Vashon-Maury Island

2008 Water Resources Data Report

Part of the Water Resources Evaluation Project

December 2009

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Citation

King County. 2009. Vashon-Maury Island 2008 Water Resources Data Report. Prepared by Eric W. Ferguson, Water and Land Resources Division. Seattle, Washington.

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EXECUTIVE SUMMARY

King County Water and Land Resource Division (WLRD) has been monitoring precipitation, stream flow and groundwater on Vashon-Maury Island (VMI) for a number of years in an effort to better understand the water balance and overall water quality. This report summarizes the monitoring activities completed during the Water Year 2008 for the Water Resource Evaluation (WRE) Project.

A variation of 13+ inches of precipitation was observed across the island and three out of the five sites recorded more rainfall than Sea-Tac airport, the area reference. Site 43U, North Vashon, recorded the most rainfall at 43.8 inches per water year (October 1st to September 30th). The East Maury Island site, 36V, recorded the least amount of rainfall at about 28 inches per water year. This site had an incomplete record with two weeks of data missing. The SeaTac annual total precipitation for the 2008 water year was 33.8 inches which is below the annual average of 37.2 inches (based on historic data 1971-2000). The difference in total precipitation between water year 2007 and 2008 is almost 18 inches at most VMI sites; Site 43U: 61.3 to 43.8 inches and Site 65U: 54.2 to 36.3 inches.

Stream gauging activities in 2008 recorded a decrease in stream flow at all five sites when comparing water year 2007 to water year 2008. This change coincides with decreases in the precipitation.

The water quality assessment of VMI creeks continued in 2008 at Shingle Mill, Fisher, Judd, Mileta, and Gorsuch Creeks. The parameters of interest are temperature, dissolved oxygen, pH, specific conductance, nutrients, and indictor bacteria. This list of parameters is comparable to other stream sampling done in King County. These sites have good water quality when compared to other King County streams locations. Mileta Creek had varying concentrations of nitrate+nitrite throughout the year that were higher than other VMI creeks and other King County stream sites. The bacteria (fecal colifom and *E. coli*) data are variable month to month and site to site yet the data shows an increase from June through September primarily in 2 creeks – Fisher and Judd. This work has continued to help assess if these observation are consistent and to evaluate the potential sources/causes of the elevated water quality results of selected parameters.

In 2008, groundwater water level monitoring activities continued across the island at our volunteer sites and our monitoring wells. The data collected by volunteers since 2001 was assessed for water level trends in selected areas on VMI. A baseline has been established by averaging all measurements taken at each of the five sites during Water Years 2002 and 2003. The data from two sites show increasing depth to water while two others show a decrease in their depth to water measurements between water years 2004 to 2008. The other site shows a varying difference from year to year. Two new sites have been added into this network.

Continuous recording water level devices (Levelogger™) were installed in the dedicated monitoring wells in 2006. This data set shows fluctuations in the water table not seen in the monthly volunteer measurements. The extent and duration of these fluctuations vary by well location and are likely related to recharge events. Equipment challenges during the year means

some sites have data gaps for selected periods of time. Manual water level measurements were recorded at these locations during the year to help calibrate the water table measurements.

The groundwater water quality sampling, completed in July, included the environmental indicators of arsenic, chloride, and nitrate+nitrite at the long-term monitoring locations. These sites have been monitored by King County WLRD since 2001. Overall, the water quality of the groundwater on VMI is very good. The concentrations of these indicators were similar to the results in the previous 10 rounds of sampling.

Permit exempt well usage data is being reported for the first time as part of the WRE data report. This work began in April 2007 and has continued to the present. Currently, this project has eight volunteers reporting their results on a regular basis. The results to date show a wide range of usage from ~30 to over 800 gallons per day per household.

The precipitation, stream and groundwater monitoring activities of the WRE project will continue in 2009. The data collected will be presented in a similar report and on the King County web pages. Starting in 2009 through 2012, the WRE activities will be coordinated with a new project, Quartermaster Harbor Nitrogen Management Study. This study will evaluate the role of nitrogen in the risk of lethal, low-level oxygen events in Quartermaster Harbor, to recommend policy changes in the 2012 King County Comprehensive Plan update for nitrogen management on Vashon-Maury Island, and to assess management options for implementing the recommended policy changes.

1.0. INTRODUCTION

The Water Resource Evaluation (WRE) project is intended to cover monitoring, modeling, and data management activities within Vashon-Maury Island (VMI) for seven years (2004-2010). As part of this work, monitoring activities and results are summarized in annual reports. The structure of the report is as follows: Section 1.0 – Introduction and Overview; Section 2.0 – Precipitation; Section 3.0 – Surface Water Monitoring; Section 4.0 – Groundwater Monitoring; Section 5.0 – Exempt Wells and Section 6.0 – Summary.

1.1 Overview

Vashon-Maury Island in Central Puget Sound has a land area of about 36 square miles. All drinking water sources on the island (springs, surface water, and groundwater) are supplied by precipitation. Groundwater is the portion of precipitation that soaks into the ground and is stored in underground geological water systems called aquifers. Every groundwater system is unique and dependent upon factors such as the rate of precipitation, the interaction of groundwater with the streams and other surface water bodies, and the rate of evapotranspiration. These factors all contribute to the overall water budget. Understanding the water balance for VMI and changes that occur in response to human activities and climate changes is important in determining the amount of drinking water that can be used on a sustained basis.

A long-term plan to monitor and evaluate the different components of the VMI water balance is being implemented by the WRE project to address needs and concerns identified by residents of VMI and the staff of King County Water and Land Resources Division (WLRD). Much interest has been expressed over the years in the sustainability of the water supply on the island, although prior to the WRE there has not been a comprehensive study to address the many major water supply issues.

The work plan of the Water Resources Evaluation Project is designed to provide a scientific evaluation of the water supply issues (both water quantity and quality related) on VMI[1] The work plan for the VMI Water Resources Evaluation has four main objectives:

1. To monitor Vashon-Maury Island groundwater and surface water quantity and quality to record and identify changes over time;
2. To build a comprehensive groundwater flow model that evaluates groundwater and surface water quantity and quality under various climate change and land-use scenarios;
3. To satisfy the goals of the countywide data management work plan for the Vashon-Maury Island region; and
4. To coordinate activities with the Vashon-Maury Island Groundwater Protection and Land Use Committees, and the citizens of Vashon Maury Island.

To satisfy the objectives of this project, the work is being done in four major areas. The first three areas, monitoring, modeling, and data management are closely interrelated and must be

[1] The work plan can be found at: http://your.kingcounty.gov/dnrp/library/archive-documents/wlr/wq/vashon-island/pdf/Vashon-Maury-Island-plan.pdf.

responsive to each other to satisfy the first three objectives of this work plan. The last area, project communication, addresses the fourth and final objective.

1.2 2008 Monitoring Activities

Groundwater, surface water, and precipitation are being monitored in an effort to better describe the VMI water budget and overall water quality. Monitoring efforts on VMI will serve three purposes (1) to identify changes and trends in groundwater and surface water quantity and quality, (2) to provide necessary data for model development and calibration, and (3) to have an early warning system on the impacts of pollution sources and groundwater extraction. This monitoring is conducted by a combination of King County WLRD staff and volunteers. Data collected in previous years have been presented in several different formats. The precipitation and stream-flow gauging data have been available via request and web site: http://green.kingcounty.gov/WLR/Waterres/hydrology/GaugeListSearch.aspx. The groundwater data collected in previous years was presented in a report summarizing all of King County's groundwater monitoring, and is available from the following website: http://www.kingcounty.gov/environment/waterandland/groundwater/maps-reports.aspx. The following headers give brief descriptions of the data and outline the major monitoring tasks.

Precipitation

Precipitation monitoring has continued on VMI in 2008. KC WLRD staff maintained continuous precipitation gauges at selected gauge locations (see section 2.1).

Stream-flow gauging

Stream gauging continued on the creeks of VMI in 2008. The existing KC WLRD continuous stream-gauge network on VMI consists of 5 sites: Shingle Mill Creek, Green Valley Creek, Tahlequah Creek, Fisher Creek, and Judd Creek. Additional streams sites are monitored on a semi-annual basis (see section 3.1).

Stream water quality collection

Five streams (Shingle Mill, Fisher, Judd, Mileta, and Gorsuch Creeks) were sampled for a selected set of water quality parameters. This work continues to assess the water quality in the surface water. Additional information and locations are provided in section 3.2.

Water-level measurements

Water level measurements continue to be taken by volunteers at regular intervals. Additional water level data is being collected at dedicated groundwater-monitoring wells throughout VMI. These wells were equipped with data loggers that monitor water level fluctuations on a continuous basis (see section 4.1.3). Water-level measurements are downloaded from the data loggers during the year by KC WLRD staff. The volunteers send their data to King County via e-mail.

Groundwater quality sample collection

This task involves collecting groundwater samples from our long-term well locations. These sites are currently 18 public supply/private wells that have been sampled since 2001 (see section 4.2). The current water quality program has a set of environmental indicators, arsenic; chloride; and nitrate+nitrite, that are sampled annually at all sites.

Permit Exempt Well Usage Monitoring

This task involves receiving data from volunteers who are monitoring the usage of their permit exempt well. This work is ongoing and started in April 2007. Currently the WRE project has eight volunteers who are reporting the usage data to KC WLRD staff via e-mail. This data collection effort is starting to fill a data gap of how much water does an exempt well user use. (see Section 5.0).

1.3 Objective

This report summarizes the data collection activities during the water year: October 2007 to September 2008. A variety of activities are done as part of the WRE project. The WRE annual reports, started in 2006, are to provide all the data and an assessment in one report.[2]

[2] Annual data reports for the WRE project can be found at the document web page: http://www.kingcounty.gov/environment/waterandland/groundwater/management-areas/vashon-maury-island-gwma/vashon-island/project-documents.aspx.

2.0. PRECIPITATION

This type of gauging activity on VMI was expanded in 2005 as part of the project. This increased effort is needed to help establish a baseline of conditions as well as highlight the variety of conditions across the island. In 2006, a new rainfall contour map of VMI was completed and presented in that annual data report.[3]

2.1 Precipitation sites

Five sites are currently being monitored for precipitation across VMI. The locations of the gauging sites are shown in Figure 1 and listed in Table 1. The data from Sea-Tac airport is also included in Table 1 as an area reference. The data presented in Table 1 is summarized as total precipitation (inches per year). The annual totals are calculated for the Water Year (WY) – October 1st 2007 to September 30th. 2008[4] Accumulated daily totals of precipitation for all VMI sites are presented in Figure 2.

Site 43U, North Vashon, has the most rain for the WY at 43.8 in/yr (Table 1, Figure 2 and Appendix A). The other VMI sites that had a complete record were Site 28Y, Judd Creek, with 38.7 in and Site 65U, Tahlequah, with 36.3 in. The two Maury island sites, Site 36U – Maury Island and Site 36V - East Maury Island, had an incomplete record for the 2008 WY. Typically these locations have the least amount of rainfall of all of the VMI sites. This was true for 2008 but incomplete rainfall totals do not allow a direct comparison (Table 1, Figure 2 and Appendix A).

In WY 2008, there was a large (>15 inches) difference in precipitation totals from the previous water year (Table 2). Two other sites with complete records yielded a difference of almost 18 inches. The incomplete record of the Maury Island sites does not allow direct comparison of the annual totals. Monthly data can be compared between water years for those months with a complete record. A difference of almost 18 inches between WY 2007 to 2008 with WY 2008 being much dryer was observed (Table 2 and Table 3). The primary reason for this difference is due to the record rainfall that occurred in the fall of 2006. The total amount of rainfall for these three months (October, November and December) in 2006 ranged from 18.2 to 33.9 inches, Table 3. These amounts translate into 50 to 70% of the annual average rainfall for the year.

The site, 36V – East Maury Island, is the driest portion of the island. Table 3 highlights the difference on the total precipitation by month for each site. WY 2007 is also presented in Table 3 for a monthly and annual total comparison. The Sea-Tac data is less than all the Vashon-

[3] The rainfall contour map can be found at: http://your.kingcounty.gov/dnrp/library/archive-documents/wlr/wq//pdf/0704vmiGWprecip.pdf.

[4] The water year is a standard way to report this type of data so as not to separate the wetter winter season between two calendar years A water year can be any 12 month period, usually selected to begin and end with a relatively dry season. The period from October 1 to September 30 is typically used in the United States and the standard for the Pacific Northwest.

Maury Island sites except for 36V – East Maury Island highlighting the need to have numerous local sites to record the local variation.

3.0. SURFACE WATER MONITORING

Surface water monitoring is an important component of the WRE. The WRE is continuing its stream gauging and water quality monitoring across the island to better understand surface – groundwater interactions.

3.1 Stream gauging sites

Five creeks on VMI, Shingle Mill Creek, Green Valley Creek, Tahlequah Creek, Fisher Creek and Judd Creek, are monitored as part of the existing KC WLRD stream-gauge network. All gauging locations are shown in Figure 1 and the continuous gauging sites are listed in Table 4.

Judd Creek, site 43a, is the largest stream basin on VMI and has the largest mean stream flow, Q_{mean}, for all sites (Table 4). Hydrographs of mean, maximum and minimum daily flows for each site are presented in Figures 3-7.

A comparison of stream flow data for previous water years was done for all sites. All stream sites showed a decrease in WY 2008 when compared to WY 2007 due to the lower precipitation totals for the same period (Table 5). This is in part due to the fact that WY 2007 was a wet year.

3.1.1 Island-wide gauging

In 2004, King County began measuring instantaneous stream flow a couple of times during the year on VMI to better assess the amount of flow in stream catchments where continuous gauging is not feasible. These measurements continued at 28 locations in 2008 on two occasions — February and September/October. The locations are shown in Figure 1 and the data are presented in Table 6. Data from these sites a consistent with typical annual stream hydrographs – higher stream flow in late winter with lower flow until mid to late Fall. Figure 8 is a typical hydrograph of these sites based on data collected at Christensen Creek.

3.2 Stream water quality sites

In late 2006, water quality sampling started at seven stream locations across Vashon-Maury Island, see Figure 1. Until this effort, very little data had been collected to assess the status of the quality of the stream water on the island with the exception of source water locations (Beall and Ellis Creeks). The parameters of interest are temperature, dissolved oxygen, pH, specific conductance, nutrients and indictor bacteria (see Table 7). This list of parameters is comparable to other stream sampling done in King County. In 2008, the water quality work continued at five sites, Shingle Mill, Fisher, Judd, Mileta, and Gorsuch Creeks. The sampling at Christian and Tahlequah Creeks ended in December 2007.

Concentration versus time graphs of VMI creeks for nitrate+nitrite and temperature are presented in Figure 9 and Figure 10, respectively. Bacteria (fecal coliform and *E. coli*) data are presented in Figure 11 and Figure 12. All VMI water quality data are presented in Appendix B. The VMI creeks overall have good water quality, especially when compared to other King County stream

sites (King County, 2008). Mileta Creek is one site that has varying concentration of nitrate+nitrite throughout the year that are higher then other VMI creeks and King County stream sites, particularly during the winter. The cause of these elevated levels of nitrate during the winter months is not currently known.

The indictor bacteria data from Vashon-Maury Island stream sampling show dramatic increases from time to time and in two creeks – Fisher and Judd – increases typically occur in the summer months (Figures 11-12). At this time, the exact source causing this is unknown. The potential sources are warm blooded mammals including but not limited to birds, deer, horses and/or people.

4.0. GROUNDWATER MONITORING

A major part of this project focuses on the groundwater on VMI. This project is expanding the water level and water quality monitoring across the island to better understand local variations.

4.1 Water Level Monitoring

In 2008, the WRE project continued the water level monitoring by supporting the volunteers who monitor their own well water levels and installing continuous recording devices in our dedicated monitoring wells.

4.1.1 Volunteer sites

The volunteer sites started with five individuals that have monitored water levels in their own wells since 2001. Two new sites started in 2006. The measurements are typically taken once a month and reported to KC staff via e-mail. These locations are shown in Figure 13. The data are presented in Table 8 and shown in Figure 14. Two of the sites, GWL_w-01 and GWL_w-06, have very small fluctuations in the measurements during the year with changes in the range of tenths of a foot (Figure 14 and Table 8). The other five sites show a typical annual hydrograph with smaller depth to water (DTW) measurements in late spring and greater depth to water measurements in late summer/early fall (Figure 14 and Table 8).

The volunteer sites have been monitoring their wells monthly since 2001 and this allows for assessment of trends for selected areas on Vashon-Maury Island. A baseline has been established by averaging all of measurements taken for WYs 2002 and 2003. The number of water level measurements taken varies from 11 to 21 for this 24 month period. Establishing a baseline allows for a simple comparison of measurements to this average. Some limitations are present using this technique, such as the limited number of measurements used to establish the baseline number for a few sites. Another concern is the seasonal variation may not be accurately captured, depending on when the baseline measurements were taken.

Table 13 shows the relative change of the annual average from the baseline in the DTW measurements taken during WYs 2004 through 2008 for five long-term water level monitoring sites. Two of these sites, GWL_w-06 and GWL_w-09, show a trend of increasing DTW with time from WY 2004 to 2008. Another two sites, GWL_w-01 and GWL_w-13 have decreased DTW measurements when compared to the baseline during the same time period. The last site shows a varying difference from year to year. Another way to visualize the data is to show the monthly DTW measurements versus time (Figure 15). This figure has three separate graphs of the volunteer sites with increasing depth to water on the left and the same annual time periods across the top. The purpose of this figure is to highlight the seasonal variation recorded at some sites.

4.1.2 Long-term sites

Water level data can be collected at six of the 19 long-term sites that are sampled for water quality. These water level measurements were collected in late July/August during the annual

water quality sampling event (Table 9). These locations are identified with a unique symbol in Figure 13.

4.1.3 Monitoring wells

Six monitoring wells were drilled and installed in the fall of 2005, October-December. Water level measurements were taken at numerous times at these sites. Continuous water level loggers (Levelogger™) were installed in these locations in 2006. The locations of these monitoring wells are shown in Figure 13 and the depth to water data are presented in Table 10. The continuous data from each site are shown in Figure 16-20 with the exception of VAS_w-62 which is "dry."[5]

Four additional monitoring wells were drilled and installed during October 2007 through January 2008. Water level data was not taken until the wells were developed in March 2008. The water level data for these wells are reported in Table 10 and Figure 21. . The locations of these monitoring wells are shown in Figure 13. Continuous water level recorders (Diver™) were not installed in each well until 2009.

The continuous water level recorders that were installed in each well had a variety of problems this water year. At times, the data from the recorder was constant at the maximum reading limits. The likely cause of this problem is related to the direct read cables installed in 2008. The cables were purchased at fixed intervals and as such needed to be adjusted in the field. The recorder was either set at the wrong depth or the cable slipped. Examples of this can be seen in the water level time series plots of VAS_w-60 – Vashon Highway @145th Pl and VAS_w-64 – Wax Orchard Rd @ Vashon Hwy, Figure 16 and Figure 19, respectively. Site VAS_w-65 – Valley Center Park-n-Ride had equipment failure where the device did not record any readings between sessions (Figure 20).

4.2 Water Quality Monitoring

The water quality sampling, done in July/August this year, included the environmental indicators of arsenic, chloride, and nitrate+nitrite at 16 of the long-term monitoring locations, see Figure 13. These sites have been monitored by King County WLRD since 2001 (King County, 2005a, 2006a, 2007, 2008). The results of this monitoring are presented in Table 11 and Appendix B. Overall, the water quality of the groundwater on VMI is very good when compared to drinking water standards.[6] The concentrations of these indicators were similar to the results in the previous 10 rounds of sampling (Table 11).

An additional site was included in this annual sampling event. This site was to be sampled in 2007 but was unavailable. The site, VAS_w-68, was sampled for the same environmental

[5] The term "dry" refers to no water was measured in the screen zone for this location.

[6] Drinking water standards are set by U.S. Environmental Protection Agency and enforced by Washington State Department of Health for public water systems. The list of standards can be found at: http://www.epa.gov/safewater/contaminants/index.html.

indicator parameters, as noted above, during the same event. The results for this site are presented in Table 12. All sampling results are presented in Appendix B.

5.0. EXEMPT WELL METERING

The WRE project is designed to provide data on many aspects of the water resources on VMI. One area that does not have much data is water used by exempt wells. Exempt wells are wells that are "permit exempt" for water rights. Washington State law (RWC 90.44.050) grants these wells the ability to withdraw up to 5,000 gallons a day for domestic usage. See Washington State Department of Ecology for additional permit exceptions — http://www.ecy.wa.gov/programs/wr/comp_enforce/gwpe.html.

To better understand the overall water balance of the island, it's important to know who is using the resource and how much are they using. On VMI, there are four subsets of water users — Group A (large) Public Water System (PWS), Group B PWS (small), Irrigation/Industrial, and Permit Exempt. Typically, the source is metered to know how much water is being used and/or to show compliance with a water right. The permit exempt wells are not required to meter their usage.

In 2007, the WRE project solicited volunteers to monitor their usage of their "permit exempt" well. King County provided the equipment (water meter) and the cost of installation by a professional in exchange for providing data on a regular basis. To date, eight sites have had meters installed on their wells (Figure 22). The data collection started in April 2007 and is presented through 2008 WY.

The data presented is an average of daily usage for each household. The number of persons per system varied from one to five. Additional factors that also effect usage is the outside usage of water. Many of the volunteers report using water for landscaping, gardens and/or for animals. The value calculated is the difference of the meter readings divided by the number days between readings to yield an average usage per day. At least three of the volunteers report the meter readings on a regular monthly schedule, while several others report on a quarterly basis. The remaining readings occur randomly providing an overall assessment of annual usage verses monthly or seasonal patterns.

The data to date has yielded a range of usage patterns for a small subset of this type of users. One volunteer consistently uses a low volume of water daily of about 30 gallons a day compared to a summertime usage of >800 gallons a day for another (Figure 23 and Table 14). Typically the readings are about 110 gallons per day per well. The monthly readings from a few of the volunteers do show increases in usage during June through October. Not all of the volunteers show this pattern of increased water demand in the summer months (Figure 23 and Table 14).

All the data compiled together yields an average daily usage of about 200 gallons per day. For an average household (per the 2000 US Census) of 2.4 persons, the daily usage per person is about 80 gallons. The modeling work done as part of the WRE project uses a daily average of 266 gallons per day per well and with the same 2.4 persons per household yields a per capita usage of 110 gallons a day (King County, 2005b). This value of 200 gallons per day is similar to some of the larger (Group A) Public Water Systems usage data on VMI. These water providers have a range of average daily usage of 100 to 200 gallons per day. Data from several of these systems show increased usage during May through October with 60 to 75% of the total annual use during this period.

The Vashon-Maury Island Groundwater Protection Committee has noted on several occasions during their quarterly meeting updates that this is a very small subset of exempt wells. The current monitoring is <1% of the total number of permit exempt wells, which is over 800 and growing. The reporting of this data will continue in 2009.

6.0. SUMMARY

The WRE project conducted a wide variety of monitoring activities during the 2008 WY. This report summarizes the data based on the type of activity – precipitation; stream flow gauging; stream water quality; groundwater water level measurements; groundwater water quality sampling; and permit exempt well usage.

The data collected during the 2008 WY showed it was much drier than the previous water year. This drier water year was also reflected in the stream flow measurements. The mean daily flows were less in 2008 WY when compared to the 2007 WY for all five continuous stream gauging sites. The water level data shows a mixed pattern of increases and decreases in the depth to water data.

The water quality data was similar to previous years. Groundwater nitrate+nitrite data show a slight increase for three sites while three other sites show a decrease in values. The remaining groundwater sampling sites have had little to no variation in their detected values. Stream water quality data continued to show dramatic increases in indictor bacteria from time to time. In particular, data from Fisher and Judd creeks have increased values during the summer months. Nitrate+nitrite data for one creek (Mileta) is still showing much higher concentrations during winter, which is distinct from the other creeks on VMI.

The precipitation, stream and groundwater monitoring activities of the WRE project will continue in 2009. The data collected will be presented in a similar report and on the King County web pages. Starting in 2009 through 2012, the WRE activities will be coordinated with a new project, Quartermaster Harbor Nitrogen Management Study[7] and data will be utilized for both projects[8]. This study will evaluate the role of nitrogen in the risk of low-level oxygen events in Quartermaster Harbor, to recommend policy changes in the 2012 King County Comprehensive Plan update for nitrogen management on Vashon-Maury Island, and to assess management options for implementing the recommended policy changes.

[7] Quartermaster Harbor Nitrogen Management Study web page can be found at: http://www.kingcounty.gov/qmhnitrogenstudy.

[8] The Quality Assurance Project Plan for the Quartermaster Harbor Nitrogen Management Study can be found at: http://your.kingcounty.gov/dnrp/library/2009/kcr2073.pdf.

7.0. REFERENCES

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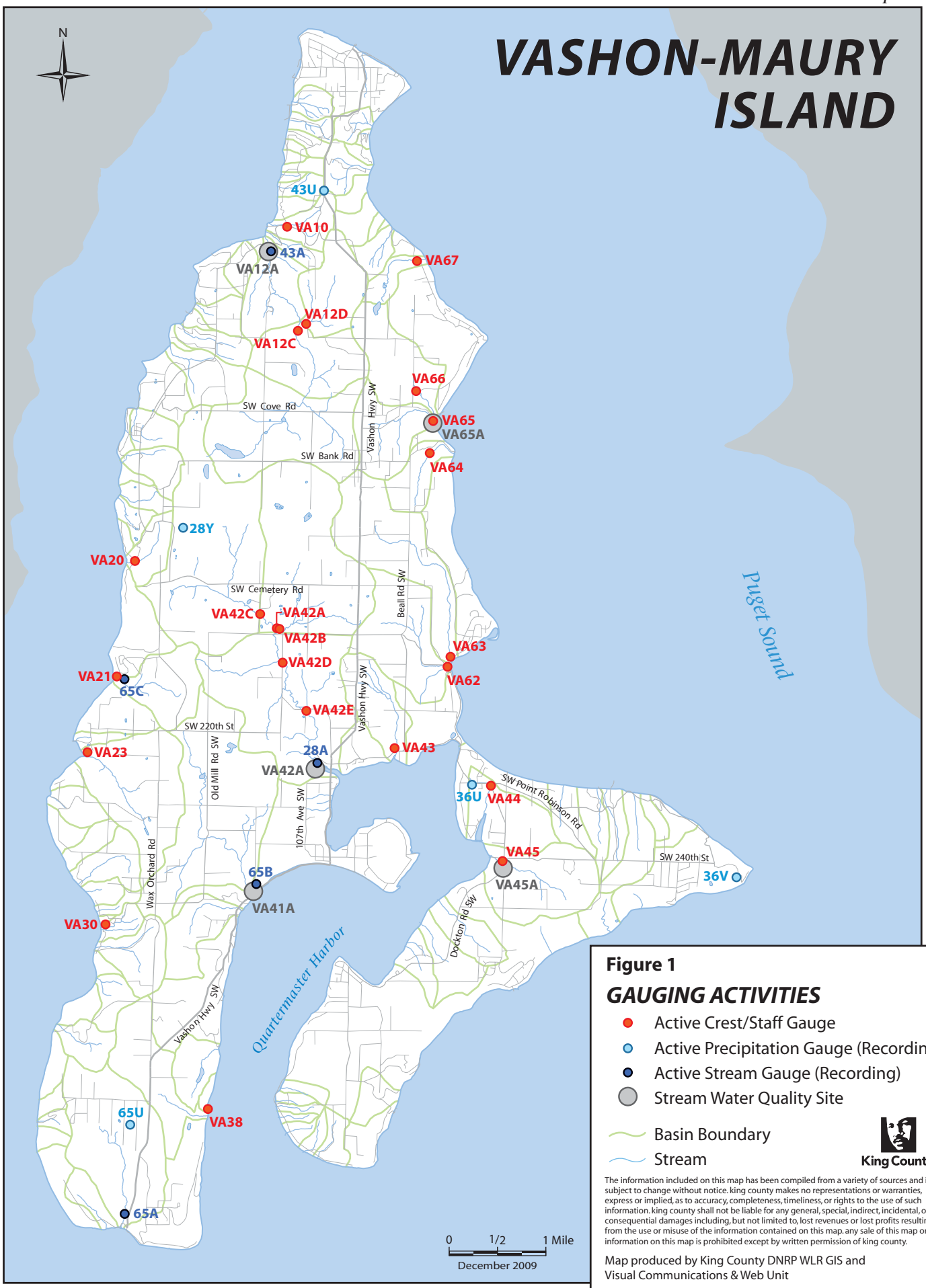

Figure 1

GAUGING ACTIVITIES

- Active Crest/Staff Gauge
- Active Precipitation Gauge (Recording)
- Active Stream Gauge (Recording)
- Stream Water Quality Site
- Basin Boundary
- Stream

King County

Map produced by King County DNRP WLR GIS and Visual Communications & Web Unit

File name: 0912vmiGWmaps.ai wgab **Data sources:** King County Datasets

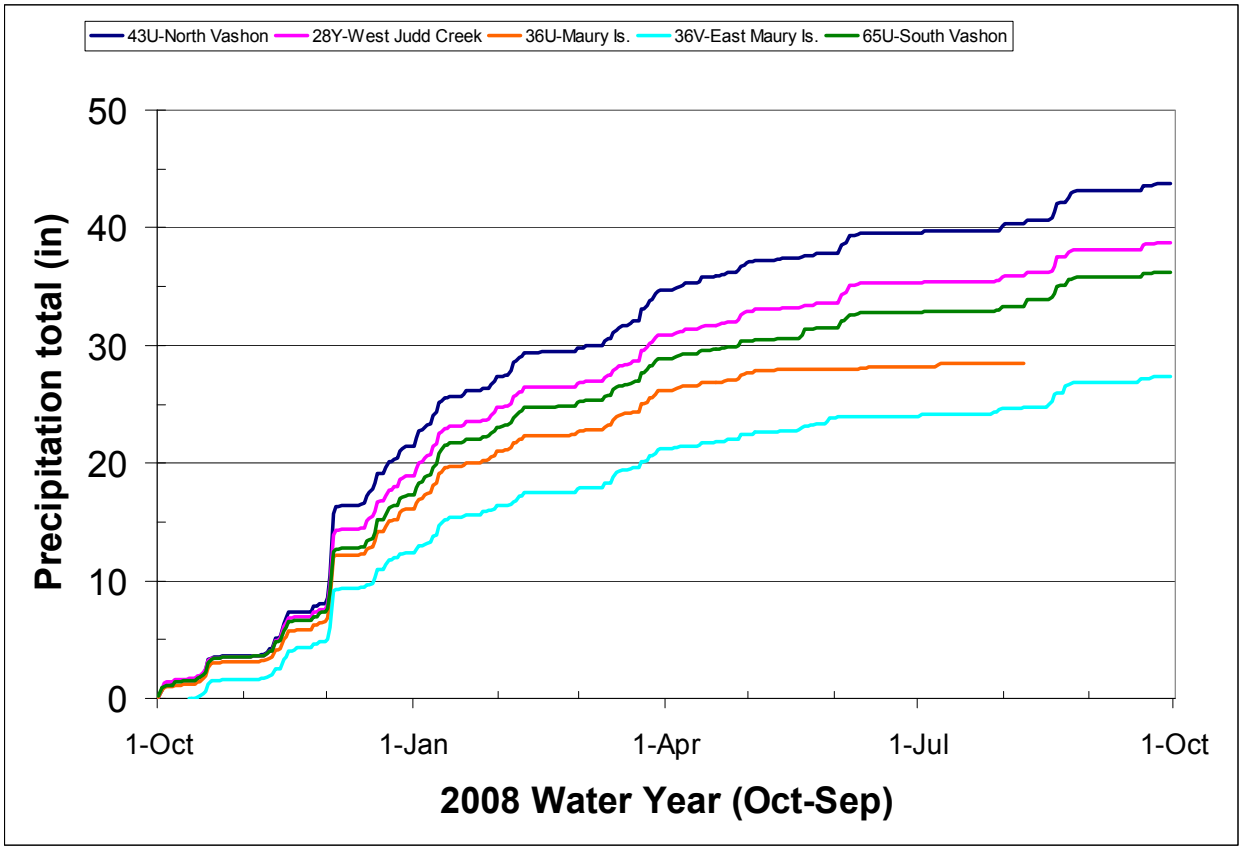

Figure 2. Accumulated daily totals of precipitation for all sites on Vashon-Maury Island. The figure displays the data on a Water Year (October to September) time.

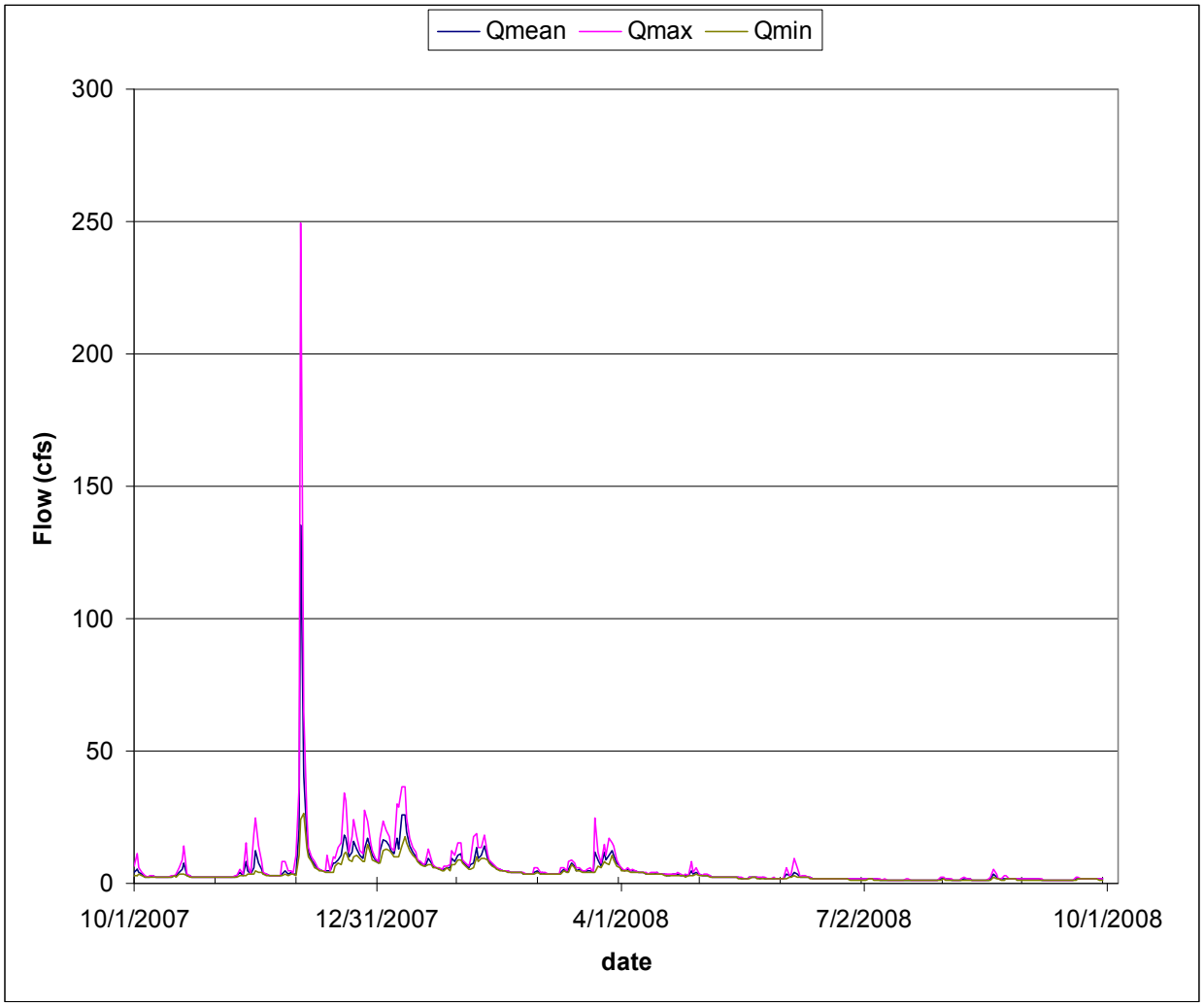

Figure 3. Hydrograph of daily stream flows (mean, maximum and minimum) for the Judd Creek site, gauge 28A. The time period shown is from October 1, 2007 to September 30, 2008 — Water Year 2008.

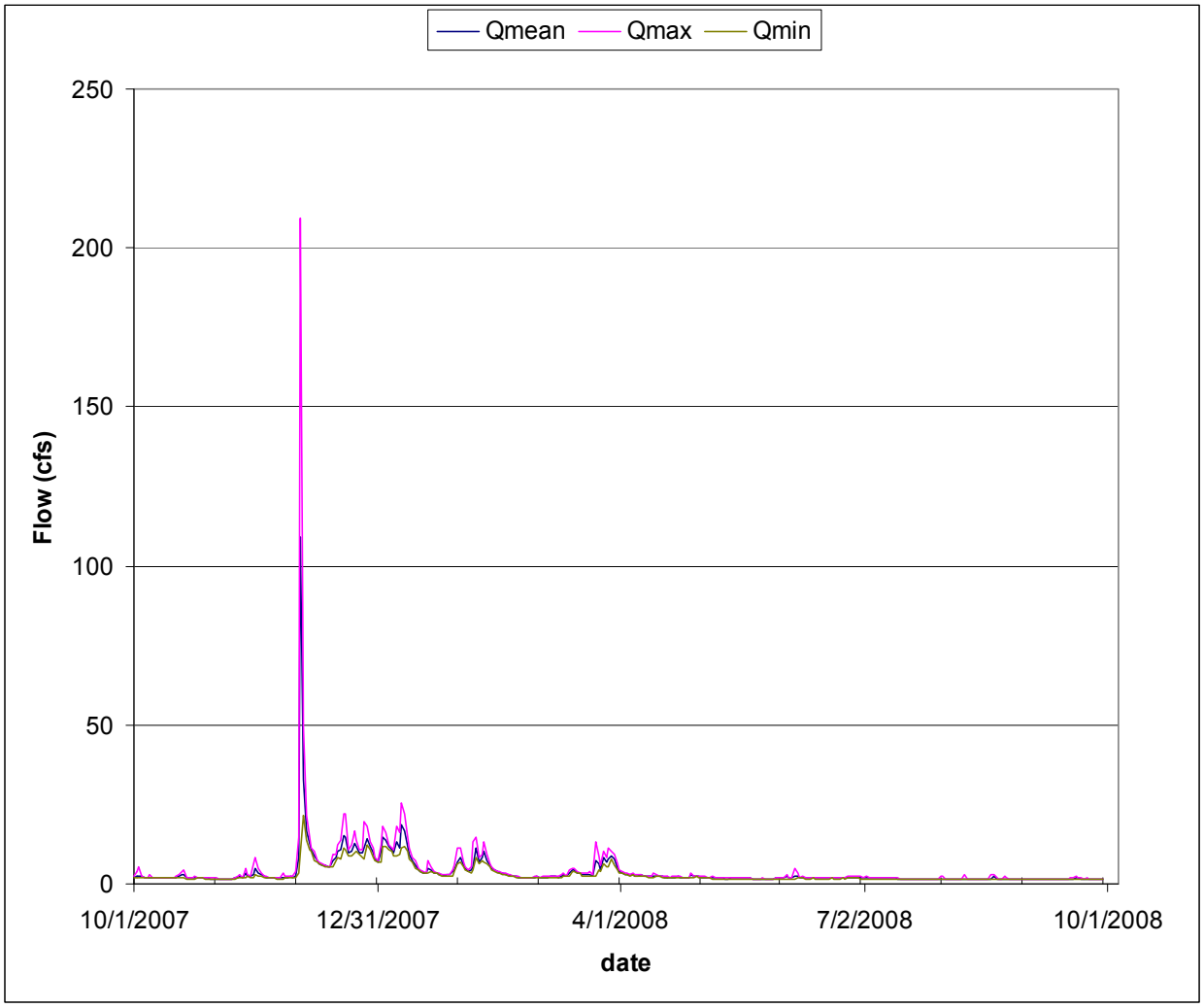

Figure 4. Hydrograph of daily stream flows (mean, maximum and minimum) for the Shingle Mill Creek site, gauge 43A. The time period shown is for the water year 2008.

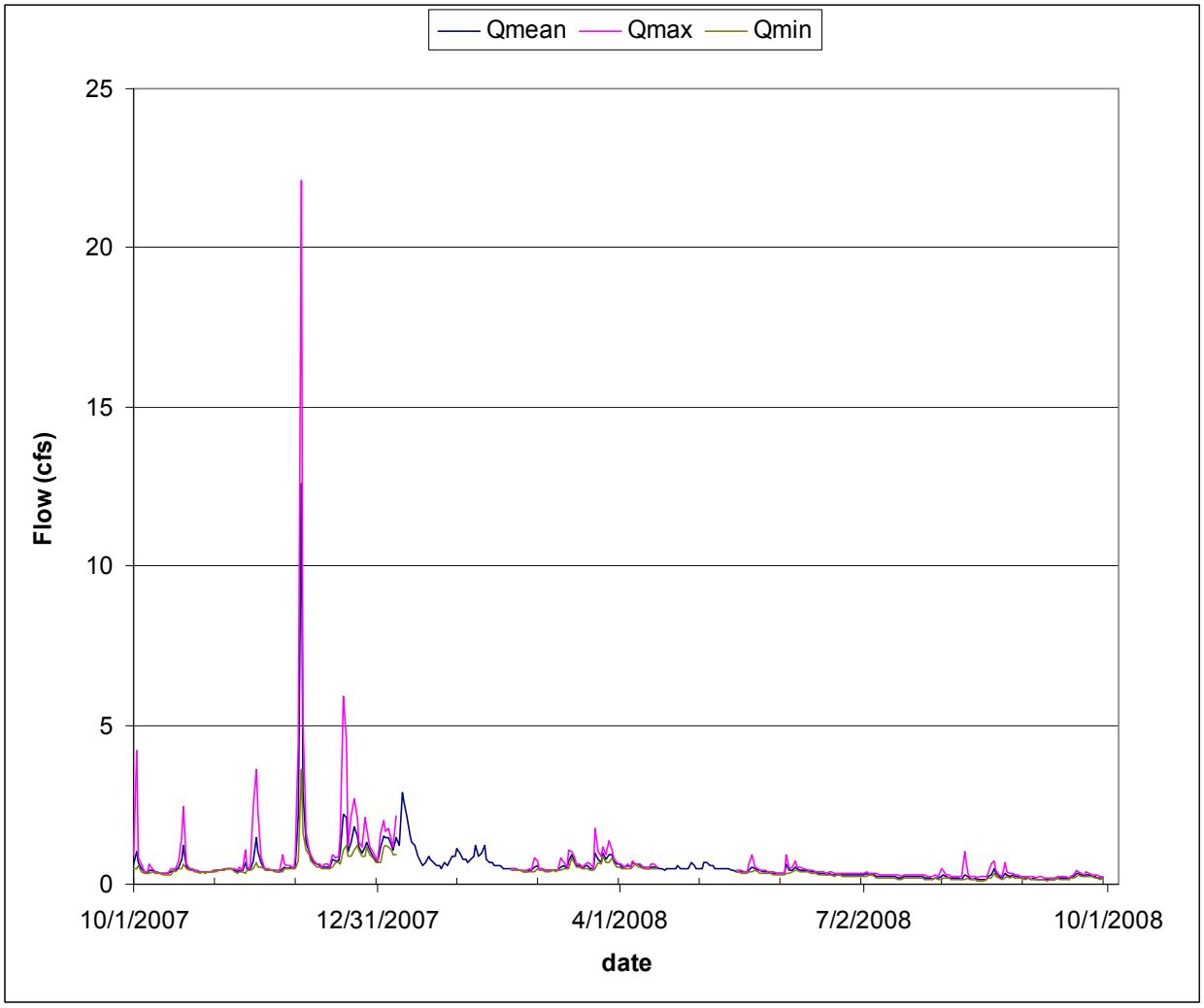

Figure 5. Hydrograph of daily stream flows (mean, maximum and minimum) for the Tahlequah Creek site, gauge 65A. The time period shown is the water year 2008.

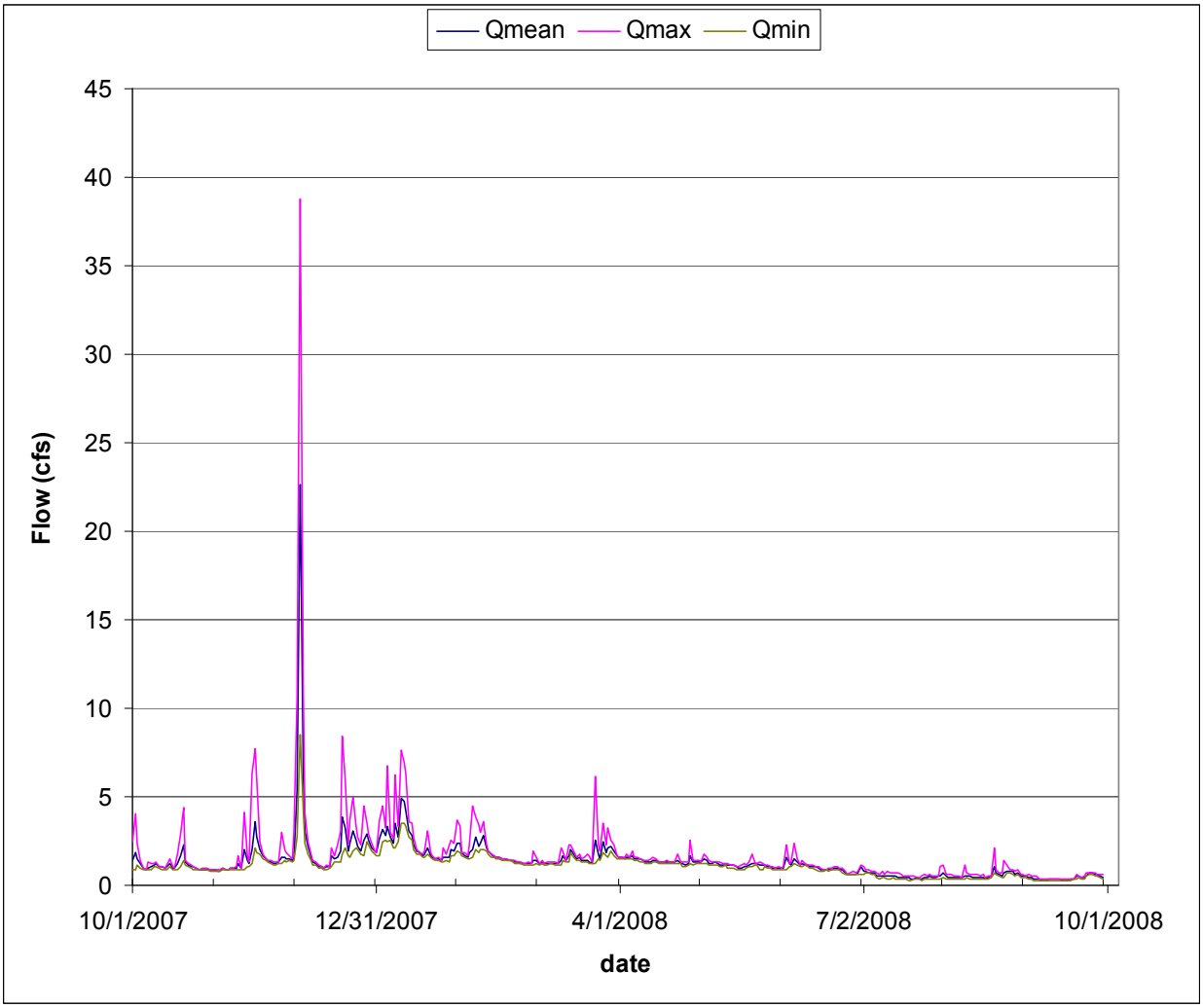

Figure 6. Hydrograph of daily stream flows (mean, maximum and minimum) for the Fisher Creek site, gauge 65B. The time period shown is the water year 2008.

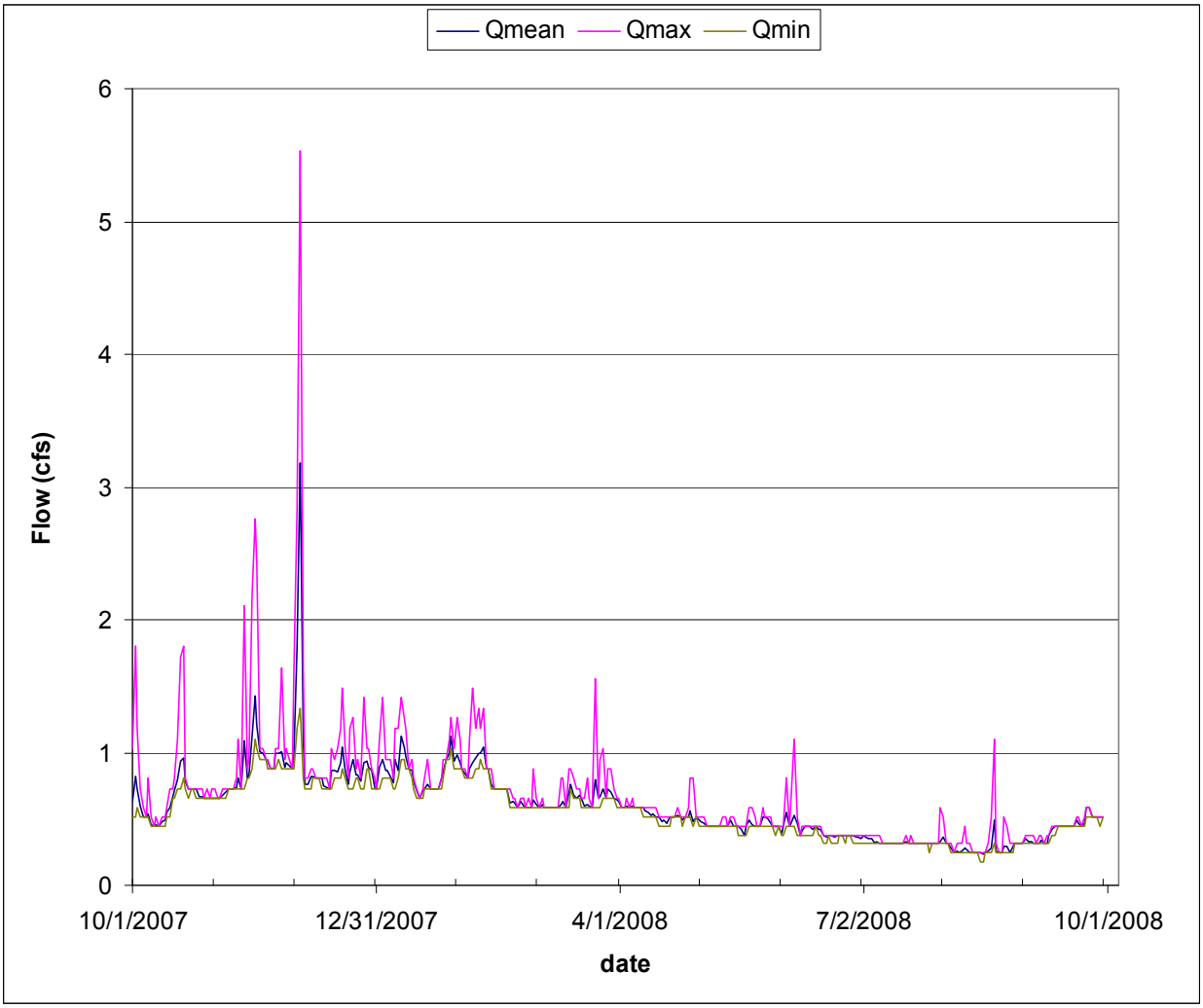

Figure 7. Hydrograph of daily stream flows (mean, maximum and minimum) for the Green Valley Creek site, gauge 65C. The time period shown is the water year 2008.

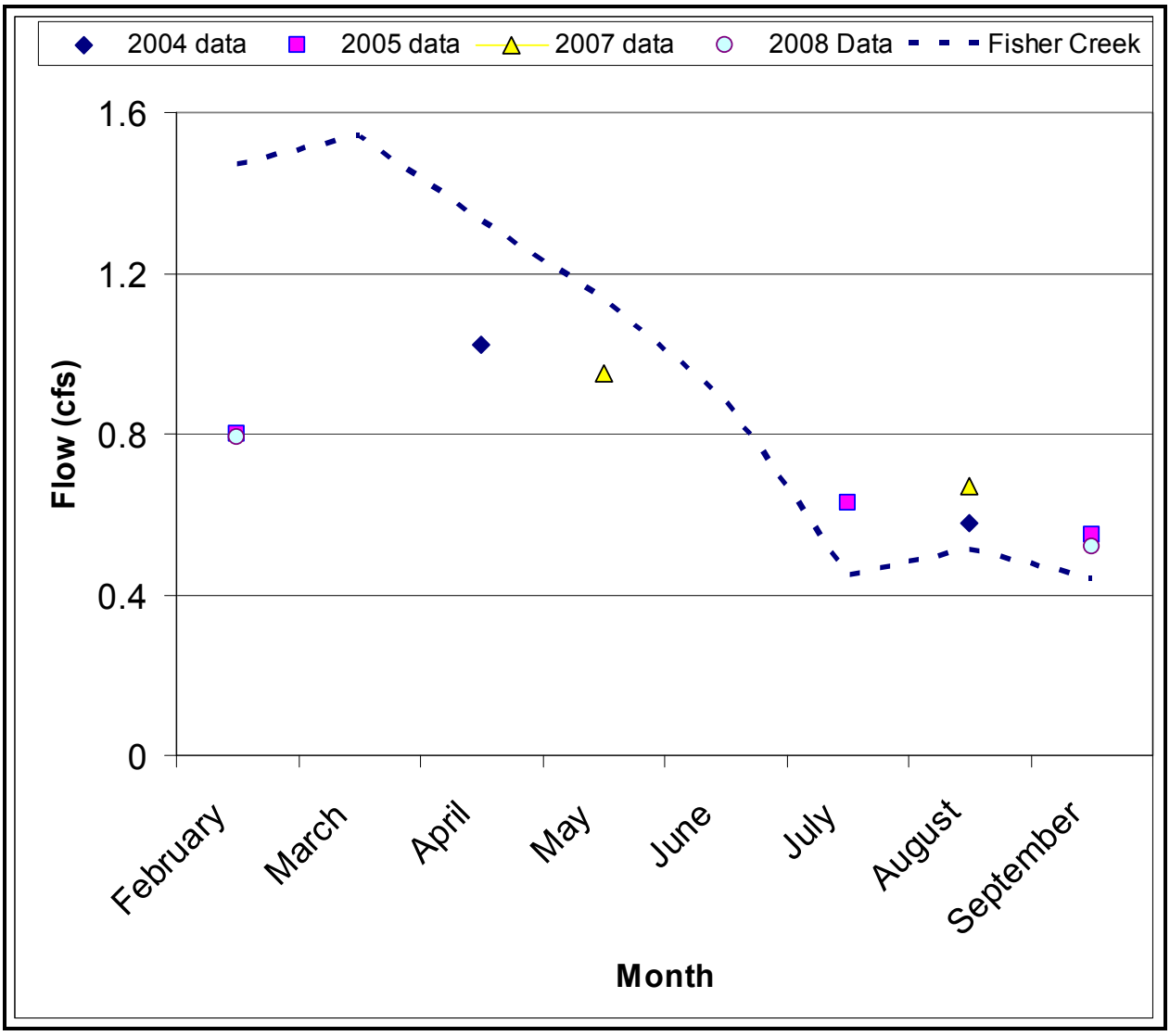

Figure 8. Typical hydrograph for the Island-wide stream gauge sites showing a decrease in stream flow from late winter/spring through early fall. This location is Christensen Creek, gauge VA23, and has been measured twice a year since April 2004. Fisher Creek data as monthly mean flow (cfs) is shown to help visualize the typical hydrograph.

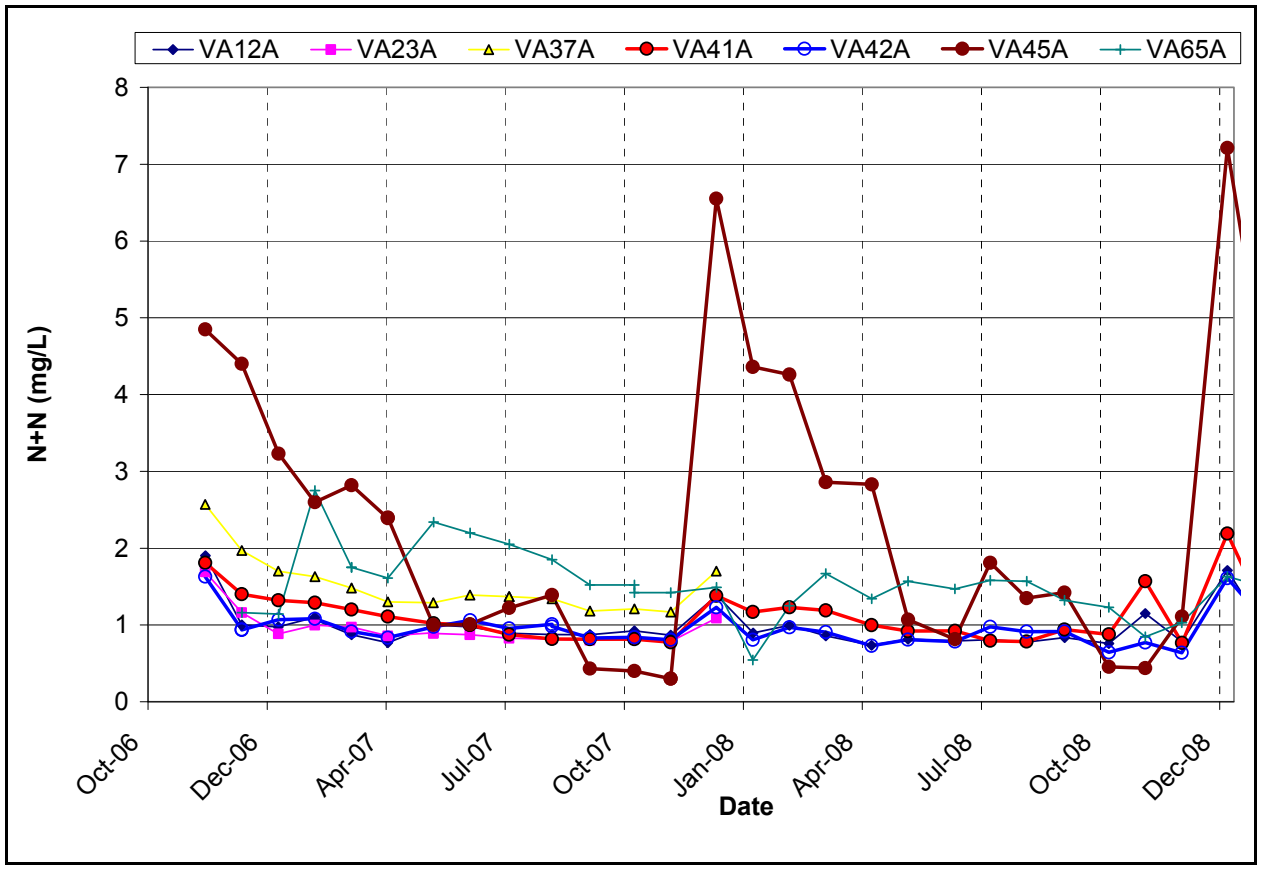

Figure 9. Nitrate + Nitrite water quality data from Vashon-Maury Island Creeks since November 2006 to January 2009. The sites sampled are Shingle Mill (VA12A), Christian (VA23A), Tahlequah (VA37A), Fisher (VA41A), Judd (VA42A), Mileta (VA45A), and Gorsuch Creek (VA65A).

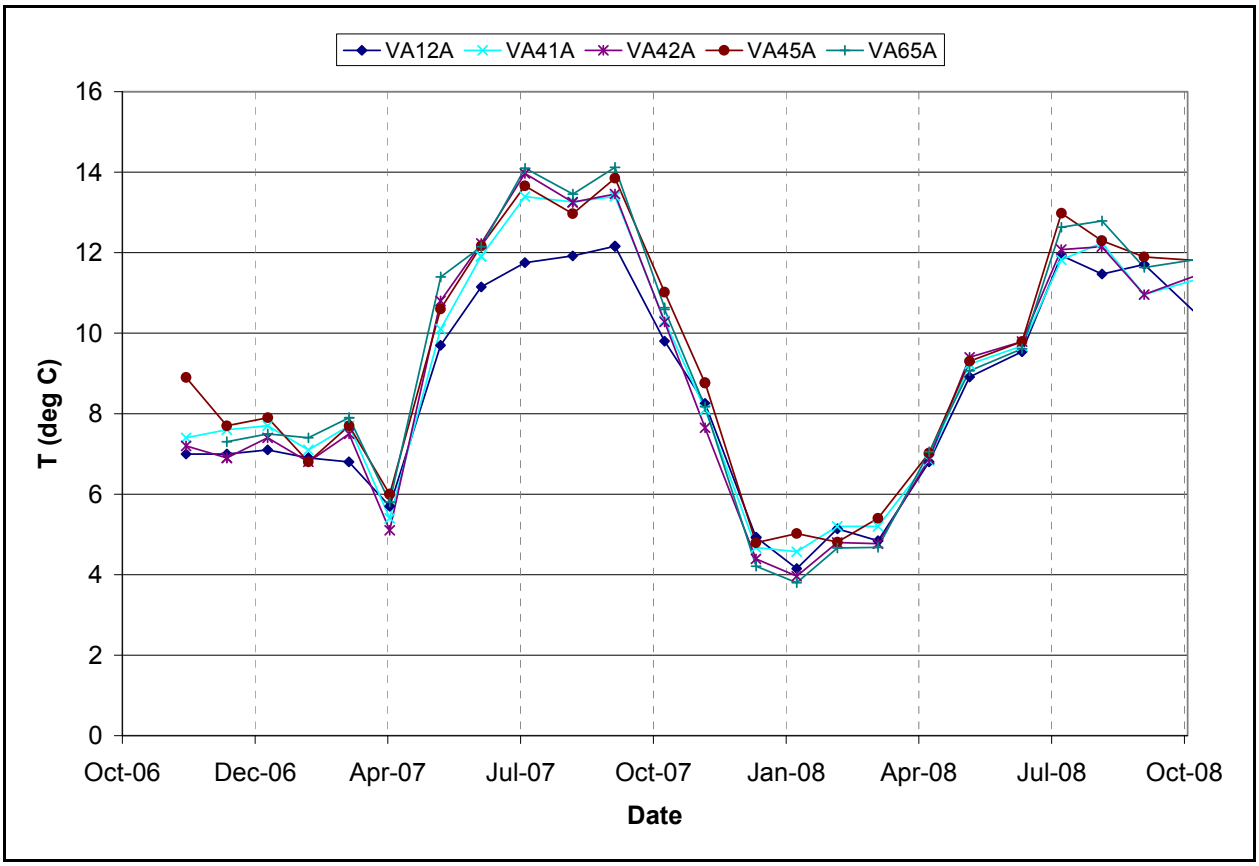

Figure 10. Temperature data from Vashon-Maury Island Creeks from November 2006 to September 2008. Data collected monthly at seven stream sites: Shingle Mill (VA12A), Fisher (VA41A), Judd (VA42A), Mileta (VA45A), and Gorsuch Creek (VA65A).

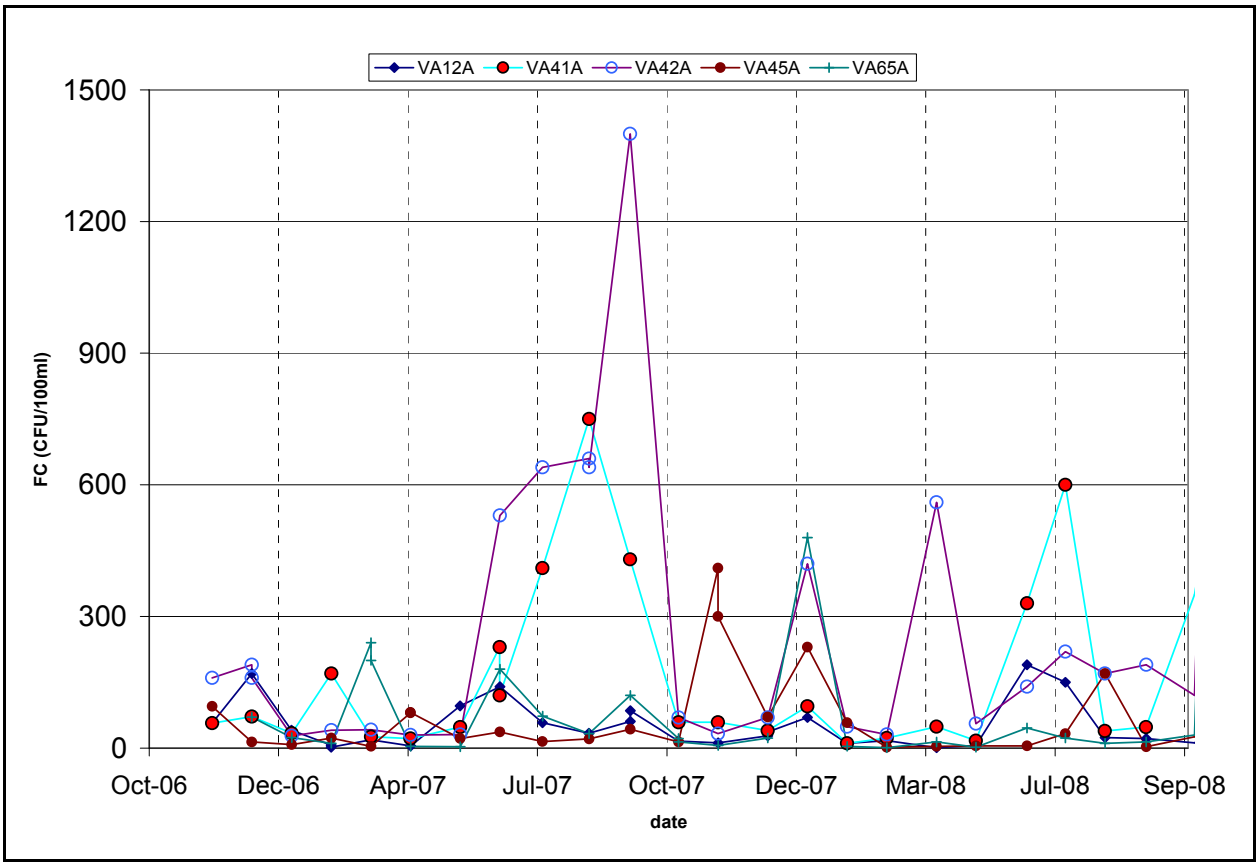

Figure 11. Fecal Coliform data from VMI Streams from November 2006 to September 2008. Data collected monthly at five stream sites: Shingle Mill (VA12A), Fisher (VA41A), Judd (VA42A), Mileta (VA45A), and Gorsuch Creek (VA65A).

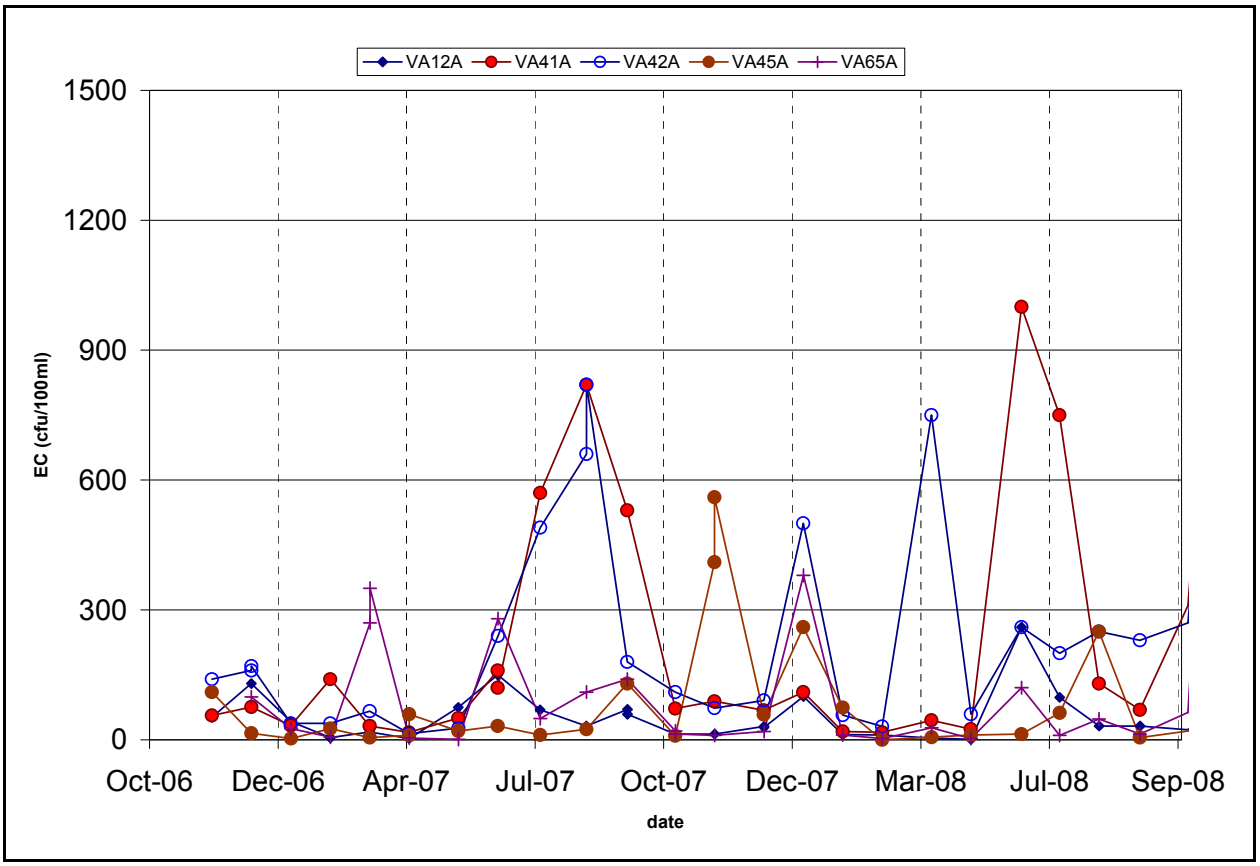

Figure 12. E. Coli data from VMI Streams from November 2006 to September 2008. Data collected monthly at five stream sites: Shingle Mill (VA12A), Fisher (VA41A), Judd (VA42A), Mileta (VA45A), and Gorsuch Creek (VA65A).

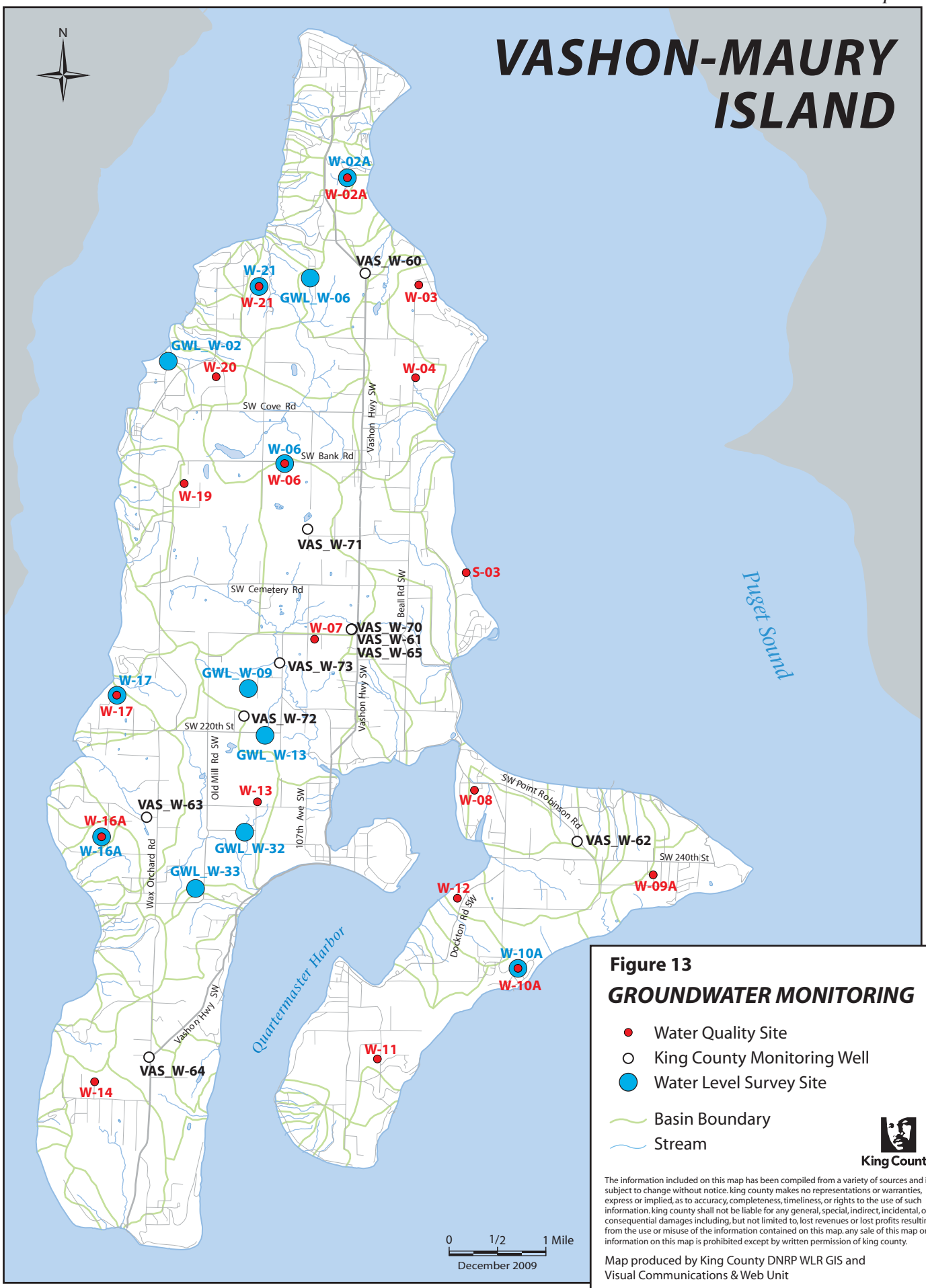

Figure 13

GROUNDWATER MONITORING

- Water Quality Site
- King County Monitoring Well
- Water Level Survey Site
- Basin Boundary
- Stream

King County

Map produced by King County DNRP WLR GIS and Visual Communications & Web Unit

File name: 0912vmiGWmaps.ai wgab **Data sources:** King County Datasets

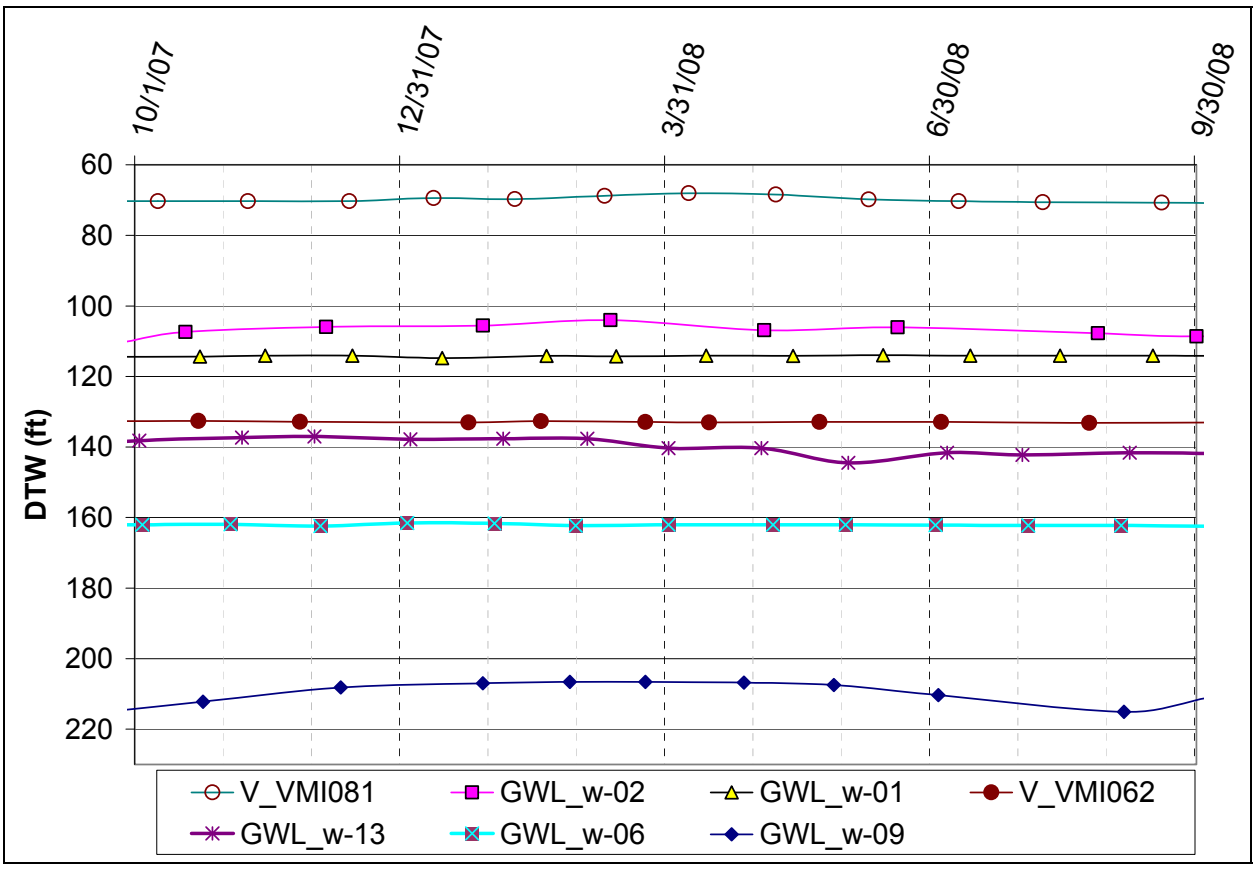

Figure 14. Depth to water (DTW) measurements in feet below land surface at the seven volunteer sites on VMI during the Water Year 2008.

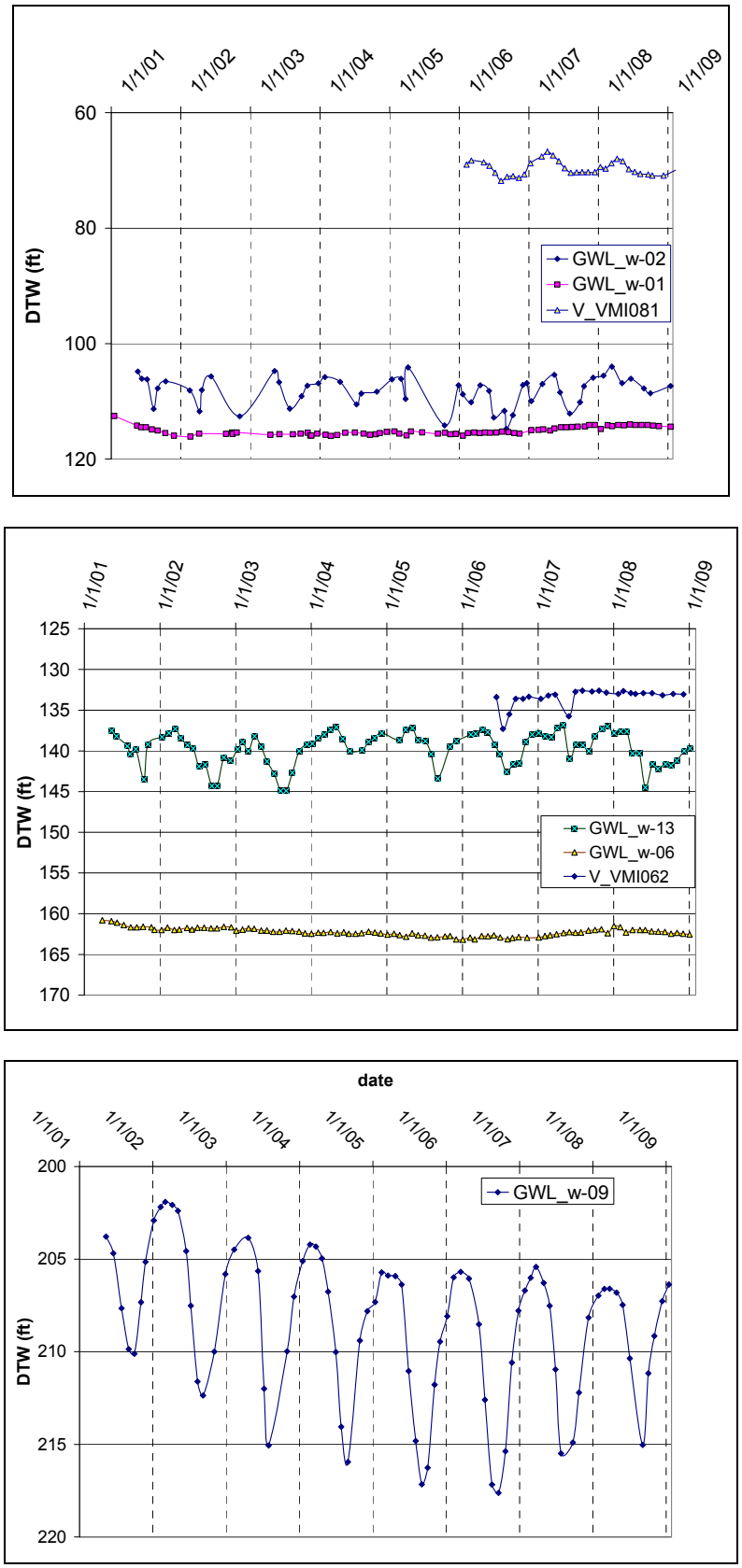

Figure 15. Depth to water (DTW) measurements in feet below land surface for the volunteer monitoring sites since 2001.

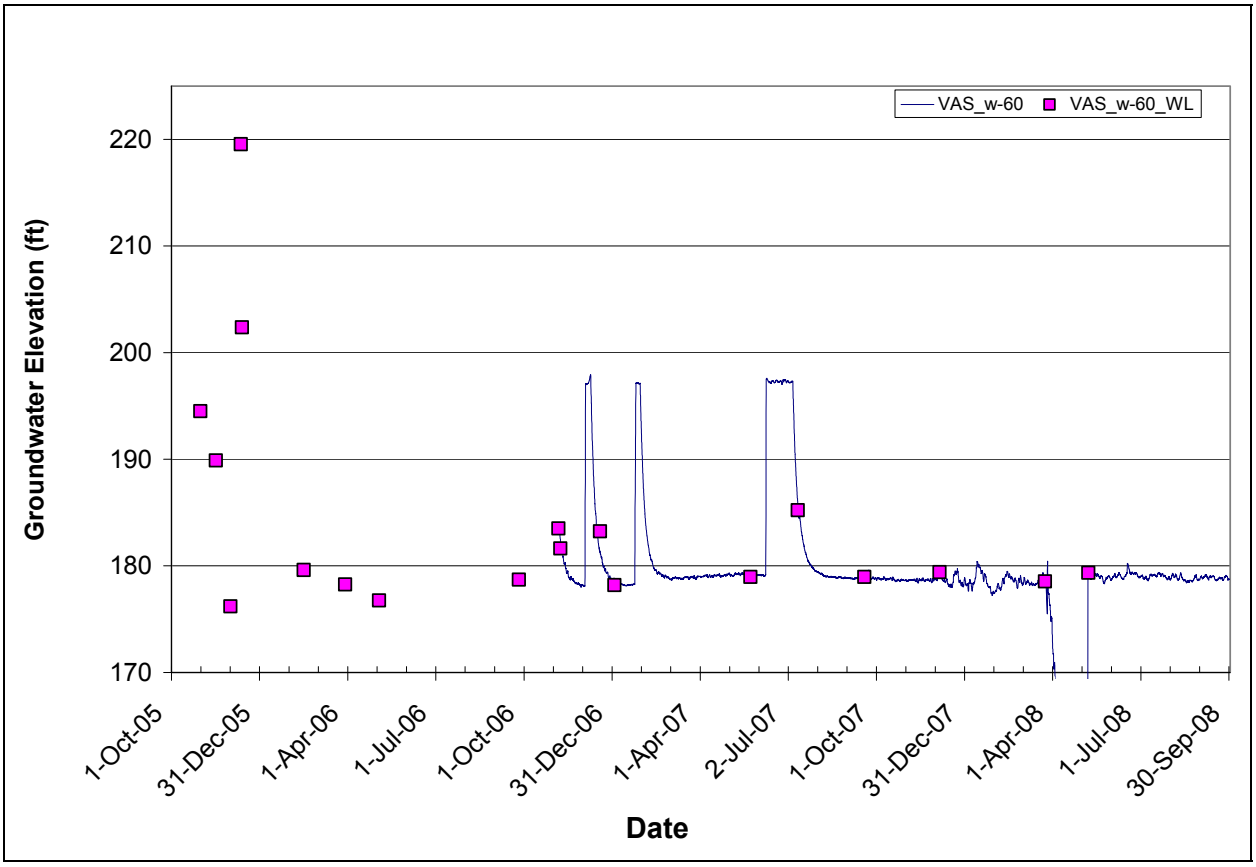

Figure 16. Water table elevations for site VAS_w-60, North Vashon, based on continuous levelogger water level data and manual depth to water measurements. Levelogger data collection started November 6, 2006. Depth to water measurements are presented as points for the dates measured, see Table 10.

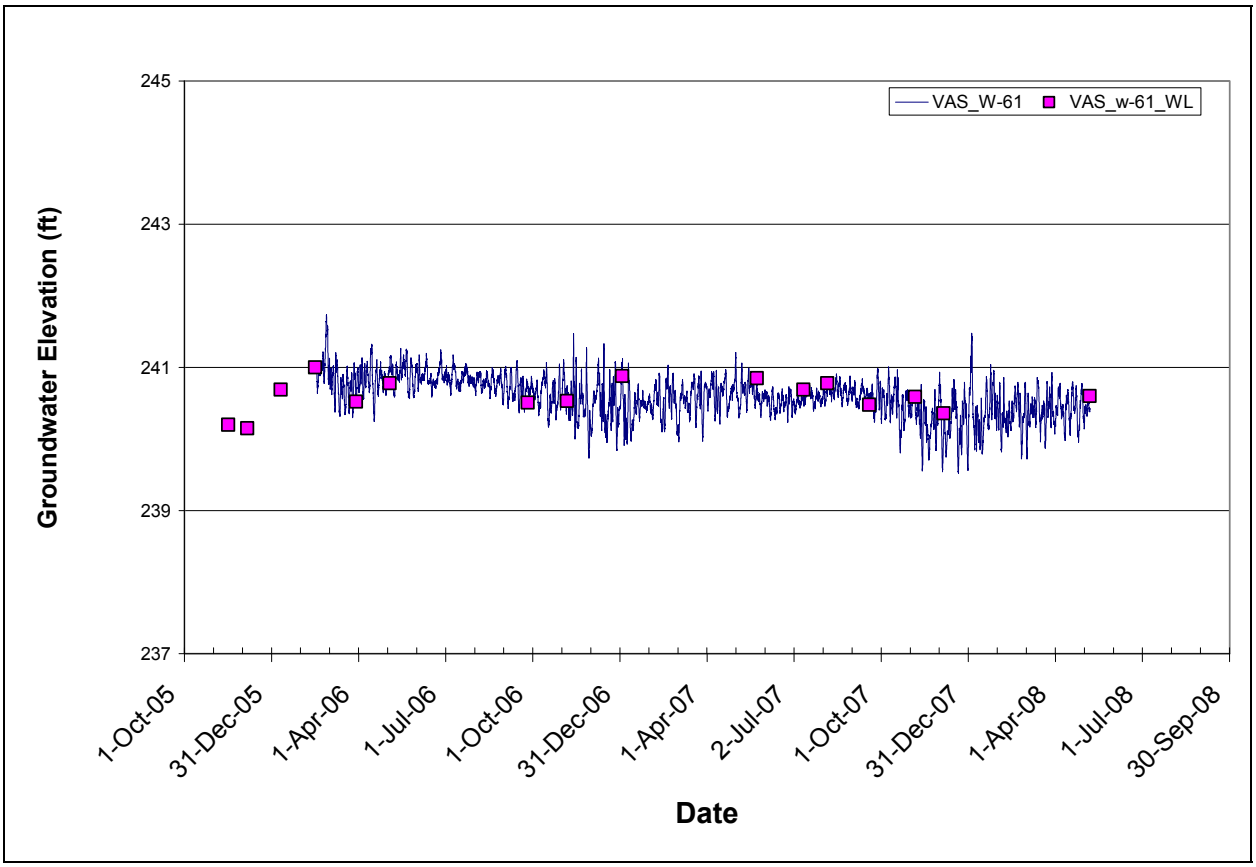

Figure 17. Water table elevations for site VAS_w-61, Valley Center Park-n-Ride 2" well, based on continuous levelogger water level data and manual depth to water measurements. Levelogger data collection started 15Feb2006. Depth to water measurements are presented as points for the dates measured, see Table 10.

Note VAS_W-62 does not have data presented due to the lack of water in the screen zone.

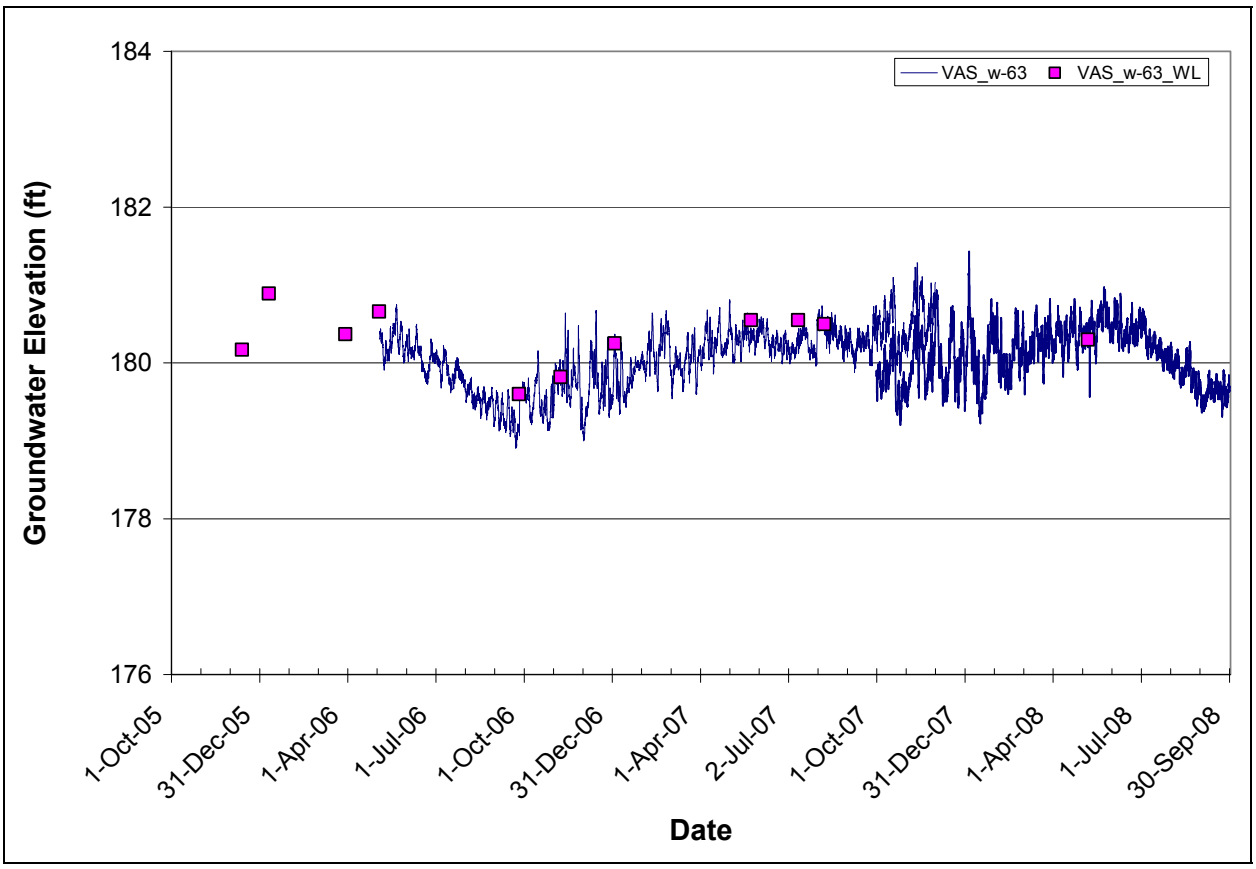

Figure 18. Water table elevations for site VAS_w-63, Redding Beach Rd, based on continuous levelogger water level data and manual depth to water measurements. Levelogger data collection started May 4, 2006. Depth to water measurements are presented as points for the dates measured, see Table 10.

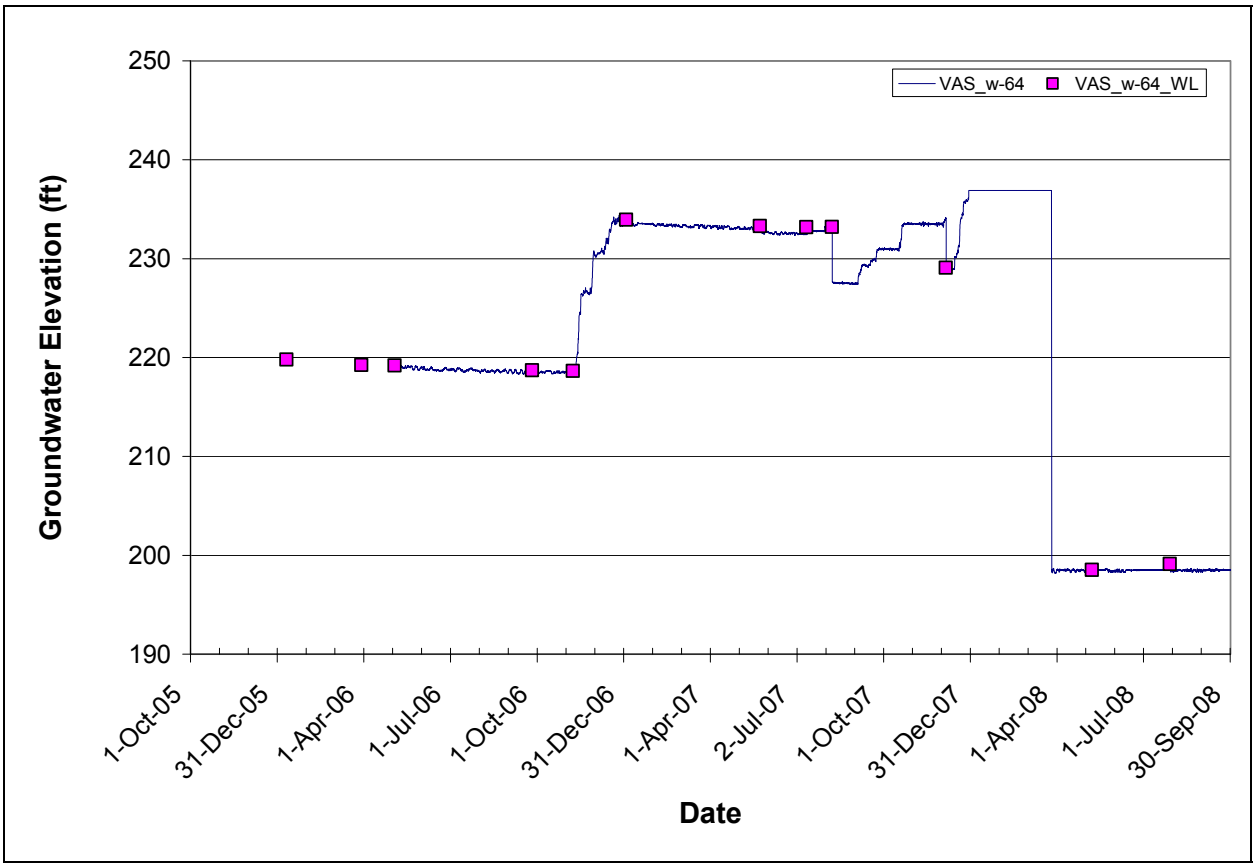

Figure 19. Water table elevations for site VAS_w-64, Wax Orchard Rd @ Vashon Hwy, based on continuous levelogger water level data and manual depth to water measurements. Levelogger data collection started November 6, 2006. Depth to water measurements are presented as points for the dates measured, see Table 10.

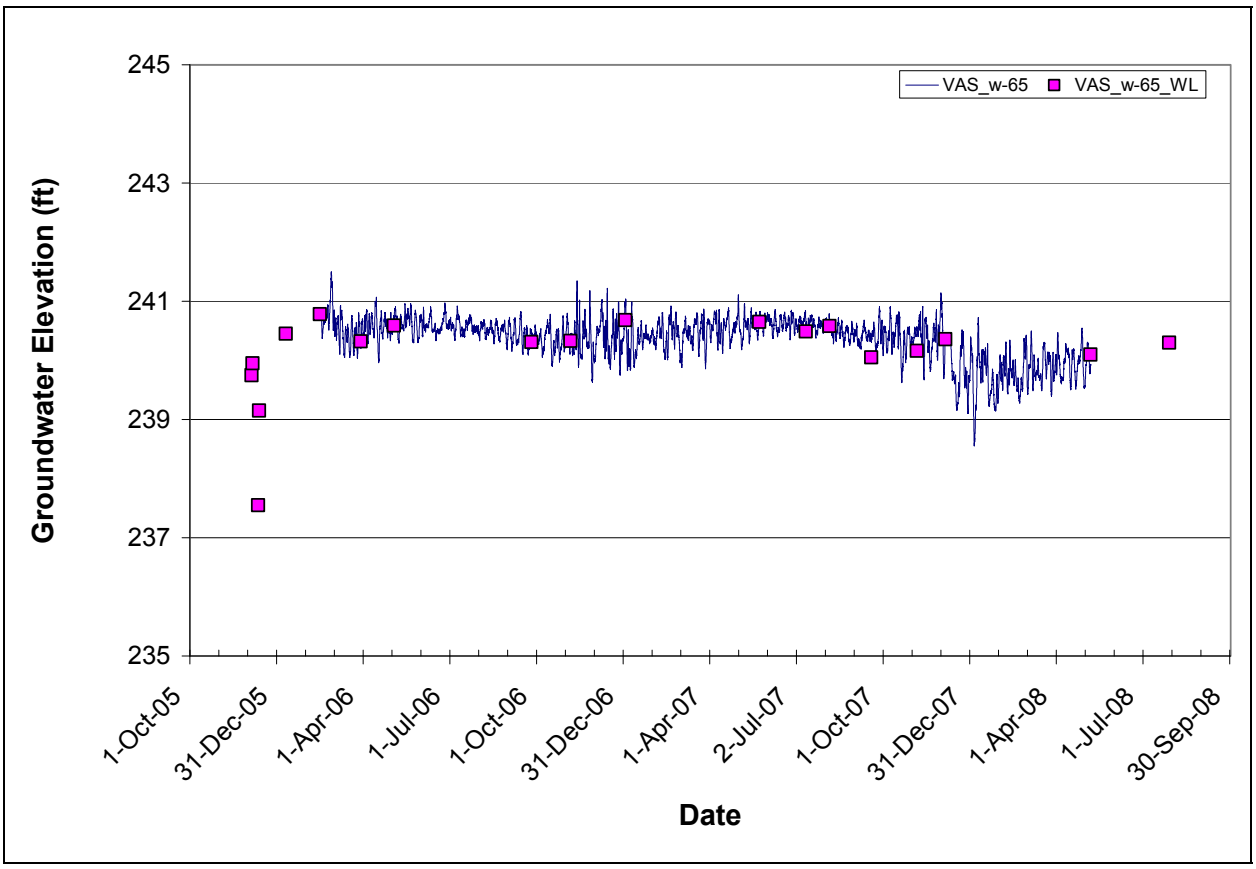

Figure 20. Water table elevations for site VAS_w-65, Valley Center Park-n-Ride 6" well based on continuous levelogger water level data and manual depth to water measurements. Levelogger data collection started February 15, 2006. Depth to water measurements are presented as points for the dates measured, see Table 10.

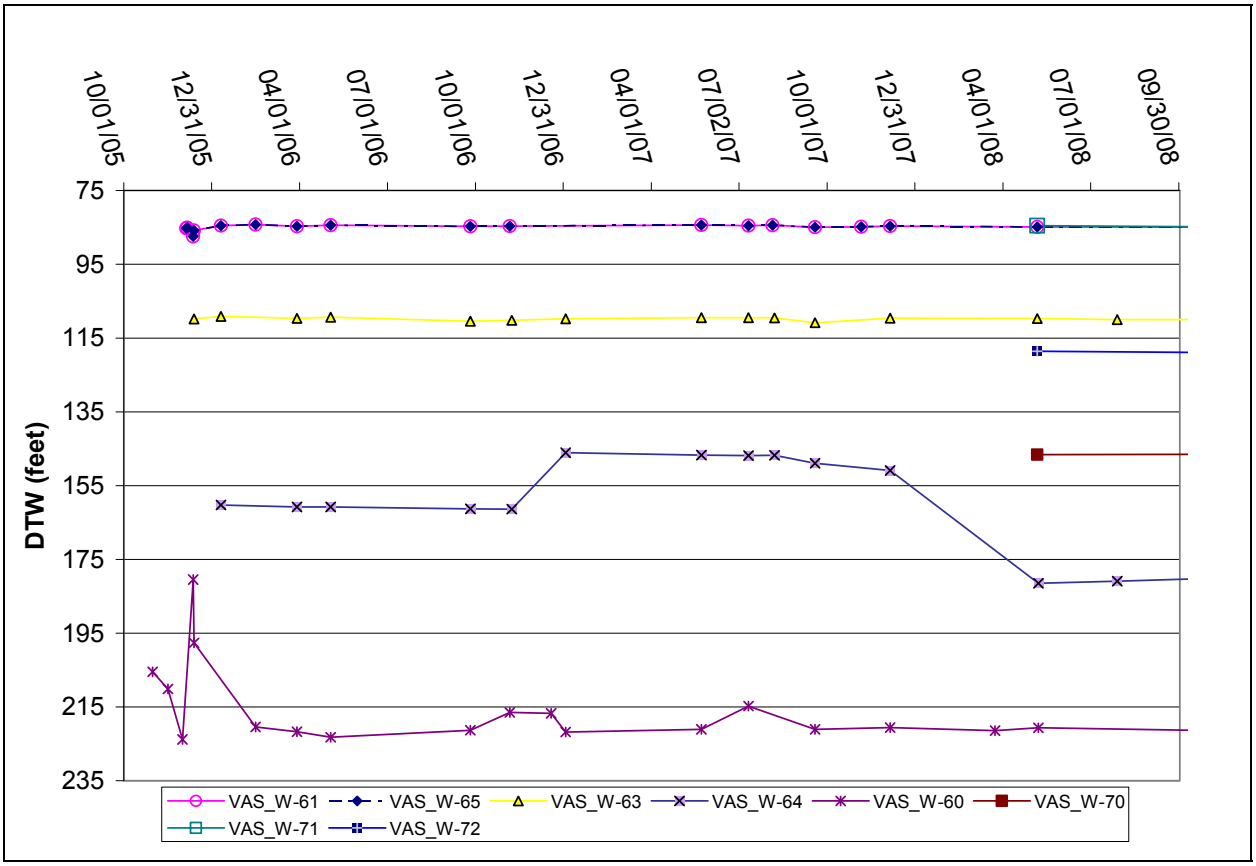

Figure 21. Depth to water (DTW) measurements for the monitoring wells on VMI since October 2005 to present. Not shown on this scale is VAS_w-73 with DTW data of 9.3 feet below land surface.

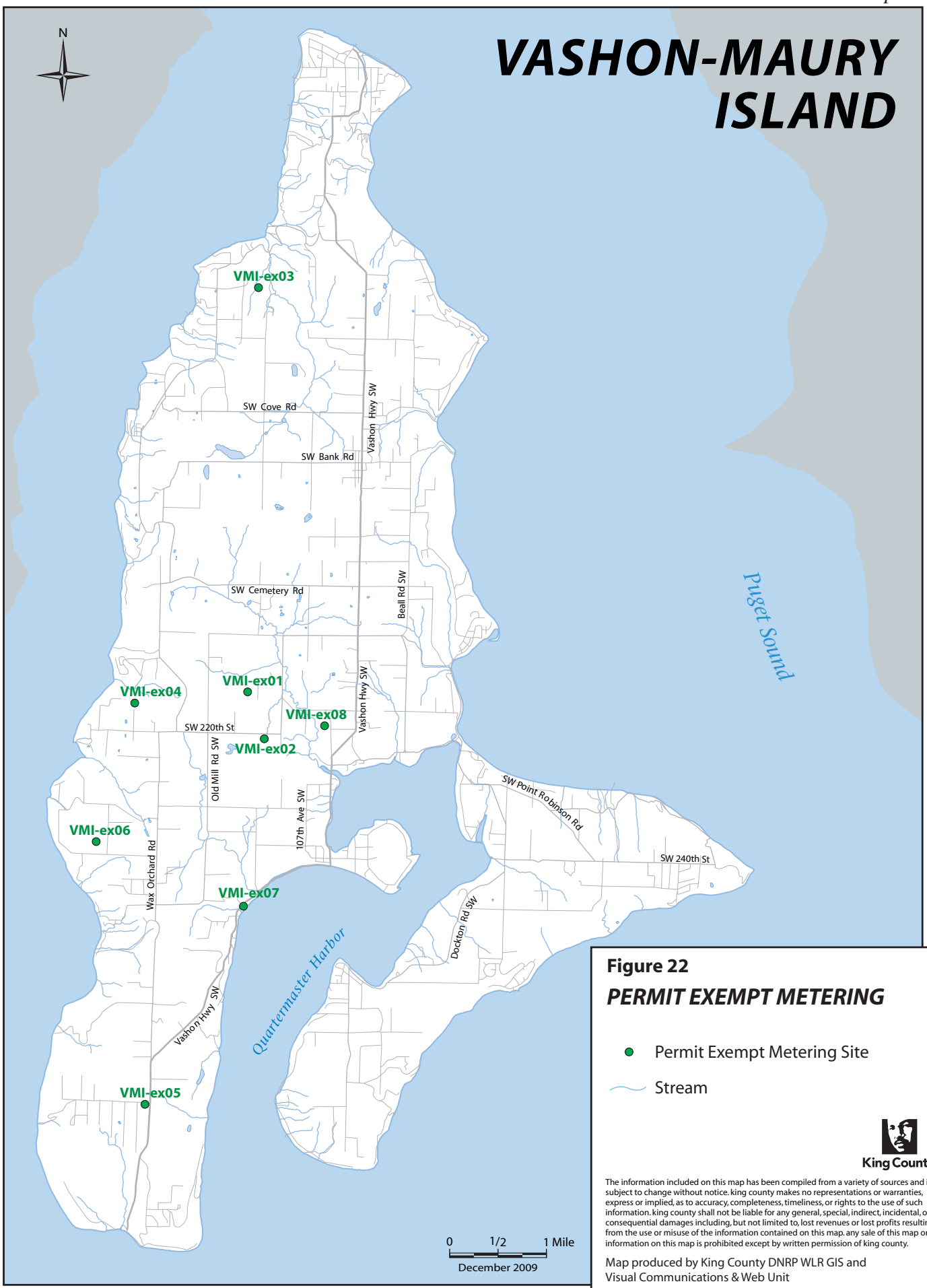

Figure 22

PERMIT EXEMPT METERING

- Permit Exempt Metering Site
- Stream

King County

Map produced by King County DNRP WLR GIS and Visual Communications & Web Unit

File name: 0912vmiGWmaps.ai wgab **Data sources:** King County Datasets

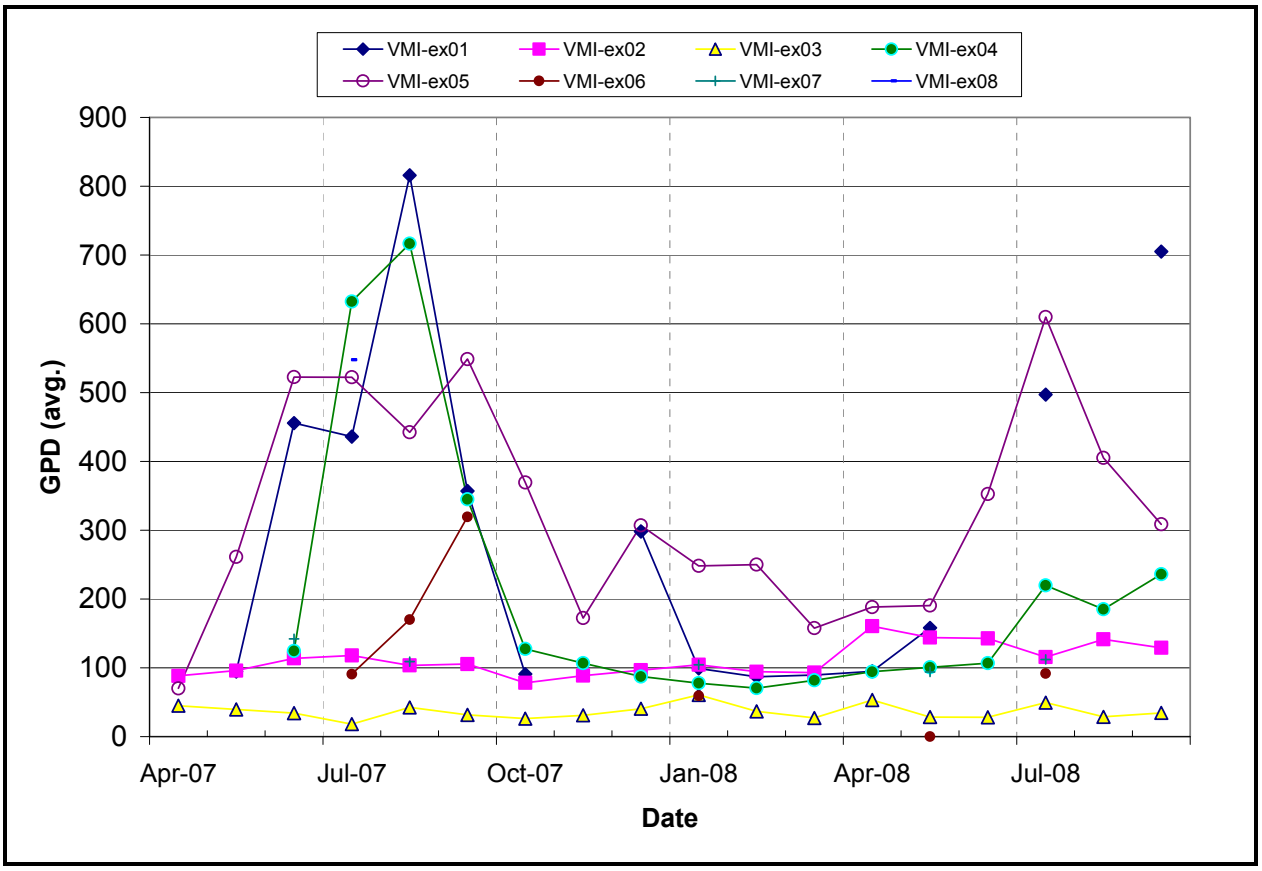

Figure 23. Average daily usage of permit exempt wells on VMI since April 2007 through water year 2008 from eight volunteer locations.

Table 1. Precipitation Gauge Sites on Vashon-Maury Island.

Gauge Id	Gauge Name	Date Started	Total Precipitation (inches) Water Year 2008
28Y	West Judd Creek (Transfer Station)	Oct-5-04	43.8
36U	Maury Island (KIRO)	Oct-5-04	28.5*
36V	East Maury Island (marine park)	Mar-25-05	27.4*
43U	North Vashon (Heights Water District Office)	Sep-20-99	43.8
65U	South Vashon (Tahlequah Ferry Landing)	Nov-5-04	36.3
Sea-Tac	Sea-Tac airport (area reference)	1971^	34.1

"^" = refers to the year that precipitation annual averages started – the annual average for Sea-Tac is 37.2 measured 1971-2000.

"*" = refers to sites that have incomplete data record for the time period measured.

Water Year is a 12 month period from October 1st to September 30tth. Example: Water Year 2008 is from October 1, 2007 to September 30, 2008.

Table 2. Difference in rainfall totals Water Year 2008 to 2007.

Gauge Id	Gauge Name	Total Precipitation (inches)		Difference 2008 - 2007
		2008	2007	
28Y	West Judd Creek (Transfer Station)	38.7	54.0	-15.3
36U	Maury Island (KIRO)	28.5*	50.6	*
36V	East Maury Island (marine park)	27.4*	25.0*	*
43U	North Vashon (Heights Water District Office)	43.8	61.6	-17.8
65U	South Vashon	36.3	54.2	-17.9
Sea-Tac	Sea-Tac airport (area reference)	34.1	47.3	-13.2

"*" = refers to sites that have incomplete data record for the time period measured.

Table 3. Monthly rainfall totals in inches for Water Year: 2008 and 2007

Water Year	Site	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	YTD Total
WY08	**28Y**	3.5	4.0	11.3	5.9	1.7	4.4	1.9	0.8	1.7	0.2	2.6	0.6	**38.7**
	36U	3.1	3.4	9.6	4.9	1.4	3.8	1.4	0.4	0.1	0.4	0.0*	0.0*	**28.5***
	36V	1.6*	3.3	7.5	4.0	1.2	3.6	1.3	1.4	0.3	0.5	2.2	0.6	**27.4***
	43U	3.7	4.4	13.4	6.0	2.1	5.2	2.2	1.0	1.7	0.3	3.3	0.7	**43.8**
	65U	3.5	3.8	10.0	5.8	1.8	4.0	1.5	1.1	1.3	0.2	2.8	0.5	**36.3**
	SeaTac	3.3	3.7	9.1	4.3	1.8	3.7	1.9	0.9	1.6	0.5	2.9	0.8	**34.1**

YTD Total = Year to date total of the monthly precipitation.

WY = Water Year – a 12 month period starting October 1st through September 30th; WY08 is from October 2007 through September 2008.

"*" = refers to sites that have incomplete data record for the time period measured.

Water Year	Site	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	YTD Total
WY07	**28Y**	1.1	18.2	9.5	7.3	3.8	5.9	1.4	1.0	1.0	1.5	0.8	2.5	**54.0**
	36U	1.2	16.2	8.7	7.3	3.9	5.4	0.9	1.4	1.1	1.4	0.6	2.5	**50.6**
	36V	1.0	13.9	3.4*	--	--	4.9	0.8	0.7	0.2	0.1	0.0	0.0	**25.0***
	43U	1.2	21.3	11.4	8.3	3.8	6.0	1.3	1.6	1.0	1.7	1.2	2.9	**61.6**
	65U	1.3	17.6	8.4	7.1	4.1	6.2	1.3	1.3	1.1	1.6	0.8	3.3	**54.2**
	SeaTac	1.6	15.6	7.3	6.2	3.4	4.4	0.7	1.5	1.3	1.4	0.7	3.2	**47.3**

WY07 is from October 2006 through September 2007.

"*" = refers to sites that have incomplete data record for the time period measured.

Table 4. An annual summary of flow data based on the water year for all continuous stream gauge sites on Vashon-Maury Island.

Gauge Id	Gauge Name	Date Started	Q_{mean} (cfs)	Q_{max} (cfs)	Q_{min} (cfs)
28A	Judd Creek	Jul-16-99	4.9	249.5	1.2
43A	Shingle Mill Creek	Jul-9-98	3.8	209.6	1.3
65A	Tahlequah Creek	May-1-04	0.6	22.1	0.1
65B	Fisher Creek	May-1-04	1.4	38.8	0.3
65C	Green Valley Creek	Mar-25-05	0.6	5.5	0.2

Q_{mean} = Mean flow recorded for a given site.

Q_{max} = Maximum flow recorded for a given site.

Q_{min} = Minimum flow recorded for a given site.

(cfs) = cubic feet per second; the unit of measurement for stream flow.

Table 5. Comparison of Stream Flow by Water Year (Oct-Sep) for all continuous stream gauge sites on Vashon-Maury Island. All units are cfs of Qmean.

Water Year	28A Judd Creek	43A Shingle Mill Creek	65A Tahlequah Creek	65B Fisher Creek	65C Green Valley Creek
1999	2.56*	7.63	--	--	--
2000	6.67	5.67	--	--	--
2001	3.82	2.66	--	--	--
2002	6.68	5.05	--	--	--
2003	4.87	3.85	--	--	--
2004	5.92	4.43	--	--	--
2005	3.42	3.03	0.48	1.01	0.45*
2006	6.12	4.55	0.92	1.68	0.50*
2007	5.94*	5.77	1.16	2.13	0.62
2008	4.93	3.77	0.53	1.35	0.60

Q_{mean} = Average mean flow for measured time period of water year (WY).

Water Year – a 12 month period starting October 1st through September 30th; example WY08 is from October 2007 through September 2008

(cfs) = cubic feet per second; the unit of measurement for stream flow.

-- = No data for this site for this water year.

"*" = refers to sites that have incomplete (estimated) data record for the time period measured.

Table 6. Instantaneous flow measurements at stream gauge sites measured semi-annually as part of the Island-wide assessment of stream flow.

Stream number	Stream Name	2/25-26 2008	9/30-10/2 2008
		Q (cfs)	Q (cfs)
17A	McCormick Creek	0.23	0.24
43A	Shingle Mill Creek	2.24	1.68
VA12c	Shingle Mill above Needle Creek	1.76	1.24
VA12d	Needle Creek	0.26	0.19
VA20	Robinwood Creek	0.38	0.38
65C	Green Valley Creek	0.58 est	0.53
VA23	Christensen Creek	0.79	0.52
VA30	Bates Creek	0.05	0.04
65A	Tahlequah Creek	.43 est	0.24
65B	Fisher Creek	1.4 est	0.59
28A	Judd Creek @ SW 204th	1.13	0.49
VA42b	East Fork Judd Cr @ SW 204th	1.38	0.4
VA42	Judd Creek near Mouth	0.39	.02 est
VA42c	Judd Creek @ Singer Rd	4.6 est	1.51
VA42d	Judd Cr @ 111th SW	not meas	not meas
VA42e	Judd Cr @ 107th SW	2.46	0.70
VA43	Tsugwalla Creek	0.18	0.034
VA44	Raab's Creek	0.09	.001 est
VA45	Mileta Creek	0.02	0
VA62	Ellis Creek	0.52	0.095
VA63	Ellisport Creek	0.4	not meas
VA64	Beall Creek - upstream of withdrawal	0.76	0.72
VA65	Gorsuch Creek	0.14	0.05
VA66	Dilworth Creek	0.19	0.027
VA67	Glen Acre Creek	0.09	0.016

Q = Flow recorded for a given site.

(cfs) = cubic feet per second; the unit of measurement for stream flow.

"est" = estimated flow data due to low water.

"not meas" = Not measured during the field days.

Table 7. List of parameters sampled as part of the surface water water quality monitoring started in November 2006.

Parameters
Total Alkalinity
Total Suspended Solids
Turbidity
Total Nitrogen
Ammonia Nitrogen
Nitrite + Nitrate Nitrogen
Total Phosphorus
Orthophosphate Phosphorus
Escherichia coli
Fecal Coliform
pH, Field
Sample Temperature, Field
Dissolved Oxygen, Field
Conductivity, Field

Table 8. Depth to water data for volunteer water level sites during 2008.

	GWL_w-01	GWL_w-02	GWL_w-06	GWL_w-09	GWL_w-13	GWL_w-32	GWL_w-33
Month	**depth to water (feet)**						
Jan	114.8	105.6	161.5	207.0	137.8	133.6	68.8
Feb	114.2	not meas	161.6	206.6	137.6	133.2	not meas
Mar	114.3	103.9	162.3	206.6	137.6	133.1	67.6
Apr	114.1	not meas	162.0	206.8	140.3	not meas	66.8
May	114.2	106.9	162.0	204.5	140.3	135.8	67.4
Jun	114.0	106.1	162.0	not meas	144.5	not meas	68.4
Jul	114.1	not meas	162.1	210.4	141.6	132.8	69.6
Aug	114.1	107.8	162.2	not meas	142.2	132.6	70.4
Sep	114.1	not meas	162.2	215.0	141.6	132.7	70.4
Oct	114.2	108.6	162.5	211.2	141.8	132.6	70.3
Nov	114.3	not meas	162.4	209.2	141.2	132.9	70.3
Dec	not meas	not meas	162.5	207.3	140.0	not meas	70.3

not meas = Water level not measured that month.

Table 9. Water level measurements for water quality sites on Vashon-Maury Island for 2008.

Site id	Measurement date	Depth to water (feet)
w-02a	07/30/2008	150.3
w-06	07/30/2008	146.9
w-13	07/28/2008	12.7
w-16a	07/28/2008	25.7
w-17	07/29/2008	170.7
w-21	07/29/2008	114.1

Table 10. Water level measurements at the dedicated groundwater monitoring wells on VMI during the WY2008.

Site id	Measurement date	Depth to water (feet)
w-60	12/16/2007	220.6
	03/24/2008	221.5
	05/08/2008	220.6
w-61	11/06/2007	84.1
	12/06/2008	84.6
	05/08/2008	84.4
w-63	12/06/2007	109.6
	05/08/2008	109.7
	07/29/2008	110.0
w-64	12/06/2007	150.9
	05/08/2008	181.5
	07/29/2008	180.9
w-65	11/06/2007	84.8
	12/06/2008	84.5
	05/08/2008	84.9
w-70	05/07/2008	146.6
w-71	05/07/2008	84.6
w-72	05/07/2008	118.6
w-73	05/07/2008	9.3

NOTE: Water levels taken within VAS_W-62 are below the screen, so these measurements are reported as “dry”.

Table 11. Environmental Indicators – Arsenic, Chloride, and Nitrate-Nitrate – sampling results at the long-term monitoring sites. Sampling occurred at 16 sites on Ju1y 28 -30th2008.

Site Id	2008 results	Avg Conc.	2008 results	Avg Conc.	2008 results	Avg Conc.
	µg/L		mg/L		mg/L	
VAS_s-03*	1.78 1.67	1.76	5.39 5.41	5.94	1.71 1.74	2.01
VAS_w-02a	9.23	7.54	3.68	3.71	1.96	1.21
VAS_w-03	1.16	1.09	7.90	7.75	0.49	0.35
VAS_w-04	19.70	18.54	3.95	3.69	0.02^	0.02^
VAS_w-06	18.60	1.03	3.98	3.05	0.02^	1.21
VAS_w-07	13.20	28.86	2.80	2.71	0.02^	0.02^
VAS_w-09a	4.50	5.43	4.89	4.87	0.02^	0.02^
VAS_w-10a	2.08	1.48	11.50	9.83	4.55	3.58
VAS_w-11	1.16	1.41	4.97	5.01	0.02^	0.02^
VAS_w-12	5.69	5.86	4.28	4.00	0.02^	0.02^
VAS_w-13	1.28	1.14	8.45	8.62	1.97	1.85
VAS_w-14	1.37	1.37	4.40	4.14	0.04	0.03
VAS_w-15	1.30	1.39	4.81	4.61	0.02^	0.02^
VAS_w-16a	0.60	0.52	3.42	3.90	3.73	4.67
VAS_w-17	0.48	0.51	4.01	3.83	1.96	1.68
VAS_w-21	3.98	3.90	4.08	3.71	0.02^	0.02^

Avg Conc. = Average Concentration of the previous sampling events (typically 10 results per location)

Units: µg/L = micrograms per liter and mg/L = milligrams per liter.

^ refers to a concentration that is below the detection limit for this parameter

* = these locations had a sample replicate taken during this sampling event.

Table 12. Environmental Indicators – Arsenic, Chloride, and Nitrate-Nitrate – sampling results for a special sampling sites not sampled in 2007. This sampling occurred at the same time as the long-term monitoring event, Ju1y 28 -30th2008.

Site ID	Arsenic (µg/L)	Chloride (mg/L)	Nitrate+Nitrite (mg/L)
VAS_w-68	1.4	5.70	0.87

Units: µg/L = micrograms per liter and mg/L = milligrams per liter.

Table 13. The relative change of the annual average (in feet) from the baseline of the depth to water measurements done during Water Years 2004 to 2008 for the five long-term water level sites. The baseline for each site is the average of the measurements made during Water years 2002-2003. Depth to water measurements for these sites are plotted versus time in Figure 15.

	WY2002-03		WY2004		WY2005		WY2006		WY2007		WY2008	
	baseline	count	data	count	data	count	data	count	data	count	data	count
GWL_w-01	**115.7**	13	**0.0**	8	0.2	10	0.1	9	0.8	11	1.5	11
GWL_w-02	**108.5**	11	0.8	6	1.6	5	**-2.1**	6	**-0.4**	10	2.2	10
GWL_w-06	**161.9**	21	**-0.5**	12	**-0.7**	12	**-1.1**	12	**-0.6**	10	**-0.1**	10
GWL_w-09	**206.7**	18	**-1.6**	7	**-2.5**	10	**-4.2**	11	**-3.0**	11	**-2.2**	11
GWL_w-13	**140.8**	19	1.7	12	1.8	11	1.5	9	1.9	11	1.9	11

Table 14. Average Daily usage of permit exempt wells shown as gallons per day. Values are calculated of the difference of meter readings divided by the number of days between readings. Data collection started in April 2007. Average daily usage of these sites are plotted versus time in Figure 23.

Site Id	Water Year 2007					
	Apr	May	Jun	Jul	Aug	Sep
VMI-ex01	*NC*	94	456	436	816	357
VMI-ex02	88	96	114	118	104	105
VMI-ex03	45	40	34	18	43	31
VMI-ex04	*NC*	*NC*	125	632	717	345
VMI-ex05	70	261	523	522	442	549
VMI-ex06	*NC*	*NC*	NC	91	170	319
VMI-ex07	*NC*	*NC*	142	—	109	—
VMI-ex08	*NC*	*NC*	—	548	—	—

Site Id	Water Year 2008											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
VMI-ex01	91	—	298	99	87	90	95	158	—	497	—	705
VMI-ex02	78	89	96	104	94	93	161	144	143	116	141	129
VMI-ex03	26	31	41	60	37	27	53	28	28	49	29	35
VMI-ex04	127	107	87	78	70	82	94	101	107	220	185	236
VMI-ex05	369	172	307	248	250	158	188	190	353	610	405	309
VMI-ex06	—	—	—	59	—	—	—	0	—	92	—	—
VMI-ex07	—	—	—	104	—	—	—	94	—	112	—	—
VMI-ex08	—	—	—	—	—	—	—	—	—	—	—	—

Units for results are shown are gallons per day.

NC = Not connected – meter not installed that month.

"—" refers to a calendar month that no readings were reported.

Appendix A

Precipitation data

43U North Vashon

Water Year 2008 01Oct07 to 30Sep08

Rainfall in inches

Data are provisional until end of year

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.07	0.00	0.51	0.00	0.00	0.26	0.03	0.19	0.00	0.00	0.36	0.02
2	0.61	0.00	1.86	0.74	0.01	0.07	0.00	0.08	0.00	0.00	0.20	0.00
3	0.38	0.00	5.31	0.54	0.05	0.00	0.00	0.00	0.04	0.00	0.00	0.00
4	0.09	0.01	0.53	0.12	0.00	0.18	0.00	0.09	0.68	0.18	0.00	0.00
5	0.00	0.00	0.00	0.24	0.38	0.00	0.12	0.00	0.06	0.00	0.00	0.00
6	0.01	0.00	0.11	0.21	0.71	0.00	0.03	0.00	0.16	0.00	0.00	0.00
7	0.33	0.04	0.00	0.08	0.15	0.01	0.19	0.00	0.56	0.00	0.00	0.00
8	0.00	0.03	0.00	0.70	0.25	0.02	0.02	0.00	0.00	0.00	0.00	0.00
9	0.01	0.20	0.00	0.26	0.11	0.01	0.20	0.00	0.00	0.00	0.00	0.00
10	0.02	0.26	0.02	0.82	0.35	0.00	0.02	0.00	0.16	0.00	0.34	0.00
11	0.00	0.03	0.00	0.09	0.00	0.31	0.03	0.00	0.04	0.00	0.00	0.00
12	0.02	0.88	0.00	0.33	0.00	0.23	0.00	0.09	0.00	0.00	0.00	0.00
13	0.00	0.00	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.16	0.05	0.15	0.00	0.50	0.07	0.11	0.00	0.00	0.00	0.00
15	0.17	1.11	0.68	0.00	0.03	0.21	0.37	0.00	0.00	0.00	0.00	0.00
16	0.08	0.45	0.26	0.00	0.01	0.20	0.07	0.00	0.00	0.00	0.00	0.00
17	0.28	0.48	0.29	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00
18	0.33	0.00	0.53	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
19	0.89	0.04	0.80	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00
20	0.17	0.02	0.00	0.35	0.00	0.15	0.05	0.00	0.00	0.00	0.45	0.00
21	0.04	0.00	0.00	0.00	0.00	0.25	0.04	0.16	0.00	0.00	0.77	0.42
22	0.00	0.00	0.47	0.00	0.00	0.00	0.08	0.02	0.00	0.00	0.06	0.03
23	0.00	0.00	0.54	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
24	0.15	0.00	0.00	0.00	0.00	0.92	0.16	0.02	0.00	0.00	0.00	0.00
25	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.11
26	0.00	0.43	0.02	0.14	0.00	0.31	0.00	0.21	0.00	0.00	0.39	0.07
27	0.00	0.00	0.68	0.01	0.05	0.39	0.00	0.00	0.00	0.00	0.09	0.00
28	0.00	0.21	0.20	0.03	0.00	0.13	0.18	0.00	0.00	0.00	0.03	0.00
29	0.01	0.03	0.14	0.29		0.50	0.35	0.00	0.00	0.00	0.00	0.00
30	0.00	0.02	0.01	0.29		0.25	0.12	0.00	0.00	0.07	0.00	0.00
31	0.00		0.00	0.42		0.05	0.00		0.02		0.00	
Total	3.66	4.40	13.35	5.97	2.10	5.21	2.15	0.97	1.70	0.27	3.33	0.65

Year To Date Total: 43.76 inches

s = snow

e = estimated

Precipitation is measured with a tipping bucket rain gauge.

Ice and snow accumulations in the rain gage are not recorded until they melt.

Precipitation from snow is not measured accurately

King County Water and Land Resources Division (206) 296-6519

Download streamflow and rainfall data from the Hydrologic Information Center at the King County Department of Natural Resources website: http://dnr.metrokc.gov/hydrodat

28Y West Judd Creek

Water Year 2007 01Oct06 to 30Sep07

Rainfall in inches

Data are provisional until end of year

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.08	0.01	0.50	0.00	0.00	0.26	0.00	0.06	0.00	0.00	0.32	0.00
2	0.70	0.00	1.58	0.64	0.00	0.07	0.00	0.05	0.00	0.00	0.13	0.00
3	0.56	0.00	4.28	0.52	0.03	0.01	0.00	0.00	0.04	0.00	0.00	0.00
4	0.06	0.03	0.35	0.08	0.00	0.10	0.00	0.12	0.68	0.13	0.00	0.00
5	0.00	0.00	0.00	0.31	0.25	0.00	0.11	0.00	0.06	0.00	0.00	0.00
6	0.01	0.00	0.10	0.20	0.56	0.00	0.03	0.00	0.16	0.00	0.00	0.00
7	0.21	0.03	0.00	0.07	0.12	0.01	0.15	0.00	0.56	0.00	0.00	0.00
8	0.00	0.00	0.00	0.67	0.27	0.01	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.17	0.00	0.26	0.08	0.00	0.15	0.01	0.00	0.00	0.00	0.00
10	0.03	0.25	0.02	0.86	0.34	0.00	0.02	0.00	0.16	0.00	0.27	0.00
11	0.00	0.02	0.00	0.13	0.00	0.28	0.00	0.00	0.04	0.00	0.00	0.00
12	0.01	0.92	0.00	0.32	0.00	0.22	0.00	0.05	0.00	0.00	0.00	0.00
13	0.01	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.15	0.04	0.19	0.00	0.40	0.08	0.08	0.00	0.00	0.00	0.00
15	0.20	1.00	0.58	0.00	0.01	0.26	0.16	0.00	0.00	0.00	0.00	0.00
16	0.04	0.32	0.19	0.00	0.00	0.13	0.05	0.00	0.00	0.00	0.00	0.00
17	0.28	0.45	0.18	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
18	0.28	0.00	0.49	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
19	0.78	0.05	0.81	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00
20	0.16	0.02	0.01	0.30	0.00	0.12	0.05	0.00	0.00	0.00	0.39	0.00
21	0.03	0.00	0.00	0.00	0.00	0.20	0.05	0.16	0.00	0.00	0.73	0.39
22	0.00	0.00	0.42	0.00	0.00	0.00	0.11	0.02	0.00	0.00	0.03	0.06
23	0.00	0.00	0.56	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
24	0.08	0.00	0.00	0.00	0.00	0.85	0.14	0.02	0.00	0.00	0.00	0.00
25	0.01	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.09
26	0.00	0.34	0.00	0.10	0.00	0.34	0.00	0.21	0.00	0.00	0.11	0.05
27	0.00	0.00	0.65	0.00	0.04	0.25	0.00	0.00	0.00	0.00	0.10	0.00
28	0.00	0.22	0.15	0.14	0.00	0.11	0.17	0.00	0.00	0.00	0.02	0.00
29	0.01	0.03	0.13	0.30		0.46	0.36	0.00	0.00	0.00	0.00	0.00
30	0.00	0.01	0.01	0.31		0.19	0.25	0.00	0.00	0.07	0.00	0.00
31	0.00		0.00	0.41		0.01	0.00		0.00		0.00	
Total	3.54	4.02	11.34	5.89	1.70	4.43	1.90	0.78	1.70	0.20	2.64	0.59

Year To Date Total: 38.73 inches

s = snow

e = estimated

Precipitation is measured with a tipping bucket rain gauge.

Ice and snow accumulations in the rain gage are not recorded until they melt.

Precipitation from snow is not measured accurately

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36U Maury Island

Water Year 2008 01Oct07 to 08Aug08

Rainfall in inches

Data are provisional until end of year

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.08	0.02	0.37	0.00	0.01	0.22	0.00	0.07	0.00	0.00	0.00	0.00
2	0.62	0.00	1.45	0.53	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00
3	0.19	0.00	3.73	0.32	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.08	0.04	0.09	0.04	0.01	0.08	0.00	0.21	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.27	0.21	0.00	0.10	0.00	0.00	0.00	0.00	0.00
6	0.01	0.00	0.06	0.16	0.36	0.00	0.04	0.00	0.00	0.00	0.00	0.00
7	0.12	0.04	0.00	0.08	0.06	0.00	0.14	0.00	0.00	0.04	0.00	0.00
8	0.01	0.00	0.00	0.58	0.28	0.03	0.04	0.00	0.00	0.01	0.00	0.00
9	0.01	0.09	0.00	0.23	0.02	0.00	0.03	0.00	0.00	0.23	0.00	0.00
10	0.08	0.18	0.02	0.79	0.27	0.00	0.00	0.00	0.00	0.08	0.00	0.00
11	0.00	0.03	0.00	0.13	0.00	0.23	0.01	0.00	0.12	0.00	0.00	0.00
12	0.03	0.62	0.00	0.35	0.00	0.12	0.00	0.09	0.00	0.00	0.00	0.00
13	0.00	0.00	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.10	0.04	0.13	0.01	0.46	0.11	0.06	0.01	0.00	0.00	0.00
15	0.19	0.81	0.35	0.00	0.00	0.29	0.16	0.00	0.00	0.00	0.00	0.00
16	0.01	0.20	0.08	0.00	0.00	0.14	0.01	0.00	0.00	0.00	0.00	0.00
17	0.23	0.49	0.14	0.00	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.00
18	0.26	0.00	0.44	0.00	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00
19	0.74	0.02	0.87	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.32	0.11	0.01	0.21	0.00	0.06	0.03	0.00	0.00	0.00	0.00	0.00
21	0.05	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.01	0.37	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.47	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
24	0.04	0.00	0.00	0.00	0.00	0.64	0.17	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.01	0.37	0.00	0.17	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.60	0.00	0.06	0.32	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.21	0.15	0.13	0.01	0.03	0.07	0.00	0.00	0.00	0.00	0.00
29	0.02	0.03	0.15	0.17		0.36	0.29	0.00	0.00	0.00	0.00	0.00
30	0.00	0.02	0.00	0.17		0.29	0.11	0.00	0.00	0.00	0.00	0.00
31	0.00		0.00	0.37		0.01	0.00		0.00		0.00	
Total	3.10	3.39	9.61	4.93	1.40	3.77	1.36	0.43	0.13	0.36	0.00	0.00

Year To Date Total: 28.48 inches

s = snow

e = estimated

Precipitation is measured with a tipping bucket rain gauge.

Ice and snow accumulations in the rain gage are not recorded until they melt.

Precipitation from snow is not measured accurately

King County Water and Land Resources Division (206) 296-6519

Download streamflow and rainfall data from the Hydrologic Information Center at the King County Department of Natural Resources website: http://dnr.metrokc.gov/hydrodat

36V East Maury Island

Water Year 2008 12Oct07 to 30Sep08

Rainfall in inches

Data are provisional until end of year

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.01	0.16	0.00	0.01	0.23	0.00	0.03	0.00	0.00	0.17	0.00
2	0.00	0.00	1.04	0.36	0.00	0.10	0.00	0.00	0.07	0.00	0.00	0.00
3	0.00	0.00	3.11	0.21	0.06	0.00	0.00	0.00	0.03	0.00	0.00	0.00
4	0.00	0.03	0.14	0.02	0.00	0.04	0.00	0.13	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.17	0.10	0.00	0.11	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.05	0.10	0.19	0.00	0.02	0.00	0.00	0.00	0.00	0.00
7	0.00	0.04	0.00	0.08	0.07	0.00	0.10	0.00	0.00	0.00	0.00	0.00
8	0.00	0.01	0.00	0.45	0.38	0.02	0.02	0.00	0.00	0.00	0.00	0.00
9	0.00	0.10	0.00	0.14	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00
10	0.00	0.16	0.00	0.78	0.26	0.00	0.00	0.00	0.00	0.00	0.16	0.00
11	0.00	0.03	0.00	0.22	0.00	0.32	0.01	0.01	0.00	0.00	0.34	0.00
12	0.00	0.49	0.00	0.30	0.00	0.09	0.00	0.06	0.01	0.00	0.59	0.34
13	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.07	0.04
14	0.00	0.08	0.02	0.19	0.00	0.45	0.08	0.08	0.00	0.00	0.00	0.00
15	0.14	0.82	0.20	0.00	0.01	0.38	0.20	0.00	0.00	0.00	0.00	0.00
16	0.03	0.17	0.02	0.00	0.01	0.14	0.01	0.00	0.00	0.00	0.62	0.07
17	0.27	0.53	0.11	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.11	0.12
18	0.21	0.00	0.44	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.11	0.00
19	0.59	0.06	0.79	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
20	0.27	0.22	0.00	0.16	0.00	0.07	0.08	0.06	0.00	0.00	0.00	0.00
21	0.03	0.00	0.00	0.00	0.00	0.10	0.00	0.23	0.00	0.19	0.00	0.00
22	0.00	0.00	0.34	0.00	0.00	0.00	0.02	0.11	0.00	0.01	0.00	0.00
23	0.00	0.00	0.46	0.00	0.00	0.00	0.01	0.00	0.00	0.21	0.00	0.00
24	0.05	0.00	0.00	0.00	0.00	0.54	0.16	0.03	0.00	0.07	0.00	0.00
25	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00
26	0.00	0.29	0.00	0.26	0.00	0.09	0.00	0.11	0.00	0.00	0.00	0.00
27	0.00	0.00	0.32	0.00	0.07	0.38	0.00	0.00	0.02	0.00	0.00	0.00
28	0.00	0.19	0.02	0.08	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
29	0.01	0.02	0.07	0.06		0.25	0.35	0.20	0.00	0.00	0.00	0.00
30	0.00	0.00	0.02	0.07		0.32	0.04	0.33	0.00	0.00	0.00	0.00
31	0.00		0.00	0.25		0.01	0.00		0.00		0.00	
Total	1.60	3.25	7.51	4.00	1.19	3.63	1.27	1.39	0.30	0.48	2.20	0.57

Year To Date Total: 27.39 inches

s = snow

e = estimated

Precipitation is measured with a tipping bucket rain gauge.

Ice and snow accumulations in the rain gage are not recorded until they melt.

Precipitation from snow is not measured accurately

King County Water and Land Resources Division (206) 296-6519

Download streamflow and rainfall data from the Hydrologic Information Center at the King County Department of Natural Resources website: http://dnr.metrokc.gov/hydrodat

65U Tahlequah

Water Year 2008 01Oct07 to 30Sep08

Rainfall in inches

Data are provisional until end of year

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.18	0.01	0.35	0.00	0.03	0.24	0.01	0.00	0.00	0.00	0.29	0.00
2	0.72	0.00	1.46	0.56	0.01	0.12	0.00	0.00	0.00	0.00	0.09	0.00
3	0.13	0.00	3.37	0.45	0.15	0.00	0.00	0.00	0.04	0.00	0.00	0.00
4	0.08	0.08	0.15	0.07	0.00	0.07	0.00	0.15	0.58	0.12	0.00	0.00
5	0.00	0.00	0.00	0.42	0.25	0.00	0.11	0.00	0.03	0.01	0.00	0.00
6	0.04	0.00	0.11	0.15	0.35	0.00	0.07	0.00	0.17	0.00	0.00	0.00
7	0.22	0.04	0.00	0.08	0.16	0.00	0.16	0.00	0.31	0.00	0.00	0.00
8	0.04	0.00	0.00	0.63	0.36	0.02	0.04	0.00	0.00	0.00	0.00	0.00
9	0.01	0.15	0.00	0.21	0.06	0.01	0.05	0.00	0.00	0.00	0.00	0.00
10	0.05	0.24	0.02	0.99	0.35	0.00	0.02	0.00	0.13	0.00	0.53	0.00
11	0.00	0.04	0.00	0.25	0.00	0.28	0.01	0.01	0.04	0.00	0.00	0.00
12	0.03	0.73	0.00	0.40	0.01	0.15	0.00	0.06	0.00	0.00	0.00	0.00
13	0.00	0.00	0.10	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.14	0.04	0.16	0.00	0.47	0.12	0.07	0.00	0.00	0.00	0.00
15	0.26	0.83	0.47	0.00	0.01	0.22	0.16	0.00	0.00	0.00	0.00	0.00
16	0.04	0.31	0.09	0.00	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00
17	0.17	0.51	0.14	0.00	0.00	0.07	0.01	0.00	0.00	0.00	0.00	0.00
18	0.29	0.00	0.52	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
19	0.75	0.03	1.02	0.13	0.00	0.00	0.01	0.00	0.00	0.00	0.20	0.00
20	0.33	0.03	0.00	0.20	0.00	0.09	0.04	0.00	0.00	0.00	0.37	0.00
21	0.08	0.00	0.01	0.01	0.00	0.13	0.00	0.26	0.00	0.00	0.55	0.31
22	0.00	0.00	0.45	0.00	0.01	0.03	0.06	0.46	0.00	0.00	0.12	0.00
23	0.00	0.00	0.63	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00
24	0.06	0.01	0.01	0.00	0.00	0.78	0.13	0.01	0.00	0.00	0.00	0.00
25	0.00	0.01	0.16	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.09
26	0.00	0.33	0.00	0.17	0.00	0.25	0.00	0.09	0.00	0.00	0.03	0.08
27	0.00	0.00	0.57	0.00	0.06	0.33	0.00	0.00	0.00	0.00	0.11	0.00
28	0.00	0.23	0.14	0.12	0.02	0.02	0.12	0.00	0.00	0.00	0.06	0.00
29	0.02	0.08	0.13	0.18		0.41	0.33	0.00	0.00	0.00	0.00	0.00
30	0.00	0.01	0.05	0.21		0.13	0.00	0.00	0.00	0.07	0.00	0.00
31	0.00		0.00	0.33		0.00	0.00		0.00		0.00	
Total	3.50	3.81	9.99	5.75	1.83	3.97	1.49	1.12	1.30	0.20	2.81	0.48

Year To Date Total: 36.25 inches

s = snow

e = estimated

Precipitation is measured with a tipping bucket rain gauge.

Ice and snow accumulations in the rain gage are not recorded until they melt.

Precipitation from snow is not measured accurately

King County Water and Land Resources Division (206) 296-6519

Download streamflow and rainfall data from the Hydrologic Information Center at the King County Department of Natural Resources website: http://dnr.metrokc.gov/hydrodat

Appendix B-1

Stream Water Quality Data

King County Environmental Lab Analytical Report

PROJECT: 421195DC

	Locator:	VA12A				Locator:	VA41A			
	Descrip:	SHINGLEMILL CREEK				Descrip:	FISHER CREEK UPSTR			
	Sampled:	01/08/08 10:22:00 AM				Sampled:	01/08/08 8:32:00 AM			
	Lab ID:	L44907-1				Lab ID:	L44907-2			
	Matrix:	FRESH WTR				Matrix:	FRESH WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			-Wet Weight Basis					-Wet Weight Basis		
COMBINED LABS										
M=CV SM2130-B (03-01-011-004)										
Turbidity	4.69		0.5	2	NTU	3.89		0.5	2	NTU
M=CV SM2320-B (03-03-001-003)										
Total Alkalinity	24.4		1	10	mg CaCO3/L	32		1	10	mg CaCO3/L
M=CV SM2540-D (03-01-009-002)										
Total Suspended Solids	54		0.6	1.2	mg/L	23		0.7	1.4	mg/L
M=CV SM4500-N-C (03-03-013-003)C										
Total Nitrogen	1.28		0.05	0.1	mg/L	1.63		0.05	0.1	mg/L
M=CV SM4500-NH3-G (03-03-012-004)										
Ammonia Nitrogen	0.012	<RDL	0.01	0.02	mg/L	0.016	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (03-03-012-004)										
Nitrite + Nitrate Nitrogen	0.895		0.02	0.04	mg/L	1.17		0.02	0.04	mg/L
M=CV SM4500-P-B,F(03-03-013-003)C										
Total Phosphorus	0.0688		0.005	0.01	mg/L	0.0739		0.005	0.01	mg/L
M=CV SM4500-P-F (03-03-012-004)										
Orthophosphate Phosphorus	0.0165		0.002	0.005	mg/L	0.0249		0.002	0.005	mg/L
M=ES Hydrolab (02-01-005-002)										
Conductivity, Field	78.9		0.5	10	umhos/cm	102		0.5	10	umhos/cm
Dissolved Oxygen, Field	11.4		0.5	1	mg/L	11.1		0.5	1	mg/L
pH, Field	7.2				pH	6.99				pH
Sample Temperature, Field	4.15				deg C	4.57				deg C
M=ES NONE										
Field Personnel	DR				none	DR				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	below staff g	TA			ft					
Storm Or Non-Storm	N				none	N				none
M=MC METRO MC SOP 6.5.1										
Escherichia coli	100				CFU/100ml	110				CFU/100ml
M=MC SM-9222 D ed.17										
Fecal Coliform	70				CFU/100ml	95				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC															
	Locator:	VA42A				Locator:	VA45A				Locator:	VA65A			
	Descrip:	JUDD CREEK AT SW 2				Descrip:	MILETA CREEK DOWNS				Descrip:	GORSUCH CREEK NEAR			
	Sampled:	01/08/08 9:20:00 AM				Sampled:	01/08/08 9:00:00 AM				Sampled:	01/08/08 10:06:00 AM			
	Lab ID:	L44907-3				Lab ID:	L44907-4				Lab ID:	L44907-5			
	Matrix:	FRESH WTR				Matrix:	FRESH WTR				Matrix:	FRESH WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
	-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis				
COMBINED LABS															
M=CV SM2130-B (03-01-011-004)															
Turbidity	5.21		0.5	2	NTU	6.17		0.5	2	NTU	12.9		0.5	2	NTU
M=CV SM2320-B (03-03-001-003)															
Total Alkalinity	26.3		1	10	mg CaCO3/L	6.4	<RDL	1	10	mg CaCO3/L	19.1		1	10	mg CaCO3/L
M=CV SM2540-D (03-01-009-002)															
Total Suspended Solids	29.6		0.6	1.3	mg/L	2.2		0.5	1	mg/L	69.3		1.2	2.3	mg/L
M=CV SM4500-N-C (03-03-013-003)C															
Total Nitrogen	1.33		0.05	0.1	mg/L	4.7		0.1	0.2	mg/L	0.951		0.05	0.1	mg/L
M=CV SM4500-NH3-G (03-03-012-004)															
Ammonia Nitrogen	0.017	<RDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L	0.01	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (03-03-012-004)															
Nitrite + Nitrate Nitrogen	0.806		0.02	0.04	mg/L	4.36		0.1	0.2	mg/L	0.542		0.02	0.04	mg/L
M=CV SM4500-P-B,F(03-03-013-003)C															
Total Phosphorus	0.0655		0.005	0.01	mg/L	0.0203		0.005	0.01	mg/L	0.102		0.005	0.01	mg/L
M=CV SM4500-P-F (03-03-012-004)															
Orthophosphate Phosphorus	0.0134		0.002	0.005	mg/L	0.0021	<RDL	0.002	0.005	mg/L	0.014		0.002	0.005	mg/L
M=ES Hydrolab (02-01-005-002)															
Conductivity, Field	81.8		0.5	10	umhos/cm	85		0.5	10	umhos/cm	59.5		0.5	10	umhos/cm
Dissolved Oxygen, Field	11.7		0.5	1	mg/L	10.9		0.5	1	mg/L	11.9		0.5	1	mg/L
pH, Field	7.13				pH	6.63				pH	7.2				pH
Sample Temperature, Field	3.96				deg C	5.02				deg C	3.8				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	1.11				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC METRO MC SOP 6.5.1															
Escherichia coli	500				CFU/100ml	260				CFU/100ml	380				CFU/100ml
M=MC SM-9222 D ed.17															
Fecal Coliform	420				CFU/100ml	230				CFU/100ml	480				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA12A Descrip: SHINGLEMILL CREEK Sampled: 02/05/08 8:50:00 AM Lab ID: L45056-1 Matrix: FRESH WTR					Locator: VA41A Descrip: FISHER CREEK UPSTR Sampled: 02/05/08 7:33:00 AM Lab ID: L45056-2 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			-Wet Weight Basis					-Wet Weight Basis		
COMBINED LABS										
M=CV SM2130-B (03-01-011-004)										
Turbidity	2.13		0.5	2	NTU	2.86		0.5	2	NTU
M=CV SM2320-B (03-03-001-003)										
Total Alkalinity	44.8		1	10	mg CaCO3/L	39.3		1	10	mg CaCO3/L
M=CV SM2540-D (03-01-009-002)										
Total Suspended Solids	4		1	2	mg/L	5.2		0.5	1	mg/L
M=CV SM4500-N-C (03-03-013-003)C										
Total Nitrogen	1.15		0.05	0.1	mg/L	1.51		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen	0.011	<RDL	0.01	0.02	mg/L	0.015	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.996		0.02	0.04	mg/L	1.23		0.02	0.04	mg/L
M=CV SM4500-P-B,F(03-03-013-003)C										
Total Phosphorus	0.0384		0.005	0.01	mg/L	0.0456		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0264		0.002	0.005	mg/L	0.0282		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	124		0.5	10	umhos/cm	120		0.5	10	umhos/cm
Dissolved Oxygen, Field	12.7		0.5	1	mg/L	11.2		0.5	1	mg/L
pH, Field	7.63				pH	7.5				pH
Sample Temperature, Field	5.14				deg C	5.2				deg C
M=ES NONE										
Field Personnel	DR				none	DR				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	below staff plate				ft					
Storm Or Non-Storm	N				none	N				none
M=MC METRO MC SOP 6.5.1										
Escherichia coli	12				CFU/100ml	19				CFU/100ml
M=MC SM-9222 D ed.17										
Fecal Coliform	11				CFU/100ml	11				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 02/05/08 7:55:00 AM Lab ID: L45056-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 02/05/08 8:13:00 AM Lab ID: L45056-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 02/05/08 8:34:00 AM Lab ID: L45056-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL -Wet Weight Basis	RDL	Units	Value	Qual	MDL -Wet Weight Basis	RDL	Units	Value	Qual	MDL -Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (03-01-011-004)															
Turbidity	2.99		0.5	2	NTU	5.05		0.5	2	NTU	2.67		0.5	2	NTU
M=CV SM2320-B (03-03-001-003)															
Total Alkalinity	39.3		1	10	mg CaCO3/L	9	<RDL	1	10	mg CaCO3/L	45.8		1	10	mg CaCO3/L
M=CV SM2540-D (03-01-009-002)															
Total Suspended Solids	4.4		0.5	1	mg/L	0.8	<RDL	0.5	1	mg/L	6.5		0.5	1	mg/L
M=CV SM4500-N-C (03-03-013-003)C															
Total Nitrogen	1.24		0.05	0.1	mg/L	4.54		0.1	0.2	mg/L	1.59		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen	0.011	<RDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.968		0.02	0.04	mg/L	4.26		0.1	0.2	mg/L	1.25		0.02	0.04	mg/L
M=CV SM4500-P-B,F(03-03-013-003)C															
Total Phosphorus	0.0339		0.005	0.01	mg/L	0.016		0.005	0.01	mg/L	0.0378		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0157		0.002	0.005	mg/L	0.0029	<RDL	0.002	0.005	mg/L	0.0195		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	111		0.5	10	umhos/cm	87		0.5	10	umhos/cm	132		0.5	10	umhos/cm
Dissolved Oxygen, Field	13.7		0.5	1	mg/L	12		0.5	1	mg/L	12		0.5	1	mg/L
pH, Field	7.69				pH	7.32				pH	7.43				pH
Sample Temperature, Field	4.8				deg C	4.81				deg C	4.66				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.83				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC METRO MC SOP 6.5.1															
Escherichia coli	57				CFU/100ml	74				CFU/100ml	11				CFU/100ml
M=MC SM-9222 D ed.17															
Fecal Coliform	49				CFU/100ml	58				CFU/100ml	4				CFU/100ml

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PROJECT: 421195DC	Locator:	VA12A				Locator:	VA41A			
	Descrip:	SHINGLEMILL CREEK				Descrip:	FISHER CREEK UPSTR			
	Sampled:	03/04/08 8:32:51 AM				Sampled:	03/04/08 7:18:35 AM			
	Lab ID:	L45211-1				Lab ID:	L45211-2			
	Matrix:	FRESH WTR				Matrix:	FRESH WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis		
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	0.65	<RDL	0.5	2	NTU	1.3	<RDL	0.5	2	NTU
M=CV SM2320-B (319V3)										
Total Alkalinity	58.3		1	10	mg CaCO3/L	45.6		1	10	mg CaCO3/L
M=CV SM2540-D (309V2)										
Total Suspended Solids	0.8	<RDL	0.5	1	mg/L	3.2		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	0.981		0.05	0.1	mg/L	1.3		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.857		0.02	0.04	mg/L	1.19		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.0345		0.005	0.01	mg/L	0.0461		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0331		0.002	0.005	mg/L	0.0376		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	154		0.5	10	umhos/cm	133		0.5	10	umhos/cm
Dissolved Oxygen, Field	12.8		0.5	1	mg/L	12.1		0.5	1	mg/L
pH, Field	7.61				pH	7.4				pH
Sample Temperature, Field	4.84				deg C	5.2				deg C
M=ES NONE										
Field Personnel	DR				none	DR				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	below staff plate	TA			ft					
Storm Or Non-Storm	N				none	N				none
M=MC METRO MC SOP 6.5.1										
Escherichia coli	11				CFU/100ml	17				CFU/100ml
M=MC SM-9222 D ed.17										
Fecal Coliform	17				CFU/100ml	23				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 03/04/08 7:33:15 AM Lab ID: L45211-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 03/04/08 7:55:16 AM Lab ID: L45211-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 03/04/08 8:16:27 AM Lab ID: L45211-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	1.4	<RDL	0.5	2	NTU	4.62		0.5	2	NTU	1.1	<RDL	0.5	2	NTU
M=CV SM2320-B (319V3)															
Total Alkalinity	48.3		1	10	mg CaCO3/L	15.7		1	10	mg CaCO3/L	60.9		1	10	mg CaCO3/L
M=CV SM2540-D (309V2)															
Total Suspended Solids	2.9		0.5	1	mg/L		<MDL	0.5	1	mg/L	2.5		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	1.06		0.05	0.1	mg/L	2.97		0.05	0.1	mg/L	1.79		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.905		0.02	0.04	mg/L	2.86		0.1	0.2	mg/L	1.67		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0293		0.005	0.01	mg/L	0.0141		0.005	0.01	mg/L	0.0376		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.019		0.002	0.005	mg/L	0.0045	<RDL	0.002	0.005	mg/L	0.0289		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	129		0.5	10	umhos/cm	93.9		0.5	10	umhos/cm	165		0.5	10	umhos/cm
Dissolved Oxygen, Field	12.7		0.5	1	mg/L	11.5		0.5	1	mg/L	11.2		0.5	1	mg/L
pH, Field	7.58				pH	7.01				pH	7.53				pH
Sample Temperature, Field	4.77				deg C	5.4				deg C	4.68				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.75				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC METRO MC SOP 6.5.1															
Escherichia coli	31				CFU/100ml	0				CFU/100ml	3				CFU/100ml
M=MC SM-9222 D ed.17															
Fecal Coliform	31				CFU/100ml	2				CFU/100ml	1				CFU/100ml

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PROJECT: 421195DC	Locator:	VA12A				Locator:	VA41A			
	Descrip:	SHINGLEMILL CREEK				Descrip:	FISHER CREEK UPSTR			
	Sampled:	04/08/08 9:45:00 AM				Sampled:	04/08/08 10:44:00 AM			
	Lab ID:	L45369-1				Lab ID:	L45369-2			
	Matrix:	FRESH WTR				Matrix:	FRESH WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis		
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	0.81	<RDL	0.5	2	NTU	0.99	<RDL	0.5	2	NTU
M=CV SM2320-B (319V3)										
Total Alkalinity	54		1	10	mg CaCO3/L	45.4		1	10	mg CaCO3/L
M=CV SM2540-D (309V2)										
Total Suspended Solids	1	RDL	0.5	1	mg/L	3.6		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	0.899		0.05	0.1	mg/L	1.21		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.735		0.02	0.04	mg/L	0.998		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.0317		0.005	0.01	mg/L	0.0454		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0274		0.002	0.004	mg/L	0.0349		0.002	0.004	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	146		0.5	10	umhos/cm	133		0.5	10	umhos/cm
Dissolved Oxygen, Field	12		0.5	1	mg/L	11.8		0.5	1	mg/L
pH, Field	7.59				pH	7.45				pH
Sample Temperature, Field	6.8				deg C	6.84				deg C
M=ES NONE										
Field Personnel	JO				none	JO				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none
Staff Height	2.88				ft					
Storm Or Non-Storm	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)										
Escherichia coli	4				CFU/100ml	45				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)										
Fecal Coliform	1				CFU/100ml	49				CFU/100ml

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PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 04/08/08 11:06:00 AM Lab ID: L45369-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 04/08/08 12:05:00 PM Lab ID: L45369-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 04/08/08 12:31:00 PM Lab ID: L45369-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	1.1	<RDL	0.5	2	NTU	3.9		0.5	2	NTU	1.3	<RDL	0.5	2	NTU
M=CV SM2320-B (319V3)															
Total Alkalinity	47.6		1	10	mg CaCO3/L	13.8		1	10	mg CaCO3/L	58.9		1	10	mg CaCO3/L
M=CV SM2540-D (309V2)															
Total Suspended Solids	2.02		0.6	1.1	mg/L	0.6	<RDL	0.5	1	mg/L	1.9		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	0.958		0.05	0.1	mg/L	3		0.05	0.1	mg/L	1.55		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.728		0.02	0.04	mg/L	2.83		0.2	0.4	mg/L	1.34		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0268		0.005	0.01	mg/L	0.0139		0.005	0.01	mg/L	0.033		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0165		0.002	0.004	mg/L	0.0034	<RDL	0.002	0.004	mg/L	0.0255		0.002	0.004	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	127		0.5	10	umhos/cm	88.9		0.5	10	umhos/cm	158		0.5	10	umhos/cm
Dissolved Oxygen, Field	12.2		0.5	1	mg/L	11.6		0.5	1	mg/L	11.4		0.5	1	mg/L
pH, Field	7.77				pH	7.03				pH	7.69				pH
Sample Temperature, Field	6.87				deg C	7.02				deg C	7.05				deg C
M=ES NONE															
Field Personnel	JO				none	JO				none	JO				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.78				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	750				CFU/100ml	6				CFU/100ml	28				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	560				CFU/100ml	4				CFU/100ml	14				CFU/100ml

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PROJECT: 421195DC											
	Locator:	VA12A				Locator:	VA41A				
	Descrip:	SHINGLEMILL CREEK				Descrip:	FISHER CREEK UPSTR				
	Sampled:	05/06/08 9:00:56 AM				Sampled:	05/06/08 7:36:51 AM				
	Lab ID:	L45567-1				Lab ID:	L45567-2				
	Matrix:	FRESH WTR				Matrix:	FRESH WTR				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	
			Wet Weight Basis					Wet Weight Basis			
COMBINED LABS											
M=CV SM2130-B (311V4)											
Turbidity	0.69	<RDL	0.5	2	NTU	1	<RDL	0.5	2	NTU	
M=CV SM2320-B (319V3)											
Total Alkalinity	66.6		1	10	mg CaCO3/L	50.8		1	10	mg CaCO3/L	
M=CV SM2540-D (309V2)											
Total Suspended Solids	3.2		0.5	1	mg/L	8.2		0.5	1	mg/L	
M=CV SM4500-N-C (331V3)C											
Total Nitrogen	0.922		0.05	0.1	mg/L	1.08		0.05	0.1	mg/L	
M=CV SM4500-NH3-G (330V4)											
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L	
M=CV SM4500-NO3-F (330V4)											
Nitrite + Nitrate Nitrogen	0.814		0.02	0.04	mg/L	0.922		0.02	0.04	mg/L	
M=CV SM4500-P-B,F(331V3)C											
Total Phosphorus	0.0415		0.005	0.01	mg/L	0.0552		0.005	0.01	mg/L	
M=CV SM4500-P-F (330V4)											
Orthophosphate Phosphorus	0.0321		0.002	0.005	mg/L	0.0399		0.002	0.005	mg/L	
M=ES HYDROLAB (SOP 205V4)											
Conductivity, Field	172		0.5	10	umhos/cm	141		0.5	10	umhos/cm	
Dissolved Oxygen, Field	11		0.5	1	mg/L	10.6		0.5	1	mg/L	
pH, Field	7.73				pH	7.25				pH	
Sample Temperature, Field	8.91				deg C	9.23				deg C	
M=ES NONE											
Field Personnel	DR				none	DR				none	
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none	
Staff Height	below staff plate	TA			ft						
Storm Or Non-Storm	N				none	N				none	
M=MC SM 9213D 20TH (SOP 522V0)											
Escherichia coli	1				CFU/100ml	25				CFU/100ml	
M=MC SM 9222D 20TH (SOP 506V1)											
Fecal Coliform	6				CFU/100ml	17				CFU/100ml	

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PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 05/06/08 8:05:59 AM Lab ID: L45567-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 05/06/08 8:24:14 AM Lab ID: L45567-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 05/06/08 8:45:42 AM Lab ID: L45567-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	0.97	<RDL	0.5	2	NTU	3.55		0.5	2	NTU	0.95	<RDL	0.5	2	NTU
M=CV SM2320-B (319V3)															
Total Alkalinity	56		1	10	mg CaCO3/L	26		1	10	mg CaCO3/L	71.4		1	10	mg CaCO3/L
M=CV SM2540-D (309V2)															
Total Suspended Solids	4.3		0.5	1	mg/L	1.1		0.5	1	mg/L	5.4		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	0.983		0.05	0.1	mg/L	1.26		0.05	0.1	mg/L	1.62		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.808		0.02	0.04	mg/L	1.07		0.02	0.04	mg/L	1.57		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0342		0.005	0.01	mg/L	0.0254		0.005	0.01	mg/L	0.0395		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0207		0.002	0.005	mg/L	0.00681		0.002	0.005	mg/L	0.0341		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	144		0.5	10	umhos/cm	106		0.5	10	umhos/cm	185		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.8		0.5	1	mg/L	10.3		0.5	1	mg/L	10.7		0.5	1	mg/L
pH, Field	7.66				pH	6.95				pH	7.67				pH
Sample Temperature, Field	9.4				deg C	9.3				deg C	9.06				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.72				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	59				CFU/100ml	11				CFU/100ml	3				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	56				CFU/100ml	5				CFU/100ml	2				CFU/100ml

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PROJECT: 421195DC	Locator:	VA12A				Locator:	VA41A			
	Descrip:	SHINGLEMILL CREEK				Descrip:	FISHER CREEK UPSTR			
	Sampled:	06/11/08 8:33:00 AM				Sampled:	06/11/08 7:13:00 AM			
	Lab ID:	L45701-1				Lab ID:	L45701-2			
	Matrix:	FRESH WTR				Matrix:	FRESH WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis		
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	0.9	<RDL	0.5	2	NTU	2	<RDL	0.5	2	NTU
M=CV SM2320-B (319V4)										
Total Alkalinity	71.9		1	5	mg CaCO3/L	54.8		1	5	mg CaCO3/L
M=CV SM2540-D (309V2)										
Total Suspended Solids	4.4		0.5	1	mg/L	6.32		0.5	1.1	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	0.977		0.05	0.1	mg/L	1.22		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen	0.019	<RDL	0.01	0.02	mg/L	0.016	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.792		0.02	0.04	mg/L	0.924		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.0553		0.005	0.01	mg/L	0.0648		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.045		0.002	0.005	mg/L	0.0466		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	181		0.5	10	umhos/cm	148		0.5	10	umhos/cm
Dissolved Oxygen, Field	12.1		0.5	1	mg/L	10.8		0.5	1	mg/L
pH, Field	7.61				pH	7.46				pH
Sample Temperature, Field	9.54				deg C	9.68				deg C
M=ES NONE										
Field Personnel	DR				none	DR				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	water below staff plate	TA			ft					
Storm Or Non-Storm	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)										
Escherichia coli	260				CFU/100ml	1000				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)										
Fecal Coliform	190				CFU/100ml	330				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 06/11/08 7:30:00 AM Lab ID: L45701-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 06/11/08 7:47:00 AM Lab ID: L45701-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 06/11/08 8:13:00 AM Lab ID: L45701-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	1	<RDL	0.5	2	NTU	1.3	<RDL	0.5	2	NTU	1.1	<RDL	0.5	2	NTU
M=CV SM2320-B (319V4)															
Total Alkalinity	61		1	5	mg CaCO3/L	37.4		1	5	mg CaCO3/L	75.4		1	5	mg CaCO3/L
M=CV SM2540-D (309V2)															
Total Suspended Solids	4.6		0.5	1	mg/L	0.6	<RDL	0.5	1	mg/L	3.3		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	1.06		0.05	0.1	mg/L	1.09		0.05	0.1	mg/L	1.72		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen	0.012	<RDL	0.01	0.02	mg/L	0.011	<RDL	0.01	0.02	mg/L	0.0214		0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.783		0.02	0.04	mg/L	0.815		0.02	0.04	mg/L	1.47		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0471		0.005	0.01	mg/L	0.0193		0.005	0.01	mg/L	0.057		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0326		0.002	0.005	mg/L	0.0101		0.002	0.005	mg/L	0.0492		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	152		0.5	10	umhos/cm	127		0.5	10	umhos/cm	189		0.5	10	umhos/cm
Dissolved Oxygen, Field	11.5		0.5	1	mg/L	10.2		0.5	1	mg/L	11.3		0.5	1	mg/L
pH, Field	7.65				pH	6.81				pH	7.6				pH
Sample Temperature, Field	9.79				deg C	9.79				deg C	9.61				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.7				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	260				CFU/100ml	13				CFU/100ml	120				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	140				CFU/100ml	5				CFU/100ml	46				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator:	VA12A				Locator:	VA41A			
	Descrip:	SHINGLEMILL CREEK				Descrip:	FISHER CREEK UPSTR			
	Sampled:	07/08/08 11:23:00 AM				Sampled:	07/08/08 9:00:00 AM			
	Lab ID:	L45854-1				Lab ID:	L45854-2			
	Matrix:	FRESH WTR				Matrix:	FRESH WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis		
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	0.67	<RDL	0.5	2	NTU	1.6	<RDL	0.5	2	NTU
M=CV SM2320-B (319V4)										
Total Alkalinity	75.4		1	5	mg CaCO3/L	57.3		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)										
Total Suspended Solids	2.9		0.5	1	mg/L	8.35		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	0.936		0.05	0.1	mg/L	1.11		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen	0.012	<RDL	0.01	0.02	mg/L	0.011	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.808		0.02	0.04	mg/L	0.795		0.06	0.12	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.0633		0.005	0.01	mg/L	0.0758		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0615		0.002	0.005	mg/L	0.0406		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	185		0.5	10	umhos/cm	146		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.3		0.5	1	mg/L	10		0.5	1	mg/L
pH, Field	7.8				pH	7.77				pH
Sample Temperature, Field	11.93				deg C	11.82				deg C
M=ES NONE										
Field Personnel	DR				none	DR				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	water below staff plate				ft					
Storm Or Non-Storm	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)										
Escherichia coli	98				CFU/100ml	750				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)										
Fecal Coliform	150				CFU/100ml	600				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 07/08/08 9:53:00 AM Lab ID: L45854-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 07/08/08 10:30:00 AM Lab ID: L45854-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 07/08/08 11:05:00 AM Lab ID: L45854-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	1.8	<RDL	0.5	2	NTU	1.9	<RDL	0.5	2	NTU	0.98	<RDL	0.5	2	NTU
M=CV SM2320-B (319V4)															
Total Alkalinity	64.7		1	5	mg CaCO3/L	52.5		1	5	mg CaCO3/L	79.3		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)															
Total Suspended Solids	5.5		0.5	1	mg/L	2.8		0.5	1	mg/L	3.4		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	1.18		0.05	0.1	mg/L	2.21		0.05	0.1	mg/L	1.87		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.975		0.02	0.04	mg/L	1.81		0.06	0.12	mg/L	1.58		0.06	0.12	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0534		0.005	0.01	mg/L	0.0295		0.005	0.01	mg/L	0.0613		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0545		0.002	0.005	mg/L	0.0111		0.002	0.005	mg/L	0.0481		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	159		0.5	10	umhos/cm	153		0.5	10	umhos/cm	195		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.5		0.5	1	mg/L	8.4		0.5	1	mg/L	9.9		0.5	1	mg/L
pH, Field	7.89				pH	7.08				pH	7.79				pH
Sample Temperature, Field	12.08				deg C	12.98				deg C	12.63				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.65				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	200				CFU/100ml	62				CFU/100ml	10				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	220				CFU/100ml	33				CFU/100ml	23				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA12A Descrip: SHINGLEMILL CREEK Sampled: 08/05/08 9:31:00 AM Lab ID: L46210-1 Matrix: FRESH WTR					Locator: VA41A Descrip: FISHER CREEK UPSTR Sampled: 08/05/08 7:03:00 AM Lab ID: L46210-2 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
	Wet Weight Basis					Wet Weight Basis				
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	1.9	<RDL	0.5	2	NTU	2.26		0.5	2	NTU
M=CV SM2320-B (319V4)										
Total Alkalinity	75.5		1	5	mg CaCO3/L	58.9		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)										
Total Suspended Solids	3.4		0.9	1.9	mg/L	4.6		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	0.879		0.05	0.1	mg/L	0.873		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen	0.015	<RDL	0.01	0.02	mg/L	0.011	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.777		0.02	0.04	mg/L	0.784		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.056		0.005	0.01	mg/L	0.063		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0496		0.002	0.005	mg/L	0.0549		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	190		0.5	10	umhos/cm	153		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.5		0.5	1	mg/L	10.2		0.5	1	mg/L
pH, Field	7.75				pH	7.67				pH
Sample Temperature, Field	11.47				deg C	12.24				deg C
M=ES NONE										
Field Personnel	DR				none	DR				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height										
Storm Or Non-Storm	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)										
Escherichia coli	32				CFU/100ml	130				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)										
Fecal Coliform	24				CFU/100ml	39				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 08/05/08 7:19:00 AM Lab ID: L46210-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 08/05/08 7:41:00 AM Lab ID: L46210-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 08/05/08 9:15:00 AM Lab ID: L46210-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	2.4		0.5	2	NTU	3.2		0.5	2	NTU	1.2	<RDL	0.5	2	NTU
M=CV SM2320-B (319V4)															
Total Alkalinity	66.5		1	5	mg CaCO3/L	50.7		1	5	mg CaCO3/L	81.3		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)															
Total Suspended Solids	4.3		0.5	1	mg/L	3.5		0.5	1	mg/L	5.15		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	1		0.05	0.1	mg/L	1.43		0.05	0.1	mg/L	1.7		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L	0.0207		0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.913		0.02	0.04	mg/L	1.35		0.02	0.04	mg/L	1.57		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0473		0.005	0.01	mg/L	0.0473		0.005	0.01	mg/L	0.0605		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0404		0.002	0.005	mg/L	0.0172		0.002	0.005	mg/L	0.0562		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	120		0.5	10	umhos/cm	155		0.5	10	umhos/cm	204		0.5	10	umhos/cm
Dissolved Oxygen, Field	10		0.5	1	mg/L	6.9		0.5	1	mg/L	8.8		0.5	1	mg/L
pH, Field	7.8				pH	6.77				pH	7.75				pH
Sample Temperature, Field	12.15				deg C	12.3				deg C	12.79				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.64				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	250				CFU/100ml	250				CFU/100ml	48				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	170				CFU/100ml	170				CFU/100ml	11				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195Dc	Locator:	VA12A				Locator:	VA41A			
	Descrip:	SHINGLEMILL CREEK				Descrip:	FISHER CREEK UPSTR			
	Sampled:	09/03/08 12:50:00 PM				Sampled:	09/03/08 8:39:00 AM			
	Lab ID:	L46405-1				Lab ID:	L46405-2			
	Matrix:	FRESH WTR				Matrix:	FRESH WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis		
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	0.621		0.2	0.5	NTU	0.606		0.2	0.5	NTU
M=CV SM2320-B (319V4)										
Total Alkalinity	75.4		1	5	mg CaCO3/L	59.3		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)										
Total Suspended Solids	3.5		0.5	1	mg/L	6.11		0.9	1.9	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	0.869		0.05	0.1	mg/L	0.951		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen	0.013	<RDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.834		0.02	0.04	mg/L	0.94		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.0585		0.005	0.01	mg/L	0.0674		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0456		0.002	0.005	mg/L	0.0505		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	184		0.5	10	umhos/cm	153		0.5	10	umhos/cm
Dissolved Oxygen, Field	9.6		0.5	1	mg/L	9.8		0.5	1	mg/L
pH, Field	7.55				pH	7.51				pH
Sample Temperature, Field	11.71				deg C	10.96				deg C
M=ES NONE										
Field Personnel	DR				none	DR				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height										
Storm Or Non-Storm	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)										
Escherichia coli	32				CFU/100ml	69				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)										
Fecal Coliform	22				CFU/100ml	48				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195Dc	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 09/03/08 9:19:00 AM Lab ID: L46405-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 09/03/08 9:40:00 AM Lab ID: L46405-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 09/03/08 10:08:00 AM Lab ID: L46405-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units	Value	Qual	MDL Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	1.04		0.2	0.5	NTU	2.83		0.2	0.5	NTU	1.7		0.2	0.5	NTU
M=CV SM2320-B (319V4)															
Total Alkalinity	66.2		1	5	mg CaCO3/L	60.1		1	5	mg CaCO3/L	81.2		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)															
Total Suspended Solids	4.6		0.5	1	mg/L	5.2		0.5	1	mg/L	2.1		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	1.03		0.05	0.1	mg/L	1.54		0.05	0.1	mg/L	1.63		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L	0.0326		0.01	0.02	mg/L	0.013	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.916		0.06	0.12	mg/L	1.42		0.02	0.04	mg/L	1.32		0.2	0.4	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0522		0.005	0.01	mg/L	0.0456		0.005	0.01	mg/L	0.0665		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0364		0.002	0.005	mg/L	0.0165		0.002	0.005	mg/L	0.0523		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	162		0.5	10	umhos/cm	165		0.5	10	umhos/cm	198		0.5	10	umhos/cm
Dissolved Oxygen, Field	9.6		0.5	1	mg/L	6.9		0.5	1	mg/L	9.6		0.5	1	mg/L
pH, Field	7.72				pH	6.92				pH	7.71				pH
Sample Temperature, Field	10.96				deg C	11.89				deg C	11.63				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.65				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	230				CFU/100ml	5				CFU/100ml	13				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	190				CFU/100ml	3				CFU/100ml	14				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA12A Descrip: SHINGLEMILL CREEK Sampled: 10/07/08 10:05:00 AM Lab ID: L46550-1 Matrix: FRESH WTR					Locator: VA41A Descrip: FISHER CREEK UPSTR Sampled: 10/07/08 10:44:00 AM Lab ID: L46550-2 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
	-Wet Weight Basis					-Wet Weight Basis				
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	0.925		0.2	0.5	NTU	1.35		0.2	0.5	NTU
M=CV SM2320-B (319V4)										
Total Alkalinity	76.3		1	5	mg CaCO3/L	55		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)										
Total Suspended Solids	3.8		0.5	1	mg/L	9.25		0.9	1.9	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	0.931		0.05	0.1	mg/L	1.25		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen	0.012	<RDL	0.01	0.02	mg/L	0.012	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.757		0.02	0.04	mg/L	0.879		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.0635		0.005	0.01	mg/L	0.0764		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0451		0.002	0.005	mg/L	0.0428		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	194		0.5	10	umhos/cm	162		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.9		0.5	1	mg/L	10.5		0.5	1	mg/L
pH, Field	7.69				pH	7.63				pH
Sample Temperature, Field	10.55				deg C	11.31				deg C
M=ES NONE										
Field Personnel	SH				none	SH				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none
Staff Height	3.1	E,TA			ft					
Storm Or Non-Storm	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)										
Escherichia coli	23				CFU/100ml	310				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)										
Fecal Coliform	12				CFU/100ml	350				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 10/07/08 11:16:00 AM Lab ID: L46550-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 10/07/08 11:42:00 AM Lab ID: L46550-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 10/07/08 12:06:00 PM Lab ID: L46550-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL -Wet Weight Basis	RDL	Units	Value	Qual	MDL -Wet Weight Basis	RDL	Units	Value	Qual	MDL -Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	2.21		0.2	0.5	NTU	1.76		0.2	0.5	NTU	1.38		0.2	0.5	NTU
M=CV SM2320-B (319V4)															
Total Alkalinity	57.4		1	5	mg CaCO3/L	28.9		1	5	mg CaCO3/L	71.6		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)															
Total Suspended Solids	7.2		0.5	1	mg/L	1.3		0.5	1	mg/L	34.3		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	1.18		0.05	0.1	mg/L	0.866		0.05	0.1	mg/L	1.58		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.644		0.02	0.04	mg/L	0.454		0.02	0.04	mg/L	1.23		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0621		0.005	0.01	mg/L	0.0308		0.005	0.01	mg/L	0.0813		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0298		0.002	0.005	mg/L	0.0116		0.002	0.005	mg/L	0.0512		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	159		0.5	10	umhos/cm	136		0.5	10	umhos/cm	187		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.4		0.5	1	mg/L	8.3		0.5	1	mg/L	9.7		0.5	1	mg/L
pH, Field	7.77				pH	7.08				pH	7.76				pH
Sample Temperature, Field	11.41				deg C	11.81				deg C	11.82				deg C
M=ES NONE															
Field Personnel	SH				none	SH				none	SH				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.72				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	270				CFU/100ml	20				CFU/100ml	63				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	120				CFU/100ml	26				CFU/100ml	30				CFU/100ml

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PROJECT: 421195DC	Locator: VA12A Descrip: SHINGLEMILL CREEK Sampled: 11/04/08 9:08:00 AM Lab ID: L46861-1 Matrix: FRESH WTR					Locator: VA41A Descrip: FISHER CREEK UPSTR Sampled: 11/04/08 7:36:00 AM Lab ID: L46861-2 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
	-Wet Weight Basis					-Wet Weight Basis				
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	5.93		0.2	0.5	NTU	52		0.2	0.5	NTU
M=CV SM2320-B (319V4)										
Total Alkalinity	64.4		1	5	mg CaCO3/L	38		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)										
Total Suspended Solids	21		0.5	1	mg/L	284		2.5	5	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	1.67		0.05	0.1	mg/L	3.35		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen	0.012	<RDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	1.15		0.06	0.12	mg/L	1.57		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.0835		0.005	0.01	mg/L	0.343		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0438		0.002	0.005	mg/L	0.0336		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	171		0.5	10	umhos/cm	136		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.5		0.5	1	mg/L	10.3		0.5	1	mg/L
pH, Field	7.57				pH	7.33				pH
Sample Temperature, Field	8.66				deg C	8.96				deg C
M=ES NONE										
Field Personnel	DR				none	DR				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	below staff plate				ft					
Storm Or Non-Storm	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)										
Escherichia coli	82				CFU/100ml	1500				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)										
Fecal Coliform	83				CFU/100ml	870				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 11/04/08 7:56:00 AM Lab ID: L46861-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 11/04/08 8:18:00 AM Lab ID: L46861-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 11/04/08 8:49:00 AM Lab ID: L46861-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL -Wet Weight Basis	RDL	Units	Value	Qual	MDL -Wet Weight Basis	RDL	Units	Value	Qual	MDL -Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	20.9		0.2	0.5	NTU	6.08		0.2	0.5	NTU	24.5		0.2	0.5	NTU
M=CV SM2320-B (319V4)															
Total Alkalinity	43.8		1	5	mg CaCO3/L	23.7		1	5	mg CaCO3/L	35.6		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)															
Total Suspended Solids	316		3.3	6.7	mg/L	3.8		0.5	1	mg/L	122		1.6	3.2	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	2.88		0.05	0.1	mg/L	1.04		0.05	0.1	mg/L	1.5		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.771		0.02	0.04	mg/L	0.438		0.02	0.04	mg/L	0.846		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.325		0.005	0.01	mg/L	0.0401		0.005	0.01	mg/L	0.189		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.021		0.002	0.005	mg/L	0.00873		0.002	0.005	mg/L	0.0321		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	133		0.5	10	umhos/cm	127		0.5	10	umhos/cm	68.4		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.5		0.5	1	mg/L	9.4		0.5	1	mg/L	10.7		0.5	1	mg/L
pH, Field	7.51				pH	7.06				pH	7.39				pH
Sample Temperature, Field	8.83				deg C	9.19				deg C	8.56				deg C
M=ES NONE															
Field Personnel	DR				none	DR				none	DR				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	1.02				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	1300				CFU/100ml	52				CFU/100ml	1600				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	2800				CFU/100ml	94				CFU/100ml	2700				CFU/100ml

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PROJECT: 421195DC	Locator:	VA12A				Locator:	VA41A			
	Descrip:	SHINGLEMILL CREEK				Descrip:	FISHER CREEK UPSTR			
	Sampled:	12/02/08 9:42:00 AM				Sampled:	12/02/08 11:38:00 AM			
	Lab ID:	L47017-1				Lab ID:	L47017-2			
	Matrix:	FRESH WTR				Matrix:	FRESH WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
	-Wet Weight Basis					-Wet Weight Basis				
COMBINED LABS										
M=CV SM2130-B (311V4)										
Turbidity	0.772		0.2	0.5	NTU	0.867		0.2	0.5	NTU
M=CV SM2320-B (319V4)										
Total Alkalinity	72.1		1	5	mg CaCO3/L	55.9		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)										
Total Suspended Solids	2.8		0.5	1	mg/L	2.8		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C										
Total Nitrogen	0.97		0.05	0.1	mg/L	1.04		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)										
Ammonia Nitrogen	0.0268		0.01	0.02	mg/L	0.01	<RDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	0.782		0.02	0.04	mg/L	0.767		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C										
Total Phosphorus	0.0521		0.005	0.01	mg/L	0.0514		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)										
Orthophosphate Phosphorus	0.0388		0.002	0.005	mg/L	0.0379		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)										
Conductivity, Field	182		0.5	10	umhos/cm	153		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.9		0.5	1	mg/L	10.5		0.5	1	mg/L
pH, Field	7.62				pH	7.49				pH
Sample Temperature, Field	9.19				deg C	9.74				deg C
M=ES NONE										
Field Personnel	SH				none	SH				none
Sampling Method	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	below staff plate	TA			ft					
Storm Or Non-Storm	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)										
Escherichia coli	7				CFU/100ml	19				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)										
Fecal Coliform	7				CFU/100ml	14				CFU/100ml

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator: VA42A Descrip: JUDD CREEK AT SW 2 Sampled: 12/02/08 10:40:00 AM Lab ID: L47017-3 Matrix: FRESH WTR					Locator: VA45A Descrip: MILETA CREEK DOWNS Sampled: 12/02/08 12:16:00 PM Lab ID: L47017-4 Matrix: FRESH WTR					Locator: VA65A Descrip: GORSUCH CREEK NEAR Sampled: 12/02/08 10:21:00 AM Lab ID: L47017-5 Matrix: FRESH WTR				
Parameters	Value	Qual	MDL -Wet Weight Basis	RDL	Units	Value	Qual	MDL -Wet Weight Basis	RDL	Units	Value	Qual	MDL -Wet Weight Basis	RDL	Units
COMBINED LABS															
M=CV SM2130-B (311V4)															
Turbidity	1.29		0.2	0.5	NTU	2.46		0.2	0.5	NTU	1.21		0.2	0.5	NTU
M=CV SM2320-B (319V4)															
Total Alkalinity	59		1	5	mg CaCO3/L	28.2		1	5	mg CaCO3/L	77.7		1	5	mg CaCO3/L
M=CV SM2540-D (309V3)															
Total Suspended Solids	1.7		0.5	1	mg/L	3.4		0.5	1	mg/L	1.3		0.5	1	mg/L
M=CV SM4500-N-C (331V3)C															
Total Nitrogen	1.01		0.05	0.1	mg/L	1.52		0.05	0.1	mg/L	1.27		0.05	0.1	mg/L
M=CV SM4500-NH3-G (330V4)															
Ammonia Nitrogen	0.012	<RDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L		<MDL	0.01	0.02	mg/L
M=CV SM4500-NO3-F (330V4)															
Nitrite + Nitrate Nitrogen	0.637		0.02	0.04	mg/L	1.11		0.02	0.04	mg/L	1.03		0.02	0.04	mg/L
M=CV SM4500-P-B,F(331V3)C															
Total Phosphorus	0.0424		0.005	0.01	mg/L	0.0192		0.005	0.01	mg/L	0.0512		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)															
Orthophosphate Phosphorus	0.0233		0.002	0.005	mg/L	0.0053		0.002	0.005	mg/L	0.0375		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)															
Conductivity, Field	152		0.5	10	umhos/cm	115		0.5	10	umhos/cm	195		0.5	10	umhos/cm
Dissolved Oxygen, Field	10.2		0.5	1	mg/L	8.2		0.5	1	mg/L	10.2		0.5	1	mg/L
pH, Field	7.67				pH	6.84				pH	7.63				pH
Sample Temperature, Field	9.49				deg C	9.81				deg C	9.28				deg C
M=ES NONE															
Field Personnel	SH				none	SH				none	SH				none
Sampling Method	11011, 60201, 18100, 80011				none	11011, 60201, 18100				none	11011, 60201, 18100				none
Staff Height	0.76				ft										
Storm Or Non-Storm	N				none	N				none	N				none
M=MC SM 9213D 20TH (SOP 522V0)															
Escherichia coli	29				CFU/100ml	3				CFU/100ml	4				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)															
Fecal Coliform	23				CFU/100ml	5				CFU/100ml	2				CFU/100ml

Appendix B-2

Long-Term Monitoring Sites Water Quality Data

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator:	VAS_W-11				Locator:	VAS_W-14				Locator:	VAS_W-17				Locator:	VAS_W-02A				Locator:	VAS_W-03			
	Descrip:	W-11-DOCKTON				Descrip:	W-14-KRISHNAN				Descrip:	W-17-PERLA				Descrip:	W-02A-HEIGHTS W #1				Descrip:	W-03-GLEN ACRES			
	Client Loc:																							
	Sampled:	07/30/08 10:45:00 AM				Sampled:	07/29/08 9:15:00 AM				Sampled:	07/29/08 10:45:00 AM				Sampled:	07/30/08 9:05:00 AM				Sampled:	07/28/08 8:15:00 AM			
	Lab ID:	L46047-1				Lab ID:	L46047-2				Lab ID:	L46047-4				Lab ID:	L46047-5				Lab ID:	L46047-6			
	Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis					Wet Weight Basis					Wet Weight Basis					Wet Weight Basis		
COMBINED LABS																									
M=CV SM4110B (320V4)																									
Chloride	4.97		0.05	0.1	mg/L	4.4		0.05	0.1	mg/L	4.01		0.05	0.1	mg/L	3.68		0.05	0.1	mg/L	7.9		0.05	0.1	mg/L
M=CV SM4500-NO3-F (330V4)																									
Nitrite + Nitrate Nitrogen		<MDL	0.02	0.04	mg/L	0.037	<RDL	0.02	0.04	mg/L	1.96		0.06	0.12	mg/L	1.96		0.06	0.12	mg/L	0.49		0.02	0.04	mg/L
M=MT ICPMS EPA 200.8 (623V1)																									
Arsenic, Total, ICP-MS	1.16		0.1	0.5	ug/L	1.37		0.1	0.5	ug/L	0.48	<RDL	0.1	0.5	ug/L	9.23		0.1	0.5	ug/L	1.16		0.1	0.5	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator:	VAS_W-04				Locator:	VAS_W-21				Locator:	VAS_S-03				Locator:	VAS_W-07				Locator:	VAS_W-10A			
	Descrip:	W-04-RODRIQUES				Descrip:	W-21-KUPERBERG				Descrip:	S-03-ATLAS WATER				Descrip:	W-07-TOOMEY/SORGE				Descrip:	W-10A-GOLD BEACH W			
	Sampled:	07/28/08 11:50:00 AM				Sampled:	07/29/08 11:45:00 AM				Sampled:	07/28/08 8:50:00 AM				Sampled:	07/28/08 9:40:00 AM				Sampled:	07/30/08 11:30:00 AM			
	Lab ID:	L46047-7				Lab ID:	L46047-8				Lab ID:	L46047-9				Lab ID:	L46047-10				Lab ID:	L46047-12			
	Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis					Wet Weight Basis					Wet Weight Basis					Wet Weight Basis		
COMBINED LABS																									
M=CV SM4110B (320V4)																									
Chloride	3.95		0.05	0.1	mg/L	4.08		0.05	0.1	mg/L	5.39		0.05	0.1	mg/L	2.8		0.05	0.1	mg/L	11.5		0.1	0.2	mg/L
M=CV SM4500-NO3-F (330V4)																									
Nitrite + Nitrate Nitrogen		<MDL	0.02	0.04	mg/L		<MDL	0.02	0.04	mg/L	1.71		0.06	0.12	mg/L		<MDL	0.02	0.04	mg/L	4.55		0.2	0.4	mg/L
M=MT ICPMS EPA 200.8 (623V1)																									
Arsenic, Total, ICP-MS	19.7		0.1	0.5	ug/L	3.98		0.1	0.5	ug/L	1.78		0.1	0.5	ug/L	13.2		0.1	0.5	ug/L	2.08		0.1	0.5	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195DC	Locator:	VAS_W-09A				Locator:	VAS_W-12				Locator:	VAS_W-16A				Locator:	VAS_W-13				Locator:	VAS_W-06			
	Descrip:	WHITE #1				Descrip:	W-12-HOLLYMERE				Descrip:	W-16A-BAKER/KLEMKA				Descrip:	W-13-MISTY ISLE FA				Descrip:	W-06-PACKARD/HEADL			
	Sampled:	07/30/08 12:05:00 PM				Sampled:	07/30/08 12:40:00 PM				Sampled:	07/28/08 10:25:00 AM				Sampled:	07/28/08 11:00:00 AM				Sampled:	07/30/08 10:00:00 AM			
	Lab ID:	L46047-13				Lab ID:	L46047-14				Lab ID:	L46047-15				Lab ID:	L46047-16				Lab ID:	L46047-18			
	Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR				Matrix:	GRND WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis					Wet Weight Basis					Wet Weight Basis					Wet Weight Basis		
COMBINED LABS																									
M=CV SM4110B (320V4)																									
Chloride	4.89		0.05	0.1	mg/L	4.28		0.05	0.1	mg/L	3.42		0.05	0.1	mg/L	8.45		0.05	0.1	mg/L	3.39		0.05	0.1	mg/L
M=CV SM4500-NO3-F (330V4)																									
Nitrite + Nitrate Nitrogen		<MDL	0.02	0.04	mg/L		<MDL	0.02	0.04	mg/L	3.73		0.1	0.2	mg/L	1.97		0.06	0.12	mg/L	1.26		0.02	0.04	mg/L
M=MT ICPMS EPA 200.8 (623V1)																									
Arsenic, Total, ICP-MS	4.5		0.1	0.5	ug/L	5.69		0.1	0.5	ug/L	0.627		0.1	0.5	ug/L	1.28		0.1	0.5	ug/L	1.15		0.1	0.5	ug/L

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PROJECT: 421195DC	Locator:	GROUNDDUP				Locator:	VAS_W-68			
	Descrip:	Frep@L46047-9				Descrip:	VASHON ISLAND WELL			
	Sampled:	07/28/08 8:55:00 AM				Sampled:	07/28/08 11:15:00 AM			
	Lab ID:	L46047-19				Lab ID:	L46047-20			
	Matrix:	GRND WTR				Matrix:	GRND WTR			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			Wet Weight Basis					Wet Weight Basis		
COMBINED LABS										
M=CV SM4110B (320V4)										
Chloride	5.41		0.05	0.1	mg/L	5.6		0.05	0.1	mg/L
M=CV SM4500-NO3-F (330V4)										
Nitrite + Nitrate Nitrogen	1.74		0.06	0.12	mg/L	1.06		0.02	0.04	mg/L
M=MT ICPMS EPA 200.8 (623V1)										
Arsenic, Total, ICP-MS	1.67		0.1	0.5	ug/L	1.54		0.1	0.5	ug/L

PROJECT: 421195DC

Locator: VAS_W-68
Descrip: VASHON ISLAND WELL

Sampled: 07/28/08 11:15:00 AM
Lab ID: L46047-20
Matrix: GRND WTR

Parameters	Value	Qual	MDL	RDL	Units
			Wet Weight Basis		
COMBINED LABS					
M=CV SM4110B (320V4)					
Chloride	5.6		0.05	0.1	mg/L
M=CV SM4500-NO3-F (330V4)					
Nitrite + Nitrate Nitrogen	1.06		0.02	0.04	mg/L
M=ES NONE					
Sample Function					
M=MC SM 9213D 20TH (SOP 522V0)					
Escherichia coli	0				CFU/100ml
M=MC SM 9222B 20TH (SOP 501V0)					
Total Coliform	0				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)					
Fecal Coliform	0				CFU/100ml
M=MT ICPMS EPA 200.8 (623V1)					
Arsenic, Total, ICP-MS	1.54		0.1	0.5	ug/L