NOVA SCOTIA GROUNDWATER OBSERVATION WELL NETWORK

2011 REPORT

Prepared: December 2011

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EXECUTIVE SUMMARY

The Nova Scotia Groundwater Observation Well Network was established in 1965 to monitor groundwater levels across the province. The network currently monitors both groundwater levels and groundwater quality and the results are used to: manage groundwater resources; assess drought conditions; evaluate the impact of human activities on groundwater; and, evaluate long-term groundwater trends. At the beginning of 2010 the network included 35 observation wells. Two additional wells were added during 2010, bringing the total number of active wells to 37 by the end of 2010. This report presents the monitoring results collected up to the end of 2010.

The observation wells are monitored with telemetric dataloggers that record water levels and groundwater temperature every hour and transmit the data to a central computer. The number of years of groundwater level data available at each observation well ranges from one to 44 years. Groundwater samples are collected from the wells periodically and tested for a number of parameters, including: general chemistry, metals, pesticides, volatile organic compounds (VOCs), tritium and perchlorate.

The groundwater level monitoring results indicate that seven of the 37 observation wells exhibit statistically significant groundwater level trends, based on trend analysis completed in 2009, with three having small upward trends and four having small downward trends. The downward trends tend to be larger than the upward trends, however, the size of the trends in all cases is relatively small. The maximum observed water level decline was approximately 1.2 m. Three of the four observation wells with downward trends are located in municipal wellfields and, therefore, groundwater level drops in these wells are expected to have been caused by wellfield pumping.

The groundwater quality monitoring results indicate that seven of the 37 wells exceeded health-based drinking water guidelines. The parameters that exceeded health-based guidelines included: arsenic (at four wells), fluoride (one well), lead (one well), nitrate (one well) and uranium (one well). Elevated levels of arsenic, fluoride and uranium are known to occur in groundwater in certain areas of the province due to their naturally-occurring presence in soil and bedrock. The elevated nitrate levels were observed in a well located in an agricultural area and are likely caused by human activity.

Nineteen of the 37 wells exceeded aesthetic drinking water guidelines, including the following parameters: manganese (at 13 wells), iron (seven wells), chloride (one well), pH (five wells), turbidity (seven wells), colour (one well) and sodium (one well). The majority of these parameters are representative of naturally occurring water quality problems that are routinely encountered in water wells in Nova Scotia and elsewhere. Chloride was detected above background levels at five wells. The data suggests that two of these wells have been impacted by road salt, two have been impacted by sea water intrusion, and one has been impacted by naturally-occurring geologic formation salt.

The water quality results show that none of the observation wells exceeded drinking water guidelines for VOCs or pesticides. However, the VOC toluene was detected at low levels (i.e., 2 ug/L) in two of the observation wells. These wells are located beside roads and so the presence of toluene may be due to gasoline runoff from roads. No pesticides were detected in any of the observation wells.

Of the 17 observation wells tested for tritium, 13 wells contained either recent water (recharged after 1952) or a mix of recent and old water (recharged before and after 1952). Only four of the seventeen wells tested for tritium contained purely old water (recharged before1952). These results suggest that most of the wells draw water from aquifers that are recharged relatively quickly. This is encouraging from a water quantity point of view because the aquifers are being regularly replenished with new water, however it also indicates that the aquifers are vulnerable to contaminants released at the surface that can be carried into the aquifer relatively quickly. This emphasizes the importance of source water protection in the province to ensure that groundwater is kept clean.

ACKNOWLEDGMENTS

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1.0 INTRODUCTION

The Nova Scotia Groundwater Observation Well Network was established in 1965 to monitor groundwater levels across the province. The size of the Network has varied over the years, however, at the beginning of 2010 the network included 35 observation wells. Two wells were added to the Network during 2010, bringing the total number of active wells to 37 by the end of 2010. The Network is operated by Nova Scotia Environment (NSE) and is used for monitoring both groundwater levels and groundwater quality. The monitoring results are used to help manage groundwater resources, assess drought conditions, evaluate the impact of human activities on groundwater and evaluate long-term groundwater trends. This report presents the monitoring results to the end of 2010.

1.1 Historical Background

When the observation well network was initially established in 1965, it consisted of wells that were installed as part of the International Hydrologic Decade (1965-1974) and as part of regional groundwater resource evaluation studies undertaken in Nova Scotia during the 1960's and 1970's. Most of these wells were constructed specifically for observation purposes or drilled as test holes and then converted to observation wells. During the 1970's and 80's the network continued to expand until it included as many as 40 active wells, but many of these were abandoned in the 1990's. By 2003, the network consisted of 11 active wells.

After 2003, the network began expanding again. Three wells were added between 2003 and 2005, bringing the total number of wells to 14. Ten observation wells were added to the network in 2006, bringing the total number of wells to 24. All of the wells added to the network up to the end of 2006 were existing wells that were once part of the historic network, but were no longer being actively monitored. In 2007, two new observation wells were drilled and one existing inactive observation well was added back into the network. For the two wells drilled in 2007, water level monitoring began in May of 2008. Therefore, the total number of observation wells being monitored by the end of 2007 was 25. In 2008, three new observation wells were drilled and a former provincial park water supply well was converted to an observation well, bringing the total number of wells to 31 by the end of 2008. In 2009, four former provincial park water supply wells were converted to observation wells and one well was dropped from the network due to damage during site

redevelopment and from vandalism, bringing the total number of active wells to 35 by the end of 2009. In 2010, one well, drilled as a part of a sea water intrusion project by St. Francis Xavier University, was added as an observation well and one former municipal test well, completed by the Village of St. Peters, was converted to an observation well, bringing the total number of wells to 37 by the end of 2010.

Up until the 1990's, groundwater levels in each well were monitored using mechanical Stevens F Type chart recorders, which recorded water level changes on a paper chart that was retrieved from the field on a monthly or quarterly basis. In the late 1990's the chart recorders began to be replaced with electronic dataloggers and in 2003 an initiative began to equip the entire network with telemetric dataloggers, which are capable of transmitting the monitoring results by cell phone to a central computer.

Five reports have been previously published on the network:

- "Groundwater Hydrographs in Nova Scotia 1965-1981" (McIntosh, 1984);
- "Nova Scotia Groundwater Observation Well Network - 2007 Report" (NS Environment and Labour, 2007);
- "Nova Scotia Groundwater Observation Well Network - 2008 Report" (NS Environment, 2008); and
- "Nova Scotia Groundwater Observation Well Network - 2009 Report" (NS Environment, 2009).
- "Nova Scotia Groundwater Observation Well Network - 2010 Report" (NS Environment, 2010).

In 2006, a web page was launched to provide public access to the network's results. The website can be found at: http://www.gov.ns.ca/nse/groundwater/groundwaternetwork.asp. The webpage is updated with new groundwater level data on a quarterly basis. The majority of the historical hard copy water level data has been digitized and is available in spreadsheet format on the above referenced webpage.

1.2 Activities Completed in 2010

Two wells were added to the network in 2010, including: Pugwash (084) and St. Peters (085). Pugwash (084) was drilled by St. Francis Xavier University as part of a sea water intrusion project (Atlantic Climate Adaptation Solutions Project) and then converted to a Provincial Observation well. St. Peters (085) was originally completed by the Village of St. Peters as a municipal test well in 2006, and was converted to a Provincial observation well in 2010.

Water quality sampling was carried out at four observation wells in 2010, including Wilmot (005), Annapolis Royal (062), Atlanta (074) and Sheffield Mills (075). The sample results are provided in Appendix C.

1.3 Description of the Current Network

As of December 31st, 2010 the observation well network consisted of 37 wells. The wells are listed in Table 1.1 and the well locations are shown in Figure 1.1. As shown in Table 1.1, the number of years since monitoring began at each well is variable, but ranges from 1 year to 44 years and can be summarized as follows: wells with more than 40 years of data (5 wells); 30 years (5 wells); 20 years (7 wells); 10 years (7 wells); and less than 10 years (13 wells). Note that these figures do not necessarily reflect the number of years of monitoring data available for each well because there are data gaps in the records.

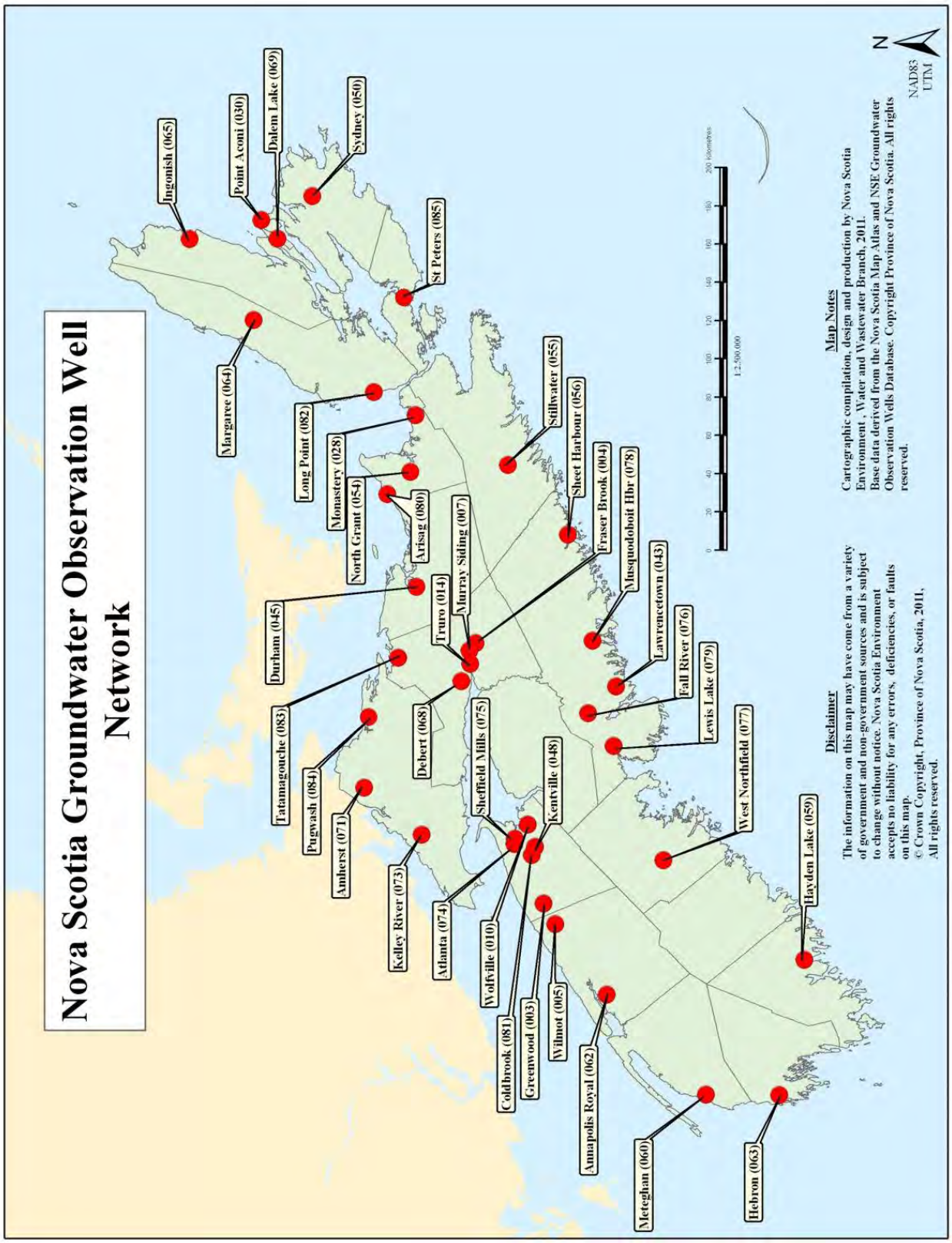
Currently, all of the observation wells in the network have dataloggers that record water levels and temperature every hour. The majority of wells also have telemetric systems that transmit the data by cell phone to a central computer. Groundwater samples are collected from the wells periodically and tested for a number of parameters, including general chemistry, metals, pesticides, volatile organic compounds, tritium and perchlorate. The wells are sampled at approximately two to five year intervals to monitor for changes in water quality. Most of the wells in the network have been sampled at least once; however, some wells have not been sampled due to technical limitations (such as old floats associated with former Stevens chart recorders that have become lodged in the well casing).

Note that the observation wells listed in Table 1.1 are named based on the nearest town or water body and the observation well number that is assigned to the well when it is added to the network. For example, “Truro (014)” is located in Truro and its network well ID number is 014. The three digit observation well ID numbers have been in use since the network was developed in 1965. They are unique and are not reused, even when a well is abandoned. Some of the observation wells in this report have been renamed since the initial 1984 network report in order to adhere to a consistent naming protocol. For example, “Truro (014)” was originally named “Truro 421" in the 1984 network report. The “421" was originally included in the well name because it was called “Department of Mines Test Hole 421" at the time of drilling. Because some of the original well names have changed, readers who wish to compare historical results from the 1984 network report with this report should cross-reference wells using the three digit observation well ID number.

Table 1.1: Wells in the NS Groundwater Observation Well Network (as of Dec.31, 2010)

No.	Well Name	Well ID#	County	Year Monitoring Started	Years Since Monitoring Began
1	Greenwood (003)	003	Kings	1966	44
2	Fraser Brook (004)	004	Colchester	1966	44
3	Wilmot (005)	005	Annapolis	1966	44
4	Murray Siding (007)	007	Colchester	1967	43
5	Wolfville (010)	010	Kings	1969	41
6	Truro (014)	014	Colchester	1971	39
7	Monastery (028)	028	Antigonish	1976	34
8	Point Aconi (030)	030	Cape Breton	1976	34
9	Lawrencetown (043)	043	Halifax	1978	32
10	Durham (045)	045	Pictou	1979	31
11	Kentville (048)	048	Kings	1980	30
12	Sydney (050)	050	Cape Breton	1984	26
13	North Grant (054)	054	Antigonish	1987	23
14	Stillwater (055)	055	Guysborough	1987	23
15	Sheet Harbour (056)	056	Halifax	1987	23
16	Hayden Lake (059)	059	Shelburne	1988	22
17	Meteghan (060)	060	Digby	1987	23
18	Annapolis Royal (062)	062	Digby	1990	20
19	Hebron (063)	063	Yarmouth	1990	20
20	Margaree (064)	064	Inverness	1990	20
21	Ingonish (065)	065	Victoria	1990	14
22	Debert (068)	068	Colchester	1993	17
23	Dalem Lake (069)	069	Victoria	1992	18
24	Amherst (071)	071	Cumberland	1993	17
25	Kelley River (073)	073	Cumberland	2006	4

No.	Well Name	Well ID#	County	Year Monitoring Started	Years Since Monitoring Began
26	Atlanta (074)	074	Kings	2008	2
27	Sheffield Mills (075)	075	Kings	2008	2
28	Fall River (076)	076	Halifax	2008	2
29	West Northfield (077)	077	Lunenburg	2008	2
30	Musquodoboit Harbour (078)	078	Halifax	2008	2
31	Lewis Lake (079)	079	Halifax	2008	2
32	Arisaig (080)	080	Antigonish	2009	2
33	Coldbrook (081)	081	Kings	2009	2
34	Long Point (082)	082	Inverness	2009	2
35	Tatamagouche (083)	083	Colchester	2009	2
36	Pugwash (084)	084	Cumberland	2010	<1
37	St. Peters (085)	085	Richmond	2010	<1


Nova Scotia Groundwater Observation Well Network
Ingonish (065)
Point Aconi (030)
Dalem Lake (069)
Sydney (050)
St Peters (085)
Margaree (064)
Long Point (082)
Monastery (028)
North Grant (054)
Arisaig (080)
Durham (045)
Truro (014)
Murray Siding (007)
Stillwater (055)
Sheet Harbour (056)
Fraser Brook (004)
Musquodoboit Hbr (078)
Lawrencetown (043)
Fall River (076)
Lewis Lake (079)
West Northfield (077)
Hayden Lake (059)
Tatamagouche (083)
Pugwash (084)
Amherst (071)
Kelley River (073)
Debert (068)
Sheffield Mills (075)
Atlanta (074)
Wolfville (010)
Coldbrook (081)
Greenwood (003)
Kentville (048)
Wilmot (005)
Annapolis Royal (062)
Meteghan (060)
Hebron (063)
Map Notes
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2.0 METHODS

2.1 Groundwater Level Monitoring

2.1.1 Field Methods

Each observation well in the network is equipped with a pressure transducer, temperature sensor and electronic datalogger that records water levels and water temperature every hour. There is also a second pressure transducer located above the water in each well that monitors atmospheric pressure so the water level measurements can be adjusted for atmospheric pressure changes. The majority of wells are also equipped with telemetric systems that transmit the monitoring data by cell phone to a central computer system once a week.

The wells are visited approximately every six months for field verification of the water level data and to change the telemetric system batteries. Water levels are verified in the field with a manual electronic water level tape.

After the raw water level data is collected, it goes through several adjustments before being added to the spreadsheet database. Data corrections are applied if the field measurement differs from the pressure transducer readings by more than 2.1 cm, which is the reported accuracy of the pressure transducers. If corrections are necessary, they are made by applying a linear adjustment between two field verified water levels. Next, the hourly water level data is averaged to obtain a single average daily water level for each day. Finally, the water level data are converted to a water level elevation (relative to mean sea level) using the elevation of the top of the well casing.

2.1.2 Data Assessment Methods

The water levels at each well were assessed for changes and long-term trends for the entire period on record, up to the end of 2010. The water level assessments were carried out by visual inspection of the water level graphs and through statistical analysis. The Mann-Kendall trend test (Gilbert, 1987) was used to determine if there was a trend in the water level data (i.e. upward trend, downward trend or no trend) for the period ending in 2009. This test is one of the most commonly used statistical methods to evaluate trends in environmental data and has been used in other studies in Nova Scotia to assess groundwater level trends (Rivard et al., in progress). The rate of annual change at each well

was determined using the Sen's slope estimator (Gilbert, 1987), a commonly-used linear slope estimator in environmental statistics.

The results of the statistical trend analyses are presented in Appendix E. Trend analyses were only completed for wells with four or more "usable" years of data. A year was considered usable if groundwater level data were available for at least 75% of the days in the year. A trend for a well was considered "statistically significant" if there were 10 or more "usable" years. Trends were considered "statistically significant" if there was at least an 80% confidence that the trend was real. Note that "statistically significant" means there is statistical evidence that a trend is present, but it does not necessarily mean the trend is large.

If groundwater level changes or trends were identified, possible reasons for the change or trend were evaluated. Several factors can cause groundwater levels to fluctuate. The most common causes of groundwater level changes in Nova Scotia include: precipitation, seasonal variations, groundwater pumping and tidal effects. Each of these factors is discussed in further detail in the following paragraphs.

Fluctuations Due to Precipitation

Precipitation, such as rainfall or melting snow, will either run off into streams and other surface water bodies, be intercepted by vegetation, or seep into the ground. The portion that seeps into the ground is known as groundwater recharge. Groundwater recharge is difficult to measure, however, it has been estimated that recharge rates in Nova Scotia typically range from about 8 to 25% of precipitation. Groundwater recharge causes the groundwater levels in an aquifer to rise, although there is usually a delay between the precipitation event and when the groundwater level rises. The amount of precipitation and groundwater recharge varies throughout the province. Nova Scotia weather stations show the following mean annual total precipitations at selected locations between 1971 and 2000: Greenwood 1127 mm, Halifax 1452 mm, Sydney 1505 mm, and Yarmouth 1274 mm (Environment Canada, 2007).

Long-term trends in precipitation due to climate change can result in corresponding trends in groundwater levels. In cases where observation wells showed a significant groundwater level trend, the nearest climate station data was also evaluated for precipitation trends to assess whether or not climate change could be affecting groundwater levels.

Seasonal Fluctuations

In Nova Scotia, the spring and fall tend to have the highest amounts of precipitation and the summers tend to be drier. This seasonal variation is reflected in groundwater levels in the province's aquifers, which usually have higher water levels in the spring and lower levels in the summer. The lower groundwater levels in the late months of summer are the result of several factors, including: decreased precipitation, increased evaporation and the increased interception of water by vegetation. The typical seasonal variation in groundwater levels in Nova Scotia aquifers is usually less than about three metres.

Season fluctuations in groundwater levels in Nova Scotia can often be observed in the three typical patterns they produce in observation well hydrographs. These usually include two wet seasons (spring and fall) with rising groundwater levels, and a dry season in the summer with declining groundwater levels, as described below:

1. Spring Recharge - rising groundwater levels between March and May due to spring rainfall and melting snowpack . Maximum groundwater levels usually occur during this period.

2. Fall Recharge - rising groundwater levels between October and December due to fall precipitation.

3. Summer Recession - declining groundwater levels beginning in June and reaching minimum levels in September. Winter conditions of snowfall and frost can also limit recharge, resulting in a minor groundwater level recession in February.

Groundwater Pumping

The removal of water from an aquifer, by a well or wellfield, results in the lowering of the water level in the well and the surrounding aquifer. The lowering of groundwater levels as a result of pumping is referred to as drawdown. The amount of drawdown depends on how much is being pumped, the distance from the pumping well, and the characteristics of the aquifer (e.g., transmissivity, storativity, aquifer boundaries). In Nova Scotia, large wellfields in bedrock aquifers have been observed to cause groundwater drawdown in wells as far away as two to three kilometres.

Tidal Fluctuations

Aquifers and wells near the ocean can experience tidal fluctuations. Even though the water in a well may be fresh, the water level may rise and fall with the tide. The amount of water level fluctuation (i.e., amplitude) depends on the distance between the well and the ocean and aquifer properties. There is also a delay (i.e., time lag) between the rise or drop in the tide and the corresponding rise or drop in the well.

2.2 Groundwater Quality Monitoring

2.2.1 Field Methods

The observation wells have been tested for various parameters including: general chemistry, metals, volatile organic compounds (VOC), pesticides, tritium and perchlorate. The general chemistry, metals, VOC and pesticides analyses were carried out at Maxxam Analytics in Bedford, NS; the tritium analyses were carried out at the Environmental Isotope Laboratory, University of Waterloo, Waterloo, ON; and, the perchlorate analyses were carried out by the National Water Research Institute in Burlington, ON.

The groundwater samples were collected using either a disposable bailer or a submersible pump that was cleaned after each sample was collected. Prior to collecting the samples each well was purged by either removing three well volumes, or by purging until electrical conductivity (EC) and temperature (T) have become stable based on the following approach: 1) begin to purge the well; 2) record the EC and T values after purging 0.5 well volumes; 3) repeat EC and T measurements after purging 1 well volume; 4) continue purging and recording EC and T values at 0.5 well volume intervals until EC and T values are within 10% of previous values. If a well was pumped completely dry, purging was considered complete.

The groundwater samples were collected into laboratory supplied bottles, stored in a chilled cooler and delivered to the laboratory within the specified holding times. Samples for general chemistry and metals were filtered in the field using 0.45 micron filters. Samples collected for metals were also preserved in the field using nitric acid.

2.2.2 Data Assessment Methods

The groundwater sample results for general chemistry, metals, VOCs and pesticides were assessed by comparison to the Canadian Drinking Water Quality Guidelines. Tritium and perchlorate results were assessed separately, as described in the paragraphs below. Note that the observation wells in the network are not used for drinking water, however, the drinking water guidelines are the most commonly used guidelines applied to water wells and they provide a useful reference point to judge the general water quality at each well.

Tritium is a short-lived isotope of hydrogen with a half-life of 12.43 years that is commonly used to assess the relative age of groundwater and how vulnerable an aquifer is to contamination (Clark and Fritz, 1997). During the 1950's, hydrogen bomb testing caused tritium levels to become elevated above naturally-occurring background levels in the earth's atmosphere. The elevated tritium levels are picked up by precipitation and carried into aquifers as the precipitation infiltrates in to the ground. Groundwater with tritium levels of less than 1.0 Tritium Units (TU) is considered relatively old, being recharged before hydrogen bomb testing began in 1952. Groundwater with more than 5.0 TU is considered to be predominantly recent water, being recharged after 1952 (Clark and Fritz, 1997). Groundwater with tritium levels between 1.0 and 4.0 TU is considered to be a mix of recent and old water. Groundwater with tritium levels between 4.0 and 5.0 TU is considered to be a mix of mostly recent water with a small measure being old water.

Water wells with tritium levels less than 1.0 TU are considered to be recharged by older water and, therefore, are not as vulnerable to contamination as other wells. Water wells that contain recent water, or a mix of recent and old water, are more vulnerable to contamination because rapid recharge allows contaminants to move relatively quickly from the ground surface into the aquifer. Many of the wells in the observation well network have short casing lengths (i.e., less than seven metres) and long open-hole intervals that allow both shallow and deep groundwater to enter the well and, therefore, it is likely that these wells will contain a mix of recent and old water. This type of well construction is similar to the majority of water wells in Nova Scotia , which have a minimum casing length of 6.1 m, as required by the NS Well Construction Regulations.

Perchlorate is an emerging contaminant that has received significant attention since 1997 when it was found in several water supplies in the United States. It is a compound consisting of one chlorine and four oxygen atoms that can exist as the solid salt of ammonium, potassium, or other metals, and it readily dissolves in water to produce the perchlorate ion (ClO_4^-). Perchlorate has been used in products such as rocket fuels, munitions, explosives, fireworks, road flares, fertilizers and air bag inflation systems. It can also occur naturally at low levels in the environment.

Recent sampling has detected the presence of very low levels of perchlorate in some Canadian drinking water sources (Health Canada, 2007). Groundwater samples from the Nova Scotia Observation Well Network were tested for perchlorate in 2004/2005 in order to evaluate the occurrence of perchlorate in Nova Scotia groundwater. There is currently no national drinking water guideline for perchlorate either in Canada or in the United States, however, Health Canada

recommends a drinking water guidance value of 6 ug/L. Therefore, the perchlorate results from the observation well network were assessed by comparison to the recommended Health Canada value of 6 ug/L. The perchlorate results are provided in Appendix C in this report and are discussed in further detail in previous annual reports on the Groundwater Observation Well Network (see NSEL, 2007).

In observation wells where elevated chloride levels were detected, an assessment of the possible source of salt was carried out by calculating the bromide (Br) to chloride (Cl) ratio. Wells were considered to have elevated chloride levels if chloride concentrations exceeded typical background levels for groundwater in coastal Nova Scotia (i.e., <50 mg/L). A commonly used guide for distinguishing salt sources in Nova Scotia is to calculate the ratio of Br(mg/L)/Cl(mg/L) x 10,000, and compare the result to the following three ranges:

1. Ratio <10 indicates road salt or halite brine;
2. Ratio >10 indicates formation brines; and
3. Ratio = 35 indicates a sea water influence.

3.0 RESULTS

This section presents the monitoring results for each observation well. Please refer to the appendices for well logs, groundwater level graphs, groundwater chemistry tables, groundwater temperature graphs, trend analysis details, well location maps and site photographs.

3.1 Greenwood (003)

Well Description

The Greenwood (003) observation well is located near Greenwood, Kings County. It was constructed in 1966 as part of a regional groundwater resource evaluation project (Trescott, 1968) and was originally named "Nova Scotia Department of Mines Test Hole 88". The well is completed in an overburden aquifer comprised of outwash sand. It is 7.6 m deep and has 6.6 m of casing. The well location and construction information is shown in Table 3.1 and the well log is provided in Appendix A.

Table 3.1: Greenwood (003) Well Construction Information

Well Name	Greenwood (003)
Observation Well ID Number	003
NSE Well Log Number	661225
County	Kings
Nearest Community	Greenwood
UTM - Easting (m)	350680
UTM - Northing (m)	4985498
Year Monitoring Started	1966
Casing Depth (m, bgs)	6.6
Well Depth (m, bgs)	7.6
Elevation - top of casing (m, asl)	24.15
Geologic Unit	Pleistocene Outwash
Aquifer Material	Overburden - sand

Notes: bgs = below ground surface; asl = above sea level

The location of the Greenwood (003) observation well is shown in Figure F.1a, Appendix F. It is situated in a rural area where land use is primarily agricultural or undeveloped. The well is located in a wooded area behind a house (see Figure F.1b), with all other development at least a kilometre away. The nearest water well is a private well located approximately 120 m away.

Monitoring Results - Water Levels

The water level graphs for Greenwood (003) are shown in Figure B.1, Appendix B. This well has been monitored since 1966 and water levels have remained relatively consistent. The average water level elevation in 2010 was approximately 21.92 m above sea level and the annual water level fluctuation is less than 1 m (0.66 m). The average depth to water in this well is approximately 2.2 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009, there is no visually obvious long-term water level trend and the statistical trend analysis for this well (Appendix E) indicates that there is no statistically significant trend present.

The 2010 water levels were within the normal range for this well during the majority of the year; however, historical high water levels were recorded in January, February, March, June, August, September, November and December of 2010.

Monitoring Results - Water Chemistry and Temperature

The Greenwood (003) well was not sampled in 2010. Water chemistry results from 2005 and 2008 are presented in Appendix C. The results for both samples indicate that no health-based drinking water guidelines were exceeded; however, both samples exceeded aesthetic drinking water guidelines for pH, turbidity, iron and manganese. The elevated turbidity levels are expected due to the high iron and manganese. Note that the ion balance error reported in the general chemistry analysis exceeds the generally acceptable level of 5% and, therefore, these results should be viewed with caution. VOCs, pesticides and perchlorate were not detected at the Greenwood (003) well. The tritium level in this well was 5.76 TU, indicating that the water in this well is relatively recent (i.e., recharged after 1952).

A graph of the daily average groundwater temperature for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at the Greenwood (003) well was 7.93 ^{o}C, with annual fluctuations between 6.02 and 9.90 ^{o}C.

3.2 Fraser Brook (004)

Well Description

The Fraser Brook (004) observation well is located near Lower Harmony, Colchester County. It was constructed in 1966 as part of a water resources study (Hennigar, 1966) that was carried out under the International Hydrologic Decade Program. It was originally named "Test Hole 100" and was one in a series of test wells installed in the Fraser Brook watershed.

The well is completed in siltstone. It is 18.3 m deep and the casing extends to a depth of 9.3 m. Well location and construction information is provided in Table 3.2 and the well log is provided in Appendix A. A 24-hour pump test conducted at this well indicated a transmissivity of 4.8 m^2/day and a safe yield of 42 m^3/day (6.5 igpm) (McIntosh, 1984).

Table 3.2: Fraser Brook (004) Well Construction Information

Well Name	Fraser Brook (004)
Observation Well ID Number	004
NSE Well Log Number	661226
County	Colchester
Nearest Community	Lower Harmony
UTM - Easting	486889
UTM - Northing	5021100
Year Monitoring Started	1966
Casing Depth (m, bgs)	9.3
Well Depth (m, bgs)	18.3
Elevation - top of casing (m, asl)	109.27
Geologic Unit	Canso Group
Aquifer Material	Bedrock - siltstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Fraser Brook (004) observation well is shown in Figure F.2a, Appendix F. It is situated in a rural area where land use is primarily agricultural or undeveloped. The well was located in a wooded area (see Figure F.2b), however, in 2005 the majority of the trees were removed due to damage sustained during Hurricane Juan in 2003. The nearest water well is a domestic well, located approximately 1,000 m away.

Monitoring Results - Water Levels

The water level graphs for Fraser Brook (004) are shown in Figure B.2, Appendix B. This well has been monitored since 1966. The average water level elevation at this well in 2010 was 104.92 m above sea level with an annual water level fluctuation of less than 1 m. The average depth to water in this well is 4.35 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009, there is no visually obvious long-term water level trend, however, the statistical trend analysis for this well (Appendix E) indicates that there is a very small statistically significant upward trend about 0.4 cm/year. This is equivalent to a total rise of about 0.1 m since monitoring began at this well.

The 2010 water levels generally fluctuated within the typical range for this well; however, water levels exceeded historical highs in July.

Monitoring Results - Water Chemistry and Temperature

The Fraser Brook (004) well was not sampled in 2010. Water chemistry results from 2004 and 2008 are presented in Appendix C. The results indicate that arsenic exceeded the drinking water guideline in both water samples. No other parameters exceeded guidelines at this well. VOCs, pesticides and perchlorate were not detected. This well has not been tested for tritium.

A graph of the daily average groundwater temperature for the period ending in January 2010 for this well is presented in Appendix D. Groundwater temperature at the Fraser Brook (004) well were consistent with previous data. The average groundwater temperature was 7.27 ^{o}C , with annual fluctuations between 6.21 and 8.39 ^{o}C.

3.3 Wilmot (005)

Well Description

The Wilmot (005) observation well is located in Wilmot, Annapolis County. It was constructed May 1966 as part of a regional groundwater resource evaluation project (Trescott, 1968) and was originally named "Nova Scotia Department of Mines Test Hole 51". The well is completed in an overburden aquifer comprising outwash gravel. It is 18.3 m deep and the casing depth extends to 6.4 m. The surficial geology of the area was classified as a stream alluvium deposit of the Quaternary Period. The alluvium deposit consisted of several feet of clay overlying fine to coarse gravel.

Table 3.3: Wilmot (005) Well Construction Information

Well Name	Wilmot (005)
Observation Well ID Number	005
NSE Well Log Number	661267
County	Annapolis
Nearest Community	Wilmot
UTM - Easting	340015
UTM - Northing	4979368
Year Monitoring Started	1966
Casing Depth (m, bgs)	6.4
Well Depth (m, bgs)	18.3
Elevation - top of casing (m, asl)	9.0
Geologic Unit	Pleistocene Outwash
Aquifer Material	Overburden - gravel

Notes: bgs = below ground surface; asl = above sea level

Well location and construction information is provided in Table 3.3 and the well log is provided in Appendix A. A 26 hour pumping test conducted at a nearby wellfield situated in a similar geological unit indicated a transmissivity of 621 m^2/day and storativity of 1.9 x 10^{-3} (McIntosh, 1984).

The location of the Wilmot (005) observation well is shown in Figure F.3a, Appendix F. The well site, shown in Figure F.3b, is located south-west of Wilmot. It is situated in an actively farmed field, 100 m east of Baynard Road. South of the site, is a wooded area extending 75 m to the Annapolis River, where a hydrometric station measures surface water flow as part of the Canada/Nova Scotia Hydrometric Program. The nearest water well is a domestic well located approximately 150 m away.

Monitoring Results - Water Levels

The historical water level graphs for Wilmot (005) are shown in Figure B.3, Appendix B. This well has been monitored since 1966 and there is no visually obvious long-term water level trend. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, the trend analysis for this well (Appendix E) indicates that there is no statistically significant trend.

The average water level elevation at this well in 2010 was approximately 6.90 m above sea level and the annual water level fluctuation was about 2.99 m. The average depth to water in this well in 2010 was 2.0 m below ground surface.

The 2010 water levels generally fluctuated within the typical range for this well; however, water levels exceeded historical highs in March and November and historical lows in May and June.

Monitoring Results - Water Chemistry and Temperature

The Wilmot (005) well was sampled in 2006 and 2010 and the water chemistry results are presented in Appendix C. The results indicate that health-based drinking water guidelines were exceeded for nitrate in both 2006 and 2010. The aesthetic guidelines were exceeded for turbidity in 2006 only; turbidity results in 2010 were within the aesthetic guidelines. VOCs were not detected in both 2006 and 2010. This well was tested for pesticides in 2010 only. The results indicated pesticides were not detected in 2010. This well has not been tested for either perchlorate or tritium.

A graph of the average daily temperature at this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was 7.98 ^{o}C, with annual fluctuations between 5.57 and 10.24 ^{o}C.

3.4 Murray Siding (007)

Well Description

The Murray Siding (007) observation well is located off Old Court House Branch Road near the community of Murray Siding, Colchester County. It was constructed August 1967 as part of a regional groundwater resource evaluation project (Hennigar, 1972) and was originally named "Nova Scotia Department of Mines Test Hole 191". The well is completed in a sandstone bedrock aquifer and is 8.5 m deep with 7.9 m of casing. Well location and construction information is provided in Table 3.4 and the well log is provided in Appendix A. This well was used as an observation well for an 80 hour pumping test conducted at a pumping well located approximately 100 m away. The results indicated a transmissivity of 672 m^2/day and storativity of 8.7 x 10^{-2} (McIntosh, 1984).

Table 3.4: Murray Siding (007) Well Construction Information

Well Name	Murray Siding (007)
Observation Well ID Number	007
NSE Well Log Number	671074
County	Colchester
Nearest Community	Murray Siding
UTM - Easting	483114
UTM - Northing	5024186
Year Monitoring Started	1967
Casing Depth (m, bgs)	7.9
Well Depth (m, bgs)	8.5
Elevation - top of casing (m, asl)	25.32
Geologic Unit	Wolfville Formation
Aquifer Material	Bedrock - sedimentary

Notes: bgs = below ground surface; asl = above sea level

The location of the Murray Siding (007) observation well is shown in Figure F.4a, Appendix F, and a photograph of the well is shown in Figure F.4b.The well is located in a residential area where the residents obtain their water supplies from domestic drilled wells.

Monitoring Results - Water Levels

The water level graphs for Murray Siding (007) are shown in Figure B.4, Appendix B. This well has been monitored since August 1967 with data gaps in the monitoring record occurring in 1968-1969, 1976-1979, and 2001-late 2009. The Murray Siding well was brought back into the observation well network in December 2009 and water level monitoring resumed in January 2010.

The average water level elevation from 1967 to 2001 was 21.64 m above sea level and the average depth to water was approximately 3.68 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, the statistical trend analysis for this well (Appendix E) indicates that there is a statistically significant downward trend of about 2.5 cm/year. This is equivalent to a total drop of about 1 m since monitoring began at this well.

The 2010 water levels generally fluctuated within the typical range for this well. In 2010, the average water level elevation was 21.64 m above sea level and the annual water level fluctuation was 1.44 m. The average depth to water in this well in 2010 was 3.68 m below ground surface.

Monitoring Results - Water Chemistry and Temperature

There is currently no water chemistry or temperature data available for the Murray Siding (007) well.

3.5 Wolfville (010)

Well Description

The Wolfville (010) observation well is located in Wolfville, Kings County. It was constructed in December 1968 as part of a regional groundwater resource evaluation project (Trescott, 1969) and was originally named “Nova Scotia Department of Mines Test Hole 398". This well has also been referred to as the “Wolfville 2" observation well. The well is completed in a sandstone aquifer. It is 17.7 m deep and penetrates 7.0 m into the bedrock. The casing depth extends to 22.7 m. Well location and construction information is provided in Table 3.5 and the well log is provided in Appendix A. A 29-day pump test was conducted at this well in 1969. The results indicated a transmissivity of 695 m^2/day and storativity of $3x10^{-2}$ (McIntosh, 1984).

Table 3.5: Wolfville (010) Well Construction Information

Well Name	Wolfville (010)
Observation Well ID Number	010
NSE Well Log Number	681252
County	Kings
Nearest Community	Wolfville
UTM - Easting	392093
UTM - Northing	4993838
Year Monitoring Started	1969
Casing Depth (m, bgs)	22.7
Well Depth (m, bgs)	24.1
Elevation - top of casing (m, asl)	5.20
Geologic Unit	Wolfville Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Wolfville (010) observation well is shown in Figure F.5a. The well is situated in a small park in the middle of a residential area (see Figure F.5b). Land use in the vicinity of the well is urban. The wellfield for the Town of Wolfville, comprised of two pumping wells, is located approximately 750 m away.

Monitoring Results - Water Levels

The water level graphs for Wolfville (010) are shown in Figure B.5, Appendix B. This well has been monitored since 1969 and water levels appear to have declined slightly over time. From 1970 to 1975, the average water level elevation was approximately 1.1 m above sea level and the annual water level fluctuation was about 2.0 m. The average water level in 2010 was 1.24 m above sea level, with an annual fluctuation of 0.63 m. The depth to water in this well is approximately 3.9 m below ground surface.

Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, the statistical trend analysis for this well (Appendix E) indicates that there is small downward trend in water levels, equivalent to approximately 2.3 cm/year. The total water level drop since monitoring began at this well is approximately 0.7 m. The reason for this decline has not been confirmed, however, it may be related to pumping at the Town of Wolfville's production wells, which are located within 750 m from this well.

The 2010 water levels generally remained constant near the higher end of the typical range for this well. Water levels reached previously observed historical highs in January and from September to November, and then exceeded historical highs in December. There were minor annual water level fluctuations in 2010 (0.63 m) as compared to previous years (average fluctuation of 1.53 m for the period of 1967 to 2010). Groundwater elevations remained consistent around 1.23 m for the entire 2010 monitoring year. That is, in 2010 there was very little observable visual increase in water levels in the typical wet months of April and June (i.e. spring recharge), and no observable visual decrease in water levels corresponding to the onset of the typical dry months of July, August and September (i.e. summer recession).

Monitoring Results - Water Chemistry and Temperature

The Wolfville (010) well was not sampled in 2010. Water chemistry results from 2004 and 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, turbidity, iron and manganese were above aesthetic drinking water guidelines in the 2008 sample. The elevated turbidity levels are expected due to the high iron and manganese. The iron and manganese levels from the 2008 sample have increased by approximately two orders of magnitude compared to the 2004 sample results. The reason for this increase has not been determined. VOCs, pesticides and perchlorate were not detected in this well.

The chloride level in this well was 78 mg/L in 2004 and 87 mg/L in 2008. Although these levels do not exceed the aesthetic objective of 250 mg/L, they are elevated above the typical background level for groundwater in coastal Nova Scotia (<50 mg/L). For the 2004 sample results, the bromide/chloride ratio for this well was <10 (i.e., 0.06 mg/L/ 78mg/L x 10,000 =7.7). For the 2008 sample results, the bromide/chloride ratio for this well was 9.2. Both of these results indicate that the source of the chloride is road salt. Please see Section 2.2.4 for a discussion of how this ratio is used to assess salt sources.

The tritium level in this well was 4.7 TU (+/- 0.4), indicating that the water in this well is either a mix of old and recent water (i.e., recharge occurred before and after 1952) or is recent (i.e., recharged occurred after 1952).

A graph of the average daily temperature for this well for the period ending in January 2010 is presented in Appendix D.The average groundwater temperature at the Wolfville (010) well was 9.47 ^{o}C, with annual fluctuations between 8.17 and 11.11 ^{o}C.

3.6 Truro (014)

Well Description

The Truro (014) observation well is located in Truro, Colchester County. It was constructed in November 1970 as part of a regional groundwater resource evaluation project (Hennigar, 1972) and was originally named "Nova Scotia Department of Mines Test Hole 421". It has also been referred to as the "Truro 421" observation well. The well is 91.4 m deep, penetrates 80.8 m into bedrock and the casing depth extends to 18.3 m. It is completed in a sandstone aquifer. Well location and construction information is provided in Table 3.6 and the well log is provided in Appendix A.

Table 3.6: Truro (014) Well Construction Information

Well Name	Truro (014)
Observation Well ID Number	014
NSE Well Log Number	701431
County	Colchester
Nearest Community	Truro
UTM - Easting	476052
UTM - Northing	5023778
Year Monitoring Started	1971
Casing Depth (m, bgs)	18.3
Well Depth (m, bgs)	91.4
Elevation - top of casing (m, asl)	9.83
Geologic Unit	Wolfville Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Truro (014) observation well is shown in Figure F.6a, Appendix F, and a site photograph is shown in Figure F.5b. It is situated in an urban area where the surrounding land is predominantly developed. The well is located within the Town of Truro Public Works yard and is

adjacent to a golf course, several businesses and residences. The area is serviced by a municipal water supply and there are no other known water wells in the immediate vicinity.

Monitoring Results - Water Levels

The water level graphs for Truro (014) are shown in Figure B.6, Appendix B. This well has been monitored since 1971. The groundwater levels appear to have decreased slightly between 1971 and 1991. There is a data gap between 1991 and 2002 when no monitoring was carried out at this well; however, sometime after 1991 the groundwater levels in this well increased and have remained relatively consistent since 2003 when monitoring began again. The increased water level at this well is believed to be a result of the decommissioning of a municipal water supply well in 1994, which was located within a kilometre of the observation well. Trend analysis was not completed in 2010. Based on the trend analysis conducted in 2009 for this well (Appendix E), there is no statistically significant trend present when the entire data record from 1991 to 2009 is considered.

The water level elevation between 1971 and 1991 ranged from about 6.5 to 7.5 m above sea level and the annual water level fluctuation was about 1.5 m. From 2003 to 2010, the average water level elevation was 7.9 m above sea level, with an annual water level fluctuation was about 1.2 m. The depth to water in this well has varied from approximately 1.3 m to 2.5 m below ground surface.

The 2010 water levels generally fluctuated within the typical range that has been observed at this well since 2003; however, in June, July and November of 2010 water levels exceeded the previously observed historical highs.

Monitoring Results - Water Chemistry and Temperature

The Truro (014) well has not been sampled due to a partial blockage of the casing, caused by an old float device from a Stevens chart recorder that is lodged in the well. Therefore, chemistry data are not available.

A graph of the average daily temperature in this well for the period ending January 2010 is presented in Appendix D. The average groundwater temperature at this well was 8.53 ^{o}C, with annual fluctuations between approximately 4.32 and 13.60 ^{o}C.

3.7 Monastery (028)

Well Description

The Monastery (028) observation well is located near Monastery, Antigonish County. The well was installed in January 1974 as part of a groundwater resource evaluation study (Strait of Canso Natural Environment Committee, 1975) and was originally named "Nova Scotia Department of Mines Test Hole 449". The well is completed in a sandstone aquifer. It is 158 m deep and the casing depth is unknown. Well location and construction information is provided in Table 3.7 and the well log is provided in Appendix A. A 50-hour pumping test was conducted at this well in 1974, indicating a transmissivity of 9.8 m^2/day and a 20-year safe yield of 439 m^3/day (67 igpm) (McIntosh, 1984).

Table 3.7: Monastery (028) Well Construction Information

Well Name	Monastery (028)
Observation Well ID Number	028
NSE Well Log Number	742420
County	Antigonish
Nearest Community	Monastery
UTM - Easting	606083
UTM - Northing	5052489
Year Monitoring Started	1976
Casing Depth (m, bgs)	NA
Well Depth (m, bgs)	158
Elevation - top of casing (m, asl)	23.12
Geologic Unit	Canso Group
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Monastery (028) well is shown in Figure F.7a, Appendix F. It is situated in a rural area where land use is primarily agricultural. The well is located at the end of a hayfield (see Figure F.7b), approximately 1,000 m from the ocean. The nearest water well is a domestic well located approximately 230 m away.

Monitoring Results - Water Levels

The water level graphs for Monastery (028) are shown in Figure B.7, Appendix B. This well has been monitored since 1979 and the average water level elevation has decreased from about 15.5 m (between 1979 and 1987) to approximately 13.5 m in 2006. The annual water level fluctuation also decreased over the same period from about 1.5 m to 1.0 m. However, the water level in this well rebounded to its 1980s elevation after the well was purged during a sampling event in December 2006. The water level then slowly declined again until it rebounded once more during a sampling event in December 2008. It is suspected that the decline in water levels at this well during the 1990s and early 2000s may have been due to a slow decline in well efficiency, perhaps caused by biofouling. The sampling process involves pumping water from the well, which may temporarily rehabilitate the well and allow water levels to rebound. The depth to water in this well has varied from approximately 6.4 m to 11.0 m below ground surface.

Trend analysis was no completed in 2010. Based on trend analysis conducted in 2009 (Appendix E), there is no statistically significant trend present when the entire data record is considered.

The 2010 water levels fluctuated within the typical range that has been observed at this well. The average water level was 13.41 m above sea level with a water level fluctuation of approximately 1.2 m. In 2010, the average depth to water was 9.7 m.

Monitoring Results - Water Chemistry and Temperature

The Monastery (028) well was not sampled in 2010. Water chemistry results from 2006 and 2008 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded in either of the samples. VOCs, pesticides and perchlorate were not detected.

The tritium level in this well was 0.94 TU (+/- 0.17), indicating that the water is relatively old (i.e., recharge occurred before 1952).

A graph of the average daily temperature for the period ending in January 2010 for this well is presented in Appendix D. The average groundwater temperature at this well was 8.13 ^{o}C, with annual fluctuations between 8.07 and 8.21 ^{o}C.

3.8 Point Aconi (030)

Well Description

The Point Aconi (030) observation well is located near Point Aconi, Cape Breton County. It was constructed in August 1976 to monitor groundwater levels at the Prince Mine, located about 2 km away. The well is completed in a sandstone aquifer. It is 30.5 m deep, penetrates 26.2 m into the bedrock and the casing depth extends to 12.8 m. Well location and construction information is provided in Table 3.8 and the well log is provided in Appendix A.

The location of the Point Aconi (030) well is shown in Figure F.8a, Appendix F, and a site photograph is shown in Figure F.8b. It is situated in an urban area where the land use is primarily residential. There are several residences located within 300 m of the well, one of which is immediately adjacent to the well. The nearest water well is a domestic well located approximately 18 m away.

Table 3.8: Point Aconi (030) Well Construction Information

Well Name	Point Aconi (030)
Observation Well ID Number	030
NSE Well Log Number	761408
County	Cape Breton
Nearest Community	Point Aconi
UTM - Easting	707986
UTM - Northing	5133152
Year Monitoring Started	1976
Casing Depth (m, bgs)	12.8
Well Depth (m, bgs)	30.5
Elevation - top of casing (m, asl)	29.97
Geologic Unit	Inverness Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Point Aconi (030) are shown in Figure B.8, Appendix B. This well has been monitored since 1976. The average water level elevation at the Point Aconi (030) well is 27.44 m above sea level and the annual water level fluctuation is about 5.94 m. The depth to water in this well is approximately 2.5 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there is no visually obvious long-term water level trend and the statistical trend analysis for this well (Appendix E) indicates that there is no statistically significant trend present.

The 2010 water levels fluctuated within the typical historical range for this well; however, water levels dropped below the historical lows in June, August and September 2010.

Monitoring Results - Water Chemistry and Temperature

The Point Aconi (030) well was not sampled in 2010, however it was sampled in 2005 and 2008. Water chemistry results are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded. Manganese was above the aesthetic drinking water guideline in the 2005 sample but was below the guideline in the 2008 sample. VOCs, pesticides and perchlorate were not detected.

The tritium level in this well was 3.62 TU (+/- 0.34), indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature for the period ending in January 2010 for this well is presented in Appendix D. The average groundwater temperature at the Point Aconi (030) was 8.55 ^{o}C, with annual fluctuations between 5.96 and 11.25 ^{o}C.

3.9 Lawrencetown (043)

Well Description

The Lawrencetown (043) observation well is located near Upper Lawrencetown, Halifax County. It was constructed in March 1977 as part of a saltwater intrusion investigation in the Lawrencetown area (Cross, 1980) and was originally named "Nova Scotia Department of the Environment, Test Hole L3". It has also been referred to as the "Lawrencetown L3" observation well. Three other test wells were drilled near this well (i.e., Lawrencetown L1, L2 and L4) but were decommissioned in August 1994 by sealing the entire length of the wells with alternating layers of bentonite and sand.

Table 3.9: Lawrencetown (043) Well Construction Information

Well Name	Lawrencetown (043)
Observation Well ID Number	043
NSE Well Log Number	771538
County	Halifax
Nearest Community	Upper Lawrencetown
UTM - Easting	464172
UTM - Northing	4947712
Year Monitoring Started	1978
Casing Depth (m, bgs)	44.2
Well Depth (m, bgs)	53
Elevation - top of casing (m, asl)	4.73
Geologic Unit	Goldenville Formation
Aquifer Material	Bedrock - quartzite

Notes: bgs = below ground surface; asl = above sea level

The Lawrencetown (043) well is completed in a fractured bedrock aquifer comprised of quartzite. It is 53.0 m deep, penetrates 49.4 m into the bedrock and the casing depth extends to 44.2 m. Well location and construction information is provided in Table 3.9 and the well log is provided in

Appendix A. A 1.5-hour pump test was conducted at this well in 1977 and the results indicated a transmissivity of 2.8 m^2/day a safe yield rate of 95 m^3/day (14.5 igpm) (McIntosh, 1984).
The location of the Lawrencetown (043) observation well is shown in Figure F.9a, Appendix F. It is situated in a rural area where land use is primarily residential. The well is located within 100 m of the ocean (see Figure F.9b) and the there are two domestic wells nearby, both located approximately 50 m away.

Monitoring Results - Water Levels

The water level graphs for Lawrencetown (043) are shown in Figure B.9, Appendix B. This well has been monitored since 1978, although a data gap exists for the ten year period from 1992 to 2002. A visual inspection of the historical water level graph indicates that water levels have declined by approximately 1.0 m since monitoring began. The decline is expected to be caused by the increased use of a nearby domestic well located 50 m away. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009 (Appendix E) there is no statistically significant trend present; however, previous statistical trend analysis for this well indicated a small downward trend in water levels, equivalent to approximately 2.4 cm/year. This corresponds to a total water level drop of approximately 0.7 m since monitoring began.

The average water level elevation at the Lawrencetown (043) well for the monitoring period 1978-1992 was approximately 3.6 m above sea level and the annual water level fluctuation was about 0.6 m. Between 2002 and 2009, the average water level declined to approximately 2.89 m above sea level, with a 1.26 m average annual fluctuation. During this time period, the average depth to water in this well has varied from 1.61 m to 2.07 m below ground surface and the hourly water level data shows tidal fluctuations of approximately 0.3 m. There is also a daily drawdown and subsequent recovery of approximately 0.8 m at this well, which likely reflects domestic water use patterns associated with a nearby domestic well. In 2010, the average water level elevation was 2.85 m above sea level and the annual water level fluctuation was about 1.3 m. The depth to water in this well was approximately 1.9 m below ground surface.

The 2010 water levels fluctuated within the typical historical range for this well; however, water levels dropped below the historical lows in April and September 2010.

Monitoring Results - Water Chemistry and Temperature

The Lawrencetown (043) well was not sampled in 2010. Previous water chemistry results from 2004 and 2008 are presented in Appendix C. The results indicate that arsenic concentrations exceeded the health-based drinking water guideline in both samples. VOCs and pesticides were not detected. Tritium results reported from a previous study (Bottomley, 1983) were non-detect, indicating this water is relatively old (i.e., recharged prior to 1952).

It should also be noted that the chloride level in this well (150 mg/L in 2004 and 180 mg/L in 2008) is elevated above the typical background level for groundwater in coastal Nova Scotia (<50 mg/L), although it is below the aesthetic objective of 250 mg/L. The ocean is less than about 100 m from this well and, therefore, the elevated chloride level is probably due to seawater influence. The bromide/chloride ratio at this well also indicates a seawater influence. The bromide/chloride ratio at this well was 35 (i.e., 0.53 mg/L/150 mg/L x 10,000 = 35). Please see Section 2.2.4 for a discussion of how this ratio is used to assess salt sources.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. In 2009 the average groundwater temperature at the Lawrencetown (043) well was 8.42 ^{o}C, with annual fluctuations between approximately 6.72 and 10.38 ^{o}C.

3.10 Durham (045)

Well Description

The Durham (045) observation well is located near Durham, Pictou County. It was constructed in July 1978 as part of a regional groundwater resource evaluation project (Gibb and McMullin, 1980) and was originally named "Nova Scotia Department of the Environment Test Hole Durham 3". The well is completed in a sandstone and shale aquifer. It is 75.3 m deep, penetrates 69.2 m into the bedrock and the casing depth is unknown. Well location and construction information is provided in Table 3.10 and the well log is provided in Appendix A. A 72-hour pump test was conducted at this well in 1978, indicating a transmissivity of 14 m^2/day and storativity of 3.2 x 10^{-4} (McIntosh, 1984).

The location of the Durham (045) observation well is shown in Figure F.10a, Appendix F. It is situated in a rural area, where the land use is primarily agricultural. The well is located in a wooded area, about 3 m from the edge of a hayfield. The nearest water well is a domestic well located approximately 500 m away.

Table 3.10: Durham (045) Well Construction Information

Well Name	Durham (045)
Observation Well ID Number	045
NSE Well Log Number	782683
County	Pictou
Nearest Community	Durham
UTM - Easting	516224
UTM - Northing	5052105
Year Monitoring Started	1979
Casing Depth (m, bgs)	NA
Well Depth (m, bgs)	75.3
Elevation - top of casing (m, asl)	14.88
Geologic Unit	Boss Point Formation
Aquifer Material	Bedrock - sandstone/shale

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Durham (045) are shown in Figure B.10, Appendix B. This well has been monitored since 1979. The water levels appear to have risen slightly since monitoring began and the amount of annual water level fluctuation has varied throughout the monitoring period. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009 (Appendix E), there is a small upward trend, equivalent to about 1.8 cm/year. This is equivalent to a total rise of about 0.7 m since monitoring began at this well.

The average water levels from January 1, 2010 to November 2, 2010 at the Durham (045) well was approximately 11.1 m above sea level and the annual water level fluctuation was 1.46 m. The average depth to water in this well in 2010 was 3.75 m below ground surface. From 1979 to 1989 the average water level was approximately 11.0 m, then from 1989 to 2004 average water levels rose slightly, to approximately 11.6 m. Since 2004 the average water levels have decreased slightlyby approximately 0.7 m.

The 2010 water levels fluctuated within the typical historical range for this well.

Monitoring Results - Water Chemistry and Temperature

The Durham (045) well was not sampled in 2010. Previous water chemistry results from 2005 and 2009 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded. VOCs, pesticides and perchlorate were not detected.

The tritium level in this well was 2.04 TU, indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the hourly temperature in this well for the period ending in January 2010 is presented in Appendix D. The average annual groundwater temperature at the Durham (045) well was 7.65 ^{o}C, with annual fluctuations between 6.34 and 8.96 ^{o}C.

3.11 Kentville (048)

Well Description

The Kentville (048) observation well is located near Kentville, Kings County. The well was constructed in May 1977 as part of a water supply investigation for the Kentville Industrial Park (Callan, 1977) and was previously named the "Kentville Industrial Park" observation well. The well is completed in a sandstone aquifer. It is 106.7 m deep and the casing depth extends to 30.5 m. Well location and construction information is provided in Table 3.11 and the well log is in Appendix A. A 72-hour pump test was conducted at this well in June 1977 and the results indicated a transmissivity of 84 m^2/day and a storativity of 3 x 10^{-4} (Callan, 1977).

Table 3.11: Kentville (048) Well Construction Information

Well Name	Kentville (048)
Observation Well ID Number	048
NSE Well Log Number	772021
County	Kings
Nearest Community	Kentville
UTM - Easting	377628
UTM - Northing	4992245
Year Monitoring Started	1980
Casing Depth (m, bgs)	30.5
Well Depth (m, bgs)	106.7
Elevation - top of casing (m, asl)	12.79
Geologic Unit	Wolfville Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Kentville (048) observation well is shown in Figure F.11a, Appendix F. It is situated in a wooded area (see Figure F.11b) and the surrounding land use includes an industrial park (Annapolis Valley Regional Industrial Park), residential properties and undeveloped land. This well lies within the wellhead protection area for the Town of Kentville wellfield, which includes seven production wells. The wellfield was initially developed in the late 1970's to supply the nearby industrial park and was expanded to become the primary water supply for the Town of Kentville in 2002. The nearest production well is located approximately 150 m away from the Kentville (048) observation well.

Monitoring Results - Water Levels

The water level graphs for Kentville (048) are shown in Figure B.11, Appendix B. This well has been monitored since 1980 and the water level appears to have dropped slightly since monitoring began. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009 for this well (Appendix E) there is a small downward trend, equivalent to 0.8 cm/year. The total drop in water level since monitoring began at this well is approximately 0.6 m.

The 2010 average water level elevation at the Kentville (048) well was 6.9 m above sea level and the annual water level fluctuation was 0.69 m. The depth to water in this well was approximately 5.9 m below ground surface.

The 2010 water levels fluctuated within the typical historical range for this well.

Monitoring Results - Water Chemistry and Temperature

The Kentville (048) well was not sampled in 2010. Previous water chemistry results from 2005 and 2007 are presented in Appendix C. In 2005, no drinking water guidelines were exceeded. In 2007, lead exceeded the health-based drinking water guideline, and chloride and iron exceeded the aesthetic drinking water guidelines. No pesticides or VOC's were detected.

The chloride level in this well was at 230 mg/L in 2005, which is elevated above the typical background level for groundwater in coastal Nova Scotia (<50 mg/L). In 2007, the chloride level in this well increased to 270 mg/L, which exceeded the aesthetic objective of 250 mg/L. The well is located approximately 15 km from the ocean and, therefore, the elevated chloride levels are not expected to be caused by sea water. The bromide/chloride ratio at this well indicated the salt source is likely to be road salt. The bromide/chloride ratio at this well was 7.4 (i.e., 0.2 mg/L/270 mg/L x

10,000 = 7.4). Please see Section 2.2.4 for a discussion of how this ratio is used to assess salt sources.

The perchlorate level in this well was 0.05 ug/L, which is below the recommended Health Canada guidance value of 6 ug/L. The tritium level in this well was 3.8 TU (+/- 0.3), indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at the Kentville (048) well was 6.41 ^{o}C, with annual fluctuations between 3.11 and 9.60 ^{o}C.

3.12 Sydney (050)

Well Description

The Sydney (050) observation well is located near Sydney, Cape Breton County. It was constructed in 1977 as part of a regional water resource study in the Sydney Coalfield (Baechler, 1986) and has also been referred to as the "Sydney Watershed " observation well. The well is completed in a sandstone aquifer and is 100.6 m deep with a casing depth extending to 6.1 m. Well location and construction information is provided in Table 3.12 and the well log is provided in Appendix A. A 72-hour pump test was conducted at this well in the 1980's and the results indicated a transmissivity of 71 m^2/day (Baechler, 1986).

Table 3.12: Sydney (050) Well Construction Information

Well Name	Sydney (050)
Observation Well ID Number	050
NSE Well Log Number	771077
County	Cape Breton
Nearest Community	Sydney
UTM - Easting	720589
UTM - Northing	5106450
Year Monitoring Started	1984
Casing Depth (m, bgs)	6.7
Well Depth (m, bgs)	100.6
Elevation - top of casing (m, asl)	64.10
Geologic Unit	South Bar Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Sydney (050) observation well is shown in Figure F.12a, Appendix F. It is situated in a rural area where land use is primarily residential and undeveloped land. The well is located within the Sydney wellfield, which consists of 11 production wells. The wellfield, which began operating in 1996, pumps an average of 16,000 m^3/day and is the largest municipal wellfield in Nova Scotia. The nearest production well is approximately 200 m from the Sydney (050) observation well.

Monitoring Results - Water Levels

The water level graphs for Sydney (050) are shown in Figure B.12, Appendix B. This well has been monitored since 1984. The water levels appear to have decreased when the Sydney wellfield began pumping in 1996; after a period of less than one year, water levels stabilized until approximately 2008 when a declining trend is observed. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009 (Appendix E), there is a downward trend, equivalent to approximately 5.8 cm/year. The total drop in water level since monitoring began at this well is approximately 1.2 m.

The average water level elevation at this well from 1984 to 1994 (i.e., before the wellfield began pumping) was approximately 59.9 m above sea level and the annual water level fluctuation varied between 0.7 m and 1.0 m. Between 2004 and 2009 the average water level elevation was approximately 58.67 m above sea level, with an annual water level fluctuation of up to approximately 3 m. The depth to water in this well is between 5.0 and 6.0 m below ground surface.

In 2010, the average water level elevation was 57.60 m above sea level and the annual water level fluctuation was about 2 m. The depth to water in this well in 2010 was approximately 6.5 m below ground surface.

The 2010 water levels were within the historically observed water level range for this well; however, 2010 water levels reached or exceeded previously observed historical lows for each month in 2010. These lows were exceeded for most days of January, February, April, May and for considerably less time during the remaining months

Monitoring Results - Water Chemistry and Temperature

The Sydney (050) well was not sampled in 2010. Previous water chemistry results from 2005 and 2008 are presented in Appendix C. The results indicate that no health-based drinking water

guidelines were exceeded; however, manganese was above the aesthetic drinking water guideline in both samples. VOCs, pesticides and perchlorate were not detected.

The tritium level in this well was 4.92 TU (+/- 0.43), indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at the Sydney (050) well was 7.50 ^{o}C, with annual fluctuations between approximately 5.84 and 9.02 ^{o}C.

3.13 North Grant (054)

Well Description

The North Grant (054) observation well is located in Lower North Grant, Antigonish County. This well was constructed in 1987 to expand the NS Groundwater Observation Well Network. The well is completed in slate and is 39.0 m deep and the casing extends to a depth of 13.1 m. Well location and construction information is provided in Table 3.13 and the well log is provided in Appendix A.

The location of the North Grant (054) observation well is shown in Figure F.13a, Appendix F. The well is situated approximately 15 km northwest of the town of Antigonish, and approximately 3.0 m from the side of North Grant Road (see Figure F.13b). It is located approximately 100 m from the Wrights River, and there is a domestic drilled well located within 150 m.

Table 3.13: North Grant (054) Well Construction Information

Well Name	North Grant (054)
Observation Well ID Number	054
NSE Well Log Number	871262
County	Antigonish
Nearest Community	Lower North Grant
UTM - Easting	576403
UTM - Northing	5055139
Year Monitoring Started	1987
Casing Depth (m, bgs)	13.1
Well Depth (m, bgs)	39.0
Elevation - top of casing (m, asl)	21.7
Geologic Unit	Horton Group
Aquifer Material	Bedrock - shale/slate

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for North Grant (054) are shown in Figure B.13, Appendix B. This well has been monitored since 1987; however, there is a gap in the monitoring data between 1997 and 2006. Water levels at this well have declined approximately 40 cm since 1997. From 1987 to 1997, the average water level elevation was approximately 19.8 m above sea level and the annual water level fluctuation was about 0.9 m. The average water level elevation for the period between April 2006 and 2010 was slightly lower, at 19.4 m above sea level, and the average annual water level fluctuation for this period was approximately 1.1 m. The depth to water in this well in 2010 was approximately 2.35 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

The 2010 water levels remained near previously observed historical lows throughout the year, and exceeded these lows for short periods of time in all months except March and September.

Monitoring Results - Water Chemistry and Temperature

The North Grant (054) well was not sampled in 2010. Previous water chemistry results from 2006 and 2008 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded in 2006; however, the 2008 sample exceeded health-based guidelines for arsenic and aesthetic guidelines for turbidity and iron. VOCs and pesticides were not detected.

The tritium level in this well was 1.95 TU (+/- 0.22), indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature at this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was 7.84 ^{o}C, with annual fluctuations between approximately 6.62 and 9.38 ^{o}C.

3.14 Stillwater (055)

Well Description

The Stillwater (055) observation well is located in Stillwater, Guysborough County. This well was constructed in 1987 to expand the NS Groundwater Observation Well Network. It is completed in fractured bedrock comprised of greywacke. The well is 36.0 m deep and the casing extends to 13.4 m depth. Well location and construction information are provided in Table 3.14 and the well log is provided in Appendix A.

The location of the Stillwater (055) observation well is shown in Figure F.14, Appendix F. The well is located in a wooded area off Route #7 on Department of Natural Resources' property adjacent to a gravel road leading to a rifle range. The nearest water well is a domestic drilled well located within 250 m. The St. Mary's River is approximately 750 m away, and the well is located 2 km from an Environment Canada Hydrometric Station on St. Mary's River.

Table 3.14: Stillwater (055) Well Construction Information

Well Name	Stillwater (055)
Observation Well ID Number	055
NSE Well Log Number	871263
County	Guysborough
Nearest Community	Stillwater
UTM - Easting	579938
UTM - Northing	5004212
Year Monitoring Started	1987
Casing Depth (m, bgs)	13.4
Well Depth (m, bgs)	36.0
Elevation - top of casing (m, asl)	26.9
Geologic Unit	Goldenville Formation
Aquifer Material	Bedrock - greywacke

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Stillwater (055) are shown in Figure B.14, Appendix B. This well has been monitored since 1987; however, monitoring stopped in the summer of 1995 and did not resume until May 2006. Water levels appear to have remained relatively consistent over time. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

From 1987 to 1995, the average water level elevation at this well was approximately 25.0 m above sea level and the annual water level fluctuation was about 1.1 m. The average water level elevation for the period between May 2006 and 2010 was slightly higher, at 25.08 m above sea level, and the annual water level fluctuation for this period was up to 1.4 m. In 2010, the average depth to water in this well was 1.79 m below ground surface.

The 2010 water levels exceeded historical highs in January, February, March, June and July, and dropped below historical lows in April, May, July August, and November.

Monitoring Results - Water Chemistry and Temperature

The Stillwater (055) well was not sampled in 2010. Water chemistry results for 2006 and 2008 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded in 2006, however, the aesthetic guideline for manganese was exceeded in 2008. One VOC (toluene) was measured at the detection limit of 1 ug/L in 2006 but it was not detected in 2008. No pesticides were detected at this well.

The tritium level in this well was 3.82 TU (+/- 0.34), indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was 7.20^{o}C, with annual fluctuations between 4.80 and 9.78 ^{o}C.

3.15 Sheet Harbour (056)

Well Description

The Sheet Harbour (056) observation well is located in Sheet Harbour, Halifax County. The well was constructed in 1987 to expand the NS Groundwater Observation Well Network. The well is completed in a bedrock aquifer and is 46.4 m deep with 7.01 m of casing. Well location and construction information is provided in Table 3.15 and the well log is provided in Appendix A.

The location of the Sheet Harbour (056) observation well is shown in Figure F.15a, Appendix F. It is situated in a rural area where the surrounding land is predominantly undeveloped. The well is located in a field, 50 m north of Route #7 (see Figure F.15b). It is located approximately 5.0 m from the East Halfway Brook and there is a domestic drilled well within 35 m of the observation well.

Table 3.15: Sheet Harbour (056) Well Construction Information

Well Name	Sheet Harbour (056)
Observation Well ID Number	056
NSE Well Log Number	871264
County	Halifax
Nearest Community	Sheet Harbour
UTM - Easting	543176
UTM - Northing	4972468
Year Monitoring Started	1987
Casing Depth (m, bgs)	7.01
Well Depth (m, bgs)	46.4
Elevation - top of casing (m, asl)	38.06
Geologic Unit	Goldenville Formation
Aquifer Material	Bedrock - Quartzite

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Sheet Harbour (056) are shown in Figure B.15, Appendix B. Based on a visual inspection of the historical water level graph, the water level at this well increased over time by approximately 1 m. The average water level elevation at this well was as follows: 35.9 m (1987 to 1993); 36.2 m (1994 to 1999); and 36.9 m (2007 to 2009). The depth to water in this well is currently approximately 1.2 m below ground surface and the average water level fluctuation is 0.6 m. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

In 2010, the average water level elevation was 36.7 m above sea level and the annual water level fluctuation was 0.64 m. The depth to water in this well was approximately 1.4 m below ground surface.

The 2010 water levels remained at, or close to, the historical highs for this well throughout most of the year.

Monitoring Results - Water Chemistry and Temperature

The Sheet Harbour (056) well was not sampled in 2010. Previous water chemistry results from 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, arsenic was detected at 10 ug/L, which is equal to, but does not exceed the drinking water guideline for arsenic. In addition, the aesthetic guideline for manganese was exceeded. No VOCs or pesticides were detected at this well.

A graph of the average daily temperature in this well for the period ending in January, 2010 is presented in Appendix D. The average groundwater temperature at this well was 7.05^{o}C, with annual fluctuations between approximately 3.39 and 9.14 ^{o}C.

3.16 Hayden Lake (059)

Well Description

The Hayden Lake (059) observation well is located near East Jordan, Shelburne County. The well was constructed in 1987 to expand the NS Groundwater Observation Well Network. It is completed in fractured bedrock comprised of greywacke. The well is 48.8 m deep and the casing extends to 6.1 m depth. Well location and construction information is provided in Table 3.16 and the well log is provided in Appendix A.

The location of the Hayden Lake (059) observation well is shown in Figure F.16, Appendix F. It is situated in a rural area where the surrounding land is primarily undeveloped. The well is located adjacent to the Hayden Lake Water Treatment Plant, which supplies the Town of Lockeport. The nearest water well is a domestic well located approximately 300 m away.

Table 3.16: Hayden Lake (059) Well Construction Information

Well Name	Hayden Lake (059)
Observation Well ID Number	059
NSE Well Log Number	870189
County	Shelburne
Nearest Community	East Jordan
UTM - Easting	321365
UTM - Northing	4849195
Year Monitoring Started	1988
Casing Depth (m, bgs)	6.1
Well Depth (m, bgs)	48.8
Elevation - top of casing (m, asl)	2.94
Geologic Unit	Goldenville Formation
Aquifer Material	Bedrock - greywacke

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Hayden Lake (059) are shown in Figure B.16, Appendix B. This well has been monitored since 1988. Water levels appear to have risen slightly over time while the amount of annual fluctuation has decreased. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, the statistical trend analysis for this well (Appendix E) indicates that there is a very small upward trend of approximately 0.9 cm/year. This corresponds to a total water level rise of approximately 0.2 m since monitoring began at this well.

The 2010 average water level elevation at the Hayden Lake (059) well was approximately 1.38 m above sea level and the annual water level fluctuation was 0.78 m. The depth to water in this well was approximately 1.56 m below ground surface.

The 2010 water levels were within the historically observed water level range for this well; however, the water level dropped below historical lows for short periods from January to June and for several days in late November and late December.

Monitoring Results - Water Chemistry and Temperature

The Hayden Lake (059) well was not sampled in 2010. Previous water chemistry results from 2005 and 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, the pH level in the 2008 sample did not meet the aesthetic drinking water guideline.

Note that one VOC (chloroform) was detected below the drinking water guideline in 2005; however, it was not detected in the 2008 sample. Chloroform is produced when chlorine reacts with organic matter and may have been present in this well as a result of chlorine use and storage at the nearby water treatment plant.

Perchlorate was detected at very low levels (0.014 ug/L), but was far below the recommended Health Canada guidance value of 6 ug/L. No pesticides were detected at this well.

The tritium level in this well was 3.4 TU, indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is

presented in Appendix D. The average groundwater temperature at the Hayden Lake (059) well was 8.50 ^{o}C, with annual fluctuations between 6.26 and 10.33 ^{o}C.

3.17 Meteghan (060)

Well Description

The Meteghan (060) observation well is located near the community of Meteghan River, Digby County. The well was constructed in March 1987 to expand the NS Groundwater Observation Well Network. The well is completed in slate aquifer and is 61.0 m deep with 12.19 m of casing. Well location and construction information is provided in Table 3.17 and the well log is provided in Appendix A.

The location of the Meteghan (060) observation well is shown in Figure F.17a, Appendix F. The well is situated on the lawn of a private property (see Figure F.17b), located 100 m south of the Meteghan River. The nearest water well is a domestic dug well approximately 30 m away.

Table 3.17: Meteghan (060) Well Construction Information

Well Name	Meteghan (060)
Observation Well ID Number	060
NSE Well Log Number	870188
County	Digby
Nearest Community	Meteghan River
UTM - Easting	250890
UTM - Northing	4900628
Year Monitoring Started	1987
Casing Depth (m, bgs)	12.19
Well Depth (m, bgs)	61.0
Elevation - top of casing (m, asl)	13.8
Geologic Unit	Halifax Formation
Aquifer Material	Bedrock-slate

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Meteghan (060) are shown in Figure B.17, Appendix B. This well has been monitored since mid-December 1987 and water levels appear to have decreased by approximately 0.3 m over time. From the end of 1987 until the end of 1992 the average water level elevation was approximately 9.42 m above sea level. From 1993 to the spring of 1999, the average water level elevation was approximately 9.15 m above sea level. The average water level elevation for the period when monitoring resumed in August 2006 to the end 2009 was again lower, at 9.10 m. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

In 2010, the average water level elevation was 9.18 m above sea level and the annual water level fluctuation was 1.14 m. The average depth to water in this well was approximately 4.63 m below ground surface in 2010.

The 2010 water levels were within the historical range for this well; however, water levels exceeded historical highs in October and November and dropped below historical lows in January, March, May, June and December 2010

Monitoring Results - Water Chemistry and Temperature

The Meteghan (060) well was not sampled in 2010. Previous water chemistry results from 2006 and 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, aesthetic drinking water guidelines were exceeded for turbidity, iron and manganese in both the 2006 and 2008 samples. The elevated turbidity is expected due to the high iron and manganese levels. VOCs and pesticides were not detected.

The tritium level in this well was 0.46 TU (+/- 0.14), indicating that the water in this well is old water (i.e., recharge occurred before 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was 8.88 ^{o}C, with annual fluctuations between approximately 8.14 and 9.78 ^{o}C.

3.18 Annapolis Royal (062)

Well Description

The Annapolis Royal (062) observation well is located near Lake La Rose, Annapolis County. The well was constructed in December 1989 to expand the NS Groundwater Observation Well Network. The well is completed in granite and is 62.8 m deep with 24.3 m of casing. Well location and construction information is provided in Table 3.18 and the well log is provided in Appendix A.

The location of the Annapolis Royal (062) observation well is shown in Figure F.18, Appendix F. It is situated in a rural area where the surrounding land is primarily undeveloped. The well is located 500 m from Lake La Rose, the former water supply for the Town of Annapolis Royal. The nearest water well is a domestic well located approximately 1,000 m away.

Table 3.18: Annapolis Royal (062) Well Construction Information

Well Name	Annapolis Royal (062)
Observation Well ID Number	062
NSE Well Log Number	891722
County	Annapolis
Nearest Community	Lake La Rose
UTM - Easting	303029
UTM - Northing	4952588
Year Monitoring Started	1990
Casing Depth (m, bgs)	24.3
Well Depth (m, bgs)	62.8
Elevation - top of casing (m, asl)	121.06
Geologic Unit	Liscomb Complex
Aquifer Material	Bedrock - granite

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Annapolis Royal (062) are shown in Figure B.18, Appendix B. This well has been monitored since 1990 and water levels have remained relatively constant. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there were insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis. The 2010 average water level elevation at the Annapolis Royal (062) well was 109.65 m above sea level and the annual water level fluctuation was 1.15 m. The average depth to water in this well in 2010 was 11.41 m below ground surface.

The 2010 water levels were within the historically observed water level range for this well, with water levels meeting or exceeding the previously observed historical highs in November and December and meeting the historical lows in January and May.

Monitoring Results - Water Chemistry and Temperature

The Annapolis Royal (062) well was sampled in 2005, 2007 and 2010 and the results are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, turbidity (2007) and manganese (2005, 2007 and 2010) exceeded the aesthetic drinking water guidelines. One VOC, toluene, was detected at 2 ug/L in 2005 and at 1 ug/L in 2007. These toluene levels are below the aesthetic drinking water guideline of 24 ug/L. This well is located beside a road and so the toluene, a chemical found in gasoline, may be due to runoff from the road. Toluene was not detected in 2010. Pesticides and perchlorate were not detected.

The tritium level in this well was measured in 2005 and found to be 0.27 TU, (+/- 0.17), indicating the water in the well is relatively old (i.e., recharge occurred before 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at the Annapolis Royal (062) well was 8.14 ^{o}C, with annual fluctuations between 8.04 and 8.19 ^{o}C.

3.19 Hebron (063)

Well Description

The Hebron (063) observation well is located near Dayton, Yarmouth County. The well was constructed in 1989 to expand the NS Groundwater Observation Well Network. The well is completed in slate and is 45.7 m deep with 12.2 m of casing. Well location and construction information is provided in Table 3.19 and the well log is provided in Appendix A.

The location of the Hebron (063) observation well is shown in Figure F.19, Appendix F. It is situated in a rural area and the surrounding land use is primarily residential. The well is located approximately 100 m from Lake Milo and 1,000 m from the ocean. The nearest water well is a domestic well located approximately 90 m away.

Table 3.19: Hebron (063) Well Construction Information

Well Name	Hebron (063)
Observation Well ID Number	063
NSE Well Log Number	891721
County	Yarmouth
Nearest Community	Dayton
UTM - Easting	250697
UTM - Northing	4862322
Year Monitoring Started	1990
Casing Depth (m, bgs)	12.2
Well Depth (m, bgs)	45.7
Elevation - top of casing (m, asl)	23.89
Geologic Unit	Whiterock Formation
Aquifer Material	Bedrock - slate

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Hebron (063) are shown in Figure B.19, Appendix B. This well has been monitored since 1990 and water levels have been relatively constant, although there appears to be a slight increase in the average water level (up by about 0.3 m) since the 1990s. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

The average water level elevation at the Hebron (063) well in 2010 was 21.36 m above sea level and the annual water level fluctuation was 1.65 m. The average depth to water in this well was about 2.53 m below ground surface and the hourly water level data shows tidal fluctuations of approximately 0.05 m.

The 2010 water levels were generally within the historically observed water level range for this well, however, historical highs were exceeded several times throughout 2010, in January, February, November and December. In addition, the 2010 water levels declined to previously observed historical lows from mid-April to early July and again in October.

Monitoring Results - Water Chemistry and Temperature

The Hebron (063) well was not sampled in 2010. Previous water chemistry results from 2005 and 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, the aesthetic drinking water guidelines were exceeded for turbidity, iron and manganese. In addition, the low pH in this well did not meet the aesthetic guideline in the 2005 sample and was equal to the guideline in the 2008 sample. The elevated turbidity levels in this well are expected due to the high iron and manganese levels. Note that the ion balance error reported in the general chemistry analysis was 23% in 2005 and 13% in 2008, which exceeds the generally acceptable level of 5% and, therefore, these results should be viewed with caution. VOCs, pesticides and perchlorate were not detected at this well.

The tritium level in this well was 4.6 TU, indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is provided in Appendix D. The average groundwater temperature at the Hebron (063) well was 8.84 ^{o}C, with annual fluctuations between 6.30 and 11.43 ^{o}C.

3.20 Margaree (064)

Well Description

The Margaree (064) observation well is located near the community of Margaree Valley, Inverness County. The well was constructed in January 1990 to expand the NS Groundwater Observation Well Network. The well is completed in a bedrock aquifer and is 45.7 m deep with 12.2 m of casing. Well location and construction information is provided in Table 3.20 and the well log is provided in Appendix A.

The location of the Margaree (064) observation well is shown in Figure F.20a, Appendix F. The well is situated 1.5 km northwest of the town of Margaree Valley. It is located at the end of a field (see Figure F.20b), 25 m from the northeast branch of the Margaree River, where Nova Scotia Environment has a surface water quality station and Environment Canada has a hydrometric station that measures river water levels. The land surrounding the well is used for growing hay.

Table 3.20: Margaree (064) Well Construction Information

Well Name	Margaree (064)
Observation Well ID Number	064
NSE Well Log Number	902524
County	Inverness
Nearest Community	Margaree Valley
UTM - Easting	655717
UTM - Northing	5137031
Year Monitoring Started	1990
Casing Depth (m, bgs)	12.2
Well Depth (m, bgs)	45.7
Elevation - top of casing (m, asl)	46.5
Geologic Unit	Windsor Group
Aquifer Material	Bedrock-conglomerate

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Margaree (064) are shown in Figure B.20, Appendix B. This well has been monitored since 1990, with a data gap from early 1998 to mid-2006. Water levels appear to have remained relatively consistent over time. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

From 1990 until 1998 the average water level elevation was 42.87 m above sea level. The average water level elevation for the period when monitoring resumed in 2006 to the end of 2009 was 42.66 m above sea level, with water level fluctuations of about 1 m. In 2010, the average water level elevation was 42.52 m above sea level and the annual water level fluctuation was about 1.53 m. The depth to water in this well was approximately 4.0 m below ground surface.

The 2010 water levels at this observation well were within the range previously observed, but were near historical lows for most of the year, with an exceedance above historical highs in December.

Monitoring Results - Water Chemistry and Temperature

The Margaree (064) well was not sampled in 2010. Previous water chemistry results from 2006 and 2008 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded. VOCs and pesticides were not detected.

The tritium level in this well was 0.41 TU (+/- 0.14), indicating that the water in this well is old water (i.e., recharge occurred before 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was 7.80 ^{o}C, with annual fluctuations between approximately 6.84 and 9.01 ^{o}C.

3.21 Ingonish (065)

Well Description

The Ingonish (065) observation well is located near the community of Ingonish Beach, Victoria County. The well was constructed in December 1989 to expand the NS Groundwater Observation Well Network. The well is completed in a bedrock aquifer and is 45.7 m deep with 12.2 m of casing. Well location and construction information is provided in Table 3.21 and the well log is provided in Appendix A.

The location of the Ingonish (065) observation well is shown in Figure F.21a, Appendix F. The well is situated on the Highlands Links golf course, within the Cape Breton Highlands Park. It is located 1.5 km south of Ingonish Centre and is approximately 30 m north west of Clyde Burn Brook. The well is in a forested area, adjacent to a small storage building (see site photograph in Figure F.21b).

Table 3.21: Ingonish (065) Well Construction Information

Well Name	Ingonish (065)
Observation Well ID Number	065
NSE Well Log Number	892288
County	Victoria
Nearest Community	Ingonish Beach
UTM - Easting	698083
UTM - Northing	5170473
Year Monitoring Started	1990
Casing Depth (m, bgs)	12.2
Well Depth (m, bgs)	45.7
Elevation - top of casing (m, asl)	7.0
Geologic Unit	Early Devonion Granodiorite
Aquifer Material	Bedrock - granodiorite

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Ingonish (065) are shown in Figure B.21, Appendix B. This well has been monitored since November 1990 with a data gap between mid-1998 to late 2006. Water levels appear to have remained relatively consistent over time. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

The average water level elevation at this well in 2010 was 2.03 m above sea level with annual fluctuations up to approximately 3.43 m. The average depth to water in this well was 4.63 m below ground surface.

The 2010 water levels were generally within the historically observed water level range for this well, although the historical highs were exceeded a few times throughout the year, in January, April, June, October and December. Water levels also declined to historical lows in February, March May and early December, 2010.

Monitoring Results - Water Chemistry

The Ingonish (065) well was not sampled in 2010. Previous water chemistry results from 2009 are presented in Appendix C. The results indicate that health-based no drinking water guidelines were exceeded; however, the results indicate a sodium concentration of 8000 mg/l, which exceeds the aesthetic guideline of 200 mg/l. Note that the ion balance error reported in the general chemistry analysis was 10%, which exceeds the generally acceptable level of 5% and, therefore, these results should be viewed with caution. VOCs and pesticides were not detected.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D.The average groundwater temperature at this well was approximately 6.55 ^{o}C, with annual fluctuations between 5.79 and 6.88 ^{o}C.

3.22 Debert (068)

Well Description

The Debert (068) observation well is located near the community of Debert, Colchester County. The well was constructed in August 1983 as a domestic water supply and was added to the NS Observation Well Network in 1993 to expand the network. The well is completed in a bedrock aquifer comprised of conglomerate. It is 46.6 m deep and has 7.9 m of casing. Well location and construction information is provided in Table 3.22 and the well log is provided in Appendix A.

The location of the Debert (068) observation well is shown in Figure F.22, Appendix F. The well is situated within the Debert Industrial Park, north of Highway 104. It is located in a cleared area beside a parking lot.

Table 3.22: Debert (068) Well Construction Information

Well Name	Debert (068)
Observation Well ID Number	068
NSE Well Log Number	832002
County	Colchester
Nearest Community	Debert
UTM - Easting	466921
UTM - Northing	5028483
Year Monitoring Started	1993
Casing Depth (m, bgs)	7.9
Well Depth (m, bgs)	46.6
Elevation - top of casing (m, asl)	28.4
Geologic Unit	Wolfville Formation
Aquifer Material	Bedrock-conglomerate

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Debert (068) are shown in Figure B.22, Appendix B. Monitoring began at this well in 1993; however, there is a gap in monitoring data between 1996 and 2006. The average water level in this well appears to have increased by approximately 1.5 m between 2006 and 2009. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

From June 1993 until June 1995 the average water level elevation was approximately 24.0 m above sea level, with an annual variation of up to approximately 3.2 m. The average water level elevation in 2010 was 25.45 m above sea level, with an annual variation of 3 m.

In 2010, the average water level elevation was 24.54 m above sea level and the annual water level fluctuation was 2.84 m. The depth to water in this well in 2010 was approximately 3.8 m below ground surface.

The 2010 water levels at this well reached historical high levels in November and December and dropped to historical lows in May and from August to early October.

Monitoring Results - Water Chemistry and Temperature

The Debert (068) well has not been sampled and, therefore, water chemistry results are not available. A graph of the daily average temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was approximately 8.09 ^{o}C, with annual fluctuations between approximately 6.39 and 9.76^{o}C.

3.23 Dalem Lake (069)

Well Description

The Dalem Lake (069) observation well is located near the community of New Dominion, Victoria County. This well was drilled in 1992 to expand the Groundwater Observation Well Network. The well is completed in a sandstone aquifer and is 61.0 m deep with 12.4 m of casing. Well location and construction information is provided in Table 3.23.

The location of the Dalem Lake (069) observation well is shown in Figure F.23, Appendix F. The well is located approximately 75 m south of the 105 Trans Canada Highway. There are no other wells in the nearby area and the surrounding land has recently been logged.

Table 3.23: Dalem Lake (069) Well Construction Information

Well Name	Dalem Lake (069)
Observation Well ID Number	069
NSE Well Log Number	943326
County	Victoria
Nearest Community	New Dominion
UTM - Easting	698221
UTM - Northing	5124576
Year Monitoring Started	1992
Casing Depth (m, bgs)	12.4
Well Depth (m, bgs)	61.0
Elevation - top of casing (m, asl)	93.8
Geologic Unit	South Bar Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Dalem Lake (069) are shown in Figure B.23, Appendix B. This well has been monitored since 1992 with a data gap between 1997 and early 2006. Water levels have remained relatively consistent. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

The average water level elevation at this well in 2010 was 86.82 m above sea level, with approximately 1.07 m of annual water level fluctuation. The depth to water in this well in 2010 was 6.93 m below ground surface.

The 2010 water levels were typically within the historically observed range for this well although historical highs were exceeded several times throughout the year, in January, March, April, June, and December. Historical low levels were surpassed lows in January, February, May and briefly in November.

Monitoring Results - Water Chemistry and Temperature

The Dalem Lake (069) well was not sampled in 2010. Previous water chemistry results from 2006 and 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, manganese was above the aesthetic guideline in both the 2006 and the 2008 samples. VOCs and pesticides were not detected.

The tritium level in this well was 3.61 TU (+/- 0.30), indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was 8.10 ^{o}C, with annual fluctuations between approximately 6.39 and 9.76 ^{o}C.

3.24 Amherst (071)

Well Description

The Amherst (071) observation well is located near the Town of Amherst, Cumberland County. It was drilled in July 1986 as a test well for the Town of Amherst's wellfield and was originally named "Test Hole No. 86-9". The well is completed in a sandstone aquifer and is 116.5 m deep with 5.8 m of casing. Well location and construction information is provided in Table 3.24 and the well log is provided in Appendix A.

The location of the Amherst (071) observation well is shown in Figure F.24, Appendix F. The well is situated in a field approximately 175 m northwest of Route 66 (Tyndal Road). There are two domestic wells within 125 m of this observation well and the Town of Amherst's wellfield is located nearby.

Table 3.24: Amherst (071) Well Construction Information

Well Name	Amherst (071)
Observation Well ID Number	071
NSE Well Log Number	862667
County	Cumberland
Nearest Community	Amherst
UTM - Easting	411279
UTM - Northing	5079213
Year Monitoring Started	1993
Casing Depth (m, bgs)	5.8
Well Depth (m, bgs)	116.5
Elevation - top of casing (m, asl)	17.8
Geologic Unit	Balfron Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Amherst (071) are shown in Figure B.24, Appendix B. Monitoring began at this well in 1993 and water levels appear to have remained relatively consistent; however, there is no data for the period between 1996 and 2006 and, therefore, the variability of the water level at this well is somewhat uncertain. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

The average water level elevation at this well in 2010 was 15.21 m above sea level, with an annual fluctuation of approximately 1.34 m. The depth to water in this well is approximately 2.56 m below ground surface.

The 2010 water levels were within the range historically observed for this well. Water levels matched the historical highs in January, February and April. Water levels declined to meet the historical lows in May and then increased gradually to reach the historical high again throughout June and July and again in November and December.

Monitoring Results - Water Chemistry and Temperature

The Amherst (071) well was not sampled in 2010. Previous water chemistry results from 2006 and 2009 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded. VOCs and pesticides were not detected.

The tritium level in this well was 4.0 TU (+/- 0.32), indicating that the water in this well is either a mix of old and recent water (i.e., recharge occurred before and after 1952) or is recent water (i.e., recharge occurred after 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was 7.34^{o}C, with annual fluctuations between approximately 6.16 and 8.65 ^{o}C

3.25 Kelley River (073)

Well Description

The Kelley River (073) observation well is located near the community of River Herbert, Cumberland County. This well was drilled as part of a hydrogeological investigation of the Kelley River Basin in 1972 (Hennigar, 1974). This well is referred to as "Observation well No.2" In the report entitled "Hydrogeology of the Kelley River IHD Benchmark Basin Cumberland County, NS" (Hennigar, 1974). The well is completed in a sandstone aquifer and is approximately 11.6 m deep with 4.2 m of casing. Well location and construction information is provided in Table 3.25 and the well log is provided in Appendix A.

Table 3.25: Kelley River (073) Well Construction Information

Well Name	Kelley River (073)
Observation Well ID Number	073
NSE Well Log Number	721858
County	Cumberland
Nearest Community	River Herbert
UTM - Easting	386806
UTM - Northing	5049171
Year Monitoring Started	2006
Casing Depth (m, bgs)	4.2
Well Depth (m, bgs)	11.6
Elevation - top of casing (m, asl)	33.1
Geologic Unit	Malagash Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Kelley River (073) observation well is shown in Figure F.25, Appendix F. The well is located within the Chignecto Game Sanctuary, 13 km from the Boars Back Ridge Road. It is in a wooded area and is located 18 m from Nova Scotia Environment's surface water quality station and Environment Canada's hydrometric station on Kelley River.

Monitoring Results - Water Levels

The water level graphs for Kelley River (073) are shown in Figure B.25, Appendix B. This well has been monitored since 2006 and water levels appear to have remained relatively consistent. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

The average water level elevation based on monitoring conducted to the end of November 2010 was 31.59 m above sea level, with an annual fluctuation of approximately 1.13 m. The average depth to water was 1.54 m below ground surface. The 2010 water levels were consistent with previous water levels observed at this well.

Monitoring Results - Water Chemistry and Temperature

The Kelley River (073) well was not sampled in 2010. Water chemistry results for 2007 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded. VOCs and pesticides were not detected.

The tritium level in this well was 3.78 TU (+/- 0.32), indicating that the water in this well is a mix of old and recent water (i.e., recharge occurred before and after 1952).

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well was 6.78 ^{o}C, with annual fluctuations between approximately 4.30 and 7.17 ^{o}C.

3.26 Atlanta (074)

Well Description

The Atlanta (074) observation well is located near the community of Atlanta, Kings County. The well was constructed in 2007 as part of a aquifer evaluation project completed by Nova Scotia Department of Environment and Labour. The well is completed in a sandstone aquifer and is 53.4 m deep with 36.0 m of casing. Well location and construction information is provided in Table 3.26 and the well log is provided in Appendix A. A 72-hour pumping test conducted at this well in 2007 indicated a transmissivity of 105 m^2/day, hydraulic conductivity of 5.7 m/day and a safe yield of 1227 m^3/day (188 igpm).

Table 3.26: Atlanta (074) Well Construction Information

Well Name	Atlanta (074)
Observation Well ID Number	074
NSE Well Log Number	070613
County	Kings
Nearest Community	Atlanta
UTM - Easting	381956
UTM - Northing	5000758
Year Monitoring Started	2008
Casing Depth (m, bgs)	36.0
Well Depth (m, bgs)	53.4
Elevation - top of casing (m, asl)	NA
Geologic Unit	Blomidon Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Atlanta (074) observation well is shown in Figure F.26a, Appendix F. The well is located approximately 250 m south of Bains Road and is surrounded by undeveloped land in a wooded area. It is located 150 m from the nearest domestic well and 150 m from the Habitant River.

Monitoring Results - Water Levels

The water level graphs for Atlanta (074) are shown in Figure B.26, Appendix B. This well has been monitored since May 2008. The average water level elevation up to the end of 2010 was 13.93 m above sea level, with an annual fluctuation of approximately 0.4 m. The average depth to water throughout this period was 2.27 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The Atlanta (074) well was sampled in 2007 and 2010 and the results are presented in Appendix C. The results indicate that the health-based drinking water guideline was exceeded for uranium in 2007 and 2010. VOCs and pesticides were not detected. This well has not been sampled for tritium or perchlorate.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature in 2009 was 5.54 ^{o}C, with an annual temperature range between 4.58 ^{o}C and 6.55 ^{o}C.

3.27 Sheffield Mills (075)

Well Description

The Sheffield Mills (075) observation well is located near the community of Sheffield Mills, Kings County. The well was constructed in 2007 as part of a aquifer evaluation project completed by Nova Scotia Department of Environment and Labour. The well is completed in a sandstone aquifer and is 53.4 m deep with 19.2 m of casing. Well location and construction information is provided in Table 3.27 and the well log is provided in Appendix A. A 72-hour pumping test conducted at this well in 2007 indicated a transmissivity of 72.4 m^2/day, hydraulic conductivity of 5.7 m/day and a safe yield of 371 m^3/day (57 igpm).

Table 3.27: Sheffield Mills (075) Well Construction Information

Well Name	Sheffield Mills (075)
Observation Well ID Number	075
NSE Well Log Number	070618
County	Kings
Nearest Community	Sheffield Mills
UTM - Easting	384693
UTM - Northing	5000590
Year Monitoring Started	2008
Casing Depth (m, bgs)	19.2
Well Depth (m, bgs)	53.4
Elevation - top of casing (m, asl)	NA
Geologic Unit	Wolfville Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

The location of the Sheffield Mills (075) observation well is shown in Figure F.27a, Appendix F. The well is located south of Highway 221 in an active agricultural field which is used for growing vegetables (see Figure F.27b). It is located 165 m from the Habitant River and there are several houses with domestic wells located within 300 m.

Monitoring Results - Water Levels

The water level graphs for Sheffield Mills (075) are shown in Figure B.27, Appendix B. This well has been monitored since May 2008. The average water level elevation up to the end of 2010 was 3.36 m above sea level, with an average annual fluctuation of 0.64 m. The average depth to water throughout this period was 5.74 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The Sheffield Mills (075) was sampled in 2007 and 2010 and the results are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded in 2007 or 2010. VOCs and pesticides were also not detected.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well in 2009 was 8.46 ^{o}C, with a temperature range between 8.13 ^{o}C and 8.98 ^{o}C.

3.28 Fall River (076)

Well Description

The Fall River (076) observation well is located in the community of Fall River, Halifax County. The well was constructed in February 2008 by NSE and NSDNR to expand the Groundwater Observation Well Network. The well is completed in a slate aquifer and is 61.0 m deep with 13.1 m of casing. Well location and construction information is provided in Table 3.28 and the well log is provided in Appendix A. A 4-hour constant rate pumping test was conducted at this well in 2008 by NSDNR (Kennedy et al., 2009). The results indicated a transmissivity of 0.07 m^2/day, hydraulic conductivity of 1.21 x 10^{-3} m/day and an estimated safe yield of 2.13 m^3/day (0.3 igpm).

Table 3.28: Fall River (076) Well Construction Information

Well Name	Fall River (076)
Observation Well ID Number	076
NSE Well Log Number	080824
County	Halifax
Nearest Community	Fall River
UTM - Easting	450243
UTM - Northing	4962226
Year Monitoring Started	2008
Casing Depth (m, bgs)	13.1
Well Depth (m, bgs)	61.0
Elevation - top of casing (m, asl)	108.67
Geologic Unit	Halifax Formation
Aquifer Material	Bedrock - slate

Notes: bgs = below ground surface; asl = above sea level

The location of the Fall River (076) observation well is shown in Figure F.28a, Appendix F, and a photograph of the well is shown in Figure F.28b. The well is located in a ball field in a subdivision development and is within 100 m of the nearest domestic well.

Monitoring Results - Water Levels

The water level graphs for Fall River (076) are shown in Figure B.28, Appendix B. This well has been monitored since March 2008. In 2010, the average water level elevation was 103.95 m above sea level and the annual water level fluctuation was 6.08m. The average depth to water in this well was 4.72 m below ground surface.

Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well. The water levels in 2010 were generally within the range previously recorded in 2008 and 2009.

Monitoring Results - Water Chemistry and Temperature

The Fall River (076) well was not sampled in 2010. Previous water chemistry results from 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded, however, three aesthetic drinking water guidelines were exceeded, including pH, iron and manganese. VOCs and pesticides were not detected.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well since monitoring began was 8.09 ^{o}C, with fluctuations between 7.05 and 9.33 ^{o}C.

3.29 West Northfield (077)

Well Description

The West Northfield (077) observation well is located adjacent to the LaHave River in the community of West Northfield, Lunenburg County. The well was constructed in March 2008 by NSE to expand the Groundwater Observation Well Network. The well is completed in a slate aquifer and is 48.8 m deep with 12.8 m of casing. Well location and construction information is provided in Table 3.29 and the well log is provided in Appendix A. A 5-hour pumping test (i.e., step-test) was conducted at this well in 2008 by NSDNR (Kennedy et al., 2009). The results indicated a transmissivity of 0.44 m^2/day, hydraulic conductivity of 1.44 X 10^{-2} m/day and an estimated safe yield of 10.53 m^3/day (1.6 igpm).

Table 3.29: West Northfield (077) Well Construction Information

Well Name	West Northfield (077)
Observation Well ID Number	077
NSE Well Log Number	080132
County	Lunenburg
Nearest Community	West Northfield
UTM - Easting	373416
UTM - Northing	4922807
Year Monitoring Started	2008
Casing Depth (m, bgs)	12.8
Well Depth (m, bgs)	48.8
Elevation - top of casing (m, asl)	50.84
Geologic Unit	Halifax Formation
Aquifer Material	Bedrock - slate

Notes: bgs = below ground surface; asl = above sea level

The location of the West Northfield (077) observation well is shown in Figure F.29a, Appendix F, and a photograph of the well is shown in Figure F.29b. The well is located adjacent to the LaHave River (within 50 m of the river) beside a bridge that crosses the LaHave. It is located within 100 m from the nearest domestic well. Note that surface water flow data is also collected at this location of the LaHave River as part of the Canada/Nova Scotia Hydrometric Program.

Monitoring Results - Water Levels

The water level graphs for West Northfield (077) are shown in Figure B.29, Appendix B. This well has been monitored since May 2008. The average water level elevation since monitoring began was 49.63 m above sea level, with fluctuations of approximately 1 m. In 2010, the average water level elevation was 49.62 m above sea level and the annual water level fluctuation was 1.92 m. The average depth to water in this well was 1.2 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The West Northfield (077) well was not sampled in 2010. Previous water chemistry results from 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded, however, the aesthetic drinking water guideline for manganese was exceeded. VOCs and pesticides were not detected.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature in 2009 was 8.10 ^{o}C, with fluctuations between approximately 7.30 and 8.63^{o}C.

3.30 Musquodoboit Harbour (078)

Well Description

The Musquodoboit Harbour (078) observation well is located adjacent to the Musquodoboit River in the community of Musquodoboit Harbour, Halifax County. The well was constructed in March 2008 by NSE and NSDNR to expand the Groundwater Observation Well Network. The well is completed in a slate aquifer and is 61.0 m deep with 27.1 m of casing.

Well location and construction information is provided in Table 3.30 and the well log is provided in Appendix A. A 1.5-hour constant rate pumping test was conducted at this well in 2008 by NSDNR (Kennedy et al., 2009). The results indicated a transmissivity of 0.010 m^2/day, hydraulic conductivity of 1.5 X 10^{-4} m/day and an estimated safe yield of 0.31 m^3/day (0.05 igpm). Note that this well is completed in bedrock, however, there is a sand and gravel layer that is approximately 25 m thick which overlies the bedrock at this location. During drilling, it was estimated that the yield of this overlying sand and gravel aquifer was approximately 1,300 m^3/day (200 igpm).

Table 3.30: Musquodoboit Harbour (078) Well Construction Information

Well Name	Musquodoboit Harbour (078)
Observation Well ID Number	078
NSE Well Log Number	080861
County	Halifax
Nearest Community	Musquodoboit Harbour
UTM - Easting	488125
UTM - Northing	4959880
Year Monitoring Started	2008
Casing Depth (m, bgs)	27.1
Well Depth (m, bgs)	61.0
Elevation - top of casing (m, asl)	7.71
Geologic Unit	Halifax Formation
Aquifer Material	Bedrock - slate

Notes: bgs = below ground surface; asl = above sea level

The location of the Musquodoboit Harbour (078) observation well is shown in Figure F.30a, Appendix F, and a photograph of the well is shown in Figure F.30b. The well is located on the edge of a ball field near a wetland and the Musquodoboit River (within 200 m of the river). It is located within 300 m from the nearest domestic well.

Monitoring Results - Water Levels

The water level graphs for Musquodoboit Harbour (078) are shown in Figure B.30, Appendix B. This well has been monitored since May 2008. In 2010, the average water level elevation was 4.80 m above sea level and the annual water level fluctuation was 2.7 m. The depth to water in this well was approximately 2.9 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The Musquodoboit Harbour (078) well was not sampled in 2010. Previous water chemistry results from 2008 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded. VOCs and pesticides were not detected.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well since monitoring began was 7.38 ^{o}C, with fluctuations between approximately 6.16 and 8.93^{o}C.

3.31 Lewis Lake (079)

Well Description

The Lewis Lake (079) observation well is located in the Jerry Lawrence Provincial Park near the community of Lewis Lake, Halifax County. The well was constructed in 1969 as a water supply for the park and was converted to an observation well in 2008 because it was no longer in use as a water supply well.

The well is completed in a granite aquifer and is 77.0 m deep with 7.6 m of casing. Well location and construction information is provided in Table 3.31 and the well log is provided in Appendix A. A 3 hour pumping test (i.e., step-test) was conducted at this well in 2008 by NSDNR (Kennedy et al., 2009). The results indicated a transmissivity of 1.53 m^2/day, hydraulic conductivity of $2.7x10^{-2}$ m/day and an estimated safe yield of 57.31 m^3/day (8.8 igpm).

Table 3.31: Lewis Lake (079) Well Construction Information

Well Name	Lewis Lake (079)
Observation Well ID Number	079
NSE Well Log Number	690090
County	Halifax
Nearest Community	Lewis Lake
UTM - Easting	433048
UTM - Northing	4948873
Year Monitoring Started	2008
Casing Depth (m, bgs)	7.6
Well Depth (m, bgs)	77.0
Elevation - top of casing (m, asl)	82
Geologic Unit	Late Devonian Granite
Aquifer Material	Bedrock - granite

Notes: bgs = below ground surface; asl = above sea level

The location of the Lewis Lake (079) observation well is shown in Figure F.31a, Appendix F, and a photograph of the well is shown in Figure F.31b. The well is located in a forested area within 100 m of Lewis Lake. The nearest domestic well is approximately 1,000 m away.

Monitoring Results - Water Levels

The water level graphs for Lewis Lake (079) are shown in Figure B.31, Appendix B. This well has been monitored since November 2008. In 2010, the average water level elevation was 69.34 m above sea level and the annual water level fluctuation was 0.73 m. The average depth to water in this well was approximately 2.5 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The Lewis Lake (079) well was not sampled in 2010. Previous water chemistry results from 2008 are presented in Appendix C. The results indicate that health-based drinking water guidelines were exceeded for arsenic and fluoride, and aesthetic drinking water guidelines were exceeded for manganese. VOCs and pesticides were not detected.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well in 2009 was 7.39 ^{o}C, with temperature fluctuations between 6.76 ^{o}C and 8.17 ^{o}C.

3.32 Arisaig (080)

Well Description

The Arisaig (080) observation well is located in Arisaig Provincial Park, near Arisaig in Antigonish County. The well was constructed in 1977 as a water supply for the park and was converted to an observation well in 2009 because it was no longer in use as a water supply well. The location of the Arisaig (080) observation well is shown in Figure F.32a, Appendix F.

The well is completed in a bedrock aquifer and is 91.5 m deep with 12.2 m of casing. Well location and construction information is provided in Table 3.32 and the well log is provided in Appendix A.

Table 3.32: Arisaig (080) Well Construction Information

Well Name	Arisaig (080)
Observation Well ID Number	080
NSE Well Log Number	770542
County	Antigonish
Nearest Community	Arisaig
UTM - Easting	564737
UTM - Northing	5067204
Year Monitoring Started	2009
Casing Depth (m, bgs)	12.2
Well Depth (m, bgs)	91.5
Elevation - top of casing (m, asl)	27.67
Geologic Unit	Earltown Formation
Aquifer Material	Bedrock - shale

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Arisaig (080) are shown in Figure B.32, Appendix B. This well has been monitored since December 2009. In 2010, the average water level elevation was 19.60 m above sea level and the annual water level fluctuation was 4.75 m. The depth to water in this well was approximately 8.1 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The Arisaig (080) well was not sampled in 2010. Previous water chemistry results from 2009 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, the water chemistry results indicate a pH does not meet the drinking water aesthetic objective. The pH at the Arisaig (080) well was 8.63 and Health Canada recommends a range from 6.5to 8.5. VOCs and pesticides were not detected at the Arisaig (080) well, with the exception of a low level of toluene (2 ug/l). The drinking water guideline for toluene is 24 ug/L.

The chloride level in this well was 57 mg/L. Although this does not exceed the aesthetic objective of 250 mg/L, it is elevated above the typical background level for groundwater in coastal Nova Scotia (<50 mg/L). The ocean is about 0.5 km from this well and, therefore, the elevated chloride level may be due to seawater influence. The bromide/chloride ratio for this well was 35 (i.e., 0.2 mg/L/ 57mg/L x 10,000 =35). This result indicates that the source of the chloride is sea water. Please see Section 2.2.4 for a discussion of how this ratio is used to assess salt sources.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well since monitoring began was 7.82 ^{o}C.

3.33 Coldbrook (081)

Well Description

The Coldbrook (081) observation well is located in the Coldbrook Provincial Park near the community of Coldbrook, Kings County. The well was constructed in 1961 as a water supply for the park and was converted to an observation well in 2009 because it was no longer in use as a water supply well. The location of the Coldbrook (081) observation well is shown in Figure F.33a, Appendix F, and a photograph of the well is shown in Figure F.33b.

The well is completed in a bedrock aquifer and is 70.7 m deep with 52.4 m of casing. Well location and construction information is provided in Table 3.33 and the well log is provided in Appendix A. A 1 hour pumping test was conducted at this well in 1974. The results indicated a specific capacity of 6.29 m^2/day and an estimated short-term safe yield of 26.18 m^3/day (8.8 igpm).

Table 3.33: Coldbrook (081) Well Construction Information

Well Name	Coldbrook (081)
Observation Well ID Number	081
NSE Well Log Number	610135
County	Kings
Nearest Community	Coldbrook
UTM - Easting	376149
UTM - Northing	4991748
Year Monitoring Started	2009
Casing Depth (m, bgs)	52.4
Well Depth (m, bgs)	70.7
Elevation - top of casing (m, asl)	27
Geologic Unit	Wolfville Formation
Aquifer Material	Bedrock - sandstone

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Coldbrook (081) are shown in Figure B.33, Appendix B. This well has been monitored since June 2009. In 2010, the average water level elevation was 12.12 m above sea level and the annual water level fluctuation was 0.78 m. The depth to water in this well was approximately 14.9 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The Coldbrook (081) well was not sampled in 2010. Previous water chemistry results from 2009 are presented in Appendix C. The results indicate that all parameters are within the drinking water guidelines. VOCs and pesticides were not detected.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well since monitoring began was 8.05 ^{o}C.

3.34 Long Point (082)

Well Description

The Long Point (082) observation well is located in the Long Point Provincial Park near the community of Long Point, Inverness County.The well was constructed in 1974 as a water supply for the park and was converted to an observation well in 2009 because it was no longer in use as a water supply well. The location of the Long Point (082) observation well is shown in Figure F.34a, Appendix F, and a photograph of the well is shown in Figure F.34b.

The well is completed in a bedrock aquifer and is 18.6 m deep with 13.1 m of casing. Well location and construction information is provided in Table 3.34 and the well log is provided in Appendix A. A pumping test was conducted at this well in 1974. The results indicated a transmissivity of 3.6 m^2/day and an estimated safe yield of 13.7 m^3/day (2.1 igpm).

Table 3.34: Long Point (082) Well Construction Information

Well Name	Long Point (082)
Observation Well ID Number	082
NSE Well Log Number	742421
County	Inverness
Nearest Community	Long Point
UTM - Easting	618131
UTM - Northing	5074277
Year Monitoring Started	2009
Casing Depth (m, bgs)	13.1
Well Depth (m, bgs)	18.5
Elevation - top of casing (m, asl)	10.17
Geologic Unit	Mabou Group
Aquifer Material	Bedrock - mudstone/sandstone

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Long Point (082) are shown in Figure B.34, Appendix B. This well has been monitored since August 2009. In 2010, the average water level elevation was 8.77 m above sea level and the annual water level fluctuation was 0.73 m. The average depth to water in this well was approximately 1.4 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis conducted in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The Long Point (082) well was not sampled in 2010. Previous water chemistry results from 2009 are presented in Appendix C. The results indicate that no drinking water guidelines were exceeded. VOCs and pesticides were not detected at the Long Point (082) well, with the exception of a low level of toluene (2 ug/l). The drinking water guideline for toluene is 24 ug/l.

The chloride level in this well was 61 mg/L. Although this level does not exceed the aesthetic objective of 250 mg/L, it is elevated above the typical background level for groundwater in coastal Nova Scotia (<50 mg/L). The bromide/chloride ratio for this well was >10 (i.e., 0.25 mg/L/ 61mg/L x 10,000 =41). This result indicates that the source of the chloride is formation salt, indicating the well may be influenced by the nearby Windsor Group/Carbonate bedrock. Please see Section 2.2.4 for a discussion of how this ratio is used to assess salt sources.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D. The average groundwater temperature at this well since monitoring began was 11.20 ^{o}C.

3.35 Tatamagouche (083)

Well Description

The Tatamagouche (083) observation well is located at the Tatamagouche Provincial Park, 1.5 km east of the community of Tatamagouche, Colchester County. The well was constructed in 1951 as a water supply for the park and was converted to an observation well in 2009 because it was no longer in use as a water supply well. The location of the Tatamagouche (083) observation well is shown in Figure F.35a, Appendix F.

The well is completed in a bedrock aquifer and is 24.5 m deep with an unknown casing length. Well location and construction information is provided in Table 3.35 and the well log is provided in Appendix A. A 22 hour pumping test was conducted at this well in 1974. The results indicated a transmissivity of 1.72 m^2/day and an estimated safe yield of 13.09 m^3/day (2.0 igpm).

Table 3.35: Tatamagouche (083) Well Construction Information

Well Name	Tatamagouche (083)
Observation Well ID Number	083
NSE Well Log Number	510124
County	Colchester
Nearest Community	Tatamagouche
UTM - Easting	479226
UTM - Northing	5061591
Year Monitoring Started	2009
Casing Depth (m, bgs)	unknown
Well Depth (m, bgs)	24.5
Elevation - top of casing (m, asl)	16
Geologic Unit	Tatamagouche Formation
Aquifer Material	Bedrock - sandstone/siltstone

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for Tatamagouche (083) are shown in Figure B.35, Appendix B. This well has been monitored since September 2009. In 2010, the average water level elevation was 13.95 m above sea level and the annual water level fluctuation was about 1.4 m. The average depth to water in this well was approximately 2.1 m below ground surface. Trend analysis was not completed in 2010. Based on trend analysis completed in 2009, there was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The Tatamagouche (083) well was not sampled in 2010. Water chemistry results from 2008 are presented in Appendix C. The results indicate that no health-based drinking water guidelines were exceeded; however, aesthetic drinking water guidelines were exceeded for colour, pH, turbidity, and manganese. VOCs and pesticides were not detected.

A graph of the average daily temperature in this well for the period ending in January 2010 is presented in Appendix D.The average groundwater temperature at this well since monitoring began was 8.67 ^{o}C, ranging from 7.74 to 9.15 ^{o}C.

3.36 Pugwash (084)

Well Description

The Pugwash (084) observation well is located in the Village of Pugwash, Cumberland County. The well was constructed in 2010 to support a sea water intrusion study under the Atlantic Climate Adaption Solutions program. The well was added to the NS Groundwater Observation Well Network in November 2010. The location of the Pugwash (084) observation well is shown in Figure F.36a, Appendix F.

The well is completed in a bedrock aquifer and is 61.6 m deep with a casing length of 12.2 m. Well location and construction information is provided in Table 3.36 and the well log is provided in Appendix A.

Table 3.36: Pugwash (084) Well Construction Information

Well Name	Pugwash (084)
Observation Well ID Number	084
NSE Well Log Number	100983
County	Colchester
Nearest Community	Pugwash
UTM - Easting	448360
UTM - Northing	5077961
Year Monitoring Started	2010
Casing Depth (m, bgs)	12.2
Well Depth (m, bgs)	61.6
Elevation - top of casing (m, asl)	NA
Geologic Unit	Cumberland Group
Aquifer Material	Bedrock - Shale/sandstone

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

Water level data are not available for this observation well for 2010.

Monitoring Results - Water Chemistry and Temperature

The Pugwash (084) observation well has not yet been sampled by Nova Scotia Environment.

3.37 St. Peters (085)

Well Description

The St. Peters (085) observation well is located on Oban Road, approximately 1 km north of the Village of St. Peters, Richmond County. The well was constructed in 2006 as a test well to explore for a water supply for St Peters. It was converted to an observation well in December 2010. The location of the St. Peters (085) observation well is shown in Figure F.37a, Appendix F.

The well is completed in a bedrock aquifer and is 112.9 m deep with a casing length of 18.3m. Well location and construction information is provided in Table 3.37 and the well log is provided in Appendix A.

Table 3.37: St Peters (085) Well Construction Information

Well Name	St. Peters (085)
Observation Well ID Number	085
NSE Well Log Number	062067
County	Richmond
Nearest Community	St. Peters
UTM - Easting	664778
UTM - Northing	5059282
Year Monitoring Started	2010
Casing Depth (m, bgs)	18.3
Well Depth (m, bgs)	112.9
Elevation - top of casing (m, asl)	NS
Geologic Unit	Cumberland Group
Aquifer Material	Bedrock - conglomerate

Notes: bgs = below ground surface; asl = above sea level

Monitoring Results - Water Levels

The water level graphs for St Peters (085) are shown in Figure B.37, Appendix B. This well has been monitored since September 2009. The average water level elevation since monitoring began was 14.13 m above sea level with a water table fluctuation of approximately 1 m. The depth to water was approximately 1.9 m below ground surface. There was insufficient water level data (i.e., <10 years of useable data) to complete a water level trend analysis for this well.

Monitoring Results - Water Chemistry and Temperature

The St. Peters (085) observation well has not yet been sampled by Nova Scotia Environment.

4.0 SUMMARY & CONCLUSIONS

4.1 Groundwater Levels

Table 4.1 presents a summary of groundwater level trends for each observation well and further details are provided in Appendix E. Statistical trend analysis was most recently completed in 2009. Trend analyses were only carried out on wells with at least ten years of "useable" water level data. A year was considered useable if data were available for at least 75% of the year. Thirteen of the observation wells had enough water level data available to complete trend analyses. The remaining 22 wells had either been monitored for less than ten years, or had data gaps that caused some years of monitoring data to be unusable. Trends were considered statistically significant if the confidence level was greater than 80%.

The results based on trend analysis completed for the period ending in 2009 indicate that seven of the wells exhibit statistically significant groundwater level trends, with three having small upward trends and four having small downward trends. The downward trends are larger than the upward trends; however, the size of the trends in all cases is relatively small.

Upward trends were observed at the following wells: Fraser Brook (004), Durham (045) and Hayden Lake (059). The largest upward trend was 1.8 cm/year at the Durham (045) observation well, which resulted in a total rise of approximately 0.7 m over the entire monitoring period at this well. The reason for the upward trends at these wells has not been determined, however, possible reasons include: increased annual precipitation, greater infiltration rates due to changes in land use, and reduction in evapotranspiration rates.

Downward trends were observed at the following wells: Murray Siding (007), Wolfville (010), Kentville (048) and Sydney (050). The largest downward trend was 5.8 cm/year at the Sydney (050) observation well, which resulted in a total decline of approximately 1.2 m since monitoring began. The reason for the downward trends at these wells has not been confirmed, however, three of these observation wells are located in municipal wellfields and so groundwater levels in these areas are expected to decline due to wellfield pumping.

Table 4.1: Summary of Groundwater Level Trends

Well Name	Year Monitoring Started	No. of Usable Years [1]	Average Yearly Water Level Change (cm/year)[2]	Total Water Level Change Since Monitoring Began (m)	Water Level Trend[3]
Greenwood (003)	1966	21	NA	NA	No Trend
Fraser Brook (004)	1966	20	0.4	0.1	Up
Wilmot (005)	1966	19	NA	NA	No Trend
Murray Siding (007)	1967	13	-2.5	-1	Down
Wolfville (010)	1969	21	-2.3	-0.7	Down
Truro (014)	1971	17	NA	NA	No Trend
Monastery (028)	1976	11	NA	NA	No Trend
Point Aconi (030)	1976	17	NA	NA	No Trend
Lawrencetown (043)	1978	13	NA	NA	No Trend
Durham (045)	1979	24	1.8	0.7	Up
Kentville (048)	1980	16	-0.8	-0.6	Down
Sydney (050)	1984	15	-5.8	-1.2	Down
North Grant (054)	1987	8	NA	NA	Insufficient Data
Stillwater (055)	1987	7	NA	NA	Insufficient Data
Sheet Harbour (056)	1987	7	NA	NA	Insufficient Data
Hayden Lake (059)	1988	15	0.9	0.2	Up
Meteghan (060)	1987	9	NA	NA	Insufficient Data
Annapolis Royal (062)	1990	8	NA	NA	Insufficient Data
Hebron (063)	1990	8	NA	NA	Insufficient Data
Margaree (064)	1990	8	NA	NA	Insufficient Data

Well Name	Year Monitoring Started	No. of Usable Years [1]	Average Yearly Water Level Change (cm/year)[2]	Total Water Level Change Since Monitoring Began (m)	Water Level Trend[3]
Ingonish (065)	1990	7	NA	NA	Insufficient Data
Debert (068)	1993	4	NA	NA	Insufficient Data
Dalem Lake (069)	1992	6	NA	NA	Insufficient Data
Amherst (071)	1993	3	NA	NA	Insufficient Data
Kelley River (073)	2006	3	NA	NA	Insufficient Data
Atlanta (074)	2008	1	NA	NA	Insufficient Data
Sheffield Mills (075)	2008	1	NA	NA	Insufficient Data
Fall River (076)	2008	1	NA	NA	Insufficient Data
West Northfield (077)	2008	1	NA	NA	Insufficient Data
Musquodoboit Hbr (078)	2008	1	NA	NA	Insufficient Data
Lewis Lake (079)	2008	<1	NA	NA	Insufficient Data
Arisaig (080)	2009	<1	NA	NA	Insufficient Data
Coldbrook (081)	2009	<1	NA	NA	Insufficient Data
Long Point (082)	2009	<1	NA	NA	Insufficient Data
Tatamagouche (083)	2009	<1	NA	NA	Insufficient Data
Pugwash (084)	2010	<1	NA	NA	Insufficient Data
St. Peters (085)	2010	<1	NA	NA	Insufficient Data

Notes:
1. For a year to be considered a “useable” year, data must be available for at least 75% of the year.
2. Positive (+) values indicate upward trend and negative (-) values indicate downward trend.
3. The trend is considered to be statistically significant if the confidence level is 80% or more.
5. Insufficient data means there are less than 10 useable years of data available.

4.2 Groundwater Quality

Table 4.2 presents a summary of the groundwater quality results for each of the Network's observation wells. Detailed chemistry results are available in Appendix C. The results indicate that seven of the 37 wells exceeded health-based drinking water guidelines in the past. The parameters that exceeded health-based guidelines include: arsenic (at four wells), fluoride (one well), lead (one well), nitrate (one well) and uranium (one well). Most of these exceedances (including arsenic, fluoride and uranium) are associated with naturally-occurring dissolved minerals that are known to occur in groundwater in certain areas of the province. The nitrate exceedance was observed at a well located in an agricultural area, and is likely to be caused by human activity.

Nineteen of the 37 wells exceeded aesthetic drinking water guidelines in the past. The parameters that exceeded aesthetic drinking water guidelines include: manganese (at 13 wells), iron (at seven wells), chloride (at one well), pH (at five wells), turbidity (at eight wells), colour (at one well) and sodium (at one well). The majority of these parameters are representative of naturally-occurring water quality problems that are commonly encountered in water wells in Nova Scotia and elsewhere. Chloride was detected above background levels at five wells, including one well where the chloride level was above the aesthetic drinking water guideline. Based on the chemistry and location of these wells, it appears that two of these wells have been impacted by road salt, two have been impacted by sea water intrusion, and one has been impacted by naturally-occurring salt contained in the geologic formation.

The water quality results show that none of the observation wells exceeded drinking water guidelines for volatile organic compounds (VOCs) or pesticides. However, one VOC (toluene) was detected at three observation wells at low levels (i.e., 2 ug/L). The source of the toluene at these wells has not been determined; however, these wells are located beside roads and so the toluene source may be gasoline runoff from roads. No pesticides were detected in any of the observation wells.

The groundwater temperature data collected at each observation well for the period ending in January 2010 (see Appendix D) show that all of the observation wells experience seasonal temperature fluctuations. The peak groundwater temperatures usually occur between September and January and the lowest temperatures usually occur between March and June. The temperature range at each observation well is variable, however, the typical range is between 6^{o}C and 10^{o}C, with a

typical average temperature of approximately 8^{o}C.

Of the 17 observation wells tested for tritium, 13 wells contained either recent water (recharged after 1952) or a mix of recent and old water (recharged before and after 1952). Only four of the seventeen wells tested for tritium contained purely old water (recharged before1952). These results suggest that most of the wells draw water from aquifers that are recharged relatively quickly. This is encouraging from a water quantity point of view because the aquifers are being regularly replenished with new water, but it also indicates that the aquifers are vulnerable to contaminants released at the surface that can be carried into the aquifer relatively quickly. This vulnerability underlines the importance of implementing source water protection measures to ensure that groundwater aquifers are protected from surface activities.

Table 4.2: Summary of Groundwater Quality Results

Well Name	Parameters Exceeding Health-Based Drinking Water Guidelines	Parameters Exceeding Aesthetic Drinking Water Guidelines	Comments
Greenwood (003)	None	pH, Turbidity, Iron, Manganese	None
Fraser Brook (004)	Arsenic	None	None
Wilmot (005)	Nitrate	None	None
Murray Siding (007)	Not sampled	Not sampled	Not sampled
Wolfville (010)	None	Turbidity, Iron, Manganese	Chloride exceeds background
Truro (014)	Not sampled	Not sampled	Not sampled
Monastery (028)	None	None	None
Point Aconi (030)	None	None	None
Lawrencetown (043)	Arsenic	None	Chloride exceeds background
Durham (045)	None	None	None
Kentville (048)	Lead	Chloride, Iron	None
Sydney (050)	None	Manganese	None
North Grant (054)	Arsenic	Turbidity, Iron	None
Stillwater (055)	None	Manganese	None
Sheet Harbour (056)	None	Manganese	Arsenic was detected at a level equal to the guideline (10 ug/L)
Hayden Lake (059)	None	pH	None
Meteghan (060)	None	Turbidity, Iron, Manganese	None
Annapolis Royal (062)	None	Manganese	None

Well Name	Parameters Exceeding Health-Based Drinking Water Guidelines	Parameters Exceeding Aesthetic Drinking Water Guidelines	Comments
Hebron (063)	None	Turbidity, Iron, Manganese	None
Margaree (064)	None	None	None
Ingonish (065)	None	Sodium	None
Debert (068)	Not sampled	Not sampled	Not sampled
Dalem Lake (069)	None	Manganese	None
Amherst (071)	None	None	None
Kelley River (073)	None	None	None
Atlanta (074)	Uranium	None	None
Sheffield Mills (075)	None	None	None
Fall River (076)	None	pH, Iron, Manganese	None
West Northfield (077)	None	Manganese	None
Musquodoboit Hbr (078)	None	None	None
Lewis Lake (079)	Arsenic, Fluoride	Manganese	None
Arisaig (080)	None	pH	Toluene detected below guidelines; Chloride exceeds background
Coldbrook (081)	None	None	None
Long Point (082)	None	None	Toluene detected below guidelines; Chloride exceeds background
Tatamagouche (083)	None	pH, Turbidity, Manganese, Colour	None
Pugwash (084)	Not Sampled	Not Sampled	Not Sampled
St Peters (085)	Not Sampled	Not Sampled	Not Sampled

Note: Some wells have been sampled multiple times. This table summarizes the most recent sample results.

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APPENDIX A
WELL LOGS

Table A-1: Summary of Observation Well Construction Information

Well#	Address	Community	County	Date	Well Depth (ft)	Casing Depth (ft)	Depth to Bedrock (ft)	Depth to Static Level (ft)	Water Yield (igpm)	Driller	Type of Well
661225	NS OBS WELL - GREENWOOD (003)	GREENWOOD	KINGS	20-Jun-66	25	21.5				1	DRILLED
661226	NS OBS WELL - FRASER BROOK (004)	LOWER HARMONY	COLCHESTER	11-Jul-66	60		2		5	1	DRILLED
661267	NS OBS WELL - WILMOT (005)	WILMOT	ANNAPOLIS	18-May-66	60	21				1	DRILLED
671074	NS OBS WELL - MURRAY SIDING (007)	MURRAYS SIDING	COLCHESTER	2-Aug-67	28	26	26			1	DRILLED
681252	NS OBS WELL - WOLFVILLE (010)	WOLFVILLE	KINGS	17-Dec-68	79	74.5	35			1	DRILLED
701431	NS OBS WELL - TRURO (014)	TRURO	COLCHESTER	16-Nov-70	300	60	35			1	DRILLED
742420	NS OBS WELL - MONASTERY (028)	MONASTERY	ANTIGONISH	1-Jan-74	520				40	1	DRILLED
761408	NS OBS WELL - POINT ACONI (030)	POINT ACONI	CAPE BRETON	11-Aug-76	100	42	14		10	45	DRILLED
771538	NS OBS WELL - LAWRENCETOWN (043)	UPPER LAWRENCETOWN	HALIFAX	16-Mar-77	175	145	10	4	8	83	DRILLED
772021	NS OBS WELL - KENTVILLE (048)	KENTVILLE	KINGS	20-May-77	400	100	95		150	20	DRILLED
771077	NS OBS WELL - SYDNEY (050)	SYDNEY	CAPE BRETON	9-Mar-77	330	22	13		250	45	DRILLED
782683	NS OBS WELL - DURHAM (045)	DURHAM	PICTOU	1-Jul-78	247		20		100	4	DRILLED
832002	NS OBS WELL - DEBERT (068)	DEBERT	COLCHESTER	13-Aug-83	153	26		112	10	6	DRILLED
871262	NS OBS WELL - NORTH GRANT (054)	LOWER NORTH GRANT	ANTIGONISH	30-Mar-87	150	43		14	20	2	DRILLED
871263	NS OBS WELL - STILLWATER (055)	STILLWATER	GUYSBOROUGH	1-Apr-87	118	44		30	4.5	2	DRILLED
871264	NS OBS WELL - SHEET HARBOUR (056)	BEAVER HARBOUR	HALIFAX	6-Apr-87	150	23		10	0.7	2	DRILLED
870189	NS OBS WELL - HAYDEN LAKE (059)	EAST JORDAN	SHELBURNE	31-Mar-87	160	20	10		3.7	210	DRILLED
870188	NS OBS WELL - METEGHAN (060)	METEGHAN RIVER	DIGBY	31-Mar-87	200	40			0.7	210	DRILLED
891721	NS OBS WELL - HEBRON (063)	DAYTON	YARMOUTH	19-Dec-89	150	40	3		45	210	DRILLED
891722	NS OBS WELL - ANNAPOLIS ROYAL (062)	LAKE LA ROSE	ANNAPOLIS	20-Dec-89	205	80	71		0.5	210	DRILLED
892288	NS OBS WELL - INGONISH (065)	INGONISH	VICTORIA	12-Dec-89	150	40			100	45	DRILLED
902524	NS OBS WELL - MARGAREE (064)	MARGAREE VALLEY	INVERNESS	16-Jan-90	150	40			10	45	DRILLED
943326	NS OBS WELL - DALEM LAKE (069)	NEW DOMINION	VICTORIA	1-Jan-92	200	40.5					DRILLED
862667	NS OBS WELL - AMHERST (071)	AMHERST	CUMBERLAND	29-Jul-86	382	20	15			32	DRILLED
721858	NS OBS WELL - KELLEY RIVER (073)	RIVER HEBERT	CUMBERLAND	1-Dec-71	50	13.6					DRILLED
070613	NS OBS WELL - ATLANTA (074)	ATLANTA	KINGS	29-Aug-07	175	118	112		100	307	DRILLED
070618	NS OBS WELL - SHEFFIELD MILLS (075)	SHEFFIELD MILLS	KINGS	29-Aug-07	175	63	16		60	307	DRILLED
080824	NS OBS WELL - FALL RIVER (076)	FALL RIVER	HALIFAX	28-Feb-08	200	43	3.5	12	1.5	695	DRILLED
080132	NS OBS WELL - WEST NORTHFIELD (077)	WEST NORTHFIELD	LUNENBURG	6-Mar-08	160	42	24		7	307	DRILLED
080861	NS OBS WELL - MUSQUODOBOIT HBR (078)	MUSQUODOBOIT HARBOUR	HALIFAX	6-Mar-08	200	89	81		0.5	734	DRILLED
690090	NS OBS WELL - LEWIS LAKE (079)	LEWIS LAKE	HALIFAX	11-Jun-69	250	25	20		6	3	DRILLED
770542	NS OBS WELL - ARISAIG (080)	ARISAIG	ANTIGONISH	5-Jul-77	300	40	30			15	DRILLED
610135	NS OBS WELL - COLDBROOK (081)	COLDBROOK	KINGS	1-Jan-61	232	172		45			DRILLED
742421	NS OBS WELL - LONG POINT (082)	LONG POINT	INVERNESS	1-Aug-74	61	43		7.5			DRILLED
510124	NS OBS WELL - TATAMAGOUCHE (083)	TATAMAGOUCHE	COLCHESTER	1-Jan-51	80.4					33	DRILLED
100983	NS OBS WELL - PUGWASH (084)	PUGWASH	CUMBERLAND	30-Sep-10	202	40	24	9	75	882	DRILLED
062067	NS OBS WELL - ST. PETERS (085)	ST. PETER'S	RICHMOND	2-Mar-06	370	60	42		12.5	446	DRILLED

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 661225
Well Type DRILLED

Certified Well Contractor

Name: MINES
Certificate No.: 1
Company: N. S. DEPARTMENT OF MINES

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF MINES
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - GREENWOOD (003)
Lot Number: Subdivision:
County: KINGS Postal Code:
Nearest Community in Altlas/Map Book: ATLAS GREENWOOD

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book:
Map Page No.:
Reference Letter:
Reference Number:
Roamer Letter:
Roamer Number:

NTS Map Reference :
Map Sheet: 21H2
Reference Map: B
Tract No.: 7
Claim: M

GPS (WGS84 UTM) :
Northing (m): 4985498
Easting (m): 350680
Property (PID):
Well Location Sketch Available ☐

Depth in feet / Primary Lithology / Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	25		FINE GRAINED	SAND		COARSE GRAIN	SAND	☐

Well Construction Information

Total depth below surface (ft): 25
Depth to bedrock (ft):
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft): 0 To (ft): 22
Diameter (in): 4.5
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm):
Method:
Rate (igpm):
Duration (hrs):
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments: NS OBSERVATION WELL - GREENWOOD (003)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling:
Date well completed: 20-Jun-66

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 661226
Well Type DRILLED

Certified Well Contractor

Name: MINES
Certificate No.: 1
Company: N. S. DEPARTMENT OF MINES

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF MINES
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - FRASER BROOK (004)
Lot Number: Subdivision:
County: COLCHESTER Postal Code:
Nearest Community in Altlas/Map Book: ATLAS LOWER HARMONY

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book:
Map Page No.:
Reference Letter:
Reference Number:
Roamer Letter:
Roamer Number:

NTS Map Reference :
Map Sheet: 11E6
Reference Map: A
Tract No.: 81
Claim: J

GPS (WGS84 UTM) :
Northing (m): 5021100
Easting (m): 486889
Property (PID):
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	2	REDDISH	SANDY	TILL				☐
6	60	REDDISH	LAMINATED	SILTSTONE	GRAY	LAYERS	SILTSTONE	☐

Well Construction Information

Total depth below surface (ft): 60
Depth to bedrock (ft): 2
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft): To (ft):
Diameter (in): 6
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm): 6.5
Method: PUMP TEST
Rate (igpm): 5
Duration (hrs): 24
Depth to water at end of test (ft):
Total drawdown (ft): 29.5
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments: NS OBSERVATION WELL - FRASER BROOK (004)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling:
Date well completed: 11-Jul-66

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 661267

Well Type DRILLED

Certified Well Contractor

Name: MINES

Certificate No.: 1

Company: N. S. DEPARTMENT OF MINES

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF MINES

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - WILMOT (005)

Lot Number: Subdivision:

County: ANNAPOLIS Postal Code:

Nearest Community in Altlas/Map Book: ATLAS WILMOT

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.:

Reference Letter:

Reference Number:

Roamer Letter:

Roamer Number:

NTS Map Reference :

Map Sheet: 21A14

Reference Map: D

Tract No.: 71

Claim: G

GPS (WGS84 UTM) :

Northing (m): 4979368

Easting (m): 340015

Property (PID):

Well Location Sketch Available ☐

Depth in feet	Primary Lithology	Secondary Lithology

Well Construction Information

Total depth below surface (ft): 60

Depth to bedrock (ft):

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): 0 To (ft): 21

Diameter (in): 4.5

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method:

Rate (igpm):

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NS OBSERVATION WELL - WILMOT (005)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling:

Date well completed: 18-May-66

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 671074

Well Type DRILLED

Certified Well Contractor

Name: MINES

Certificate No.: 1

Company: N. S. DEPARTMENT OF MINES

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF MINES

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - MURRAY SIDING (007)

Lot Number: Subdivision:

County: COLCHESTER Postal Code:

Nearest Community in Altlas/Map Book: ATLAS MURRAYS SIDING

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.:

Reference Letter:

Reference Number:

Roamer Letter:

Roamer Number:

NTS Map Reference :

Map Sheet: 11E6

Reference Map: A

Tract No.: 107

Claim: K

Well Construction Sketch Available ☐

GPS (WGS84 UTM) :

Northing (m): 5024186

Easting (m): 483114

Estimated GPS Accuracy (m, +/-): 50

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	26		COARSE GRAIN	SAND		COARSE GRAIN	GRAVEL	☐
26	28			SANDSTONE			SILTSTONE	☐

Well Construction Information

Total depth below surface (ft): 28

Depth to bedrock (ft): 26

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): 0 To (ft): 26

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method:

Rate (igpm):

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NS OBS WELL - MURRAY SIDING (007)
NOTE: WELL AND CASING DEPTH MEASURED TO BE 18 FT BGS ON 20 MAY 2010; ASSUME WELL COLLAPSE.

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling:

Date well completed: 02-Aug-67

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 681252
Well Type DRILLED

Certified Well Contractor

Name: MINES
Certificate No.: 1
Company: N. S. DEPARTMENT OF MINES

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF MINES
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - WOLFVILLE (010)
Lot Number: Subdivision:
County: KINGS Postal Code:
Nearest Community in Altlas/Map Book: ATLAS WOLFVILLE

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book:
Map Page No.:
Reference Letter:
Reference Number:
Roamer Letter:
Roamer Number:

NTS Map Reference :
Map Sheet: 21H1
Reference Map: B
Tract No.: 78
Claim: K

GPS (WGS84 UTM) :
Northing (m): 4993828
Easting (m): 392086
Property (PID):
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	3	RED	CLAYEY	TILL				☐
3	15		FINE GRAINED	SAND			GRAVEL	☐
15	35	RED	CLAYEY	TILL				☐
35	79	RED		SANDSTONE				☐

Well Construction Information

Total depth below surface (ft): 79
Depth to bedrock (ft): 35
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft): To (ft): 75
Diameter (in): 4.5
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm):
Method:
Rate (igpm):
Duration (hrs):
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments: NS OBSERVATION WELL - WOLFVILLE (010)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling:
Date well completed: 17-Dec-68

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 701431
Well Type DRILLED

Certified Well Contractor

Name: MINES
Certificate No.: 1
Company: N. S. DEPARTMENT OF MINES

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF MINES
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - TRURO (014)
Lot Number: Subdivision:
County: COLCHESTER Postal Code:
Nearest Community in Altlas/Map Book: ATLAS TRURO

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book:
Map Page No.:
Reference Letter:
Reference Number:
Roamer Letter:
Roamer Number:

NTS Map Reference :
Map Sheet: 11E6
Reference Map: B
Tract No.: 99
Claim: F

GPS (WGS84 UTM) :
Northing (m): 5023778
Easting (m): 476052
Property (PID):
Well Location Sketch Available ☐

Depth in feet / Primary Lithology / Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	20			GRAVEL				☐
20	35			GLACIAL TILL				☐
35	300			SHALE		SEAM	SANSTONE	☐

Well Construction Information

Total depth below surface (ft): 300
Depth to bedrock (ft): 35
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft): 0 To (ft): 60
Diameter (in): 6
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm):
Method:
Rate (igpm):
Duration (hrs):
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments: NS OBSERVATION WELL - TRURO (014)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling:
Date well completed: 16-Nov-70

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 742420

Well Type DRILLED

Certified Well Contractor

Name: MINES

Certificate No.: 1

Company: N. S. DEPARTMENT OF MINES

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF MINES

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - MONASTERY (028)

Lot Number: Subdivision:

County: ANTIGONISH Postal Code:

Nearest Community in Altlas/Map Book: ATLAS MONASTERY

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.:

Reference Letter:

Reference Number:

Roamer Letter:

Roamer Number:

NTS Map Reference :

Map Sheet: 11F12

Reference Map: A

Tract No.: 91

Claim:

GPS (WGS84 UTM) :

Northing (m): 5052489

Easting (m): 606083

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	1		CLAYEY	TILL				☐
1	520			SANDSTONE			SHALE & CONGLOM	☐

Well Construction Information

Total depth below surface (ft): 520

Depth to bedrock (ft):

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): To (ft):

Diameter (in):

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm): 67

Method:

Rate (igpm): 40

Duration (hrs): 50

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NS OBSERVATION WELL - MONASTERY (028)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling:

Date well completed: 01-Jan-74

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 761408
Well Type DRILLED

Certified Well Contractor

Name: MCDONALD, IAN
Certificate No.: 45
Company: ISLAND WELL DRILLERS

Well Owner/Contractor Information

Well Drilled For: Owner: CAPE BRETON DEVELOPMEN
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - POINT ACONI (030)
Lot Number: Subdivision:
County: CAPE BRETON Postal Code:
Nearest Community in Altlas/Map Book: ATLAS POINT ACONI

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book: MAP
Map Page No.: 43
Reference Letter: A
Reference Number: 1
Roamer Letter: O
Roamer Number: 13

NTS Map Reference :
Map Sheet: 11K8
Reference Map: B
Tract No.: 70
Claim:

GPS (WGS84 UTM) :
Northing (m): 5133152
Easting (m): 707986
Property (PID):
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	14			SHALE & CLAY				☐
14	100			SANDSTONE				☐

Well Construction Information

Total depth below surface (ft): 100
Depth to bedrock (ft): 14
Water bearing fractures encountered at (ft): 70
Outer Well Casing:
From (ft): 6 To (ft): 42
Diameter (in): 6
Length of casing above ground :
(ft): (in):
Driveshoe make: UNKNOWN

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm): 10
Method: PUMPED
Rate (igpm): 10
Duration (hrs): 1
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments: NS OBSERVATION WELL - POINT ACONI (030)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling: ROTARY
Date well completed: 11-Aug-76

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 771538

Well Type DRILLED

Certified Well Contractor

Name: EDWARDS, HARRY A.

Certificate No.: 83

Company: H. J. EDWARDS WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - LAWRENCETOWN (043)

Lot Number: Subdivision:

County: HALIFAX Postal Code:

Nearest Community in Altlas/Map Book: ATLAS UPPER LAWRENCETOWN

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: MAP

Map Page No.: 24

Reference Letter: D

Reference Number: 3

Roamer Letter: N

Roamer Number: 11

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

GPS (WGS84 UTM) :

Northing (m): 4947712

Easting (m): 464172

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	5			SAND & GRAVEL & BOU				☐
5	12			BOULDER & ROCK				☐
12	152	GRAY		QUARTZITE			SLATE	☐
152	165	DARK GRA		SLATE		QUARTZ VEINS		☑
165	174	GREENISH		QUARTZITE			SLATE	☐

Well Construction Information

Total depth below surface (ft): 175

Depth to bedrock (ft): 10

Water bearing fractures encountered at (ft): 152, 155

Outer Well Casing:

From (ft): 0 To (ft): 145

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make: UNKNOWN

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm): 14.5

Method:

Rate (igpm): 8

Duration (hrs): 1.5

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft): 4

Overflow ☐

Comments: NS OBSERVATION WELL - LAWRENCETOWN (043)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling: ROTARY

Date well completed: 16-Mar-77

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 782683
Well Type DRILLED

Certified Well Contractor

Name: STEWART, EDMUND
Certificate No.: 4
Company: E. D. STEWART LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - DURHAM (045)
Lot Number: Subdivision:
County: PICTOU Postal Code:
Nearest Community in Altlas/Map Book: ATLAS DURHAM

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book:
Map Page No.:
Reference Letter:
Reference Number:
Roamer Letter:
Roamer Number:

NTS Map Reference :
Map Sheet: 11E10
Reference Map:
Tract No.:
Claim:

GPS (WGS84 UTM) :
Northing (m): 5052105
Easting (m): 516224
Property (PID):
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	20		SANDY	TILL				☐
20	247	RED		SANDSTONE & SHALE	GRAY		SANDSTONE & SHA	☐

Well Construction Information

Total depth below surface (ft): 247
Depth to bedrock (ft): 20
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft): To (ft):
Diameter (in):
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm): 100
Method: PUMPED
Rate (igpm): 100
Duration (hrs): 72
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments: NS OBSERVATION WELL - DURHAM (045)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling:
Date well completed: 01-Jul-78

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 772021
Well Type DRILLED

Certified Well Contractor

Name HOPPER, RUSSELL
Certificate No. 20
Company HOPPER BROS. LTD.

Well Owner/Contractor Information

Well Drilled For: Owner
NS DEPT. OF DEVELOPMENT
or Contractor/Builder/Consultant, etc. CBCL
Civic Address of Well NS OBS WELL - KENTVILLE (048)
Lot Number
Subdivision
County KINGS
Postal Code
Nearest Community in Altlas/Map Book ATLAS KENTVILLE

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book
Map Page No.
Reference Letter
Reference Number
Roamer Letter
Roamer Number

NTS Map Reference :
Map Sheet 21A2
Reference Map A
Tract No. 71
Claim

GPS (WGS84 UTM) :
Northing (m) 4992245
Easting (m) 377628
Property (PID)
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	55		FINE GRAINED	SAND		MEDIUM GRAINE	SAND	☐
55	60		MEDIUM GRAIN	SAND		COARSE GRAIN	SAND	☐
60	95			GRAVEL				☑
95	380	GRAY		SANDSTONE		INTERBEDDED	SHALE	☑
380	400	BROWN	ARGILLACEOU	METASEDIMENT	PURPLE			☐

Well Construction Information

Total depth below surface (ft) 400
Depth to bedrock (ft) 95
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft) 0 To (ft) 100
Diameter (in) 8
Length of casing above ground :
(ft) (in)
Driveshoe make

Dug Well Information

Depth of liner (crock) (ft)
Reservoir material
Reservoir vol. (cu.yd)
Reservoir material size
Apron Material
Apron depth (ft)
Apron thickness (ft)
Apron width (ft)
Apron volume (cu.yd)
Bottom material

Water Yield

Estimated Yield (igpm) 150
Method PUMPED
Rate (igpm) 150
Duration (hrs) 72
Depth to water at end of test (ft) 122
Total drawdown (ft) 140
Water level recovered to (ft)
Recovery time (hrs)
Depth to static level (ft)
Overflow ☐

Comments NS OBSERVATION WELL - KENTVILLE (048)

Well Status/Water Use/Date Completed

Final status of well OBSERVATION WELL
Water use MONITORING
Method of drilling
Date well completed 20-May-77

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 771077

Well Type DRILLED

Certified Well Contractor

Name: MCDONALD, IAN

Certificate No.: 45

Company: ISLAND WELL DRILLERS

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - SYDNEY (050)

Lot Number: Subdivision:

County: CAPE BRETON Postal Code:

Nearest Community in Altlas/Map Book: ATLAS SYDNEY

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: MAP

Map Page No.: 24

Reference Letter: A

Reference Number: 5

Roamer Letter: J

Roamer Number: 13

NTS Map Reference :

Map Sheet: 11K1

Reference Map: A

Tract No.: 66

Claim:

GPS (WGS84 UTM) :

Northing (m): 5106450

Easting (m): 720589

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	13			BOULDER & GRAVEL				☐
13	330			COAL &SHALE & SANDS				☐

Well Construction Information

Total depth below surface (ft): 330

Depth to bedrock (ft): 13

Water bearing fractures encountered at (ft): 63

Outer Well Casing:

From (ft): 6 To (ft): 22

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make: UNKNOWN

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm): 250

Method: PUMPED

Rate (igpm): 250

Duration (hrs): 1

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NS OBSERVATION WELL - SYDNEY (050)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling: ROTARY

Date well completed: 09-Mar-77

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 871262
Well Type DRILLED

Certified Well Contractor

Name: CHISHOLM, WAYNE
Certificate No.: 2
Company: G. W. REID WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - NORTH GRANT (054)
Lot Number: Subdivision:
County: ANTIGONISH Postal Code:
Nearest Community in Altlas/Map Book: LOWER NORTH GRANT

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book:
Map Page No.: 29
Reference Letter: C
Reference Number: 4
Roamer Letter: M
Roamer Number: 12

NTS Map Reference :
Map Sheet:
Reference Map:
Tract No.:
Claim:

GPS (WGS84 UTM) :
Northing (m): 5055139
Easting (m): 576403
Property (PID):
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	34			MUD				☐
34	150			SHALE			SLATE	☐

Well Construction Information

Total depth below surface (ft): 150
Depth to bedrock (ft):
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft): To (ft): 43
Diameter (in): 6
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm):
Method: AIR LIFT
Rate (igpm): 20
Duration (hrs):
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft): 14
Overflow ☐

Comments: NS OBSERVATION WELL NORTH GRANT (054)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: OTHER
Method of drilling:
Date well completed: 30-Mar-87

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 871263
Well Type DRILLED

Certified Well Contractor

Name: CHISHOLM, WAYNE
Certificate No.: 2
Company: G. W. REID WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - STILLWATER (055)
Lot Number: Subdivision:
County: GUYSBOROUGH Postal Code:
Nearest Community in Altlas/Map Book: STILLWATER

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book:
Map Page No.: 30
Reference Letter: C
Reference Number: 4
Roamer Letter: P
Roamer Number: 12

NTS Map Reference :
Map Sheet:
Reference Map:
Tract No.:
Claim:

GPS (WGS84 UTM) :
Northing (m): 5004212
Easting (m): 579938
Property (PID):
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	24			MUD			GRAVEL	☐
24	38			ROCK				☐
38	118			BEDROCK				☐

Well Construction Information

Total depth below surface (ft): 118
Depth to bedrock (ft):
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft): To (ft): 44
Diameter (in): 6
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm):
Method: AIR LIFT
Rate (igpm): 4.5
Duration (hrs):
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft): 30
Overflow ☐

Comments: NS OBSERVATION WELL STILLWATER (055)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling:
Date well completed: 01-Apr-87

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 871264

Well Type DRILLED

Certified Well Contractor

Name: CHISHOLM, WAYNE

Certificate No.: 2

Company: G. W. REID WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - SHEET HARBOUR (056)

Lot Number: Subdivision:

County: HALIFAX Postal Code:

Nearest Community in Altlas/Map Book: BEAVER HARBOUR

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.: 28

Reference Letter: E

Reference Number: 2

Roamer Letter: H

Roamer Number: 14

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

GPS (WGS84 UTM) :

Northing (m): 4972468

Easting (m): 543176

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	8			GRAVEL				☐
8	18			ROCK				☐
18	150			BEDROCK				☐

Well Construction Information

Total depth below surface (ft): 150

Depth to bedrock (ft):

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): To (ft): 23

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 0.7

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft): 10

Overflow ☐

Comments: NS OBSERVATION WELL SHEET HARBOUR (056)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: OTHER

Method of drilling:

Date well completed: 06-Apr-87

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 870189

Well Type DRILLED

Certified Well Contractor

Name: MOWAT, DONALD

Certificate No.: 210

Company: MOWAT'S WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - HAYDEN LAKE (059)

Lot Number: Subdivision:

County: SHELBURNE Postal Code:

Nearest Community in Altlas/Map Book: ATLAS EAST JORDAN

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: MAP

Map Page No.: 10

Reference Letter: C

Reference Number: 5

Roamer Letter: G

Roamer Number: 7

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

GPS (WGS84 UTM) :

Northing (m): 4849195

Easting (m): 321365

Property (PID):

Well Location Sketch Available ☐

Depth in feet / Primary Lithology / Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	10			CLAY			BOULDER	☐
10	160			GREYWACKE				☐

Well Construction Information

Total depth below surface (ft): 160

Depth to bedrock (ft): 10

Water bearing fractures encountered at (ft): 30

Outer Well Casing:

From (ft): 0 To (ft): 20

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm): 3.7

Method: AIR LIFT

Rate (igpm): 3.7

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NS OBSERVATION WELL - HAYDEN LAKE (059)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling:

Date well completed: 31-Mar-87

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 870188

Well Type DRILLED

Certified Well Contractor

Name: MOWAT, DONALD

Certificate No.: 210

Company: MOWAT'S WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - METEGHAN (060)

Lot Number: Subdivision:

County: DIGBY Postal Code:

Nearest Community in Altlas/Map Book: METEGHAN RIVER

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.: 4

Reference Letter: A

Reference Number: 4

Roamer Letter: F

Roamer Number: 16

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

GPS (WGS84 UTM) :

Northing (m): 4900628

Easting (m): 250890

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	4			GRAVEL				☐
4	200			SLATE				☐

Well Construction Information

Total depth below surface (ft): 200

Depth to bedrock (ft):

Water bearing fractures encountered at (ft): 90, 180

Outer Well Casing:

From (ft): To (ft): 40

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 0.7

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NS OBSERVATION WELL METEGHAN (060)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling:

Date well completed: 31-Mar-87

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 891722
Well Type DRILLED

Certified Well Contractor

Name: MOWAT, DONALD
Certificate No.: 210
Company: MOWAT'S WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - ANNAPOLIS ROYAL (062)
Lot Number: Subdivision:
County: ANNAPOLIS Postal Code:
Nearest Community in Altlas/Map Book: ATLAS LAKE LA ROSE

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book: MAP
Map Page No.: 8
Reference Letter: A
Reference Number: 4
Roamer Letter: H
Roamer Number: 14

NTS Map Reference :
Map Sheet:
Reference Map:
Tract No.:
Claim:

GPS (WGS84 UTM) :
Northing (m): 4952588
Easting (m): 303029
Property (PID):
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	71			CLAY			BOULDER	☐
71	205			GRANITE				☐

Well Construction Information

Total depth below surface (ft): 205
Depth to bedrock (ft): 71
Water bearing fractures encountered at (ft): 120
Outer Well Casing:
From (ft): 0 To (ft): 80
Diameter (in): 6
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm): 0.5
Method: AIR LIFT
Rate (igpm): 0.5
Duration (hrs):
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments: NS OBSERVATION WELL - ANNAPOLIS ROYAL (062)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling:
Date well completed: 20-Dec-89

NOVA SCOTIA
Environment and Labour

Well Report

(Summary Log)

NSEL Well No. 891721
Well Type DRILLED

Certified Well Contractor

Name: MOWAT, DONALD
Certificate No.: 210
Company: MOWAT'S WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - HEBRON (063)
Lot Number: Subdivision:
County: YARMOUTH Postal Code:
Nearest Community in Altlas/Map Book: ATLAS DAYTON

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book: MAP
Map Page No.: 5
Reference Letter: A
Reference Number: 3
Roamer Letter: F
Roamer Number: 14

NTS Map Reference :
Map Sheet:
Reference Map:
Tract No.:
Claim:

GPS (WGS84 UTM) :
Northing (m): 4862322
Easting (m): 250697
Property (PID):
Well Location Sketch Available ☐

Depth in feet / Primary Lithology / Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	3			TOPSOIL				☐
3	140			SLATE				☐
140	144			QUARTZITE				☐
144	150			SHALE				☐

Well Construction Information

Total depth below surface (ft): 150
Depth to bedrock (ft): 3
Water bearing fractures encountered at (ft): 57, 150
Outer Well Casing:
From (ft): 0 To (ft): 40
Diameter (in): 6
Length of casing above ground :
(ft): (in):
Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm): 45
Method: AIR LIFT
Rate (igpm): 45
Duration (hrs):
Depth to water at end of test (ft):
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments

NS OBSERVATION WELL - HEBRON (063)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling:
Date well completed: 19-Dec-89

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 902524

Well Type DRILLED

Certified Well Contractor

Name: MCDONALD, IAN

Certificate No.: 45

Company: ISLAND WELL DRILLERS

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - MARGAREE (064)

Lot Number: Subdivision:

County: INVERNESS Postal Code:

Nearest Community in Altlas/Map Book: MARGAREE VALLEY

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.: 38

Reference Letter: A

Reference Number: 1

Roamer Letter: L

Roamer Number: 12

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

GPS (WGS84 UTM) :

Northing (m): 5137031

Easting (m): 655717

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	9			GRAVEL			TILL	☐
9	150			CONGLOMERATE				☐

Well Construction Information

Total depth below surface (ft): 150

Depth to bedrock (ft):

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): To (ft): 40

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 10

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NOFRACTUREINCREASEDFR80'- NS OBSERVATION WELL MARGAREE (064)

Well Status/Water Use/Date Completed

Final status of well:

Water use:

Method of drilling:

Date well completed: 16-Jan-90

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 892288

Well Type DRILLED

Certified Well Contractor

Name: MCDONALD, IAN

Certificate No.: 45

Company: ISLAND WELL DRILLERS

Well Owner/Contractor Information

Well Drilled For: Owner: DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - INGONISH (065)

Lot Number: Subdivision:

County: VICTORIA Postal Code:

Nearest Community in Altlas/Map Book: INGONISH

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.: 42

Reference Letter: A

Reference Number: 2

Roamer Letter: F

Roamer Number: 10

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

GPS (WGS84 UTM) :

Northing (m): 5170473

Easting (m): 698083

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	30			GRAVEL			BOULDERS	☐
30	33			GRANITE				☐
33	150			GRANITE				☐

Well Construction Information

Total depth below surface (ft): 150

Depth to bedrock (ft):

Water bearing fractures encountered at (ft): 44, 149

Outer Well Casing:

From (ft): To (ft): 40

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 100

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NS OBSERVATION WELL INGONISH (065)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use:

Method of drilling:

Date well completed: 12-Dec-89

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 832002

Well Type DRILLED

Certified Well Contractor

Name: JOHNSON, GREGORY I.

Certificate No.: 6

Company: HUB WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: PHILLIP BARLEY

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - DEBERT (068)

Lot Number: Subdivision:

County: COLCHESTER Postal Code:

Nearest Community in Altlas/Map Book: DEBERT

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.:

Reference Letter:

Reference Number:

Roamer Letter:

Roamer Number:

NTS Map Reference :

Map Sheet: 11E6

Reference Map: C

Tract No.: 60

Claim:

GPS (WGS84 UTM) :

Northing (m): 5028483

Easting (m): 466921

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	18			CLAY			SAND /LENSES	☐
18	153			CONGLOMERATE				☐

Well Construction Information

Total depth below surface (ft): 153

Depth to bedrock (ft):

Water bearing fractures encountered at (ft): 112

Outer Well Casing:

From (ft): To (ft): 26

Diameter (in): 4

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method:

Rate (igpm): 10

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft): 112

Overflow ☐

Comments: NS OBSERVATION WELL DEBERT (068)

Well Status/Water Use/Date Completed

Final status of well: WATER SUPPLY WELL

Water use: DOMESTIC

Method of drilling:

Date well completed: 13-Aug-83

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 943326

Well Type DRILLED

Certified Well Contractor

Name

Certificate No.

Company ISLAND WELL DRILLERS

Well Owner/Contractor Information

Well Drilled For: Owner | NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.

Civic Address of Well NS OBS WELL - DALEM LAKE (069)

Lot Number | Subdivision

County VICTORIA | Postal Code

Nearest Community in Altlas/Map Book ATLAS | DALEM LAKE

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book MAP

Map Page No. 38

Reference Letter E

Reference Number 2

Roamer Letter O

Roamer Number 12

NTS Map Reference :

Map Sheet

Reference Map

Tract No.

Claim

GPS (WGS84 UTM) :

Northing (m) 5124576

Easting (m) 698221

Property (PID)

Well Location Sketch Available ☐

Depth in feet	Primary Lithology	Secondary Lithology

Well Construction Information

Total depth below surface (ft) 200

Depth to bedrock (ft)

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft) 0 To (ft) 41

Diameter (in) 6

Length of casing above ground :

(ft) (in)

Driveshoe make

Dug Well Information

Depth of liner (crock) (ft)

Reservoir material

Reservoir vol. (cu.yd)

Reservoir material size

Apron Material

Apron depth (ft)

Apron thickness (ft)

Apron width (ft)

Apron volume (cu.yd)

Bottom material

Water Yield

Estimated Yield (igpm)

Method

Rate (igpm)

Duration (hrs)

Depth to water at end of test (ft)

Total drawdown (ft)

Water level recovered to (ft)

Recovery time (hrs)

Depth to static level (ft)

Overflow ☐

Comments NS OBSERVATION WELL - DALEM LAKE (069)

Well Status/Water Use/Date Completed

Final status of well OBSERVATION WELL

Water use MONITORING

Method of drilling

Date well completed 01-Jan-94

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 862667

Well Type DRILLED

Certified Well Contractor		Well Owner/Contractor Information	
Name	CHAPPELL, WALTER	Well Drilled For: Owner	TOWN OF AMHERST
Certificate No.	32	or Contractor/Builder/Consultant, etc.	
Company	WALTER CHAPPELL WELL DRILLING LTD.	Civic Address of Well	NS OBS WELL - AMHERST (071)
		Lot Number / Subdivision	/
		County / Postal Code	CUMBERLAND /
		Nearest Community in Altlas/Map Book	ATLAS AMHERST

Well Location

NS Atlas or Map Book Reference :		NTS Map Reference :		GPS (WGS84 UTM) :	
Atlas or Map Book	MAP	Map Sheet		Northing (m)	5079213
Map Page No.	18	Reference Map		Easting (m)	411279
Reference Letter	B	Tract No.		Property (PID)	
Reference Number	2	Claim		Well Location Sketch Available	☐
Roamer Letter	G				
Roamer Number	8				

Depth in feet		Primary Lithology			Secondary Lithology			
From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	15			TILL				☐
15	45			SANDSTONE				☐
45	101	REDDISH		SHALE	BROWN			☐
101	109	BROWN	FINE GRAINED	SANDSTONE				☐
109	114	REDDISH	FINE GRAINED					☐
114	124	REDDISH	FINE GRAINED	SANDSTONE		MEDIUM GRAINE		☐
124	127	BROWN	FINE GRAINED	SHALE				☐
127	130			SHALE			SANDSTONE	☐
130	157	REDDISH	MEDIUM GRAIN	SANDSTONE	RED	COARSE GRAINE		☐
157	161	GRAYISH	MEDIUM GRAIN	SANDSTONE		COARSE GRAINE		☐
161	165	REDDISH		SHALE	BROWN			☐
165	166	BROWN		MUDSTONE				☐
166	196	GRAYISH	MEDIUM GRAIN	SANDSTONE				☐
196	198	REDDISH		SHALE			SANDSTONE	☐
198	202	REDDISH		SILTSTONE				☐
202	206	BROWN		SHALE				☐
206	211	BROWN		SILTSTONE				☐
211	227	BROWN		SILTSTONE			SHALE	☐
227	235	REDDISH		SHALE				☐
235	258	BROWN		SILTSTONE	GREENIS			☐
258	262	REDDISH	MEDIUM GRAIN	SANDSTONE				☐
262	263	REDDISH		SHALE				☐
263	277	REDDISH	MEDIUM GRAIN	SANDSTONE				☐
277	281	REDDISH		SHALE				☐
281	294	BROWN		SILTSTONE				☐
294	296	BROWN		SHALE				☐
296	358	BROWN	FINE GRAINED	SILTSTONE			SHALE	☐
358	370	REDDISH		SANDSTONE				☐
370	378	GRAYISH		SANDSTONE				☐
378	382	BROWN		SILTSTONE				☐

Well Construction Information

Total depth below surface (ft): 382

Depth to bedrock (ft): 15

Water bearing fractures encountered at (ft):

140

Outer Well Casing:

From (ft): 0 To (ft): 20

Diameter (in): 6

Length of casing above ground :

(ft) (in)

Driveshoe make

Dug Well Information

Depth of liner (crock) (ft)

Reservoir material

Reservoir vol. (cu.yd)

Reservoir material size

Apron Material

Apron depth (ft)

Apron thickness (ft)

Apron width (ft)

Apron volume (cu.yd)

Bottom material

Water Yield

Estimated Yield (igpm)

Method

Rate (igpm)

Duration (hrs)

Depth to water at end of test (ft)

Total drawdown (ft)

Water level recovered to (ft)

Recovery time (hrs)

Depth to static level (ft)

Overflow ☐

Comments: NS OBSERVATION WELL - AMHERST (071)

Well Status/Water Use/Date Completed

Final status of well: TEST HOLE

Water use: MONITORING

Method of drilling

Date well completed: 29-Jul-86

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 721858

Well Type DRILLED

Certified Well Contractor

Name

Certificate No.

Company

Well Owner/Contractor Information

Well Drilled For: Owner | NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.

Civic Address of Well: NS OBS WELL - KELLEY RIVER (073)

Lot Number | Subdivision

County: CUMBERLAND | Postal Code

Nearest Community in Altlas/Map Book: ATLAS | KELLEY RIVER

Well Location

NS Atlas or Map Book Reference :

- Atlas or Map Book: MAP
- Map Page No.: 12
- Reference Letter: D
- Reference Number: 5
- Roamer Letter
- Roamer Number

NTS Map Reference :

- Map Sheet
- Reference Map
- Tract No.
- Claim

GPS (WGS84 UTM) :

- Northing (m): 5049171
- Easting (m): 386806
- Property (PID)
- Well Location Sketch Available ☐

Depth in feet	Primary Lithology	Secondary Lithology

Well Construction Information

Total depth below surface (ft): 38

Depth to bedrock (ft)

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): 0 To (ft): 14

Diameter (in)

Length of casing above ground :

(ft) (in)

Driveshoe make

Dug Well Information

Depth of liner (crock) (ft)

Reservoir material

Reservoir vol. (cu.yd)

Reservoir material size

Apron Material

Apron depth (ft)

Apron thickness (ft)

Apron width (ft)

Apron volume (cu.yd)

Bottom material

Water Yield

Estimated Yield (igpm)

Method

Rate (igpm)

Duration (hrs)

Depth to water at end of test (ft)

Total drawdown (ft)

Water level recovered to (ft)

Recovery time (hrs)

Depth to static level (ft)

Overflow ☐

Comments: NS OBSERVATION WELL - KELLEY RIVER (073)

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling

Date well completed: 01-Jul-72

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 070613

Well Type DRILLED

Certified Well Contractor

Name: ROGERS, KIRK

Certificate No.: 307

Company: K. D. ROGERS WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT &

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - ATLANTA (074)

Lot Number: Subdivision:

County: KINGS Postal Code: B0P 1H0

Nearest Community in Altlas/Map Book: ATLAS ATLANTA

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: ATLAS

Map Page No.: 46

Reference Letter: Z

Reference Number: 2

Roamer Letter: H

Roamer Number: 6

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

GPS (WGS84 UTM) :

Northing (m): 5000758

Easting (m): 381956

Property (PID): 55045942

Well Location Sketch Available: ☑

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	112			SAND				☑
112	175			SANDSTONE				☑

Well Construction Information

Total depth below surface (ft): 175

Depth to bedrock (ft): 112

Water bearing fractures encountered at (ft): 115 175

Outer Well Casing:

From (ft): 0 To (ft): 118

Diameter (in): 6

Length of casing above ground :

(ft): 4 (in):

Driveshoe make: MEDIUM

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 100

Duration (hrs): 1

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft): 10

Recovery time (hrs): 24

Depth to static level (ft):

Overflow: ☐

Comments:

NS OBSERVATION WELL - ATLANTA (074)
FRACTURES 115-175 FT. DIST TO PROP LINE 300+', WATERCOURSE 200+'. WELL LOC EDGE OF WOOD ROAD, WELLHEAD 4 FT ABOVE GROUND.

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling: ROTARY

Date well completed: 29-Aug-07

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 070618

Well Type DRILLED

Certified Well Contractor

Name: ROGERS, KIRK

Certificate No.: 307

Company: K. D. ROGERS WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT &

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - SHEFFIELD MILLS (075)

Lot Number: Subdivision:

County: KINGS Postal Code: B0P 1H0

Nearest Community in Altlas/Map Book: ATLAS SHEFFIELD MILLS

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: ATLAS

Map Page No.: 47

Reference Letter: V

Reference Number: 2

Roamer Letter: D

Roamer Number: 6

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

GPS (WGS84 UTM) :

Northing (m): 5000590

Easting (m): 384693

Property (PID): 55301667

Well Location Sketch Available: ☑

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	16			SAND				☐
16	175			SANDSTONE				☑

Well Construction Information

Total depth below surface (ft): 175

Depth to bedrock (ft): 16

Water bearing fractures encountered at (ft): 60, 175

Outer Well Casing:

From (ft): 0 To (ft): 63

Diameter (in): 6

Length of casing above ground :

(ft): 4 (in):

Driveshoe make: MEDIUM

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 60

Duration (hrs): 1

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft): 20

Recovery time (hrs): 24

Depth to static level (ft):

Overflow: ☐

Comments:

NS OBSERVATION WELL - SHEFFIELD MILLS (075)
FRACTURES 60-175 FT. WELL LOC AT EDGE OF FIELD. WELLHEAD 4 FT ABOVE GROUND.

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling: ROTARY

Date well completed: 29-Aug-07

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 080824

Well Type DRILLED

Certified Well Contractor

Name: JACOBS, BYRON

Certificate No.: 695

Company: BLUENOSE WELL DRILLING

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT &

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - FALL RIVER (076); TAMARACK DRIVE

Lot Number: 65 Subdivision:

County: HALIFAX Postal Code:

Nearest Community in Atlas/Map Book: ATLAS FALL RIVER

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: ATLAS

Map Page No.: 58

Reference Letter: Y

Reference Number: 4

Roamer Letter: F

Roamer Number: 5

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

Well Construction Sketch Available: ☑

GPS (WGS84 UTM) :

Northing (m): 4962226

Easting (m): 450243

Estimated GPS Accuracy (m, +/-): 50

Property (PID): 40372922

Well Location Sketch Available: ☑

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	4							☐
4	200			SLATE				☐

Well Construction Information

Total depth below surface (ft): 200

Depth to bedrock (ft): 3.5

Water bearing fractures encountered at (ft): 18, 41, 102

Outer Well Casing:

From (ft): 0 To (ft): 43

Diameter (in): 6

Length of casing above ground :

(ft): 1 (in):

Driveshoe make: HEAVY WALL

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 1.5

Duration (hrs): 1

Depth to water at end of test (ft): 195

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft): 12

Overflow: ☐

Comments : NS OBS WELL - FALL RIVER (076); WB FRACT 18' 5 GPM, 41' 0.5 GPM, 102' 1 GPM. WELL LOC SKETCH: NEAR BALLFIELD OFF TALISMAN DR. WELL SKETCH SHOWS 8.75" HOLE FOR CASING, 6" BOREHOLE, BENTONITE SEAL ABOVE DRIVE SHOE. LOT FROM POL.

ADDRESS TAMARACK DRIVE (POL), TALISMAN DRIVE (LOG).

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling: ROTARY

Date well completed: 28-Feb-08

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 080132

Well Type DRILLED

Certified Well Contractor

Name: ROGERS, KIRK

Certificate No.: 307

Company: K. D. ROGERS WELL DRILLING

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT &

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - WEST NORTHFIELD (077); BRUHM ROAD

Lot Number: Subdivision:

County: LUNENBURG Postal Code: B4V 2W1

Nearest Community in Altlas/Map Book: ATLAS WEST NORTHFIELD

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: ATLAS

Map Page No.: 73

Reference Letter: Z

Reference Number: 2

Roamer Letter: A

Roamer Number: 1

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

Well Construction Sketch Available ☐

GPS (WGS84 UTM) :

Northing (m): 4922807

Easting (m): 373416

Estimated GPS Accuracy (m, +/-): 50

Property (PID): 60200029

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	10							☐
10	24			SAND & SILT				☑
24	160			SLATE				☑

Well Construction Information

Total depth below surface (ft): 160

Depth to bedrock (ft): 24

Water bearing fractures encountered at (ft): 124

Outer Well Casing:

From (ft): 0 To (ft): 42

Diameter (in): 6

Length of casing above ground :

(ft): 3 (in):

Driveshoe make: MEDIUM

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 7

Duration (hrs): 1

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft): 32

Recovery time (hrs): 1

Depth to static level (ft):

Overflow ☐

Comments : NS OBS WELL - WEST NORTHFIELD (077); DIST TO OFF-SITE SEPTIC: 100+ FT. ADDRESS HWY #10 (POL), BRUHM RD (LOG).

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling: ROTARY

Date well completed: 06-Mar-08

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 080861

Well Type DRILLED

Certified Well Contractor

Name: JACOBS, LARRY

Certificate No.: 734

Company: BLUENOSE WELL DRILLING

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT &

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - MUSQUODOBOIT HBR (078); 104 PARK RD

Lot Number: Subdivision: DALE BENNETT PARK

County: HALIFAX Postal Code:

Nearest Community in Altlas/Map Book: ATLAS MUSQUODOBOIT HARBOUR

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: ATLAS

Map Page No.: 59

Reference Letter: Y

Reference Number: 5

Roamer Letter: D

Roamer Number: 1

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

Well Construction Sketch Available: ☑

GPS (WGS84 UTM) :

Northing (m): 4959880

Easting (m): 488125

Estimated GPS Accuracy (m, +/-): 50

Property (PID): 40591471

Well Location Sketch Available: ☑

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	66							☐
66	81		COARSE GRAIN	SAND				☑
81	200			SEE COMMENTS				☐

Well Construction Information

Total depth below surface (ft): 200

Depth to bedrock (ft): 81

Water bearing fractures encountered at (ft): 66, 81, 95

Outer Well Casing:

From (ft): 0 To (ft): 89

Diameter (in): 6

Length of casing above ground :

(ft): 1 (in):

Driveshoe make: HEAVY WALL

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 0.5

Duration (hrs): 1

Depth to water at end of test (ft): 195

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow: ☐

Comments : NS OBS WELL - MUSQUODOBOIT HBR (078); WB FRACT 66-81, 95 FT. WELL SKETCH: CASED OFF SAND WITH COBBLES WITH 200 GPM; BENTONITE SEAL ABOVE DRIVE SHOE; 6" BOREHOLE BELOW CASING. WELL LOC SKETCH: WELL NEAR PARKING LOT. STRAT: 81-200 FT NOT GIVEN.

CIVIC & ADDRESS FROM POL.

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling: ROTARY

Date well completed: 06-Mar-08

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 690090
Well Type DRILLED

Certified Well Contractor

Name: BOWMASTER
Certificate No.: 3
Company: WILLIAM BOWMASTER, SR.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF LANDS & FORES
or Contractor/Builder/Consultant, etc.:
Civic Address of Well: NS OBS WELL - LEWIS LAKE (079)
Lot Number: Subdivision:
County: HALIFAX Postal Code:
Nearest Community in Altlas/Map Book: LEWIS LAKE

Well Location

NS Atlas or Map Book Reference :
Atlas or Map Book: MAP
Map Page No.: 20
Reference Letter: D
Reference Number: 5
Roamer Letter: H
Roamer Number: 8

NTS Map Reference :
Map Sheet:
Reference Map:
Tract No.:
Claim:
Well Construction Sketch Available ☐

GPS (WGS84 UTM) :
Northing (m): 4948873
Easting (m): 433048
Estimated GPS Accuracy (m, +/-): 50
Property (PID):
Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	20							☐
20	250			GRANITE				☐

Well Construction Information

Total depth below surface (ft): 250
Depth to bedrock (ft): 20
Water bearing fractures encountered at (ft): 240, 250
Outer Well Casing:
From (ft): 6 To (ft): 25
Diameter (in): 6
Length of casing above ground :
(ft): (in):
Driveshoe make: UNKNOWN

Dug Well Information

Depth of liner (crock) (ft):
Reservoir material:
Reservoir vol. (cu.yd):
Reservoir material size:
Apron Material:
Apron depth (ft):
Apron thickness (ft):
Apron width (ft):
Apron volume (cu.yd):
Bottom material:

Water Yield

Estimated Yield (igpm):
Method:
Rate (igpm): 6
Duration (hrs): 1.5
Depth to water at end of test (ft): 27
Total drawdown (ft):
Water level recovered to (ft):
Recovery time (hrs):
Depth to static level (ft):
Overflow ☐

Comments : NS OBS WELL - LEWIS LAKE (079) FORMER PARK WATER SUPPLY WELL; CONVERTED TO OBSERVATION WELL IN 2008.

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL
Water use: MONITORING
Method of drilling: ROTARY
Date well completed: 11-Jun-69

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 770542

Well Type DRILLED

Certified Well Contractor

Name: HINGLEY, FLEMING

Certificate No.: 15

Company: A & W WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF ENVIRONMENT

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - ARISAIG (080)

Lot Number: Subdivision:

County: ANTIGONISH Postal Code:

Nearest Community in Altlas/Map Book: ARISAIG

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: MAP

Map Page No.: 29

Reference Letter: B

Reference Number: 3

Roamer Letter: L

Roamer Number: 9

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

Well Construction Sketch Available ☐

GPS (WGS84 UTM) :

Northing (m): 5067204

Easting (m): 564737

Estimated GPS Accuracy (m, +/-): 50

Property (PID):

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
1	20			GRAVEL & SAND				☐
20	30			SHALE				☐

Well Construction Information

Total depth below surface (ft): 300

Depth to bedrock (ft): 30

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): 1 To (ft): 40

Diameter (in): 6

Length of casing above ground :

(ft): (in):

Driveshoe make: UNKNOWN

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method:

Rate (igpm):

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments: NS OBS WELL - ARISAIG (080)
FORMER PARK WATER SUPPLY WELL FOR ARISAIG PARK;
CONVERTED TO MONITORING WELL IN 2009.

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling: ROTARY

Date well completed: 05-Jul-77

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 610135
Well Type DRILLED

Certified Well Contractor

Name
Certificate No.
Company

Well Owner/Contractor Information

Well Drilled For: Owner | NS DEPT. OF LANDS AND FOR
or Contractor/Builder/Consultant, etc.
Civic Address of Well | NS OBS WELL - COLDBROOK (081) 7073 HWY 1
Lot Number | Subdivision
County | KINGS | Postal Code
Nearest Community in Altlas/Map Book | ATLAS | COLDBROOK

Well Location

NS Atlas or Map Book Reference :
- Atlas or Map Book
- Map Page No.
- Reference Letter
- Reference Number
- Roamer Letter
- Roamer Number

NTS Map Reference :
- Map Sheet
- Reference Map
- Tract No.
- Claim
- Well Construction Sketch Available ☐

GPS (WGS84 UTM) :
- Northing (m) 4991748
- Easting (m) 376149
- Estimated GPS Accuracy (m, +/-) 50
- Property (PID) 55281984
- Well Location Sketch Available ☐

Depth in feet	Primary Lithology	Secondary Lithology

Well Construction Information

Total depth below surface (ft) 232
Depth to bedrock (ft)
Water bearing fractures encountered at (ft):
Outer Well Casing:
From (ft) 0 To (ft) 172
Diameter (in) 4
Length of casing above ground :
(ft) (in)
Driveshoe make

Dug Well Information

Depth of liner (crock) (ft)
Reservoir material
Reservoir vol. (cu.yd)
Reservoir material size
Apron Material
Apron depth (ft)
Apron thickness (ft)
Apron width (ft)
Apron volume (cu.yd)
Bottom material

Water Yield

Estimated Yield (igpm)
Method
Rate (igpm)
Duration (hrs)
Depth to water at end of test (ft)
Total drawdown (ft)
Water level recovered to (ft)
Recovery time (hrs)
Depth to static level (ft) 45
Overflow ☐

Comments : NS OBS WELL - COLDBROOK (081)
FORMER PARK SUPPLY WELL CONVERTED TO OBSERVATION WELL IN 2009; STATIC LEVEL WAS 45 FT IN 1961 AND 44 FT IN 1974; BEDROCK DEPTH ESTIMATED TO BE 80-150 FT.

Well Status/Water Use/Date Completed

Final status of well | OBSERVATION WELL
Water use | MONITORING
Method of drilling
Date well completed | 01-Jan-61

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 742421

Well Type DRILLED

Certified Well Contractor

Name

Certificate No.

Company

Well Owner/Contractor Information

Well Drilled For: Owner | NS DEPT. OF LANDS AND FOR

or Contractor/Builder/Consultant, etc.

Civic Address of Well | NS OBS WELL - LONG POINT (082) HWY 19

Lot Number | Subdivision

County | INVERNESS | Postal Code

Nearest Community in Altlas/Map Book | ATLAS | LONG POINT

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book

Map Page No.

Reference Letter

Reference Number

Roamer Letter

Roamer Number

NTS Map Reference :

Map Sheet

Reference Map

Tract No.

Claim

Well Construction Sketch Available ☐

GPS (WGS84 UTM) :

Northing (m) 5074277

Easting (m) 618131

Estimated GPS Accuracy (m, +/-) 50

Property (PID) 50017490

Well Location Sketch Available ☐

Depth in feet	Primary Lithology	Secondary Lithology

Well Construction Information

Total depth below surface (ft) 61

Depth to bedrock (ft)

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft) 0 To (ft) 43

Diameter (in) 6

Length of casing above ground :

(ft) (in)

Driveshoe make

Dug Well Information

Depth of liner (crock) (ft)

Reservoir material

Reservoir vol. (cu.yd)

Reservoir material size

Apron Material

Apron depth (ft)

Apron thickness (ft)

Apron width (ft)

Apron volume (cu.yd)

Bottom material

Water Yield

Estimated Yield (igpm)

Method

Rate (igpm)

Duration (hrs)

Depth to water at end of test (ft)

Total drawdown (ft)

Water level recovered to (ft)

Recovery time (hrs)

Depth to static level (ft) 7.5

Overflow ☐

Comments : NS OBS WELL - LONG POINT (082)
FORMER PARK SUPPLY WELL CONVERTED TO OBSERVATION WELL IN 2009; WELL CONSTRUCTION DATE ASSUMED TO BE 1-AUG-1974 FROM PUMPING TEST RECORDS;

Well Status/Water Use/Date Completed

Final status of well OBSERVATION WELL

Water use MONITORING

Method of drilling

Date well completed 01-Aug-74

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 510124

Well Type DRILLED

Certified Well Contractor

Name: MATTATALL, EARL

Certificate No.: 33

Company:

Well Owner/Contractor Information

Well Drilled For: Owner: NS DEPT. OF LANDS AND FOR

or Contractor/Builder/Consultant, etc.:

Civic Address of Well: NS OBS WELL - TATAMAGOUCHE (083) 2660 HWY 6

Lot Number: Subdivision:

County: COLCHESTER Postal Code:

Nearest Community in Altlas/Map Book: ATLAS TATAMAGOUCHE

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book:

Map Page No.:

Reference Letter:

Reference Number:

Roamer Letter:

Roamer Number:

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

Well Construction Sketch Available ☐

GPS (WGS84 UTM) :

Northing (m): 5061591

Easting (m): 479226

Estimated GPS Accuracy (m, +/-): 50

Property (PID): 20419768

Well Location Sketch Available ☐

Depth in feet	Primary Lithology	Secondary Lithology

Well Construction Information

Total depth below surface (ft): 80.4

Depth to bedrock (ft):

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): To (ft):

Diameter (in): 4

Length of casing above ground :

(ft): (in):

Driveshoe make:

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method:

Rate (igpm):

Duration (hrs):

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments : NS OBS WELL - TATAMAGOUCHE (083)
FORMER PARK SUPPLY WELL CONVERTED TO OBSERVATION WELL IN 2009.

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: MONITORING

Method of drilling:

Date well completed: 01-Jan-51

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 100983

Well Type DRILLED

Certified Well Contractor

Name: JOHNSON, BRIAN

Certificate No.: 882

Company: HUB WELL DRILLING LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: ST. FX UNIVERSITY WELL #3

or Contractor/Builder/Consultant, etc.: ST. FX UNIVERSITY

Civic Address of Well: NS OBS WELL - PUGWASH (084); 247 WATER ST.

Lot Number: Subdivision:

County: CUMBERLAND Postal Code:

Nearest Community in Altlas/Map Book: ATLAS PUGWASH

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: ATLAS

Map Page No.: 17

Reference Letter: Y

Reference Number: 3

Roamer Letter: C

Roamer Number: 6

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

Well Construction Sketch Available: ☐

GPS (WGS84 UTM) :

Northing (m): 5077959

Easting (m): 448364

Estimated GPS Accuracy (m, +/-): 50

Property (PID): 25156936

Well Location Sketch Available: ☑

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
0	24	BROWN		CLAY & SAND				☐
24	70	BROWN		SHALE				☐
70	133	BROWN		SANDSTONE				☐
133	202	BROWN		SHALE	BROWN	SANDY	SHALE	☐

Well Construction Information

Total depth below surface (ft): 202

Depth to bedrock (ft): 24

Water bearing fractures encountered at (ft): 51, 75, 85, 120

Outer Well Casing:

From (ft): 0 To (ft): 40

Diameter (in): 6

Length of casing above ground :

(ft): 2 (in): 0

Driveshoe make: REGULAR HEAVY

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 75

Duration (hrs): 1

Depth to water at end of test (ft): 202

Total drawdown (ft):

Water level recovered to (ft): 9

Recovery time (hrs):

Depth to static level (ft): 9

Overflow: ☐

Comments : NS OBS WELL - PUGWASH (084); WELL #3. DIST TO ON & OFF-SITE SEPTIC: NONE, TO WATERCOURSE & WELL N/A. CIVIC 247 (LOG), MULTIPLE 227 & 247 & 249 (NSCAF). SEE LOGS 100981 & 100982 FOR WELLS #1 & 2.

NOTE: THIS WELL WAS DRILLED BY ST. FX AS PART OF SEA WATER INTRUSION PROJECT (ATLANTIC CLIMATE ADAPTION SOLUTIONS PROJECT) AND THEN CONVERTED TO A PROVINCIAL OBSERVATION WELL IN 2010.

Well Status/Water Use/Date Completed

Final status of well: OBSERVATION WELL

Water use: OBSERVATION

Method of drilling: ROTARY

Date well completed: 30-Sep-10

NOVA SCOTIA
Environment

Well Report

(Summary Log)

NSE Well No. 062067

Well Type DRILLED

Certified Well Contractor

Name: MCDONALD, JAMIE

Certificate No.: 446

Company: ISLAND WELL DRILLERS LTD.

Well Owner/Contractor Information

Well Drilled For: Owner: VILLAGE OF ST. PETER'S

or Contractor/Builder/Consultant, etc.: DILLON CONSULTING LTD (SYDNEY)

Civic Address of Well: NS OBS WELL - ST. PETERS (085); OBAN ROAD

Lot Number: Subdivision:

County: RICHMOND Postal Code:

Nearest Community in Altlas/Map Book: MAP ST. PETER'S

Well Location

NS Atlas or Map Book Reference :

Atlas or Map Book: MAP

Map Page No.: 39

Reference Letter: B

Reference Number: 4

Roamer Letter: K

Roamer Number: 8

NTS Map Reference :

Map Sheet:

Reference Map:

Tract No.:

Claim:

Well Construction Sketch Available ☐

GPS (WGS84 UTM) :

Northing (m): 5061576

Easting (m): 667038

Estimated GPS Accuracy (m, +/-): 50

Property (PID): 75086793

Well Location Sketch Available ☐

Depth in feet | Primary Lithology | Secondary Lithology

From	To	Colour 1	Description 1	Lithology 1	Colour 2	Description 2	Lithology 2	Water Found
16	42	RED		HARDPAN				☐
0	16	RED		FIRECLAY			BOULDERS	☐
42	370	REDDISH B	SEE COMMENT	CONGLOMERATE		STRINGERS	SANDSTONE & SHA	☐

Well Construction Information

Total depth below surface (ft): 370

Depth to bedrock (ft): 42

Water bearing fractures encountered at (ft):

Outer Well Casing:

From (ft): 0 To (ft): 60

Diameter (in): 6.625

Length of casing above ground :

(ft): 2 (in):

Driveshoe make: ROTARY - UNSPECI

Dug Well Information

Depth of liner (crock) (ft):

Reservoir material:

Reservoir vol. (cu.yd):

Reservoir material size:

Apron Material:

Apron depth (ft):

Apron thickness (ft):

Apron width (ft):

Apron volume (cu.yd):

Bottom material:

Water Yield

Estimated Yield (igpm):

Method: AIR LIFT

Rate (igpm): 12.5

Duration (hrs): 2

Depth to water at end of test (ft):

Total drawdown (ft):

Water level recovered to (ft):

Recovery time (hrs):

Depth to static level (ft):

Overflow ☐

Comments : NS OBS WELL - ST. PETERS (085); WATER STEADILY INCREASED FROM 200'-370'. WATER COLOUR REDDISH. WELL STATUS: OBSERVATION WELL & TEST HOLE. DRILLING FLUID: BAROID QUICK FOAM. STRAT: 42-370 FT RED/BROWN CONGLOMERATE WITH MINOR SANDSTONE & SHALE STRINGERS.

NOTE: THIS WELL WAS ORIGINALLY DRILLED AS A MUNICIPAL TEST WELL IN 2006 AND CONVERTED TO A PROVINCIAL OBSERVATION WELL IN 2010.

Well Status/Water Use/Date Completed

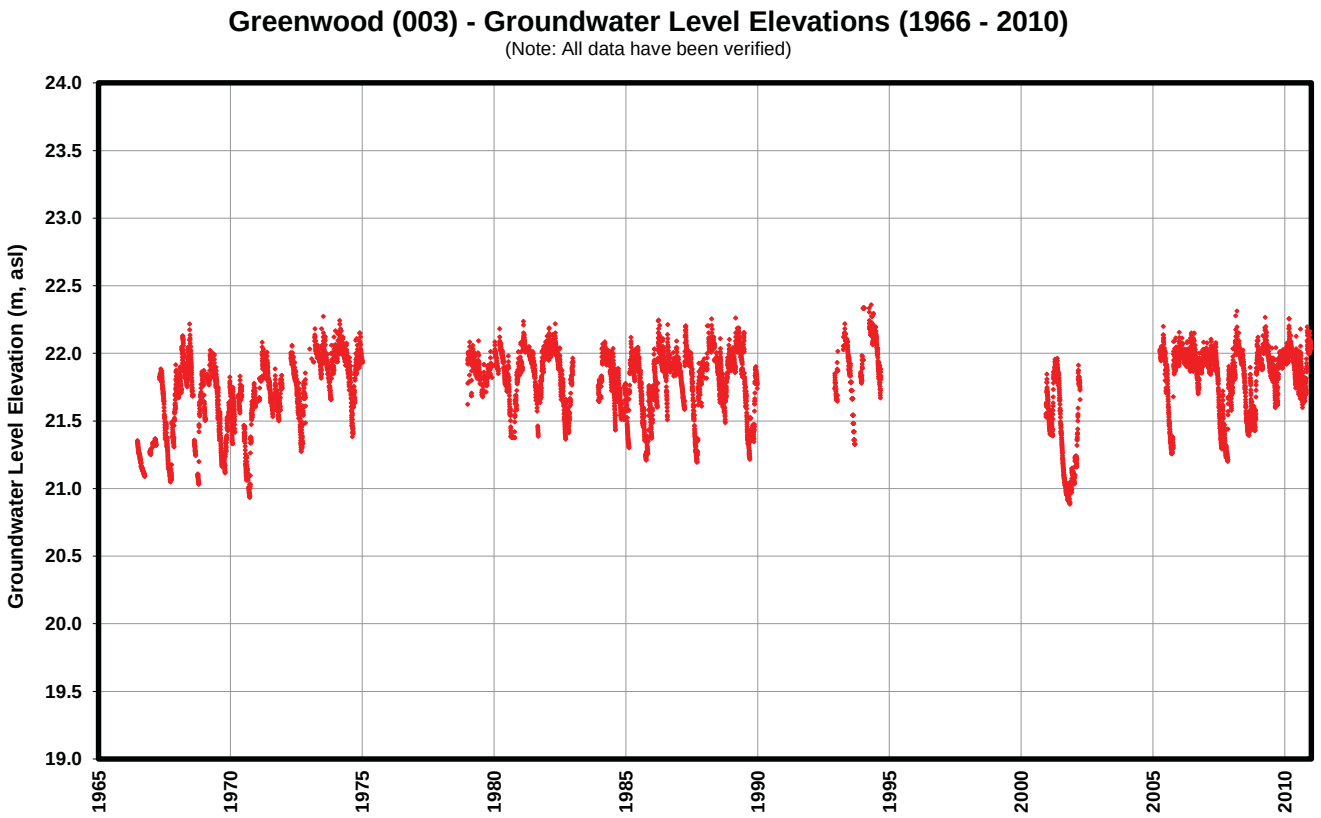
Final status of well: OBSERVATION WELL

Water use: OBSERVATION

Method of drilling: ROTARY

Date well completed: 02-Mar-06

APPENDIX B
GROUNDWATER LEVEL GRAPHS



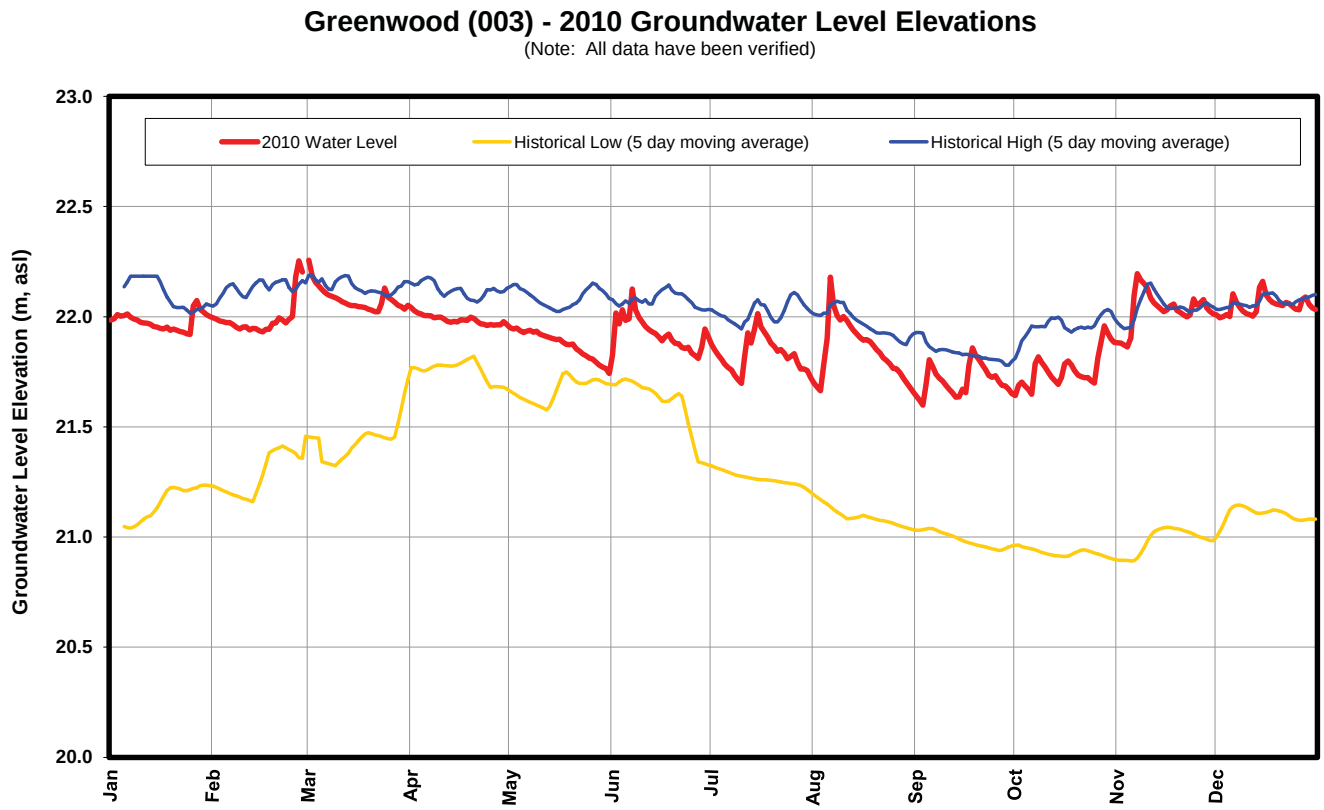
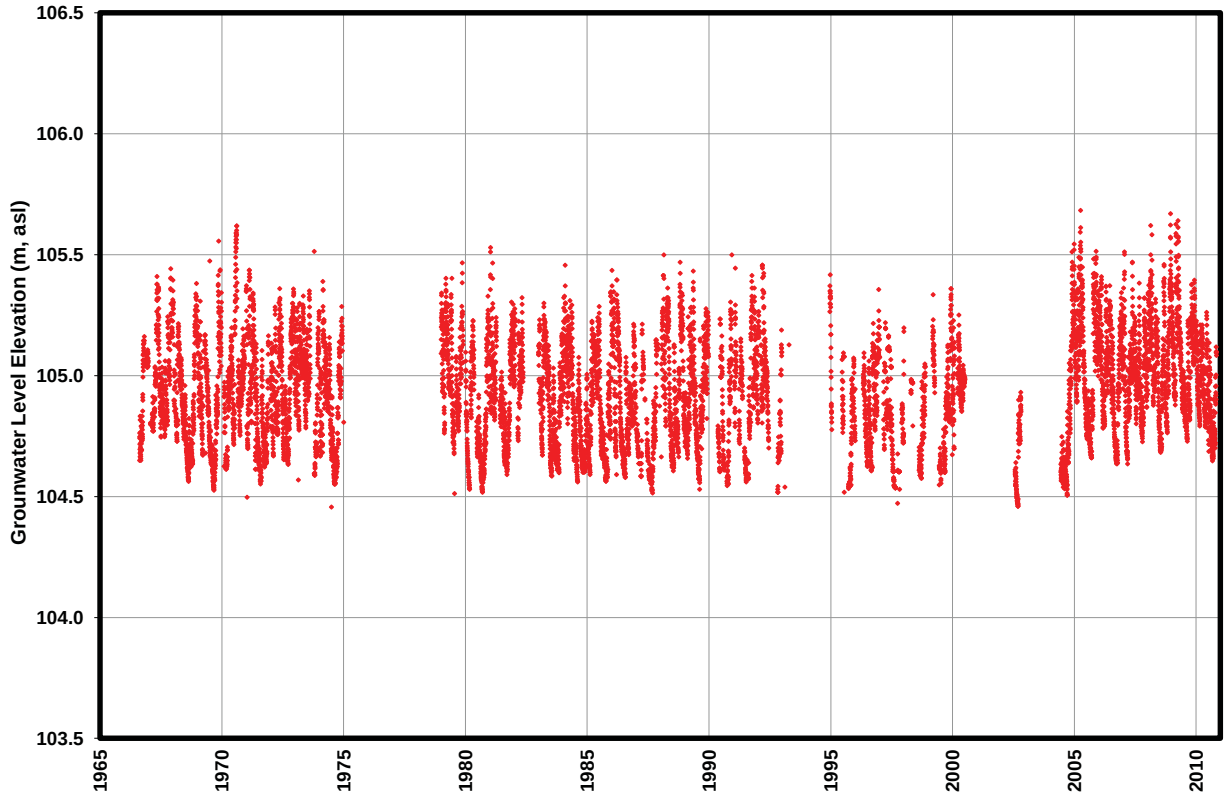


Figure B.1: Greenwood (003) Groundwater Level Elevations

Fraser Brook (004) - Groundwater Level Elevations (1966 - 2010)

(Note: Data from January 20, 2010 to present have not been verified)



Fraser Brook (004) - 2010 Groundwater Level Elevations

(Note: Data from January 20, 2010 to present have not been verified)

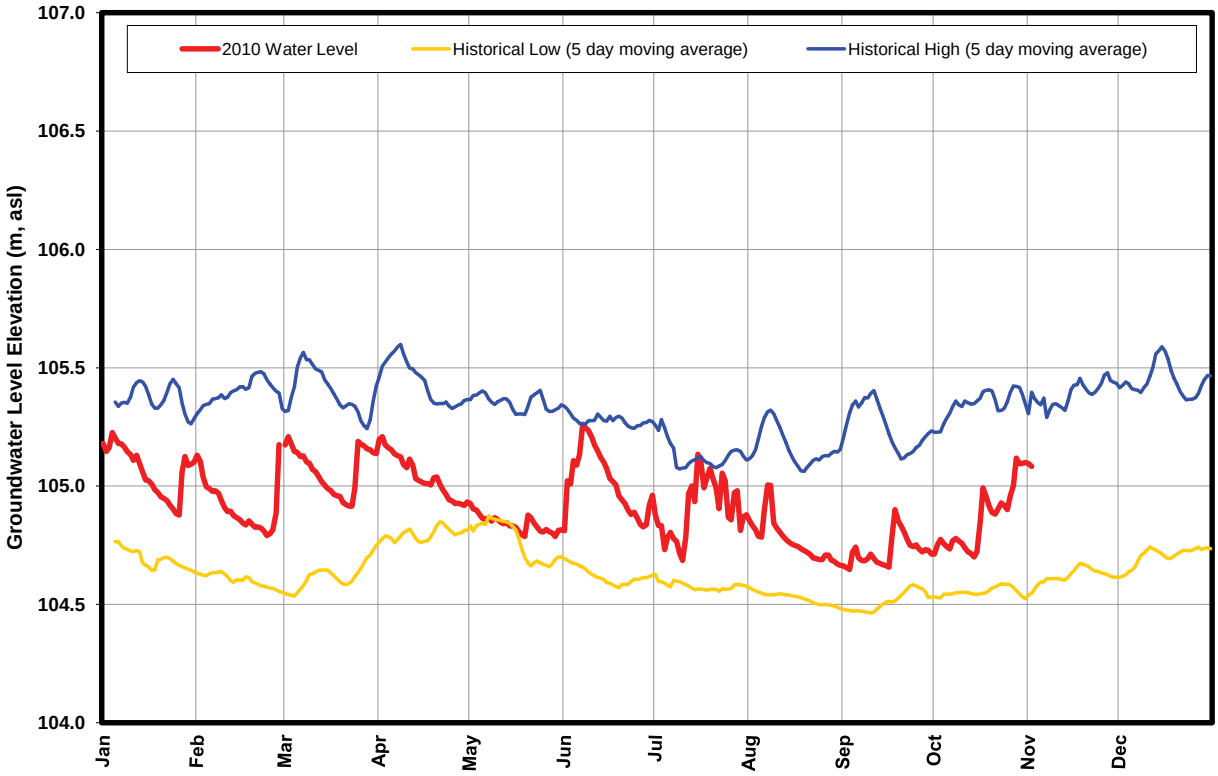
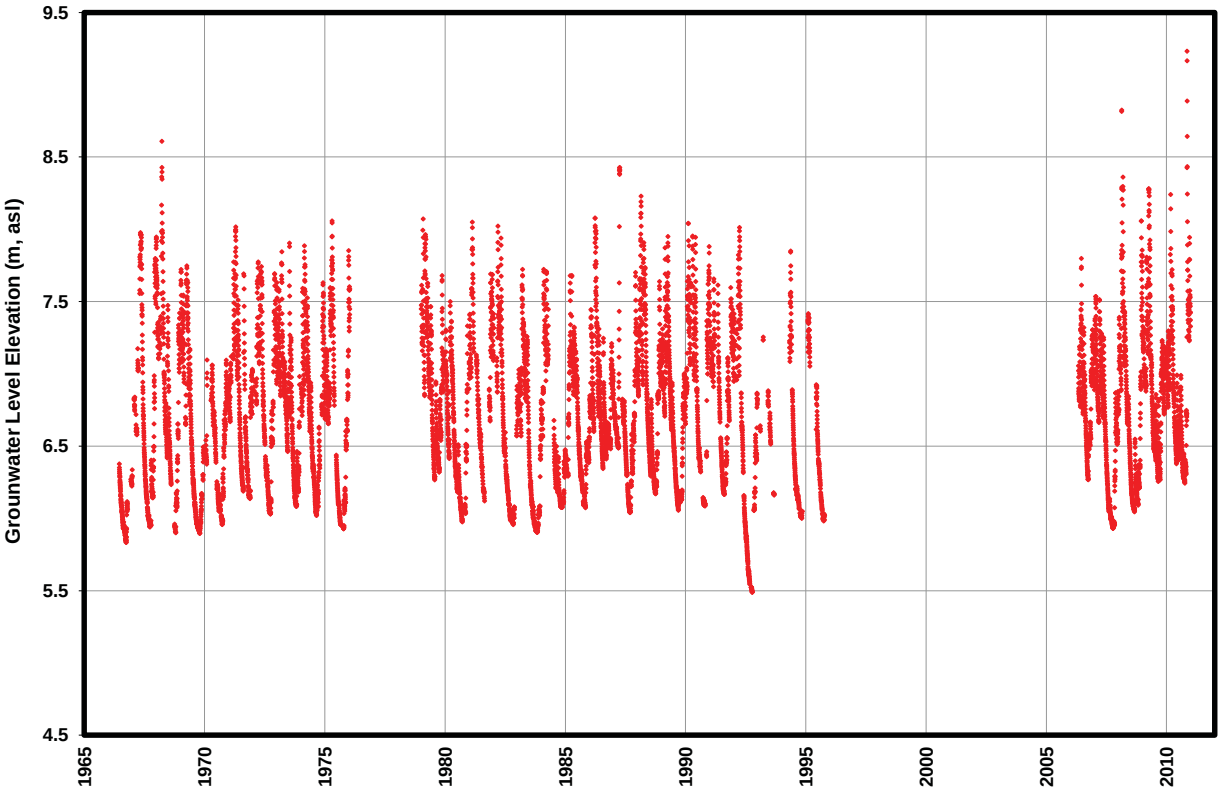


Figure B.2: Fraser Brook (004) Groundwater Level Elevations

Wilmot (005) - Groundwater Level Elevations (1966 - 2010)

(Note: All data have been verified)



Wilmot (005) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

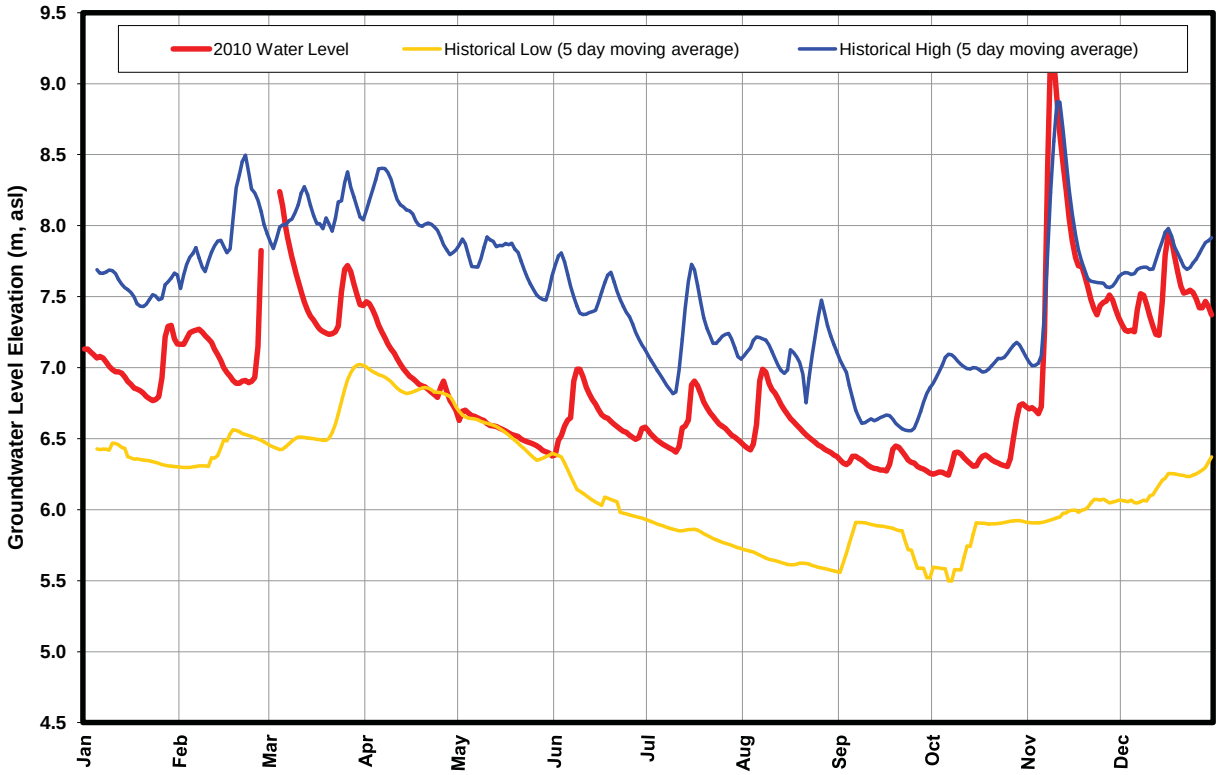
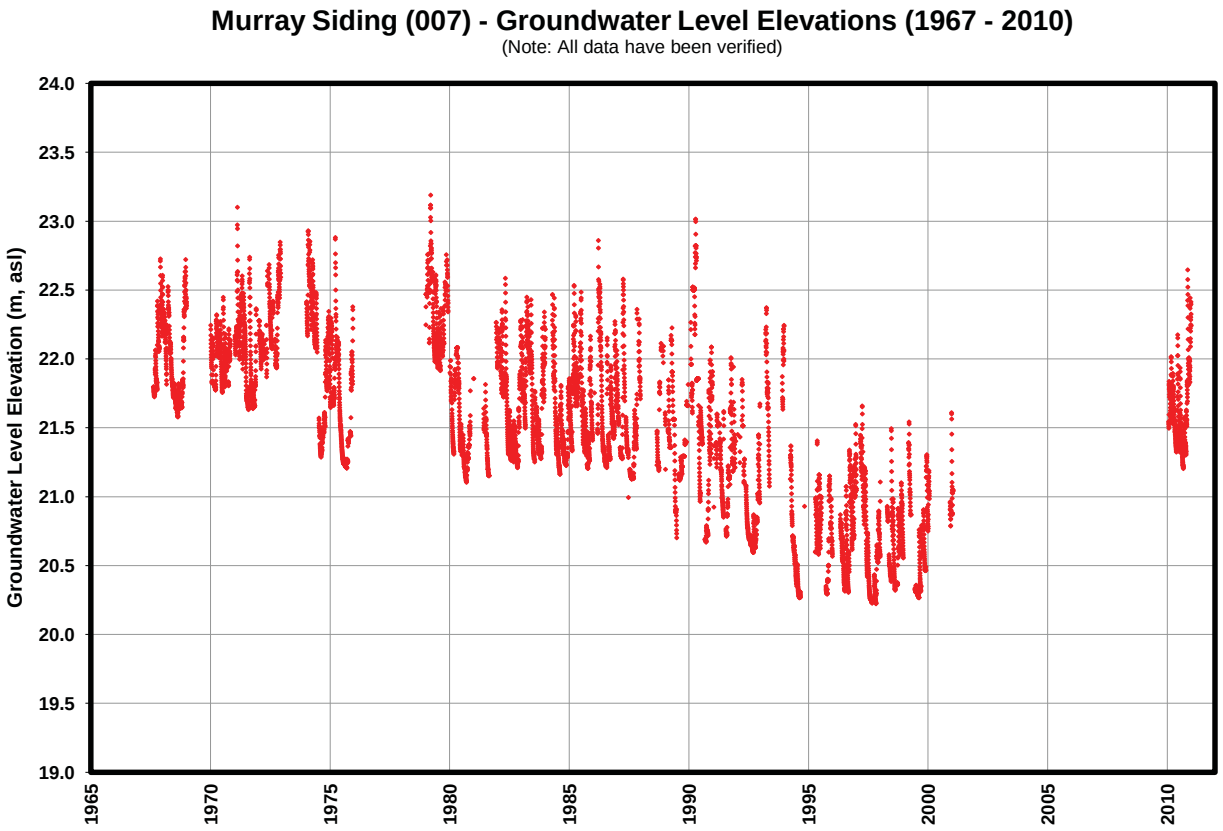


Figure B.3: Wilmot (005) Groundwater Level Elevations



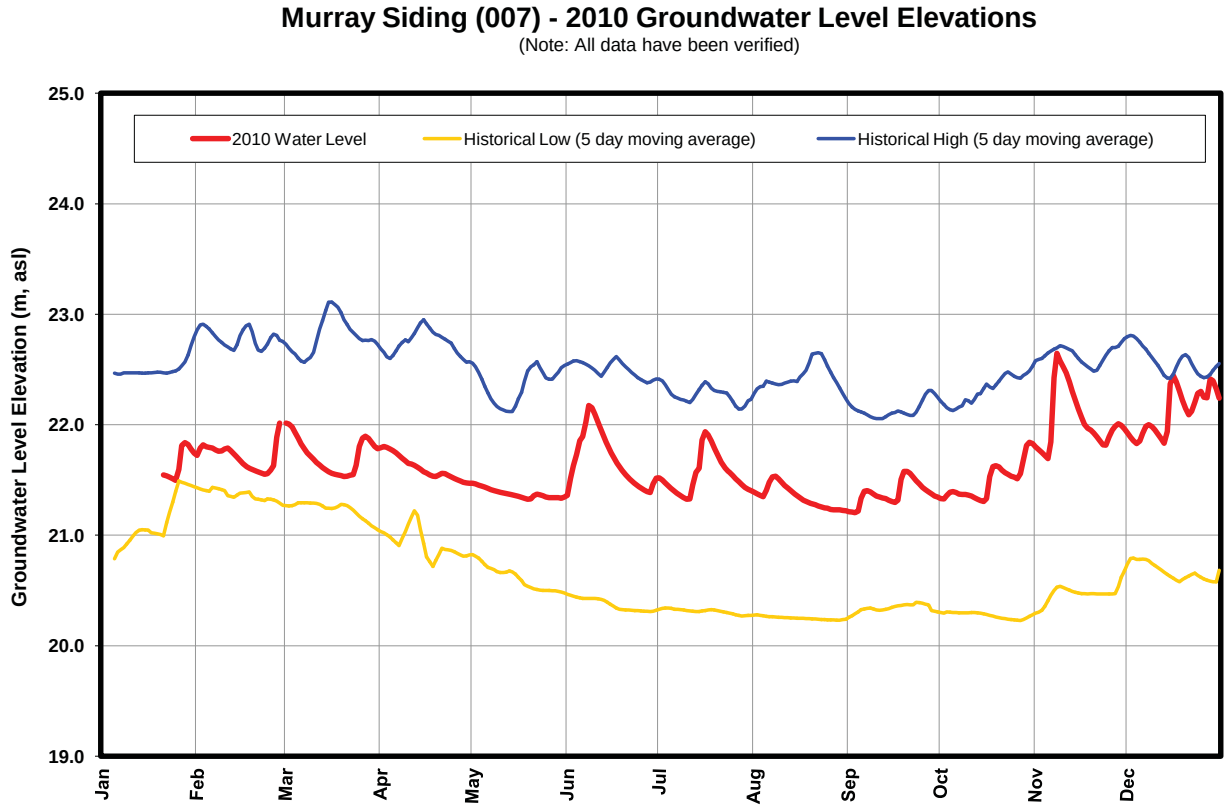
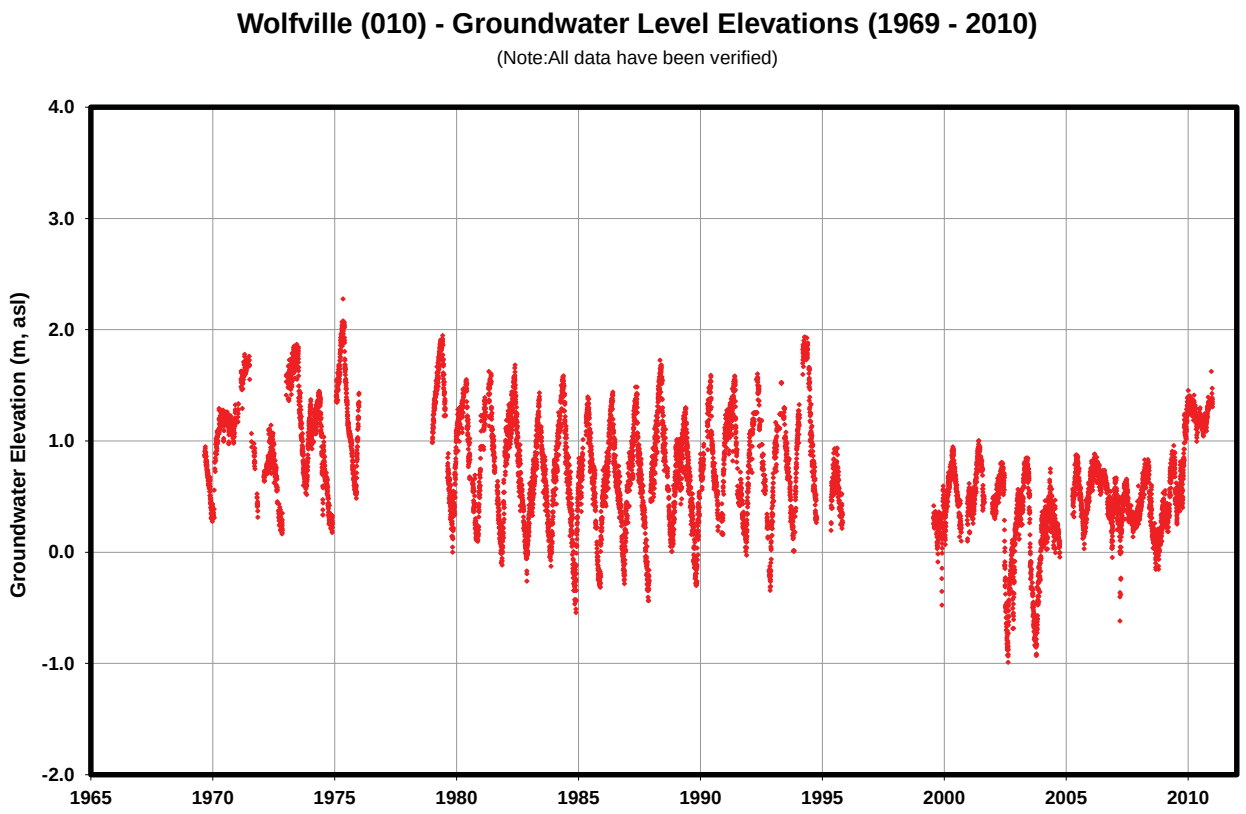


Figure B.4: Murray Siding (007) Groundwater Level Elevations



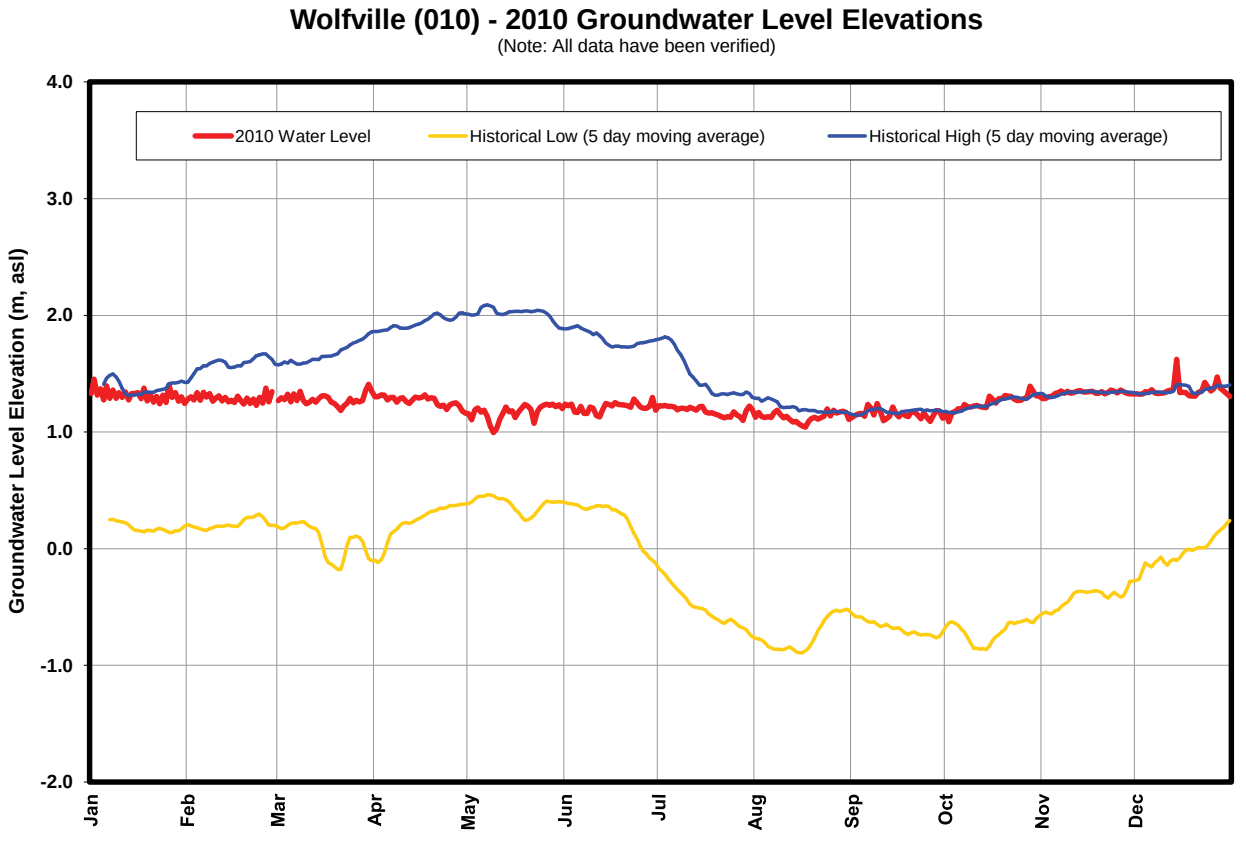
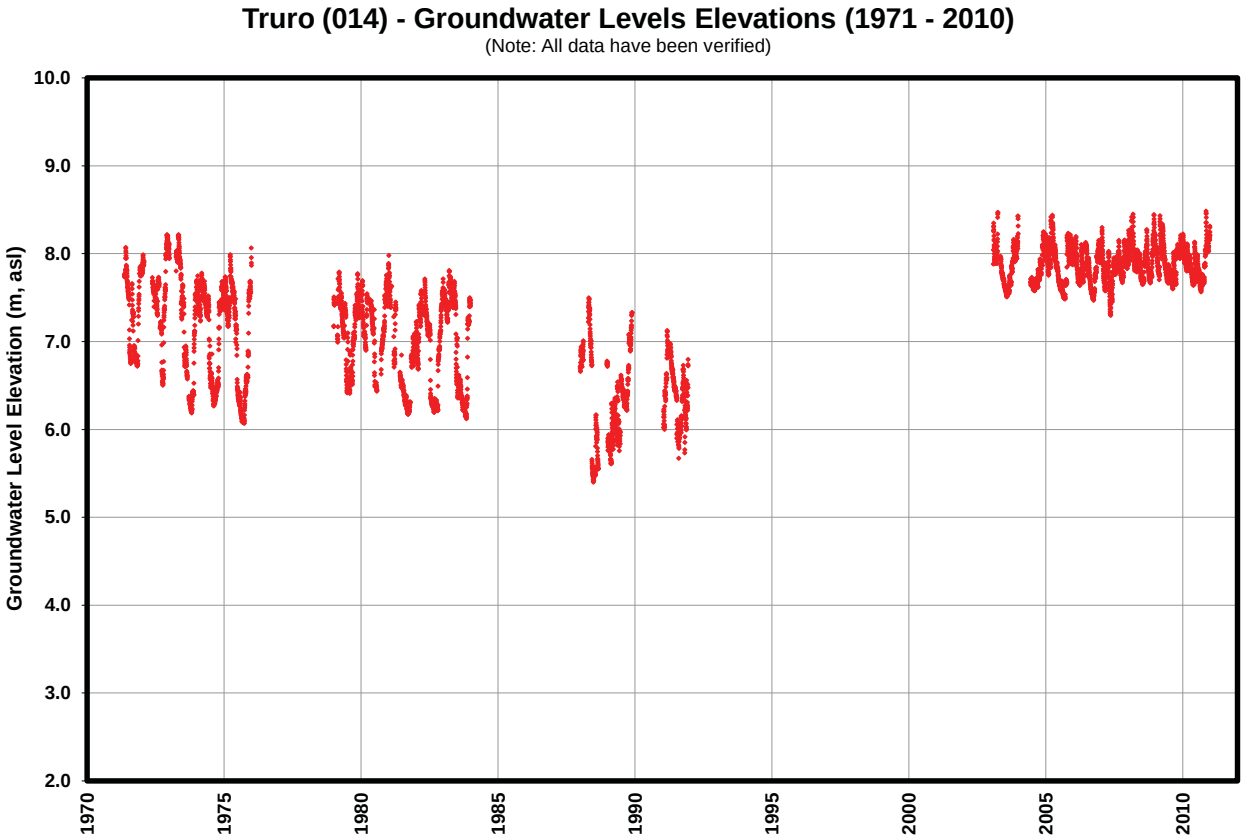


Figure B.5: Wolfville (010) Groundwater Level Elevations



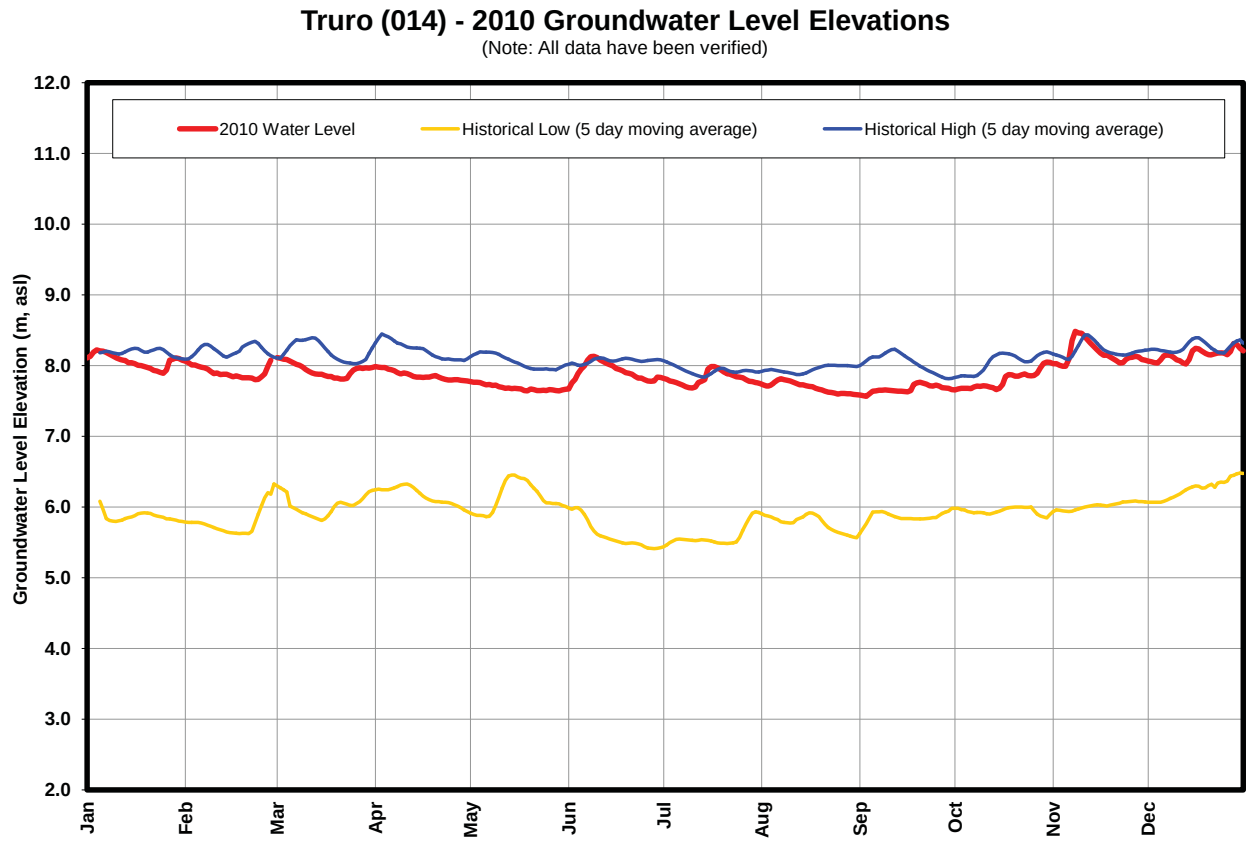
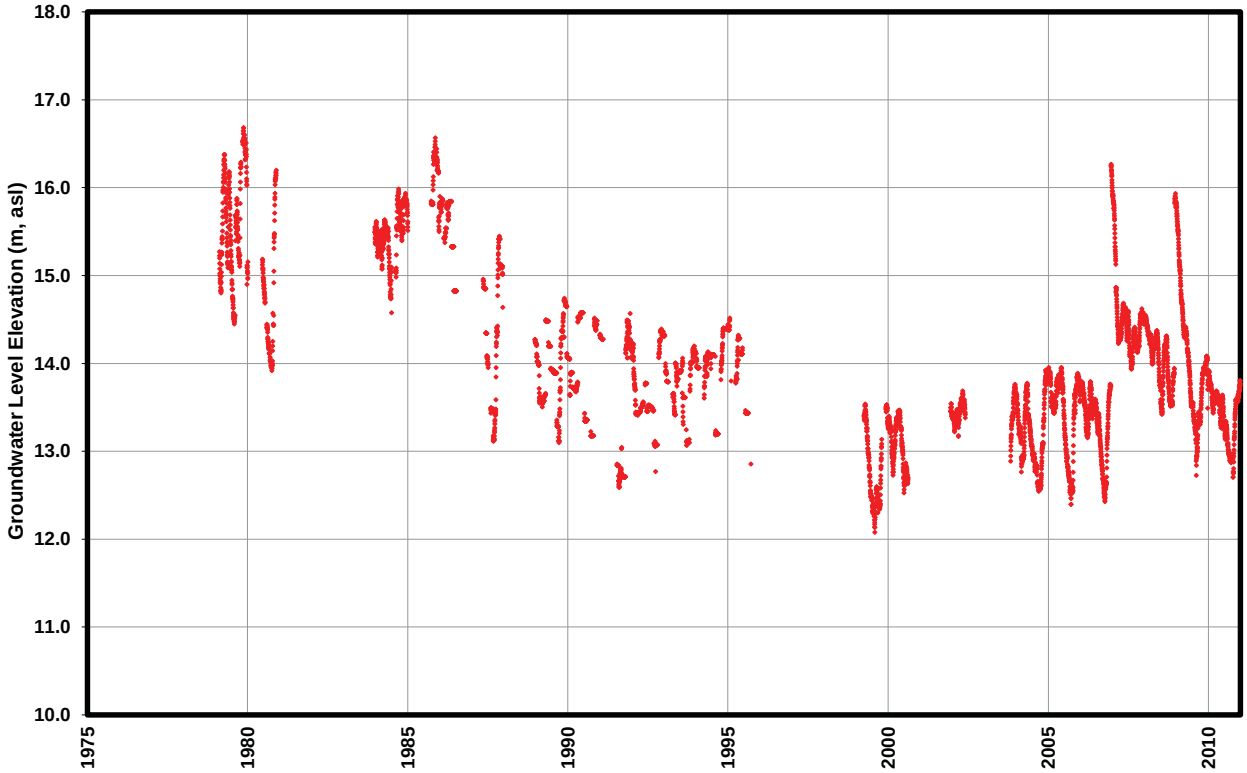


Figure B.6: Truro (014) Groundwater Level Elevations

Monastery (028) - Groundwater Levels Elevations (1979 - 2010)

(Note: All data have been verified)



Monastery (028) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

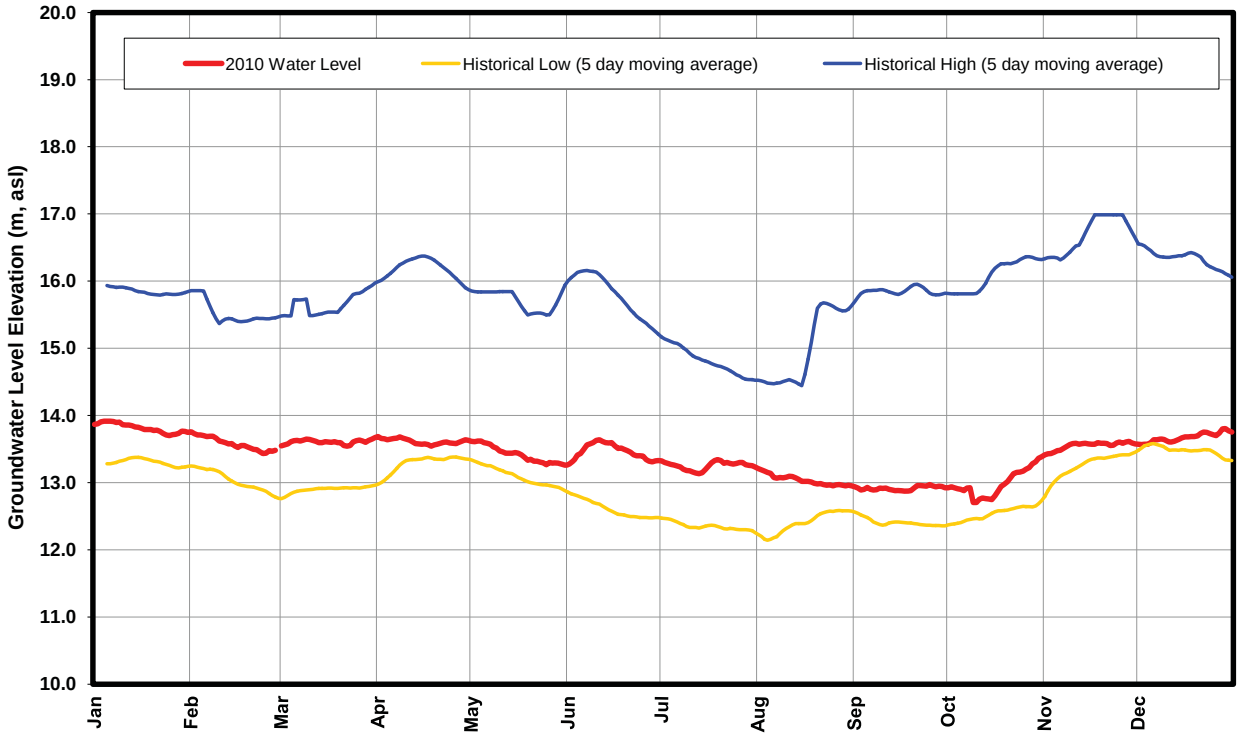
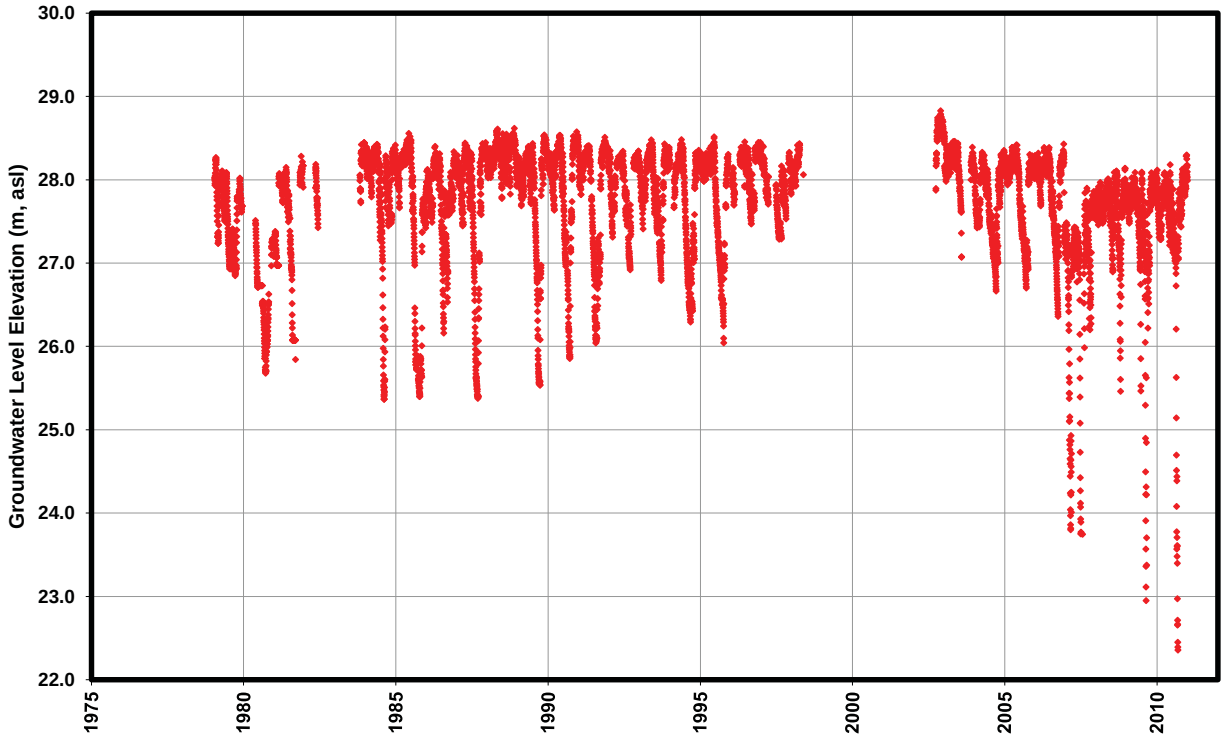


Figure B.7: Monastery (028) Groundwater Level Elevations

Point Aconi (030) - Groundwater Level Elevations (1979 - 2010)

(Note: All data have been verified)



Point Aconi (030) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

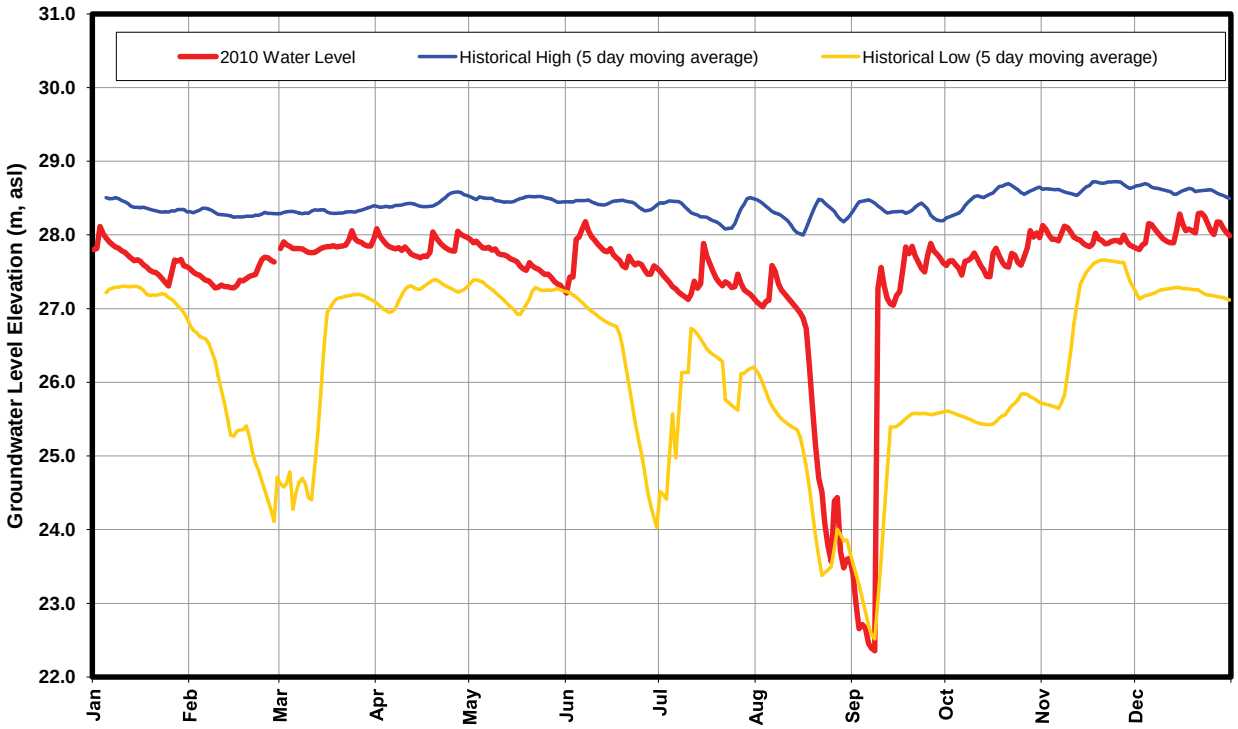
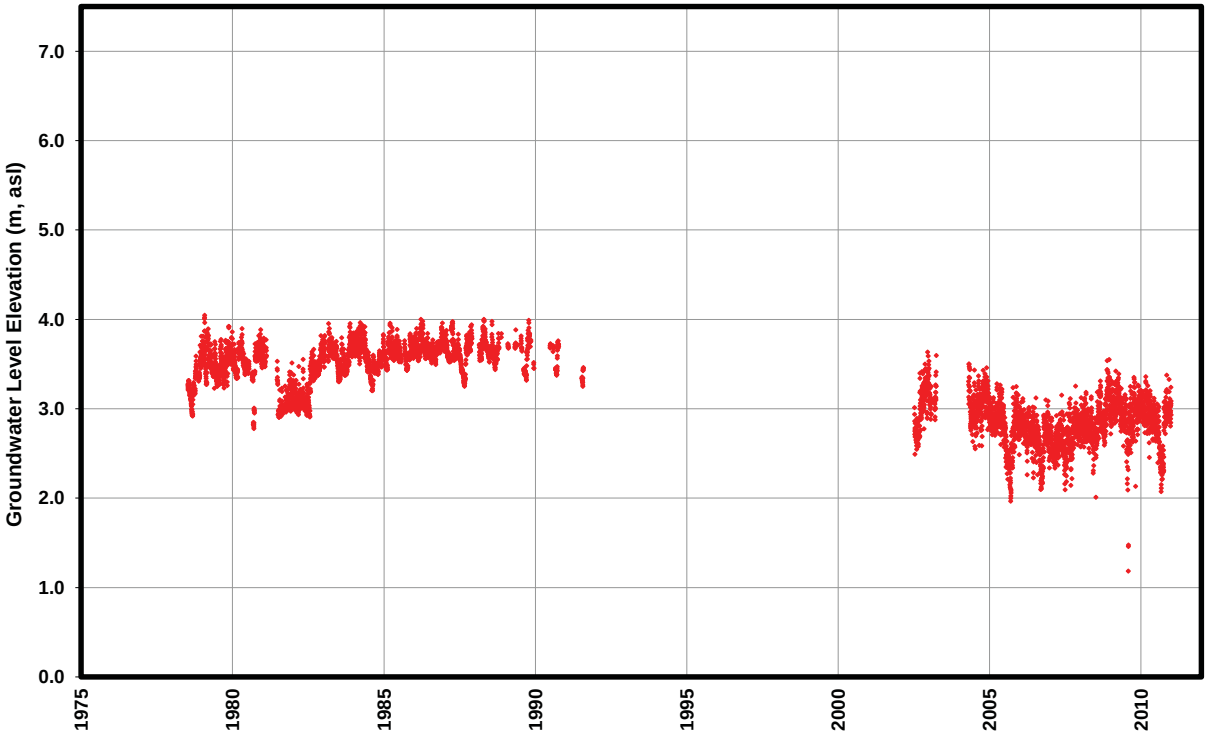


Figure B.8: Point Aconi (030) Groundwater Level Elevations

Lawrencetown (043) - Groundwater Level Elevations (1978 - 2010)

(Note: All data have been verified)



Lawrencetown (043) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

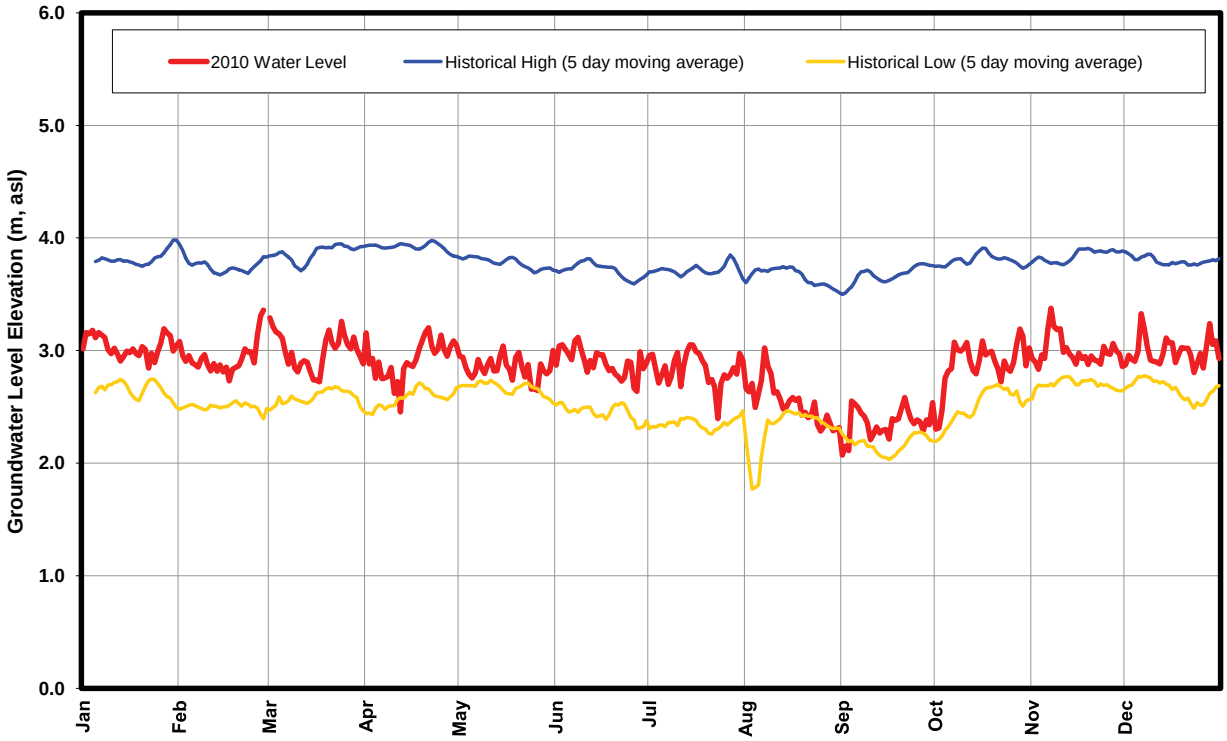
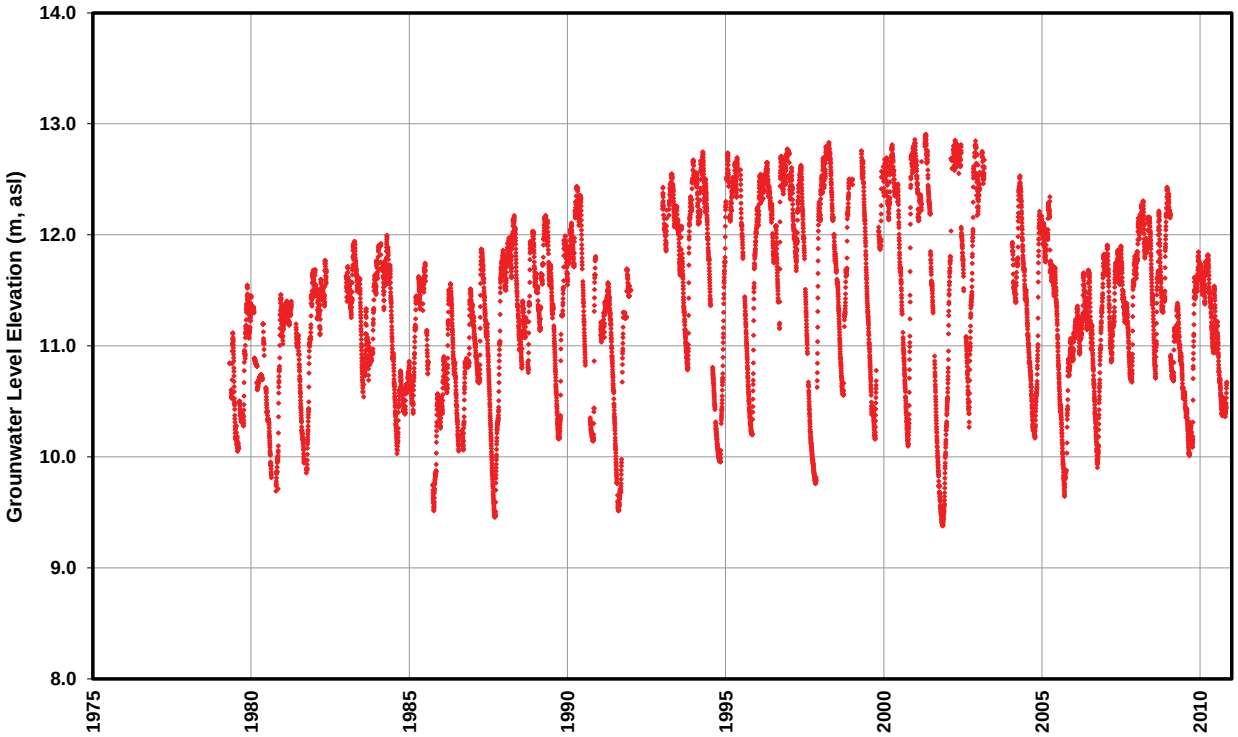


Figure B.9: Lawrencetown (043) Groundwater Level Elevations

Durham (045) - Groundwater Level Elevations (1979 - 2010)

(Note: Data from January 20, 2010 to present have not been verified)



Durham (045) - 2010 Groundwater Level Elevations

(Note: Data from January 20, 2010 to present have not been verified)

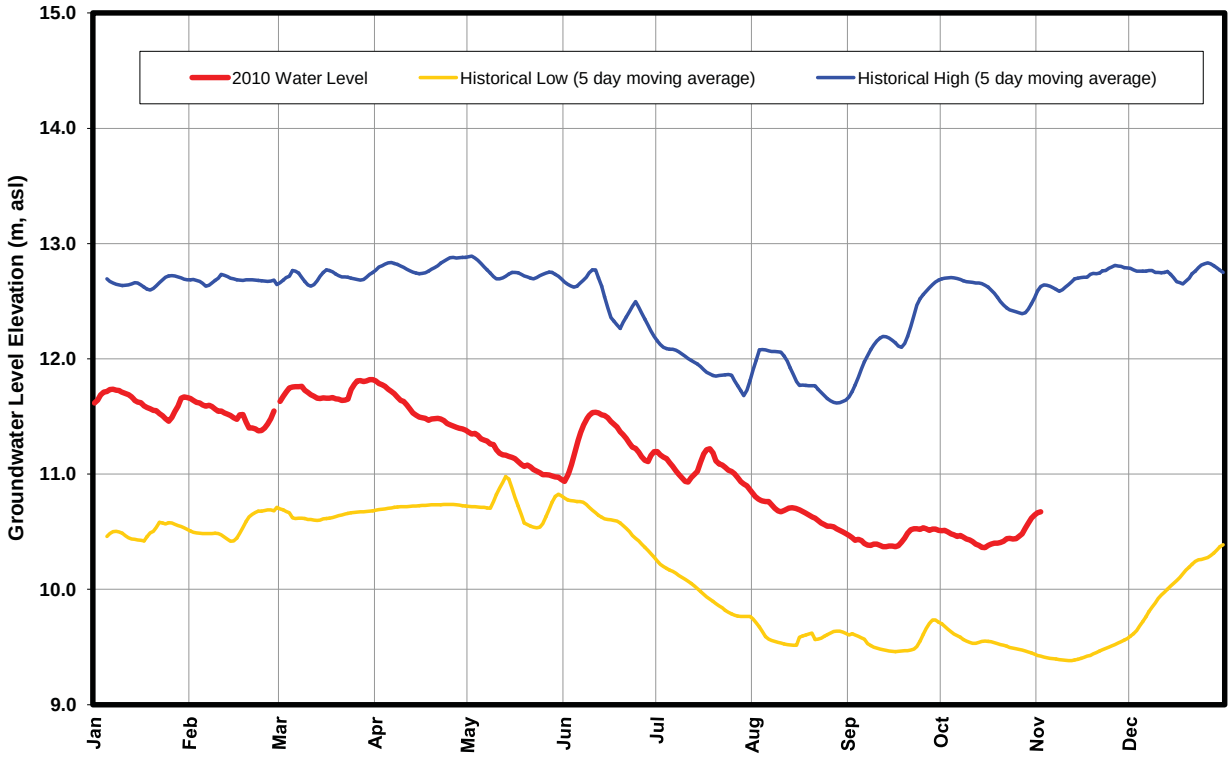
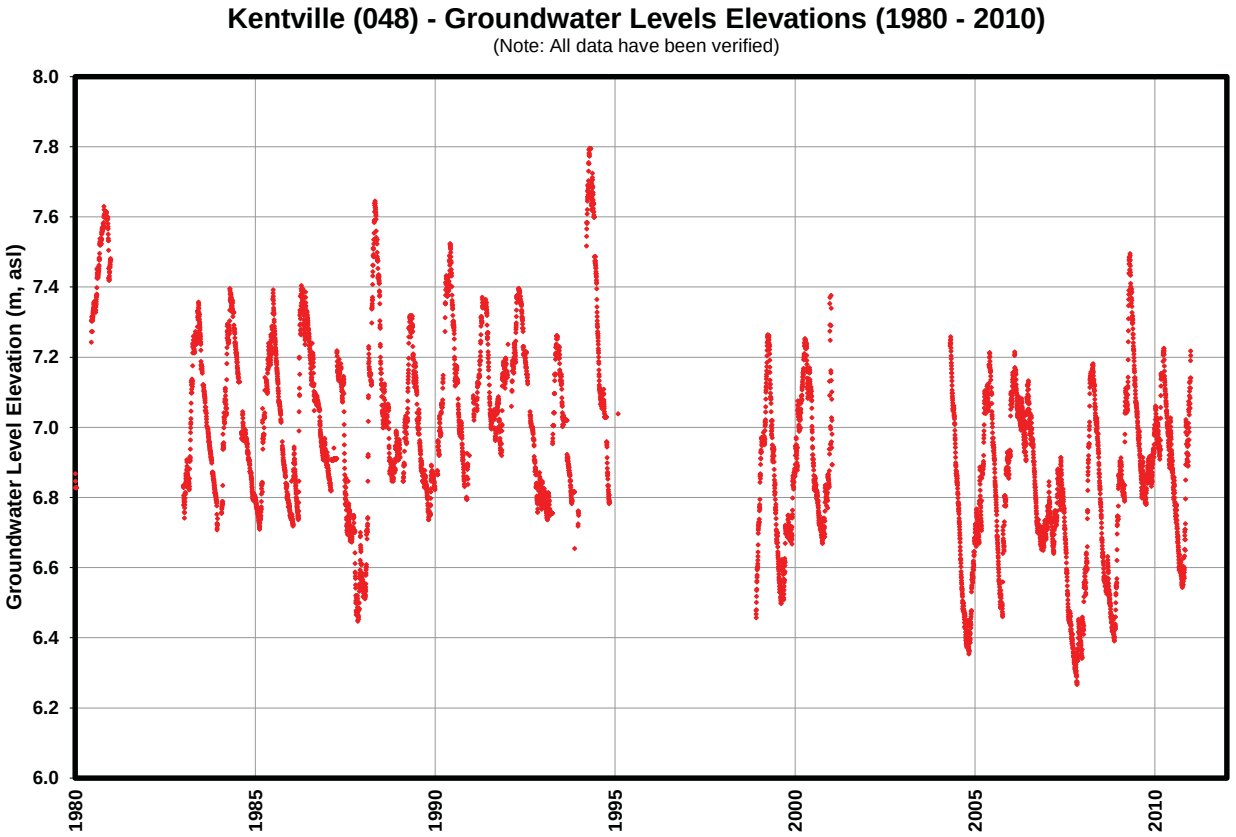


Figure B.10: Durham (045) Groundwater Level Elevations



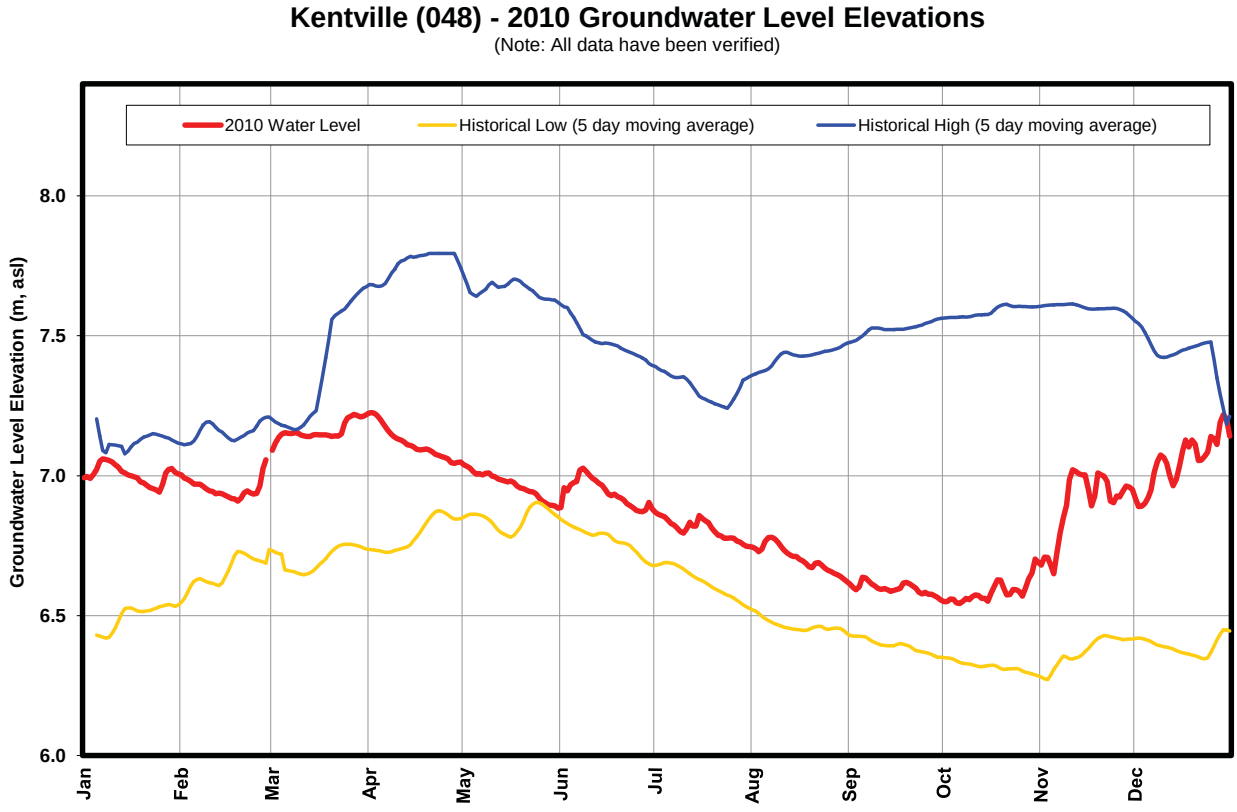
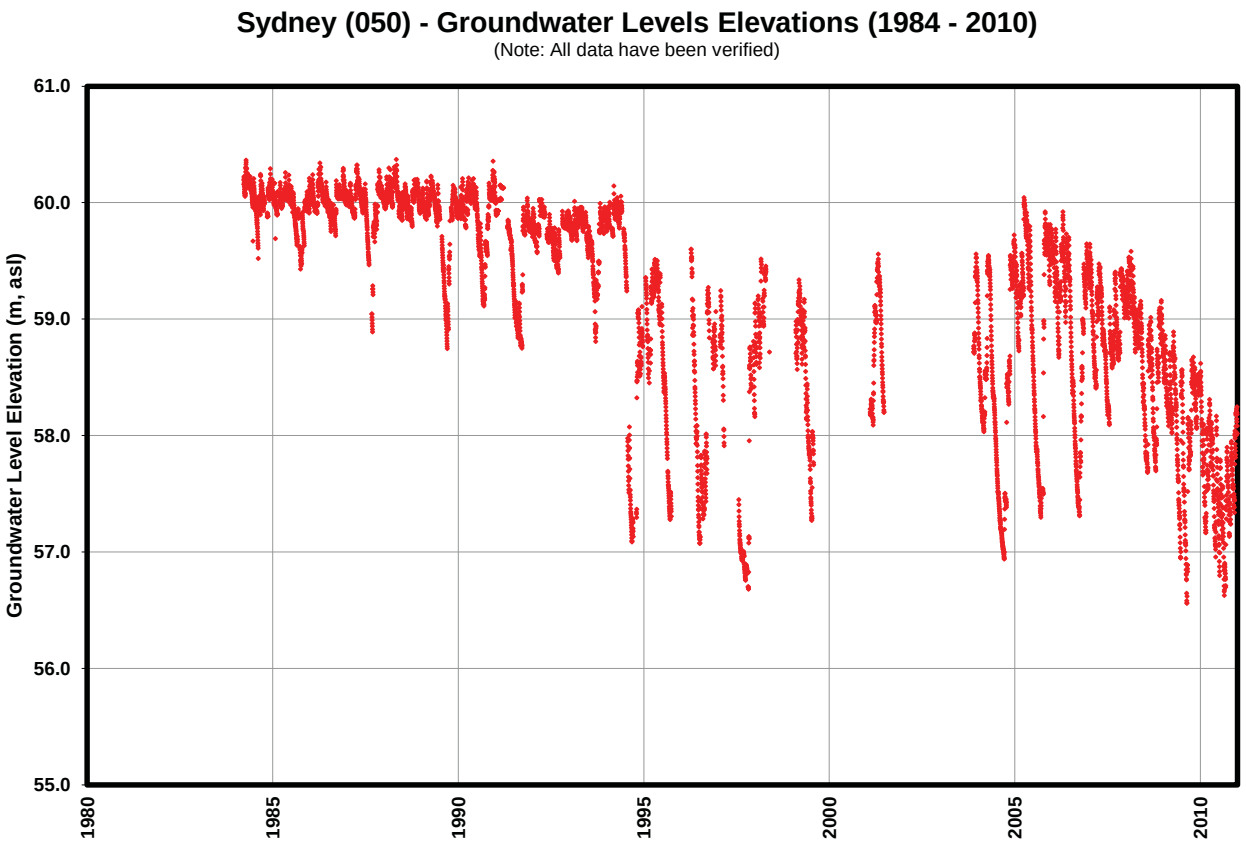


Figure B.11: Kentville (048) Groundwater Level Elevations



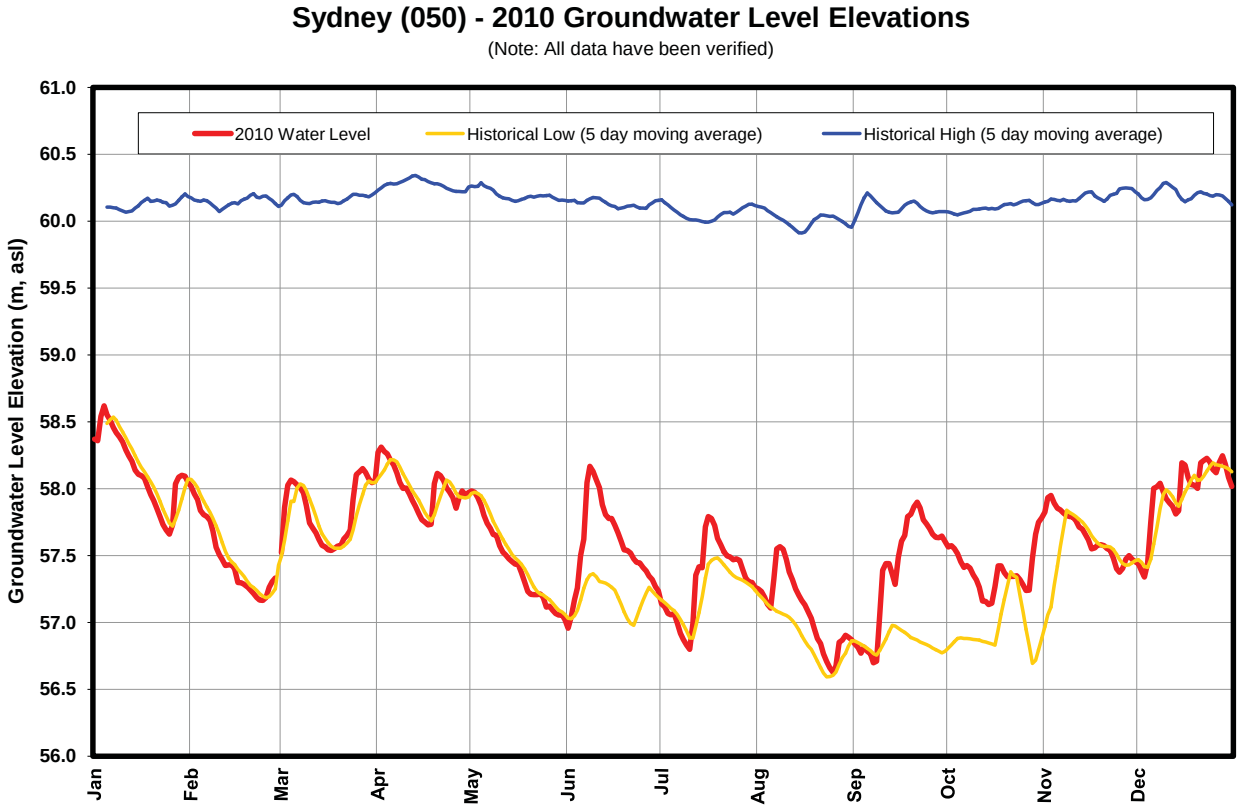
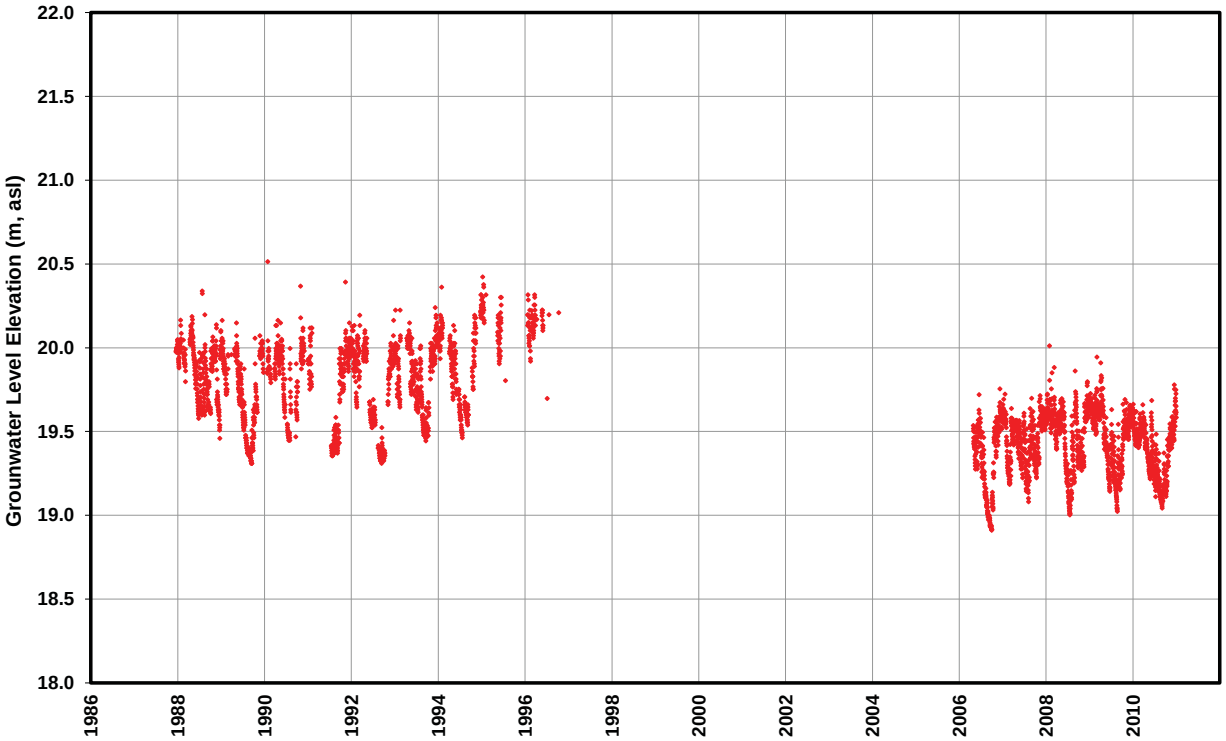


Figure B.12: Sydney (050) Groundwater Level Elevations

North Grant (054) - Groundwater Level Elevations (1987 - 2010)

(Note: All data have been verified)



North Grant (054) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

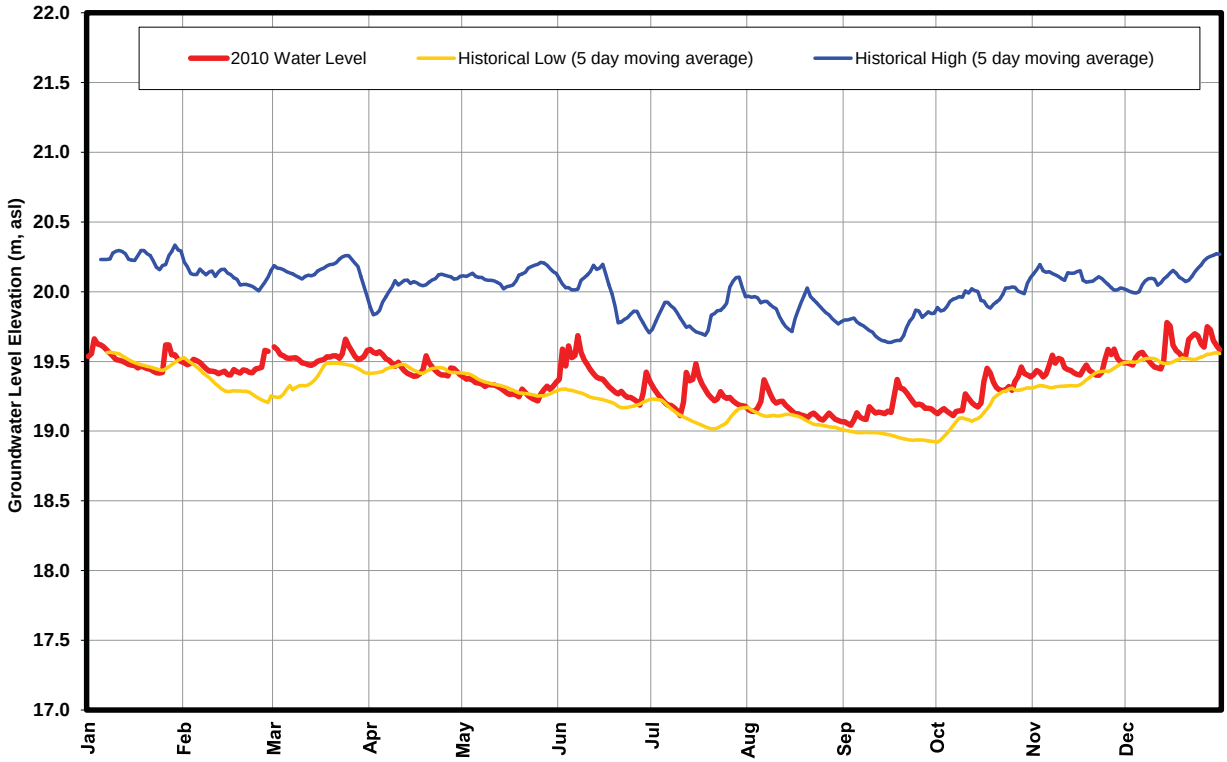
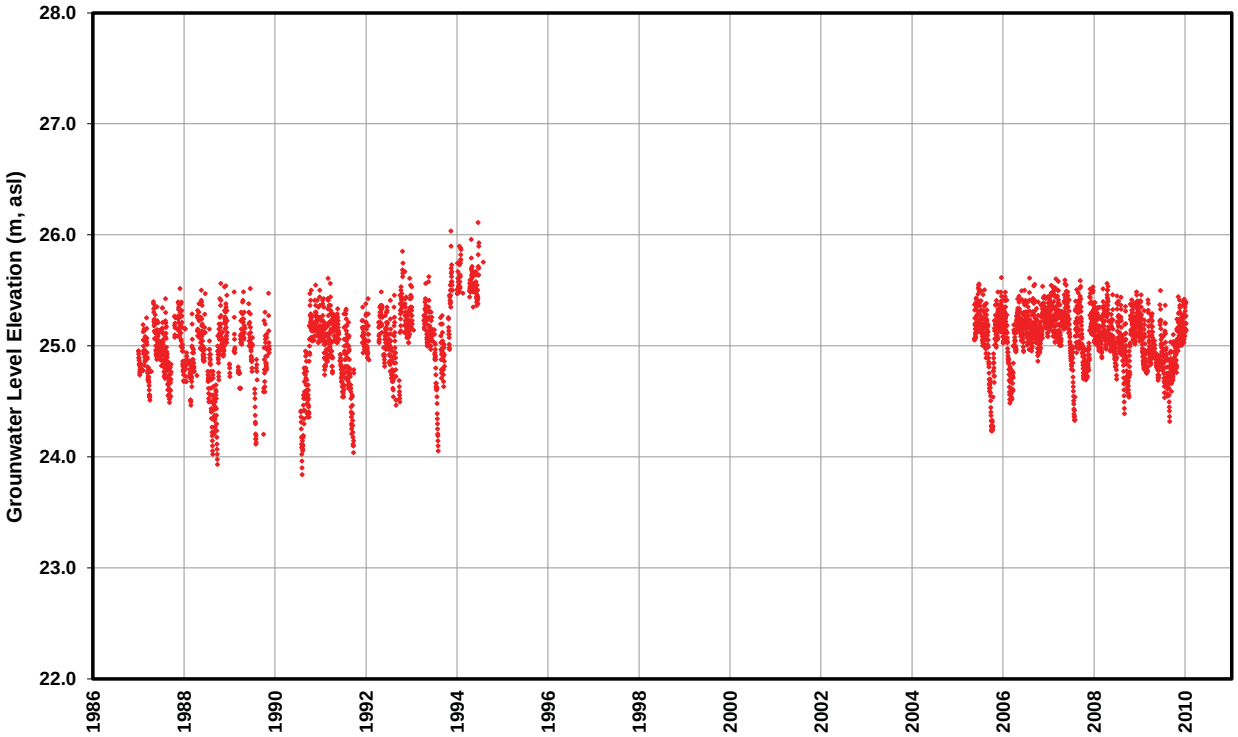


Figure B.13: North Grant (054) Groundwater Level Elevations

Stillwater (055) - Groundwater Level Elevations (1987 - 2010)

(Note: All data have been verified)



Stillwater (055) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

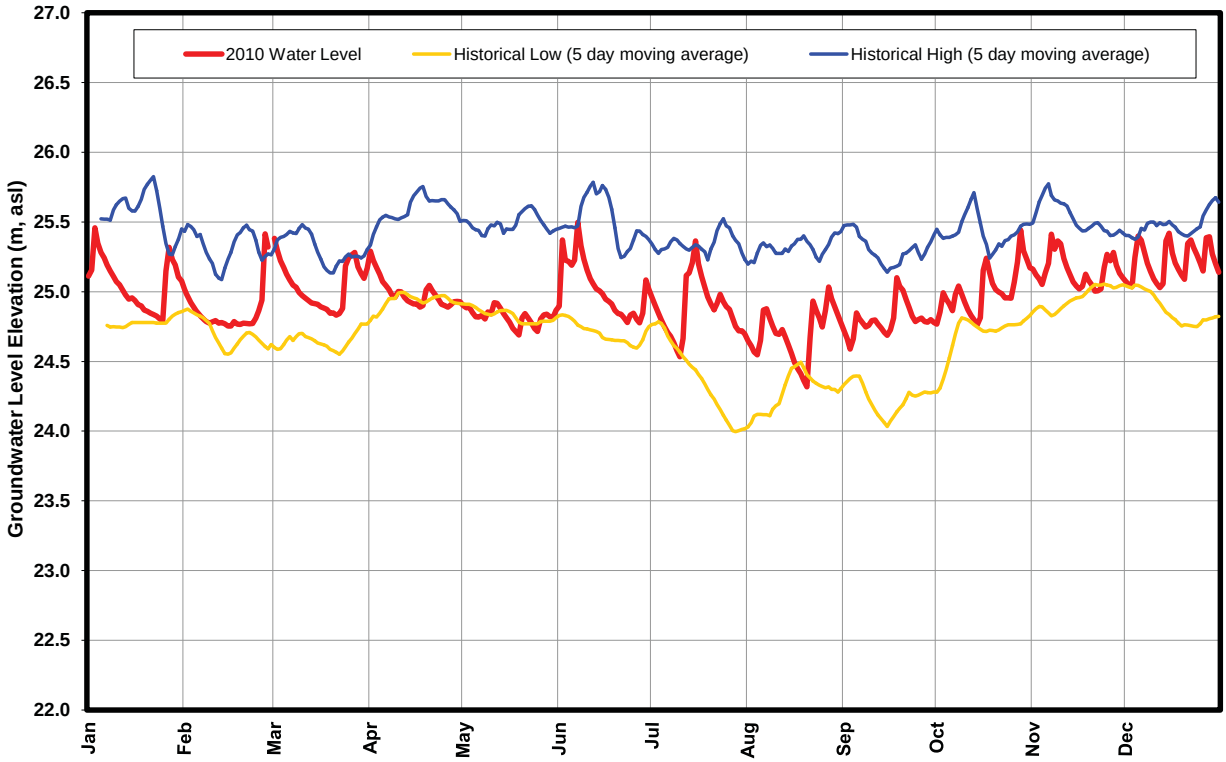
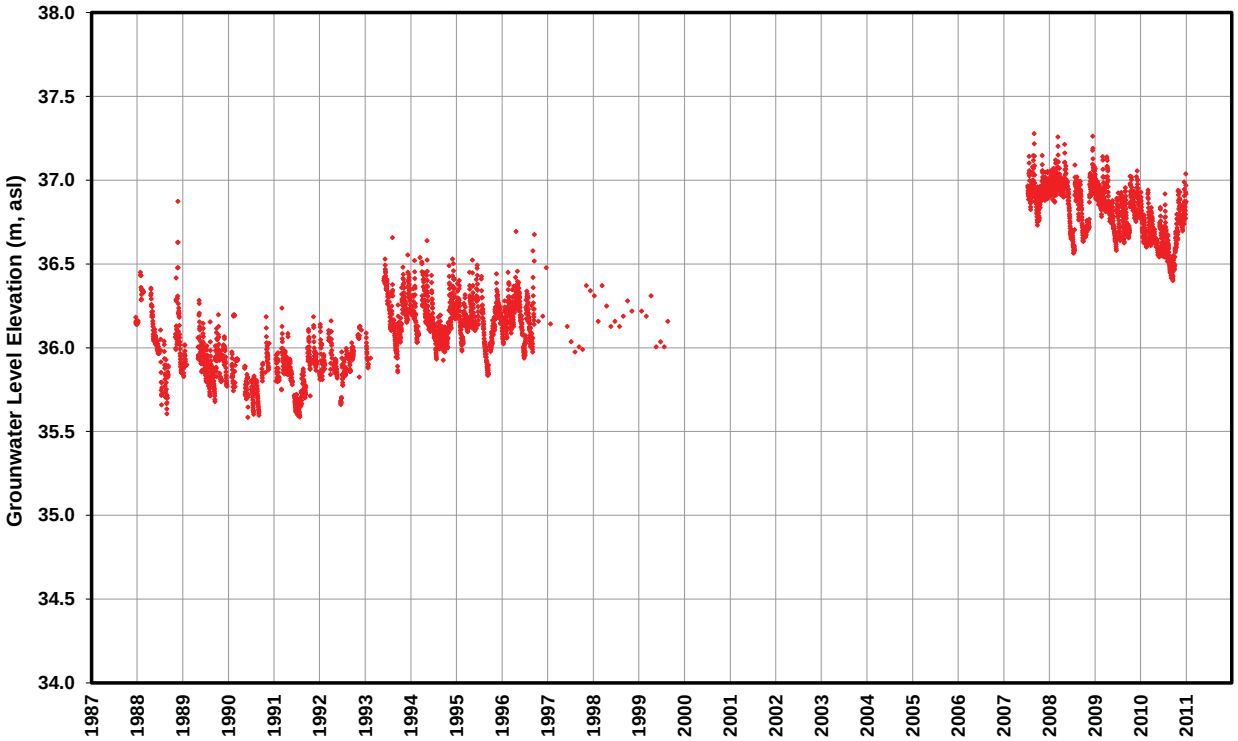


Figure B.14: Stillwater (055) Groundwater Level Elevations

Sheet Harbour (056) - Groundwater Level Elevations (1987 - 2010)

(Note: All data have been verified)



Sheet Harbour (056) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

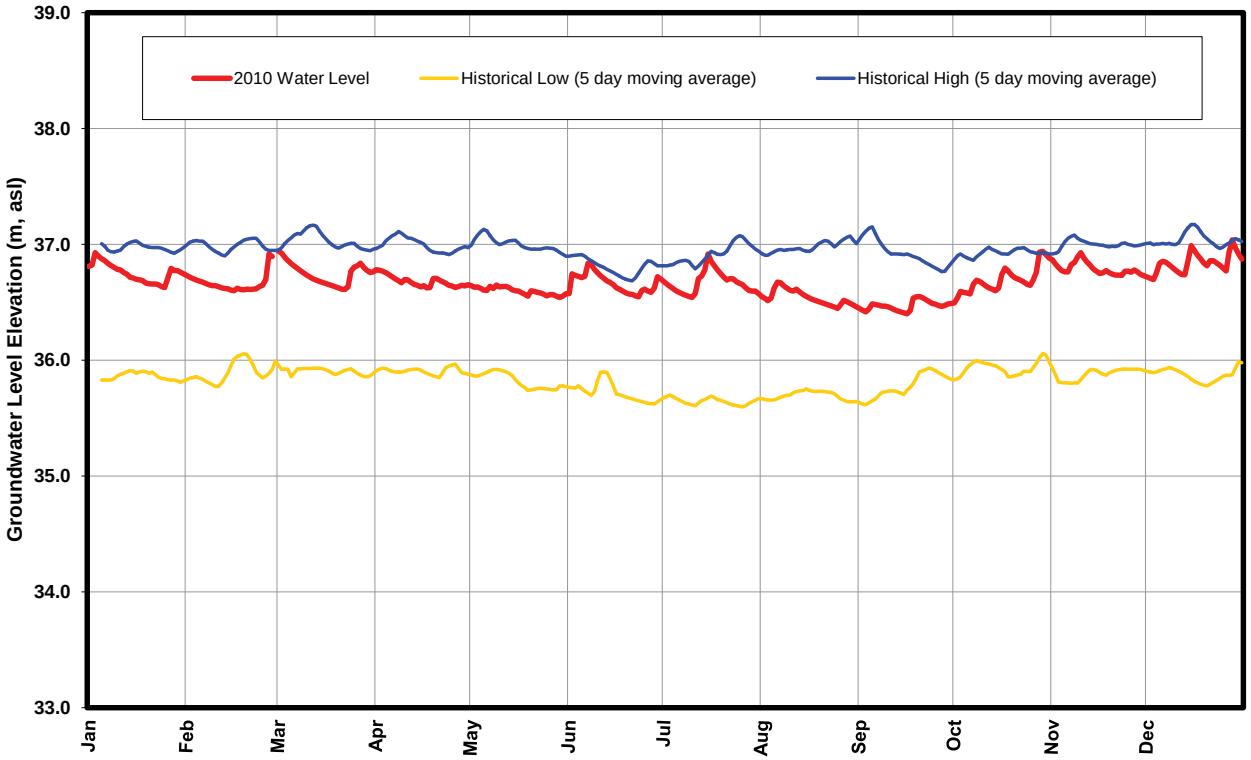
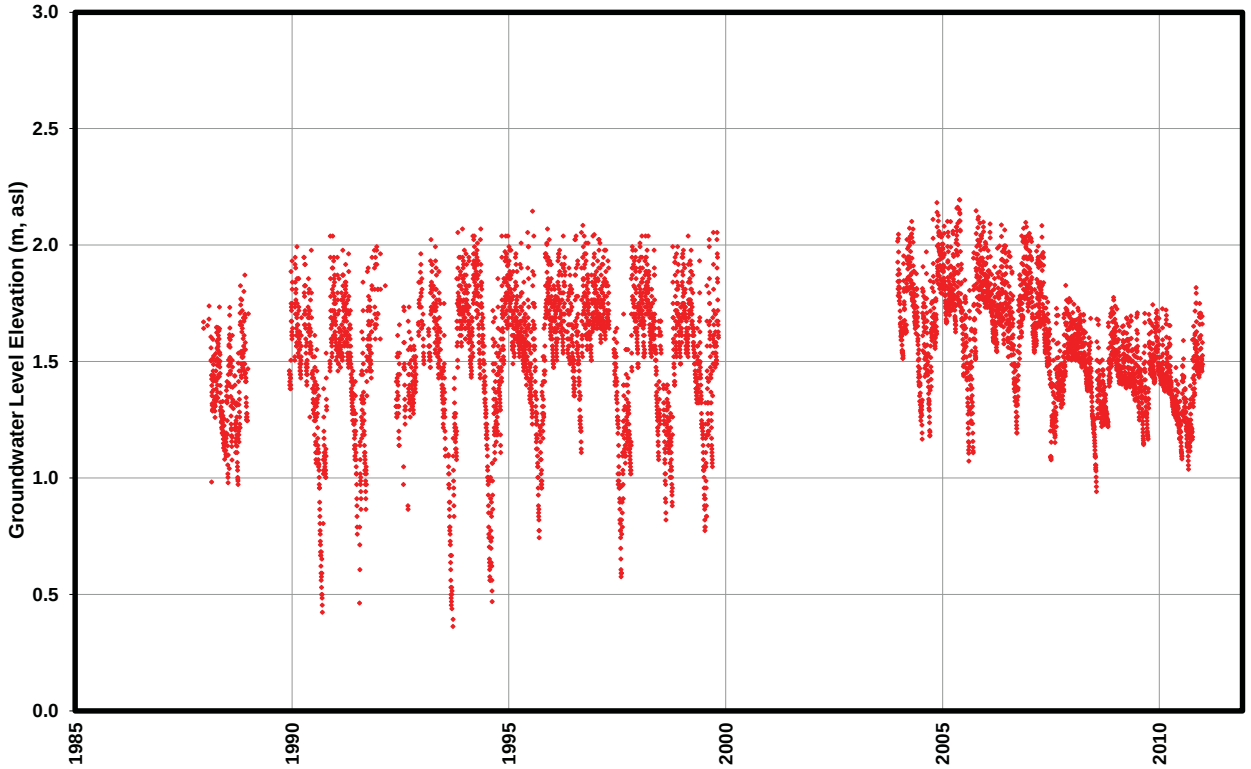


Figure B.15: Sheet Harbour (056) Groundwater Level Elevations

Hayden Lake (059) - Groundwater Levels Elevations (1987 - 2010)

(Note: Data from January 6, 2010 to present have not been verified)



Hayden Lake (059) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

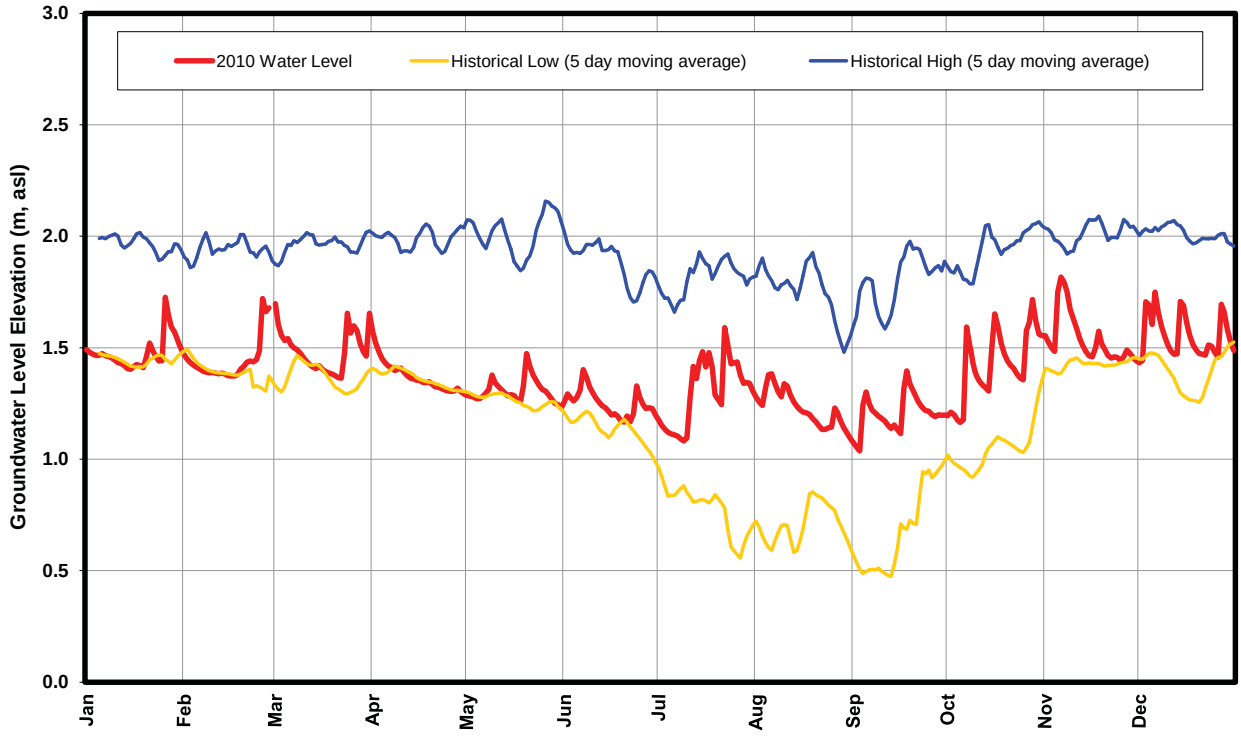
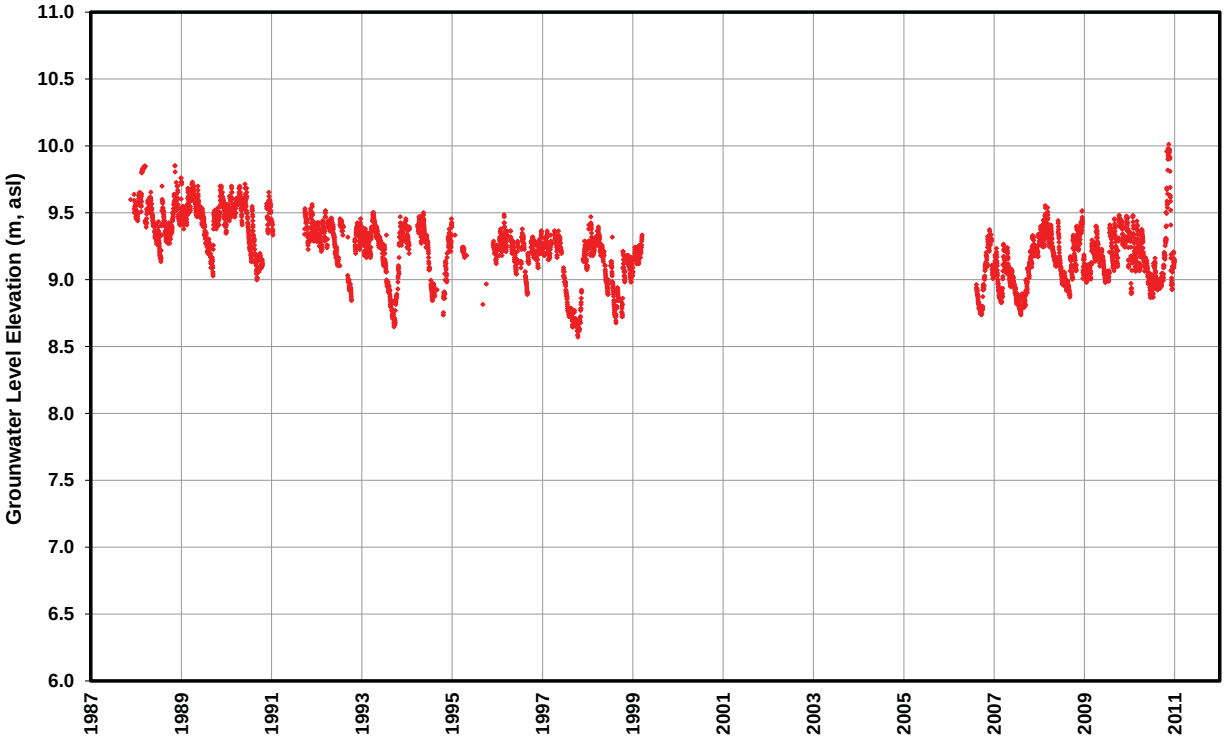


Figure B.16: Hayden Lake (059) Groundwater Level Elevations

Meteghan (060) - Groundwater Level Elevations (1987 - 2010)

(Note: All data have been verified)



Meteghan (060) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

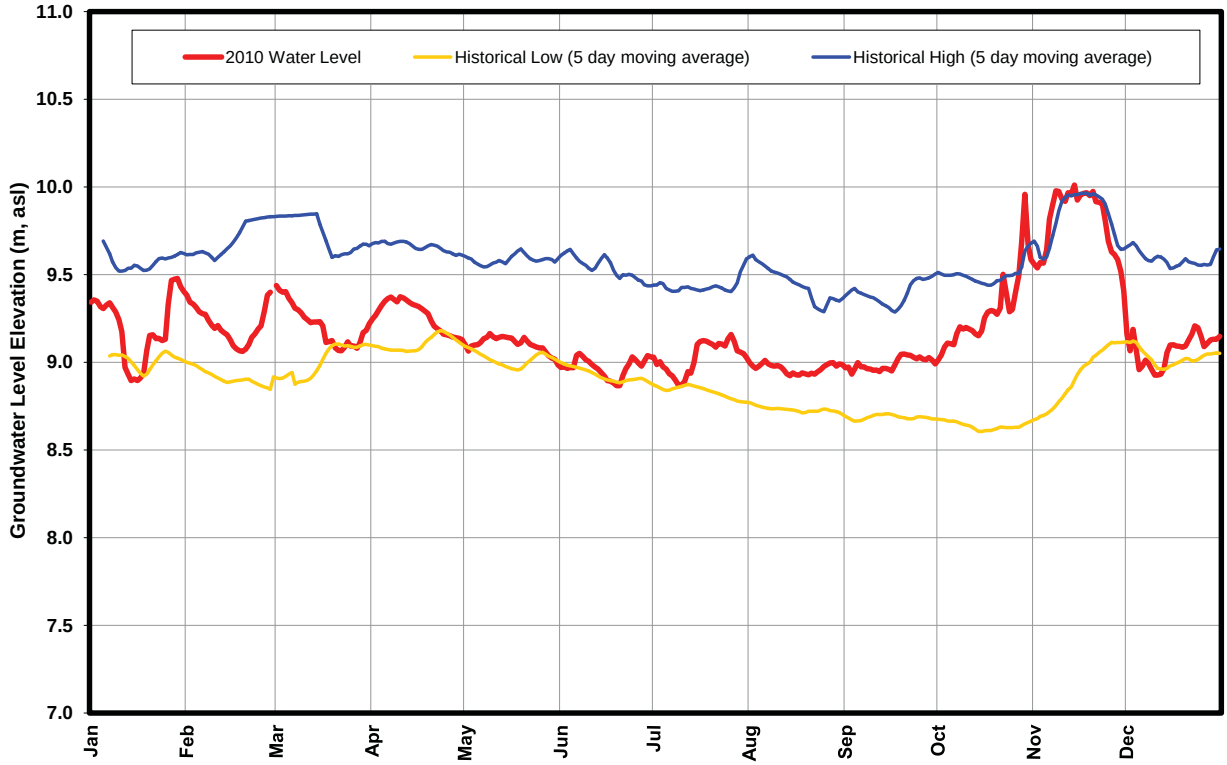
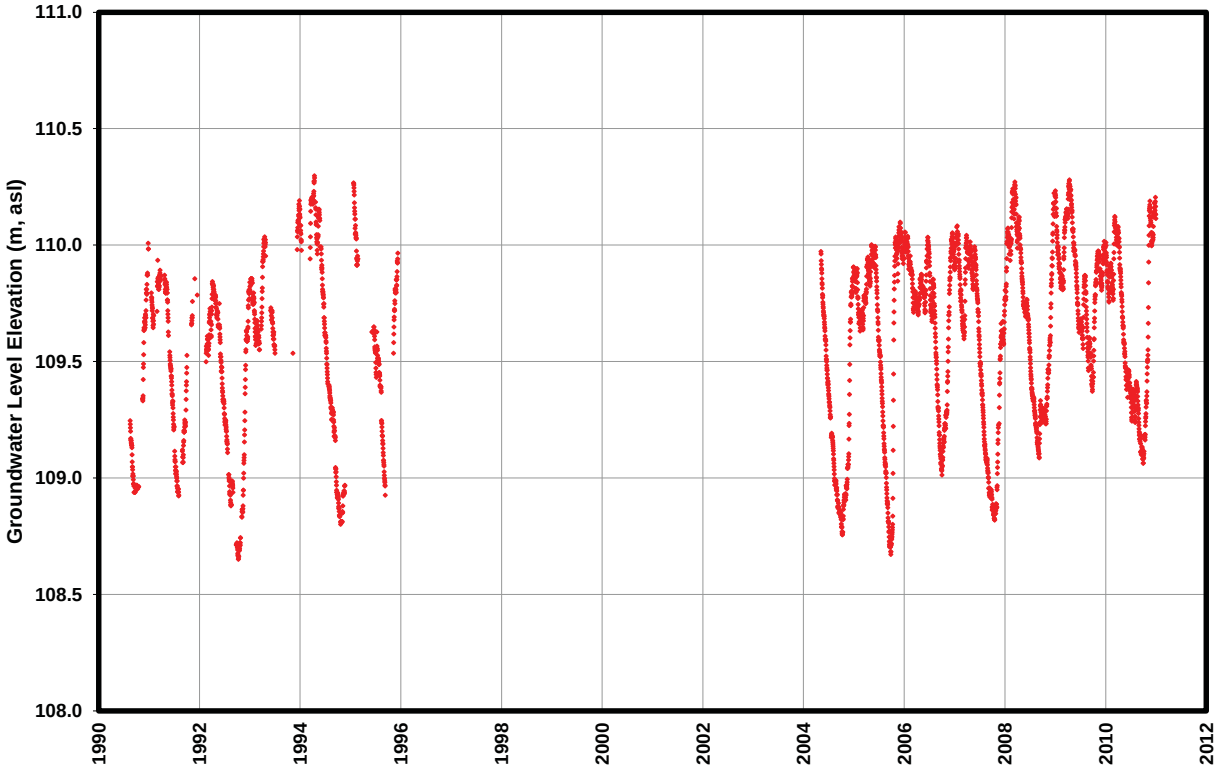


Figure B.17: Meteghan (060) Groundwater Level Elevations

Annapolis Royal (062) - Groundwater Level Elevations (1990 - 2010)

(Note: All data have been verified)



Annapolis Royal (062) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

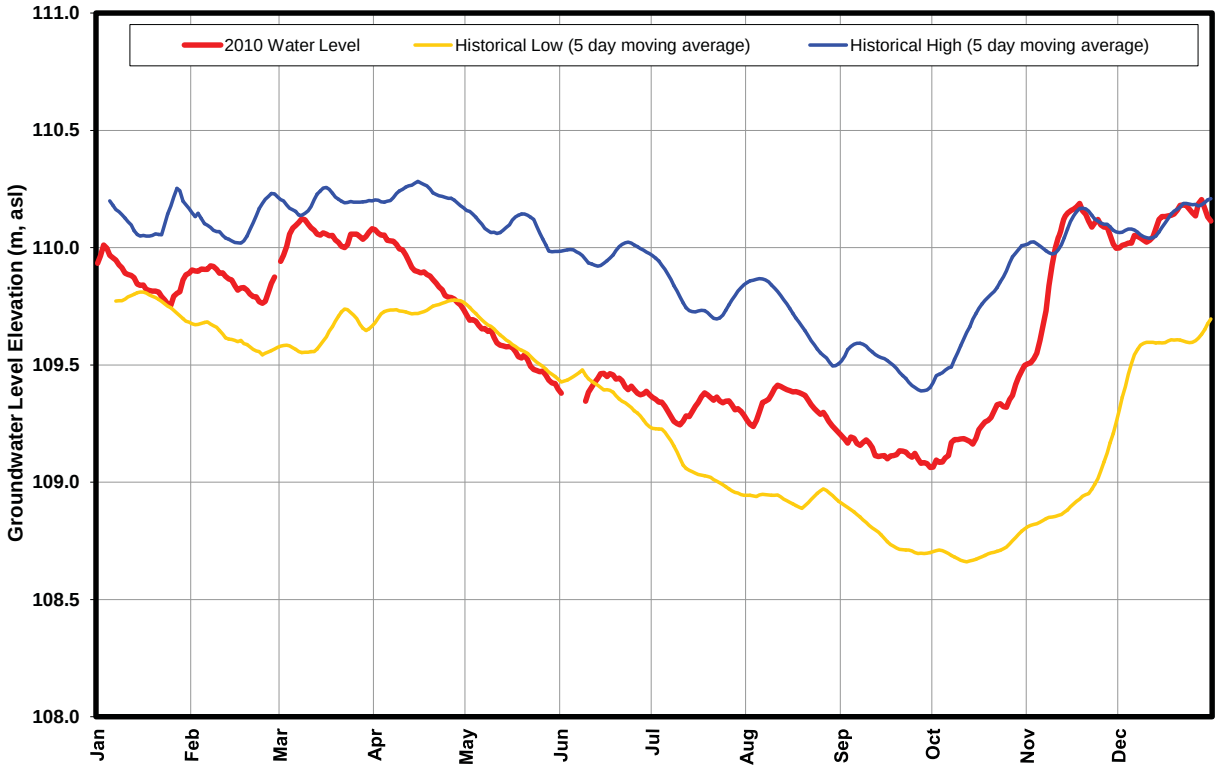
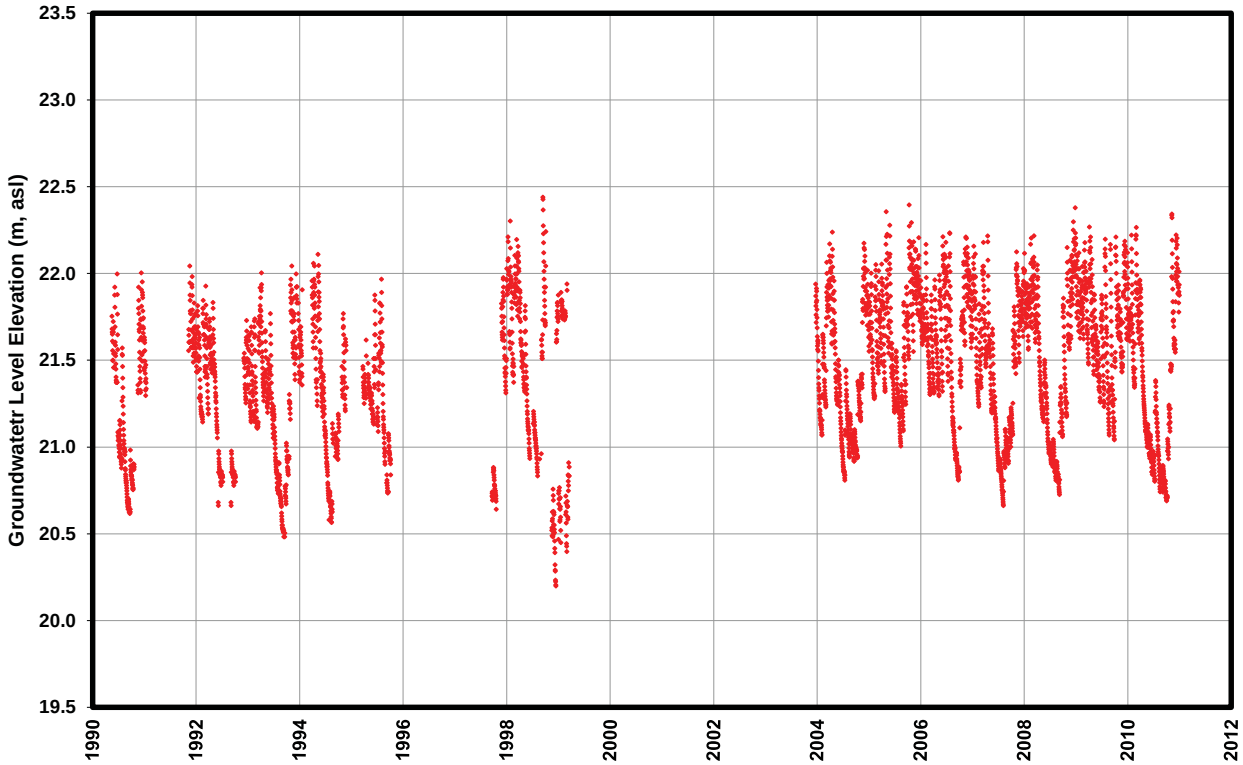


Figure B.18: Annapolis Royal (062) Groundwater Level Elevations

Hebron (063) - Groundwater Level Elevations (1990 - 2010)

(Note: All data have been verified)



Hebron (063) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

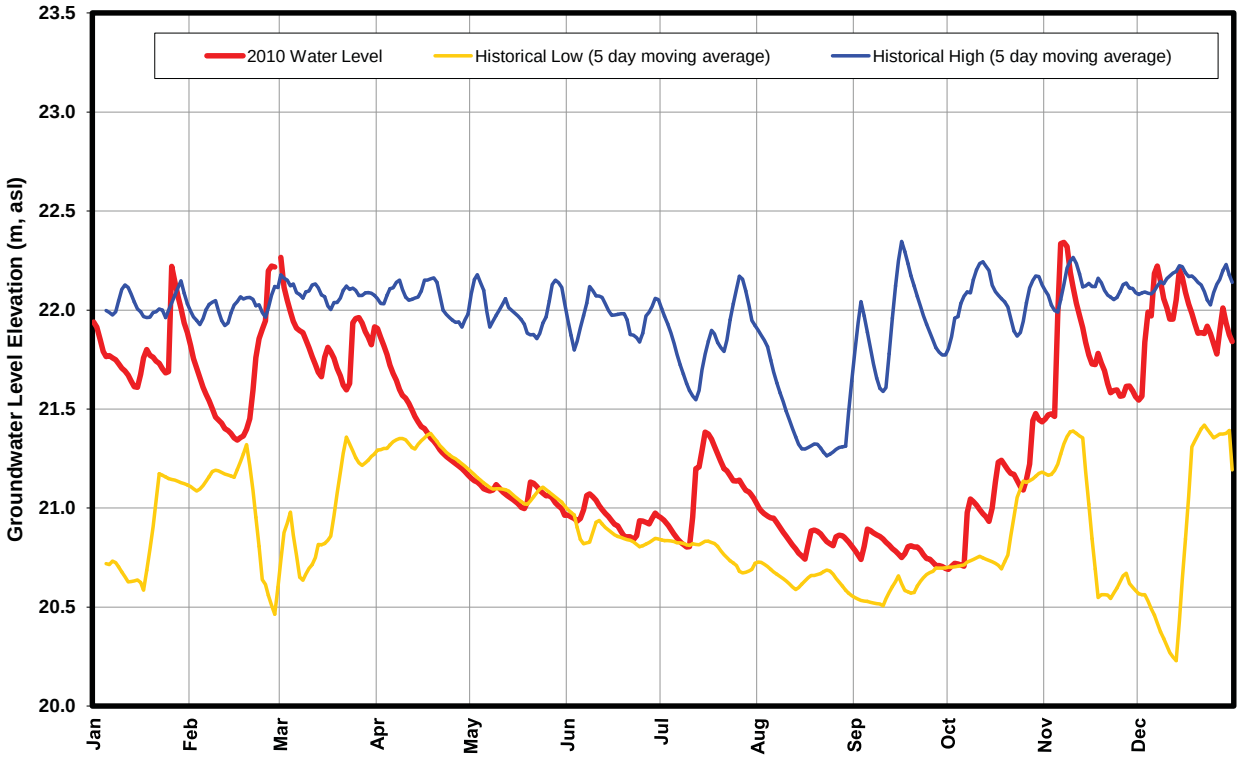
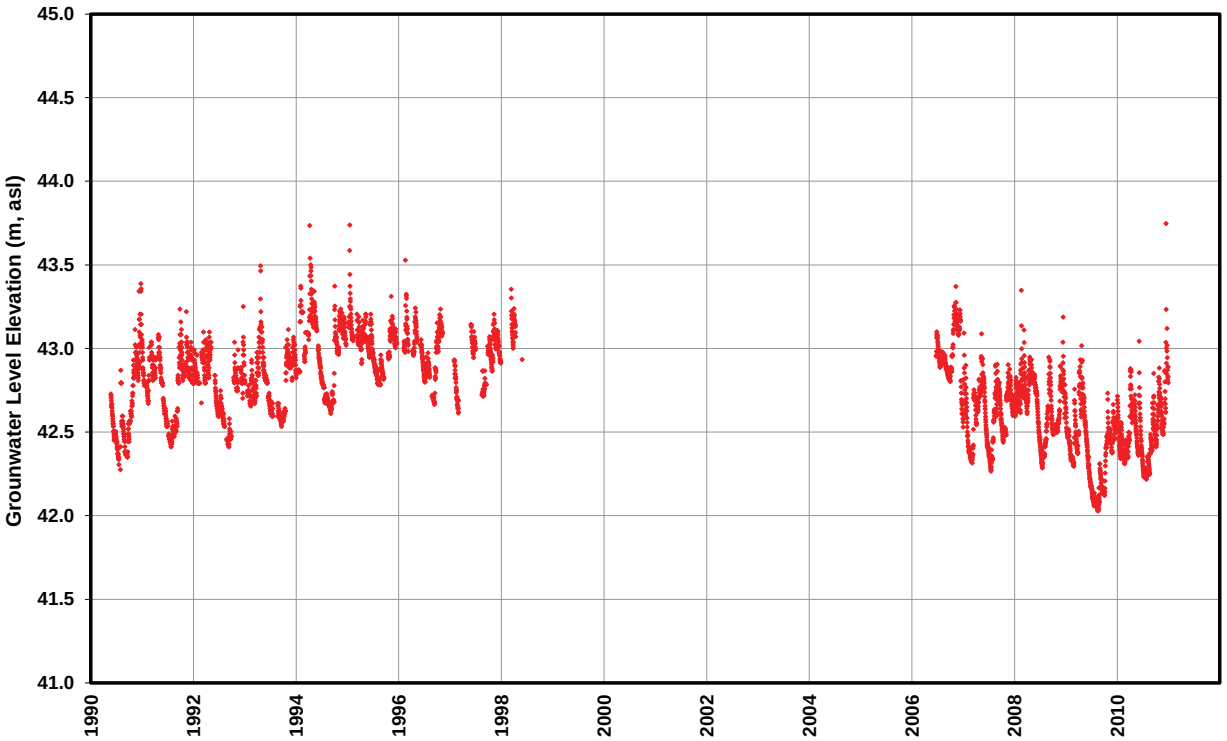


Figure B.19: Hebron (063) Groundwater Level Elevations

Margaree Valley (064) - Groundwater Level Elevations (1990 - 2010)

(Note: All data have been verified)



Margaree Valley (064) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

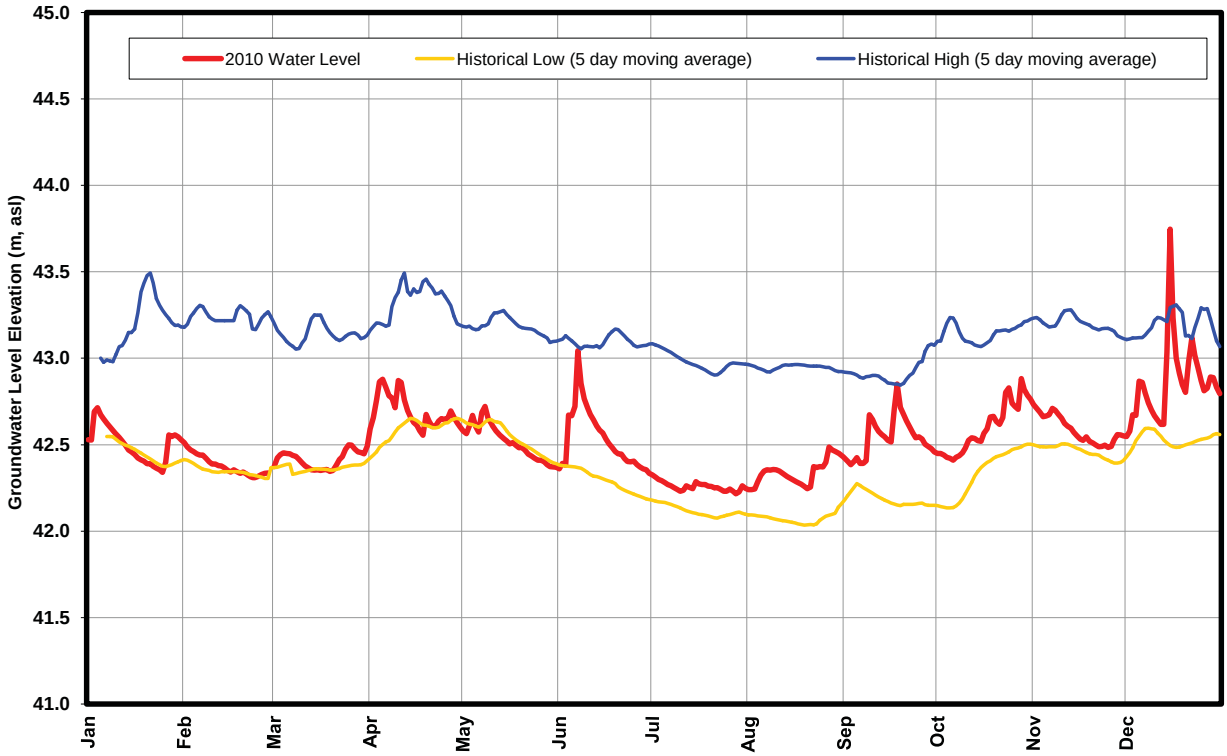
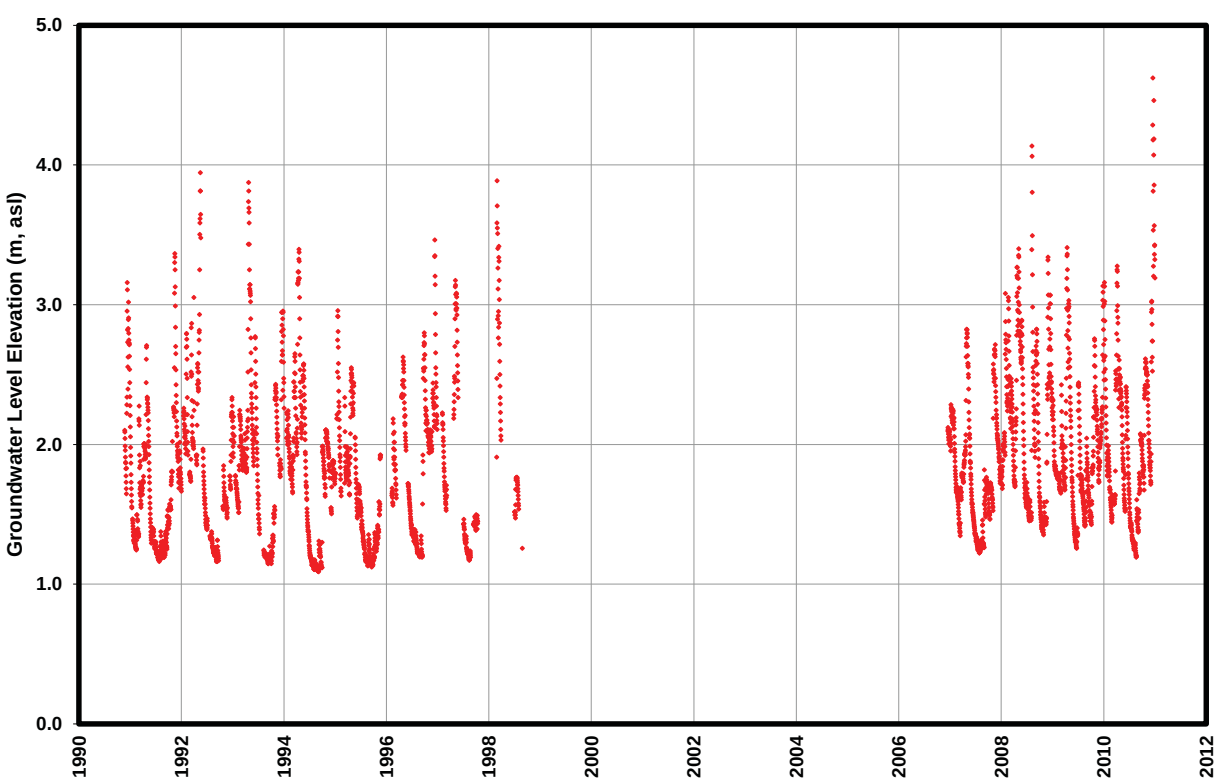


Figure B.20: Margaree (064) Groundwater Level Elevations



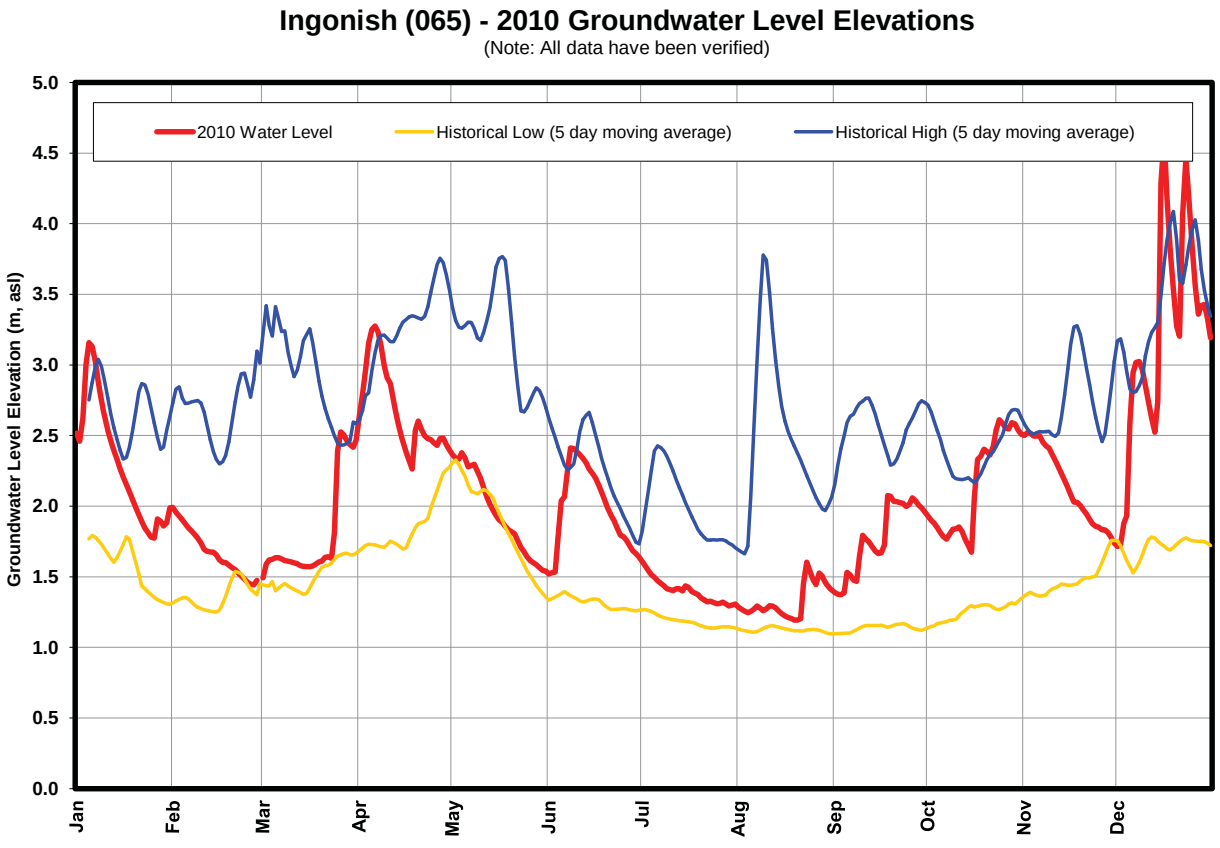
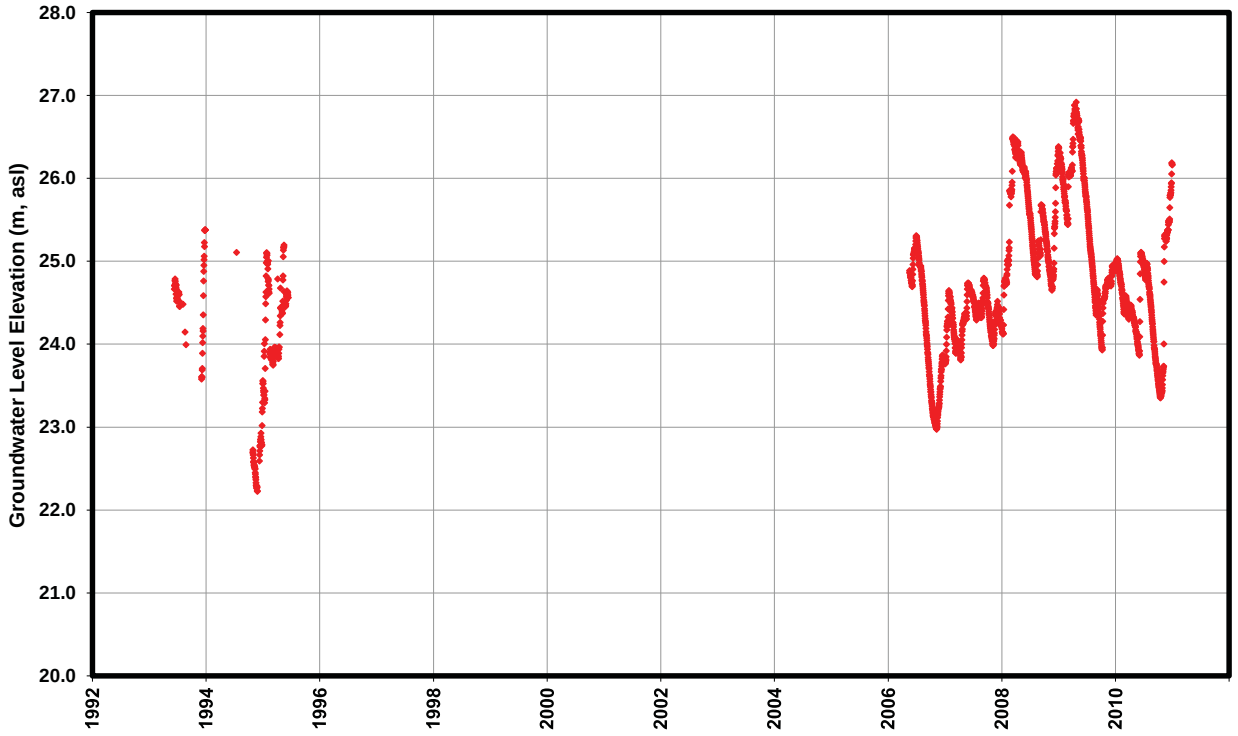


Figure B.21: Ingonish (065) Groundwater Level Elevations

Debert (068) - Groundwater Level Elevations (1993 - 2010)

(Note: All data have been verified)



Debert (068) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

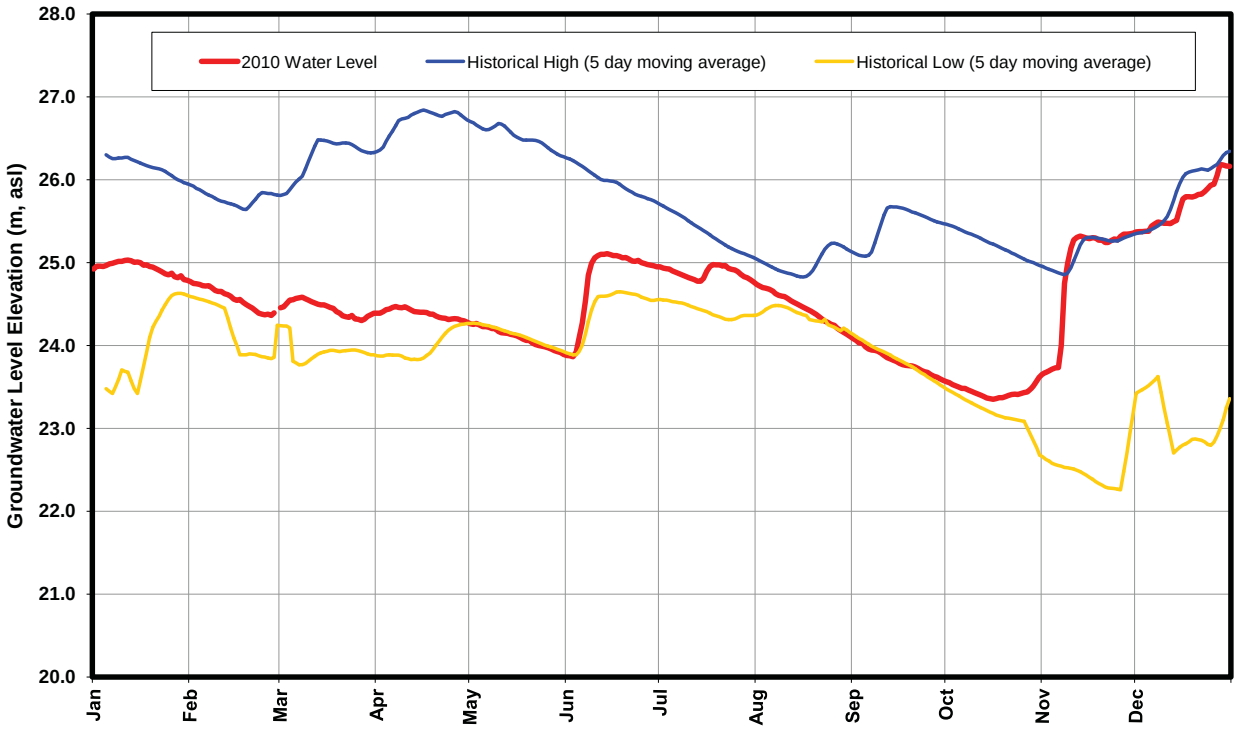
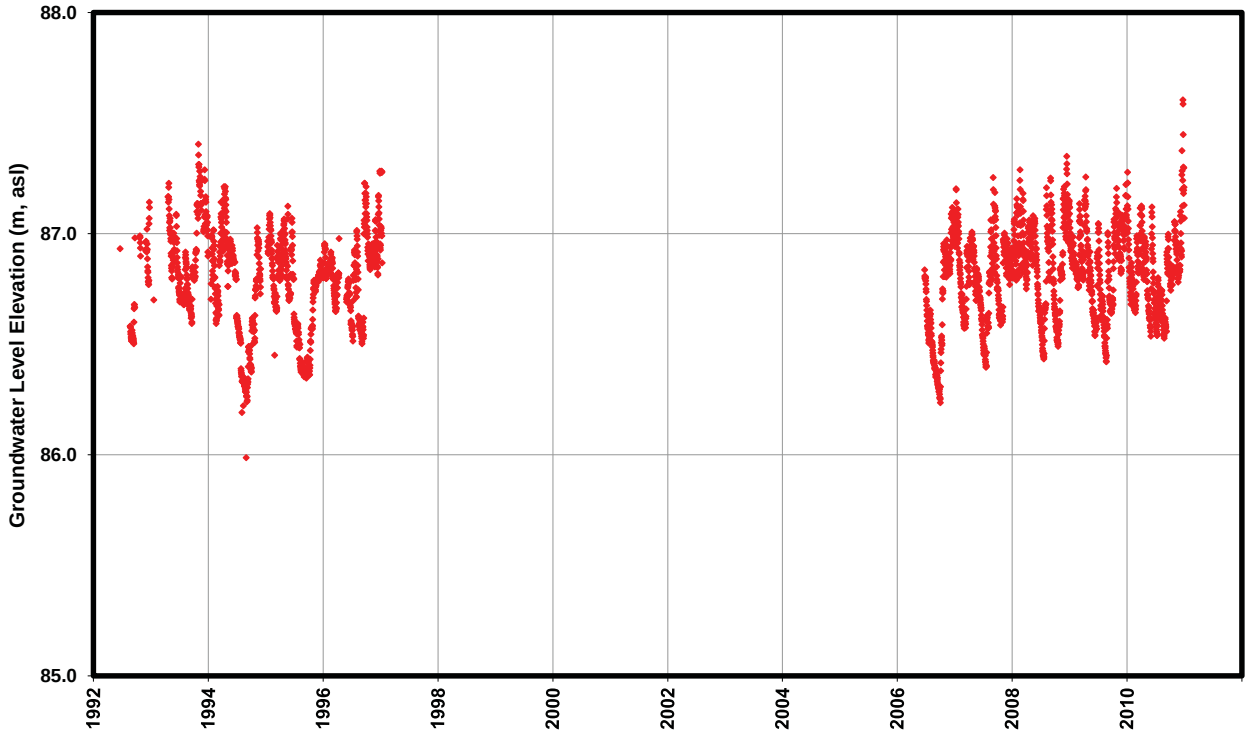


Figure B.22: Debert (068) Groundwater Level Elevations

Dalem Lake (069) - Groundwater Level Elevations (1992 - 2010)

(Note: Al data have been verified)



Dalem Lake (069) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

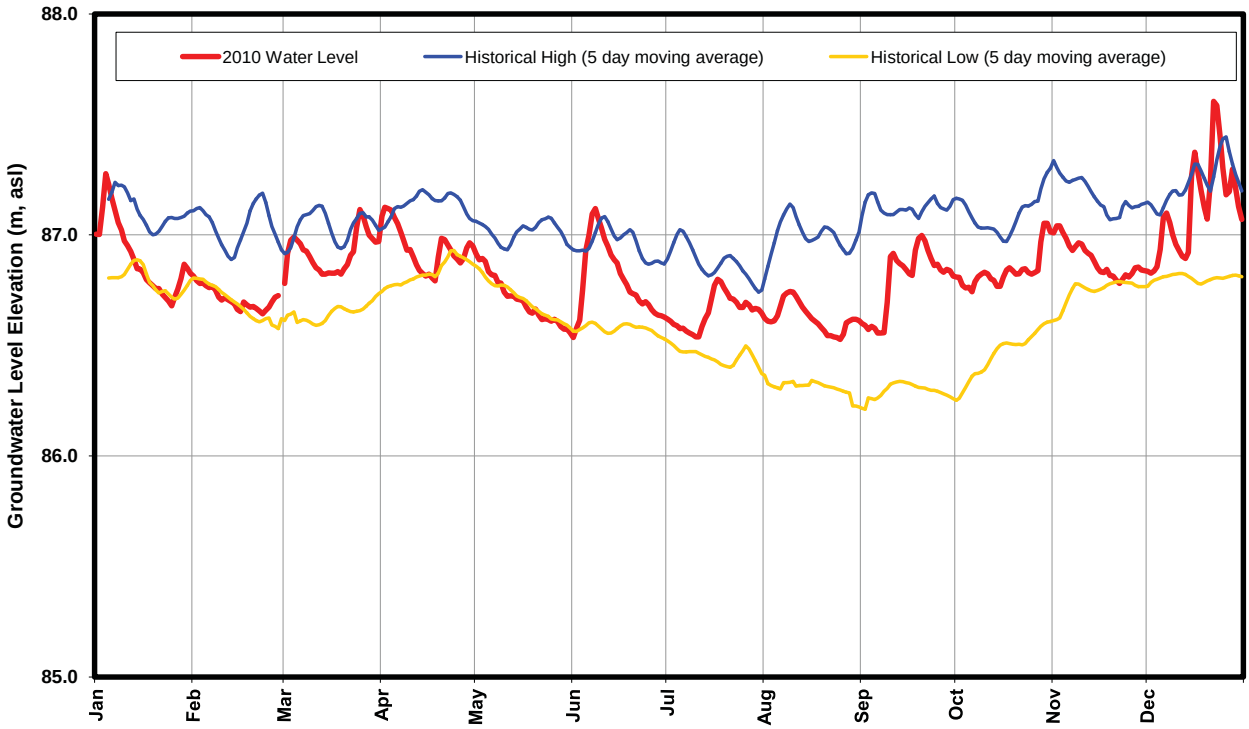
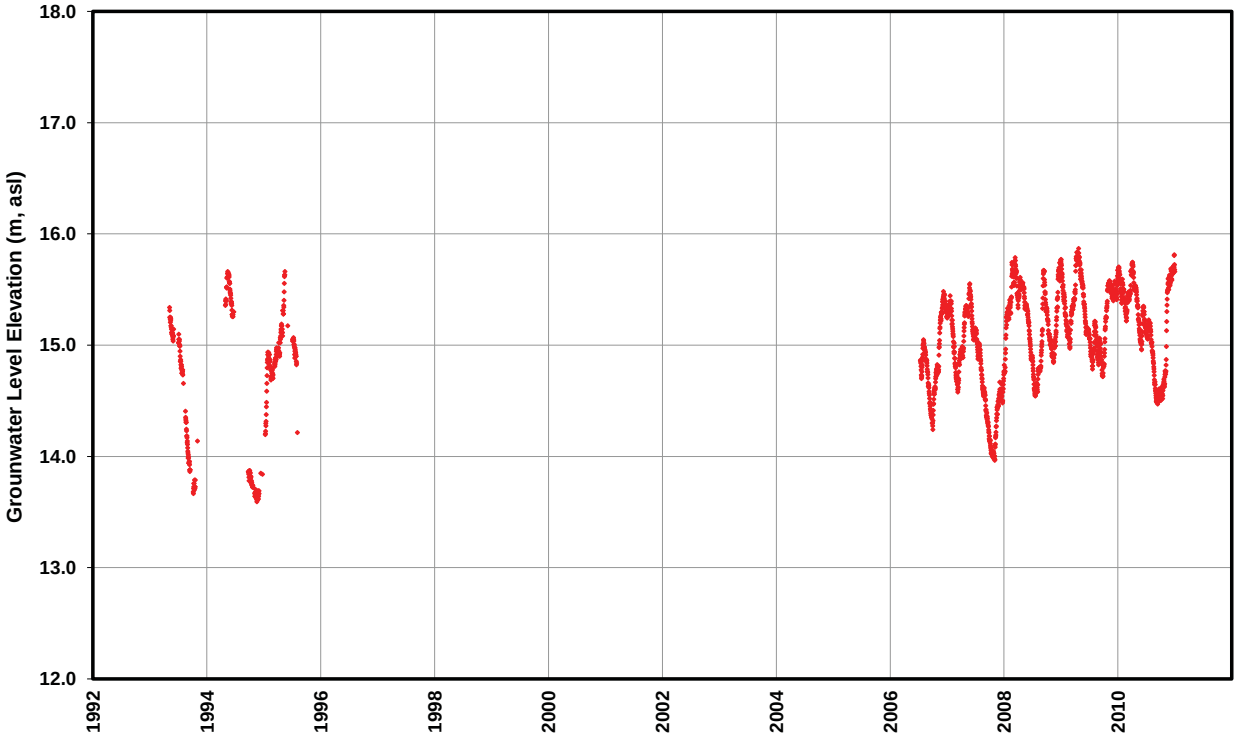


Figure B.23: Dalem Lake (069) Groundwater Level Elevations

Amherst (071) - Groundwater Level Elevations (1993 - 2010)

(Note: All data have been verified)



Amherst (071) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

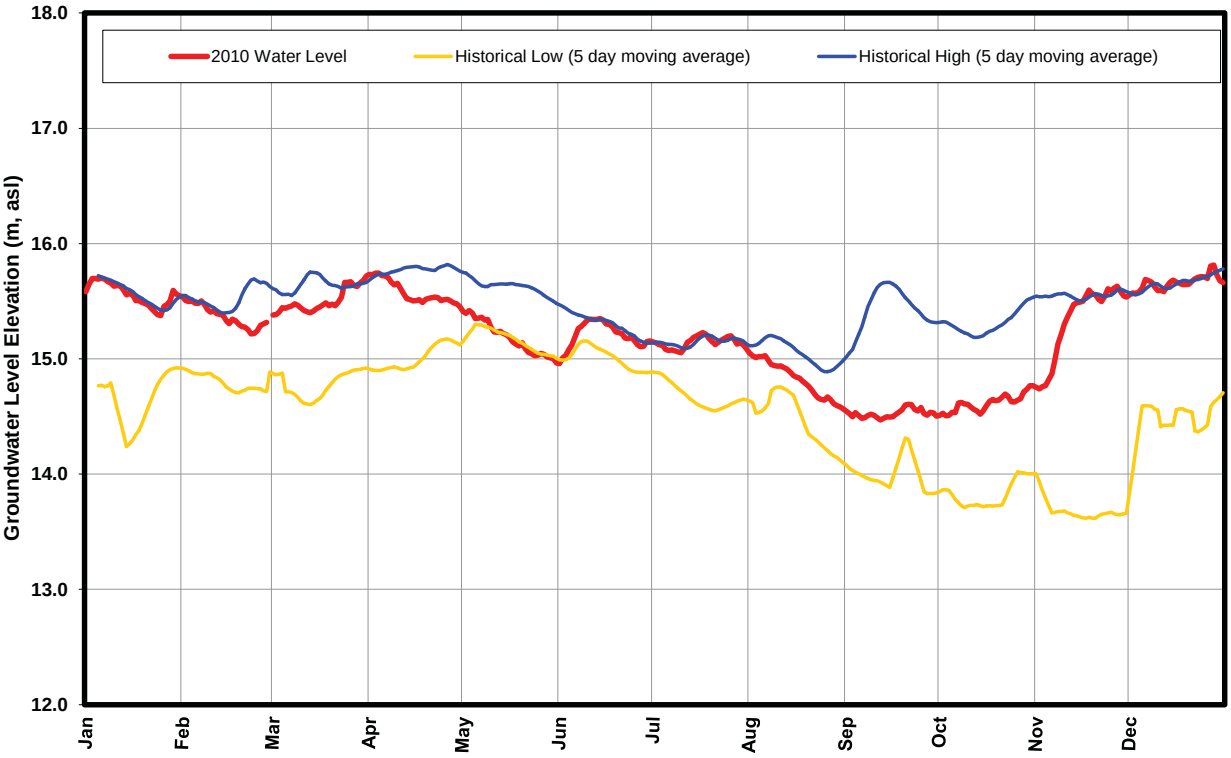
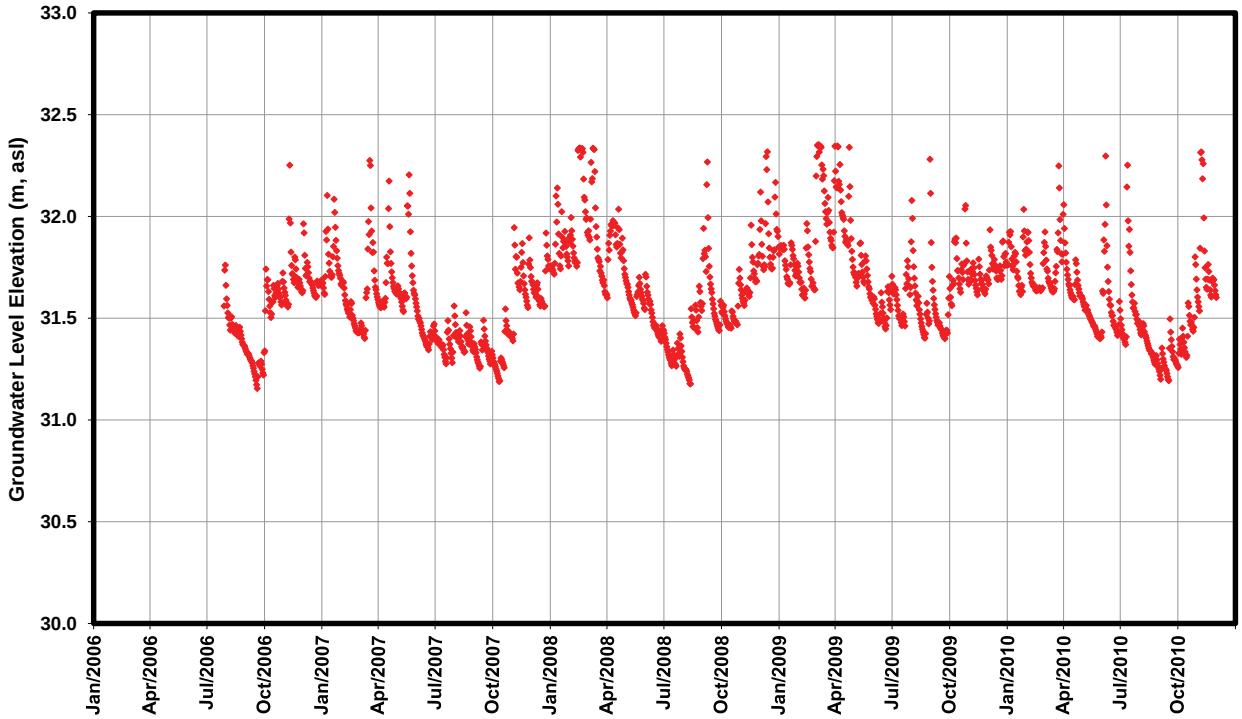


Figure B.24: Amherst (071) Groundwater Level Elevations

Kelley River (073) - Groundwater Level Elevations (2006 - 2010)

(Note: All data have been verified)



Kelley River (073) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

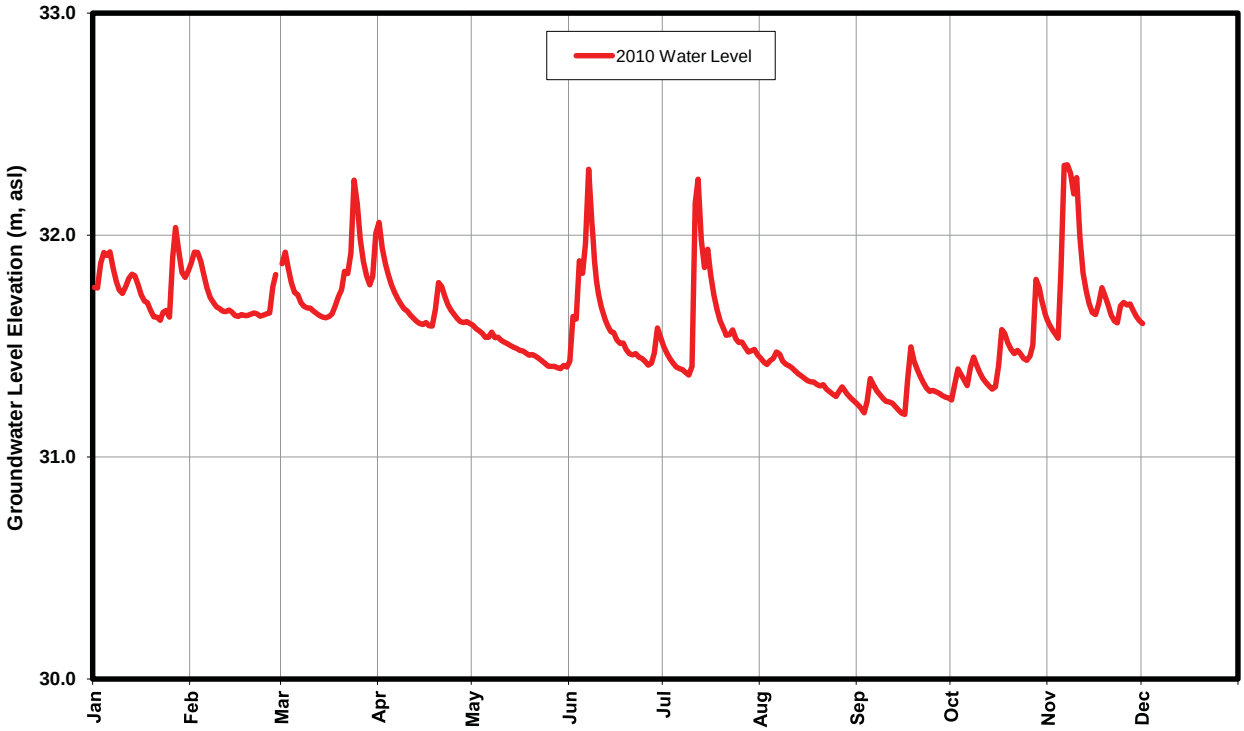
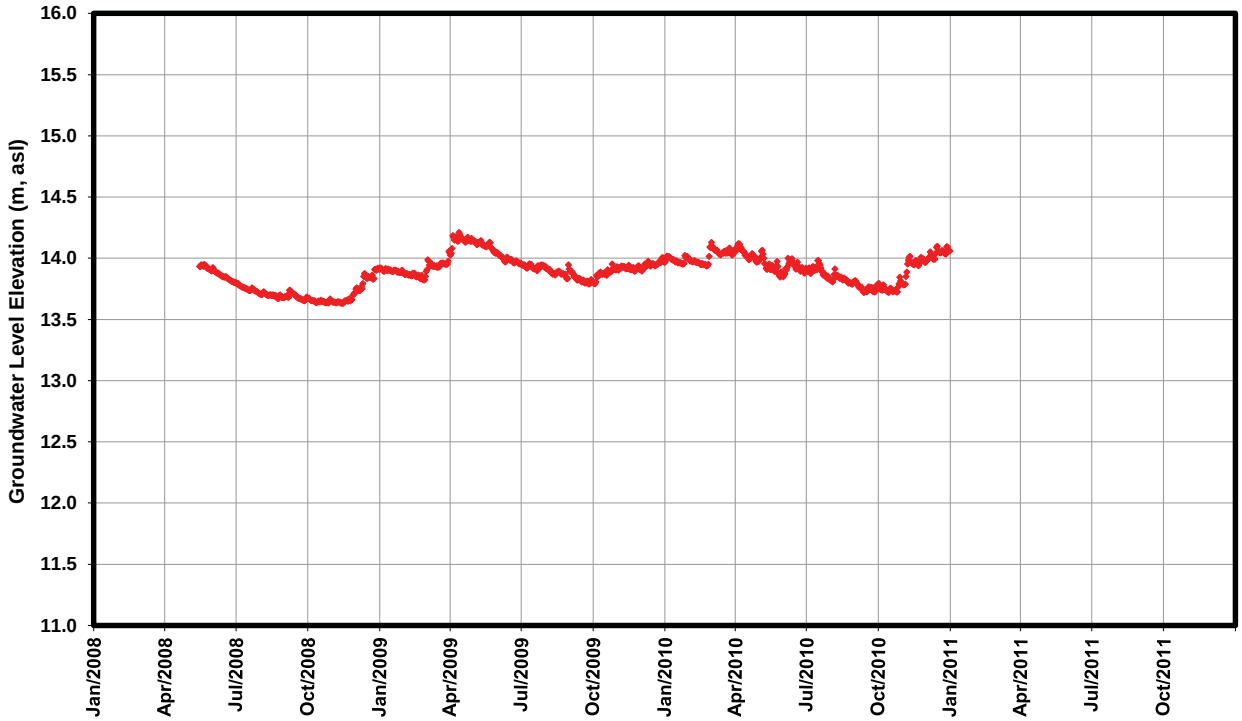


Figure B.25: Kelly River (075) Groundwater Level Elevations

Atlanta (074) - Groundwater Level Elevations (2008 to present)

(Note: All data have been verified)



Atlanta (074) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

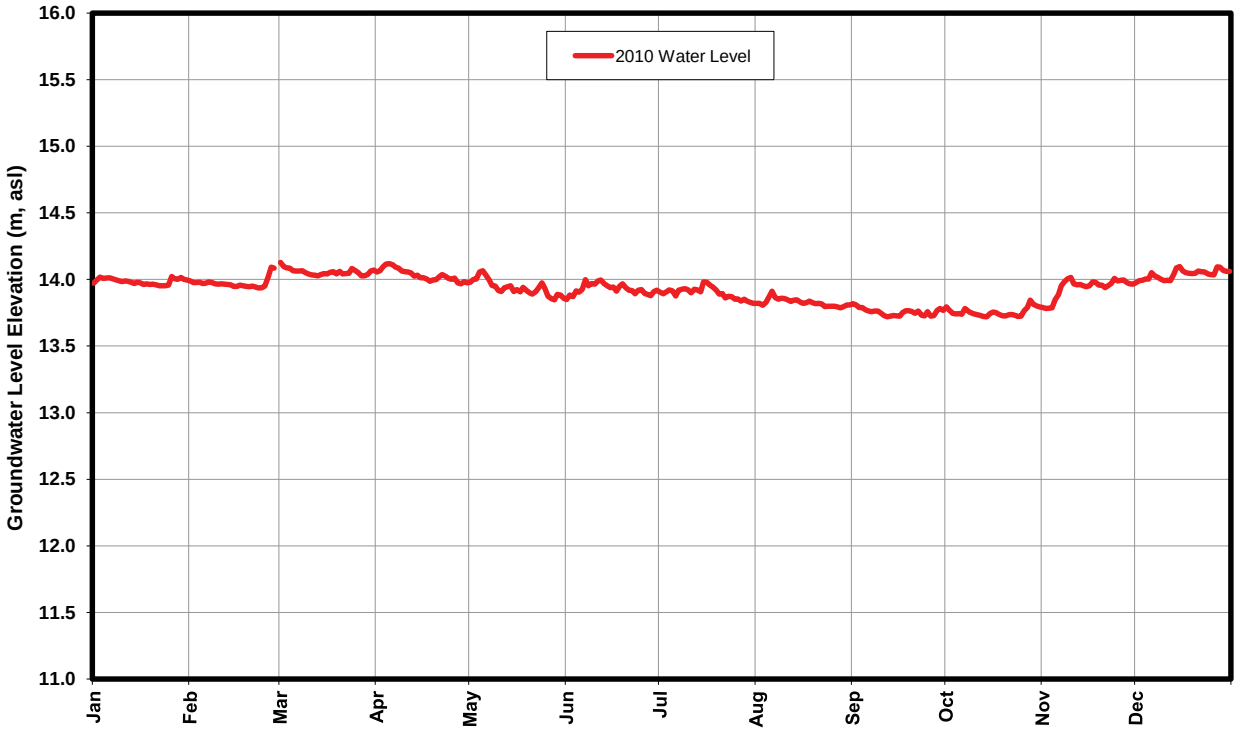
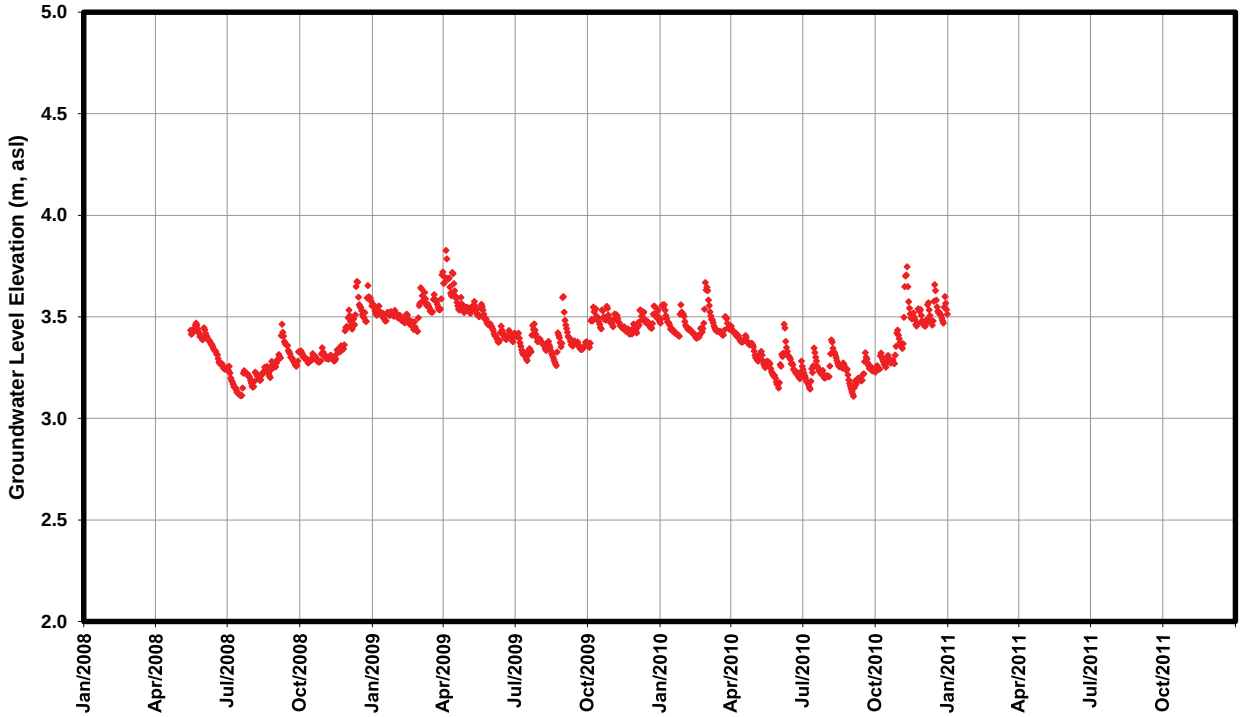


Figure B.26: Atlanta (074) Groundwater Level Elevations

Sheffield Mills (075) - Groundwater Level Elevations (2008 to present)

(Note: All data have been verified)



Sheffield Mills (075) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

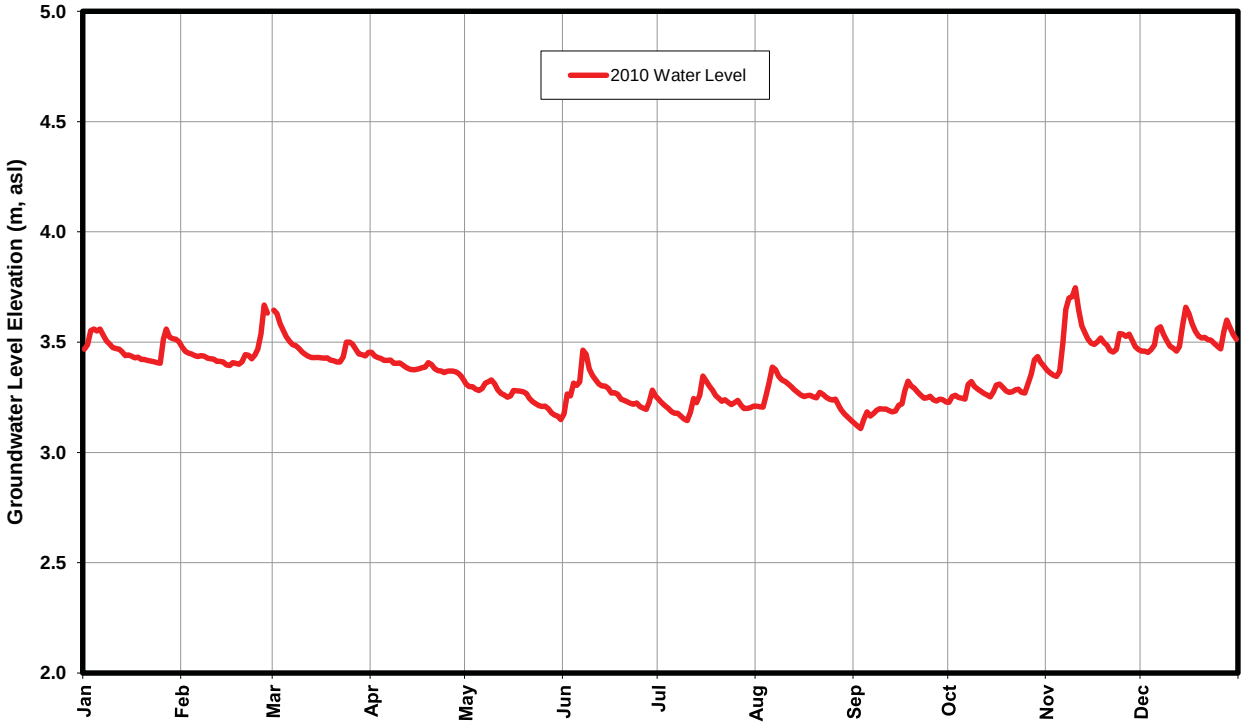
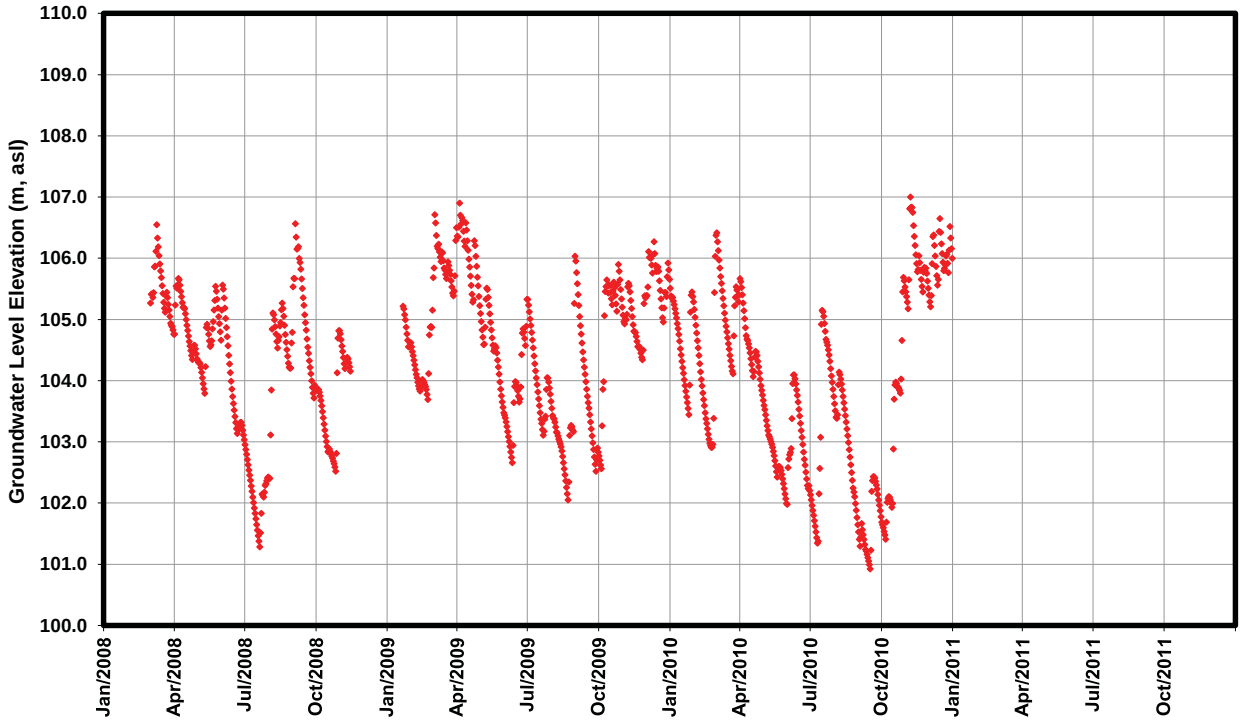


Figure B.27: Sheffield Mills (075) Groundwater Level Elevations

Fall River (076) - Groundwater Level Elevations (2008 to present)

(Note: All data have been verified)



Fall River (076) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

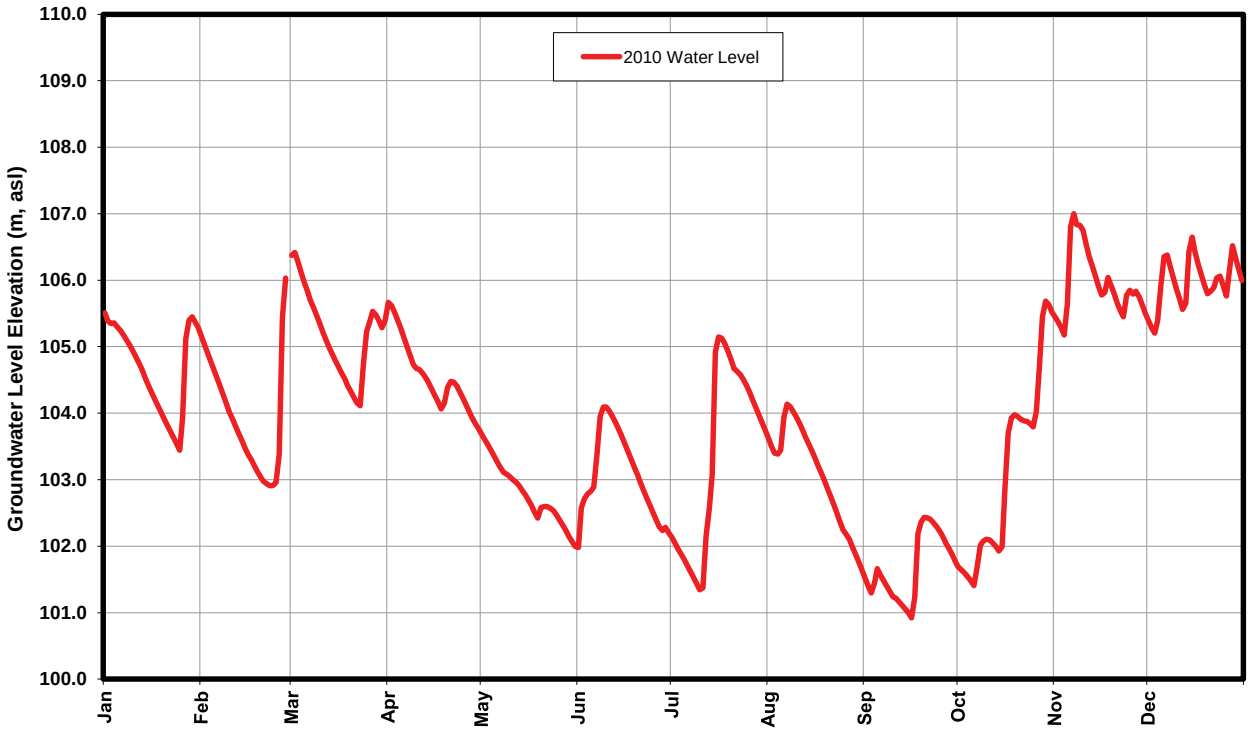
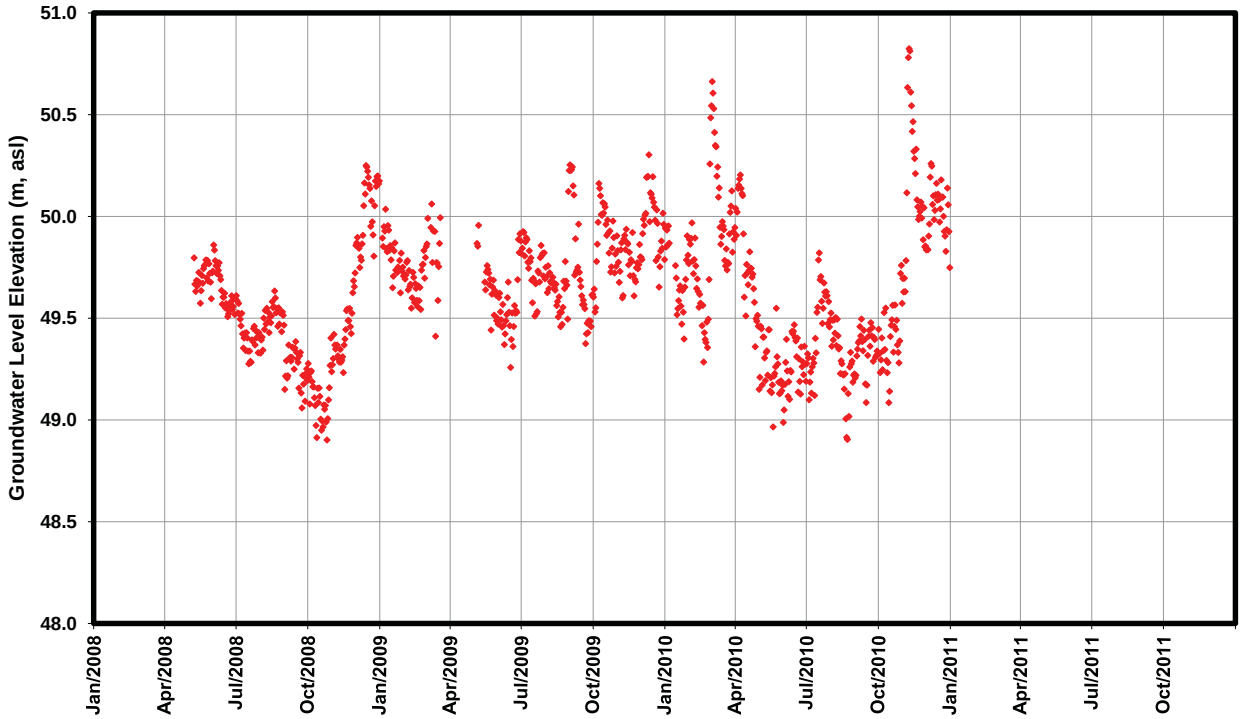


Figure B.28: Fall River (076) Groundwater Level Elevations

West Northfield (077) - Groundwater Level Elevations (2008 to present)

(Note: All data have been verified)



West Northfield (077) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

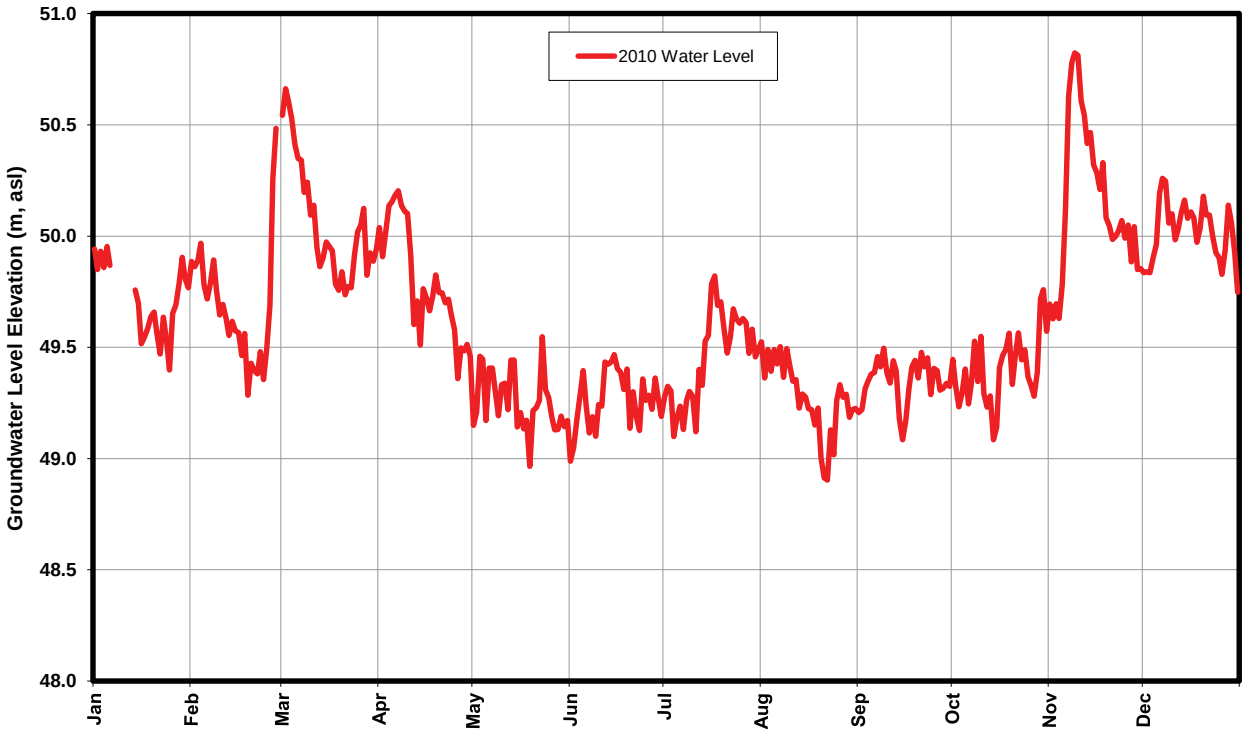
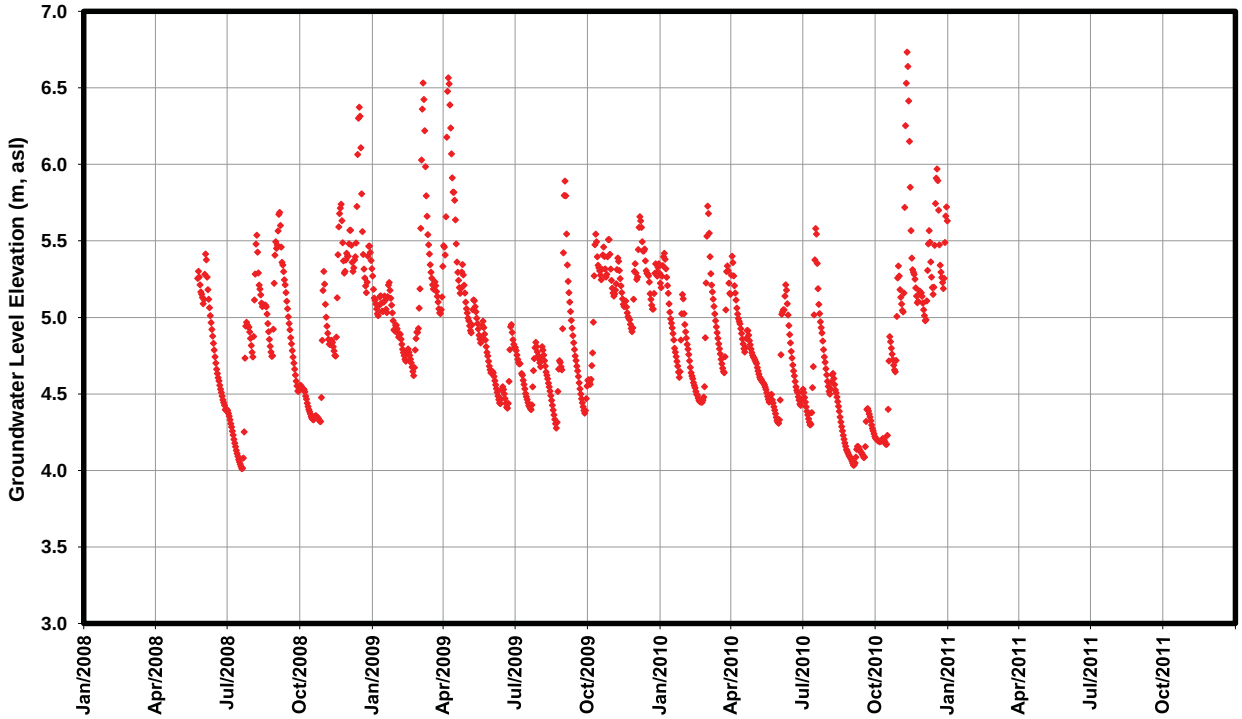


Figure B.29: West Northfield (077) Groundwater Level Elevations

Musquodoboit Hbr (078) - Groundwater Level Elevations (2008 to present)
(Note: All data have been verified)



Musquodoboit Hbr (078) - 2010 Groundwater Level Elevations
(Note: All data have been verified)

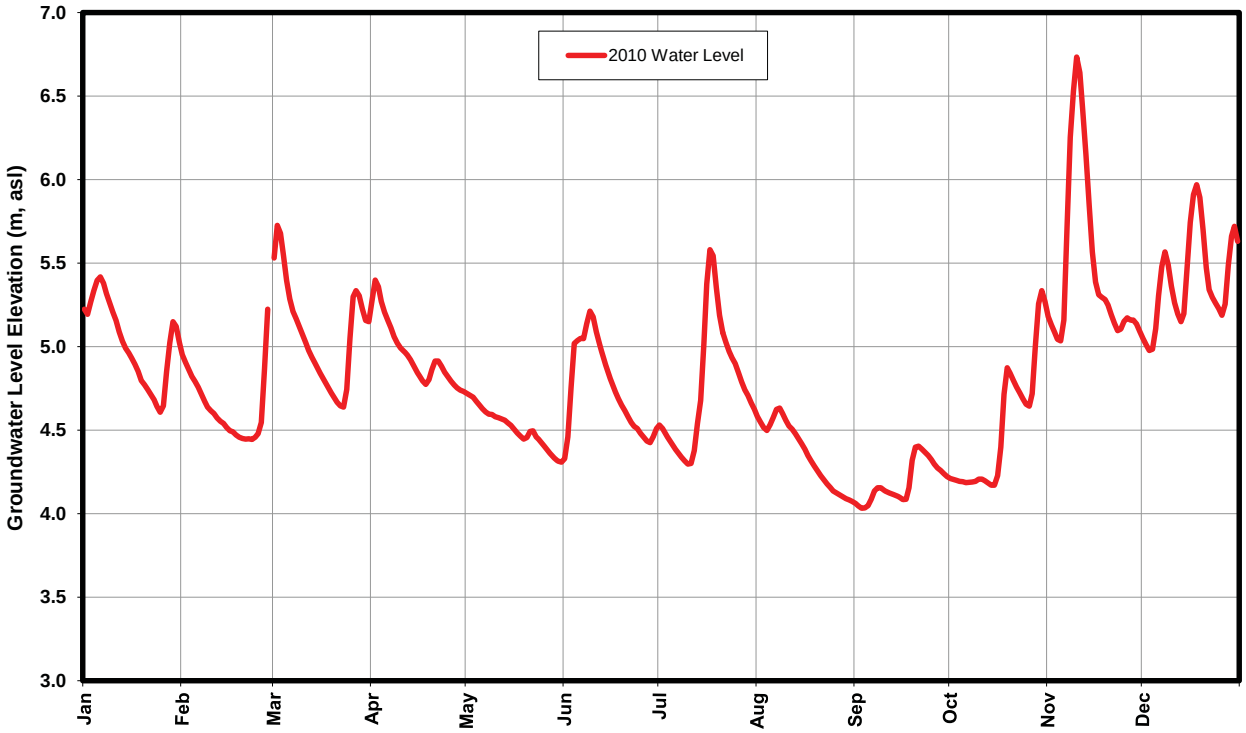
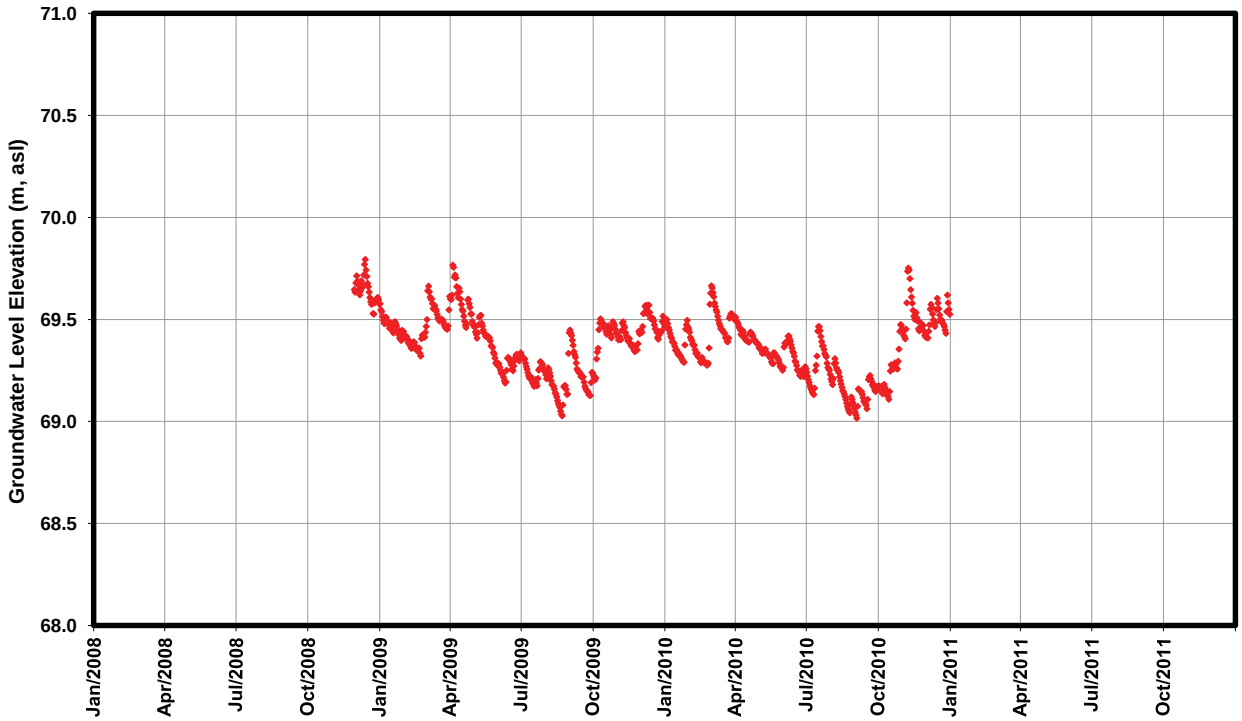


Figure B.30: Musquodoboit Harbour (078) Groundwater Level Elevations

Lewis Lake (079) - Groundwater Level Elevations (2008 to present)

(Note: All data have been verified)



Lewis Lake (079) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

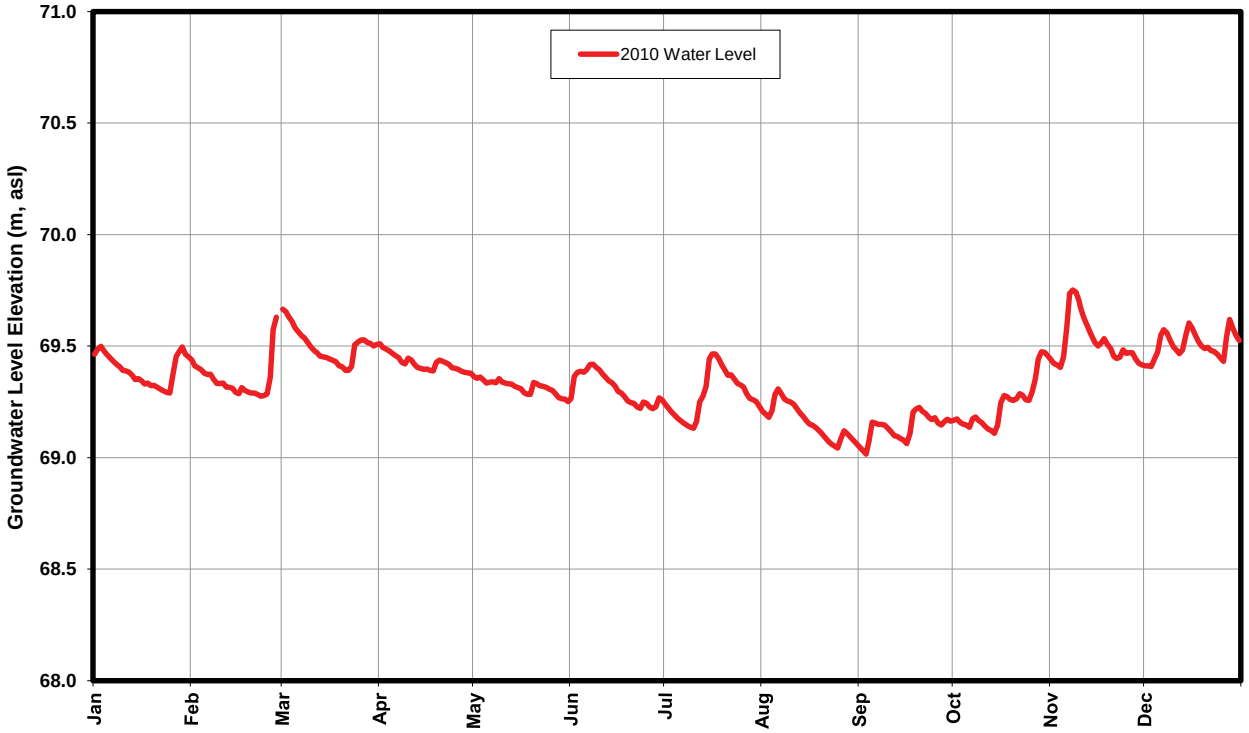


Figure B.31: Lewis Lake (079) Groundwater Level Elevations

No historical data available - monitoring began in 2009

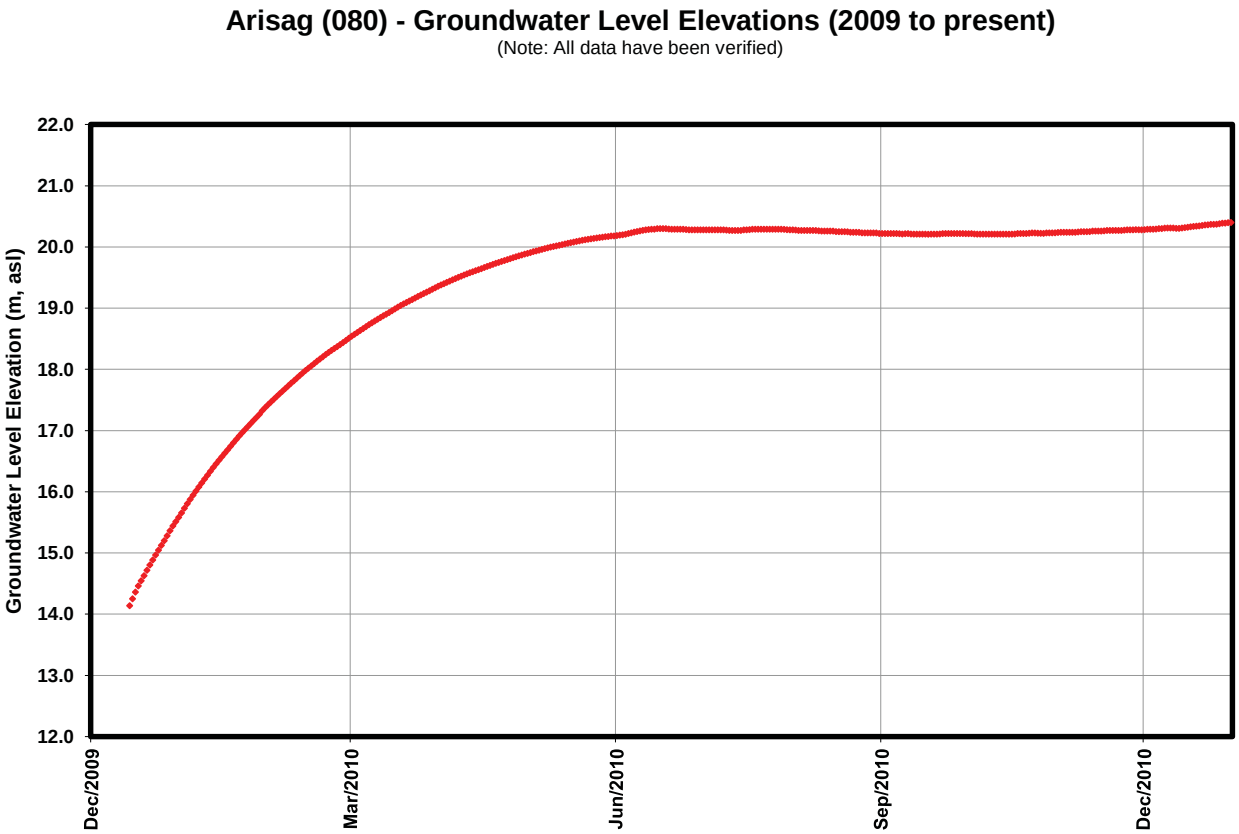
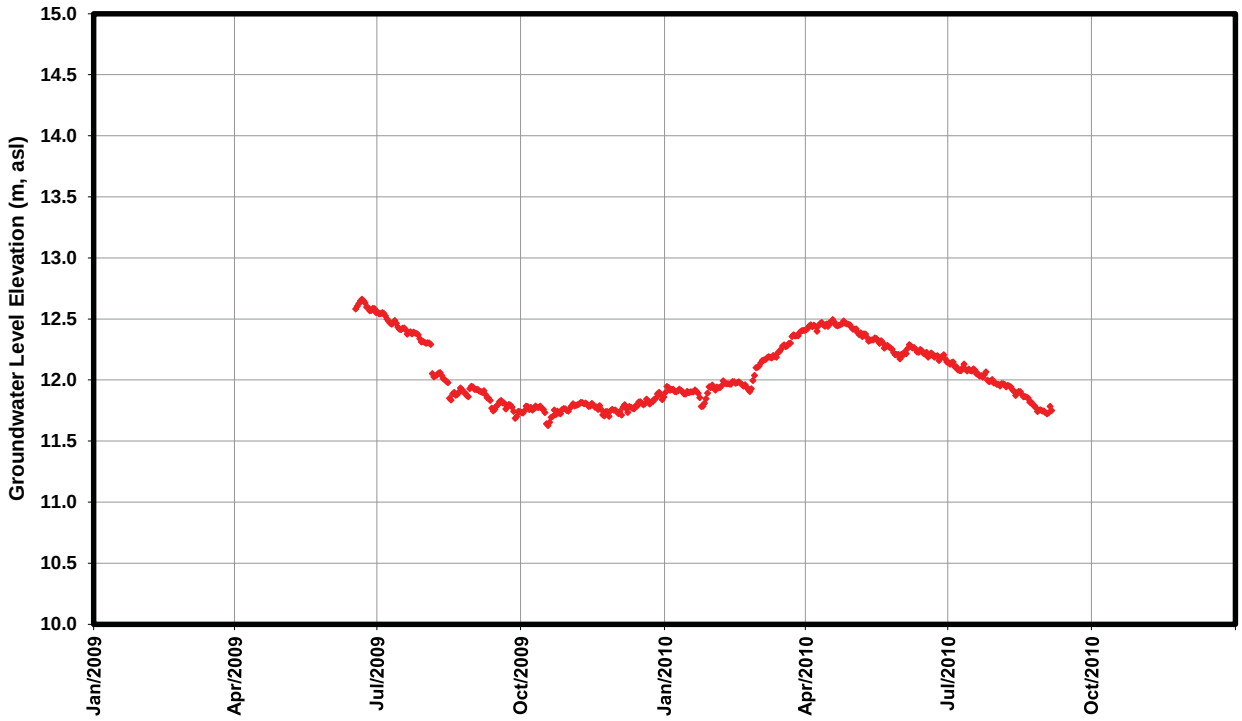


Figure B.32: Arisag (080) Groundwater Level Elevations

Coldbrook (081) - Groundwater Level Elevations (2009 to present)

(Note: All data have been verified)



Coldbrook (081) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

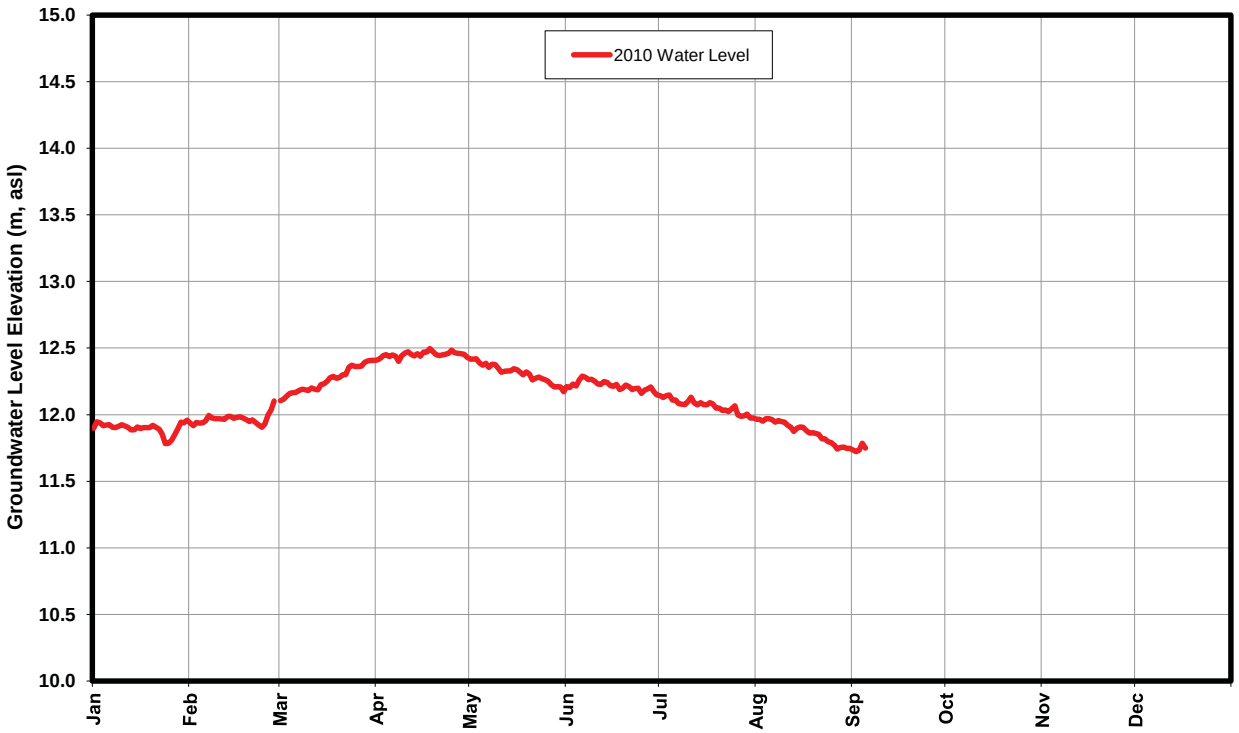
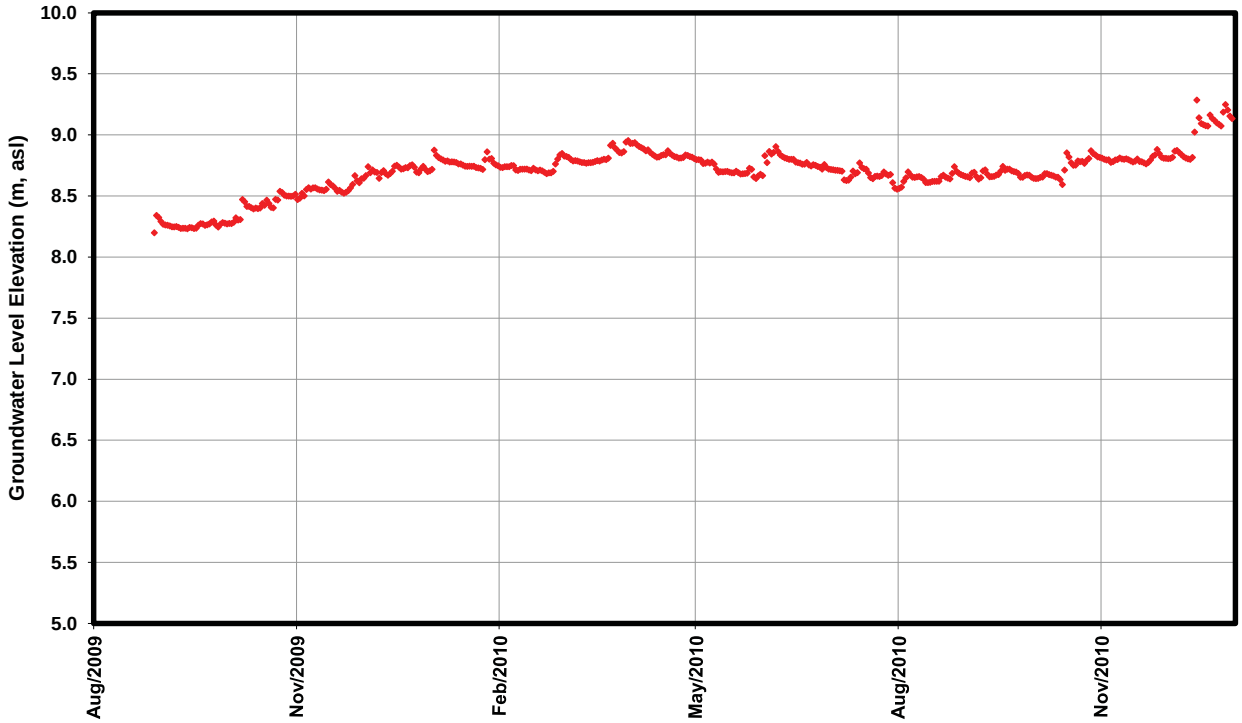


Figure B.33: Coldbrook (081) Groundwater Level Elevations

Long Point (082) - Groundwater Level Elevations (2009 to present)

(Note: All data have been verified)



Long Point (082) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

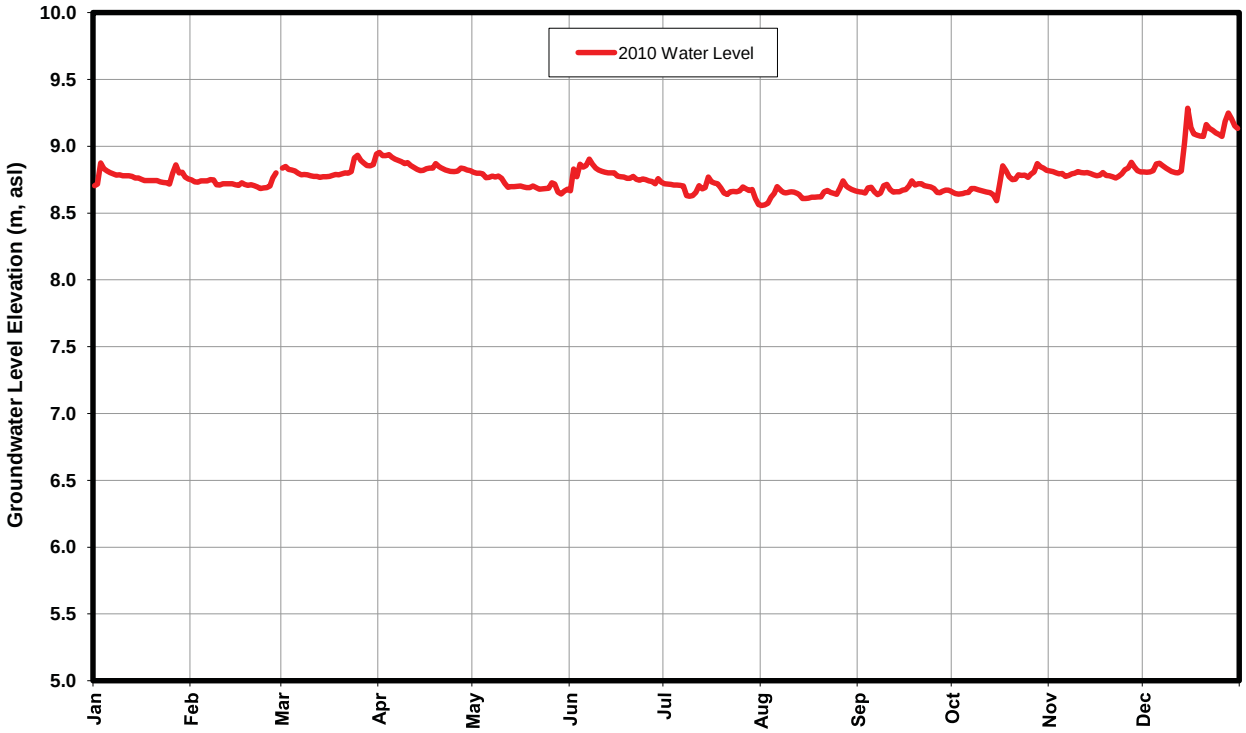
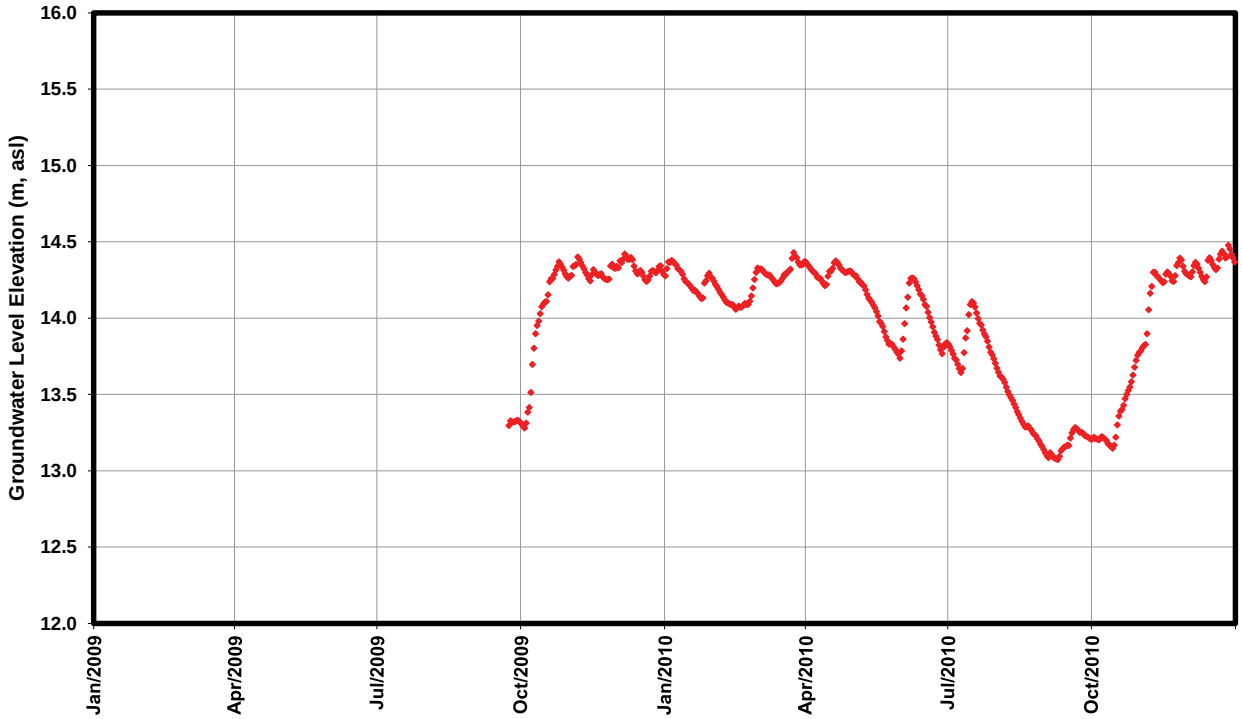


Figure B.34: Long Point (082) Groundwater Level Elevations

Tatamagouche (083) - Groundwater Level Elevations (2009 to present)

(Note: All data have been verified)



Tatamagouche (083) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

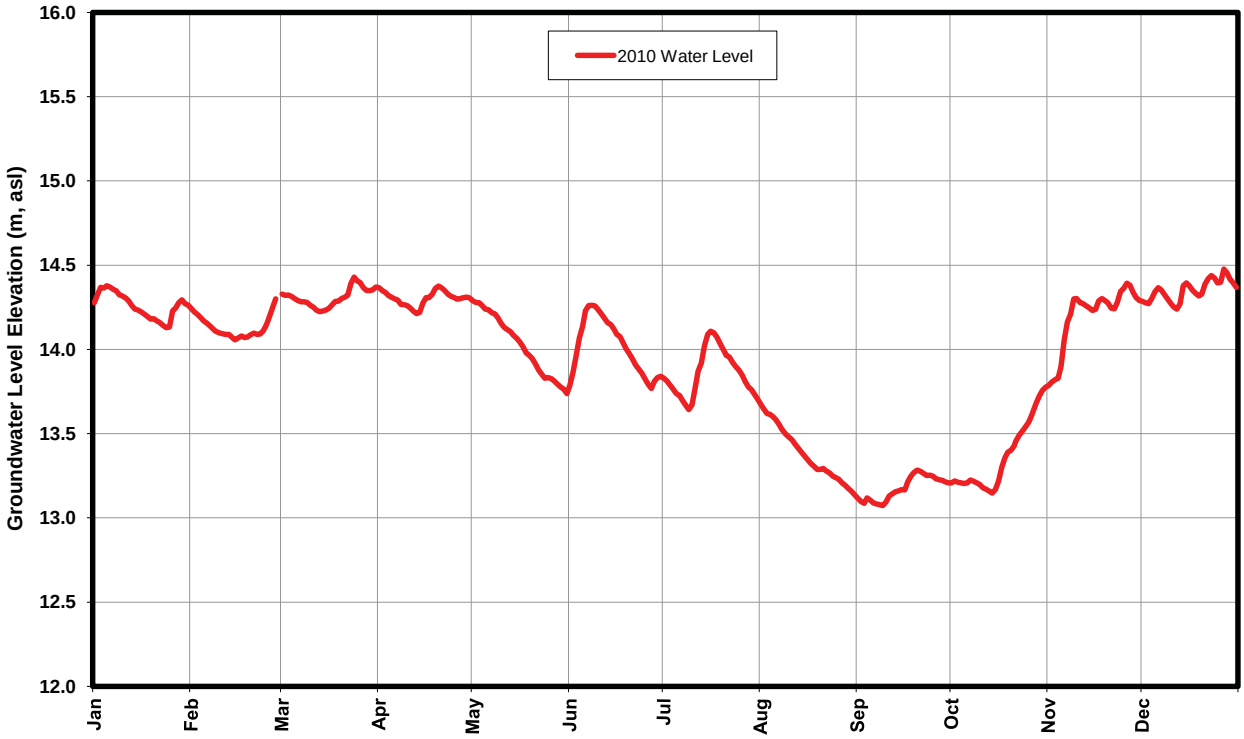
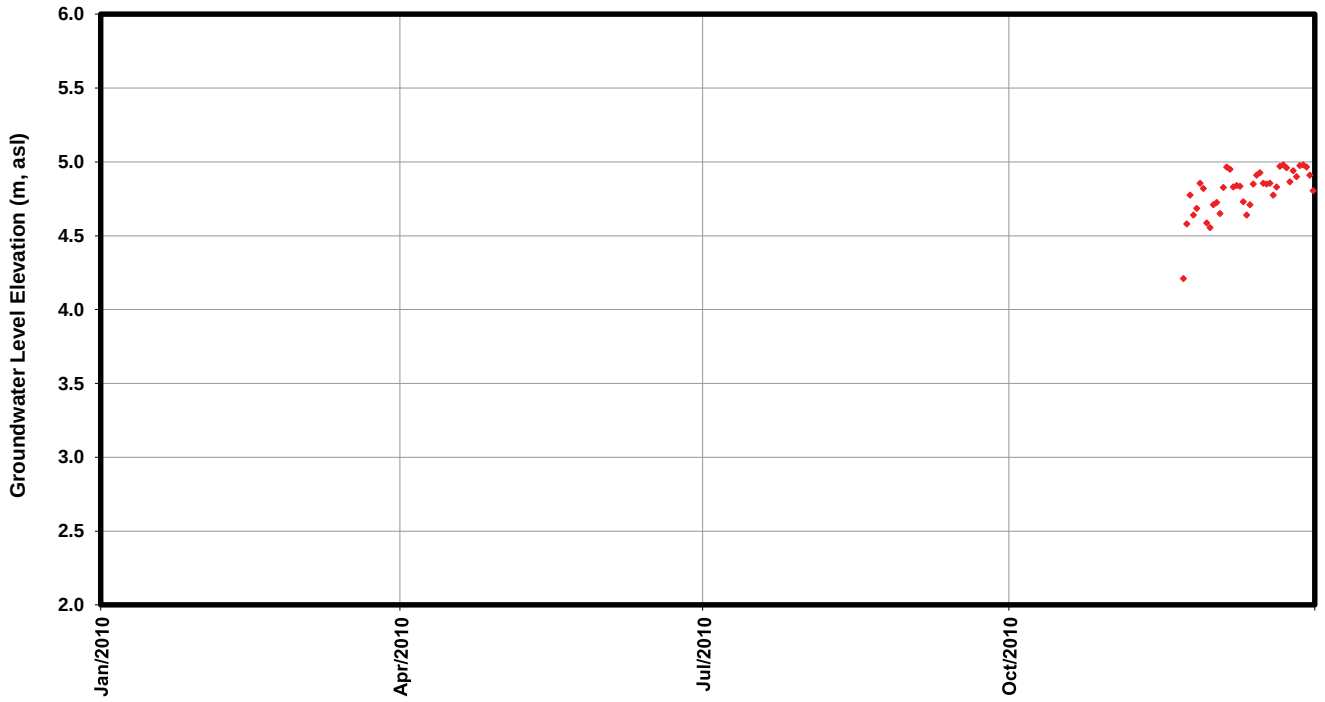


Figure B.35: Tatamagouche (083) Groundwater Level Elevations

Pugwash (084) - Groundwater Level Elevations (2010 to present)

(Note: All data have been verified)



Pugwash (084) - 2010 Groundwater Level Elevations

(Note: All data have been verified)

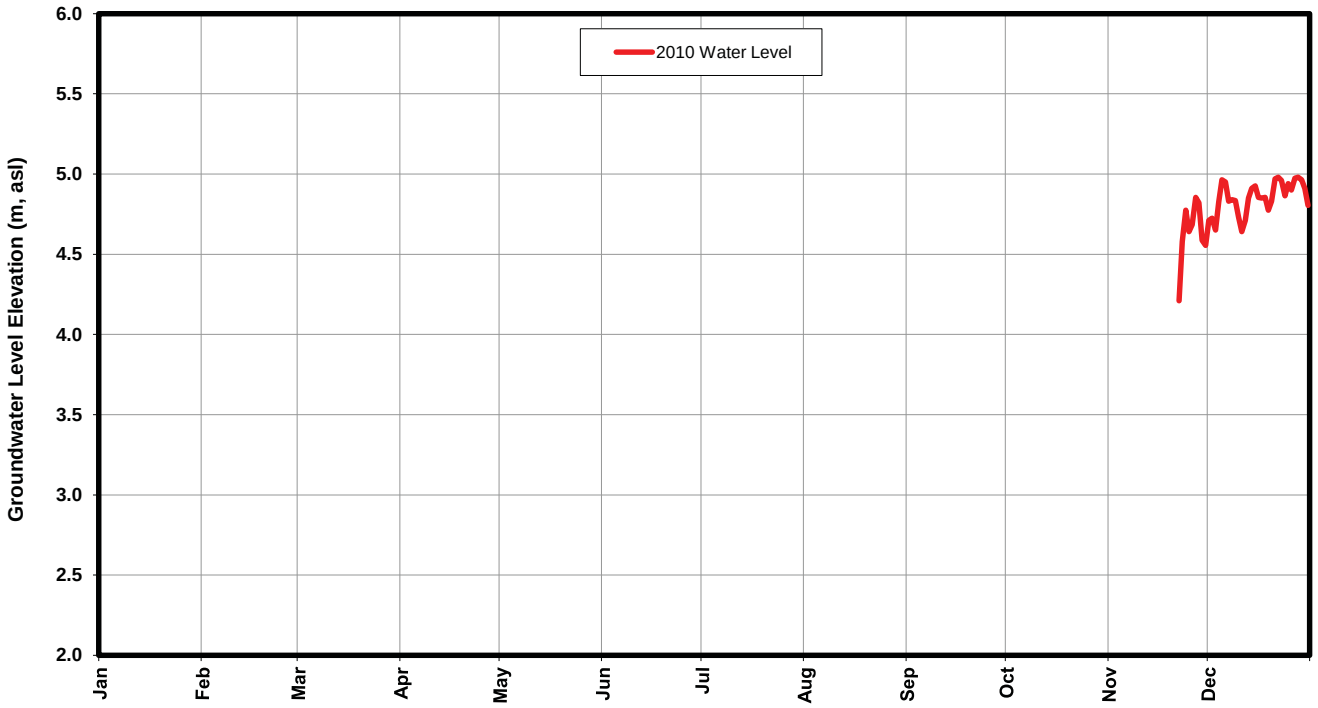
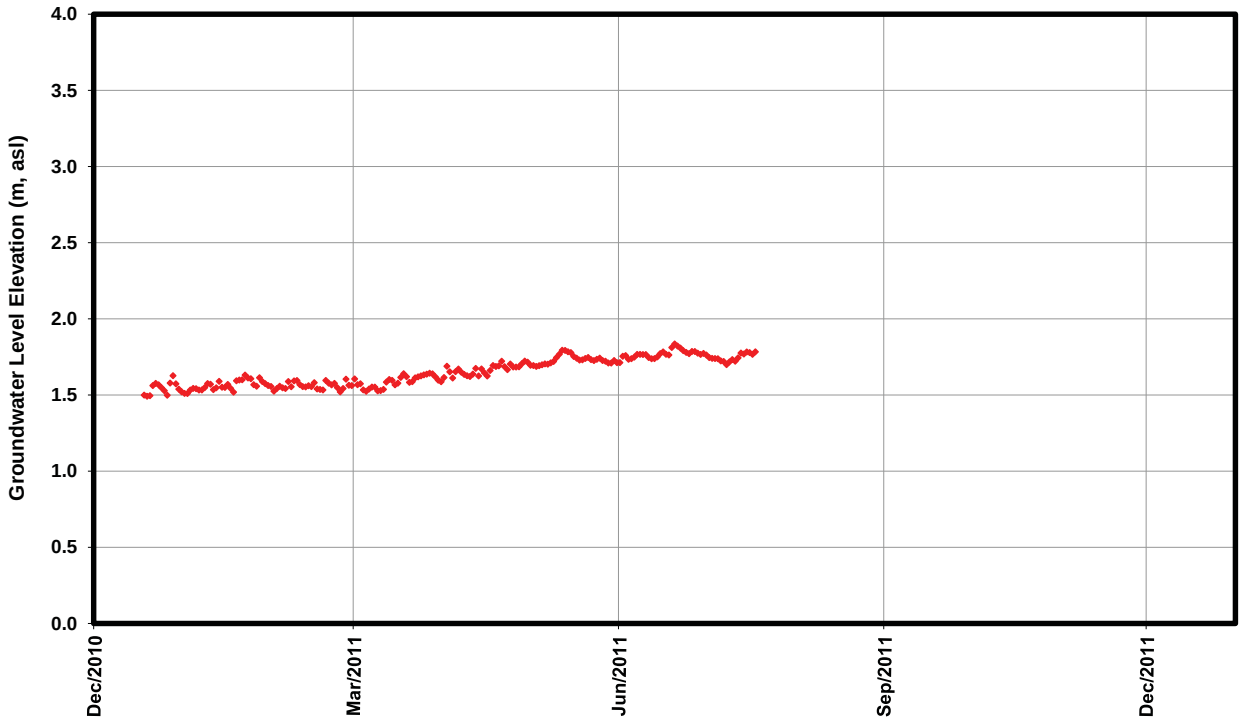


Figure B.36: Pugwash (084) Groundwater Level Elevations

St. Peter's (085) - Groundwater Level Elevations (2010 to present)

(Note: All data have been verified)



St. Peter's (085) - 2011 Groundwater Level Elevations

(Note: All data have been verified)

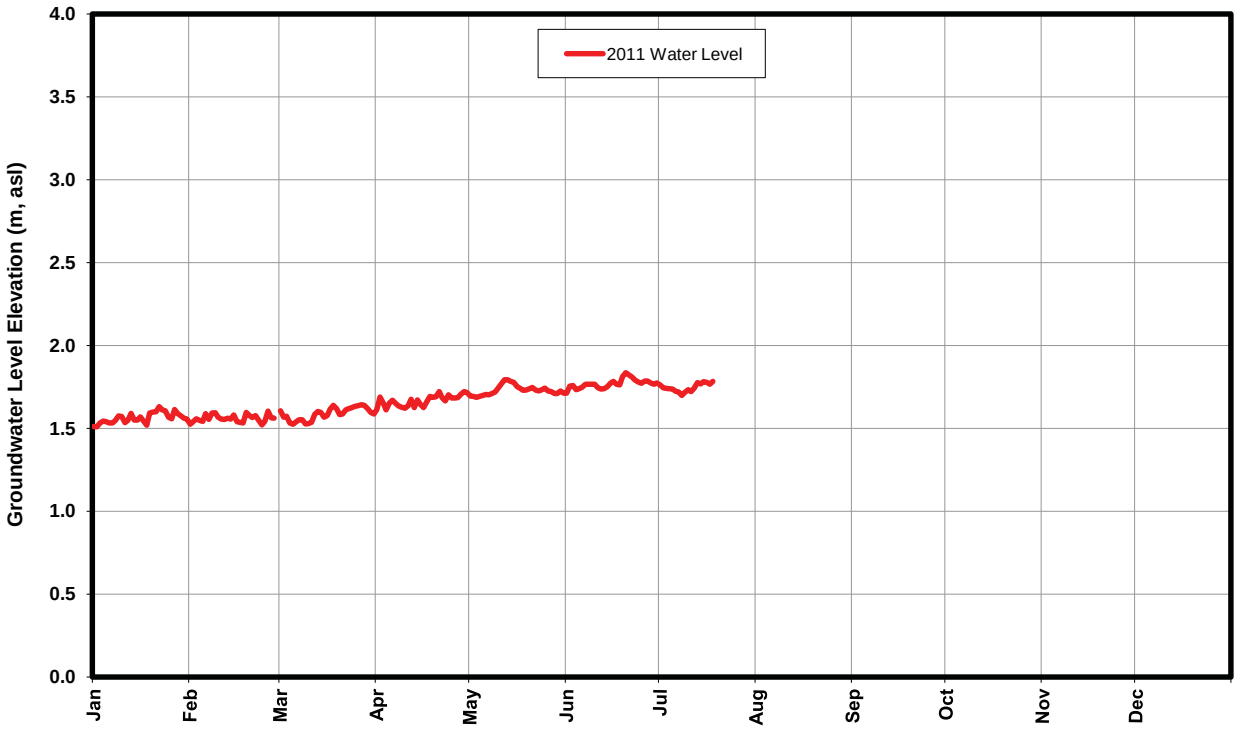


Figure B.37: St. Peter's (085) Groundwater Level Elevations

APPENDIX C
GROUNDWATER CHEMISTRY RESULTS

Table C1. Summary of Parameters Tested at Each Well

Observation Well		General Chemistry	Metals	VOC	Pesticides	Tritium	Perchlorate
Greenwood (003)	23/Nov/2005	✓	✓	✓	✓	✓	✓
	18/Dec/2008	✓	✓	✓	✓		
Fraser Brook (004)	10/Dec/2004	✓	✓	✓	✓		✓
	03/Dec/2008	✓	✓	✓	✓		
Wilmot (005)	29/Nov/2006	✓	✓	✓			
	12/May/2010	✓	✓	✓	✓		
Murray Siding (007)	N/A						
Wolfville (010)	22/Dec/2004	✓	✓	✓	✓	✓	✓
	18/Dec/2008	✓	✓	✓	✓		
Truro (014)	N/A						
Monastery (028)	15/Dec/2006	✓	✓	✓	✓	✓	✓
	09/Dec/2008	✓	✓	✓	✓		
Point Aconi (030)	15/Sep/2005	✓	✓	✓	✓	✓	✓
	10/Dec/2008	✓	✓	✓	✓		
Lawrencetown (043)	18/Nov/2004	✓	✓				
	05/Dec/2008	✓	✓	✓	✓		
Durham (045)	05/Oct/2005	✓	✓	✓	✓	✓	✓
	21/Jan/2009	✓	✓	✓	✓		
Kentville (048)	15/Jun/2005	✓	✓		✓	✓	✓
	07/Nov/2007	✓	✓	✓	✓		
Sydney (050)	15/Sep/2005	✓	✓	✓	✓	✓	✓
	11/Dec/2008	✓	✓	✓	✓		
North Grant (054)	13/Dec/2006	✓	✓	✓	✓	✓	
	22/Jul/2008	✓	✓	✓	✓		
Stillwater (055)	13/Dec/2006	✓	✓	✓	✓	✓	
	04/Dec/2008	✓	✓	✓	✓		
Sheet Harbour (056)	05/Dec/2008	✓	✓	✓	✓		
Hayden Lake (059)	09/Jun/2005	✓	✓	✓	✓	✓	✓
	16/Dec/2008	✓	✓	✓	✓		
Meteghan (060)	12/Dec/2006	✓	✓	✓	✓	✓	
	17/Dec/2008	✓	✓	✓	✓		
Annapolis Royal (062)	09/Nov/2005	✓	✓	✓	✓	✓	✓
	26/Nov/2007	✓	✓	✓	✓		
	01/Jun/2010	✓	✓	✓	✓		
Hebron (063)	09/Jun/2005	✓	✓	✓	✓	✓	✓
	17/Dec/2008	✓	✓	✓	✓		
Margaree (064)	14/Dec/2006	✓	✓	✓	✓	✓	
	10/Dec/2008	✓	✓	✓	✓		
Ingonish (065)	25/Aug/2009	✓	✓	✓	✓		
Debert (068)	N/A						
Dalem Lake (069)	14/Dec/2006	✓	✓	✓	✓	✓	
	11/Dec/2008	✓	✓	✓	✓		
Amherst (071)	16/Dec/2006	✓	✓	✓	✓	✓	
	08/Jan/2009	✓	✓	✓	✓		
Kelley River (073)	12/Jan/2007	✓	✓	✓	✓	✓	
	09/Jun/2009	✓	✓	✓	✓		
Atlanta (074)	03/Sep/2007	✓	✓	✓	✓		
	08/Jun/2010	✓	✓	✓	✓		
Sheffield Mills (075)	10/Sep/2007	✓	✓	✓	✓		
	09/Jun/2010	✓	✓	✓	✓		
Fall River (076)	20/May/2008	✓	✓	✓	✓		
West Northfield (077)	12/Jun/2008	✓	✓	✓	✓		
Musquodoboit Hbr (078)	22/May/2008	✓	✓	✓	✓		
Lewis Lake (079)	31/Jul/2008	✓	✓	✓	✓		
Arisaig (080)	08/Sep/2009	✓	✓	✓	✓		
Coldbrook (081)	08/Aug/2009	✓	✓	✓	✓		
Long Point (082)	12/Aug/2009	✓	✓	✓	✓		
Tatamagouche (083)	21/Jul/2008	✓	✓	✓	✓		

Table C2: General Chemistry and Metal Results

Parameter	Units	Drinking Water Guideline	Detection Limit	Greenwood (003)		Fraser Brook (004)		Wilmot (005)	
				23-Nov-2005	18-Dec-2008	10-Dec-2004	3-Dec-2008	29-Nov-2006	12-May-2010
General Chemistry									
Total Alkalinity (Total as CaCO3)	mg/L	-	5	ND	ND	74	71	16	27
Chloride (Cl)	mg/L	250 AO	1	6	3	5	5	22	14
Colour	TCU	15 AO	5	5	7	ND	ND	ND	ND
Hardness (CaCO3)	mg/L	500 AO	-	10	5	79.1	75	180	100
Nitrate + Nitrite	mg/L	10	0.05	ND	0.12	ND	1.2	**30**	**17**
Nitrite (N)	mg/L	1	0.01	ND	ND	ND	ND	0.02	0.02
Nitrate (N)	mg/L	10	0.05	ND	0.12	ND	1.2	**30**	**17**
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.05	0.22	ND	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	-	0.5	2	0.8	ND	0.5	ND	ND
Orthophosphate (P)	mg/L	-	0.01	0.05	ND	0.02	0.03	0.07	0.08
pH	pH	6.5 - 8.5 AO	-	**6.41**	**6.49**	7.6	8.05	6.7	7.28
Reactive Silica (SiO2)	mg/L		0.5	11	11	7.8	7.1	7.9	7.7
Sulphate (SO4)	mg/L	500 AO	2	9	5	5	4	27	21
Turbidity	NTU	5 AO	0.1	**39**	**5.4**	0.2	0.3	**50**	0.2
Conductivity	uS/cm	-	-	79	41	166	160	410	280
Anion Sum	me/L	-	-	0.372	0.18	1.73	1.73	3.65	2.56
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	1	ND	ND	74	70	16	27
Calculated TDS	mg/L	-	1	40	28	94	95	275	182
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1	ND	ND	ND	ND	ND	ND
Cation Sum	me/L	-	-	0.549	0.38	1.78	1.71	3.92	2.46
Ion Balance (% Difference)	%	-	-	19.2	35.7	1.56	0.58	3.58	1.99
Langelier Index (@ 20C)	N/A	-	-	-	NC	-0.68	-0.188	-1.75	-1.12
Langelier Index (@ 4C)	N/A	-	-	-	NC	-1.08	-0.44	-2	-1.37
Saturation pH (@ 20C)	N/A	-	-	-	NC	8.28	8.24	8.45	8.4
Saturation pH (@ 4C)	N/A	-	-	-	NC	8.68	8.49	8.7	8.65
Calcium (Ca)	mg/L	-	0.1	2.2	1.2	19.3	18	56	36
Magnesium (Mg)	mg/L	-	0.1	1	0.4	7.5	7.3	8.5	3.6
Phosphorus (P)	mg/L	-	0.1	ND	ND	ND	ND	0.2	ND
Potassium (K)	mg/L	-	0.1	2.4	1.7	1	1	3.1	2.8
Sodium (Na)	mg/L	200 AO	0.1	3.6	2.1	4	4.3	7.5	6.8
Bromide (Br)	mg/L	-	0.5	ND	ND	0.03	ND	-	ND
Fluoride (F)	mg/L	1.5	0.1	ND	ND	ND	ND	-	ND
Metals									
Aluminum (Al)	ug/L	-	10	47	18	ND	ND	ND	13
Antimony (Sb)	ug/L	6	2	ND	ND	ND	ND	ND	ND
Arsenic (As)	ug/L	10	2	2	ND	**14**	**15**	ND	ND
Barium (Ba)	ug/L	1000	5	59	25	5	6	89	53
Beryllium (Be)	ug/L	-	2	ND	ND	ND	ND	ND	ND
Bismuth (Bi)	ug/L	-	2	ND	ND	ND	ND	ND	ND
Boron (B)	ug/L	5000	5	ND	ND	30	27	14	15
Cadmium (Cd)	ug/L	5	0.3	ND	ND	ND	ND	ND	ND
Chromium (Cr)	ug/L	50	2	ND	ND	ND	ND	ND	ND
Cobalt (Co)	ug/L	-	1	3	1	ND	ND	ND	ND
Copper (Cu)	ug/L	1000 AO	2	3	ND	ND	ND	ND	10
Iron (Fe)	ug/L	300 AO	50	**8700**	**4300**	ND	ND	ND	ND
Lead (Pb)	ug/L	10	0.5	1.7	ND	ND	ND	2.3	0.7
Manganese (Mn)	ug/L	50 AO	2	**140**	**84**	ND	ND	15	14
Molybdenum (Mo)	ug/L	-	2	ND	ND	ND	ND	ND	ND
Mercury (Hg)	ug/L	1	0.01	-	ND	-	ND	-	ND
Nickel (Ni)	ug/L	-	2	4	2	ND	ND	3	2
Selenium (Se)	ug/L	10	2	ND	ND	ND	ND	ND	ND
Silver (Ag)	ug/L	-	0.5	ND	ND	ND	ND	ND	ND
Strontium (Sr)	ug/L	-	5	9	ND	150	150	160	120
Thallium (Tl)	ug/L	-	0.1	ND	ND	ND	ND	ND	ND
Tin (Sn)	ug/L	-	2	ND	ND	ND	ND	ND	ND
Titanium (Ti)	ug/L	-	2	ND	ND	ND	ND	ND	ND
Uranium (U)	ug/L	20	0.1	0.2	ND	1.5	1.4	ND	ND
Vanadium (V)	ug/L	-	2	ND	ND	2	2	ND	ND
Zinc (Zn)	ug/L	5000 AO	5	87	60	ND	ND	7	24

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C2: General Chemistry and Metal Results

Parameter	Units	Drinking Water Guideline	Detection Limit	Wolfville (010)		Monastery (028)		Point Aconi (030)		Lawrencetown (043)	
				22-Dec-2004	18-Dec-2008	15-Dec-2006	9-Dec-2008	15-Sep-2005	10-Dec-2008	18-Nov-2004	5-Dec-2008
General Chemistry											
Total Alkalinity (Total as CaCO3)	mg/L	-	5	25	10	240	220	140	130	82	82
Chloride (Cl)	mg/L	250 AO	1	78	87	31	24	19	11	150	180
Colour	TCU	15 AO	5	ND	14	ND	ND	ND	ND	ND	ND
Hardness (CaCO3)	mg/L	500 AO	-	101	67	120	95	140	160	98.9	100
Nitrate + Nitrite	mg/L	10	0.05	1.9	1.5	ND	ND	ND	1.3	ND	ND
Nitrite (N)	mg/L	1	0.01	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (N)	mg/L	10	0.05	1.9	1.5	ND	ND	ND	1.3	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.05	ND	0.63	0.14	0.12	ND	ND	0.19	0.12
Total Organic Carbon (C)	mg/L	-	0.5	ND	1.6	2.1	1	ND	1.3	ND	0.5
Orthophosphate (P)	mg/L	-	0.01	ND	0.01	ND	ND	ND	ND	ND	ND
pH	pH	6.5 - 8.5 AO	-	6.5	6.53	8.14	8.23	8.01	7.97	7.3	8.14
Reactive Silica (SiO2)	mg/L		0.5	17	14	11	13	7.6	9.2	7.3	8.5
Sulphate (SO4)	mg/L	500 AO	2	12	11	72	59	10	21	ND	ND
Turbidity	NTU	5 AO	0.1	0.9	**68**	0.2	0.3	ND	0.2	1	0.2
Conductivity	uS/cm	-	-	382	370	660	640	380	340	695	710
Anion Sum	me/L	-	-	3.08	2.99	7.13	6.36	3.6	3.38	5.92	6.77
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	1	25	10	235	220	140	126	82	81
Calculated TDS	mg/L	-	1	196	201	417	365	207	194	341	375
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1	ND	ND	3	4	1	1	ND	1
Cation Sum	me/L	-	-	3.3	3.4	7.51	6.28	4.11	3.66	6.19	6.39
Ion Balance (% Difference)	%	-	-	3.3	6.42	2.61	0.63	6.56	3.98	2.27	2.89
Langelier Index (@ 20C)	N/A	-	-	-2.12	-2.59	0.553	0.539	0.41	0.423	-0.85	0.039
Langelier Index (@ 4C)	N/A	-	-	-2.52	-2.84	0.304	0.29	0.16	0.173	-1.25	-0.21
Saturation pH (@ 20C)	N/A	-	-	8.62	9.12	7.59	7.69	7.6	7.55	8.15	8.1
Saturation pH (@ 4C)	N/A	-	-	9.02	9.37	7.84	7.94	7.85	7.8	8.55	8.35
Calcium (Ca)	mg/L	-	0.1	27.4	19	31	25	44	55	26.1	27
Magnesium (Mg)	mg/L	-	0.1	7.8	4.6	9.3	7.7	6.3	5.8	8.2	8.8
Phosphorus (P)	mg/L	-	0.1	ND	ND	ND	ND	ND	ND	ND	ND
Potassium (K)	mg/L	-	0.1	2	1.9	2.3	3.6	4	1	1.9	1.9
Sodium (Na)	mg/L	200 AO	0.1	28.3	29	120	98	30	10	95.4	98
Bromide (Br)	mg/L	-	0.5	0.06	ND	ND	ND	-	ND	0.53	ND
Fluoride (F)	mg/L	1.5	0.1	ND	ND	0.3	ND	-	ND	0.11	0.1
Metals											
Aluminum (Al)	ug/L	-	10	ND	ND	ND	ND	15	ND	ND	ND
Antimony (Sb)	ug/L	6	2	ND	ND	ND	0.78	ND	ND	ND	ND
Arsenic (As)	ug/L	10	2	ND	ND	6	4.1	ND	ND	**56**	**58**
Barium (Ba)	ug/L	1000	5	69	46	25	25	40	18	26	41
Beryllium (Be)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Bismuth (Bi)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Boron (B)	ug/L	5000	5	26	23	250	220	35	ND	93	110
Cadmium (Cd)	ug/L	5	0.3	ND	ND	ND	ND	ND	ND	ND	ND
Chromium (Cr)	ug/L	50	2	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt (Co)	ug/L	-	1	ND	2	ND	ND	ND	ND	ND	ND
Copper (Cu)	ug/L	1000 AO	2	ND	ND	7	ND	6	ND	ND	ND
Iron (Fe)	ug/L	300 AO	50	230	**20000**	ND	ND	ND	ND	ND	ND
Lead (Pb)	ug/L	10	0.5	ND	ND	ND	ND	0.6	ND	ND	ND
Manganese (Mn)	ug/L	50 AO	2	14	**1300**	42	48	**360**	7.9	16	32
Molybdenum (Mo)	ug/L	-	2	ND	ND	3	ND	ND	ND	ND	ND
Mercury (Hg)	ug/L	1	0.01	-	ND	ND	ND	-	ND	-	ND
Nickel (Ni)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Selenium (Se)	ug/L	10	2	ND	ND	ND	ND	ND	ND	ND	ND
Silver (Ag)	ug/L	-	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Strontium (Sr)	ug/L	-	5	110	67	2400	2600	230	110	1100	1400
Thallium (Tl)	ug/L	-	0.1	ND	ND	ND	ND	ND	ND	ND	ND
Tin (Sn)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Titanium (Ti)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Uranium (U)	ug/L	20	0.1	ND	ND	0.6	0.72	0.3	0.36	ND	ND
Vanadium (V)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Zinc (Zn)	ug/L	5000 AO	5	ND	ND	34	ND	18	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C2: General Chemistry and Metal Results

Parameter	Units	Drinking Water Guideline	Detection Limit	Durham (045)		Kentville (048)		Sydney (050)		North Grant (054)	
				5-Oct-2005	21-Jan-2009	15-Jun-2005	7-Nov-2007	15-Sep-2005	11-Dec-2008	13-Dec-2006	22-Jul-2008
General Chemistry											
Total Alkalinity (Total as CaCO3)	mg/L	-	5	140	110	20	22	83	90	93	92
Chloride (Cl)	mg/L	250 AO	1	44	19	230	**270**	7	5	30	27
Colour	TCU	15 AO	5	ND	ND	ND	ND	ND	8	ND	ND
Hardness (CaCO3)	mg/L	500 AO	-	86	72	150	180	87	89	38	36
Nitrate + Nitrite	mg/L	10	0.05	ND	ND	1.2	0.96	0.17	ND	0.55	0.7
Nitrite (N)	mg/L	1	0.01	ND	ND	ND	ND	ND	ND	ND	ND
Nitrate (N)	mg/L	10	0.05	ND	ND	1.2	0.96	0.17	ND	0.55	0.7
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.05	0.11	ND	0.06	ND	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	-	0.5	ND	ND	ND	ND	ND	1.3	2.5	ND
Orthophosphate (P)	mg/L	-	0.01	ND	0.01	ND	0.05	ND	ND	ND	ND
pH	pH	6.5 - 8.5 AO	-	8.16	7.95	6.84	7.39	8.03	7.7	7.83	8.03
Reactive Silica (SiO2)	mg/L		0.5	11	9.8	11	11	8.6	8	9.6	9.8
Sulphate (SO4)	mg/L	500 AO	2	16	11	16	19	7	7	35	31
Turbidity	NTU	5 AO	0.1	ND	0.5	5	0.7	0.3	0.2	1.1	**53**
Conductivity	uS/cm	-	-	410	290	910	1000	210	190	340	340
Anion Sum	me/L	-	-	4.31	2.95	7.36	8.5	2.02	2.1	3.5	3.3
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	1	134	108	20.3	22	82	90	93	91
Calculated TDS	mg/L	-	1	243	167	223	503	115	116	209	206
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1	2	ND	ND	ND	ND	ND	ND	ND
Cation Sum	me/L	-	-	4.22	2.92	8.18	8.67	2.07	2.05	3.43	3.58
Ion Balance (% Difference)	%	-	-	1.01	0.51	5.28	0.99	1.29	1.2	1.07	4.07
Langelier Index (@ 20C)	N/A	-	-	0.382	0.008	-1.54	-0.975	0.069	-0.207	-0.526	-0.363
Langelier Index (@ 4C)	N/A	-	-	0.132	-0.242	-1.79	-1.22	-0.182	-0.458	-0.776	-0.613
Saturation pH (@ 20C)	N/A	-	-	7.78	7.94	8.38	8.37	7.96	7.91	8.36	8.39
Saturation pH (@ 4C)	N/A	-	-	8.03	8.19	8.63	8.61	8.21	8.16	8.61	8.64
Calcium (Ca)	mg/L	-	0.1	30	25	52	58	30	31	12	11
Magnesium (Mg)	mg/L	-	0.1	2.7	2.3	5.6	7.5	3	2.8	2.2	2.2
Phosphorus (P)	mg/L	-	0.1	0.1	ND	ND (0.2)	ND	ND	ND	ND	ND
Potassium (K)	mg/L	-	0.1	1.6	1.3	4.9	5.4	1.7	1.4	1	1
Sodium (Na)	mg/L	200 AO	0.1	57	33	120	120	6.6	5.5	61	61
Bromide (Br)	mg/L	-	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Fluoride (F)	mg/L	1.5	0.1	0.3	0.2	ND	ND	0.1	0.1	0.6	0.6
Metals											
Aluminum (Al)	ug/L	-	10	16	12	ND	ND	11	ND	46	620
Antimony (Sb)	ug/L	6	2	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As)	ug/L	10	2	4	2	ND	ND	ND	ND	3	**15**
Barium (Ba)	ug/L	1000	5	130	110	64	76	93	91	88	110
Beryllium (Be)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Bismuth (Bi)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Boron (B)	ug/L	5000	5	38	27	5.7	6	15	10	610	560
Cadmium (Cd)	ug/L	5	0.3	ND	ND	ND	ND	ND	ND	ND	ND
Chromium (Cr)	ug/L	50	2	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt (Co)	ug/L	-	1	ND	ND	ND	ND	ND	ND	ND	ND
Copper (Cu)	ug/L	1000 AO	2	ND	ND	ND	ND	7	ND	ND	ND
Iron (Fe)	ug/L	300 AO	50	ND	ND	ND	**410**	80	250	85	**4900**
Lead (Pb)	ug/L	10	0.5	ND	ND	ND	**45**	ND	ND	ND	0.6
Manganese (Mn)	ug/L	50 AO	2	21	ND	ND	12	**630**	**830**	8	27
Molybdenum (Mo)	ug/L	-	2	8	4	ND	ND	ND	ND	3	3
Mercury (Hg)	ug/L	1	0.01	-	ND	-	0.01	-	ND	ND	ND
Nickel (Ni)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Selenium (Se)	ug/L	10	2	ND	ND	ND	ND	ND	ND	ND	ND
Silver (Ag)	ug/L	-	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Strontium (Sr)	ug/L	-	5	1100	520	210	260	230	180	180	180
Thallium (Tl)	ug/L	-	0.1	ND	ND	ND	ND	ND	ND	ND	ND
Tin (Sn)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Titanium (Ti)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	24
Uranium (U)	ug/L	20	0.1	0.7	0.9	ND	ND	ND	ND	1.3	2.1
Vanadium (V)	ug/L	-	2	ND	ND	ND	ND	ND	ND	2	17
Zinc (Zn)	ug/L	5000 AO	5	21	ND	150	8	6	ND	ND	8

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C2: General Chemistry and Metal Results

Parameter	Units	Drinking Water Guideline	Detection Limit	Stillwater (055)		Sheet Harbour (056)	Hayden Lake (059)		Meteghan (060)	
				13-Dec-2006	4-Dec-2008	5-Dec-2008	9-Jun-2005	16-Dec-2008	12-Dec-2006	17-Dec-2008
General Chemistry										
Total Alkalinity (Total as CaCO3)	mg/L	-	5	58	64	96	14	12	67	63
Chloride (Cl)	mg/L	250 AO	1	5	5	7	9.2	9	16	17
Colour	TCU	15 AO	5	ND	ND	ND	ND	ND	6	ND
Hardness (CaCO3)	mg/L	500 AO	-	58	53	81	15	13	85	77
Nitrate + Nitrite	mg/L	10	0.05	0.13	0.1	ND	ND	0.06	ND	ND
Nitrite (N)	mg/L	1	0.01	ND	ND	ND	ND	ND	ND	ND
Nitrate (N)	mg/L	10	0.05	0.13	0.1	ND	ND	0.06	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.05	0.09	0.06	ND	ND	ND	0.07	0.08
Total Organic Carbon (C)	mg/L	-	0.5	2.5	0.8	0.6	0.8	0.6	3.3	0.6
Orthophosphate (P)	mg/L	-	0.01	ND	ND	ND	ND	ND	ND	ND
pH	pH	6.5 - 8.5 AO	-	7.32	7.28	7.99	6.74	**6.33**	7.42	7.31
Reactive Silica (SiO2)	mg/L		0.5	12	11	11	5.9	7.6	8.7	9
Sulphate (SO4)	mg/L	500 AO	2	6	4	4	4.3	4	13	13
Turbidity	NTU	5 AO	0.1	0.4	0.6	0.3	ND	0.1	**59**	**49**
Conductivity	uS/cm	-	-	140	140	220	70	64	200	200
Anion Sum	me/L	-	-	1.44	1.52	2.19	0.622	0.58	2.11	2.04
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	1	58	64	95	13.6	12	67	63
Calculated TDS	mg/L	-	1	89	88	121	41.2	40	124	119
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1	ND	ND	ND	ND	ND	ND	ND
Cation Sum	me/L	-	-	1.5	1.4	2.07	0.659	0.57	2.29	2.15
Ion Balance (% Difference)	%	-	-	2.18	4.11	2.82	2.9	0.87	4.09	2.63
Langelier Index (@ 20C)	N/A	-	-	-0.962	-0.998	0.053	-2.86	-3.4	-0.765	-0.956
Langelier Index (@ 4C)	N/A	-	-	-1.21	-1.25	-0.198	-3.11	-3.65	-1.02	-1.21
Saturation pH (@ 20C)	N/A	-	-	8.28	8.28	7.94	9.6	9.73	8.19	8.27
Saturation pH (@ 4C)	N/A	-	-	8.53	8.53	8.19	9.85	9.98	8.44	8.52
Calcium (Ca)	mg/L	-	0.1	19	18	27	3.7	3.1	22	19
Magnesium (Mg)	mg/L	-	0.1	2.2	2	2.9	1.5	1.3	7.3	6.8
Phosphorus (P)	mg/L	-	0.1	ND	ND	ND	ND	ND	ND	ND
Potassium (K)	mg/L	-	0.1	1.8	1.6	1.9	0.9	1	1.7	1.7
Sodium (Na)	mg/L	200 AO	0.1	6.8	7	9.5	7.5	6.6	8.5	9.2
Bromide (Br)	mg/L	-	0.5	ND	ND	ND	ND	ND	ND	ND
Fluoride (F)	mg/L	1.5	0.1	ND	ND	0.1	ND	ND	0.6	0.6
Metals										
Aluminum (Al)	ug/L	-	10	35	20	ND	25	73	ND	ND
Antimony (Sb)	ug/L	6	2	ND	ND	ND	ND	ND	ND	ND
Arsenic (As)	ug/L	10	2	ND	ND	10	ND	ND	ND	ND
Barium (Ba)	ug/L	1000	5	11	10	7	7.4	8	5	6
Beryllium (Be)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Bismuth (Bi)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Boron (B)	ug/L	5000	5	8	8	18	6.9	7	47	51
Cadmium (Cd)	ug/L	5	0.3	ND	ND	ND	ND	ND	ND	ND
Chromium (Cr)	ug/L	50	2	ND	ND	ND	ND	ND	ND	ND
Cobalt (Co)	ug/L	-	1	ND	1	ND	ND	ND	ND	ND
Copper (Cu)	ug/L	1000 AO	2	ND	ND	ND	37	ND	ND	ND
Iron (Fe)	ug/L	300 AO	50	ND	ND	77	ND	ND	**4900**	**4600**
Lead (Pb)	ug/L	10	0.5	ND	ND	ND	ND	ND	ND	ND
Manganese (Mn)	ug/L	50 AO	2	37	**100**	**160**	13	10	**60**	**52**
Molybdenum (Mo)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Mercury (Hg)	ug/L	1	0.01	ND	ND	ND	-	ND	ND	ND
Nickel (Ni)	ug/L	-	2	ND	3	ND	ND	ND	ND	ND
Selenium (Se)	ug/L	10	2	ND	ND	ND	ND	ND	ND	ND
Silver (Ag)	ug/L	-	0.5	ND	ND	ND	ND	ND	ND	ND
Strontium (Sr)	ug/L	-	5	64	71	170	19	20	36	35
Thallium (Tl)	ug/L	-	0.1	ND	ND	ND	ND	ND	ND	ND
Tin (Sn)	ug/L	-	2	ND	ND	2	ND	ND	ND	ND
Titanium (Ti)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Uranium (U)	ug/L	20	0.1	0.5	0.3	1	ND	ND	ND	ND
Vanadium (V)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Zinc (Zn)	ug/L	5000 AO	5	ND	ND	ND	21	5	5	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C2: General Chemistry and Metal Results

Parameter	Units	Drinking Water Guideline	Detection Limit	Annapolis Royal (062)			Hebron (063)		Margaree (064)	
				9-Nov-2005	26-Nov-2007	1-Jun-2010	9-Jun-2005	17-Dec-2008	14-Dec-2006	10-Dec-2008
General Chemistry										
Total Alkalinity (Total as CaCO3)	mg/L	-	5	52	54	55	23	24	160	160
Chloride (Cl)	mg/L	250 AO	1	6	6	6	49	57	10	8
Colour	TCU	15 AO	5	ND	ND	ND	5.8	8	ND	ND
Hardness (CaCO3)	mg/L	500 AO	-	43	41	44	71	65	210	190
Nitrate + Nitrite	mg/L	10	0.05	ND	ND	ND	ND	ND	ND	ND
Nitrite (N)	mg/L	1	0.01	ND	ND	ND	ND	ND	ND	ND
Nitrate (N)	mg/L	10	0.05	ND	ND	ND	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.05	ND	ND	ND	ND	0.05	0.13	0.12
Total Organic Carbon (C)	mg/L	-	0.5	ND	ND	ND	1.2	1.6	3.6	ND
Orthophosphate (P)	mg/L	-	0.01	0.03	0.02	0.02	ND	0.01	ND	ND
pH	pH	6.5 - 8.5 AO	-	7.3	8.03	7.77	**6.29**	6.5	8.13	8.11
Reactive Silica (SiO2)	mg/L		0.5	14	12	13	17	16	12	16
Sulphate (SO4)	mg/L	500 AO	2	7	7	8	13	16	93	87
Turbidity	NTU	5 AO	0.1	0.2	**15**	0.2	**150**	**45**	0.2	0.7
Conductivity	uS/cm	-	-	130	140	140	270	310	510	510
Anion Sum	me/L	-	-	1.38	1.4	1.43	2.12	2.41	5.48	5.17
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	1	52	53	54	23.2	24	160	154
Calculated TDS	mg/L	-	1	89	88	89	169	174	311	295
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1	ND	ND	ND	ND	ND	2	2
Cation Sum	me/L	-	-	1.44	1.42	1.43	3.38	3.14	5.5	4.95
Ion Balance (% Difference)	%	-	-	2.2	0.71	0	22.9	13.2	0.182	2.17
Langelier Index (@ 20C)	N/A	-	-	-1.15	-0.431	-0.657	-2.47	-2.29	0.525	0.484
Langelier Index (@ 4C)	N/A	-	-	-1.41	-0.682	-0.909	-2.72	-2.54	0.276	0.235
Saturation pH (@ 20C)	N/A	-	-	8.45	8.46	8.43	8.76	8.79	7.61	7.63
Saturation pH (@ 4C)	N/A	-	-	8.71	8.71	8.68	9.01	9.04	7.85	7.88
Calcium (Ca)	mg/L	-	0.1	15	14	15	18	16	41	41
Magnesium (Mg)	mg/L	-	0.1	1.6	1.5	1.7	6.3	6	26	21
Phosphorus (P)	mg/L	-	0.1	ND	ND	-	ND	0.1	ND	ND
Potassium (K)	mg/L	-	0.1	1	1.2	1.1	1.7	1.8	1.7	1.3
Sodium (Na)	mg/L	200 AO	0.1	13	13	12	20	20	28	27
Bromide (Br)	mg/L	-	0.5	ND	ND	ND	0.5	0.5	ND	ND
Fluoride (F)	mg/L	1.5	0.1	0.2	0.2	0.2	ND	ND	0.6	0.6
Metals										
Aluminum (Al)	ug/L	-	10	ND	ND	ND	ND	ND	12	ND
Antimony (Sb)	ug/L	6	2	ND	ND	ND	ND	ND	ND	ND
Arsenic (As)	ug/L	10	2	4	4	4	ND	ND	ND	ND
Barium (Ba)	ug/L	1000	5	52	66	77	14	17	21	19
Beryllium (Be)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Bismuth (Bi)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Boron (B)	ug/L	5000	5	12	12	13	8.8	10	450	490
Cadmium (Cd)	ug/L	5	0.3	ND	ND	ND	ND	ND	ND	ND
Chromium (Cr)	ug/L	50	2	ND	ND	1	ND	ND	ND	ND
Cobalt (Co)	ug/L	-	1	ND	ND	ND	ND	ND	ND	ND
Copper (Cu)	ug/L	1000 AO	2	ND	ND	ND	ND	ND	ND	ND
Iron (Fe)	ug/L	300 AO	50	ND	ND	ND	**27000**	**26000**	ND	ND
Lead (Pb)	ug/L	10	0.5	ND	1	ND	ND	ND	ND	ND
Manganese (Mn)	ug/L	50 AO	2	**110**	**93**	**95**	**440**	**460**	5	ND
Molybdenum (Mo)	ug/L	-	2	4	4	4	ND	ND	ND	ND
Mercury (Hg)	ug/L	1	0.01	-	0.02	ND	-	ND	ND	ND
Nickel (Ni)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Selenium (Se)	ug/L	10	2	ND	ND	ND	ND	ND	ND	ND
Silver (Ag)	ug/L	-	0.5	ND	ND	ND	ND	ND	ND	ND
Strontium (Sr)	ug/L	-	5	59	61	71	91	92	15000	14000
Thallium (Tl)	ug/L	-	0.1	ND	ND	ND	ND	ND	ND	ND
Tin (Sn)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Titanium (Ti)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Uranium (U)	ug/L	20	0.1	1.9	3.6	2.6	ND	ND	ND	ND
Vanadium (V)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Zinc (Zn)	ug/L	5000 AO	5	ND	ND	ND	16	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C2: General Chemistry and Metal Results

Parameter	Units	Drinking Water Guideline	Detection Limit	Ingonish (065)	Dalem Lake (069)		Amherst (071)		Kelley River (073)		Atlanta (074)	
				25-Aug-2009	14-Dec-2006	11-Dec-2008	16-Dec-2006	8-Jan-2009	12-Jan-2007	9-Jun-2009	3-Sep-2007	8-Jun-2010
General Chemistry												
Total Alkalinity (Total as CaCO3)	mg/L	-	5	13	63	65	120	120	22	26	95	88
Chloride (Cl)	mg/L	250 AO	1	9	38	38	33	32	8	7	8	8
Colour	TCU	15 AO	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness (CaCO3)	mg/L	500 AO	-	18	120	100	83	74	13	14	75	50
Nitrate + Nitrite	mg/L	10	0.05	0.15	ND	0.06	1.3	1.4	0.07	ND	0.74	0.61
Nitrite (N)	mg/L	1	0.01	ND	ND	ND	ND	0.01	ND	ND	ND	ND
Nitrate (N)	mg/L	10	0.05	0.15	ND	0.06	1.3	1.4	0.07	ND	0.74	0.61
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon (C)	mg/L	-	0.5	0.6	2.6	ND	2.3	ND	2.7	ND	ND	ND
Orthophosphate (P)	mg/L	-	0.01	ND	0.01	ND	0.04	0.05	ND	ND	ND	ND
pH	pH	6.5 - 8.5 AO	-	7.4	7.8	7.77	8.08	7.97	7.22	7.1	8.08	8.12
Reactive Silica (SiO2)	mg/L		0.5	8.2	12	12	11	11	4.3	4.9	11	10
Sulphate (SO4)	mg/L	500 AO	2	4	8	7	40	42	4	4	4	4
Turbidity	NTU	5 AO	0.1	ND	0.3	1.2	ND	0.3	0.2	0.2	ND	0.3
Conductivity	uS/cm	-	-	65	260	260	430	390	81	86	210	200
Anion Sum	me/L	-	-	0.6	2.51	2.54	4.3	4.26	0.765	0.81	2.26	2.1
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	1	13	62	65	120	117	22	26	94	87
Calculated TDS	mg/L	-	1	44	150	145	260	259	46	51	135	120
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1	ND	ND	ND	1	1	ND	ND	1	1
Cation Sum	me/L	-	-	0.73	2.77	2.45	4.55	4.46	0.746	0.86	2.47	2
Ion Balance (% Difference)	%	-	-	9.77	4.97	1.8	2.89	2.29	1.26	2.99	4.44	2.44
Langelier Index (@ 20C)	N/A	-	-	-2.12	-0.191	-0.263	0.17	0.007	-2.19	-2.21	0.116	-0.049
Langelier Index (@ 4C)	N/A	-	-	-2.37	-0.442	-0.514	-0.08	-0.242	-2.44	-2.47	-0.135	-0.3
Saturation pH (@ 20C)	N/A	-	-	9.52	7.99	8.03	7.91	7.96	9.41	9.31	7.96	8.17
Saturation pH (@ 4C)	N/A	-	-	9.77	8.24	8.28	8.16	8.21	9.66	9.57	8.22	8.42
Calcium (Ca)	mg/L	-	0.1	**4700**	38	33	26	24	3.6	3.9	27	18
Magnesium (Mg)	mg/L	-	0.1	**1500**	6.1	5.3	4.3	3.6	1	1.1	2.2	1.5
Phosphorus (P)	mg/L	-	0.1	ND	ND	ND	ND	ND	ND	ND	ND	-
Potassium (K)	mg/L	-	0.1	**790**	1.3	1.2	1.3	1.2	1	0.9	2.2	2.2
Sodium (Na)	mg/L	200 AO	0.1	**8000**	7.5	7.5	66	68	11	13	21	22
Bromide (Br)	mg/L	-	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoride (F)	mg/L	1.5	0.1	ND	0.2	0.2	0.6	0.6	ND	ND	ND	ND
Metals												
Aluminum (Al)	ug/L	-	10	6.6	ND	ND	ND	ND	ND	ND	ND	17
Antimony (Sb)	ug/L	6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (As)	ug/L	10	2	ND	4	3	ND	ND	ND	ND	ND	ND
Barium (Ba)	ug/L	1000	5	7.7	150	150	170	180	24	170	8	7
Beryllium (Be)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bismuth (Bi)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron (B)	ug/L	5000	5	ND	9	5	12	11	14	30	13	16
Cadmium (Cd)	ug/L	5	0.3	ND	ND	ND	ND	ND	ND	ND	ND	0.04
Chromium (Cr)	ug/L	50	2	ND	ND	ND	ND	ND	ND	ND	ND	2
Cobalt (Co)	ug/L	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper (Cu)	ug/L	1000 AO	2	ND	ND	ND	ND	ND	ND	ND	ND	3
Iron (Fe)	ug/L	300 AO	50	ND	180	160	ND	ND	87	ND	ND	ND
Lead (Pb)	ug/L	10	0.5	ND	ND	ND	ND	ND	ND	ND	ND	0.6
Manganese (Mn)	ug/L	50 AO	2	ND	**330**	**350**	3	ND	20	2	ND	3
Molybdenum (Mo)	ug/L	-	2	ND	ND	ND	50	56	ND	ND	ND	ND
Mercury (Hg)	ug/L	1	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel (Ni)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium (Se)	ug/L	10	2	ND	ND	ND	ND	ND	ND	ND	2	5
Silver (Ag)	ug/L	-	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Strontium (Sr)	ug/L	-	5	27	77	58	58	58	20	22	280	250
Thallium (Tl)	ug/L	-	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tin (Sn)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Titanium (Ti)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Uranium (U)	ug/L	20	0.1	0.58	ND	ND	3.7	3.8	ND	ND	**21**	**25**
Vanadium (V)	ug/L	-	2	ND	ND	ND	5	4	ND	ND	ND	ND
Zinc (Zn)	ug/L	5000 AO	5	ND	ND	ND	ND	ND	ND	130	ND	16

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C2: General Chemistry and Metal Results

Parameter	Units	Drinking Water Guideline	Detection Limit	Sheffield Mills (075)		Fall River (076)	West Northfield (077)	Musquodoboit Hbr (078)	Lewis Lake (079)	Arisaig (080)
				10-Sep-2007	9-Jun-2010	20-May-2008	12-Jun-2008	22-May-2008	31-Jul-2008	8-Sep-2009
General Chemistry										
Total Alkalinity (Total as CaCO3)	mg/L	-	5	95	97	ND	57	81	62	240 (30)
Chloride (Cl)	mg/L	250 AO	1	6	5	12	15	8	11	57
Colour	TCU	15 AO	5	ND	ND	42	7	5	6	7
Hardness (CaCO3)	mg/L	500 AO	-	98	95	13	80	21	21	10
Nitrate + Nitrite	mg/L	10	0.05	0.78	0.12	0.14	ND	ND	ND	ND
Nitrite (N)	mg/L	1	0.01	ND	ND	ND	ND	ND	ND	ND
Nitrate (N)	mg/L	10	0.05	0.78	0.12	0.12	ND	ND	ND	ND
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.05	ND	ND	0.07	ND	0.16	ND	0.11
Total Organic Carbon (C)	mg/L	-	0.5	ND	ND	1.1	ND	ND	0.5	ND (5)
Orthophosphate (P)	mg/L	-	0.01	ND	ND	ND	ND	ND	0.03	0.04
pH	pH	6.5 - 8.5 AO	-	7.99	8.05	**6**	8.1	7.78	7.8	**8.63**
Reactive Silica (SiO2)	mg/L		0.5	8.9	8.8	4	9.1	2.4	20	2.1
Sulphate (SO4)	mg/L	500 AO	2	3	3	14	32	9	7	ND
Turbidity	NTU	5 AO	0.1	ND	0.6	4.6	0.5	0.6	3.6	240
Conductivity	uS/cm	-	-	210	200	110	240	210	170	610
Anion Sum	me/L	-	-	2.17	2.15	0.69	2.31	2.13	1.83	6.52
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	1	94	96	ND	57	81	61	233
Calculated TDS	mg/L	-	1	124	117	54	139	119	124	353
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1	ND	1	ND	ND	ND	ND	9
Cation Sum	me/L	-	-	2.31	2.08	0.95	2.31	2.14	1.98	6.37
Ion Balance (% Difference)	%	-	-	3.13	1.65	15.9	0	0.23	3.94	1.16
Langelier Index (@ 20C)	N/A	-	-	0.147	0.211	-	-0.081	-0.857	-0.889	0.109
Langelier Index (@ 4C)	N/A	-	-	-0.104	-0.04	-	-0.331	-1.11	-1.14	-140
Saturation pH (@ 20C)	N/A	-	-	7.84	7.84	-	8.18	8.64	8.69	8.52
Saturation pH (@ 4C)	N/A	-	-	8.09	8.09	-	8.43	8.89	8.94	8.77
Calcium (Ca)	mg/L	-	0.1	35	34	3.4	27	6.4	7.5	3.5
Magnesium (Mg)	mg/L	-	0.1	2.7	2.4	1.1	3	1.3	0.5	0.4
Phosphorus (P)	mg/L	-	0.1	ND	-	ND	ND	ND	ND	ND
Potassium (K)	mg/L	-	0.1	2.5	2.3	0.9	0.9	4.5	4.4	1.8
Sodium (Na)	mg/L	200 AO	0.1	6.8	3.2	8.1	16	37	33	140
Bromide (Br)	mg/L	-	0.5	ND	-	0.5	ND	ND	2.6	ND
Fluoride (F)	mg/L	1.5	0.1	ND	ND	ND	1.1	1.6	**2.5**	1.1
Metals										
Aluminum (Al)	ug/L	-	10	ND	ND	45	ND	ND	ND	53
Antimony (Sb)	ug/L	6	2	ND	ND	ND	ND	ND	ND	ND
Arsenic (As)	ug/L	10	2	ND	ND	ND	ND	ND	**18**	ND
Barium (Ba)	ug/L	1000	5	18	16	14	6	5	72	36
Beryllium (Be)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Bismuth (Bi)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Boron (B)	ug/L	5000	5	7	7	6	27	120	35	74
Cadmium (Cd)	ug/L	5	0.3	ND	ND	ND	ND	ND	ND	ND
Chromium (Cr)	ug/L	50	2	ND	ND	ND	ND	ND	ND	ND
Cobalt (Co)	ug/L	-	1	ND	ND	4	ND	ND	ND	ND
Copper (Cu)	ug/L	1000 AO	2	ND	ND	ND	ND	ND	ND	ND
Iron (Fe)	ug/L	300 AO	50	ND	ND	**8700**	150	ND	140	59
Lead (Pb)	ug/L	10	0.5	ND	ND	1.5	ND	ND	0.7	ND
Manganese (Mn)	ug/L	50 AO	2	ND	ND	**770**	**150**	35	**60**	16
Molybdenum (Mo)	ug/L	-	2	ND	ND	ND	6	5	3	3
Mercury (Hg)	ug/L	1	0.01	ND	ND	ND	0.01	0.01	ND	ND
Nickel (Ni)	ug/L	-	2	ND	ND	5	ND	ND	ND	ND
Selenium (Se)	ug/L	10	2	ND	ND	ND	ND	ND	ND	ND
Silver (Ag)	ug/L	-	0.5	ND	ND	ND	ND	ND	ND	ND
Strontium (Sr)	ug/L	-	5	420	420	11	99	39	100	62
Thallium (Tl)	ug/L	-	0.1	ND	ND	ND	ND	ND	ND	ND
Tin (Sn)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Titanium (Ti)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Uranium (U)	ug/L	20	0.1	8.4	9.7	ND	0.2	ND	0.2	ND
Vanadium (V)	ug/L	-	2	ND	ND	ND	ND	ND	ND	ND
Zinc (Zn)	ug/L	5000 AO	5	ND	6	21	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C2: General Chemistry and Metal Results

Parameter	Units	Drinking Water Guideline	Detection Limit	Coldbrook (081)	Long Point (082)	Tatamagouche (083)
				5-Aug-2009	12-Aug-2009	21-Jul-2008
General Chemistry						
Total Alkalinity (Total as CaCO3)	mg/L	-	5	37	99	210
Chloride (Cl)	mg/L	250 AO	1	3	61	7
Colour	TCU	15 AO	5	ND	ND	**25**
Hardness (CaCO3)	mg/L	500 AO	-	33	130	20
Nitrate + Nitrite	mg/L	10	0.05	0.16	0.10	ND
Nitrite (N)	mg/L	1	0.01	ND	ND	ND
Nitrate (N)	mg/L	10	0.05	0.16	0.10	ND
Nitrogen (Ammonia Nitrogen)	mg/L	-	0.05	ND	ND	ND
Total Organic Carbon (C)	mg/L	-	0.5	ND	ND	ND
Orthophosphate (P)	mg/L	-	0.01	0.03	ND	ND
pH	pH	6.5 - 8.5 AO	-	7.36	7.64	**9.12**
Reactive Silica (SiO2)	mg/L		0.5	11	8.0	8
Sulphate (SO4)	mg/L	500 AO	2	ND	29	18
Turbidity	NTU	5 AO	0.1	4.7	0.1	**21**
Conductivity	uS/cm	-	-	84	400	440
Anion Sum	me/L	-	-	0.85	4.32	4.78
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	-	1	37	99	187
Calculated TDS	mg/L	-	1	54	246	270
Carb. Alkalinity (calc. as CaCO3)	mg/L	-	1	ND	ND	23
Cation Sum	me/L	-	-	0.82	4.31	4.89
Ion Balance (% Difference)	%	-	-	1.8	0.12	1.14
Langelier Index (@ 20C)	N/A	-	-	-1.32	-0.111	0.784
Langelier Index (@ 4C)	N/A	-	-	-1.57	-0.361	0.534
Saturation pH (@ 20C)	N/A	-	-	8.68	7.75	8.34
Saturation pH (@ 4C)	N/A	-	-	8.93	8.00	8.59
Calcium (Ca)	mg/L	-	0.1	12	44	6.3
Magnesium (Mg)	mg/L	-	0.1	1.1	5.8	0.9
Phosphorus (P)	mg/L	-	0.1	ND	ND	ND
Potassium (K)	mg/L	-	0.1	1.2	1.7	0.4
Sodium (Na)	mg/L	200 AO	0.1	2.9	37	100
Bromide (Br)	mg/L	-	0.5	ND	ND	ND
Fluoride (F)	mg/L	1.5	0.1	0.1	0.1	0.9
Metals						
Aluminum (Al)	ug/L	-	10	ND	ND	100
Antimony (Sb)	ug/L	6	2	ND	ND	ND
Arsenic (As)	ug/L	10	2	ND	ND	8
Barium (Ba)	ug/L	1000	5	10	100	68
Beryllium (Be)	ug/L	-	2	ND	ND	ND
Bismuth (Bi)	ug/L	-	2	ND	ND	ND
Boron (B)	ug/L	5000	5	7	19	61
Cadmium (Cd)	ug/L	5	0.3	ND	ND	ND
Chromium (Cr)	ug/L	50	2	ND	ND	ND
Cobalt (Co)	ug/L	-	1	ND	ND	ND
Copper (Cu)	ug/L	1000 AO	2	ND	ND	ND
Iron (Fe)	ug/L	300 AO	50	ND	ND	150
Lead (Pb)	ug/L	10	0.5	ND	ND	ND
Manganese (Mn)	ug/L	50 AO	2	ND	2	**160**
Molybdenum (Mo)	ug/L	-	2	ND	ND	15
Mercury (Hg)	ug/L	1	0.01	ND	ND	0.01
Nickel (Ni)	ug/L	-	2	ND	ND	ND
Selenium (Se)	ug/L	10	2	ND	ND	ND
Silver (Ag)	ug/L	-	0.5	ND	ND	ND
Strontium (Sr)	ug/L	-	5	61	200	71
Thallium (Tl)	ug/L	-	0.1	ND	ND	ND
Tin (Sn)	ug/L	-	2	ND	ND	ND
Titanium (Ti)	ug/L	-	2	ND	ND	5
Uranium (U)	ug/L	20	0.1	0.2	0.7	11
Vanadium (V)	ug/L	-	2	ND	ND	ND
Zinc (Zn)	ug/L	5000 AO	5	ND	10	6

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Greenwood (003)		Fraser Brook (004)		Wilmot (005)	
			23-Nov-2005	18-Dec-2008	10-Dec-2004	03-Dec-2008	29-Nov-2006	12-May-2010
CHLOROBENZENES								
1,2-Dichlorobenzene	200	0.5	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND	ND	ND	ND	ND
Chlorobenzene	80	1	ND	ND	ND	ND	ND	ND
VOLATILES								
1,1,1-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	2	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	14	2	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	1	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	1	ND	ND	ND	ND	ND	ND
Benzene	5	1	ND	ND	ND	ND	ND	ND
Bromodichloromethane	16	1	ND	ND	ND	ND	ND	ND
Bromoform	100	1	ND	ND	ND	ND	ND	ND
Bromomethane	-	8	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	1	ND	ND	ND	ND	ND	ND
Chloroethane	-	8	ND	ND	ND	ND	ND	ND
Chloroform	100	1	ND	ND	ND	ND	ND	ND
Chloromethane	-	8	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100	1	ND	ND	ND	ND	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND	ND	ND	ND	ND
Ethylene Dibromide	-	1	ND	ND	ND	ND	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND	ND	ND	ND	ND
o-Xylene	300 AO	1	ND	ND	ND	ND	ND	ND
p+m-Xylene	300 AO	2	ND	ND	ND	ND	ND	ND
Styrene	-	1	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	30	1	ND	ND	ND	ND	ND	ND
Toluene	24 AO	1	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND	ND	ND	ND	ND
Trichloroethylene	5	1	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Wolfville (010)		Monastery (028)		Point Aconi (030)	
			22-Dec-2004	18-Dec-2008	15-Dec-2006	09-Dec-2008	15-Sep-2005	10-Dec-2008
CHLOROBENZENES								
1,2-Dichlorobenzene	200	0.5	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND	ND	ND	ND	ND
Chlorobenzene	80	1	ND	ND	ND	ND	ND	ND
VOLATILES								
1,1,1-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	2	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	14	2	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	1	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	1	ND	ND	ND	ND	ND	ND
Benzene	5	1	ND	ND	ND	ND	ND	ND
Bromodichloromethane	16	1	ND	ND	ND	ND	ND	ND
Bromoform	100	1	ND	ND	ND	ND	ND	ND
Bromomethane	-	8	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	1	ND	ND	ND	ND	ND	ND
Chloroethane	-	8	ND	ND	ND	ND	ND	ND
Chloroform	100	1	ND	ND	ND	ND	ND	ND
Chloromethane	-	8	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100	1	ND	ND	ND	ND	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND	ND	ND	ND	ND
Ethylene Dibromide	-	1	ND	ND	ND	ND	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND	ND	ND	ND	ND
o-Xylene	300 AO	1	ND	ND	ND	ND	ND	ND
p+m-Xylene	300 AO	2	ND	ND	ND	ND	ND	ND
Styrene	-	1	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	30	1	ND	ND	ND	ND	ND	ND
Toluene	24 AO	1	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND	ND	ND	ND	ND
Trichloroethylene	5	1	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Lawrencetown (043)	Durham (045)		Kentville (048)	Sydney (050)	
			05-Dec-2008	05-Oct-2005	21-Jan-2009	07-Nov-2007	15-Sep-2005	11-Dec-2008
CHLOROBENZENES								
1,2-Dichlorobenzene	200	0.5	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND	ND	ND	ND	ND
Chlorobenzene	80	1	ND	ND	ND	ND	ND	ND
VOLATILES								
1,1,1-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	2	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	14	2	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	1	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	1	ND	ND	ND	ND	ND	ND
Benzene	5	1	ND	ND	ND	ND	ND	ND
Bromodichloromethane	16	1	ND	ND	ND	ND	ND	ND
Bromoform	100	1	ND	ND	ND	ND	ND	ND
Bromomethane	-	8	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	1	ND	ND	ND	ND	ND	ND
Chloroethane	-	8	ND	ND	ND	ND	ND	ND
Chloroform	100	1	ND	ND	ND	ND	ND	ND
Chloromethane	-	8	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100	1	ND	ND	ND	ND	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND	ND	ND	ND	ND
Ethylene Dibromide	-	1	ND	ND	ND	ND	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND	ND	ND	ND	ND
o-Xylene	300 AO	1	ND	ND	ND	ND	ND	ND
p+m-Xylene	300 AO	2	ND	ND	ND	ND	ND	ND
Styrene	-	1	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	30	1	ND	ND	ND	ND	ND	ND
Toluene	24 AO	1	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND	ND	ND	ND	ND
Trichloroethylene	5	1	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
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Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	North Grant (054)		Stillwater (055)		Sheet Harbour (056)
			13-Dec-2006	22-Jul-2008	13-Dec-2006	04-Dec-2008	05-Dec-2008
CHLOROBENZENES							
1,2-Dichlorobenzene	200	0.5	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND	ND	ND	ND
Chlorobenzene	80	1	ND	ND	ND	ND	ND
VOLATILES							
1,1,1-Trichloroethane	-	1	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	2	ND	ND	ND	ND	ND
1,1-Dichloroethylene	14	2	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	1	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	1	ND	ND	ND	ND	ND
Benzene	5	1	ND	ND	ND	ND	ND
Bromodichloromethane	16	1	ND	ND	ND	ND	ND
Bromoform	100	1	ND	ND	ND	ND	ND
Bromomethane	-	8	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	1	ND	ND	ND	ND	ND
Chloroethane	-	8	ND	ND	ND	ND	ND
Chloroform	100	1	ND	ND	ND	ND	ND
Chloromethane	-	8	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND	ND	ND	ND
Dibromochloromethane	100	1	ND	ND	ND	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND	ND	ND	ND
Ethylene Dibromide	-	1	ND	ND	ND	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND	ND	ND	ND
o-Xylene	300 AO	1	ND	ND	ND	ND	ND
p+m-Xylene	300 AO	2	ND	ND	ND	ND	ND
Styrene	-	1	ND	ND	ND	ND	ND
Tetrachloroethylene	30	1	ND	ND	ND	ND	ND
Toluene	24 AO	1	ND	ND	1	ND	ND
trans-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND	ND	ND	ND
Trichloroethylene	5	1	ND	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Hayden Lake (059)		Meteghan (060)		Annapolis Royal (062)			Hebron (063)	
			09-Jun-2005	16-Dec-2008	13-Dec-2006	17-Dec-2008	09-Nov-2005	26-Nov-2007	01-Jun-2010	09-Jun-2005	17-Dec-2008
CHLOROBENZENES											
1,2-Dichlorobenzene	200	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	80	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
VOLATILES											
1,1,1-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	14	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	16	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	100	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	-	8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	-	8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	100	1	3.2	ND	ND	ND	ND (2)	ND	ND	ND	ND
Chloromethane	-	8	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylene Dibromide	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	300 AO	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
p+m-Xylene	300 AO	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	30	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	24 AO	1	ND	ND	ND	ND	2	1	ND	ND	ND
trans-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Margaree (064)		Ingonish (065)	Dalem Lake (069)	
			14-Dec-2006	10-Dec-2008	25-Aug-2009	14-Dec-2006	11-Dec-2008
CHLOROBENZENES							
1,2-Dichlorobenzene	200	0.5	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND	ND	ND	ND
Chlorobenzene	80	1	ND	ND	ND	ND	ND
VOLATILES							
1,1,1-Trichloroethane	-	1	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	2	ND	ND	ND	ND	ND
1,1-Dichloroethylene	14	2	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	1	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	1	ND	ND	ND	ND	ND
Benzene	5	1	ND	ND	ND	ND	ND
Bromodichloromethane	16	1	ND	ND	ND	ND	ND
Bromoform	100	1	ND	ND	ND	ND	ND
Bromomethane	-	8	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	1	ND	ND	ND	ND	ND
Chloroethane	-	8	ND	ND	ND	ND	ND
Chloroform	100	1	ND	ND	ND	ND	ND
Chloromethane	-	8	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND	ND	ND	ND
Dibromochloromethane	100	1	ND	ND	ND	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND	ND	ND	ND
Ethylene Dibromide	-	1	ND	ND	ND	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND	ND	ND	ND
o-Xylene	300 AO	1	ND	ND	ND	ND	ND
p+m-Xylene	300 AO	2	ND	ND	ND	ND	ND
Styrene	-	1	ND	ND	ND	ND	ND
Tetrachloroethylene	30	1	ND	ND	ND	ND	ND
Toluene	24 AO	1	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND	ND	ND	ND
Trichloroethylene	5	1	ND	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Amherst (071)		Kelley River (073)		Atlanta (074)		Sheffield Mills (075)	
			16-Dec-2006	08-Jan-2009	12-Jan-2007	09-Jun-2009	03-Sep-2007	08-Jun-2010	10-Sep-2007	09-Jun-2010
CHLOROBENZENES										
1,2-Dichlorobenzene	200	0.5	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	80	1	ND	ND	ND	ND	ND	ND	ND	ND
VOLATILES										
1,1,1-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	2	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	14	2	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	1	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	1	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	1	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	16	1	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	100	1	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	-	8	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	1	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	-	8	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	100	1	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	-	8	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100	1	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND	ND	ND	ND	ND	ND	ND
Ethylene Dibromide	-	1	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	300 AO	1	ND	ND	ND	ND	ND	ND	ND	ND
p+m-Xylene	300 AO	2	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	-	1	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	30	1	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	24 AO	1	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	5	1	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
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Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Fall River (076)	West Northfield (077)	Musquodoboit Hbr (078)	Lewis Lake (079)	Arisaig (080)	Coldbrook (081)
			20-May-2008	12-Jun-2008	22-May-2008	31-Jul-2008	08-Sep-2009	05-Aug-2009
CHLOROBENZENES								
1,2-Dichlorobenzene	200	0.5	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND	ND	ND	ND	ND
Chlorobenzene	80	1	ND	ND	ND	ND	ND	ND
VOLATILES								
1,1,1-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	2	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	14	2	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	1	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	-	1	ND	ND	ND	ND	ND	ND
Benzene	5	1	ND	ND	ND	ND	ND	ND
Bromodichloromethane	16	1	ND	ND	ND	ND	ND	ND
Bromoform	100	1	ND	ND	ND	ND	ND	ND
Bromomethane	-	8	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	1	ND	ND	ND	ND	ND	ND
Chloroethane	-	8	ND	ND	ND	ND	ND	ND
Chloroform	100	1	ND	ND	ND	ND	ND	ND
Chloromethane	-	8	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100	1	ND	ND	ND	ND	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND	ND	ND	ND	ND
Ethylene Dibromide	-	1	ND	ND	ND	ND	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND	ND	ND	ND	ND
o-Xylene	300 AO	1	ND	ND	ND	ND	ND	ND
p+m-Xylene	300 AO	2	ND	ND	ND	ND	ND	ND
Styrene	-	1	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	30	1	ND	ND	ND	ND	ND	ND
Toluene	24 AO	1	ND	ND	ND	ND	2	ND
trans-1,2-Dichloroethylene	-	2	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND	ND	ND	ND	ND
Trichloroethylene	5	1	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	1	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C3: Volatile Organic Compound (VOC) Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Long Point (082)	Tatamagouche (083)
			12-Aug-2009	21-Jul-2008
CHLOROBENZENES				
1,2-Dichlorobenzene	200	0.5	ND	ND
1,3-Dichlorobenzene	-	1	ND	ND
1,4-Dichlorobenzene	5	1	ND	ND
Chlorobenzene	80	1	ND	ND
VOLATILES				
1,1,1-Trichloroethane	-	1	ND	ND
1,1,2,2-Tetrachloroethane	-	1	ND	ND
1,1,2-Trichloroethane	-	1	ND	ND
1,1-Dichloroethane	-	2	ND	ND
1,1-Dichloroethylene	14	2	ND	ND
1,2-Dichloroethane	5	1	ND	ND
1,2-Dichloropropane	-	1	ND	ND
Benzene	5	1	ND	ND
Bromodichloromethane	16	1	ND	ND
Bromoform	100	1	ND	ND
Bromomethane	-	8	ND	ND
Carbon Tetrachloride	5	1	ND	ND
Chloroethane	-	8	ND	ND
Chloroform	100	1	ND	ND
Chloromethane	-	8	ND	ND
cis-1,2-Dichloroethylene	-	2	ND	ND
cis-1,3-Dichloropropene	-	2	ND	ND
Dibromochloromethane	100	1	ND	ND
Ethylbenzene	2.4 AO	1	ND	ND
Ethylene Dibromide	-	1	ND	ND
Methylene Chloride(Dichloromethane)	-	3	ND	ND
o-Xylene	300 AO	1	ND	ND
p+m-Xylene	300 AO	2	ND	ND
Styrene	-	1	ND	ND
Tetrachloroethylene	30	1	ND	ND
Toluene	24 AO	1	2	ND
trans-1,2-Dichloroethylene	-	2	ND	ND
trans-1,3-Dichloropropene	-	1	ND	ND
Trichloroethylene	5	1	ND	ND
Trichlorofluoromethane (FREON 11)	-	8	ND	ND
Vinyl Chloride	2	1	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Greenwood (003)		Fraser Brook (004)		Wilmot (005)	Wolfville (010)		Monastery (028)
			23-Nov-2005	18-Dec-2008	10-Dec-2004	3-Dec-2008	12-May-2010	22-Dec-2004	18-Dec-2008	15-Dec-2006
Herbicides										
Atrazine	5	0.2	ND	ND	ND	ND	ND	ND	ND	ND
De-ethyl Atrazine		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Butylate		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Cyanazine	10	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Desmetryn		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Diphenylamine		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Eptam		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Ethalfluralin		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Hexazinone		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Metalaxyl		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Metribuzin	80	0.3	ND	ND	ND	ND	ND	ND	ND	ND
Metolachlor	50	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Pirimicarb		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Profluralin		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Prometryn		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Propazine		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Simazine	10	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Terbuthylazine		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Terbutryn		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Triallate		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Triadimefon		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Trifluralin	45	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Organochlorine Pesticides										
Alachlor		0.5	ND		ND	ND	ND	ND		ND
Aldrin + Dieldrin	0.7	0.5	ND	ND	ND	ND	ND	ND	ND	ND
BHC, alpha-		0.3	ND	ND	ND	ND	ND	ND	ND	ND
BHC, beta-		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Captan		1	ND	ND	ND	ND	ND	ND	ND	ND
Chlorbenside		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane, alpha-		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane, gamma-		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Chlorfenson (Ovex)		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Chlorothalonil (Daconil)		1	ND	ND	ND	ND	ND	ND	ND	ND
Chlorpropham		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Dacthal (DCPA)		0.1	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE		0.01	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
DDT - orthopara (2,4')		0.01	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
DDT - parapara (4,4')		0.01	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Diallate(e/z)		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Dichlobenil		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Dichloran		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Dichlofluanid		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Dicofol		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulphate		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Endrin		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Folpet		1	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Lindane (BHC), gamma-		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Methidathion		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	900	0.1	ND	ND	ND	ND	ND	ND	ND	-
Mirex		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Nitrofen		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Permethrin-cis/trans		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Procymidone		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Pronamide		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Quintozene (Pentachloronitrobenzene)		0.5	ND	ND	-	-	-	-	ND	-
Tecnazene		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Tetradifon		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Tolylfluanid		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Vinclozolin		0.5	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Point Aconi (030)		Lawrencetown (043)	Durham (045)		Kentville (048)	
			15-Sep-2005	10-Dec-2008	5-Dec-2008	5-Oct-2005	21-Jan-2009	15-Jun-2005	7-Nov-2007
Herbicides									
Atrazine	5	0.2	ND	ND	ND	ND	ND	ND (1)	ND
De-ethyl Atrazine		0.3	ND	ND	ND	ND	ND	-	ND
Butylate		0.5	ND	ND	ND	ND	ND	-	ND
Cyanazine	10	0.5	ND	ND	ND	ND	ND	-	ND
Desmetryn		0.3	ND	ND	ND	ND	ND	-	ND
Diphenylamine		0.1	ND	ND	ND	ND	ND	-	ND
Eptam		0.5	ND	ND	ND	ND	ND	-	ND
Ethalfluralin		0.5	ND	ND	ND	ND	ND	-	ND
Hexazinone		0.1	ND	ND	ND	ND	ND	-	ND
Metalaxyl		0.3	ND	ND	ND	ND	ND	-	ND
Metribuzin	80	0.3	ND	ND	ND	ND	ND	-	ND
Metolachlor	50	0.2	ND	ND	ND	ND	ND	-	ND
Pirimicarb		0.5	ND	ND	ND	ND	ND	-	ND
Profluralin		0.5	ND	ND	ND	ND	ND	-	ND
Prometryn		0.2	ND	ND	ND	ND	ND	-	ND
Propazine		0.1	ND	ND	ND	ND	ND	-	ND
Simazine	10	0.5	ND	ND	ND	ND	ND	-	ND
Terbuthylazine		0.1	ND	ND	ND	ND	ND	-	ND
Terbutryn		0.2	ND	ND	ND	ND	ND	-	ND
Triallate		0.3	ND	ND	ND	ND	ND	-	ND
Triadimefon		0.3	ND	ND	ND	ND	ND	-	ND
Trifluralin	45	0.2	ND	ND	ND	ND	ND	-	ND
Organochlorine Pesticides									
Alachlor		0.5	ND	-	-	ND	ND	-	ND
Aldrin + Dieldrin	0.7	0.5	ND	ND	ND	ND	ND	-	ND
BHC, alpha-		0.3	ND	ND	ND	ND	ND	-	ND
BHC, beta-		0.3	ND	ND	ND	ND	ND	-	ND
Captan		1	ND	ND	ND	ND	ND	-	ND
Chlorbenside		0.1	ND	ND	ND	ND	ND	-	ND
Chlordane, alpha-		0.5	ND	ND	ND	ND	ND	-	ND
Chlordane, gamma-		0.5	ND	ND	ND	ND	ND	-	ND
Chlorfenson (Ovex)		0.2	ND	ND	ND	ND	ND	-	ND
Chlorothalonil (Daconil)		1	ND	ND	ND	ND	ND	-	ND
Chlorpropham		0.2	ND	ND	ND	ND	ND	-	ND
Dacthal (DCPA)		0.1	ND	ND	ND	ND	ND	-	ND
4,4'-DDE		0.01	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND	ND (0.1)
DDT - orthopara (2,4')		0.01	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND	ND (0.2)
DDT - parapara (4,4')		0.01	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND	ND (0.2)
Diallate(e/z)		0.5	ND	ND	ND	ND	ND	-	ND
Dichlobenil		0.2	ND	ND	ND	ND	ND	-	ND
Dichloran		0.5	ND	ND	ND	ND	ND	-	ND
Dichlofluanid		0.5	ND	ND	ND	ND	ND	-	ND
Dicofol		0.2	ND	ND	ND	ND	ND	-	ND
Endosulfan I		0.5	ND	ND	ND	ND	ND	-	ND
Endosulfan II		0.5	ND	ND	ND	ND	ND	-	ND
Endosulfan Sulphate		0.5	ND	ND	ND	ND	ND	-	ND
Endrin		0.5	ND	ND	ND	ND	ND	-	ND
Folpet		1	ND	ND	ND	ND	ND	-	ND
Heptachlor		0.5	ND	ND	ND	ND	ND	-	ND
Lindane (BHC), gamma-		0.5	ND	ND	ND	ND	ND	-	ND
Methidathion		0.3	ND	ND	ND	ND	ND	-	ND
Methoxychlor	900	0.1	ND	ND	ND	ND	ND	-	ND
Mirex		0.3	ND	ND	ND	ND	ND	-	ND
Nitrofen		0.2	ND	ND	ND	ND	ND	-	ND
Permethrin-cis/trans		0.5	ND	ND	ND	ND	ND	-	ND
Procymidone		0.2	ND	ND	ND	ND	ND	-	ND
Pronamide		0.2	ND	ND	ND	ND	ND	-	ND
Quintozene (Pentachloronitrobenzene)		0.5	ND	ND	ND	ND	ND	-	ND
Tecnazene		0.5	ND	ND	ND	ND	ND	-	ND
Tetradifon		0.2	ND	ND	ND	ND	ND	-	ND
Tolylfluanid		0.5	ND	ND	ND	ND	ND	-	ND
Vinclozolin		0.5	ND	ND	ND	ND	ND	-	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Sydney (050)		North Grant (054)		Stillwater (055)		Sheet Harbour (056)
			15-Sep-2005	11-Dec-2008	12-Dec-2006	22-Jul-2008	12-Dec-2006	4-Dec-2008	5-Dec-2008
Herbicides									
Atrazine	5	0.2	ND	ND	ND	ND	ND	ND	ND
De-ethyl Atrazine		0.3	ND	ND	ND	ND	ND	ND	ND
Butylate		0.5	ND	ND	ND	ND	ND	ND	ND
Cyanazine	10	0.5	ND	ND	ND	ND	ND	ND	ND
Desmetryn		0.3	ND	ND	ND	ND	ND	ND	ND
Diphenylamine		0.1	ND	ND	ND	ND	ND	ND	ND
Eptam		0.5	ND	ND	ND	ND	ND	ND	ND
Ethalfluralin		0.5	ND	ND	ND	ND	ND	ND	ND
Hexazinone		0.1	ND	ND	ND	ND	ND	ND	ND
Metalaxyl		0.3	ND	ND	ND	ND	ND	ND	ND
Metribuzin	80	0.3	ND	ND	ND	ND	ND	ND	ND
Metolachlor	50	0.2	ND	ND	ND	ND	ND	ND	ND
Pirimicarb		0.5	ND	ND	ND	ND	ND	ND	ND
Profluralin		0.5	ND	ND	ND	ND	ND	ND	ND
Prometryn		0.2	ND	ND	ND	ND	ND	ND	ND
Propazine		0.1	ND	ND	ND	ND	ND	ND	ND
Simazine	10	0.5	ND	ND	ND	ND	ND	ND	ND
Terbuthylazine		0.1	ND	ND	ND	ND	ND	ND	ND
Terbutryn		0.2	ND	ND	ND	ND	ND	ND	ND
Triallate		0.3	ND	ND	ND	ND	ND	ND	ND
Triadimefon		0.3	ND	ND	ND	ND	ND	ND	ND
Trifluralin	45	0.2	ND	ND	ND	ND	ND	ND	ND
Organochlorine Pesticides									
Alachlor		0.5	ND	ND	ND	ND	ND	ND	-
Aldrin + Dieldrin	0.7	0.5	ND	ND	ND	ND (0.02)	ND	ND	ND
BHC, alpha-		0.3	ND	ND	ND	ND (0.1)	ND	ND	ND
BHC, beta-		0.3	ND	ND	ND	ND (0.1)	ND	ND	ND
Captan		1	ND	ND	ND	ND	ND	ND	ND
Chlorbenside		0.1	ND	ND	ND	ND	ND	ND	ND
Chlordane, alpha-		0.5	ND	ND	ND	ND (0.06)	ND	ND	ND
Chlordane, gamma-		0.5	ND	ND	ND	ND (0.06)	ND	ND	ND
Chlorfenson (Ovex)		0.2	ND	ND	ND	ND	ND	ND	ND
Chlorothalonil (Daconil)		1	ND	ND	ND	ND	ND	ND	ND
Chlorpropham		0.2	ND	ND	ND	ND	ND	ND	ND
Dacthal (DCPA)		0.1	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE		0.01	ND (0.1)	ND (0.1)	ND	ND	ND	ND (0.1)	ND (0.1)
DDT - orthopara (2,4')		0.01	ND (0.2)	ND (0.2)	ND	ND	ND	ND (0.2)	ND (0.2)
DDT - parapara (4,4')		0.01	ND (0.2)	ND (0.2)	ND	ND	ND	ND (0.2)	ND (0.2)
Diallate(e/z)		0.5	ND	ND	ND	ND	ND	ND	ND
Dichlobenil		0.2	ND	ND	ND	ND	ND	ND	ND
Dichloran		0.5	ND	ND	ND	ND	ND	ND	ND
Dichlofluanid		0.5	ND	ND	ND	ND	ND	ND	ND
Dicofol		0.2	ND	ND	ND	ND	ND	ND	ND
Endosulfan I		0.5	ND	ND	ND	ND (0.2)	ND	ND	ND
Endosulfan II		0.5	ND	ND	ND	ND (0.2)	ND	ND	ND
Endosulfan Sulphate		0.5	ND	ND	ND	ND (0.2)	ND	ND	ND
Endrin		0.5	ND	ND	ND	ND (0.02)	ND	ND	ND
Folpet		1	ND	ND	ND	ND	ND	ND	ND
Heptachlor		0.5	ND	ND	ND	ND (0.1)	ND	ND	ND
Lindane (BHC), gamma-		0.5	ND	ND	ND	ND (0.1)	ND	ND	ND
Methidathion		0.3	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	900	0.1	ND	ND	ND	ND	ND	ND	ND
Mirex		0.3	ND	ND	ND	ND	ND	ND	ND
Nitrofen		0.2	ND	ND	ND	ND	ND	ND	ND
Permethrin-cis/trans		0.5	ND	ND	ND	ND	ND	ND	ND
Procymidone		0.2	ND	ND	ND	ND	ND	ND	ND
Pronamide		0.2	ND	ND	ND	ND	ND	ND	ND
Quintozene (Pentachloronitrobenzene)		0.5	ND	ND	ND	ND	ND	ND	ND
Tecnazene		0.5	ND	ND	ND	ND	ND	ND	ND
Tetradifon		0.2	ND	ND	ND	ND	ND	ND	ND
Tolylfluanid		0.5	ND	ND	ND	ND	ND	ND	ND
Vinclozolin		0.5	ND	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Hayden Lake (059)		Meteghan (060)		Annapolis Royal (062)			Hebron (063)	
			9-Jun-2005	16-Dec-2008	13-Dec-2006	17-Dec-2008	9-Nov-2005	26-Nov-2007	1-Jun-2010	9-Jun-2005	17-Dec-2008
Herbicides											
Atrazine	5	0.2	ND (2.5)	ND	ND	ND	ND	ND	ND	ND (2.5)	ND
De-ethyl Atrazine		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Butylate		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Cyanazine	10	0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Desmetryn		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Diphenylamine		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Eptam		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Ethalfluralin		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Hexazinone		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Metalaxyl		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Metribuzin	80	0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Metolachlor	50	0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Pirimicarb		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Profluralin		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Prometryn		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Propazine		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Simazine	10	0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Terbuthylazine		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Terbutryn		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Triallate		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Triadimefon		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Trifluralin	45	0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Organochlorine Pesticides											
Alachlor		0.5	-	-	ND	ND	ND	ND	ND	-	-
Aldrin + Dieldrin	0.7	0.5	-	ND	ND	ND	ND	ND	ND	-	ND
BHC, alpha-		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
BHC, beta-		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Captan		1	-	ND	ND	ND	ND	ND	ND	-	ND
Chlorbenside		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Chlordane, alpha-		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Chlordane, gamma-		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Chlorfenson (Ovex)		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Chlorothalonil (Daconil)		1	-	ND	ND	ND	ND	ND	ND	-	ND
Chlorpropham		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Dacthal (DCPA)		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
4,4'-DDE		0.01	ND	ND (0.1)	ND	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND	ND (0.1)
DDT - orthopara (2,4')		0.01	ND	ND (0.2)	ND	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND	ND (0.2)
DDT - parapara (4,4')		0.01	ND	ND (0.2)	ND	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND	ND (0.2)
Diallate(e/z)		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Dichlobenil		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Dichloran		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Dichlofluanid		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Dicofol		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Endosulfan I		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Endosulfan II		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Endosulfan Sulphate		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Endrin		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Folpet		1	-	ND	ND	ND	ND	ND	ND	-	ND
Heptachlor		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Lindane (BHC), gamma-		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Methidathion		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Methoxychlor	900	0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Mirex		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Nitrofen		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Permethrin-cis/trans		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Procymidone		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Pronamide		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Quintozene (Pentachloronitrobenzene)		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Tecnazene		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Tetradifon		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Tolylfluanid		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Vinclozolin		0.5	-	ND	ND	ND	ND	ND	ND	-	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Margaree (064)		Ingonish (065)	Dalem Lake (069)		Amherst (071)	
			14-Dec-2006	8-Dec-2008	25-Aug-2009	14-Dec-2006	11-Dec-2008	16-Dec-2006	8-Jan-2009
Herbicides									
Atrazine	5	0.2	ND	ND	ND	ND	ND	ND	ND
De-ethyl Atrazine		0.3	ND	ND	ND	ND	ND	ND	ND
Butylate		0.5	ND	ND	ND	ND	ND	ND	ND
Cyanazine	10	0.5	ND	ND	ND	ND	ND	ND	ND
Desmetryn		0.3	ND	ND	ND	ND	ND	ND	ND
Diphenylamine		0.1	ND	ND	ND	ND	ND	ND	ND
Eptam		0.5	ND	ND	ND	ND	ND	ND	ND
Ethalfluralin		0.5	ND	ND	ND	ND	ND	ND	ND
Hexazinone		0.1	ND	ND	ND	ND	ND	ND	ND
Metalaxyl		0.3	ND	ND	ND	ND	ND	ND	ND
Metribuzin	80	0.3	ND	ND	ND	ND	ND	ND	ND
Metolachlor	50	0.2	ND	ND	ND	ND	ND	ND	ND
Pirimicarb		0.5	ND	ND	ND	ND	ND	ND	ND
Profluralin		0.5	ND	ND	ND	ND	ND	ND	ND
Prometryn		0.2	ND	ND	ND	ND	ND	ND	ND
Propazine		0.1	ND	ND	ND	ND	ND	ND	ND
Simazine	10	0.5	ND	ND	ND	ND	ND	ND	ND
Terbuthylazine		0.1	ND	ND	ND	ND	ND	ND	ND
Terbutryn		0.2	ND	ND	ND	ND	ND	ND	ND
Triallate		0.3	ND	ND	ND	ND	ND	ND	ND
Triadimefon		0.3	ND	ND	ND	ND	ND	ND	ND
Trifluralin	45	0.2	ND	ND	ND	ND	ND	ND	ND
Organochlorine Pesticides									
Alachlor		0.5	ND	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	0.7	0.5	ND	ND	ND (0.02)	ND	ND	ND	ND
BHC, alpha-		0.3	ND	ND	ND (0.1)	ND	ND	ND	ND
BHC, beta-		0.3	ND	ND	ND (0.1)	ND	ND	ND	ND
Captan		1	ND	ND	ND	ND	ND	ND	ND
Chlorbenside		0.1	ND	ND	ND	ND	ND	ND	ND
Chlordane, alpha-		0.5	ND	ND	ND (0.06)	ND	ND	ND	ND
Chlordane, gamma-		0.5	ND	ND	ND (0.06)	ND	ND	ND	ND
Chlorfenson (Ovex)		0.2	ND	ND	ND	ND	ND	ND	ND
Chlorothalonil (Daconil)		1	ND	ND	ND	ND	ND	ND	ND
Chlorpropham		0.2	ND	ND	ND	ND	ND	ND	ND
Dacthal (DCPA)		0.1	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE		0.01	ND	ND (0.1)	ND	ND	ND (0.1)	ND	ND
DDT - orthopara (2,4')		0.01	ND	ND (0.2)	ND	ND	ND (0.2)	ND	ND
DDT - parapara (4,4')		0.01	ND	ND (0.2)	ND	ND	ND (0.2)	ND	ND
Diallate(e/z)		0.5	ND	ND	ND	ND	ND	ND	ND
Dichlobenil		0.2	ND	ND	ND	ND	ND	ND	ND
Dichloran		0.5	ND	ND	ND	ND	ND	ND	ND
Dichlofluanid		0.5	ND	ND	ND	ND	ND	ND	ND
Dicofol		0.2	ND	ND	ND	ND	ND	ND	ND
Endosulfan I		0.5	ND	ND	ND (0.2)	ND	ND	ND	ND
Endosulfan II		0.5	ND	ND	ND (0.2)	ND	ND	ND	ND
Endosulfan Sulphate		0.5	ND	ND	ND (0.2)	ND	ND	ND	ND
Endrin		0.5	ND	ND	ND (0.02)	ND	ND	ND	ND
Folpet		1	ND	ND	ND	ND	ND	ND	ND
Heptachlor		0.5	ND	ND	ND (0.1)	ND	ND	ND	ND
Lindane (BHC), gamma-		0.5	ND	ND	ND (0.1)	ND	ND	ND	ND
Methidathion		0.3	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	900	0.1	ND	ND	ND	ND	ND	ND	ND
Mirex		0.3	ND	ND	ND	ND	ND	ND	ND
Nitrofen		0.2	ND	ND	ND	ND	ND	ND	ND
Permethrin-cis/trans		0.5	ND	ND	ND	ND	ND	ND	ND
Procymidone		0.2	ND	ND	ND	ND	ND	ND	ND
Pronamide		0.2	ND	ND	ND	ND	ND	ND	ND
Quintozene (Pentachloronitrobenzene)		0.5	ND	ND	ND	ND	ND	ND	ND
Tecnazene		0.5	ND	ND	ND	ND	ND	ND	ND
Tetradifon		0.2	ND	ND	ND	ND	ND	ND	ND
Tolylfluanid		0.5	ND	ND	ND	ND	ND	ND	ND
Vinclozolin		0.5	ND	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Kelley River (073)		Atlanta (074)		Sheffield Mills (075)	
			12-Jan-2007	9-Jun-2009	3-Sep-2007	8-Jun-2010	10-Sep-2007	9-Jun-2010
Herbicides								
Atrazine	5	0.2	ND	ND	ND	ND	ND	ND
De-ethyl Atrazine		0.3	ND	ND	ND	ND	ND	ND
Butylate		0.5	ND	ND	ND	ND	ND	ND
Cyanazine	10	0.5	ND	ND	ND	ND	ND	ND
Desmetryn		0.3	ND	ND	ND	ND	ND	ND
Diphenylamine		0.1	ND	ND	ND	ND	ND	ND
Eptam		0.5	ND	ND	ND	ND	ND	ND
Ethalfluralin		0.5	ND	ND	ND	ND	ND	ND
Hexazinone		0.1	ND	ND	ND	ND	ND	ND
Metalaxyl		0.3	ND	ND	ND	ND	ND	ND
Metribuzin	80	0.3	ND	ND	ND	ND	ND	ND
Metolachlor	50	0.2	ND	ND	ND	ND	ND	ND
Pirimicarb		0.5	ND	ND	ND	ND	ND	ND
Profluralin		0.5	ND	ND	ND	ND	ND	ND
Prometryn		0.2	ND	ND	ND	ND	ND	ND
Propazine		0.1	ND	ND	ND	ND	ND	ND
Simazine	10	0.5	ND	ND	ND	ND	ND	ND
Terbuthylazine		0.1	ND	ND	ND	ND	ND	ND
Terbutryn		0.2	ND	ND	ND	ND	ND	ND
Triallate		0.3	ND	ND	ND	ND	ND	ND
Triadimefon		0.3	ND	ND	ND	ND	ND	ND
Trifluralin	45	0.2	ND	ND	ND	ND	ND	ND
Organochlorine Pesticides								
Alachlor		0.5	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	0.7	0.5	ND	ND (0.02)	ND	ND	ND	ND
BHC, alpha-		0.3	ND	ND (0.1)	ND	ND	ND	ND
BHC, beta-		0.3	ND	ND (0.1)	ND	ND	ND	ND
Captan		1	ND	ND	ND	ND	ND	ND
Chlorbenside		0.1	ND	ND	ND	ND	ND	ND
Chlordane, alpha-		0.5	ND	ND (0.06)	ND	ND	ND	ND
Chlordane, gamma-		0.5	ND	ND (0.06)	ND	ND	ND	ND
Chlorfenson (Ovex)		0.2	ND	ND	ND	ND	ND	ND
Chlorothalonil (Daconil)		1	ND	ND	ND	ND	ND	ND
Chlorpropham		0.2	ND	ND	ND	ND	ND	ND
Dacthal (DCPA)		0.1	ND	ND	ND	ND	ND	ND
4,4'-DDE		0.01	ND (0.1)	ND	ND	ND	ND	ND
DDT - orthopara (2,4')		0.01	ND (0.2)	ND	ND	ND	ND	ND
DDT - parapara (4,4')		0.01	ND (0.2)	ND	ND	ND	ND	ND
Diallate(e/z)		0.5	ND	ND	ND	ND	ND	ND
Dichlobenil		0.2	ND	ND	ND	ND	ND	ND
Dichloran		0.5	ND	ND	ND	ND	ND	ND
Dichlofluanid		0.5	ND	ND	ND	ND	ND	ND
Dicofol		0.2	ND	ND	ND	ND	ND	ND
Endosulfan I		0.5	ND	ND (0.2)	ND	ND	ND	ND
Endosulfan II		0.5	ND	ND (0.2)	ND	ND	ND	ND
Endosulfan Sulphate		0.5	ND	ND (0.2)	ND	ND	ND	ND
Endrin		0.5	ND	ND (0.02)	ND	ND	ND	ND
Folpet		1	ND	ND	ND	ND	ND	ND
Heptachlor		0.5	ND	ND (0.1)	ND	ND	ND	ND
Lindane (BHC), gamma-		0.5	ND	ND (0.1)	ND	ND	ND	ND
Methidathion		0.3	ND	ND	ND	ND	ND	ND
Methoxychlor	900	0.1	ND	ND	ND	ND	ND	ND
Mirex		0.3	ND	ND	ND	ND	ND	ND
Nitrofen		0.2	ND	ND	ND	ND	ND	ND
Permethrin-cis/trans		0.5	ND	ND	ND	ND	ND	ND
Procymidone		0.2	ND	ND	ND	ND	ND	ND
Pronamide		0.2	ND	ND	ND	ND	ND	ND
Quintozene (Pentachloronitrobenzene)		0.5	ND	ND	ND	ND	ND	ND
Tecnazene		0.5	ND	ND	ND	ND	ND	ND
Tetradifon		0.2	ND	ND	ND	ND	ND	ND
Tolylfluanid		0.5	ND	ND	ND	ND	ND	ND
Vinclozolin		0.5	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Fall River (076)	West Northfield (077)	Musquodoboit Hbr (078)	Lewis Lake (079)	Arisaig (080)	Coldbrook (081)
			20-May-2008	12-Jun-2008	22-May-2008	31-Jul-2008	8-Sep-2009	5-Aug-2009
Herbicides								
Atrazine	5	0.2	ND	ND	ND	ND	ND	ND
De-ethyl Atrazine		0.3	ND	ND	ND	ND	ND	ND
Butylate		0.5	ND	ND	ND	ND	ND	ND
Cyanazine	10	0.5	ND	ND	ND	ND	ND	ND
Desmetryn		0.3	ND	ND	ND	ND	ND	ND
Diphenylamine		0.1	ND	ND	ND	ND	ND	ND
Eptam		0.5	ND	ND	ND	ND	ND	ND
Ethalfluralin		0.5	ND	ND	ND	ND	ND	ND
Hexazinone		0.1	ND	ND	ND	ND	ND	ND
Metalaxyl		0.3	ND	ND	ND	ND	ND	ND
Metribuzin	80	0.3	ND	ND	ND	ND	ND	ND
Metolachlor	50	0.2	ND	ND	ND	ND	ND	ND
Pirimicarb		0.5	ND	ND	ND	ND	ND	ND
Profluralin		0.5	ND	ND	ND	ND	ND	ND
Prometryn		0.2	ND	ND	ND	ND	ND	ND
Propazine		0.1	ND	ND	ND	ND	ND	ND
Simazine	10	0.5	ND	ND	ND	ND	ND	ND
Terbuthylazine		0.1	ND	ND	ND	ND	ND	ND
Terbutryn		0.2	ND	ND	ND	ND	ND	ND
Triallate		0.3	ND	ND	ND	ND	ND	ND
Triadimefon		0.3	ND	ND	ND	ND	ND	ND
Trifluralin	45	0.2	ND	ND	ND	ND	ND	ND
Organochlorine Pesticides								
Alachlor		0.5	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	0.7	0.5	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.05)
BHC, alpha-		0.3	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
BHC, beta-		0.3	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Captan		1	ND	ND	ND	ND	ND	ND
Chlorbenside		0.1	ND	ND	ND	ND	ND	ND
Chlordane, alpha-		0.5	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)
Chlordane, gamma-		0.5	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)	ND (0.06)
Chlorfenson (Ovex)		0.2	ND	ND	ND	ND	ND	ND
Chlorothalonil (Daconil)		1	ND	ND	ND	ND	ND	ND
Chlorpropham		0.2	ND	ND	ND	ND	ND	ND
Dacthal (DCPA)		0.1	ND	ND	ND	ND	ND	ND
4,4'-DDE		0.01	ND	ND	ND	ND	ND	ND
DDT - orthopara (2,4')		0.01	ND	ND	ND	ND	ND	ND
DDT - parapara (4,4')		0.01	ND	ND	ND	ND	ND	ND
Diallate(e/z)		0.5	ND	ND	ND	ND	ND	ND
Dichlobenil		0.2	ND	ND	ND	ND	ND	ND
Dichloran		0.5	ND	ND	ND	ND	ND	ND
Dichlofluanid		0.5	ND	ND	ND	ND	ND	ND
Dicofol		0.2	ND	ND	ND	ND	ND	ND
Endosulfan I		0.5	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Endosulfan II		0.5	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Endosulfan Sulphate		0.5	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Endrin		0.5	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Folpet		1	ND	ND	ND	ND	ND	ND
Heptachlor		0.5	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Lindane (BHC), gamma-		0.5	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Methidathion		0.3	ND	ND	ND	ND	ND	ND
Methoxychlor	900	0.1	ND	ND	ND	ND	ND	ND
Mirex		0.3	ND	ND	ND	ND	ND	ND
Nitrofen		0.2	ND	ND	ND	ND	ND	ND
Permethrin-cis/trans		0.5	ND	ND	ND	ND	ND	ND
Procymidone		0.2	ND	ND	ND	ND	ND	ND
Pronamide		0.2	ND	ND	ND	ND	ND	ND
Quintozene (Pentachloronitrobenzene)		0.5	ND	ND	ND	ND	ND	ND
Tecnazene		0.5	ND	ND	ND	ND	ND	ND
Tetradifon		0.2	ND	ND	ND	ND	ND	ND
Tolylfluanid		0.5	ND	ND	ND	ND	ND	ND
Vinclozolin		0.5	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Long Point (082)	Tatamagouche (083)
			12-Aug-2009	21-Jul-2008
Herbicides				
Atrazine	5	0.2	ND	ND
De-ethyl Atrazine		0.3	ND	ND
Butylate		0.5	ND	ND
Cyanazine	10	0.5	ND	ND
Desmetryn		0.3	ND	ND
Diphenylamine		0.1	ND	ND
Eptam		0.5	ND	ND
Ethalfluralin		0.5	ND	ND
Hexazinone		0.1	ND	ND
Metalaxyl		0.3	ND	ND
Metribuzin	80	0.3	ND	ND
Metolachlor	50	0.2	ND	ND
Pirimicarb		0.5	ND	ND
Profluralin		0.5	ND	ND
Prometryn		0.2	ND	ND
Propazine		0.1	ND	ND
Simazine	10	0.5	ND	ND
Terbuthylazine		0.1	ND	ND
Terbutryn		0.2	ND	ND
Triallate		0.3	ND	ND
Triadimefon		0.3	ND	ND
Trifluralin	45	0.2	ND	ND
Organochlorine Pesticides				
Alachlor		0.5	ND	ND
Aldrin + Dieldrin	0.7	0.5	ND (0.05)	ND (0.02)
BHC, alpha-		0.3	ND (0.1)	ND (0.1)
BHC, beta-		0.3	ND (0.1)	ND (0.1)
Captan		1	ND	ND
Chlorbenside		0.1	ND	ND
Chlordane, alpha-		0.5	ND (0.06)	ND (0.06)
Chlordane, gamma-		0.5	ND (0.06)	ND (0.06)
Chlorfenson (Ovex)		0.2	ND	ND
Chlorothalonil (Daconil)		1	ND	ND
Chlorpropham		0.2	ND	ND
Dacthal (DCPA)		0.1	ND	ND
4,4'-DDE		0.01	ND	ND
DDT - orthopara (2,4')		0.01	ND	ND
DDT - parapara (4,4')		0.01	ND	ND
Diallate(e/z)		0.5	ND	ND
Dichlobenil		0.2	ND	ND
Dichloran		0.5	ND	ND
Dichlofluanid		0.5	ND	ND
Dicofol		0.2	ND	ND
Endosulfan I		0.5	ND (0.2)	ND (0.2)
Endosulfan II		0.5	ND (0.2)	ND (0.2)
Endosulfan Sulphate		0.5	ND (0.2)	ND (0.2)
Endrin		0.5	ND (0.02)	ND (0.02)
Folpet		1	ND	ND
Heptachlor		0.5	ND (0.1)	ND (0.1)
Lindane (BHC), gamma-		0.5	ND (0.1)	ND (0.1)
Methidathion		0.3	ND	ND
Methoxychlor	900	0.1	ND	ND
Mirex		0.3	ND	ND
Nitrofen		0.2	ND	ND
Permethrin-cis/trans		0.5	ND	ND
Procymidone		0.2	ND	ND
Pronamide		0.2	ND	ND
Quintozene (Pentachloronitrobenzene)		0.5	ND	ND
Tecnazene		0.5	ND	ND
Tetradifon		0.2	ND	ND
Tolylfluanid		0.5	ND	ND
Vinclozolin		0.5	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
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Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Greenwood (003)		Fraser Brook (004)		Wilmot (005)	Wolfville (010)		Monastery (028)
			23-Nov-2005	18-Dec-2008	10-Dec-2004	3-Dec-2008	12-May-2010	22-Dec-2004	18-Dec-2008	15-Dec-2006
Organophosphorus Pesticides										
Aspon		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Azinphos ethyl		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Azinphos methyl	20	1	ND	ND	ND	ND	ND	ND	ND	ND
Bromacil		0.1	ND	ND	ND	ND	ND	ND	ND	ND (1)
Benfluralin		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Bromophos		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Bromophos-ethyl		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Carbophenothion		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Chlorfenvinphos(e/z)		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Chlormephos		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Chlorpyrifos	90	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Chlorpyriphos-methyl		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Chlorthiophos		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Cyanophos		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Demeton		1	ND	ND	ND	ND	ND	ND	ND	ND
Diazinon	20	0.3	ND	ND	ND	ND	ND	ND	ND	ND
Dichlofenthion		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorvos/Naled		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Dicrotophos		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoate	20	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Dioxathion		1	ND	ND	ND	ND	ND	ND	ND	ND
Disulfoton (Di-Syston)		1	ND	ND	ND	ND	ND	ND	ND	ND
EPN		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Ethion		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Fenchlorphos (Ronnel)		0.1	ND	ND	ND	ND	ND	ND	ND	-
Fenitrothion		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Fensulfothion		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Fenthion		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Fonofos		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Iodofenphos		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Isofenphos		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Malaoxon		1	ND	ND	ND	ND	ND	ND	ND	ND
Malathion	190	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Mevinphos-cis/trans (Phosdrin)		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Omethoate		1	ND	ND	ND	ND	ND	ND	ND	ND
Parathion	50	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Parathion methyl		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Phorate (Thimet)	2	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Phosalone		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Phosmet		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Phosphamidon		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Pirimiphos-ethyl		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Pirimiphos-methyl		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Profenophos		0.5	ND	ND	ND	ND	ND	ND	ND	ND
Pyrazophos		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Quinalphos		0.3	ND	ND	ND	ND	ND	ND	ND	ND
Sulfotep		0.1	ND	ND	ND	ND	ND	ND	ND	ND
Terbufos	1	0.3	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachlorvinphos (Stirophos)		0.2	ND	ND	-	-	-	-	ND	-
Other										
Hexachlorobenzene		0.2	ND	ND	ND	ND	ND	ND	ND	ND
Iprodione		1	-	-	-	-	-	-	-	-
Propiconazole		0.5	-	-	-	-	-	-	-	-

Notes:
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ND = not detected
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Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Point Aconi (030)		Lawrencetown (043)	Durham (045)		Kentville (048)	
			15-Sep-2005	10-Dec-2008	5-Dec-2008	5-Oct-2005	21-Jan-2009	15-Jun-2005	7-Nov-2007
Organophosphorus Pesticides									
Aspon		0.2	ND	ND	ND	ND	ND	-	ND
Azinphos ethyl		0.5	ND	ND	ND	ND	ND	-	ND
Azinphos methyl	20	1	ND	ND	ND	ND	ND	-	ND
Bromacil		0.1	ND	ND	ND	ND	ND	-	ND
Benfluralin		0.1	ND	ND	ND	ND	ND	-	ND
Bromophos		0.1	ND	ND	ND	ND	ND	-	ND
Bromophos-ethyl		0.3	ND	ND	ND	ND	ND	-	ND
Carbophenothion		0.3	ND	ND	ND	ND	ND	-	ND
Chlorfenvinphos(e/z)		0.1	ND	ND	ND	ND	ND	-	ND
Chlormephos		0.5	ND	ND	ND	ND	ND	-	ND
Chlorpyrifos	90	0.2	ND	ND	ND	ND	ND	-	ND
Chlorpyriphos-methyl		0.1	ND	ND	ND	ND	ND	-	ND
Chlorthiophos		0.3	ND	ND	ND	ND	ND	-	ND
Cyanophos		0.2	ND	ND	ND	ND	ND	-	ND
Demeton		1	ND	ND	ND	ND	ND	-	ND
Diazinon	20	0.3	ND	ND	ND	ND	ND	ND (2)	ND
Dichlofenthion		0.2	ND	ND	ND	ND	ND	-	ND
Dichlorvos/Naled		0.1	ND	ND	ND	ND	ND	-	ND
Dicrotophos		0.5	ND	ND	ND	ND	ND	-	ND
Dimethoate	20	0.5	ND	ND	ND	ND	ND	-	ND
Dioxathion		1	ND	ND	ND	ND	ND	-	ND
Disulfoton (Di-Syston)		1	ND	ND	ND	ND	ND	-	ND
EPN		0.5	ND	ND	ND	ND	ND	-	ND
Ethion		0.2	ND	ND	ND	ND	ND	-	ND
Fenchlorphos (Ronnel)		0.1	ND	ND	ND	ND	ND	-	ND
Fenitrothion		0.5	ND	ND	ND	ND	ND	-	ND
Fensulfothion		0.1	ND	ND	ND	ND	ND	-	ND
Fenthion		0.1	ND	ND	ND	ND	ND	-	ND
Fonofos		0.1	ND	ND	ND	ND	ND	-	ND
Iodofenphos		0.1	ND	ND	ND	ND	ND	-	ND
Isofenphos		0.3	ND	ND	ND	ND	ND	-	ND
Malaoxon		1	ND	ND	ND	ND	ND	-	ND
Malathion	190	0.5	ND	ND	ND	ND	ND	ND (2)	ND
Mevinphos-cis/trans (Phosdrin)		0.1	ND	ND	ND	ND	ND	-	ND
Omethoate		1	ND	ND	ND	ND	ND	-	ND
Parathion	50	0.5	ND	ND	ND	ND	ND	ND (2)	ND
Parathion methyl		0.5	ND	ND	ND	ND	ND	ND (2)	ND
Phorate (Thimet)	2	0.5	ND	ND	ND	ND	ND	-	ND
Phosalone		0.2	ND	ND	ND	ND	ND	-	ND
Phosmet		0.2	ND	ND	ND	ND	ND	-	ND
Phosphamidon		0.2	ND	ND	ND	ND	ND	-	ND
Pirimiphos-ethyl		0.5	ND	ND	ND	ND	ND	-	ND
Pirimiphos-methyl		0.2	ND	ND	ND	ND	ND	-	ND
Profenophos		0.5	ND	ND	ND	ND	ND	-	ND
Pyrazophos		0.1	ND	ND	ND	ND	ND	-	ND
Quinalphos		0.3	ND	ND	ND	ND	ND	-	ND
Sulfotep		0.1	ND	ND	ND	ND	ND	-	ND
Terbufos	1	0.3	ND	ND	ND	ND	ND	-	ND
Tetrachlorvinphos (Stirophos)		0.2	ND	ND	ND	ND	ND	-	ND
Other									
Hexachlorobenzene		0.2	ND	ND	ND	ND	ND	-	ND
Iprodione		1	-	-	-	-	-	-	ND
Propiconazole		0.5	-	-	-	-	-	-	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Sydney (050)		North Grant (054)		Stillwater (055)		Sheet Harbour (056)
			15-Sep-2005	11-Dec-2008	12-Dec-2006	22-Jul-2008	12-Dec-2006	4-Dec-2008	5-Dec-2008
Organophosphorus Pesticides									
Aspon		0.2	ND	ND	ND	ND	ND	ND	ND
Azinphos ethyl		0.5	ND	ND	ND	ND	ND	ND	ND
Azinphos methyl	20	1	ND	ND	ND	ND	ND	ND	ND
Bromacil		0.1	ND	ND	ND	ND	ND	ND	ND
Benfluralin		0.1	ND	ND	ND	ND	ND	ND	ND
Bromophos		0.1	ND	ND	ND	ND	ND	ND	ND
Bromophos-ethyl		0.3	ND	ND	ND	ND	ND	ND	ND
Carbophenothion		0.3	ND	ND	ND	ND	ND	ND	ND
Chlorfenvinphos(e/z)		0.1	ND	ND	ND	ND	ND	ND	ND
Chlormephos		0.5	ND	ND	ND	ND	ND	ND	ND
Chlorpyrifos	90	0.2	ND	ND	ND	ND (0.01)	ND	ND	ND
Chlorpyriphos-methyl		0.1	ND	ND	ND	ND	ND	ND	ND
Chlorthiophos		0.3	ND	ND	ND	ND	ND	ND	ND
Cyanophos		0.2	ND	ND	ND	ND	ND	ND	ND
Demeton		1	ND	ND	ND	ND	ND	ND	ND
Diazinon	20	0.3	ND	ND	ND	ND (0.02)	ND	ND	ND
Dichlofenthion		0.2	ND	ND	ND	ND	ND	ND	ND
Dichlorvos/Naled		0.1	ND	ND	ND	ND	ND	ND	ND
Dicrotophos		0.5	ND	ND	ND	ND	ND	ND	ND
Dimethoate	20	0.5	ND	ND	ND	ND	ND	ND	ND
Dioxathion		1	ND	ND	ND	ND	ND	ND	ND
Disulfoton (Di-Syston)		1	ND	ND	ND	ND	ND	ND	ND
EPN		0.5	ND	ND	ND	ND	ND	ND	ND
Ethion		0.2	ND	ND	ND	ND	ND	ND	ND
Fenchlorphos (Ronnel)		0.1	ND	ND	ND	ND	ND	ND	ND
Fenitrothion		0.5	ND	ND	ND	ND	ND	ND	ND
Fensulfothion		0.1	ND	ND	ND	ND	ND	ND	ND
Fenthion		0.1	ND	ND	ND	ND	ND	ND	ND
Fonofos		0.1	ND	ND	ND	ND	ND	ND	ND
Iodofenphos		0.1	ND	ND	ND	ND	ND	ND	ND
Isofenphos		0.3	ND	ND	ND	ND	ND	ND	ND
Malaoxon		1	ND	ND	ND	ND	ND	ND	ND
Malathion	190	0.5	ND	ND	ND	ND	ND	ND	ND
Mevinphos-cis/trans (Phosdrin)		0.1	ND	ND	ND	ND	ND	ND	ND
Omethoate		1	ND	ND	ND	ND	ND	ND	ND
Parathion	50	0.5	ND	ND	ND	ND	ND	ND	ND
Parathion methyl		0.5	ND	ND	ND	ND	ND	ND	ND
Phorate (Thimet)	2	0.5	ND	ND	ND	ND	ND	ND	ND
Phosalone		0.2	ND	ND	ND	ND	ND	ND	ND
Phosmet		0.2	ND	ND	ND	ND	ND	ND	ND
Phosphamidon		0.2	ND	ND	ND	ND	ND	ND	ND
Pirimiphos-ethyl		0.5	ND	ND	ND	ND	ND	ND	ND
Pirimiphos-methyl		0.2	ND	ND	ND	ND	ND	ND	ND
Profenophos		0.5	ND	ND	ND	ND	ND	ND	ND
Pyrazophos		0.1	ND	ND	ND	ND	ND	ND	ND
Quinalphos		0.3	ND	ND	ND	ND	ND	ND	ND
Sulfotep		0.1	ND	ND	ND	ND	ND	ND	ND
Terbufos	1	0.3	ND	ND	ND	ND	ND	ND	ND
Tetrachlorvinphos (Stirophos)		0.2	ND	ND	ND	ND	ND	ND	ND
Other									
Hexachlorobenzene		0.2	ND	ND	ND	ND	ND	ND	ND
Iprodione		1	-	-	-	ND	-	-	-
Propiconazole		0.5	-	-	-	ND	-	-	-

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Hayden Lake (059)		Meteghan (060)		Annapolis Royal (062)			Hebron (063)	
			9-Jun-2005	16-Dec-2008	13-Dec-2006	17-Dec-2008	9-Nov-2005	26-Nov-2007	1-Jun-2010	9-Jun-2005	17-Dec-2008
Organophosphorus Pesticides											
Aspon		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Azinphos ethyl		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Azinphos methyl	20	1	-	ND	ND	ND	ND	ND	ND	-	ND
Bromacil		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Benfluralin		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Bromophos		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Bromophos-ethyl		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Carbophenothion		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Chlorfenvinphos(e/z)		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Chlormephos		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Chlorpyrifos	90	0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Chlorpyriphos-methyl		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Chlorthiophos		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Cyanophos		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Demeton		1	-	ND	ND	ND	ND	ND	ND	-	ND
Diazinon	20	0.3	ND (5)	ND	ND	ND	ND	ND	ND	ND (5)	ND
Dichlofenthion		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Dichlorvos/Naled		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Dicrotophos		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Dimethoate	20	0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Dioxathion		1	-	ND	ND	ND	ND	ND	ND	-	ND
Disulfoton (Di-Syston)		1	-	ND	ND	ND	ND	ND	ND	-	ND
EPN		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Ethion		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Fenchlorphos (Ronnel)		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Fenitrothion		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Fensulfothion		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Fenthion		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Fonofos		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Iodofenphos		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Isofenphos		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Malaoxon		1	-	ND	ND	ND	ND	ND	ND	-	ND
Malathion	190	0.5	ND (5)	ND	ND	ND	ND	ND	ND	ND (5)	ND
Mevinphos-cis/trans (Phosdrin)		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Omethoate		1	-	ND	ND	ND	ND	ND	ND	-	ND
Parathion	50	0.5	ND (5)	ND	ND	ND	ND	ND	ND	ND (5)	ND
Parathion methyl		0.5	ND (5)	ND	ND	ND	ND	ND	ND	ND (5)	ND
Phorate (Thimet)	2	0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Phosalone		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Phosmet		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Phosphamidon		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Pirimiphos-ethyl		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Pirimiphos-methyl		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Profenophos		0.5	-	ND	ND	ND	ND	ND	ND	-	ND
Pyrazophos		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Quinalphos		0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Sulfotep		0.1	-	ND	ND	ND	ND	ND	ND	-	ND
Terbufos	1	0.3	-	ND	ND	ND	ND	ND	ND	-	ND
Tetrachlorvinphos (Stirophos)		0.2	-	ND	ND	ND	ND	-	ND	-	ND
Other											
Hexachlorobenzene		0.2	-	ND	ND	ND	ND	ND	ND	-	ND
Iprodione		1	-	-	-	-	-	-	ND	-	-
Propiconazole		0.5	-	-	-	-	-	-	ND	-	-

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Margaree (064)		Ingonish (065)	Dalem Lake (069)		Amherst (071)	
			14-Dec-2006	8-Dec-2008	25-Aug-2009	14-Dec-2006	11-Dec-2008	16-Dec-2006	8-Jan-2009
Organophosphorus Pesticides									
Aspon		0.2	ND	ND	ND	ND	ND	ND	ND
Azinphos ethyl		0.5	ND	ND	ND	ND	ND	ND	ND
Azinphos methyl	20	1	ND	ND	ND	ND	ND	ND	ND
Bromacil		0.1	ND	ND	ND	ND	ND	ND	ND
Benfluralin		0.1	ND	ND	ND	ND	ND	ND	ND
Bromophos		0.1	ND	ND	ND	ND	ND	ND	ND
Bromophos-ethyl		0.3	ND	ND	ND	ND	ND	ND	ND
Carbophenothion		0.3	ND	ND	ND	ND	ND	ND	ND
Chlorfenvinphos(e/z)		0.1	ND	ND	ND	ND	ND	ND	ND
Chlormephos		0.5	ND	ND	ND	ND	ND	ND	ND
Chlorpyrifos	90	0.2	ND	ND	ND (0.01)	ND	ND	ND	ND
Chlorpyriphos-methyl		0.1	ND	ND	ND	ND	ND	ND	ND
Chlorthiophos		0.3	ND	ND	ND	ND	ND	ND	ND
Cyanophos		0.2	ND	ND	ND	ND	ND	ND	ND
Demeton		1	ND	ND	ND	ND	ND	ND	ND
Diazinon	20	0.3	ND	ND	ND (0.02)	ND	ND	ND	ND
Dichlofenthion		0.2	ND	ND	ND	ND	ND	ND	ND
Dichlorvos/Naled		0.1	ND	ND	ND	ND	ND	ND	ND
Dicrotophos		0.5	ND	ND	ND	ND	ND	ND	ND
Dimethoate	20	0.5	ND	ND	ND	ND	ND	ND	ND
Dioxathion		1	ND	ND	ND	ND	ND	ND	ND
Disulfoton (Di-Syston)		1	ND	ND	ND	ND	ND	ND	ND
EPN		0.5	ND	ND	ND	ND	ND	ND	ND
Ethion		0.2	ND	ND	ND	ND	ND	ND	ND
Fenchlorphos (Ronnel)		0.1	ND	ND	ND	ND	ND	ND	ND
Fenitrothion		0.5	ND	ND	ND	ND	ND	ND	ND
Fensulfothion		0.1	ND	ND	ND	ND	ND	ND	ND
Fenthion		0.1	ND	ND	ND	ND	ND	ND	ND
Fonofos		0.1	ND	ND	ND	ND	ND	ND	ND
Iodofenphos		0.1	ND	ND	ND	ND	ND	ND	ND
Isofenphos		0.3	ND	ND	ND	ND	ND	ND	ND
Malaoxon		1	ND	ND	ND	ND	ND	ND	ND
Malathion	190	0.5	ND	ND	ND	ND	ND	ND	ND
Mevinphos-cis/trans (Phosdrin)		0.1	ND	ND	ND	ND	ND	ND	ND
Omethoate		1	ND	ND	ND	ND	ND	ND	ND
Parathion	50	0.5	ND	ND	ND	ND	ND	ND	ND
Parathion methyl		0.5	ND	ND	ND	ND	ND	ND	ND
Phorate (Thimet)	2	0.5	ND	ND	ND	ND	ND	ND	ND
Phosalone		0.2	ND	ND	ND	ND	ND	ND	ND
Phosmet		0.2	ND	ND	ND	ND	ND	ND	ND
Phosphamidon		0.2	ND	ND	ND	ND	ND	ND	ND
Pirimiphos-ethyl		0.5	ND	ND	ND	ND	ND	ND	ND
Pirimiphos-methyl		0.2	ND	ND	ND	ND	ND	ND	ND
Profenophos		0.5	ND	ND	ND	ND	ND	ND	ND
Pyrazophos		0.1	ND	ND	ND	ND	ND	ND	ND
Quinalphos		0.3	ND	ND	ND	ND	ND	ND	ND
Sulfotep		0.1	ND	ND	ND	ND	ND	ND	ND
Terbufos	1	0.3	ND	ND	ND	ND	ND	ND	ND
Tetrachlorvinphos (Stirophos)		0.2	ND	ND	ND	ND	ND	ND	ND
Other									
Hexachlorobenzene		0.2	ND	ND	ND	ND	ND	ND	ND
Iprodione		1	-	-	ND	-	-	-	-
Propiconazole		0.5	-	-	ND	-	-	-	-

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Kelley River (073)		Atlanta (074)		Sheffield Mills (075)	
			12-Jan-2007	9-Jun-2009	3-Sep-2007	8-Jun-2010	10-Sep-2007	9-Jun-2010
Organophosphorus Pesticides								
Aspon		0.2	ND	ND	ND	ND	ND	ND
Azinphos ethyl		0.5	ND	ND	ND	ND	ND	ND
Azinphos methyl	20	1	ND	ND	ND	ND	ND	ND
Bromacil		0.1	ND	ND	ND	ND	ND	ND
Benfluralin		0.1	ND	ND	ND	ND	ND	ND
Bromophos		0.1	ND	ND	ND	ND	ND	ND
Bromophos-ethyl		0.3	ND	ND	ND	ND	ND	ND
Carbophenothion		0.3	ND	ND	ND	ND	ND	ND
Chlorfenvinphos(e/z)		0.1	ND	ND	ND	ND	ND	ND
Chlormephos		0.5	ND	ND	ND	ND	ND	ND
Chlorpyrifos	90	0.2	ND	ND (0.01)	ND	ND	ND	ND
Chlorpyriphos-methyl		0.1	ND	ND	ND	ND	ND	ND
Chlorthiophos		0.3	ND	ND	ND	ND	ND	ND
Cyanophos		0.2	ND	ND	ND	ND	ND	ND
Demeton		1	ND	ND	ND	ND	ND	ND
Diazinon	20	0.3	ND	ND (0.02)	ND	ND	ND	ND
Dichlofenthion		0.2	ND	ND	ND	ND	ND	ND
Dichlorvos/Naled		0.1	ND	ND	ND	ND	ND	ND
Dicrotophos		0.5	ND	ND	ND	ND	ND	ND
Dimethoate	20	0.5	ND	ND	ND	ND	ND	ND
Dioxathion		1	ND	ND	ND	ND	ND	ND
Disulfoton (Di-Syston)		1	ND	ND	ND	ND	ND	ND
EPN		0.5	ND	ND	ND	ND	ND	ND
Ethion		0.2	ND	ND	ND	ND	ND	ND
Fenchlorphos (Ronnel)		0.1	ND	ND	ND	ND	ND	ND
Fenitrothion		0.5	ND	ND	ND	ND	ND	ND
Fensulfothion		0.1	ND	ND	ND	ND	ND	ND
Fenthion		0.1	ND	ND	ND	ND	ND	ND
Fonofos		0.1	ND	ND	ND	ND	ND	ND
Iodofenphos		0.1	ND	ND	ND	ND	ND	ND
Isofenphos		0.3	ND	ND	ND	ND	ND	ND
Malaoxon		1	ND	ND	ND	ND	ND	ND
Malathion	190	0.5	ND	ND	ND	ND	ND	ND
Mevinphos-cis/trans (Phosdrin)		0.1	ND	ND	ND	ND	ND	ND
Omethoate		1	ND	ND	ND	ND	ND	ND
Parathion	50	0.5	ND	ND	ND	ND	ND	ND
Parathion methyl		0.5	ND	ND	ND	ND	ND	ND
Phorate (Thimet)	2	0.5	ND	ND	ND	ND	ND	ND
Phosalone		0.2	ND	ND	ND	ND	ND	ND
Phosmet		0.2	ND	ND	ND	ND	ND	ND
Phosphamidon		0.2	ND	ND	ND	ND	ND	ND
Pirimiphos-ethyl		0.5	ND	ND	ND	ND	ND	ND
Pirimiphos-methyl		0.2	ND	ND	ND	ND	ND	ND
Profenophos		0.5	ND	ND	ND	ND	ND	ND
Pyrazophos		0.1	ND	ND	ND	ND	ND	ND
Quinalphos		0.3	ND	ND	ND	ND	ND	ND
Sulfotep		0.1	ND	ND	ND	ND	ND	ND
Terbufos	1	0.3	ND	ND	ND	ND	ND	ND
Tetrachlorvinphos (Stirophos)		0.2	ND	ND	ND	-	ND	-
Other								
Hexachlorobenzene		0.2	ND	ND	ND	ND	ND	ND
Iprodione		1	-	ND	-	-	-	-
Propiconazole		0.5	-	ND	-	-	-	-

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
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Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Fall River (076)	West Northfield (077)	Musquodoboit Hbr (078)	Lewis Lake (079)	Arisaig (080)	Coldbrook (081)
			20-May-2008	12-Jun-2008	22-May-2008	31-Jul-2008	8-Sep-2009	5-Aug-2009
Organophosphorus Pesticides								
Aspon		0.2	ND	ND	ND	ND	ND	ND
Azinphos ethyl		0.5	ND	ND	ND	ND	ND	ND
Azinphos methyl	20	1	ND	ND	ND	ND	ND	ND
Bromacil		0.1	ND	ND	ND	ND	ND	ND
Benfluralin		0.1	ND	ND	ND	ND	ND	ND
Bromophos		0.1	ND	ND	ND	ND	ND	ND
Bromophos-ethyl		0.3	ND	ND	ND	ND	ND	ND
Carbophenothion		0.3	ND	ND	ND	ND	ND	ND
Chlorfenvinphos(e/z)		0.1	ND	ND	ND	ND	ND	ND
Chlormephos		0.5	ND	ND	ND	ND	ND	ND
Chlorpyrifos	90	0.2	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)
Chlorpyriphos-methyl		0.1	ND	ND	ND	ND	ND	ND
Chlorthiophos		0.3	ND	ND	ND	ND	ND	ND
Cyanophos		0.2	ND	ND	ND	ND	ND	ND
Demeton		1	ND	ND	ND	ND	ND	ND
Diazinon	20	0.3	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Dichlofenthion		0.2	ND	ND	ND	ND	ND	ND
Dichlorvos/Naled		0.1	ND	ND	ND	ND	ND	ND
Dicrotophos		0.5	ND	ND	ND	ND	ND	ND
Dimethoate	20	0.5	ND	ND	ND	ND	ND	ND
Dioxathion		1	ND	ND	ND	ND	ND	ND
Disulfoton (Di-Syston)		1	ND	ND	ND	ND	ND	ND
EPN		0.5	ND	ND	ND	ND	ND	ND
Ethion		0.2	ND	ND	ND	ND	ND	ND
Fenchlorphos (Ronnel)		0.1	ND	ND	ND	ND	ND	ND
Fenitrothion		0.5	ND	ND	ND	ND	ND	ND
Fensulfothion		0.1	ND	ND	ND	ND	ND	ND
Fenthion		0.1	ND	ND	ND	ND	ND	ND
Fonofos		0.1	ND	ND	ND	ND	ND	ND
Iodofenphos		0.1	ND	ND	ND	ND	ND	ND
Isofenphos		0.3	ND	ND	ND	ND	ND	ND
Malaoxon		1	ND	ND	ND	ND	ND	ND
Malathion	190	0.5	ND	ND	ND	ND	ND	ND
Mevinphos-cis/trans (Phosdrin)		0.1	ND	ND	ND	ND	ND	ND
Omethoate		1	ND	ND	ND	ND	ND	ND
Parathion	50	0.5	ND	ND	ND	ND	ND	ND
Parathion methyl		0.5	ND	ND	ND	ND	ND	ND
Phorate (Thimet)	2	0.5	ND	ND	ND	ND	ND	ND
Phosalone		0.2	ND	ND	ND	ND	ND	ND
Phosmet		0.2	ND	ND	ND	ND	ND	ND
Phosphamidon		0.2	ND	ND	ND	ND	ND	ND
Pirimiphos-ethyl		0.5	ND	ND	ND	ND	ND	ND
Pirimiphos-methyl		0.2	ND	ND	ND	ND	ND	ND
Profenophos		0.5	ND	ND	ND	ND	ND	ND
Pyrazophos		0.1	ND	ND	ND	ND	ND	ND
Quinalphos		0.3	ND	ND	ND	ND	ND	ND
Sulfotep		0.1	ND	ND	ND	ND	ND	ND
Terbufos	1	0.3	ND	ND	ND	ND	ND	ND
Tetrachlorvinphos (Stirophos)		0.2	ND	ND	ND	ND	ND	ND
Other								
Hexachlorobenzene		0.2	ND	ND	ND	ND	ND	ND
Iprodione		1	ND	ND	ND	ND	ND	ND
Propiconazole		0.5	ND	ND	ND	ND	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C4: Pesticide Results (ug/L)

Parameter	Drinking Water Guideline	Detection Limit	Long Point (082)	Tatamagouche (083)
			12-Aug-2009	21-Jul-2008
Organophosphorus Pesticides				
Aspon		0.2	ND	ND
Azinphos ethyl		0.5	ND	ND
Azinphos methyl	20	1	ND	ND
Bromacil		0.1	ND	ND
Benfluralin		0.1	ND	ND
Bromophos		0.1	ND	ND
Bromophos-ethyl		0.3	ND	ND
Carbophenothion		0.3	ND	ND
Chlorfenvinphos(e/z)		0.1	ND	ND
Chlormephos		0.5	ND	ND
Chlorpyrifos	90	0.2	ND (0.01)	ND (0.01)
Chlorpyriphos-methyl		0.1	ND	ND
Chlorthiophos		0.3	ND	ND
Cyanophos		0.2	ND	ND
Demeton		1	ND	ND
Diazinon	20	0.3	ND (0.02)	ND (0.02)
Dichlofenthion		0.2	ND	ND
Dichlorvos/Naled		0.1	ND	ND
Dicrotophos		0.5	ND	ND
Dimethoate	20	0.5	ND	ND
Dioxathion		1	ND	ND
Disulfoton (Di-Syston)		1	ND	ND
EPN		0.5	ND	ND
Ethion		0.2	ND	ND
Fenchlorphos (Ronnel)		0.1	ND	ND
Fenitrothion		0.5	ND	ND
Fensulfothion		0.1	ND	ND
Fenthion		0.1	ND	ND
Fonofos		0.1	ND	ND
Iodofenphos		0.1	ND	ND
Isofenphos		0.3	ND	ND
Malaoxon		1	ND	ND
Malathion	190	0.5	ND	ND
Mevinphos-cis/trans (Phosdrin)		0.1	ND	ND
Omethoate		1	ND	ND
Parathion	50	0.5	ND	ND
Parathion methyl		0.5	ND	ND
Phorate (Thimet)	2	0.5	ND	ND
Phosalone		0.2	ND	ND
Phosmet		0.2	ND	ND
Phosphamidon		0.2	ND	ND
Pirimiphos-ethyl		0.5	ND	ND
Pirimiphos-methyl		0.2	ND	ND
Profenophos		0.5	ND	ND
Pyrazophos		0.1	ND	ND
Quinalphos		0.3	ND	ND
Sulfotep		0.1	ND	ND
Terbufos	1	0.3	ND	ND
Tetrachlorvinphos (Stirophos)		0.2	ND	ND
Other				
Hexachlorobenzene		0.2	ND	ND
Iprodione		1	ND	ND
Propiconazole		0.5	ND	ND

Notes:
AO = Aesthetic Objective.
ND = not detected
ND( ) = not detected at the elevated detection limit shown in brackets ( )
All guidelines are health-based MACs or IMACs, unless otherwise indicated.
Shaded values exceed guidelines.

Table C5: Tritium Results

Observation Well	Date Sampled	Tritium Level (TU)	Accuracy (+/- TU)	Age Estimate (Recent is >1952)
Wolfville (010)	22-Dec-2004	4.7	0.4	Mix/Recent
Hayden Lake (059)	9-Jun-2005	3.4	0.3	Mix
Hebron (063)	9-Jun-2005	4.6	0.4	Mix/Recent
Kentville (048)	15-Jun-2005	3.8	0.3	Mix
Point Aconi (030)	15-Sep-2005	3.62	0.34	Mix
Sydney (050)	15-Sep-2005	4.92	0.43	Mix/Recent
Durham (045)	5-Oct-2005	2.04	0.28	Mix
Annapolis Royal (062)	9-Nov-2005	0.27	0.17	Old
Greenwood (003)	23-Nov-2005	5.76	0.47	Recent
Meteghan (060)	12-Dec-2006	0.46	0.14	Old
North Grant (054)	13-Dec-2006	1.95	0.22	Mix
Stillwater (055)	13-Dec-2006	3.82	0.34	Mix
Margaree (064)	14-Dec-2006	0.41	0.14	Old
Dalem Lake (069)	14-Dec-2006	3.61	0.3	Mix
Monastery (028)	15-Dec-2006	0.94	0.17	Old
Amherst (071)	16-Dec-2006	4.0	0.32	Mix/Recent
Kelley River (073)	12-Jan-2007	3.78	0.32	Mix

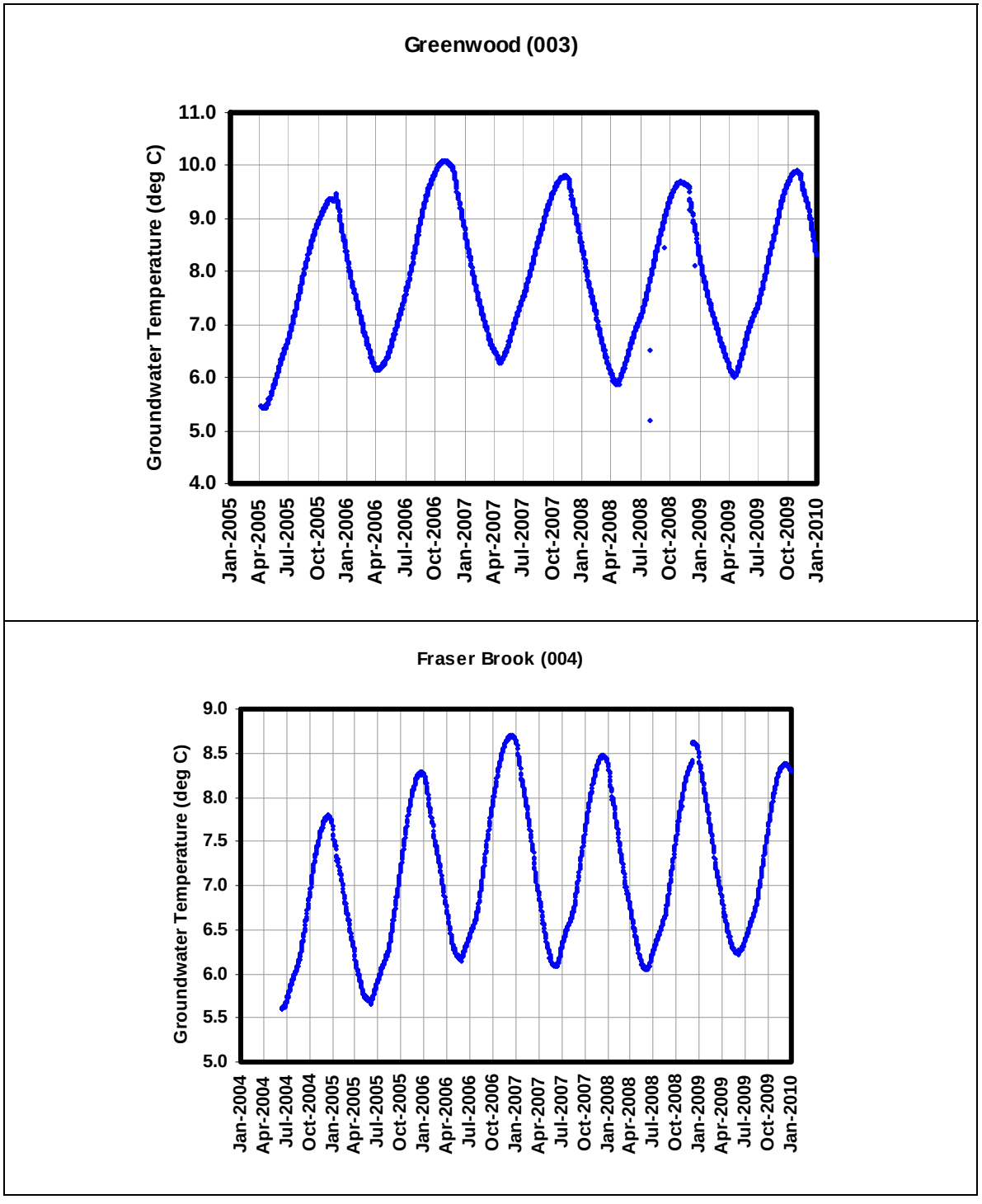
Age Estimate Guide	Tritium Level (TU)
Recent (recharged after 1952)	>5
Mixture of recent and old	1 to 5
Old (recharged before 1952)	<1
Source: Clark and Fritz, 1997	

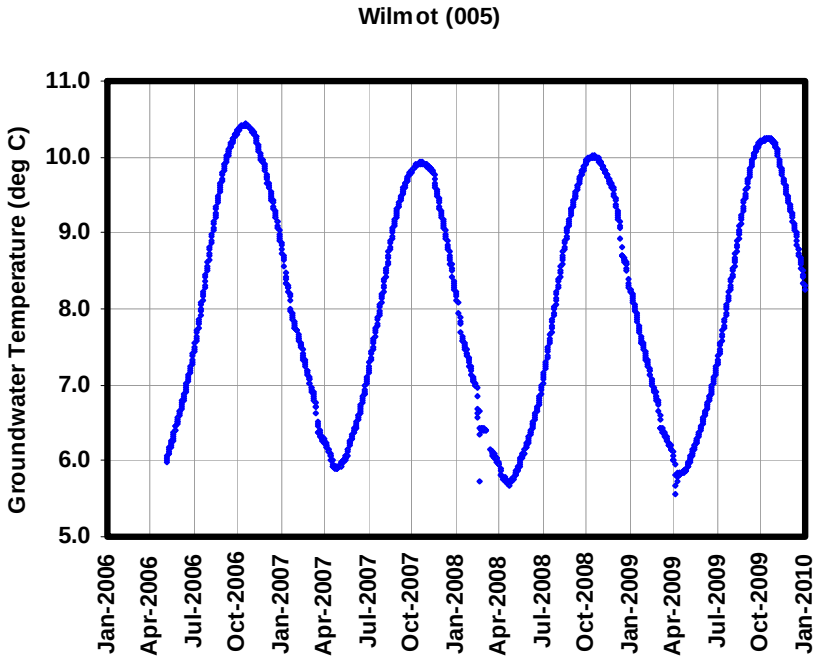
Table C6: Perchlorate Results

Observation Well	Date Sampled	Recommended Guidance Value (Health Canada, 2007) (ug/L)	Detection Limit (ug/L)	Perchlorate Result (ug/L)
Fraser Brook (004)	10-Dec-2004	6	0.2	ND
Wolfville (010)	22-Dec-2004	6	0.2	ND
Hayden Lake (059)	9-Jun-2005	6	0.011	0.014
Hebron (063)	9-Jun-2005	6	0.011	ND
Kentville (048)	15-Jun-2005	6	0.011	0.05
Point Aconi (030)	15-Sep-2005	6	0.011	ND
Sydney (050)	15-Sep-2005	6	0.011	ND
Durham (045)	5-Oct-2005	6	0.011	ND
Annapolis Royal (062)	9-Nov-2005	6	0.011	ND
Greenwood (003)	23-Nov-2005	6	0.011	ND
Monastery (028)	15-Dec-2006	6	0.011	ND

ND = Not Detected

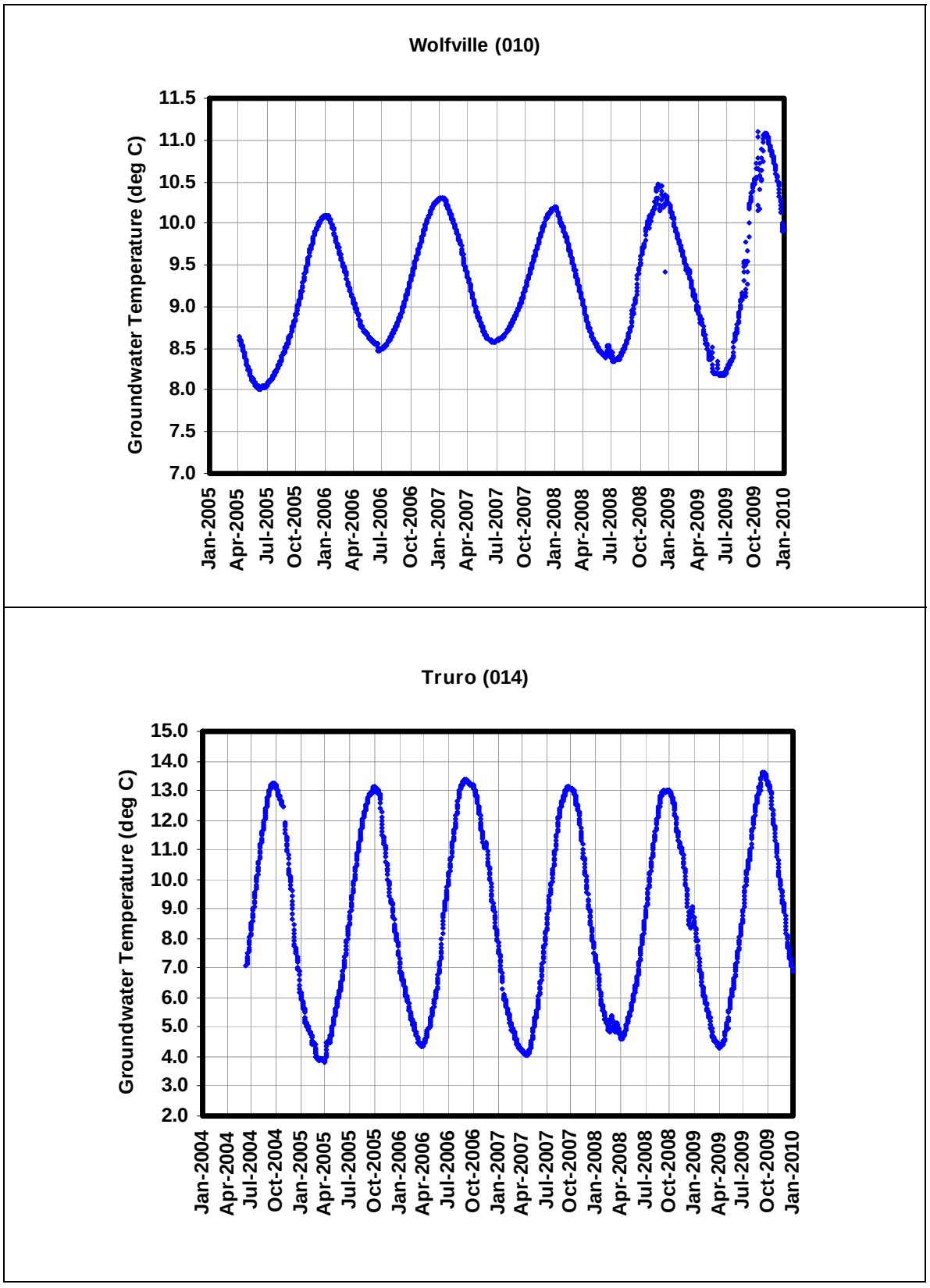
APPENDIX D
GROUNDWATER TEMPERATURE GRAPHS

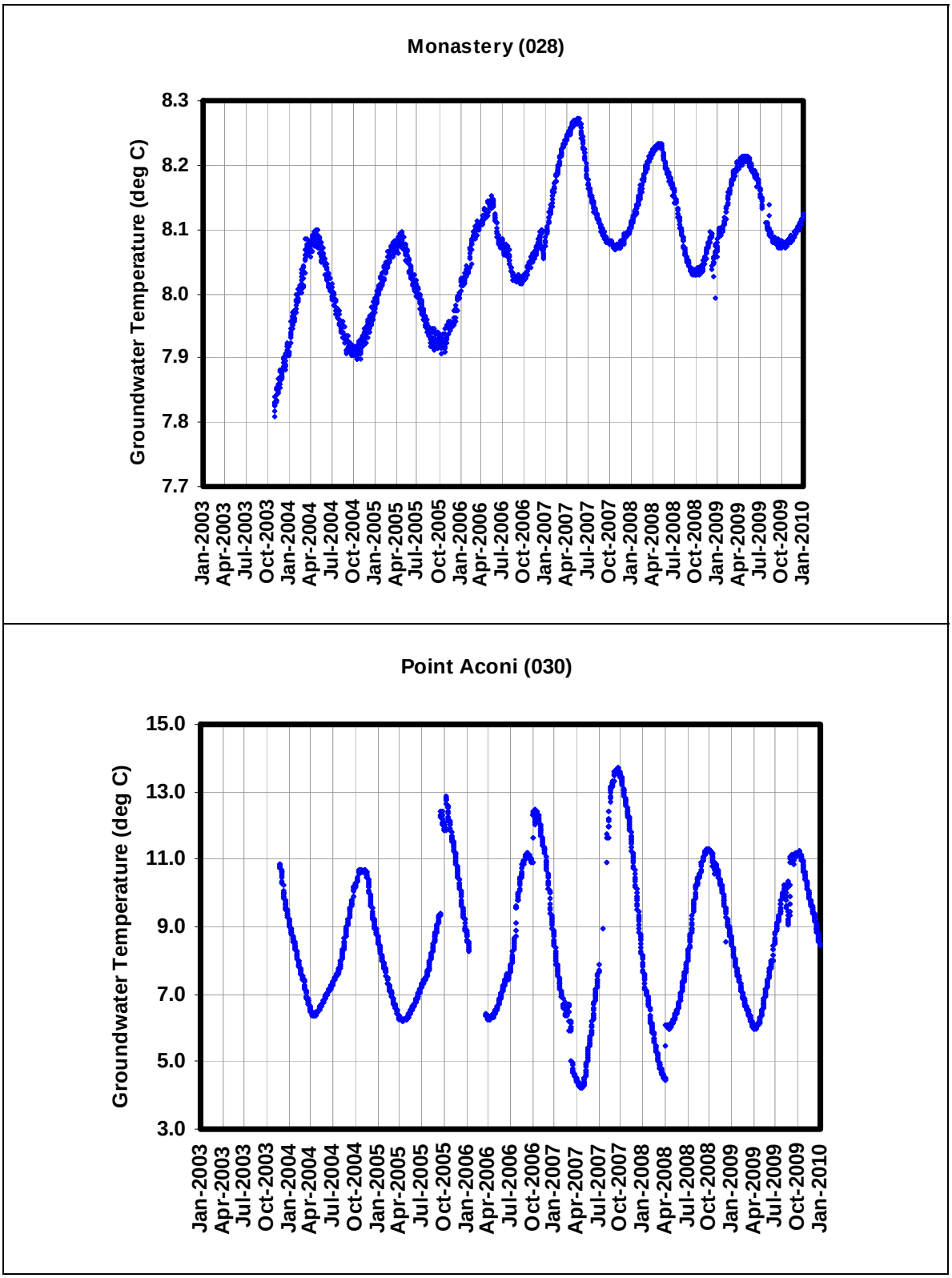

Greenwood (003)
Groundwater Temperature (deg C)
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Fraser Brook (004)
Groundwater Temperature (deg C)
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

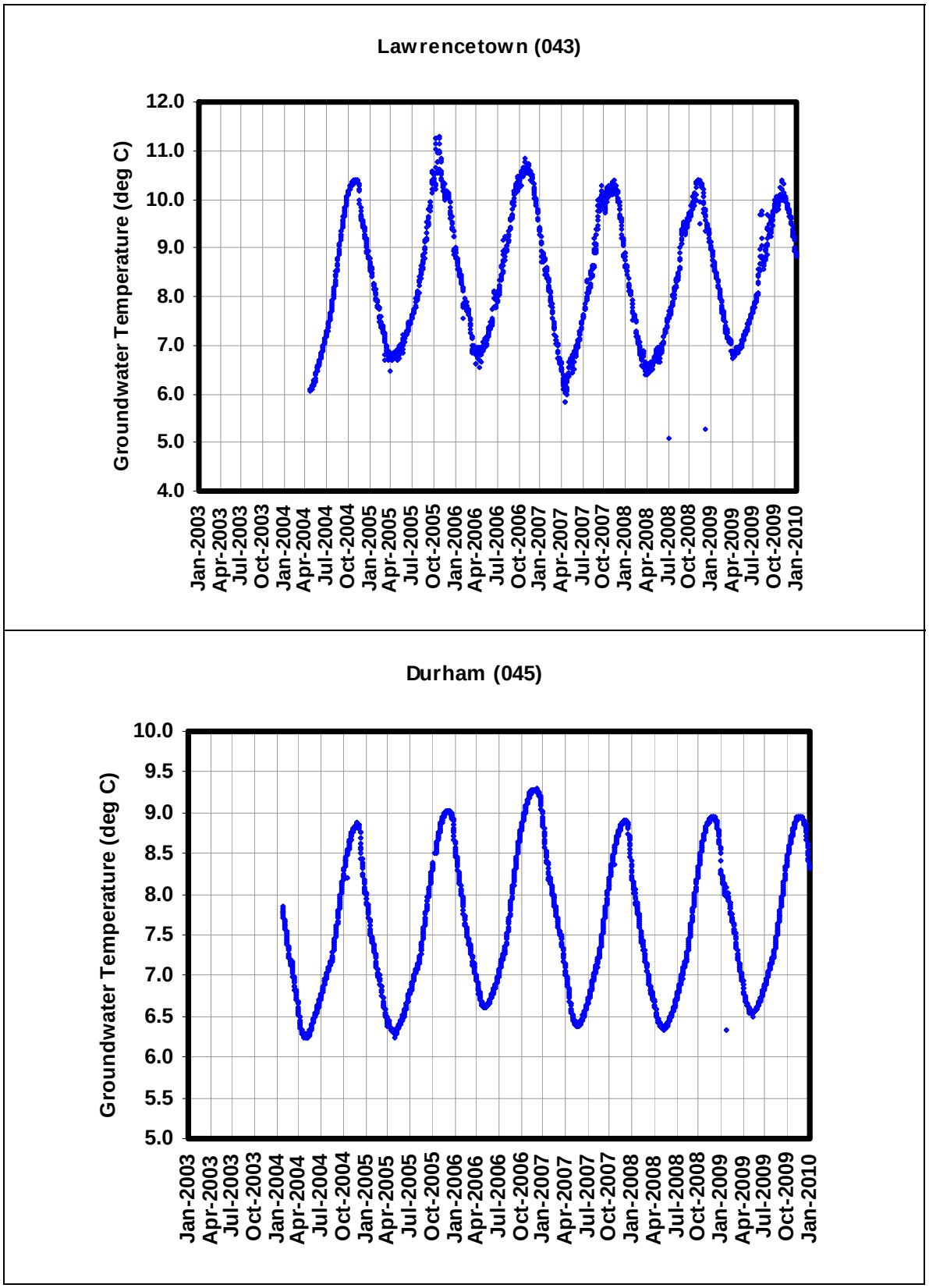


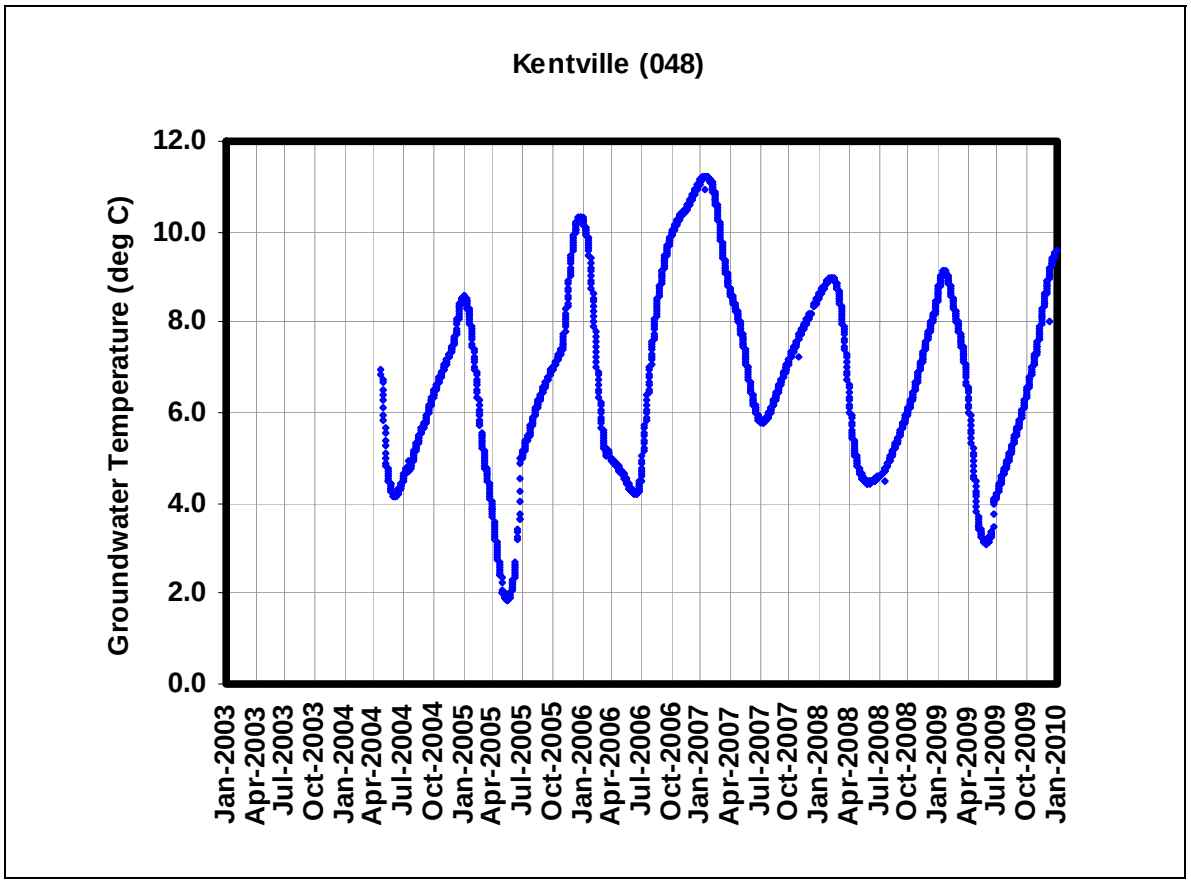
Murray Siding (007)

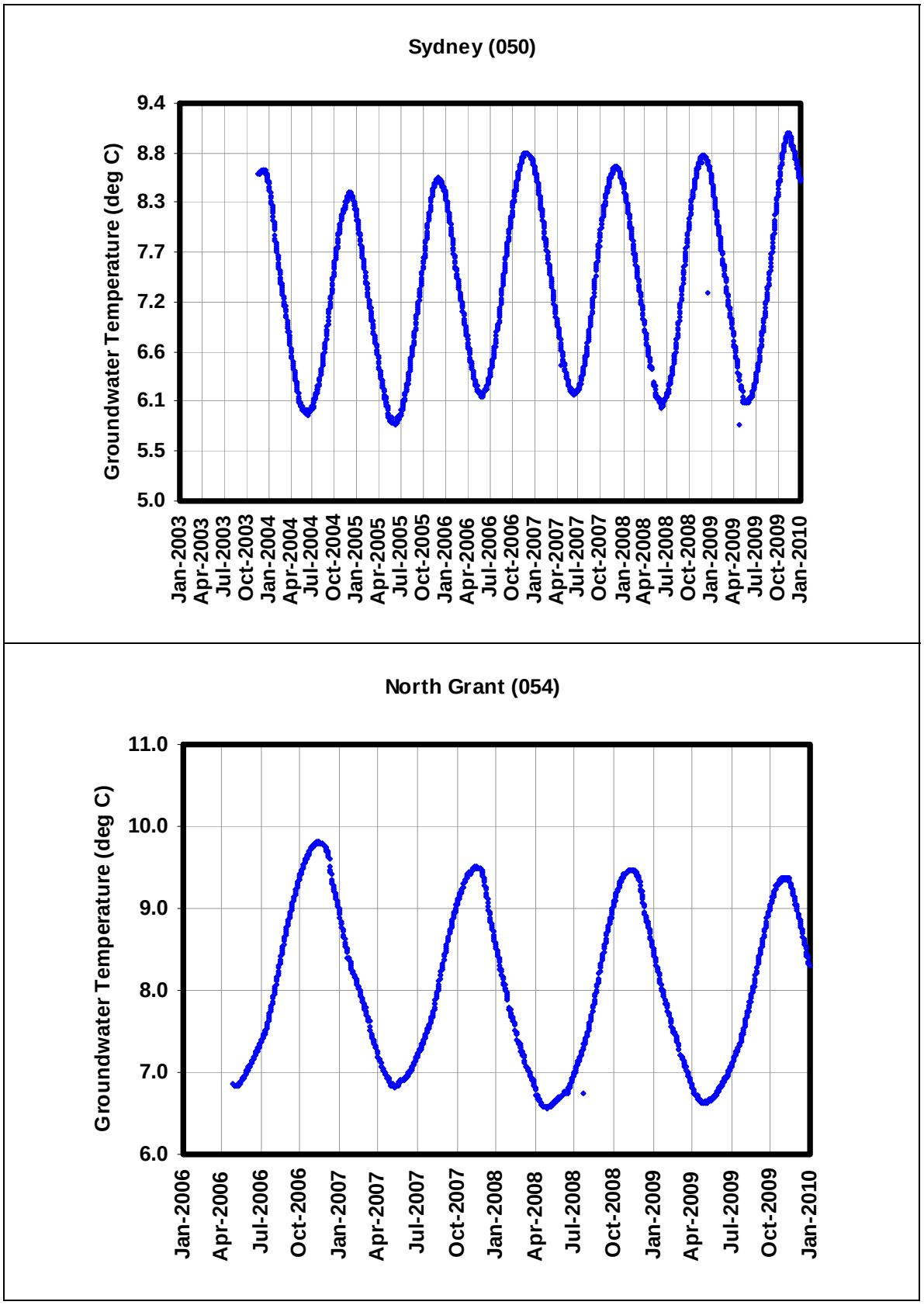
No temperature data available

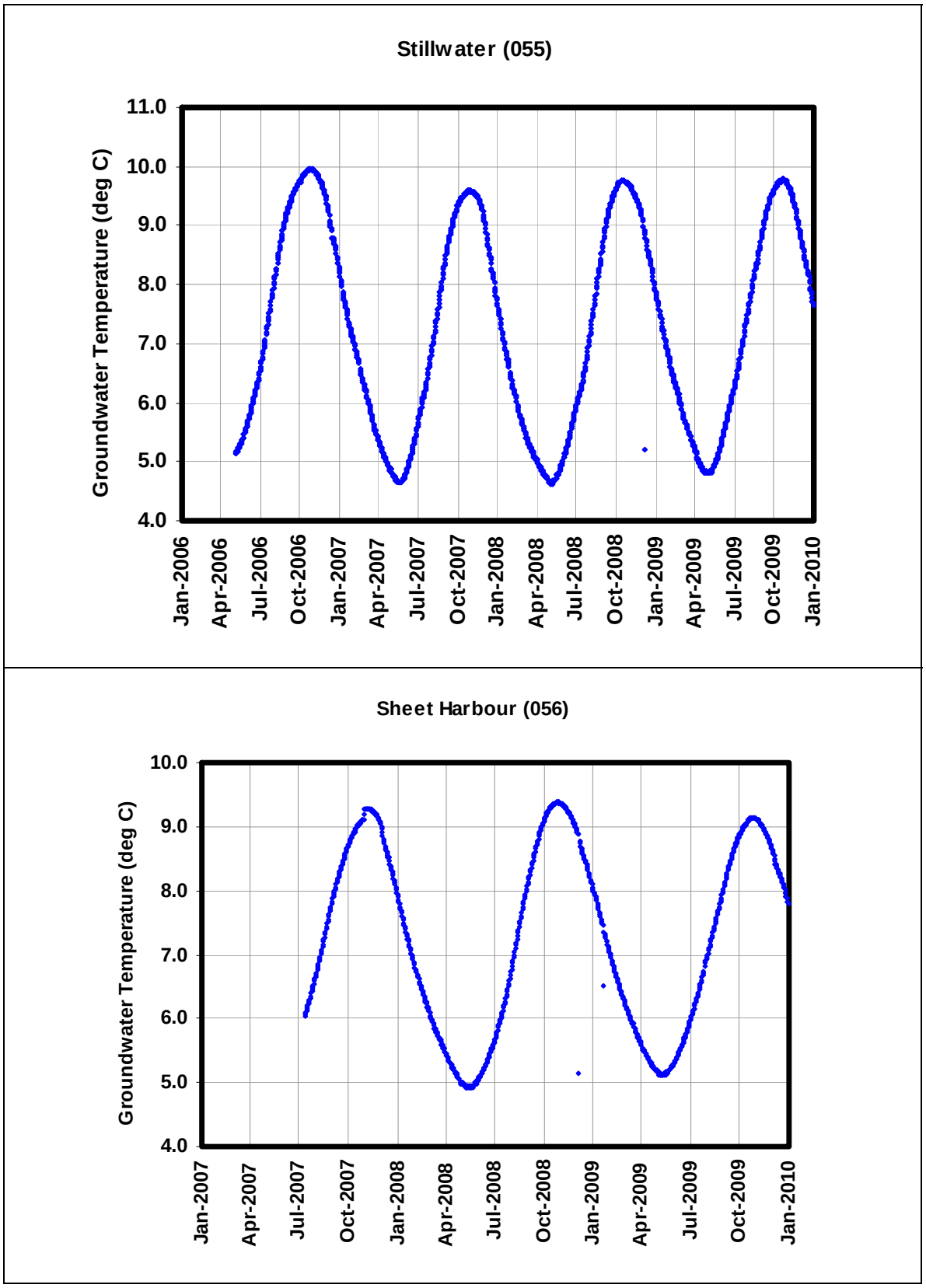

Wolfville (010)
Groundwater Temperature (deg C)
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Truro (014)
Groundwater Temperature (deg C)
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

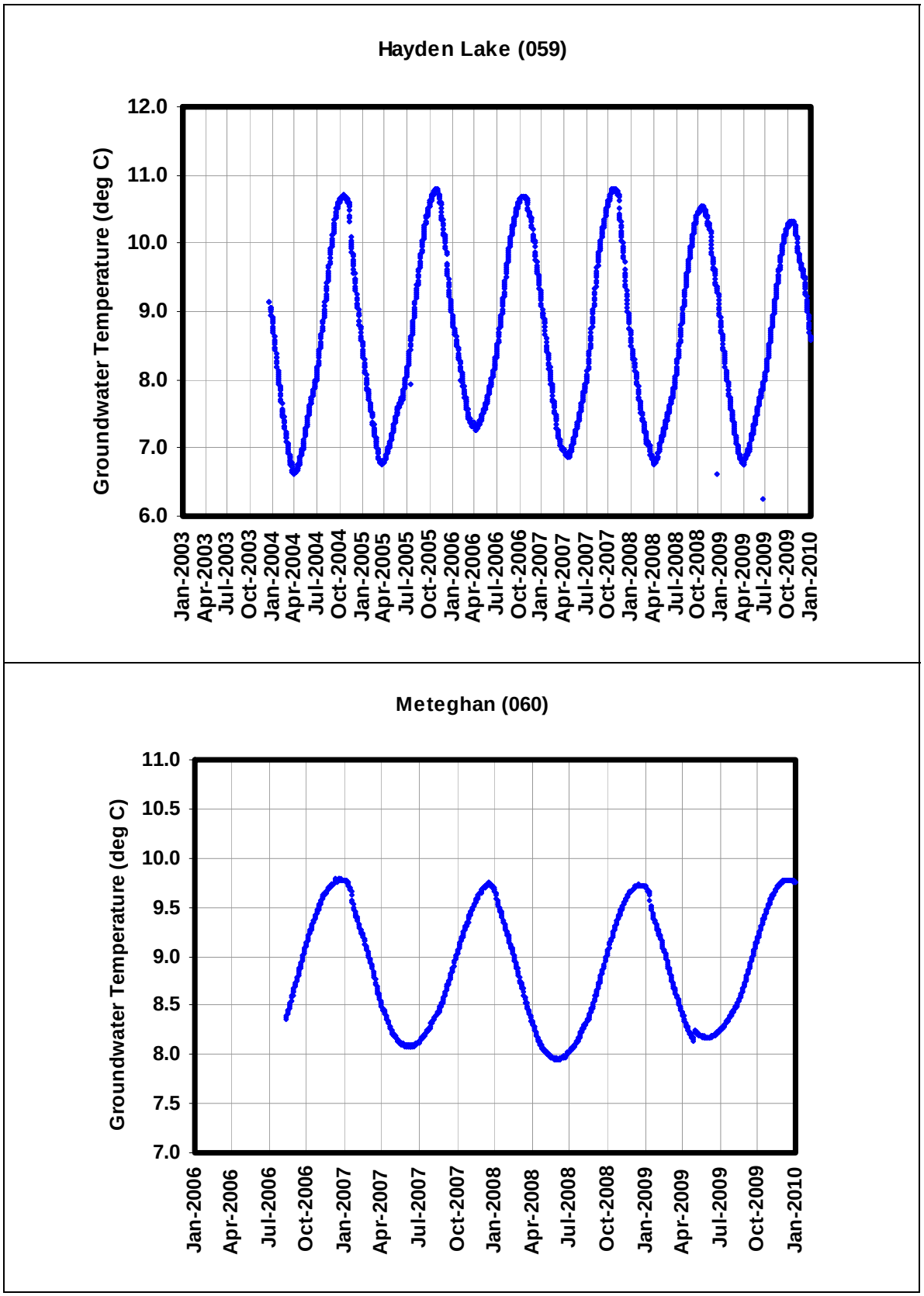

Monastery (028)
Groundwater Temperature (deg C)
8.3
8.2
8.1
8.0
7.9
7.8
7.7
Jan-2003
Apr-2003
Jul-2003
Oct-2003
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Point Aconi (030)
Groundwater Temperature (deg C)
15.0
13.0
11.0
9.0
7.0
5.0
3.0
Jan-2003
Apr-2003
Jul-2003
Oct-2003
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

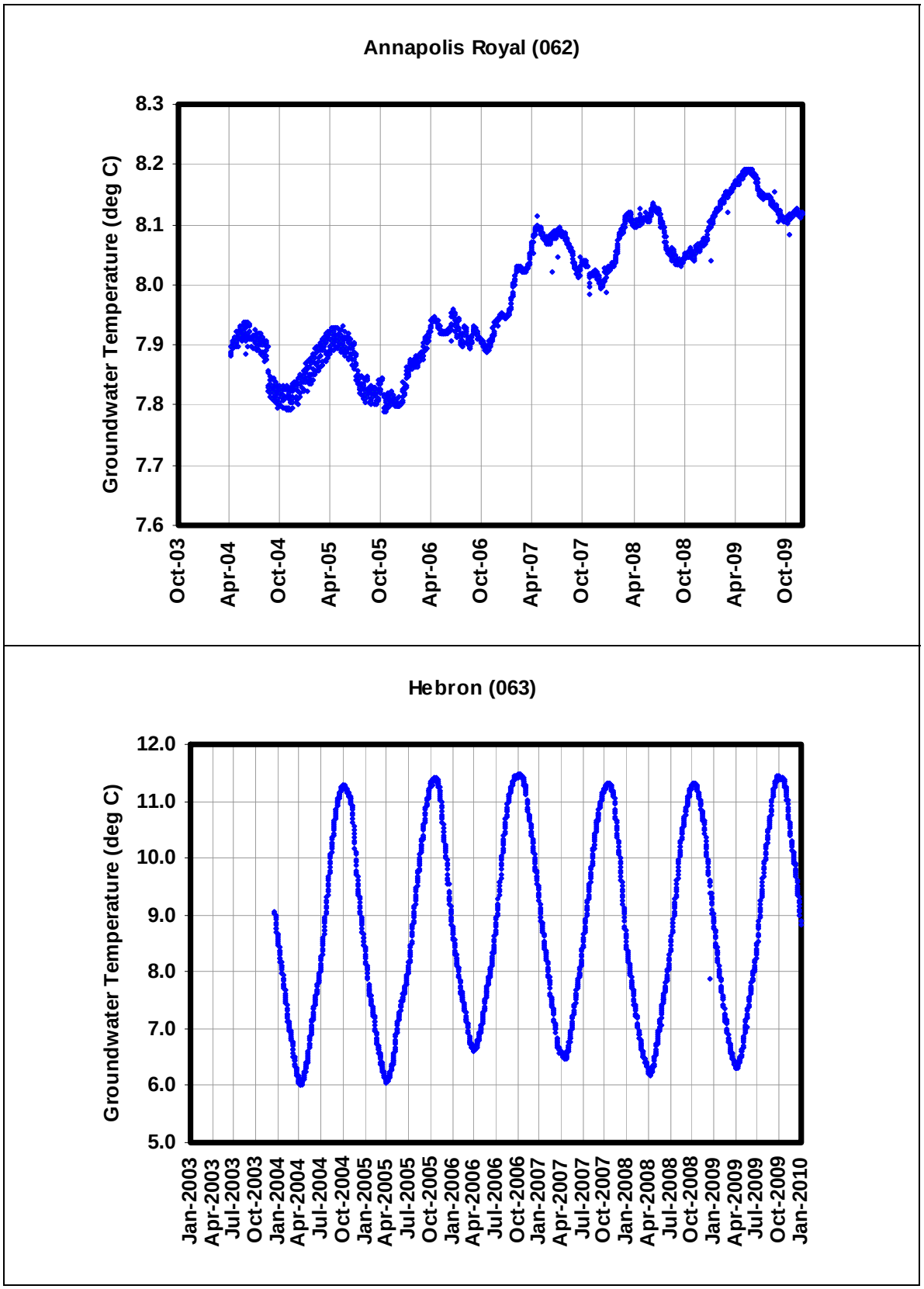

Lawrencetown (043)
Groundwater Temperature (deg C)
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
Jan-2003
Apr-2003
Jul-2003
Oct-2003
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Durham (045)
Groundwater Temperature (deg C)
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
Jan-2003
Apr-2003
Jul-2003
Oct-2003
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

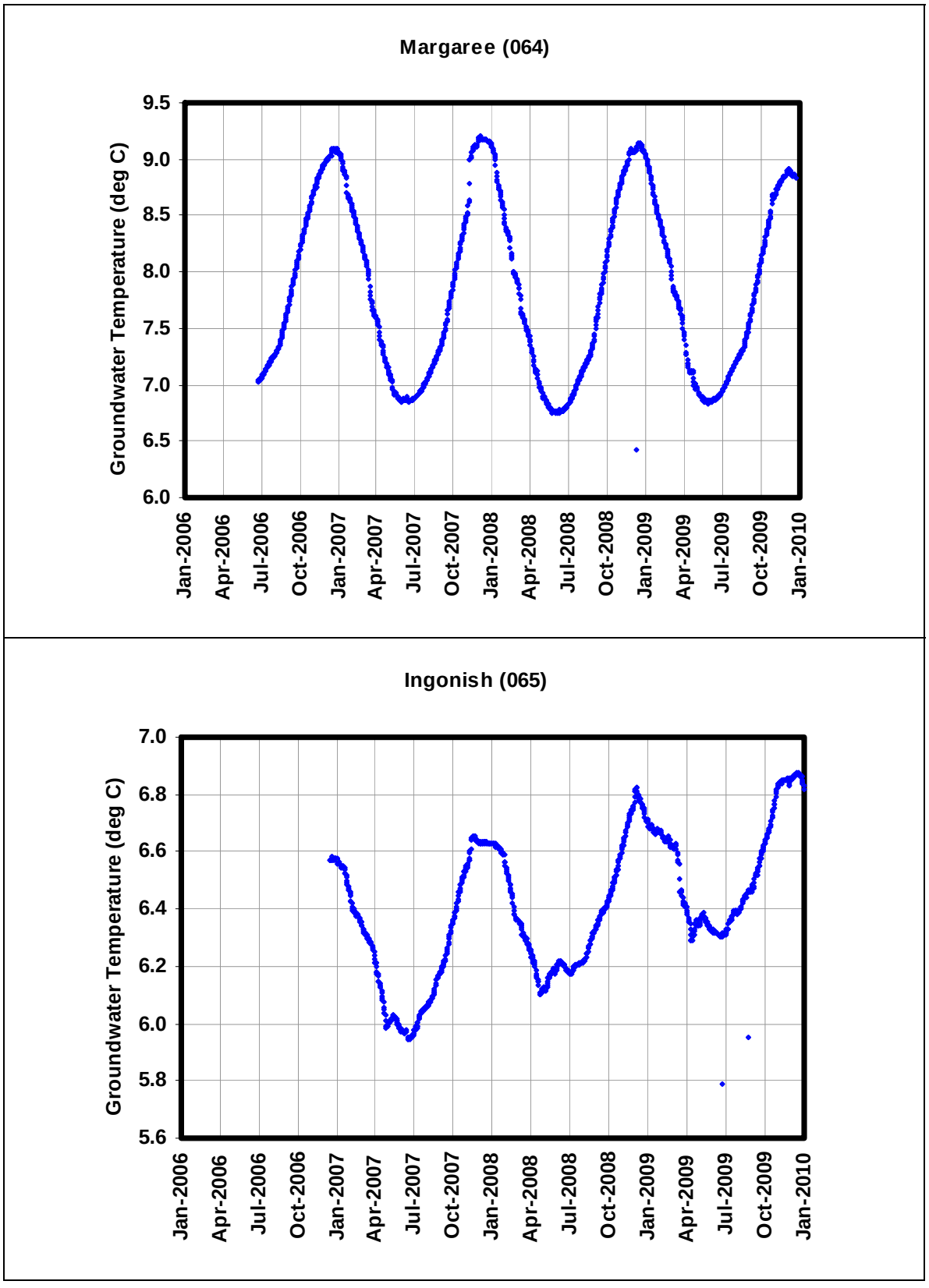

Kentville (048)
Groundwater Temperature (deg C)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan-2003
Apr-2003
Jul-2003
Oct-2003
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

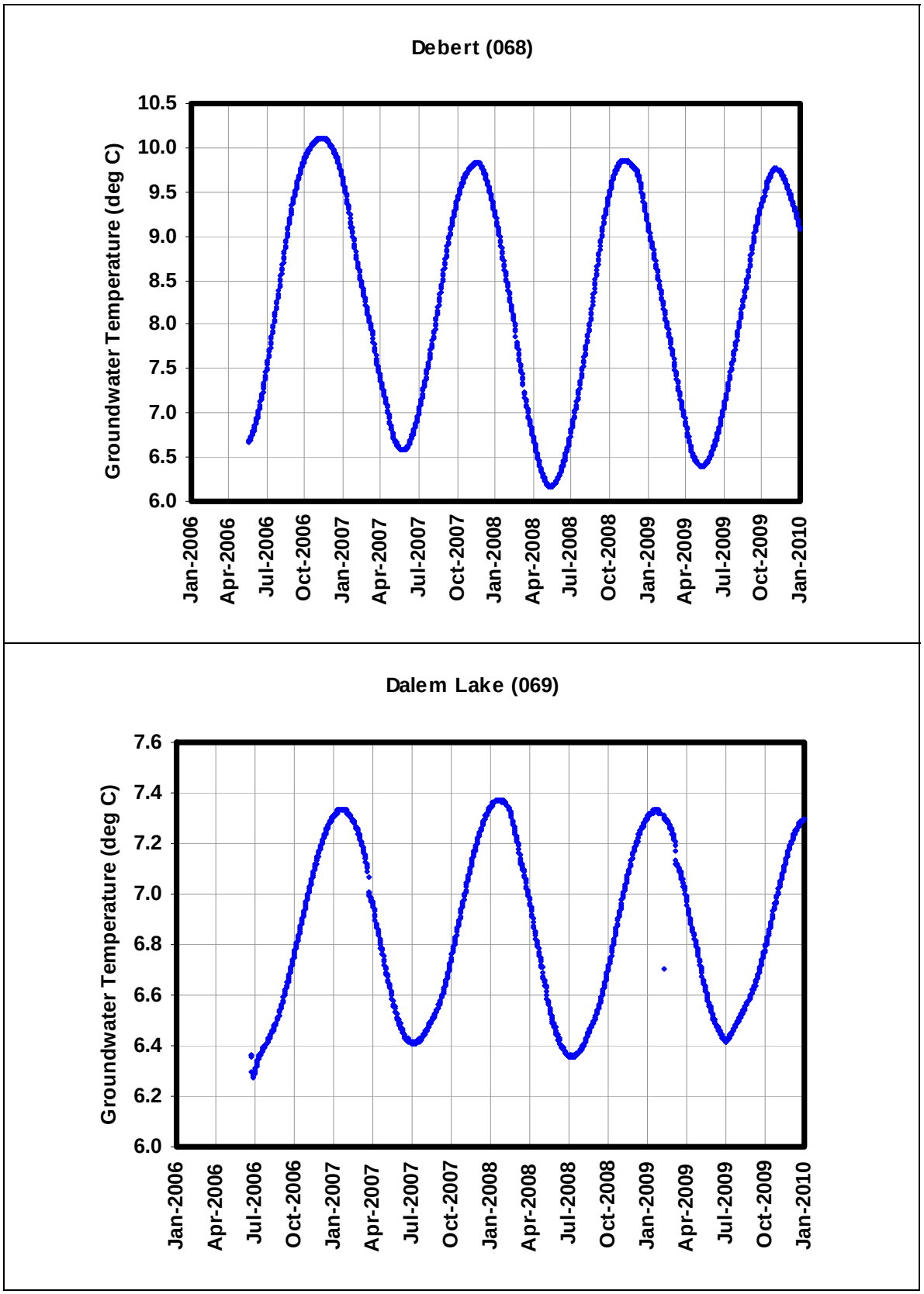

Sydney (050)
Groundwater Temperature (deg C)
9.4
8.8
8.3
7.7
7.2
6.6
6.1
5.5
5.0
Jan-2003
Apr-2003
Jul-2003
Oct-2003
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
North Grant (054)
Groundwater Temperature (deg C)
11.0
10.0
9.0
8.0
7.0
6.0
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

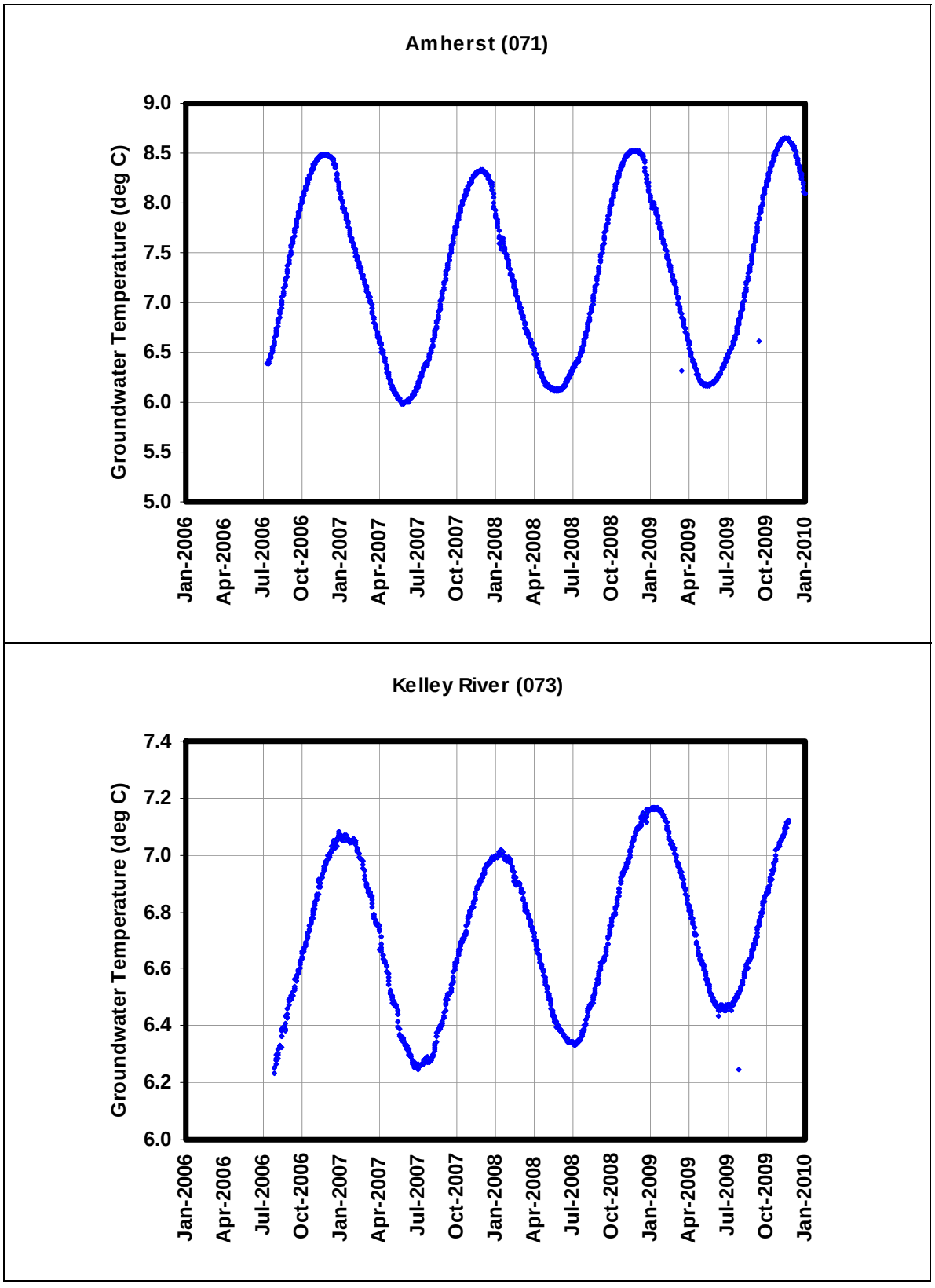

Stillwater (055)
Groundwater Temperature (deg C)
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Sheet Harbour (056)
Groundwater Temperature (deg C)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

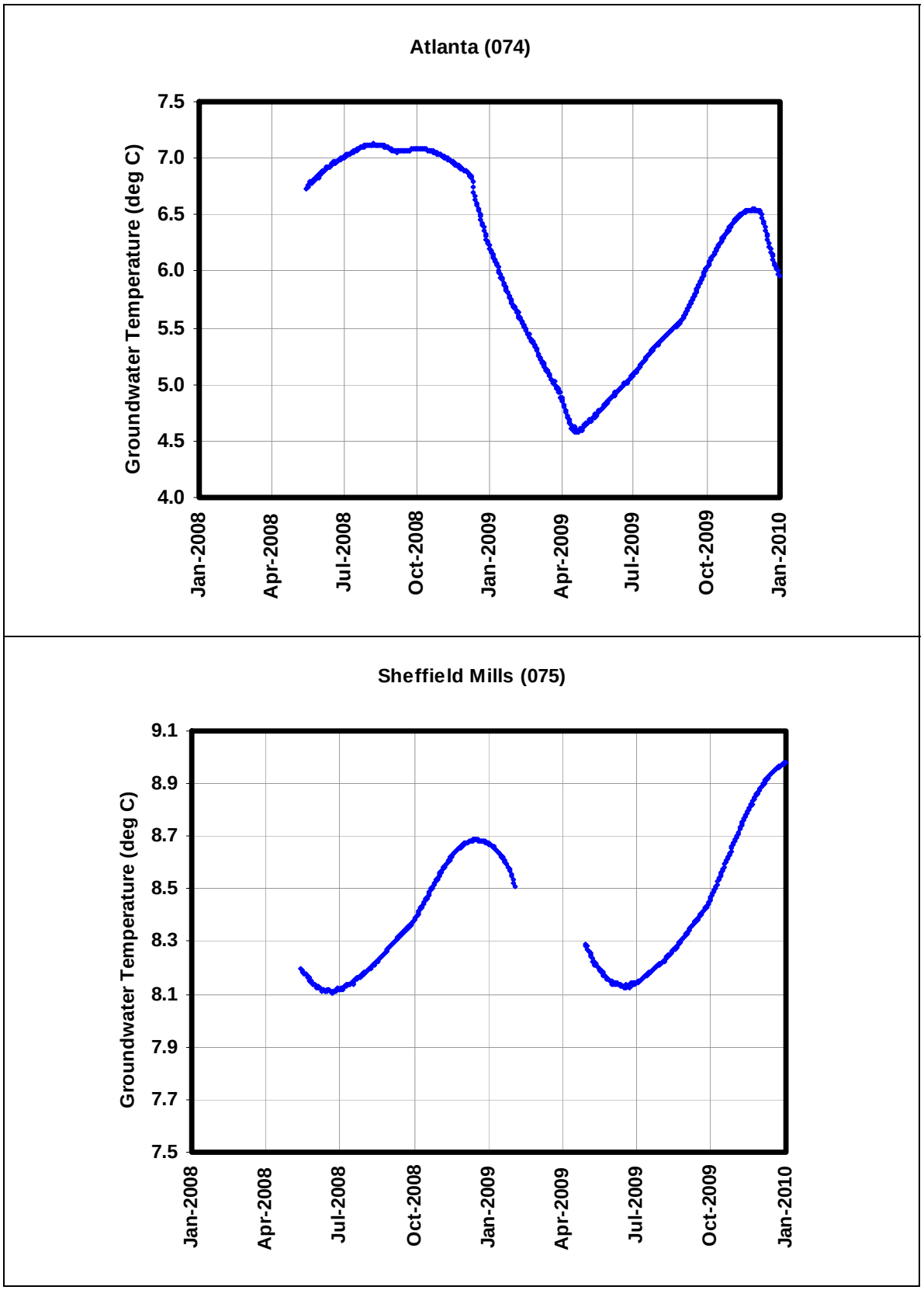

Hayden Lake (059)
Groundwater Temperature (deg C)
12.0
11.0
10.0
9.0
8.0
7.0
6.0
Jan-2003
Apr-2003
Jul-2003
Oct-2003
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Meteghan (060)
Groundwater Temperature (deg C)
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

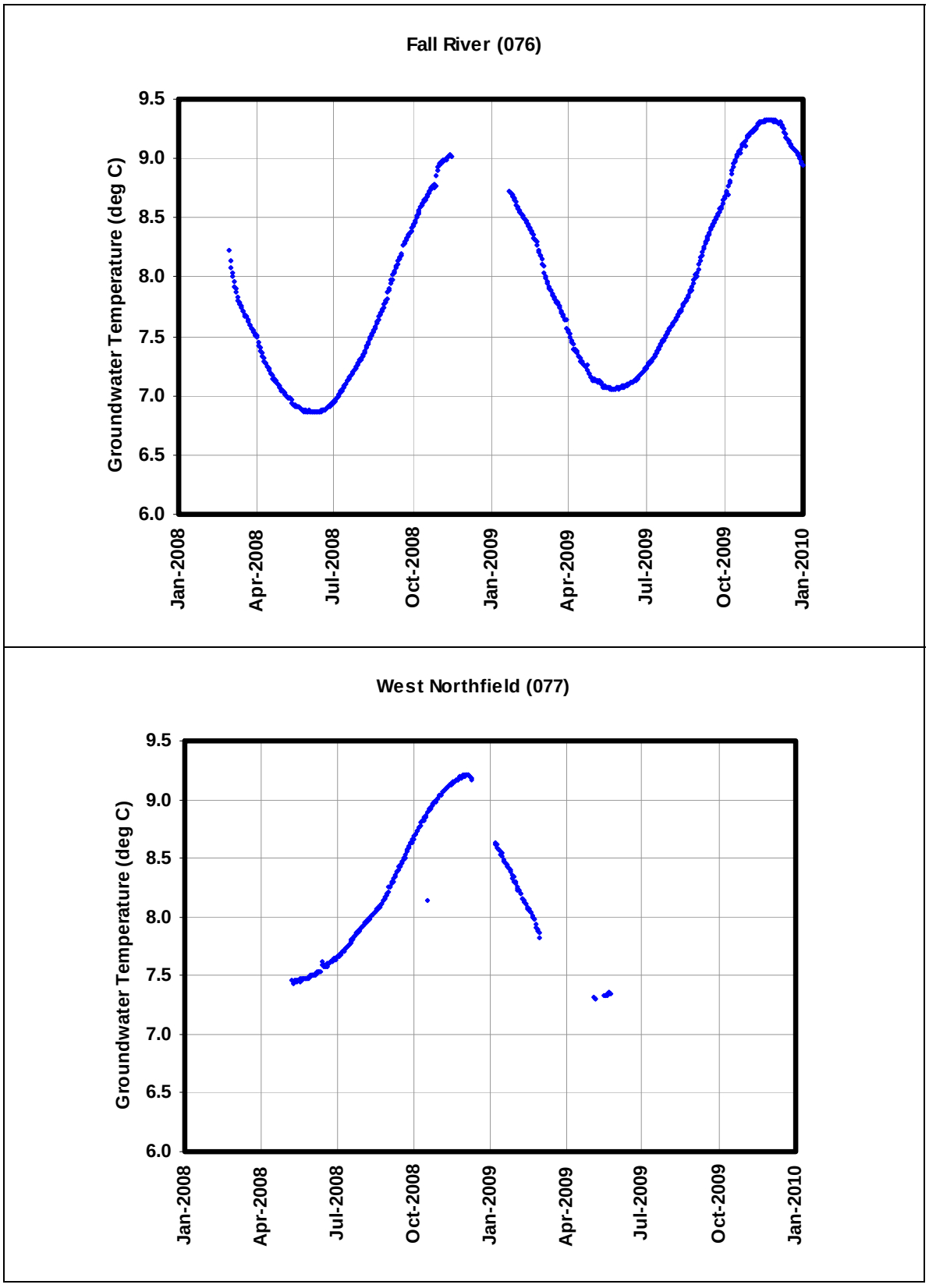

Annapolis Royal (062)
Groundwater Temperature (deg C)
8.3
8.2
8.1
8.0
7.9
7.8
7.7
7.6
Oct-03
Apr-04
Oct-04
Apr-05
Oct-05
Apr-06
Oct-06
Apr-07
Oct-07
Apr-08
Oct-08
Apr-09
Oct-09
Hebron (063)
Groundwater Temperature (deg C)
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
Jan-2003
Apr-2003
Jul-2003
Oct-2003
Jan-2004
Apr-2004
Jul-2004
Oct-2004
Jan-2005
Apr-2005
Jul-2005
Oct-2005
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

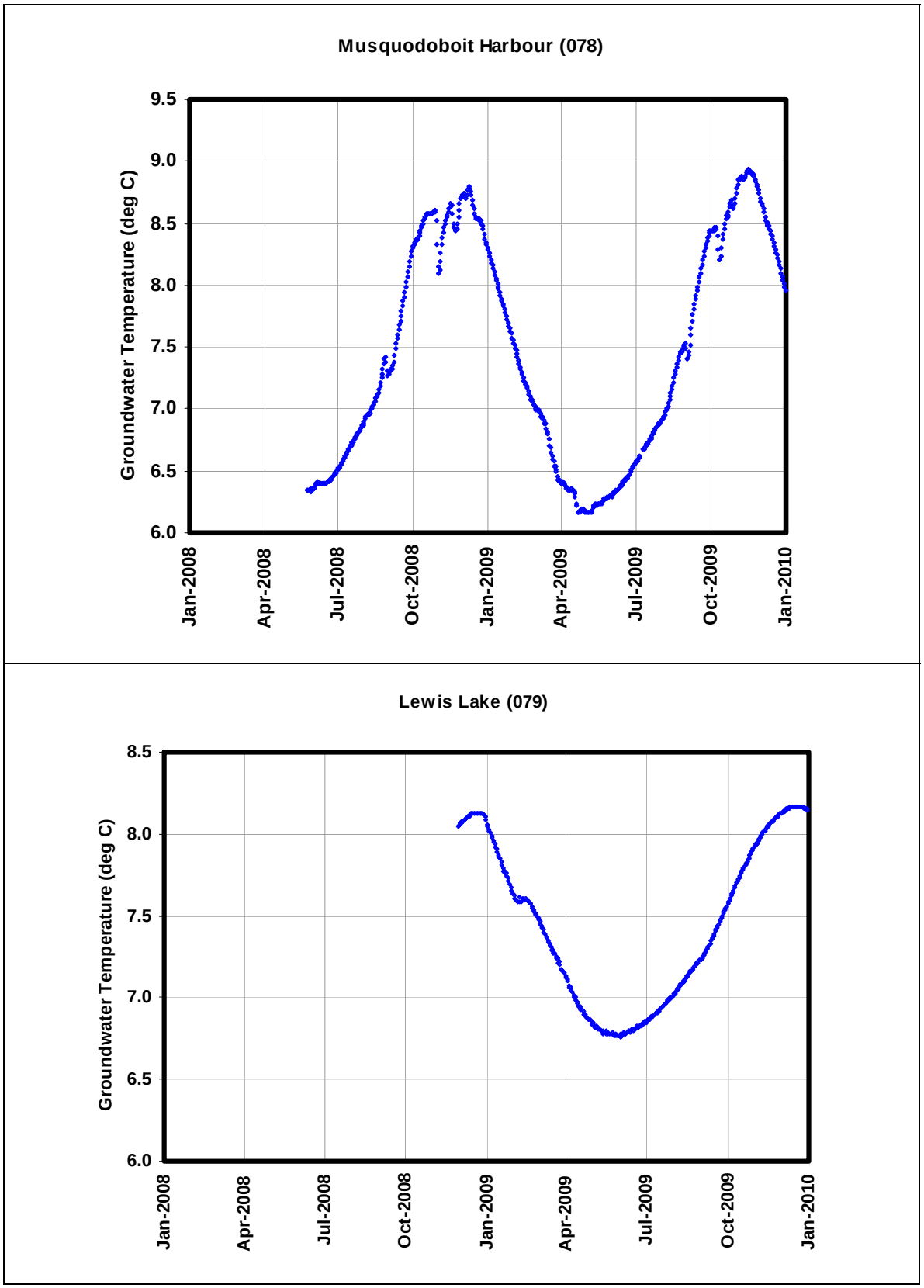

Margaree (064)
Groundwater Temperature (deg C)
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Ingonish (065)
Groundwater Temperature (deg C)
7.0
6.8
6.6
6.4
6.2
6.0
5.8
5.6
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

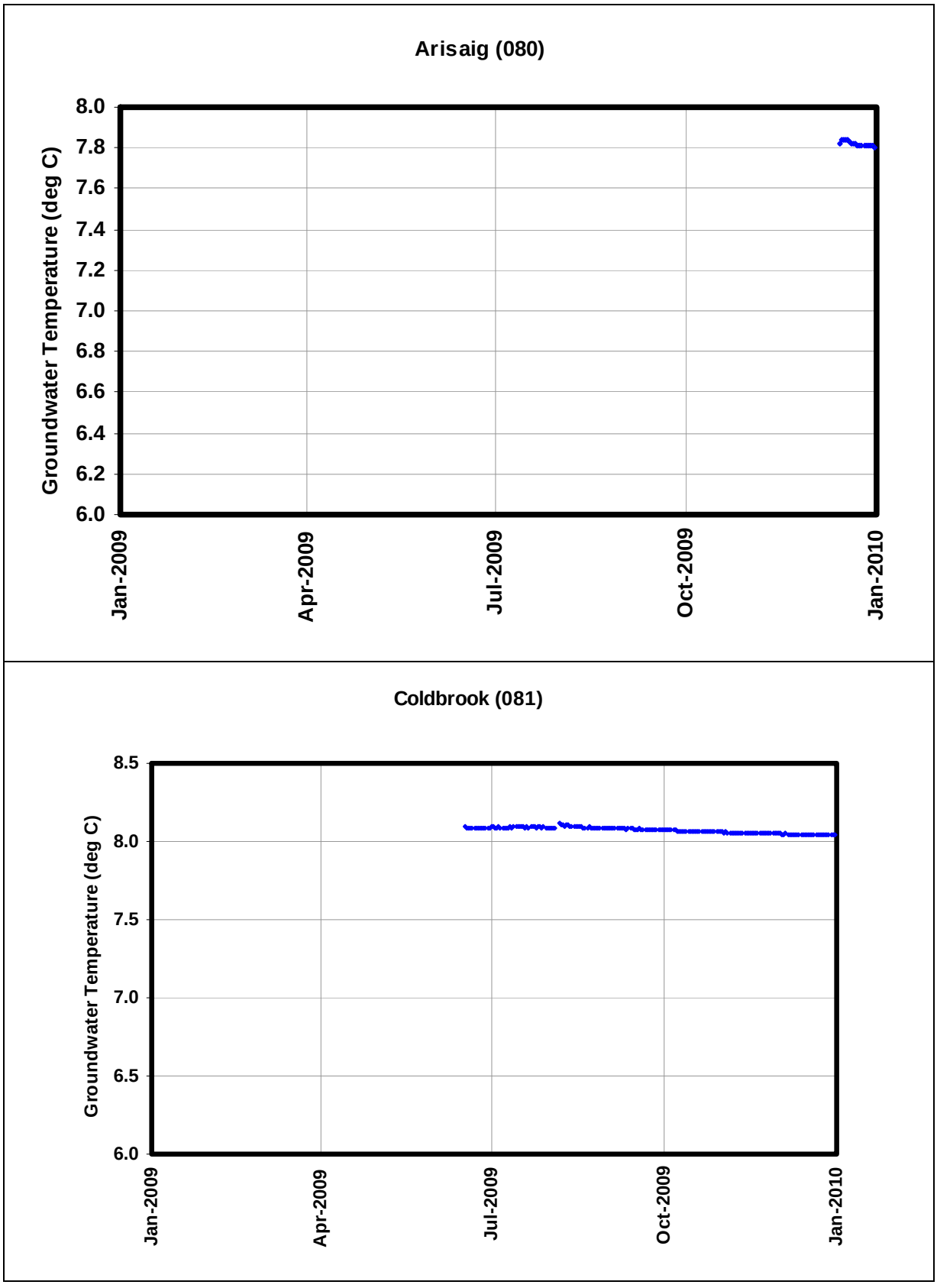

Debert (068)
Groundwater Temperature (deg C)
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Dalem Lake (069)
Groundwater Temperature (deg C)
7.6
7.4
7.2
7.0
6.8
6.6
6.4
6.2
6.0
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

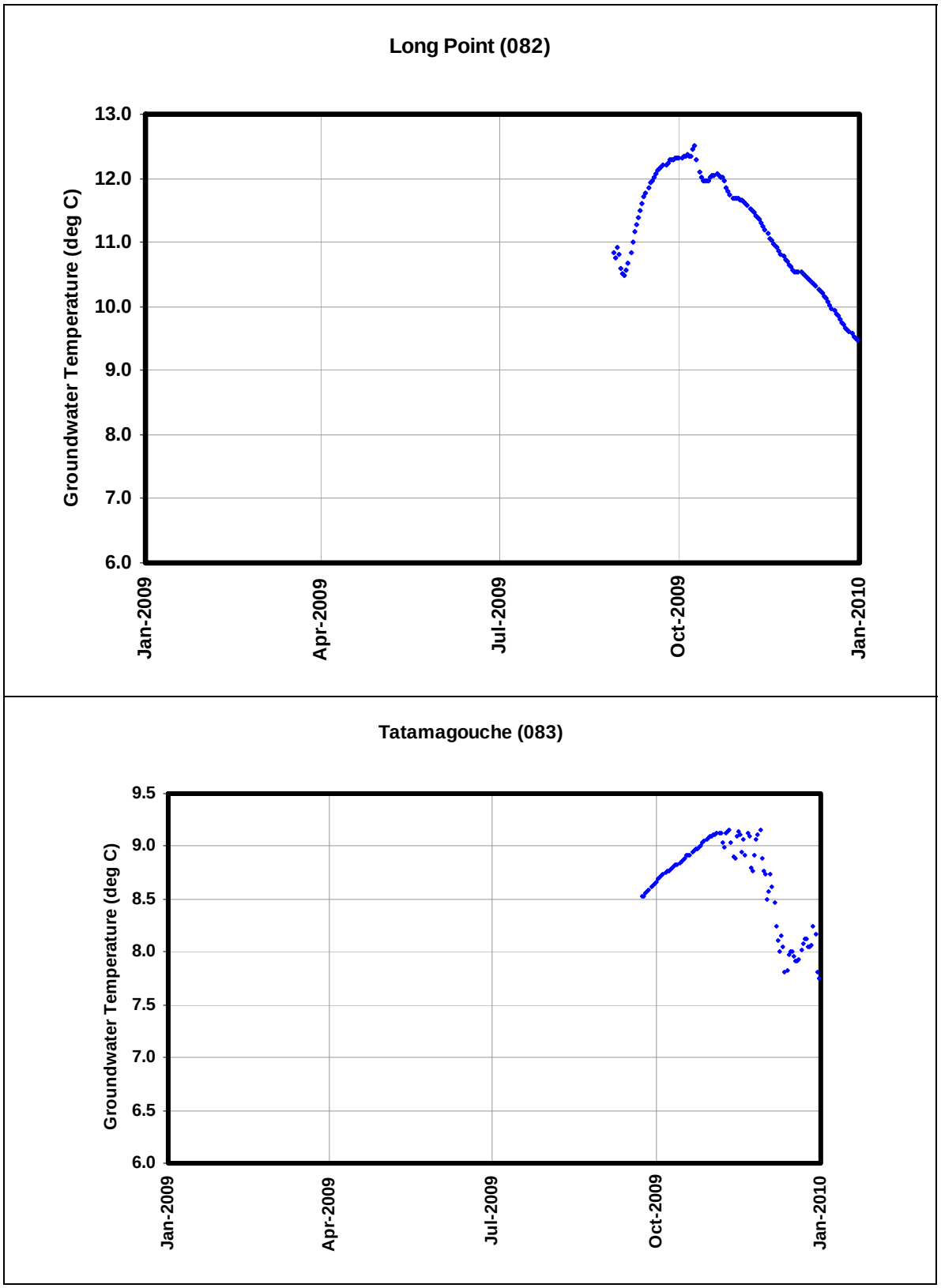

Amherst (071)
Groundwater Temperature (deg C)
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Kelley River (073)
Groundwater Temperature (deg C)
7.4
7.2
7.0
6.8
6.6
6.4
6.2
6.0
Jan-2006
Apr-2006
Jul-2006
Oct-2006
Jan-2007
Apr-2007
Jul-2007
Oct-2007
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010


Atlanta (074)
Groundwater Temperature (deg C)
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Sheffield Mills (075)
Groundwater Temperature (deg C)
9.1
8.9
8.7
8.5
8.3
8.1
7.9
7.7
7.5
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010


Fall River (076)
Groundwater Temperature (deg C)
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
West Northfield (077)
Groundwater Temperature (deg C)
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010


Musquodoboit Harbour (078)
Groundwater Temperature (deg C)
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Lewis Lake (079)
Groundwater Temperature (deg C)
8.5
8.0
7.5
7.0
6.5
6.0
Jan-2008
Apr-2008
Jul-2008
Oct-2008
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010


Arisaig (080)
Groundwater Temperature (deg C)
8.0
7.8
7.6
7.4
7.2
7.0
6.8
6.6
6.4
6.2
6.0
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Coldbrook (081)
Groundwater Temperature (deg C)
8.5
8.0
7.5
7.0
6.5
6.0
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010


Long Point (082)
Groundwater Temperature (deg C)
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010
Tatamagouche (083)
Groundwater Temperature (deg C)
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
Jan-2009
Apr-2009
Jul-2009
Oct-2009
Jan-2010

APPENDIX E
WATER LEVEL TREND ANALYSIS

Table E1. Water Level Statistical Trend Analyses

Observation Well	Well Number	First Year	Last Year	n[1]	Mann-Kendall Statistics		Confidence Level[4]
					S[2]	Q[3] (cm/year)	
Greenwood	003	1966	2009	21	-1	0.0	<80%
Fraser Brook	004	1966	2009	20	85	0.4	99%
Wilmot	005	1966	2009	19	21	0.3	<80%
Murray Siding	007	1968	1990	13	-37	-2.5	95%
Wolfville	010	1969	2009	21	-139	-2.3	99%
Truro	014	1971	2009	17	32	2.5	<80%
Monastery	028	1976	2009	11	-14	-3.6	<80%
Point Aconi	030	1976	2009	17	1	0.0	<80%
Lawrencetown	043	1978	2009	13	-20	-2.3	<80%
Durham	045	1979	2009	24	69	1.8	90%
Kentville	048	1980	2009	16	-48	-0.8	95%
Sydney	050	1984	2009	16	-79	-5.8	99%
North Grant	054	1987	2009	8	NA	NA	NA
Stillwater	055	1987	2009	7	NA	NA	NA
Sheet Harbour	056	1987	2009	7	NA	NA	NA
Hayden Lake	059	1988	2009	15	34	0.9	80%
Meteghan	060	1987	2009	9	NA	NA	NA
Annapolis Royal	062	1990	2009	8	NA	NA	NA
Hebron	063	1990	2009	8	NA	NA	NA
Margaree	064	1990	2009	8	NA	NA	NA
Ingonish	065	1990	2009	7	NA	NA	NA
Debert	068	1993	2009	4	NA	NA	NA
Dalem Lake	069	1992	2009	6	NA	NA	NA
Amherst	071	1993	2009	3	NA	NA	NA
Kelley River	073	2006	2009	3	NA	NA	NA
Atlanta	074	2008	2009	1	NA	NA	NA
Sheffield Mills	075	2008	2009	1	NA	NA	NA
Fall River	076	2008	2009	1	NA	NA	NA
West Northfield	077	2008	2009	1	NA	NA	NA
Musquodoboit Hbr	078	2008	2009	1	NA	NA	NA
Lewis Lake	079	2008	2009	1	NA	NA	NA
Arisaig	080	2009	2009	<1	NA	NA	NA
Coldbrook	081	2009	2009	<1	NA	NA	NA
Long Point	082	2009	2009	<1	NA	NA	NA
Tatamagouche	083	2009	2009	<1	NA	NA	NA

Notes:

1. n is the number of "usable" years. For a year of data to be considered a "usable", data must be available for at least 75% of the year, unless otherwise noted. Trend analyses were not completed for wells with less than 10 years of usable data.
2. S is the Mann-Kendall statistic, which is based on the differences between data values. Positive values indicate upward trends and negative values indicate downward trends (Gilbert, 1987).
3. Q is Sen's estimator of slope. Positive values indicate upward trends and negative values indicate downward trends (Gilbert, 1987).
4. The trend is considered to be statistically significant if the confidence level is at least 80%.
5. NA = Not Applicable (there were insufficient data to complete a trend analysis at this well).

APPENDIX F
WELL LOCATION MAPS &
SITE PHOTOGRAPHS

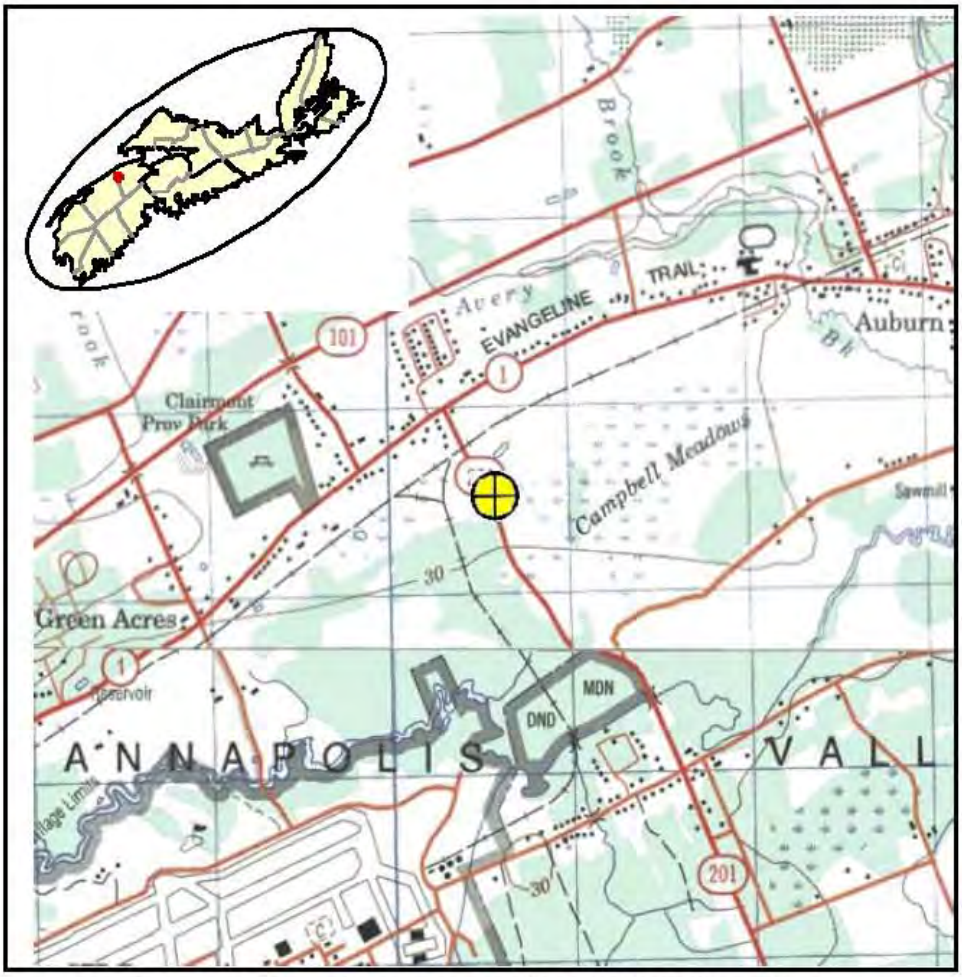


Figure F.1a: Greenwood (003) Well Location

Figure F.1b: Greenwood (003) Site Photograph

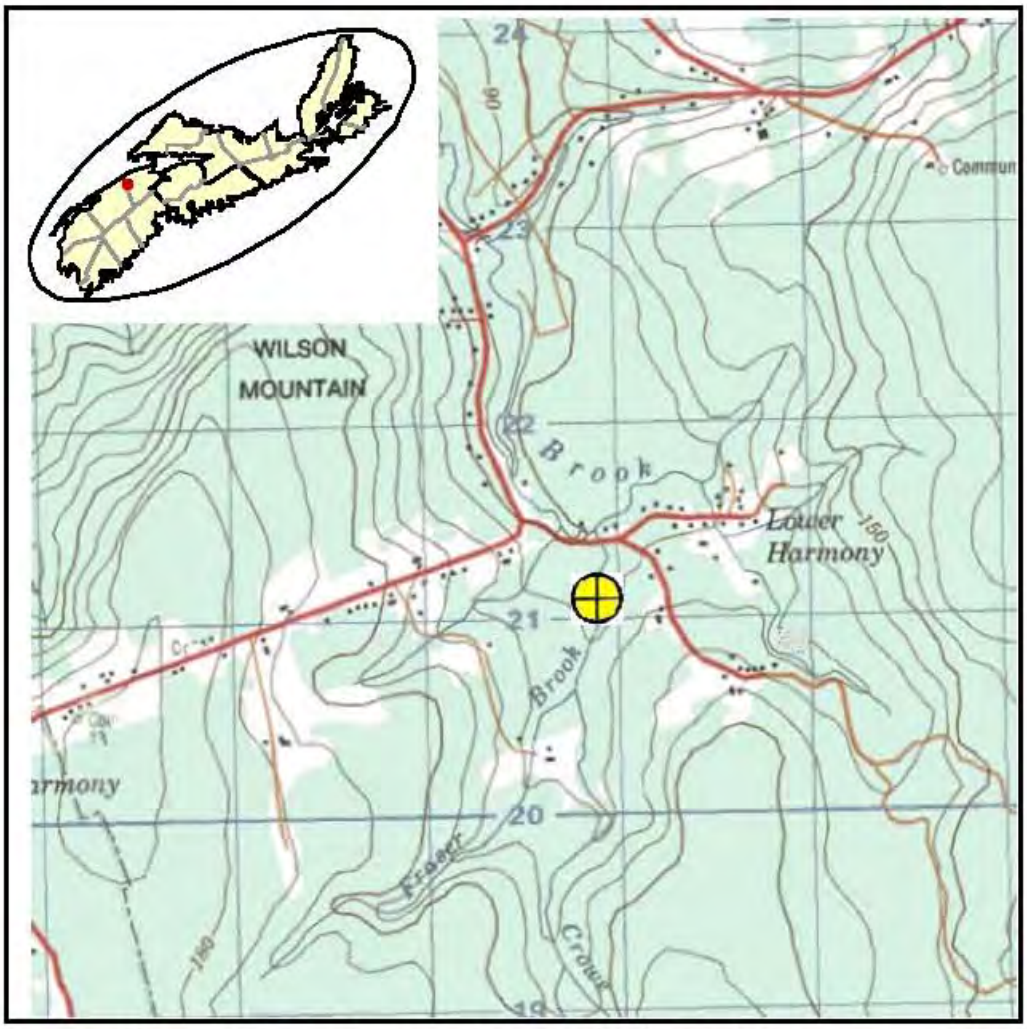


Figure F.2a: Fraser Brook (004) Well Location

Figure F.2b: Fraser Brook (004) Site Photograph

Figure F.3a: Wilmot (005) Well Location

Figure F.3b: Wilmot (005) Site Photograph

Figure F.4a: Murray Siding (007) Well Location

Figure F.4b: Murray Siding (007) Site Photograph

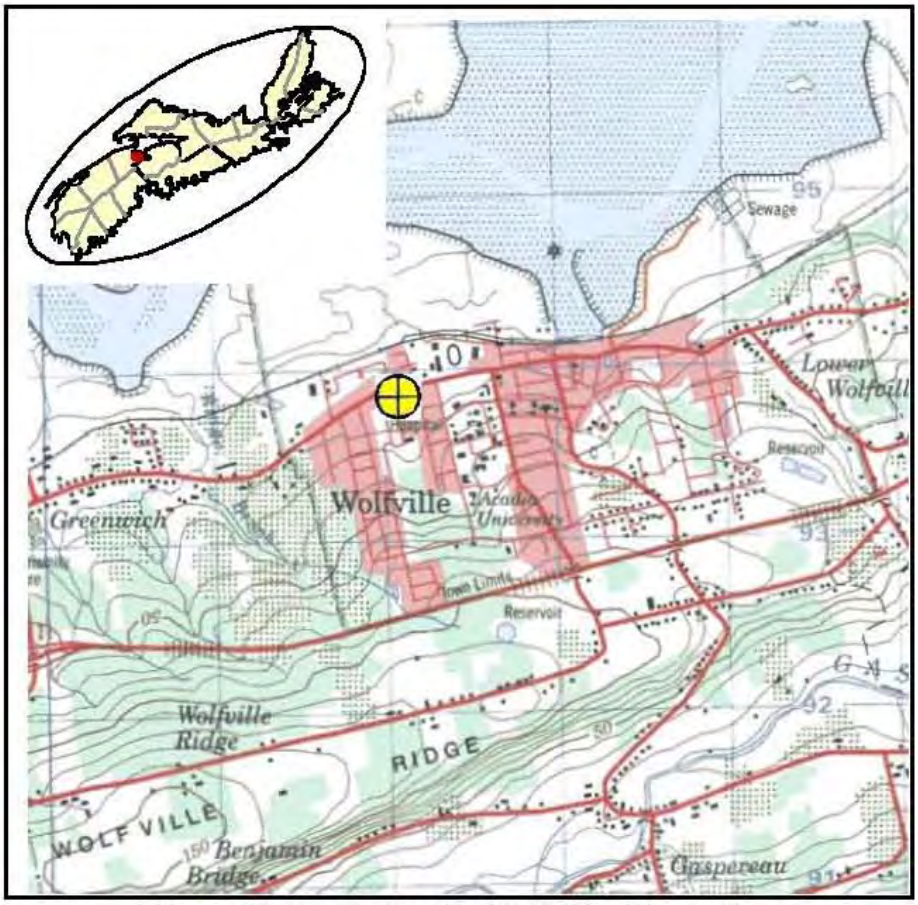


Figure F.5a: Wolfville (010) Well Location

Figure F.5b: Wolfville (010) Site Photograph

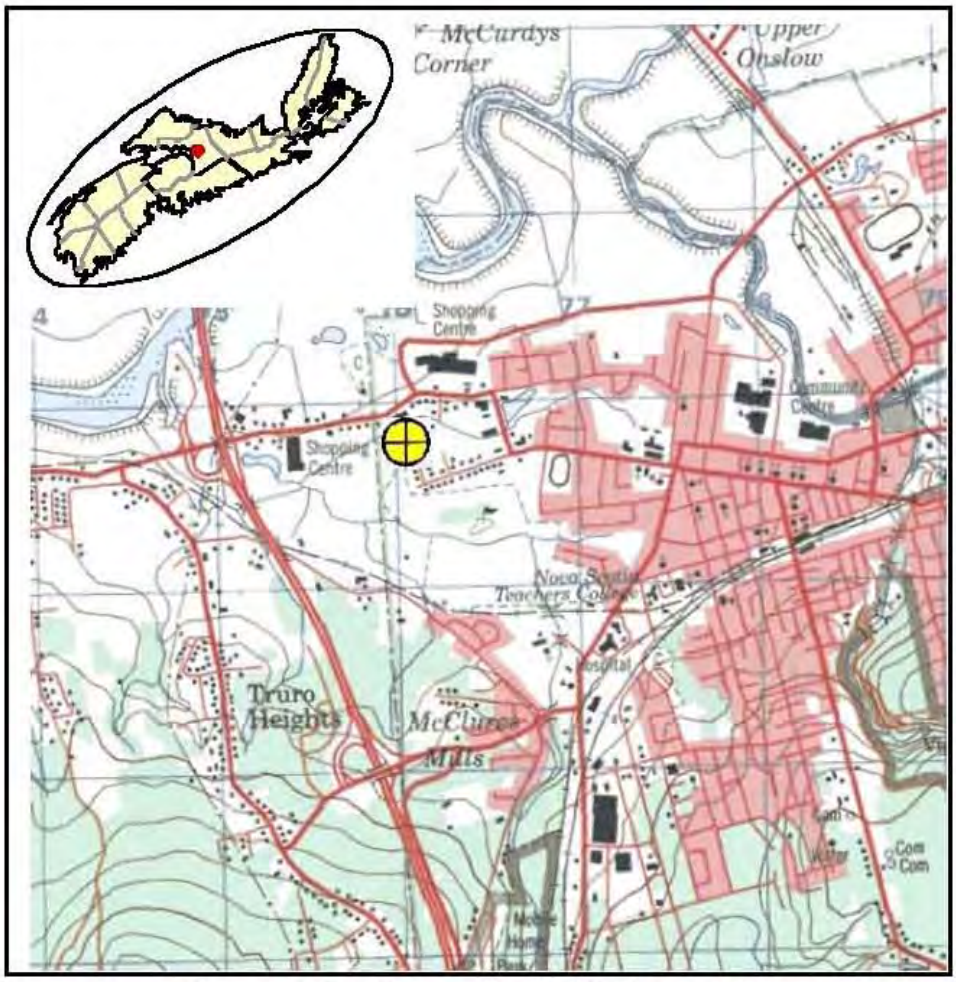


Figure F.6a: Truro (014) Well Location

Figure F.6b: Truro (014) Site Photograph

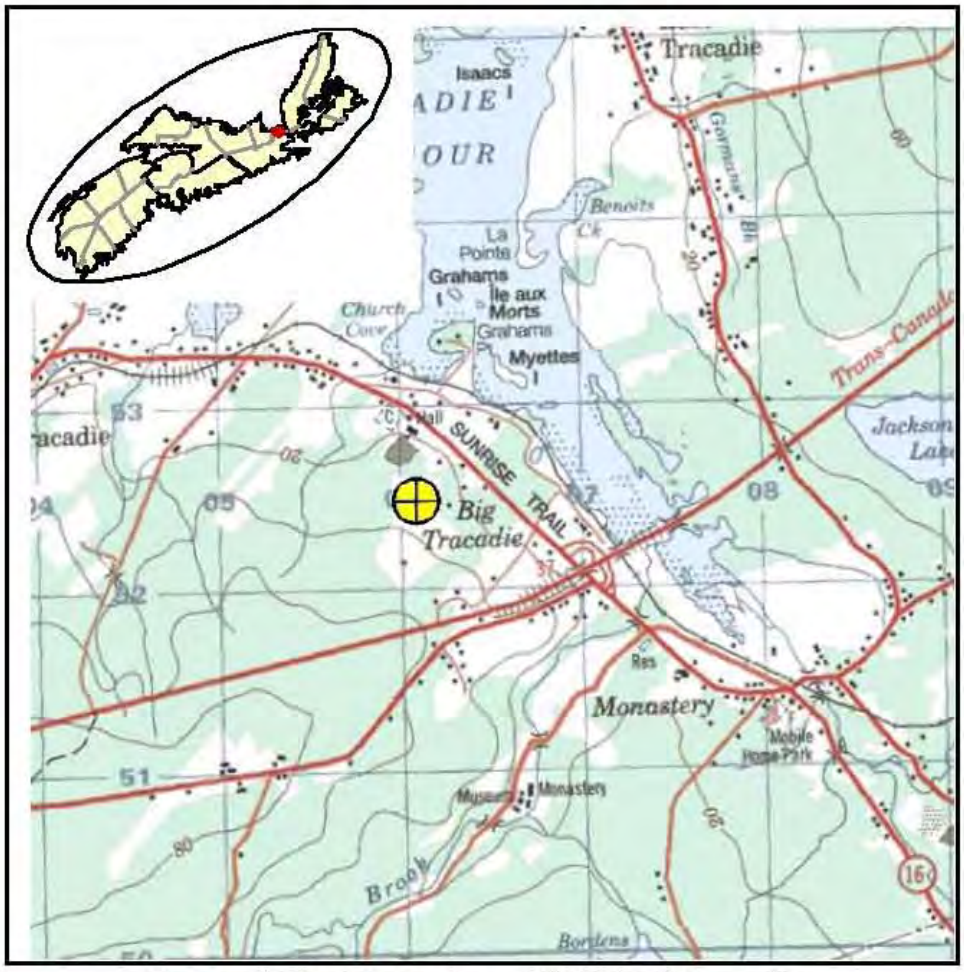


Figure F.7a: Monastery (028) Well Location

Figure F.7b: Monastery (028) Site Photograph

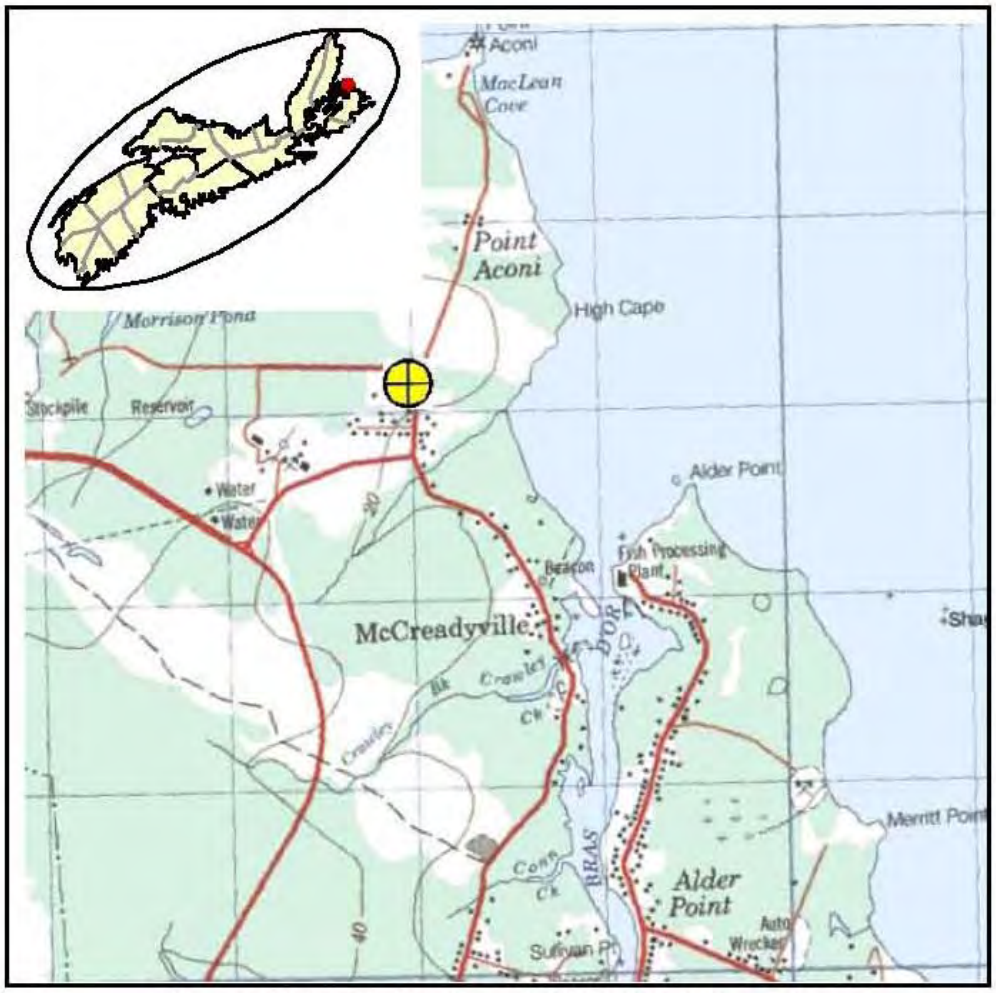


Figure F.8a: Point Aconi (030) Well Location

Figure F.8b: Point Aconi (030) Site Photograph

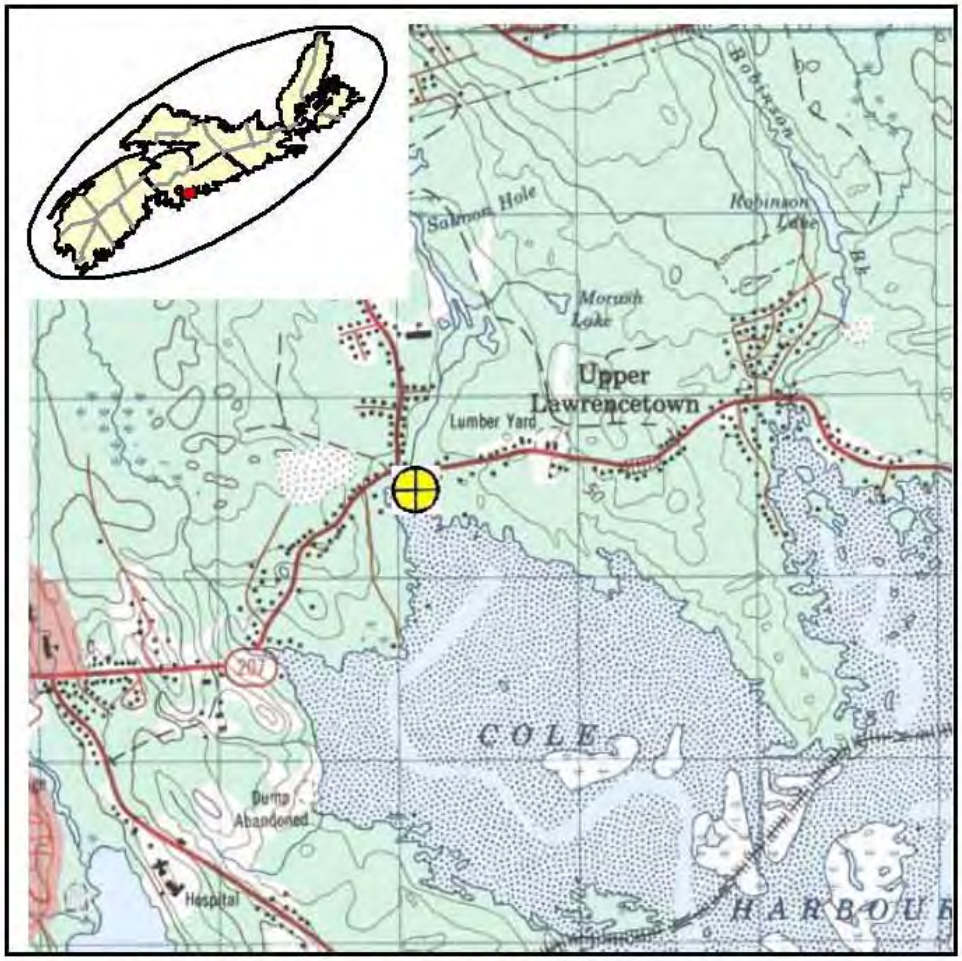


Figure F.9a: Lawrencetown (043) Well Location

Figure F.9b: Lawrencetown (043) Site Photograph

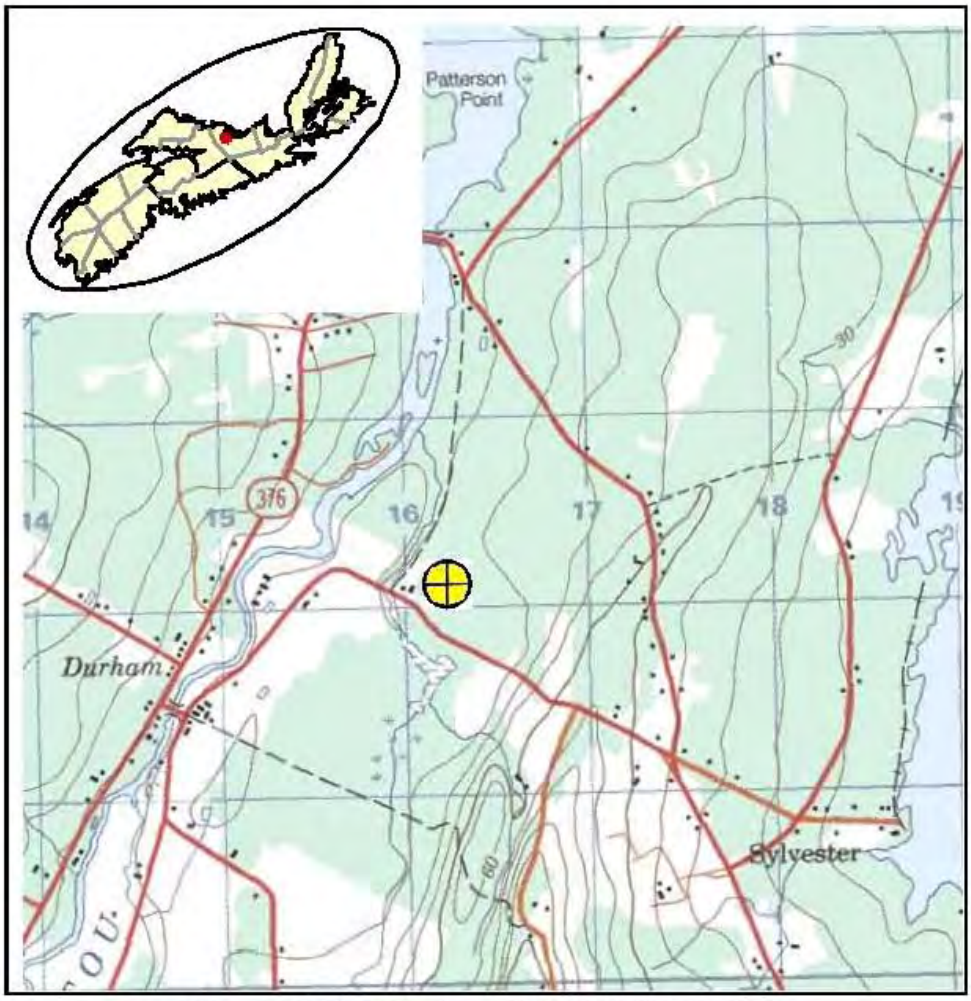


Figure F.10a: Durham (045) Well Location

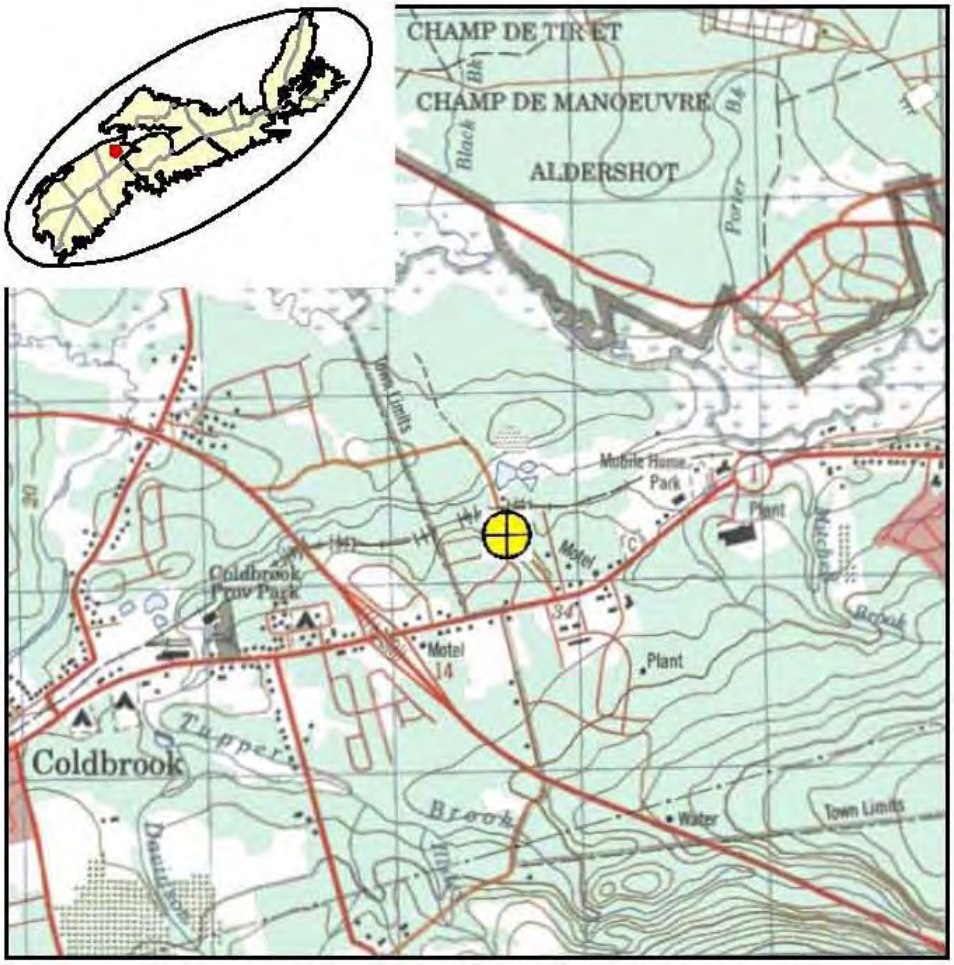


Figure F.11a: Kentville (048) Well Location

Figure F.11b: Kentville (048) Site Photograph

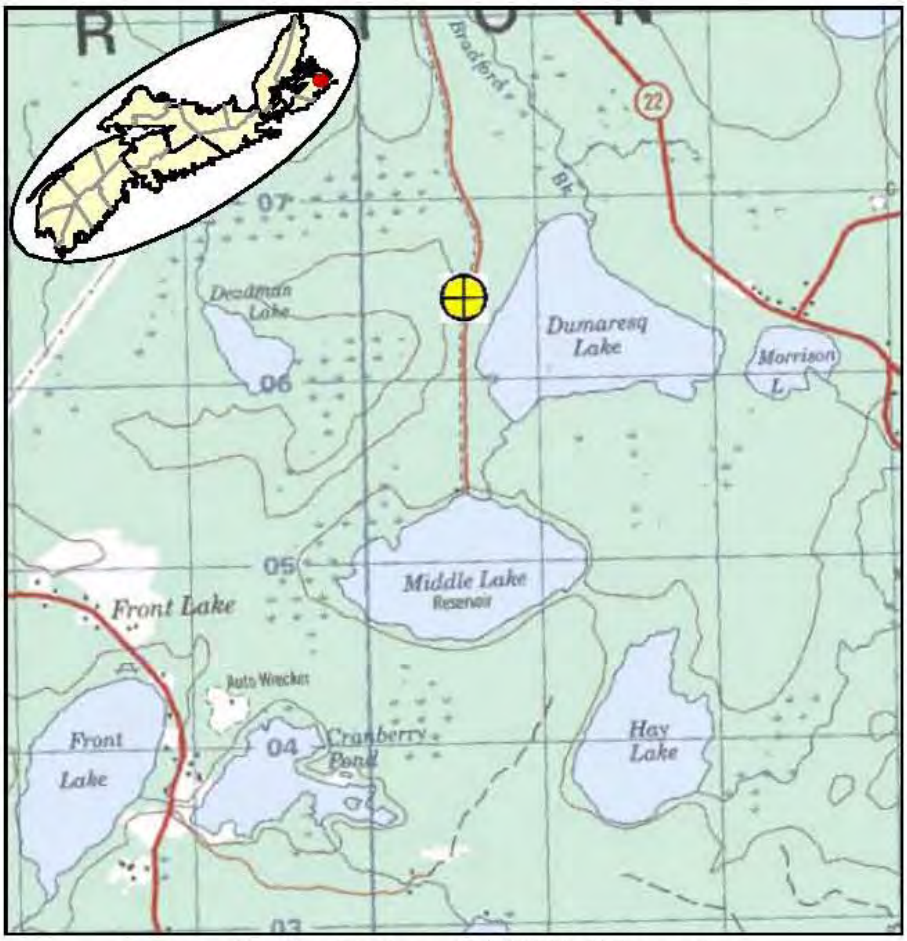


Figure F.12a: Sydney (050) Well Location

Figure F.12b: Sydney (050) Site Photograph

Figure F.13a: North Grant (054) Well Location

Figure F.13b: North Grant (054) Site Photograph

Figure F.14a: Stillwater (055) Well Location

Figure F.14b: Stillwater (055) Site Photograph

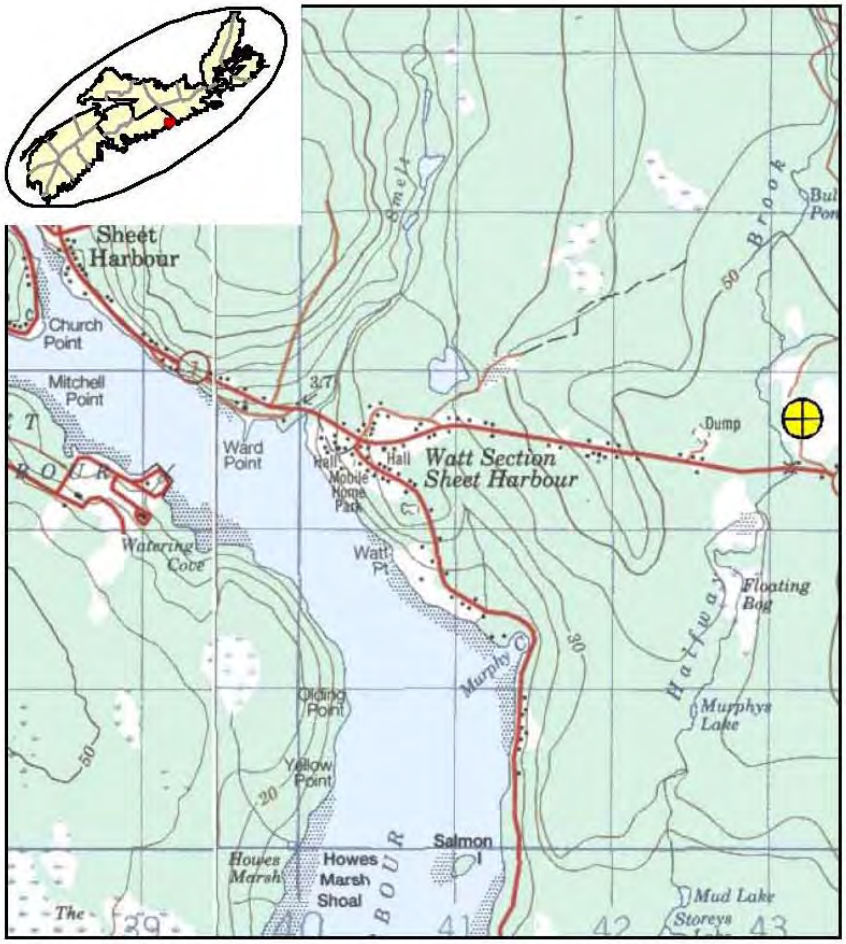


Figure F.15a: Sheet Harbour (056) Well Location

Figure F.15b: Sheet Harbour Site Photograph

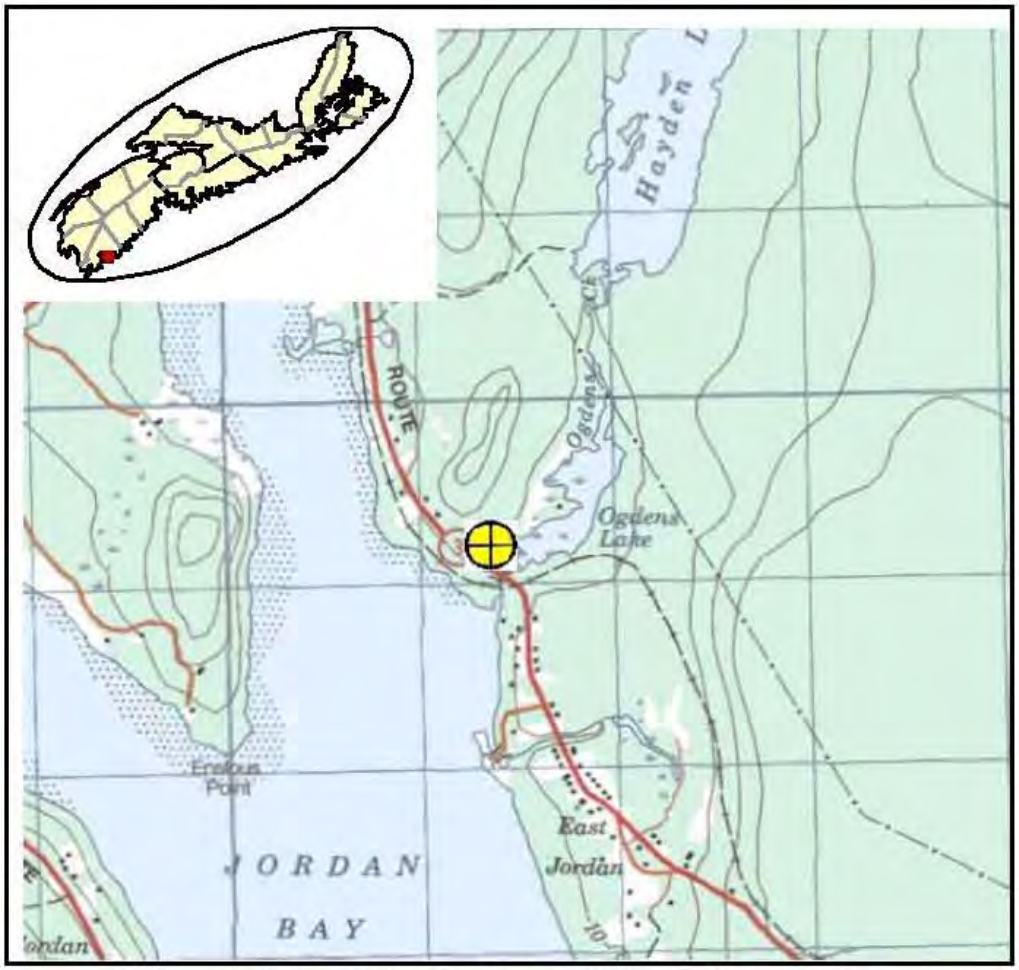


Figure F.16a: Hayden Lake (059) Well Location

Figure F.16b: Hayden Lake (059) Site Photograph

Figure F.17a: Meteghan (060) Well Location

Figure F.17b: Meteghan (060) Site Photograph

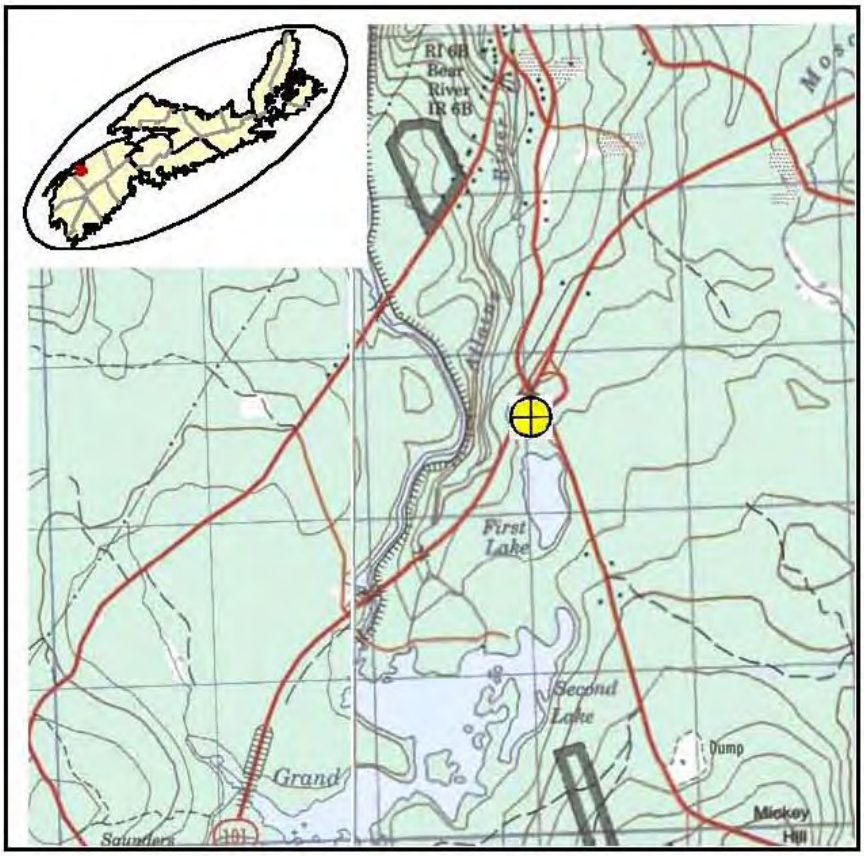


Figure F.18a: Annapolis Royal (062) Well Location

Figure F.18b: Annapolis Royal (062) Site Photograph

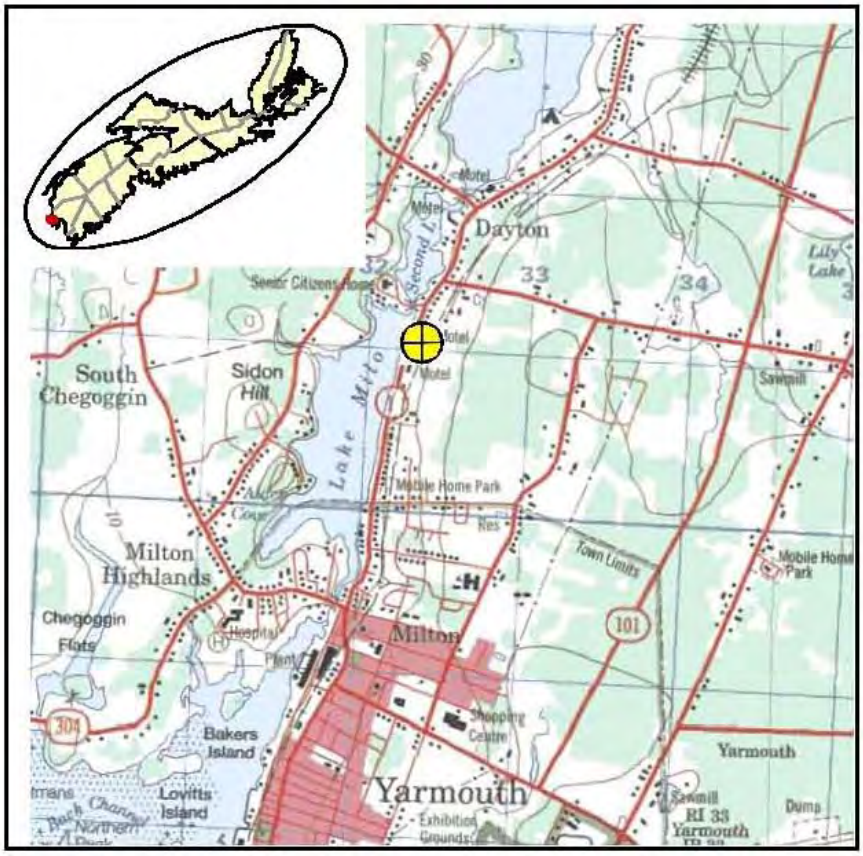


Figure F.19a: Hebron (063) Well Location

Figure F.19b: Hebron (063) Site Photograph

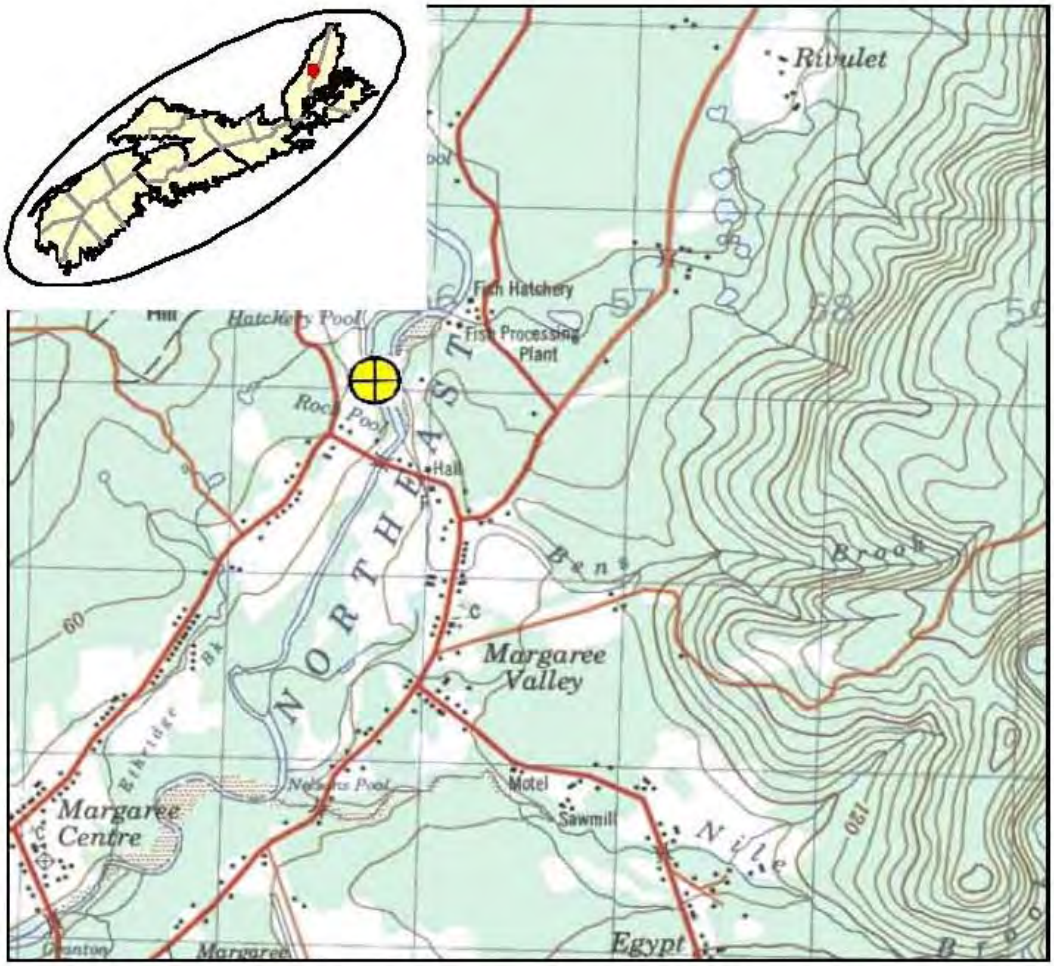


Figure F.20a: Margaree (064) Well Location

Figure F.20b: Margaree (064) Site Photograph

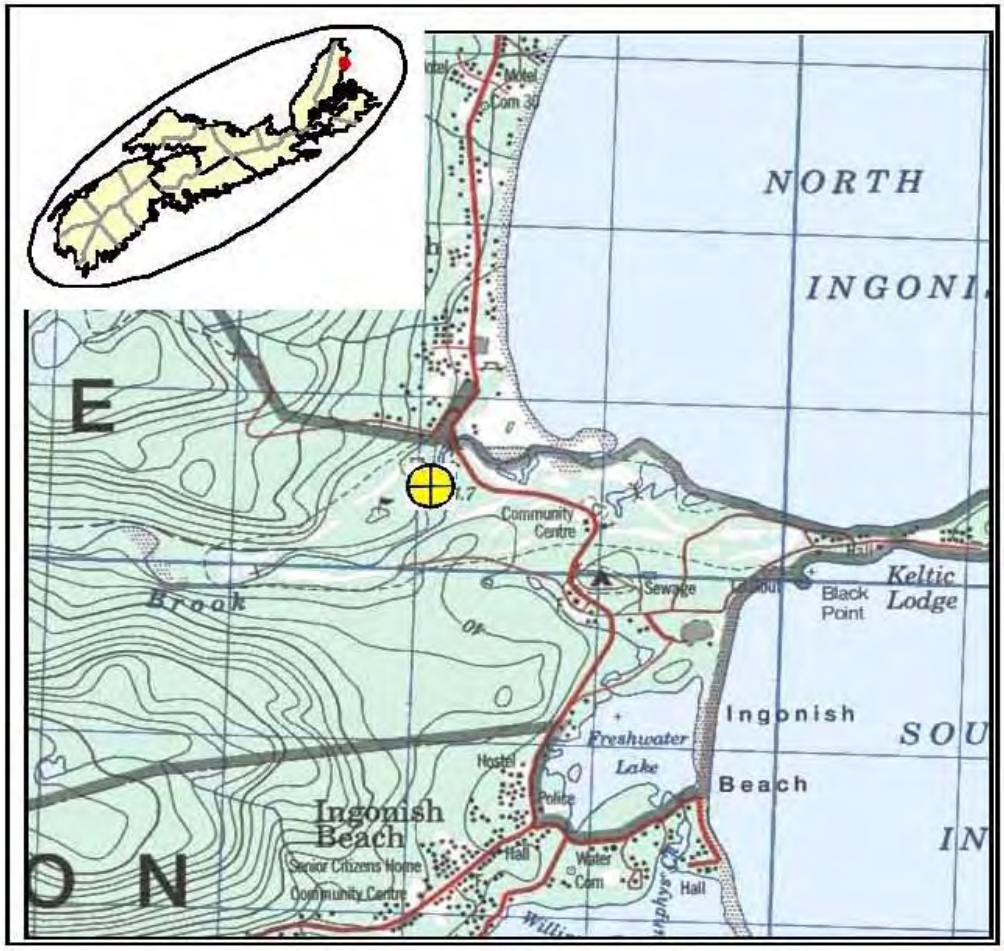


Figure F.21a: Ingonish (065) Well Location

Figure F.21b: Ingonish (065) Site Photograph

Figure F.22: Debert (068) Well Location

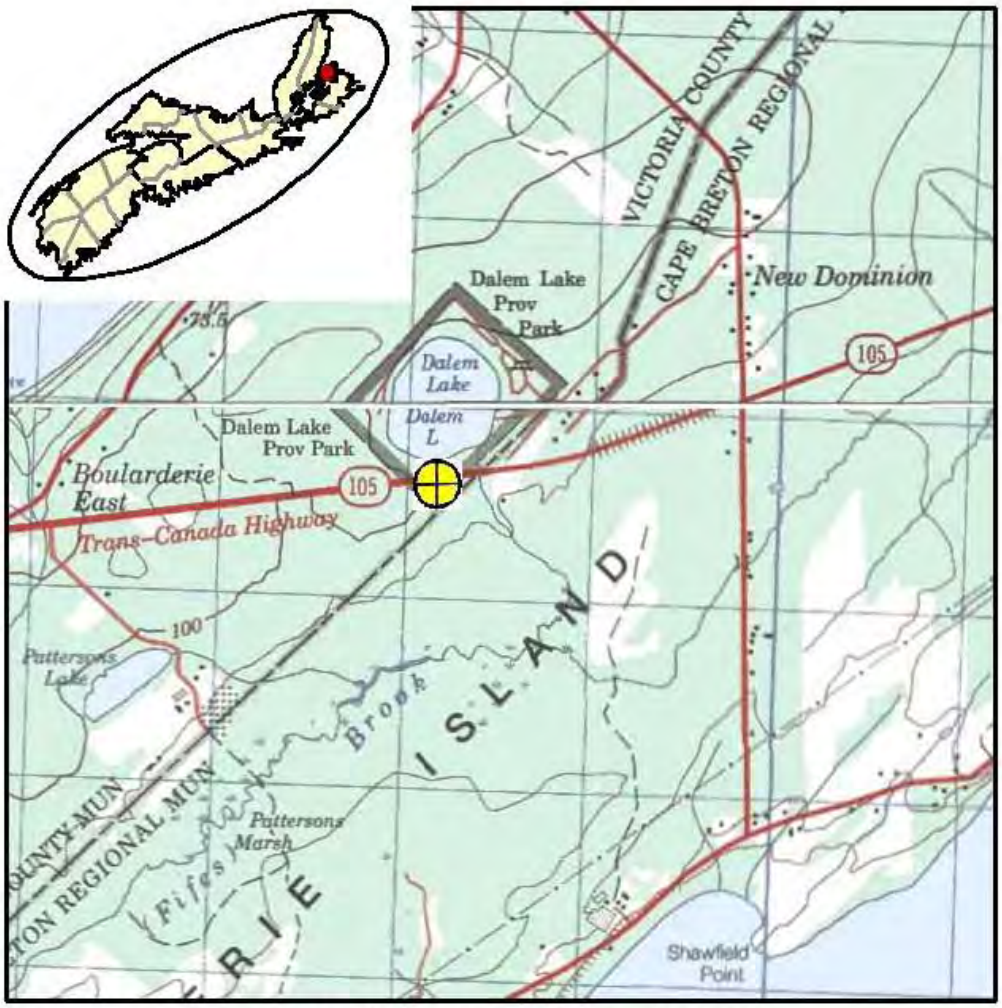


Figure F.23: Dalem Lake (069) Well Location

Figure F.24a: Amherst (071) Well Location

Figure F.24b: Amherst (071) Site Photograph

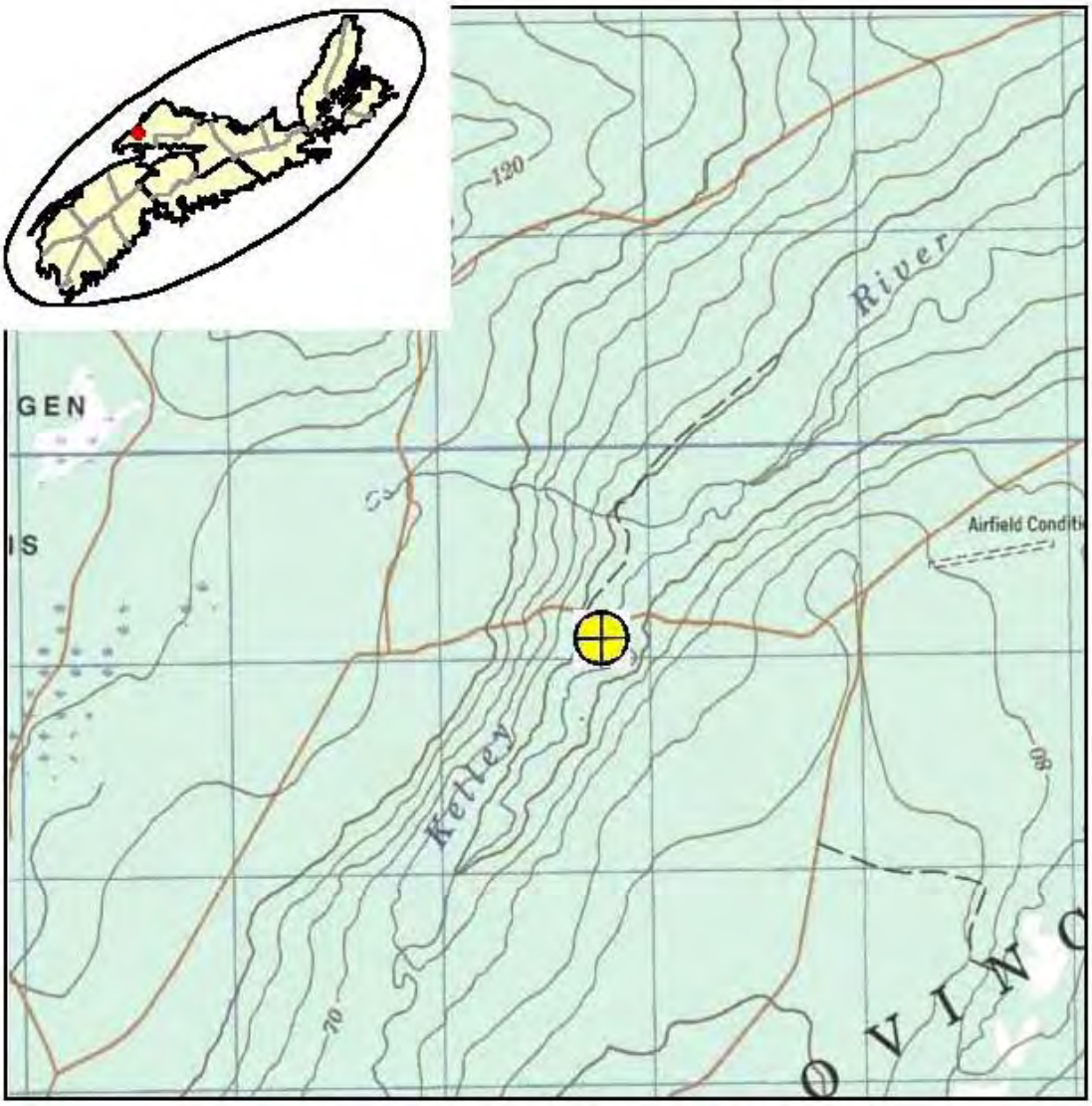


Figure F.25: Kelley River (073) Well Location

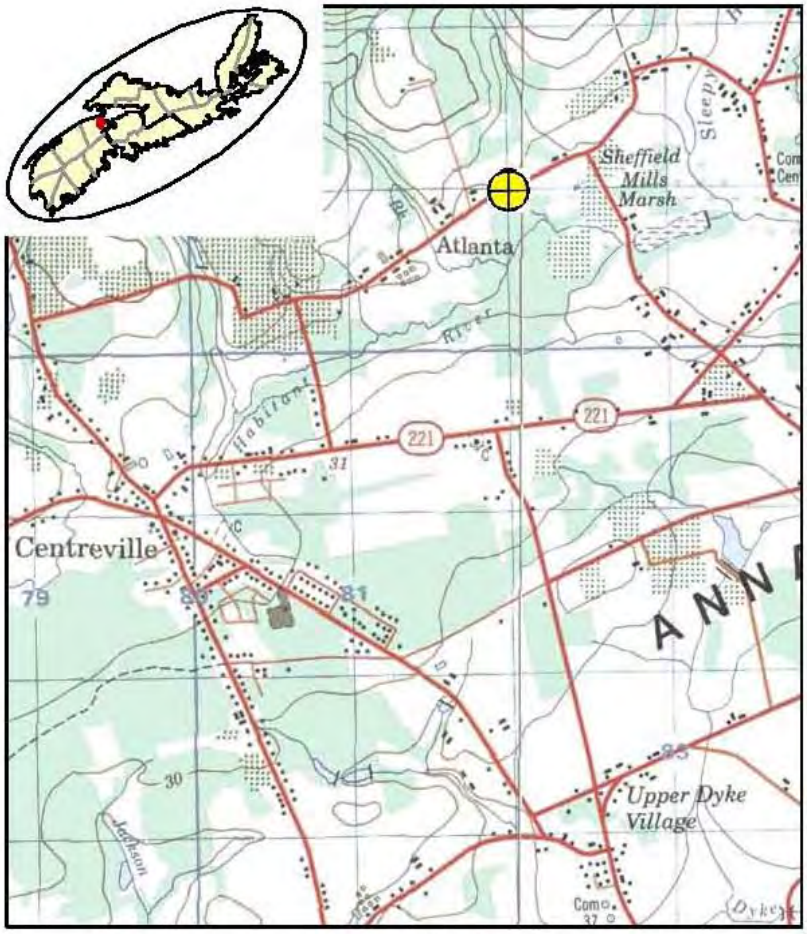


Figure F.26a: Atlanta (074) Well Location

Figure F.26b: Atlanta (074) Site Photo

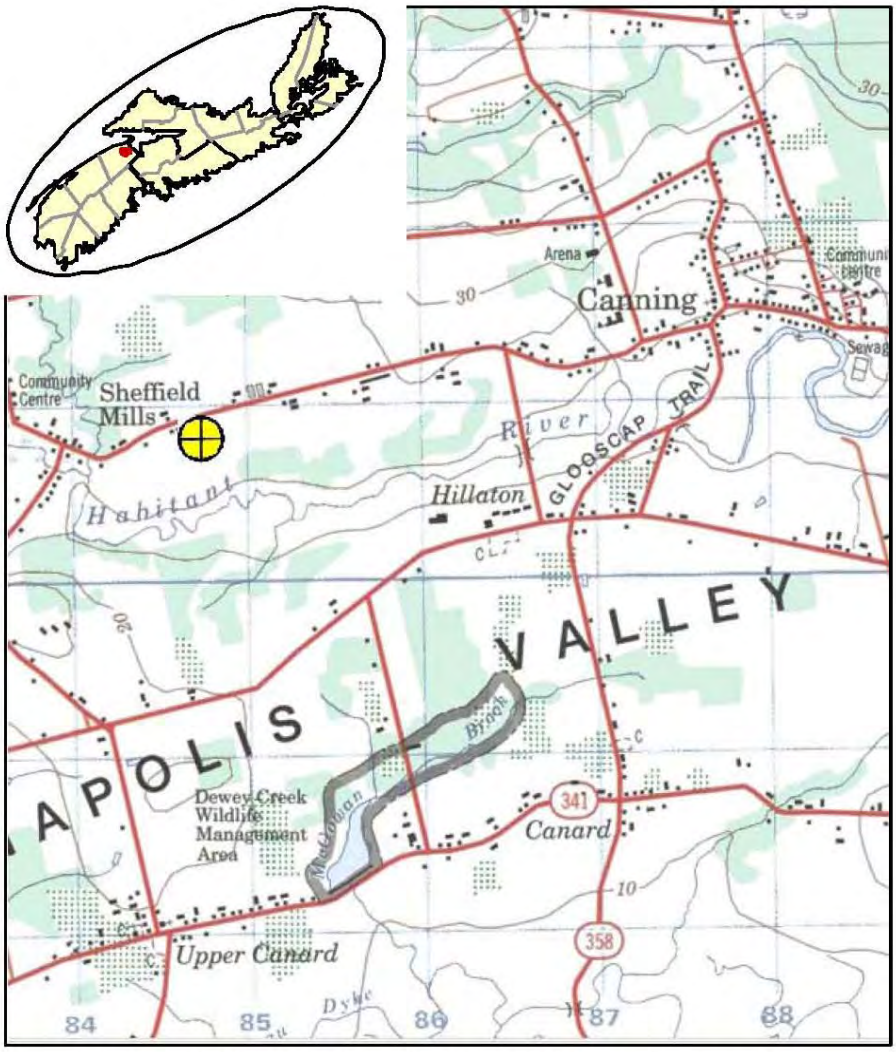


Figure F.27a: Sheffield Mills (075) Well Location

Figure F.27b: Sheffield Mills (075) Site Photograph

Figure F.28a: Fall River (076) Well Location

Figure F.28b: Fall River (076) Site Photograph

Figure F.29a: West Northfield (077) Well Location

Figure F.29b: West Northfield (077) Site Photo

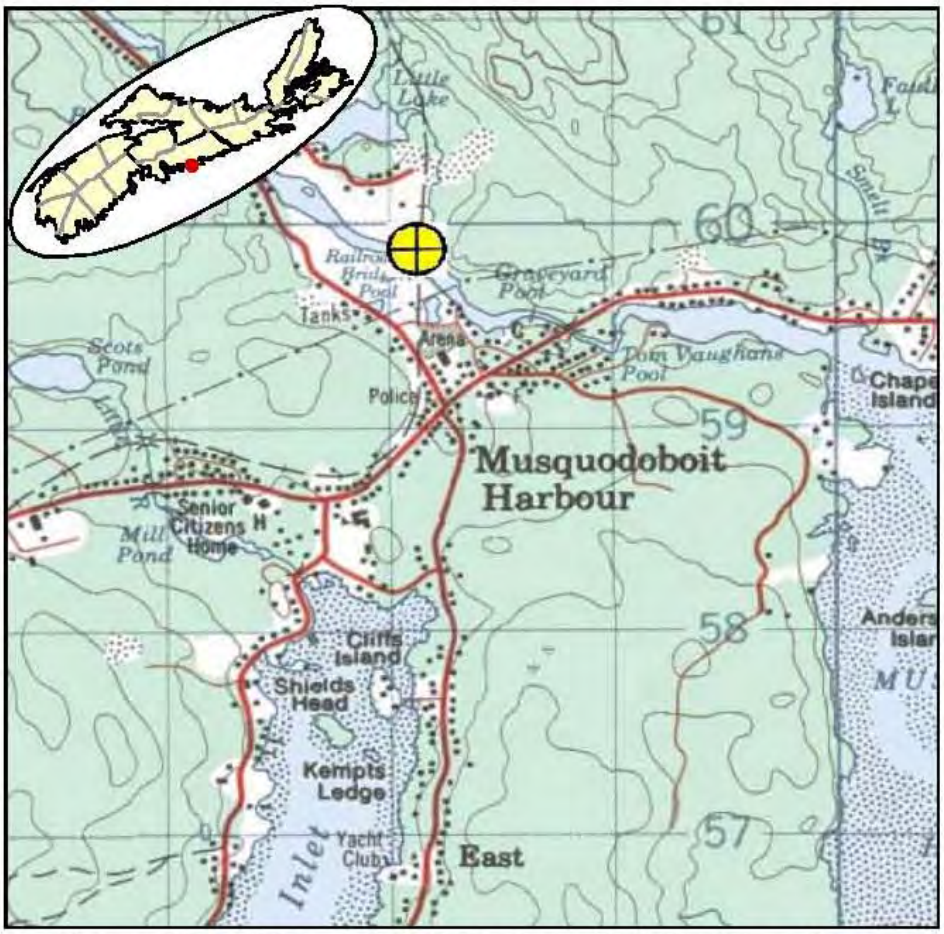


Figure F.30a: Musquodoboit Harbour (078) Well Location

Figure F.30b: Musquodoboit Harbour (078) Site Photograph

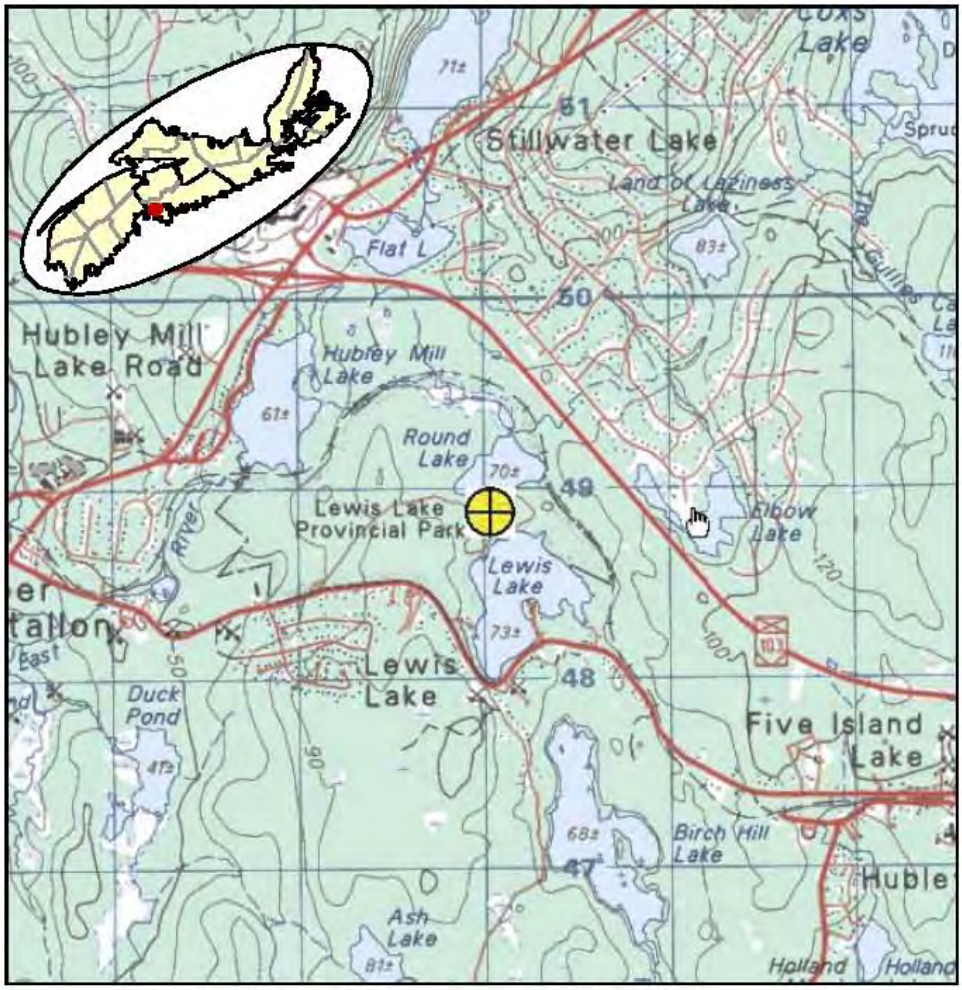


Figure F.31a: Lewis Lake (079) Well Location

Figure F.31b: Lewis Lake (079) Site Photograph

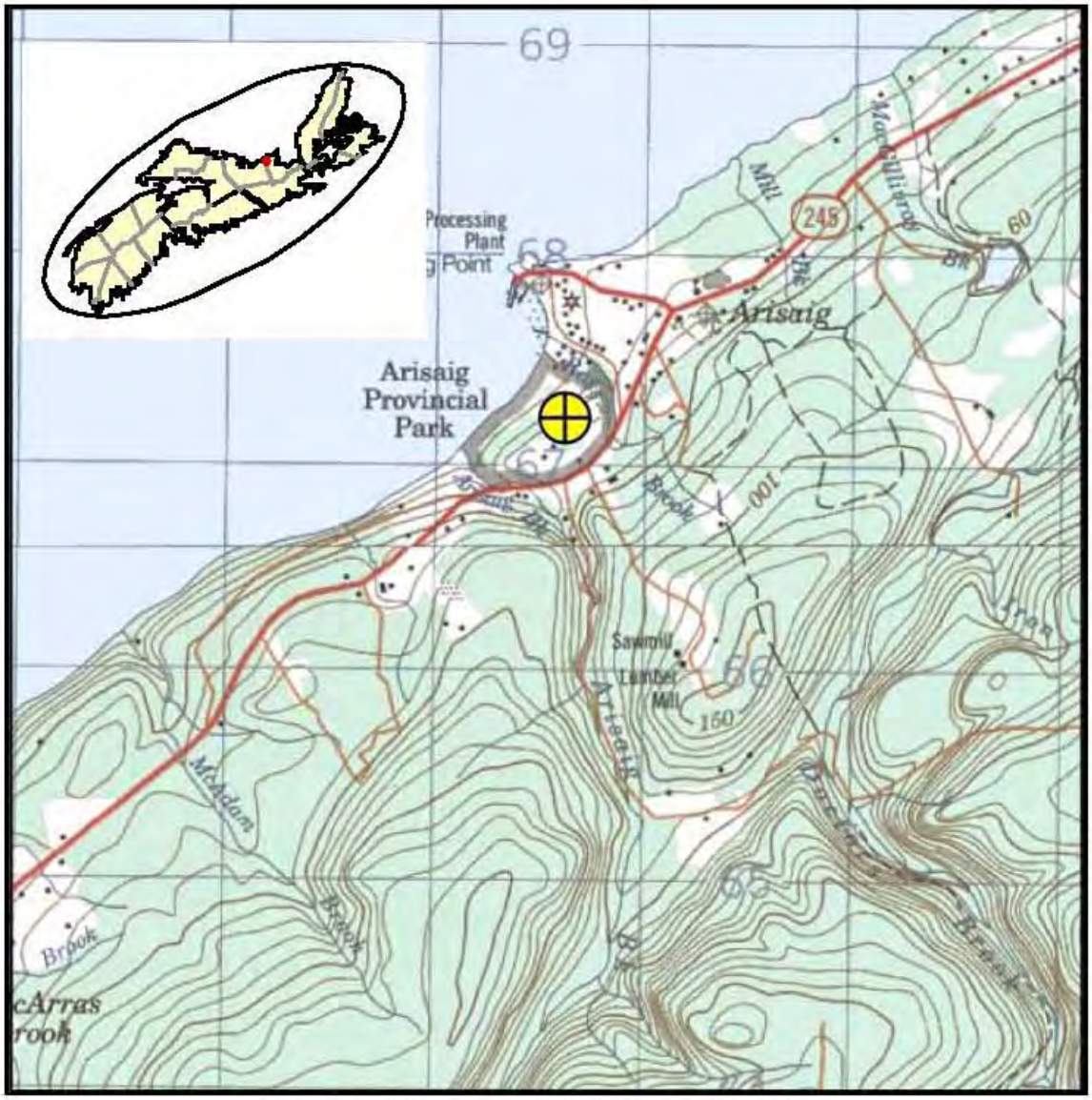


Figure F.32: Arisaig (080) Well Location

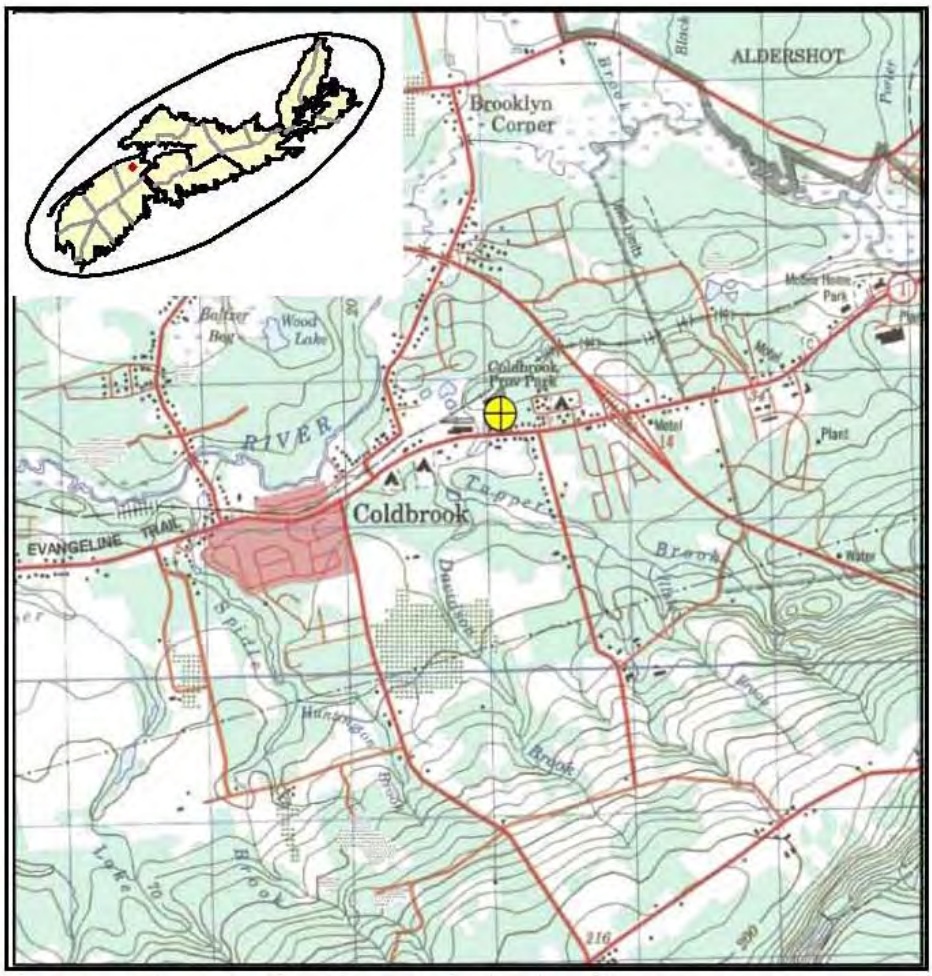


Figure F.33a: Coldbrook (081) Well Location

Figure F.33b: Coldbrook (081) Site Photograph

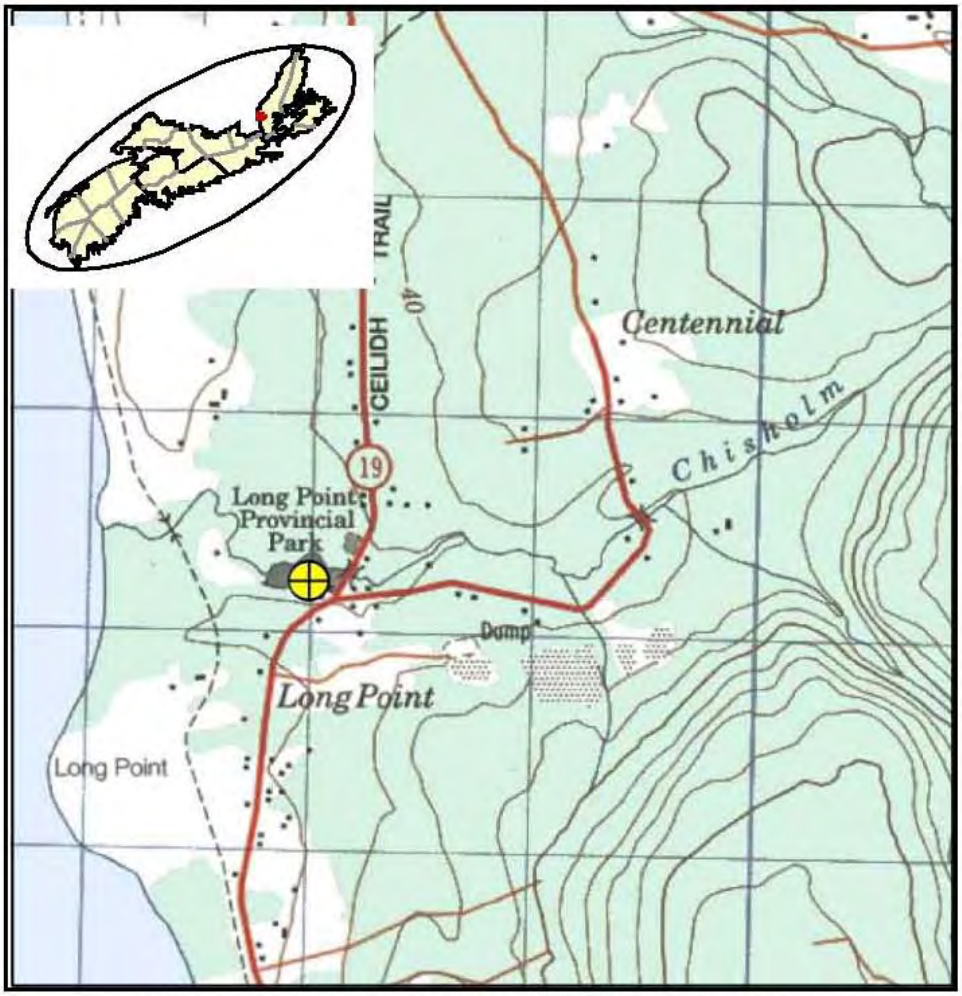


Figure F.34a: Long Point (082) Well Location

Figure F.34b: Long Point (082) Site Photograph

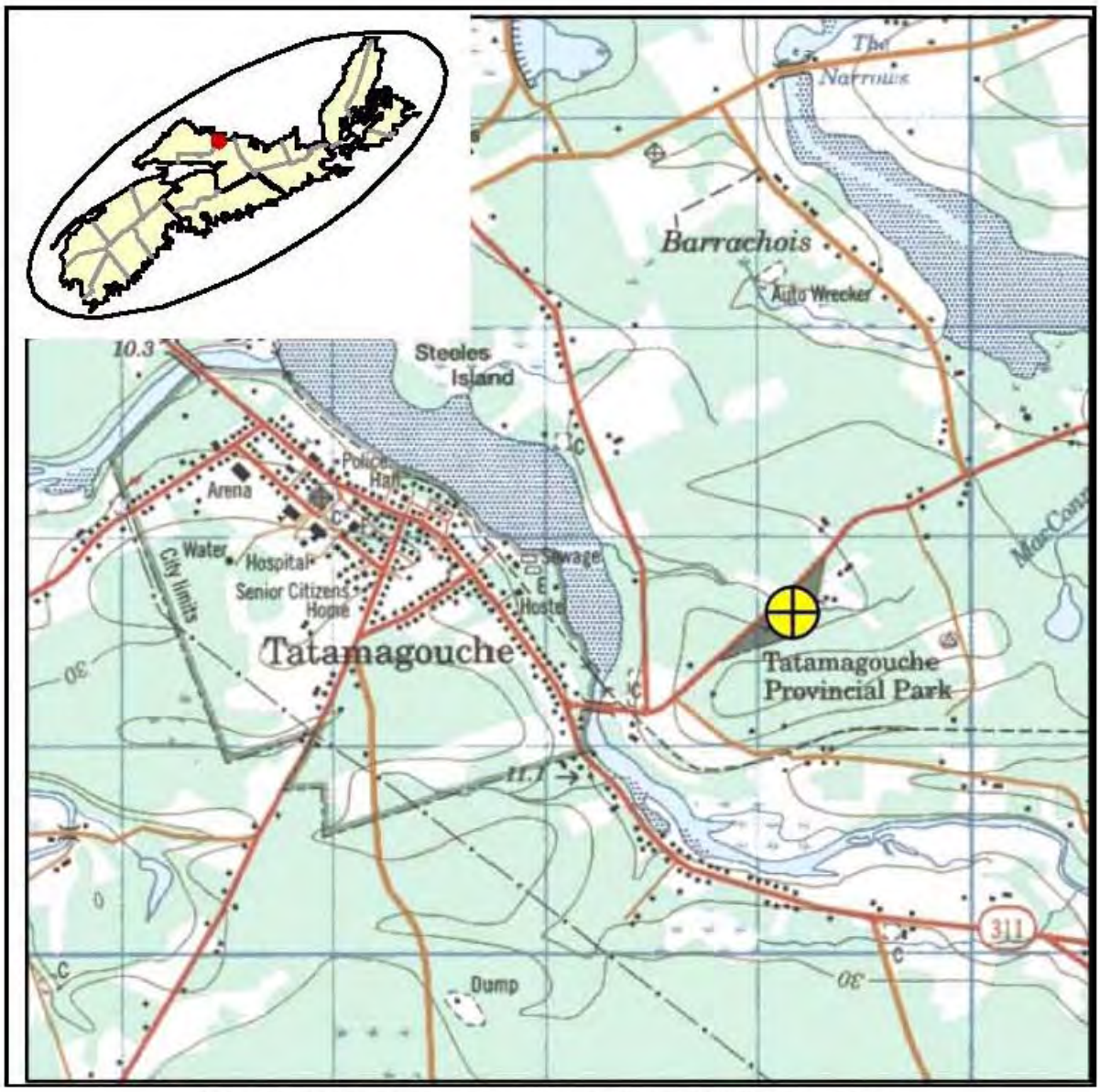


Figure F.35: Tatamagouche (083) Well Location

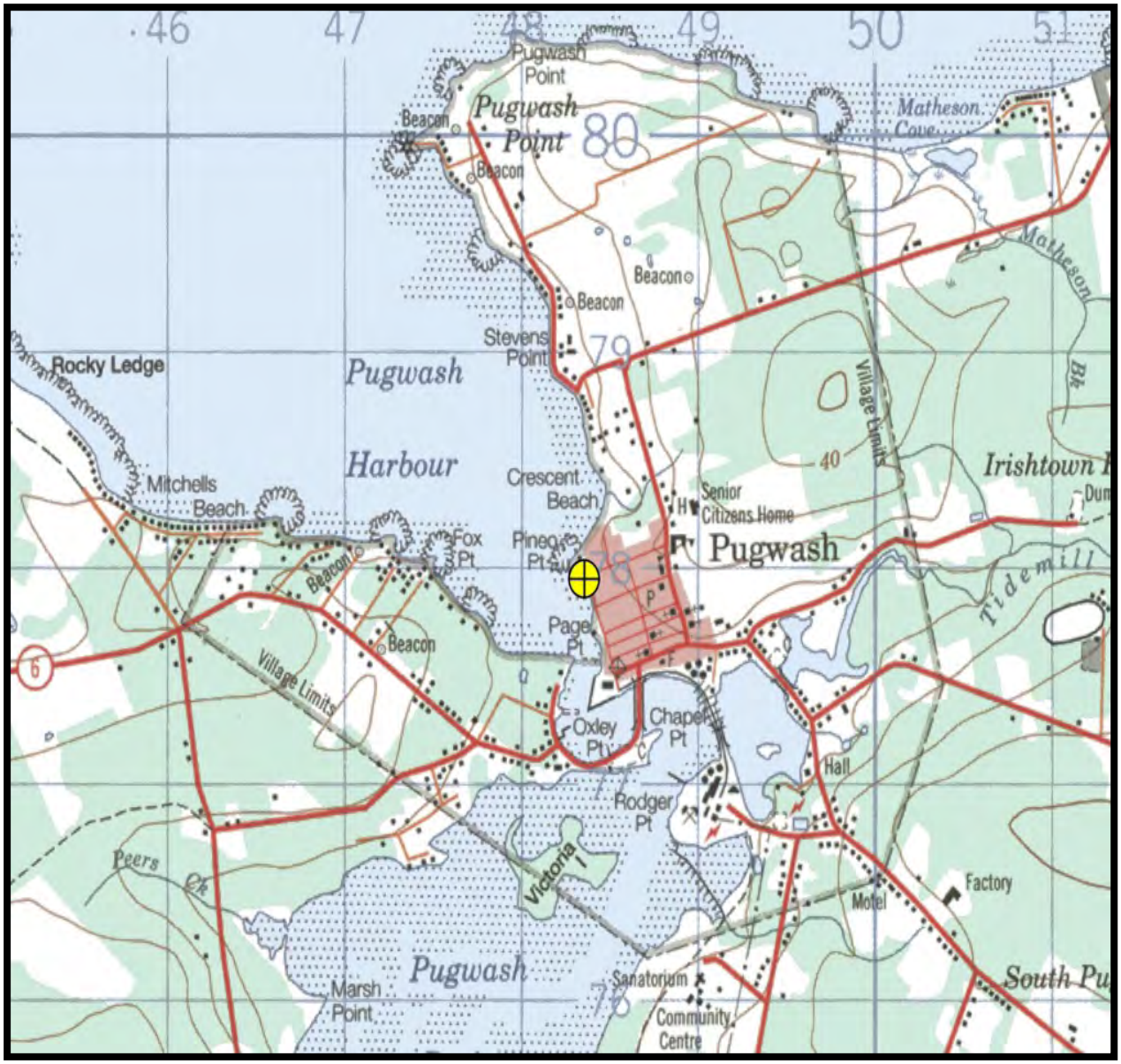


Figure F.36: Pugwash (084) Well Location

Figure F. 37: St. Peters (085) Well Location