/28/2011	29	Kunia I-P2 DUP	4543	40.464	5000
11/28/2011	29	SG4	3710	33.164	5000
11/28/2011	29	WL1-1-1	2398	21.241	5000
11/28/2011	29	"20" um 0.06% NIST-3 (W)	2270	20.05	5000
11/28/2011	29	Wilder Well 1	3594	31.964	5000
11/28/2011	29	"20" um 0.00% NIST-3 (W)	2510	22.186	5000
11/28/2011	29	Waipahu IV-2	3429	30.567	5000
11/28/2011	29	"20"um 0.08% NIST-3 (W)	1959	17.179	5000
11/28/2011	29	WL1-1-1 DUP	2434	21.578	5000
11/28/2011	29	10 um UH NaNO3	828	7.262	5000
11/28/2011	29	Waipahu I-1	3875	34.53	5000
11/28/2011	29	"20"um 0.06% NIST-3 DUP (W)	2439	21.618	5000
11/28/2011	29	Keauhou Pond	3975	35.352	5000
11/28/2011	29	Blank DUP	59	0.505	5000
11/28/2011	RG	199.5 ppm Reference Gas 41	2543	22.455	500
12/5/2011	RG	199.5 ppm Reference Gas 42	2786	24.862	500
12/5/2011	RG	199.5 ppm Reference Gas 43	2149	19.027	500
12/5/2011	30	PUHO	3342	29.969	5000
12/5/2011	30	BLANK	66	0.563	5000
12/5/2011	30	"20"um 0.08% NIST-3 (W) DUP	1902	16.962	5000
12/5/2011	30	Waialae Golf Course	3030	26.691	5000
12/5/2011	30	Kapalama Well 1	3125	27.576	5000
12/5/2011	30	"20"um 0.06% NIST-3 (W) DUP	2368	21.021	5000

Table AII.114: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples.

Sample	ID	Sample #	Amplitude	Area Vs	Loop uL
12/5/2011	30	Kailua Lava Tube	3523	31.41	5000
12/5/2011	30	Aiea Heights 2	3480	30.827	5000
12/5/2011	30	10 um UH NaNO3	40	0.344	5000
12/5/2011	30	10 um UH NaNO3 DUP	39	0.335	5000
12/12/2011	RG	199.5 ppm Reference Gas 44	2762	24.657	500
12/12/2011	31	PUHO DUP	3745	33.73	5000
12/12/2011	31	BLANK DUP	36	0.296	5000
12/12/2011	31	100 um 0% NIST-3 (O)	13188	124.994	5000
12/12/2011	31	Keauhou Pond	3345	30.101	5000
12/12/2011	31	100 um 0% NIST-3 DUP (O)	12299	115.472	5000
12/12/2011	31	Holualoa	3496	31.431	5000
12/12/2011	31	100 um UH NaNO3 DUP	2518	22.564	5000
12/12/2011	31	Halekii	3443	30.881	5000
12/12/2011	31	100 um 10% NIST-3 (O)	3616	32.41	5000
12/12/2011	31	Halekii DUP	3483	31.092	5000
12/12/2011	31	Hind Well	3395	30.186	5000
12/12/2011	31	100 um 5% NIST-3 DUP (O)	4208	37.642	5000
12/12/2011	31	PUHO	3627	32.193	5000
12/12/2011	31	100 um 10% NIST-3 DUP (O)	3598	32.14	5000
12/12/2011	31	100 um UH NaNO3	2500	22.204	5000
12/12/2011	31	Kailua Lava Tube	3401	30.214	5000
12/12/2011	31	Hualalai	3673	32.683	5000
12/12/2011	31	100 um 5% NIST-3 (O)	4430	39.481	5000
12/12/2011	31	Hind Well DUP	3551	31.561	5000
12/12/2011	31	BLANK	39	0.329	5000
12/12/2011	RG	199.5 ppm Reference Gas 45	2652	23.267	500
12/19/2011	RG	199.5 ppm Reference Gas 46	2037	17.897	500
12/19/2011	32	Ainakoa Well 2	3149	27.961	5000
12/19/2011	32	BLANK DUP	51	0.448	5000
12/19/2011	32	100 um UH NaNO3	2491	21.783	5000
12/19/2011	32	Kalaoa A	3629	31.95	5000
12/19/2011	32	100 um 0.00% NIST-3 (R)	2534	22.288	5000
12/19/2011	32	Keei D	3733	33.106	5000
12/19/2011	32	100 um 0.05% NIST-3 DUP (R)	3539	31.352	5000
12/19/2011	32	Aiea Heights 2	3295	29.148	5000
12/19/2011	32	100 um 0.1% NIST-3 DUP (R)	3679	32.475	5000
12/19/2011	32	Moanalua Well 2 DUP	3034	26.833	5000
12/19/2011	32	Aina Koa Well 1	3278	28.985	5000
12/19/2011	32	100 um 0.05% NIST-3 (R)	3371	29.953	5000

Table AII.114: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples.

Sample	ID	Sample #	Amplitude	Area Vs	Loop uL
12/19/2011	32	Kapalama Well 1	3145	27.737	5000
12/19/2011	32	100 um 0.1% NIST-3 (R)	3557	31.415	5000
12/19/2011	32	Moanalua Well 2	2900	25.496	5000
12/19/2011	32	100 um UH NaNO3 DUP	2477	21.752	5000
12/19/2011	32	Waialae Golf Course	2946	25.972	5000
12/19/2011	32	100 um 0.00% NIST-3 DUP (R)	2295	20.043	5000
12/19/2011	32	100 um 0.1% NIST-3 DUP (R) REINJECT	2059	18.47	5000
12/19/2011	32	Aina Koa Well 2 DUP REINJECT	1872	16.75	5000
12/19/2011	32	BLANK	39	0.353	5000
12/19/2011	32	100 um UH NaNO3 REINJECT	2112	30.734	5000
12/19/2011	32	Kapalama Well 1 REINJECT	1712	14.919	5000
12/19/2011	32	BLANK DUP REINJECT	30	0.278	5000
12/19/2011	32	Aina Koa Well 1 REINJECT	1422	12.254	5000
12/19/2011	RG	199.5 ppm Reference Gas 47	4289	25.786	500
12/28/2011	RG	199.5 ppm Reference Gas 48	2123	18.746	500
12/28/2011	33	Waiau HECO Spring 1	3650	32.396	5000
12/28/2011	33	BLANK	34	0.287	5000
12/28/2011	33	100 um UH NaNO3 DUP	2463	21.677	5000
12/28/2011	33	100 um 0.10% NIST-3 (R)	3480	30.932	5000
12/28/2011	33	Cameron's Well	3604	31.593	5000
12/28/2011	33	EL5-1-1	4199	37.125	5000
12/28/2011	33	100 um 0.00% NIST-3 (R)	2447	21.594	5000
12/28/2011	33	Cameron's Well DUP	3735	32.745	5000
12/28/2011	33	Waiau HECO Spring 1 DUP	3019	26.458	5000
12/28/2011	33	MLC-5	3084	27.149	5000
12/28/2011	33	100 um 0.00% NIST-3 DUP (R)	2646	23.01	5000
12/28/2011	33	100 um UH NaNO3	2613	22.885	5000
12/28/2011	33	Waiau HECO Spring 2	4075	35.672	5000
12/28/2011	33	WLT-2	1941	17.001	5000
12/28/2011	33	100 um 0.05% NIST-3 (R)	3619	31.762	5000
12/28/2011	33	100 um 0.10% NIST-3 DUP (R)	N/A	N/A	5000
12/28/2011	33	100 um 0.10% NIST-3 DUP (R) REINJECT	3050	26.86	5000
12/28/2011	33	Waiau HECO Spring 3	4148	36.625	5000
12/28/2011	33	WLT-2 DUP	2017	17.598	5000
12/28/2011	33	100 um 0.05% NIST-3 DUP (R)	3707	32.315	5000
12/28/2011	33	BLANK DUP	30	0.263	5000
12/28/2011	RG	199.5 ppm Reference Gas 49	2410	21.135	500

Table AII.115: Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
199.5 ppm Reference Gas 40	0.7669916	0.7148013	0.7695965	0.7167457	-3.38	-2.71
BLANK	0.8128217	0.7602850	0.7695568	0.7170384	56.22	60.31
40 um 0.06% NIST-3 (P)	0.7698258	0.7308484	0.7695193	0.7169340	0.40	19.41
40 um 0.08% NIST-3 (P)	0.7697131	0.7312019	0.7694330	0.7169218	0.36	19.92
40 um UH NaNO3	0.7651084	0.7288389	0.7693919	0.7169919	-5.57	16.52
40 um 0.00% NIST-3 (P)	0.7697654	0.7307422	0.7694039	0.7171538	0.47	18.95
BLANK DUP 3	0.8066072	0.7406701	0.7693699	0.7171420	48.40	32.81
199.5 ppm Reference Gas 41	0.7670737	0.7157952	0.7694546	0.7171517	-3.09	-1.89
199.5 ppm Reference Gas 42	0.7679741	0.7141460	0.7707270	0.7157418	-3.57	-2.23
BLANK DUP 2	0.7958869	0.7103303	0.7703882	0.7158629	33.10	-7.73
40 um UH NaNO3 DUP 1	0.7746667	0.7263765	0.7703277	0.7159545	5.63	14.56
40 um 0.00% NIST-3 (P) DUP 1	0.7712709	0.7295440	0.7702503	0.7161095	1.33	18.76
40 um 0.06% NIST-3 (P) DUP 1	0.7716566	0.7303901	0.7701542	0.7161167	1.95	19.93
40 um 0.08% NIST-3 (P) DUP 1	0.770965	0.7309872	0.7701179	0.7160913	1.10	20.80
40 um 0.08% NIST-3 (P) DUP 2	0.7713666	0.7309126	0.7700394	0.7161861	1.72	20.56
40 um 0.08% NIST-3 (P) DUP 3	0.7711011	0.7308684	0.7700346	0.7161653	1.39	20.53
Manana Well	0.7743365	0.7160384	0.7700033	0.7162218	5.63	-0.26
Manana Well DUP	0.7743014	0.7162302	0.7699452	0.7161469	5.66	0.12
BLANK DUP 1	0.8037907	0.7176311	0.7699434	0.7162123	43.96	1.98
199.5 ppm Reference Gas 43	0.7674953	0.7149593	0.7698594	0.7161174	-3.07	-1.62
199.5 ppm Reference Gas 44	0.7686324	0.7143382	0.7727113	0.7195306	-5.28	-7.22
40 um 0.08% NIST-3 (P)	0.7740508	0.7307170	0.7724885	0.7192036	2.02	16.01
40 um UH NaNO3	0.7720664	0.7239570	0.7722621	0.7188937	-0.25	7.04
BLANK	0.7900102	0.7233333	0.7722792	0.7185664	22.96	6.63
Honokohau	0.7714965	0.7107425	0.7718427	0.7183431	-0.45	-10.58
Kahaluu Shaft	0.7728185	0.7119678	0.7717894	0.7180256	1.33	-8.44

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
40 um 0.00% NIST-3 (P)	0.7742673	0.7280503	0.7718047	0.7177723	3.19	14.32
Kahaluu A	0.7724268	0.7123449	0.7717071	0.7175686	0.93	-7.28
40 um 0.06% NIST-3 (P)	0.7739943	0.7300826	0.7715362	0.7172146	3.19	17.94
Keahuola QLT-1	0.7720966	0.7124170	0.7714452	0.7170021	0.84	-6.39
Keahuola QLT-1 DUP 1	0.7714013	0.7109135	0.7718451	0.7168111	-0.57	-8.23
199.5 ppm Reference Gas 45	0.7686785	0.7144585	0.7712913	0.7166939	-3.39	-3.12
199.5 ppm Reference Gas 46	0.7687721	0.7135637	0.7714753	0.7160417	-3.50	-3.46
40 um UH NaNO3 DUP 1	0.7723497	0.7254655	0.7713631	0.7159793	1.28	13.25
KAHO 3	0.7750993	0.7120998	0.7712828	0.7160523	4.95	-5.52
40 um 0.00% NIST-3 DUP 1 (P)	0.7744399	0.7278125	0.7710573	0.7159084	4.39	16.63
Kahaluu A DUP 1	0.7732276	0.7125014	0.7710872	0.7159369	2.78	-4.80
40 um 0.08% NIST-3 DUP 1 (P)	0.7743568	0.7334587	0.7710039	0.7159395	4.35	24.47
Kahaluu Shaft DUP 1	0.7727856	0.7118389	0.7709024	0.7158524	2.44	-5.61
40 um 0.06% NIST-3 DUP 1 (P)	0.7752551	0.7325663	0.7709135	0.7158458	5.63	23.36
Honokohau DUP 1	0.7728091	0.7128424	0.7706748	0.7156752	2.77	-3.96
BLANK DUP 1	0.7975391	0.7235923	0.7705733	0.7156868	34.99	11.05
KAHO 3 DUP 1	0.7741805	0.7132771	0.7705819	0.7156267	4.67	-3.28
Keahuola QLT-1 DUP 1 Reinject	0.7724727	0.7124900	0.7705822	0.7156776	2.45	-4.45
199.5 ppm Reference Gas 47	0.7685813	0.7147739	0.7704209	0.7156765	-2.39	-1.26
199.5 ppm Reference Gas 5	0.7619485	0.7097936	0.7669980	0.7162936	-6.58	-9.07
199.5 ppm Reference Gas 6	0.7637317	0.7126413	0.7669810	0.7162275	-4.24	-5.01
199.5 ppm Reference Gas 7	0.7629428	0.7119990	0.7666175	0.7160357	-4.79	-5.64
199.5 ppm Reference Gas 8	0.7625944	0.7116425	0.7669592	0.7161680	-5.69	-6.32
199.5 ppm Reference Gas 9	0.7637421	0.7145610	0.7669200	0.7161506	-4.14	-2.22
WLT5 DUP	0.7810038	0.7185970	0.7669016	0.7161376	18.39	3.43
BLANK	0.8143727	0.7152169	0.7671274	0.7168180	61.59	-2.23

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
EL2-4-1	0.7835020	0.7184342	0.7664783	0.7159722	22.21	3.44
40 um 0.00% NIST-3 (P)	0.7725635	0.7272458	0.7665204	0.7158706	7.88	15.89
199.5 ppm Reference Gas 12	0.7627940	0.7130132	0.7665866	0.7161368	-4.95	-4.36
199.5 ppm Reference Gas 13	0.7642233	0.7143246	0.7665821	0.7161165	-3.08	-2.50
WL 1-6-1	0.7878162	0.7194825	0.7666173	0.7160884	27.65	4.74
40 um UH NaNO3 DUP	0.7703443	0.7258206	0.7666604	0.7161937	4.81	13.44
EL 5-1-1	0.7787096	0.7176275	0.7666625	0.7160092	15.71	2.26
MLC3	N/A	N/A	0.7667619	0.7161725	N/A	N/A
40 um 0.08% NIST-3 (P)	0.7735629	0.7300749	0.7665269	0.7159972	9.18	19.66
WL 1-5-1	0.7836995	0.7188112	0.7665516	0.7159877	22.37	3.94
HIT2 DUP	0.7822487	0.7191753	0.7665823	0.7159460	20.44	4.51
199.5 ppm Reference Gas 14	0.7638979	0.7134788	0.7665377	0.7159592	-3.44	-3.46
199.5 ppm Reference Gas 15	0.7641625	0.7141719	0.7667110	0.7164875	-3.32	-3.23
40 um 0.00% NIST-3 (P) DUP	0.7728361	0.7279168	0.7666265	0.7163238	8.10	16.18
MLC2	0.7826070	0.7209454	0.7665857	0.7161439	20.90	6.70
WLT5	0.7804677	0.7179384	0.7665538	0.7161890	18.15	2.44
40 um 0.06% NIST-3 (P)	0.7735432	0.7289611	0.7663785	0.7157495	9.35	18.46
HIT2	0.7810143	0.7204434	0.7669341	0.7161760	18.36	5.96
WLT6	0.7822754	0.7165602	0.7665135	0.7160063	20.56	0.77
40 um UH NaNO3	0.7695416	0.7238654	0.7666217	0.7159792	3.81	11.01
MLC2 DUP	0.7792643	0.7183089	0.7665035	0.7158940	16.65	3.37
BLANK DUP	0.8253877	0.7125052	0.7666163	0.7160853	76.66	-5.00
40 um UH NANO3 REINJECT	0.7693621	0.7235701	0.7664559	0.7159057	3.79	10.71
199.5 ppm Reference Gas 16	0.7643662	0.7145939	0.7666933	0.7159030	-3.04	-1.83
199.5 ppm Reference Gas 17	0.7586459	0.7050521	0.7665448	0.7163295	-10.30	-15.74
199.5 ppm Reference Gas 18	0.7638223	0.7141556	0.7664988	0.7162798	-3.49	-2.97
BLANK DUP	0.7844547	0.7324012	0.7664313	0.7161360	23.52	22.71
Ainakoa Well 2	0.7838288	0.7313328	0.7664392	0.7160829	22.69	21.30

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
40 um 0.08% NIST-3 (P)	0.7831261	0.7345813	0.7664525	0.7160602	21.75	25.87
40 um UH NaNO3	0.7836452	0.7296319	0.7664119	0.7159770	22.49	19.07
BLANK	0.9172872	0.8763918	0.7664451	0.7160488	196.81	223.93
MLT8	0.7528674	0.6955562	0.7664113	0.7160167	-17.67	-28.58
199.5 ppm Reference Gas 19	0.7603644	0.7084061	0.7663897	0.7159453	-7.86	-10.53
199.5 ppm Reference Gas 20	0.760914	0.7090451	0.7664172	0.7159548	-7.18	-9.65
199.5 ppm Reference Gas 21	0.7605072	0.7092971	0.7663942	0.7159113	-7.68	-9.24
199.5 ppm Reference Gas 22	N/A	N/A	0.7664163	0.7159720	N/A	N/A
199.5 ppm Reference Gas 23	0.7614977	0.7098128	0.7664664	0.7159248	-6.48	-8.54
199.5 ppm Reference Gas 24	0.76196	0.7106065	0.7664708	0.7158597	-5.89	-7.34
199.5 ppm Reference Gas 25	0.7595065	0.7063996	0.7665971	0.7162777	-9.25	-13.79
199.5 ppm Reference Gas 26	0.768623	0.7220550	0.7665905	0.7162278	2.65	8.14
199.5 ppm Reference Gas 27 (No Slurry)	0.761107	0.7091442	0.7665261	0.7160595	-7.07	-9.66
199.5 ppm Reference Gas 28 (No Slurry)	0.75992887	0.7069590	0.7665208	0.7159087	-8.60	-12.50
199.5 ppm Reference Gas 29	N/A	N/A	N/A	N/A	N/A	N/A
199.5 ppm Reference Gas 30	N/A	N/A	N/A	N/A	N/A	N/A
199.5 ppm Reference Gas 31 (No Slurry)	0.7609949	0.7086405	N/A	N/A	N/A	N/A
199.5 ppm Reference Gas 32	0.7640831	0.7139088	0.7668455	0.7163264	-3.60	-3.37
Kunawai Spring	0.7689475	0.7185641	0.7667562	0.7162397	2.86	3.25
20 um 0.08% NIST-3 (W)	0.7668983	0.7323103	0.7667366	0.7161652	0.21	22.54
Manana Well	0.7734998	0.7138431	0.7666934	0.7161318	8.88	-3.20
BLANK	0.811121	0.7515564	0.7667643	0.7162218	57.85	49.33
40 um UH NaNO3	N/A	N/A	N/A	N/A	N/A	N/A

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
WLT1 DUP	0.7783193	0.7147960	0.7666173	0.7160357	15.26	-1.73
"20" um 0.00% NIST-3 DUP (W)	0.7685812	0.7282340	0.7665190	0.7159264	2.69	17.19
Bakken Pond	0.7701479	0.7108118	0.7668405	0.7158924	4.31	-7.10
"20" um 0.08% NIST-3 (W)	0.7698802	0.7309298	0.7667874	0.7158779	4.03	21.03
MLC1	0.7717226	0.7140846	0.7668360	0.7157700	6.37	-2.35
199.5 ppm Reference Gas 33	0.7639941	0.7137823	0.7665996	0.7158498	-3.40	-2.89
199.5 ppm Reference Gas 34	0.7640017	0.7140852	0.7663808	0.7157919	-3.10	-2.38
"20" um 0.00% NIST-3 (W)	0.7684221	0.7276916	0.7663692	0.7157037	2.68	16.75
Manana Well DUP	0.7737374	0.7127377	0.7663822	0.7157107	9.60	-4.15
SG6	0.7820876	0.7150216	0.7663336	0.7156704	20.56	-0.91
WLT1	0.7786381	0.7153253	0.7663283	0.7156537	16.06	-0.46
Waiau Spring HECO	0.7733993	0.7150768	0.7663152	0.7156628	9.24	-0.82
199.5 ppm Reference Gas 35	0.7639398	0.7140542	0.7662555	0.7155838	-3.02	-2.14
199.5 ppm Reference Gas 36	0.7637419	0.7137274	0.7664227	0.7161407	-3.50	-3.37
SG5	0.7880919	0.7126195	0.7664556	0.7161260	28.23	-4.90
EL4-1-1	0.7829601	0.7114167	0.7664507	0.7160620	21.54	-6.49
MLT7	0.7756848	0.7146940	0.7664493	0.7160661	12.05	-1.92
"20" um 0.06% NIST-3 (W)	0.7676187	0.7283736	0.7664273	0.7160338	1.55	17.23
40 um UH NaNO3 DUP	0.7660716	0.7263050	0.7664146	0.7159972	-0.45	14.40
"20" um 0.06% NIST-3 DUP (W)	0.7694921	0.7319061	0.7664126	0.7159464	4.02	22.29
BLANK DUP	0.8026594	0.7442869	0.7664455	0.7160040	47.25	39.50
MLC1 REINJECT	0.7721613	0.7150983	0.7663924	0.7159556	7.53	-1.20
SG5 REINJECT	0.7886586	0.7140101	0.7663604	0.7159338	29.10	-2.69
Manana Well DUP REINJECT	0.7731237	0.7114516	0.7663316	0.7158543	8.86	-6.15
199.5 ppm Reference Gas 37	0.7641974	0.7142336	0.7664144	0.7158009	-2.89	-2.19
199.5 ppm Reference Gas 38	0.7640078	0.7140078	0.7664591	0.7160153	-3.20	-2.80
MLT8	0.7744278	0.7152692	0.7664455	0.7159366	10.41	-0.93
BLANK DUP	0.7933198	0.7089805	0.7664126	0.7159288	35.11	-9.71

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
"20" um 0.00% NIST-3 (W)	0.7684735	0.7274685	0.7663898	0.7158824	2.72	16.18
ML1-6-1	0.7751991	0.7161385	0.7663728	0.7157984	11.52	0.48
ML1-9-1	0.7785404	0.7164031	0.7664025	0.7157913	15.84	0.85
"20" um 0.06% NIST-3 (W)	0.7695526	0.733614	0.7663478	0.7158001	4.18	24.89
WLT7	0.7728321	0.7122408	0.7663629	0.7156988	8.44	-4.83
40 um UH NaNO3 DUP	0.76724	0.7253273	0.7663705	0.7156884	1.13	13.47
Waiau HECO 2A	0.7720009	0.713987	0.7664242	0.7156633	7.28	-2.34
"20" um 0.08% NIST-3 (W) DUP	0.7705067	0.7325509	0.7663546	0.7157503	5.42	23.47
Kunawai Spring DUP	0.7751132	0.7135299	0.7663893	0.715706	11.38	-3.04
WLC2	0.7768781	0.7142357	0.7663133	0.7156879	13.79	-2.03
40 um UH NaNO3	0.7654455	0.7251377	0.7662241	0.7157118	-1.02	13.17
"20" um 0.00% NIST-3 (W) DUP	0.7689686	0.728209	0.7663304	0.7156439	3.44	17.56
Kunawai Spring	0.775447	0.714226	0.7662084	0.7156144	12.06	-1.94
Palolo Well 2	0.7712183	0.7119627	0.7662203	0.7156583	6.52	-5.16
Kaahumanu 1-1	0.7732505	0.7127187	0.7663154	0.7156521	9.05	-4.10
MLT8 DUP	0.7735245	0.713508	0.7663142	0.7156575	9.41	-3.00
"20" um 0.08% NIST-3 (W)	0.7697411	0.7310795	0.7662994	0.7156225	4.49	21.60
BLANK	0.7809021	0.7100126	0.7663097	0.7156442	19.04	-7.87
199.5 ppm Reference Gas 39	0.7626439	0.7117313	0.766429	0.7156241	-4.94	-5.44
199.5 ppm Reference Gas 40	0.763098	0.7125205	0.7660345	0.7156292	-3.83	-4.34
199.5 ppm Reference Gas 40	0.763817	0.713946	0.766935	0.717184	-4.07	-4.52
PUHO	0.815909	0.712201	0.767228	0.717396	63.45	-7.24
BLANK	0.825427	0.742145	0.766878	0.717126	76.35	34.89
40 um UH NaNO3 DUP	0.767338	0.723706	0.767158	0.717160	0.23	9.13
Kailua Lava Tube	0.812954	0.712975	0.766730	0.716937	60.29	-5.53
"20" um 0.08% NIST-3 (W) DUP	0.769736	0.730252	0.766938	0.716834	3.65	18.72
Moanalua Well 2	0.834505	0.713518	0.766701	0.716740	88.44	-4.50
Ainakoa Well 1 DUP	0.802445	0.714072	0.766725	0.716732	46.59	-3.71

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
"20" um 0.00% NIST-3 (W) DUP	0.767910	0.727331	0.766619	0.716652	1.68	14.90
Ainakoa Well 2	0.838082	0.714867	0.766643	0.716563	93.18	-2.37
Hind Well	0.808956	0.711357	0.766611	0.716486	55.24	-7.16
Kunia I-P2	0.768750	0.713090	0.766570	0.716367	2.84	-4.57
BLANK	0.784179	0.714549	0.766530	0.716310	23.02	-2.46
"20" um 0.00% NIST-3 (W) DUP	0.767401	0.726472	0.766499	0.716284	1.18	14.22
Waipio Heights II-1	0.769194	0.713629	0.766741	0.716148	3.20	-3.52
Hoaeae P2	0.768273	0.712683	0.766496	0.716183	2.32	-4.89
10 um UH NaNO3 DUP	0.769252	0.716187	0.766418	0.716019	3.70	0.23
Kunia I-P2 DUP	0.768696	0.712930	0.766415	0.716025	2.98	-4.32
SG4	0.773656	0.713783	0.766399	0.716015	9.47	-3.12
WL1-1-1	0.773682	0.714072	0.766416	0.715948	9.48	-2.62
"20" um 0.06% NIST-3 (W)	0.768599	0.729729	0.766406	0.715958	2.86	19.23
Wilder Well 1	0.771189	0.712317	0.766375	0.715941	6.28	-5.06
"20" um 0.00% NIST-3 (W)	0.768025	0.726675	0.766397	0.715862	2.12	15.10
Waipahu IV-2	0.768622	0.712536	0.766357	0.715899	2.96	-4.70
"20"um 0.08% NIST-3 (W)	0.769808	0.730375	0.766365	0.715837	4.49	20.31
WL1-1-1 DUP	0.773919	0.714953	0.766336	0.715862	9.90	-1.27
10 um UH NaNO3	0.768555	0.714530	0.766318	0.715824	2.92	-1.81
Waipahu I-1	0.768442	0.711767	0.766333	0.715795	2.75	-5.63
"20"um 0.06% NIST-3 DUP (W)	0.769174	0.731047	0.766338	0.715795	3.70	21.31
Keauhou Pond	0.769662	0.710730	0.766288	0.715752	4.40	-7.02
Blank DUP	0.786459	0.714647	0.766262	0.715706	26.36	-1.48
199.5 ppm Reference Gas 41	0.763756	0.713774	0.766510	0.715678	-3.59	-2.66
199.5 ppm Reference Gas 42	0.762882	0.7122954	0.767581	0.7184851	-6.12	-8.61
199.5 ppm Reference Gas 43	0.763672	0.713666	0.7674961	0.7182695	-4.98	-6.41
PUHO	0.7869868	0.7119495	0.7673755	0.7180806	25.56	-8.54
BLANK	0.8380236	0.7039521	0.7673566	0.7179415	92.09	-19.49
"20"um 0.08% NIST-3 (W) DUP	0.770273	0.734205	0.7672004	0.7177435	4.00	22.94

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
Waialae Golf Course	0.7857301	0.7105627	0.7670938	0.7175836	24.29	-9.78
Kapalama Well 1	0.7968695	0.7132474	0.7673147	0.7175144	38.52	-5.95
"20"um 0.06% NIST-3 (W) DUP	0.7703776	0.7325937	0.7671238	0.7173662	4.24	21.23
Kailua Lava Tube	0.7880945	0.7113404	0.76698	0.7172209	27.53	-8.20
Aiea Heights 2	0.7866828	0.7124892	0.7669043	0.717081	25.79	-6.40
10 um UH NaNO3	0.817836	0.7369286	0.7668411	0.7170179	66.50	27.77
10 um UH NaNO3 DUP	0.8066209	0.7411573	0.7667946	0.7169174	51.94	33.81
199.5 ppm Reference Gas 44	0.763738	0.713878	0.7669407	0.7173551	-4.18	-4.85
PUHO DUP	0.7730903	0.7132874	0.7671316	0.7172454	7.77	-5.52
BLANK DUP	0.7980093	0.7399237	0.7674733	0.7172583	39.79	31.60
100 um 0% NIST-3 (O)	0.7684081	0.7282754	0.7669574	0.7170454	1.89	15.66
Keauhou Pond	0.7704156	0.712017	0.7669658	0.7169293	4.50	-6.85
100 um 0% NIST-3 DUP (O)	0.7688734	0.7284166	0.7673047	0.71695	2.04	15.99
Holualoa	0.7704905	0.7121991	0.7671439	0.7168242	4.36	-6.45
100 um UH NaNO3 DUP	0.7667274	0.7262495	0.7672194	0.7167943	-0.64	13.19
Halekii	0.7681258	0.711692	0.7668616	0.7166308	1.65	-6.89
100 um 10% NIST-3 (O)	0.7705076	1.7594979	0.7670195	0.716544	4.55	1455.53
Halekii DUP	0.767723	0.7136449	0.7665224	0.7163106	1.57	-3.72
Hind Well	0.7686247	0.7102476	0.766496	0.7162113	2.78	-8.33
100 um 5% NIST-3 DUP (O)	0.76883	1.1843422	0.7664714	0.7161484	3.08	653.77
PUHO	0.772808	0.7142846	0.7664093	0.7160793	8.35	-2.51
100 um 10% NIST-3 DUP (O)	0.7697388	1.7659886	0.7664075	0.7160554	4.35	1466.27
100 um UH NaNO3	0.7654123	0.7294228	0.7663812	0.7160147	-1.26	18.73
Kailua Lava Tube	0.7702569	0.7117363	0.7663317	0.7159139	5.12	-5.84
Hualalai	0.7681394	0.7109968	0.7663069	0.7159021	2.39	-6.85
100 um 5% NIST-3 (O)	0.7688598	1.1799293	0.7662816	0.7158796	3.36	648.22
Hind Well DUP	0.7693587	0.7115791	0.7665703	0.7159508	3.64	-6.11
BLANK	0.7976693	0.7377953	0.7665453	0.7159331	40.60	30.54
199.5 ppm Reference Gas 45	0.7638275	0.7143061	0.7662069	0.7156971	-3.11	-1.94

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
199.5 ppm Reference Gas 46	0.7636342	0.7139639	0.7672518	0.7178257	-4.72	-5.38
Ainakoa Well 2	0.7739836	0.7170781	0.7671536	0.7176487	8.90	-0.80
BLANK DUP	0.8207727	0.9073787	0.7670445	0.7173021	70.05	264.99
100 um UH NaNO3	0.764694	0.7266923	0.7670535	0.7173446	-3.08	13.03
Kalaoa A	0.7706317	0.7119826	0.7669802	0.7172758	4.76	-7.38
100 um 0.00% NIST-3 (R)	0.7675902	0.727102	0.7669208	0.7171488	0.87	13.88
Keei D	0.7710001	0.7120014	0.7668558	0.7170791	5.40	-7.08
100 um 0.05% NIST-3 DUP (R)	0.7681177	0.7358147	0.7667902	0.7169731	1.73	26.28
Aiea Heights 2	0.7740935	0.7135646	0.7667753	0.7168365	9.54	-4.56
100 um 0.1% NIST-3 DUP (R)	0.7672196	0.7378576	0.7667192	0.7167893	0.65	29.39
Moanalua Well 2 DUP	0.7763164	0.7139558	0.7666621	0.7166332	12.59	-3.74
Aina Koa Well 1	0.7717063	0.7117845	0.766672	0.7165644	6.57	-6.67
100 um 0.05% NIST-3 (R)	0.7682156	0.7358441	0.7666481	0.7165478	2.04	26.93
Kapalama Well 1	0.7740595	0.7121603	0.7666304	0.7164579	9.69	-6.00
100 um 0.1% NIST-3 (R)	0.7675768	0.7384545	0.7665493	0.7163971	1.34	30.79
Moanalua Well 2	0.7758209	0.7126737	0.7665387	0.7163406	12.11	-5.12
100 um UH NaNO3 DUP	0.7654682	0.7251556	0.7664875	0.7161900	-1.33	12.52
Waialae Golf Course	0.7740667	0.712618	0.7664386	0.7161684	9.95	-4.96
100 um 0.00% NIST-3 DUP (R)	0.7677283	0.7272776	0.7664238	0.7160791	1.70	15.64
100 um 0.1% NIST-3 DUP (R) REINJECT	0.7682859	0.7429687	0.7662484	0.7157765	2.66	37.99
Aina Koa Well 2 DUP REINJECT	0.7744279	0.7160073	0.7664379	0.7160073	10.42	0.00
BLANK	0.7897251	0.7672339	0.7662653	0.7157734	30.62	71.89
100 um UH NaNO3 REINJECT	0.7659575	0.7428394	0.7662525	0.7156618	-0.38	37.98
Kapalama Well 1 REINJECT	0.7748941	0.7155173	0.7662440	0.7156459	11.29	-0.18
BLANK DUP REINJECT	0.8038537	2.7437132	0.7661874	0.7157054	49.16	2833.58

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
Aina Koa Well 1 REINJECT	0.7723323	0.7154375	0.7661644	0.7156566	8.05	-0.31
199.5 ppm Reference Gas 47	0.8012757	0.7258076	0.7663162	0.7154463	45.62	14.48
199.5 ppm Reference Gas 48	0.7638033	0.713672	0.7683224	0.7196702	-5.88	-8.33
Waiau HECO Spring 1	0.7735079	0.7146091	0.7681796	0.7194635	6.94	-6.75
BLANK	0.8140132	0.7675069	0.7680013	0.7191641	59.91	67.22
100 um UH NaNO3 DUP	0.76562	0.7262055	0.7678664	0.7189816	-2.93	10.05
100 um 0.10% NIST-3 (R)	0.7677228	0.73795	0.7677659	0.7187583	-0.06	26.70
Cameron's Well	0.7689458	0.7127477	0.7675836	0.7184814	1.77	-7.98
EL5-1-1	0.7845923	0.7144088	0.7677132	0.7181805	21.99	-5.25
100 um 0.00% NIST-3 (R)	0.7678712	0.7278279	0.7673723	0.7180662	0.65	13.59
Cameron's Well DUP	0.7679125	0.7112597	0.7673036	0.7178878	0.79	-9.23
Waiau HECO Spring 1 DUP	0.7742986	0.7151468	0.7671043	0.7174141	9.38	-3.16
MLC-5	0.7997252	0.7164792	0.7670201	0.7172832	42.64	-1.12
100 um 0.00% NIST-3 DUP (R)	0.7675303	0.726956	0.7670198	0.7170754	0.67	13.78
100 um UH NaNO3	0.7658888	0.7261882	0.7669459	0.7170160	-1.38	12.79
Waiau HECO Spring 2	0.7722723	0.7139216	0.7668934	0.71691	7.01	-4.17
WLT-2	0.8167921	0.7157193	0.7668314	0.7167362	65.15	-1.42
100 um 0.05% NIST-3 (R)	0.7682968	0.7353473	0.7667766	0.7166545	1.98	26.08
100 um 0.10% NIST-3 DUP (R)	N/A	N/A	0.7667781	0.7166112	N/A	N/A
100 um 0.10% NIST-3 DUP (R) REINJECT	0.7676565	0.7378562	0.7670656	0.7165871	0.77	29.68
Waiau HECO Spring 3	0.7730677	0.7142912	0.7666604	0.7164142	8.36	-2.96
WLT-2 DUP	0.8150537	0.7155127	0.7666296	0.7163372	63.16	-1.15
100 um 0.05% NIST-3 DUP (R)	0.7676767	0.7343674	0.7665901	0.7162474	1.42	25.30
BLANK DUP	0.791295	0.748757	0.7665555	0.7162096	32.27	45.44

Table AII.115: (Continued) Dissolved nitrate stable isotopic analyses of nitrogen and oxygen for all Pearl Harbor and Big Island samples continued.

Sample #	Sample R45/44	Sample R46/44	Standard R45/44	Standard R46/44	Raw δ15N	Raw δ18O
199.5 ppm Reference Gas 49	0.763944	0.7141057	0.7665184	0.7161208	-3.36	-2.81

Table AII.116: Average oxygen and hydrogen isotopic data as well as standard deviations for all Big Island samples analyzed at SIRFER.

Sample Location	δD ave.	δD stdev	$\delta^{18}O$ ave.	$\delta^{18}O$ stdev
Keahoula QLT	-29.69	0.20	-5.41	0.00
Honokohau	-41.90	0.67	-6.68	0.02
Hualalai	-45.11	0.07	-7.17	0.20
Kalaoa A	-39.35	0.65	-6.38	0.24
Holualoa	-19.04	0.36	-4.15	0.20
Kahaluu Shaft	-27.99	0.57	-5.05	0.18
Kahaluu B	-27.98	0.02	-5.29	0.10
Kahaluu A	-28.24	0.95	-5.28	0.19
Kahaluu D	-27.96	1.30	-4.93	0.01
Halekii	-32.79	0.91	-5.62	0.21
Keei D	-28.34	0.77	-5.14	0.07
Cameron's Well	-23.52	0.46	-4.17	0.18
PUHO	-12.47	1.53	-2.70	0.19
Virgie's Well	-21.80	0.08	-3.99	0.02
Hind Well	-46.41	0.69	-6.95	0.18
KAHO OBS 1	-20.44	0.06	-3.93	0.08
KAHO OBS 2	-18.50	1.05	-3.53	0.14
KAHO OBS 3	-17.95	0.18	-3.21	0.04
Honokohau Harbor Expansion Well 2	-18.19	0.60	-3.14	0.08
Keauhou Pond	-20.77	0.00	-4.06	0.02
Kailua Lava Tube	-11.73	0.00	-2.32	0.09
Kiholo Fishpond	-27.93	0.20	-3.98	0.08
Bakken Pond	-45.61	0.04	-6.84	0.05

Table AII.117: Chlorofluorocarbon sample names, sample dates, arrival dates at RSMAS, where the samples were analyzed, analytical dates, recharge elevations, and recharge temperatures.

Lab ID	#	Sample Name	Samp Date m/dd/yyyy	Arrive Date m/dd/yyyy	Anal Date m/d/yyyy	Rech Elev m	Rech Temp °C
0058.01	1	Keahuola QLT1	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.01D	2	Keahuola QLT1	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.01D2	3	Keahuola QLT1	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.02	1	Keei D	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.02D	2	Keei D	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.02D2	3	Keei D	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.03	1	Kalaoa A	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.03D	2	Kalaoa A	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.03D2	3	Kalaoa A	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.04	1	Haulalai	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.04D	2	Haulalai	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.04D2	3	Haulalai	7/29/2008	8/11/2008	9/2/2008	0	20.00
0058.05	1	Halekii	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.05D	2	Halekii	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.05D2	3	Halekii	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.06	1	Honokohau	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.06D	2	Honokohau	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.06D2	3	Honokohau	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.07	1	Kahaluu A	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.07D	2	Kahaluu A	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.07D2	3	Kahaluu A	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.08	1	Holualoa	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.08D	2	Holualoa	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.08D2	3	Holualoa	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.09	1	Kahaluu Shaft	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.09D	2	Kahaluu Shaft	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.09D2	3	Kahaluu Shaft	7/29/2008	8/11/2008	9/3/2008	0	20.00
0058.10	1	Bakken Pond	7/28/2008	8/11/2008	9/3/2008	0	20.00
0058.10D	2	Bakken Pond	7/28/2008	8/11/2008	9/3/2008	0	20.00
0058.10D2	3	Bakken Pond	7/28/2008	8/11/2008	9/3/2008	0	20.00
0058.11D	2	Kiholo Lava Tube	7/28/2008	8/11/2008	9/3/2008	0	20.00
0058.11D2	3	Kiholo Lava Tube	7/28/2008	8/11/2008	9/3/2008	0	20.00

Table AII.117: (Continued) Chlorofluorocarbon sample names, sample dates, arrival dates at RSMAS, where the samples were analyzed, analytical dates, recharge elevation, and recharge temperature.

Lab ID	#	Sample Name	Samp Date m/dd/yyyy	Arrive Date m/dd/yyyy	Anal Date m/d/yyyy	Rech Elev m	Rech Temp °C
0058.12	1	Keauhou Pond	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.12D	2	Keauhou Pond	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.12D2	3	Keauhou Pond	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.13	1	KAHO Obs. 2	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.13D	2	KAHO Obs. 2	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.13D2	3	KAHO Obs. 2	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.14	1	KAHO Obs. 1	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.14D	2	KAHO Obs. 1	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.14D2	3	KAHO Obs. 1	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.15	1	KAHO Obs. 3	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.15D	2	KAHO Obs. 3	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.15D2	3	KAHO Obs. 3	8/1/2008	8/11/2008	9/3/2008	0	20.00
0058.16	1	Kailua Lava Tube	8/2/2008	8/11/2008	9/3/2008	0	20.00
0058.16D	2	Kailua Lava Tube	8/2/2008	8/11/2008	9/3/2008	0	20.00
0058.16D2	3	Kailua Lava Tube	8/2/2008	8/11/2008	9/3/2008	0	20.00
0058.17	1	Cameron's well	7/30/2008	8/11/2008	9/4/2008	0	20.00
0058.17D	2	Cameron's well	7/30/2008	8/11/2008	9/4/2008	0	20.00
0058.17D2	3	Cameron's well	7/30/2008	8/11/2008	9/4/2008	0	20.00
0058.18	1	PUHO	7/30/2008	8/11/2008	9/4/2008	0	20.00
0058.18D	2	PUHO	7/30/2008	8/11/2008	9/4/2008	0	20.00
0058.18D2	3	PUHO	7/30/2008	8/11/2008	9/4/2008	0	20.00

D in column one indicates duplicate sample,
there is no charge for this analysis.

Table AII.118: Chlorofluorocarbon water concentration for CFC-11, CFC-12, and CFC-113.

Sample Name	Water Concentration Corrected for Stripping Efficiency					
	CFC12 pmol/Kg	error pmol/Kg	CFC11 pmol/Kg	error pmol/Kg	CFC113 pmol/Kg	error pmol/Kg
Keahuola QLT1	0.090	0.002	.690	0.014	0.054	0.010
Keahuola QLT1	0.072	0.001	.444	0.009	0.247	0.010
Keahuola QLT1	0.055	0.001	.206	0.005	0.092	0.010
Keei D	0.503	0.010	.955	0.019	0.048	0.010
Keei D	0.519	0.010	1.027	0.021	0.054	0.010
Keei D	0.520	0.010	.887	0.018	0.058	0.010
Kalaoa A	-0.002	0.010	.161	0.005	-0.001	0.010
Kalaoa A	0.003	0.010	.137	0.005	-0.004	0.010
Kalaoa A	0.004	0.010	.157	0.005	0.004	0.010
Haulalai	0.064	0.010	.239	0.005	0.009	0.010
Haulalai	0.062	0.010	.293	0.006	0.012	0.010
Haulalai	0.059	0.010	.231	0.005	0.016	0.010
Halekii	0.209	0.010	.618	0.012	0.014	0.010
Halekii	0.197	0.010	.440	0.009	0.011	0.010
Halekii	0.192	0.010	.395	0.008	0.008	0.010
Honokohau	0.043	0.010	.268	0.005	-0.001	0.010
Honokohau	0.046	0.010	.243	0.005	0.004	0.010
Honokohau	0.047	0.010	.190	0.005	0.004	0.010
Kahaluu A	0.497	0.010	.650	0.013	0.045	0.010
Kahaluu A	0.509	0.010	.701	0.014	0.043	0.010
Kahaluu A	0.497	0.010	.665	0.013	0.056	0.010
Holualoa	0.138	0.010	.341	0.007	0.016	0.010
Holualoa	0.149	0.010	.303	0.006	0.012	0.010
Holualoa	0.172	0.010	.725	0.014	0.014	0.010
Kahaluu Shaft	0.644	0.013	.974	0.019	0.082	0.010
Kahaluu Shaft	0.670	0.013	.948	0.019	0.078	0.010
Kahaluu Shaft	0.624	0.012	.892	0.018	0.083	0.010
Bakken Pond	0.984	0.020	1.617	0.032	0.128	0.010
Bakken Pond	0.957	0.019	1.564	0.031	0.155	0.010
Bakken Pond	1.110	0.022	1.817	0.036	0.131	0.010
Kiholo Lava Tube	0.701	0.014	1.110	0.022	0.073	0.010
Kiholo Lava Tube	0.683	0.014	1.186	0.024	0.083	0.010
Kiholo Lava Tube	0.696	0.014	1.168	0.023	0.083	0.010
Keauhou Pond	1.352	0.027	2.639	0.053	0.178	0.010
Keauhou Pond	1.381	0.028	2.628	0.053	0.180	0.010

Table AII.118: (Continued) Chlorofluorocarbon water concentration for CFC-11, CFC-12, and CFC-113.

Sample Name	Water Concentration Corrected for Stripping Efficiency					
	CFC12 pmol/Kg	error pmol/Kg	CFC11 pmol/Kg	error pmol/Kg	CFC113 pmol/Kg	error pmol/Kg
Keauhou Pond	1.368	0.027	2.679	0.054	0.187	0.010
KAHO Obs. 2	1.467	0.029	2.857	0.057	0.206	0.010
KAHO Obs. 2	1.460	0.029	2.796	0.056	0.228	0.010
KAHO Obs. 2	1.406	0.028	2.819	0.056	0.217	0.010
KAHO Obs. 1	1.579	0.032	2.880	0.058	0.196	0.010
KAHO Obs. 1	1.579	0.032	2.850	0.057	0.228	0.010
KAHO Obs. 1	1.598	0.032	2.827	0.057	0.245	0.010
KAHO Obs. 3	1.005	0.020	2.035	0.041	0.096	0.010
KAHO Obs. 3	0.990	0.020	2.083	0.042	0.130	0.010
KAHO Obs. 3	1.031	0.021	2.025	0.041	0.143	0.010
Kailua Lava Tube	0.677	0.014	1.972	0.039	0.040	0.010
Kailua Lava Tube	0.678	0.014	1.982	0.040	0.058	0.010
Kailua Lava Tube	0.671	0.013	4.632	0.093	0.067	0.010
Cameron's well	1.340	0.027	2.394	0.048	0.192	0.010
Cameron's well	1.415	0.028	2.323	0.046	0.212	0.010
Cameron's well	1.399	0.028	2.341	0.047	0.218	0.010
PUHO	1.445	0.029	2.378	0.048	0.161	0.010
PUHO	1.414	0.028	2.372	0.047	0.212	0.010
PUHO	1.427	0.029	2.402	0.048	0.215	0.010

Detection limit for CFC-12 and CFC-113 is 0.010 pmol/Kg

Detection limit for CFC-11 is 0.005 pmol/Kg

Table AII.119: Equivalent atmospheric concentrations for CFC-12, CFC-11, and CFC-113.

Sample Name	Equivalent Atmospheric Concentration					
	CFC12 pmol/mol	error pmol/mol	CFC11 pmol/mol	error pmol/mol	CFC113 pmol/mol	error pmol/mol
Keahuola QLT1	26.0	0.5	54.8	1.1	14.7	0.3
Keahuola QLT1	21.0	0.4	35.3	0.7	67.0	1.3
Keahuola QLT1	15.9	0.3	16.4	0.3	24.9	0.5
Keei D	145.8	2.9	75.8	1.5	13.0	0.3
Keei D	150.6	3.0	81.6	1.6	14.7	0.3
Keei D	150.9	3.0	70.5	1.4	15.8	0.3
Kalaoa A	-0.6	0.0	12.8	0.3	-0.3	0.0
Kalaoa A	0.9	0.0	10.8	0.2	-1.1	0.0
Kalaoa A	1.2	0.0	12.5	0.2	1.1	0.0
Haulalai	18.6	0.4	19.0	0.4	2.5	0.1
Haulalai	18.0	0.4	23.2	0.5	3.4	0.1
Haulalai	17.1	0.3	18.3	0.4	4.2	0.1
Halekii	60.5	1.2	49.1	1.0	3.7	0.1
Halekii	57.3	1.1	35.0	0.7	3.1	0.1
Halekii	55.8	1.1	31.4	0.6	2.3	0.0
Honokohau	12.4	0.2	21.3	0.4	-0.3	0.0
Honokohau	13.3	0.3	19.3	0.4	1.1	0.0
Honokohau	13.6	0.3	15.1	0.3	1.1	0.0
Kahaluu A	144.4	2.9	51.6	1.0	12.2	0.2
Kahaluu A	147.6	3.0	55.7	1.1	11.6	0.2
Kahaluu A	144.4	2.9	52.8	1.1	15.3	0.3
Holualoa	40.2	0.8	27.1	0.5	4.2	0.1
Holualoa	43.1	0.9	24.1	0.5	3.4	0.1
Holualoa	49.9	1.0	57.6	1.2	3.7	0.1
Kahaluu Shaft	186.9	3.7	77.4	1.5	22.3	0.4
Kahaluu Shaft	194.6	3.9	75.4	1.5	21.2	0.4
Kahaluu Shaft	181.0	3.6	70.9	1.4	22.6	0.5
Bakken Pond	285.5	5.7	128.4	2.6	34.8	0.7
Bakken Pond	277.8	5.6	124.3	2.5	42.1	0.8
Bakken Pond	322.1	6.4	144.3	2.9	35.6	0.7
Kiholo Lava Tube	203.4	4.1	88.2	1.8	19.8	0.4
Kiholo Lava Tube	198.1	4.0	94.3	1.9	22.6	0.5
Kiholo Lava Tube	201.9	4.0	92.8	1.9	22.6	0.5
Keauhou Pond	392.4	7.8	209.7	4.2	48.4	1.0
Keauhou Pond	400.9	8.0	208.8	4.2	48.9	1.0

Table AII.119: (Continued) Equivalent atmospheric concentrations for CFC-12, CFC-11, and CFC-113.

Sample Name	Equivalent Atmospheric Concentration					
	CFC12 pmol/mol	error pmol/mol	CFC11 pmol/mol	error pmol/mol	CFC113 pmol/mol	error pmol/mol
Keauhou Pond	397.1	7.9	212.9	4.3	50.9	1.0
KAHO Obs. 2	425.7	8.5	227.0	4.5	56.0	1.1
KAHO Obs. 2	423.7	8.5	222.1	4.4	61.9	1.2
KAHO Obs. 2	408.0	8.2	224.0	4.5	58.8	1.2
KAHO Obs. 1	458.2	9.2	228.8	4.6	53.2	1.1
KAHO Obs. 1	458.2	9.2	226.5	4.5	61.9	1.2
KAHO Obs. 1	463.8	9.3	224.6	4.5	66.5	1.3
KAHO Obs. 3	291.7	5.8	161.7	3.2	26.0	0.5
KAHO Obs. 3	287.3	5.7	165.5	3.3	35.4	0.7
KAHO Obs. 3	299.1	6.0	160.9	3.2	38.7	0.8
Kailua Lava Tube	196.3	3.9	156.7	3.1	10.7	0.2
Kailua Lava Tube	196.6	3.9	157.5	3.1	15.8	0.3
Kailua Lava Tube	194.9	3.9	368.0	7.4	18.1	0.4
Cameron's well	388.8	7.8	190.2	3.8	52.0	1.0
Cameron's well	410.7	8.2	184.6	3.7	57.7	1.2
Cameron's well	405.9	8.1	186.0	3.7	59.1	1.2
PUHO	419.2	8.4	189.0	3.8	43.8	0.9
PUHO	410.4	8.2	188.5	3.8	57.7	1.2
PUHO	414.2	8.3	190.8	3.8	58.5	1.2

current atmospheric value for CFC-12 is ~ 542 pmol/mol
max. atmospheric value for CFC-12 was ~ 546 pmol/mol in 2003
current atmospheric value for CFC-11 is ~ 247 pmol/mol
max. atmospheric value for CFC-11 was ~ 272 pmol/mol in 1994
current atmospheric value for CFC-113 is ~ 78 pmol/mol
max. atmospheric value for CFC-113 was ~ 85 pmol/mol in 1994

Table AII.120: Apparent recharge age for a single water source model.

Sample Name	CFC-Derived Recharge Age In years before sampling date					
	CFC12 years	error years	CFC11 years	error years	CFC113 years	error years
Keahuola QLT1	50	2	39	2	31	2
Keahuola QLT1	53	2	42	2	20	2
Keahuola QLT1	55	2	46	2	27	2
Keei D	37	2	37	2	32	2
Keei D	37	2	37	2	31	2
Keei D	37	2	38	2	31	2
Kalaoa A	>60	2	48	2	>40	2
Kalaoa A	>60	2	50	2	>40	2
Kalaoa A	>60	2	48	2	>40	2
Haulalai	54	2	45	2	40	2
Haulalai	54	2	44	2	40	2
Haulalai	54	2	45	2	39	2
Halekii	44	2	40	2	39	2
Halekii	44	2	42	2	40	2
Halekii	44	2	42	2	40	2
Honokohau	56	2	44	2	>40	2
Honokohau	55	2	45	2	40	2
Honokohau	55	2	46	2	40	2
Kahaluu A	38	2	40	2	33	2
Kahaluu A	37	2	39	2	33	2
Kahaluu A	38	2	39	2	31	2
Holualoa	47	2	43	2	39	2
Holualoa	46	2	44	2	40	2
Holualoa	45	2	39	2	39	2
Kahaluu Shaft	35	2	37	2	28	2
Kahaluu Shaft	35	2	37	2	28	2
Kahaluu Shaft	35	2	38	2	28	2
Bakken Pond	30	2	32	2	25	2
Bakken Pond	30	2	33	2	23	2
Bakken Pond	28	2	31	2	25	2
Kiholo Lava Tube	34	2	36	2	29	2
Kiholo Lava Tube	35	2	35	2	28	2
Kiholo Lava Tube	34	2	35	2	28	2
Keauhou Pond	24	2	25	2	22	2
Keauhou Pond	24	2	25	2	22	2
Keauhou Pond	24	2	24	2	22	2

Table AII.120: (Continued) Apparent recharge age for a single water source model.

Sample Name	CFC-Derived Recharge Age In years before sampling date					
	CFC12 years	error years	CFC11 years	error years	CFC113 years	error years
KAHO Obs. 2	22	2	23	2	21	2
KAHO Obs. 2	22	2	23	2	20	2
KAHO Obs. 2	23	2	23	2	21	2
KAHO Obs. 1	20	2	23	2	22	2
KAHO Obs. 1	20	2	23	2	20	2
KAHO Obs. 1	20	2	23	2	20	2
KAHO Obs. 3	30	2	29	2	27	2
KAHO Obs. 3	30	2	29	2	25	2
KAHO Obs. 3	29	2	29	2	24	2
Kailua Lava Tube	35	2	30	2	34	2
Kailua Lava Tube	35	2	30	2	31	2
Kailua Lava Tube	35	2	Supersaturated		30	2
Cameron's well	24	2	26	2	22	2
Cameron's well	23	2	27	2	21	2
Cameron's well	23	2	27	2	21	2
PUHO	23	2	27	2	23	2
PUHO	23	2	27	2	21	2
PUHO	23	2	26	2	21	2

Supersaturated indicates that there are additional non-atmospheric sources of the CFC making a valid age determination impossible.

Table AII.121: Thermal infrared sea-surface temperature data from a thermistor deployed near Barber's Point at 21.301167°N and 158.049333°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	26.488	7/6/2009 3:40	26.195	7/17/2009 3:00	26.488
7/6/2009 0:25	26.390	7/6/2009 3:45	26.195	7/17/2009 3:05	26.585
7/6/2009 0:30	26.390	7/6/2009 3:50	26.195	7/17/2009 3:10	26.585
7/6/2009 0:35	26.488	7/6/2009 3:55	26.195	7/17/2009 3:15	26.585
7/6/2009 0:40	26.390	7/6/2009 4:00	26.097	7/17/2009 3:20	26.585
7/6/2009 0:45	26.488	7/6/2009 4:05	26.195	7/17/2009 3:25	26.488
7/6/2009 0:50	26.390	7/6/2009 4:10	26.097	7/17/2009 3:30	26.488
7/6/2009 0:55	26.390	7/6/2009 4:15	26.195	7/17/2009 3:35	26.488
7/6/2009 1:00	26.390	7/6/2009 4:20	26.195	7/17/2009 3:40	26.488
7/6/2009 1:05	26.390	7/6/2009 4:25	26.195	7/17/2009 3:45	26.488
7/6/2009 1:10	26.292	7/6/2009 4:30	26.097	7/17/2009 3:50	26.585
7/6/2009 1:15	26.390	7/6/2009 4:35	26.097	7/17/2009 3:55	26.488
7/6/2009 1:20	26.390	7/6/2009 4:40	26.097	7/17/2009 4:00	26.585
7/6/2009 1:25	26.390	7/6/2009 4:45	26.195	7/17/2009 4:05	26.488
7/6/2009 1:30	26.292			7/17/2009 4:10	26.488
7/6/2009 1:35	26.292	7/17/2009 0:55	26.683	7/17/2009 4:15	26.390
7/6/2009 1:40	26.292	7/17/2009 1:00	26.683	7/17/2009 4:20	26.488
7/6/2009 1:45	26.292	7/17/2009 1:05	26.683	7/17/2009 4:25	26.488
7/6/2009 1:50	26.292	7/17/2009 1:10	26.683	7/17/2009 4:30	26.488
7/6/2009 1:55	26.292	7/17/2009 1:15	26.683	7/17/2009 4:35	26.390
7/6/2009 2:00	26.292	7/17/2009 1:20	26.683	7/17/2009 4:40	26.390
7/6/2009 2:05	26.292	7/17/2009 1:25	26.683	7/17/2009 4:45	26.390
7/6/2009 2:10	26.292	7/17/2009 1:30	26.683	7/17/2009 4:50	26.390
7/6/2009 2:15	26.390	7/17/2009 1:35	26.683	7/17/2009 4:55	26.390
7/6/2009 2:20	26.390	7/17/2009 1:40	26.683	7/17/2009 5:00	26.292
7/6/2009 2:25	26.292	7/17/2009 1:45	26.683	7/17/2009 5:05	26.292
7/6/2009 2:30	26.292	7/17/2009 1:50	26.683	7/17/2009 5:10	26.292
7/6/2009 2:35	26.292	7/17/2009 1:55	26.585	7/17/2009 5:15	26.390
7/6/2009 2:40	26.292	7/17/2009 2:00	26.683	7/17/2009 5:20	26.292
7/6/2009 2:45	26.292	7/17/2009 2:05	26.585	7/17/2009 5:25	26.292
7/6/2009 2:50	26.292	7/17/2009 2:10	26.585	7/17/2009 5:30	26.195
7/6/2009 2:55	26.292	7/17/2009 2:15	26.585	7/17/2009 5:35	26.195
7/6/2009 3:00	26.195	7/17/2009 2:20	26.585		
7/6/2009 3:05	26.195	7/17/2009 2:25	26.585	7/22/2009 0:20	20.424
7/6/2009 3:10	26.195	7/17/2009 2:30	26.585	7/22/2009 0:25	20.329
7/6/2009 3:15	26.195	7/17/2009 2:35	26.585	7/22/2009 0:30	20.329
7/6/2009 3:20	26.097	7/17/2009 2:40	26.585	7/22/2009 0:35	20.329
7/6/2009 3:25	26.097	7/17/2009 2:45	26.488	7/22/2009 0:40	20.329
7/6/2009 3:30	26.195	7/17/2009 2:50	26.585	7/22/2009 0:45	20.329
7/6/2009 3:35	26.195	7/17/2009 2:55	26.585	7/22/2009 0:50	20.329

Table AII.121: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed near Barber's Point at 21.301167°N and 158.049333°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	20.329	7/22/2009 1:40	20.138	7/22/2009 2:20	20.043
7/22/2009 1:00	20.234	7/22/2009 1:45	20.138	7/22/2009 2:25	20.043
7/22/2009 1:05	20.234	7/22/2009 1:50	20.138	7/22/2009 2:30	19.948
7/22/2009 1:10	20.234	7/22/2009 1:55	20.043	7/22/2009 2:35	19.948
7/22/2009 1:15	20.234	7/22/2009 2:00	20.043	7/22/2009 2:40	19.948
7/22/2009 1:20	20.234	7/22/2009 2:05	20.043	7/22/2009 2:45	19.948
7/22/2009 1:25	20.138	7/22/2009 2:10	20.043	7/22/2009 2:50	19.948
7/22/2009 1:30	20.138	7/22/2009 2:15	20.043	7/22/2009 2:55	19.948
7/22/2009 1:35	20.138				

Table AII.122: Thermal infrared sea-surface temperature data from a thermistor deployed near the North Shore at 21.590428°N and 158.112414°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	25.805	7/6/2009 3:40	25.610	7/17/2009 3:00	25.610
7/6/2009 0:25	25.708	7/6/2009 3:45	25.708	7/17/2009 3:05	25.513
7/6/2009 0:30	25.708	7/6/2009 3:50	25.610	7/17/2009 3:10	25.610
7/6/2009 0:35	25.708	7/6/2009 3:55	25.610	7/17/2009 3:15	25.610
7/6/2009 0:40	25.708	7/6/2009 4:00	25.610	7/17/2009 3:20	25.610
7/6/2009 0:45	25.708	7/6/2009 4:05	25.610	7/17/2009 3:25	25.610
7/6/2009 0:50	25.708	7/6/2009 4:10	25.610	7/17/2009 3:30	25.513
7/6/2009 0:55	25.708	7/6/2009 4:15	25.610	7/17/2009 3:35	25.513
7/6/2009 1:00	25.708	7/6/2009 4:20	25.610	7/17/2009 3:40	25.513
7/6/2009 1:05	25.708	7/6/2009 4:25	25.610	7/17/2009 3:45	25.513
7/6/2009 1:10	25.708	7/6/2009 4:30	25.513	7/17/2009 3:50	25.513
7/6/2009 1:15	25.708	7/6/2009 4:35	25.513	7/17/2009 3:55	25.513
7/6/2009 1:20	25.708	7/6/2009 4:40	25.610	7/17/2009 4:00	25.513
7/6/2009 1:25	25.708	7/6/2009 4:45	25.513	7/17/2009 4:05	25.513
7/6/2009 1:30	25.708			7/17/2009 4:10	25.513
7/6/2009 1:35	25.708	7/17/2009 0:55	25.805	7/17/2009 4:15	25.513
7/6/2009 1:40	25.708	7/17/2009 1:00	25.805	7/17/2009 4:20	25.513
7/6/2009 1:45	25.708	7/17/2009 1:05	25.805	7/17/2009 4:25	25.513
7/6/2009 1:50	25.708	7/17/2009 1:10	25.805	7/17/2009 4:30	25.513
7/6/2009 1:55	25.708	7/17/2009 1:15	25.708	7/17/2009 4:35	25.513
7/6/2009 2:00	25.708	7/17/2009 1:20	25.708	7/17/2009 4:40	25.513
7/6/2009 2:05	25.610	7/17/2009 1:25	25.708	7/17/2009 4:45	25.513
7/6/2009 2:10	25.610	7/17/2009 1:30	25.708	7/17/2009 4:50	25.513
7/6/2009 2:15	25.708	7/17/2009 1:35	25.708	7/17/2009 4:55	25.513
7/6/2009 2:20	25.708	7/17/2009 1:40	25.708	7/17/2009 5:00	25.513
7/6/2009 2:25	25.610	7/17/2009 1:45	25.708	7/17/2009 5:05	25.513
7/6/2009 2:30	25.610	7/17/2009 1:50	25.708	7/17/2009 5:10	25.513
7/6/2009 2:35	25.610	7/17/2009 1:55	25.708	7/17/2009 5:15	25.513
7/6/2009 2:40	25.610	7/17/2009 2:00	25.708	7/17/2009 5:20	25.513
7/6/2009 2:45	25.610	7/17/2009 2:05	25.708	7/17/2009 5:25	25.513
7/6/2009 2:50	25.610	7/17/2009 2:10	25.610	7/17/2009 5:30	25.513
7/6/2009 2:55	25.610	7/17/2009 2:15	25.708	7/17/2009 5:35	25.416
7/6/2009 3:00	25.610	7/17/2009 2:20	25.610		
7/6/2009 3:05	25.610	7/17/2009 2:25	25.610	7/22/2009 0:20	25.805
7/6/2009 3:10	25.610	7/17/2009 2:30	25.610	7/22/2009 0:25	25.805
7/6/2009 3:15	25.610	7/17/2009 2:35	25.610	7/22/2009 0:30	25.805
7/6/2009 3:20	25.610	7/17/2009 2:40	25.610	7/22/2009 0:35	25.805
7/6/2009 3:25	25.610	7/17/2009 2:45	25.610	7/22/2009 0:40	25.805
7/6/2009 3:30	25.805	7/17/2009 2:50	25.610	7/22/2009 0:45	25.805
7/6/2009 3:35	25.708	7/17/2009 2:55	25.513	7/22/2009 0:50	25.805

Table AII.122: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed near the North Shore at 21.590428°N and 158.112414°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	25.805	7/22/2009 1:40	25.708	7/22/2009 2:20	25.708
7/22/2009 1:00	25.805	7/22/2009 1:45	25.708	7/22/2009 2:25	25.708
7/22/2009 1:05	25.708	7/22/2009 1:50	25.708	7/22/2009 2:30	25.708
7/22/2009 1:10	25.708	7/22/2009 1:55	25.708	7/22/2009 2:35	25.708
7/22/2009 1:15	25.708	7/22/2009 2:00	25.708	7/22/2009 2:40	25.610
7/22/2009 1:20	25.708	7/22/2009 2:05	25.708	7/22/2009 2:45	25.708
7/22/2009 1:25	25.708	7/22/2009 2:10	25.708	7/22/2009 2:50	25.708
7/22/2009 1:30	25.708	7/22/2009 2:15	25.708	7/22/2009 2:55	25.708
7/22/2009 1:35	25.708				

Table AII.123: Thermal infrared sea-surface temperature data from a thermistor deployed in Kahana Bay at 21.557139°N and 157.871250°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	26.195	7/6/2009 3:40	25.902	7/17/2009 3:00	26.488
7/6/2009 0:25	26.195	7/6/2009 3:45	26.000	7/17/2009 3:05	26.488
7/6/2009 0:30	26.292	7/6/2009 3:50	26.097	7/17/2009 3:10	26.390
7/6/2009 0:35	26.292	7/6/2009 3:55	26.000	7/17/2009 3:15	26.292
7/6/2009 0:40	26.195	7/6/2009 4:00	26.097	7/17/2009 3:20	26.195
7/6/2009 0:45	26.195	7/6/2009 4:05	26.097	7/17/2009 3:25	26.195
7/6/2009 0:50	26.195	7/6/2009 4:10	26.097	7/17/2009 3:30	26.195
7/6/2009 0:55	26.195	7/6/2009 4:15	26.097	7/17/2009 3:35	26.195
7/6/2009 1:00	26.195	7/6/2009 4:20	26.000	7/17/2009 3:40	26.097
7/6/2009 1:05	26.195	7/6/2009 4:25	25.902	7/17/2009 3:45	26.097
7/6/2009 1:10	26.195	7/6/2009 4:30	25.902	7/17/2009 3:50	26.097
7/6/2009 1:15	26.195	7/6/2009 4:35	25.902	7/17/2009 3:55	26.097
7/6/2009 1:20	26.195	7/6/2009 4:40	25.805	7/17/2009 4:00	26.000
7/6/2009 1:25	26.195	7/6/2009 4:45	25.805	7/17/2009 4:05	25.902
7/6/2009 1:30	26.195			7/17/2009 4:10	25.902
7/6/2009 1:35	26.195	7/17/2009 0:55	25.902	7/17/2009 4:15	25.805
7/6/2009 1:40	26.195	7/17/2009 1:00	24.931	7/17/2009 4:20	25.805
7/6/2009 1:45	26.195	7/17/2009 1:05	25.125	7/17/2009 4:25	25.805
7/6/2009 1:50	26.195	7/17/2009 1:10	25.805	7/17/2009 4:30	25.708
7/6/2009 1:55	26.195	7/17/2009 1:15	25.805	7/17/2009 4:35	25.708
7/6/2009 2:00	26.195	7/17/2009 1:20	25.610	7/17/2009 4:40	25.805
7/6/2009 2:05	26.000	7/17/2009 1:25	25.708	7/17/2009 4:45	25.805
7/6/2009 2:10	26.195	7/17/2009 1:30	25.708	7/17/2009 4:50	25.805
7/6/2009 2:15	26.097	7/17/2009 1:35	25.805	7/17/2009 4:55	25.902
7/6/2009 2:20	26.195	7/17/2009 1:40	25.610	7/17/2009 5:00	25.902
7/6/2009 2:25	26.097	7/17/2009 1:45	25.708	7/17/2009 5:05	25.902
7/6/2009 2:30	26.097	7/17/2009 1:50	25.610	7/17/2009 5:10	26.000
7/6/2009 2:35	26.097	7/17/2009 1:55	25.708	7/17/2009 5:15	25.902
7/6/2009 2:40	26.097	7/17/2009 2:00	25.902	7/17/2009 5:20	25.708
7/6/2009 2:45	26.097	7/17/2009 2:05	26.195	7/17/2009 5:25	25.610
7/6/2009 2:50	26.097	7/17/2009 2:10	26.097	7/17/2009 5:30	25.610
7/6/2009 2:55	26.097	7/17/2009 2:15	25.902	7/17/2009 5:35	25.805
7/6/2009 3:00	26.097	7/17/2009 2:20	25.805		
7/6/2009 3:05	26.195	7/17/2009 2:25	26.000	7/22/2009 0:20	26.097
7/6/2009 3:10	26.195	7/17/2009 2:30	25.902	7/22/2009 0:25	26.000
7/6/2009 3:15	25.805	7/17/2009 2:35	25.708	7/22/2009 0:30	26.000
7/6/2009 3:20	26.000	7/17/2009 2:40	25.610	7/22/2009 0:35	26.000
7/6/2009 3:25	26.097	7/17/2009 2:45	25.610	7/22/2009 0:40	26.000
7/6/2009 3:30	26.097	7/17/2009 2:50	26.000	7/22/2009 0:45	26.000
7/6/2009 3:35	26.000	7/17/2009 2:55	26.292	7/22/2009 0:50	26.000

Table AII.123: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed in Kahana Bay at 21.557139°N and 157.871250°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	26.000	7/22/2009 1:40	25.513	7/22/2009 2:20	24.351
7/22/2009 1:00	26.000	7/22/2009 1:45	25.513	7/22/2009 2:25	24.641
7/22/2009 1:05	26.000	7/22/2009 1:50	25.610	7/22/2009 2:30	24.931
7/22/2009 1:10	26.000	7/22/2009 1:55	25.805	7/22/2009 2:35	25.222
7/22/2009 1:15	26.000	7/22/2009 2:00	25.902	7/22/2009 2:40	24.641
7/22/2009 1:20	26.000	7/22/2009 2:05	25.708	7/22/2009 2:45	24.351
7/22/2009 1:25	26.000	7/22/2009 2:10	25.513	7/22/2009 2:50	24.641
7/22/2009 1:30	25.902	7/22/2009 2:15	24.641	7/22/2009 2:55	24.931
7/22/2009 1:35	25.513				

Table AII.124: Thermal infrared sea-surface temperature data from a thermistor deployed in Waikiki at 21.28163°N and 157.84128°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	26.390	7/6/2009 3:45	26.097	7/17/2009 3:10	26.000
7/6/2009 0:25	26.488	7/6/2009 3:50	26.195	7/17/2009 3:15	26.000
7/6/2009 0:30	26.585	7/6/2009 3:55	26.097	7/17/2009 3:20	25.902
7/6/2009 0:35	26.488	7/6/2009 4:00	26.000	7/17/2009 3:25	26.097
7/6/2009 0:40	26.097	7/6/2009 4:05	26.097	7/17/2009 3:30	26.000
7/6/2009 0:45	26.195	7/6/2009 4:10	26.097	7/17/2009 3:35	26.000
7/6/2009 0:50	26.390	7/6/2009 4:15	25.805	7/17/2009 3:40	26.000
7/6/2009 0:55	26.195	7/6/2009 4:20	26.000	7/17/2009 3:45	26.000
7/6/2009 1:00	26.000	7/6/2009 4:25	25.902	7/17/2009 3:50	26.000
7/6/2009 1:05	26.097	7/6/2009 4:30	25.902	7/17/2009 3:55	26.000
7/6/2009 1:10	26.097	7/6/2009 4:35	25.902	7/17/2009 4:00	26.000
7/6/2009 1:15	26.390	7/6/2009 4:40	25.902	7/17/2009 4:05	26.097
7/6/2009 1:20	26.488	7/6/2009 4:45	25.902	7/17/2009 4:10	26.097
7/6/2009 1:25	26.390			7/17/2009 4:15	26.097
7/6/2009 1:30	26.488	7/17/2009 0:55	26.683	7/17/2009 4:20	26.097
7/6/2009 1:35	26.488	7/17/2009 1:00	26.683	7/17/2009 4:25	26.097
7/6/2009 1:40	26.390	7/17/2009 1:05	26.585	7/17/2009 4:30	26.097
7/6/2009 1:45	25.902	7/17/2009 1:10	26.488	7/17/2009 4:35	26.195
7/6/2009 1:50	25.902	7/17/2009 1:15	26.585	7/17/2009 4:40	26.195
7/6/2009 1:55	26.195	7/17/2009 1:20	26.488	7/17/2009 4:45	26.195
7/6/2009 2:00	26.195	7/17/2009 1:25	26.585	7/17/2009 4:50	26.195
7/6/2009 2:05	26.292	7/17/2009 1:30	26.585	7/17/2009 4:55	26.097
7/6/2009 2:10	26.390	7/17/2009 1:35	26.683	7/17/2009 5:00	26.097
7/6/2009 2:15	26.195	7/17/2009 1:40	26.488	7/17/2009 5:05	26.097
7/6/2009 2:20	26.097	7/17/2009 1:45	26.585	7/17/2009 5:10	26.195
7/6/2009 2:25	26.195	7/17/2009 1:50	26.488	7/17/2009 5:15	26.097
7/6/2009 2:30	26.097	7/17/2009 1:55	26.488	7/17/2009 5:20	26.000
7/6/2009 2:35	26.195	7/17/2009 2:00	26.195	7/17/2009 5:25	26.000
7/6/2009 2:40	26.195	7/17/2009 2:05	25.902	7/17/2009 5:30	26.097
7/6/2009 2:45	26.195	7/17/2009 2:10	26.000	7/17/2009 5:35	25.902
7/6/2009 2:50	26.195	7/17/2009 2:15	26.000		
7/6/2009 2:55	26.097	7/17/2009 2:20	25.805	7/22/2009 0:20	25.902
7/6/2009 3:00	26.195	7/17/2009 2:25	25.902	7/22/2009 0:25	25.902
7/6/2009 3:05	26.195	7/17/2009 2:30	25.902	7/22/2009 0:30	25.902
7/6/2009 3:10	26.292	7/17/2009 2:35	25.805	7/22/2009 0:35	25.902
7/6/2009 3:15	26.195	7/17/2009 2:40	25.805	7/22/2009 0:40	25.902
7/6/2009 3:20	26.195	7/17/2009 2:45	25.708	7/22/2009 0:45	25.902
7/6/2009 3:25	26.195	7/17/2009 2:50	25.805	7/22/2009 0:50	25.805
7/6/2009 3:30	26.097	7/17/2009 2:55	25.902	7/22/2009 0:55	25.805
7/6/2009 3:35	26.097	7/17/2009 3:00	25.902	7/22/2009 1:00	25.805
7/6/2009 3:40	26.097	7/17/2009 3:05	25.902	7/22/2009 1:05	25.902

Table AII.124: (Continued) Thermal infrared sea-surface temperature data from an thermistor deployed Waikiki at 21.28163°N and 157.84128°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 1:10	25.805	7/22/2009 1:50	25.513	7/22/2009 2:25	25.513
7/22/2009 1:15	25.902	7/22/2009 1:55	25.416	7/22/2009 2:30	25.513
7/22/2009 1:20	25.902	7/22/2009 2:00	25.319	7/22/2009 2:35	25.610
7/22/2009 1:25	25.708	7/22/2009 2:05	25.319	7/22/2009 2:40	25.610
7/22/2009 1:30	25.708	7/22/2009 2:10	25.319	7/22/2009 2:45	26.000
7/22/2009 1:35	25.610	7/22/2009 2:15	25.319	7/22/2009 2:50	26.195
7/22/2009 1:40	25.610	7/22/2009 2:20	25.416	7/22/2009 2:55	26.097
7/22/2009 1:45	25.513				

Table AII.125: Thermal infrared sea-surface temperature data from a thermistor deployed in Kailua Bay at 21.547814°N and 157.739881°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	27.468	7/6/2009 3:40	27.075	7/17/2009 3:00	27.272
7/6/2009 0:25	27.468	7/6/2009 3:45	27.075	7/17/2009 3:05	27.272
7/6/2009 0:30	27.468	7/6/2009 3:50	27.075	7/17/2009 3:10	27.272
7/6/2009 0:35	27.370	7/6/2009 3:55	27.075	7/17/2009 3:15	27.272
7/6/2009 0:40	27.370	7/6/2009 4:00	27.075	7/17/2009 3:20	27.272
7/6/2009 0:45	27.370	7/6/2009 4:05	27.075	7/17/2009 3:25	27.272
7/6/2009 0:50	27.370	7/6/2009 4:10	27.075	7/17/2009 3:30	27.272
7/6/2009 0:55	27.370	7/6/2009 4:15	27.075	7/17/2009 3:35	27.173
7/6/2009 1:00	27.370	7/6/2009 4:20	26.977	7/17/2009 3:40	27.173
7/6/2009 1:05	27.370	7/6/2009 4:25	26.977	7/17/2009 3:45	27.173
7/6/2009 1:10	27.272	7/6/2009 4:30	26.977	7/17/2009 3:50	27.173
7/6/2009 1:15	27.272	7/6/2009 4:35	26.977	7/17/2009 3:55	27.173
7/6/2009 1:20	27.272	7/6/2009 4:40	26.977	7/17/2009 4:00	27.173
7/6/2009 1:25	27.272	7/6/2009 4:45	26.977	7/17/2009 4:05	27.173
7/6/2009 1:30	27.272			7/17/2009 4:10	27.173
7/6/2009 1:35	27.272	7/17/2009 0:55	27.468	7/17/2009 4:15	27.173
7/6/2009 1:40	27.272	7/17/2009 1:00	27.370	7/17/2009 4:20	27.173
7/6/2009 1:45	27.272	7/17/2009 1:05	27.272	7/17/2009 4:25	27.173
7/6/2009 1:50	27.173	7/17/2009 1:10	27.272	7/17/2009 4:30	27.173
7/6/2009 1:55	27.173	7/17/2009 1:15	27.272	7/17/2009 4:35	27.173
7/6/2009 2:00	27.173	7/17/2009 1:20	27.370	7/17/2009 4:40	27.173
7/6/2009 2:05	27.173	7/17/2009 1:25	27.370	7/17/2009 4:45	27.173
7/6/2009 2:10	27.173	7/17/2009 1:30	27.370	7/17/2009 4:50	27.173
7/6/2009 2:15	27.173	7/17/2009 1:35	27.272	7/17/2009 4:55	27.173
7/6/2009 2:20	27.173	7/17/2009 1:40	27.272	7/17/2009 5:00	27.075
7/6/2009 2:25	27.173	7/17/2009 1:45	27.272	7/17/2009 5:05	27.075
7/6/2009 2:30	27.173	7/17/2009 1:50	27.272	7/17/2009 5:10	27.075
7/6/2009 2:35	27.173	7/17/2009 1:55	27.272	7/17/2009 5:15	26.977
7/6/2009 2:40	27.173	7/17/2009 2:00	27.272	7/17/2009 5:20	26.977
7/6/2009 2:45	27.173	7/17/2009 2:05	27.370	7/17/2009 5:25	26.977
7/6/2009 2:50	27.173	7/17/2009 2:10	27.370	7/17/2009 5:30	27.075
7/6/2009 2:55	27.173	7/17/2009 2:15	27.370	7/17/2009 5:35	26.977
7/6/2009 3:00	27.173	7/17/2009 2:20	27.370		
7/6/2009 3:05	27.173	7/17/2009 2:25	27.370	7/22/2009 0:20	27.173
7/6/2009 3:10	27.173	7/17/2009 2:30	27.272	7/22/2009 0:25	27.075
7/6/2009 3:15	27.075	7/17/2009 2:35	27.272	7/22/2009 0:30	27.173
7/6/2009 3:20	27.075	7/17/2009 2:40	27.370	7/22/2009 0:35	27.173
7/6/2009 3:25	27.075	7/17/2009 2:45	27.272	7/22/2009 0:40	27.173
7/6/2009 3:30	27.075	7/17/2009 2:50	27.272	7/22/2009 0:45	27.075
7/6/2009 3:35	27.075	7/17/2009 2:55	27.272	7/22/2009 0:50	27.075

Table AII.125: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed in Kailua Bay at 21.547814°N and 157.739881°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	27.075	7/22/2009 1:40	26.879	7/22/2009 2:20	26.781
7/22/2009 1:00	27.075	7/22/2009 1:45	26.879	7/22/2009 2:25	26.781
7/22/2009 1:05	27.075	7/22/2009 1:50	26.879	7/22/2009 2:30	26.879
7/22/2009 1:10	27.075	7/22/2009 1:55	26.879	7/22/2009 2:35	26.781
7/22/2009 1:15	27.075	7/22/2009 2:00	26.879	7/22/2009 2:40	26.781
7/22/2009 1:20	27.075	7/22/2009 2:05	26.879	7/22/2009 2:45	26.781
7/22/2009 1:25	26.977	7/22/2009 2:10	26.781	7/22/2009 2:50	26.781
7/22/2009 1:30	26.977	7/22/2009 2:15	26.879	7/22/2009 2:55	26.781
7/22/2009 1:35	26.977				

Table AII.126: Thermal infrared sea-surface temperature data from a thermistor deployed in Waimanalo Bay at 21.337167°N and 157.696139°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	27.075	7/6/2009 3:40	26.585	7/17/2009 3:00	26.781
7/6/2009 0:25	26.977	7/6/2009 3:45	26.585	7/17/2009 3:05	26.781
7/6/2009 0:30	26.977	7/6/2009 3:50	26.585	7/17/2009 3:10	26.781
7/6/2009 0:35	26.977	7/6/2009 3:55	26.488	7/17/2009 3:15	26.781
7/6/2009 0:40	26.977	7/6/2009 4:00	26.488	7/17/2009 3:20	26.781
7/6/2009 0:45	26.977	7/6/2009 4:05	26.488	7/17/2009 3:25	26.683
7/6/2009 0:50	26.977	7/6/2009 4:10	26.390	7/17/2009 3:30	26.683
7/6/2009 0:55	26.977	7/6/2009 4:15	26.390	7/17/2009 3:35	26.683
7/6/2009 1:00	26.977	7/6/2009 4:20	26.390	7/17/2009 3:40	26.683
7/6/2009 1:05	26.977	7/6/2009 4:25	26.390	7/17/2009 3:45	26.683
7/6/2009 1:10	26.977	7/6/2009 4:30	26.292	7/17/2009 3:50	26.683
7/6/2009 1:15	26.977	7/6/2009 4:35	26.292	7/17/2009 3:55	26.585
7/6/2009 1:20	26.879	7/6/2009 4:40	26.292	7/17/2009 4:00	26.585
7/6/2009 1:25	26.879	7/6/2009 4:45	26.292	7/17/2009 4:05	26.585
7/6/2009 1:30	26.879			7/17/2009 4:10	26.585
7/6/2009 1:35	26.879	7/17/2009 0:55	27.173	7/17/2009 4:15	26.585
7/6/2009 1:40	26.879	7/17/2009 1:00	27.173	7/17/2009 4:20	26.585
7/6/2009 1:45	26.879	7/17/2009 1:05	27.173	7/17/2009 4:25	26.585
7/6/2009 1:50	26.879	7/17/2009 1:10	27.173	7/17/2009 4:30	26.585
7/6/2009 1:55	26.879	7/17/2009 1:15	27.173	7/17/2009 4:35	26.488
7/6/2009 2:00	26.879	7/17/2009 1:20	27.075	7/17/2009 4:40	26.488
7/6/2009 2:05	26.879	7/17/2009 1:25	27.173	7/17/2009 4:45	26.488
7/6/2009 2:10	26.879	7/17/2009 1:30	27.075	7/17/2009 4:50	26.488
7/6/2009 2:15	26.879	7/17/2009 1:35	27.075	7/17/2009 4:55	26.488
7/6/2009 2:20	26.879	7/17/2009 1:40	27.075	7/17/2009 5:00	26.488
7/6/2009 2:25	26.879	7/17/2009 1:45	27.075	7/17/2009 5:05	26.39
7/6/2009 2:30	26.879	7/17/2009 1:50	26.977	7/17/2009 5:10	26.39
7/6/2009 2:35	26.781	7/17/2009 1:55	26.977	7/17/2009 5:15	26.39
7/6/2009 2:40	26.781	7/17/2009 2:00	26.977	7/17/2009 5:20	26.39
7/6/2009 2:45	26.781	7/17/2009 2:05	26.977	7/17/2009 5:25	26.39
7/6/2009 2:50	26.781	7/17/2009 2:10	26.977	7/17/2009 5:30	26.39
7/6/2009 2:55	26.781	7/17/2009 2:15	26.879	7/17/2009 5:35	26.39
7/6/2009 3:00	26.781	7/17/2009 2:20	26.879		
7/6/2009 3:05	26.781	7/17/2009 2:25	26.879	7/22/2009 0:20	26.585
7/6/2009 3:10	26.781	7/17/2009 2:30	26.879	7/22/2009 0:25	26.585
7/6/2009 3:15	26.781	7/17/2009 2:35	26.879	7/22/2009 0:30	26.585
7/6/2009 3:20	26.781	7/17/2009 2:40	26.879	7/22/2009 0:35	26.585
7/6/2009 3:25	26.683	7/17/2009 2:45	26.879	7/22/2009 0:40	26.585
7/6/2009 3:30	26.683	7/17/2009 2:50	26.781	7/22/2009 0:45	26.585
7/6/2009 3:35	26.683	7/17/2009 2:55	26.781	7/22/2009 0:50	26.585

Table AII.126: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed in Waimanalo Bay at 21.337167°N and 157.696139°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	26.585	7/22/2009 1:40	26.488	7/22/2009 2:20	26.488
7/22/2009 1:00	26.585	7/22/2009 1:45	26.585	7/22/2009 2:25	26.488
7/22/2009 1:05	26.585	7/22/2009 1:50	26.585	7/22/2009 2:30	26.488
7/22/2009 1:10	26.585	7/22/2009 1:55	26.585	7/22/2009 2:35	26.488
7/22/2009 1:15	26.585	7/22/2009 2:00	26.488	7/22/2009 2:40	26.488
7/22/2009 1:20	26.585	7/22/2009 2:05	26.585	7/22/2009 2:45	26.488
7/22/2009 1:25	26.585	7/22/2009 2:10	26.488	7/22/2009 2:50	26.488
7/22/2009 1:30	26.488	7/22/2009 2:15	26.488	7/22/2009 2:55	26.488
7/22/2009 1:35	26.488				

Table AII.127: Thermal infrared sea-surface temperature data from a thermistor deployed in Waimanalo Bay at 21.412972°N and 157.778861°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	26.977	7/6/2009 3:40	26.781	7/17/2009 3:00	27.173
7/6/2009 0:25	26.977	7/6/2009 3:45	26.781	7/17/2009 3:05	27.173
7/6/2009 0:30	26.977	7/6/2009 3:50	26.683	7/17/2009 3:10	27.173
7/6/2009 0:35	26.977	7/6/2009 3:55	26.683	7/17/2009 3:15	27.173
7/6/2009 0:40	26.977	7/6/2009 4:00	26.683	7/17/2009 3:20	27.173
7/6/2009 0:45	26.977	7/6/2009 4:05	26.781	7/17/2009 3:25	27.173
7/6/2009 0:50	26.977	7/6/2009 4:10	26.781	7/17/2009 3:30	27.173
7/6/2009 0:55	26.977	7/6/2009 4:15	26.781	7/17/2009 3:35	27.173
7/6/2009 1:00	26.977	7/6/2009 4:20	26.781	7/17/2009 3:40	27.173
7/6/2009 1:05	26.977	7/6/2009 4:25	26.781	7/17/2009 3:45	27.173
7/6/2009 1:10	26.879	7/6/2009 4:30	26.781	7/17/2009 3:50	27.173
7/6/2009 1:15	26.879	7/6/2009 4:35	26.683	7/17/2009 3:55	27.173
7/6/2009 1:20	26.879	7/6/2009 4:40	26.683	7/17/2009 4:00	27.272
7/6/2009 1:25	26.879	7/6/2009 4:45	26.585	7/17/2009 4:05	27.173
7/6/2009 1:30	26.781			7/17/2009 4:10	27.173
7/6/2009 1:35	26.683	7/17/2009 0:55	27.370	7/17/2009 4:15	27.173
7/6/2009 1:40	26.683	7/17/2009 1:00	27.272	7/17/2009 4:20	27.173
7/6/2009 1:45	26.683	7/17/2009 1:05	27.272	7/17/2009 4:25	27.173
7/6/2009 1:50	26.683	7/17/2009 1:10	27.272	7/17/2009 4:30	27.173
7/6/2009 1:55	26.683	7/17/2009 1:15	27.272	7/17/2009 4:35	27.173
7/6/2009 2:00	26.781	7/17/2009 1:20	27.173	7/17/2009 4:40	27.173
7/6/2009 2:05	26.781	7/17/2009 1:25	27.173	7/17/2009 4:45	27.173
7/6/2009 2:10	26.781	7/17/2009 1:30	27.173	7/17/2009 4:50	27.173
7/6/2009 2:15	26.781	7/17/2009 1:35	27.173	7/17/2009 4:55	27.173
7/6/2009 2:20	26.781	7/17/2009 1:40	27.173	7/17/2009 5:00	27.173
7/6/2009 2:25	26.781	7/17/2009 1:45	27.173	7/17/2009 5:05	27.173
7/6/2009 2:30	26.781	7/17/2009 1:50	27.173	7/17/2009 5:10	27.173
7/6/2009 2:35	26.781	7/17/2009 1:55	27.173	7/17/2009 5:15	27.173
7/6/2009 2:40	26.781	7/17/2009 2:00	27.173	7/17/2009 5:20	27.173
7/6/2009 2:45	26.781	7/17/2009 2:05	27.173	7/17/2009 5:25	27.173
7/6/2009 2:50	26.781	7/17/2009 2:10	27.173	7/17/2009 5:30	27.173
7/6/2009 2:55	26.781	7/17/2009 2:15	27.173	7/17/2009 5:35	27.173
7/6/2009 3:00	26.683	7/17/2009 2:20	27.173		
7/6/2009 3:05	26.781	7/17/2009 2:25	27.272	7/22/2009 0:20	26.781
7/6/2009 3:10	26.781	7/17/2009 2:30	27.272	7/22/2009 0:25	26.683
7/6/2009 3:15	26.781	7/17/2009 2:35	27.272	7/22/2009 0:30	26.683
7/6/2009 3:20	26.781	7/17/2009 2:40	27.173	7/22/2009 0:35	26.683
7/6/2009 3:25	26.781	7/17/2009 2:45	27.173	7/22/2009 0:40	26.585
7/6/2009 3:30	26.781	7/17/2009 2:50	27.173	7/22/2009 0:45	26.585
7/6/2009 3:35	26.781	7/17/2009 2:55	27.173	7/22/2009 0:50	26.585

Table AII.127: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed in Waimanalo Bay at 21.412972°N and 157.778861°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	26.585	7/22/2009 1:40	26.488	7/22/2009 2:20	26.390
7/22/2009 1:00	26.585	7/22/2009 1:45	26.488	7/22/2009 2:25	26.390
7/22/2009 1:05	26.488	7/22/2009 1:50	26.488	7/22/2009 2:30	26.390
7/22/2009 1:10	26.488	7/22/2009 1:55	26.488	7/22/2009 2:35	26.390
7/22/2009 1:15	26.585	7/22/2009 2:00	26.488	7/22/2009 2:40	26.292
7/22/2009 1:20	26.488	7/22/2009 2:05	26.488	7/22/2009 2:45	26.292
7/22/2009 1:25	26.585	7/22/2009 2:10	26.488	7/22/2009 2:50	26.292
7/22/2009 1:30	26.488	7/22/2009 2:15	26.488	7/22/2009 2:55	26.292
7/22/2009 1:35	26.488				

Table AII.128: Thermal infrared sea-surface temperature data from a thermistor deployed in Waimanalo Bay at 21.295761°N and 157.658000°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	26.683	7/6/2009 3:40	25.902	7/17/2009 3:00	26.292
7/6/2009 0:25	26.683	7/6/2009 3:45	25.902	7/17/2009 3:05	26.195
7/6/2009 0:30	26.585	7/6/2009 3:50	25.902	7/17/2009 3:10	26.292
7/6/2009 0:35	26.683	7/6/2009 3:55	25.805	7/17/2009 3:15	26.195
7/6/2009 0:40	26.585	7/6/2009 4:00	25.805	7/17/2009 3:20	26.195
7/6/2009 0:45	26.585	7/6/2009 4:05	25.805	7/17/2009 3:25	26.097
7/6/2009 0:50	26.585	7/6/2009 4:10	25.805	7/17/2009 3:30	26.097
7/6/2009 0:55	26.683	7/6/2009 4:15	25.708	7/17/2009 3:35	26.097
7/6/2009 1:00	26.683	7/6/2009 4:20	25.708	7/17/2009 3:40	26.000
7/6/2009 1:05	26.683	7/6/2009 4:25	25.610	7/17/2009 3:45	26.000
7/6/2009 1:10	26.683	7/6/2009 4:30	25.610	7/17/2009 3:50	25.902
7/6/2009 1:15	26.585	7/6/2009 4:35	25.513	7/17/2009 3:55	26.000
7/6/2009 1:20	26.585	7/6/2009 4:40	25.513	7/17/2009 4:00	25.902
7/6/2009 1:25	26.488	7/6/2009 4:45	25.513	7/17/2009 4:05	25.902
7/6/2009 1:30	26.488			7/17/2009 4:10	25.805
7/6/2009 1:35	26.488	7/17/2009 0:55	26.879	7/17/2009 4:15	25.805
7/6/2009 1:40	26.488	7/17/2009 1:00	26.879	7/17/2009 4:20	25.805
7/6/2009 1:45	26.488	7/17/2009 1:05	26.781	7/17/2009 4:25	25.805
7/6/2009 1:50	26.488	7/17/2009 1:10	26.879	7/17/2009 4:30	25.805
7/6/2009 1:55	26.488	7/17/2009 1:15	26.781	7/17/2009 4:35	25.805
7/6/2009 2:00	26.390	7/17/2009 1:20	26.781	7/17/2009 4:40	25.708
7/6/2009 2:05	26.488	7/17/2009 1:25	26.683	7/17/2009 4:45	25.708
7/6/2009 2:10	26.390	7/17/2009 1:30	26.683	7/17/2009 4:50	25.708
7/6/2009 2:15	26.390	7/17/2009 1:35	26.683	7/17/2009 4:55	25.708
7/6/2009 2:20	26.390	7/17/2009 1:40	26.683	7/17/2009 5:00	25.708
7/6/2009 2:25	26.390	7/17/2009 1:45	26.683	7/17/2009 5:05	25.708
7/6/2009 2:30	26.390	7/17/2009 1:50	26.585	7/17/2009 5:10	25.708
7/6/2009 2:35	26.390	7/17/2009 1:55	26.585	7/17/2009 5:15	25.708
7/6/2009 2:40	26.292	7/17/2009 2:00	26.488	7/17/2009 5:20	25.610
7/6/2009 2:45	26.292	7/17/2009 2:05	26.488	7/17/2009 5:25	25.610
7/6/2009 2:50	26.195	7/17/2009 2:10	26.488	7/17/2009 5:30	25.708
7/6/2009 2:55	26.195	7/17/2009 2:15	26.488	7/17/2009 5:35	25.708
7/6/2009 3:00	26.195	7/17/2009 2:20	26.390		
7/6/2009 3:05	26.097	7/17/2009 2:25	26.390	7/22/2009 0:20	26.879
7/6/2009 3:10	26.097	7/17/2009 2:30	26.390	7/22/2009 0:25	26.879
7/6/2009 3:15	26.097	7/17/2009 2:35	26.390	7/22/2009 0:30	26.879
7/6/2009 3:20	26.097	7/17/2009 2:40	26.292	7/22/2009 0:35	26.879
7/6/2009 3:25	26.000	7/17/2009 2:45	26.292	7/22/2009 0:40	26.879
7/6/2009 3:30	26.000	7/17/2009 2:50	26.292	7/22/2009 0:45	26.879
7/6/2009 3:35	25.902	7/17/2009 2:55	26.292	7/22/2009 0:50	26.781

Table AII.128: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed in Waimanalo Bay at 21.295761°N and 157.658000°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	26.781	7/22/2009 1:40	26.683	7/22/2009 2:20	26.585
7/22/2009 1:00	26.781	7/22/2009 1:45	26.683	7/22/2009 2:25	26.585
7/22/2009 1:05	26.781	7/22/2009 1:50	26.683	7/22/2009 2:30	26.585
7/22/2009 1:10	26.781	7/22/2009 1:55	26.585	7/22/2009 2:35	26.585
7/22/2009 1:15	26.781	7/22/2009 2:00	26.585	7/22/2009 2:40	26.585
7/22/2009 1:20	26.781	7/22/2009 2:05	26.585	7/22/2009 2:45	26.488
7/22/2009 1:25	26.683	7/22/2009 2:10	26.585	7/22/2009 2:50	26.488
7/22/2009 1:30	26.683	7/22/2009 2:15	26.585	7/22/2009 2:55	26.488
7/22/2009 1:35	26.683				

Table AII.129: Thermal infrared sea-surface temperature data from a thermistor deployed at Hauula at 21.609167°N and 157.905556°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	25.513	7/6/2009 3:40	25.513	7/17/2009 3:00	25.805
7/6/2009 0:25	25.513	7/6/2009 3:45	25.513	7/17/2009 3:05	25.805
7/6/2009 0:30	25.513	7/6/2009 3:50	25.513	7/17/2009 3:10	25.805
7/6/2009 0:35	25.513	7/6/2009 3:55	25.513	7/17/2009 3:15	25.805
7/6/2009 0:40	25.513	7/6/2009 4:00	25.513	7/17/2009 3:20	25.708
7/6/2009 0:45	25.513	7/6/2009 4:05	25.513	7/17/2009 3:25	25.708
7/6/2009 0:50	25.513	7/6/2009 4:10	25.513	7/17/2009 3:30	25.610
7/6/2009 0:55	25.513	7/6/2009 4:15	25.513	7/17/2009 3:35	25.610
7/6/2009 1:00	25.513	7/6/2009 4:20	25.513	7/17/2009 3:40	25.708
7/6/2009 1:05	25.513	7/6/2009 4:25	25.513	7/17/2009 3:45	25.708
7/6/2009 1:10	25.513	7/6/2009 4:30	25.513	7/17/2009 3:50	25.708
7/6/2009 1:15	25.513	7/6/2009 4:35	25.416	7/17/2009 3:55	25.708
7/6/2009 1:20	25.513	7/6/2009 4:40	25.416	7/17/2009 4:00	25.708
7/6/2009 1:25	25.513	7/6/2009 4:45	25.416	7/17/2009 4:05	25.708
7/6/2009 1:30	25.610			7/17/2009 4:10	25.708
7/6/2009 1:35	25.610	7/17/2009 0:55	25.805	7/17/2009 4:15	25.708
7/6/2009 1:40	25.610	7/17/2009 1:00	25.805	7/17/2009 4:20	25.708
7/6/2009 1:45	25.610	7/17/2009 1:05	25.902	7/17/2009 4:25	25.708
7/6/2009 1:50	25.610	7/17/2009 1:10	25.902	7/17/2009 4:30	25.708
7/6/2009 1:55	25.610	7/17/2009 1:15	25.902	7/17/2009 4:35	25.610
7/6/2009 2:00	25.610	7/17/2009 1:20	25.805	7/17/2009 4:40	25.610
7/6/2009 2:05	25.610	7/17/2009 1:25	25.805	7/17/2009 4:45	25.610
7/6/2009 2:10	25.610	7/17/2009 1:30	25.805	7/17/2009 4:50	25.610
7/6/2009 2:15	25.610	7/17/2009 1:35	25.805	7/17/2009 4:55	25.708
7/6/2009 2:20	25.610	7/17/2009 1:40	25.805	7/17/2009 5:00	25.708
7/6/2009 2:25	25.513	7/17/2009 1:45	25.805	7/17/2009 5:05	25.610
7/6/2009 2:30	25.610	7/17/2009 1:50	25.805	7/17/2009 5:10	25.610
7/6/2009 2:35	25.610	7/17/2009 1:55	25.805	7/17/2009 5:15	25.610
7/6/2009 2:40	25.513	7/17/2009 2:00	25.805	7/17/2009 5:20	25.610
7/6/2009 2:45	25.513	7/17/2009 2:05	25.805	7/17/2009 5:25	25.610
7/6/2009 2:50	25.610	7/17/2009 2:10	25.805	7/17/2009 5:30	25.610
7/6/2009 2:55	25.513	7/17/2009 2:15	25.805	7/17/2009 5:35	25.610
7/6/2009 3:00	25.513	7/17/2009 2:20	25.805		
7/6/2009 3:05	25.513	7/17/2009 2:25	25.805	7/22/2009 0:20	25.610
7/6/2009 3:10	25.513	7/17/2009 2:30	25.805	7/22/2009 0:25	25.610
7/6/2009 3:15	25.513	7/17/2009 2:35	25.805	7/22/2009 0:30	25.610
7/6/2009 3:20	25.513	7/17/2009 2:40	25.805	7/22/2009 0:35	25.610
7/6/2009 3:25	25.513	7/17/2009 2:45	25.805	7/22/2009 0:40	25.610
7/6/2009 3:30	25.513	7/17/2009 2:50	25.805	7/22/2009 0:45	25.610
7/6/2009 3:35	25.513	7/17/2009 2:55	25.805	7/22/2009 0:50	25.610

Table AII.129: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed at Hauula at 21.609167°N and 157.905556°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	25.610	7/22/2009 1:40	25.610	7/22/2009 2:20	25.610
7/22/2009 1:00	25.610	7/22/2009 1:45	25.610	7/22/2009 2:25	25.610
7/22/2009 1:05	25.610	7/22/2009 1:50	25.610	7/22/2009 2:30	25.610
7/22/2009 1:10	25.610	7/22/2009 1:55	25.610	7/22/2009 2:35	25.610
7/22/2009 1:15	25.610	7/22/2009 2:00	25.610	7/22/2009 2:40	25.610
7/22/2009 1:20	25.610	7/22/2009 2:05	25.610	7/22/2009 2:45	25.610
7/22/2009 1:25	25.610	7/22/2009 2:10	25.610	7/22/2009 2:50	25.610
7/22/2009 1:30	25.610	7/22/2009 2:15	25.610	7/22/2009 2:55	25.610
7/22/2009 1:35	25.610				

Table AII.130: Thermal infrared sea-surface temperature data from a thermistor deployed in Kanewai Pond near Paiko Lagoon at 21.284139°N and 157.727611°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	24.351	7/6/2009 3:40	23.004	7/17/2009 3:00	24.738
7/6/2009 0:25	24.351	7/6/2009 3:45	23.004	7/17/2009 3:05	24.738
7/6/2009 0:30	24.448	7/6/2009 3:50	23.004	7/17/2009 3:10	24.641
7/6/2009 0:35	24.448	7/6/2009 3:55	23.292	7/17/2009 3:15	24.641
7/6/2009 0:40	24.351	7/6/2009 4:00	23.484	7/17/2009 3:20	24.545
7/6/2009 0:45	24.448	7/6/2009 4:05	23.484	7/17/2009 3:25	24.641
7/6/2009 0:50	24.545	7/6/2009 4:10	23.388	7/17/2009 3:30	24.641
7/6/2009 0:55	24.351	7/6/2009 4:15	23.292	7/17/2009 3:35	24.448
7/6/2009 1:00	24.062	7/6/2009 4:20	23.292	7/17/2009 3:40	24.545
7/6/2009 1:05	24.351	7/6/2009 4:25	23.100	7/17/2009 3:45	24.545
7/6/2009 1:10	24.351	7/6/2009 4:30	23.004	7/17/2009 3:50	24.448
7/6/2009 1:15	23.966	7/6/2009 4:35	23.004	7/17/2009 3:55	24.448
7/6/2009 1:20	23.581	7/6/2009 4:40	23.292	7/17/2009 4:00	24.351
7/6/2009 1:25	23.388	7/6/2009 4:45	23.004	7/17/2009 4:05	24.255
7/6/2009 1:30	23.581			7/17/2009 4:10	24.158
7/6/2009 1:35	23.677	7/17/2009 0:55	25.902	7/17/2009 4:15	24.158
7/6/2009 1:40	23.484	7/17/2009 1:00	25.805	7/17/2009 4:20	24.255
7/6/2009 1:45	23.773	7/17/2009 1:05	25.610	7/17/2009 4:25	24.158
7/6/2009 1:50	23.869	7/17/2009 1:10	25.513	7/17/2009 4:30	24.062
7/6/2009 1:55	23.966	7/17/2009 1:15	25.513	7/17/2009 4:35	23.869
7/6/2009 2:00	23.966	7/17/2009 1:20	25.513	7/17/2009 4:40	23.869
7/6/2009 2:05	23.966	7/17/2009 1:25	25.610	7/17/2009 4:45	23.869
7/6/2009 2:10	23.869	7/17/2009 1:30	25.610	7/17/2009 4:50	23.869
7/6/2009 2:15	23.773	7/17/2009 1:35	25.610	7/17/2009 4:55	23.966
7/6/2009 2:20	23.677	7/17/2009 1:40	25.416	7/17/2009 5:00	23.966
7/6/2009 2:25	23.581	7/17/2009 1:45	25.319	7/17/2009 5:05	23.966
7/6/2009 2:30	23.581	7/17/2009 1:50	25.028	7/17/2009 5:10	24.062
7/6/2009 2:35	23.677	7/17/2009 1:55	24.931	7/17/2009 5:15	24.062
7/6/2009 2:40	23.292	7/17/2009 2:00	25.028	7/17/2009 5:20	24.062
7/6/2009 2:45	23.292	7/17/2009 2:05	24.931	7/17/2009 5:25	23.966
7/6/2009 2:50	23.100	7/17/2009 2:10	25.125	7/17/2009 5:30	24.062
7/6/2009 2:55	23.100	7/17/2009 2:15	25.125	7/17/2009 5:35	24.158
7/6/2009 3:00	23.196	7/17/2009 2:20	25.028		
7/6/2009 3:05	23.484	7/17/2009 2:25	25.028	7/22/2009 0:20	26.292
7/6/2009 3:10	23.292	7/17/2009 2:30	24.931	7/22/2009 0:25	26.292
7/6/2009 3:15	23.388	7/17/2009 2:35	24.931	7/22/2009 0:30	26.292
7/6/2009 3:20	23.677	7/17/2009 2:40	24.931	7/22/2009 0:35	26.195
7/6/2009 3:25	23.388	7/17/2009 2:45	24.835	7/22/2009 0:40	26.390
7/6/2009 3:30	23.292	7/17/2009 2:50	24.738	7/22/2009 0:45	26.488
7/6/2009 3:35	23.196	7/17/2009 2:55	24.738	7/22/2009 0:50	26.390

Table AII.130: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed in Kanewai Pond near Paiko Lagoon at 21.284139°N and 157.727611°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	26.195	7/22/2009 1:40	26.000	7/22/2009 2:20	25.902
7/22/2009 1:00	26.195	7/22/2009 1:45	26.000	7/22/2009 2:25	25.902
7/22/2009 1:05	26.292	7/22/2009 1:50	25.902	7/22/2009 2:30	25.902
7/22/2009 1:10	26.195	7/22/2009 1:55	25.902	7/22/2009 2:35	25.805
7/22/2009 1:15	26.292	7/22/2009 2:00	26.000	7/22/2009 2:40	25.708
7/22/2009 1:20	26.195	7/22/2009 2:05	26.000	7/22/2009 2:45	25.610
7/22/2009 1:25	26.195	7/22/2009 2:10	26.000	7/22/2009 2:50	25.610
7/22/2009 1:30	26.097	7/22/2009 2:15	25.902	7/22/2009 2:55	25.610
7/22/2009 1:35	26.000				

Table AII.131: Thermal infrared sea-surface temperature data from a thermistor deployed in Hawaii Kai Harbor near Coco Isle at 21.282583°N and 157.706667°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	26.488	7/6/2009 3:40	26.292	7/17/2009 3:00	26.683
7/6/2009 0:25	26.488	7/6/2009 3:45	26.292	7/17/2009 3:05	26.683
7/6/2009 0:30	26.488	7/6/2009 3:50	26.292	7/17/2009 3:10	26.683
7/6/2009 0:35	26.488	7/6/2009 3:55	26.292	7/17/2009 3:15	26.683
7/6/2009 0:40	26.390	7/6/2009 4:00	26.292	7/17/2009 3:20	26.683
7/6/2009 0:45	26.488	7/6/2009 4:05	26.292	7/17/2009 3:25	26.585
7/6/2009 0:50	26.488	7/6/2009 4:10	26.292	7/17/2009 3:30	26.585
7/6/2009 0:55	26.488	7/6/2009 4:15	26.292	7/17/2009 3:35	26.585
7/6/2009 1:00	26.488	7/6/2009 4:20	26.292	7/17/2009 3:40	26.585
7/6/2009 1:05	26.488	7/6/2009 4:25	26.390	7/17/2009 3:45	26.585
7/6/2009 1:10	26.488	7/6/2009 4:30	26.390	7/17/2009 3:50	26.585
7/6/2009 1:15	26.488	7/6/2009 4:35	26.292	7/17/2009 3:55	26.683
7/6/2009 1:20	26.488	7/6/2009 4:40	26.292	7/17/2009 4:00	26.585
7/6/2009 1:25	26.488	7/6/2009 4:45	26.292	7/17/2009 4:05	26.585
7/6/2009 1:30	26.488			7/17/2009 4:10	26.488
7/6/2009 1:35	26.488	7/17/2009 0:55	26.781	7/17/2009 4:15	26.488
7/6/2009 1:40	26.488	7/17/2009 1:00	26.781	7/17/2009 4:20	26.488
7/6/2009 1:45	26.390	7/17/2009 1:05	26.781	7/17/2009 4:25	26.488
7/6/2009 1:50	26.390	7/17/2009 1:10	26.781	7/17/2009 4:30	26.585
7/6/2009 1:55	26.488	7/17/2009 1:15	26.781	7/17/2009 4:35	26.585
7/6/2009 2:00	26.390	7/17/2009 1:20	26.781	7/17/2009 4:40	26.585
7/6/2009 2:05	26.390	7/17/2009 1:25	26.781	7/17/2009 4:45	26.585
7/6/2009 2:10	26.390	7/17/2009 1:30	26.781	7/17/2009 4:50	26.488
7/6/2009 2:15	26.390	7/17/2009 1:35	26.781	7/17/2009 4:55	26.585
7/6/2009 2:20	26.390	7/17/2009 1:40	26.781	7/17/2009 5:00	26.585
7/6/2009 2:25	26.390	7/17/2009 1:45	26.781	7/17/2009 5:05	26.585
7/6/2009 2:30	26.488	7/17/2009 1:50	26.781	7/17/2009 5:10	26.585
7/6/2009 2:35	26.390	7/17/2009 1:55	26.683	7/17/2009 5:15	26.585
7/6/2009 2:40	26.390	7/17/2009 2:00	26.781	7/17/2009 5:20	26.488
7/6/2009 2:45	26.390	7/17/2009 2:05	26.781	7/17/2009 5:25	26.488
7/6/2009 2:50	26.390	7/17/2009 2:10	26.683	7/17/2009 5:30	26.585
7/6/2009 2:55	26.390	7/17/2009 2:15	26.683	7/17/2009 5:35	26.488
7/6/2009 3:00	26.292	7/17/2009 2:20	26.781		
7/6/2009 3:05	26.195	7/17/2009 2:25	26.683	7/22/2009 0:20	26.195
7/6/2009 3:10	26.292	7/17/2009 2:30	26.683	7/22/2009 0:25	26.195
7/6/2009 3:15	26.292	7/17/2009 2:35	26.683	7/22/2009 0:30	26.195
7/6/2009 3:20	26.292	7/17/2009 2:40	26.683	7/22/2009 0:35	26.097
7/6/2009 3:25	26.292	7/17/2009 2:45	26.683	7/22/2009 0:40	26.195
7/6/2009 3:30	26.292	7/17/2009 2:50	26.683	7/22/2009 0:45	26.195
7/6/2009 3:35	26.292	7/17/2009 2:55	26.683	7/22/2009 0:50	26.097

Table AII.131: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed in Hawaii Kai Harbor near Coco Isle at 21.282583°N and 157.706667°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	26.195	7/22/2009 1:40	26.097	7/22/2009 2:20	25.902
7/22/2009 1:00	26.097	7/22/2009 1:45	26.097	7/22/2009 2:25	26.000
7/22/2009 1:05	26.097	7/22/2009 1:50	26.000	7/22/2009 2:30	26.000
7/22/2009 1:10	26.195	7/22/2009 1:55	26.000	7/22/2009 2:35	26.000
7/22/2009 1:15	26.195	7/22/2009 2:00	26.000	7/22/2009 2:40	26.000
7/22/2009 1:20	26.097	7/22/2009 2:05	26.000	7/22/2009 2:45	25.902
7/22/2009 1:25	26.097	7/22/2009 2:10	26.000	7/22/2009 2:50	25.902
7/22/2009 1:30	26.097	7/22/2009 2:15	25.902	7/22/2009 2:55	25.902
7/22/2009 1:35	26.097				

Table AII.132:Thermal infrared sea-surface temperature data from a thermistor deployed near Lagoon Drive at the airport at 21.330139°N and 157.894944°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	26.683	7/6/2009 3:40	26.488	7/17/2009 3:00	26.292
7/6/2009 0:25	26.683	7/6/2009 3:45	26.390	7/17/2009 3:05	26.292
7/6/2009 0:30	26.683	7/6/2009 3:50	26.488	7/17/2009 3:10	26.292
7/6/2009 0:35	26.683	7/6/2009 3:55	26.488	7/17/2009 3:15	26.292
7/6/2009 0:40	26.683	7/6/2009 4:00	26.488	7/17/2009 3:20	26.390
7/6/2009 0:45	26.683	7/6/2009 4:05	26.488	7/17/2009 3:25	26.390
7/6/2009 0:50	26.683	7/6/2009 4:10	26.488	7/17/2009 3:30	26.390
7/6/2009 0:55	26.683	7/6/2009 4:15	26.488	7/17/2009 3:35	26.390
7/6/2009 1:00	26.683	7/6/2009 4:20	26.488	7/17/2009 3:40	26.390
7/6/2009 1:05	26.585	7/6/2009 4:25	26.390	7/17/2009 3:45	26.390
7/6/2009 1:10	26.585	7/6/2009 4:30	26.390	7/17/2009 3:50	26.390
7/6/2009 1:15	26.488	7/6/2009 4:35	26.390	7/17/2009 3:55	26.390
7/6/2009 1:20	26.390	7/6/2009 4:40	26.292	7/17/2009 4:00	26.390
7/6/2009 1:25	26.488	7/6/2009 4:45	26.390	7/17/2009 4:05	26.390
7/6/2009 1:30	26.488			7/17/2009 4:10	26.390
7/6/2009 1:35	26.488	7/17/2009 0:55	26.585	7/17/2009 4:15	26.390
7/6/2009 1:40	26.488	7/17/2009 1:00	26.585	7/17/2009 4:20	26.390
7/6/2009 1:45	26.488	7/17/2009 1:05	26.585	7/17/2009 4:25	26.390
7/6/2009 1:50	26.488	7/17/2009 1:10	26.585	7/17/2009 4:30	26.390
7/6/2009 1:55	26.390	7/17/2009 1:15	26.585	7/17/2009 4:35	26.292
7/6/2009 2:00	26.488	7/17/2009 1:20	26.488	7/17/2009 4:40	26.292
7/6/2009 2:05	26.488	7/17/2009 1:25	26.585	7/17/2009 4:45	26.292
7/6/2009 2:10	26.390	7/17/2009 1:30	26.585	7/17/2009 4:50	26.292
7/6/2009 2:15	26.390	7/17/2009 1:35	26.585	7/17/2009 4:55	26.292
7/6/2009 2:20	26.488	7/17/2009 1:40	26.585	7/17/2009 5:00	26.292
7/6/2009 2:25	26.390	7/17/2009 1:45	26.585	7/17/2009 5:05	26.292
7/6/2009 2:30	26.390	7/17/2009 1:50	26.585	7/17/2009 5:10	26.292
7/6/2009 2:35	26.390	7/17/2009 1:55	26.585	7/17/2009 5:15	26.195
7/6/2009 2:40	26.390	7/17/2009 2:00	26.488	7/17/2009 5:20	26.292
7/6/2009 2:45	26.390	7/17/2009 2:05	26.488	7/17/2009 5:25	26.292
7/6/2009 2:50	26.390	7/17/2009 2:10	26.488	7/17/2009 5:30	26.292
7/6/2009 2:55	26.488	7/17/2009 2:15	26.390	7/17/2009 5:35	26.292
7/6/2009 3:00	26.488	7/17/2009 2:20	26.390		
7/6/2009 3:05	26.390	7/17/2009 2:25	26.488	7/22/2009 0:20	26.097
7/6/2009 3:10	26.488	7/17/2009 2:30	26.390	7/22/2009 0:25	26.097
7/6/2009 3:15	26.390	7/17/2009 2:35	26.488	7/22/2009 0:30	26.097
7/6/2009 3:20	26.390	7/17/2009 2:40	26.488	7/22/2009 0:35	26.000
7/6/2009 3:25	26.488	7/17/2009 2:45	26.390	7/22/2009 0:40	26.097
7/6/2009 3:30	26.488	7/17/2009 2:50	26.390	7/22/2009 0:45	26.000
7/6/2009 3:35	26.488	7/17/2009 2:55	26.390	7/22/2009 0:50	26.000

Table AII.132: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed near Lagoon Drive at the airport at 21.330139°N and 157.894944°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	26.000	7/22/2009 1:40	26.097	7/22/2009 2:20	26.097
7/22/2009 1:00	26.097	7/22/2009 1:45	26.000	7/22/2009 2:25	26.097
7/22/2009 1:05	26.097	7/22/2009 1:50	26.097	7/22/2009 2:30	26.097
7/22/2009 1:10	26.097	7/22/2009 1:55	26.097	7/22/2009 2:35	26.097
7/22/2009 1:15	26.097	7/22/2009 2:00	26.097	7/22/2009 2:40	26.097
7/22/2009 1:20	26.097	7/22/2009 2:05	26.097	7/22/2009 2:45	26.097
7/22/2009 1:25	26.195	7/22/2009 2:10	26.097	7/22/2009 2:50	26.097
7/22/2009 1:30	26.097	7/22/2009 2:15	26.097	7/22/2009 2:55	26.097
7/22/2009 1:35	26.097				

Table AII.133: Thermal infrared sea-surface temperature data from a thermistor deployed at Aiea Bay State Recreation Area at 21.377444°N and 157.937139°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535 hours Hawaii Standard Time. The thermistor was not deployed on 22 July 2009.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	23.966	7/6/2009 3:30	25.125	7/17/2009 2:35	25.125
7/6/2009 0:25	24.062	7/6/2009 3:35	25.222	7/17/2009 2:40	25.222
7/6/2009 0:30	24.062	7/6/2009 3:40	25.222	7/17/2009 2:45	25.125
7/6/2009 0:35	24.062	7/6/2009 3:45	25.222	7/17/2009 2:50	25.125
7/6/2009 0:40	24.255	7/6/2009 3:50	25.319	7/17/2009 2:55	25.028
7/6/2009 0:45	24.351	7/6/2009 3:55	25.222	7/17/2009 3:00	24.835
7/6/2009 0:50	24.351	7/6/2009 4:00	25.028	7/17/2009 3:05	24.835
7/6/2009 0:55	24.255	7/6/2009 4:05	25.125	7/17/2009 3:10	24.931
7/6/2009 1:00	24.351	7/6/2009 4:10	25.610	7/17/2009 3:15	25.028
7/6/2009 1:05	24.448	7/6/2009 4:15	25.708	7/17/2009 3:20	25.028
7/6/2009 1:10	24.448	7/6/2009 4:20	25.902	7/17/2009 3:25	25.028
7/6/2009 1:15	24.255	7/6/2009 4:25	25.805	7/17/2009 3:30	25.125
7/6/2009 1:20	24.351	7/6/2009 4:30	25.805	7/17/2009 3:35	25.125
7/6/2009 1:25	24.448	7/6/2009 4:35	25.610	7/17/2009 3:40	25.222
7/6/2009 1:30	24.641	7/6/2009 4:40	25.513	7/17/2009 3:45	25.028
7/6/2009 1:35	24.738	7/6/2009 4:45	25.513	7/17/2009 3:50	24.835
7/6/2009 1:40	24.738			7/17/2009 3:55	24.641
7/6/2009 1:45	24.641	7/17/2009 0:55	25.222	7/17/2009 4:00	24.641
7/6/2009 1:50	24.545	7/17/2009 1:00	25.125	7/17/2009 4:05	24.641
7/6/2009 1:55	24.641	7/17/2009 1:05	25.125	7/17/2009 4:10	24.448
7/6/2009 2:00	24.835	7/17/2009 1:10	25.125	7/17/2009 4:15	24.641
7/6/2009 2:05	24.931	7/17/2009 1:15	24.931	7/17/2009 4:20	24.835
7/6/2009 2:10	25.028	7/17/2009 1:20	24.931	7/17/2009 4:25	25.125
7/6/2009 2:15	25.222	7/17/2009 1:25	24.931	7/17/2009 4:30	25.125
7/6/2009 2:20	25.125	7/17/2009 1:30	25.028	7/17/2009 4:35	25.125
7/6/2009 2:25	25.028	7/17/2009 1:35	24.931	7/17/2009 4:40	25.028
7/6/2009 2:30	25.125	7/17/2009 1:40	24.931	7/17/2009 4:45	25.222
7/6/2009 2:35	25.125	7/17/2009 1:45	25.028	7/17/2009 4:50	25.125
7/6/2009 2:40	25.319	7/17/2009 1:50	25.028	7/17/2009 4:55	25.222
7/6/2009 2:45	25.319	7/17/2009 1:55	25.028	7/17/2009 5:00	25.319
7/6/2009 2:50	25.319	7/17/2009 2:00	25.028	7/17/2009 5:05	25.416
7/6/2009 2:55	25.125	7/17/2009 2:05	25.028	7/17/2009 5:10	25.222
7/6/2009 3:00	25.028	7/17/2009 2:10	25.028	7/17/2009 5:15	25.222
7/6/2009 3:05	25.125	7/17/2009 2:15	24.835	7/17/2009 5:20	25.028
7/6/2009 3:10	25.222	7/17/2009 2:20	24.835	7/17/2009 5:25	24.931
7/6/2009 3:15	25.125	7/17/2009 2:25	24.835	7/17/2009 5:30	24.931
7/6/2009 3:20	24.931	7/17/2009 2:30	24.931	7/17/2009 5:35	25.028
7/6/2009 3:25	25.222				

Table AII.134: Thermal infrared sea-surface temperature data from a thermistor deployed near Pearl City Peninsular Housing at 21.375361°N and 157.976028°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535 hours Hawaii Standard Time. The thermistor was not deployed on 22 July 2009. The thermistor was on dry land on 6 July 2009 resulting in false low temperatures.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	23.004	7/6/2009 3:30	22.908	7/17/2009 2:35	26.879
7/6/2009 0:25	23.004	7/6/2009 3:35	22.812	7/17/2009 2:40	27.075
7/6/2009 0:30	23.004	7/6/2009 3:40	22.908	7/17/2009 2:45	27.173
7/6/2009 0:35	23.004	7/6/2009 3:45	22.908	7/17/2009 2:50	26.879
7/6/2009 0:40	23.004	7/6/2009 3:50	22.908	7/17/2009 2:55	26.977
7/6/2009 0:45	23.004	7/6/2009 3:55	22.812	7/17/2009 3:00	26.977
7/6/2009 0:50	22.908	7/6/2009 4:00	22.812	7/17/2009 3:05	26.977
7/6/2009 0:55	22.908	7/6/2009 4:05	22.621	7/17/2009 3:10	26.488
7/6/2009 1:00	22.812	7/6/2009 4:10	22.621	7/17/2009 3:15	26.488
7/6/2009 1:05	22.908	7/6/2009 4:15	22.621	7/17/2009 3:20	26.879
7/6/2009 1:10	22.812	7/6/2009 4:20	22.621	7/17/2009 3:25	26.977
7/6/2009 1:15	22.908	7/6/2009 4:25	22.717	7/17/2009 3:30	27.173
7/6/2009 1:20	22.908	7/6/2009 4:30	22.621	7/17/2009 3:35	26.879
7/6/2009 1:25	22.908	7/6/2009 4:35	22.621	7/17/2009 3:40	26.977
7/6/2009 1:30	22.908	7/6/2009 4:40	22.525	7/17/2009 3:45	27.272
7/6/2009 1:35	22.908	7/6/2009 4:45	22.525	7/17/2009 3:50	27.272
7/6/2009 1:40	22.908			7/17/2009 3:55	27.173
7/6/2009 1:45	22.812	7/17/2009 0:55	27.567	7/17/2009 4:00	27.173
7/6/2009 1:50	22.812	7/17/2009 1:00	27.665	7/17/2009 4:05	27.075
7/6/2009 1:55	22.812	7/17/2009 1:05	27.567	7/17/2009 4:10	26.977
7/6/2009 2:00	22.812	7/17/2009 1:10	27.370	7/17/2009 4:15	26.977
7/6/2009 2:05	22.812	7/17/2009 1:15	27.370	7/17/2009 4:20	27.075
7/6/2009 2:10	22.717	7/17/2009 1:20	27.370	7/17/2009 4:25	27.075
7/6/2009 2:15	22.717	7/17/2009 1:25	27.370	7/17/2009 4:30	26.292
7/6/2009 2:20	22.717	7/17/2009 1:30	27.173	7/17/2009 4:35	26.292
7/6/2009 2:25	22.717	7/17/2009 1:35	27.272	7/17/2009 4:40	26.390
7/6/2009 2:30	22.908	7/17/2009 1:40	27.173	7/17/2009 4:45	26.488
7/6/2009 2:35	22.908	7/17/2009 1:45	27.272	7/17/2009 4:50	26.390
7/6/2009 2:40	22.908	7/17/2009 1:50	27.272	7/17/2009 4:55	26.195
7/6/2009 2:45	23.004	7/17/2009 1:55	27.370	7/17/2009 5:00	26.000
7/6/2009 2:50	23.100	7/17/2009 2:00	27.370	7/17/2009 5:05	26.000
7/6/2009 2:55	23.196	7/17/2009 2:05	27.370	7/17/2009 5:10	25.902
7/6/2009 3:00	23.292	7/17/2009 2:10	27.370	7/17/2009 5:15	26.195
7/6/2009 3:05	23.100	7/17/2009 2:15	27.370	7/17/2009 5:20	26.000
7/6/2009 3:10	23.004	7/17/2009 2:20	27.272	7/17/2009 5:25	25.513
7/6/2009 3:15	22.908	7/17/2009 2:25	27.075	7/17/2009 5:30	25.708
7/6/2009 3:20	22.908	7/17/2009 2:30	27.567	7/17/2009 5:35	26.292
7/6/2009 3:25	22.908				

Table AII.135: Thermal infrared sea-surface temperature data from a thermistor deployed at West Loch Shoreline Park 21.371028°N and 158.020500°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535 hours Hawaii Standard Time. The thermistor was not deployed on 22 July 2009.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	26.879	7/6/2009 3:30	26.488	7/17/2009 2:35	24.835
7/6/2009 0:25	26.488	7/6/2009 3:35	26.488	7/17/2009 2:40	24.931
7/6/2009 0:30	26.488	7/6/2009 3:40	26.488	7/17/2009 2:45	24.835
7/6/2009 0:35	26.390	7/6/2009 3:45	26.488	7/17/2009 2:50	24.835
7/6/2009 0:40	26.390	7/6/2009 3:50	26.488	7/17/2009 2:55	25.028
7/6/2009 0:45	26.292	7/6/2009 3:55	26.390	7/17/2009 3:00	25.028
7/6/2009 0:50	26.390	7/6/2009 4:00	26.390	7/17/2009 3:05	25.028
7/6/2009 0:55	26.390	7/6/2009 4:05	26.390	7/17/2009 3:10	24.931
7/6/2009 1:00	26.292	7/6/2009 4:10	26.390	7/17/2009 3:15	24.931
7/6/2009 1:05	26.292	7/6/2009 4:15	26.390	7/17/2009 3:20	24.931
7/6/2009 1:10	26.292	7/6/2009 4:20	26.390	7/17/2009 3:25	24.931
7/6/2009 1:15	26.292	7/6/2009 4:25	26.390	7/17/2009 3:30	25.028
7/6/2009 1:20	26.292	7/6/2009 4:30	26.292	7/17/2009 3:35	25.028
7/6/2009 1:25	26.195	7/6/2009 4:35	26.292	7/17/2009 3:40	25.125
7/6/2009 1:30	26.195	7/6/2009 4:40	26.292	7/17/2009 3:45	25.319
7/6/2009 1:35	26.097	7/6/2009 4:45	26.292	7/17/2009 3:50	25.708
7/6/2009 1:40	26.195			7/17/2009 3:55	25.805
7/6/2009 1:45	26.195	7/17/2009 0:55	25.513	7/17/2009 4:00	25.610
7/6/2009 1:50	26.195	7/17/2009 1:00	25.513	7/17/2009 4:05	25.610
7/6/2009 1:55	26.195	7/17/2009 1:05	25.610	7/17/2009 4:10	25.513
7/6/2009 2:00	26.195	7/17/2009 1:10	25.513	7/17/2009 4:15	25.319
7/6/2009 2:05	26.292	7/17/2009 1:15	25.513	7/17/2009 4:20	25.319
7/6/2009 2:10	26.195	7/17/2009 1:20	25.610	7/17/2009 4:25	25.222
7/6/2009 2:15	26.390	7/17/2009 1:25	25.513	7/17/2009 4:30	25.222
7/6/2009 2:20	26.488	7/17/2009 1:30	25.416	7/17/2009 4:35	25.222
7/6/2009 2:25	26.488	7/17/2009 1:35	25.610	7/17/2009 4:40	25.125
7/6/2009 2:30	26.585	7/17/2009 1:40	25.708	7/17/2009 4:45	25.319
7/6/2009 2:35	26.585	7/17/2009 1:45	25.513	7/17/2009 4:50	25.125
7/6/2009 2:40	26.585	7/17/2009 1:50	25.416	7/17/2009 4:55	25.028
7/6/2009 2:45	26.488	7/17/2009 1:55	25.416	7/17/2009 5:00	25.125
7/6/2009 2:50	26.390	7/17/2009 2:00	25.416	7/17/2009 5:05	25.028
7/6/2009 2:55	26.390	7/17/2009 2:05	25.416	7/17/2009 5:10	25.028
7/6/2009 3:00	26.390	7/17/2009 2:10	25.125	7/17/2009 5:15	24.931
7/6/2009 3:05	26.390	7/17/2009 2:15	25.125	7/17/2009 5:20	24.931
7/6/2009 3:10	26.390	7/17/2009 2:20	25.125	7/17/2009 5:25	24.931
7/6/2009 3:15	26.390	7/17/2009 2:25	25.222	7/17/2009 5:30	24.931
7/6/2009 3:20	26.585	7/17/2009 2:30	25.222	7/17/2009 5:35	24.835
7/6/2009 3:25	26.585				

Table AII.136:Thermal infrared sea-surface temperature data from a thermistor deployed at Waikiki at 21.258433°N and 157.819136°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	25.513	7/6/2009 3:40	25.222	7/17/2009 3:00	25.513
7/6/2009 0:25	25.513	7/6/2009 3:45	25.125	7/17/2009 3:05	25.513
7/6/2009 0:30	25.513	7/6/2009 3:50	25.028	7/17/2009 3:10	25.416
7/6/2009 0:35	25.513	7/6/2009 3:55	25.028	7/17/2009 3:15	25.416
7/6/2009 0:40	25.513	7/6/2009 4:00	25.028	7/17/2009 3:20	25.416
7/6/2009 0:45	25.513	7/6/2009 4:05	25.028	7/17/2009 3:25	25.416
7/6/2009 0:50	25.513	7/6/2009 4:10	25.028	7/17/2009 3:30	25.319
7/6/2009 0:55	25.513	7/6/2009 4:15	25.028	7/17/2009 3:35	25.319
7/6/2009 1:00	25.416	7/6/2009 4:20	25.028	7/17/2009 3:40	25.319
7/6/2009 1:05	25.416	7/6/2009 4:25	24.931	7/17/2009 3:45	25.319
7/6/2009 1:10	25.416	7/6/2009 4:30	24.931	7/17/2009 3:50	25.319
7/6/2009 1:15	25.416	7/6/2009 4:35	24.931	7/17/2009 3:55	25.319
7/6/2009 1:20	25.416	7/6/2009 4:40	24.931	7/17/2009 4:00	25.319
7/6/2009 1:25	25.416	7/6/2009 4:45	24.931	7/17/2009 4:05	25.319
7/6/2009 1:30	25.416			7/17/2009 4:10	25.319
7/6/2009 1:35	25.416	7/17/2009 0:55	26.000	7/17/2009 4:15	25.319
7/6/2009 1:40	25.319	7/17/2009 1:00	26.000	7/17/2009 4:20	25.319
7/6/2009 1:45	25.319	7/17/2009 1:05	26.000	7/17/2009 4:25	25.319
7/6/2009 1:50	25.319	7/17/2009 1:10	25.902	7/17/2009 4:30	25.319
7/6/2009 1:55	25.319	7/17/2009 1:15	25.902	7/17/2009 4:35	25.319
7/6/2009 2:00	25.319	7/17/2009 1:20	25.902	7/17/2009 4:40	25.319
7/6/2009 2:05	25.319	7/17/2009 1:25	25.902	7/17/2009 4:45	25.319
7/6/2009 2:10	25.319	7/17/2009 1:30	25.902	7/17/2009 4:50	25.319
7/6/2009 2:15	25.319	7/17/2009 1:35	25.902	7/17/2009 4:55	25.222
7/6/2009 2:20	25.319	7/17/2009 1:40	25.902	7/17/2009 5:00	25.222
7/6/2009 2:25	25.319	7/17/2009 1:45	25.805	7/17/2009 5:05	25.222
7/6/2009 2:30	25.222	7/17/2009 1:50	25.805	7/17/2009 5:10	25.222
7/6/2009 2:35	25.222	7/17/2009 1:55	25.805	7/17/2009 5:15	25.222
7/6/2009 2:40	25.222	7/17/2009 2:00	25.805	7/17/2009 5:20	25.125
7/6/2009 2:45	25.222	7/17/2009 2:05	25.805	7/17/2009 5:25	25.222
7/6/2009 2:50	25.222	7/17/2009 2:10	25.805	7/17/2009 5:30	25.222
7/6/2009 2:55	25.222	7/17/2009 2:15	25.805	7/17/2009 5:35	25.222
7/6/2009 3:00	25.222	7/17/2009 2:20	25.708		
7/6/2009 3:05	25.222	7/17/2009 2:25	25.708	7/22/2009 0:20	25.222
7/6/2009 3:10	25.222	7/17/2009 2:30	25.610	7/22/2009 0:25	25.222
7/6/2009 3:15	25.222	7/17/2009 2:35	25.610	7/22/2009 0:30	25.222
7/6/2009 3:20	25.222	7/17/2009 2:40	25.610	7/22/2009 0:35	25.319
7/6/2009 3:25	25.222	7/17/2009 2:45	25.513	7/22/2009 0:40	25.319
7/6/2009 3:30	25.319	7/17/2009 2:50	25.513	7/22/2009 0:45	25.319
7/6/2009 3:35	25.319	7/17/2009 2:55	25.513	7/22/2009 0:50	25.222

Table AII.136: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed at Waikiki at 21.258433°N and 157.819136°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	25.222	7/22/2009 1:40	25.222	7/22/2009 2:20	25.125
7/22/2009 1:00	25.222	7/22/2009 1:45	25.222	7/22/2009 2:25	25.125
7/22/2009 1:05	25.222	7/22/2009 1:50	25.125	7/22/2009 2:30	25.125
7/22/2009 1:10	25.222	7/22/2009 1:55	25.125	7/22/2009 2:35	25.125
7/22/2009 1:15	25.222	7/22/2009 2:00	25.125	7/22/2009 2:40	25.125
7/22/2009 1:20	25.222	7/22/2009 2:05	25.125	7/22/2009 2:45	25.125
7/22/2009 1:25	25.222	7/22/2009 2:10	25.125	7/22/2009 2:50	25.125
7/22/2009 1:30	25.222	7/22/2009 2:15	25.125	7/22/2009 2:55	25.125
7/22/2009 1:35	25.222				

Table AII.137:Thermal infrared sea-surface temperature data from a thermistor deployed at Kaneohe Bay at 21.502130°N and 157.851170°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	27.173	7/6/2009 3:40	26.292	7/17/2009 3:00	26.195
7/6/2009 0:25	27.075	7/6/2009 3:45	26.390	7/17/2009 3:05	26.195
7/6/2009 0:30	27.075	7/6/2009 3:50	26.390	7/17/2009 3:10	26.292
7/6/2009 0:35	26.977	7/6/2009 3:55	26.390	7/17/2009 3:15	26.292
7/6/2009 0:40	26.977	7/6/2009 4:00	26.292	7/17/2009 3:20	26.292
7/6/2009 0:45	26.977	7/6/2009 4:05	26.292	7/17/2009 3:25	26.195
7/6/2009 0:50	26.977	7/6/2009 4:10	26.292	7/17/2009 3:30	26.195
7/6/2009 0:55	26.879	7/6/2009 4:15	26.292	7/17/2009 3:35	26.195
7/6/2009 1:00	26.879	7/6/2009 4:20	26.195	7/17/2009 3:40	26.195
7/6/2009 1:05	26.879	7/6/2009 4:25	26.195	7/17/2009 3:45	26.195
7/6/2009 1:10	26.879	7/6/2009 4:30	26.195	7/17/2009 3:50	26.195
7/6/2009 1:15	26.879	7/6/2009 4:35	26.097	7/17/2009 3:55	26.195
7/6/2009 1:20	26.879	7/6/2009 4:40	26.097	7/17/2009 4:00	26.195
7/6/2009 1:25	26.879	7/6/2009 4:45	26.097	7/17/2009 4:05	26.097
7/6/2009 1:30	26.879			7/17/2009 4:10	26.097
7/6/2009 1:35	26.781	7/17/2009 0:55	26.781	7/17/2009 4:15	26.195
7/6/2009 1:40	26.781	7/17/2009 1:00	26.781	7/17/2009 4:20	26.195
7/6/2009 1:45	26.781	7/17/2009 1:05	26.683	7/17/2009 4:25	26.097
7/6/2009 1:50	26.781	7/17/2009 1:10	26.781	7/17/2009 4:30	26.097
7/6/2009 1:55	26.781	7/17/2009 1:15	26.781	7/17/2009 4:35	26.097
7/6/2009 2:00	26.781	7/17/2009 1:20	26.781	7/17/2009 4:40	26.000
7/6/2009 2:05	26.781	7/17/2009 1:25	26.683	7/17/2009 4:45	26.000
7/6/2009 2:10	26.781	7/17/2009 1:30	26.488	7/17/2009 4:50	26.000
7/6/2009 2:15	26.683	7/17/2009 1:35	26.390	7/17/2009 4:55	26.000
7/6/2009 2:20	26.683	7/17/2009 1:40	26.390	7/17/2009 5:00	26.000
7/6/2009 2:25	26.683	7/17/2009 1:45	26.390	7/17/2009 5:05	26.000
7/6/2009 2:30	26.585	7/17/2009 1:50	26.488	7/17/2009 5:10	26.000
7/6/2009 2:35	26.585	7/17/2009 1:55	26.390	7/17/2009 5:15	26.000
7/6/2009 2:40	26.585	7/17/2009 2:00	26.390	7/17/2009 5:20	26.000
7/6/2009 2:45	26.585	7/17/2009 2:05	26.390	7/17/2009 5:25	25.902
7/6/2009 2:50	26.488	7/17/2009 2:10	26.390	7/17/2009 5:30	25.805
7/6/2009 2:55	26.488	7/17/2009 2:15	26.390	7/17/2009 5:35	25.805
7/6/2009 3:00	26.488	7/17/2009 2:20	26.390		
7/6/2009 3:05	26.488	7/17/2009 2:25	26.292	7/22/2009 0:20	26.000
7/6/2009 3:10	26.585	7/17/2009 2:30	26.292	7/22/2009 0:25	26.000
7/6/2009 3:15	26.488	7/17/2009 2:35	26.292	7/22/2009 0:30	25.902
7/6/2009 3:20	26.390	7/17/2009 2:40	26.195	7/22/2009 0:35	25.902
7/6/2009 3:25	26.390	7/17/2009 2:45	26.195	7/22/2009 0:40	25.902
7/6/2009 3:30	26.390	7/17/2009 2:50	26.292	7/22/2009 0:45	25.902
7/6/2009 3:35	26.292	7/17/2009 2:55	26.195	7/22/2009 0:50	25.902

Table AII.137: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed at Kaneohe Bay at 21.502130°N and 157.851170°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	25.805	7/22/2009 1:40	25.708	7/22/2009 2:20	25.513
7/22/2009 1:00	25.805	7/22/2009 1:45	25.805	7/22/2009 2:25	25.610
7/22/2009 1:05	25.805	7/22/2009 1:50	25.805	7/22/2009 2:30	25.708
7/22/2009 1:10	25.805	7/22/2009 1:55	25.805	7/22/2009 2:35	25.610
7/22/2009 1:15	25.805	7/22/2009 2:00	25.805	7/22/2009 2:40	25.610
7/22/2009 1:20	25.805	7/22/2009 2:05	25.805	7/22/2009 2:45	25.610
7/22/2009 1:25	25.708	7/22/2009 2:10	25.708	7/22/2009 2:50	25.610
7/22/2009 1:30	25.708	7/22/2009 2:15	25.610	7/22/2009 2:55	25.610
7/22/2009 1:35	25.708				

Table AII.138:Thermal infrared sea-surface temperature data from a thermistor deployed at Aina Haina at 21.258472°N and 157.791083°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	24.738	7/6/2009 3:40	24.448	7/17/2009 3:00	24.448
7/6/2009 0:25	24.738	7/6/2009 3:45	24.448	7/17/2009 3:05	24.448
7/6/2009 0:30	24.835	7/6/2009 3:50	24.448	7/17/2009 3:10	24.351
7/6/2009 0:35	24.738	7/6/2009 3:55	24.448	7/17/2009 3:15	24.351
7/6/2009 0:40	24.641	7/6/2009 4:00	24.545	7/17/2009 3:20	24.255
7/6/2009 0:45	24.641	7/6/2009 4:05	24.545	7/17/2009 3:25	24.351
7/6/2009 0:50	24.641	7/6/2009 4:10	24.545	7/17/2009 3:30	24.448
7/6/2009 0:55	24.738	7/6/2009 4:15	24.448	7/17/2009 3:35	24.448
7/6/2009 1:00	24.641	7/6/2009 4:20	24.255	7/17/2009 3:40	24.351
7/6/2009 1:05	24.641	7/6/2009 4:25	24.255	7/17/2009 3:45	24.351
7/6/2009 1:10	24.641	7/6/2009 4:30	24.351	7/17/2009 3:50	24.351
7/6/2009 1:15	24.545	7/6/2009 4:35	24.351	7/17/2009 3:55	24.255
7/6/2009 1:20	24.545	7/6/2009 4:40	24.351	7/17/2009 4:00	24.255
7/6/2009 1:25	24.545	7/6/2009 4:45	24.448	7/17/2009 4:05	24.255
7/6/2009 1:30	24.641			7/17/2009 4:10	24.255
7/6/2009 1:35	24.641	7/17/2009 0:55	24.835	7/17/2009 4:15	24.255
7/6/2009 1:40	24.641	7/17/2009 1:00	24.738	7/17/2009 4:20	24.255
7/6/2009 1:45	24.545	7/17/2009 1:05	24.738	7/17/2009 4:25	24.255
7/6/2009 1:50	24.545	7/17/2009 1:10	24.738	7/17/2009 4:30	24.158
7/6/2009 1:55	24.545	7/17/2009 1:15	24.738	7/17/2009 4:35	24.255
7/6/2009 2:00	24.545	7/17/2009 1:20	24.738	7/17/2009 4:40	24.158
7/6/2009 2:05	24.448	7/17/2009 1:25	24.738	7/17/2009 4:45	24.158
7/6/2009 2:10	24.545	7/17/2009 1:30	24.738	7/17/2009 4:50	24.062
7/6/2009 2:15	24.641	7/17/2009 1:35	24.641	7/17/2009 4:55	24.062
7/6/2009 2:20	24.641	7/17/2009 1:40	24.641	7/17/2009 5:00	24.158
7/6/2009 2:25	24.545	7/17/2009 1:45	24.641	7/17/2009 5:05	24.255
7/6/2009 2:30	24.448	7/17/2009 1:50	24.545	7/17/2009 5:10	24.255
7/6/2009 2:35	24.448	7/17/2009 1:55	24.448	7/17/2009 5:15	24.255
7/6/2009 2:40	24.351	7/17/2009 2:00	24.545	7/17/2009 5:20	24.255
7/6/2009 2:45	24.351	7/17/2009 2:05	24.545	7/17/2009 5:25	24.255
7/6/2009 2:50	24.448	7/17/2009 2:10	24.545	7/17/2009 5:30	24.158
7/6/2009 2:55	24.545	7/17/2009 2:15	24.545	7/17/2009 5:35	24.158
7/6/2009 3:00	24.545	7/17/2009 2:20	24.545		
7/6/2009 3:05	24.641	7/17/2009 2:25	24.545	7/22/2009 0:20	22.717
7/6/2009 3:10	24.641	7/17/2009 2:30	24.448	7/22/2009 0:25	22.717
7/6/2009 3:15	24.641	7/17/2009 2:35	24.448	7/22/2009 0:30	22.717
7/6/2009 3:20	24.545	7/17/2009 2:40	24.351	7/22/2009 0:35	22.717
7/6/2009 3:25	24.448	7/17/2009 2:45	24.448	7/22/2009 0:40	22.717
7/6/2009 3:30	24.351	7/17/2009 2:50	24.545	7/22/2009 0:45	22.717
7/6/2009 3:35	24.351	7/17/2009 2:55	24.448	7/22/2009 0:50	22.717

Table AII.138: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed at Aina Haina at 21.258472°N and 157.791083°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	22.621	7/22/2009 1:40	22.525	7/22/2009 2:20	22.621
7/22/2009 1:00	22.621	7/22/2009 1:45	22.525	7/22/2009 2:25	22.621
7/22/2009 1:05	22.621	7/22/2009 1:50	22.525	7/22/2009 2:30	22.525
7/22/2009 1:10	22.621	7/22/2009 1:55	22.525	7/22/2009 2:35	22.525
7/22/2009 1:15	22.621	7/22/2009 2:00	22.621	7/22/2009 2:40	22.525
7/22/2009 1:20	22.621	7/22/2009 2:05	22.621	7/22/2009 2:45	22.525
7/22/2009 1:25	22.621	7/22/2009 2:10	22.621	7/22/2009 2:50	22.525
7/22/2009 1:30	22.621	7/22/2009 2:15	22.621	7/22/2009 2:55	22.525
7/22/2009 1:35	22.525				

Table AII.139:Thermal infrared sea-surface temperature data from a thermistor deployed at Aina Haina at 21.275681°N and 157.760067°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/6/2009 0:20	24.545	7/6/2009 3:40	23.677	7/17/2009 3:00	25.610
7/6/2009 0:25	24.738	7/6/2009 3:45	23.581	7/17/2009 3:05	25.610
7/6/2009 0:30	24.641	7/6/2009 3:50	23.581	7/17/2009 3:10	25.610
7/6/2009 0:35	24.738	7/6/2009 3:55	23.388	7/17/2009 3:15	25.610
7/6/2009 0:40	24.835	7/6/2009 4:00	23.388	7/17/2009 3:20	25.513
7/6/2009 0:45	24.738	7/6/2009 4:05	23.196	7/17/2009 3:25	25.610
7/6/2009 0:50	24.738	7/6/2009 4:10	23.388	7/17/2009 3:30	25.513
7/6/2009 0:55	24.738	7/6/2009 4:15	23.388	7/17/2009 3:35	25.513
7/6/2009 1:00	24.835	7/6/2009 4:20	23.292	7/17/2009 3:40	25.513
7/6/2009 1:05	24.738	7/6/2009 4:25	23.388	7/17/2009 3:45	25.513
7/6/2009 1:10	24.835	7/6/2009 4:30	23.388	7/17/2009 3:50	25.416
7/6/2009 1:15	24.835	7/6/2009 4:35	23.388	7/17/2009 3:55	25.416
7/6/2009 1:20	24.738	7/6/2009 4:40	23.388	7/17/2009 4:00	25.416
7/6/2009 1:25	24.738	7/6/2009 4:45	23.292	7/17/2009 4:05	25.319
7/6/2009 1:30	24.738			7/17/2009 4:10	25.222
7/6/2009 1:35	24.448	7/17/2009 0:55	26.000	7/17/2009 4:15	25.319
7/6/2009 1:40	24.545	7/17/2009 1:00	26.000	7/17/2009 4:20	25.222
7/6/2009 1:45	24.835	7/17/2009 1:05	25.902	7/17/2009 4:25	25.222
7/6/2009 1:50	24.448	7/17/2009 1:10	25.902	7/17/2009 4:30	25.222
7/6/2009 1:55	24.641	7/17/2009 1:15	25.902	7/17/2009 4:35	25.319
7/6/2009 2:00	24.641	7/17/2009 1:20	25.902	7/17/2009 4:40	25.125
7/6/2009 2:05	24.545	7/17/2009 1:25	25.902	7/17/2009 4:45	25.222
7/6/2009 2:10	24.641	7/17/2009 1:30	25.902	7/17/2009 4:50	25.222
7/6/2009 2:15	24.641	7/17/2009 1:35	25.805	7/17/2009 4:55	25.222
7/6/2009 2:20	24.641	7/17/2009 1:40	25.805	7/17/2009 5:00	25.222
7/6/2009 2:25	24.738	7/17/2009 1:45	25.708	7/17/2009 5:05	25.222
7/6/2009 2:30	24.641	7/17/2009 1:50	25.708	7/17/2009 5:10	25.222
7/6/2009 2:35	24.351	7/17/2009 1:55	25.708	7/17/2009 5:15	25.222
7/6/2009 2:40	24.158	7/17/2009 2:00	25.708	7/17/2009 5:20	25.222
7/6/2009 2:45	23.773	7/17/2009 2:05	25.610	7/17/2009 5:25	25.125
7/6/2009 2:50	23.484	7/17/2009 2:10	25.610	7/17/2009 5:30	25.125
7/6/2009 2:55	23.388	7/17/2009 2:15	25.610	7/17/2009 5:35	25.125
7/6/2009 3:00	23.388	7/17/2009 2:20	25.610		
7/6/2009 3:05	23.388	7/17/2009 2:25	25.610	7/22/2009 0:20	22.908
7/6/2009 3:10	23.581	7/17/2009 2:30	25.610	7/22/2009 0:25	22.908
7/6/2009 3:15	23.581	7/17/2009 2:35	25.610	7/22/2009 0:30	22.908
7/6/2009 3:20	23.581	7/17/2009 2:40	25.610	7/22/2009 0:35	22.812
7/6/2009 3:25	23.484	7/17/2009 2:45	25.610	7/22/2009 0:40	22.812
7/6/2009 3:30	23.581	7/17/2009 2:50	25.513	7/22/2009 0:45	22.812
7/6/2009 3:35	23.581	7/17/2009 2:55	25.610	7/22/2009 0:50	22.812

Table AII.139: (Continued) Thermal infrared sea-surface temperature data from a thermistor deployed at Aina Haina at 21.275681°N and 157.760067°W for 6 July 2009 from 0020-0445, 17 July 2009 from 0055-0535, and 22 July 2009 from 0020-0255 hours Hawaii Standard Time.

Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C	Date & Time m/d/yyyy h:ss	Temp °C
7/22/2009 0:55	22.812	7/22/2009 1:40	22.717	7/22/2009 2:20	22.717
7/22/2009 1:00	22.812	7/22/2009 1:45	22.717	7/22/2009 2:25	22.717
7/22/2009 1:05	22.812	7/22/2009 1:50	22.717	7/22/2009 2:30	22.717
7/22/2009 1:10	22.717	7/22/2009 1:55	22.717	7/22/2009 2:35	22.717
7/22/2009 1:15	22.717	7/22/2009 2:00	22.717	7/22/2009 2:40	22.621
7/22/2009 1:20	22.717	7/22/2009 2:05	22.717	7/22/2009 2:45	22.621
7/22/2009 1:25	22.717	7/22/2009 2:10	22.717	7/22/2009 2:50	22.621
7/22/2009 1:30	22.717	7/22/2009 2:15	22.717	7/22/2009 2:55	22.621
7/22/2009 1:35	22.717				

REFERENCES

Adams, W.M., and L.K. Lepley (1968) Infrared images of the Kau and Puna coastlines on Hawaii, *Water Resources Research Center Technical Report 26,* Honolulu, Hawaii: University of Hawaii Water Resources Research Center.

Akawwi, E., A. Al-Zouabi, M. Kakish, F. Koehn, and M. Sauter (2008) Using thermal infrared imagery (TIR) for illustrating the submarine groundwater discharge into the eastern shoreline of the Dead Sea-Jordan, *American Journal of Environmental Sciences,* 4(6), 693-700, doi: 10.3844/ajessp.2008.693.700.

Banks, W.S.L., R.L. Paylor, R.L and W.B. Hughes (1996) Using thermal-infrared imagery to delineate ground-water discharge, *Ground Water,* 34(3), 434-443, doi: 10.1111/j.1745-6584.1996.tb02024.x.

Barron, V., M. Herruzo, and J. Torrent (1988) Phosphate adsorption by aluminous hematites of different shapes, *Soil Science Society of America Journal,* 52(3), 647-651, doi: 10.2136/sssaj1988.03615995005200030009x.

Bohlke, J.K., and T.B. Coplen (1995) Interlaboratory comparison of reference materials for nitrogen-isotope-ratio measurements, in *Reference and intercomparison materials for stable isotopes of light elements* (pp. 51-66), IAEA-TECDOCH-825, Vienna, Austria: International Atomic Energy Agency.

Bohlke, J.K., S.J. Mroczkowski, and T.B. Coplen (2003) Oxygen isotopes in nitrate: new reference materials for ^{18}O:^{17}O:^{16}O measurements and observations on nitrate-water equilibrium, *Rapid Communications in Mass Spectrometry,* 17(16), 1835-1846, doi: 10.1002/rcm.1123.

Bowen, J.L., K.D. Kroeger, G. Tomasky, W.J. Pabich, M.L. Cole, R.H. Carmichael, and I. Valiela (2007), A review of land-sea coupling by groundwater discharge of nitrogen to New England estuaries: Mechanisms and effects, *Applied Geochemistry,* 22(1), 175-191, doi: 10.1016/j.apgeochem.2006.09.002.

Brown, C.W., L.N. Connor, J.L. Lillibridge, N.R. Nalli, and R.V. Legeckis (2005) An introduction to satellite sensors, observations and techniques, in R.L. Miller, C.E. Del Castillo, and B.A. McKee (eds.), *Remote sensing of coastal aquatic environments: Technologies, techniques and applications* (pp. 21-50), Dordrecht, The Netherlands: Springer.

Bu, X., and M.J. Warner (1995) Solubility of chlorofluorocarbon 113 in water and seawater, *Deep Sea Research Part I: Oceanographic Research Papers,* 42(7), 1151-1161, doi: 10.1016/0967-0637(95)00052-8.

Bukunt, J.P (2006) A study of submarine groundwater discharge on two shorelines of Oahu, *Bachelor of Science Thesis in Global Environmental Science* (p. 38), Honolulu, Hawaii: University of Hawaii at Manoa.

Bullister, J.L., and R.F. Weiss (1983) Anthropogenic chlorofluoromethanes in the Greenland and Norwegian Seas, *Science,* 221(4607), 265-268, doi: 10.1126/science.221.4607.265.

Burnett, W.C., and H. Dulaiova (2003) Estimating the dynamics of groundwater input into the coastal zone via continuous radon-222 measurements, *Journal of Environmental Radioactivity,* 69, 21-35, doi: 10.1016/S0265-931X(03)00084-5.

Burnett, W.C., H. Bokuniewicz, M. Huettel, W.S. Moore, and M. Taniguchi (2003) Groundwater and pore water inputs to the coastal zone, *Biogeochemistry* 66(1-2), 3-33, doi: 10.1023/B:BIOG.0000006066.21240.53.

Burnett, W.C., P.K. Aggarwal, A. Aureli, H. Bokuniewicz, J.E. Cable, M.A. Charette, E. Kontar, S. Krupa, K.M. Kulkarni, A. Loveless, W.S. Moore, J.A. Oberdorfer, J. Oliveira, N. Ozyurt, P. Povinec, A.M.G. Privitera, R. Rajar, R.T. Ramessur, J. Scholten, T. Stieglitz, M. Taniguchi, and J.V. Turner (2006) Quantifying submarine groundwater discharge in the coastal zone via multiple methods, *Science of the Total Environment*, 367(2-3), 498-543, doi: 10.1016/j.scitotenv.2006.05.009.

Burnett, W.C., G. Wattayakorn, M. Taniguchi, H. Dulaiova, P. Sojisuporn, S. Rungsupa, and T. Ishitobi (2007) Groundwater-derived nutrient inputs to the Upper Gulf of Thailand, *Continental Shelf Research,* 27(2), 176-190, doi: 10.1016/j.csr.2006.09.006.

Burton, W.C., L.N. Plummer, E. Busenberg, B.D. Lindsey, and W.J. Gburek (2002) Influence of fracture anisotropy on ground water age and chemistry, Valley and Ridge Province, Pennsylvania, *Ground Water*, 40(3), 242-257, doi: 10.1111/j.1745-6584.2002.tb02652.x.

Busenberg, E., and L.N. Plummer (1992) Use of chlorofluorocarbons (CCl3F and CCl2F2) as hydrologic tracers and age dating tools: the alluvium and terrace system

of central Oklahoma, *Water Resources Research,* 28(9), 2257-2283, doi: 10.1029/92WR01263.

Buske, N.L., and E.C. Evans (1974) Tides, runoff and currents, in E.C. Evans (ed.), *Pearl Harbor Biological Survey - Final Report*. Naval Undersea Center.

Campbell, J.B. (2002) Thermal Radiation, in *Introduction to remote sensing* (pp. 244-271), New York: The Guilford Press.

Casciotti, K.L., D.M. Sigman, M.G. Hastings, J.K. Bohlke, and A. Hilkert (2002) Measurement of the oxygen isotopic composition of nitrate in seawater and freshwater using the denitrifier method, *Analytical Chemistry,* 74(19), 4905-4912, doi: 10.1021/ac020113w.

Chang, S.Y.K., and R.H.F. Young (1977) An investigation into environmental effects of sewage effluent reuse at the Kaneohe Marine Corps Air Station Klipper golf course, *University of Hawaii at Manoa Water Resources Research Center Technical Report 53*.

Charette, M.A., and E.R. Sholkovits (2006) Trace element cycling in a subterranean estuary: Part 2. Geochemistry of the pore water, *Geochimica et Cosmochimica Acta*, 70(4), 811-826, doi: 10.1016/j.gca.2005.10.019.

Coles, S.L., R.C. Defelice, L.G. Eldredge, J.T. Carlton, R.L. Pyle, and A. Suzumoto (1997) Biodiversity of marine communities in Pearl Harbor, Oahu, Hawaii with observations on introduced exotic species, *Bishop Museum Press, HBS 1997-014*.

Cook, P.G., G. Favreau, J.C. Dighton, and S. Tickell (2003) Determining natural groundwater influx to a tropical river using radon, chlorofluorocarbons and ionic environmental tracers, *Journal of Hydrology*, 277(1-2), 74-88, doi: 10.1016/S0022-1694(03)00087-8.

Cook, P.G., L.N. Plummer, D.K. Solomon, and L.E. Han (2006) Effects and processes that can modify apparent CFC age, in *Use of chlorofluorocarbons in hydrology: A guidebook* (pp. 31-58), Vienna, Austria: International Atomic Energy Agency.

County of Hawaii (2003) Water resources of the South Kona/Kau water master plan area.

Dailer, M.L., R.S. Knox, J.E. Smith, M. Napier, and C.M. Smith (2010) Using $\delta^{15}N$ values in algal tissue to map locations and potential sources of anthropogenic nutrient

inputs on the island of Maui, Hawaii, USA, *Marine Pollution Bulletin*, 60(5), 655-671, doi: 10.1016/j.marpolbul.2009.12.021.

Dailer, M.L., H.L. Ramey, S. Saephan, C.M. Smith (2012) Algal $\delta^{15}N$ values detect a wastewater effluent plume in nearshore and offshore surface waters and three-dimensionally model the plume across a coral reef on Maui, Hawai‘i, USA, *Marine Pollution Bulletin*, 64(2), 207-213, doi: 10.1016/j.marpolbul.2011.12.004.

Danielescu, S., K.T.B. MacQuarrie, and R.N. Faux (2009) The integration of thermal infrared imaging, discharge measurements and numerical simulation to quantify the relative contributions of freshwater inflows to small estuaries in Atlantic Canada, *Hydrological Processes*, 23(20), 2847-2859, doi: 10.1002/hyp.7383.

Darling, W.G., D.C. Gooddy, J. Riches, I. Wallis (2010) Using environmental tracers to assess the extent of river-groundwater interaction in a quarried area of the English Chalk, *Applied Geochemistry*, 25, 923-932, doi: 10.1016/j.apgeochem.2010.01.019.

Derse, E., K.L. Knee, S.D. Wankel, C. Kendall, C.J. Berg, and A. Paytan (2007) Identifying sources of nitrogen to Hanalei Bay, Kauai, utilizing the nitrogen isotope signature of macroalgae, *Environmental Science and Technology*, 41(15), 5217-5223, doi: 10.1021/es0700449.

Dollar, S.J., and M.J. Atkinson (1992) Effects of nutrient subsidies from groundwater to nearshore marine ecosystems off the island of Hawaii, *Estuarine, Coastal and Shelf Science*, 35(4), 409-424, doi: 10.1016/S0272-7714(05)80036-8.

Donlon, C.J., S.J. Keogh, D.J. Baldwin, I.S. Robinson, I. Ridley, T. Sheasby, I.J. Barton, E.F. Bradley, T.J. Nightingale, and W. Emery (1998) Solid-state radiometer measurements of sea surface skin temperature, *Journal of Atmospheric and Oceanic Technology*, 15(3), 775-787, doi: 10.1175/1520-0426(1998)015<0775:SSRMOS> 2.0.CO;2.

Donn, J. M. (1902) Oahu, Hawaiian Islands, Walter E. Wall, Surveyor. Hawaii Territory Survey.

Duarte, T.K., H.F. Hemond, D. Frankel, and S. Frankel (2006) Assessment of submarine groundwater discharge by handheld aerial infrared imagery: case study of Kaloko fishpond and bay, Hawai‘i, *Limnology and Oceanography: Methods*, 4, 227-236, doi: 10.4319/lom.2006.4.227.

Dulaiova, H., R. Peterson, W.C. Burnett, and D. Lane-Smith (2005) A multi-detector continuous monitor for assessment of ^{222}Rn in the coastal ocean, *Journal of Radioanalytical and Nuclear Chemistry,* 263(2), 361-363, doi: 10.1007/s10967-005-0063-8.

Dulaiova, H., R. Camilli, P.B. Henderson, and M.A. Charette (2010) Coupled radon, methane and nitrate sensors for large-scale assessment of groundwater discharge and non-point source pollution to coastal waters, *Journal of Environmental Radioactivity,* 101(7), 553-563, doi: 10.1016/j.jenvrad.2009.12.004.

Emery, W.J., Y. Yu, G.A. Wick, P. Schlussel, and R.W. Reynolds (1994) Correcting infrared satellite estimates of sea surface temperature for atmospheric water vapor attenuation, *Journal of Geophysical Research,* 99(C3), 5219-5236, doi: 10.1029/93JC03215.

Emery, W.J., S. Castro, P. Schuessel, and C. Donlon (2001) Estimating sea surface temperature from infrared satellite and in situ temperature data, *Bulletin of the American Meteorological Society,* 82(12), 2773-2785, doi: 10.1175/1520-0477(2001)082<2773:ESSTFI>2.3.CO;2.

Englund, R.A., D.J. Preston, R. Wolff, S.L. Coles, L.G. Eldredge, and K. Arakaki (2000) Biodiversity of freshwater and estuarine communities in lower Pearl Harbor, Oahu, Hawaii with observations on introduced species, *Bishop Museum Technical Report 16, HBS 2000-001*.

Engott, J.A. (2011) A water-budget model and assessment of groundwater recharge for the Island of Hawai‘i, *United States Geological Survey Water-Resources Investigations Report 2011-5078.*

Epstein, S. and T. Mayeda (1953) Variation of O^{18} content of waters from natural sources, *Geochimica et Cosmochimica Acta,* 4(5), 213-224, doi: 10.1016/0016-7037(53)90051-9.

Fisher, J.I., and J.F. Mustard (2004) High spatial resolution sea surface climatology from Landsat thermal infrared data, *Remote Sensing of Environment,* 90(3), 293-307, doi: 10.1016/j.rse.2004.01.008.

Fox, R.L., J.A. Silva, O.R. Younge, D.L. Plucknett, and G.D. Sherman (1967) Soil and plant silicon and silicate response by sugar cane, *Soil Science Society of America Journal 31*(6), 775-779, doi: 10.2136/sssaj1967.03615995003100060021x.

Garrison, G.H., C.R. Glenn, and G.M. McMurtry (2003) Measurement of submarine groundwater discharge in Kahana Bay, O'ahu, Hawai'i, *Limnology and Oceanography*, 48(2), 920-928, doi: 10.4319/lo.2003.48.2.0920.

Giambelluca, T.W., and M. Sanderson (1993) The water balance and climatic classification, in M. Sanderson (ed.), *Prevailing trade winds: Weather and climate in Hawai'i* (pp. 56-72), Honolulu: University of Hawaii Press.

Giambelluca, T.W., and T.A. Schroeder (1998) Climate, in S.P. Juvik, J.O. Juvik, and T.R. Paradise (eds.), *Atlas of Hawai`i*. Honolulu: University of Hawaii Press.

Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J. Eischeid, and D. Delparte (2011) The Rainfall Atlas of Hawai'i. http://rainfall.geography.hawaii.edu.

Giblin, A.E., and A.G. Gaines (1990) Nitrogen inputs to a marine embayment: the importance of groundwater, *Biogeochemistry*, 10(3), 309-328, doi: 10.1007/BF00003150.

Granger, J., and D.M. Sigman (2009) Removal of nitrate with sulfamic acid for nitrate N and O, *Rapid Communications in Mass Spectrometry*, 23(23), 3753-3762, doi: 10.1002/rcm.4307.

Granger, J., D.M. Sigman, J.A. Needoba, and P.J. Harrison (2004) Coupled nitrogen and oxyugen isotope fractionation of nitrate during assimilation by cultures of marine phytoplankton, *Limnology and Oceanography*, 49(5), 1763-1773, doi: 10.4319/lo.2004.49.5.1763.

Green, A. R., N. A. Feast, K. M. Hiscock, and P. F. Dennis (1998) Identification of the source and fate of nitrate contamination of the Jersey bedrock aquifer using stable nitrogen isotopes, in N. S. Robins (ed.) *Groundwater Pollution, Aquifer Recharge and Vulnerability*, Geological Society Special Publication Number 130, 23-35, London: The Geological Society.

Grovhoug, J. G. (1992) Evaluation of sediment contamination in Pearl Harbor, *Technical Report A810452 Naval Command, Control, and Ocean Surveillance Center (U.S.) Research, Development, Test, and Evaluation Division*.

Handcock, R.N., A.R. Gillespie, K.A. Cherkauer, J.E. Kay, S.J. Burges, and S.K. Kampf (2006) Accuracy and uncertainty of thermal-infrared remote sensing of stream temperatures at multiple spatial scales, *Remote Sensing of Environment,* 100(4), 427-440, doi: 10.1016/j.rse.2005.07.007.

Happell, J.D., D.W.R. Wallace, K.D. Wills, R.J. Wilke, and C.C. Neill (1996) A purge-and-trap capillary column gas chromatographic method for the measurement of halocarbons in water and air, *Oceanographic and Atmospheric Sciences Division, Department of Applied Science, Brookhaven National Laboratory*.

Happell, J.D., S. Opsahl, Z. Top, and J.P. Chanton (2006) Apparent CFC and $^{3}H/^{3}He$ age differences in water from Floridan aquifer springs, *Journal of Hydrology,* 319(1-4), 410-426, doi: 10.1016/j.jhydrol.2005.07.033.

Holleman, K.D. (2011) Comparison of submarine groundwater discharge derived nutrients from the leeward flanks of the islands of Oahu and Hawaii, *Master of Science Thesis from the Department of Geology and Geophysics* (p. 126), Honolulu, Hawaii: University of Hawaii at Manoa.

Hu, C., F.E. Muller-Karger, and P.W. Swarzenski (2006) Hurricanes, submarine groundwater discharge, and Florida's red tides, *Geophysical Research Letters,* 33, L11601, doi: 10.1029/2005GL025449.

Hufen, T.H., P. Eyre, and W. Mcconachie (1980) Underground residence times and chemical quality of basal groundwater in Pearl Harbor and Honolulu aquifers, O'ahu, Hawaii, *Water Resources Research Center Technical Report 129*, Honolulu, Hawaii: University of Hawaii Water Resources Research Center.

Hunt, C.D. (1996) Geohydrology of the Island of Oahu, Hawaii, *United States Geological Survey Professional Paper 1412-B.*

Hunt, C.D. (2004) Ground-water quality and its relation to land use on Oahu, Hawaii, 2000-01, *United States Geological Survey Water-Resources Investigation Report 03-4305*.

Hunt, C.D. (2007) Ground-water nutrient fluxes to coastal waters and numerical simulation of wastewater injection at Kihei, Maui, Hawaii, *United States Geological Survey Scientific Investigations Report 2006-5283*.

Hunt, C.D., and S.N. Rosa (2009) A multitracer approach to detecting wastewater plumes from municipal injection wells in nearshore marine waters at Kihei and Lahaina, Maui, Hawaii, *United States Geological Survey Scientific Investigations Report 2009-5253*.

Isdale, J.D., C.M. Spence, and J.S. Tudhope (1972) Physical properties of sea water solutions: viscosity, *Desalinatio*n, 10(4), 319-328, doi: 10.1016/S0011-9164(00)80002-8.

Johnson, A.G. (2008). Groundwater discharge from the leeward half of the Big Island, Hawaii, *Master of Science Thesis from the Department of Geology and Geophysics* (p. 158), Honolulu, Hawaii: University of Hawaii at Manoa.

Johnson, A.G., C.R., Glenn, W.C. Burnett, R.N. Peterson, and P.G. Lucey (2008) Aerial infrared imaging reveals large nutrient-rich groundwater inputs to the ocean, *Geophysical Research Letters*, 35, L15606, doi: 10.1029/2008GL034574.

Juvik, J.O., and P.C. Ekern (1978) A climatology of mountain fog on Mauna Loa: Hawaii Island, *University of Hawaii Water Resources Research Center Technical Report 118*, Honolulu, Hawaii: University of Hawaii Water Resources Research Center.

Kanehiro, B.Y., and F.L. Peterson (1977) Groundwater recharge and coastal discharge for the northwest coast of the island of Hawai'i: A computerized water budget approach, *University of Hawaii Water Resources Research Center Technical Report 110,* Honolulu, Hawaii: University of Hawaii Water Resources Research Center.

Katz, B.G. (2004) Sources of nitrate contamination and age of water in large karstic springs of Florida, *Environmental Geology*, 46(6-7), 689-706, doi: 10.1007/s00254-004-1061-9.

Katz, B.G., J.K. Böhlke, and H.D. Hornsby (2001) Timescales for nitrate contamination of spring waters, northern Florida, USA, *Chemical Geology*, 179(1-4), 167-186, doi: 10.1016/S0009-2541(01)00321-7.

Kendall, C. (1998) Tracing nitrogen sources and cycling in catchments, in C. Kendall and J.J. McDonnell (eds.), *Isotope tracers in catchment hydrology* (pp. 519-576), Amsterdam, The Netherlands: Elsevier.

Kikuchi, W.K. (1976) Prehistoric Hawaiian Fishponds, *Science,* 193(4250), 295-299, doi: 10.1126/science.193.4250.295.

Klasner, F.L. and C.D. Mikami (2003) Land use on the island of Oahu, Hawaii, 1998, *United States Geological Survey Water-Resources Investigations Report 02-4301.*

Knee, K.L., J.H. Street, E.E. Grossman, A.B. Boehm, and A. Paytan (2010) Nutrient inputs to the coastal ocean from submarine groundwater discharge in a groundwater-dominated system: Relation to land use (Kona coast, Hawaii, U.S.A.), *Limnology and Ocenaography,* 55(3), 1105-1122, doi: 10.4319/lo.2010.55.3.1105.

Krest, J.M., W.S. Moore, L.R. Gardner, and J.T. Morris (2000) Marsh nutrient export supplied by groundwater discharge: Evidence from radium measurements, *Global Biogeochemical Cycles,* 14(1), 167-176, doi: 10.1029/1999GB001197.

Lager, D. (2011) Hawai‘i Coral Reef Assessment and Monitoring Program. Hawai‘i Institute of Marine Biology. URL: http://cramp.wcc.hawaii.edu/LT_Montoring_files/lt_study_sites_Oahu_Kahe_Point.htm. Last updated on February 24, 2011.

Lane-Smith, D., W. Burnett, and H. Dulaiova (2002) Continuous radon-222 measurements in the coastal zone, *Sea Technology,* 43, 37-45.

Larned. S.T. (1998) Nitrogen-versus phosphorus-limited growth and sources of nutrients for coral reef macroalgae, *Marine Biology,* 132(3), 409-421, 10.1007/s002270050407.

Lau, L.S. (1962) Water Development of Kalauao Basal Springs: Hydraulic Model Studies.

Laws, E.A., D. Ziemann, and D. Schulman (1999) Coastal water quality in Hawaii: the importance of buffer zones and dilution, *Marine Environmental Research,* 48(1), 1-21, doi: 10.1016/S0141-1136(99)00029-X.

Lee, Y.-W., and G. Kim (2007) Linking groundwater-borne nutrients and dinoflagellate red-tide outbreaks in the southern sea of Korea using a Ra tracer, *Estuarine, Coastal and Shelf Science,* 71(1-2), 309-317, doi: 10.1016/j.ecss.2006.08.004.

Lehmann, M.F., P. Reichert, S.M. Bernasconi, A. Barbieri, and J.A. McKenzie (2003) Modeling nitrogen and oxygen isotope fractionation during denitrification in a lacustrine redox-transition zone, *Geochimica et Cosmochimica Acta,* 67(14), 2529-2542, doi: 10.1016/S0016-7037(03)00085-1.

Macintyre, S.R., G.B. Wanninkhof, and J.P. Chanton (1995) Trace gas exchange across the air-sea interface in freshwater and coastal marine environments, in P.A. Matson and R.C. Harris (eds.), *Biogenic trace gases: Measuring emissions from soil and water.*

Mariotti, A., A. Landreau, and B. Simoni (1988) ^{15}N isotope biogeochemistry and natural denitrification process in groundwater: Application to the chalk aquifer of northern France, *Geochimica et Cosmochimica Acta,* 52(7): 1869-1878, doi: 10.1016/0016-7037(88)90010-5.

Mayer, B. (2005) Assessing sources and transformations of sulphate and nitrate in the hydrosphere using isotope techniques, in P.K. Aggarwal, J.R. Gat and K.F.O. Froehlich (eds), *Isotopes in the water cycle: Past, present and future of a developing science,* (pp. 67-89), Dordrecht, The Netherlands: Springer.

McGowan, M.P. (2004), Submarine groundwater discharge: Freshwater and nutrient input into Hawaii's coastal zone, *Master of Science Thesis from the Department of Geology and Geophysics* (p. 134), Honolulu, Hawaii: University of Hawaii at Manoa.

McLaughlin, J.R., J.C. Ryden, and J.K. Syers (1981) Sorption of inorganic phosphate by iron- and aluminum-containing components, *Journal of Soil Science,* 32(3), 365-377, doi: 10.1111/j.1365-2389.1981.tb01712.x.

Meyer, W., and W.R. Souza (1995) Factors that control the amount of water that can be diverted to wells in a high-level aquifer, in R. Hermann, W. Back, R.C. Sidle, and A.I. Johnson (eds.), *Proceedings of the American Water Resources Association Annual Summer Symposium,* Water Resources and Environmental Hazards: Emphasis on Hydrologic and Cultural Insight in the Pacific Rim, Honolulu, HI, USA.

Miller, D.C., and W.J. Ullman (2004) Ecological consequences of ground water discharge to Delaware Bay, United States, *Ground Water,* 42(7), 959-970, doi: 10.1111/j.1745-6584.2004.tb02635.x.

Mink, J.F. (1964) Groundwater temperatures in a tropical island environment, *Journal of Geophysical Research*, 69(24), 5225-5230; doi: 10.1029/JZ069i024p05225.

Mink, J.F. (1980) State of the groundwater resources of southern Oahu. Board of Water Supply, City and County of Honolulu, Honolulu, Hawaii.

Moore, W.S. (1996) Large groundwater inputs to coastal waters revealed by ^{226}Ra enrichments, *Nature*, 380, 612-614, doi: 10.1038/380612a0.

Moore, W. S. (1999) The subterranean estuary: a reaction zone of groundwater and sea water, *Marine Chemistry*, 65(1-2), 111-126, doi: 10.1016/S0304-4203(99)00014-6.

Moore, W.S., J. Krest, G. Taylor, E. Roggenstein, S. Joye, and R. Lee (2002) Thermal evidence of water exchange through a coastal aquifer: Implications for nutrient fluxes, *Geophysical Research Letters*, 29(14), 1704, doi: 10.1029/2002GL014923.

Moore, W.S., J.L. Sarmiento, and R.M. Key (2008) Submarine groundwater discharge revealed by ^{228}Ra distribution in the upper Atlantic Ocean, *Nature Geoscience*, 1, 309-311, doi: doi:10.1038/ngeo183.

Mulligan, A.E., and M.A. Charette (2006) Intercomparison of submarine groundwater discharge estimates from a sandy unconfined aquifer, *Journal of Hydrology*, 327(3-4), 411-425, doi: 10.1016/j.jhydrol.2005.11.056.

Myers, J.S., and R.L. Miller (2005), Optical airborne remote sensing, in L. Miller, C.E. Del Castillo, and B.A. McKee (eds.), *Remote sensing of coastal aquatic environments* (pp. 51-67), Dordrecht, The Netherlands:Springer.

Nance, T. (1991) Saltwater ponds of the O'oma II Project: Recommended circulation system and analysis of environmental effects, in H. Helber and F. Planners (eds.) *Final environmenta impact statement, O'oma II, north Kona, Hawaii*, vol. 2.

National Research Council of the National Academics (2004) *Groundwater Fluxes Across Interface*, Washington D.C.: The National Academic Press.

Nellist, G.F. (1953) The discovery and development of artesian water. Board of Water Supply, City and County of Honolulu.

Nichols, W.D., P.J. Shade, and C.D. Hunt (1996) Summary of the Oahu, Hawaii, regional aquifer-system analysis, *United States Geological Survey Professional Paper 1412-A*.

Nilson, R.H., E.W. Peterson, K.H. Lie, N.R. Burkhard, and J.R. Hearst (1991) Atmospheric pumping: A mechanism causing vertical transport of contaminated

gases through fractured permeable media, *Journal of Geophysical Research,* 96(B13), 21,933-21,948, doi: 10.1029/91JB01836.

Nullet, D., and M. Sanderson (1993) Radiation and energy balances and air temperature, in M. Sanderson (ed.), *Prevailing trade winds: Weather and climate in Hawai'i* (pp. 37-55), Honolulu, HI, USA.: University of Hawaii Press.

Oki, D.S. (1998) Geohydrology of the Central Oahu, Hawaii, ground-water flow system and numerical simulation of the effects of additional pumping, *United States Geological Survey Water-Resources Investigations Report 97-4276*.

Oki, D.S. (1999) Geohydrology and numerical simulation of the ground-water flow system of Kona, island of Hawaii, *United States Geological Survey Water-Resources Investigations Report 99-4073*.

Oki, D.S. and M.D. Brasher (2003) Environmental setting and the effects of natural and human-related factors on water quality and aquatic biota, Oahu, Hawaii, *United States Geological Survey Water-Resources Investigations Report 03-4156.*

Oki, D.S., G.W. Tribble, W.R. Souza, and E.L. Bolke (1999) Ground-water resources in Kaloko-Honokohau National Historic Park, island of Hawaii, and numerical simulation of the effects of ground-water withdrawals, *United States Geological Survey Water-Resources Investigations Report 99-4070*.

Paerl, H.W. (1997) Coastal eutrophication and harmful algal blooms: Importance of atmospheric deposition and groundwater as "new" nitrogen and other nutrient sources, *Limnology and Oceanography*, 42(5 part 2), 1154-1165, doi: 10.4319/lo.1997.42.5_part_2.1154.

Paerl, H.W., R.L Dennis, and D.R. Whitall (2002) Atmospheric deposition of nitrogen: Implications for nutrient over-enrichment of coastal waters, *Estuaries,* 25(4), 677-693, doi: 10.1007/BF02804899.

Parfitt, R.L., R.J. Atkinson, and R. ST. C. Smart (1975) The mechanism of phosphate fixation by iron oxides, *Soil Science Society of America Proceedings*, 39(5), 837-841, doi: 10.2136/sssaj1975.03615995003900050017x.

Paytan, A., G.G. Shellenbarger, J.H. Street, M.E. Gonneea, K. Davis, M.B. Young, and W.S. Moore (2006) Submarine groundwater discharge: An important source of new

inorganic nitrogen to coral reef ecosystems, *Limnology and Oceanography,* 51(1), 343-348, doi: 10.4319/lo.2006.51.1.0343.

Peng, T.-H., T. Takahashi, and W.S. Broecker (1974) Surface radon measurements in the North Pacific Ocean Station Papa, *Journal of Geophysical Research,* 79(12), 1772-1780, doi:10.1029/JC079i012p01772.

Peterson, R.N., W.C. Burnett, C.R. Glenn, and A.J. Johnson (2007) A box model to quantify groundwater discharge along the Kona coast of Hawaii using natural tracers, in W. Sanford, C. Langevin, M. Polemio, and P. Povinec (eds.), *A new focus on groundwater-seawater interactions,* vol. 312, (pp. 142-149), Oxfordshire, UK.: IAHS Press.

Peterson, R.A., W.C. Burnett, C.R. Glenn, and A.G. Johnson (2009) Quantification of point-source groundwater discharges to the ocean from the shoreline of the Big Island, Hawaii, *Limnology and Oceanography,* 54(3), 890-904, doi: 10.4319/lo.2009.54.3.0890.

Plummer, L.N., and E. Busenberg (2000) Chlorofluorocarbons, in P. Cook and A.L. Herczeg (eds.), *Environmental tracers in subsurface hydrology* (pp. 441-478), Norwell, MA, USA.: Kluwer Academic Publishers.

Plummer, L.N., and E. Busenberg (2006a) Chlorofluorocarbons in aquatic environments, in P. Cook and A.L. Herczeg (eds.), *Use of chlorofluorocarbons in hydrology: A guidebook* (pp. 1-7), Vienna, Austria: International Atomic Energy Agency.

Plummer, L.N., and E. Busenberg (2006b) Chlorofluorocarbons in the atmosphere, in P. Cook and A.L. Herczeg (eds.), *Use of Chlorofluorocarbons in hydrology: A guidebook* (pp. 9-14), Vienna, Austria: International Atomic Energy Agency.

Plummer, L.N., M.G. Rupert, E. Busenberg, and P. Schlosser (2000) Age of irrigation water in ground water from the eastern Snake River Plain Aquifer, south-central Idaho, *Ground Water,* 38(2), 264-283, doi: 10.1111/j.1745-6584.2000.tb00338.x.

Plummer, L.N., E. Busenberg, and P.G. Cook (2006a) Principles of chlorofluorocarbon dating., in P. Cook and A.L. Herczeg (eds.) *Use of chlorofluorocarbons in hydrology: A guidebook* (pp. 17-29), Vienna, Austria: International Atomic Energy Agency.

Plummer, L.N., E. Busenberg, and L.F. Han (2006b) CFCs in binary mixtures of young and old groundwater, in P. Cook and A.L. Herczeg (eds.) *Use of chlorofluorocarbons*

in hydrology: A guidebook (pp. 59-72), Vienna, Austria: International Atomic Energy Agency.

Plummer, L.N., E. Busenberg, and L.E. Han (2006c) Data interpretation in representative cases, in P. Cook and A.L. Herczeg (eds.) *Use of chlorofluorocarbons in hydrology: A guidebook* (pp. 105-134), Vienna, Austria: International Atomic Energy Agency.

Popp, B.N., F.J. Sansone, T.M. Rust, and D.A. Merritt (1995) Determination of concentration and carbon isotopic composition of dissolved methane in sediments and nearshore waters, *Analytical Chemistry*, 67(2), 405-411, doi: 10.1021/ac00098a028.

Portnoy, J.W., B.L Nowicki, C.T. Roman, and D.W. Urish (1998) The discharge of nitrate-contaminated groundwater from developed shoreline to marsh-fringed estuary, *Water Resources Research*, 34(11), 3095-3104, doi: 10.1029/98WR02167.

Prinn, R.G., R.F. Weiss, P.J. Fraser, P.G. Simmonds, D.M. Cunnold, F.N. Alyea, S. O'Doherty, P. Salameh, B.R. Miller, J. Huang, R.H.J. Wang, D.E. Hartley, C. Harth, L.P. Steele, G. Sturrock, P.M. Midgley, and A. McCulloch (2000) A history of chemically and radiatively important gases in air deduced from ALE/GAGE/AGAGE, *Journal of Geophysical Research*, 105(D14), 17,751-17,792, doi: 10.1029/2000JD900141.

Roxburgh, I.S. (1985) Thermal infrared detection of submarine springs associated with the Plymouth Limestone, *Hydrological Sciences Journal*, 30(2), 185-196, doi: 10.1080/02626668509490983.

Sansone, F.J., B.N. Popp, and T.M. Rust (1997) Stable carbon isotopic analysis of low-level methane in water and gas, *Analytical Chemistry*, 69(1), 40-44, doi: 10.1021/ac960241i.

Santos, I.R., W.C. Burnett, J. Chanton, B. Mwashote, IG.N.A. Suryaputra, and T. Dittmar (2008) Nutrient biogeochemistry in a Gulf of Mexico subterranean estuary and groundwater-derived fluxes to the coastal ocean, *Limnology and Oceanography*, 53(2), 705-718, doi: 10.4319/lo.2008.53.2.0705.

Santos, J.D. (1976) Land use and landcover of main Hawaiian Islands as of 1976, *Office of Planning*, State of Hawaii, Honolulu, HI.

Schluessel, P., W.J. Emery, H. Grassl, and T. Mammen (1990) On the bulk-skin temperature difference and its impact on satellite remote sensing of sea surface

temperature, *Journal of Geophysical Research,* 95(C8), 13,341-13,356, doi: 10.1029/JC095iC08p13341.

Scholl, M.A., S.E. Ingebritsen, C.J. Janik, and J.P. Kauahikaua (1995) An isotope hydrology study of the Kilauea Volcano area, Hawaii, *United States Geological Survey Water-Resources Investigations Report 95-4213*.

Scholl, M.A., S.B. Gingerich, and G.W. Tribble (2002) The influence of microclimates and fog on stable isotope signatures used in interpretation of regional hydrology, East Maui, Hawaii, *Journal of Hydrology,* 264(1-4), 170-184, doi: 10.1016/S0022-1694(02)00073-2.

Schroeder, T. (1993) Climate Controls, in M. Sanderson (ed.) *Prevailing trade winds: Climate and weather in Hawai'i* (pp. 12-36), Honolulu, HI, USA.: University of Hawaii Press.

Shaban, A., M. Khawlie, C. Abdallah, and G. Faour (2005) Geologic controls of submarine groundwater discharge: application of remote sensing to north Lebanon, *Environmental Geology*, 47(4), 512-522, doi: 10.1007/s00254-004-1172-3.

Shade, P.J. (1995a) Water budget for the island of Kauai, Hawaii, *United States Geological Survey Water-Resources Investigations Report 95-4128*.

Shade, P.J. (1995b) Water budget for the Kohala Area, island of Hawaii, *United States Geological Survey Water-Resources Investigations Report 95-4114*.

Shade, P.J., and W.D. Nichols (1996) Water budget and the effects of land use changes on ground-water recharge, Oahu, Hawaii, *United States Geological Survey Professional Paper 1412-C.*

Shade, P.J. (1997) Water budget for the island of Molokai, Hawaii, *United States Geological Survey Water-Resources Investigations Report 97-4155*.

Sherrod, D.R., J.M. Sinton, S.E. Watkins, and K.M. Brunt (2007) Geologic Map of the State of Hawai‘i, *United States Geological Survey Open-File Report 2007-1089.*

Short, N.M (1982) The Landsat Tutorial Workbook: Basics of satellite remote sensing. NASA Reference Publication 1078.

Sigman, D.M., K. L. Casciotti. 2001. Nitrogen isotopes in the ocean, *Encyclopedia of Ocean Sciences*, 1884-1894, doi: 10.1006/rwos.2001.0172.

Sigman, D.M., R. Robinson, A.N. Knapp, A. Van Green, D.C. McCorkle, J.A. Brandes, and R.C. Thunell (2003) Distinguishing between water column an dsedimentary denitrification in the Santa Barbara Basin using the stable isotopes of nitrate, *Geochemistry Geophysics Geosystems,* 4, 1040-1059, doi: 10.1029/2002GC000384.

Sigman, D.M., K.L. Casciotti, M. Andreani, C. Barford, M. Galanter, and J.K. Bohlke (2001) A bacterial method for the nitrogen isotopic analysis of nitrate in seawater and freshwater, *Analytical Chemistry,* 73(17), 4145-4153, doi: 10.1021/ac010088e.

Slomp, C.P., and P. Van Cappellen (2004) Nutrient inputs to the coastal ocean through submarine groundwater discharge: controls and potential impact, *Journal of Hydrology,* 295(1-4), 64-86, doi: 10.1016/j.jhydrol.2004.02.018.

Soicher, A.J., and F.L. Peterson (1997) Terrestrial nutrient and sediment fluxes to the coastal waters of West Maui, Hawai‘i, *Pacific Science,* 51(3), 221-232.

Stearns, H. T. (1985) Geology of the State of Hawaii, Palo Alto, California: Pacific Books.

Stearns, H.T., and K.N. Vaksvik (1935) Geology and ground-water resources of the island of Oahu, Hawaii, *United States Geological Survey Hawaii Division of Hydrography Bulletin 1.*

Stearns, H.T., and G.A. MacDonald (1946) Geology and ground-water resources of the island of Hawaii, *United States Geological Survey Hawai'i Division of Hydrography Bulletin 9.*

Street, J.H., K.L. Knee, E.E. Grossman, and A. Paytan (2008) Submarine groundwater discharge and nutrient addition to the coastal zone and coral reefs of leeward Hawai'i, *Marine Chemistry,* 109(3-4), 355-378, doi: 10.1016/j.marchem.2007.08.009.

Swarzenski, P.W., J.A. Izbicki, E.E. Grossman, C.R. Glenn, C.A. Plath, and J.L. Kelly (2009) A multi-proxy approach to submarine groundwater discharge studies: Examples from Santa Barbara, CA and Maunalua Bay, HI, *Goldschmidt,* Davos, Switzerland.

Takasaki, K.J., and S. Valenciano (1969) Water in the Kahuku Area, Oahu Hawaii, *United States Geological Survey Water-Supply Paper 1874.*

Takasaki, K.J., and J.F. Mink (1985) Evaluation of major dike-impounded ground-water reservoirs, Island of Oahu, Washington D.C., USA.: United States Government Printing Office.

UNESCO (1994) Protocols for the Joint Global Ocean Flux Study (JGOFS) core measurements, *IOC Manual and Guides*.

USGS (2010) 212238157561101 Local number 3-2256-10 Aiea, U.S. Navy (187-B), Oahu, HI, *United States Geological Survey Water-Data Report 2010*.

Valiela, I., J. Costa, K. Foreman, J.M. Teal, B. Howes, and D. Aubrey (1990) Transport of groundwater-borne nutrients from watersheds and their effects on coastal waters, *Biogeochemistry,* 10(3), 177-197, doi: 10.1007/BF00003143.

Valiela, I., K. Foreman, M. LaMontagne, D. Hersh, J. Costa, P. Peckol, B. DeMeo-Andreson, C. D'Avanzo, M. Babione, C.-H. Sham, J. Brawley, and K. Lajtha (1992) Couplings of watersheds and coastal waters: Sources and consequences of nutrient enrichment in Waquoit Bay, Massachusetts, *Estuaries,* 15(4), 443-457, doi: 10.2307/1352389.

Varma, S., J. Turner, and J. Underschultz (2010) Estimation of submarine groundwater discharge into Geography Bay, Bunbury, Western Australia, *Journal of Geochemical Exploration*, 106(1-3), 197-210, doi: 10.1016/j.gexplo.2010.02.003.

Visher, F.N., and J.F. Mink (1964) Ground-Water Resources in Southern Oahu, Hawaii, Washington D.C., USA.: United States Government Printing Office.

Vitousek, P.M. (2004) Nutrient Cycling and Limitation: Hawai'i as a Model System, Princeton: Princeton University Press.

Warner, M.J., and R.F. Weiss (1985) Solubilities of chlorofluorocarbons 11 and 12 in water and seawater, *Deep Sea Research Part A. Oceanographic Research Papers,* 32(12), 1485-1497, doi: 10.1016/0198-0149(85)90099-8.

Williams, W.D. (1986) Conductivity and salinity of Australian Salt Lakes, *Australian Journal of Marine and Freshwater Research*, 37, 177-182, doi: 10.1071/MF9860177.

Wilson, J., and C. Rocha (2012) Regional scale assessment of submarine groundwater discharge in Ireland combining medium resolution satellite imagery and geochemical tracing techniques, *Remote Sensing of Environment,* 119(16), 21-34, doi: 10.1016/j.rse.2011.11.018.

Wyban, J.A., and C.A. Wyban (1989) Aquaculture in Hawaii: past, present and future, *Advances in Tropical Aquaculture,* 9**,** 37-43.

Zektser, I.S., L.G. Everett, and R.G. Dzhamalov (2006) Submarine Groundwater, Boca Raton, FL, USA.: CRC Press.