2009 ANNUAL GROUNDWATER REPORT

Sequoyah Fuels Corporation
Gore, Oklahoma

Submitted to:

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Sequoyah Fuels Corporation

1.0 INTRODUCTION

On August 22, 2005, the U.S. Nuclear Regulatory Commission (NRC) amended Source Materials License No. SUB-1010 to authorize implementation of SFC's Groundwater Monitoring Plan (GWMP) dated February 25, 2005. This license amendment requires SFC to submit, by April 1 of each year, a groundwater compliance monitoring report. Groundwater monitoring data collected during calendar year 2009 is provided herein in fulfillment of the above requirement.

1.1 Background

SFC conducts groundwater monitoring through a monitoring well network described in the GWMP. This network includes corrective action, seep, drainage, surface water and groundwater monitoring. New groundwater monitoring wells required by the GWMP were installed during late 2005 and early 2006. Initial sampling of these wells was completed during early 2006. A map of the site showing corrective action, seep, drainage and groundwater monitoring locations is presented in Figure 1. Surface water sampling locations are shown in Figure 2. Groundwater monitoring wells are completed at various depths to monitor different groundwater units. The groundwater monitoring units at the Sequoyah Facility have been designated as Terrace/Shale 1, Shale 2, Shale 3, Shale 4 and Shale 5. The GWMP includes a general description of the geologic, hydrogeologic, and geochemical conditions at the Facility.

A detailed discussion of the geology and hydrogeology of the Facility was presented in the Final RFI Report submitted to EPA Region 6 on October 11, 1996. An additional site investigation was conducted during 2001 by Shepherd Miller Inc. (SMI) in support of the development of a site conceptual model for geology and hydrogeology. The conceptual model refined the site

geology into individual shale and sandstone units and was submitted to NRC and EPA during October 2002 in a report titled Final Hydrogeological and Geochemical Site Characterization Report (HGSCR). The HGSCR was updated and republished on June 30, 2009.

License Condition 49 of SUB-1010 required SFC to submit a groundwater monitoring plan to NRC on or before June 15, 2003. SFC evaluated the groundwater monitoring requirements at the Sequoyah Facility during 2003 and submitted the GWMP to NRC and EPA on June 12, 2003. The GWMP provides a comprehensive groundwater monitoring program that meets the objectives of the GMIM and NRC license requirements. The GWMP was modified based on comments received from regulatory agencies and resubmitted to NRC and EPA on February 25, 2005. This GWMP was approved by NRC and EPA during August and November of 2005, respectively.

1.2 Scope

Routine groundwater monitoring is conducted for constituents of concern that have previously been identified in the groundwater at the Facility. The primary constituents of concern present in the Facility groundwater are arsenic, fluoride, nitrate and uranium. Barium has also been identified as a constituent of concern but the extent of impact is limited to a small area. Monitoring is conducted in accordance with the requirements of the GWMP and Amendment No. 31 to NRC License SUB-1010.

Routine groundwater sampling will normally be completed in April each year. Quarterly sampling will typically be completed during January, April, July and December of each year. Quarterly sampling of some locations is required for a year and annually thereafter. Table 1 provides the GWMP sampling and analysis schedule. Samples were collected by SFC employees using procedures and protocols defined in the GWMP. Laboratory analyses were conducted by Outreach Laboratory (EPA Lab Number OK00922 and ODEQ ID Number 9517) located in Broken Arrow, Oklahoma.

1.3 Report Organization

The remaining sections of this report describe the groundwater monitoring program changes (Section 2.0), current conditions (Section 3.0) and summarization of Facility groundwater monitoring results (Section 4.0).

2.0 MONITORING PROGRAM CHANGES

As described in Section 1.1 of this report SFC submitted a new groundwater monitoring plan to NRC and EPA on June 12, 2003. After responding to several requests for additional information from NRC regarding the plan, SFC submitted a revised plan to NRC and EPA on February 25, 2005. This revised plan was approved by NRC and EPA during 2005.

Condition Number 49 to Amendment No. 31 of SFC's NRC License Number SUB-1010 added a requirement to implement a groundwater compliance monitoring program as described in SFC's GWMP submitted to NRC on February 25, 2005. This condition included the following groundwater protection standards, referred to as Maximum Contaminant Levels (MCL's) in this report:

> Antimony = 0.006 mg/l, arsenic = 0.01 mg/l, barium = 1.0 mg/l, beryllium = 0.004 mg/l, cadmium = 0.01 mg/l, chromium = 0.05 mg/l, fluoride = 4.0 mg/l, lead = 0.05 mg/l, mercury = 0.002 mg/l, molybdenum = 0.012 mg/l, nickel = 0.023 mg/l, nitrate = 10 mg/l, combined radium-226 and radium-228 = 5.0 pCi/l, selenium = 0.01 mg/l, silver = 0.05 mg/l, thallium = 0.005 mg/l, thorium-230 = 1.2 pCi/l and uranium = 30 μg/l.

Note that, although the Condition 49 lists the molybdenum MCL as 0.0012 mg/l, this was a typographical error and the correct value is 0.012 mg/l.

In addition to groundwater monitor well compliance locations the GWMP requires SFC to monitor corrective action, seep, drainage and surface water locations. Corrective action monitoring includes collecting samples from groundwater recovery systems and monitoring locations down-gradient of the recovery systems. Seep and drainage samples are collected along the western perimeter of the Facility where groundwater reaches the ground surface from outcrops of groundwater bearing units. Surface water samples are collected at upstream and downstream locations from the rivers located west and southwest of the Facility.

3.0 CURRENT CONDITIONS

Groundwater flow at the Facility is described as generally westward with some northwesterly and southwesterly movement. This generalization is true for all the groundwater units currently being monitored. The 2009 groundwater level measurements correlate well with the flow directions found during previous measurement events. Groundwater surface contour maps for each groundwater unit are included as Figures 3 through 7. Ten foot contour intervals are shown along with the groundwater elevations measured at each well used to construct the contours. Each contour is labeled with the groundwater surface elevation in feet above mean sea level. Due to the limited number of data points available these figures provide a general depiction of the groundwater elevations surface for reach unit.

The major constituents of concern at the Facility have been established as arsenic, fluoride, nitrate (as N), and uranium. Background quality and compliance groundwater monitoring program data for 2009 are presented in Tables 2 and 3, respectively. Groundwater isoconcentration maps for each groundwater unit (Terrace / Shale 1, Shale 2, Shale 3, Shale 4 and Shale 5) and for each parameter that is a constituent of concern (arsenic, fluoride, nitrate and uranium) are included as Figures 8 through 27. The isoconcentration maps were prepared by posting the 2009 analyses on the isoconcentration maps prepared for last year's annual groundwater report. Using the posted 2009 analyses the isoconcentration contours have been adjusted to reflect the current conditions at the Facility. If more than one analyses was available for a parameter an average value was calculated and used. A discussion of the groundwater analyses for arsenic, fluoride, nitrate and uranium is provided below.

3.1 Background Quality Monitoring

The GWMP requires that the designated background groundwater monitoring locations be analyzed on a quarterly basis for one year and annually thereafter. Background monitoring wells are analyzed for antimony, arsenic, barium, beryllium, cadmium, chromium, fluoride, lead, nitrate, molybdenum, nickel, selenium, thallium, radium-226, radium-228, thorium-230 and uranium. The background wells (MW007, MW007A, MW007B, MW070, MW073 and MW110A) were sampled during May 2009. The sampling events since October 2005 have been combined and a statistical analysis completed. This evaluation and statistic analysis are included in Appendix A to this report.

3.2 Compliance Monitoring

The discussion of monitoring results in this section is based on analyses of samples collected during 2009. If more than one sample analysis is available for a monitoring location an average value was calculated and used for data evaluations. Time series graphs for groundwater monitoring wells and recovery systems are included in Appendix B and C to this report. A review of the time series graphs indicates that, depending on the specific monitoring location, the analyses have increased, remained unchanged or decreased. The analyses at some locations have demonstrated an increasing trend followed by a decreasing trend, as is evidenced for nitrate analyses at Monitor Well 2346 which is located south of the fertilizer pond area. In general, monitoring locations with the highest analyses, those located near sources that were impacted first, have shown decreasing trends. Other monitoring locations have shown various trends, or no trend.

The minimum detectable concentration for uranium changed from 5 µg/l to 1 µg/l in the mid 1990's, this is apparent in many of the graphs. The arsenic minimum detectable concentration have typically varied from 0.005 to 0.01 mg/l, with some minimum detectable concentrations

near 0.05 mg/l during the early 1990's. Minimum detectable concentrations for fluoride and nitrate are typically 0.2 and 1 mg/l, respectively.

3.2.1 Arsenic

Arsenic has been part of the routine monitoring program for select wells since being identified in Facility groundwater during the Facility Environmental Investigation conducted in the early 1990's. Total arsenic continues to be detected above the maximum contaminant level (MCL) of 0.01 mg/l in the Terrace/Shale1, Shale 2, Shale 3 and Shale 4 groundwater units. Arsenic was also detected above the MCL in the Shale 5 groundwater unit during 2009.

The arsenic levels found in the Terrace/Shale 1 groundwater varied from <0.005 to 2.3 mg/l. The high of 2.3 mg/l occurred in MW075 located south of the incinerator. Terrace/Shale 1 groundwater monitoring locations with arsenic values in 2009 above the MCL were 2248, FD-B, MW010, MW019, MW031, MW035, MW040, MW042, MW049, MW054, MW062, MW070, MW075, MW086, MW087, MWRW2, MWRW6, MWRW7 and MWRW8. An isoconcentration map of arsenic concentrations in Terrace/Shale 1 groundwater is shown in Figure 8.

The arsenic levels found in the Shale 2 groundwater varied from 0.005 to 1.35 mg/l. The high of 1.35 mg/l occurred in MW121A located southwest of Pond 2. Shale 2 groundwater monitoring locations with arsenic values in 2009 above the MCL were MW014A, MW042A, MW048, MW050A, MW065A, MW067A, MW081A and MW121A. An isoconcentration map of arsenic concentrations in Shale 2 groundwater is shown in Figure 9.

The arsenic levels found in Shale 3 groundwater varied from <0.010 to 2.92 mg/l. The high of 2.92 mg/l occurred in MW057A located near the southwest corner of Pond 2. Shale 3 groundwater monitoring locations with arsenic values in 2009 above the MCL were 2224A,

2303A, 2346, MW012A, MW049A, MW057A, MW084A, MW086A, MW089A and MW124A. As isoconcentration map of arsenic concentrations in Shale 3 groundwater is shown in Figure 10.

The arsenic levels found in the Shale 4 groundwater varied from < 0.010 to 1.34 mg/l. The high of 1.34 mg/l occurred in MW059A located southwest of Pond 2. Shale 4 groundwater monitoring locations with arsenic values in 2009 above the MCL were 2242, 2244, 2245, 2246 2247, 2247A, MW059A, MW095A, MW097A, MW099A, MW107, MW108, MW112A, MW126A, MWRW4 and MWRW5. An isoconcentration map of arsenic concentrations in Shale 4 groundwater is shown in Figure 11.

The arsenic levels found in the Shale 5 groundwater varied from 0.005 to 0.015 mg/l. The high values of 0.015 mg/l occurred in MW105B located west of the Storm Water Reservoir. The isoconcentration map of the arsenic concentrations in Shale 5 groundwater does not show any isopleths because none of the arsenic analyses were greater than 0.05 mg/l, however, the arsenic analyses are posted in Figure 12.

3.2.2 Fluoride

Fluoride has been a common parameter monitored for many years in groundwater at SFC. Fluoride continues to be detected above the MCL of 4 mg/l in Terrace/Shale 1 and Shale 3 groundwater units. Fluoride was not detected above the MCL in Shale 2, Shale 4 and Shale 5 groundwater units.

The fluoride levels found in the Terrace/Shale 1 groundwater varied from 0.2 to 6.9 mg/l. The high of 6.9 mg/l occurred in FD-B located north of the SX Building. Terrace/Shale 1 groundwater monitoring locations with fluoride values in 2009 above the MCL were FD-B and MW014. These locations are north of the SX Building and southeast of the Emergency Basin and North Ditch. An isoconcentration map of fluoride concentration in Terrace/Shale 1 groundwater is shown in Figure 13.

The fluoride levels found in the Shale 2 groundwater varied from < 0.2 to 3.0 mg/l. The high of 3.0 mg/l was less than the MCL. An isoconcentration map of the fluoride concentrations in Shale 2 groundwater has not been prepared because none of the fluoride analyses were greater than the MCL, however, the fluoride analyses are posted in Figure 14.

The fluoride levels found in the Shale 3 groundwater varied from 0.2 to 5.3 mg/l. The high of 5.3 mg/l occurred in MW057A located near the southwest corner of Pond 2. The only Shale 3 groundwater monitoring location with fluoride values above the MCL was MW057A. An isoconcentration map of fluoride concentrations in Shale 3 groundwater is shown in Figure 15.

The fluoride levels found in Shale 4 groundwater varied from <0.2 to 2.6 mg/l. The high of 2.6 mg/l was less than the MCL. An isoconcentration map of the fluoride concentrations in Shale 4 groundwater has not been prepared because none of the fluoride analyses were greater than the MCL, however, the fluoride analyses are posted in Figure 16.

The fluoride levels found in the Shale 5 groundwater varied from 0.4 to 2.7 mg/l. The high of 2.7 mg/l was less than the MCL. An isoconcentration map of the fluoride concentrations in Shale 5 groundwater has not been prepared because none of the fluoride analyses were greater than the MCL, however, the fluoride analyses are posted in Figure 17.

3.2.3 Nitrate

Nitrate has also been a common parameter monitored for many years in groundwater at SFC. Nitrate continues to be detected above the MCL of 10 mg/l in the Terrace/Shale 1, Shale 2, Shale 3 and Shale 4 groundwater units. Nitrate was not detected above the MCL in the Shale 5 groundwater unit.

The nitrate levels found in the Terrace/Shale 1 groundwater varied from <1 to 836 mg/l. The high 836 mg/l occurred in MW025 located north of the SX Building. Terrace/Shale 1

groundwater monitoring locations with nitrate values in 2009 above the MCL were MW008, MW025, MW036, MW040 and MW054. An isoconcentration map of nitrate concentrations in Terrace/Shale 1 groundwater is shown in Figure 18.

The nitrate levels found in the Shale 2 groundwater varied rom < 1 to 1670 mg/l. The high 1670 mg/l occurred in MW121A located southwest of Pond 2. Shale 2 groundwater monitoring locations with nitrate values in 2009 above the MCL were MW014A, MW042A, MW048, MW050A, MW065A and MW121A. An isoconcentration map of nitrate concentrations in Shale 2 groundwater is shown in Figure 19.

The nitrate levels found in the Shale 3 groundwater varied from 7.2 to 7940 mg/l. The high of 7940 mg/l occurred in MW057A located near the southwest corner of Pond 2. Shale 3 groundwater monitoring locations with nitrate values in 2009 above the MCL were 2224A, 2302A, 2346, MW012A, MW049A, MW057A, MW086A, MW089A, MW122A, MW124A and MW127A. An isoconcentration map of nitrate concentrations in Shale 3 groundwater is shown in Figure 20.

The nitrate levels found in the Shale 4 groundwater varied from <1 to 4590 mg/l. The high of 4590 mg/l occurred in MW059A located southwest of Pond 2. Shale 4 groundwater monitoring locations with nitrate values in 2009 above the MCL were 2244, 2246, 2247, 2247A, MW059A, MW095A, MW107, MW108 and MWRW4. An isoconcentration map of nitrate concentrations in Shale 4 groundwater is shown in Figure 21.

The nitrate levels found in the Shale 5 groundwater varied from <1 to 7.2 mg/l. The high of 7.2 mg/l was less than the MCL. An isoconcentration map of the nitrate concentrations in Shale 5 groundwater has not been prepared because none of the nitrate analyses were greater than the MCL, however, the nitrate analyses are posted in Figure 22.

3.2.4 Uranium

Uranium has been a common parameter monitored in groundwater at SFC for many years. Uranium continues to be detected above the MCL of 30 µg/l in the Terrace/Shale 1, Shale 2 and Shale 3 groundwater units. Uranium was also detected above the MCL in 005 drainage samples that are assigned to Shale 4 and Shale 5 groundwater units.

The uranium levels found in the Terrace/Shale 1 groundwater varied from <1 to 45000 µg/l. The high of 45000 µg/l occurred in MW025 located north of the SX Building. Terrace/Shale 1 groundwater monitoring locations with uranium values in 2009 above the MCL were 2248, FD-B, MW010, MW014, MW025, MW087, MWRW2, MWRW6, and MWRW7. An isoconcentration map of uranium concentrations in Terrace/Shale 1 groundwater is shown in Figure 23.

The uranium levels found in the Shale 2 groundwater varied from <1 to 243 µg/l. The high of 243 µg/l occurred in MW050A located north of Fluoride Holding Basin No. 2. Shale 2 groundwater monitoring locations with uranium values in 2009 above the MCL were MW050A, MW067A and MW081A. An isoconcentration map of uranium concentrations in Shale 2 groundwater is shown in Figure 24.

The uranium levels found in the Shale 3 groundwater varied from < 1 to 887 µg/l. The high of 887 µg/l occurred in MW012A located northwest of the Main Process Building. Shale 3 groundwater monitoring locations with uranium values in 2009 above the MCL were 2224A, MW012A and MW086A. An isoconcentration map of uranium concentrations in Shale 3 groundwater is shown in Figure 25.

The uranium levels found in the Shale 4 groundwater varied from <1 to 10.7 µg/l. The high of 10.7 µg/l was less than the MCL. Uranium levels found in the drainage locations (Sample Locations 2242 through 2246) along the west perimeter of the site varied are indicative of Shale

4 groundwater at this location. The uranium analyses in Shale 4 groundwater and the drainage locations used to monitor Shale 4 are posted in Figure 26.

The uranium levels found in the Shale 5 groundwater varied from <1 to 1.9 µg/l. The high of 1.9 µg/l was less than the MCL. The uranium level found in the 005 drainage at Sample Location 2241 is indicative of Shale 5 groundwater at this location. The uranium analyses in Shale 5 groundwater and Sample Location 2241 are posted in Figure 27.

3.2.5 Other Parameters

During the RFI, barium was identified in groundwater in a localized area north of the clarifier basins in MW040. Additional sampling was performed in 1997. A complete discussion of this data was presented in the 1997 Groundwater Report. The three barium analyses for the samples collected from MW040 during 2009 did not exceed the MCL of 2.0 mg/l. The results of the barium analyses in this well can be found in Table 3.

3.3 Corrective Action Monitoring

Corrective action monitoring includes the collection of samples from groundwater recovery systems and monitoring locations down-gradient of the recovery locations. The corrective action monitoring locations are included on Figure 1. Details regarding the installation and construction of these systems are included in the GWMP or responses to requests for additional information prepared during the GWMP approval process. The analyses of samples collected from corrective action monitoring locations are included in Table 4 and described below.

3.3.1 005 Drainage Collection Trench

The 005 Drainage Collection Trench (Location Number 2224A) recovers arsenic, nitrate and uranium impacted groundwater that flows through the Shale 3 unit. A monitor trench (Location

Number 2224B) is sampled to monitor the effectiveness of the 005 Drainage Collection Trench. The monitor trench was dry during 2009 so there are no analyses for this location. Analysis of samples collected during 2009 from the 005 Drainage Collection Trench averaged 0.023 mg/, 169 mg/l, 147 µg/l and 0.6 mg/l for arsenic, nitrate, uranium and fluoride, respectively. The arsenic, nitrate and uranium analyses exceeded the respective MCL's for each of these parameters.

Approximately 303,000 gallons of water was recovered from the 005 Collection Trench during 2009. The recovered groundwater was pumped to the Clarifier Basins.

3.3.2 MW095A Collection Trench

The MW095A Collection Trench (Location Number 2247) recovers arsenic and nitrate impacted groundwater that is present in the Shale 4 unit. Monitoring Well MW095A, which is located west of the collection trench, is used to monitor the effectiveness of the trench. Analysis of samples collected during 2009 from the MW095A Collection Trench averaged 0.057 mg/l, 1063 mg/l, 2.8 µg/l and 0.3 mg/l for arsenic, nitrate, uranium and fluoride, respectively. Analysis of samples collected during 2009 from Monitoring Well MW095A averaged 0.015 mg/l, 39.5 mg/l, 2.5 µg/l and 0.3 mg/l for arsenic, nitrate, uranium and fluoride, respectively. Arsenic and nitrate analyses of water recovered from the Monitoring Well MW095A and MW095A Collection Trench exceeded the MCL's for each of these constituents. The uranium and fluoride analyses were well below their respective MCL's.

Approximately 193,000 gallons of water was recovered from the MW095A Collection Trench during 2009. The recovered groundwater was pumped to Pond 3W. Although not included in the GWMP an additional recovery system, the MW095A Collection Pit (Location ID 2247A), is located just east of MW095A and recovered an additional 76,000 gallons of water from the Shale 4 unit in this area. This recovered water was also pumped to Pond 3W.

3.3.3 MW010 Collection Trench

The MW010 Collection Trench (Location Number 2248) recovers uranium impacted groundwater that is present in the Terrace/Shale 1 unit. Monitoring Well MW031, which is located south of the collection trench, is used to monitor the effectiveness of the trench. Analysis of samples collected during 2009 from the MW010 Collection Trench averaged 0.018 mg/l, 5.5 mg/l, 41.8 µg/l and 0.4 mg/l for arsenic, nitrate, uranium and fluoride, respectively. Analysis of samples collected during 2009 from Monitoring Well MW031 averaged 0.013 mg/l, 4.4 mg/l, 5.2 µg/l and 0.5 mg/l for arsenic, nitrate, uranium and fluoride, respectively. Arsenic and uranium analyses of water recovered from the MW010 Collection Trench exceeded the MCL's for each of these constituents. Arsenic analyses for samples collected from MW031 exceeded the arsenic MCL. The uranium analyses for samples collected from the Monitor Well MW031 did not exceed the respective MCL. Nitrate and fluoride analyses were not detected above the respective MCL's at either location.

Approximately 396,000 gallons of water was recovered from the MW010 Collection Trench during 2009. The recovered groundwater was pumped to the Clarifier Basins.

3.4 Seep and Drainage Monitoring

Seep and drainage samples were collected from locations along the western perimeter of the Facility on a quarterly frequency. The monitoring locations are shown on Figure 1. Analyses completed for samples collected during 2009 include antimony, arsenic, fluoride, lead, nitrate, thallium and uranium and are summarized in Table 5. The MCL's for each of these constituents are listed below:

Antimony	0.006 mg/l
Arsenic	0.010 mg/l
Fluoride	4 mg/l
Lead	0.05 mg/l
Nitrate	10 mg/l
Thallium	0.005 mg/l
Uranium	30 µg/l

Location 2241 is located near the property boundary in the 005 Drainage. The uranium MCL was exceeded for three of the three analyses. The nitrate MCL was exceeded for one of the three analyses. The thallium MCL was exceeded for one of the three analyses. Antimony, arsenic and lead analyses were not detected above the respective MCL's at this location.

Location 2242 is located in the 005 Drainage near Monitoring Well MW100B. The uranium analyses MCL was exceeded for three of the four analyses. The antimony MCL was exceeded for two of the four analyses. The arsenic MCL was exceeded for three of the four analyses. The nitrate MCL was exceeded for one of the four analyses. The thallium MCL was exceeded for two of the four analyses. Lead analyses were not detected above the respective MCL at this location.

Location 2243 is located in the 007 Drainage north of the Facility. The thallium MCL was exceeded for two of the four analyses. Antimony, arsenic, lead, nitrate and uranium analyses were not detected above the respective MCL's at this location.

Location 2244 is located in the 004 Drainage west of the Facility. The uranium MCL was exceeded from one of the four analyses. The nitrate MCL was exceeded for three of the four analyses. The arsenic MCL was exceeded for two of the four analyses. The thallium MCL was exceeded for three of the four analyses. Antimony and lead analyses were not detected above the respective MCL's at this location.

Location 2245 is a seep located just north of the Port Road Bridge and just east of the 001 Drainage. The nitrate concentrations at this location have decreased significantly during the past few years. This decrease is attributed to the groundwater recovery accomplished by the MW095A Collection Trench. A significant decrease in the arsenic concentrations have also been observed at this location during the past few years. The arsenic MCL was exceeded for two of the four analyses. Antimony, lead, thallium, fluoride, nitrate and uranium were not detected above the respective MCL's at this location.

Location 2246 is located in the 001 Drainage north of the Port Road Bridge. The nitrate MCL was exceeded for two of the four analyses. The arsenic MCL was exceeded for two of the four analyses. The thallium MCL was exceeded for two of the four analyses. Antimony, lead and uranium analyses were not detected above the respective MCL's at this location.

3.5 Surface Water Monitoring

Surface water samples are collected annually at the locations shown in Figure 2. The analyses for samples collected on August 13, 2009 are included in Table 6. All analyses were at background levels.

4.0 SUMMARY

Monitoring completed during 2009 has been grouped by the type of sampling that was conducted and summarized in a series of tables. The types of sampling includes background quality monitoring; compliance groundwater monitoring; corrective action monitoring; seep and drainage monitoring; and surface water monitoring. These results have been described in Section 3.0, Current Conditions, of this report. A few of the groundwater monitoring wells, drainage and other sample locations were dry when sampling was attempted so samples could not be obtained.

Monitoring wells MW075, MW079 and MW080 were located under the footprint of the Phase I area of the disposal cell and were plugged and abandoned during 2009. This was required in order to proceed with the construction of the Phase I area base. These wells were sampled prior to being plugged so the analyses for 2009 are included in this report. However, no sampling or analyses will be included in next year's report for these wells.

Tables

Table 1
Groundwater Monitoring Plan
Sampling and Analysis Schedule

Monitor ID	Location	Groundwater Unit Monitored	Parameters Analyzed
Background Quality Monitoring (Annual Sampling Frequency)			
MW007	Northeast of Main Process Building	Terrace / Shale 1	See Note 1
MW070	NE of DUF4 Building Near Property Boundary	Terrace / Shale 1	See Note 1
MW073	East of OG&E Substation Near Property Line	Terrace / Shale 1	See Note 1
MW007A	Northeast of Main Process Building	Shale 3	See Note 1
MW110A	East of Facility	Shale 4	See Note 1
MW007B	Northeast of Main Process Building	Shale 5	See Note 1
Compliance Monitoring (Annual Sampling Frequency)			
MW008[2]	Between MPB and Administration Building	Terrace / Shale 1	U, NO_3(N), F, As
MW010[2]	Southwest of Main Process Building	Terrace / Shale 1	U, NO_3(N), F, As
MW014[2]	South of Bechtel Building	Terrace / Shale 1	U, NO_3(N), F, As
MW019[2]	South of Loading Dock	Terrace / Shale 1	U, NO_3(N), F, As
MW025[2]	SX Yard North of SX Building	Terrace / Shale 1	U, NO_3(N), F, As
MW035[2]	North of Pond 1 Spoils Pile	Terrace / Shale 1	U, NO_3(N), F, As
MW036[2]	West of Sanitary Lagoon on Pond 1 Spoils Pile	Terrace / Shale 1	U, NO_3(N), F, As
MW040	North of Basin 1 of Clarifier A	Terrace / Shale 1	U, NO_3(N), F, As, Ba
MW042	South of Yellowcake Sump	Terrace / Shale 1	U, NO_3(N), F, As
MW045	Northeast Corner of Pond 2	Terrace / Shale 1	U, NO_3(N), F, As
MW049	South of Fluorisde Sludge Holding Basin 2 (North)	Terrace / Shale 1	U, NO_3(N), F, As
MW053[2]	North of Sanitary Lagoon on Emergency Basin Bank	Terrace / Shale 1	U, NO_3(N), F, As
MW054[2]	West of Pond 1 Spoils Pile at Base of Slope	Terrace / Shale 1	U, NO_3(N), F, As
MW056	Northwest Corner of ’86 Incident Sod Storage Area	Terrace / Shale 1	U, NO_3(N), F, As
MW062	South of Fluoride Sludge Holding Basin1 (South)	Terrace / Shale 1	U, NO_3(N), F, As
MW075[2]	South of Incinerator	Terrace / Shale 1	U, NO_3(N), F, As
MW077[2]	NW of DUF4 Building Near Fence	Terrace / Shale 1	U, NO_3(N), F, As
MW079[2]	NE of Bechtel Building on UF6 Cylinder Pad	Terrace / Shale 1	U, NO_3(N), F, As
MW080[2]	West of DUF4 Building in Concrete Pad	Terrace / Shale 1	U, NO_3(N), F, As
MW086[2]	NE Corner of Cooling Tower	Terrace / Shale 1	U, NO_3(N), F, As
MW087	Old Contaminated Solid Waste Burial Area	Terrace / Shale 1	U, NO_3(N), F, As
MW014A[2]	South of Bechtel Building	Shale 2, 3	U, NO_3(N), F, As
MW018A[2]	Southwest Corner of MPB	Shale 2	U, NO_3(N), F, As
MW042A	South of South Yellowcake Sump in Parking Lot	Shale 2	U, NO_3(N), F, As

Table 1
Groundwater Monitoring Plan
Sampling and Analysis Schedule

Monitor ID	Location	Groundwater Unit Monitored	Parameters Analyzed
MW047A	Northwest Corner of Pond 2	Shale 2	U, NO_3(N), F, As
MW048	West of Pond 2	Shale 2	U, NO_3(N), F, As
MW050A[2]	North of Fluoride Basin No. 2	Shale 2, 3	U, NO_3(N), F, As
MW052A	West of Fluoride Sludge Holding Basin 2 (North)	Shale 2	U, NO_3(N), F, As
MW065A[2]	South of Fluoride Clarifier	Shale 2	U, NO_3(N), F, As
MW067A[2]	North Solid Waste Burial Area No. 2	Shale 2	U, NO_3(N), F, As
MW081A	N of DUF4 Building Near Perimeter Fence	Shale 2	U, NO_3(N), F, As
MW121A[3]	Southwest of Pond 2	Shale 2	U, NO_3(N), F, As
2303A	North of Clarifier Basins	Shale 3	U, NO_3(N), F, As
2346	Southwest of Pond 6	Shale 3	U, NO_3(N), F, As
MW012A[2]	Northwest of Main Process Building	Shale 3	U, NO_3(N), F, As
MW049A[2]	South of Fluoride Holding Basin No. 2	Shale 3	U, NO_3(N), F, As
MW057A[2]	Southwest of Pond 2	Shale 3	U, NO_3(N), F, As
MW084A[2]	SW of Misc Digestion on YC Pad	Shale 3	U, NO_3(N), F, As
MW086A[2]	NE Corner of Cooling Tower	Shale 3	U, NO_3(N), F, As
MW089A	Northwest of Fluoride Holding Basin No. 2	Shale 3	U, NO_3(N), F, As
MW115A	South of Pond 2	Shale 3	U, NO_3(N), F, As
MW122A[3]	Northwest of Pond 2	Shale 3	U, NO_3(N), F, As
MW123A[3]	Southwest of Pond 2	Shale 3	U, NO_3(N), F, As
MW124A[3]	South of Pond 5	Shale 3	U, NO_3(N), F, As
MW127A[3]	Southwest of Fluoride Holding Basin No. 2	Shale 3	U, NO_3(N), F, As
MW130A[3]	West of Pond 5	Shale 3	U, NO_3(N), F, As
MW059A	Southwest of Pond 2	Shale 4	U, NO_3(N), F, As
MW062A	South of Fluoride Holding Basin No. 1	Shale 4, 2	U, NO_3(N), F, As
MW097A	West of Pond 2 at Property Boundary	Shale 4	U, NO_3(N), F, As
MW099A	Northwest Corner of Industrial Area in Woods	Shale 4	U, NO_3(N), F, As
MW107	800 Feet West of Pond 5	Shale 4	U, NO_3(N), F, As
MW108	800 Feet Southwest of Pond 5	Shale 4	U, NO_3(N), F, As
MW111A	Northeast Portion of Agland	Shale 4	U, NO_3(N), F, As
MW112A	Southwest Portion of Facility on Agland Field	Shale 4	U, NO_3(N), F, As
MW125A[3]	South of Pond 3 East	Shale 4	U, NO_3(N), F, As

Table 1
Groundwater Monitoring Plan
Sampling and Analysis Schedule

Monitor ID	Location	Groundwater Unit Monitored	Parameters Analyzed
MW126A[3]	Southwest of Pond 5	Shale 4	U, NO_3(N), F, As
MW129A[3]	Southwest of Pond 2 Near Facility West Boundary	Shale 4	U, NO_3(N), F, As
MW059B	Southwest of Pond 2	Shale 5	U, NO_3(N), F, As
MW090B	Northwest of Pond 5 Near Reservoir Weir	Shale 5	U, NO_3(N), F, As
STA04	Southwest of Pond 2 Near Port Road Bridge	Shale 5	U, NO_3(N), F, As
MW098B	West of Pond 2 at Property Boundary (old 004 Path)	Shale 5	U, NO_3(N), F, As
MW100B	West of Fluoride Sludge Holding Basin 2 in 005 Drainage	Shale 5	U, NO_3(N), F, As
MW105B	West of Pond 5	Shale 5	U, NO_3(N), F, As
MW128B[3]	SW portion of the Agland	Shale 5	U, NO_3(N), F, As
Corrective Action Monitoring (Quarterly Sampling Frequency)			
2224A	005 Collection Trench	Shale 3	U, $N0_3$(N), F, As
2224B	005 Monitor Trench	Shale 3	U, $N0_3$(N), F, As
2247	95A Collection Trench	Shale 4	U, $N0_3$(N), F, As
MW095A	Southwest of Pond 2 Near Facility West Boundary	Shale 4	U, $N0_3$(N), F, As
2248	10 Collection Trench	Terrace/Shale 1	U, $N0_3$(N), F, As
MW031	South of Main Process Building	Terrace/Shale 1	U, $N0_3$(N), F, As
Seep and Drainage Monitoring (Quarterly Sampling Frequency)			
2241	005 Drainage - 25 feet East of COE Property Boundary Fence	Shale 5	See Note 4
2242	005 Drainage - Pool Near MW100B	Shale 4	See Note 4
2243	007 Drainage at Drainage from North Holding Basin	Shale 4	See Note 4
2244	004 Drainage - 20 feet East of COE Property Boundary Fence	Shale 4	See Note 4
2245	Seep North of Port Road Bridge and East of 001 Drainage	Shale 4	See Note 4, F
2246	001 Drainage N of Port Road Bridge	Shale 4	See Note 4
Surface Water Monitoring (Annual Sampling Frequency)			
2201	Illinois River - 1600 feet Upstream of 001 Confluence		U, $N0_3$(N), As, Ra-226
2202	Illinois River - 600 feet Downstream of 001 Confluence		U, $N0_3$(N), As, Ra-226
2203	Arkansas River - Upstream Towards Highway 64 Bridge		U, $N0_3$(N), As, Ra-226
2204	Arkansas River - Downstream Near I-40 Bridge		U, $N0_3$(N), As, Ra-226

Note 1: Analyze for antimony, arsenic, barium, beryllium, cadmium, chromium, fluoride, lead, molybdenum, nickel, nitrate(as N), radium-226, selenium, thallium, thorium-230 and uranium
Note 2: Well will be abandoned and plugged as necessary to allow reclamation activities
Note 3: Well installed upon approval of GWMP
Note 4: Analyze for antimony, arsenic, nitrate (as N), lead, thallium and uranium.

Table 2
Background Quality Monitoring Analyses

Well ID	GW Unit Monitored	Date Sampled	Uranium µg/l	Thorium-230 pCi/l	Radium-226 pCi/l	Radium-228 pCi/l	Nitrate(as N) mg/l	Fluoride mg/l	Antimony mg/l	Arsenic mg/l
MW007	Terrace / Shale 1	05/01/09	< 1	0.445 ± 0.136	0.238 ± 0.133	0.238 ± 0.133	2.4	0.6	< 0.010	< 0.010
MW070	Terrace / Shale 1	05/01/09	14.5	0.305 ± 0.097	0.786 ± 0.171	0.786 ± 0.171	1.5	0.9	< 0.010	0.013
MW073	Terrace / Shale 1	05/01/09	< 1	0.493 ± 0.217	0.070 ± 0.090	0.070 ± 0.090	3.7	0.4	< 0.010	< 0.010
MW007A	Shale 3	05/01/09	< 1	0.401 ± 0.146	0.035 ± 0.084	0.035 ± 0.084	7.2	0.7	< 0.010	< 0.010
MW110A	Shale 4	05/01/09	< 1	0.338 ± 0.130	0.124 ± 0.311	0.124 ± 0.311	< 1	0.5	< 0.010	< 0.010
MW007B	Shale 5	05/01/09	< 1	0.070 ± 0.188	0.373 ± 0.230	0.373 ± 0.230	1.1	2.7	< 0.010	0.01

Well ID	Date Sampled	Barium mg/l	Beryllium mg/l	Cadmium mg/l	Chromium mg/l	Lead mg/l	Molybdenum mg/l	Nickel mg/l	Selenium mg/l	Thallium mg/l
MW007	05/01/09	0.028	< 0.010	< 0.010	0.012	0.01	< 0.010	< 0.010	< 0.010	< 0.010
MW070	05/01/09	0.193	< 0.010	< 0.010	0.013	0.012	< 0.010	0.017	< 0.010	< 0.010
MW073	05/01/09	0.023	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
MW007A	05/01/09	0.013	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
MW110A	05/01/09	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.014
MW007B	05/01/09	0.052	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Table 3
Compliance Groundwater Monitoring Analyses

Location ID	GW Unit Monitored	Date Sampled	Uranium µg/l	Nitrate (as N) mg/l	Fluoride mg/l	Arsenic mg/l	Barium mg/l
MW008	Terrace / Shale 1	6/2/2009	< 1	49	0.4	< 0.010	
MW010	Terrace / Shale 1	6/2/2009	1800	1.1	0.6	0.013	
MW014	Terrace / Shale 1	6/5/2009	6890	2.1	4.2	< 0.010	
MW019	Terrace / Shale 1	6/5/2009	< 1	< 15	< 0.3	0.011	
MW025	Terrace / Shale 1	6/5/2009	45000	836	0.4	< 0.010	
MW035	Terrace / Shale 1	5/22/2009	8.5	< 1	0.4	0.011	
MW036	Terrace / Shale 1	5/22/2009	1.82	14.5	0.2	< 0.010	
MW040	Terrace / Shale 1	5/22/2009	< 1	401	2.6	0.04	0.69
MW040	Terrace / Shale 1	8/25/2009					0.55
MW040	Terrace / Shale 1	9/4/2009					1.5
MW042	Terrace / Shale 1	6/2/2009	4.14	8.3	1.8	0.676	
MW045	Terrace / Shale 1	5/22/2009	Dry	Dry	Dry	Dry	
MW049	Terrace / Shale 1	5/22/2009	2.93	< 1	0.4	0.016	
MW053	Terrace / Shale 1	6/5/2009	20.8	< 1	0.9	< 0.010	
MW054	Terrace / Shale 1	5/22/2009	1.79	256	0.8	0.066	
MW056	Terrace / Shale 1	5/14/2009	Dry	Dry	Dry	Dry	
MW062	Terrace / Shale 1	5/14/2009	2.36	5.6	0.4	0.082	
MW075	Terrace / Shale 1	6/5/2009	6.65	< 1	4	2.3	
MW077	Terrace / Shale 1	6/5/2009	16.3	< 1	0.4	0.01	
MW079	Terrace / Shale 1	6/5/2009	8.14	< 1	1.1	< 0.010	
MW080	Terrace / Shale 1	6/5/2009	< 1	< 1	0.3	< 0.010	
MW086	Terrace / Shale 1	6/9/2009	< 1	1.3	0.5	0.026	
MW087	Terrace / Shale 1	6/5/2009	1360	< 1	0.6	0.012	
MW014A	Shale 2,3	6/5/2009	29.0	78.4	0.4	0.015	
MW018A	Shale 2	6/5/2009	1.48	7	0.4	< 0.010	
MW042A	Shale 2	6/2/2009	< 1	166.0	1.2	0.565	
MW047A	Shale 2	5/18/2009	Dry	Dry	Dry	Dry	
MW048	Shale 2	5/20/2009	3.72	38	< 0.2	0.013	
MW050A	Shale 2, 3	5/20/2009	243	33.4	0.2	0.037	
MW052A	Shale 2	5/14/2009	< 1	< 1	0.3	0.005	
MW065A	Shale 2	6/2/2009	3.55	195	1.6	0.484	
MW067A	Shale 2	6/2/2009	196	1.1	0.3	0.025	
MW081A	Shale 2	6/2/2009	30.3	< 1	0.8	0.011	
MW121A	Shale 2	5/22/2009	< 1	1670	3	1.35	
2303A	Shale 3	5/22/2009	7.58	277	0.3	0.060	
2346	Shale 3	5/5/2009	4.14	509	0.2	0.034	
MW012A	Shale 3	6/5/2009	887	91.2	0.3	0.018	
MW049A	Shale 3	5/22/2009	2.88	66.4	0.3	0.017	
MW057A	Shale 3	5/22/2009	4.29	7940	5.3	2.92	
MW084A	Shale 3	6/5/2009	< 1	8	< 0.2	0.016	
MW086A	Shale 3	6/5/2009	310	55.5	0.2	0.017	
MW089A	Shale 3	5/14/2009	20.3	28.8	0.2	0.02	
MW115A	Shale 3	5/19/2009	Dry	Dry	Dry	Dry	
MW122A	Shale 3	5/20/2009	1.52	1620	0.6	0.204	
MW123A	Shale 3	5/13/2009	Dry	Dry	Dry	Dry	
MW124A	Shale 3	5/6/2009	5.67	490	0.2	0.06	
MW127A	Shale 3	5/20/2009	6.3	53.5	0.5	< 0.010	
MW130A	Shale 3	5/6/2009	Dry	Dry	Dry	Dry	
MW059A	Shale 4	5/22/2009	4.71	4590	2.6	1.340	
MW062A	Shale 4, 2	5/14/2009	1.16	< 1	0.9	< 0.010	
MW097A	Shale 4	5/22/2009	< 1	< 1	0.3	0.012	
MW099A	Shale 4	5/14/2009	10.7	< 1	< 0.2	0.029	
MW107	Shale 4	5/5/2009	1.15	58.9	0.2	0.016	
MW108	Shale 4	5/5/2009	1.14	26.5	< 0.2	0.011	
MW111A	Shale 4	5/5/2009	4.09	< 1	0.5	< 0.010	
MW112A	Shale 4	5/5/2009	< 1	4.3	0.3	0.012	

Table 3
Compliance Groundwater Monitoring Analyses

Location ID	GW Unit Monitored	Date Sampled	Uranium µg/l	Nitrate (as N) mg/l	Fluoride mg/l	Arsenic mg/l	Barium mg/l
MW125A	Shale 4	5/5/2009	1.44	< 1	0.8	0.01	
MW126A	Shale 4	5/6/2009	1.77	< 1	0.5	0.027	
MW129A	Shale 4	5/20/2009	< 1	1.7	< 0.2	< 0.010	
MW059B	Shale 5	5/22/2009	< 1	5.9	1.6	0.011	
MW090B	Shale 5	5/20/2009	< 1	< 1	2.0	< 0.010	
STA04	Shale 5	5/20/2009	< 1	< 1	1.4	0.01	
MW098B	Shale 5	5/22/2009	1.07	< 1	0.4	0.01	
MW100B	Shale 5	5/20/2009	< 1	< 1	0.5	0.01	
MW105B	Shale 5	5/20/2009	< 1	< 1	2.2	0.015	
MW128B	Shale 5	5/5/2009	1.86	< 1	1.5	< 0.010	

Table 4
Corrective Action Monitoring Analyses

Location ID	GW Unit Monitored	Date Sampled	Uranium µg/l	Nitrate (as N) mg/l	Fluoride mg/l	Arsenic mg/l
2224A	Shale 3	1/13/2009	186	300	0.6	0.03
2224A	Shale 3	2/4/2009	198	9.4	0.5	0.012
2224A	Shale 3	3/4/2009	184	223	0.5	0.025
2224A	Shale 3	4/8/2009	162	174	0.5	0.02
2224A	Shale 3	5/20/2009	132	135	0.5	0.010
2224A	Shale 3	6/3/2009	75.1	380	0.6	< 0.010
2224A	Shale 3	7/15/2009	53.1	16	0.7	0.022
2224A	Shale 3	8/5/2009	82.1	285	0.8	0.034
2224A	Shale 3	9/9/2009	102	246	0.7	0.027
2224A	Shale 3	10/14/2009	229	7	0.7	0.046
2224A	Shale 3	11/4/2009	190	134	0.5	0.011
2224A	Shale 3	12/2/2009	176	116	0.5	0.031
2224B	Shale 3	1/13/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	2/4/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	3/4/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	4/8/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	5/20/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	6/3/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	7/15/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	8/5/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	9/9/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	10/14/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	11/4/2009	Dry	Dry	Dry	Dry
2224B	Shale 3	12/2/2009	Dry	Dry	Dry	Dry
2247	Shale 4	1/13/2009	4.24	1320	0.3	0.053
2247	Shale 4	2/4/2009	1.57	1270	0.3	0.053
2247	Shale 4	3/4/2009	3.4	1260	0.4	0.076
2247	Shale 4	4/8/2009	3.27	1100	0.3	0.039
2247	Shale 4	5/20/2009	2.2	643	0.3	0.033
2247	Shale 4	6/3/2009	2.38	897	0.4	0.045
2247	Shale 4	7/15/2009	2.42	944	0.4	0.05
2247	Shale 4	8/5/2009	3.59	1220	0.4	0.055
2247	Shale 4	9/9/2009	3.05	1190	0.3	0.01
2247	Shale 4	10/14/2009	2.33	1010	0.4	0.157
2247	Shale 4	11/4/2009	1.89	1000	0.2	0.049
2247	Shale 4	12/2/2009	2.66	897	0.3	0.069
MW095A	Shale 4	1/23/2009	< 1	49.5	< 0.2	< 0.010
MW095A	Shale 4	5/1/2009	< 1	33.1	< 0.2	0.012
MW095A	Shale 4	7/24/2009	6.85	22.2	0.4	0.017
MW095A	Shale 4	10/16/2009	< 1	53.3	0.3	< 0.020
2248	Terrace / Shale 1	1/13/2009	70.9	9.7	0.7	0.024
2248	Terrace / Shale 1	2/4/2009	49.3	2.4	0.4	< 0.010
2248	Terrace / Shale 1	3/4/2009	48.1	5.6	0.4	0.012
2248	Terrace / Shale 1	4/8/2009	37.7	2.1	0.3	< 0.010
2248	Terrace / Shale 1	5/20/2009	44	4.7	0.3	< 0.010
2248	Terrace / Shale 1	6/3/2009	40.3	5.8	0.4	0.019
2248	Terrace / Shale 1	7/15/2009	21.8	15.4	0.4	0.016
2248	Terrace / Shale 1	8/5/2009	24.6	13.1	0.3	0.019
2248	Terrace / Shale 1	9/9/2009	26.7	3.6	0.4	0.012
2248	Terrace / Shale 1	10/14/2009	37.4	1.2	0.4	0.031
2248	Terrace / Shale 1	11/4/2009	49.4	1.3	0.3	0.01
2248	Terrace / Shale 1	12/2/2009	51.8	1.1	0.3	< 0.010
MW031	Terrace / Shale 1	1/23/2009	< 1	2.4	0.6	< 0.010
MW031	Terrace / Shale 1	5/1/2009	15	2.1	0.3	< 0.010
MW031	Terrace / Shale 1	7/24/2009	3.77	7.7	0.7	< 0.010
MW031	Terrace / Shale 1	10/16/2009	< 1	5.4	0.4	< 0.020

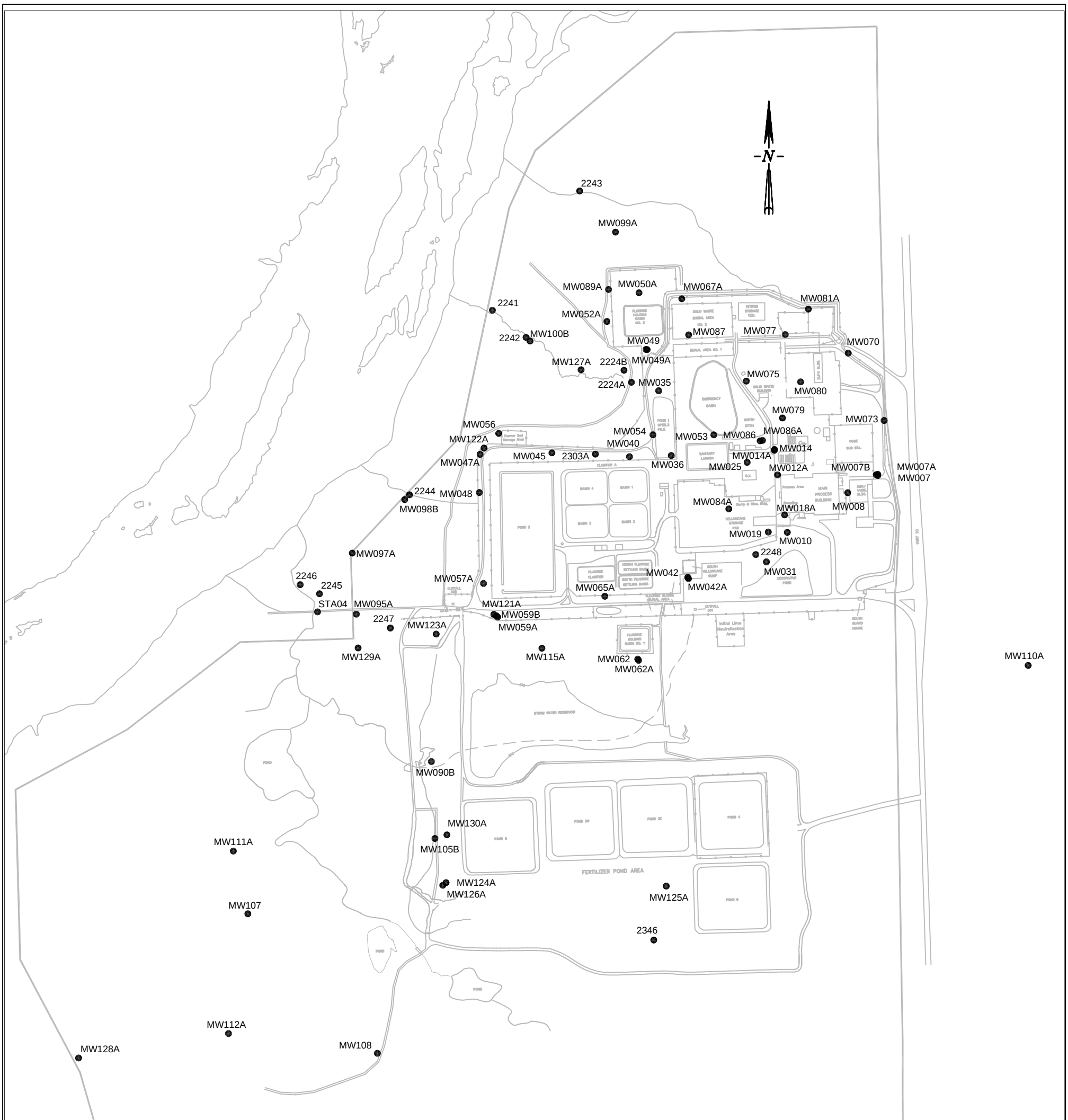
Table 5
Seep and Drainage Monitoring Analyses

Location ID	GW Unit Monitored	Date Sampled	Uranium µg/l	Nitrate (N) mg/l	Fluoride mg/l	Antimony mg/l	Arsenic mg/l	Lead mg/l	Thallium mg/l
2241	Shale 5	3/3/2009	331	17.3		< 0.012	< 0.010	< 0.010	0.108
2241	Shale 5	6/16/2009	55.1	< 1		< 0.010	0.01	< 0.016	< 0.010
2241	Shale 5	9/21/2009	Dry	Dry		Dry	Dry	Dry	Dry
2241	Shale 5	12/2/2009	49.7	3.2		< 0.010	< 0.010	< 0.010	< 0.010
2242	Shale 4	3/3/2009	278	11.8		< 0.012	< 0.010	< 0.010	0.08
2242	Shale 4	6/16/2009	44.7	1.2		< 0.010	0.014	0.024	< 0.010
2242	Shale 4	9/21/2009	7.98	< 1		0.012	0.032	0.01	0.188
2242	Shale 4	12/2/2009	41.8	4.2		0.018	0.017	0.018	< 0.010
2243	Shale 4	3/3/2009	3.95	1		< 0.012	< 0.010	< 0.010	0.029
2243	Shale 4	6/16/2009	5.48	< 1		< 0.010	< 0.010	0.026	< 0.010
2243	Shale 4	9/21/2009	17.8	1.3		< 0.010	< 0.010	< 0.010	0.032
2243	Shale 4	12/2/2009	8.39	1.1		< 0.010	< 0.010	< 0.010	< 0.010
2244	Shale 4	3/3/2009	4.21	67.4		< 0.012	0.018	0.01	0.034
2244	Shale 4	6/16/2009	11.8	5.2		< 0.010	< 0.010	0.028	0.024
2244	Shale 4	9/21/2009	8.40	44.2		< 0.010	0.026	< 0.010	0.036
2244	Shale 4	12/2/2009	53.1	29.6		< 0.010	< 0.010	< 0.010	< 0.010
2245	Shale 4	3/3/2009	6.75	1.1	0.7	< 0.012	0.011	0.02	< 0.010
2245	Shale 4	6/16/2009	7.62	< 1	0.5	< 0.010	0.012	0.03	< 0.010
2245	Shale 4	9/21/2009	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2245	Shale 4	12/2/2009	< 1	< 1	< 0.2	< 0.010	< 0.010	< 0.010	< 0.010
2246	Shale 4	3/3/2009	26	7.5		< 0.012	< 0.010	< 0.010	0.047
2246	Shale 4	6/16/2009	2.65	55.2		< 0.010	0.02	< 0.016	< 0.010
2246	Shale 4	9/21/2009	7.7	2.1		< 0.010	0.011	< 0.010	0.043
2246	Shale 4	12/2/2009	12.1	10.6		< 0.010	< 0.010	< 0.010	< 0.010

Table 6
Surface Water Monitoring Analyses

Location ID	Date Sampled	Uranium µg/l	Radium-226 pCi/l	Radium-228 pCi/l	Nitrate (N) mg/l	Arsenic mg/l
2201	8/13/2009	< 1	0 ± 0.123	0.893 ± 0.082	1.7	< 0.010
2202	8/13/2009	1.35	0.061 ± 0.069	0.655 ± 0.075	< 1	0.011
2203	8/13/2009	1.61	0.158 ± 0.118	0.060 ± 0.182	< 1	0.013
2204	8/13/2009	1.41	0.055 ± 0.063	0 ± 0.088	< 1	0.011

Figures



SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
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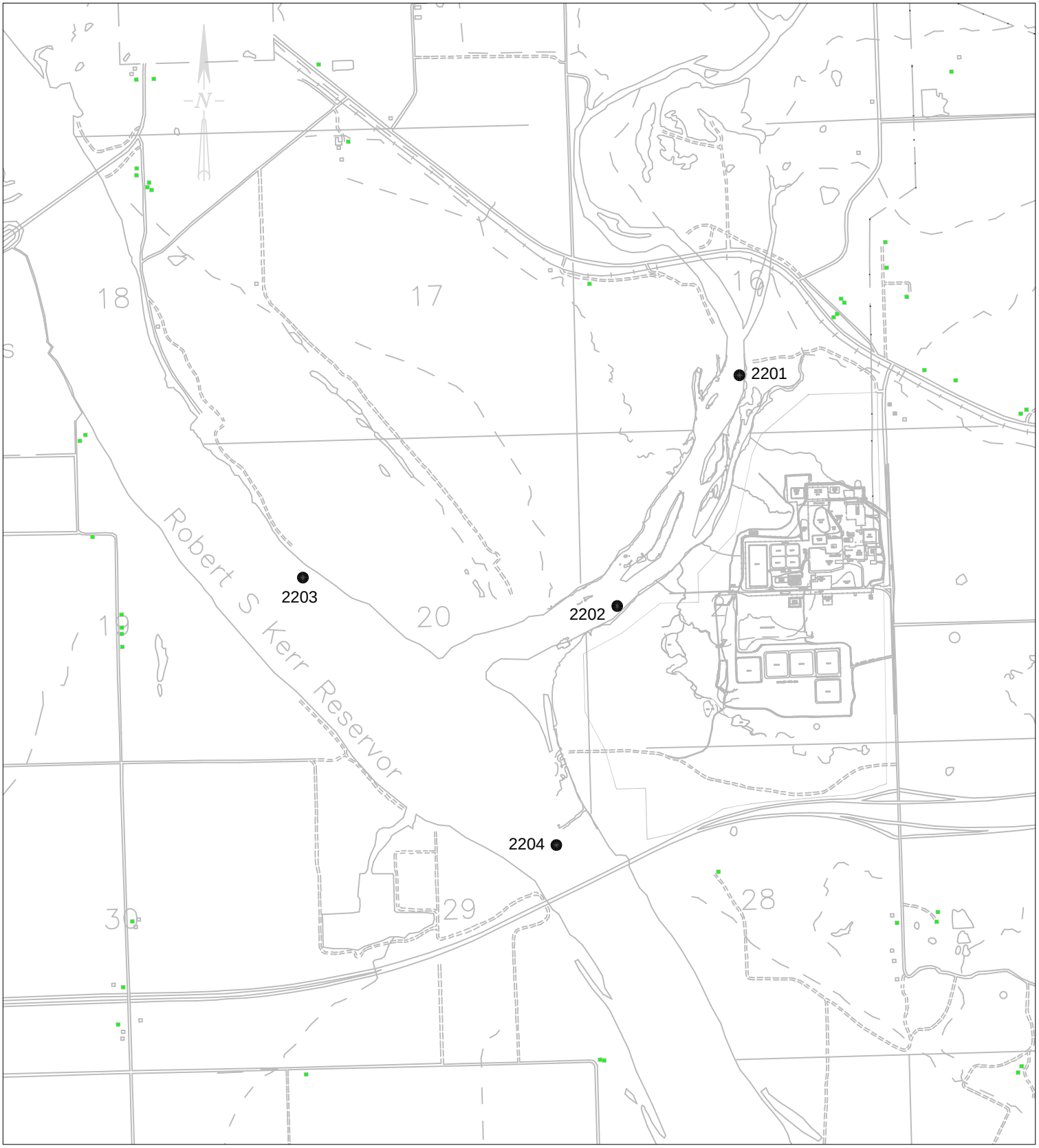
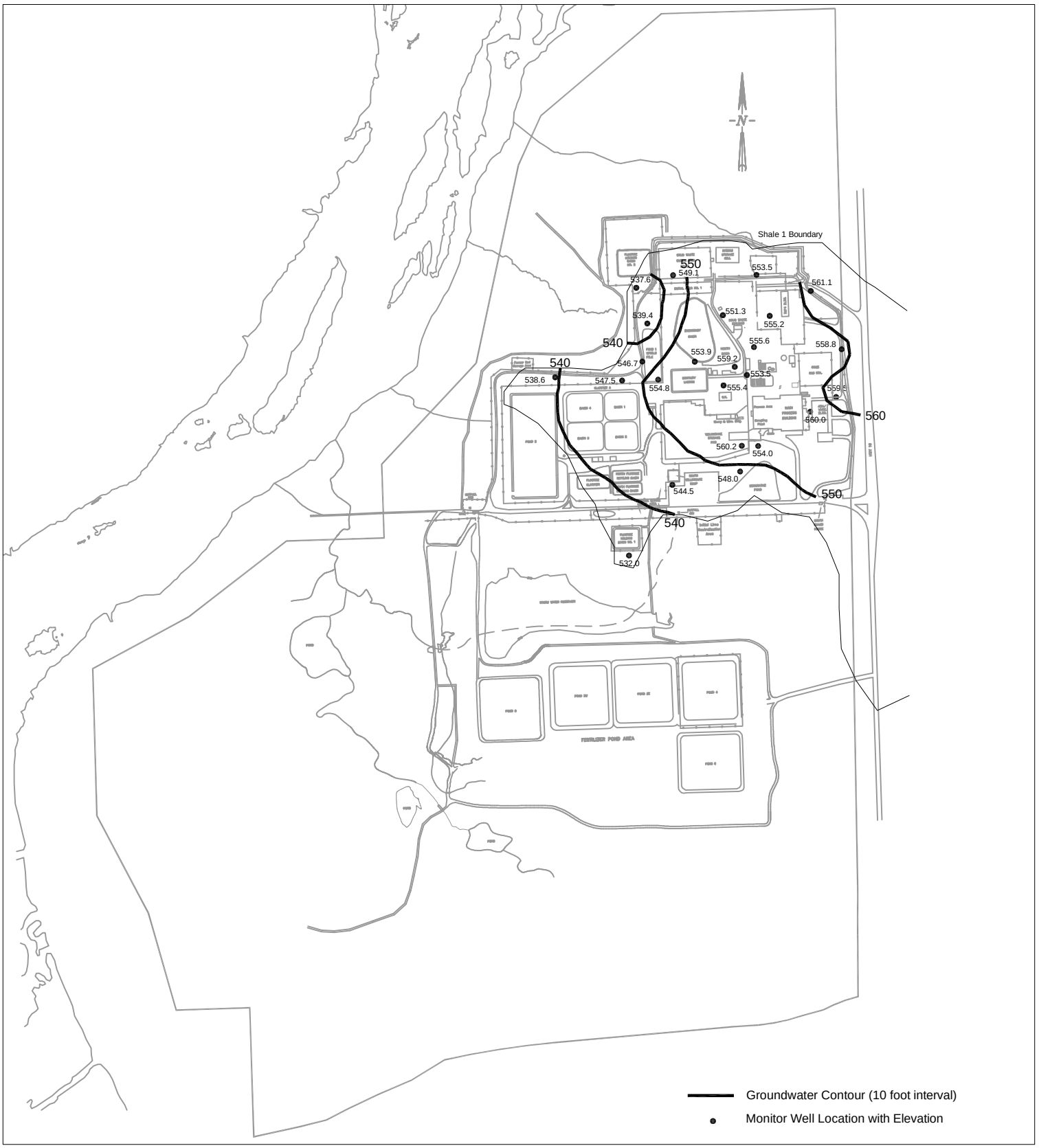
PREPARED BY: SCM	FILENAME: MonitoringLocs.dwg
REVIEWED BY: CLH	
DATE: 27 Jan 2006	FIGURE NO. 1



SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
TITLE: Surface Water Sample Locations	
PREPARED BY: SCM	FILENAME: SurfaceWaterLocs.dwg
REVIEWED BY: CLH	FIGURE NO. 2
DATE: 27 Jan 2006	

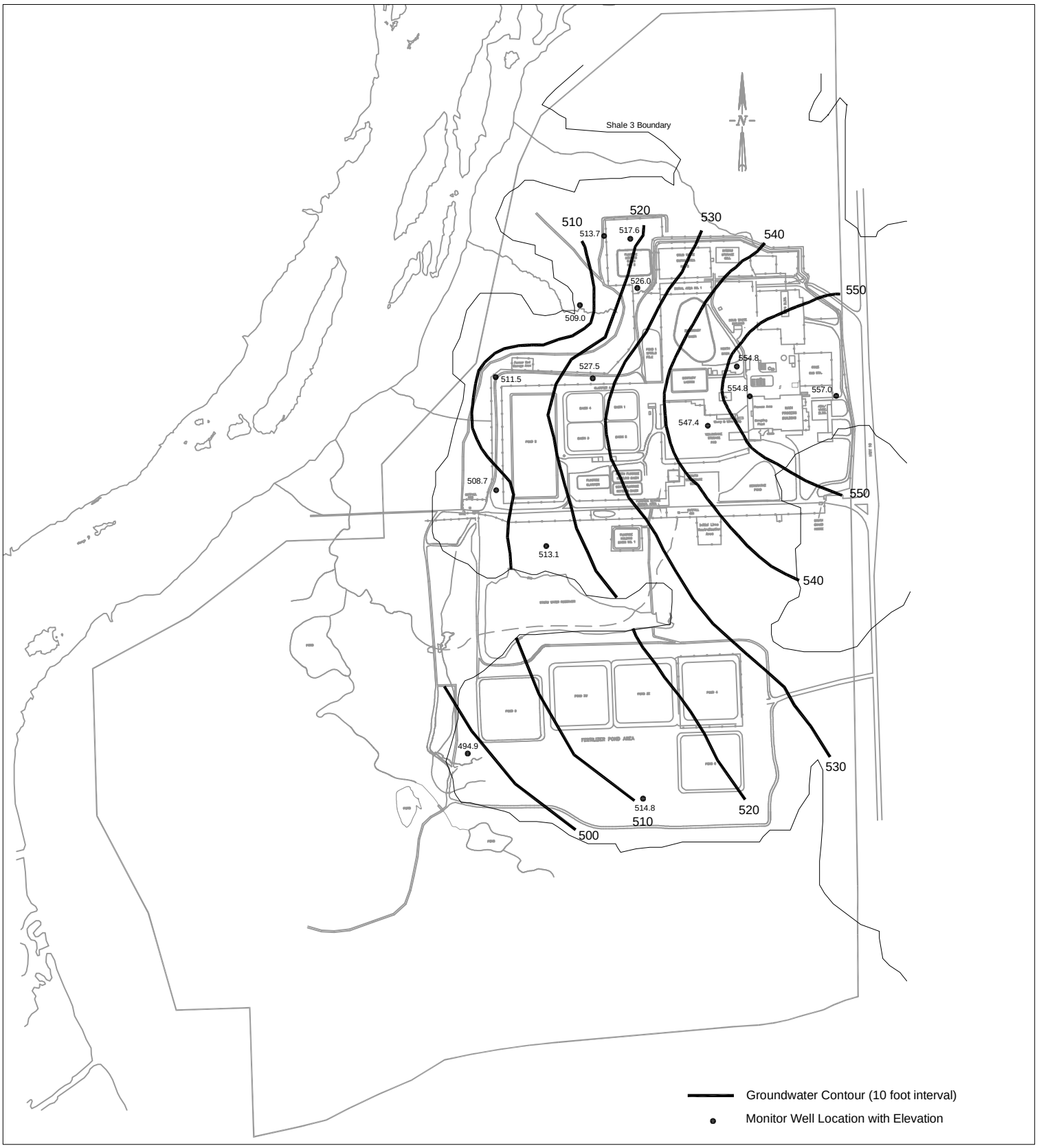


SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Groundwater Contour Map Terrace / Shale 1 Groundwater System*	
PREPARED BY: *SCM*	FILENAME: *TerrShale1WL09.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 3
DATE: *2 Feb 2010*	

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Groundwater Contour Map Shale 2 Groundwater System*	
PREPARED BY: *SCM*	FILENAME: *Shale2WL09.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 4
DATE: *2 Feb 2010*	

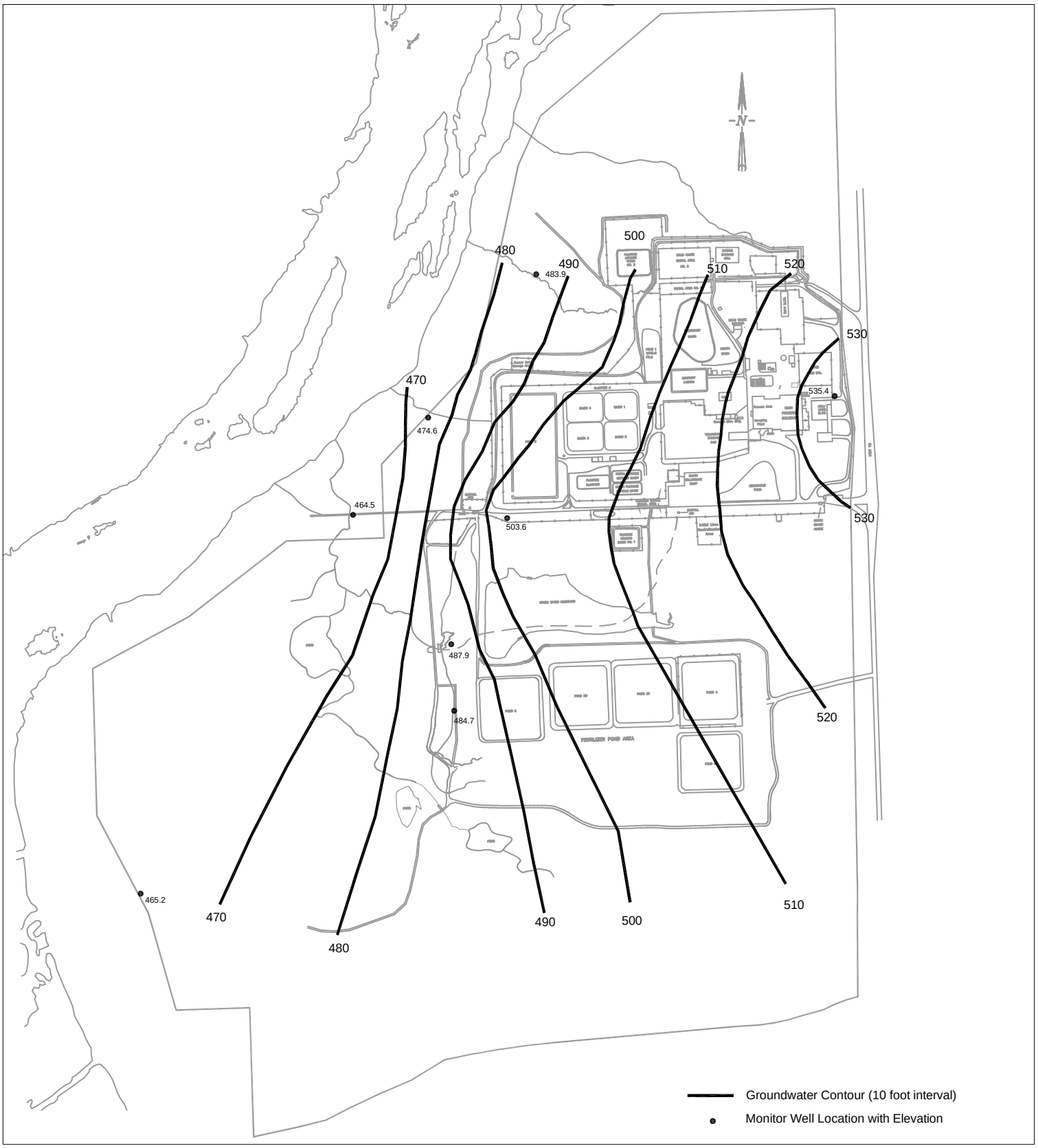


SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

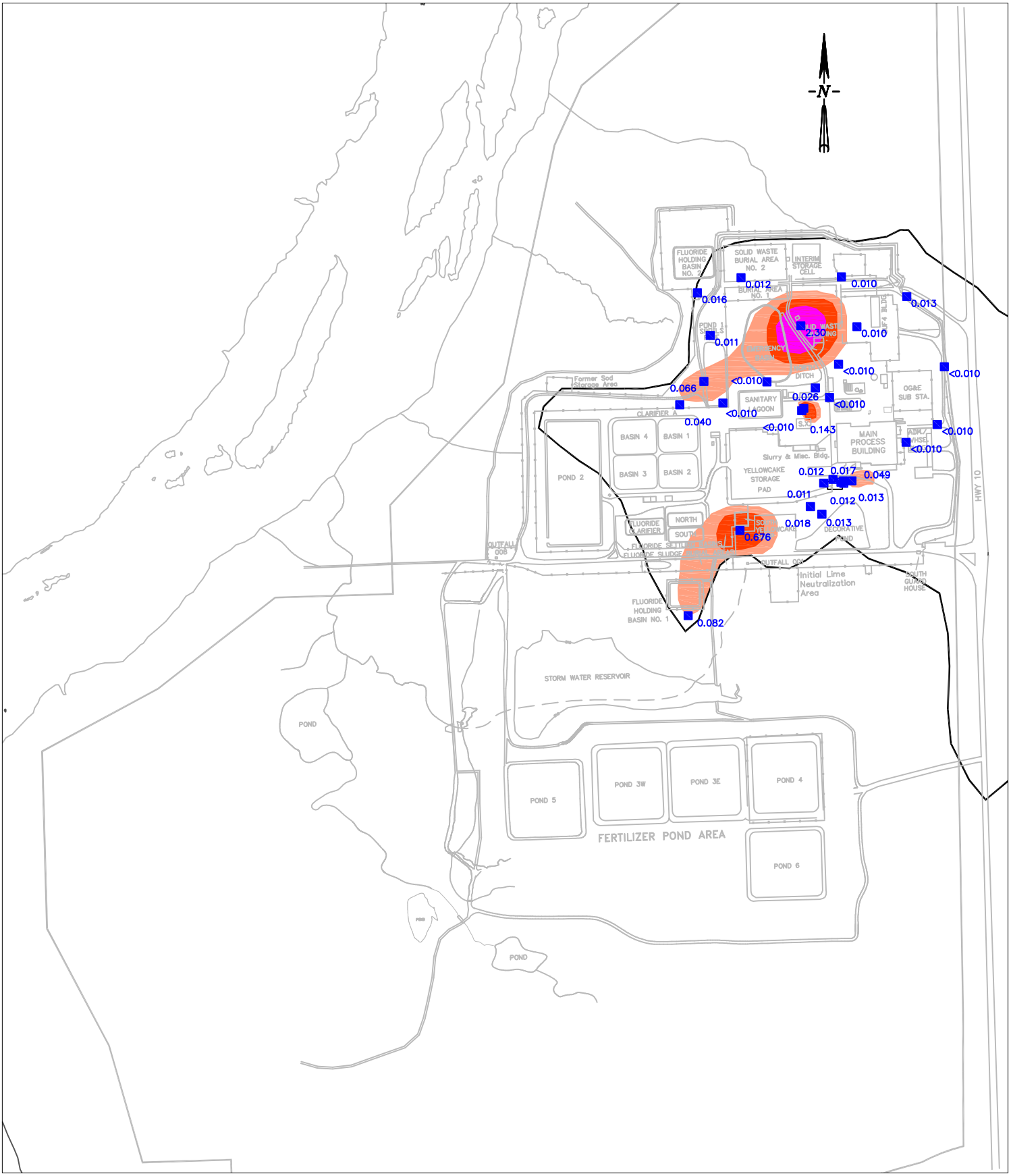
TITLE: *Groundwater Contour Map Shale 3 Groundwater System*	
PREPARED BY: *SCM*	FILENAME: *Shale3WL09.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 5
DATE: *2 Feb 2010*	

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE:	*Groundwater Contour Map Shale 4 Groundwater System*		
PREPARED BY:	*SCM*	FILENAME:	*Shale4WL09.dwg*
REVIEWED BY:	*SCM*	FIGURE NO. 6	
DATE:	*2 Feb 2010*		



SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
TITLE: Groundwater Contour Map Shale 5 Groundwater System	
PREPARED BY: SCM	FILENAME: Shale5WL09.dwg
REVIEWED BY: SCM	FIGURE NO. 7
DATE: 2 Feb 2010	



Arsenic, mg/l

1
0.1
0.05
BDL

Extent of Terrace / Shale 1

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: Arsenic Isoconcentration Diagram
Terrace / Shale 1 Groundwater Unit

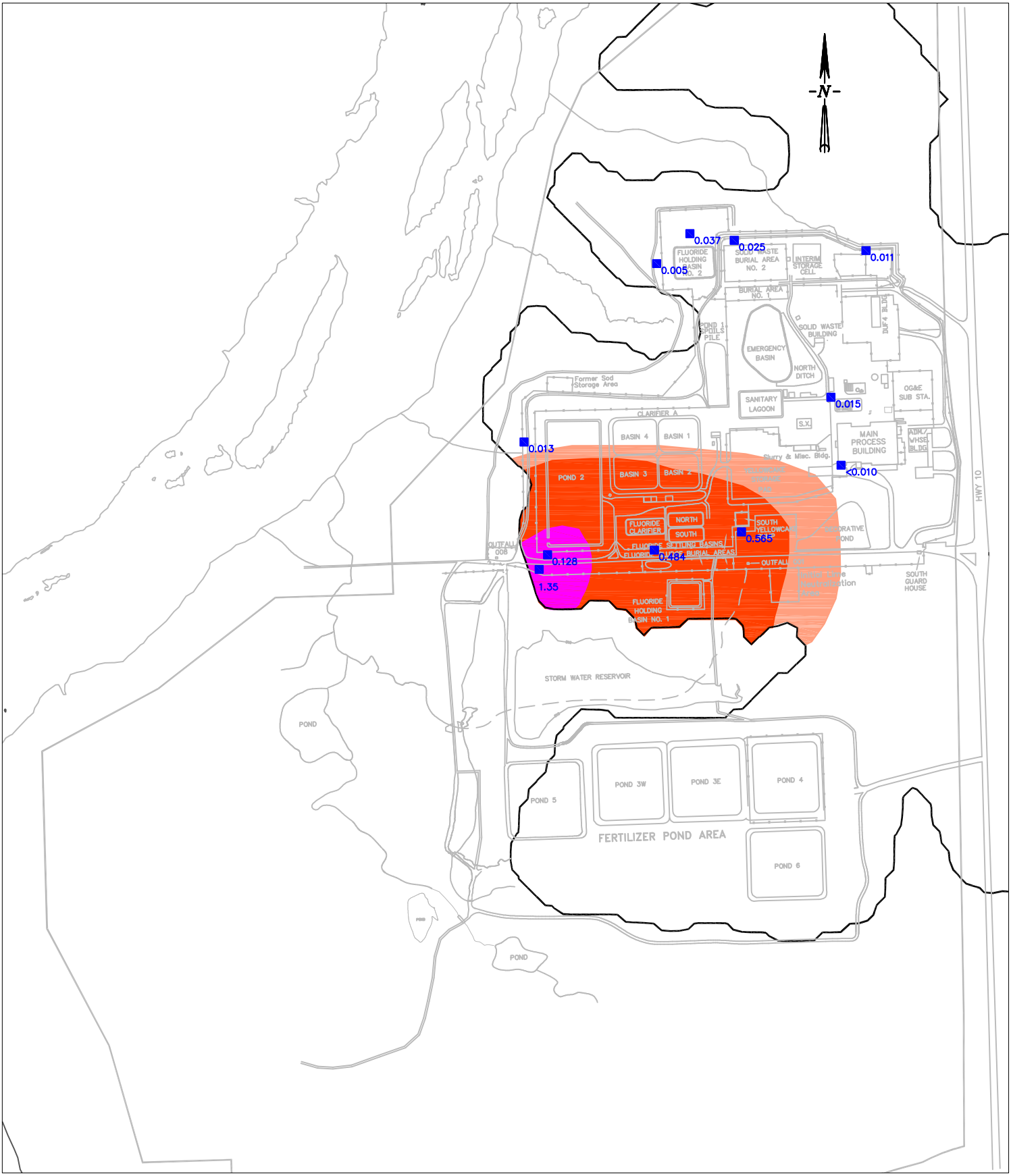
PREPARED BY: SCM

FILENAME: As_SH1_2009.dwg

REVIEWED BY: SCM

DATE: 26 JAN 2010

FIGURE NO. 8



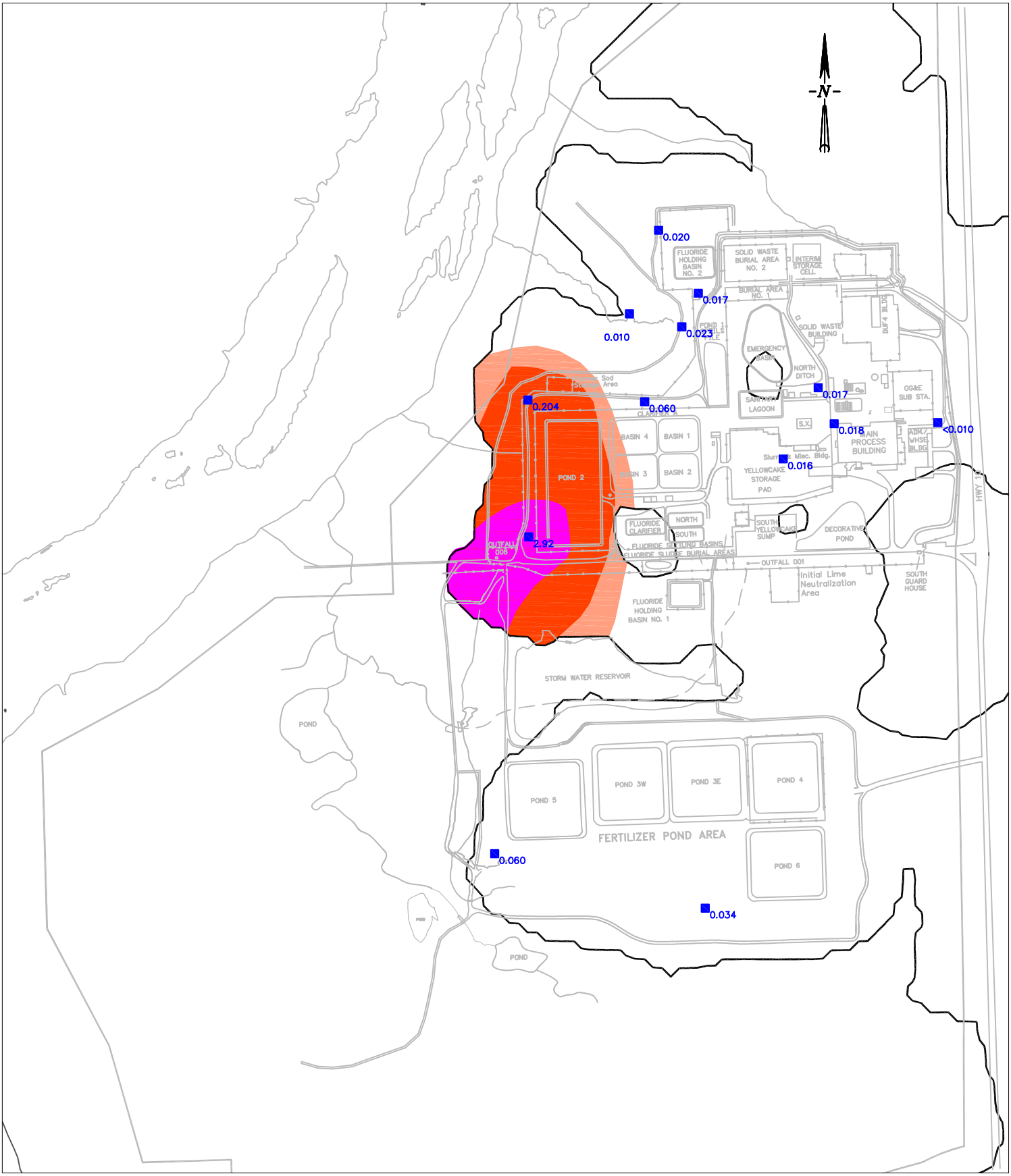
Arsenic, mg/l

1
0.1
0.05
BDL

Extent of Shale 2

Concentration

SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
TITLE: Arsenic Isoconcentration Diagram Shale 2 Groundwater Unit	
PREPARED BY: SCM	FILENAME: As_SH2_2009.dwg
REVIEWED BY: SCM	FIGURE NO. 9
DATE: 26 JAN 2010	



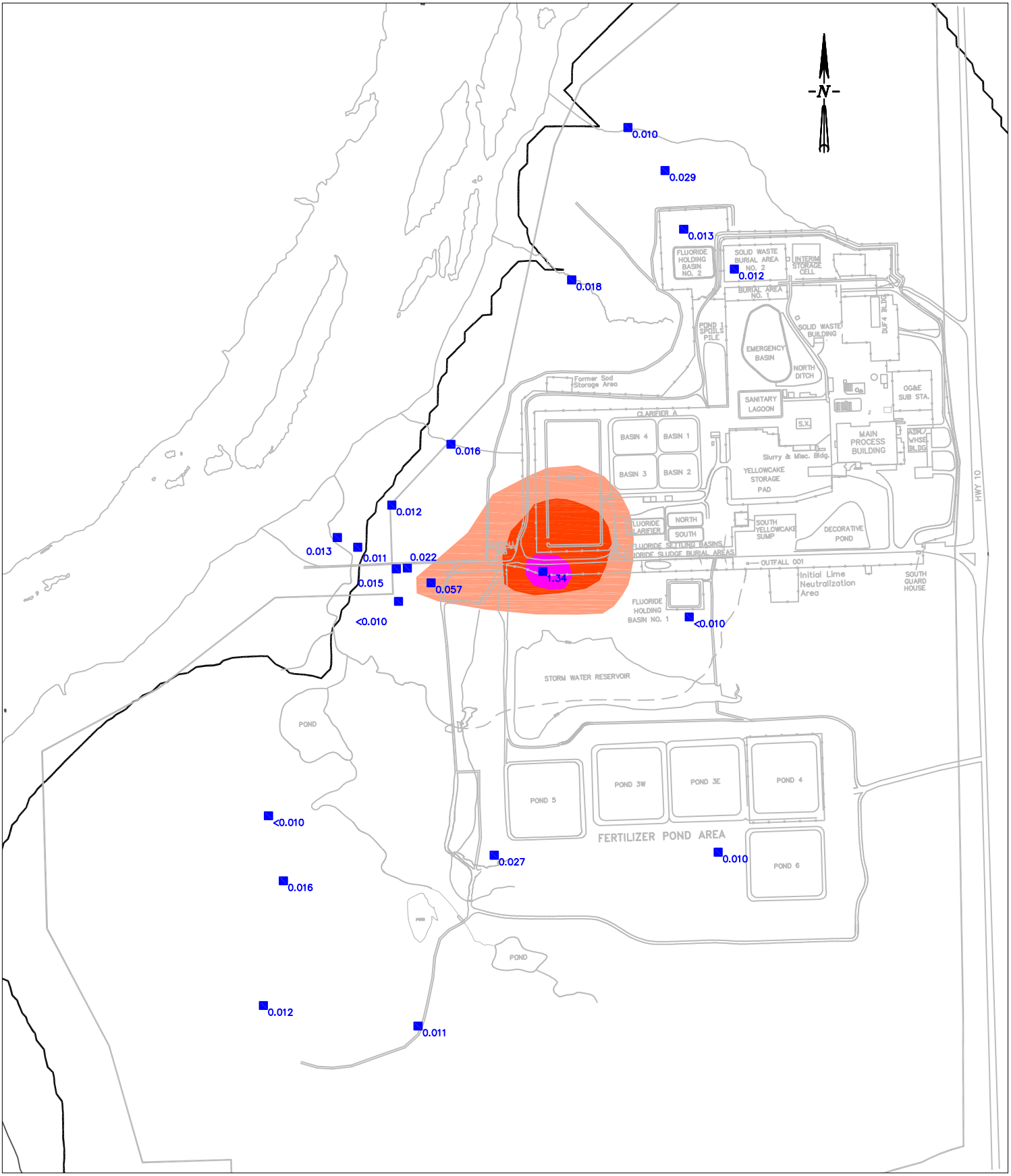
Arsenic, mg/l

1
0.1
0.05
BDL

Extent of Shale 3

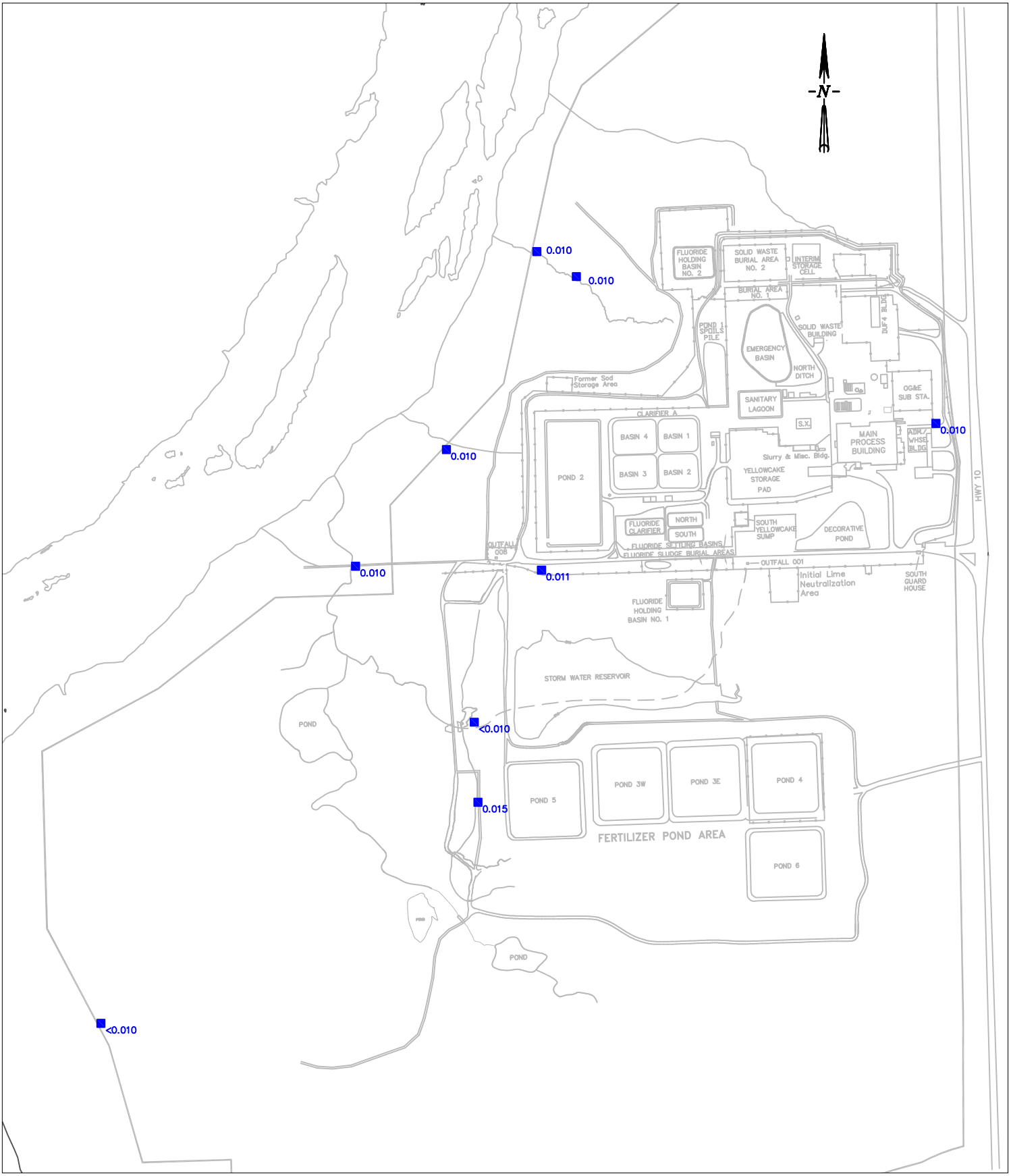
Concentration

SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
TITLE: Arsenic Isoconcentration Diagram Shale 3 Groundwater Unit	
PREPARED BY: SCM	FILENAME: U_SH3_2009.dwg
REVIEWED BY: SCM	FIGURE NO. 10
DATE: 26 JAN 2010	



SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Arsenic Isoconcentration Diagram Shale 4 Groundwater Unit*	
PREPARED BY: *SCM*	FILENAME: *As_SH4_2009.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 11
DATE: *26 JAN 2010*	



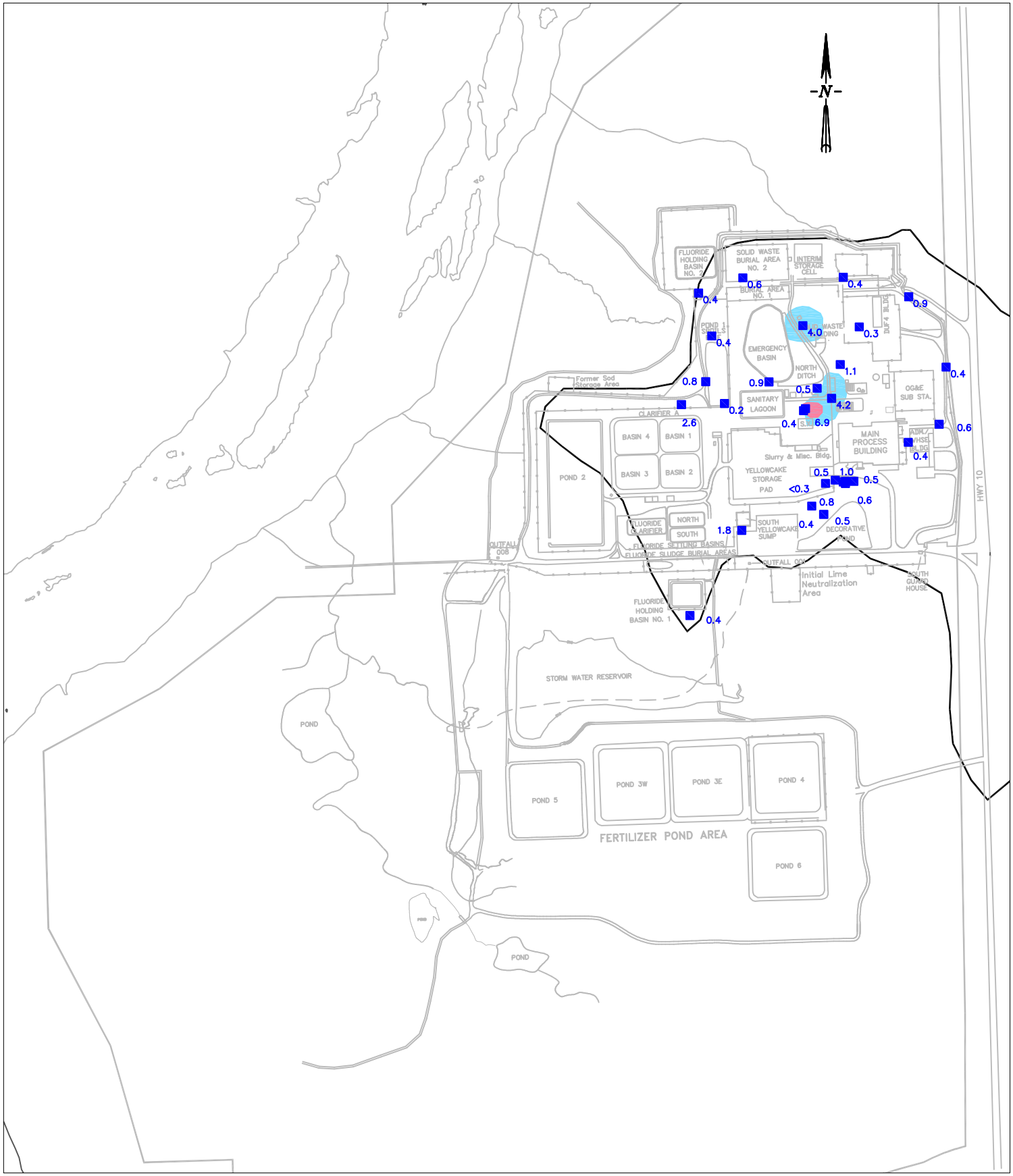
Arsenic, mg/l

1
0.1
0.05
BDL

Extent of Shale 5

Concentration

SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
TITLE: Arsenic Isoconcentration Diagram Shale 5 Groundwater Unit	
PREPARED BY: SCM	FILENAME: As_SH5_2009.dwg
REVIEWED BY: SCM	FIGURE NO. 12
DATE: 26 JAN 2010	



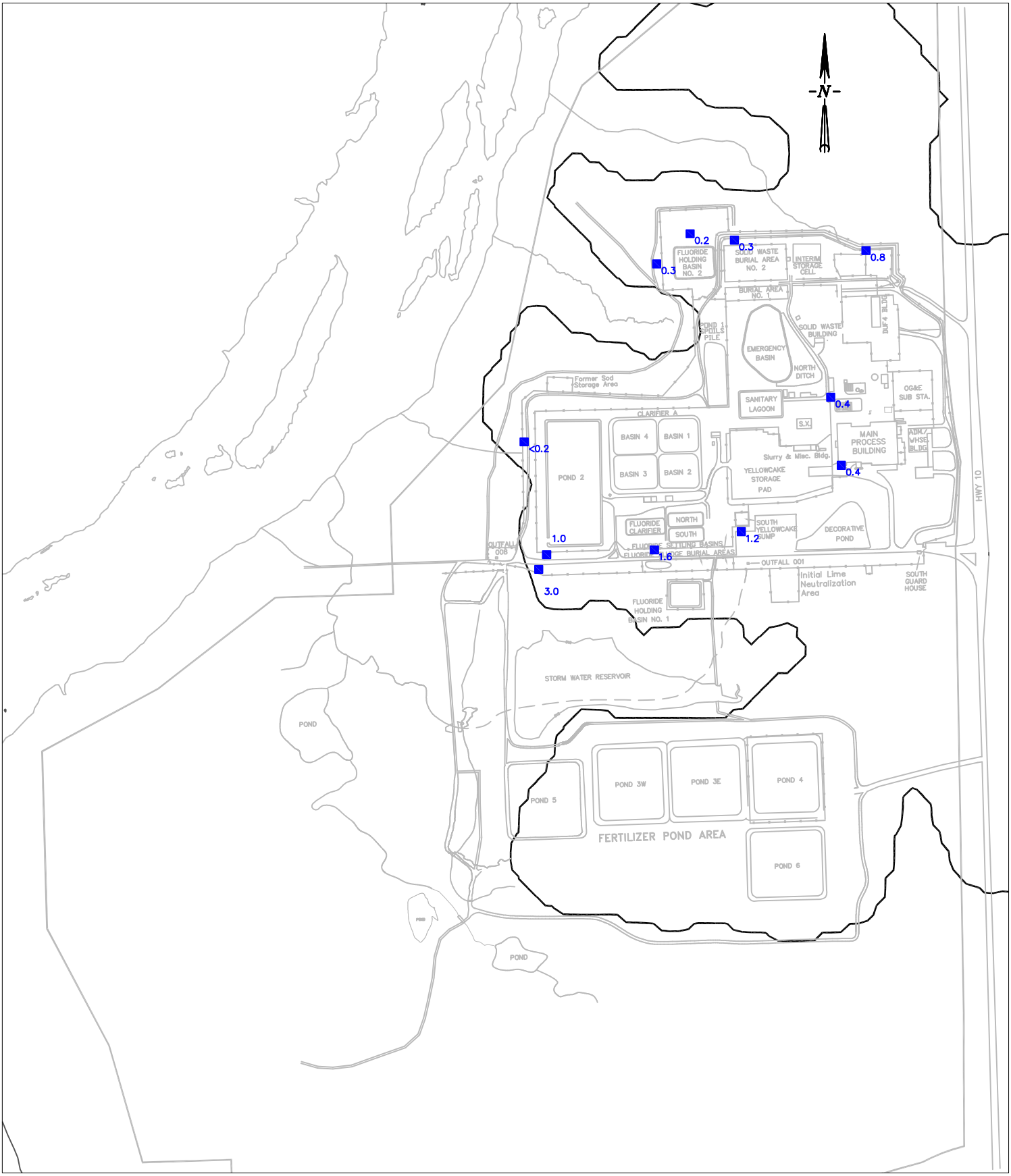
Fluoride, mg/l

6
4
BDL

Extent of Terrace / Shale 1

Concentration

SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
TITLE: Fluoride Isoconcentration Diagram Terrace / Shale 1 Groundwater Unit	
PREPARED BY: SCM	FILENAME: F_SH1_2009.dwg
REVIEWED BY: SCM	FIGURE NO. 13
DATE: 26 JAN 2010	



Fluoride, mg/l

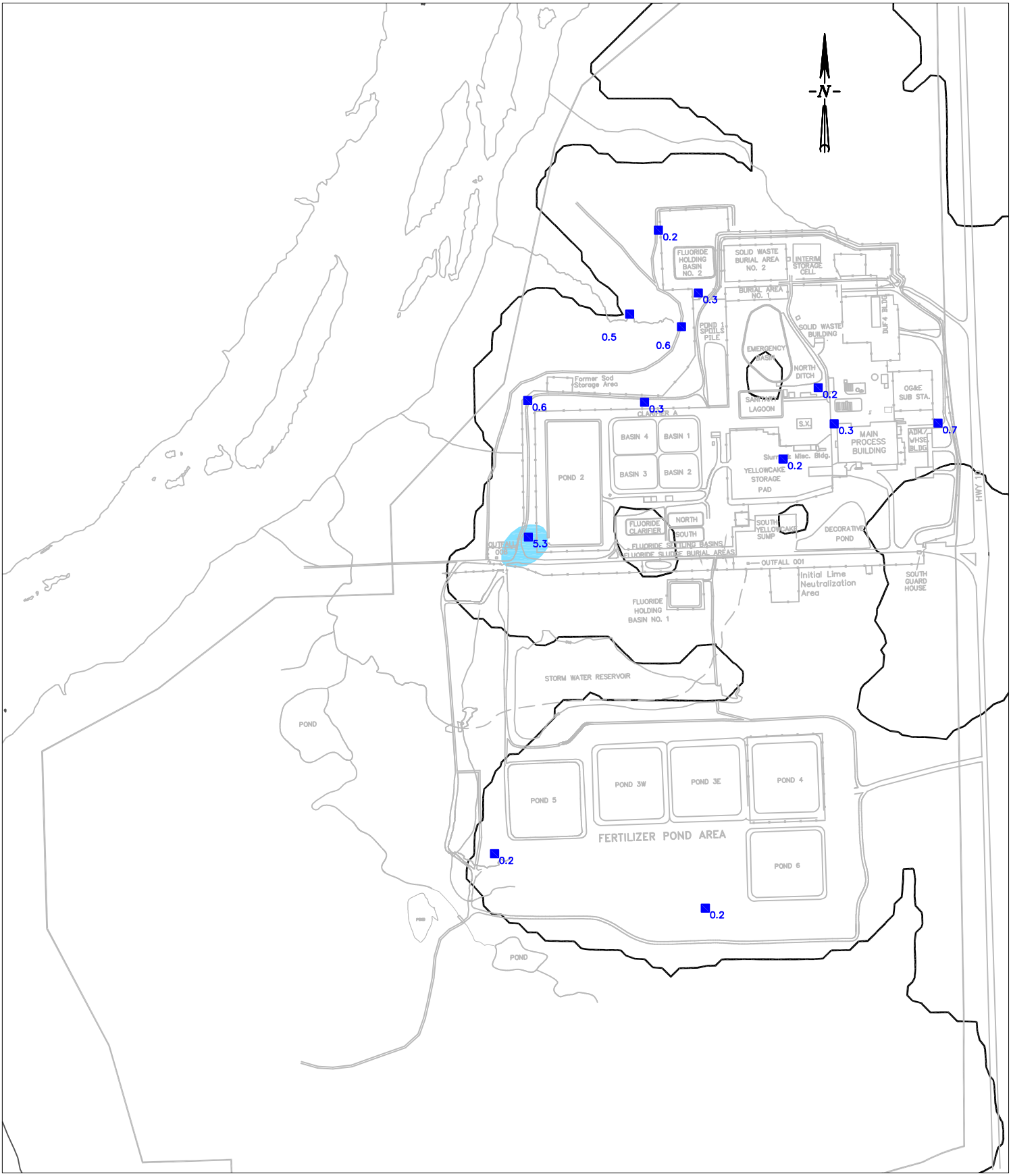
6
4
BDL

Extent of Shale 2

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Fluoride Isoconcentration Diagram Shale 2 Groundwater Unit*	
PREPARED BY: *SCM*	FILENAME: *F_SH2_2009.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 14
DATE: *26 JAN 2010*	



Fluoride, mg/l

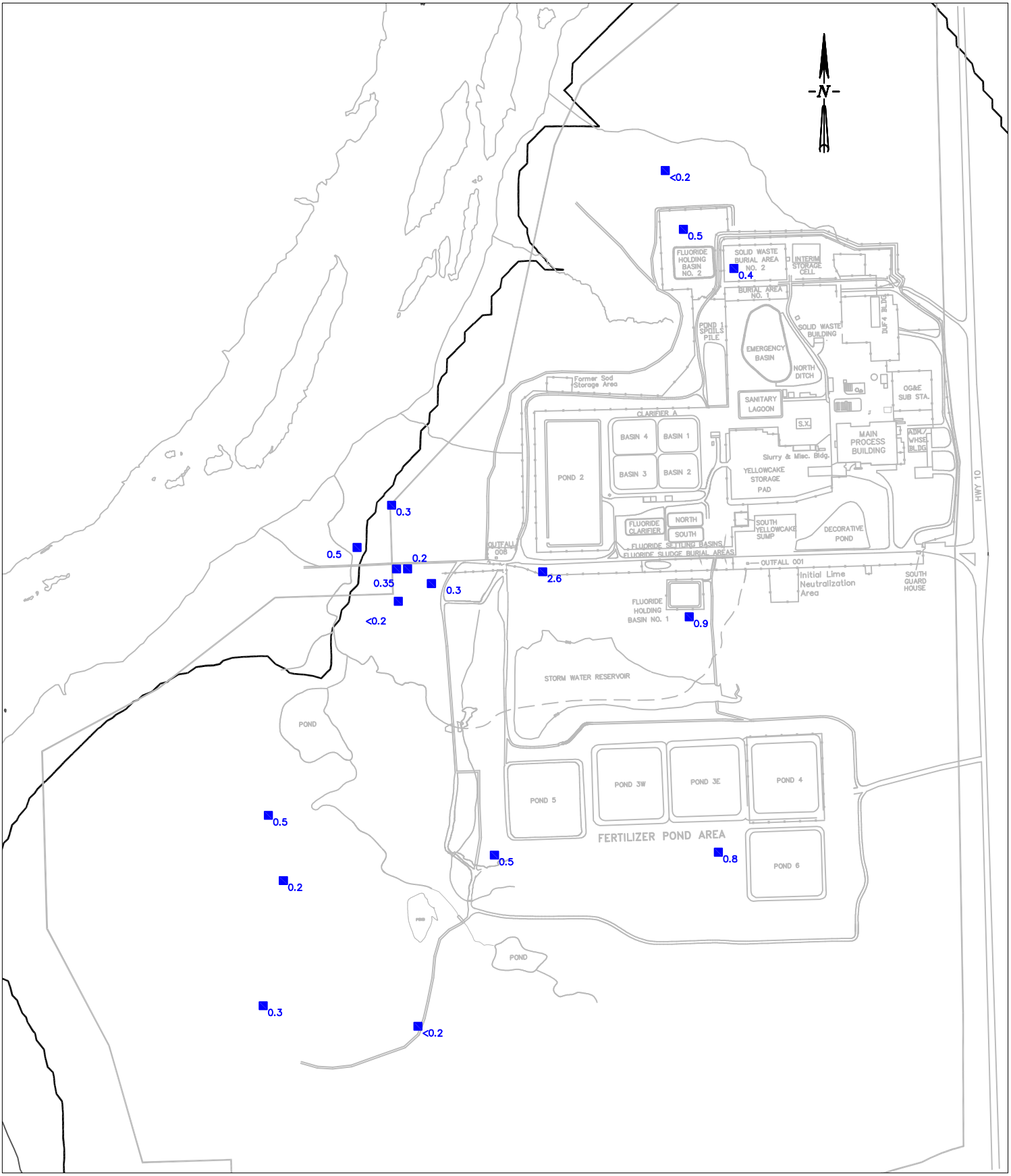
6
4
BDL

Extent of Shale 3

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Fluoride Isoconcentration Diagram Shale 3 Groundwater Unit*	
PREPARED BY: *SCM*	FILENAME: *F_SH3_2009.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 15
DATE: *26 JAN 2010*	



Fluoride, mg/l

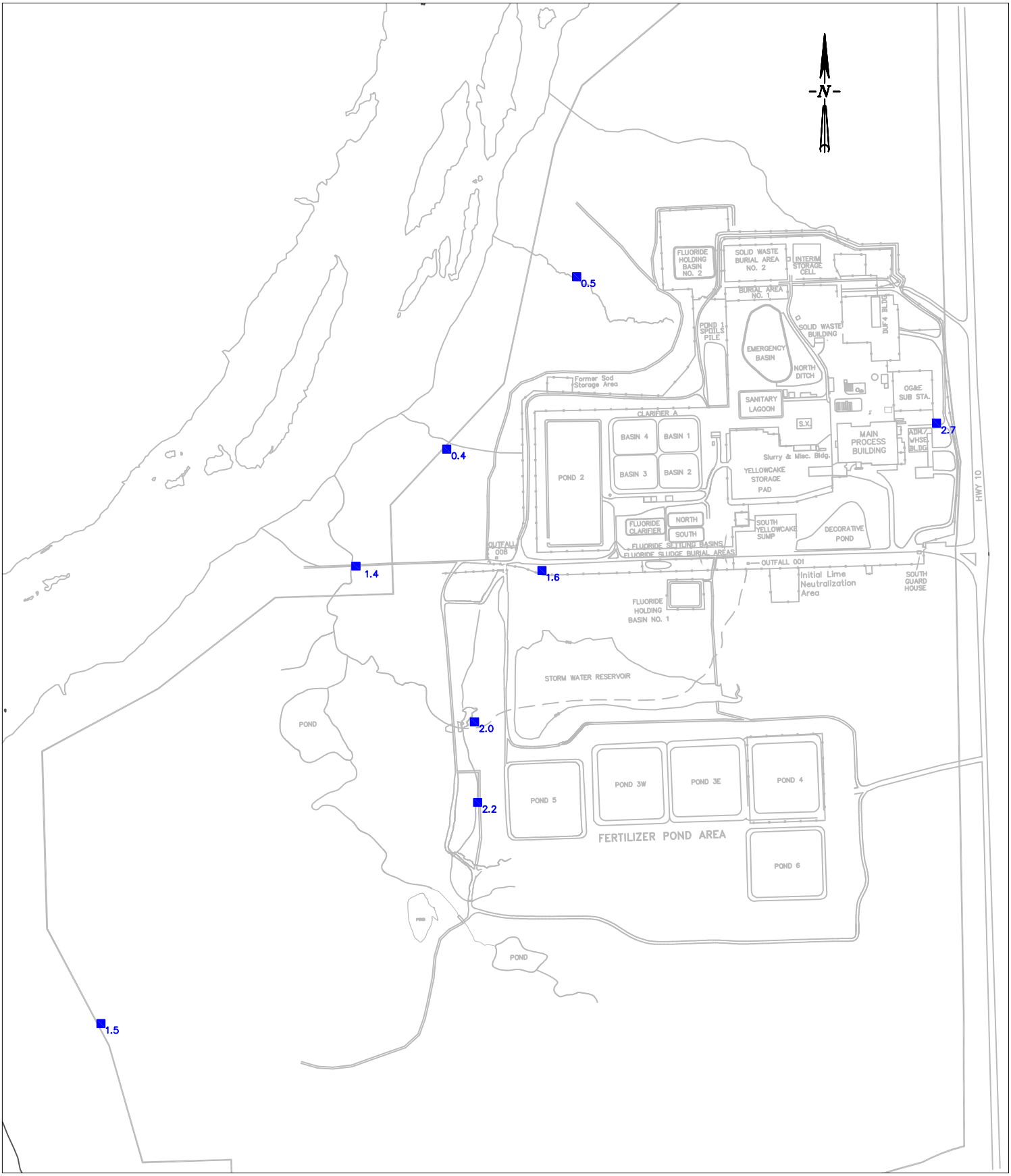
6
4
BDL

Extent of Shale 4

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Fluoride Isoconcentration Diagram Shale 4 Groundwater Unit*	
PREPARED BY: *SCM*	FILENAME: *F_SH4_2009.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 16
DATE: *26 JAN 2010*	



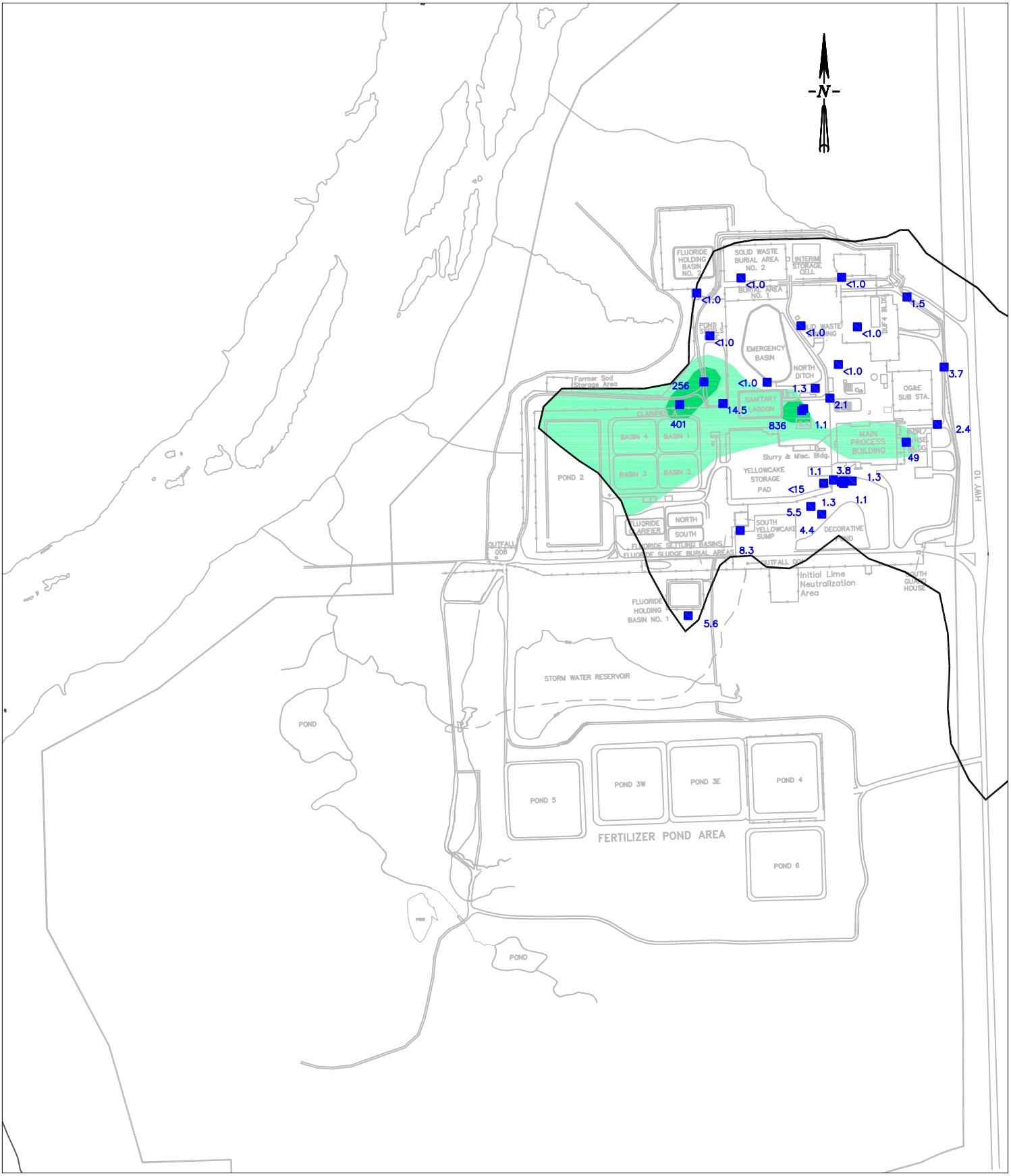
Fluoride, mg/l

6
4
BDL

Extent of Shale 5

Concentration

SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
TITLE: Fluoride Isoconcentration Diagram Shale 5 Groundwater Unit	
PREPARED BY: SCM	FILENAME: F_SH5_2009.dwg
REVIEWED BY: SCM	FIGURE NO. 17
DATE: 26 JAN 2010	



Nitrate, mg/l

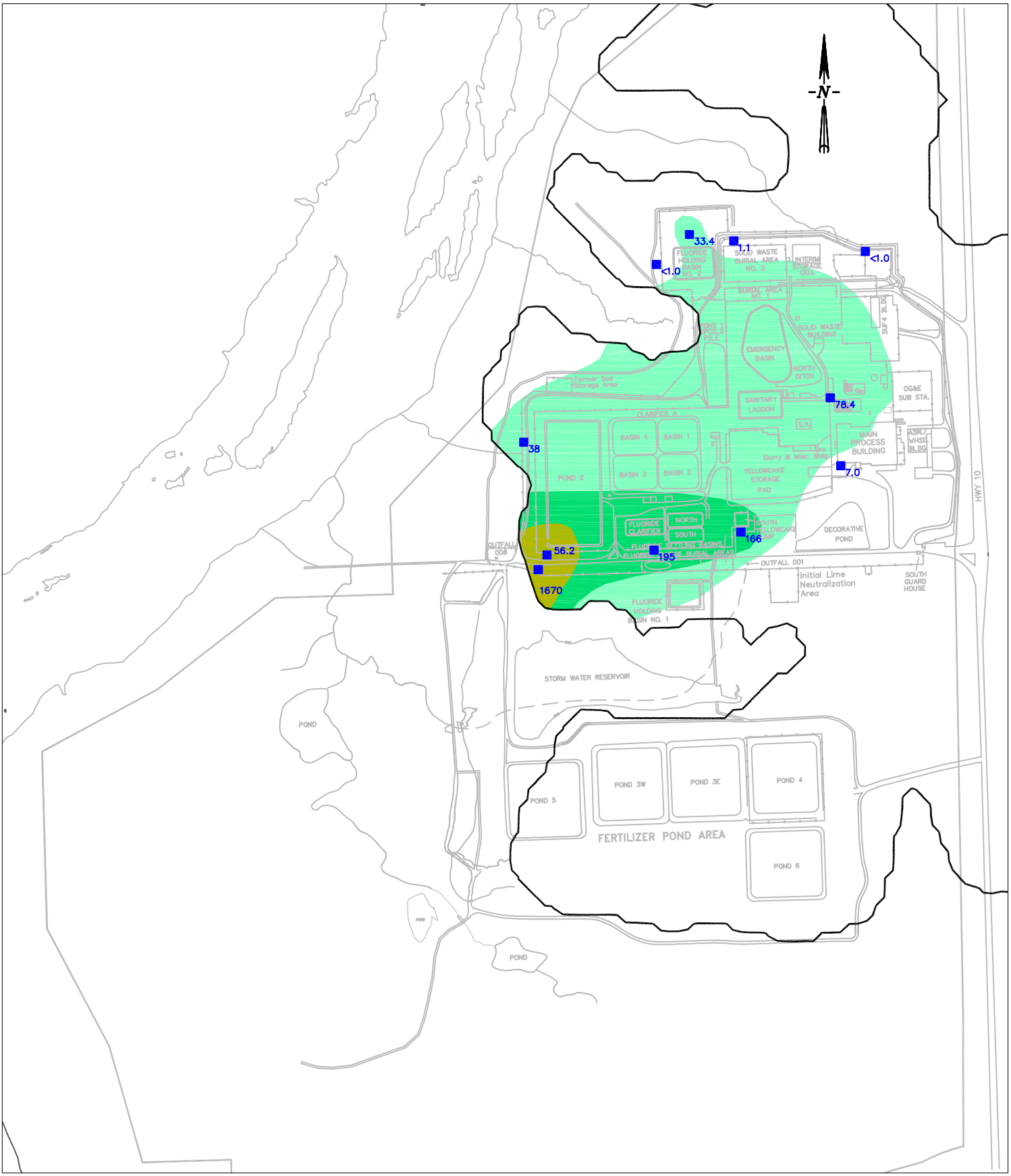
- 10000
- 1000
- 100
- 10
- BDL

Extent of Terrace / Shale 1

Concentration

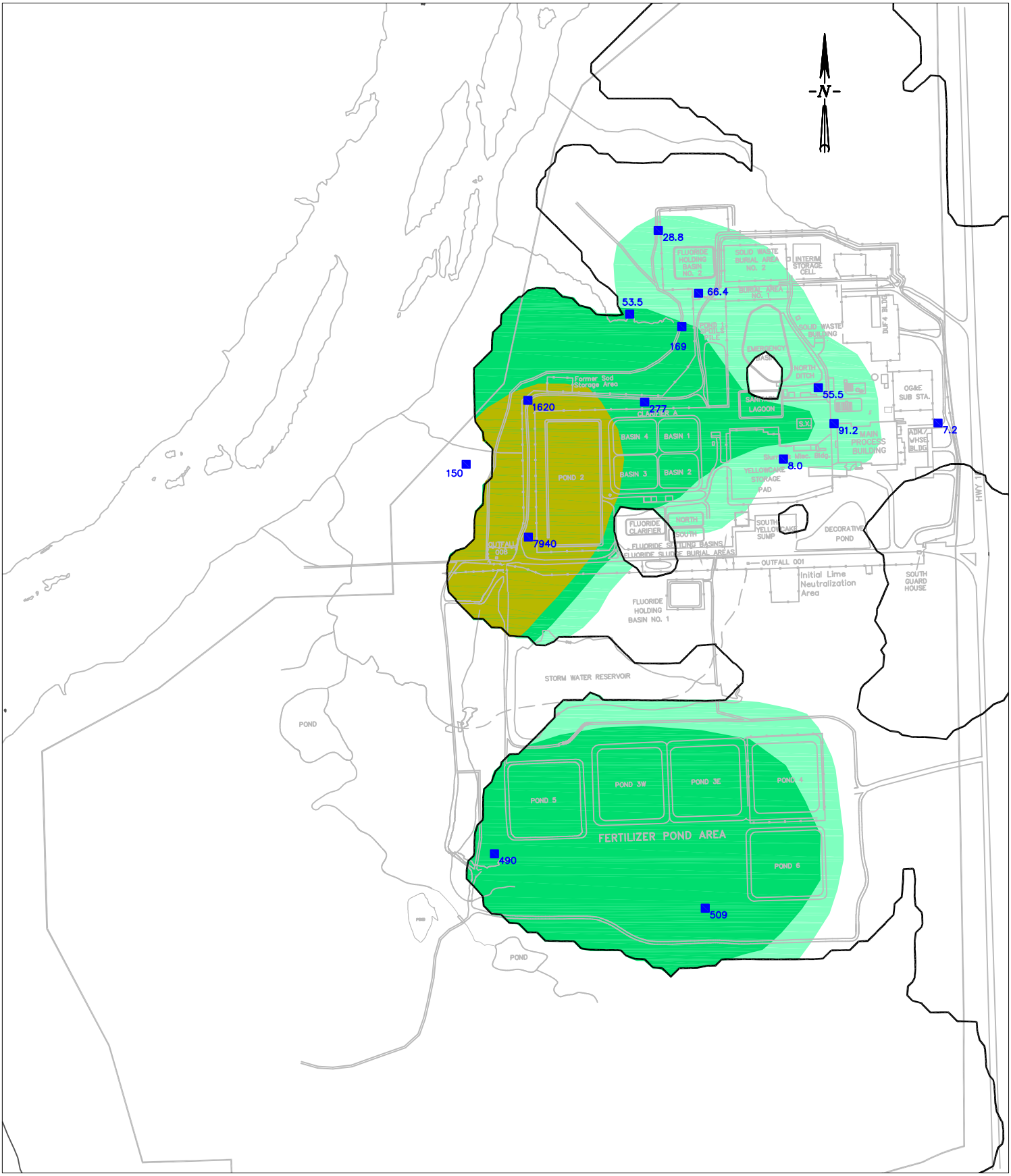
SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Nitrate Isoconcentration Diagram Terrace / Shale 1 Groundwater Unit*	
PREPARED BY: *SCM*	FILENAME: *NO_SH1_2009.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 18
DATE: *26 JAN 2010*	



SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: Nitrate Isoconcentration Diagram Shale 2 Groundwater Unit	
PREPARED BY: SCM	FILENAME: NO_SH2_2009.dwg
REVIEWED BY: SCM	FIGURE NO. 19
DATE: 26 JAN 2010	



Nitrate, mg/l

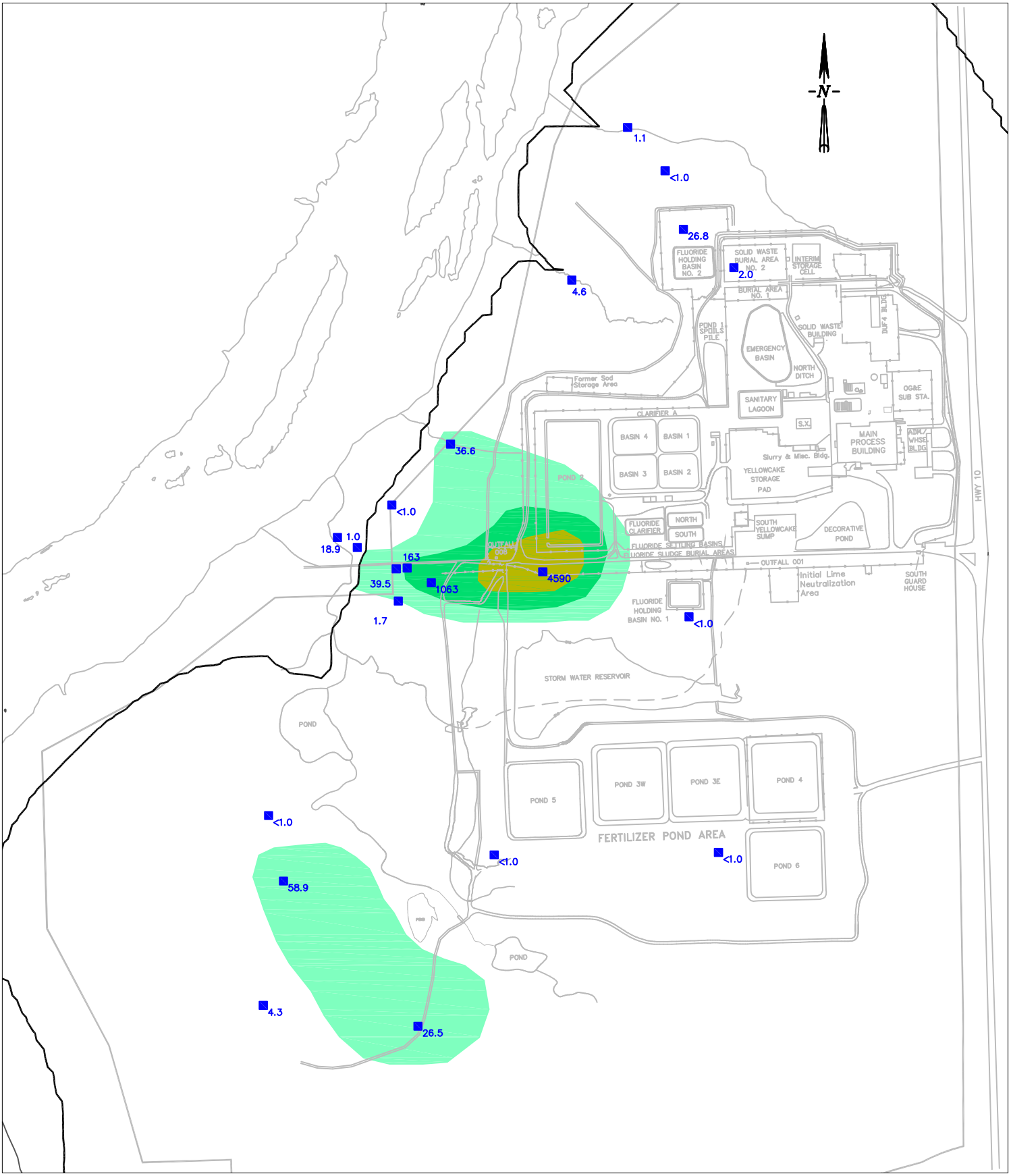
- 10000
- 1000
- 100
- 10
- BDL

Extent of Shale 3

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Nitrate Isoconcentration Diagram Shale 3 Groundwater Unit*	
PREPARED BY: *SCM*	FILENAME: *NO_SH3_2009.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 20
DATE: *26 JAN 2010*	



Nitrate, mg/l

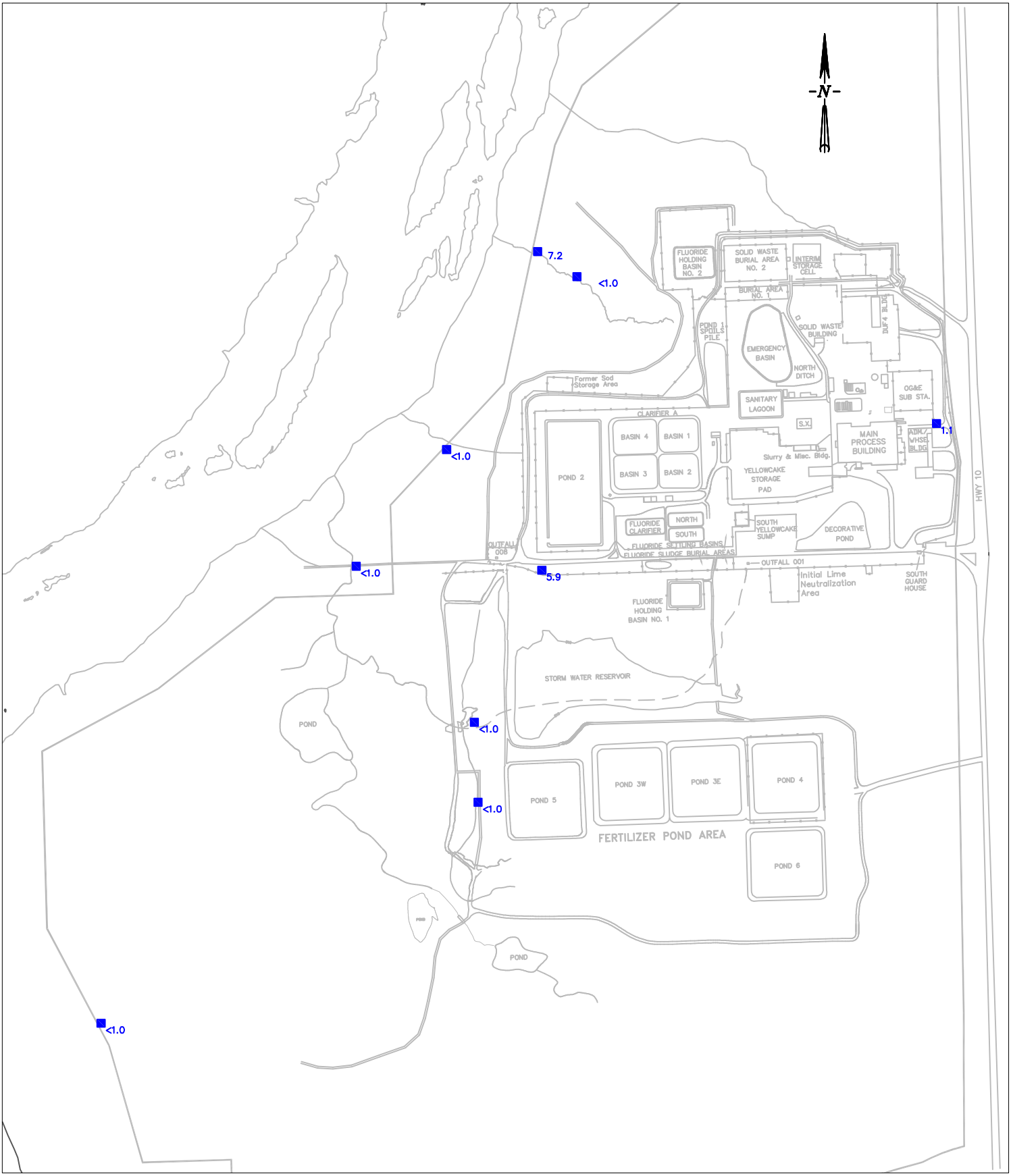
- 10000
- 1000
- 100
- 10
- BDL

Extent of Shale 4

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE:	*Nitrate Isoconcentration Diagram Shale 4 Groundwater Unit*		
PREPARED BY:	*SCM*	FILENAME:	*NO_SH4_2009.dwg*
REVIEWED BY:	*SCM*		FIGURE NO. 21
DATE:	*26 JAN 2010*		



Nitrate, mg/l

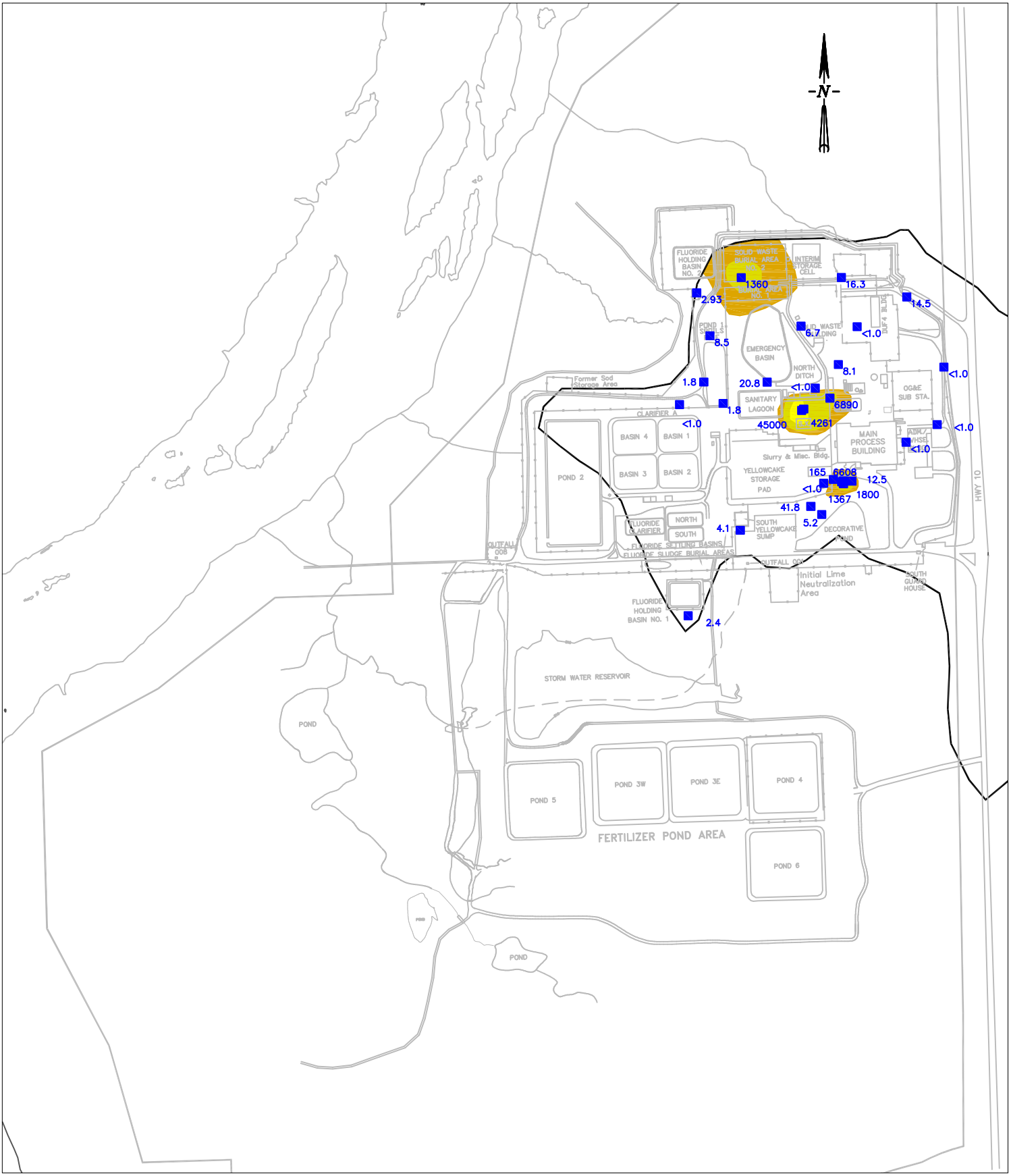
- 10000
- 1000
- 100
- 10
- BDL

Extent of Shale 5

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Nitrate Isoconcentration Diagram Shale 5 Groundwater Unit*	
PREPARED BY: *SCM*	FILENAME: *NO_SH5_2009.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 22
DATE: *26 JAN 2010*	



Uranium, µg/l

- 10000
- 1000
- 100
- BDL

Extent of Terrace / Shale 1

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Uranium Isoconcentration Diagram*
Terrace / Shale 1 Groundwater Unit

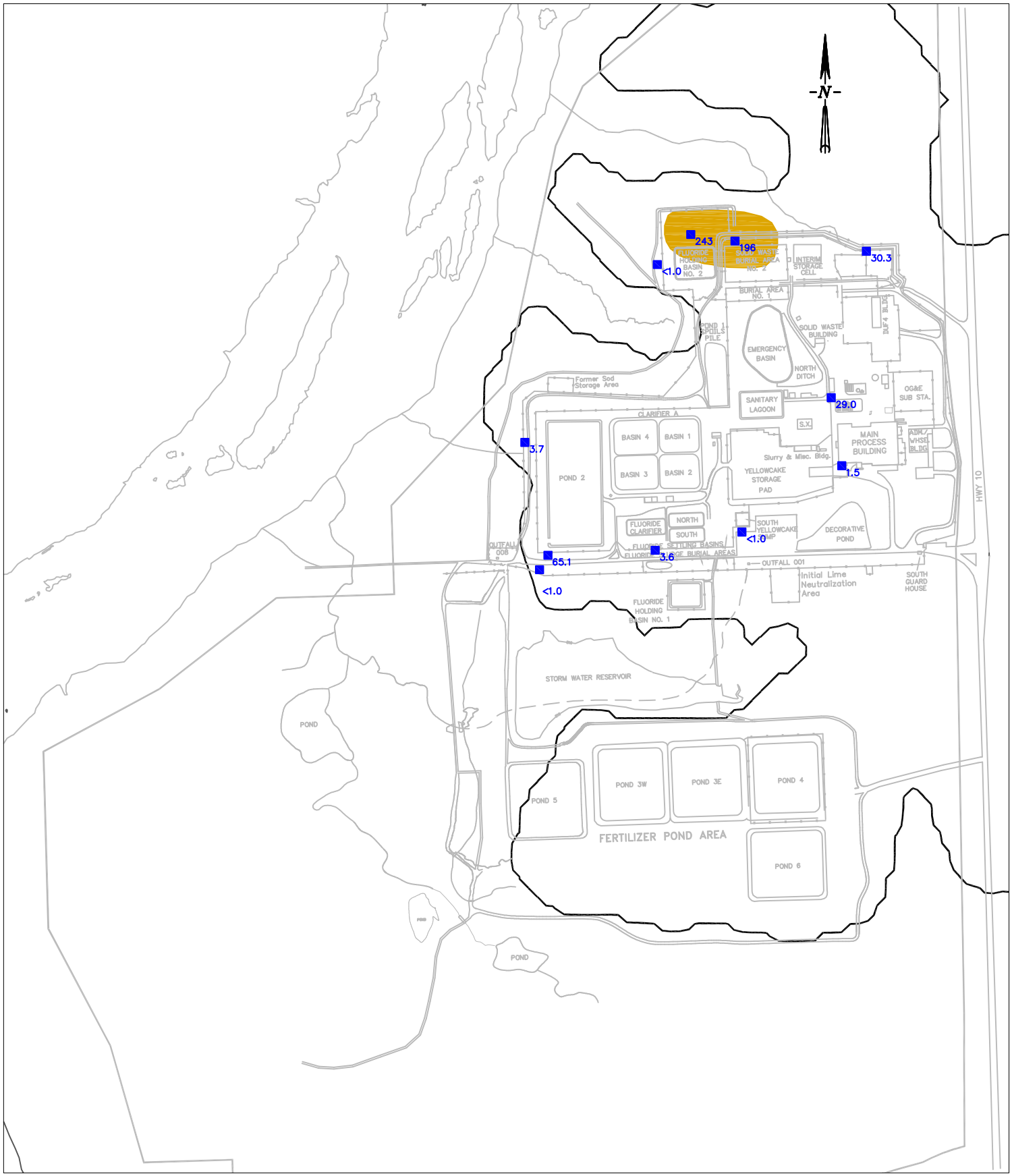
PREPARED BY: *SCM*

FILENAME: *U_SH1_2009.dwg*

REVIEWED BY: *SCM*

DATE: *26 JAN 2010*

FIGURE NO. 23



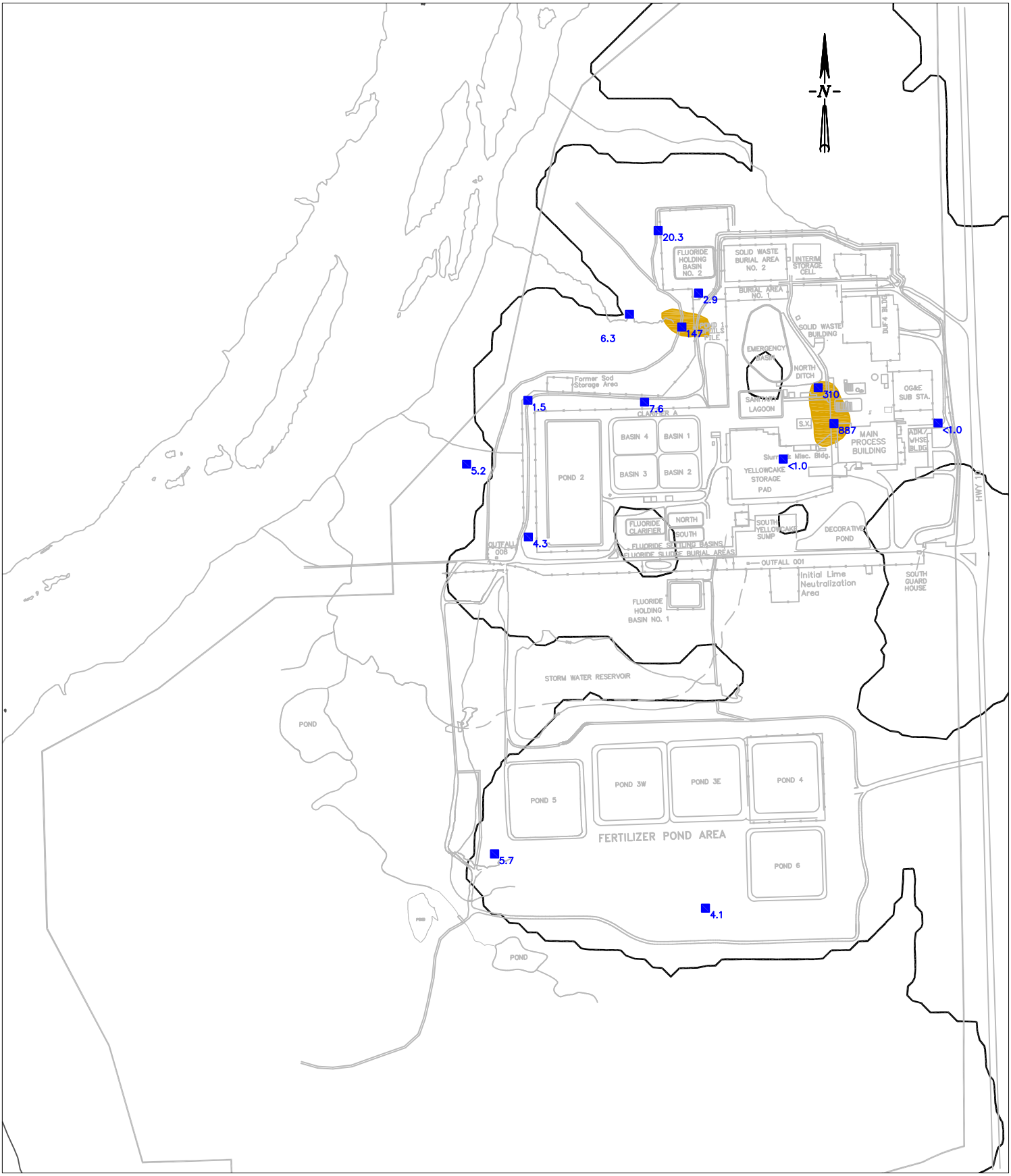
Uranium, µg/l

- 10000
- 1000
- 100
- BDL

Extent of Shale 2

Concentration

SEQUOYAH FUELS CORPORATION Annual Groundwater Report	
TITLE: Uranium Isoconcentration Diagram Shale 2 Groundwater Unit	
PREPARED BY: SCM	FILENAME: U_SH2_2009.dwg
REVIEWED BY: SCM	FIGURE NO. 24
DATE: 26 JAN 2010	



Uranium, µg/l

- 10000
- 1000
- 100
- BDL

Extent of Shale 3

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: *Uranium Isoconcentration Diagram Shale 3 Groundwater Unit*

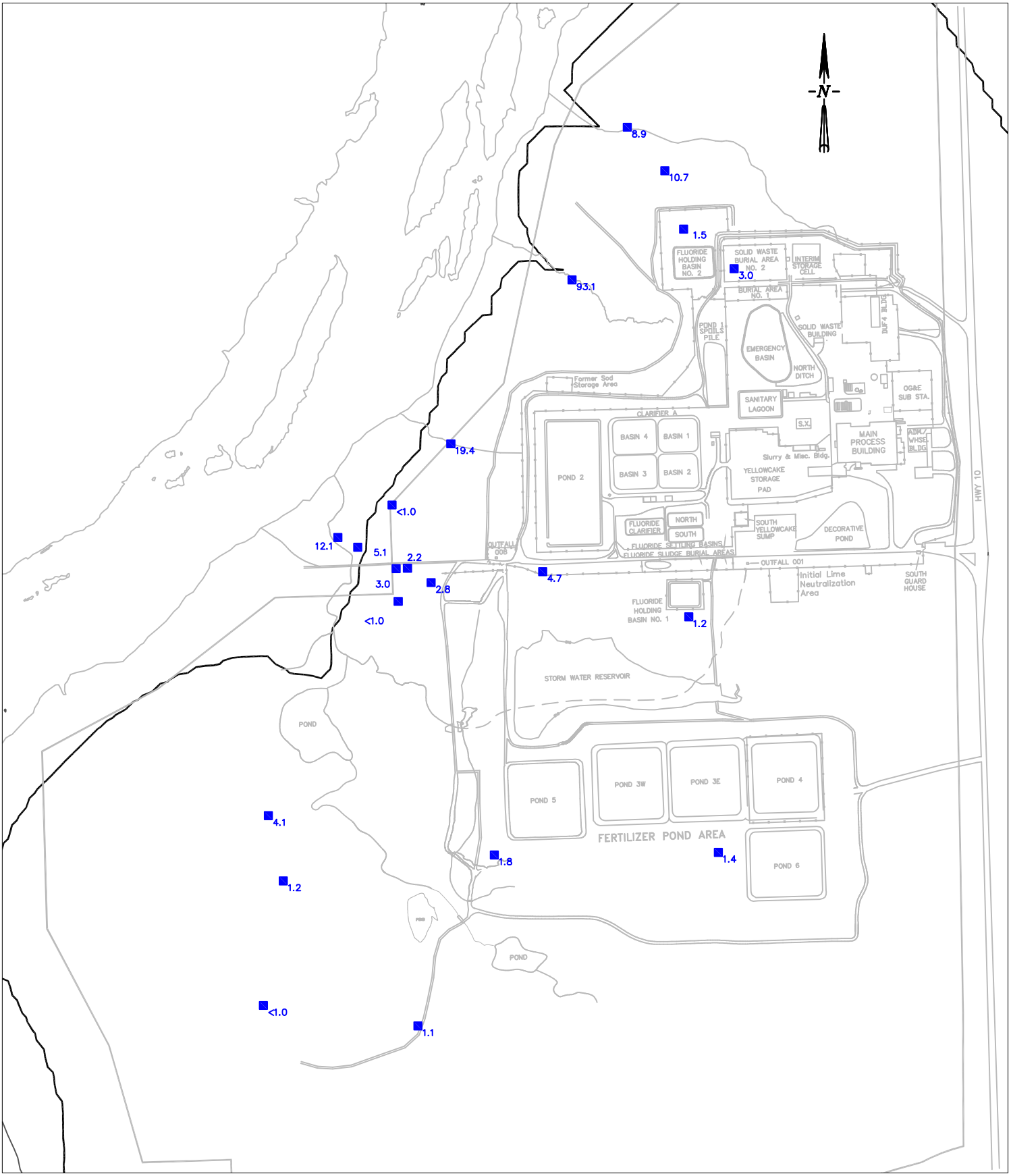
PREPARED BY: *SCM*

FILENAME: *U_SH3_2009.dwg*

REVIEWED BY: *SCM*

DATE: *26 JAN 2010*

FIGURE NO. 25



Uranium, µg/l

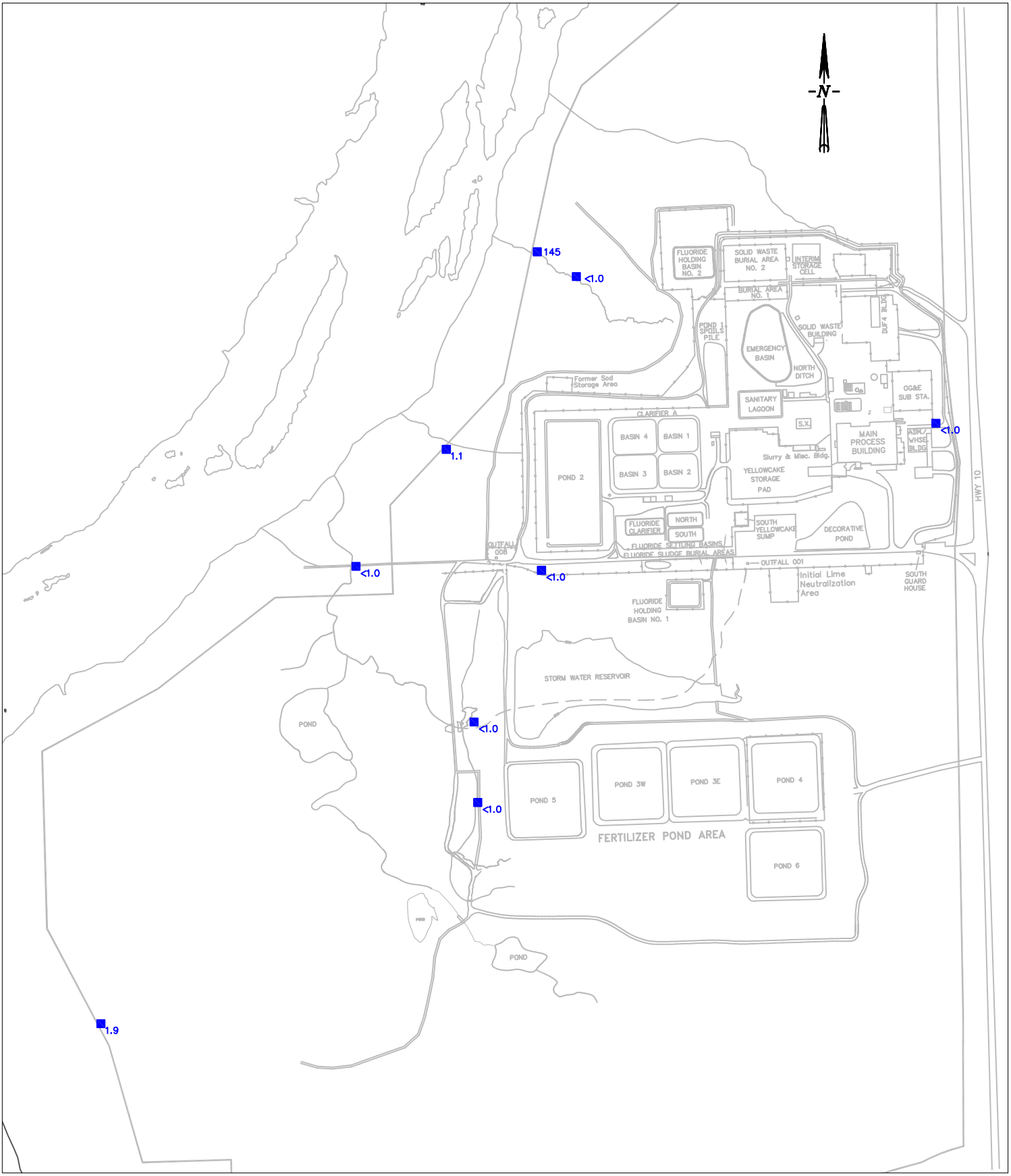
10000
1000
100
BDL

Extent of Shale 4

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE:	*Uranium Isoconcentration Diagram Shale 4 Groundwater Unit*		
PREPARED BY:	*SCM*	FILENAME:	*U_SH4_2009.dwg*
REVIEWED BY:	*SCM*	FIGURE NO.	26
DATE:	*26 JAN 2010*		



Uranium, µg/l

10000
1000
100
BDL

Extent of Shale 5

Concentration

SEQUOYAH FUELS CORPORATION
Annual Groundwater Report

TITLE: Uranium Isoconcentration Diagram Shale 5 Groundwater Unit	
PREPARED BY: SCM	FILENAME: U_SH5_2009.dwg
REVIEWED BY: SCM	FIGURE NO. 27
DATE: 26 JAN 2010	

Appendices

Appendix A

Evaluation of Background Monitoring Data

Evaluation of Background Groundwater Monitoring Data
Sequoyah Fuels Corporation

Introduction

Sequoyah Fuels Corporation (SFC) has evaluated the data collected at background groundwater monitoring wells located up-gradient of Facility operations. A total of six background wells, including one sampling event during 2005, four events from 2006 and one event from 2007 through 2009 for each well, have been used for this evaluation. Parameters analyzed for are uranium, thorium-230, radium-226, radium-228, nitrate, fluoride, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, molybdenum, nickel, selenium and thallium.

The spreadsheet program Excel was used for sorting and formatting the data for inclusion in this report. Some basic statistical evaluations and tabulation of analyses have also been completed using Excel. ChemStat[1], an application for the statistical analysis of groundwater monitoring data, was used to generate the box plots provided in this evaluation.

Description of Background Monitoring Well System

A map of the site showing locations of the background groundwater monitoring wells is provided as Figure 1. Monitoring wells are typically found as clusters at each location. Each well in a cluster is completed at different depths to monitor separate groundwater systems. Facility hydrogeology is described in the Groundwater Monitoring Plan[2] and in other documents presented with the Reclamation Plan[3]. Wells monitoring the Terrace Groundwater System are identified as "MWXXX" (e.g. MW072). Well identifications that end with an "A" (e.g. MW072A), monitor the Shallow Bedrock Groundwater System and well identifications ending with a "B" (e.g. MW072B) designation monitor the Deep Bedrock Groundwater System. The Terrace Groundwater System includes the terrace deposits and Unit 1 Shale, the Shallow Bedrock System includes Units 2, 3 or 4 Shale, and the Deep Bedrock System includes Unit 5 Shale. Well completion summary information is included in Table 1. Sampling methods and quality control practices are described in the Groundwater Monitoring Plan.

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[1] ChemStat, Environmental Data Statistical Analysis for Windows, Starpoint Software.

[2] Groundwater Monitoring Plan, Sequoyah Fuels Corporation, February 2005.

[3] Reclamation Plan, Sequoyah Fuels Corporation, January, 2003.

Data Analysis

The box plots (Figures 2 - 19) were reviewed with several significant observations made. Fluoride concentrations in the Deep Bedrock Groundwater System is significantly higher than in the Terrace and Shallow Bedrock Groundwater Systems. Analyses of samples collected from Monitoring Well MW007B, located in the Deep Bedrock system, supports this observation. A natural occurring constituent in this geological formation appears to be causing these elevated concentrations of fluoride. The second observation is that the nitrate concentration in Monitoring Well MW007A is significantly higher than in the other wells. Both of these observation have been made previously and are described in the Groundwater Monitoring Plan (see Groundwater Monitoring Plan, Appendix B, Evaluation of Background Monitoring Data, February 2005). A third observation, not discussed in the Groundwater Monitoring Plan, is the elevated nitrate concentration in Monitor Well MW073. Monitor Well MW073 is located in the same general area as MW007A and is likely impacted from the same source. An additional observation is the elevated uranium analyses at MW070, which has been confirmed thru multiple sampling events over several years.

Descriptive Statistics of Background Monitoring Wells and Groundwater Systems

Basic statistics for the background monitoring wells are presented in Table 3. For each monitoring well the total number of measurements, total non-detects, mean and standard deviation are listed. Non-detects have been replaced with the minimum detection limit. A review of the data indicates that the fluoride concentration in the Deep Bedrock Groundwater System is higher than in the other systems and the nitrate levels appear to be elevated in groundwater sampled from MW007A and MW073. The uranium concentration from MW070 is also elevated. These observations are consistent with the graphical analysis.

Conclusion

This evaluation updates the information previously included in the Groundwater Monitoring Plan that was limited to arsenic, fluoride, nitrate and uranium. Additional parameters included in this evaluation are antimony, barium, beryllium, cadmium, lead, molybdenum, nickel, radium-226, radium-228, selenium, thallium and thorium-230. Sampling of background monitoring wells was conducted on an annual basis during 2009.

Table 1

Background Well Completion Summary Information

Well ID	GW Unit Monitored	Total Depth, ft	Top Sand ft	Screen Bottom, ft	Ground Elev.	Case Top Elev.
MW007	Terrace / Shale 1	18.2	7.0	17.8	569.9	572.01
MW070	Terrace / Shale 1	13.7	2.6	13.0	567.7	569.94
MW073	Terrace / Shale 1	27.0	15.2	26.3	580.5	582.85
MW007A	Shale 3	35.0	22.0	34.8	570.2	572.63
MW110A	Shale 4	45.0	32.0	44.7	552.6	554.93
MW007B	Shale 5	82.8	72.0	82.1	570.3	572.89

Table 2
Background Monitor Well Sample Analyses

Well ID	GW Unit Monitored	Date Sampled	U µg/l	Th-230 pCi/l	Ra-226 pCi/l	Ra-228 pCi/l	NO3(N) mg/l	F mg/l	Sb mg/l	As mg/l
MW007	Terrace / Shale 1	10/20/2005	< 1	1.05 ± 0.188	0.176 ± 0.075	1.09 ± 0.123	2	0.8	0.015	0.006
		1/10/2006	2.42	0.464 ± 0.334	0.934 ± 0.351	0.965 ± 0.134	2.1	1.3	< 0.005	0.005
		4/11/2006	< 1	2.71 ± 0.330	0.734 ± 0.244	0.757 ± 0.102	1.2	1.0	< 0.007	< 0.005
		7/25/2006	< 1	0 ± 0.278	0.353 ± 0.112	0.780 ± 0.131	1.1	0.7	< 0.005	< 0.009
		10/4/2006	< 1	0 ± 0.220	0.267 ± 0.126	0.112 ± 0.053	1.5	0.6	0.011	< 0.009
		4/12/2007	1.05	0.139 ± 0.317	0.118 ± 0.215	2.46 ± 0.065	1.7	0.6	< 0.010	< 0.009
		4/23/2008	< 1	1.18 ± 0.324	0.128 ± 0.277	0 ± 1.65	2.5	0.6	0.006	0.015
		5/1/2009	< 1	0.445 ± 0.136	0.238 ± 0.133	0 ± 0.189	2.4	0.6	< 0.010	< 0.010
MW070	Terrace / Shale 1	10/20/2005	1.67	0.531 ± 0.164	0.756 ± 0.230	3.51 ± 0.294	1.7	1.1	< 0.005	0.009
		1/10/2006	1.26	1.94 ± 0.447	1.81 ± 0.718	1.68 ± 0.130	1.6	0.6	< 0.005	0.010
		4/11/2006	1.41	0.166 ± 0.117	0.626 ± 0.225	0.247 ± 0.494	< 1	1.1	0.007	0.013
		7/25/2006	1.47	0.913 ± 0.276	1.46 ± 0.393	1.02 ± 0.112	< 1	1.1	< 0.005	< 0.009
		10/4/2006	< 1	0 ± 0.235	0 ± 0.296	0.453 ± 0.049	1.8	0.9	< 0.011	< 0.009
		4/12/2007	6.66	0.744 ± 0.218	0.649 ± 0.323	0.417 ± 0.051	1.9	0.5	< 0.010	< 0.009
		4/23/2008	13.5	0 ± 0.107	0.015 ± 0.113	1.34 ± 1.19	2.1	0.4	0.016	< 0.010
		7/11/2008	15.8							
		10/16/2008	7.78				4.6	0.5		< 0.010
		5/1/2009	14.5	0.305 ± 0.097	0.786 ± 0.171	0 ± 0.261	1.5	0.9	< 0.010	0.013
MW073	Terrace / Shale 1	10/20/2005	1.08	0.262 ± 0.103	0.161 ± 0.168	1.63 ± 0.287	5.3	0.5	< 0.005	< 0.005
		1/10/2006	< 1	0.558 ± 0.399	0.670 ± 0.281	2.31 ± 0.127	4.1	0.7	0.016	< 0.005
		4/11/2006	< 1	1.30 ± 0.266	0.254 ± 0.104	0.457 ± 0.103	3.0	0.7	< 0.007	< 0.005
		7/25/2006	< 1	0 ± 0.252	0.190 ± 0.185	0.895 ± 0.119	3.2	0.7	< 0.005	< 0.009
		10/4/2006	< 1	0.048 ± 0.101	0.572 ± 0.186	0 ± 0.049	4	0.4	< 0.011	< 0.009
		4/12/2007	< 1	0.406 ± 0.153	0.142 ± 0.346	0.370 ± 0.048	1.4	0.5	< 0.010	< 0.009
		4/23/2008	< 1	0.213 ± 0.146	0 ± 0.115	1.25 ± 1.29	6.9	0.5	0.006	0.015
		5/1/2009	< 1	0.493 ± 0.217	0.070 ± 0.090	0 ± 0.103	3.7	0.4	< 0.010	< 0.010
MW007A	Shale 3	10/20/2005	1.92	0.441 ± 0.149	0.054 ± 0.073	1.17 ± 0.118	6.5	0.8	< 0.005	< 0.005
		1/10/2006	1.44	2.56 ± 0.539	0.130 ± 0.131	3.12 ± 0.130	6.7	0.7	< 0.005	0.006
		4/11/2006	< 1	0.027 ± 0.109	0.090 ± 0.216	0.120 ± 0.104	5.2	0.6	< 0.007	0.005
		7/25/2006	< 1	0.332 ± 0.224	0.211 ± 0.182	0.642 ± 0.107	4.7	0.6	< 0.005	< 0.009
		10/4/2006	< 1	0 ± 0.105	0.139 ± 0.107	0.382 ± 0.054	5.23	0.6	< 0.011	< 0.009
		4/12/2007	1.7	0 ± 0.372	0 ± 0.304	0 ± 0.049	6	0.7	< 0.010	< 0.009
		4/23/2008	1.23	0.045 ± 0.134	0 ± 0.253	0 ± 0.959	6.1	0.7	< 0.005	< 0.010
		5/1/2009	< 1	0.401 ± 0.146	0.035 ± 0.084	2.88 ± 0.165	7.2	0.7	< 0.010	< 0.010
MW110A	Shale 4	10/13/2005	2.4	0.826 ± 0.308	1.18 ± 0.283	1.81 ± 0.142	1.1	0.6	< 0.007	0.009
		1/10/2006	2.94	0.619 ± 0.359	0.606 ± 0.290	2.31 ± 0.127	1.3	0.6	< 0.005	< 0.005
		4/11/2006	1.21	0.588 ± 0.204	0.266 ± 0.128	0.753 ± 0.055	< 1	0.5	< 0.007	< 0.005
		7/25/2006	2.46	0.034 ± 0.177	1.00 ± 0.241	2.77 ± 0.119	< 1	0.5	< 0.005	< 0.009
		10/4/2006	< 1	0.130 ± 0.128	0.374 ± 0.129	1.51 ± 0.068	< 1	0.5	< 0.011	< 0.009
		4/12/2007	2	0.112 ± 0.153	0.597 ± 0.236	0.87 ± 0.052	< 1	0.5	< 0.010	< 0.009
		4/23/2008	1.73	0.620 ± 0.169	0.533 ± 0.360	4.58 ± 1.26	3.3	0.6	0.008	0.012
		5/1/2009	< 1	0.338 ± 0.130	0.124 ± 0.311	0 ± 0.186	< 1	0.5	< 0.010	< 0.010
MW007B	Shale 5	10/13/2005	5.47	0.389 ± 0.121	0.393 ± 0.18	2.87 ± 0.162	1	1.9	0.013	0.014
		1/10/2006	2.36	1.58 ± 0.504	1.15 ± 0.423	0 ± 0.100	1.2	2.9	< 0.005	0.006
		4/11/2006	< 1	0.450 ± 0.157	0.516 ± 0.327	0 ± 0.309	1.3	2.6	0.008	0.006
		7/25/2006	2.05	0 ± 0.274	0.978 ± 0.349	0 ± 0.117	< 1	2	< 0.005	< 0.009
		10/4/2006	< 1	0 ± 0.199	0.538 ± 0.172	1.61 ± 0.058	< 1	2.7	< 0.011	< 0.009
		4/12/2007	2.26	0.716 ± 0.402	0.609 ± 0.172	0.22 ± 0.048	< 1	2.5	< 0.010	< 0.009
		4/23/2008	1.69	0.281 ± 0.125	0 ± 0.083	1.71 ± 1.24	1.4	2.7	0.011	0.005
		5/1/2009	< 1	0.070 ± 0.188	0.373 ± 0.230	0.730 ± 0.053	1.1	2.7	< 0.010	0.01

Table 2
Background Monitor Well Sample Analyses

Well ID	Date Sampled	Ba mg/l	Be mg/l	Cd mg/l	Cr mg/l	Pb mg/l	Mo mg/l	Ni mg/l	Se mg/l	Tl mg/l
MW007	10/20/2005	0.042	< 0.006	< 0.006	0.008	0.01	0.011	< 0.006	0.01	< 0.009
	1/10/2006	0.167	< 0.006	< 0.006	0.065	0.029	< 0.007	0.038	< 0.007	< 0.004
	4/11/2006	0.097	< 0.005	0.001	0.031	0.017	< 0.007	0.037	< 0.007	< 0.004
	7/25/2006	0.059	< 0.006	< 0.001	0.011	0.018	< 0.007	< 0.008	0.011	< 0.003
	10/4/2006	0.033	< 0.010	< 0.008	< 0.009	0.011	< 0.009	< 0.008	0.009	< 0.006
	4/12/2007	0.05	< 0.001	< 0.001	0.004	< 0.010	< 0.011	< 0.011	< 0.007	< 0.007
	4/23/2008	0.037	< 0.010	< 0.001	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.035
	5/1/2009	0.028	< 0.010	< 0.010	0.012	0.01	< 0.010	< 0.010	< 0.010	< 0.010
MW070	10/20/2005	0.3	< 0.006	< 0.006	0.015	0.018	< 0.007	0.023	< 0.007	< 0.009
	1/10/2006	0.287	< 0.006	< 0.006	0.036	0.019	< 0.007	0.036	< 0.007	< 0.004
	4/11/2006	0.411	< 0.005	0.003	0.056	0.038	< 0.007	0.052	< 0.007	< 0.004
	7/25/2006	0.334	< 0.006	0.001	0.023	0.023	< 0.007	0.02	< 0.007	< 0.003
	10/4/2006	0.236	< 0.010	< 0.008	0.012	0.019	< 0.009	0.015	< 0.009	< 0.006
	4/12/2007	0.226	< 0.001	0.002	0.014	< 0.010	< 0.011	0.028	< 0.007	< 0.007
	4/23/2008	0.085	< 0.010	< 0.001	< 0.010	0.014	< 0.010	< 0.010	< 0.010	0.02
	7/11/2008									
	10/16/2008									
	5/1/2009	0.193	< 0.010	< 0.010	0.013	0.012	< 0.010	0.017	< 0.010	< 0.010
MW073	10/20/2005	0.038	< 0.006	< 0.006	< 0.007	0.007	< 0.007	< 0.006	< 0.007	< 0.009
	1/10/2006	0.081	< 0.006	< 0.006	0.026	0.014	< 0.007	0.010	0.009	< 0.004
	4/11/2006	0.058	< 0.005	0.002	0.016	0.014	< 0.007	0.014	0.012	< 0.004
	7/25/2006	0.035	< 0.006	< 0.001	< 0.009	< 0.007	< 0.007	0.03	0.014	< 0.003
	10/4/2006	0.033	< 0.010	< 0.008	< 0.009	0.01	< 0.009	< 0.008	0.011	< 0.006
	4/12/2007	0.044	< 0.001	< 0.001	0.004	< 0.010	< 0.011	0.011	< 0.007	< 0.007
	4/23/2008	0.022	< 0.010	< 0.001	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.01
	5/1/2009	0.023	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
MW007A	10/20/2005	0.018	< 0.006	< 0.006	< 0.007	< 0.005	0.008	< 0.006	0.009	< 0.009
	1/10/2006	0.017	< 0.006	< 0.006	< 0.007	0.010	0.008	< 0.006	0.011	0.008
	4/11/2006	0.016	< 0.005	< 0.001	< 0.007	0.022	< 0.007	< 0.006	< 0.007	0.004
	7/25/2006	0.017	< 0.006	< 0.001	< 0.009	< 0.007	< 0.007	< 0.008	0.01	< 0.003
	10/4/2006	0.02	< 0.010	< 0.008	< 0.009	< 0.007	< 0.009	< 0.008	< 0.009	< 0.006
	4/12/2007	0.022	< 0.001	< 0.001	< 0.001	< 0.010	< 0.011	< 0.011	< 0.007	< 0.007
	4/23/2008	0.014	< 0.010	< 0.001	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.005
	5/1/2009	0.013	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
MW110A	10/13/2005	0.01	< 0.006	< 0.006	< 0.007	< 0.006	< 0.007	0.008	< 0.007	< 0.004
	1/10/2006	0.012	< 0.006	< 0.006	< 0.007	0.010	< 0.007	< 0.006	< 0.007	< 0.004
	4/11/2006	0.014	< 0.005	< 0.001	< 0.007	0.006	< 0.007	0.009	< 0.007	< 0.004
	7/25/2006	0.014	< 0.006	< 0.001	< 0.009	< 0.007	< 0.007	< 0.008	0.012	< 0.003
	10/4/2006	0.017	< 0.010	< 0.008	< 0.009	0.007	< 0.009	< 0.008	< 0.009	< 0.006
	4/12/2007	0.014	< 0.001	< 0.001	< 0.001	0.03	< 0.011	0.038	< 0.007	< 0.007
	4/23/2008	< 0.010	< 0.010	< 0.001	< 0.010	0.014	< 0.010	< 0.010	< 0.010	0.036
	5/1/2009	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.014
MW007B	10/13/2005	< 0.287	< 0.006	< 0.006	0.012	< 0.006	< 0.007	0.008	< 0.007	< 0.004
	1/10/2006	0.071	< 0.006	< 0.006	0.011	0.019	< 0.007	< 0.006	< 0.007	0.006
	4/11/2006	0.054	< 0.005	< 0.001	0.007	0.007	< 0.007	0.008	< 0.007	0.004
	7/25/2006	0.060	< 0.006	< 0.001	< 0.009	< 0.007	< 0.007	< 0.008	0.008	< 0.003
	10/4/2006	0.075	< 0.010	< 0.008	< 0.009	0.011	< 0.009	< 0.008	< 0.009	< 0.006
	4/12/2007	0.075	< 0.001	< 0.001	0.003	< 0.010	< 0.011	0.011	< 0.007	< 0.007
	4/23/2008	0.049	< 0.010	< 0.001	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.033
	5/1/2009	0.052	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

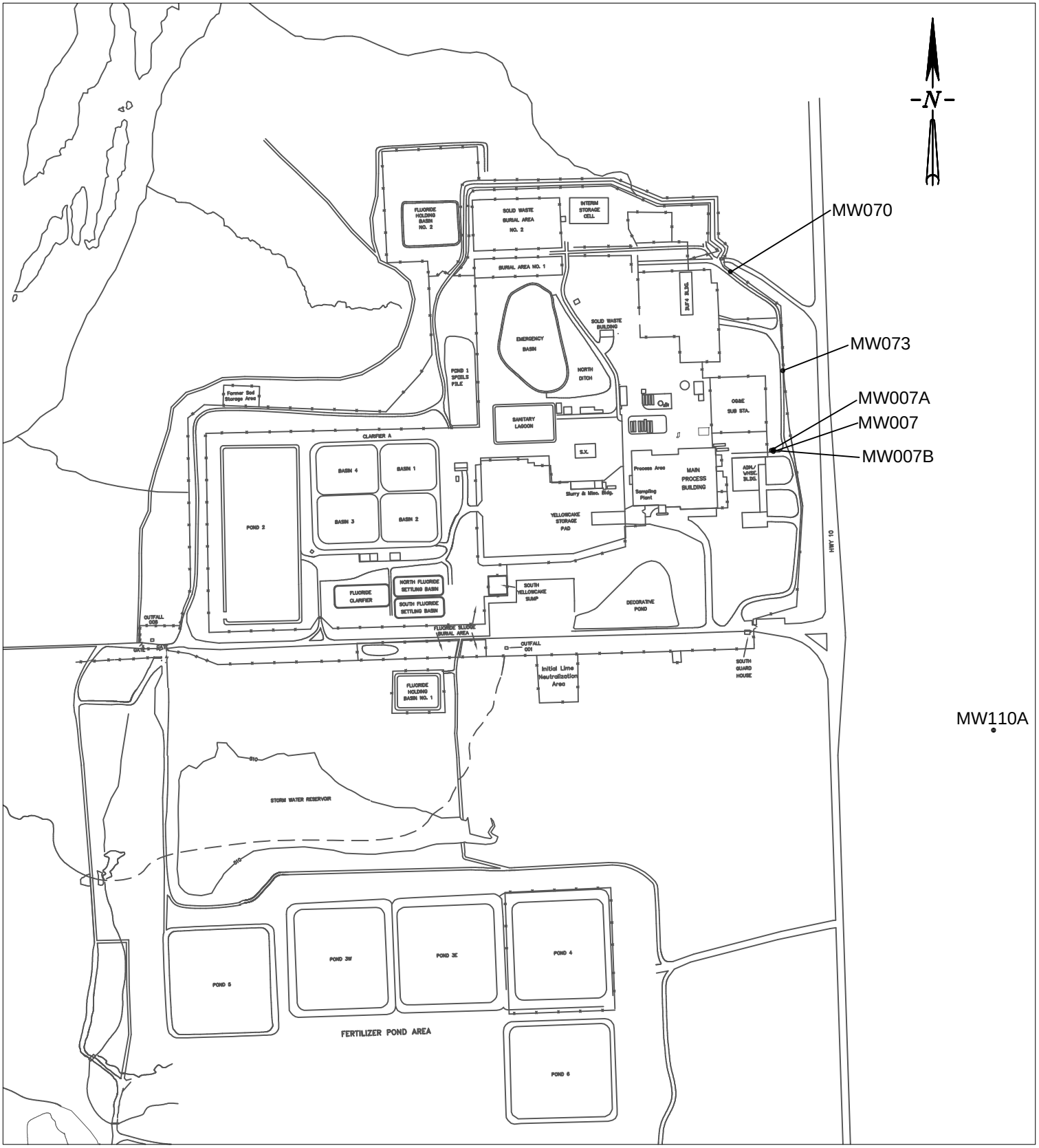
Table 3

Basic Statistics for Background Monitoring Wells

(Sample Analyses from 2005 through 2009)

Parameter	Mean ± Standard Deviation (Number of Analyses / Number of Non-Detects)						
	All Wells	**MW007**	**MW070**	**MW073**	**MW007A**	**MW110A**	**MW007B**
Geological Unit	-	Terrace / Shale 1			Shale 3	Shale 4	Shale 5
Antimony, mg/l	0.008 ± 0.003 (48/37)	0.009 ± 0.004 (8/5)	0.009 ± 0.004 (8/6)	0.009 ± 0.004 (8/6)	0.007 ± 0.003 (8/8)	0.008 ± 0.002 (8/7)	0.009 ± 0.003 (8/5)
Arsenic, mg/l	0.009 ± 0.003 (49/32)	0.009 ± 0.003 (8/5)	0.010 ± 0.002 (9/5)	0.008 ± 0.003 (8/7)	0.008 ± 0.002 (8/6)	0.009 ± 0.002 (8/6)	0.009 ± 0.003 (8/3)
Barium, mg/l	0.081 ± 0.100 (48/3)	0.064 ± 0.047 (8/0)	0.259 ± 0.098 (8/0)	0.042 ± 0.020 (8/0)	0.017 ± 0.003 (8/0)	0.013 ± 0.003 (8/2)	0.090 ± 0.080 (8/1)
Beryllium, mg/l	0.007 ± 0.003 (48/48)	0.007 ± 0.003 (8/8)	0.007 ± 0.003 (8/8)	0.007 ± 0.003 (8/8)	0.007 ± 0.003 (8/8)	0.007 ± 0.003 (8/8)	0.007 ± 0.003 (8/8)
Cadmium, mg/l	0.004 ± 0.003 (48/43)	0.004 ± 0.004 (8/7)	0.005 ± 0.003 (8/5)	0.004 ± 0.004 (8/7)	0.004 ± 0.004 (8/8)	0.004 ± 0.004 (8/8)	0.004 ± 0.004 (8/8)
Chromium, mg/l	0.013 ± 0.012 (48/28)	0.019 ± 0.020 (8/2)	0.022 ± 0.016 (8/1)	0.011 ± 0.007 (8/5)	0.008 ± 0.003 (8/8)	0.008 ± 0.003 (8/8)	0.009 ± 0.003 (8/4)
Fluoride, mg/l	1.0 ± 0.7 (49/0)	0.8 ± 0.3 (8/0)	0.8 ± 0.3 (9/0)	0.6 ± 0.1 (8/0)	0.7 ± 0.1 (8/0)	0.5 ± 0.1 (8/0)	2.5 ± 0.4 (8/0)
Lead, mg/l	0.013 ± 0.007 (48/21)	0.014 ± 0.007 (8/2)	0.019 ± 0.009 (8/1)	0.010 ± 0.003 (8/4)	0.010 ± 0.005 (8/6)	0.011 ± 0.008 (8/3)	0.010 ± 0.004 (8/5)
Molybdenum, mg/l	0.009 ± 0.002 (48/45)	0.009 ± 0.002 (8/7)	0.009 ± 0.002 (8/8)	0.009 ± 0.002 (8/8)	0.009 ± 0.001 (8/6)	0.009 ± 0.002 (8/8)	0.009 ± 0.002 (8/8)
Nickel, mg/l	0.014 ± 0.011 (48/29)	0.016 ± 0.013 (8/6)	0.025 ± 0.014 (8/1)	0.012 ± 0.007 (8/4)	0.008 ± 0.002 (8/8)	0.012 ± 0.011 (8/5)	0.009 ± 0.002 (8/5)
Nitrate, mg/l	2.7 ± 2.0 (49/10)	1.8 ± 0.5 (8/0)	1.9 ± 1.1 (9/2)	4.0 ± 1.6 (8/0)	6.0 ± 0.9 (8/0)	1.3 ± 0.8 (8/5)	1.1 ± 0.2 (8/3)
Ra-226 + Ra-228, pCi/l	1.36 ± 1.15 (48/1)	1.14 ± 0.86 (8/0)	1.69 ± 1.53 (8/0)	0.99 ± 0.97 (8/0)	1.13 ± 1.28 (8/1)	1.92 ± 1.22 (8/0)	1.28 ± 0.97 (8/0)
Radium-226, pCi/l	0.437 ± 0.415 (48/5)	0.369 ± 0.302 (8/0)	0.763 ± 0.627 (8/1)	0.257 ± 0.238 (8/1)	0.082 ± 0.074 (8/2)	0.585 ± 0.356 (8/0)	0.570 ± 0.359 (8/1)
Radium-228, pCi/l	1.08 ± 1.11 (48/11)	0.771 ± 0.812 (8/2)	1.08 ± 1.14 (8/1)	0.864 ± 0.822 (8/2)	1.04 ± 1.27 (8/2)	1.83 ± 1.42 (8/1)	0.893 ± 1.07 (8/3)
Selenium, mg/l	0.009 ± 0.002 (48/36)	0.009 ± 0.002 (8/5)	0.008 ± 0.001 (8/8)	0.010 ± 0.002 (8/4)	0.009 ± 0.001 (8/5)	0.009 ± 0.002 (8/7)	0.008 ± 0.001 (8/7)
Thallium, mg/l	0.008 ± 0.008 (48/38)	0.010 ± 0.010 (8/7)	0.008 ± 0.005 (8/7)	0.007 ± 0.003 (8/7)	0.007 ± 0.002 (8/6)	0.010 ± 0.011 (8/6)	0.009 ± 0.010 (8/5)
Thorium-230, pCi/l	0.509 ± 0.624 (48/9)	0.749 ± 0.909 (8/2)	0.575 ± 0.645 (8/2)	0.410 ± 0.411 (8/1)	0.476 ± 0.863 (8/2)	0.408 ± 0.294 (8/0)	0.436 ± 0.525 (8/2)
Uranium, µg/l	2.5 ± 3.4 (50/23)	1.2 ± 0.5 (8/6)	6.5 ± 6.1 (10/1)	1.0 ± 0.03 (8/7)	1.3 ± 0.4 (8/4)	1.8 ± 0.7 (8/2)	2.1 ± 1.5 (8/3)

Note: Non-Detects Replaced with Detection Limit
Orignial Data (Not Transformed)



SEQUOYAH FUELS CORPORATION
Background Groundwater Monitoring Well Evaluation

TITLE: *Background Monitoring Well Locations*	
PREPARED BY: *SCM*	FILENAME: *Figure1BkgdWells.dwg*
REVIEWED BY: *SCM*	FIGURE NO. 1
DATE: *19 Jan 2007*	

Figure 2

Antimony - Box Plot

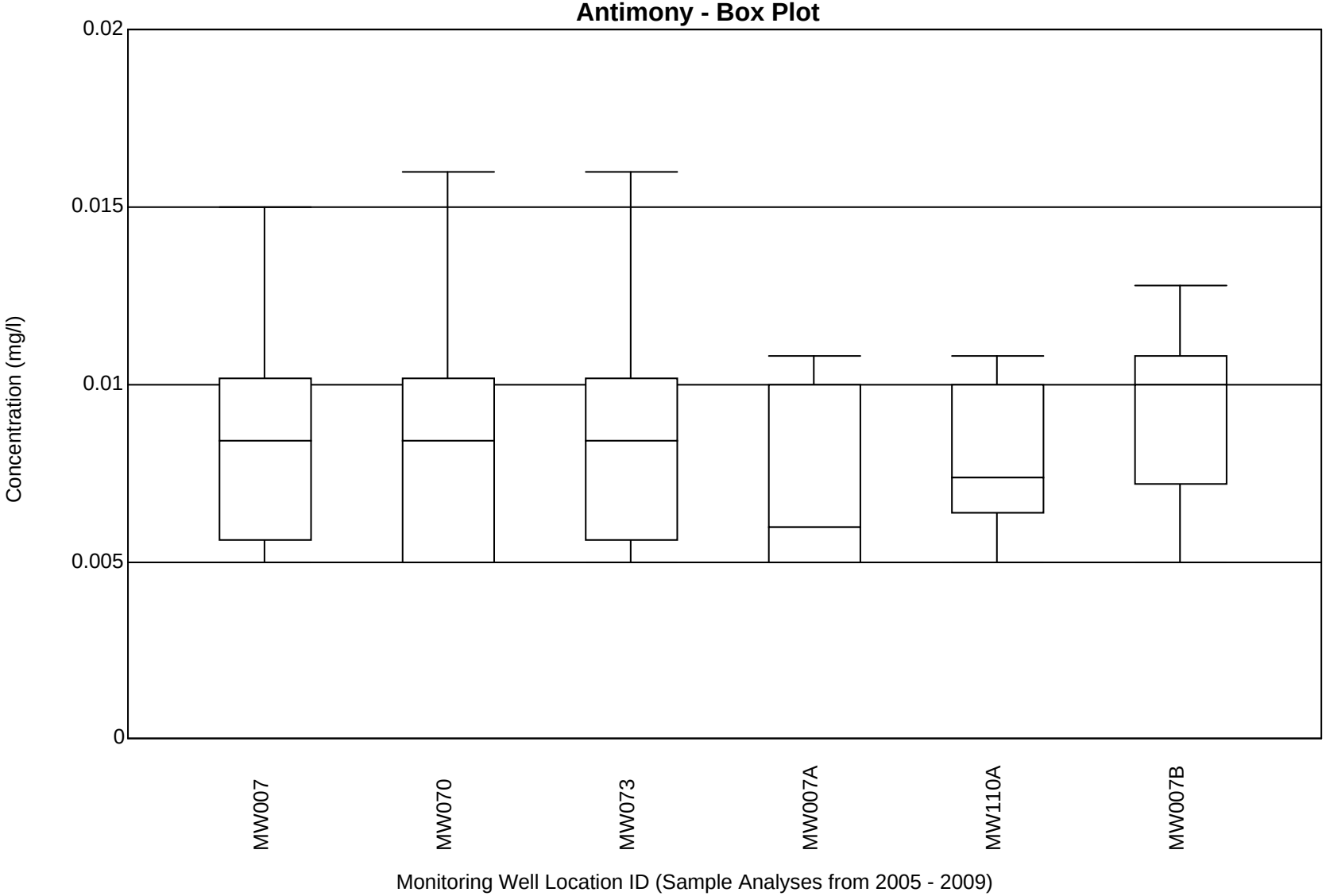


Figure 3

Arsenic - Box Plot

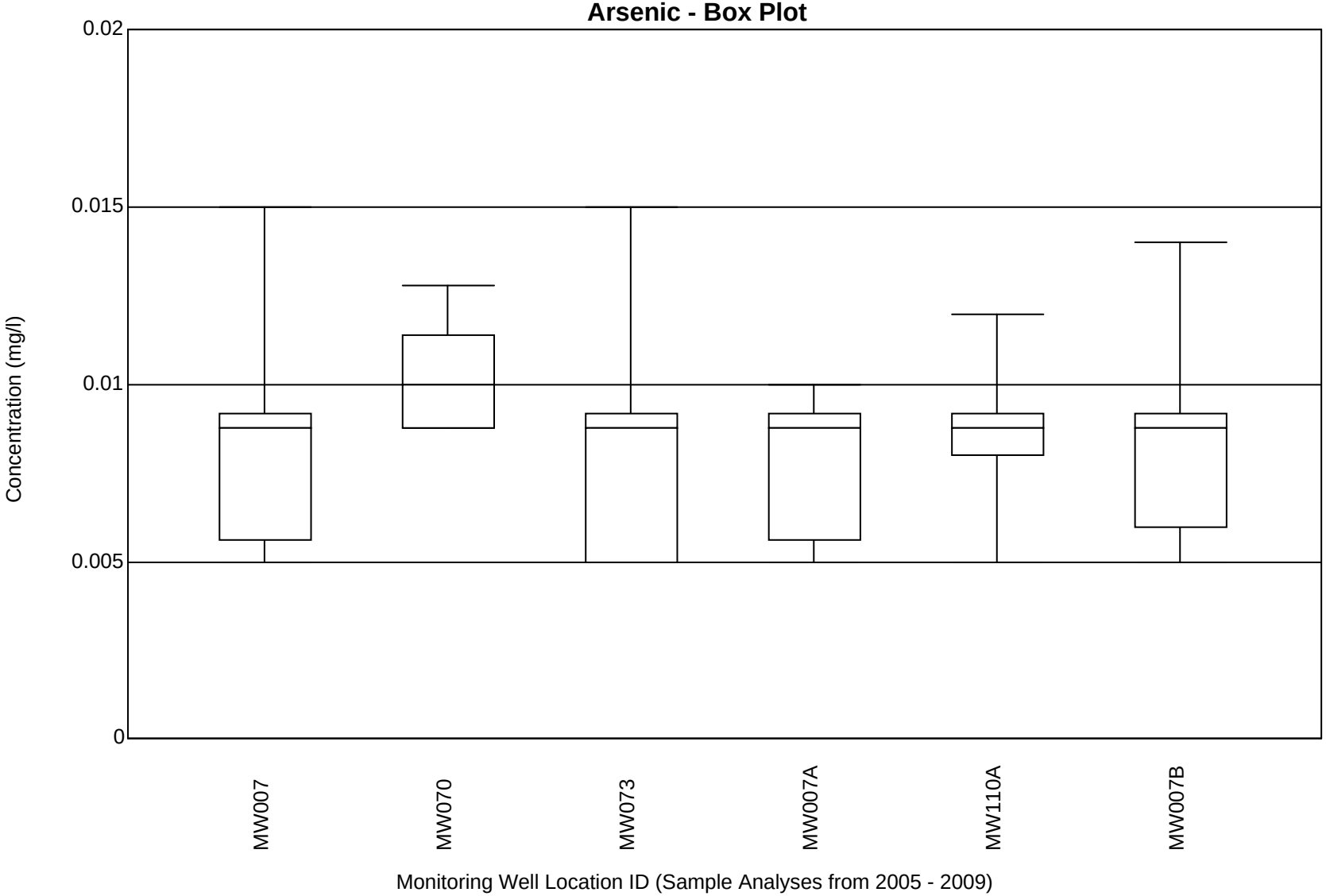


Figure 4

Barium - Box Plot

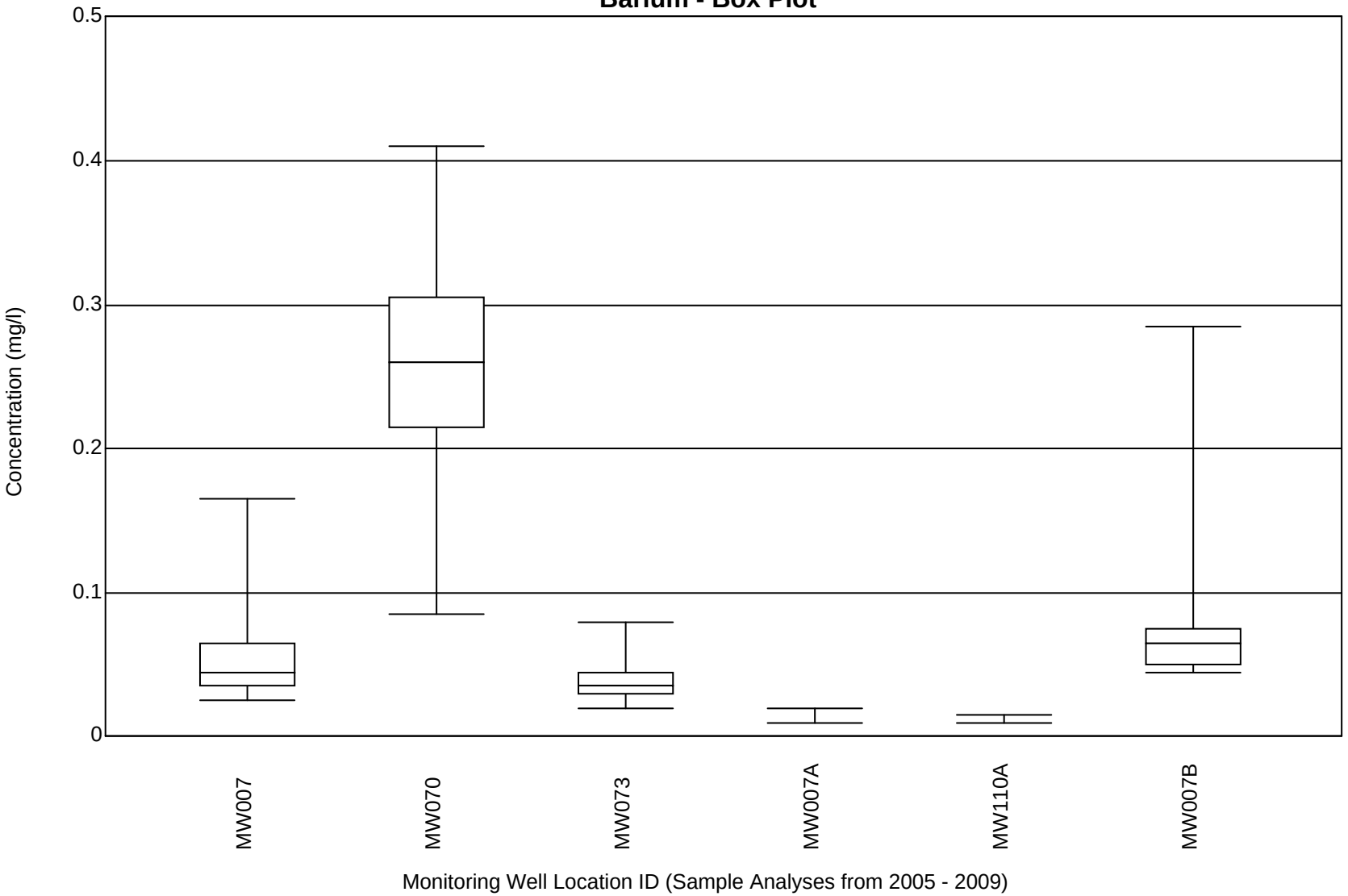


Figure 5

Beryllium - Box Plot

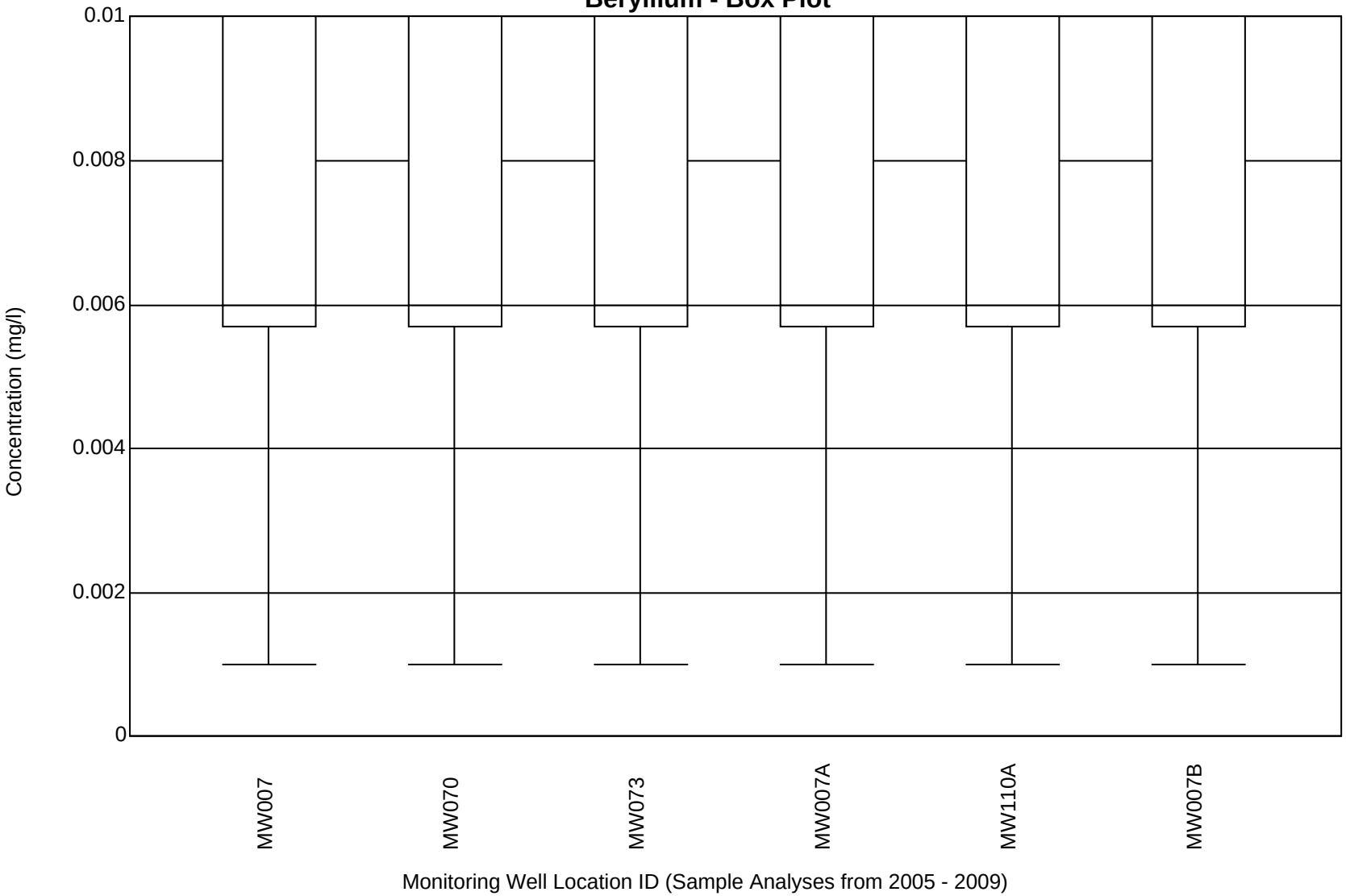


Figure 6

Cadmium - Box Plot

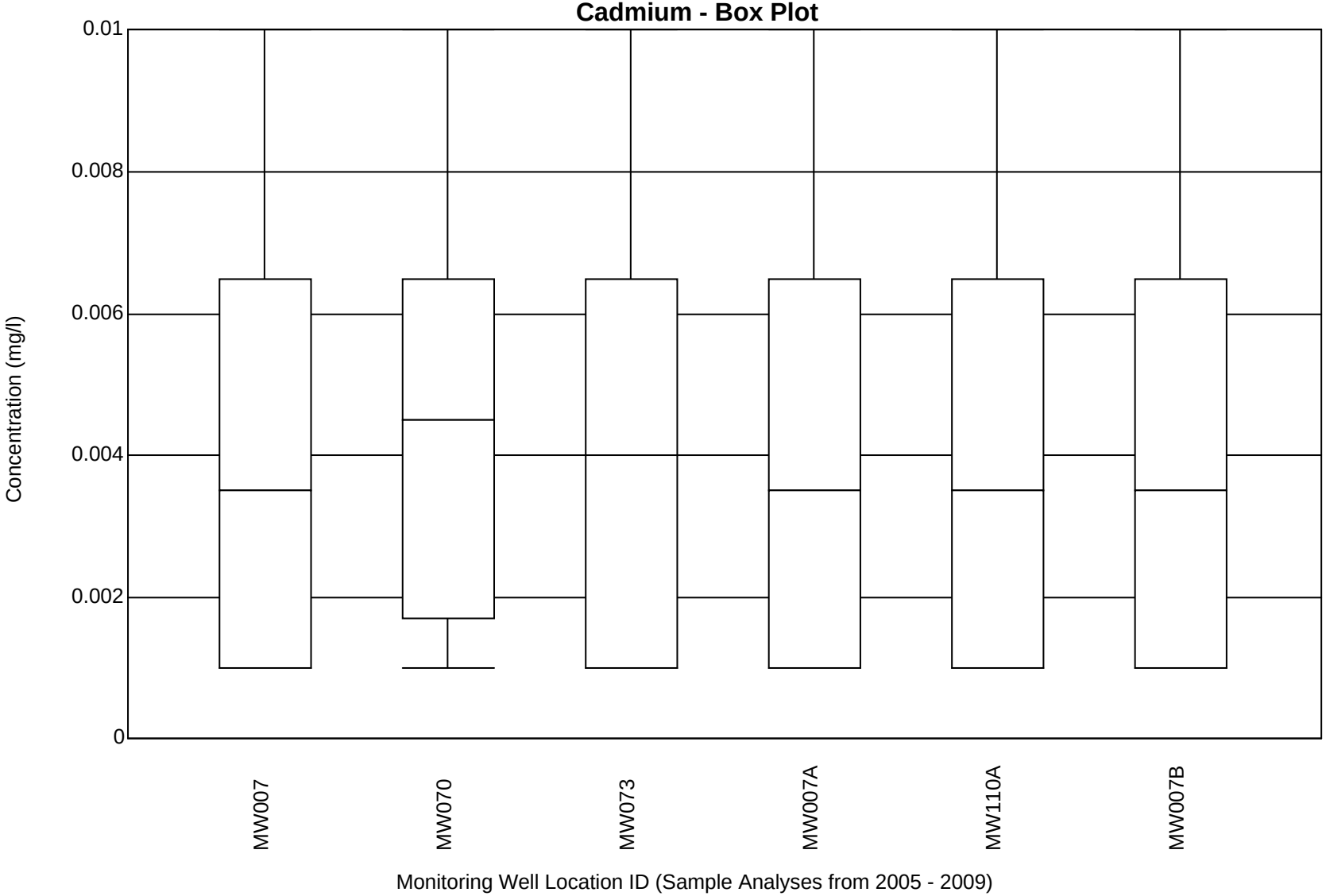


Figure 7

Chromium - Box Plot

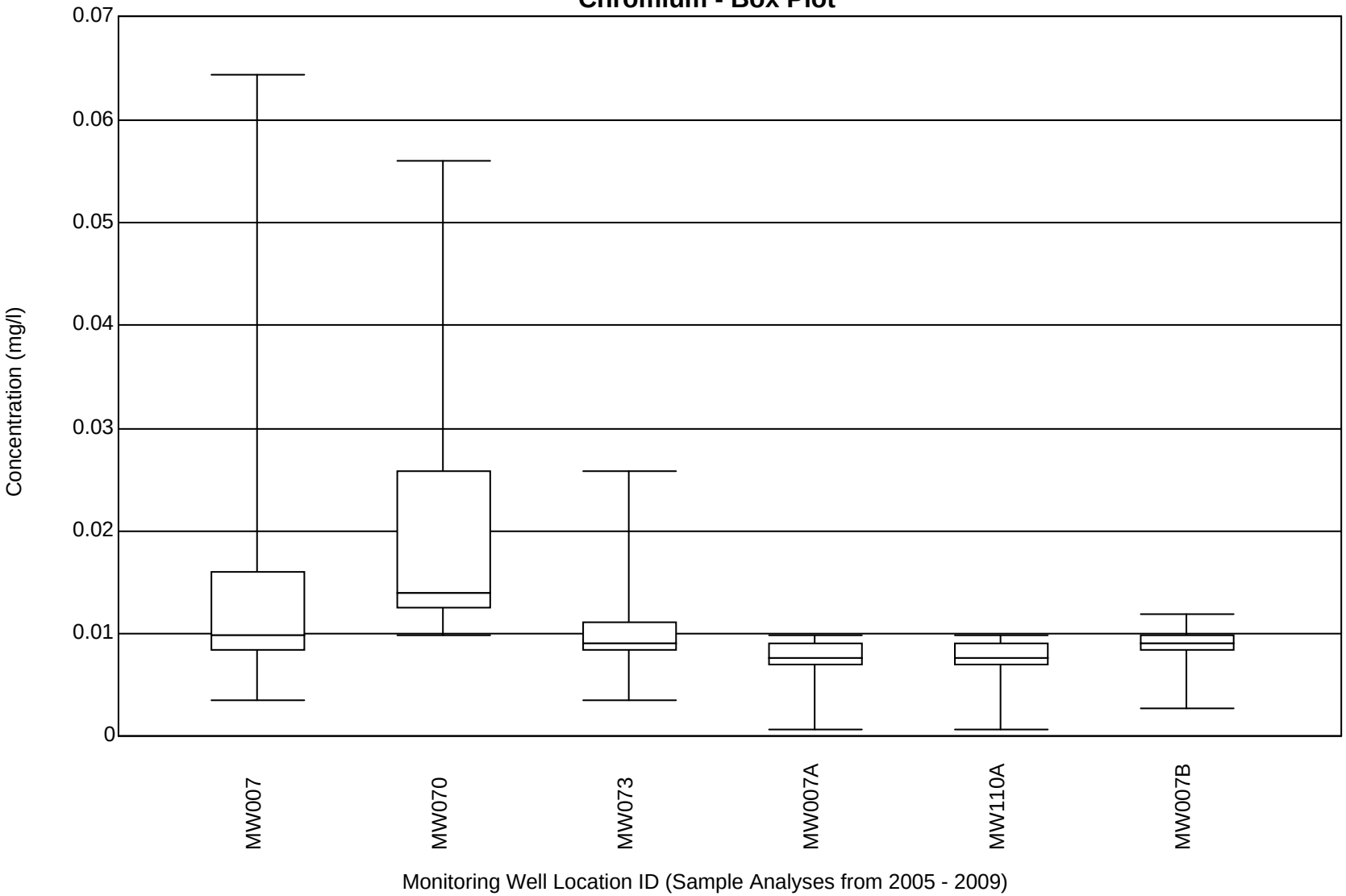


Figure 8

Fluoride - Box Plot

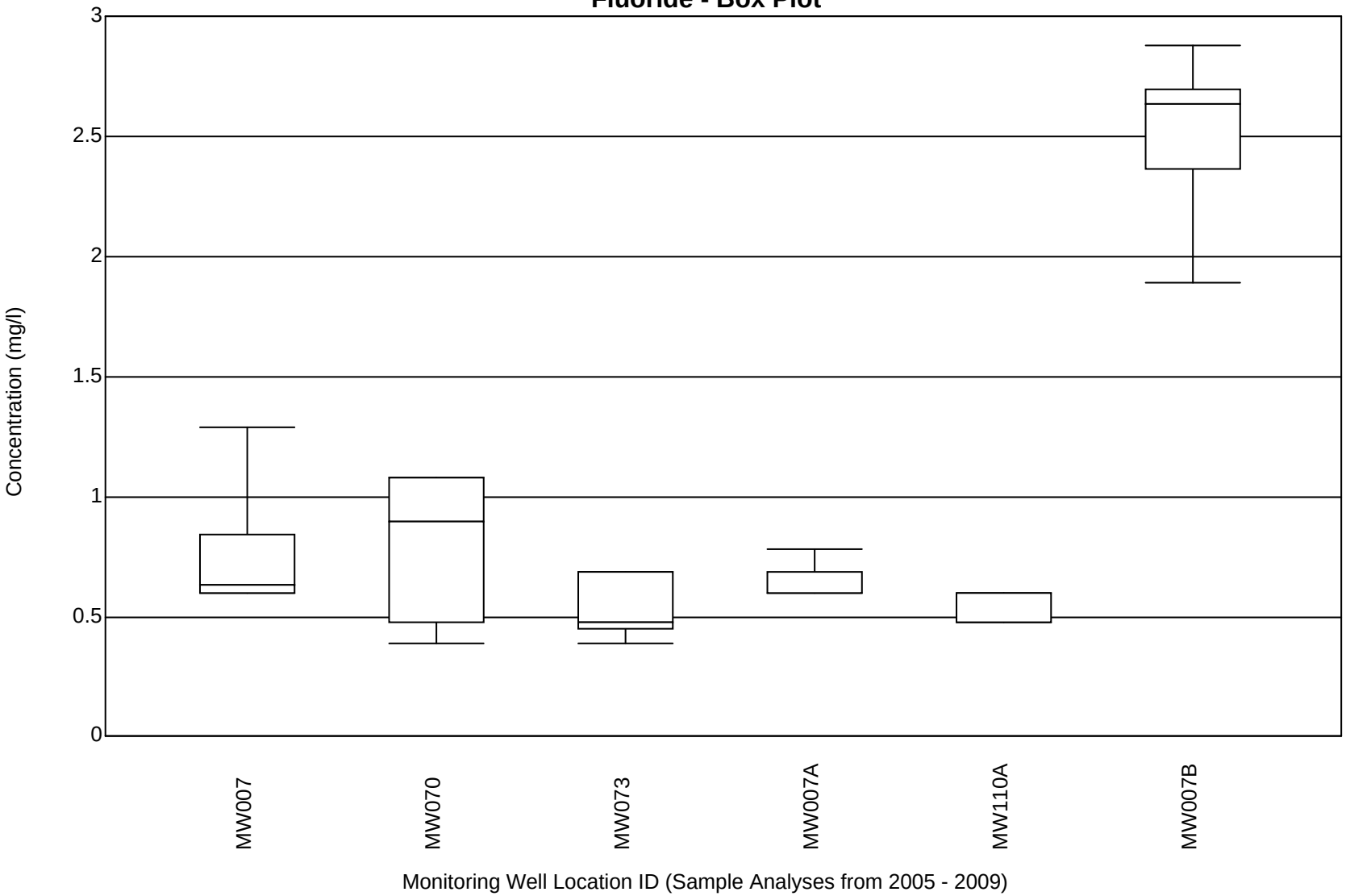


Figure 9

Lead - Box Plot

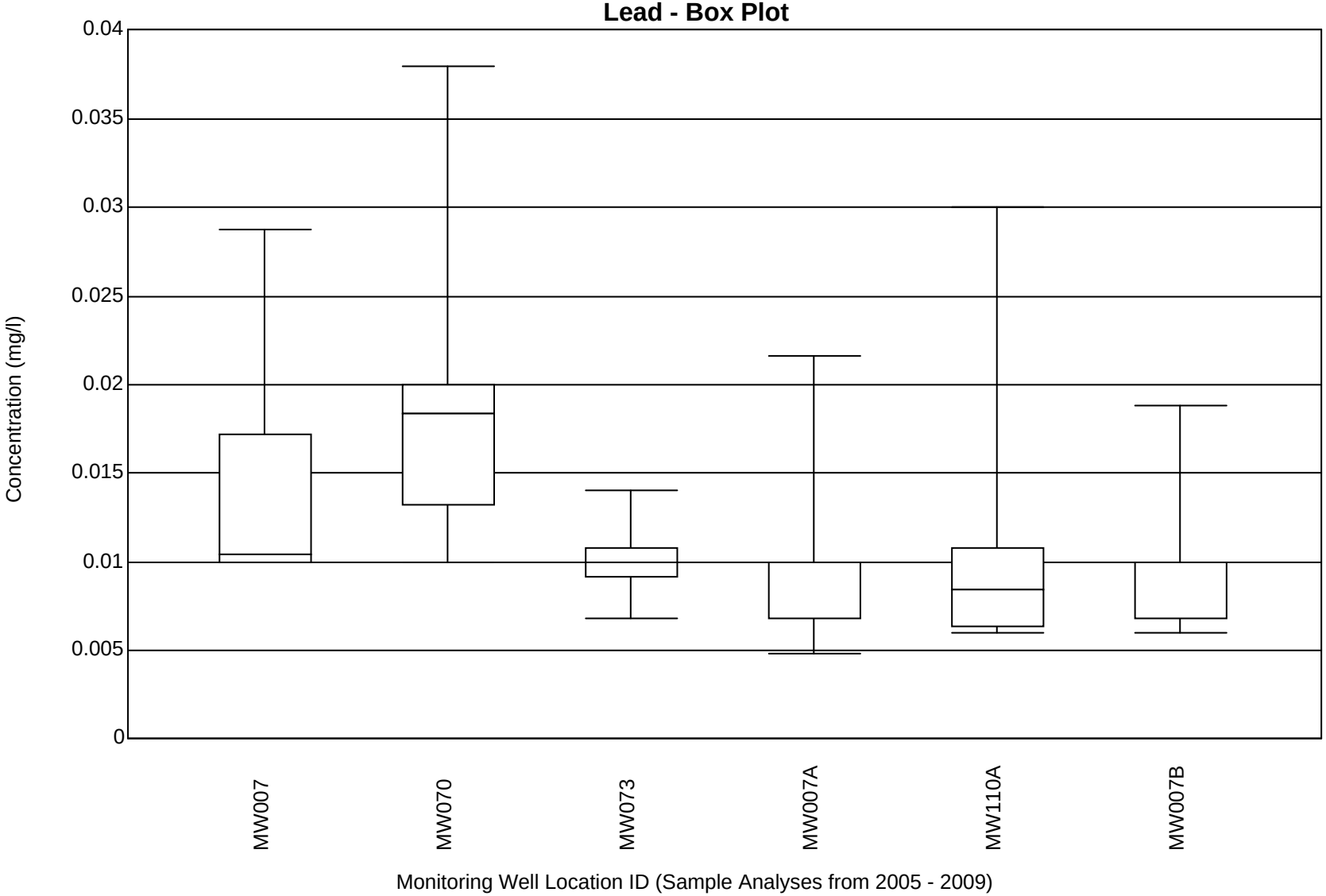


Figure 10

Molybdenum - Box Plot

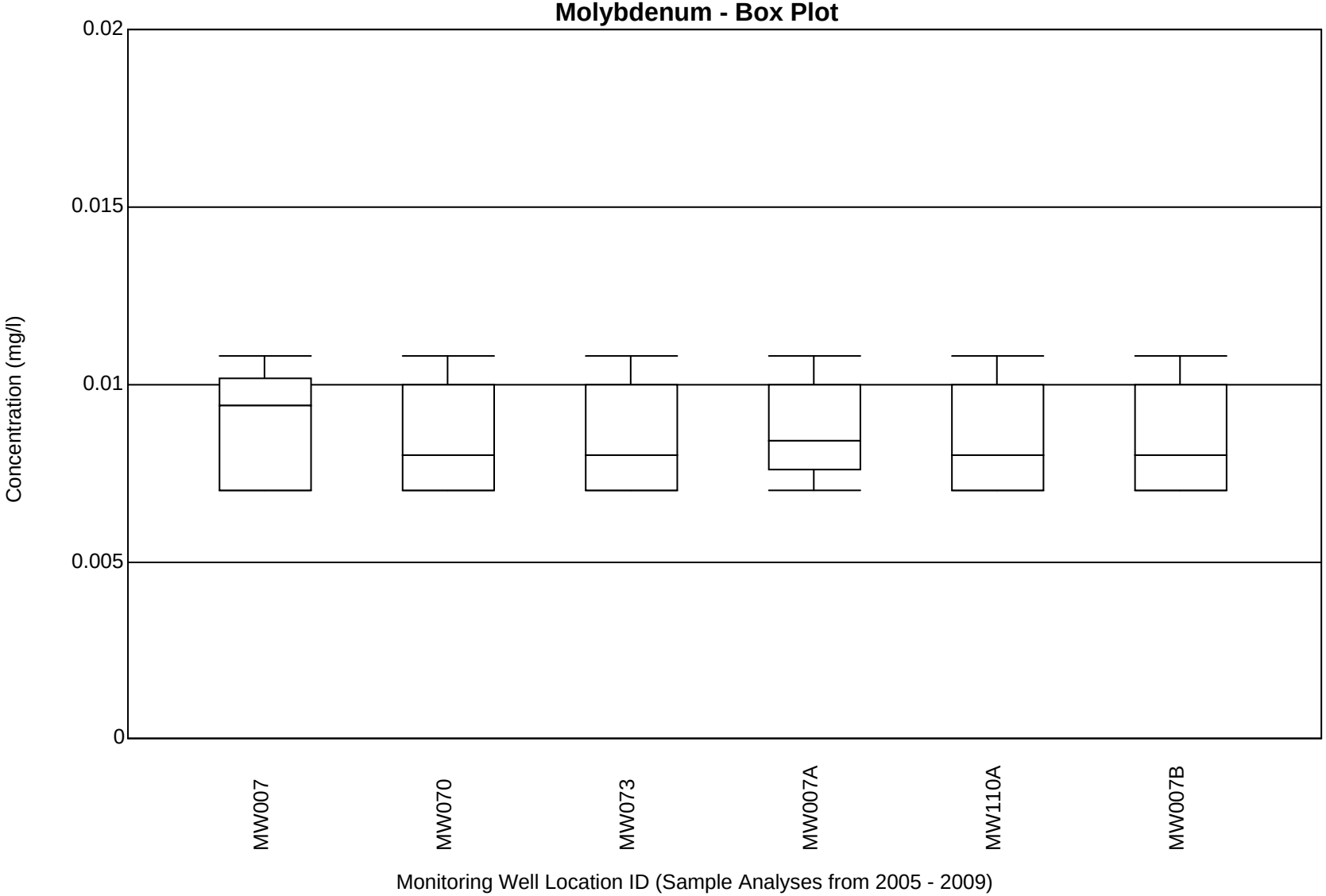


Figure 11

Nickel - Box Plot

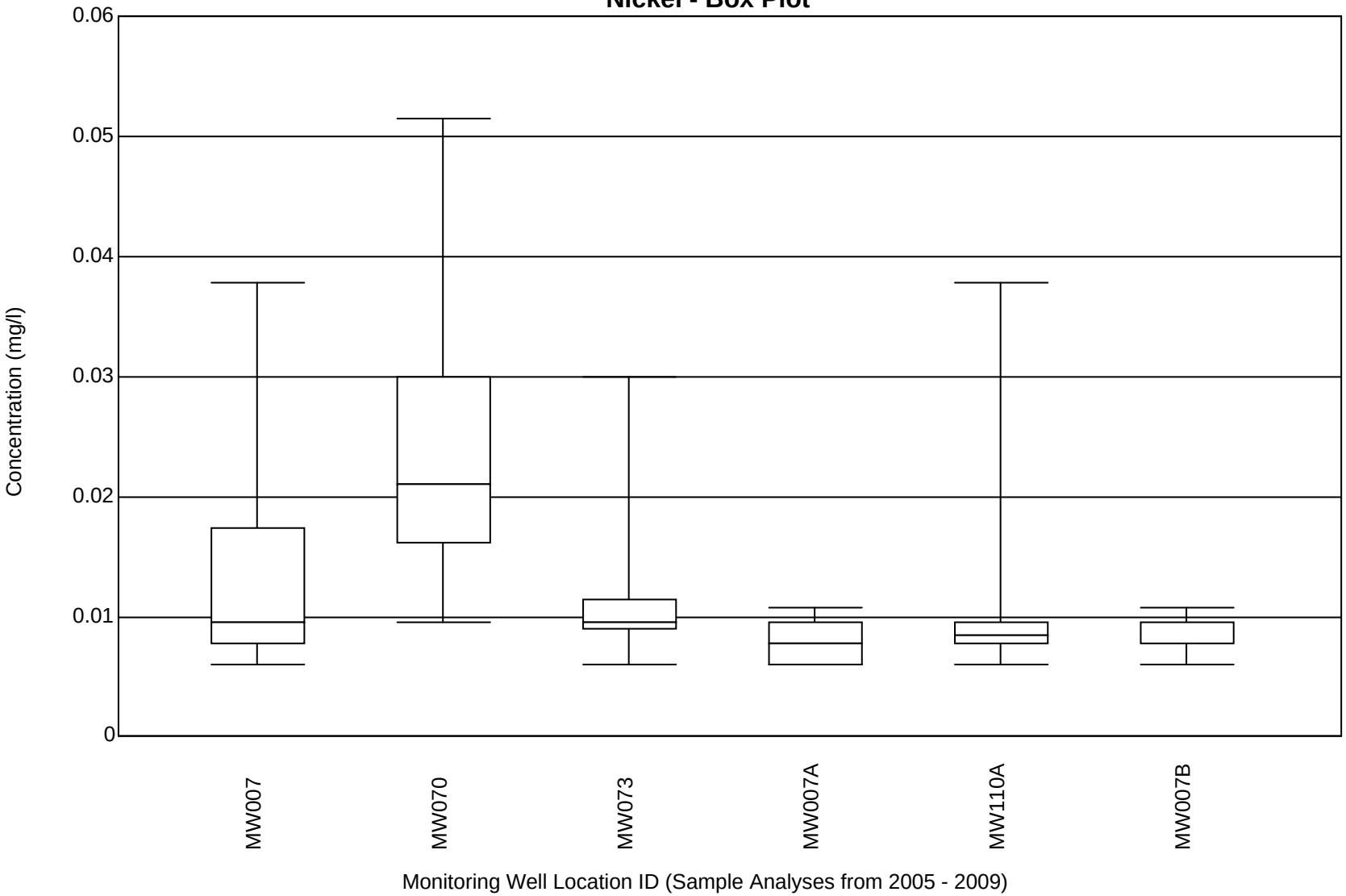


Figure 12

Nitrate - Box Plot

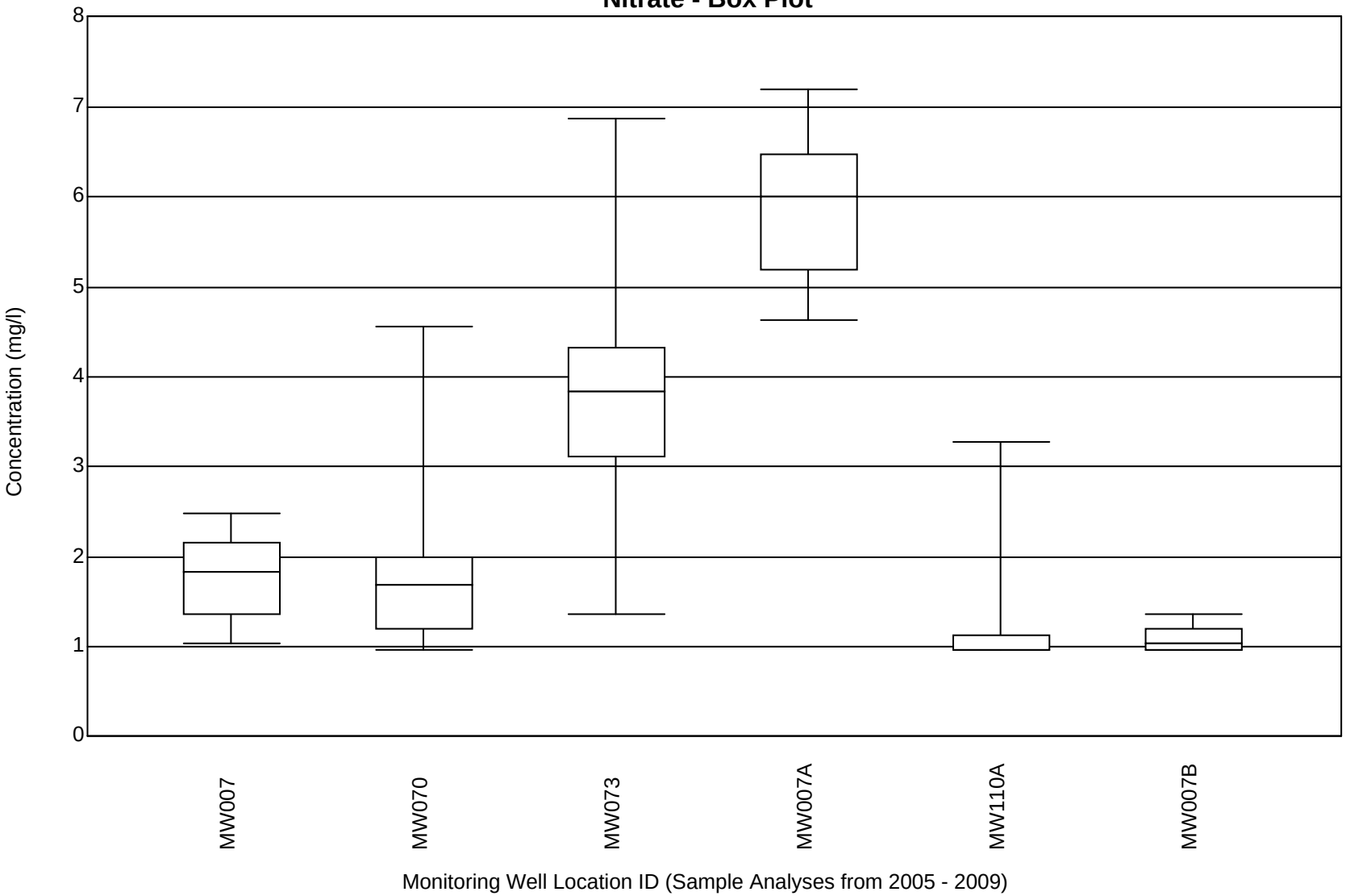


Figure 13

Ra-226 + Ra-228 - Box Plot

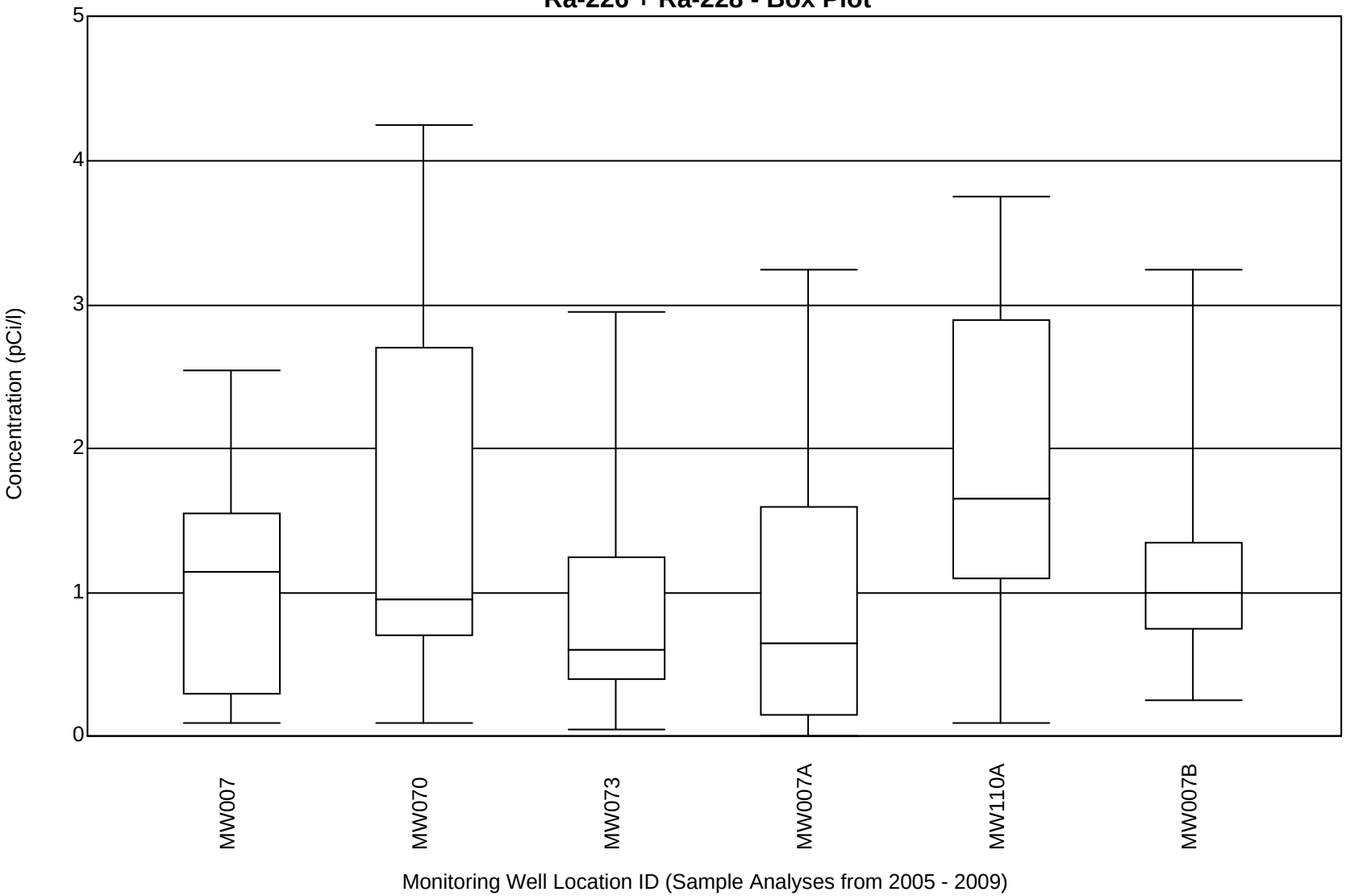


Figure 14

Radium-226 - Box Plot

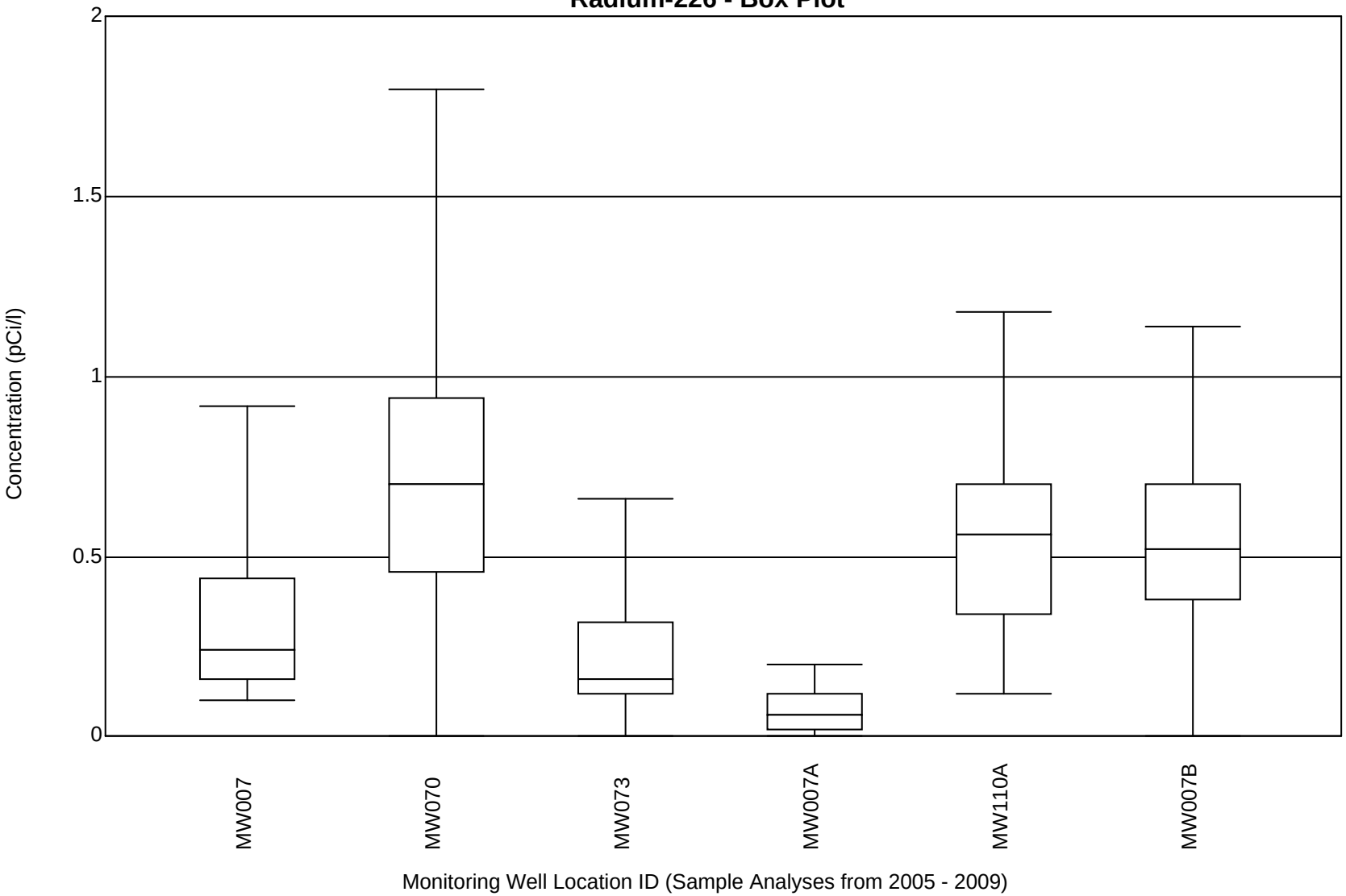


Figure 15

Radium-228 - Box Plot

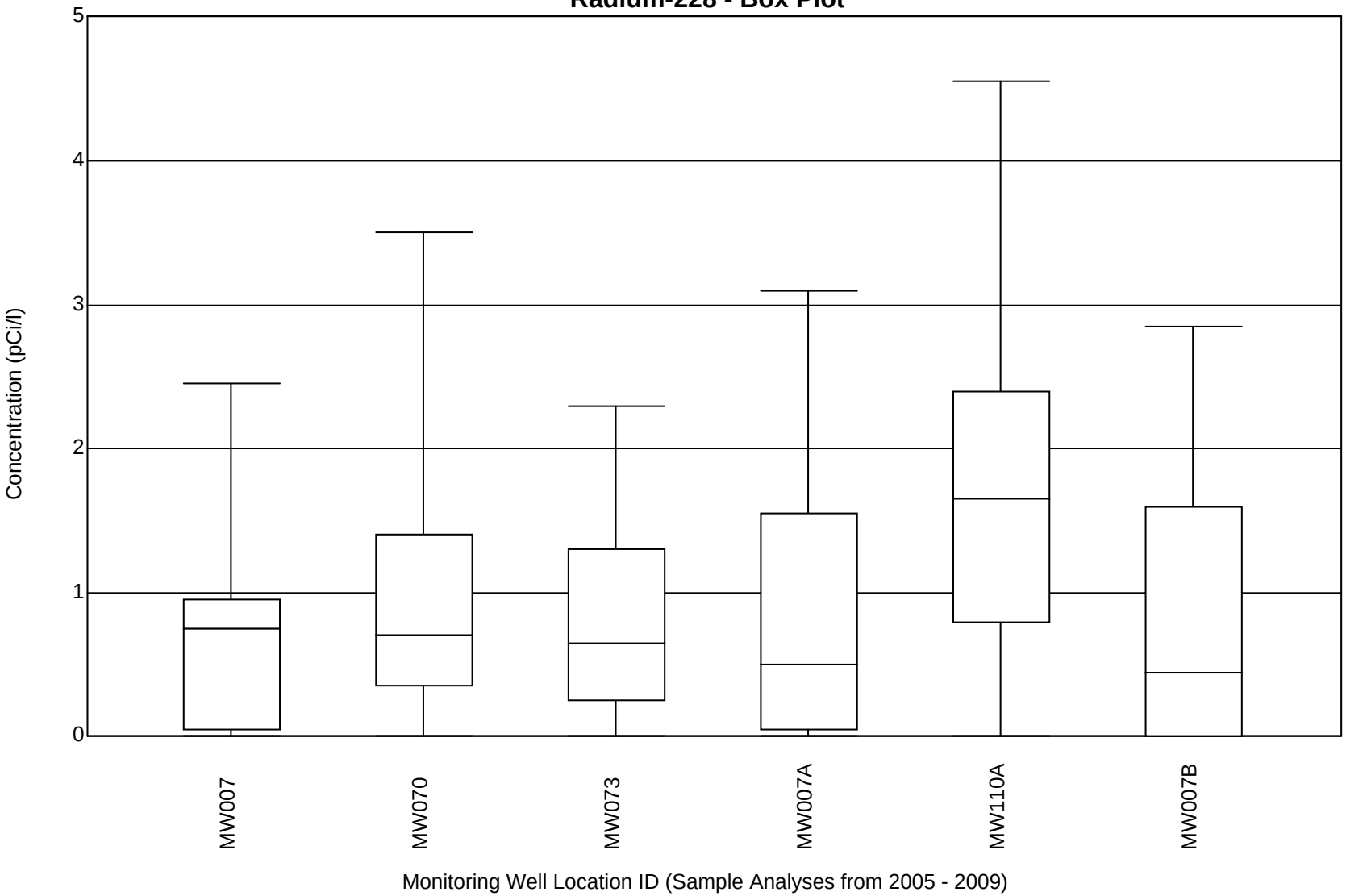


Figure 16

Selenium - Box Plot

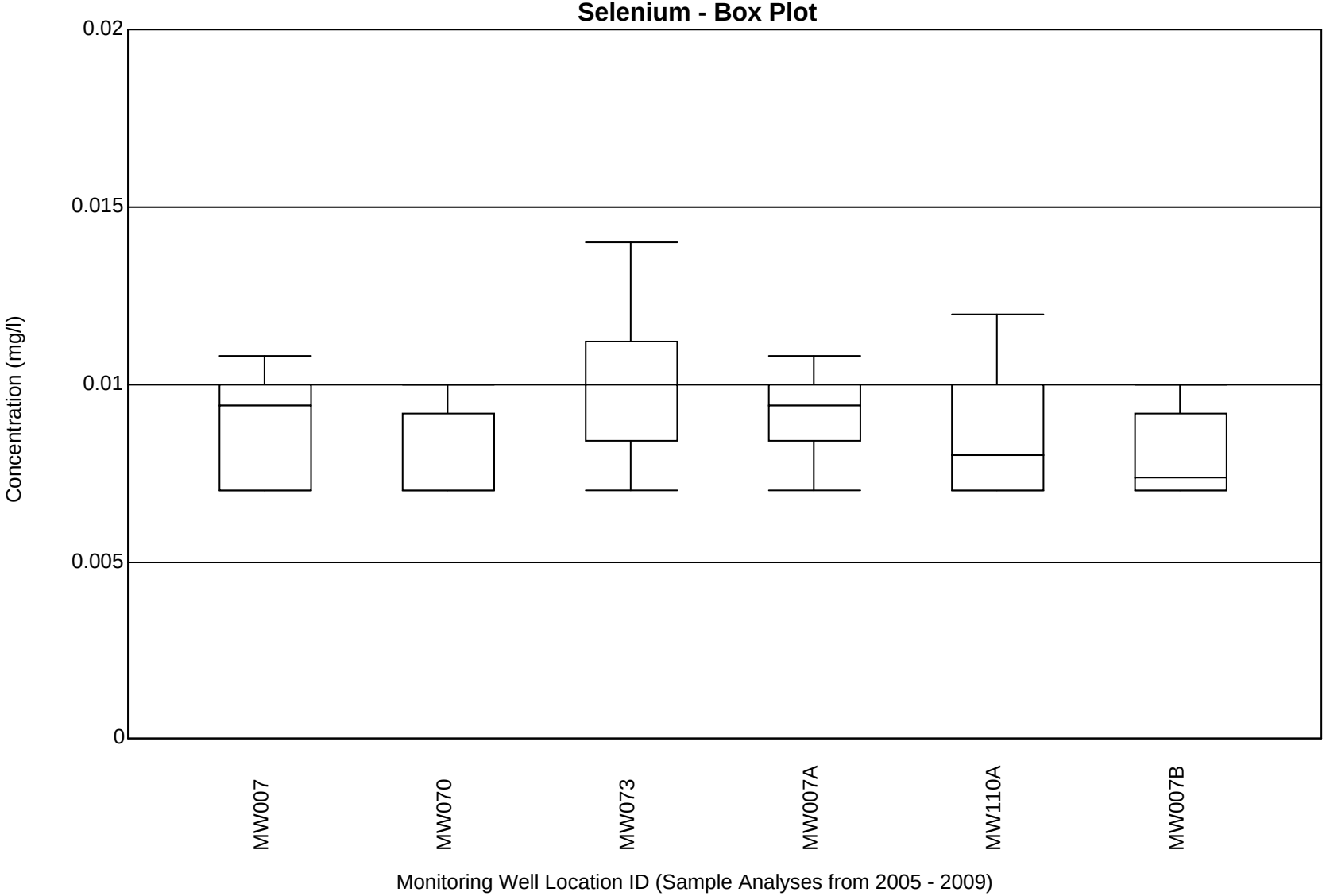


Figure 17

Thallium - Box Plot

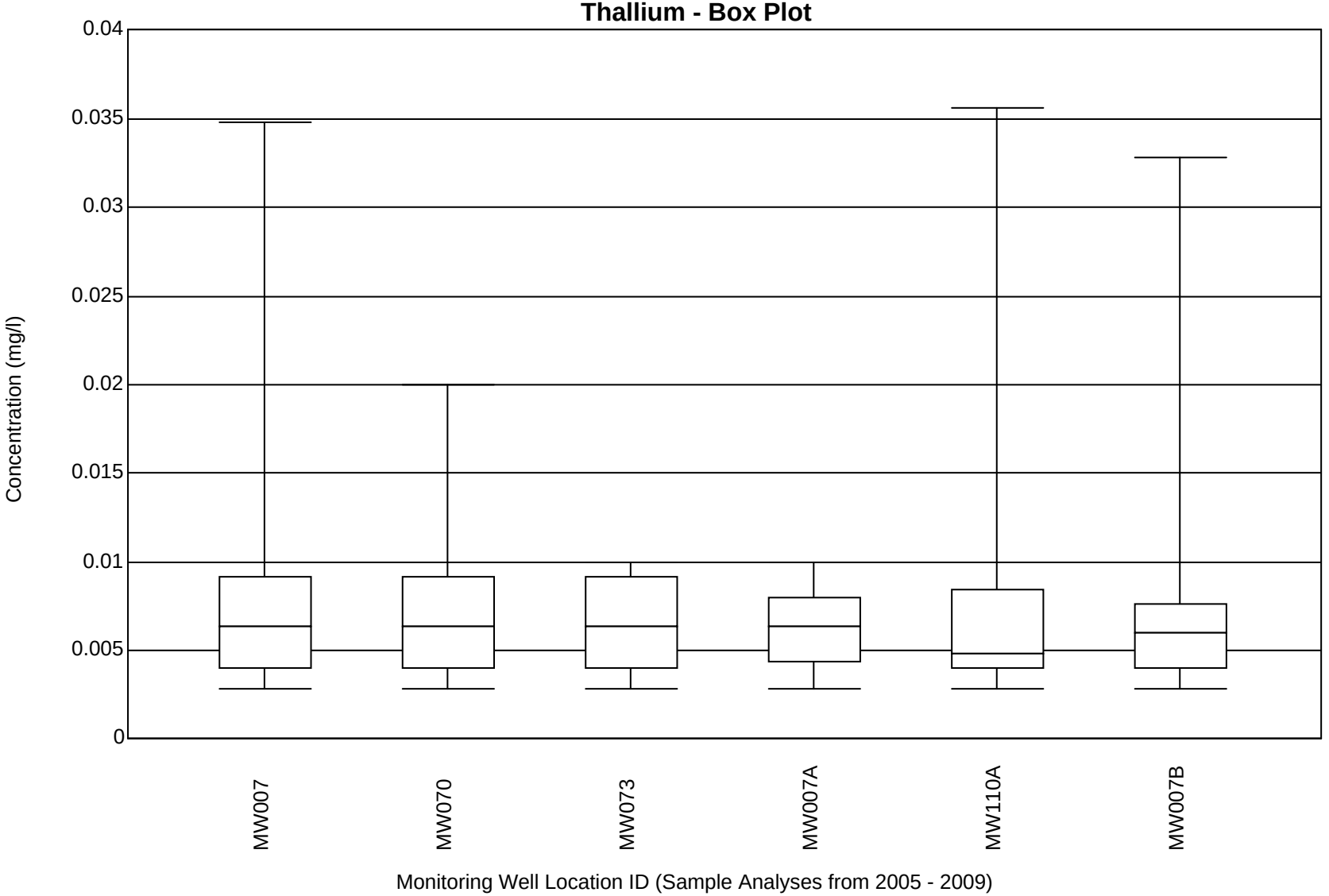


Figure 18

Thorium-230 - Box Plot

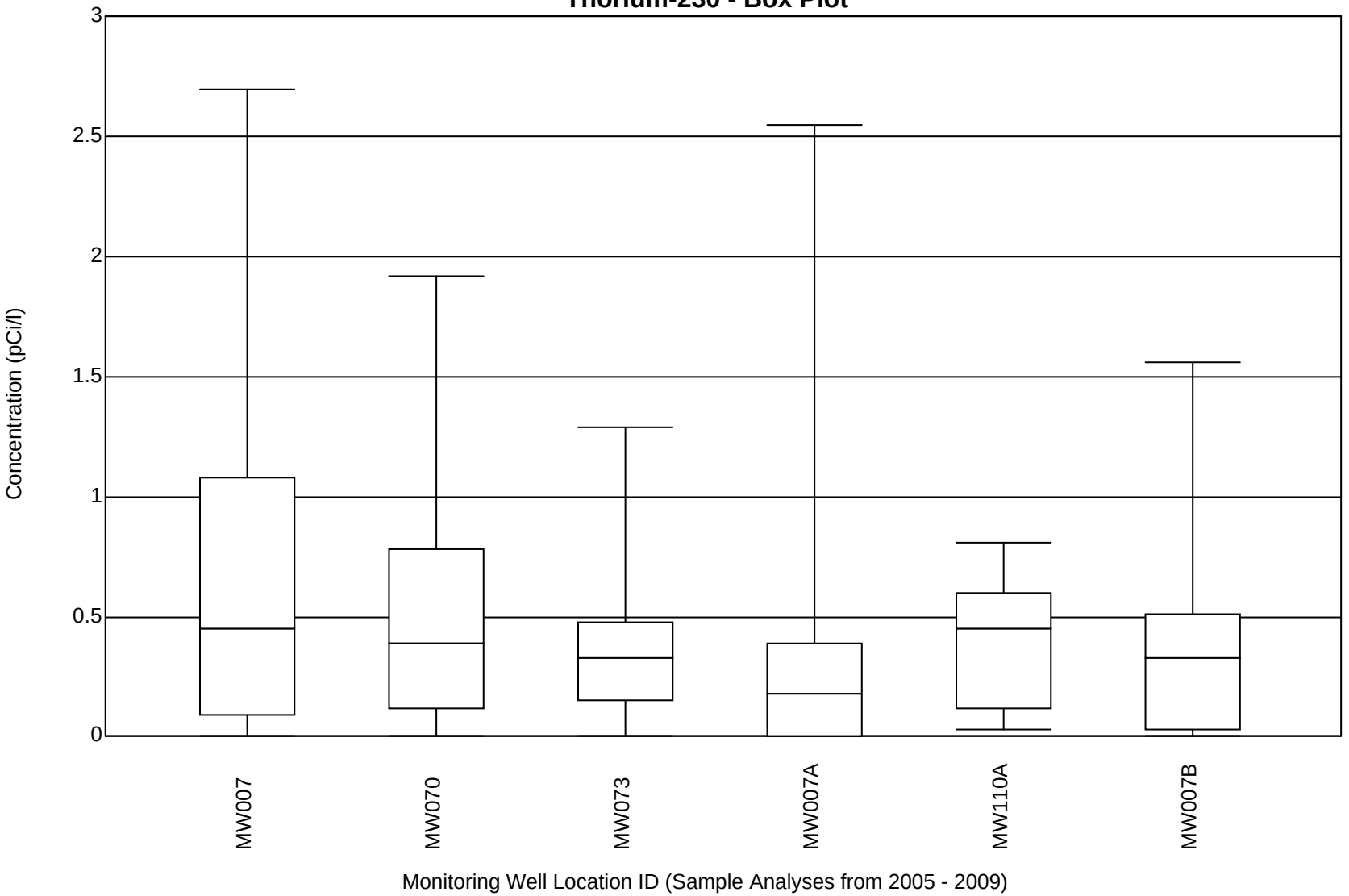
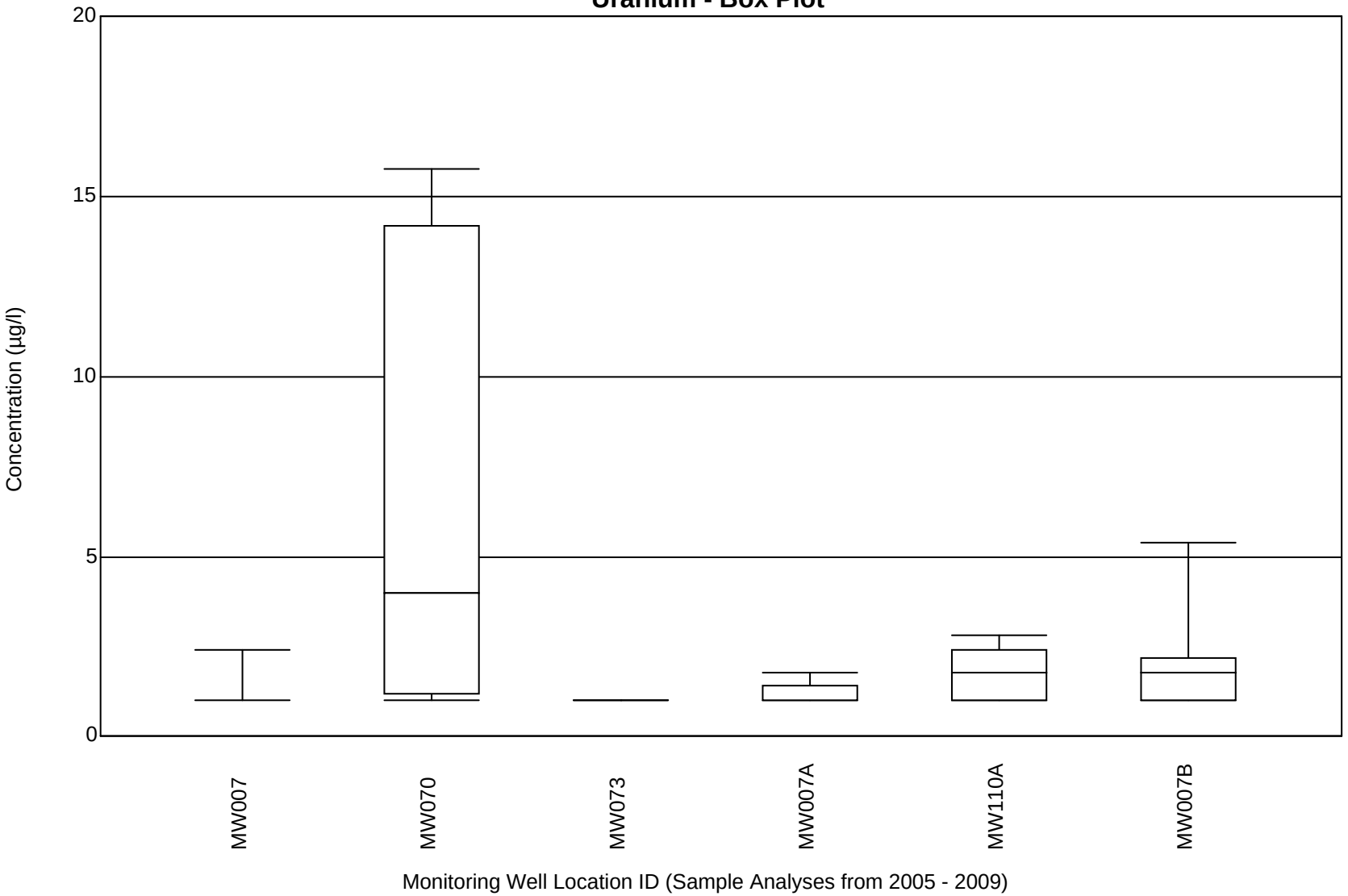


Figure 19

Uranium - Box Plot



Appendix B

Time Series Graphs for Groundwater Monitoring Wells

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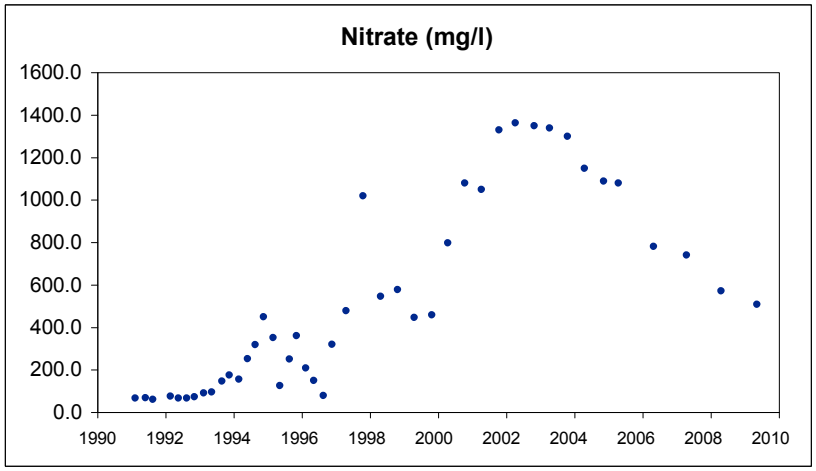

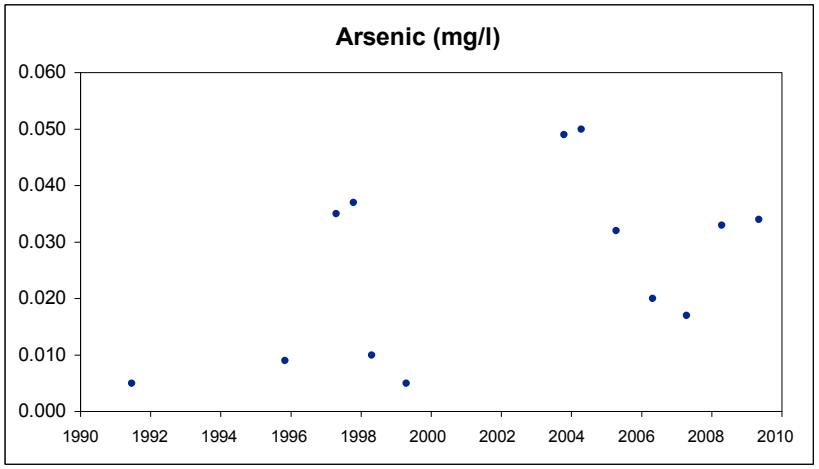

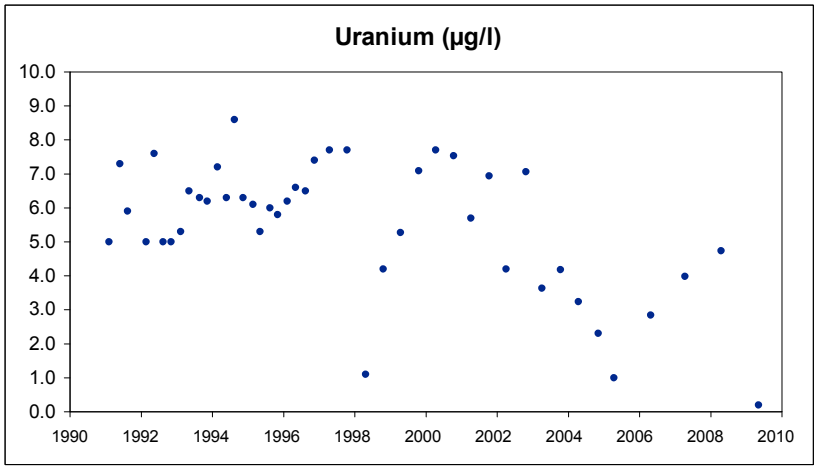

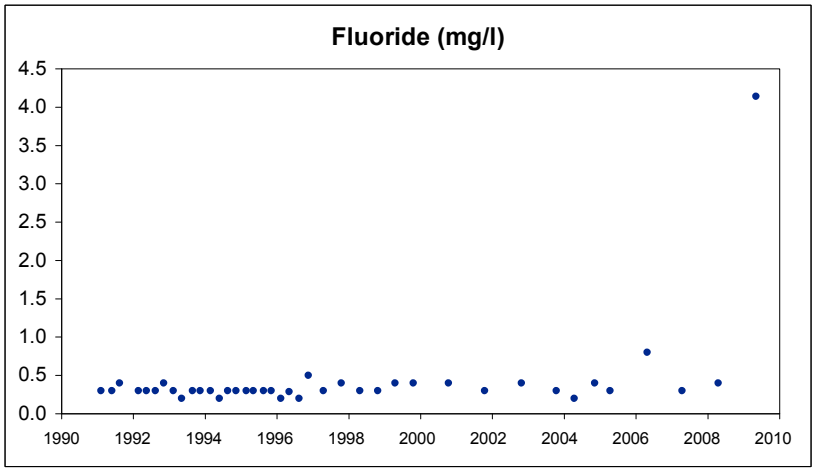

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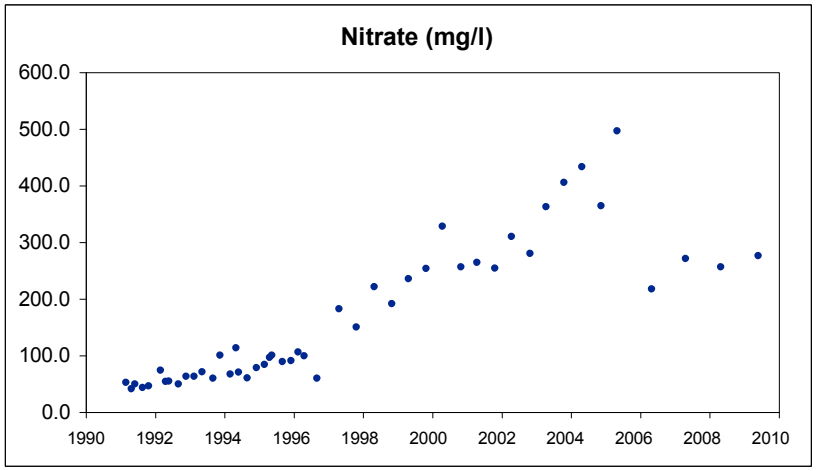

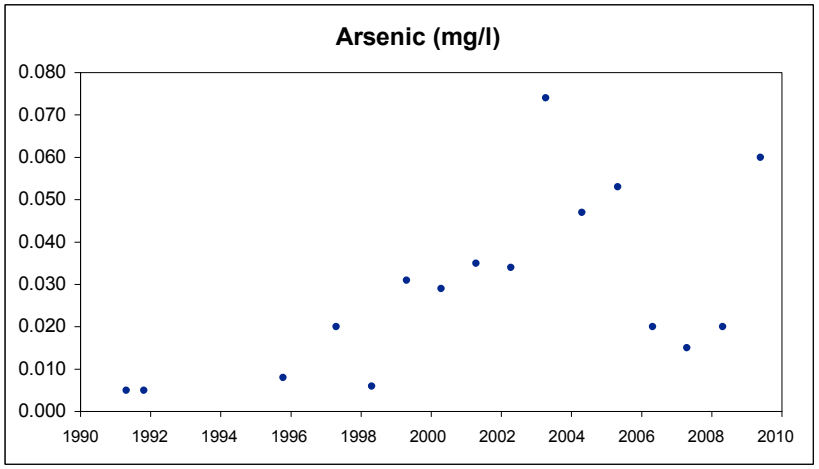

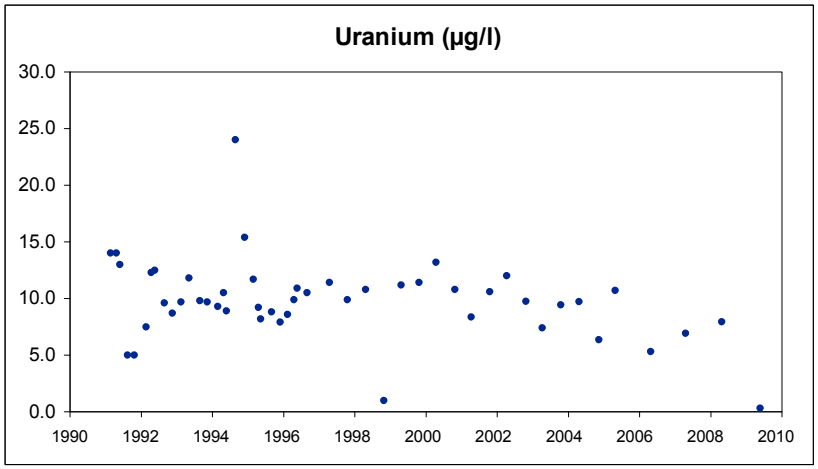

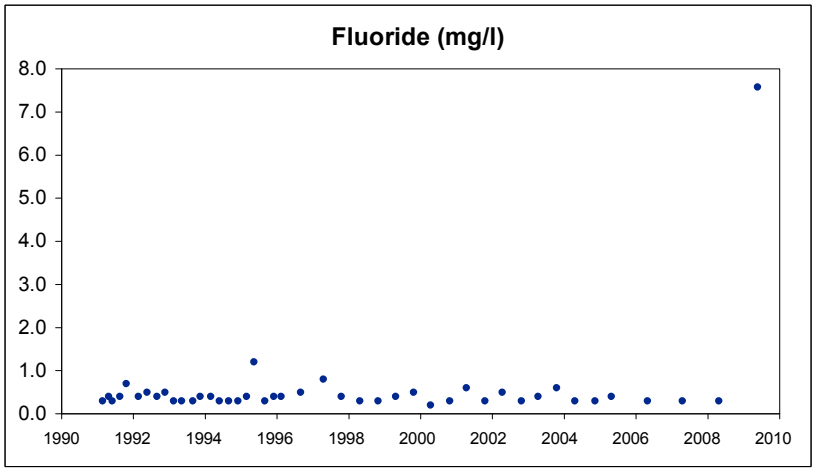

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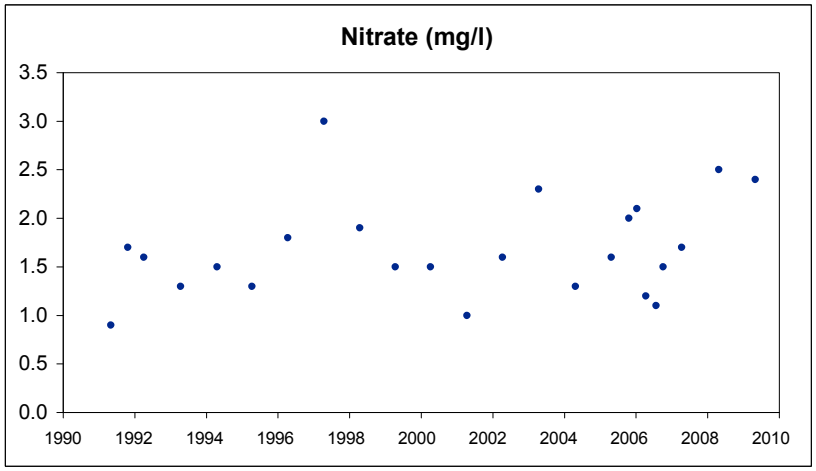

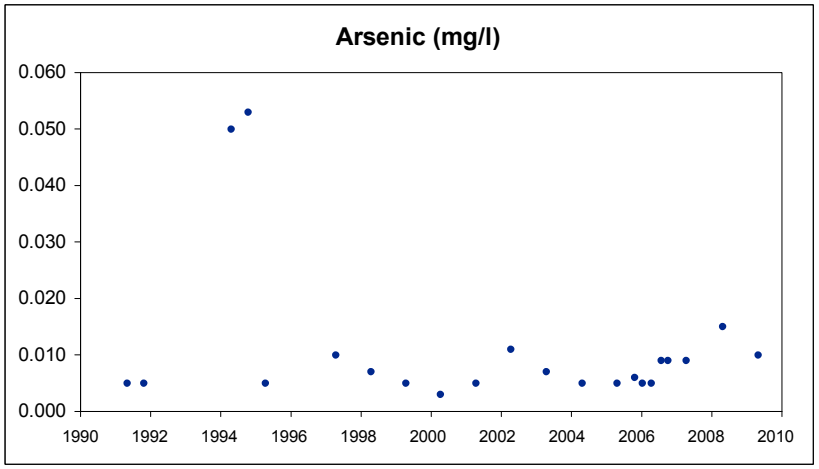

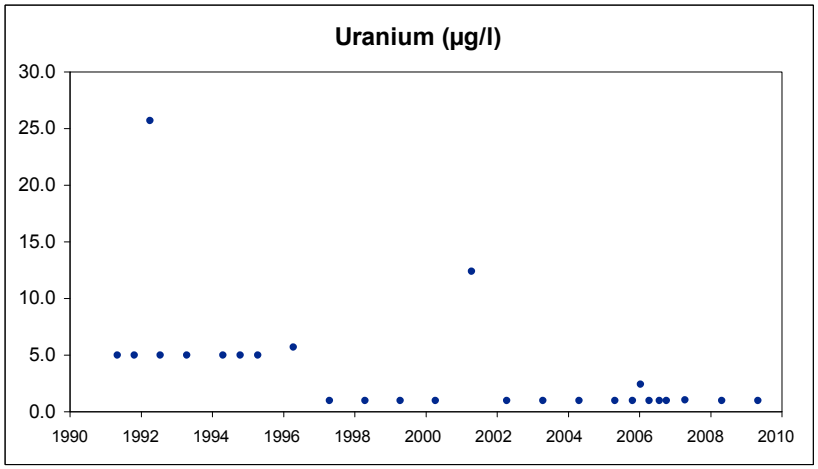

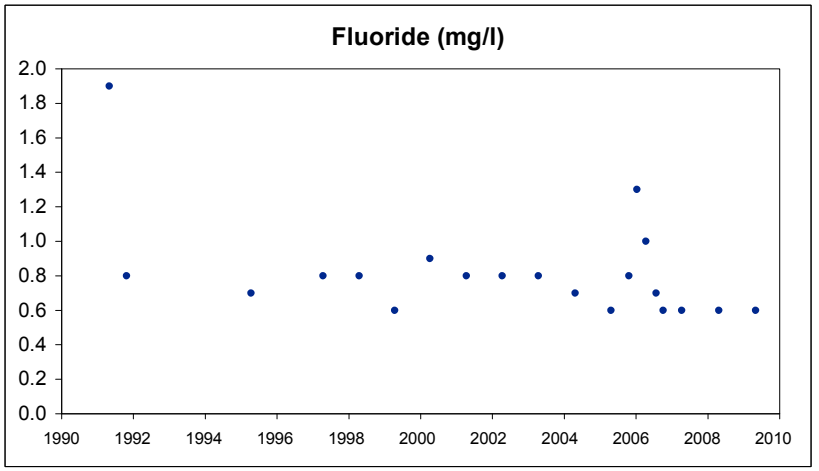

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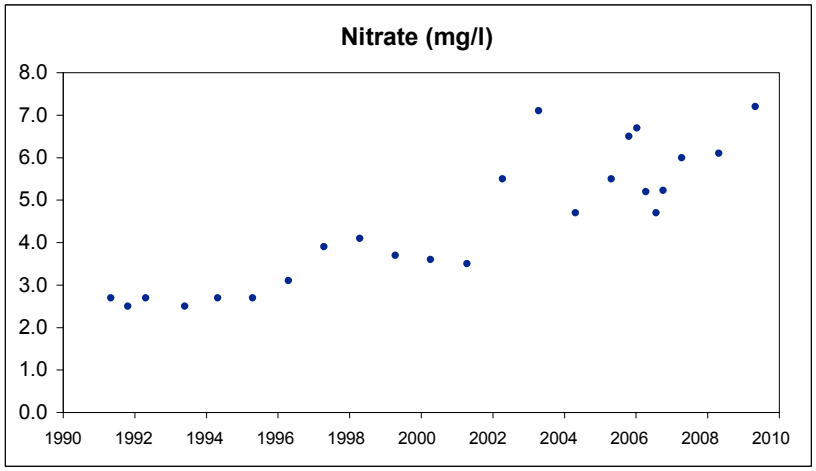

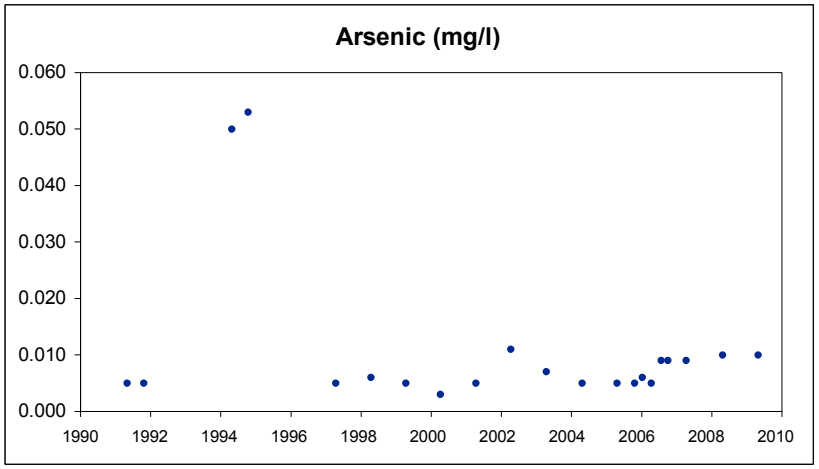

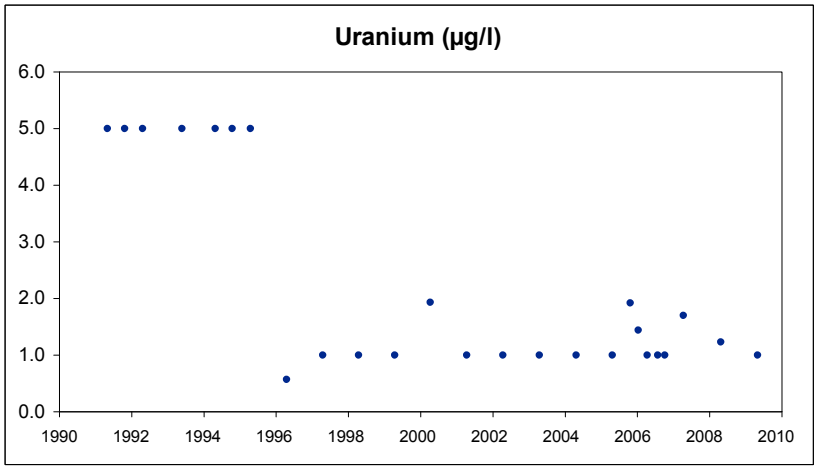

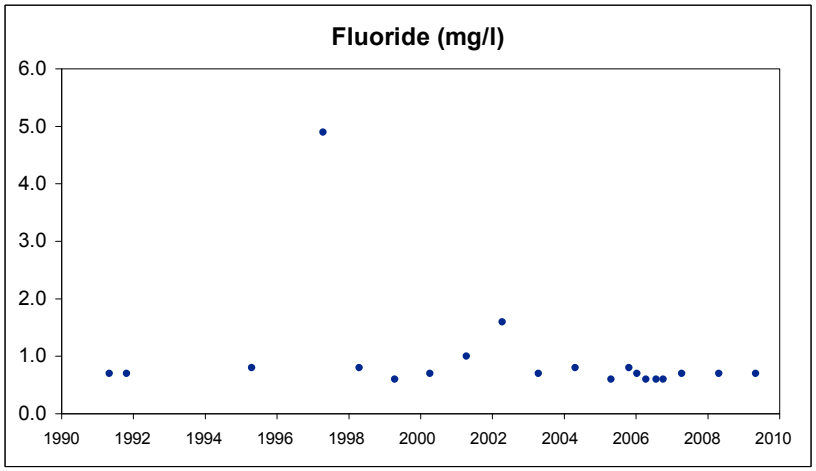

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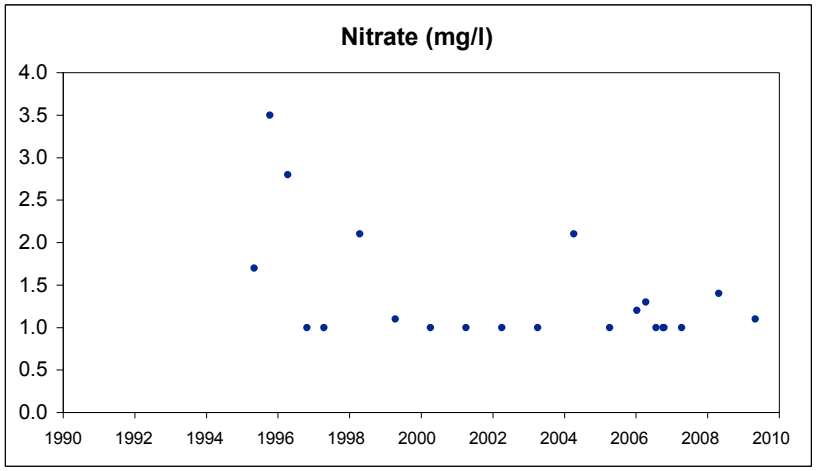

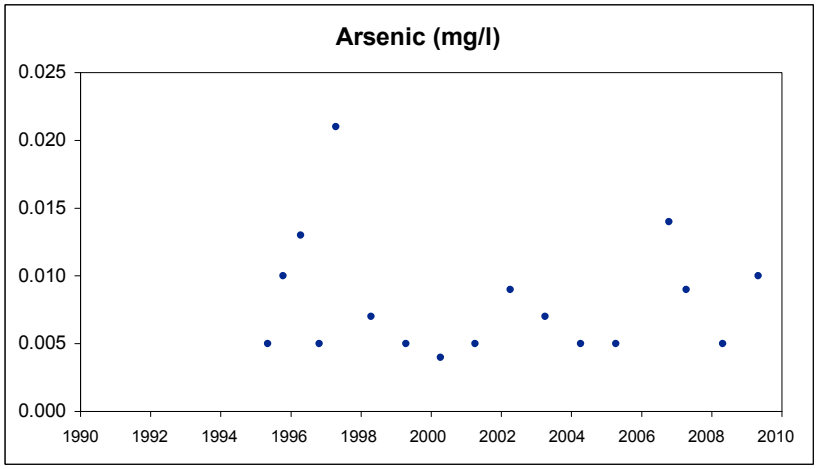

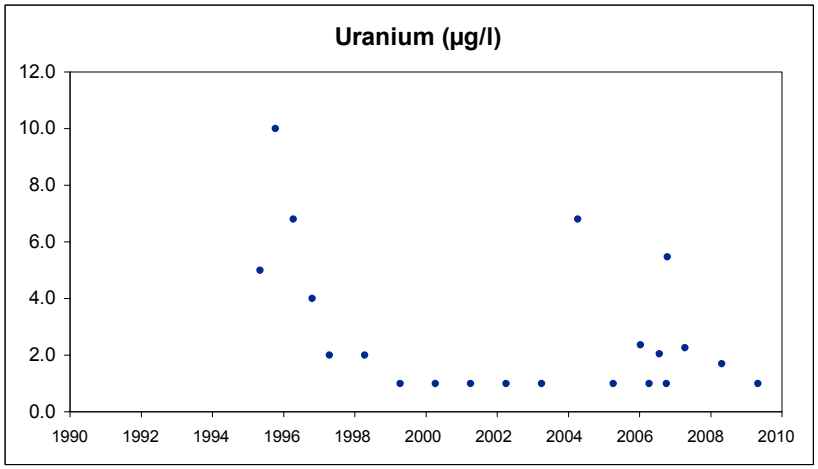

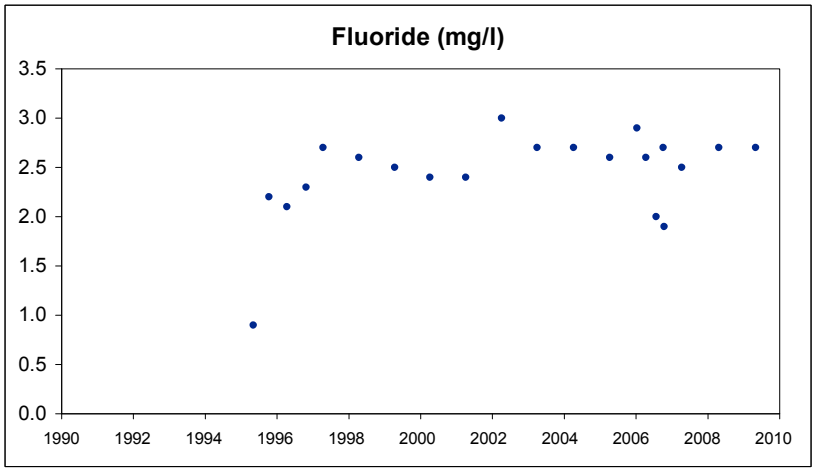

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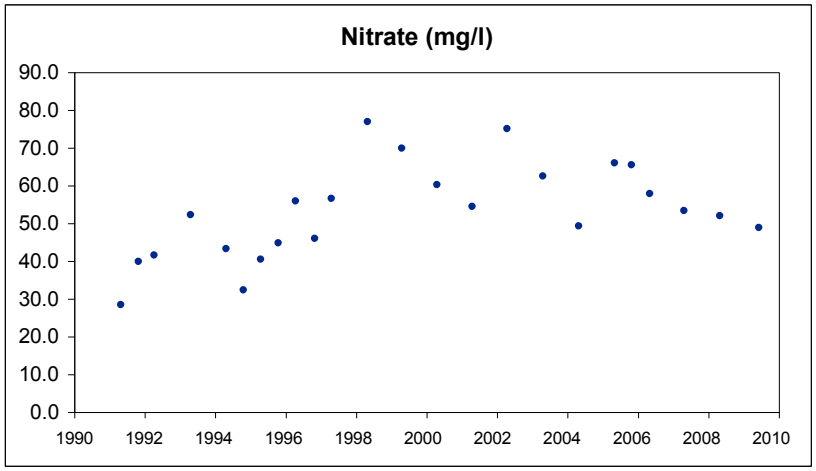

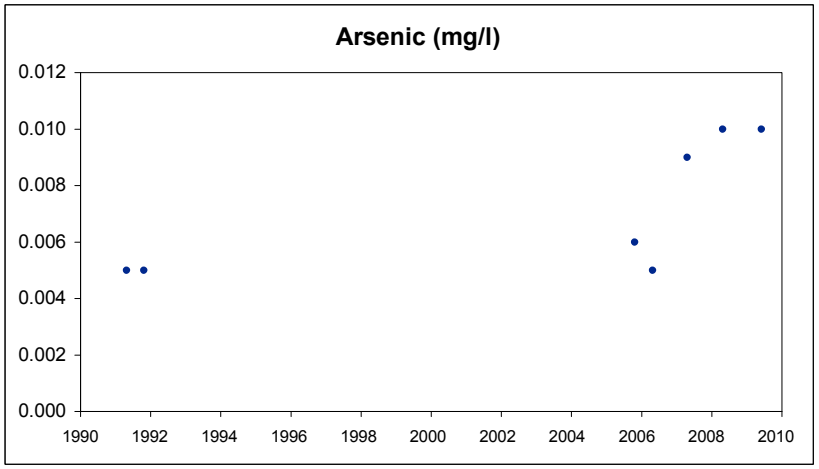

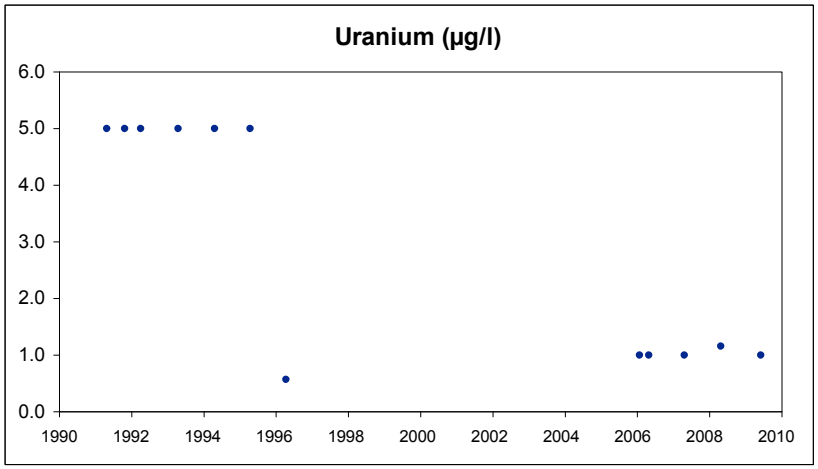

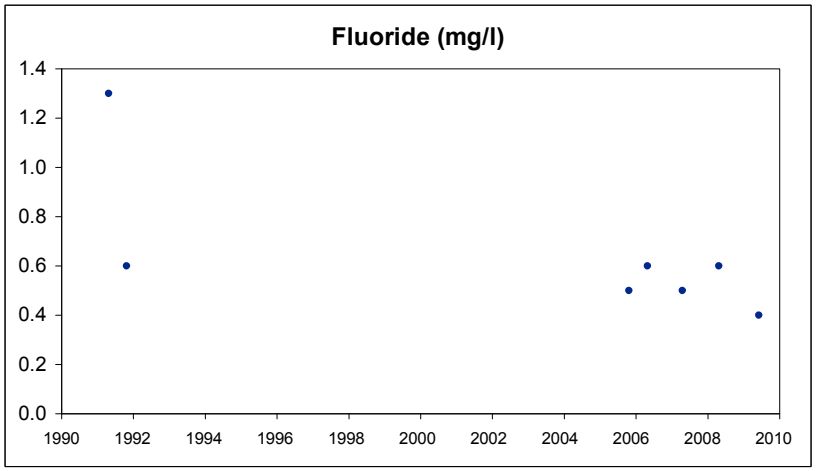

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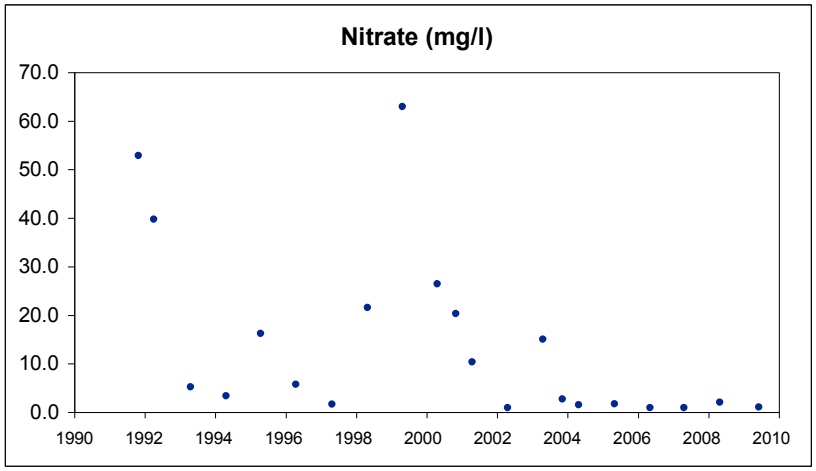

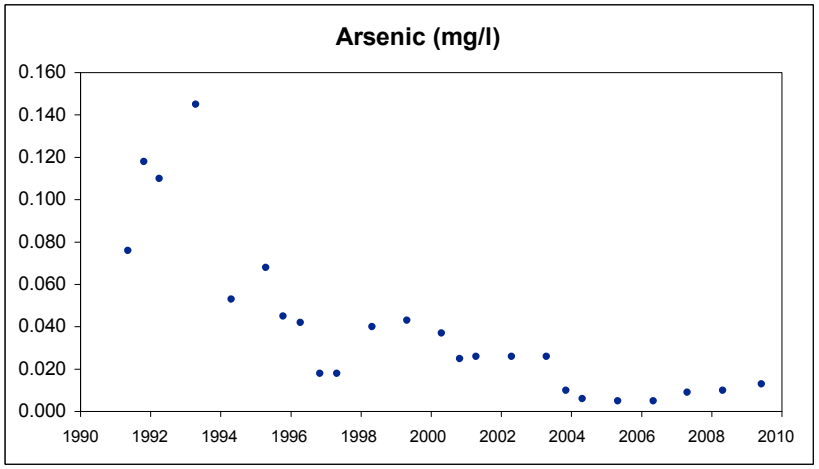

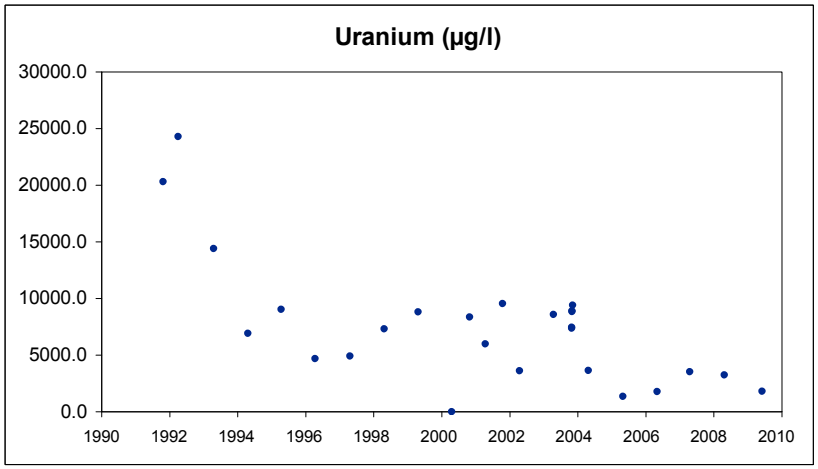

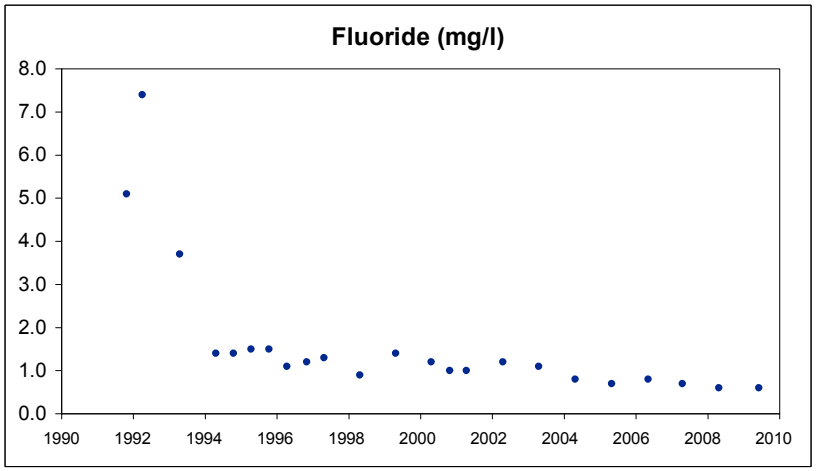

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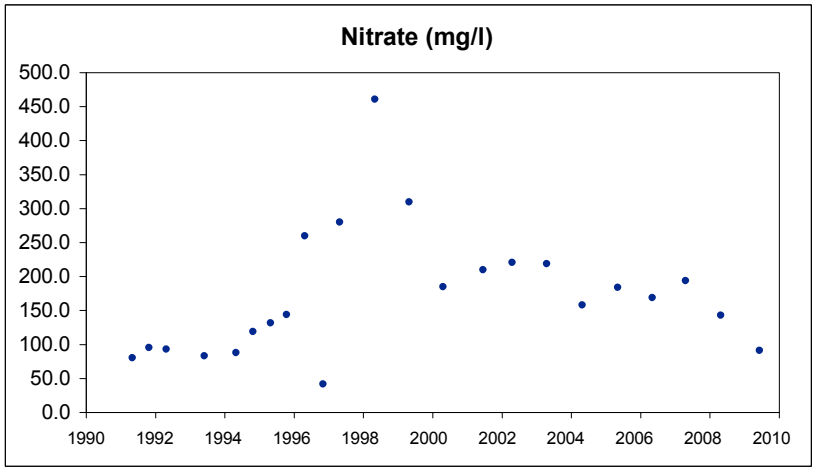

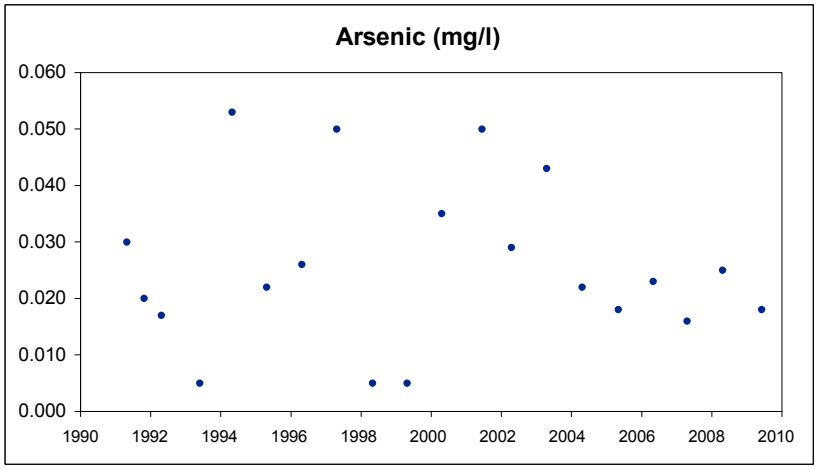

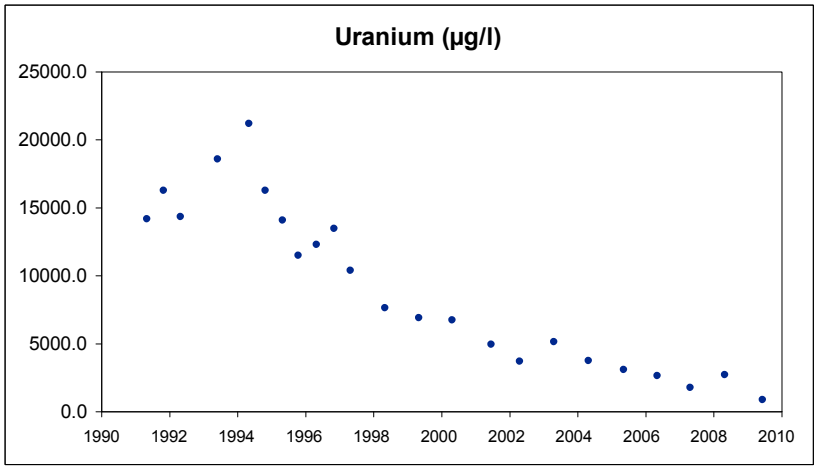

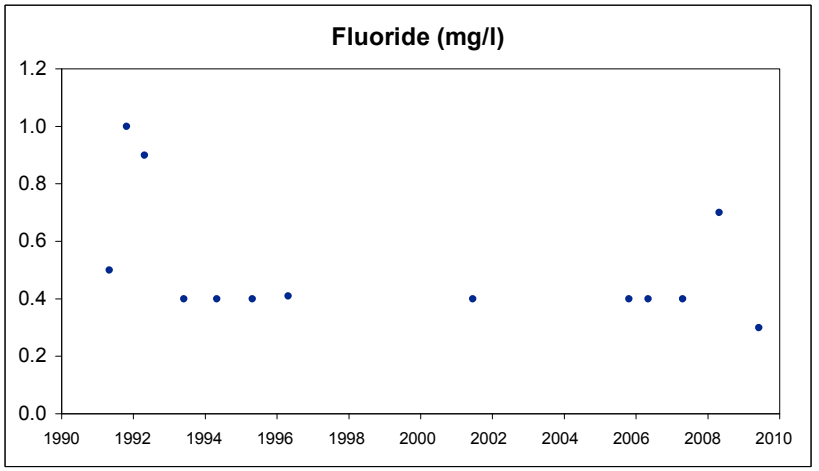

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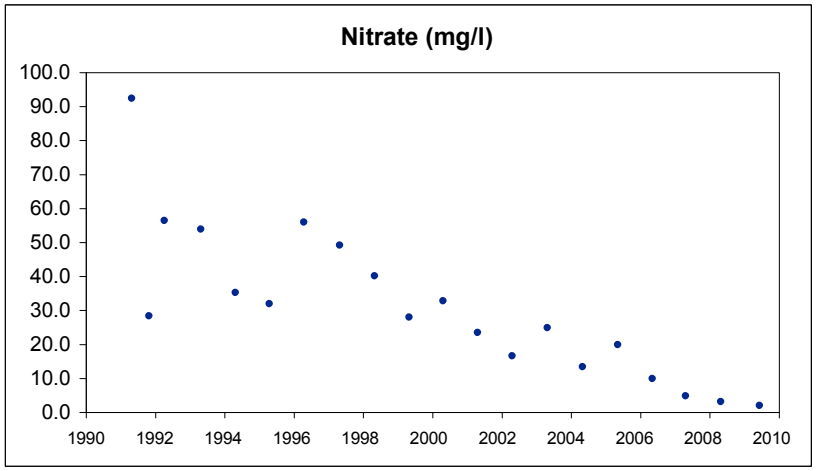

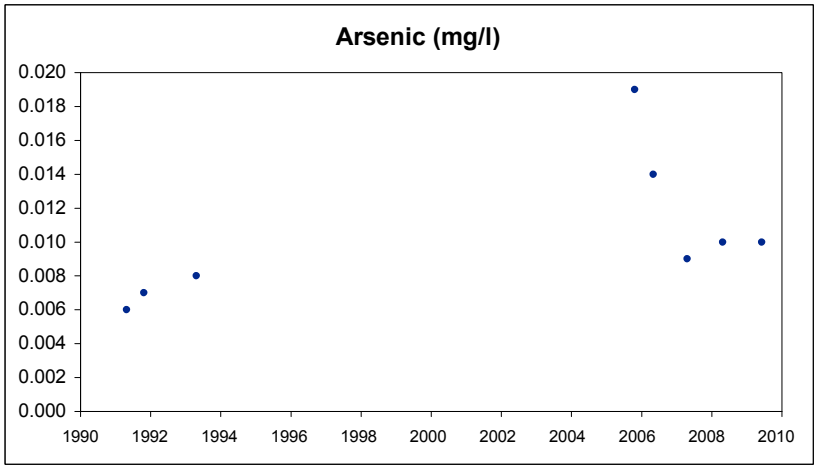

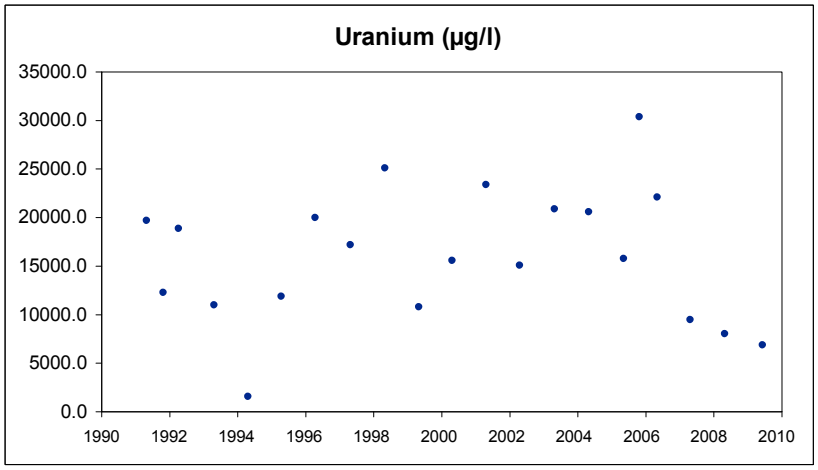

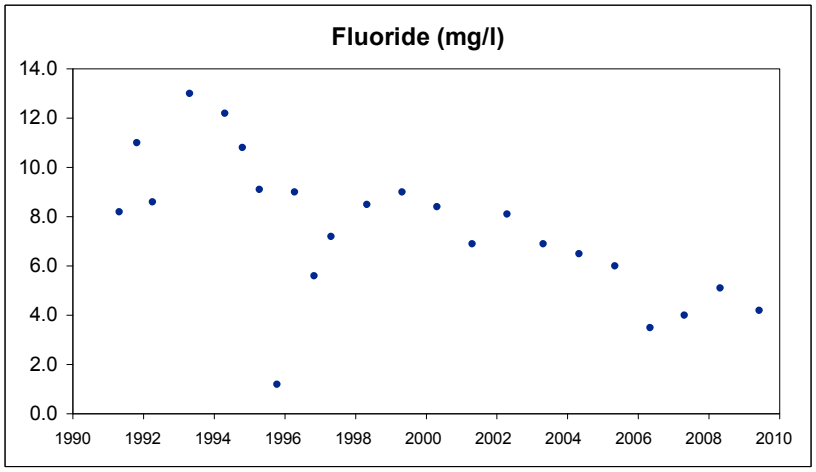

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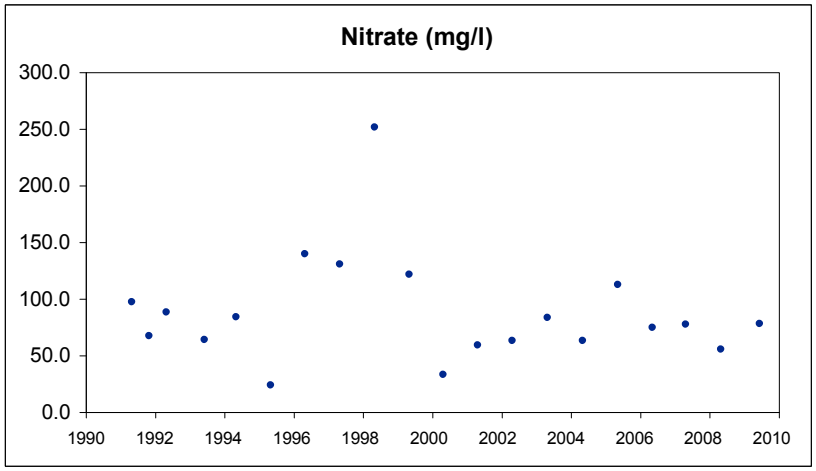

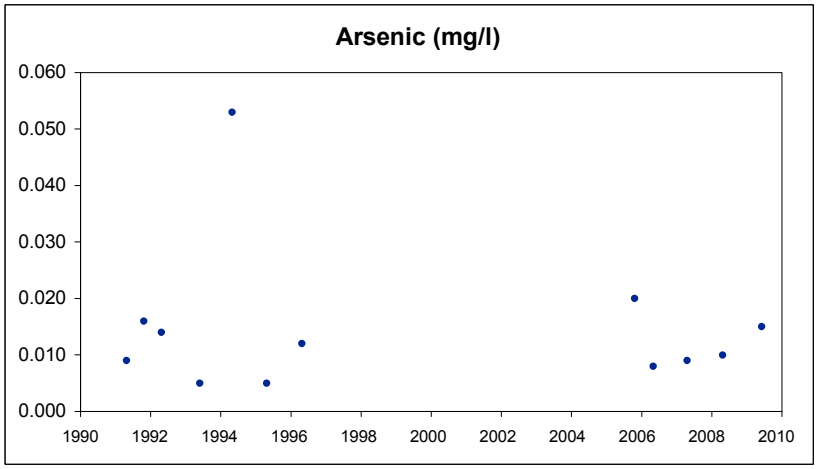

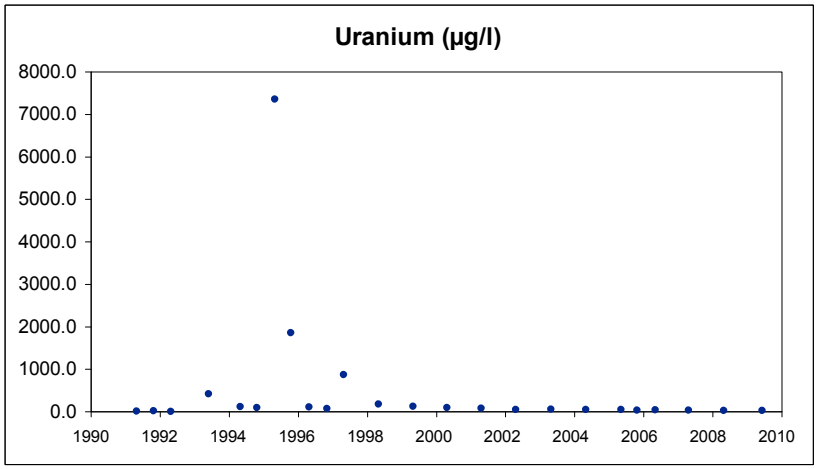

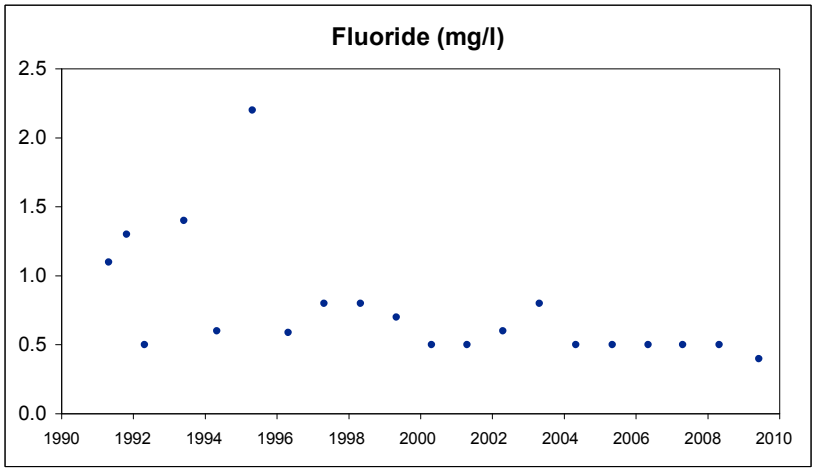

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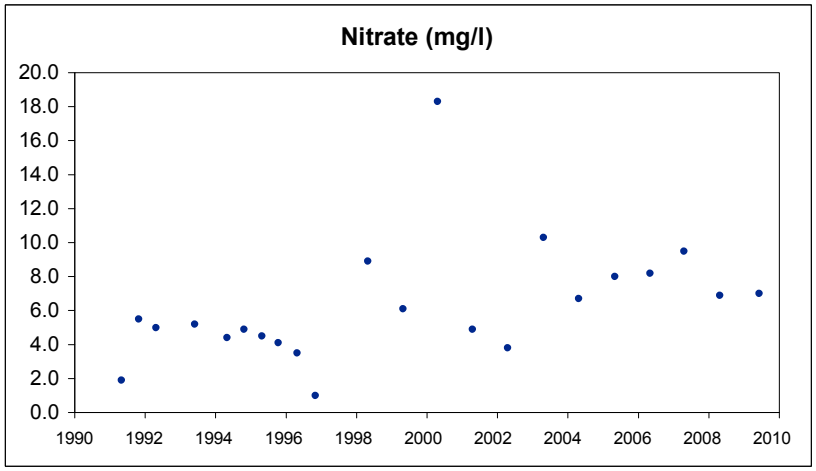

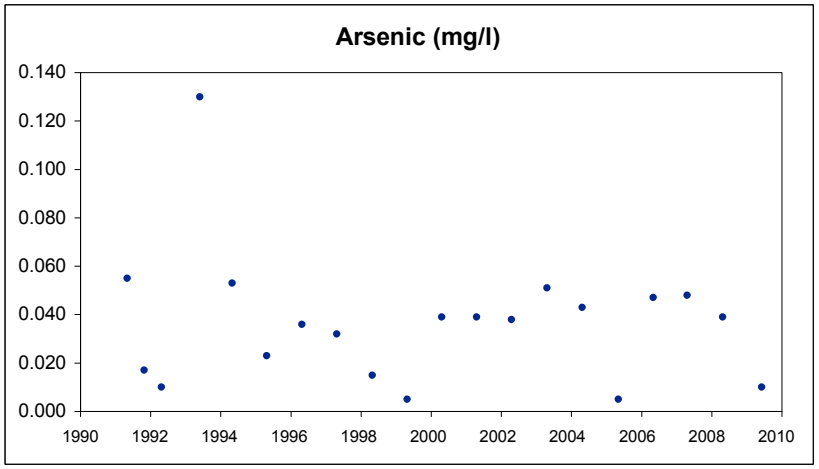

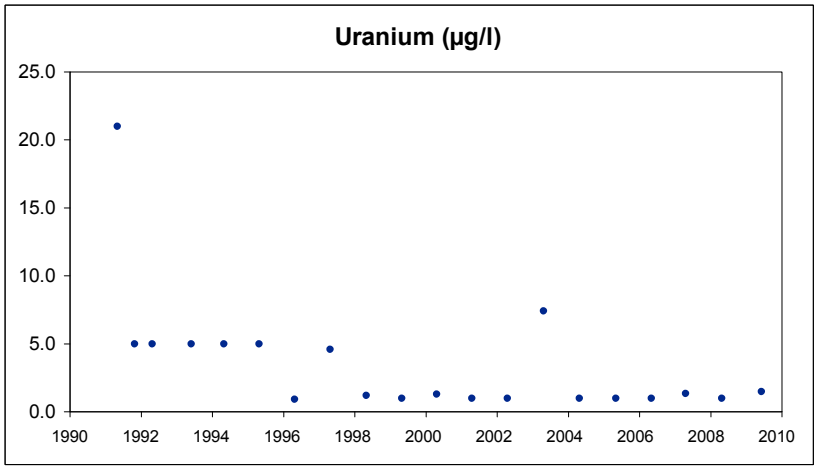

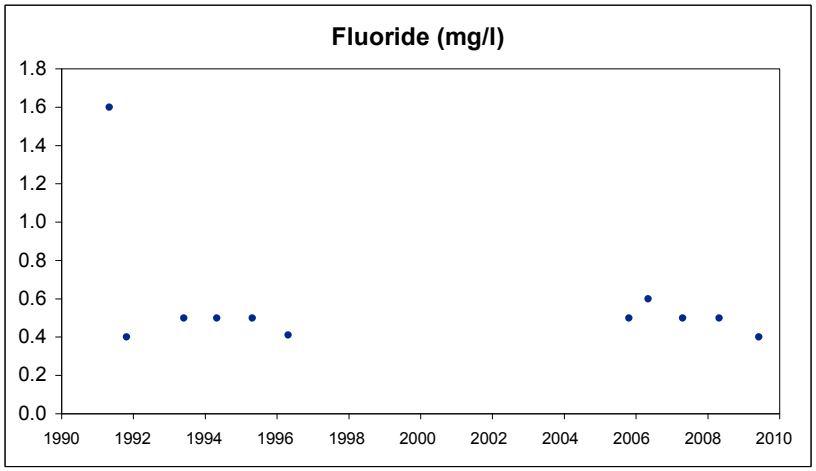

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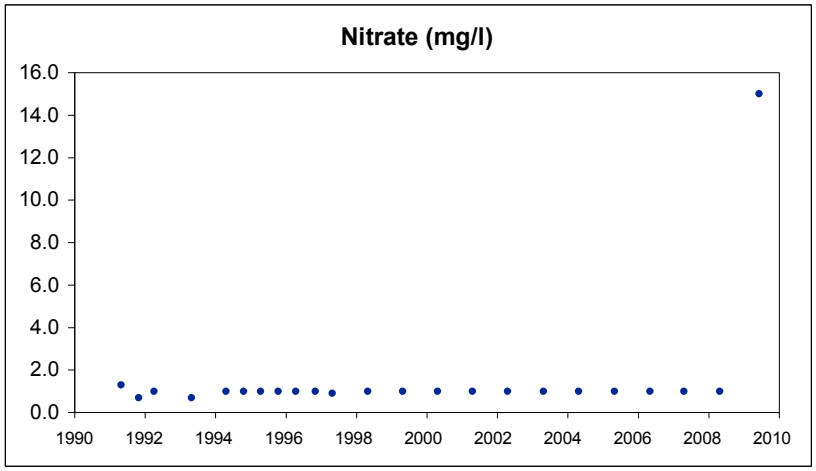

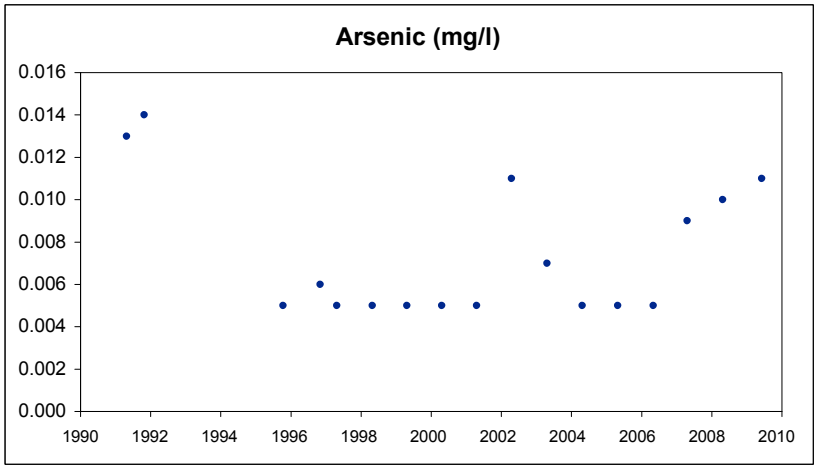

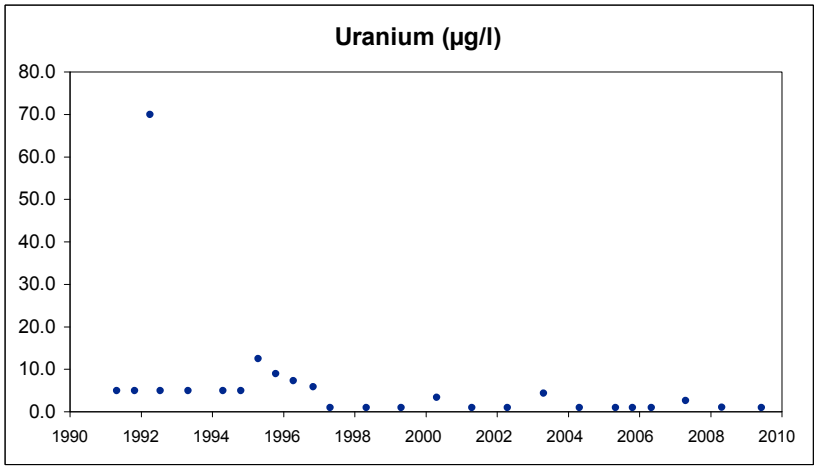

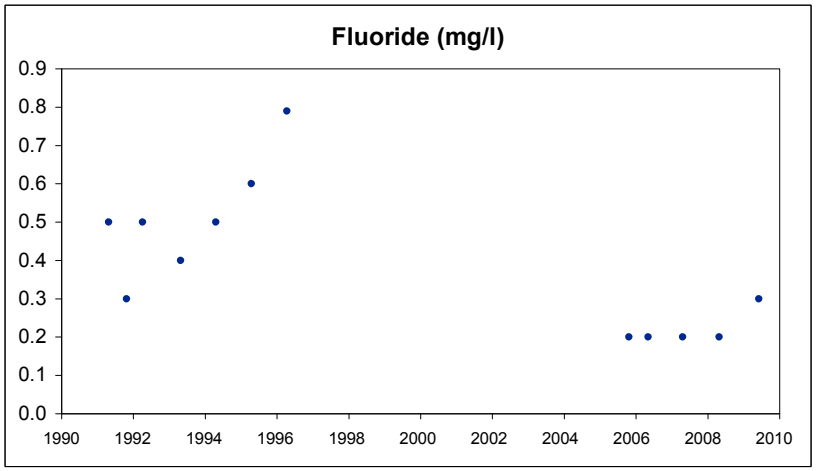

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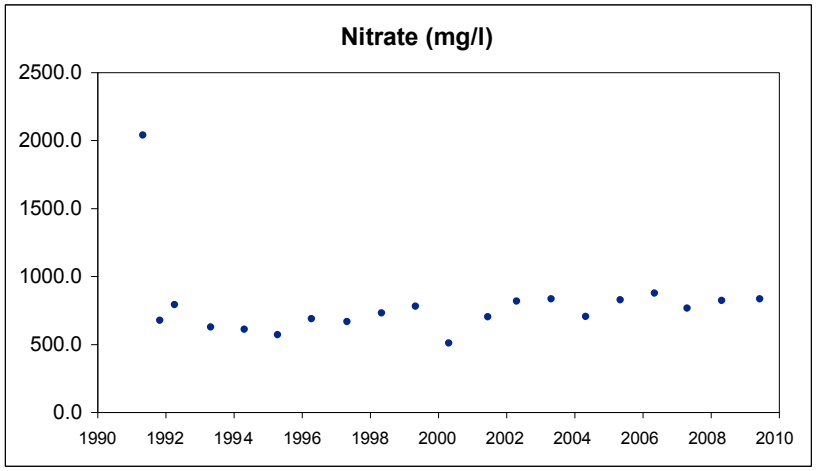

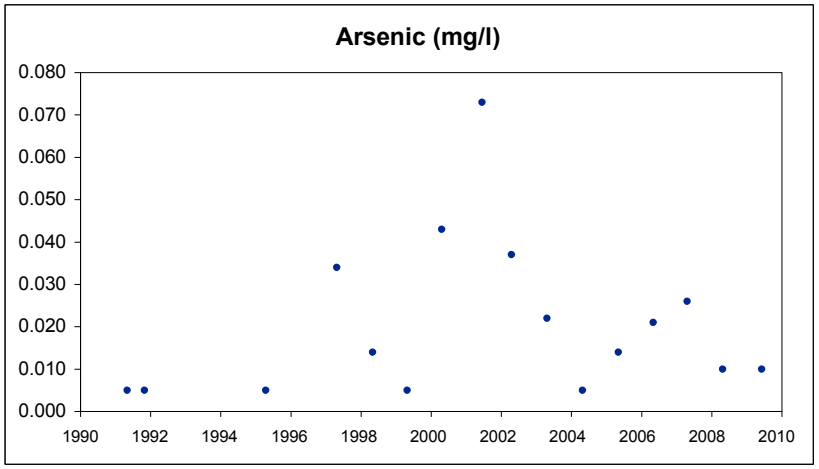

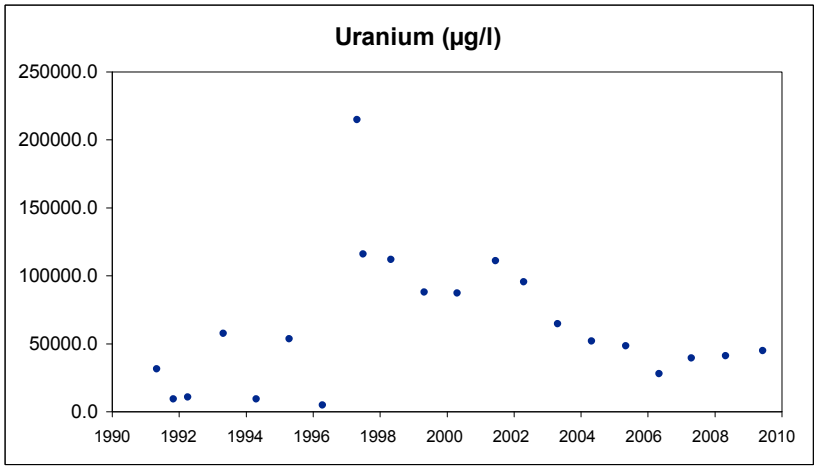

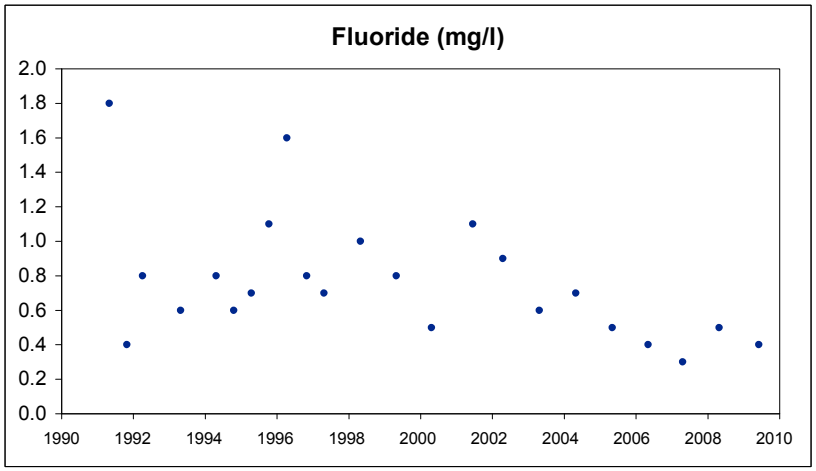

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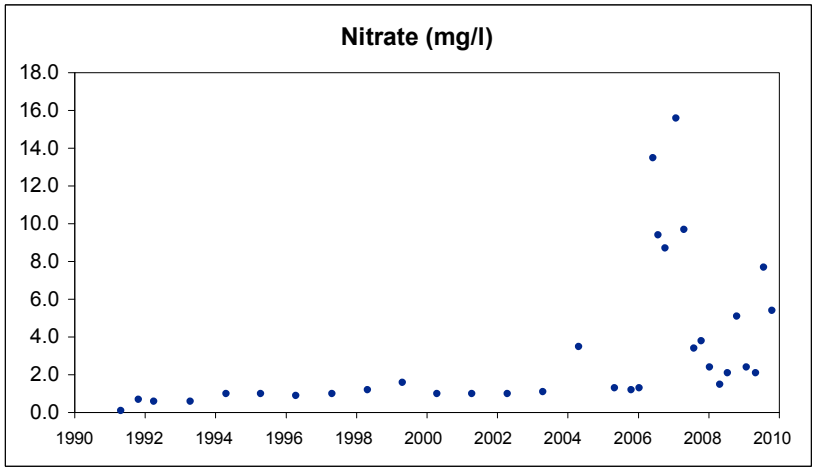

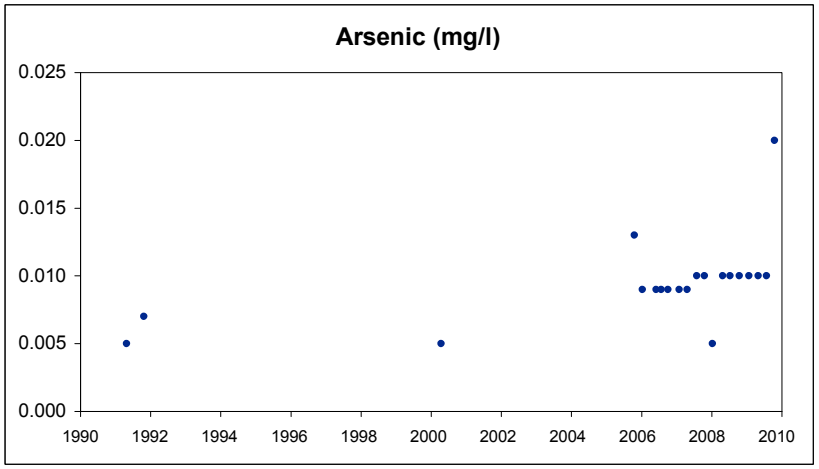

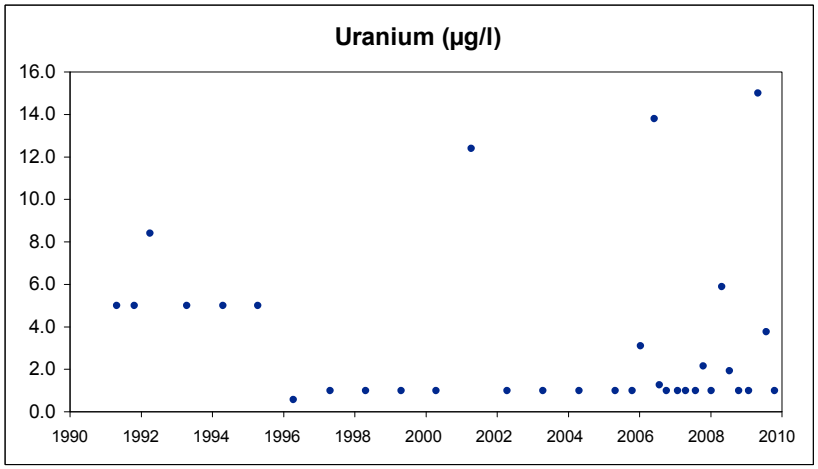

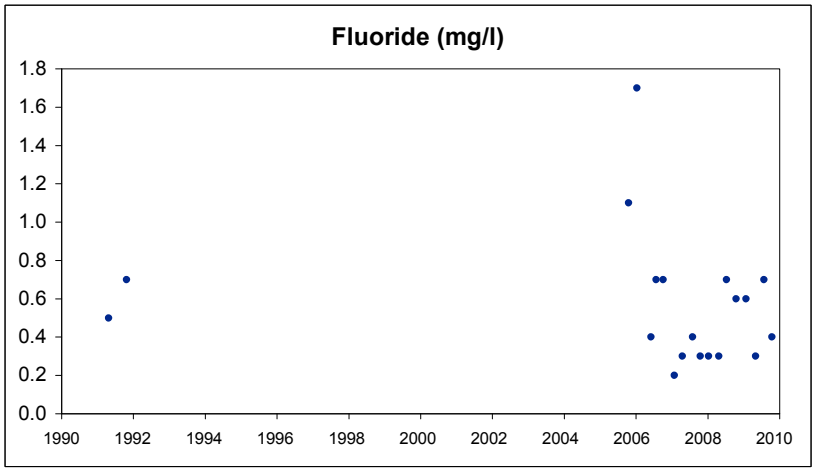

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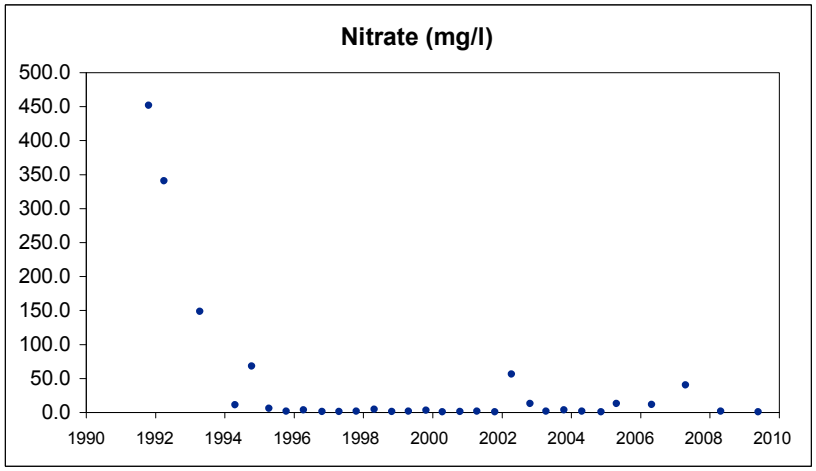

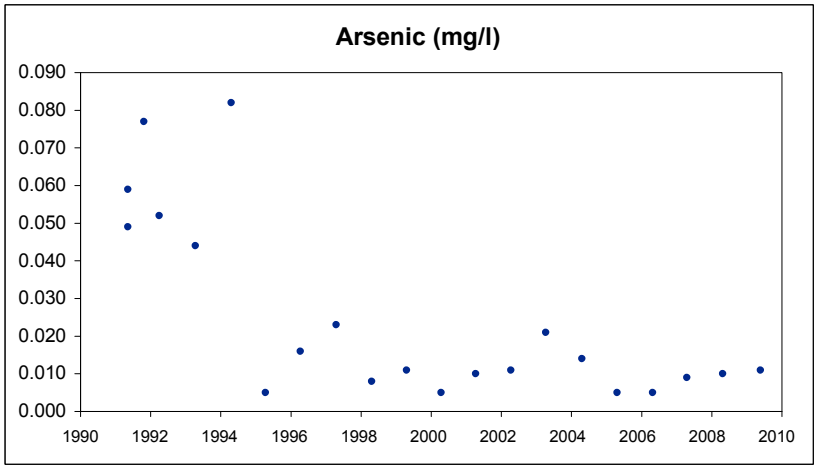

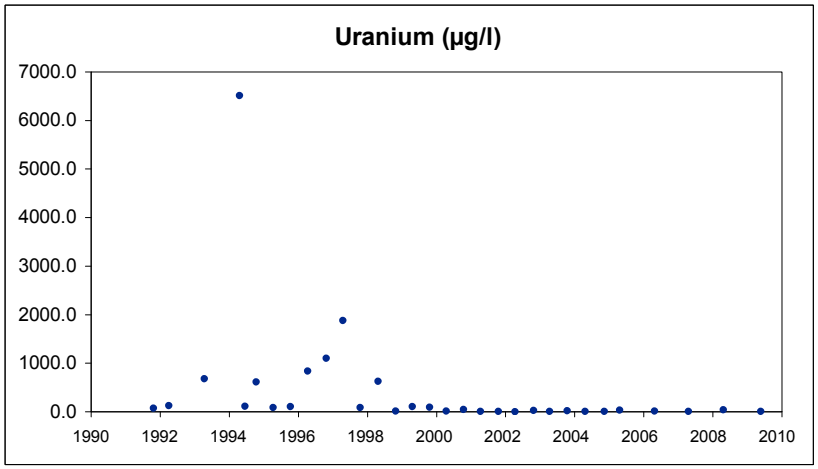

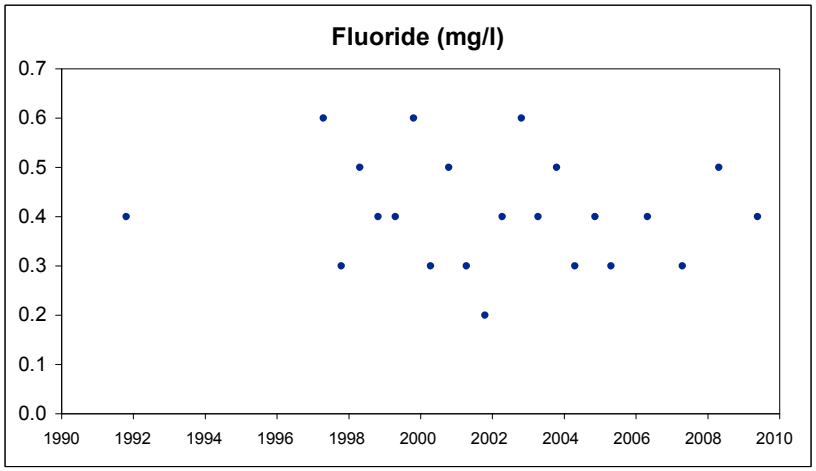

MW036

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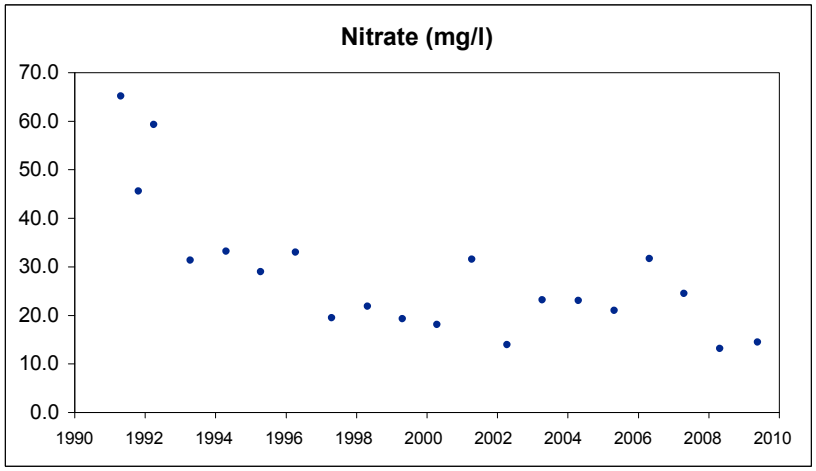

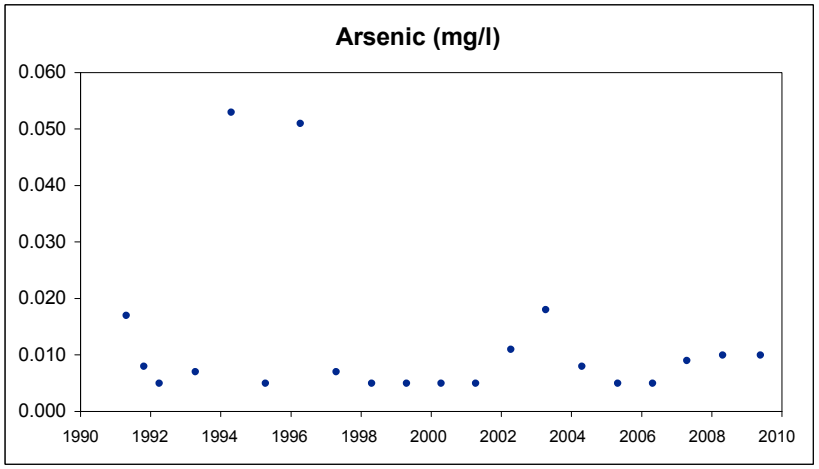

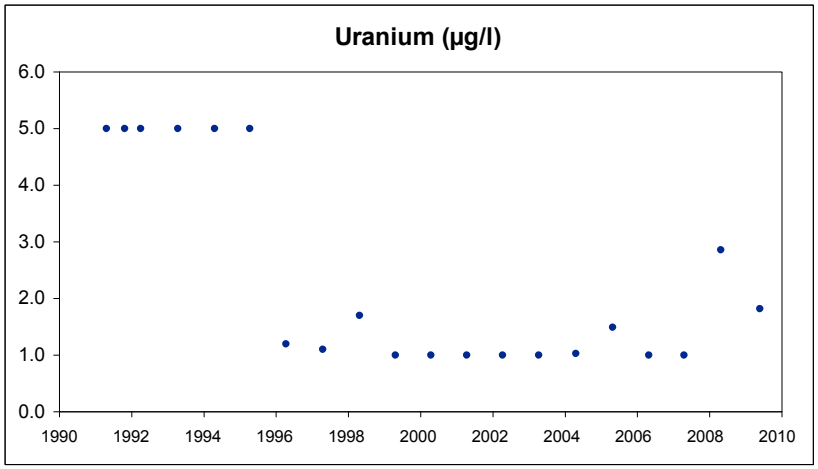

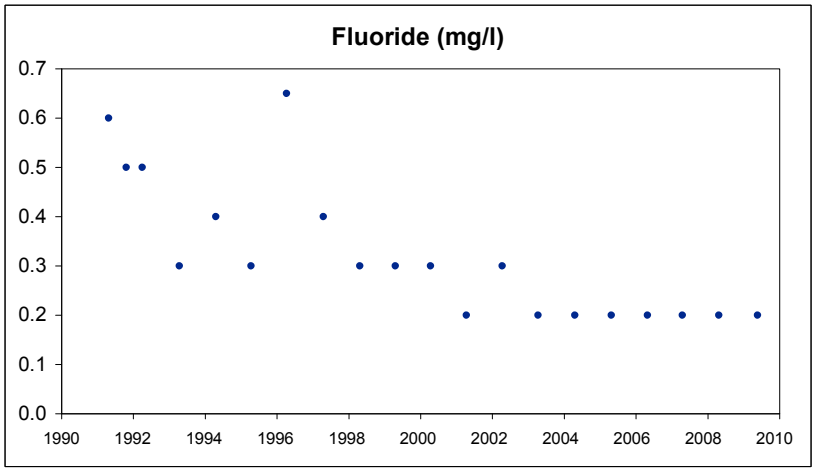

MW040

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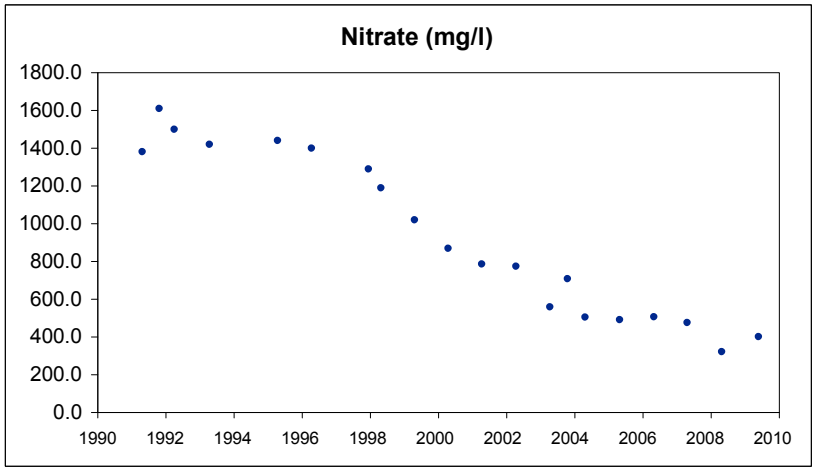

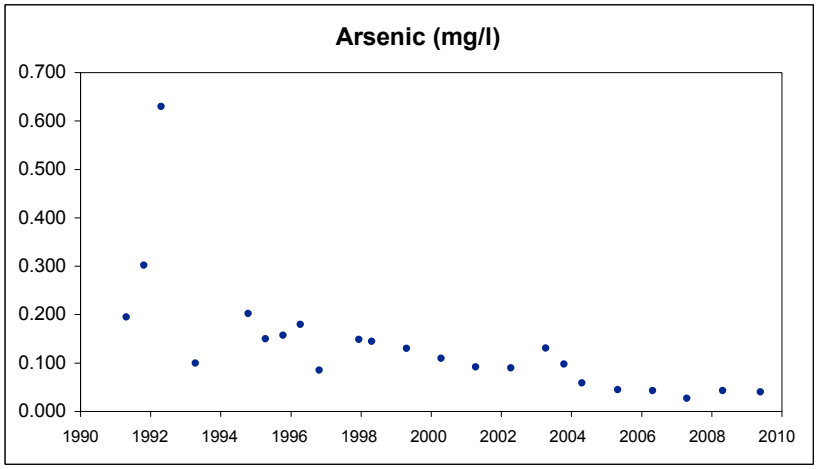

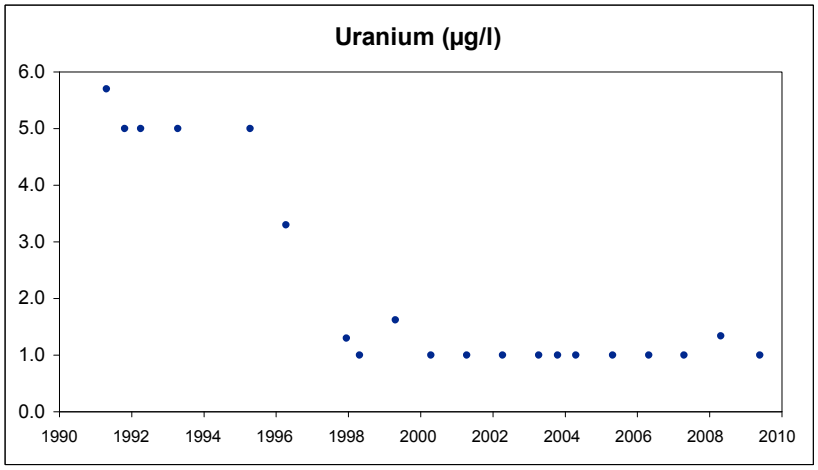

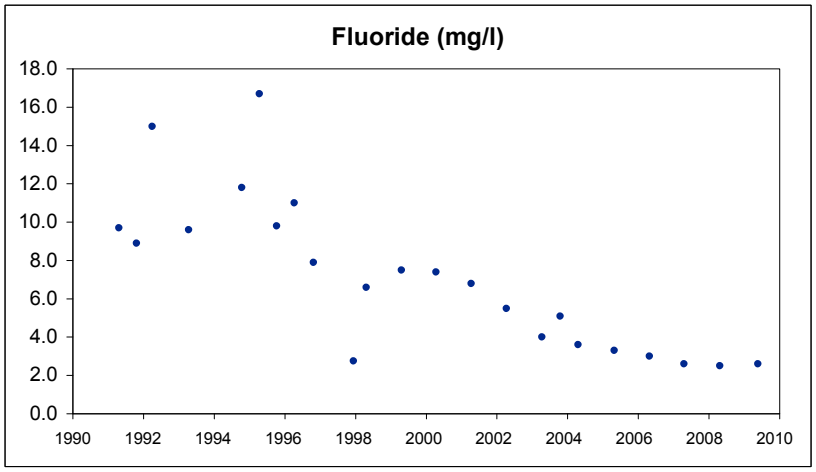

MW042

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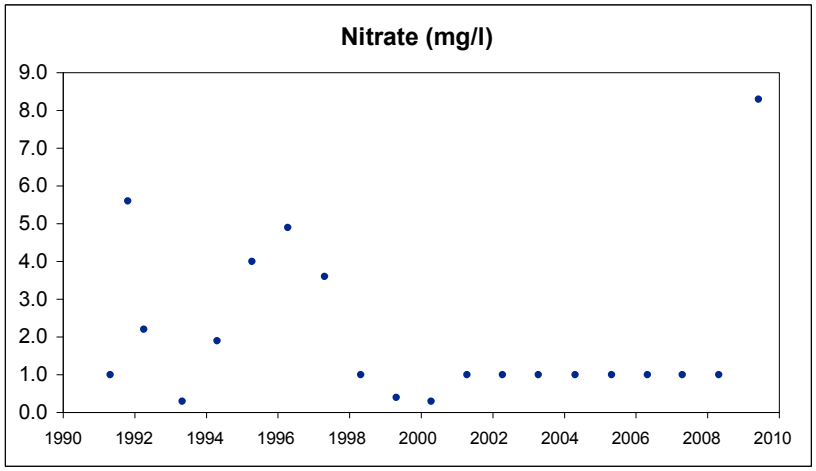

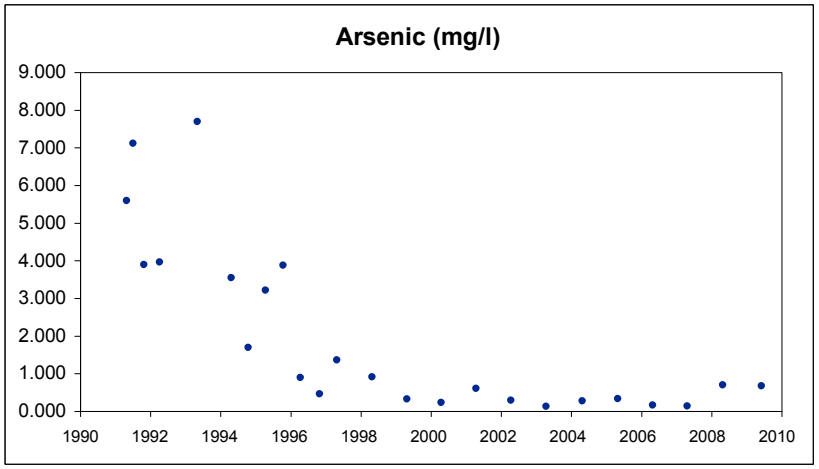

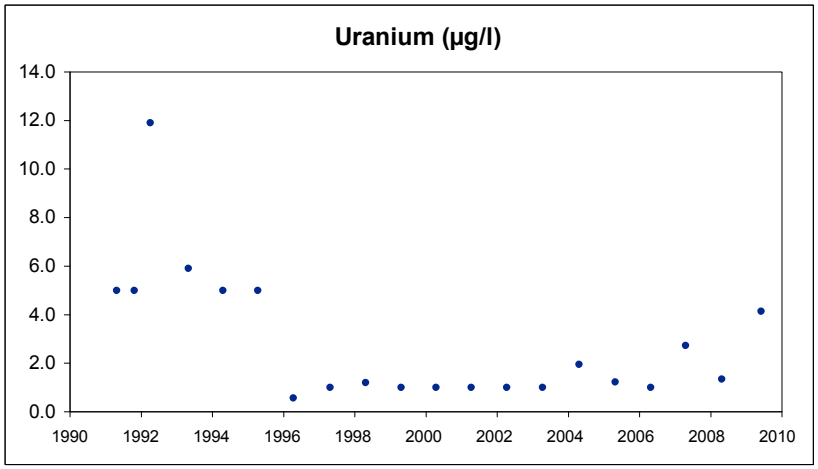

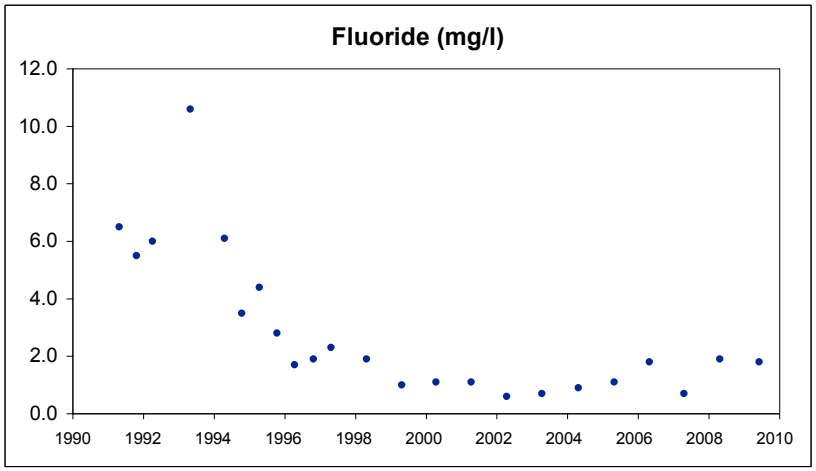

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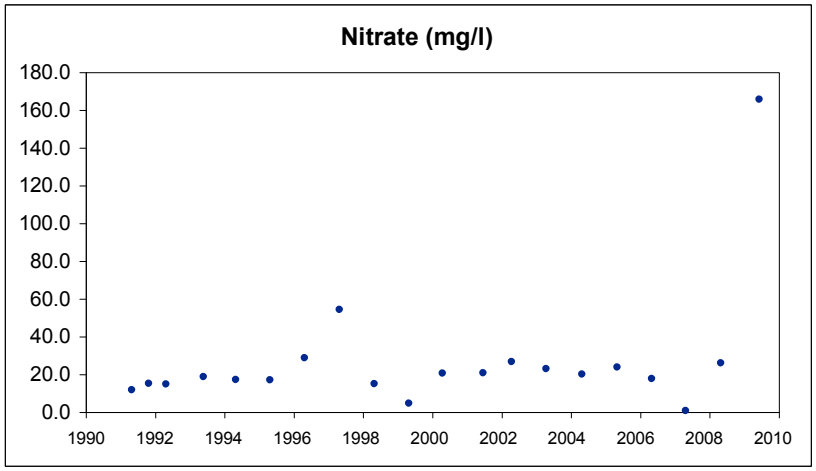

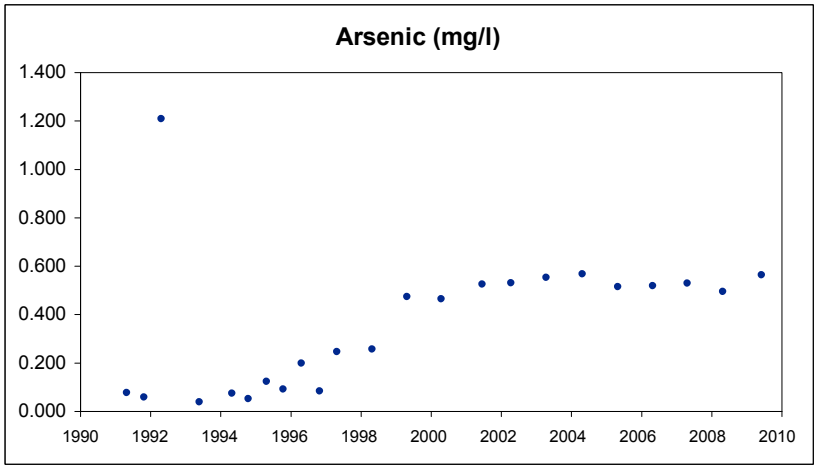

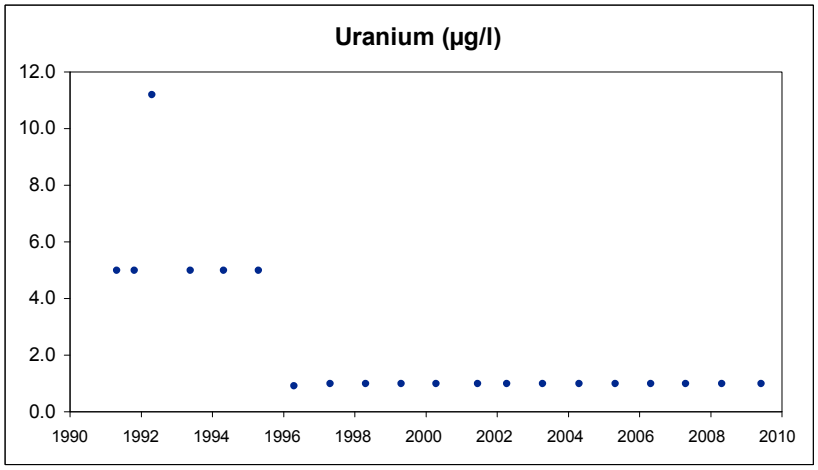

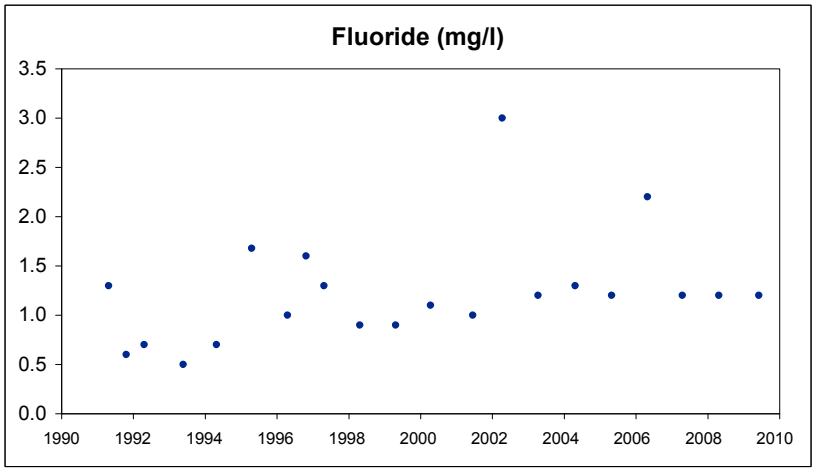

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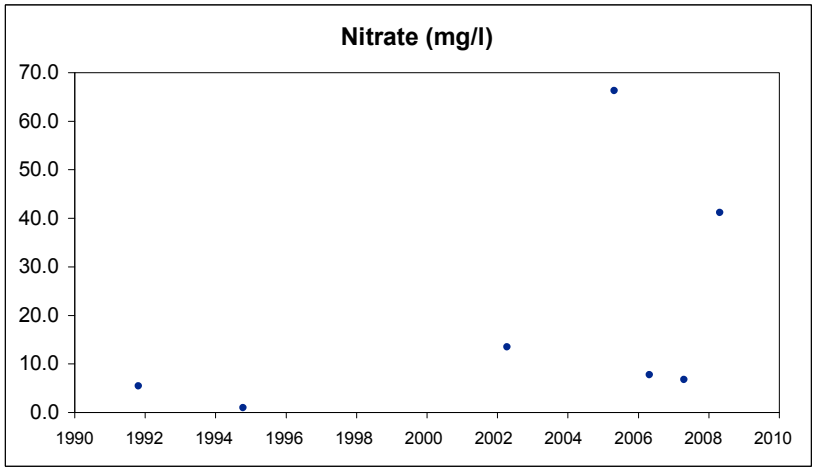

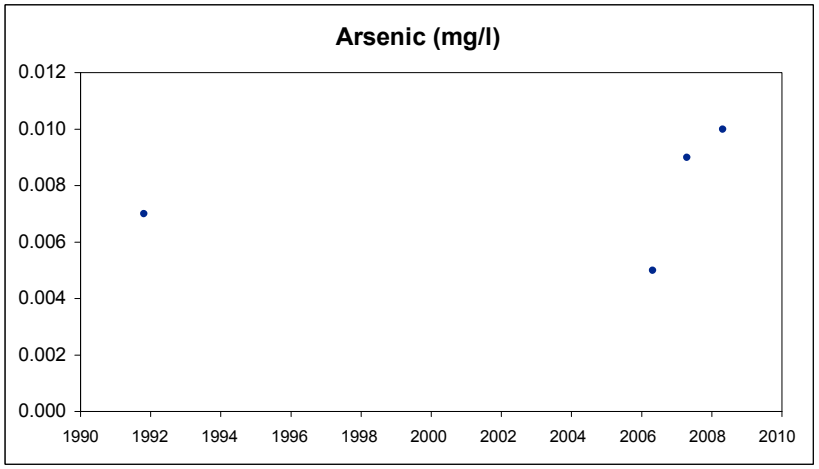

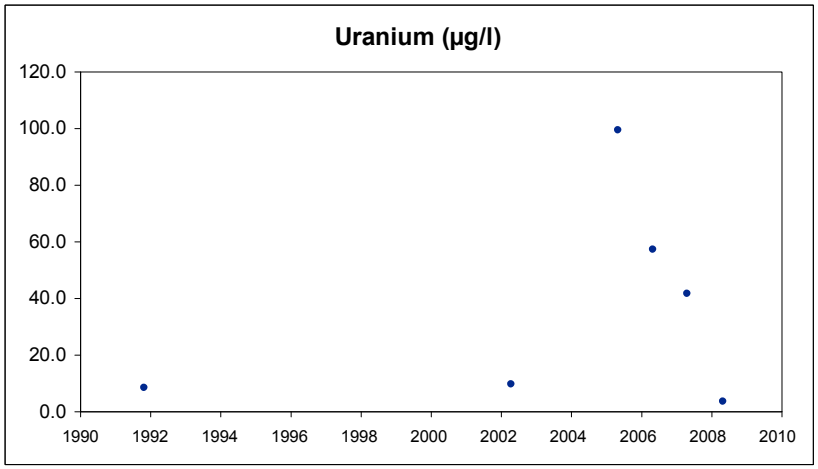

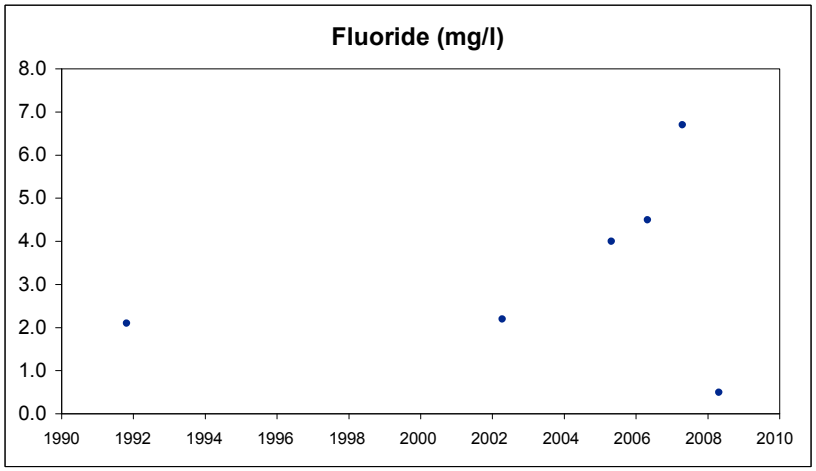

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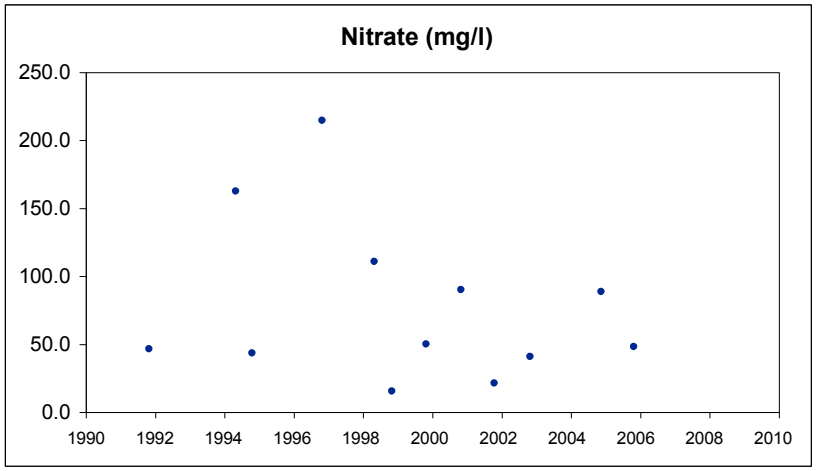

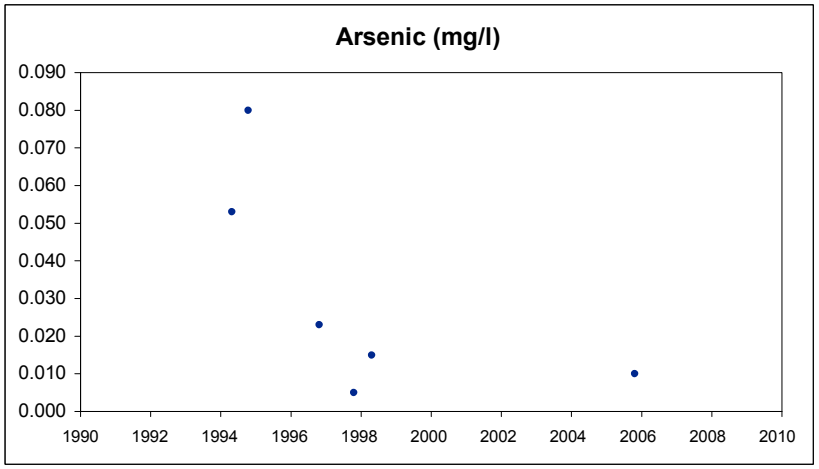

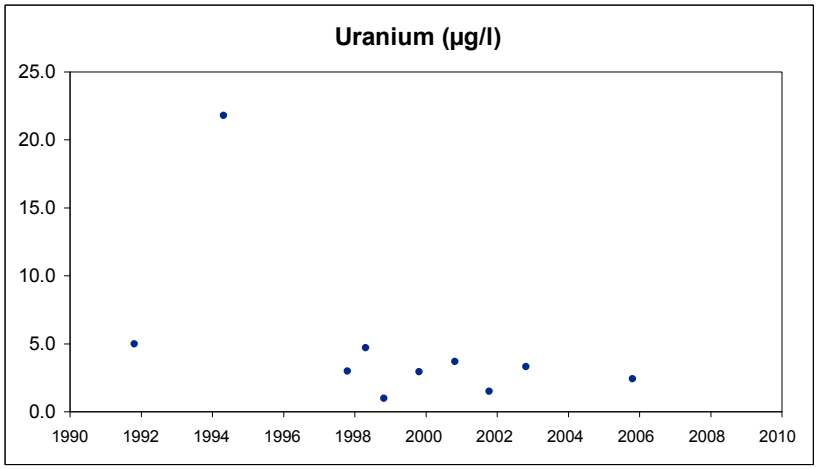

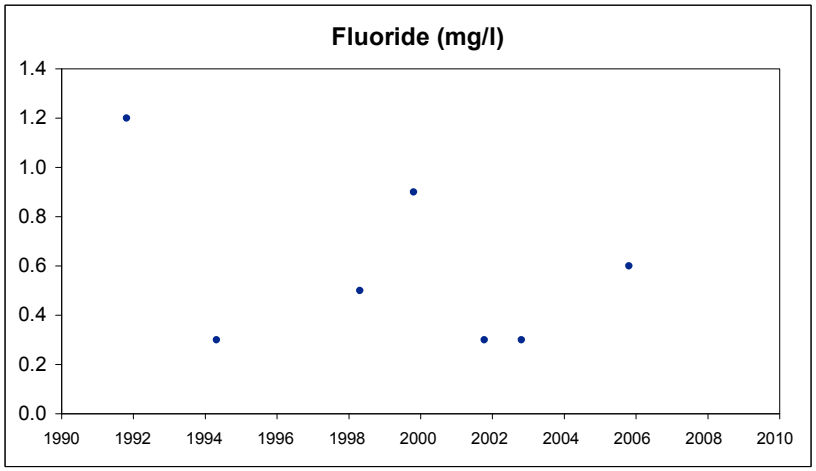

MW048

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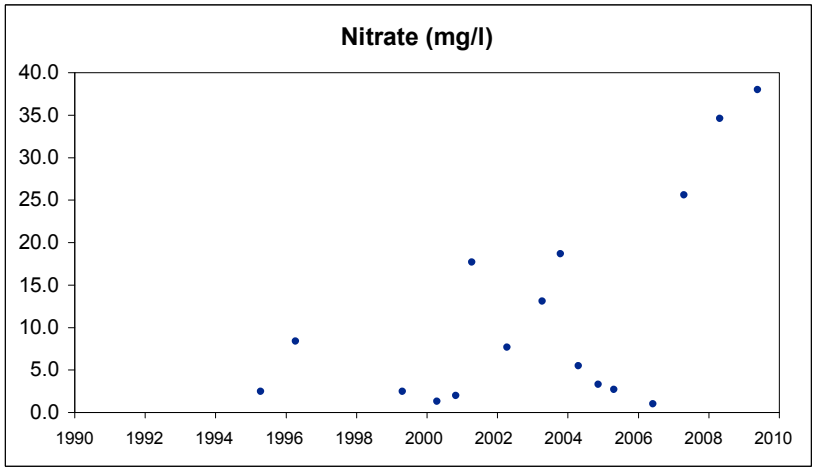

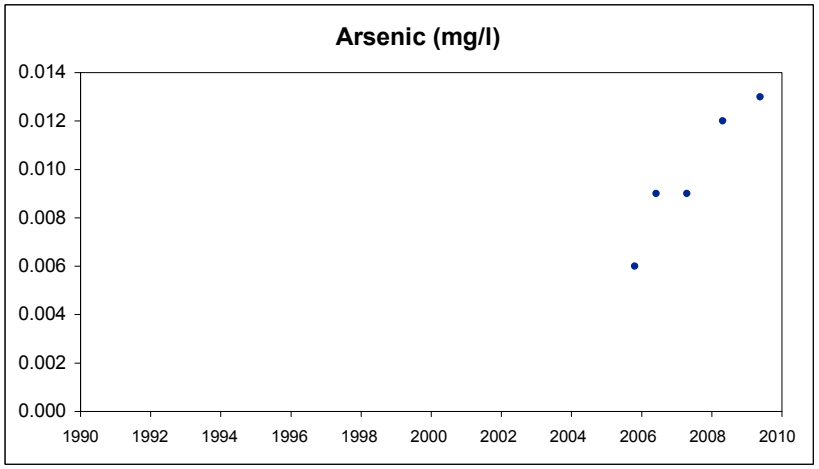

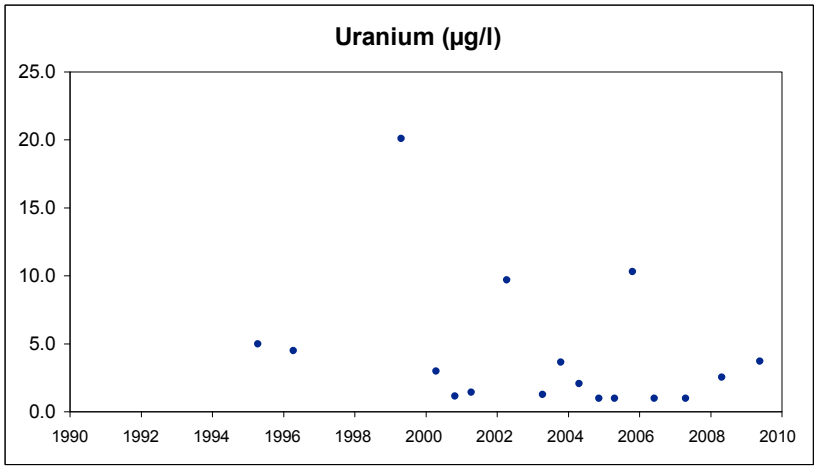

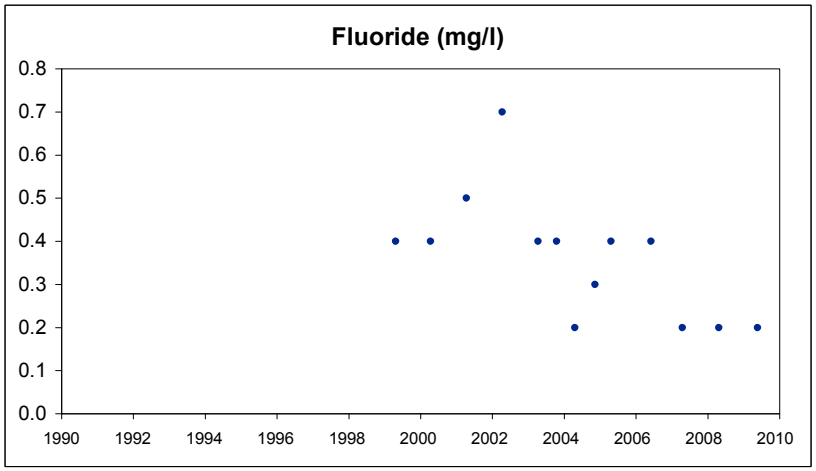

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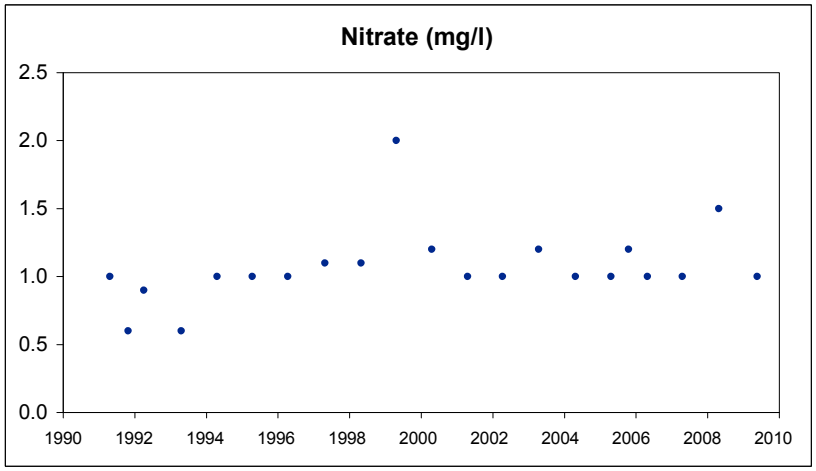

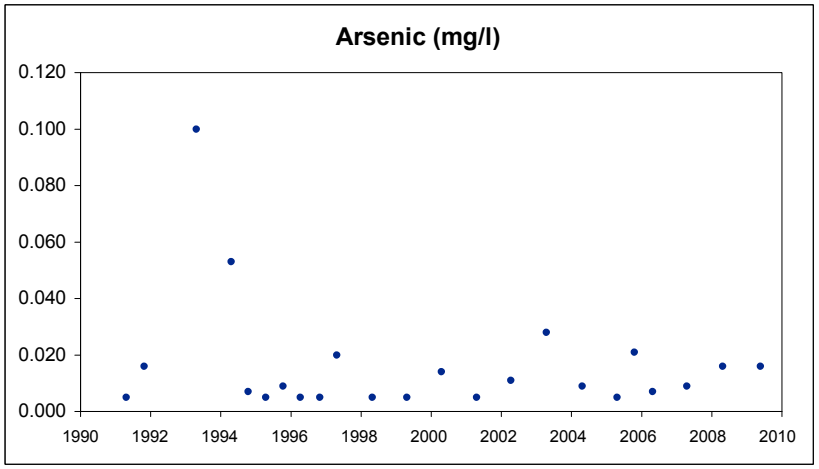

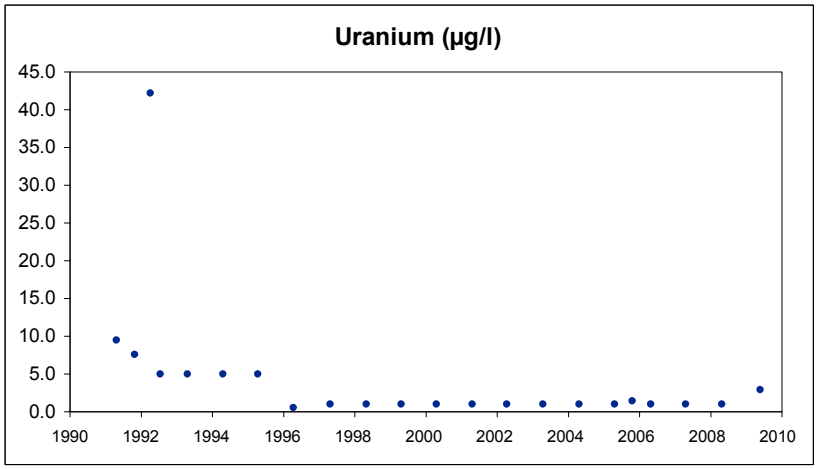

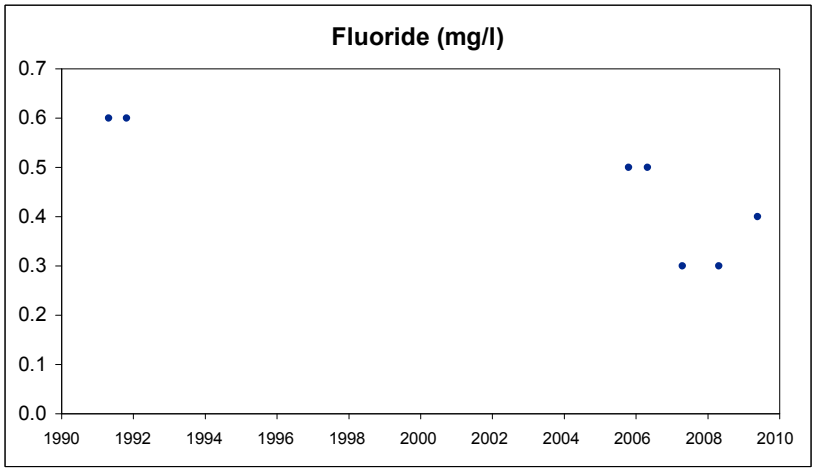

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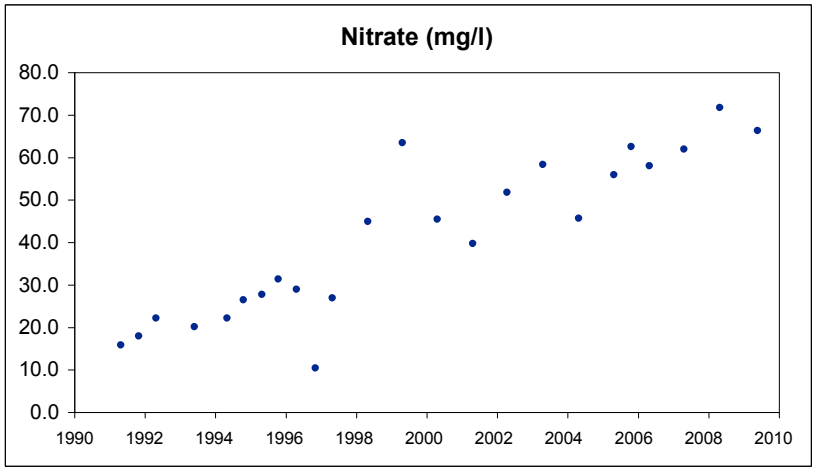

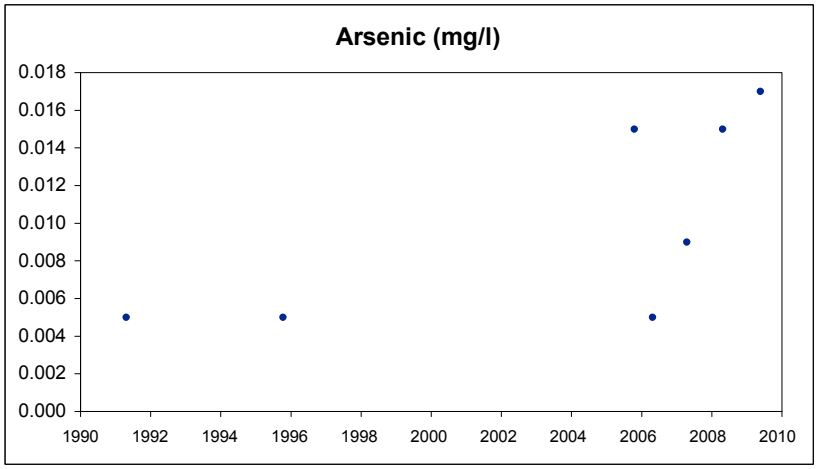

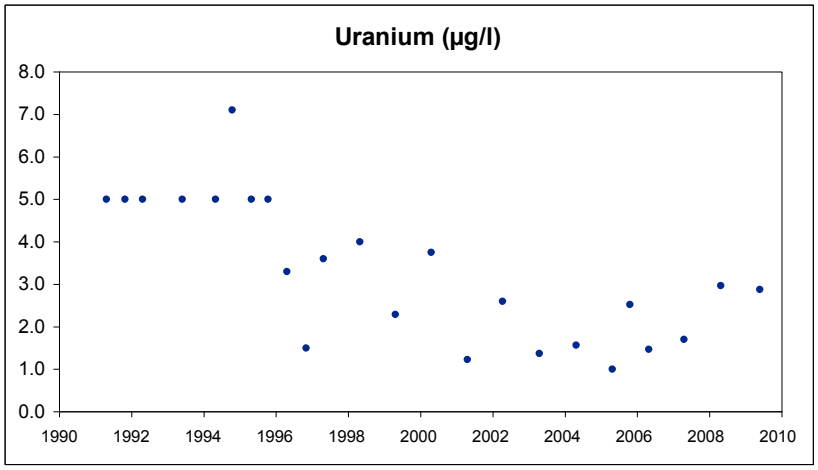

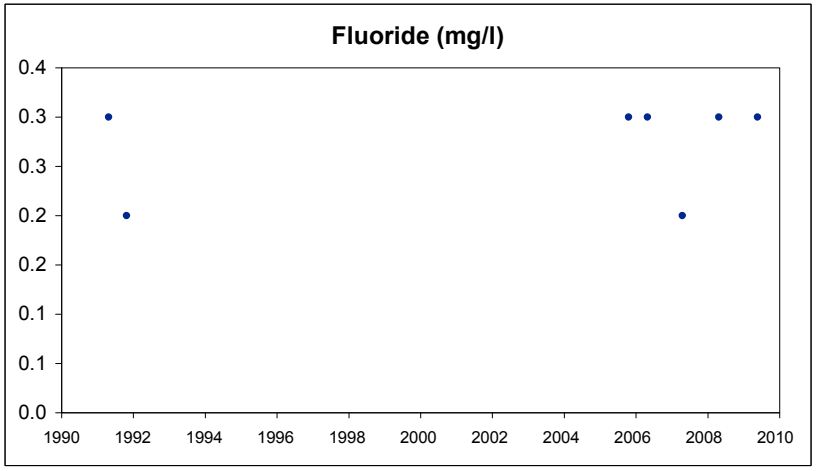

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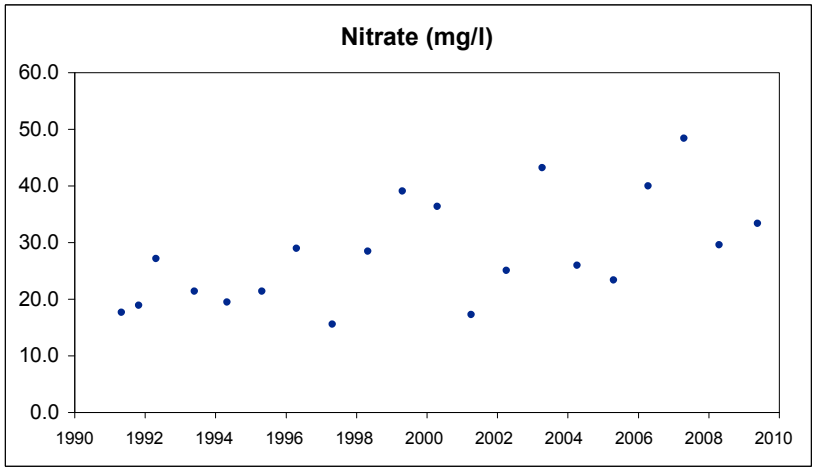

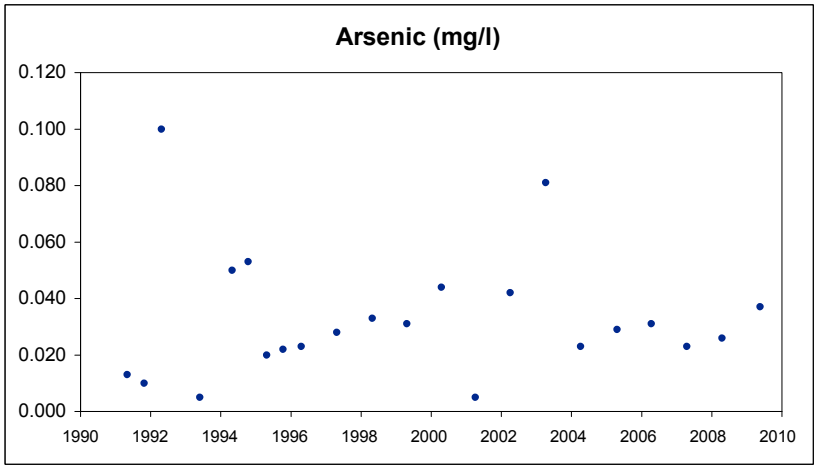

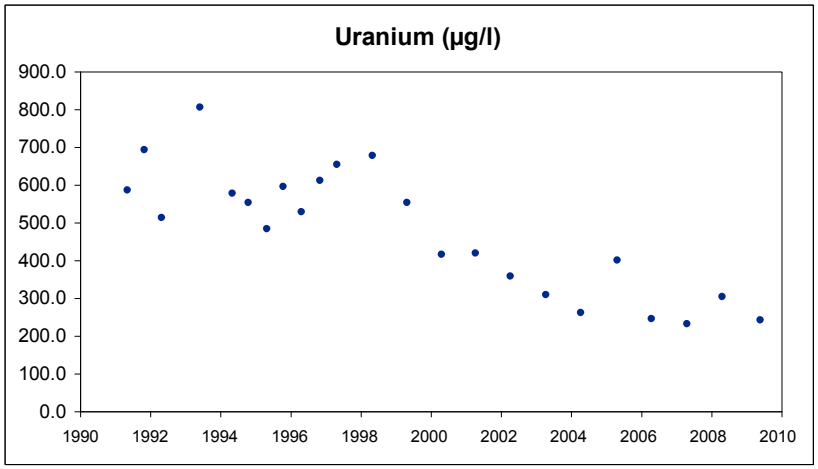

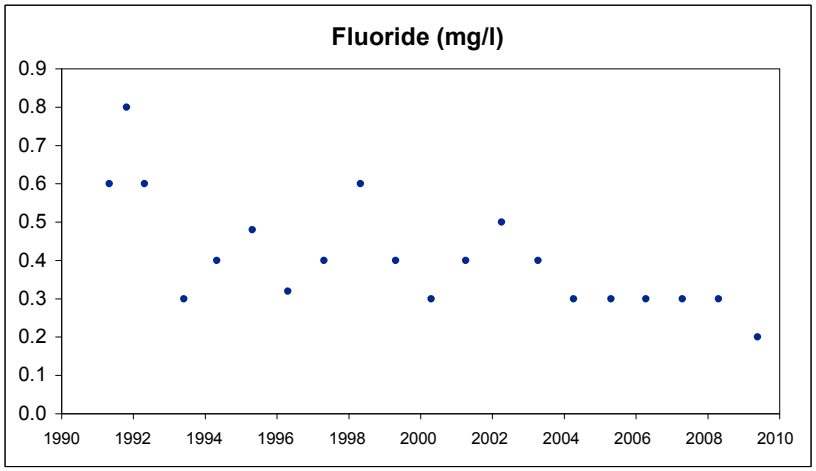

MW052A

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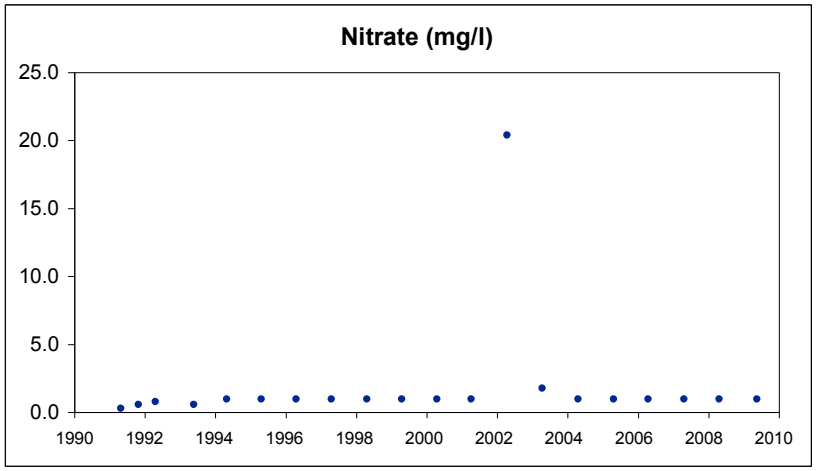

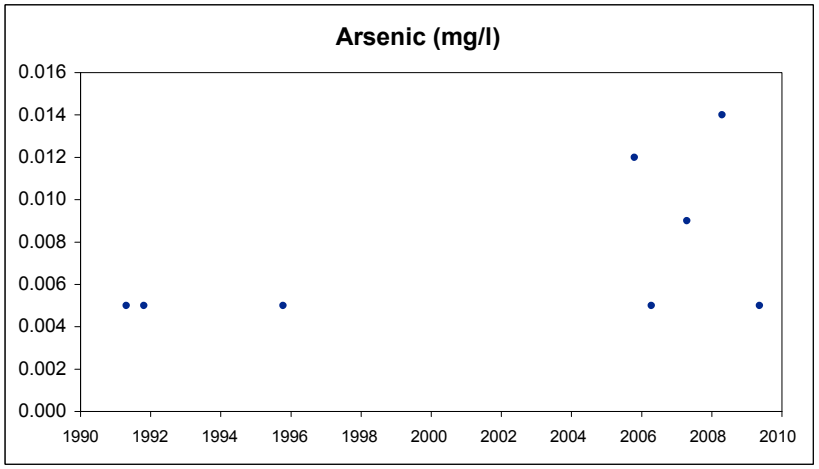

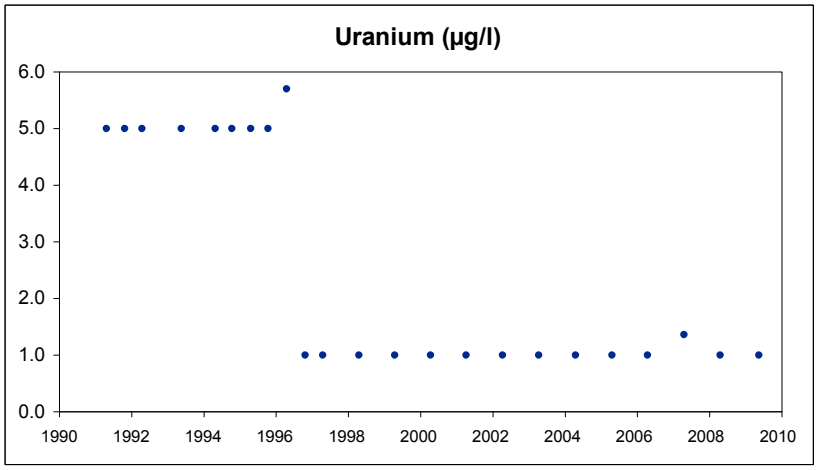

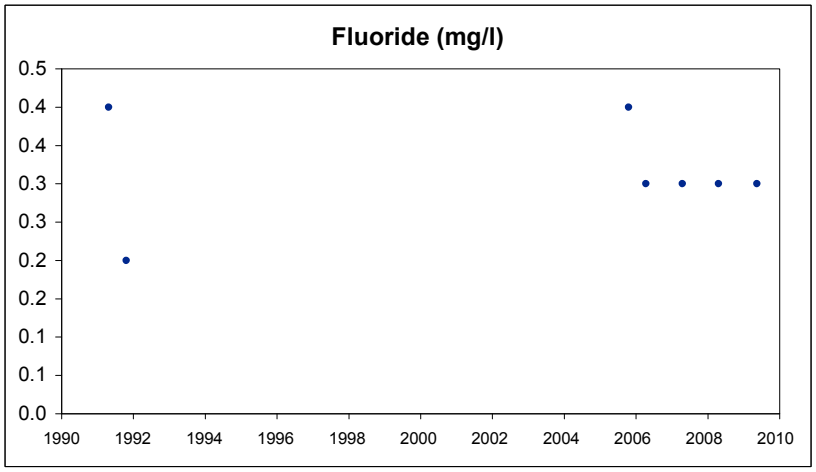

MW053

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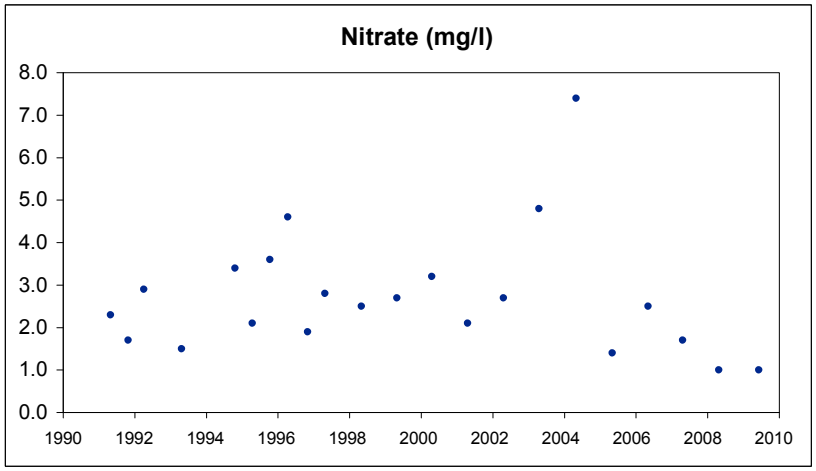

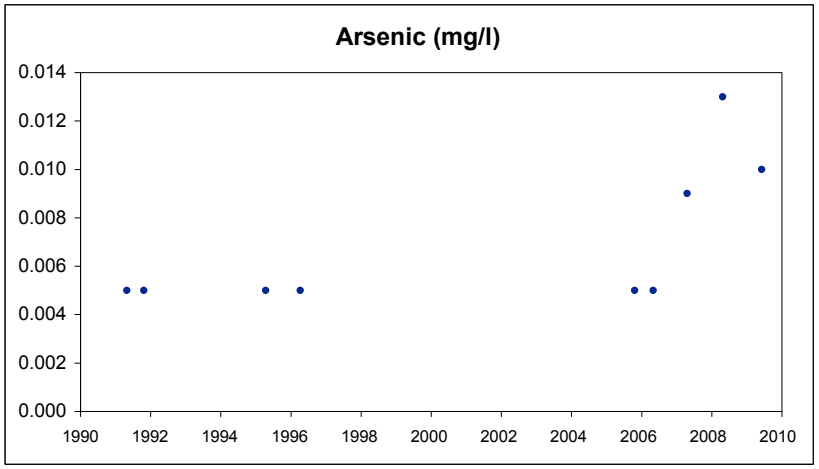

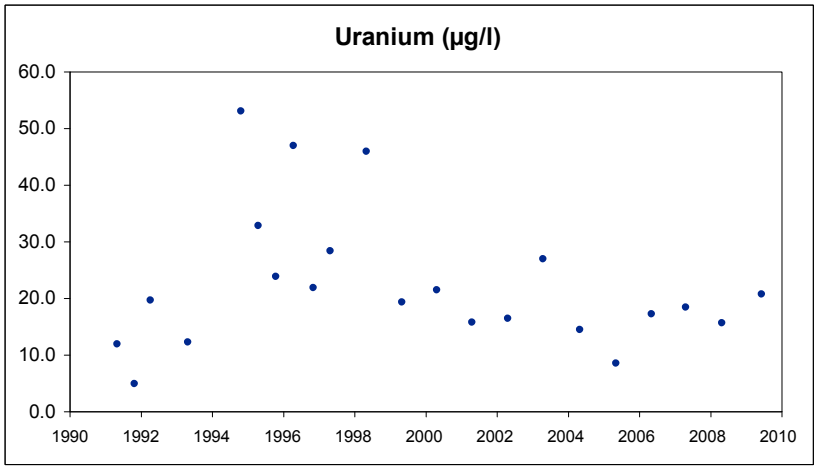

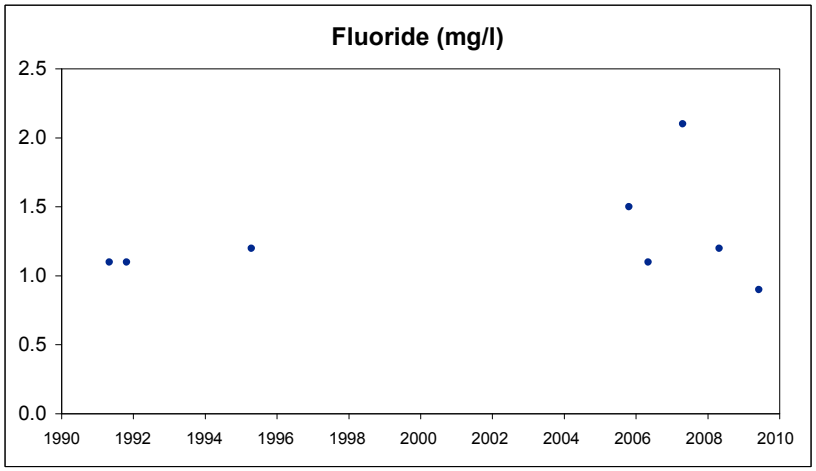

MW054

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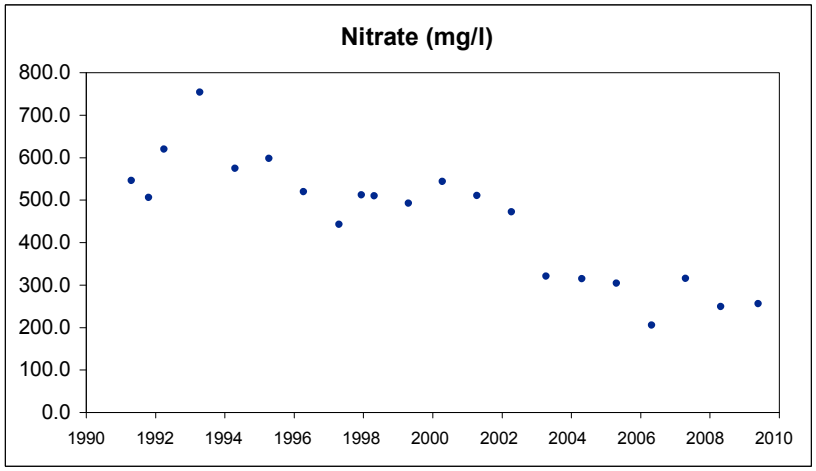

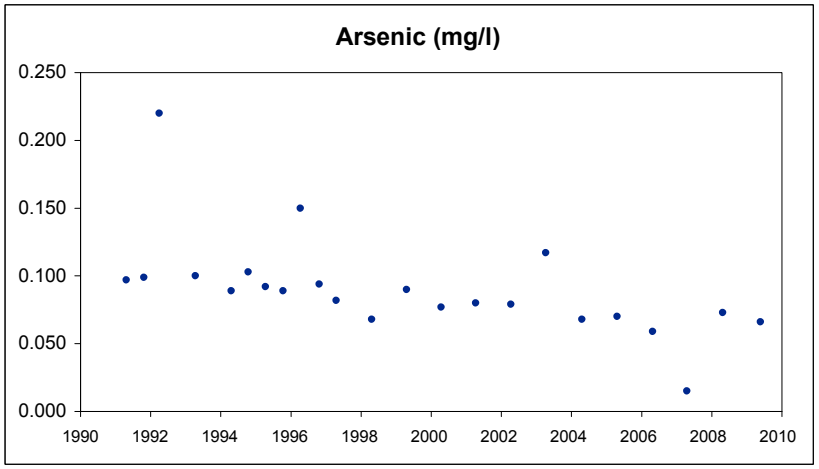

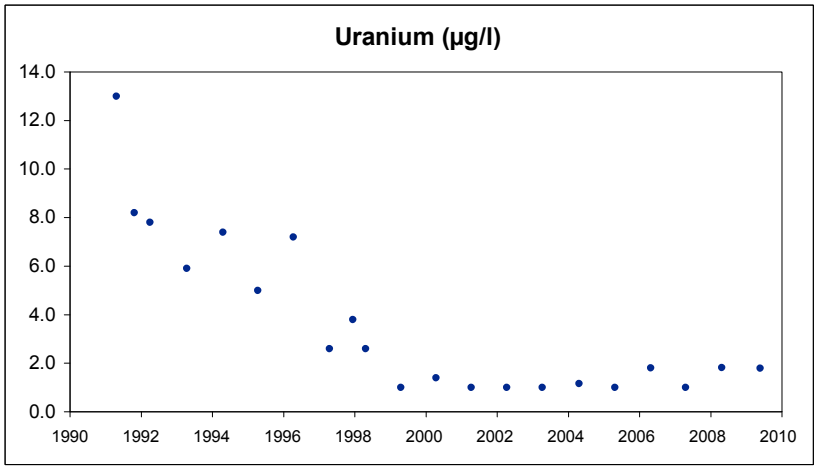

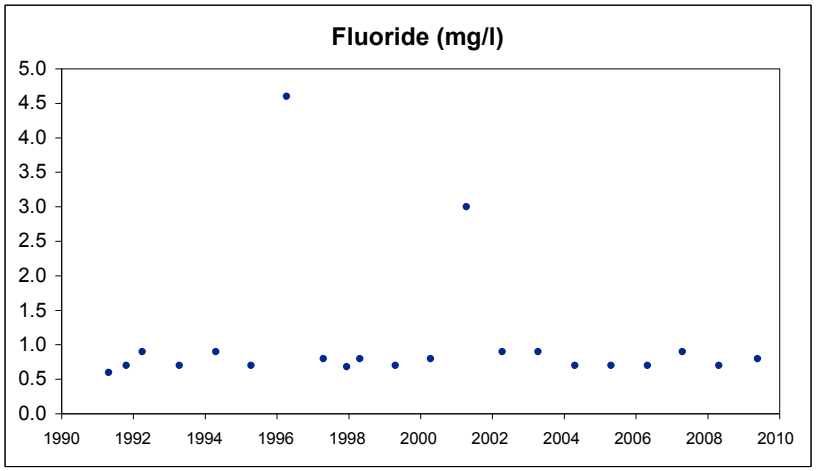

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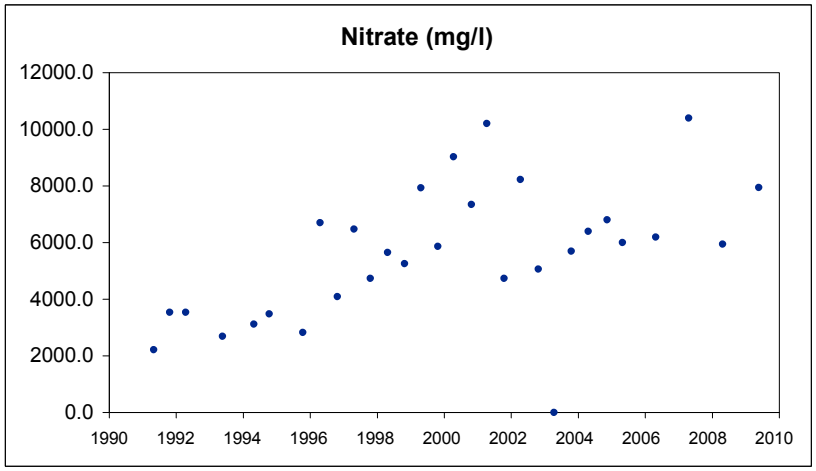

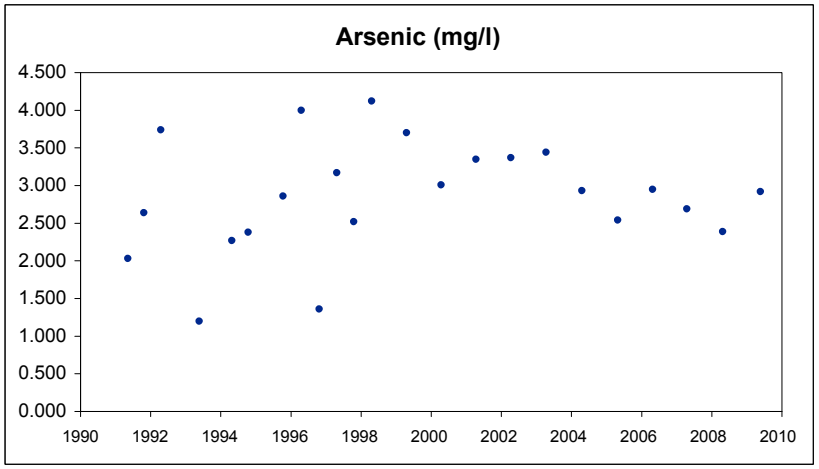

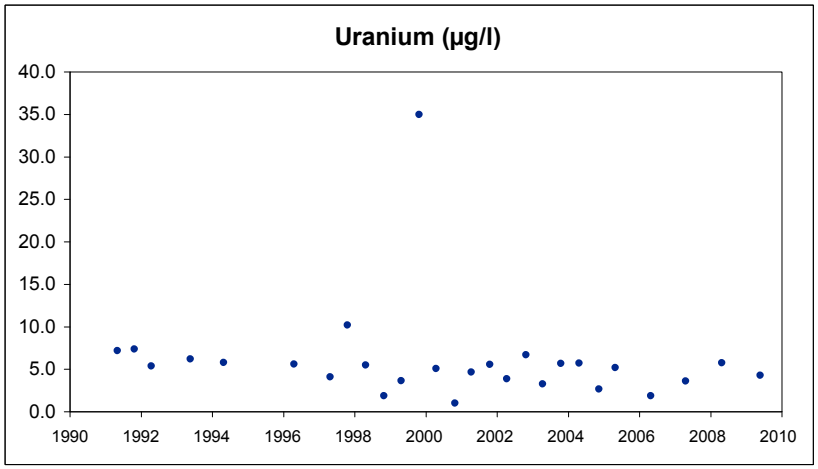

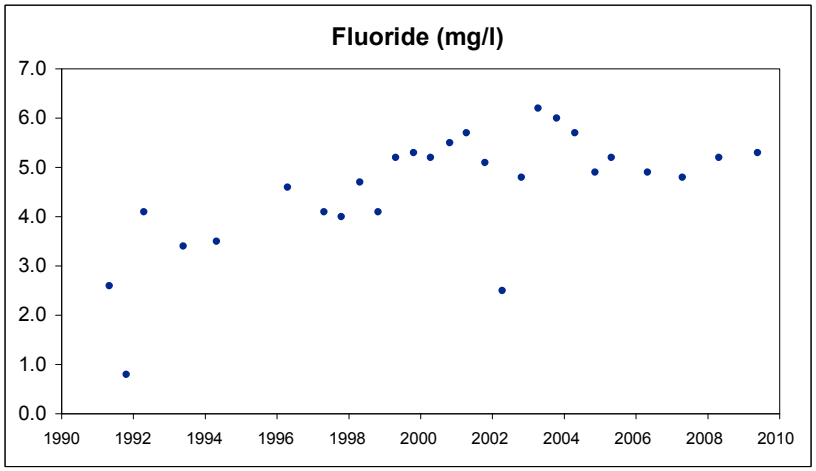

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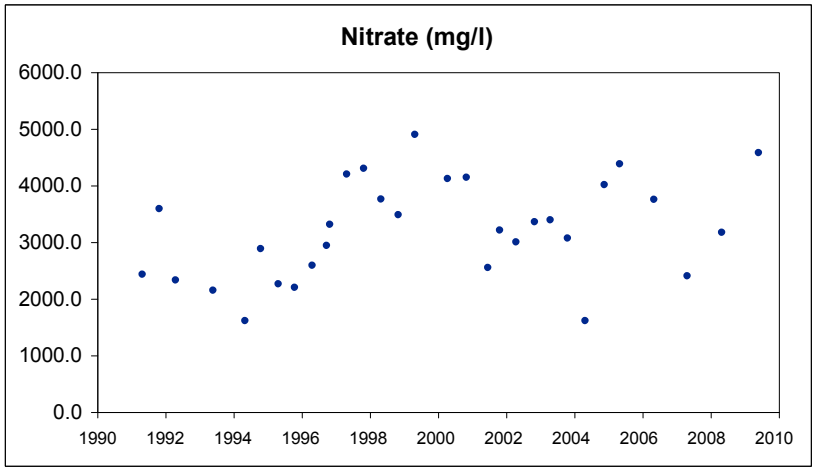

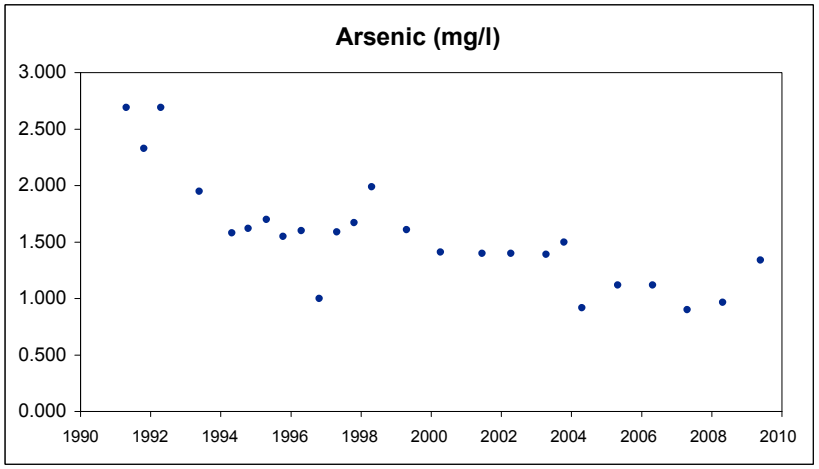

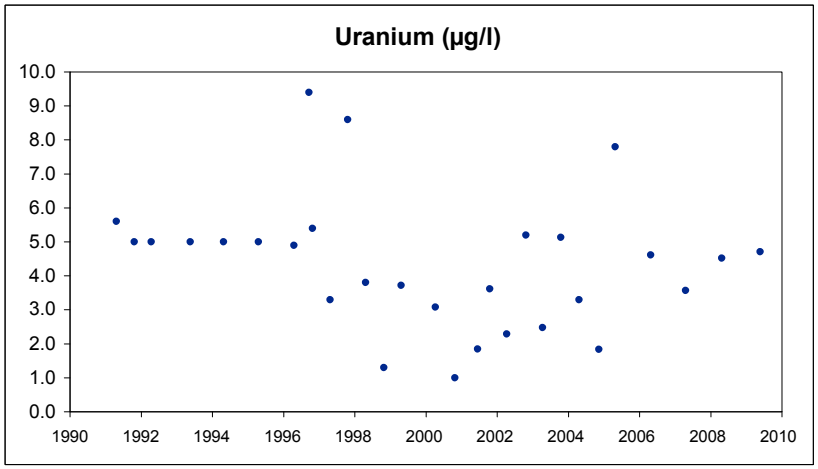

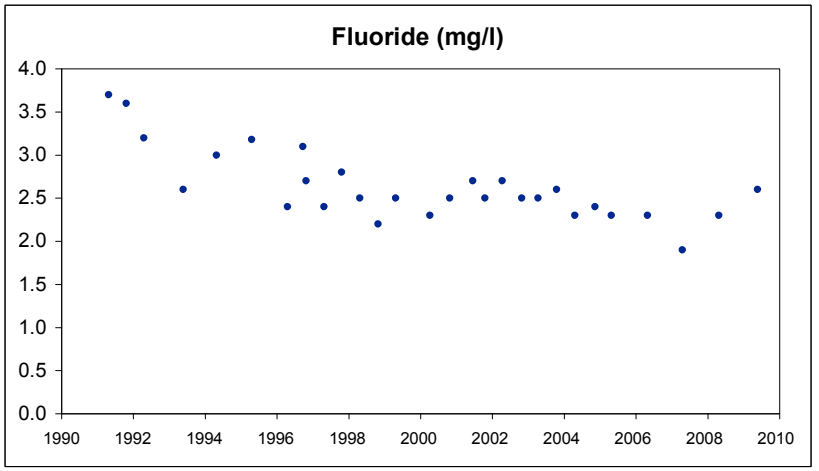

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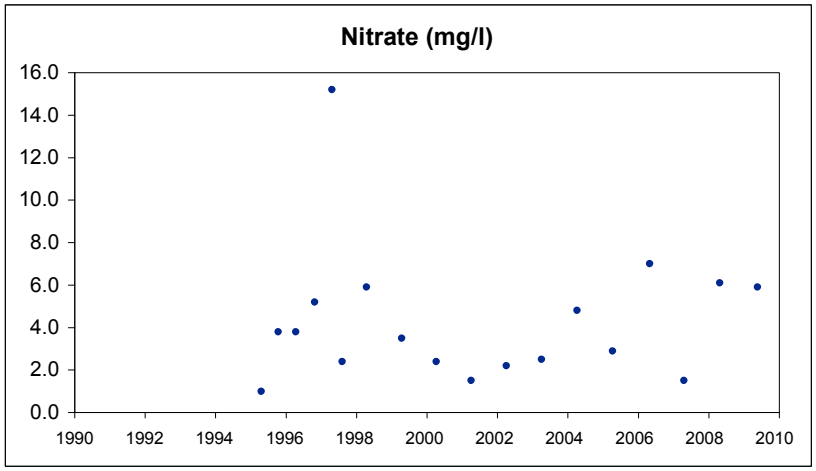

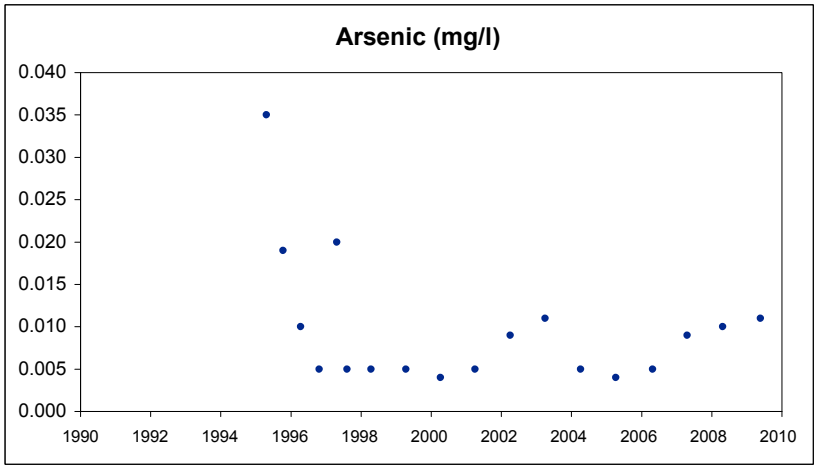

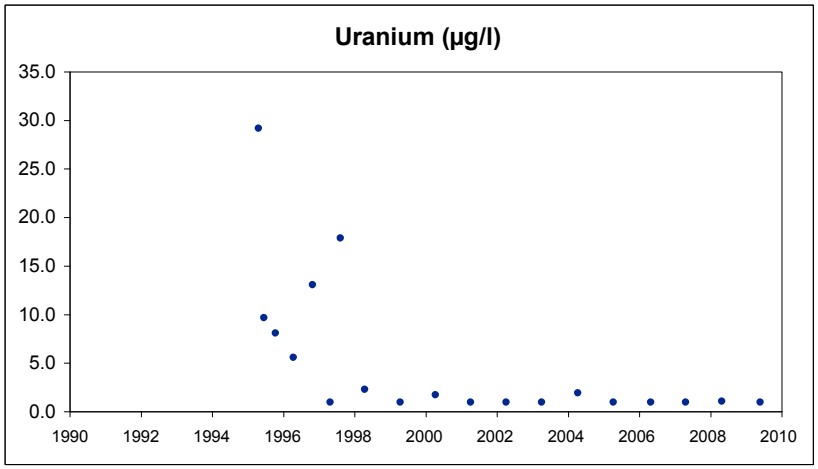

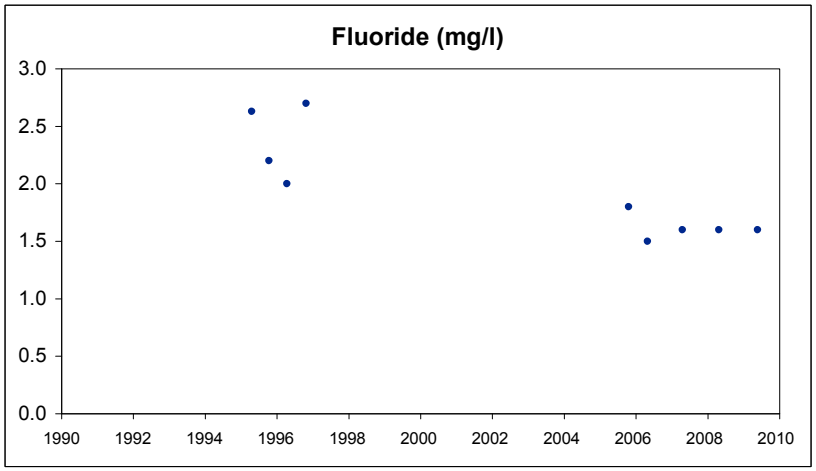

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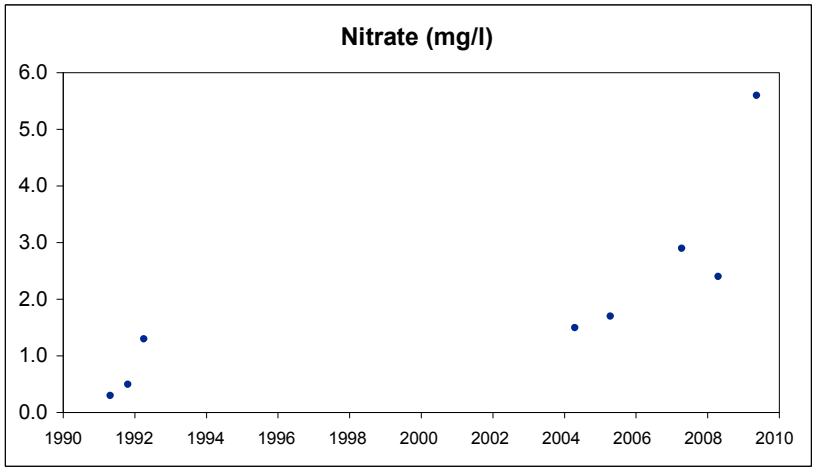

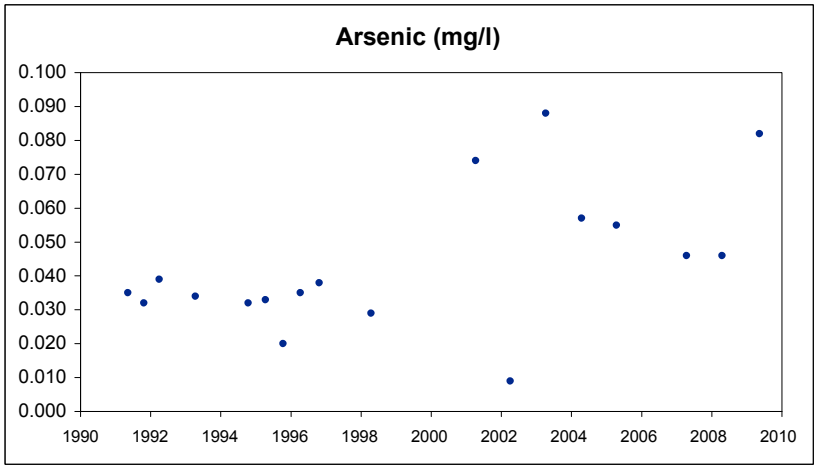

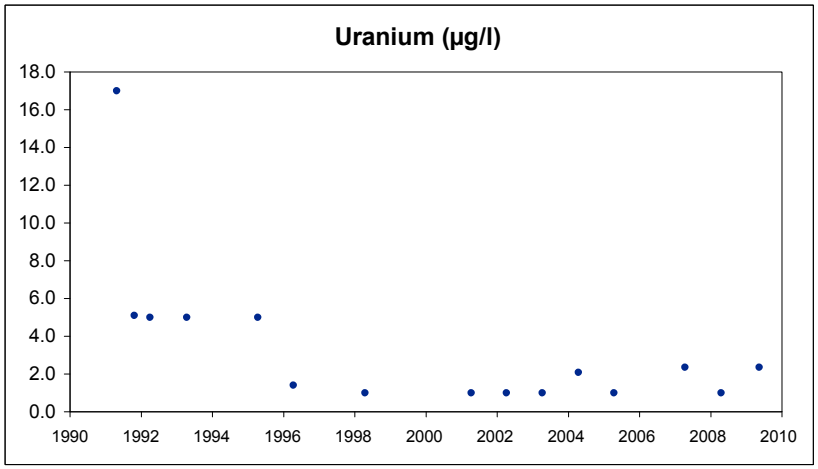

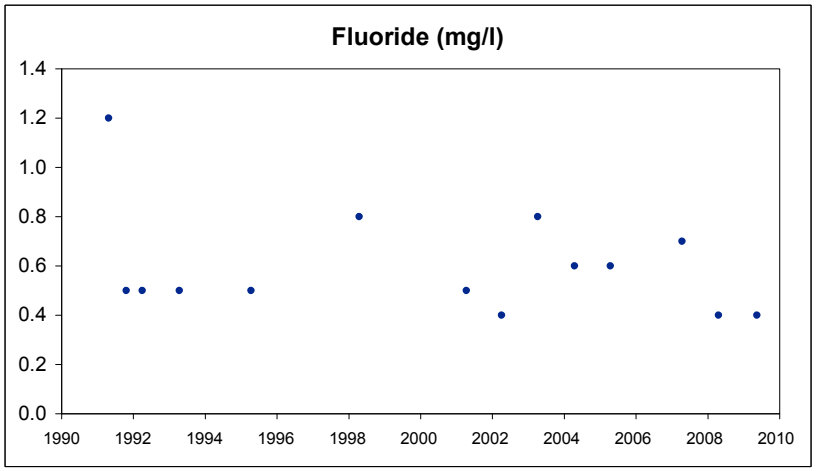

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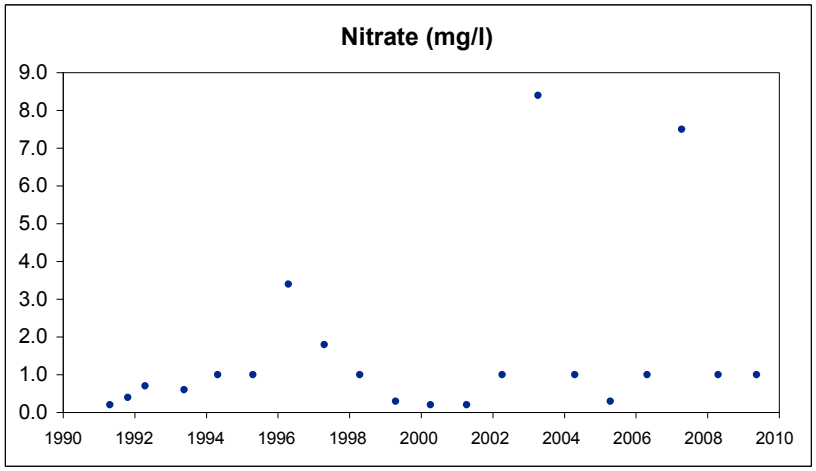

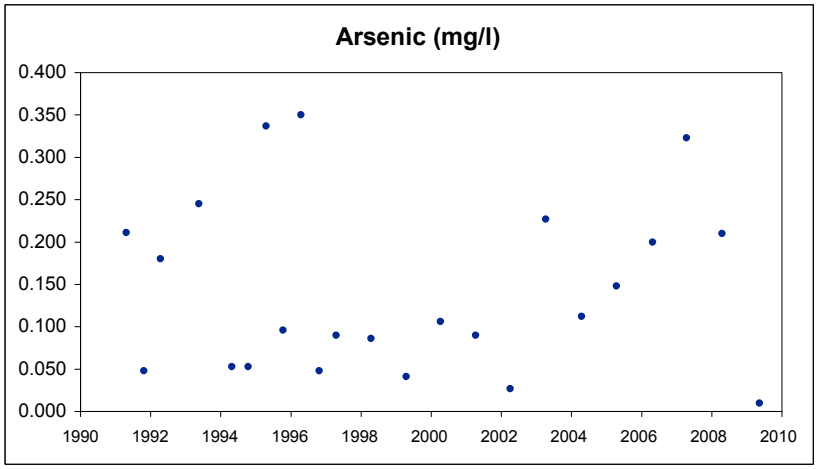

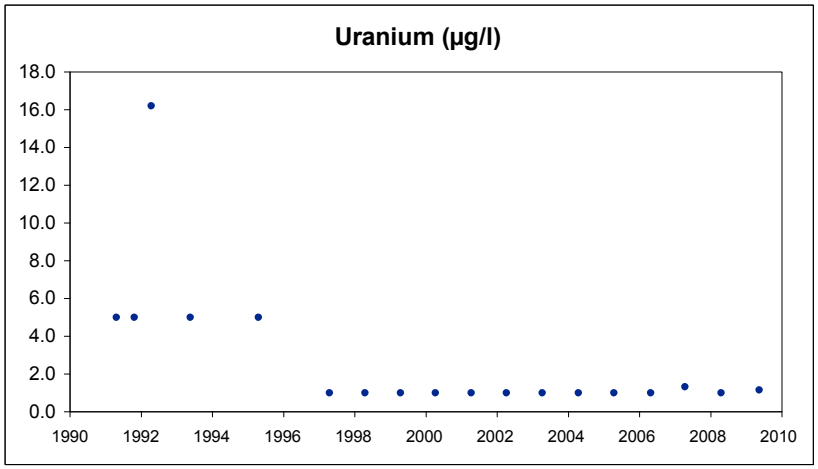

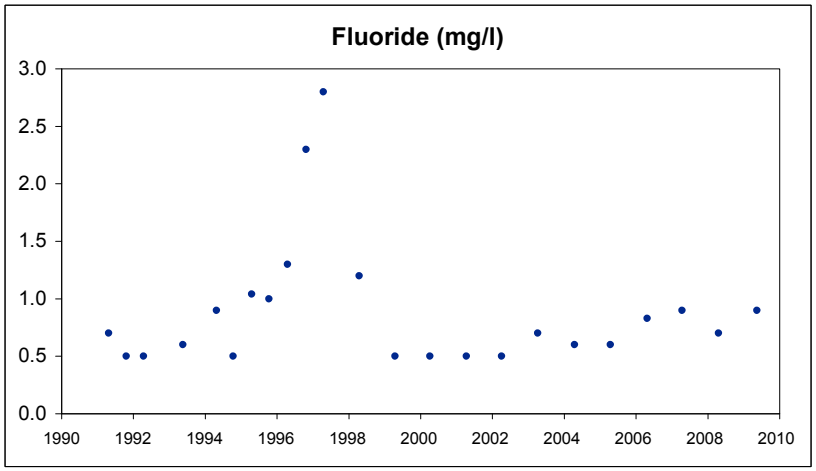

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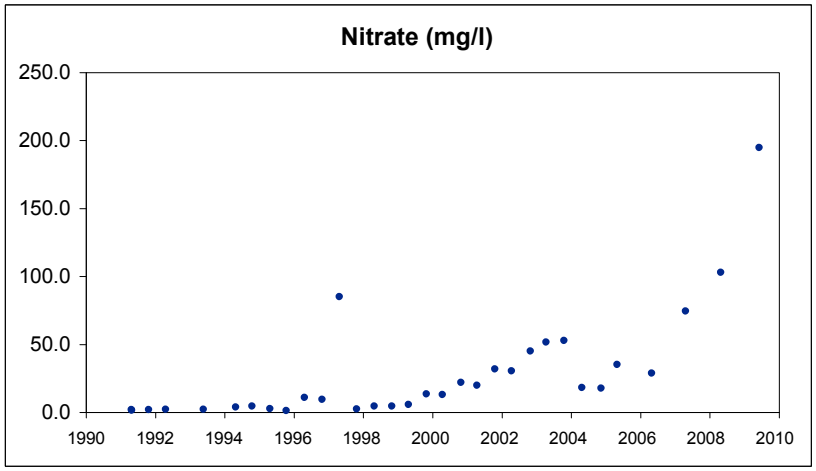

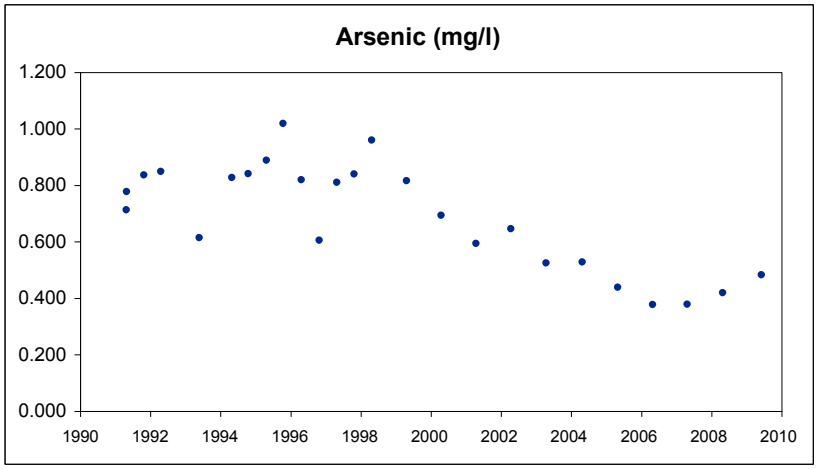

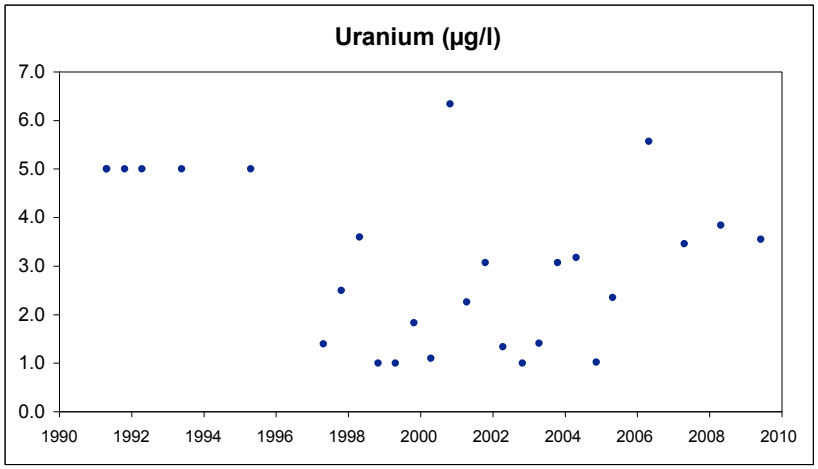

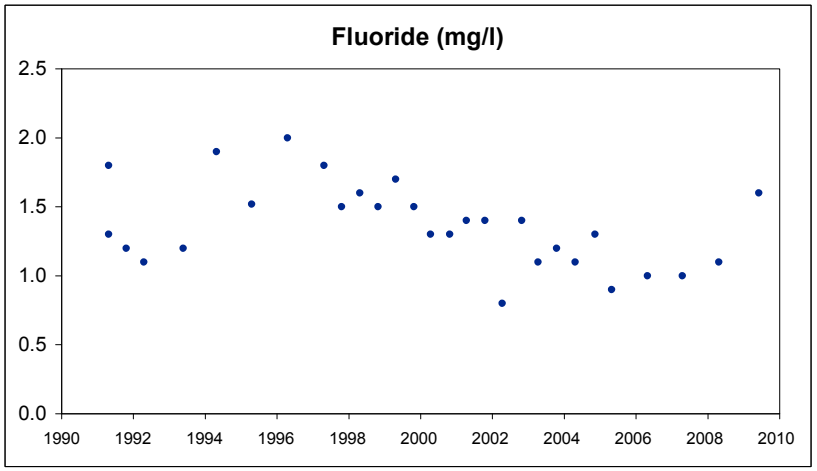

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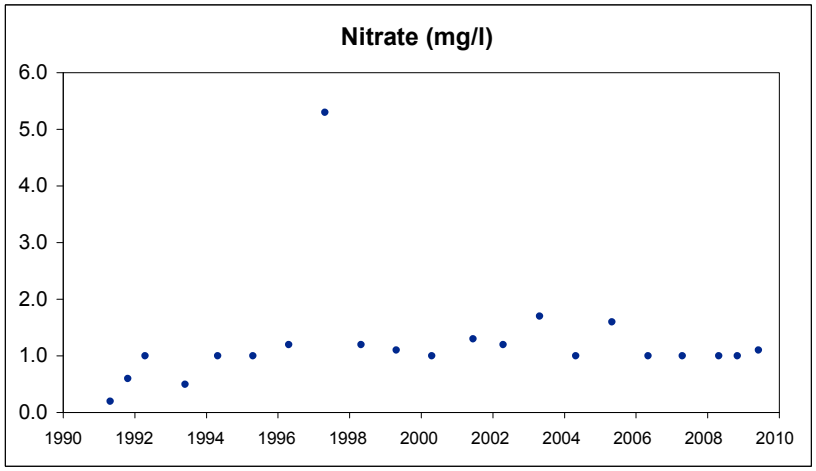

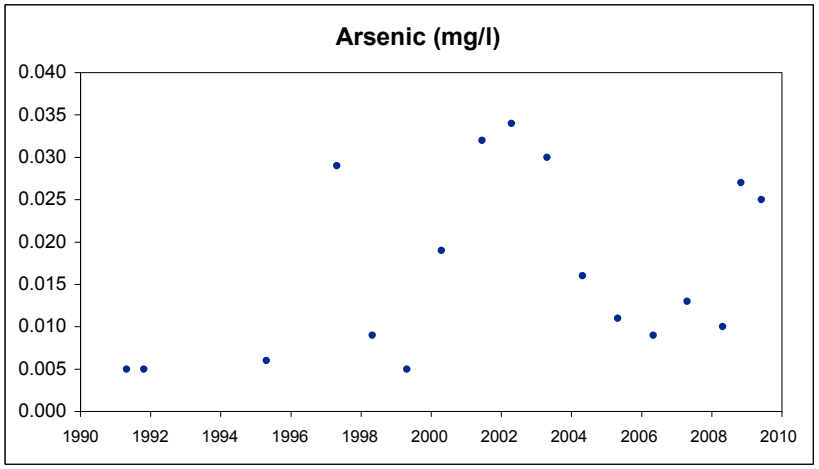

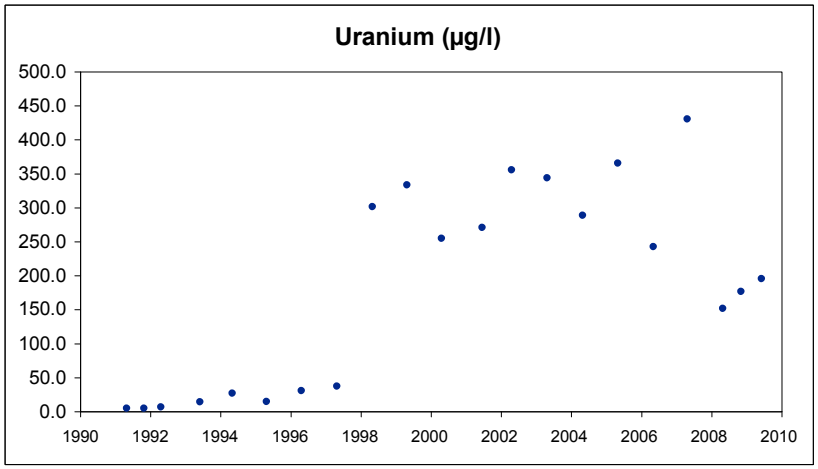

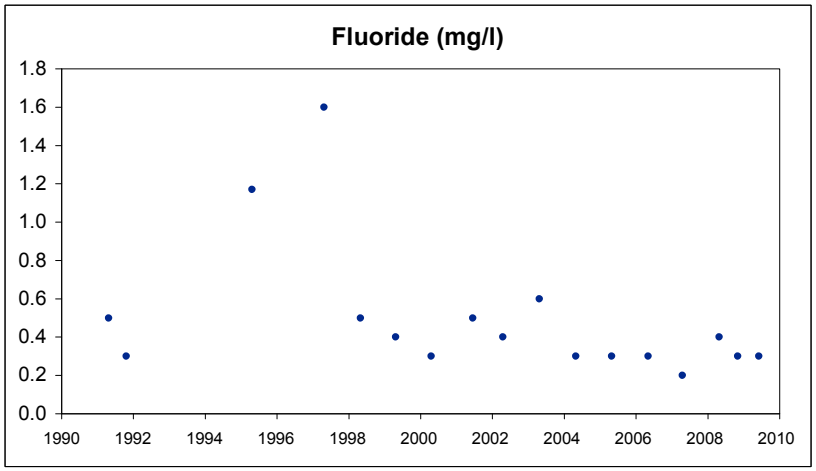

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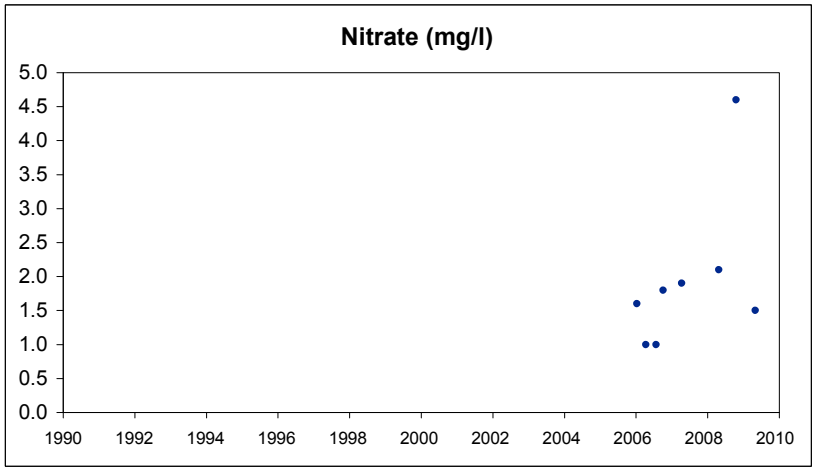

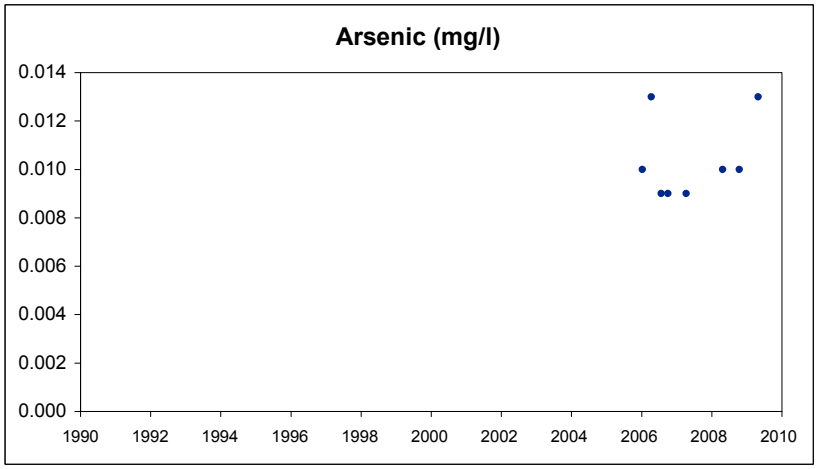

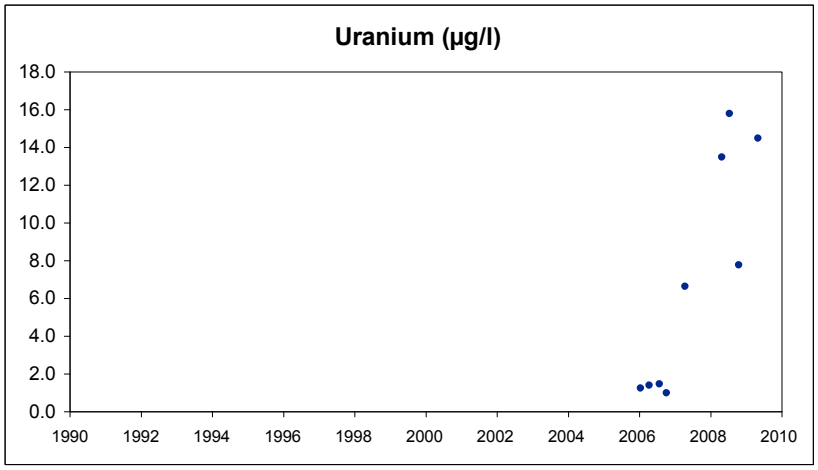

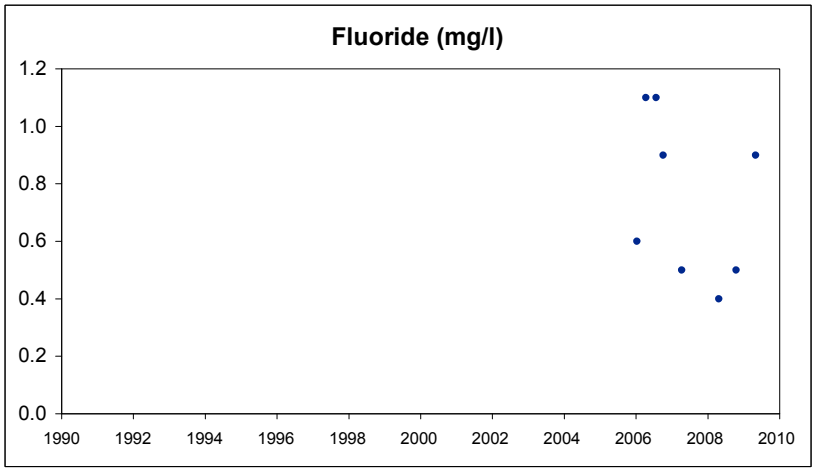

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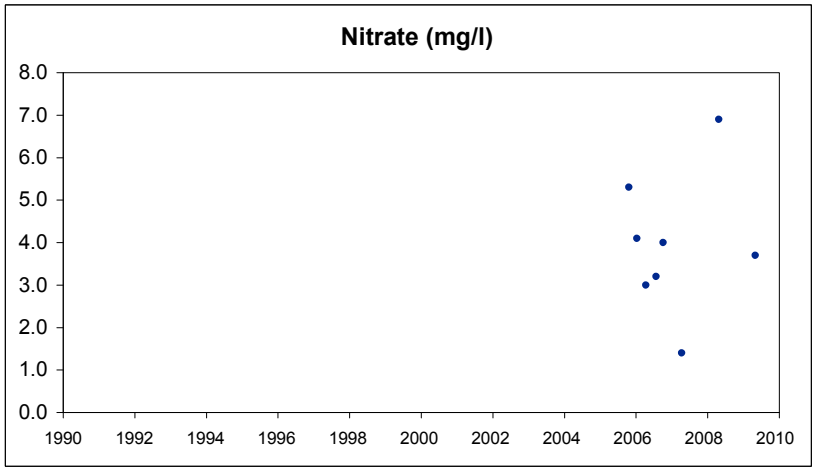

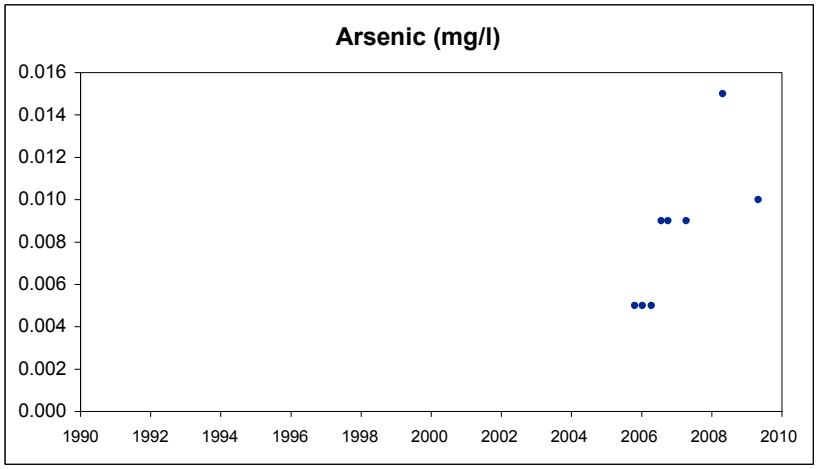

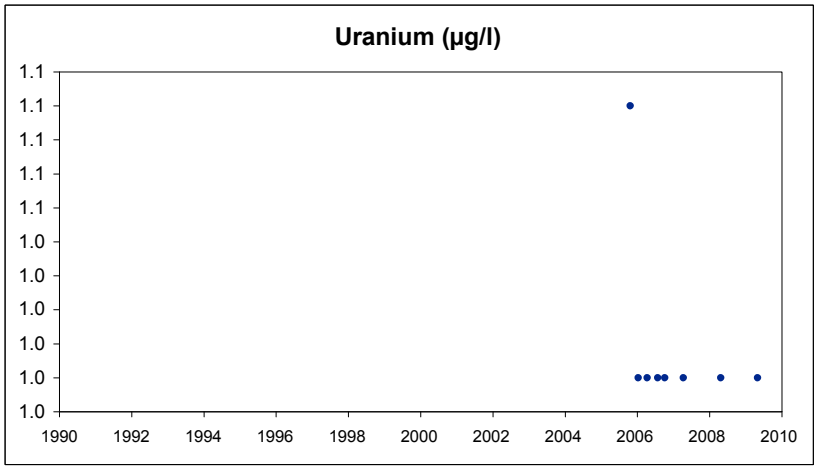

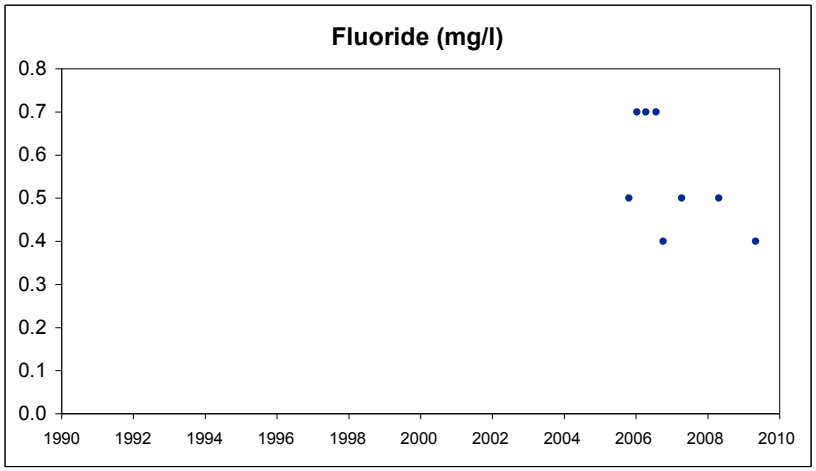

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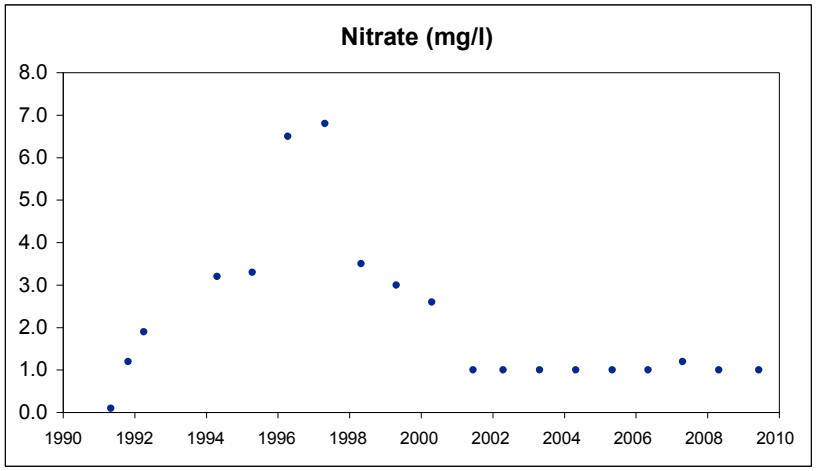

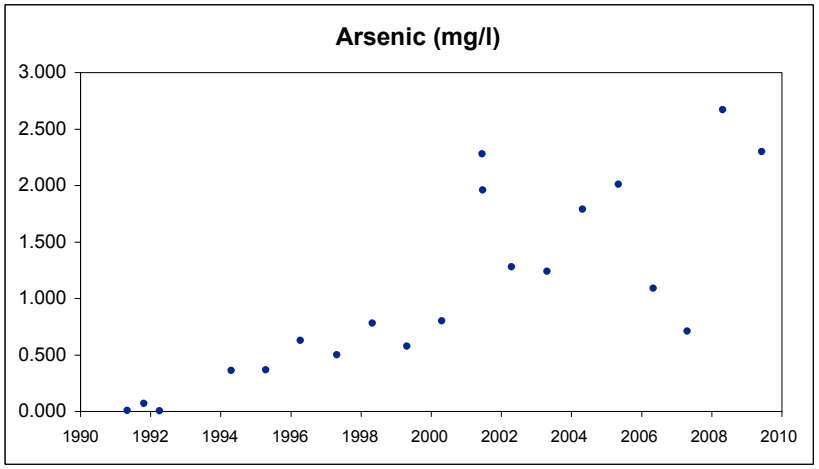

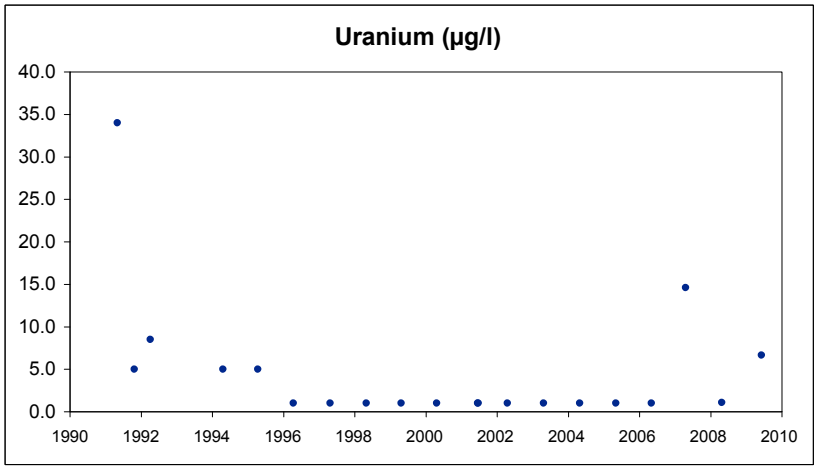

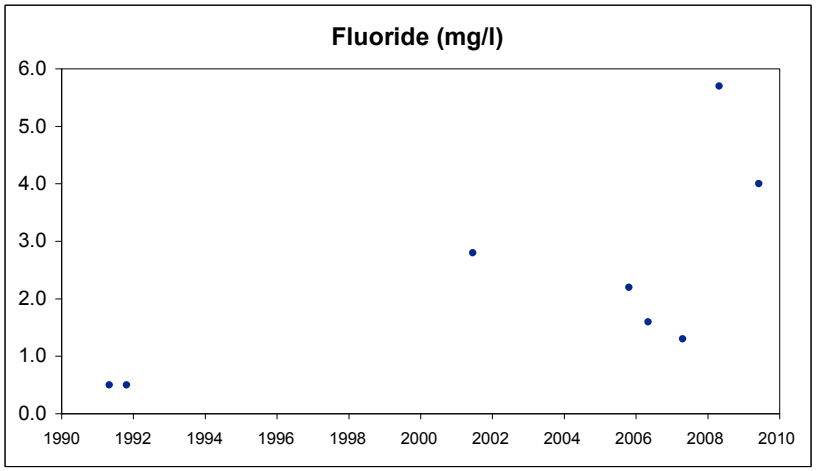

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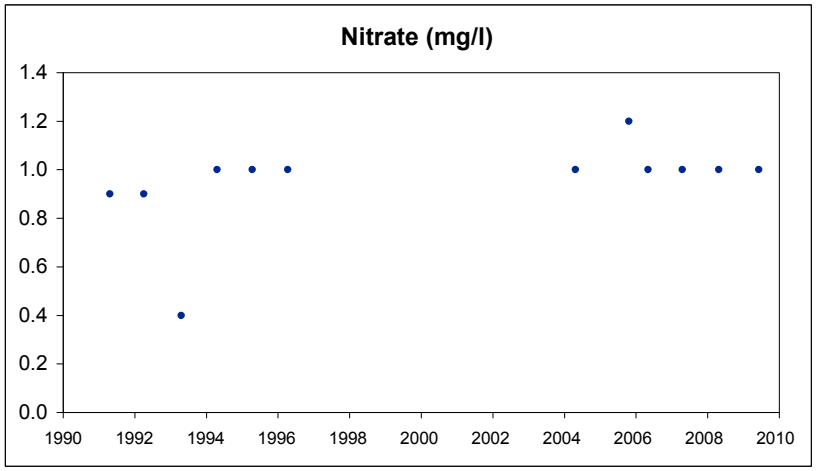

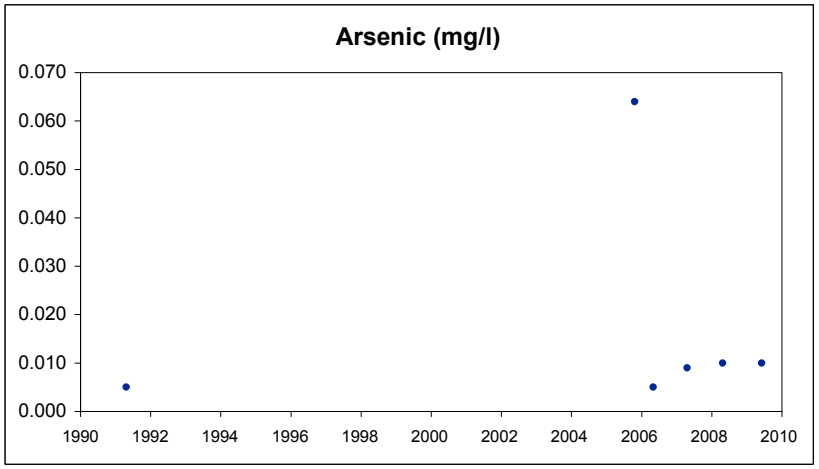

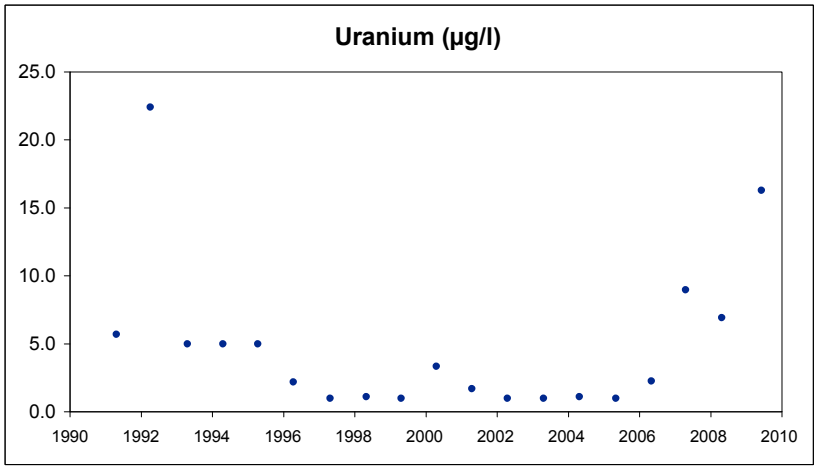

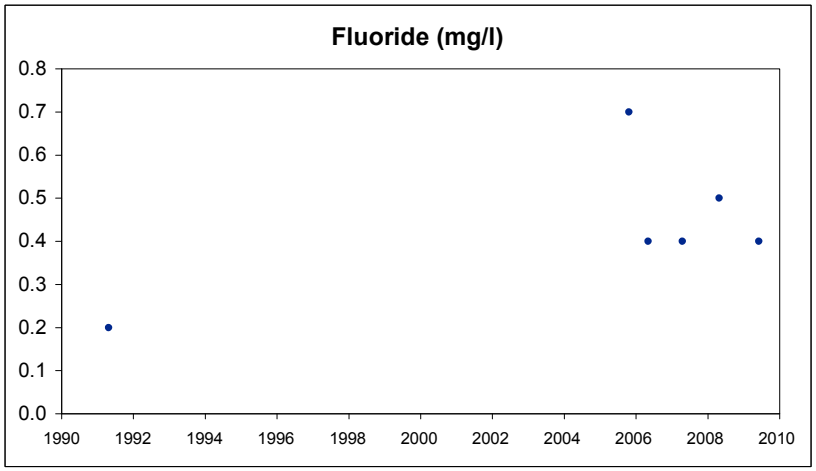

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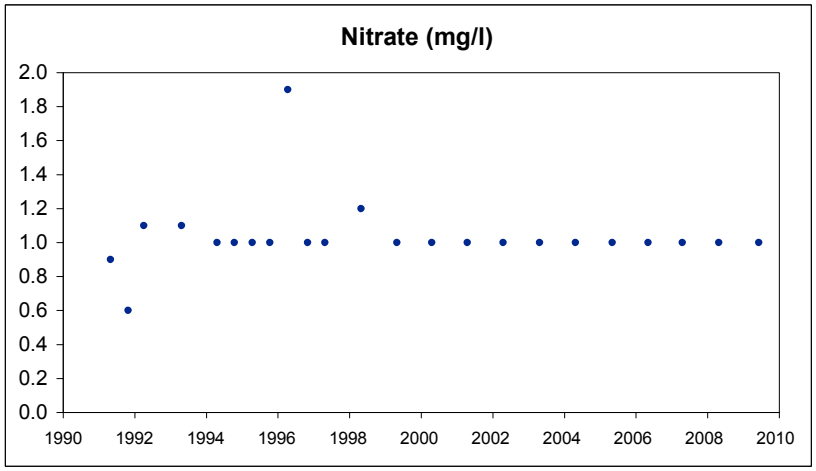

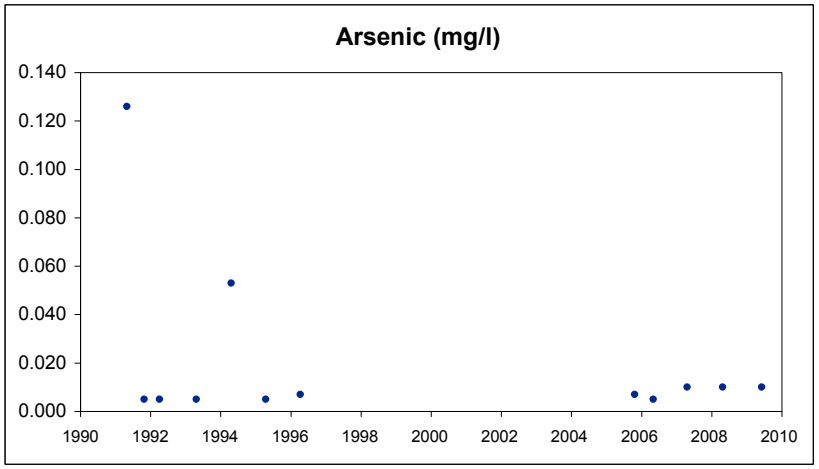

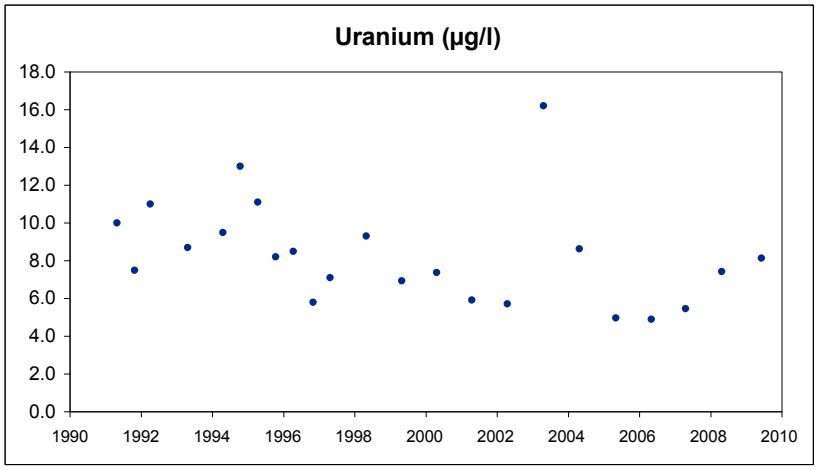

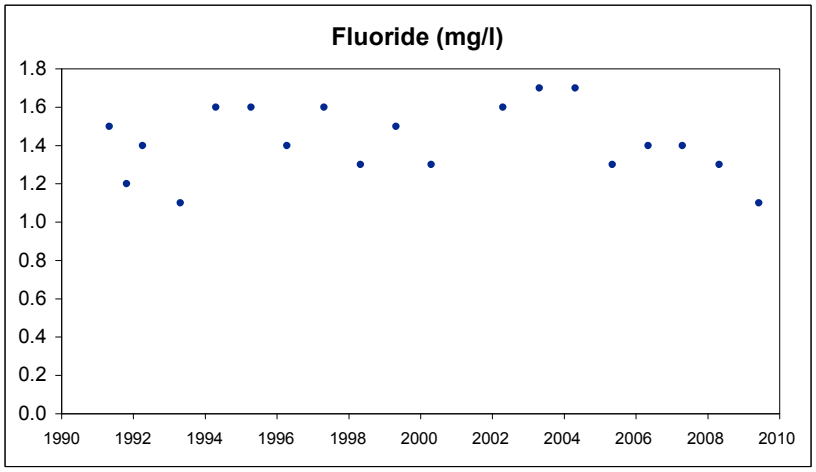

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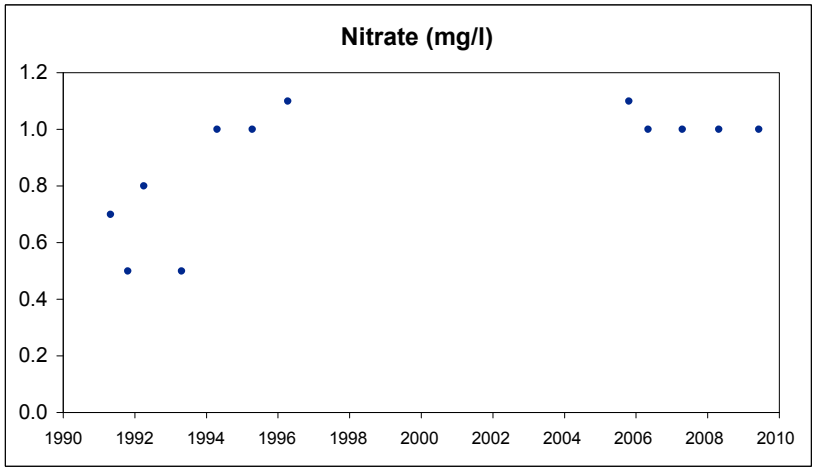

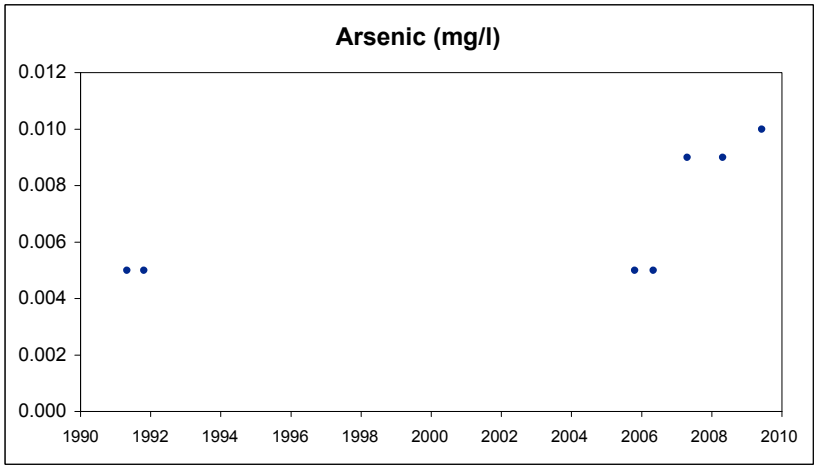

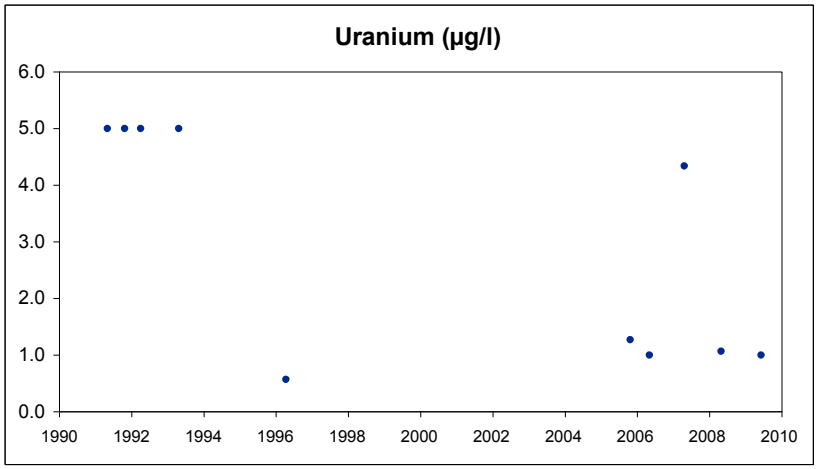

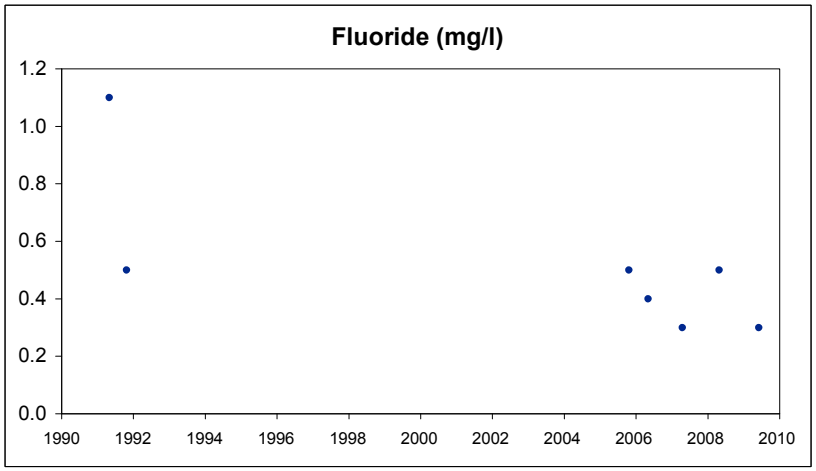

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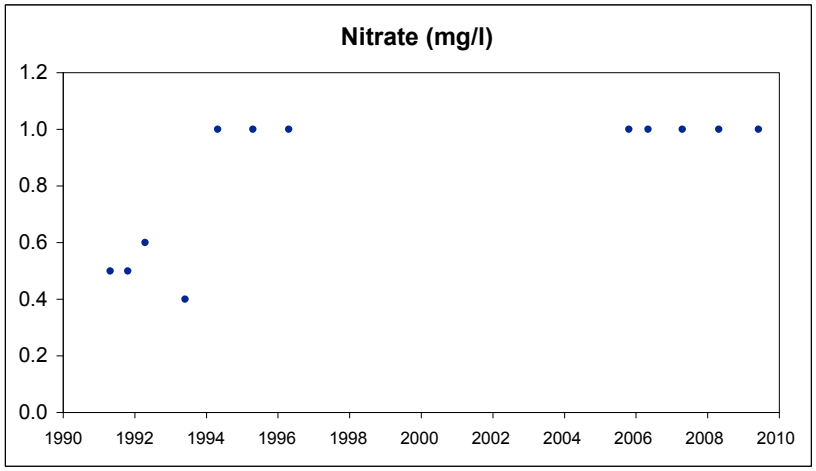

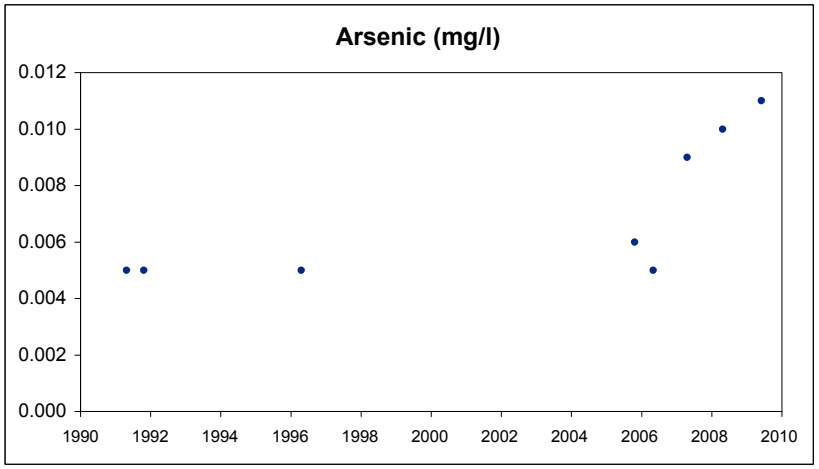

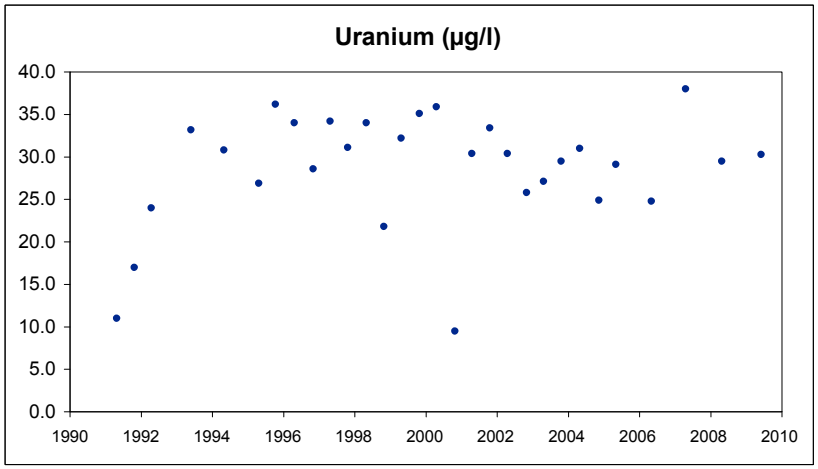

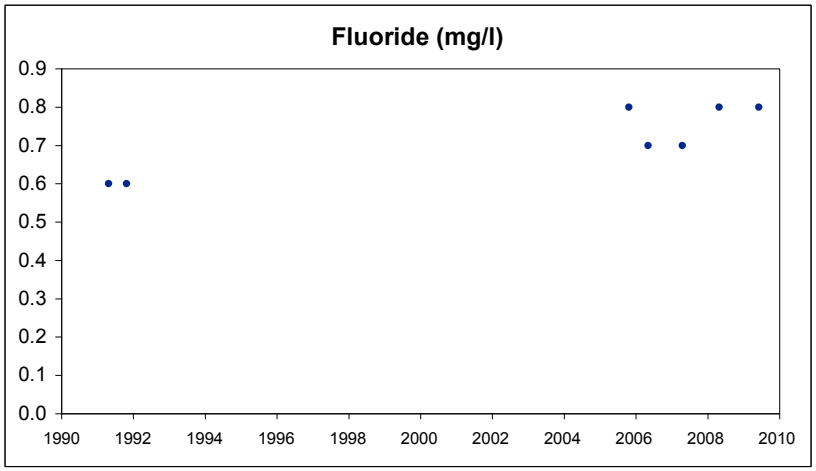

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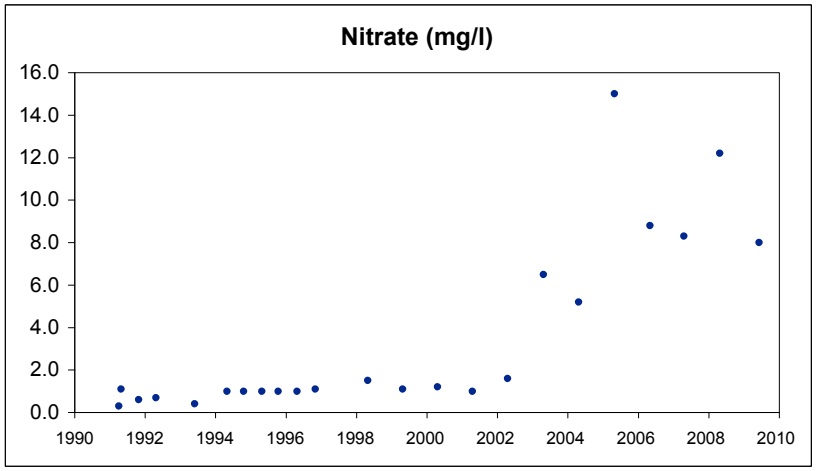

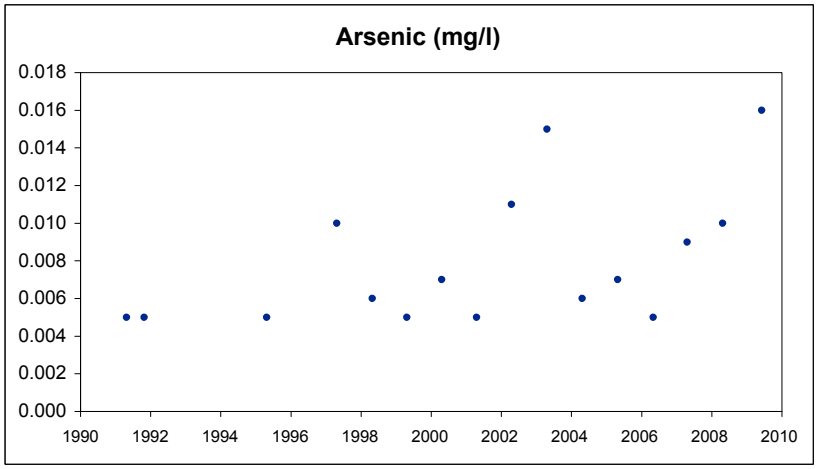

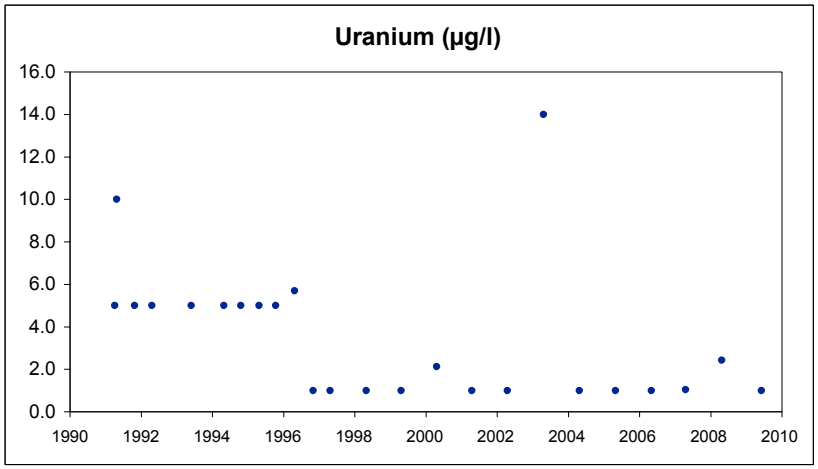

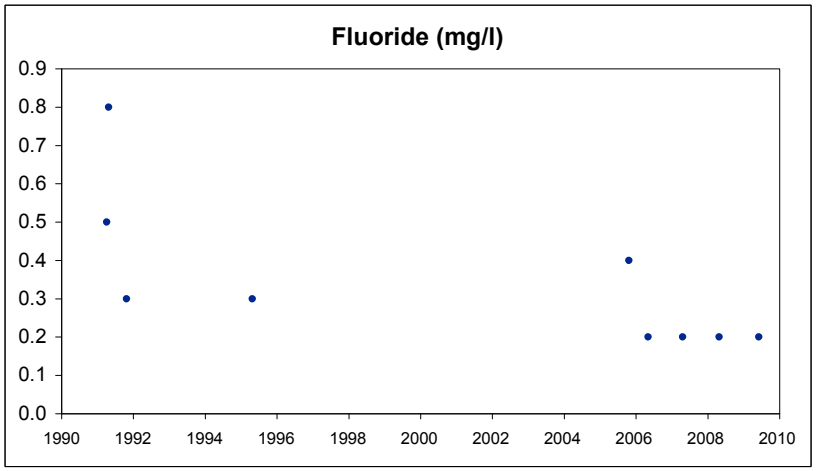

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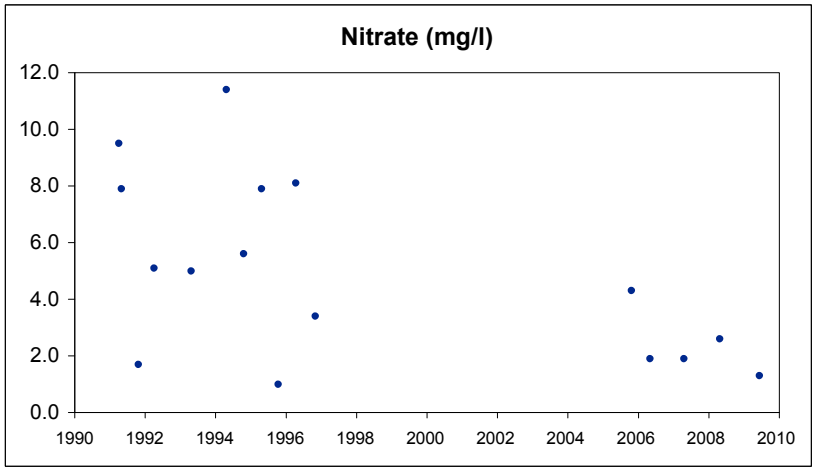

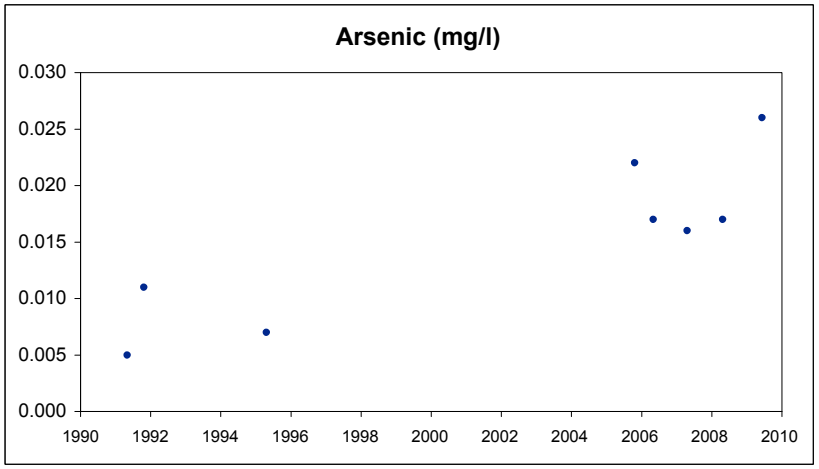

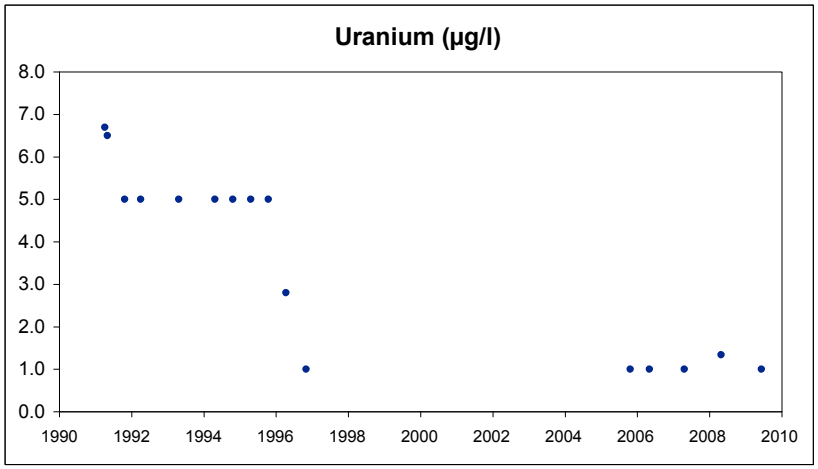

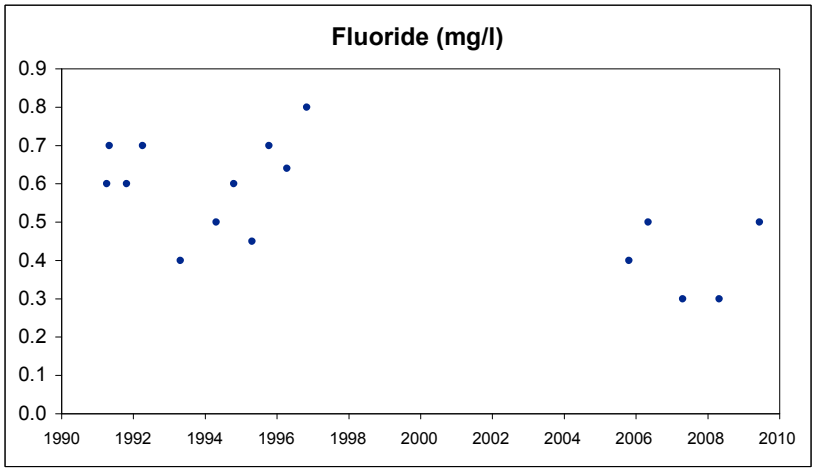

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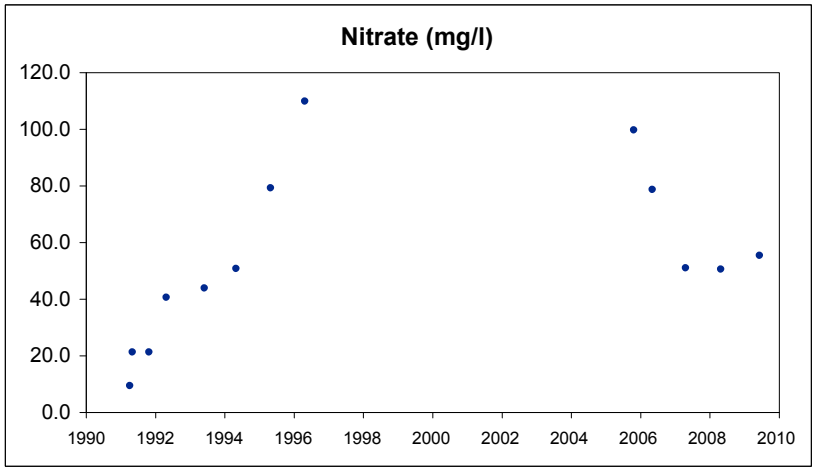

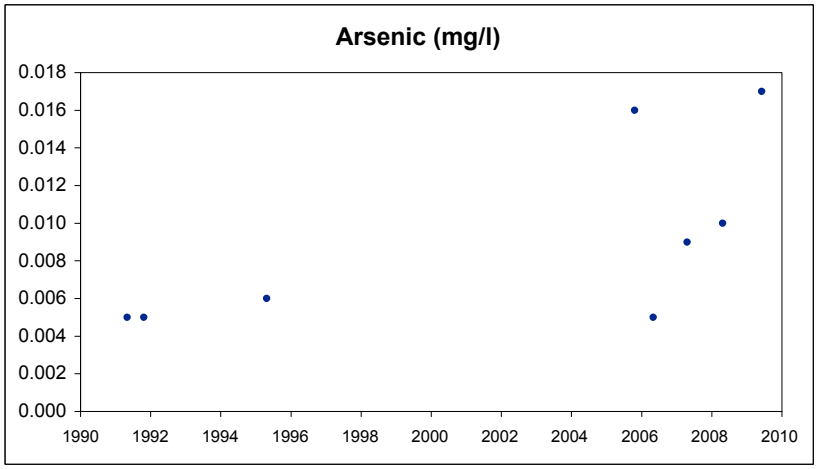

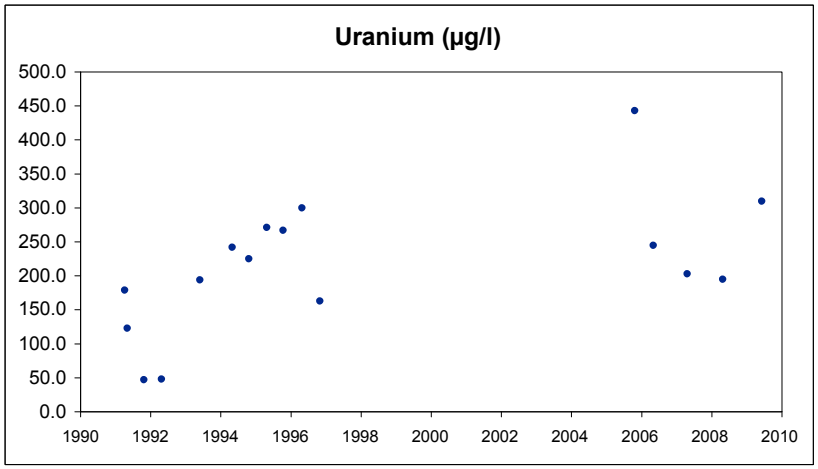

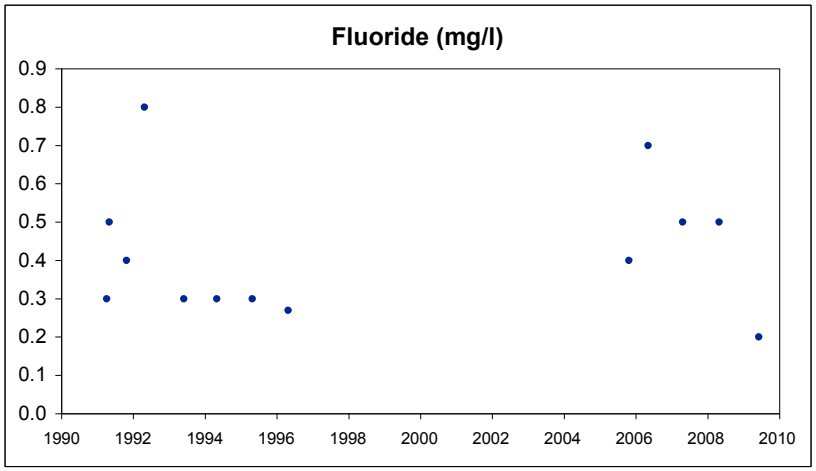

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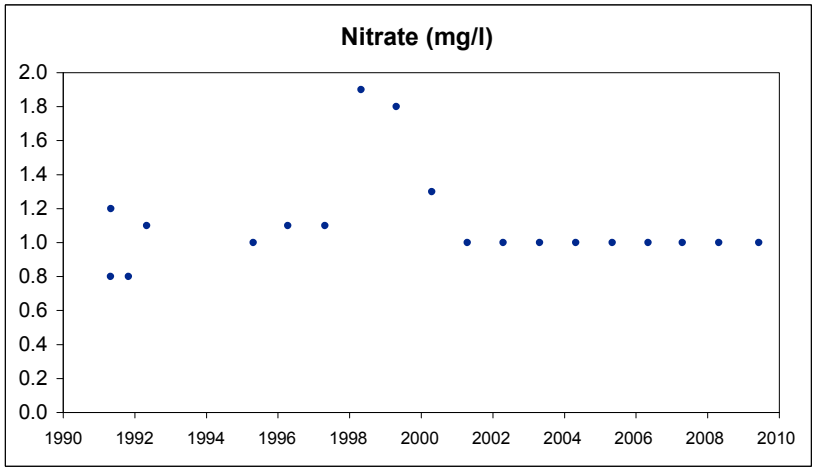

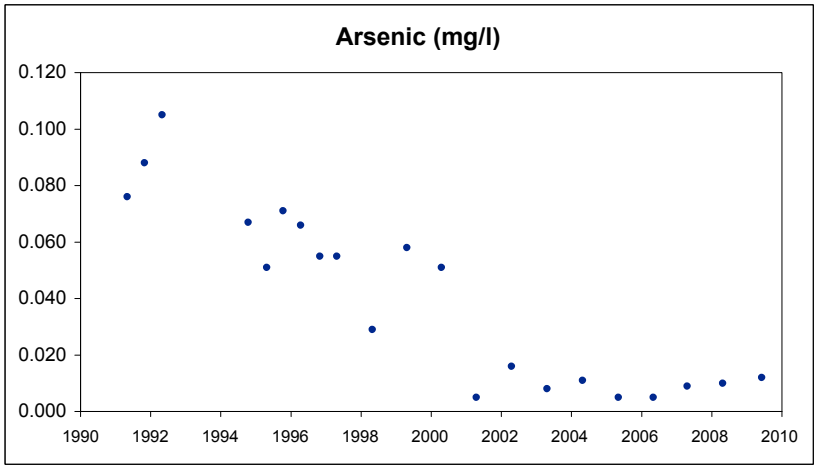

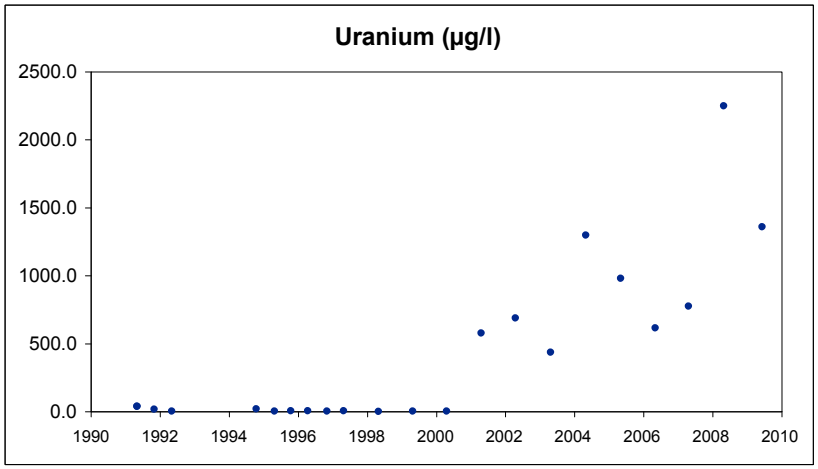

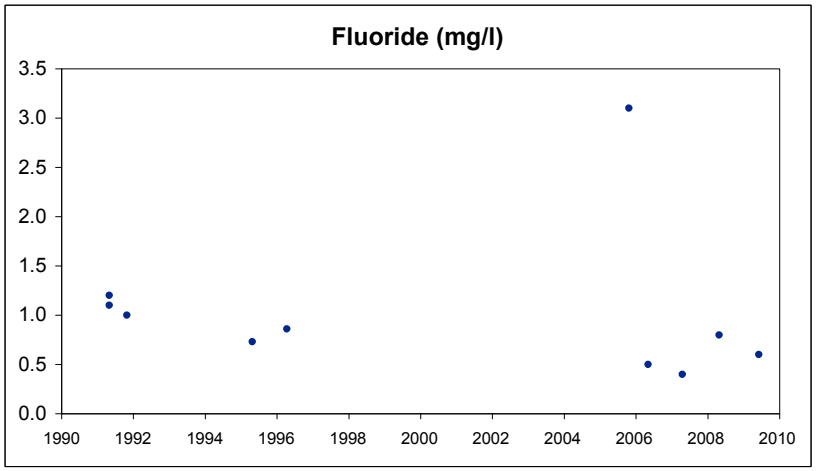

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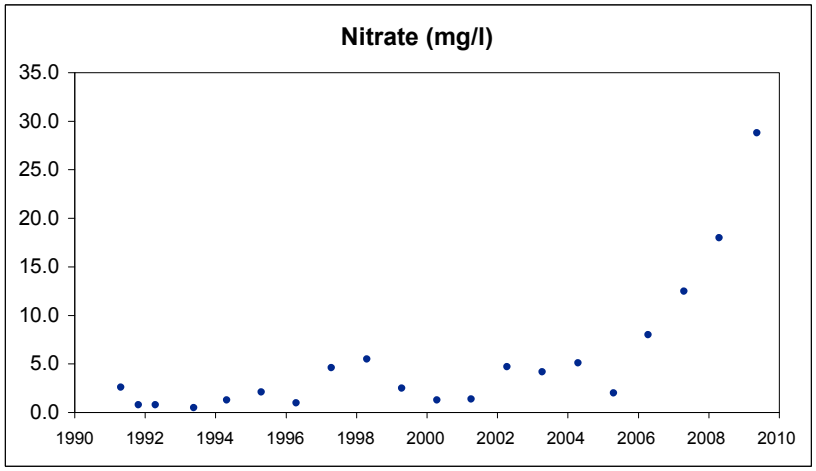

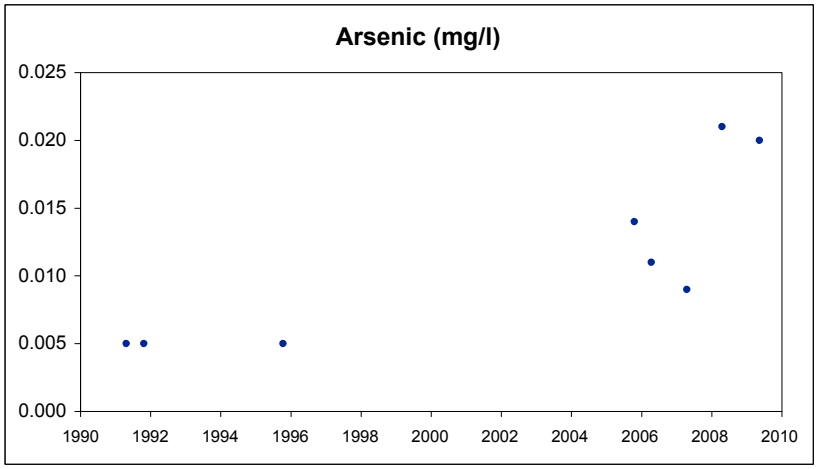

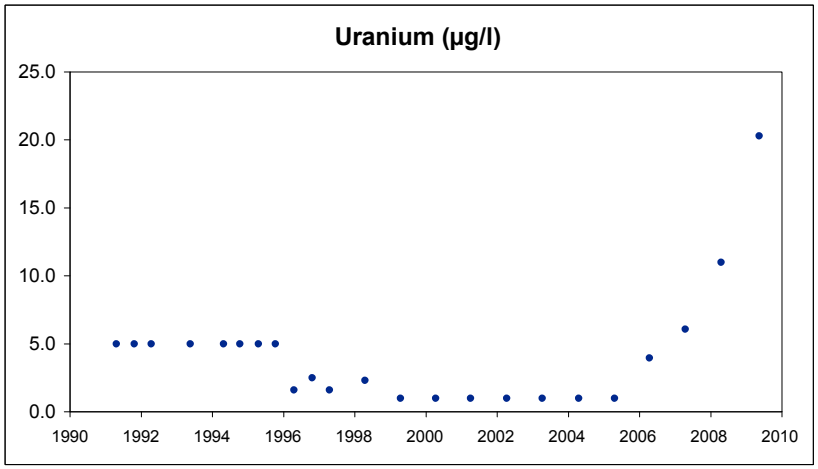

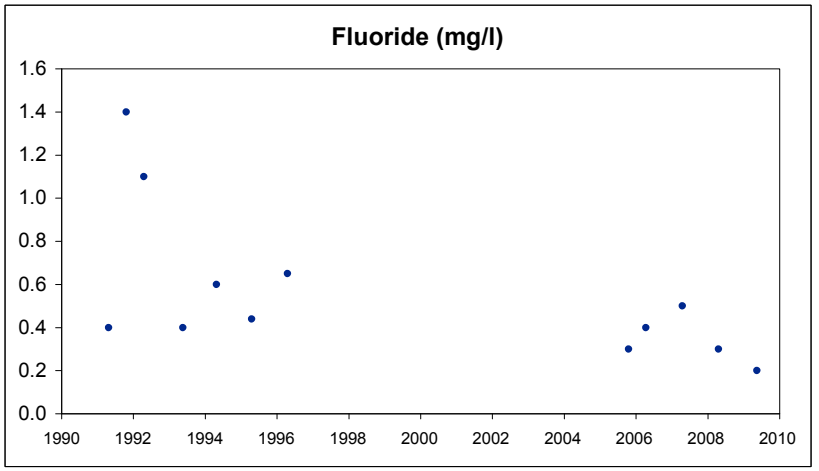

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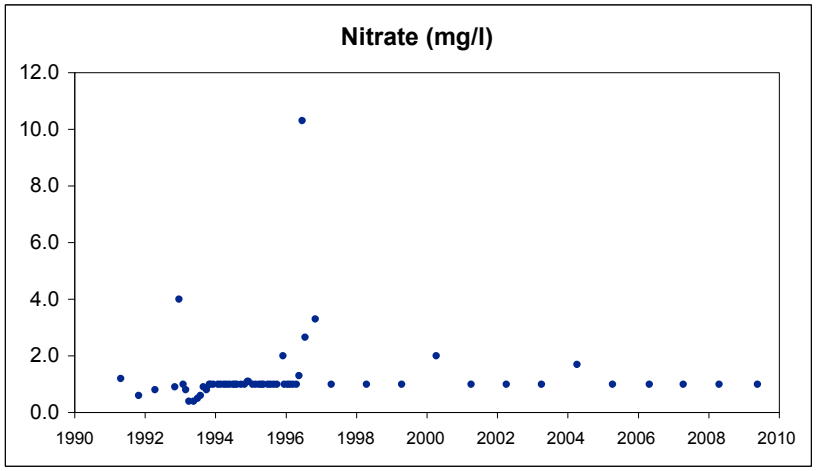

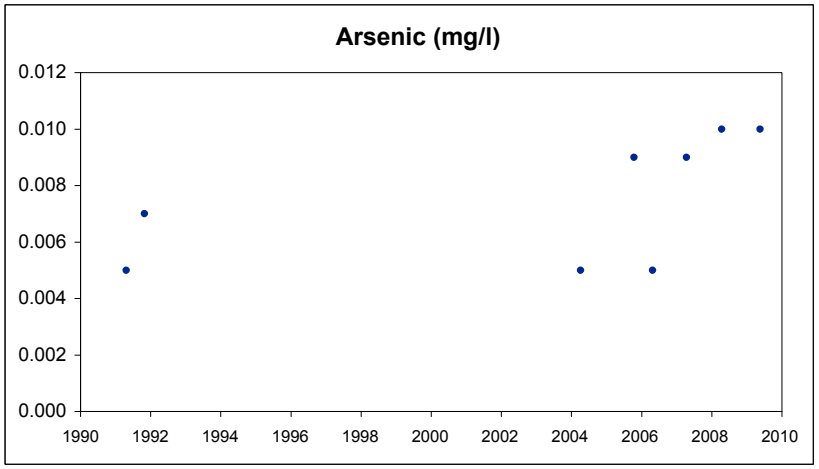

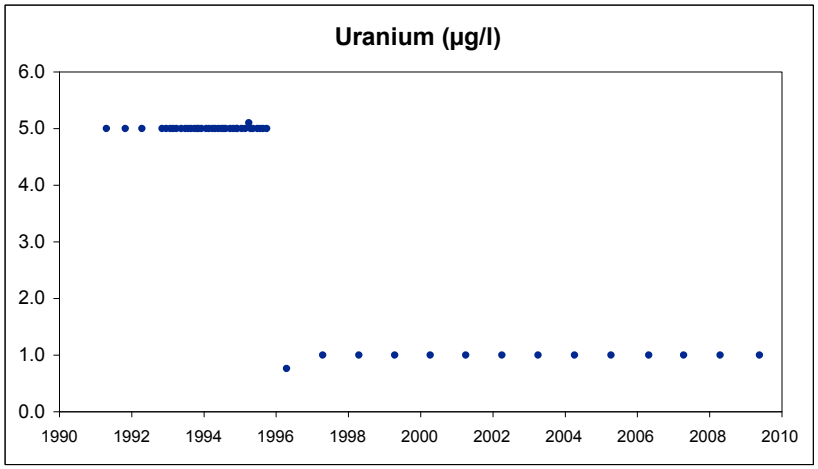

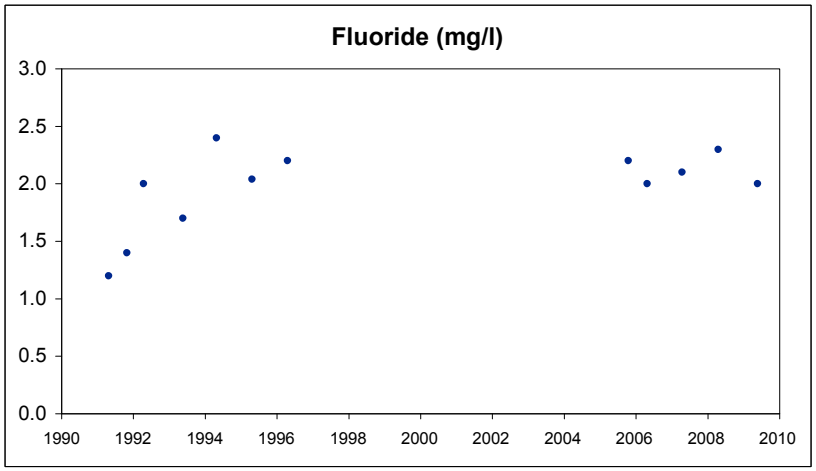

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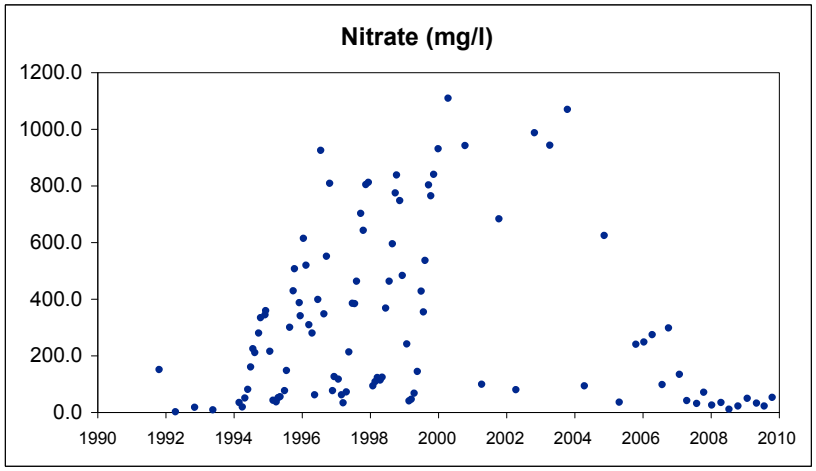

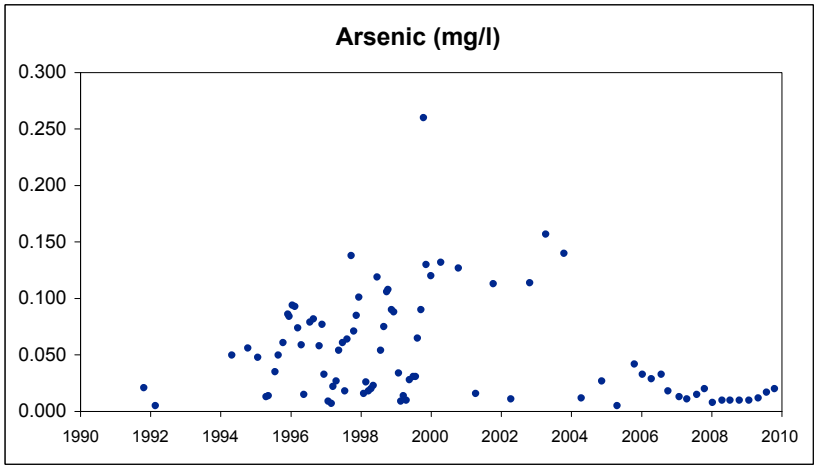

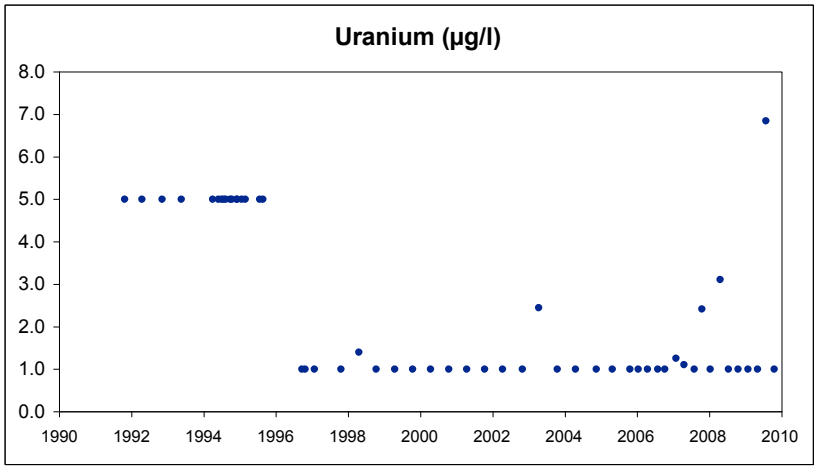

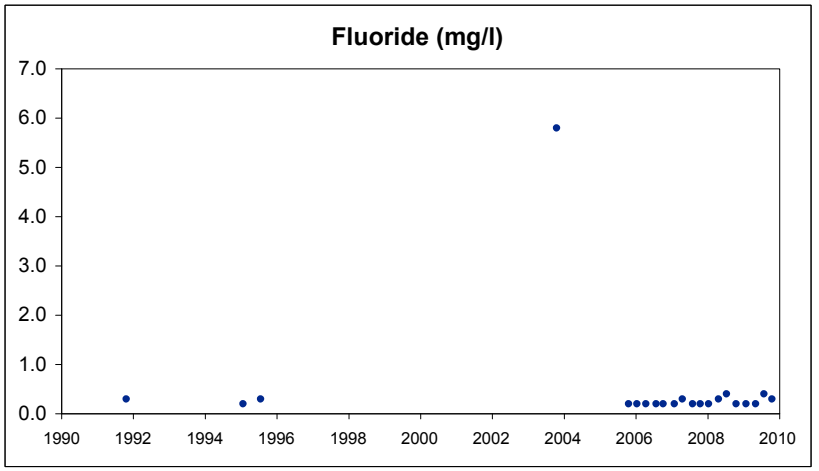

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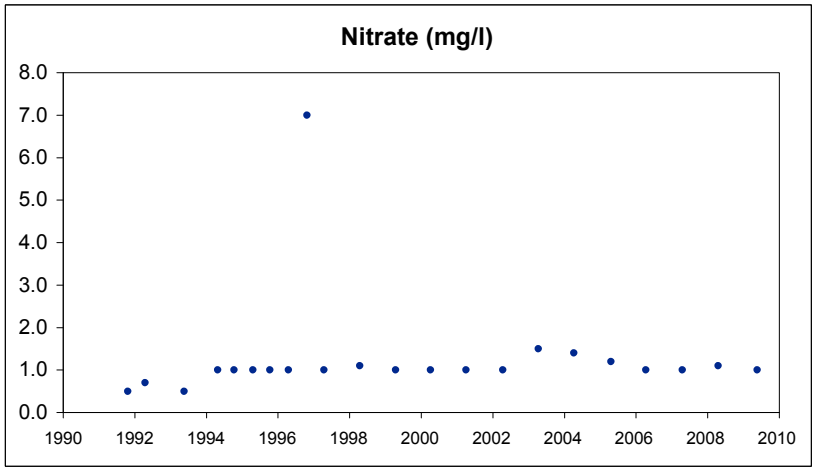

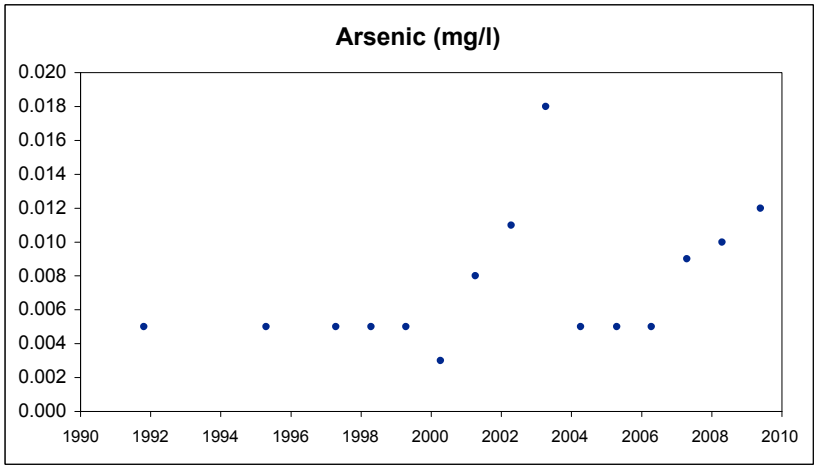

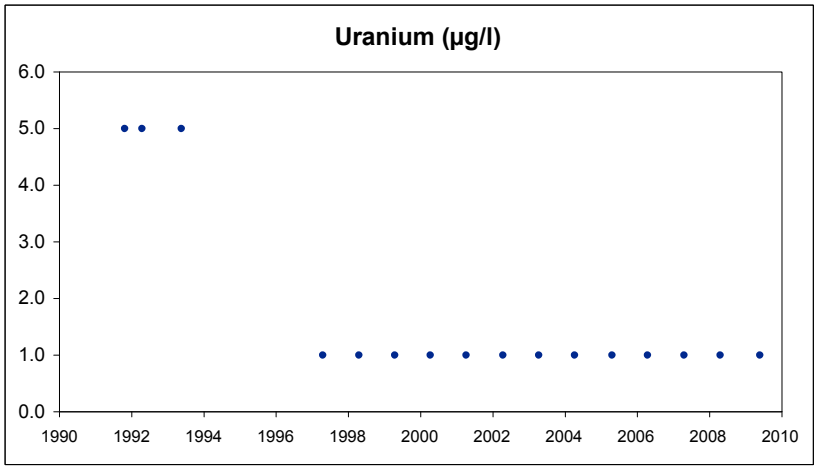

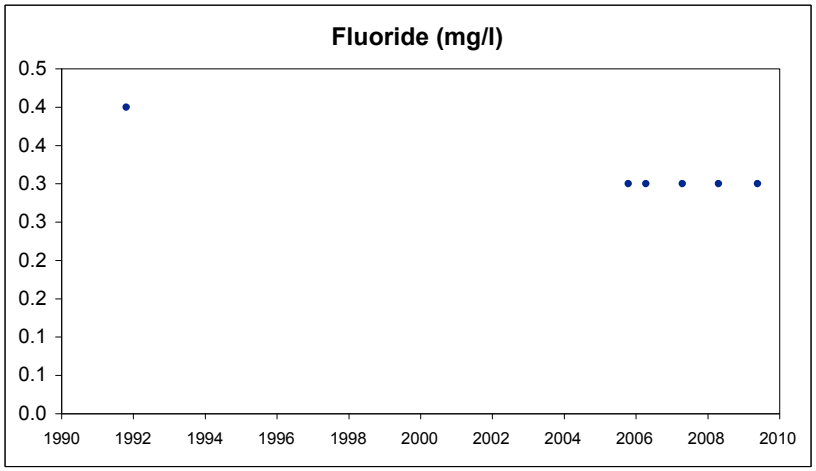

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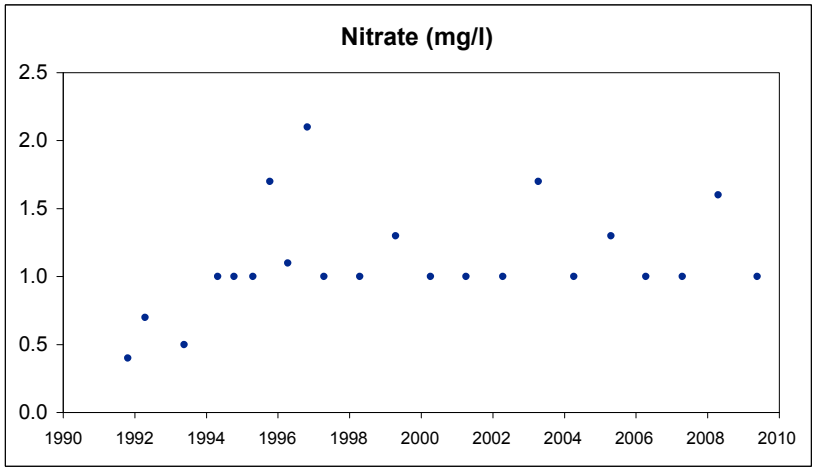

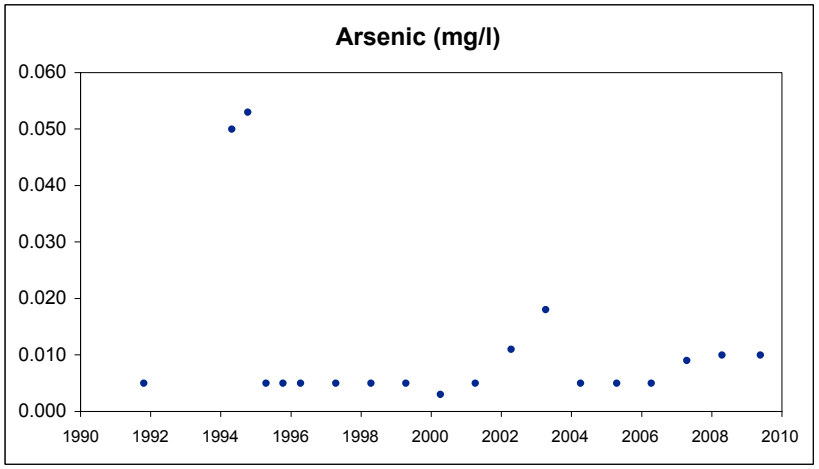

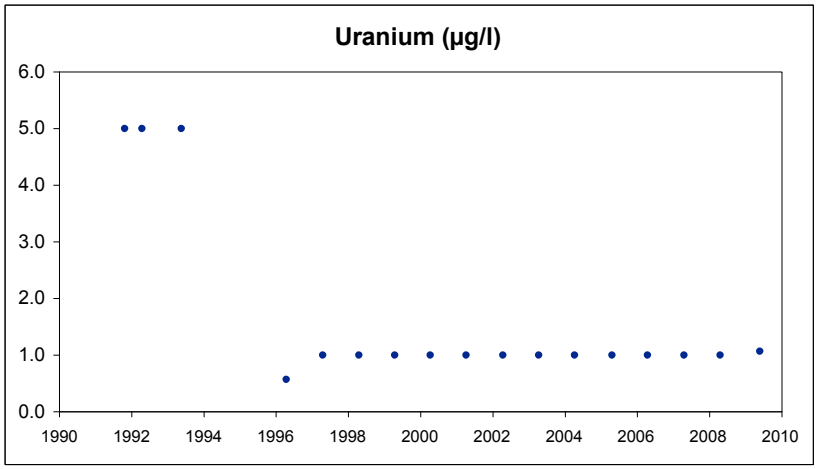

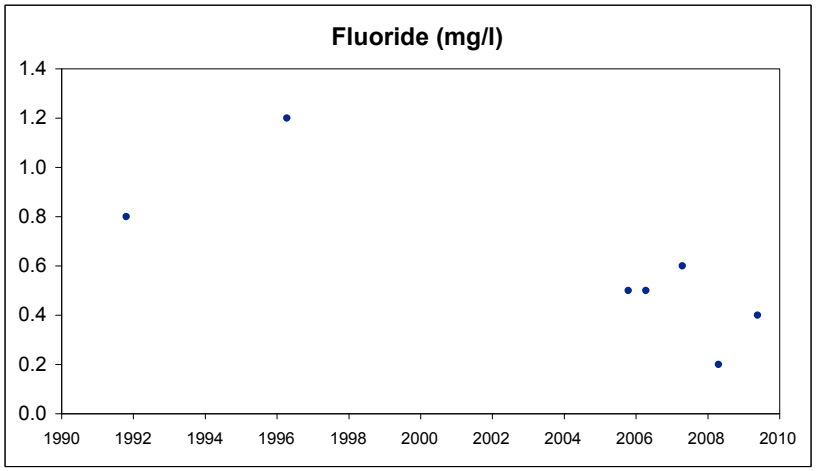

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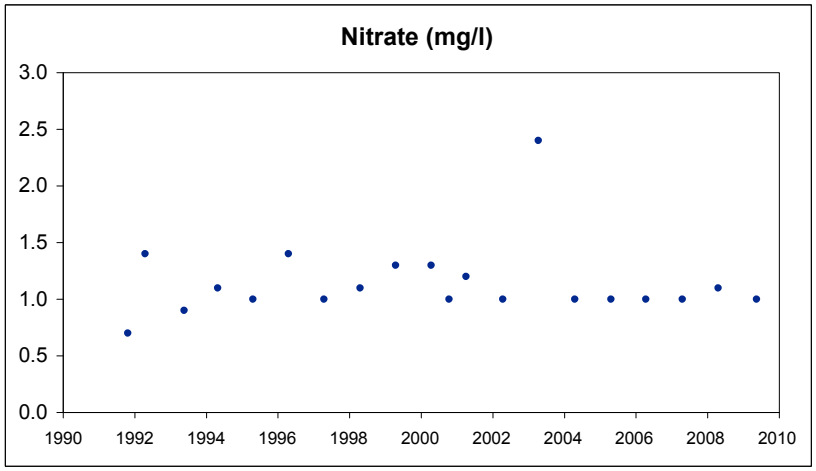

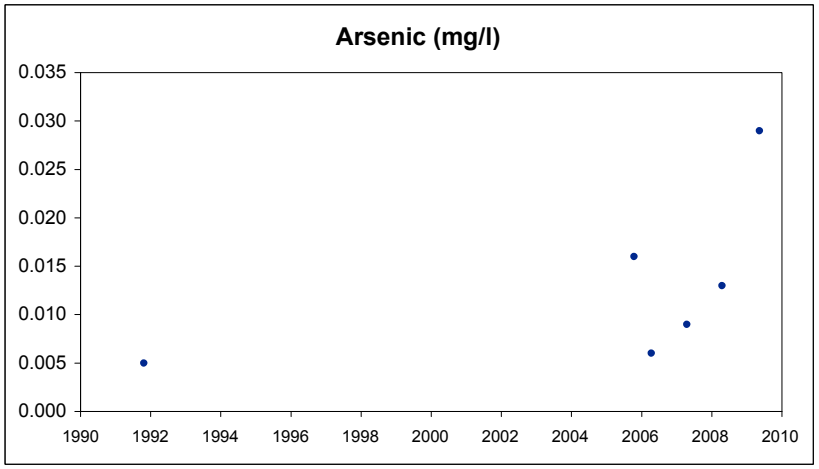

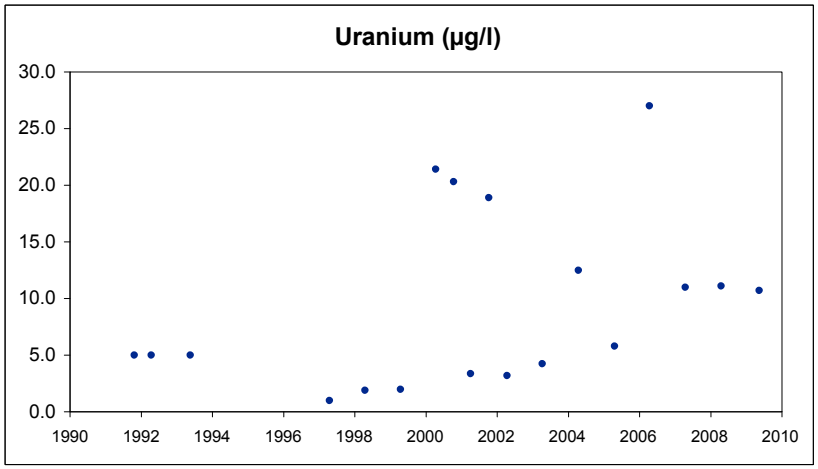

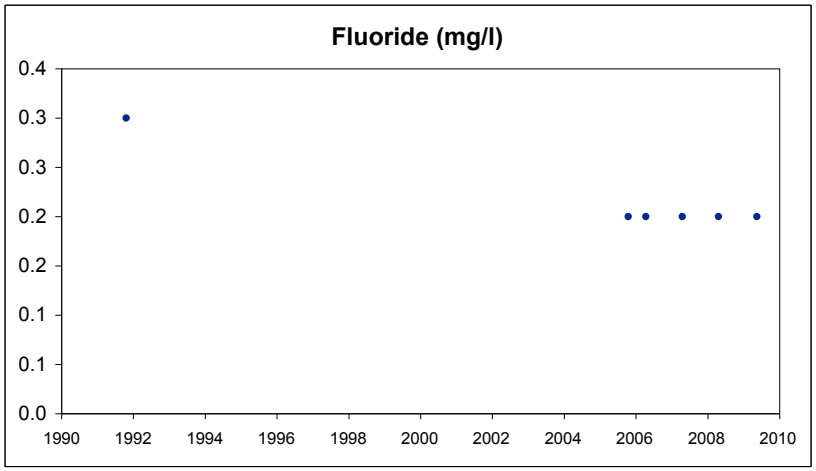

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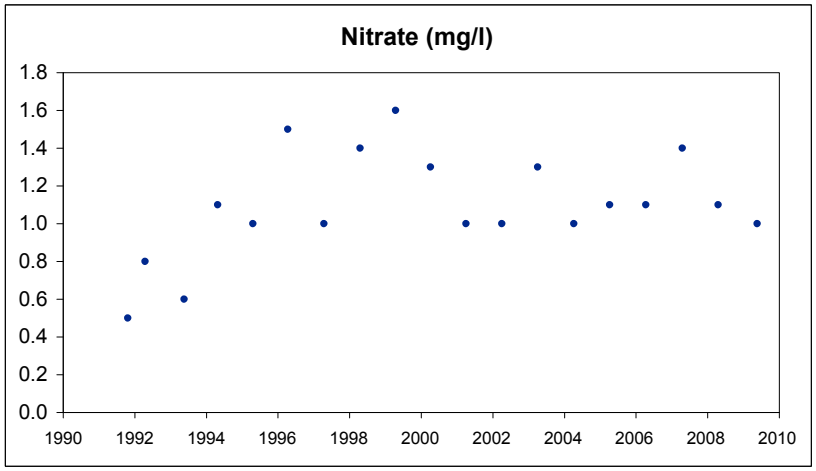

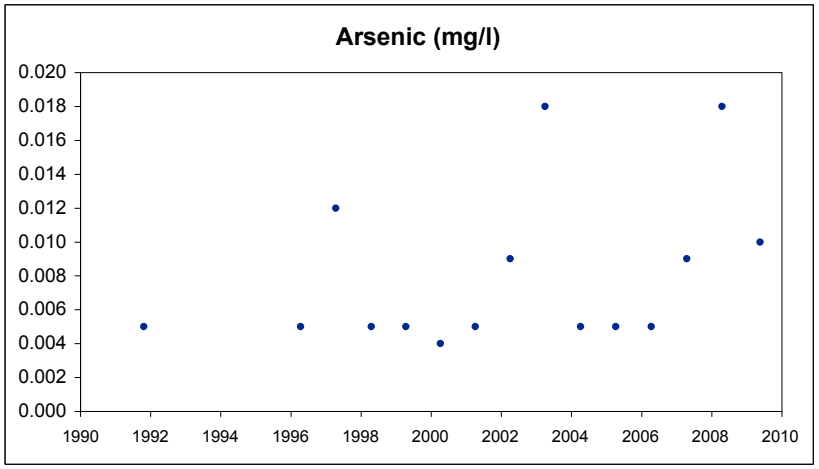

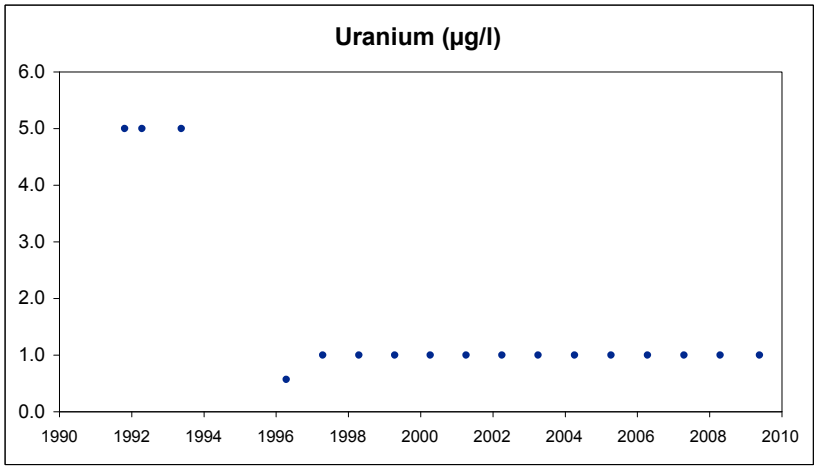

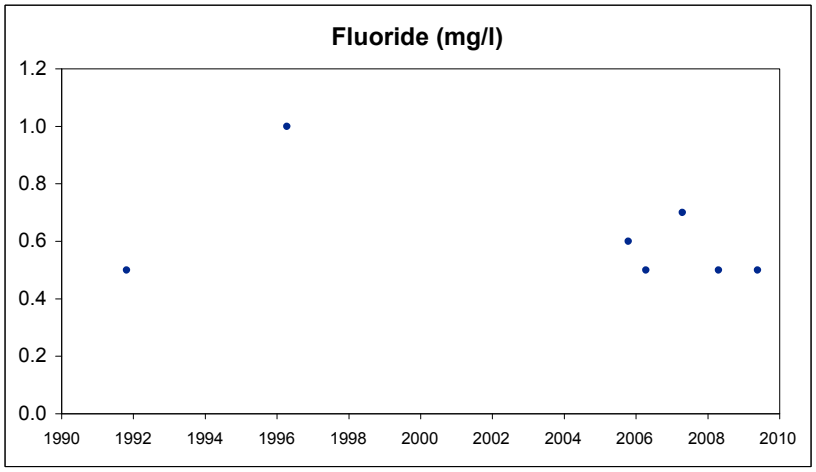

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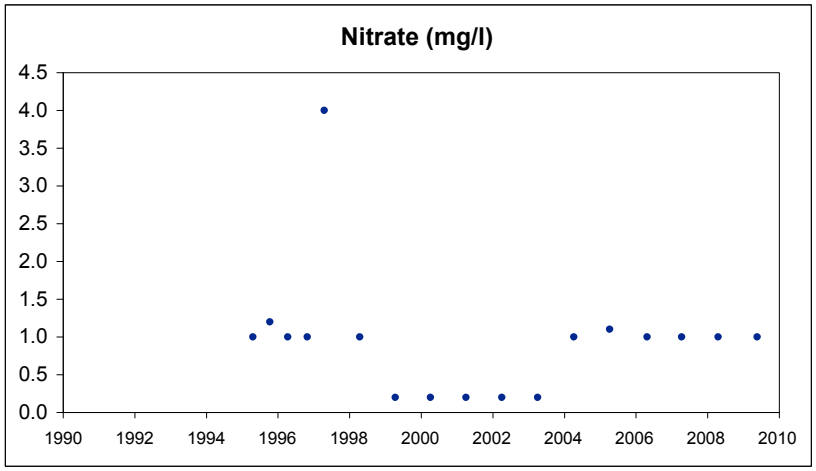

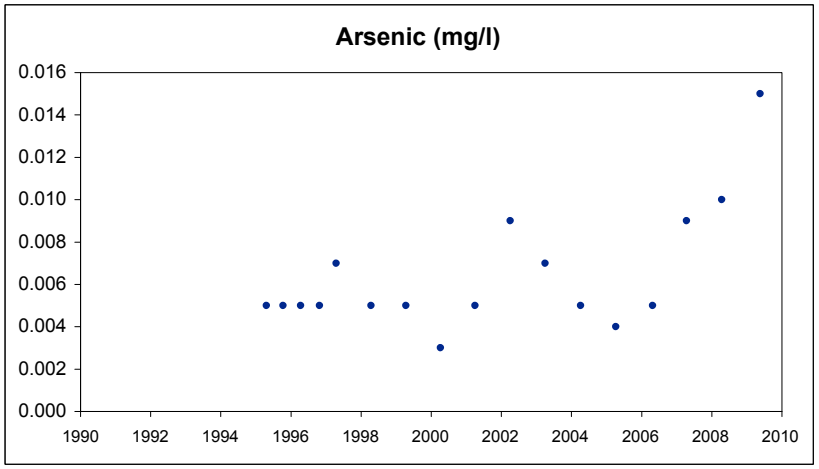

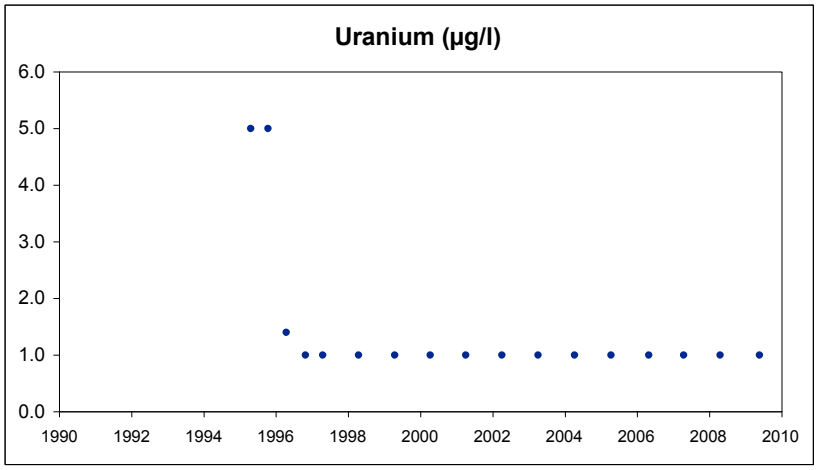

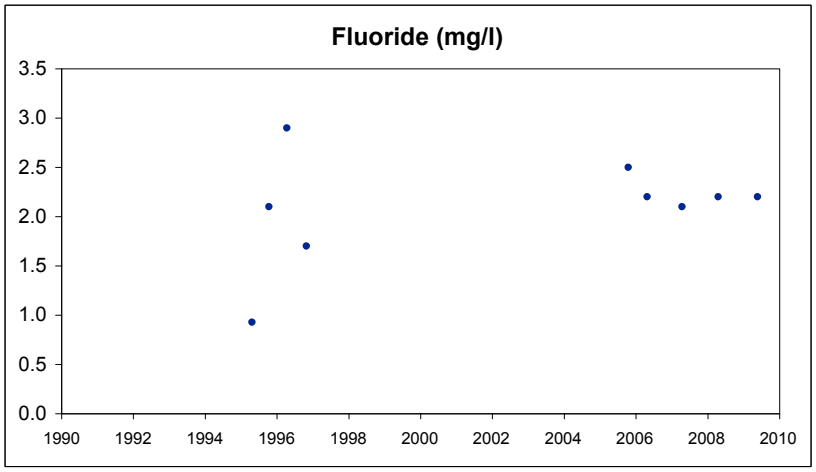

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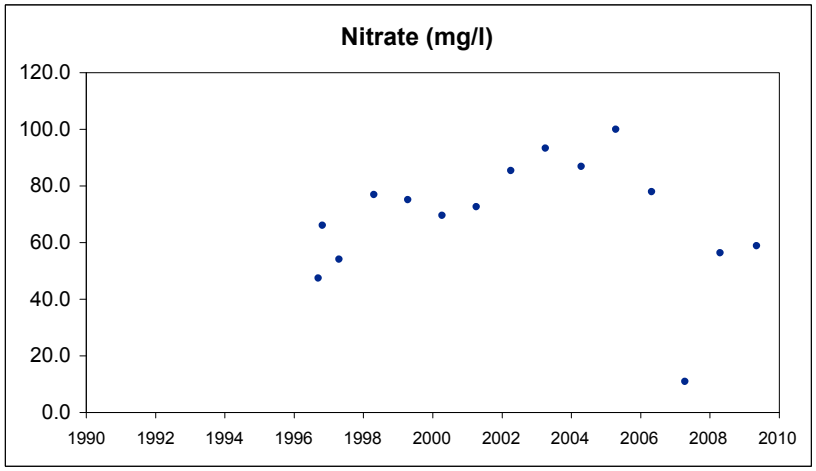

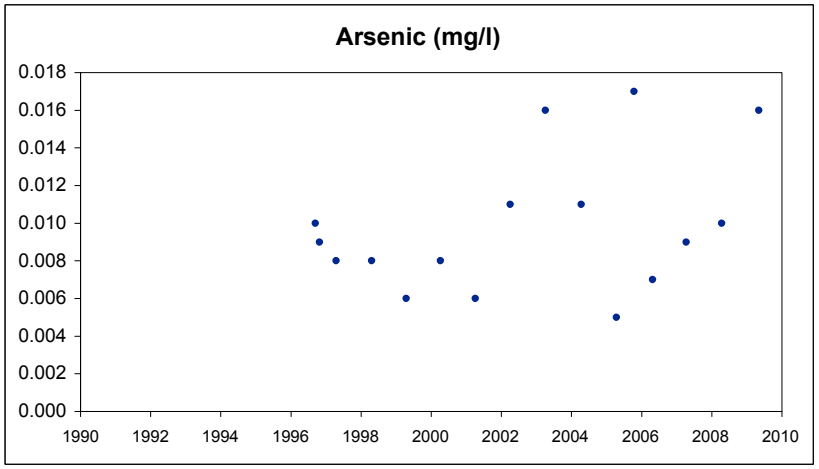

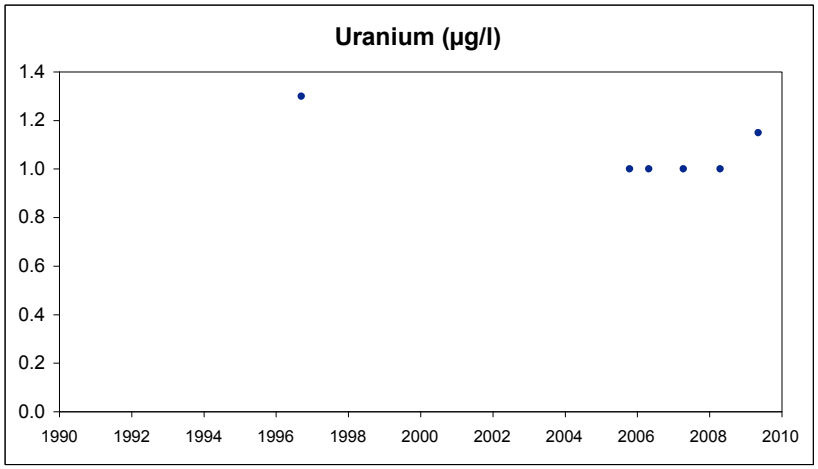

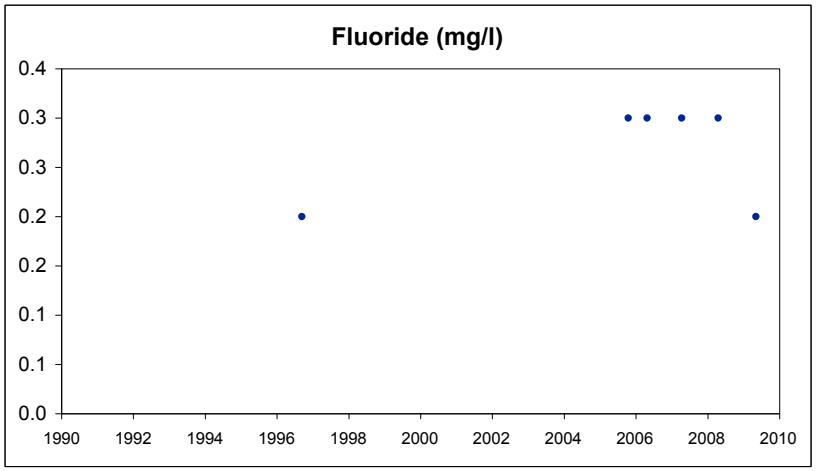

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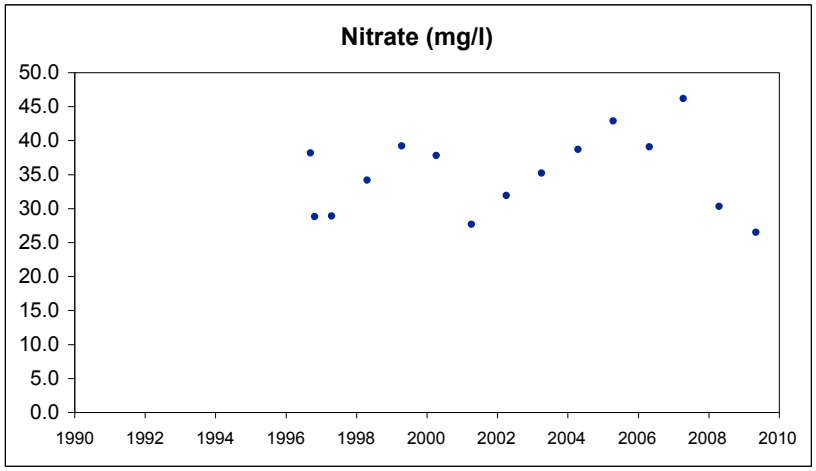

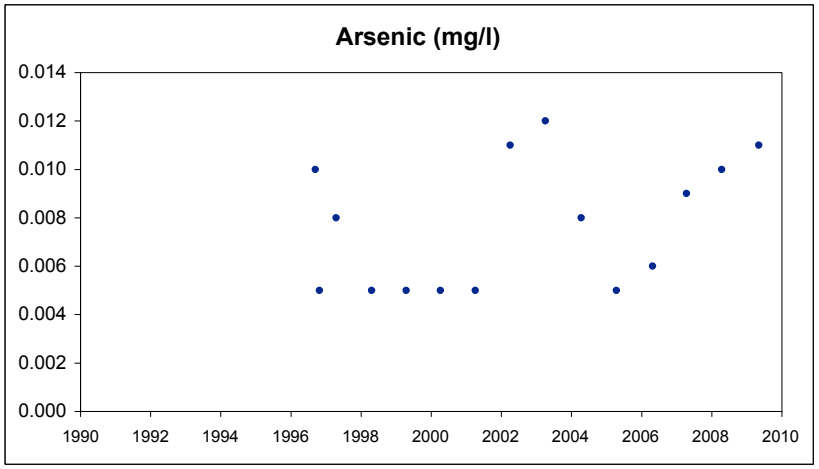

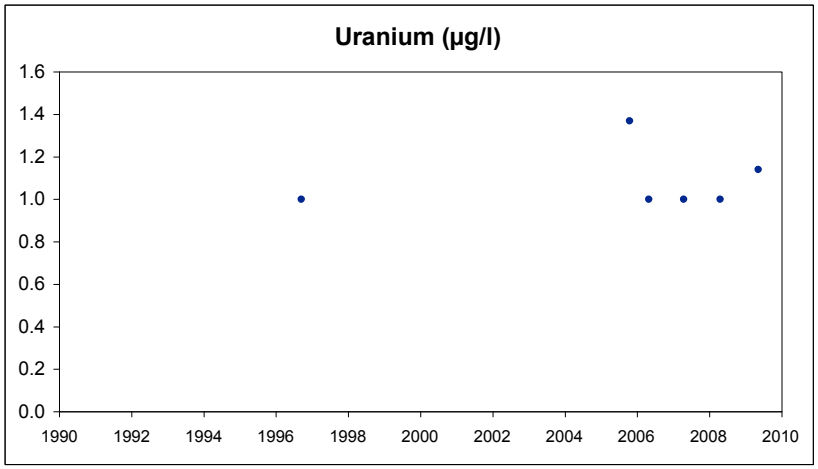

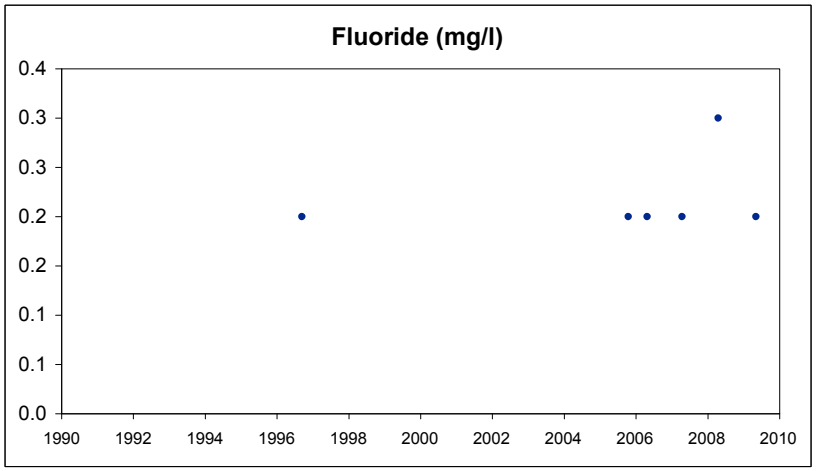

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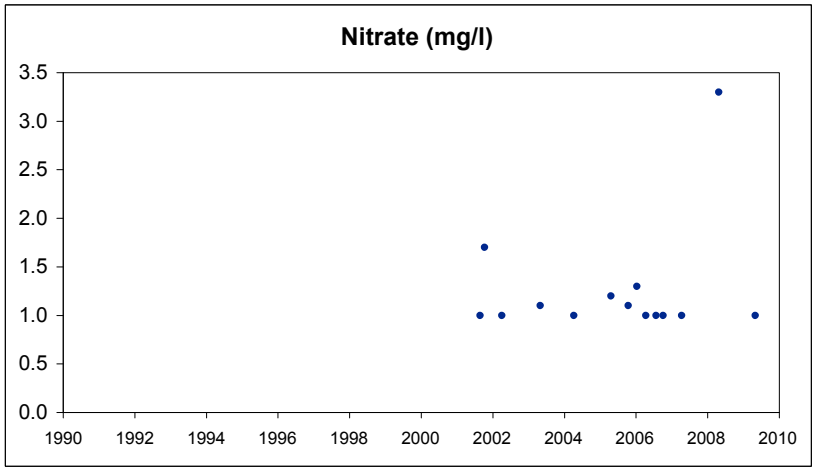

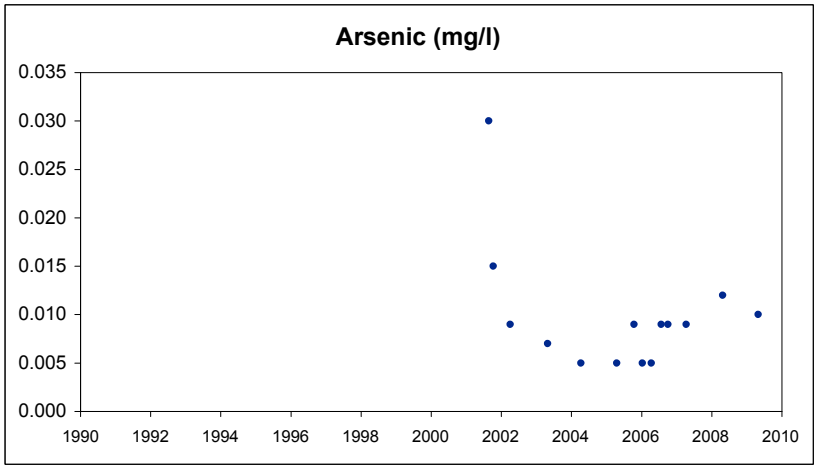

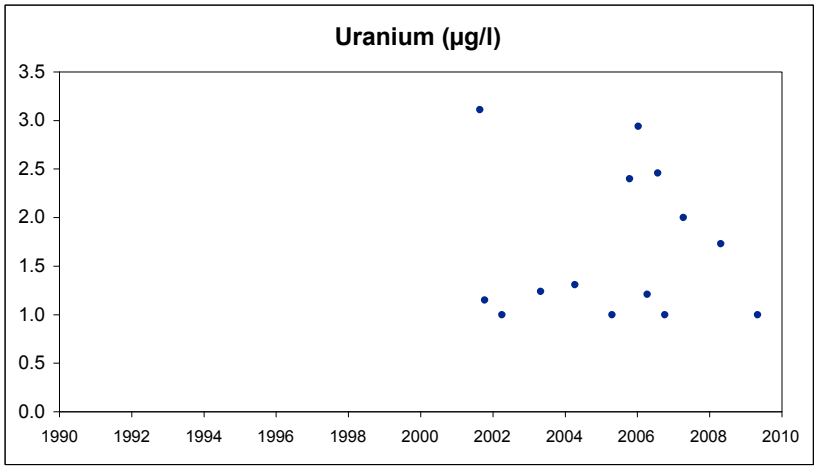

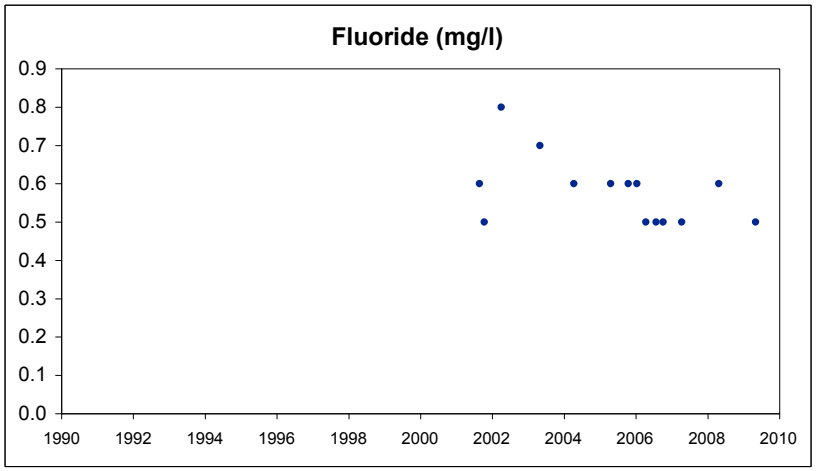

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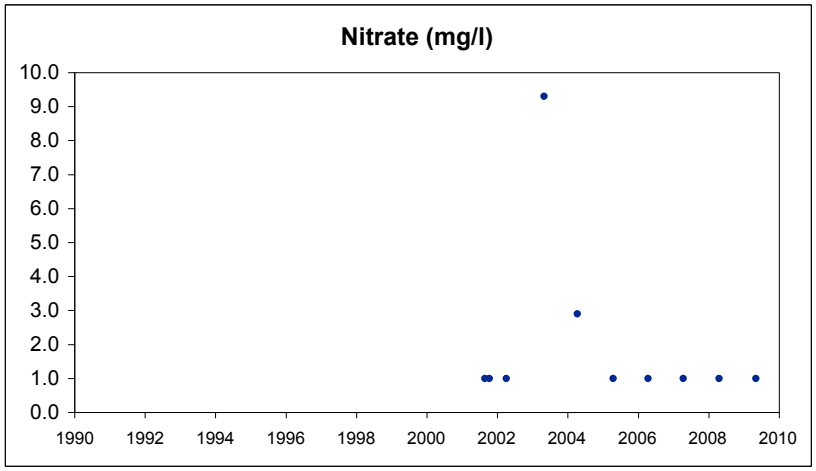

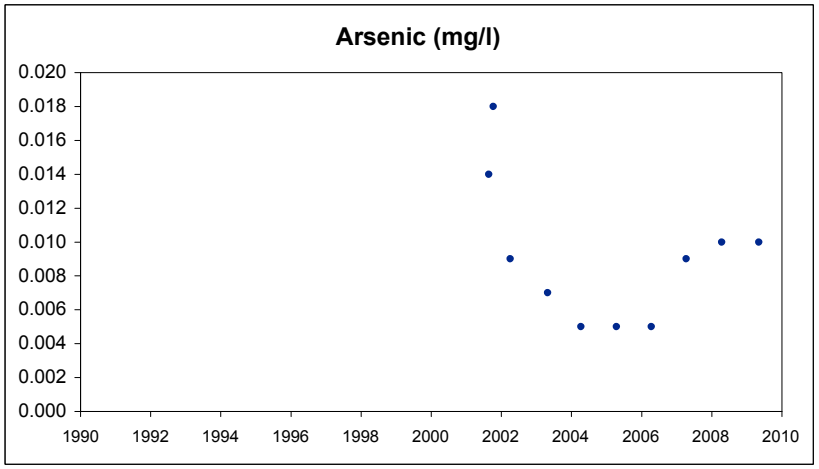

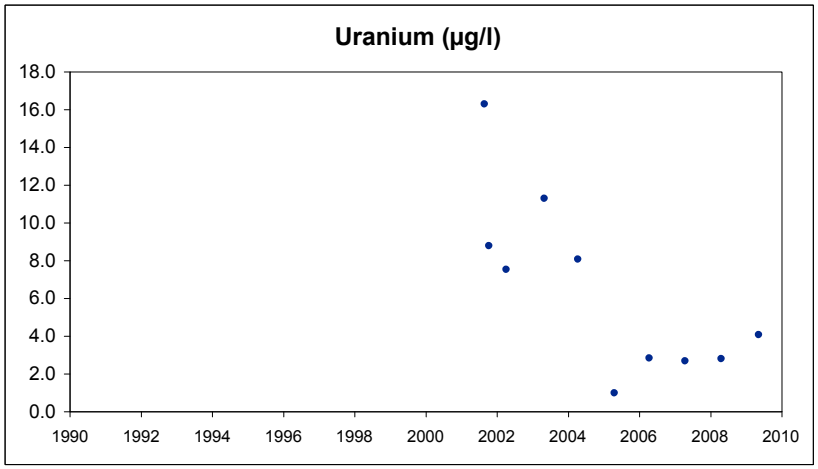

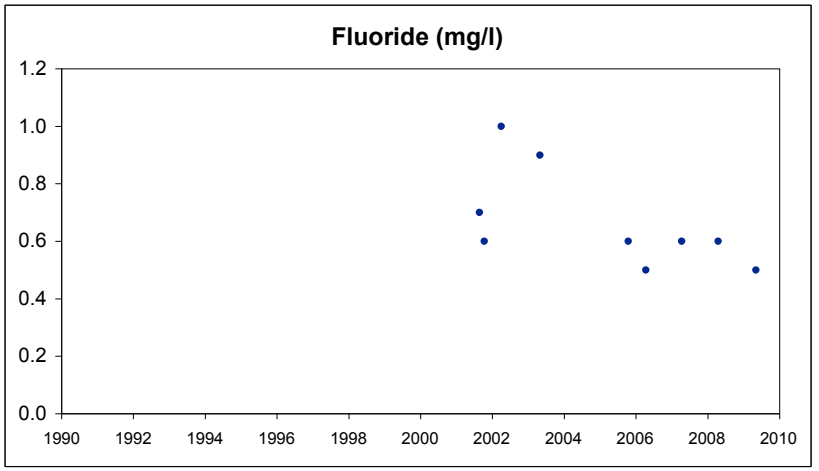

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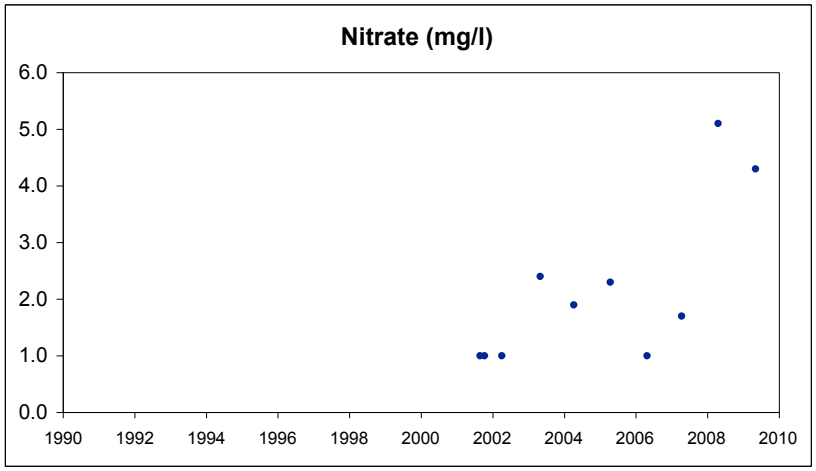

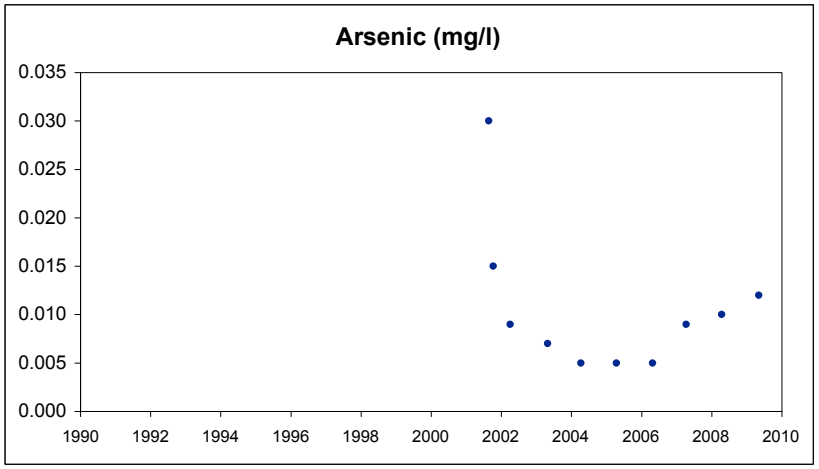

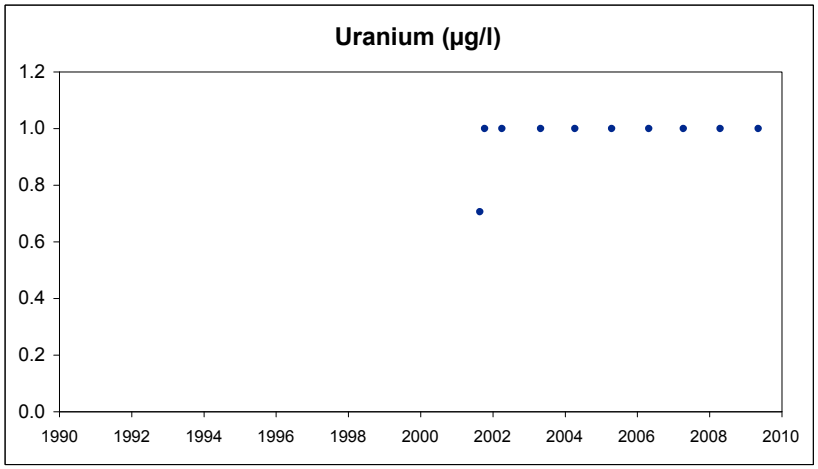

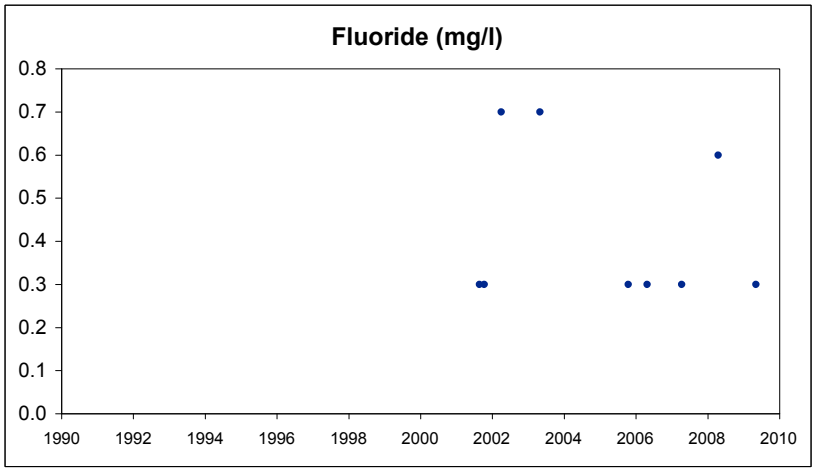

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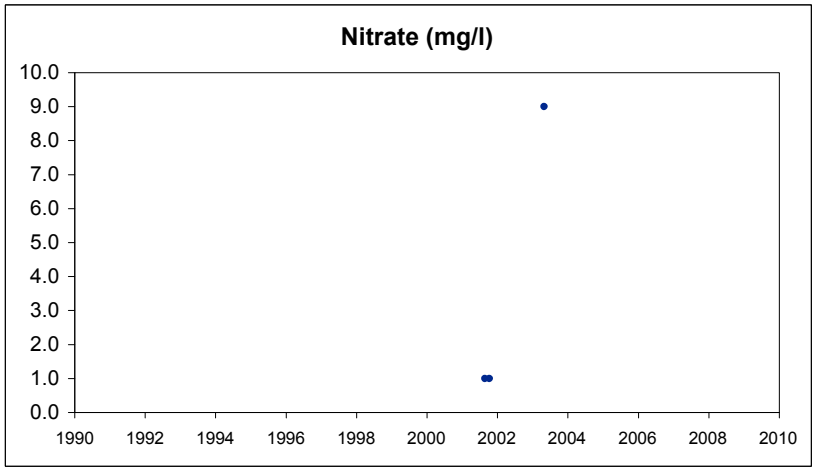

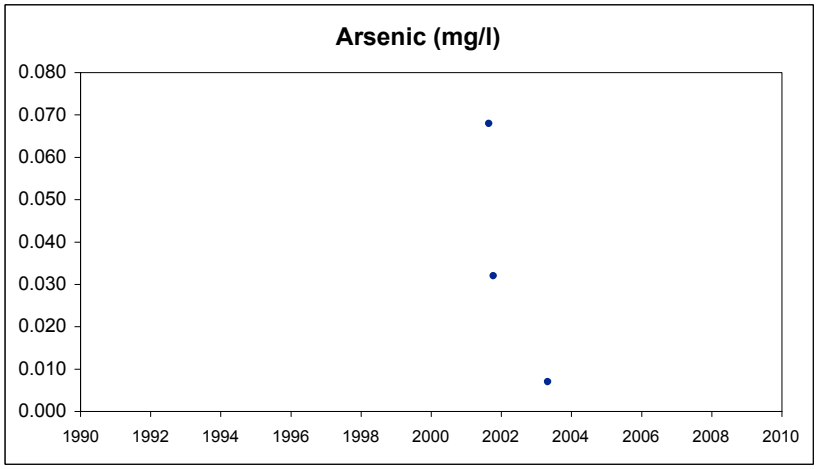

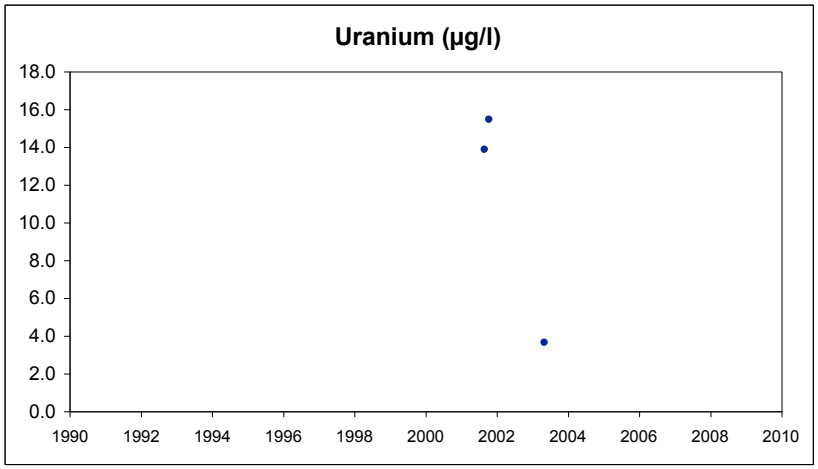

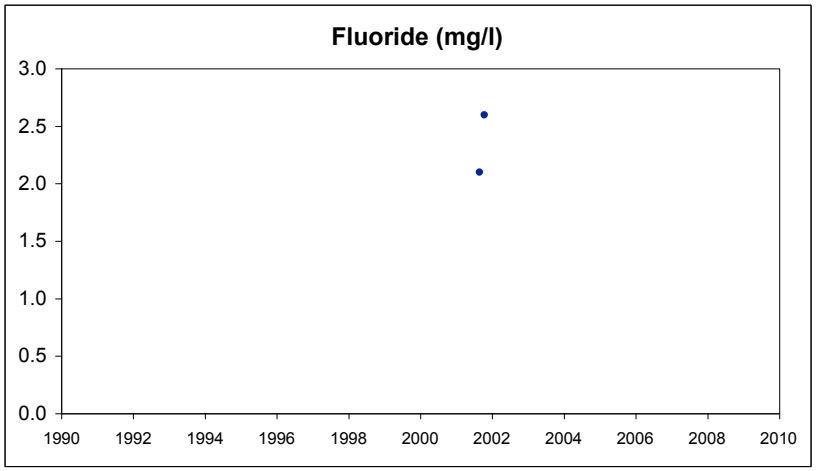

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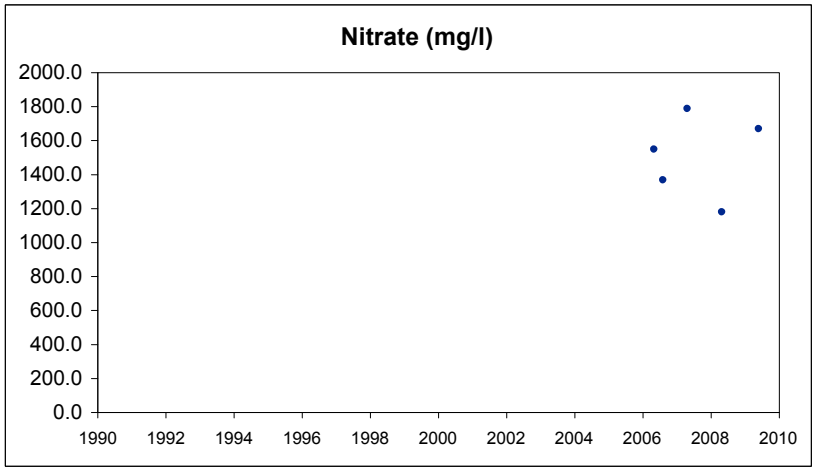

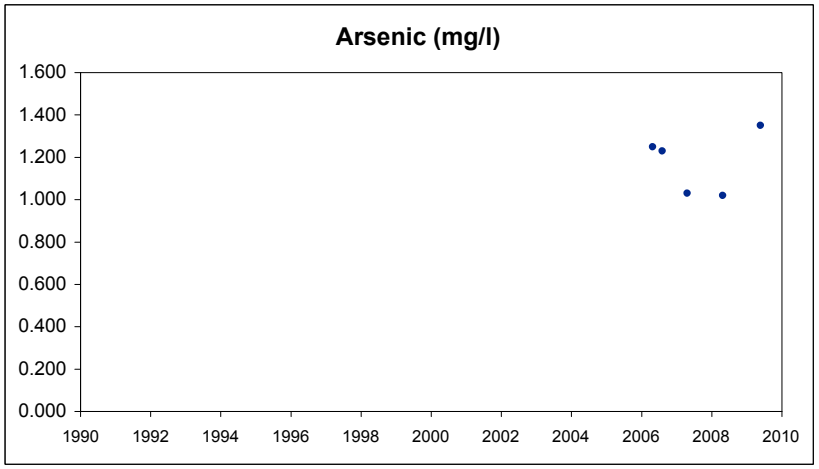

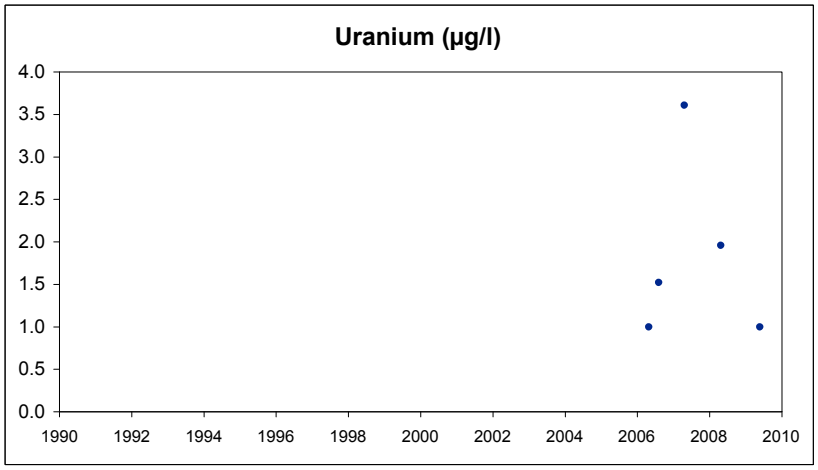

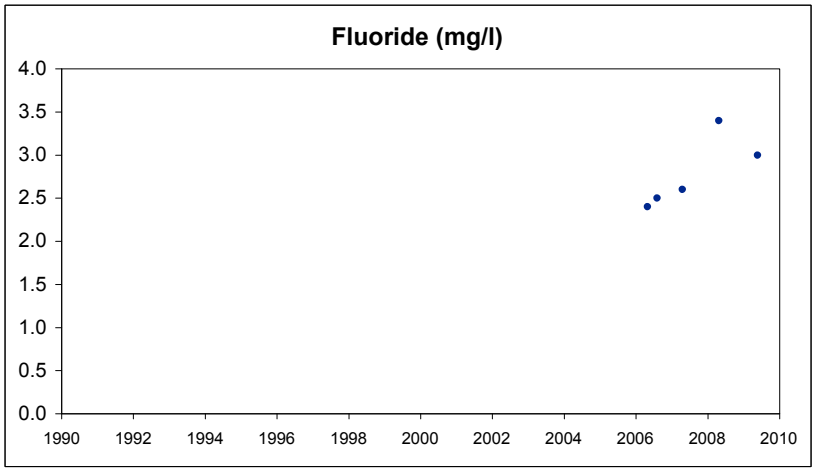

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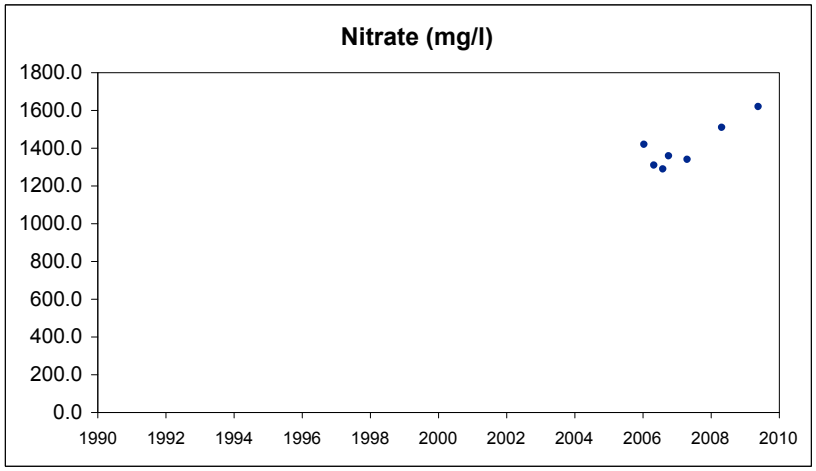

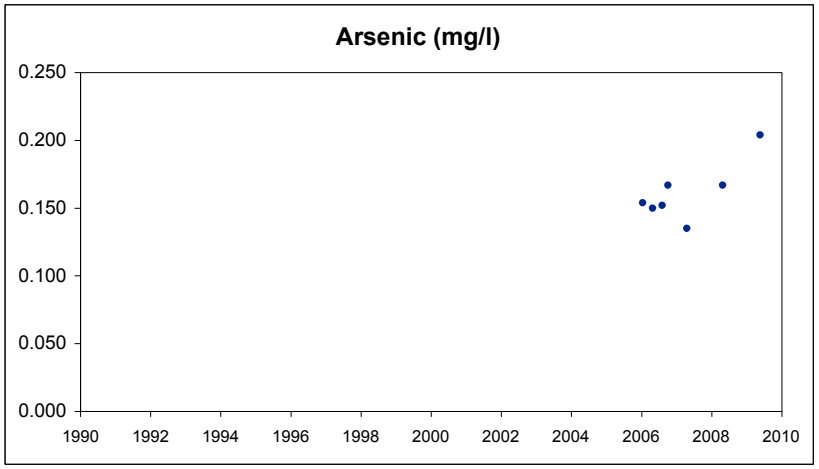

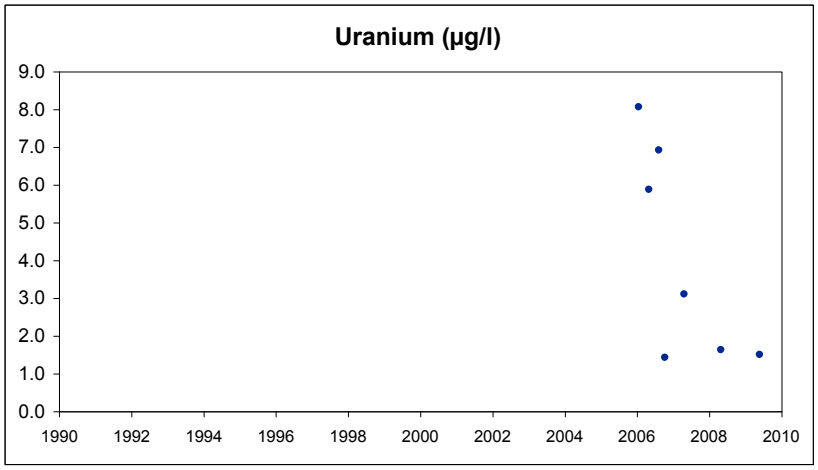

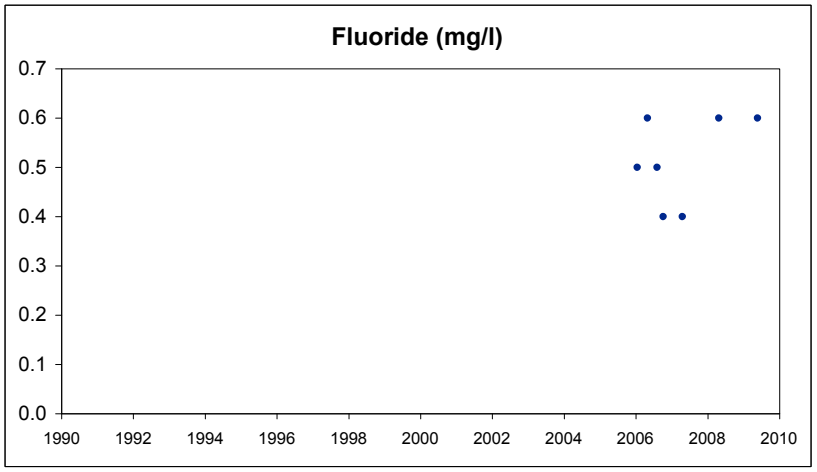

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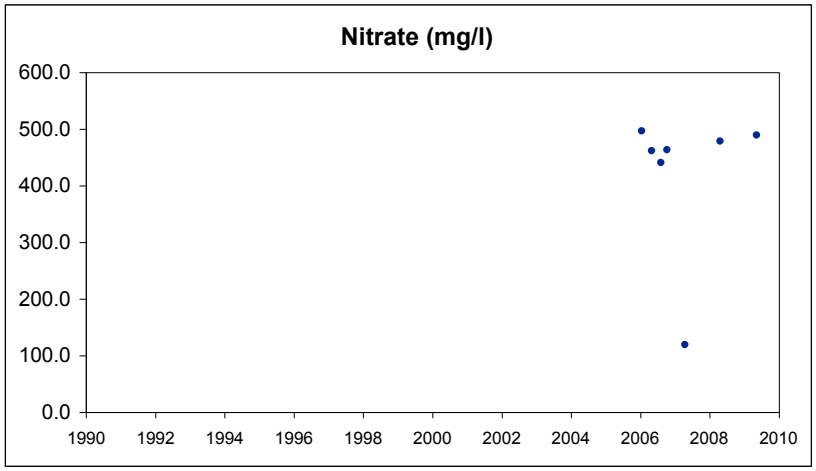

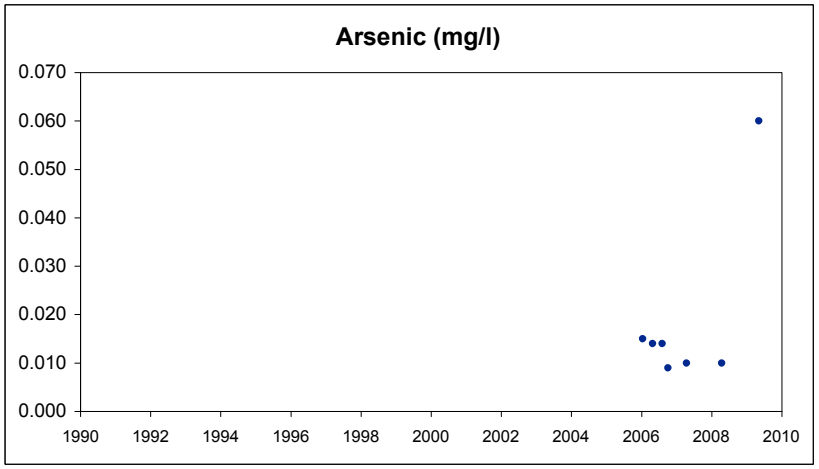

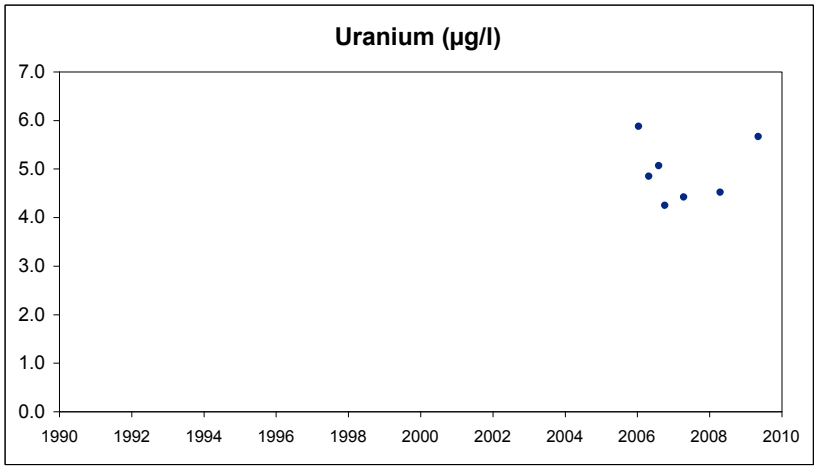

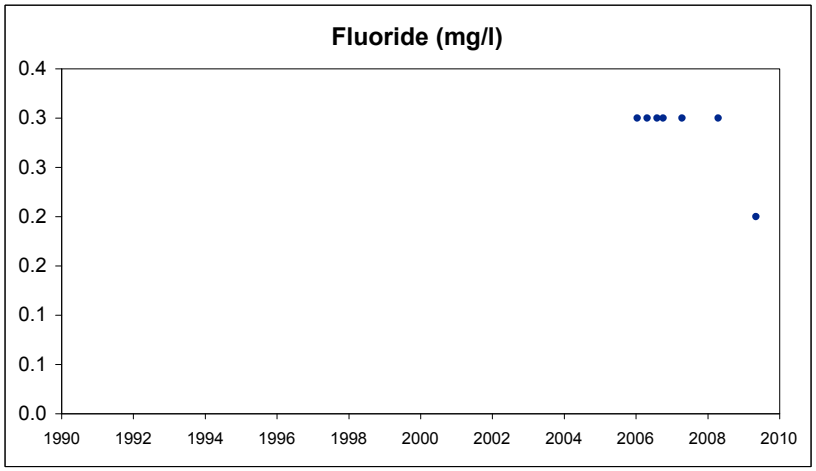

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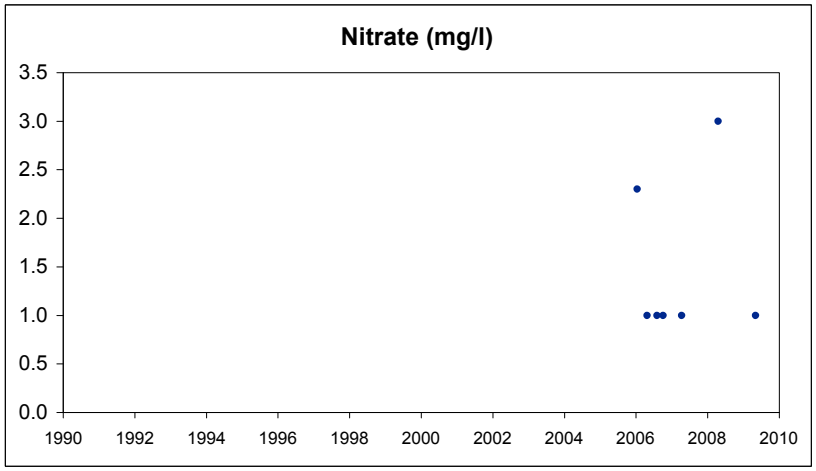

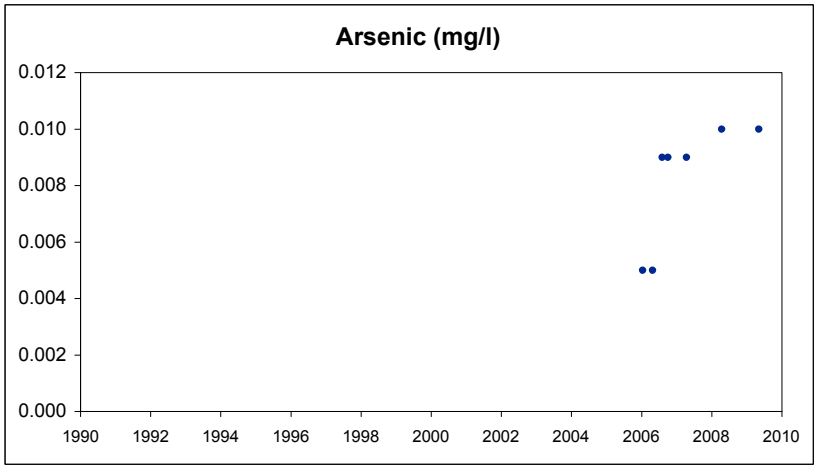

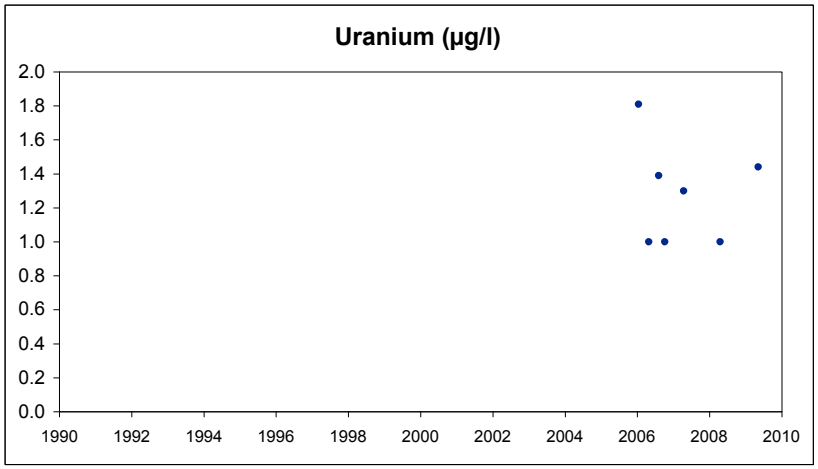

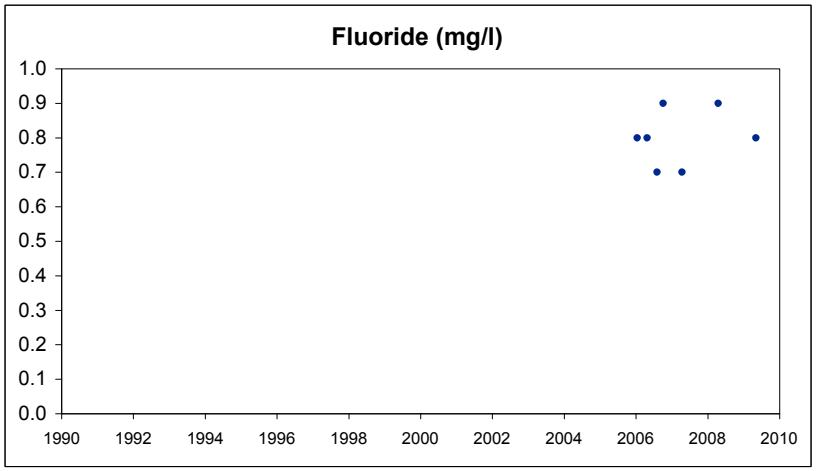

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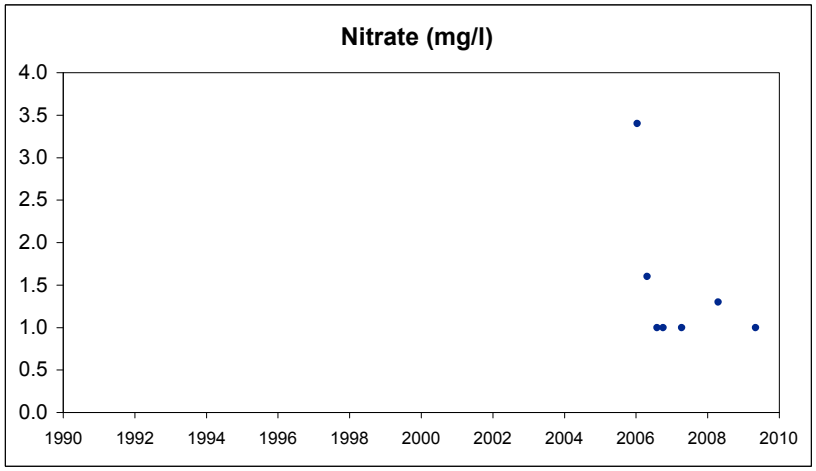

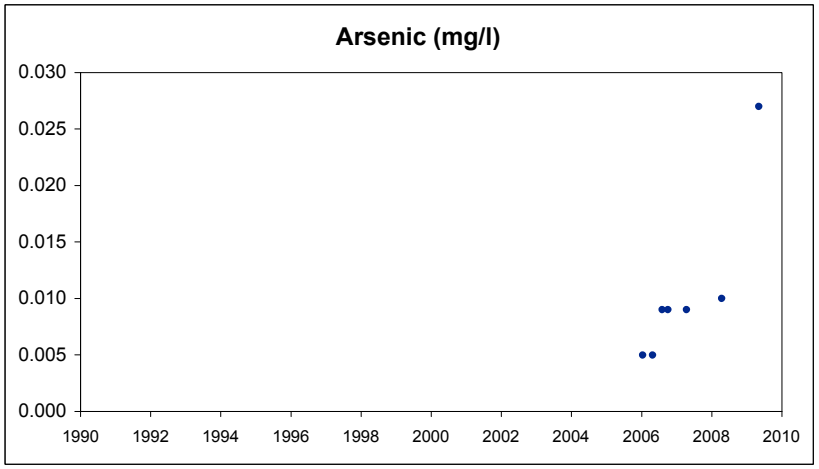

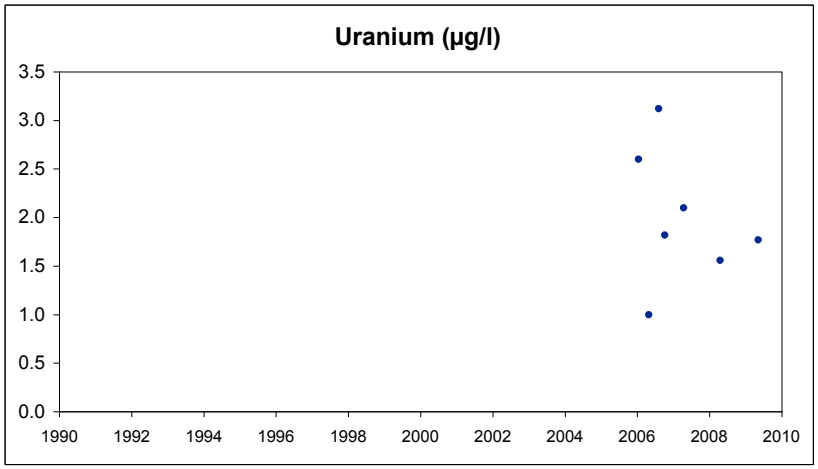

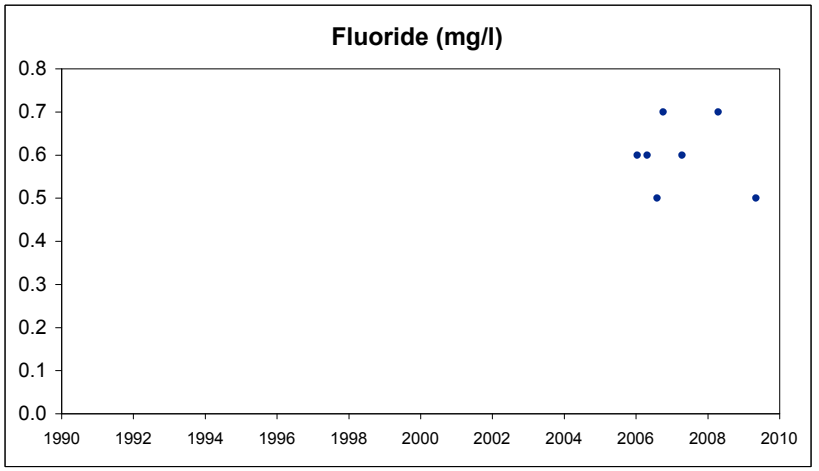

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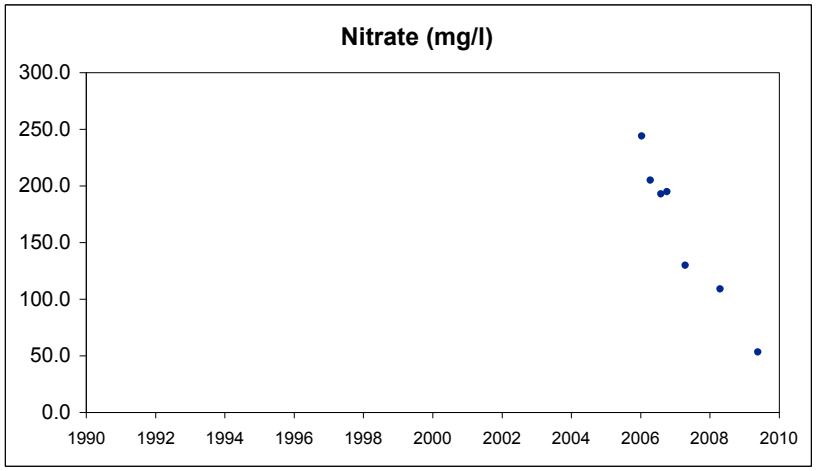

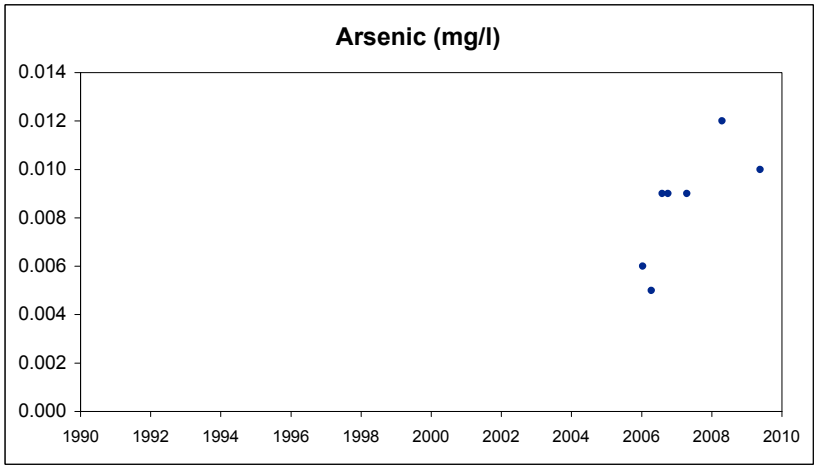

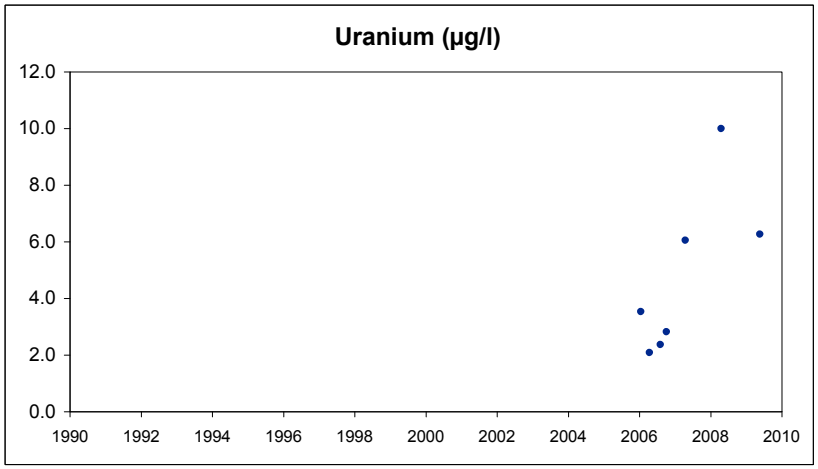

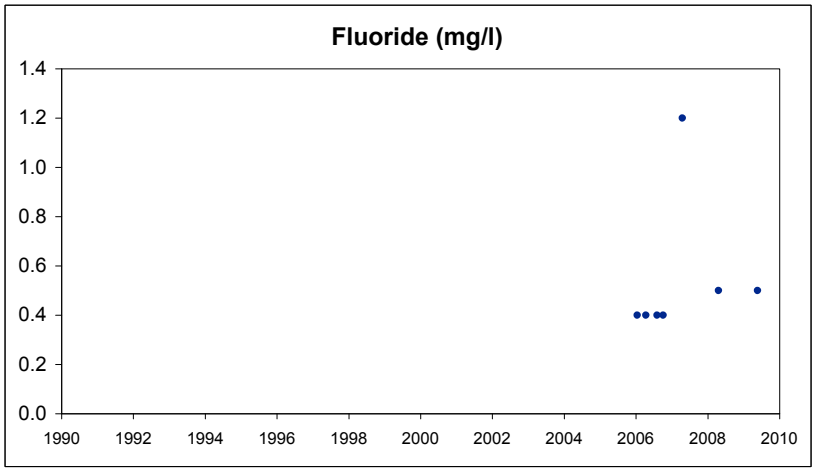

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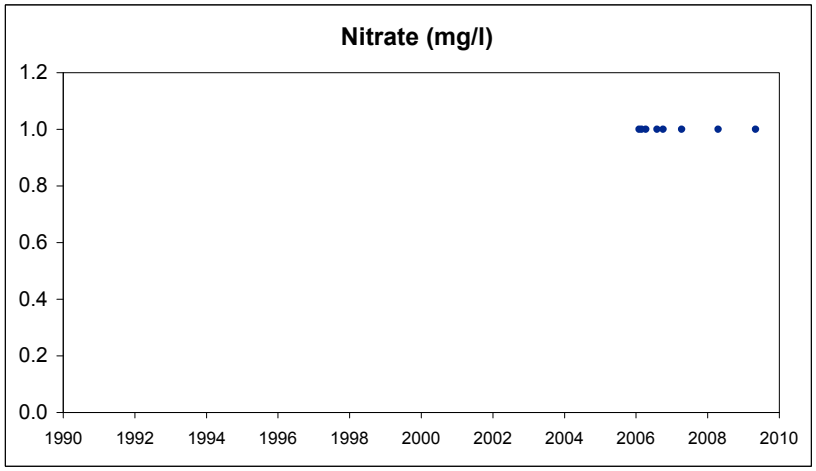

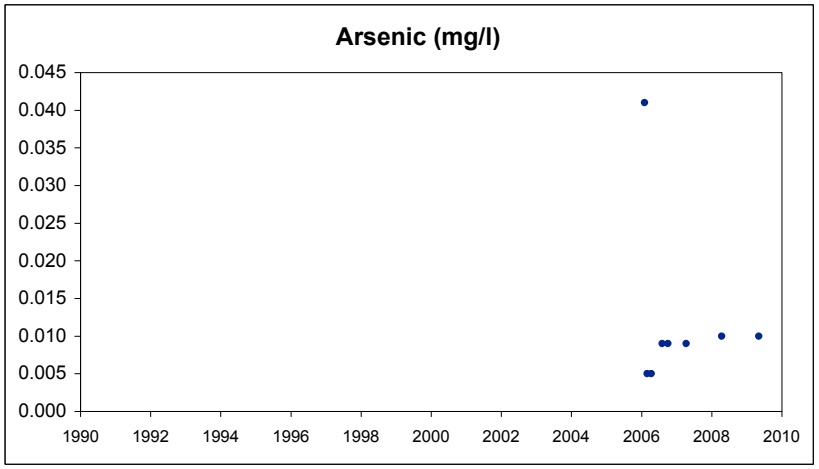

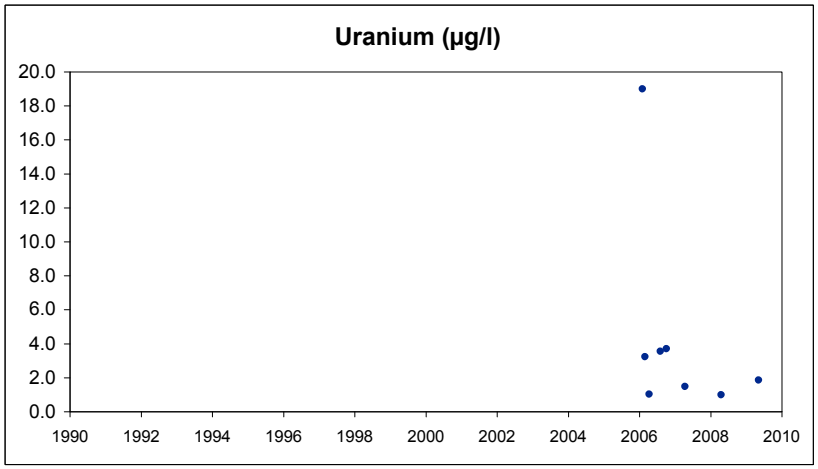

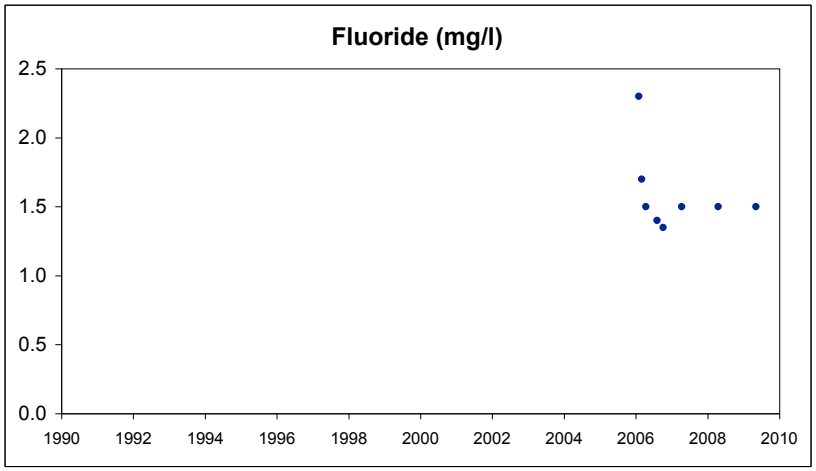

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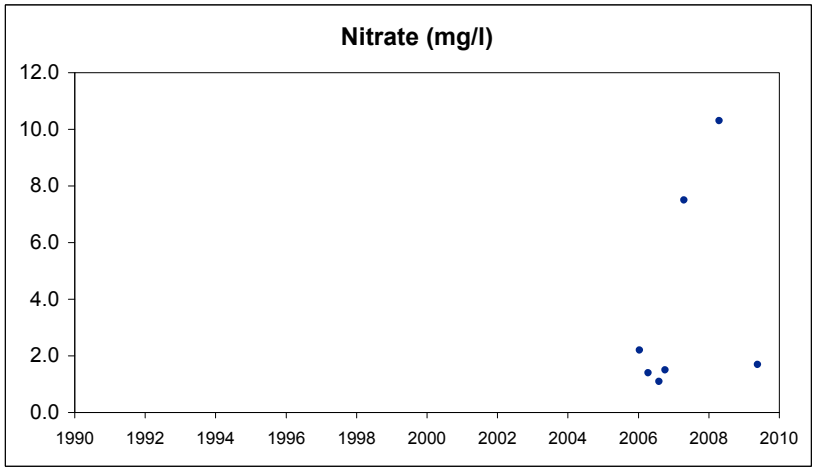

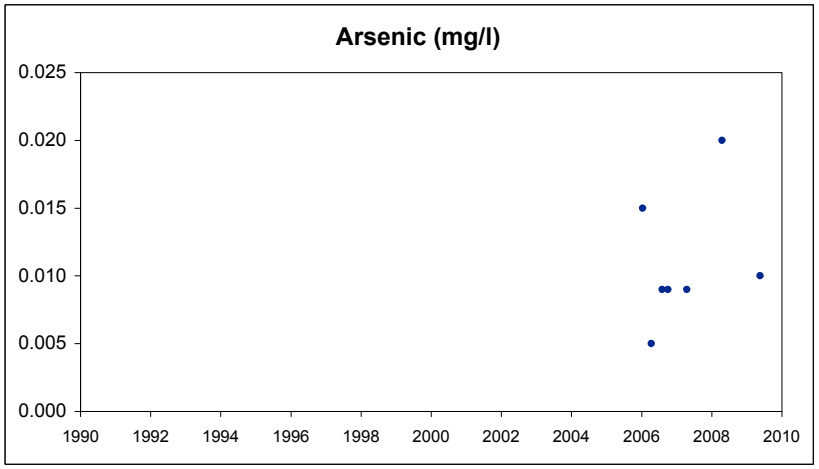

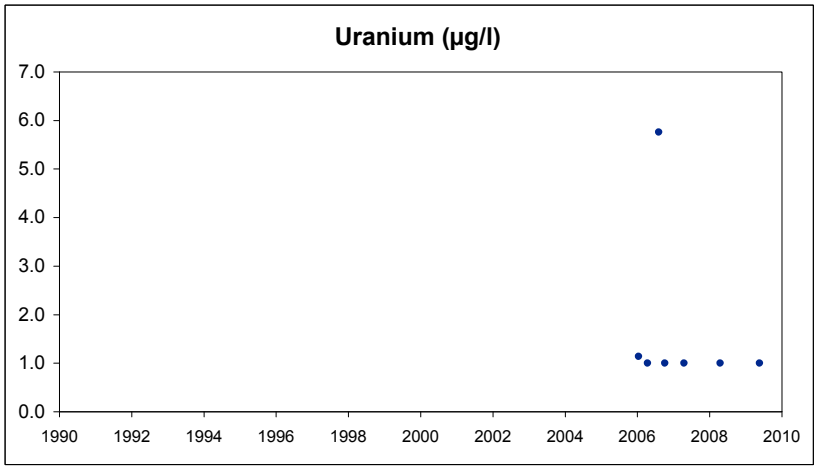

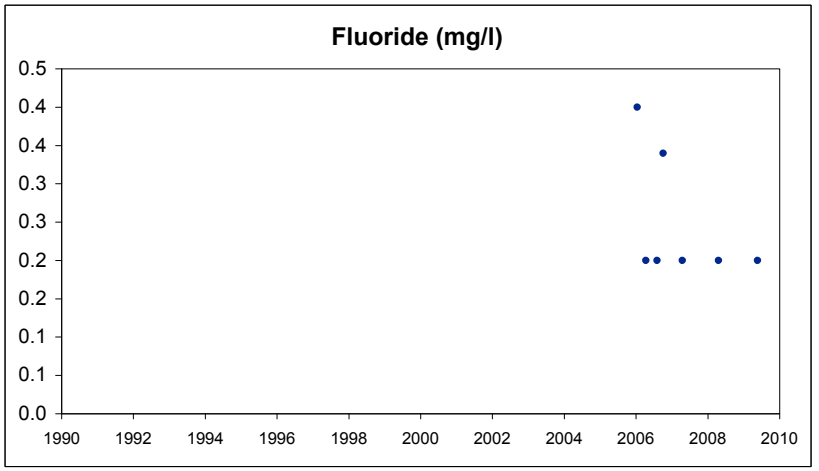

STA04 (Cherokee Nation MW)

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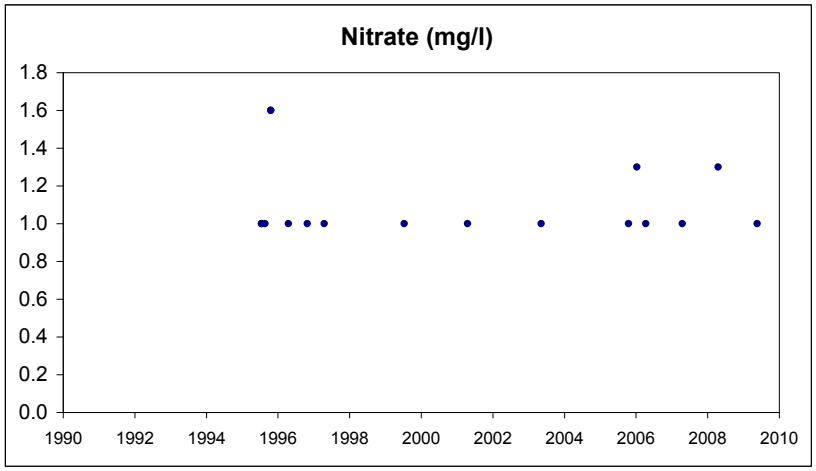

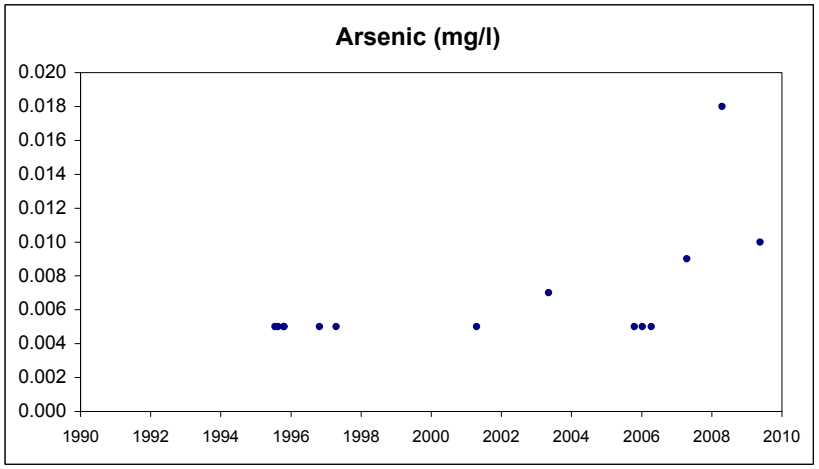

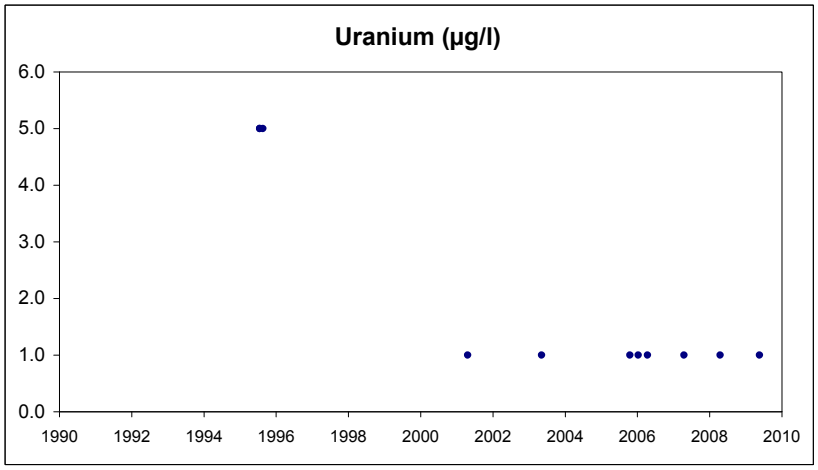

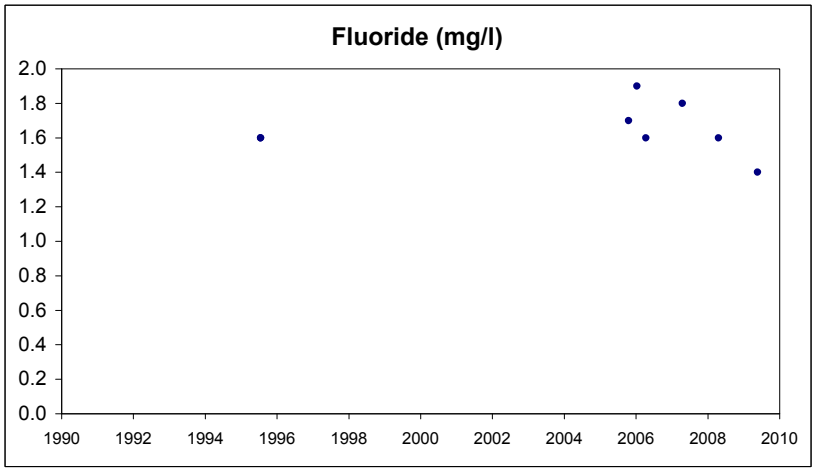

Appendix C

Time Series Graphs for Groundwater Recovery Systems

2223 (Ditch West Pond 2 Recovery System)

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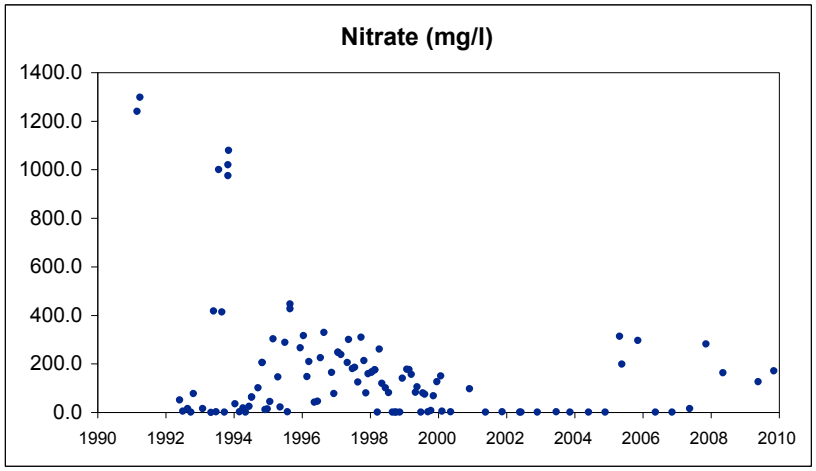

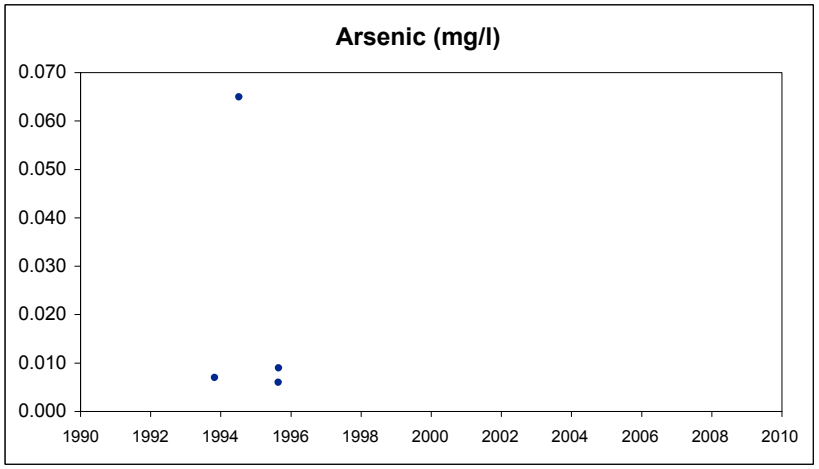

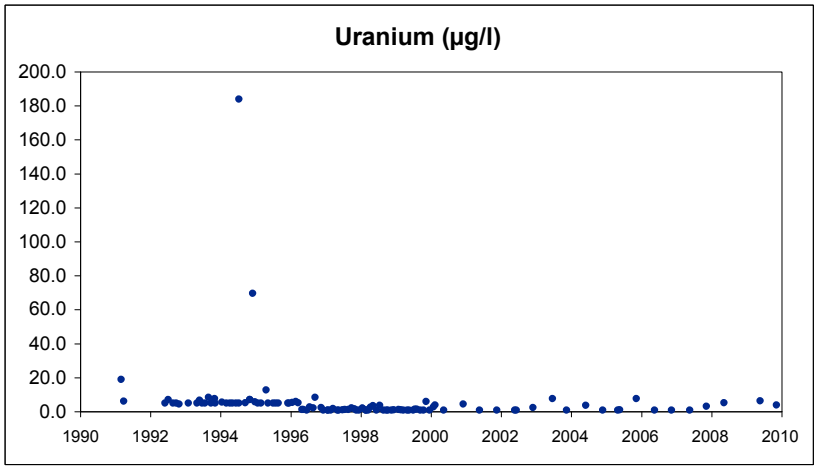

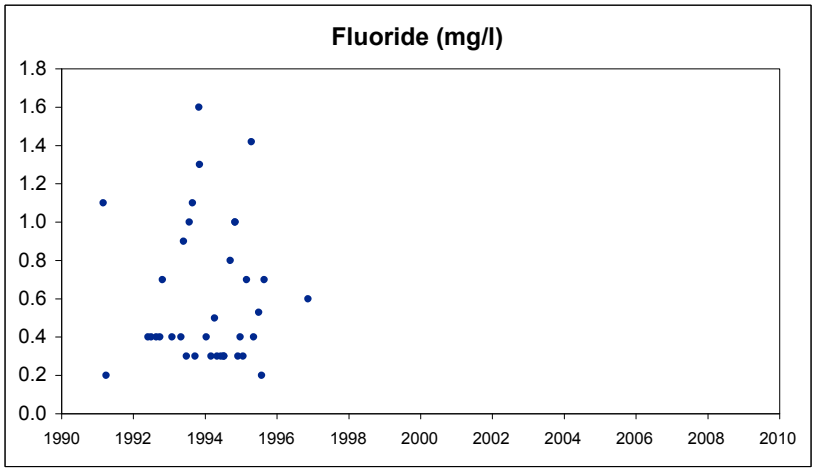

2224A (005 Collection Trench West of Emergency Basin)

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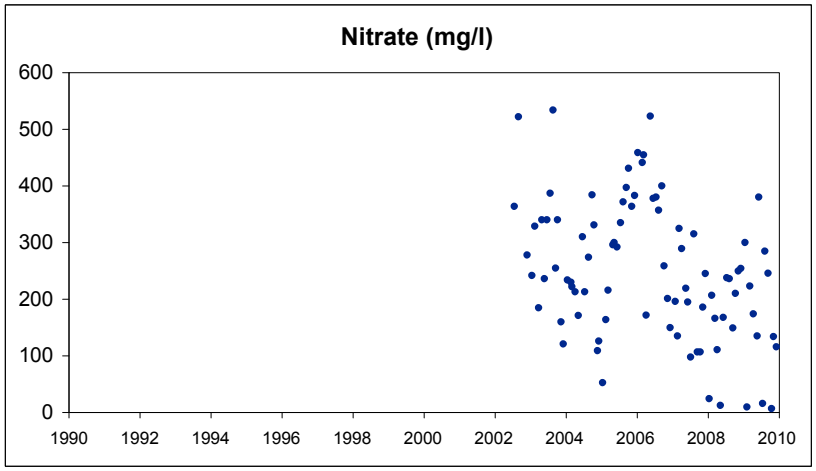

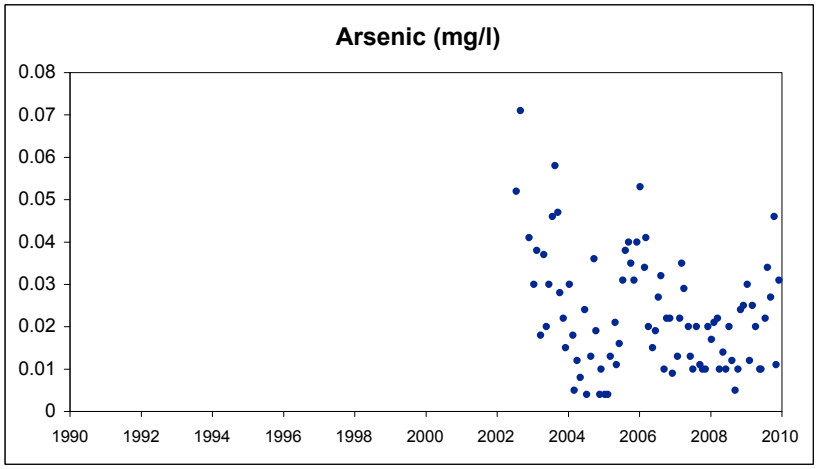

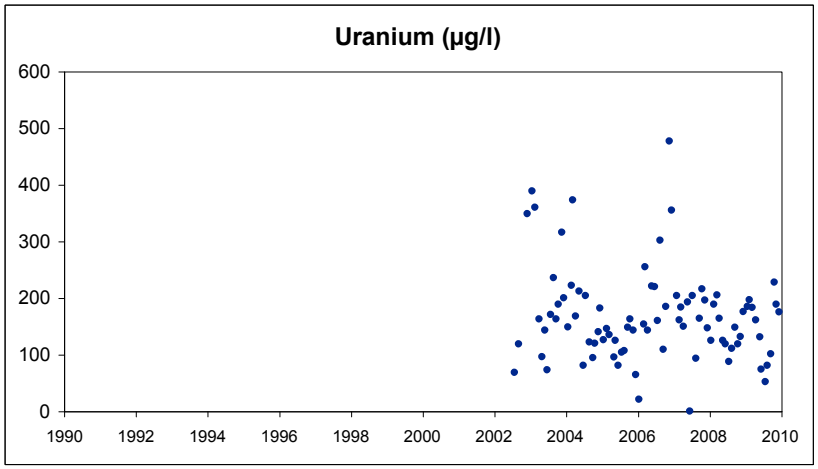

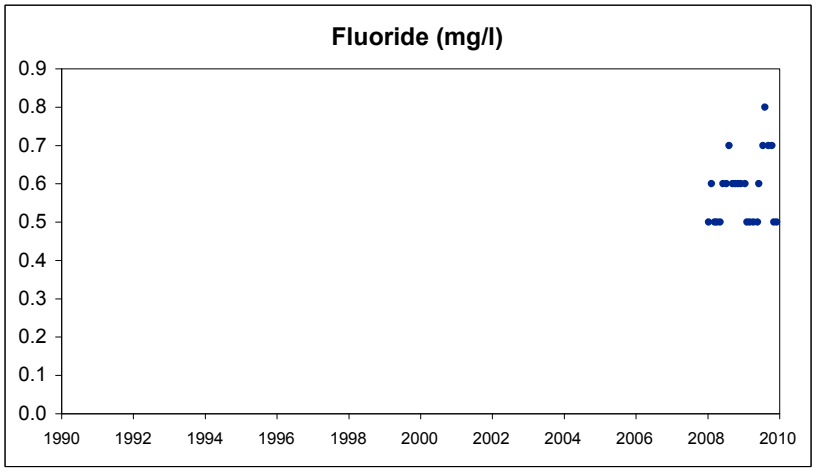

2224B (005 Monitor Trench West of Emergency Basin)

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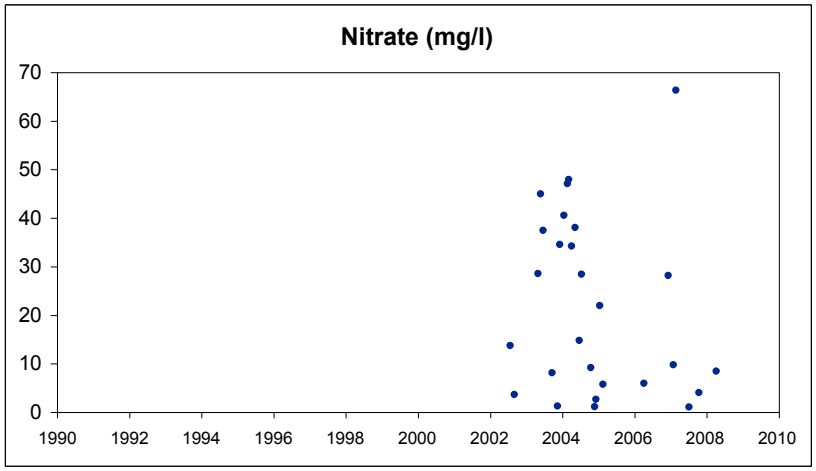

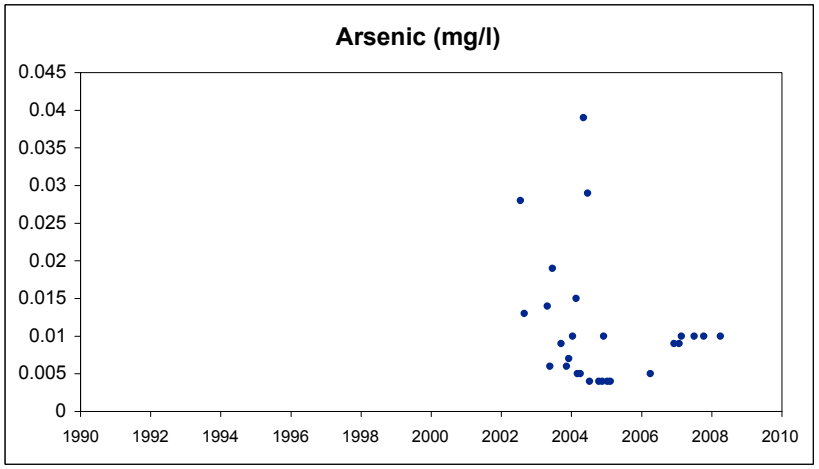

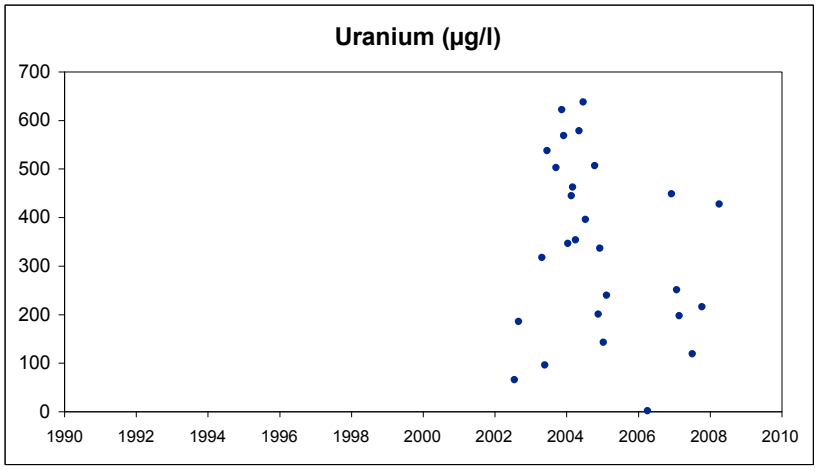

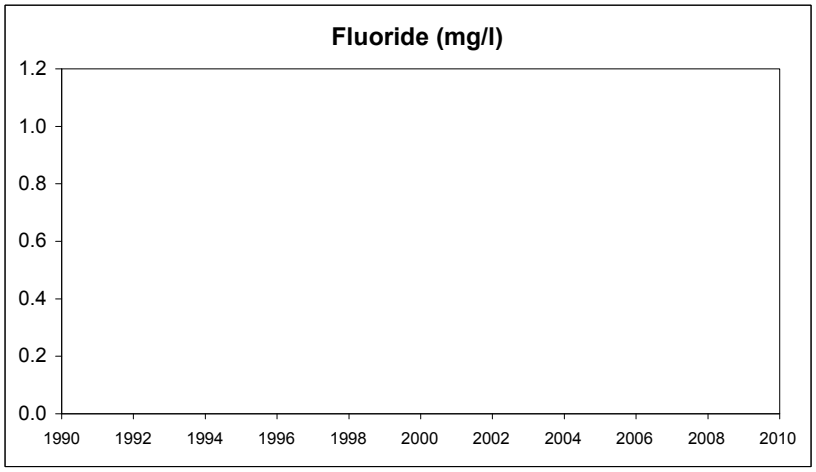

2225 (Catchment Trench No. 3)

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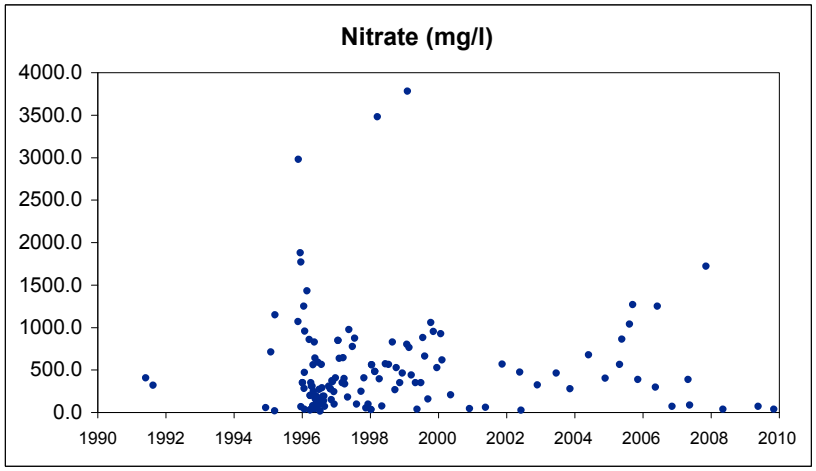

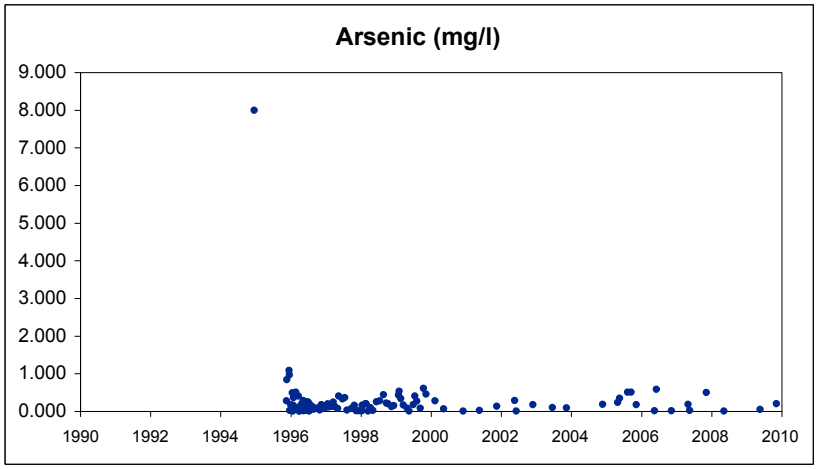

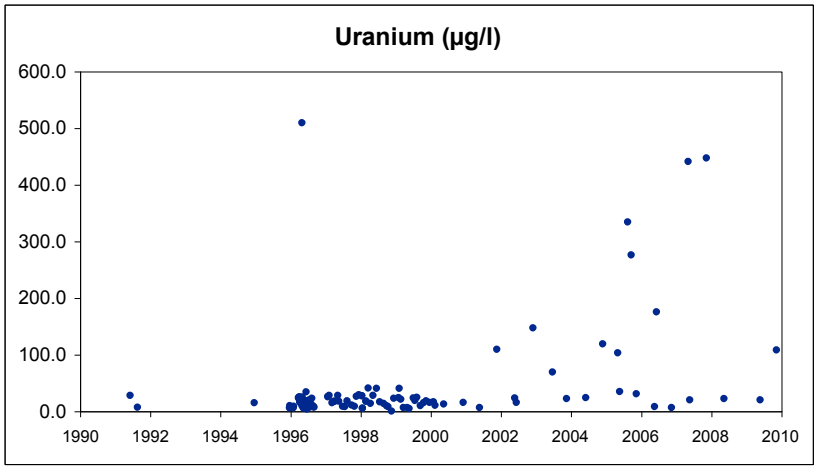

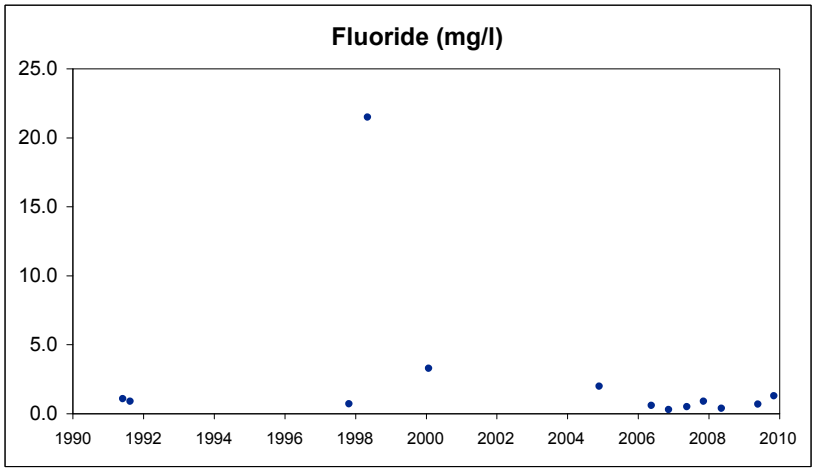

2241 (005 Drainage ~ 25' East of COE Boundary Fence)

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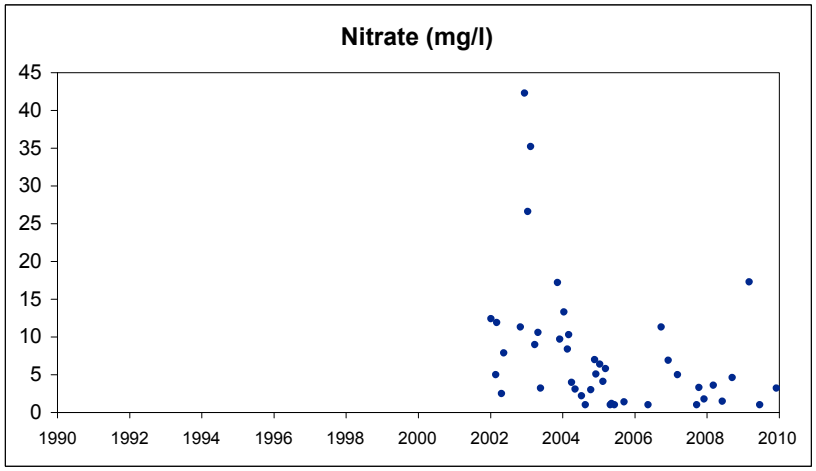

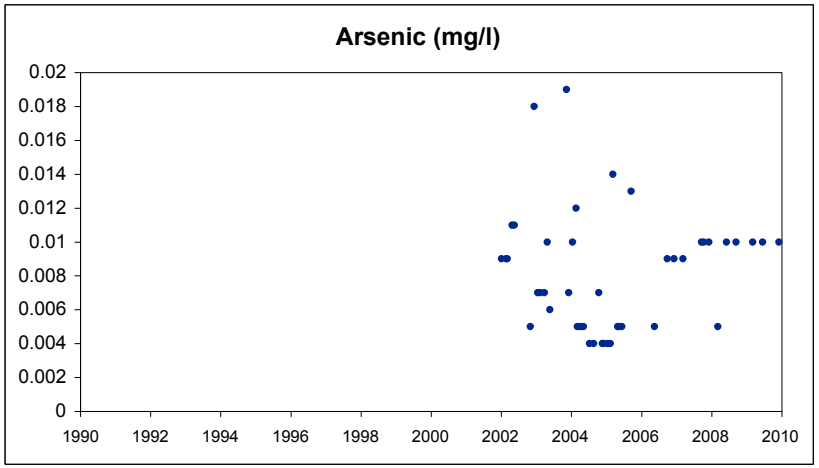

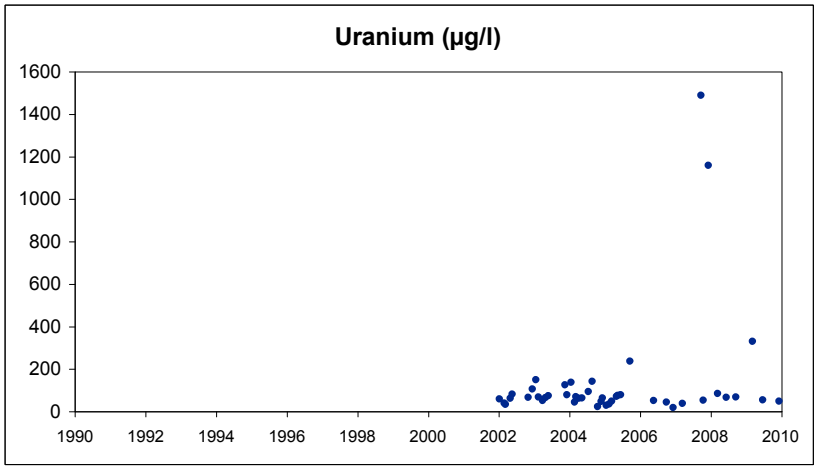

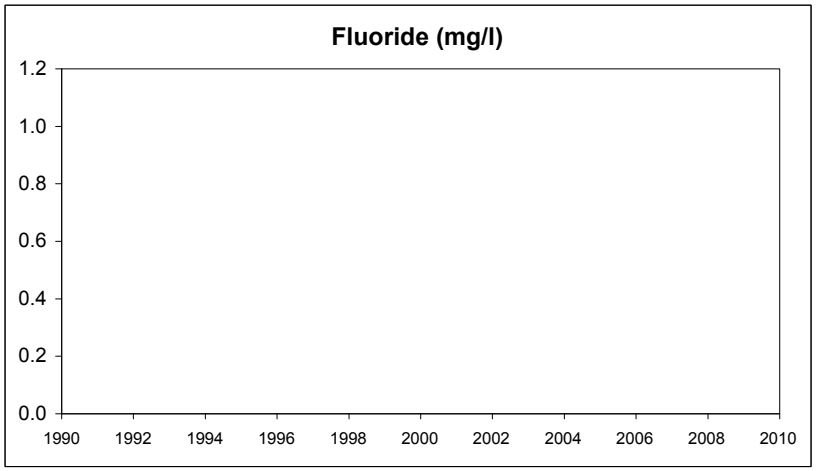

2242 (005 Drainage - Pool Near MW100B)

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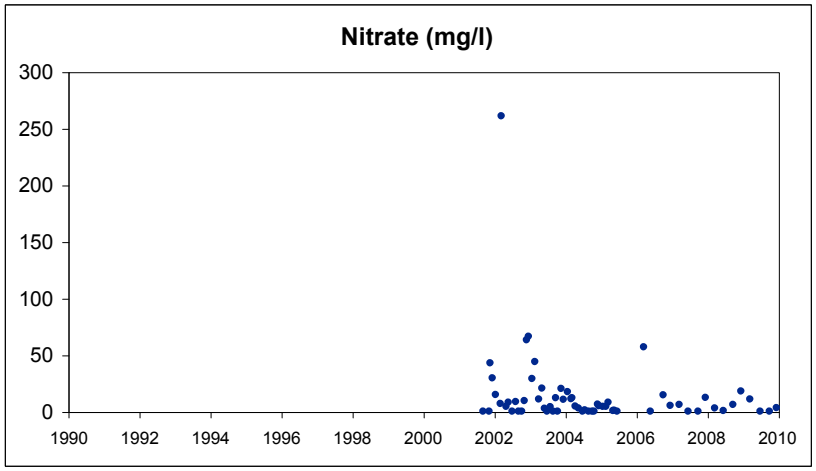

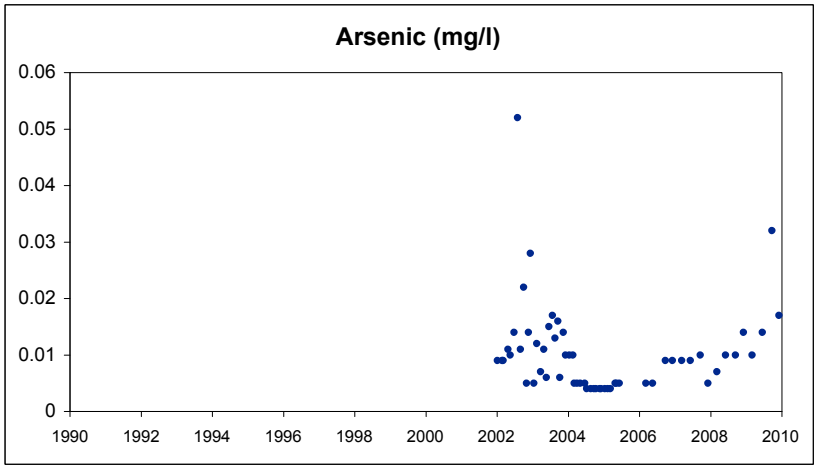

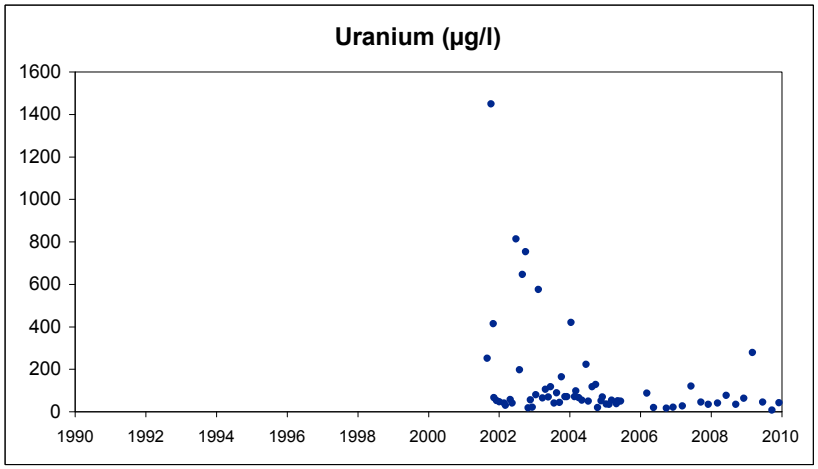

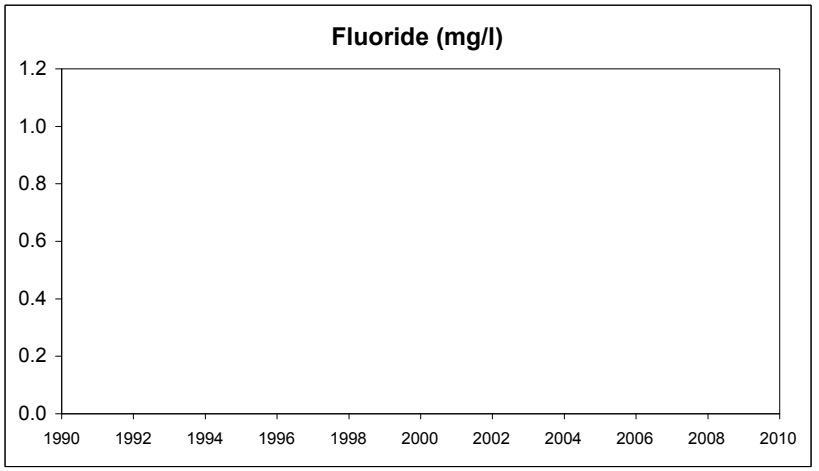

2243 (007 Drainage North of Calcium Fluoride Holding Basin)

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Sequoyah Fuels Corporation

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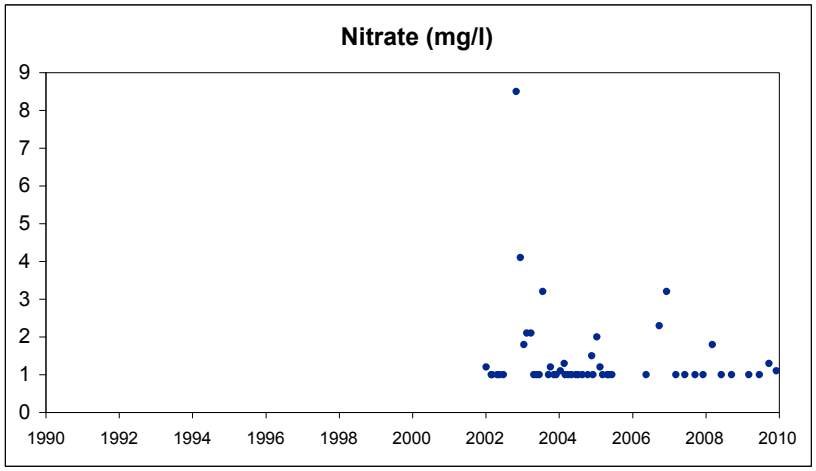

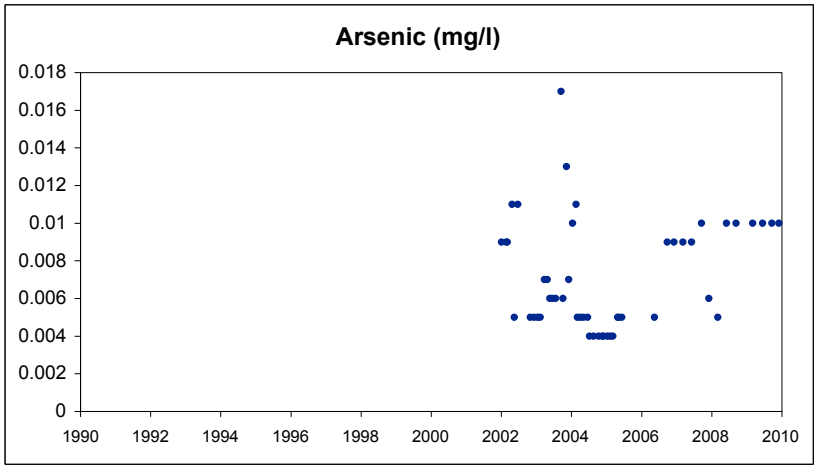

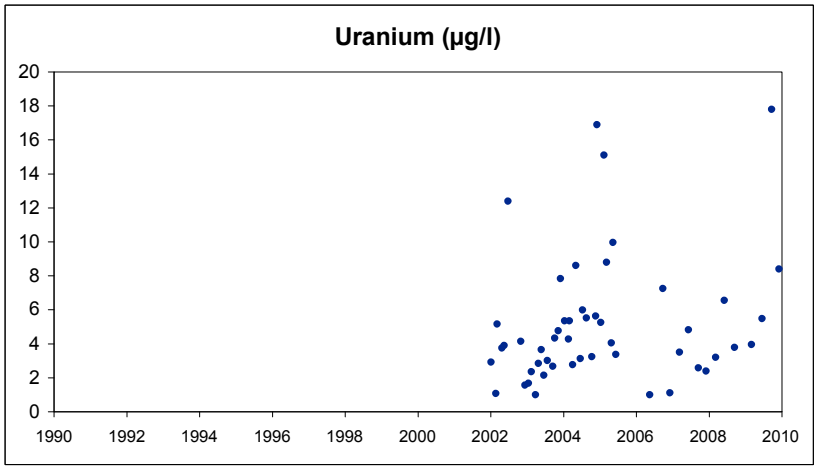

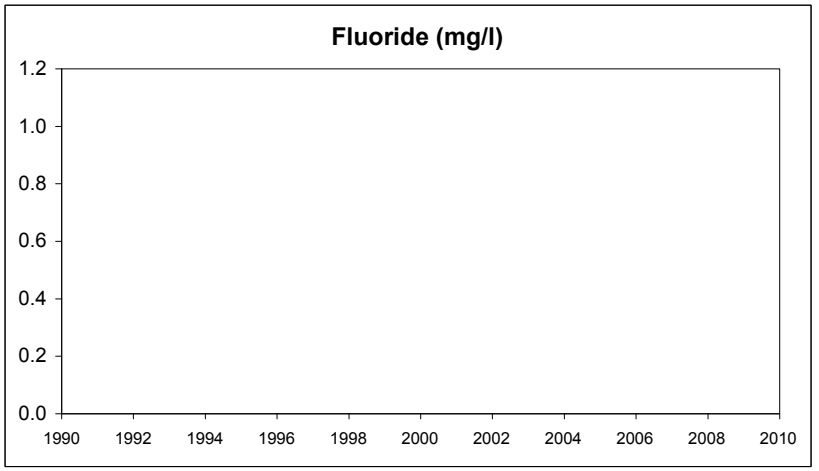

2244 (004 Drainage ~ 20' East of COE Boundary Fence)

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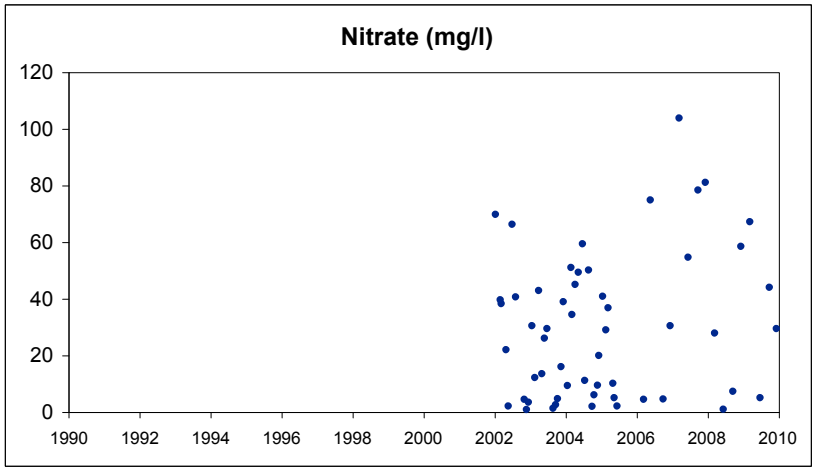

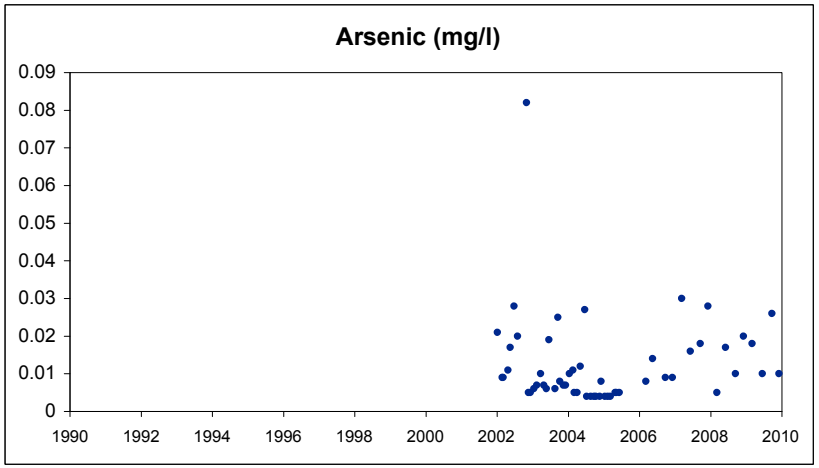

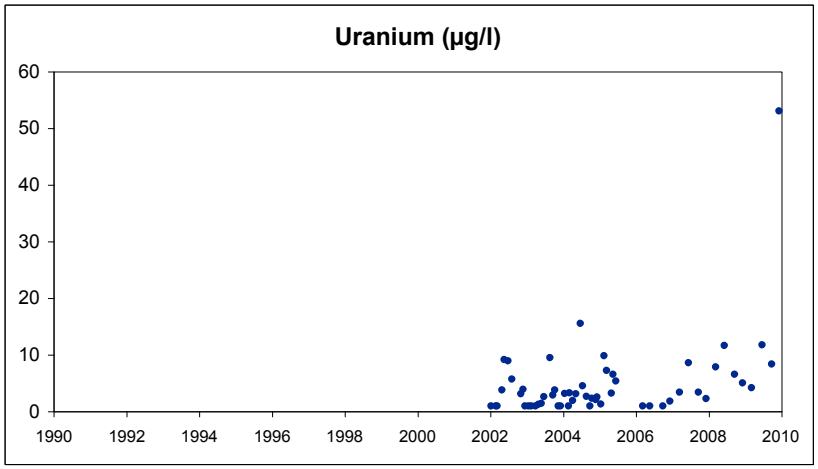

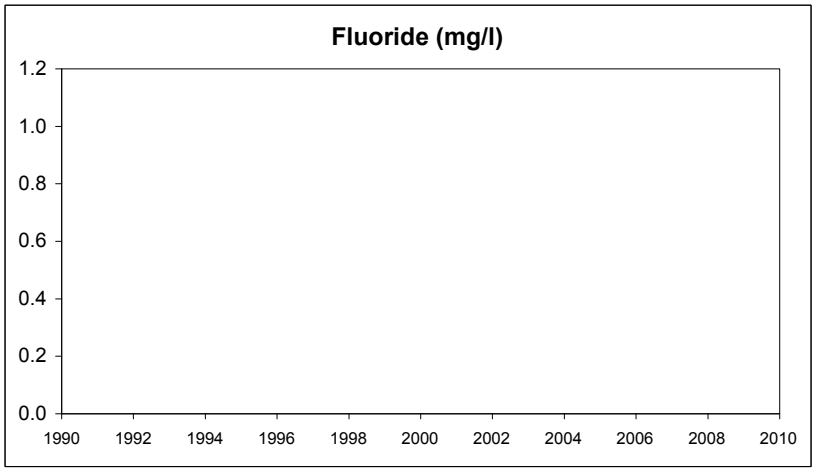

2245 (Seep North of Port Road Bridge)

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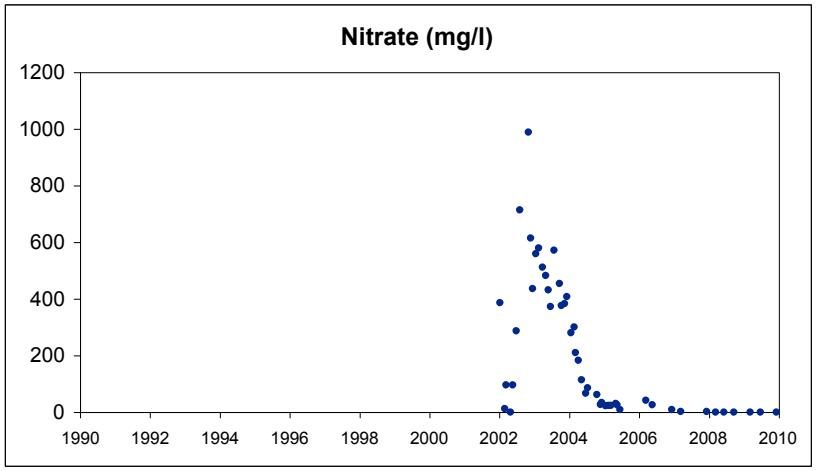

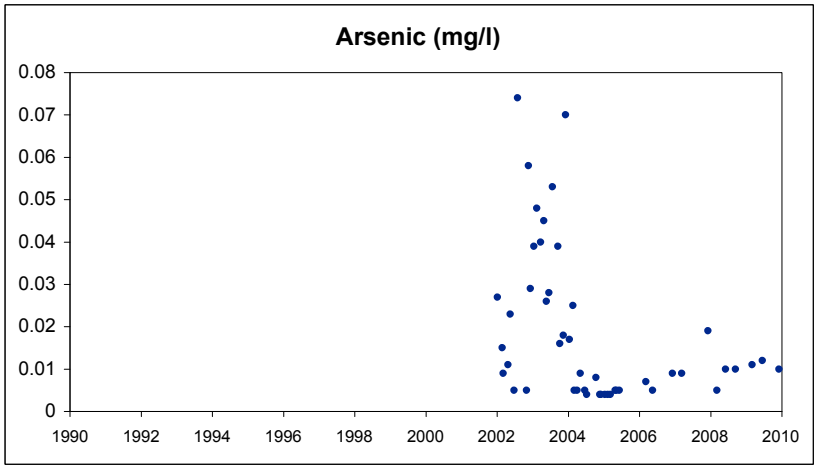

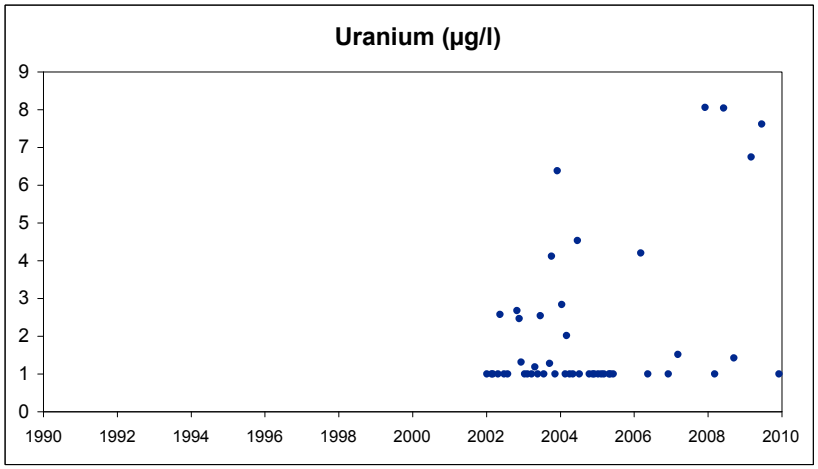

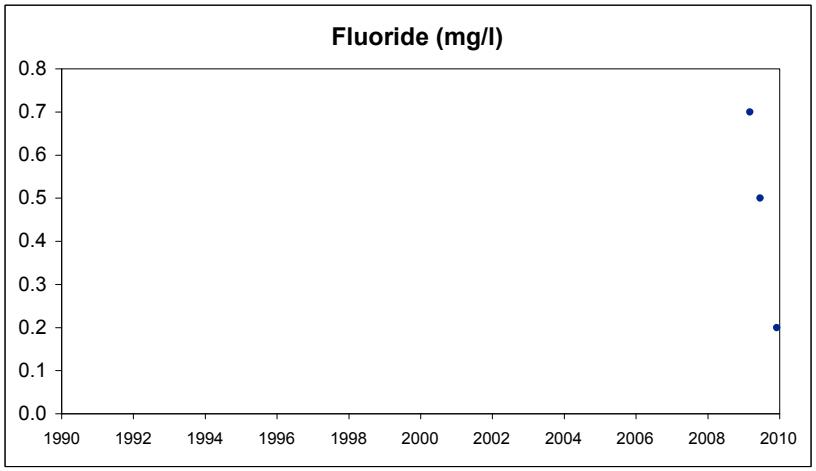

2246 (001 Drainage North of Port Road Bridge)

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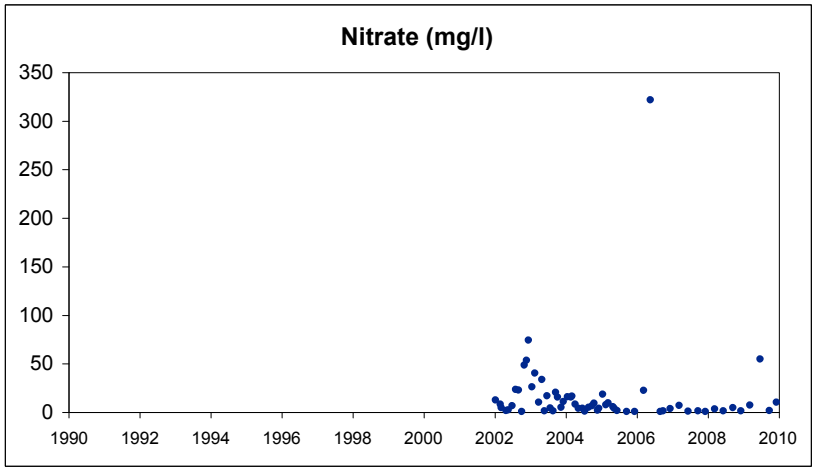

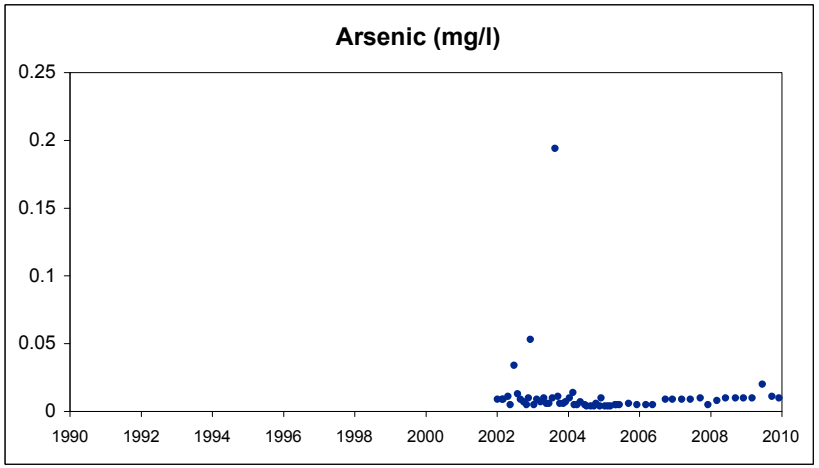

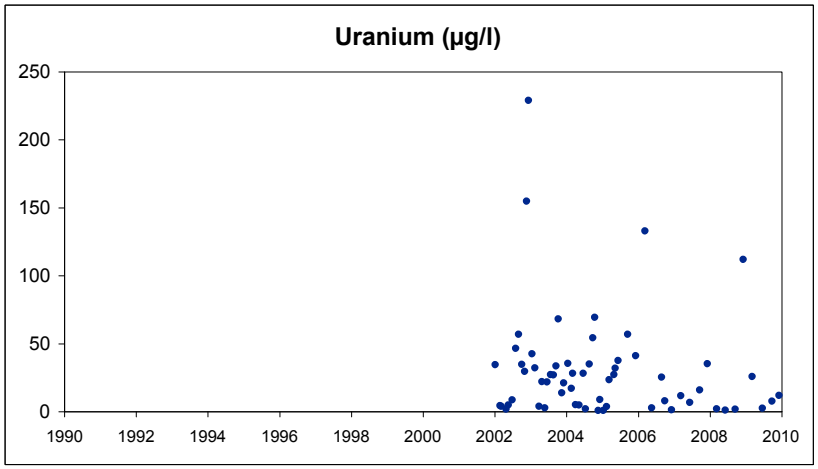

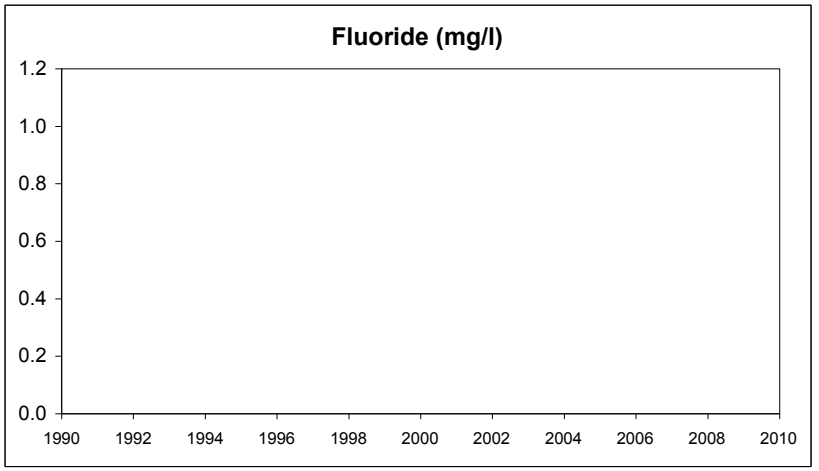

2247 (MW095A Recovery Trench)

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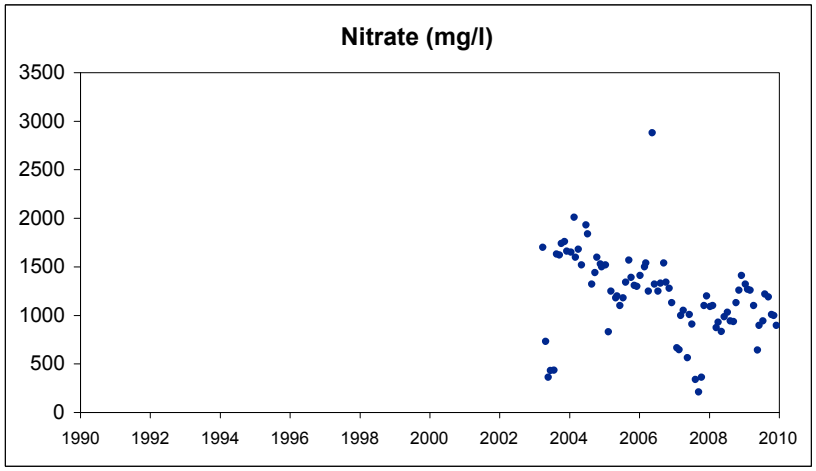

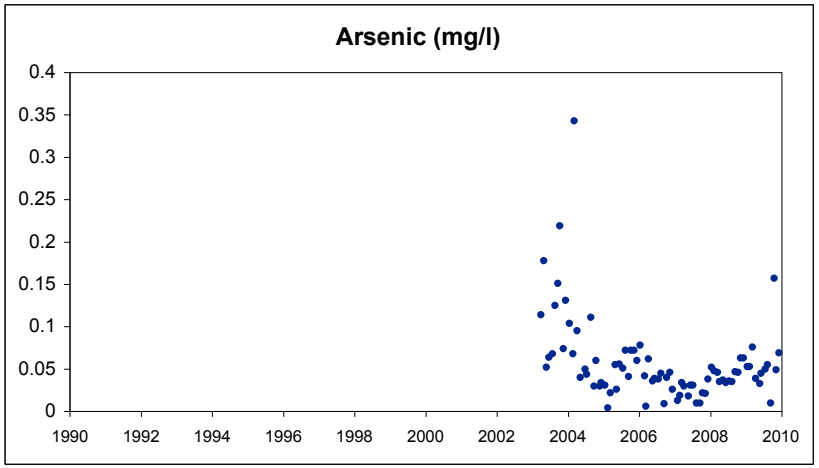

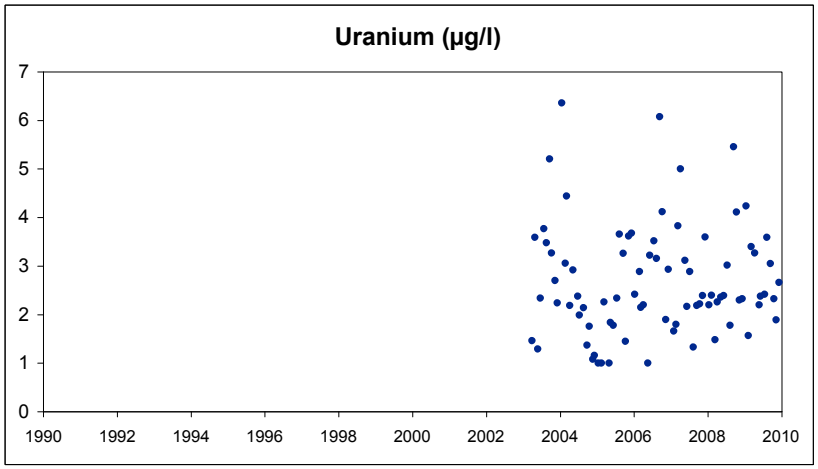

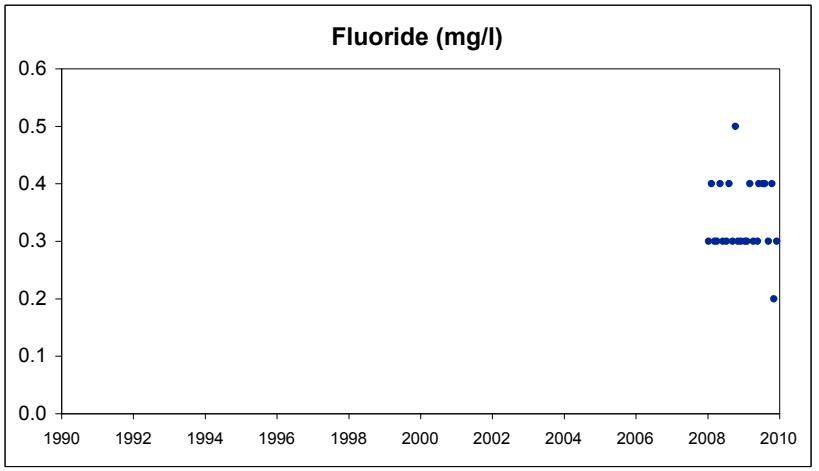

2247A (MW095A Recovery Pit)

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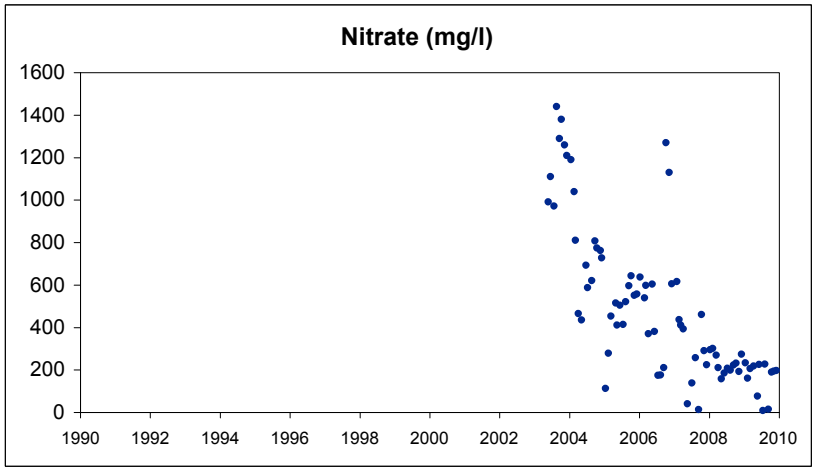

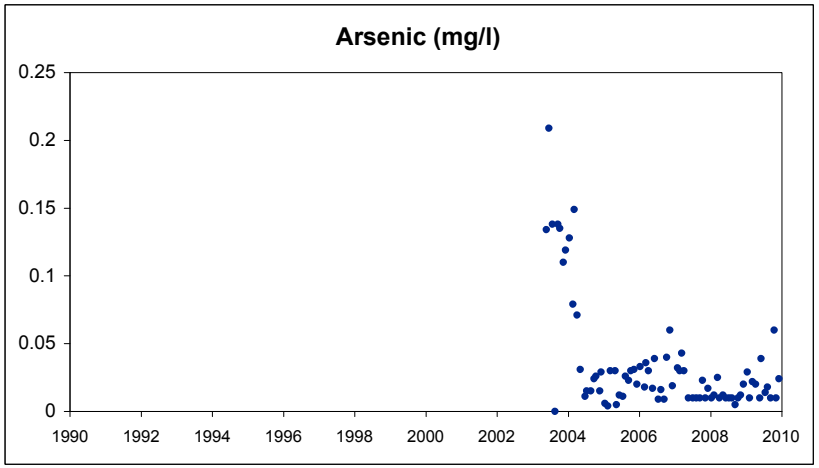

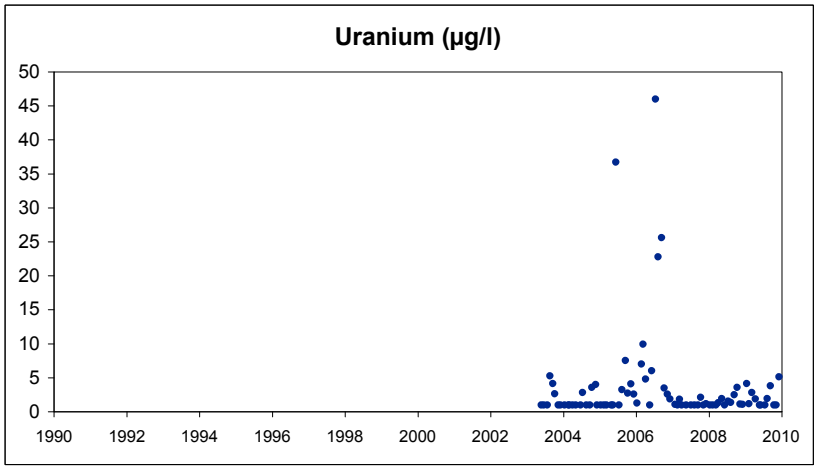

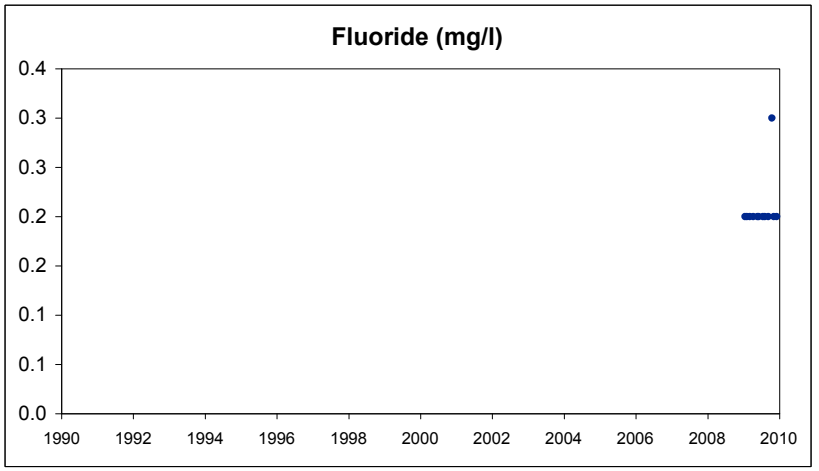

2248 (MW010 Collection Trench)

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Sequoyah Fuels Corporation

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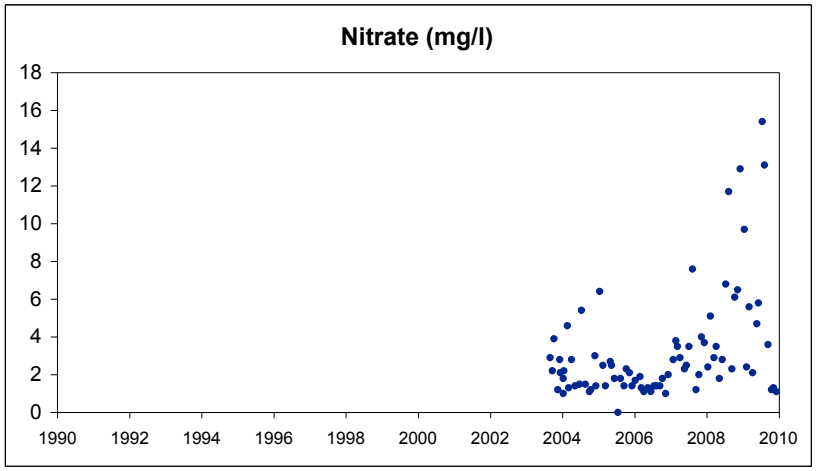

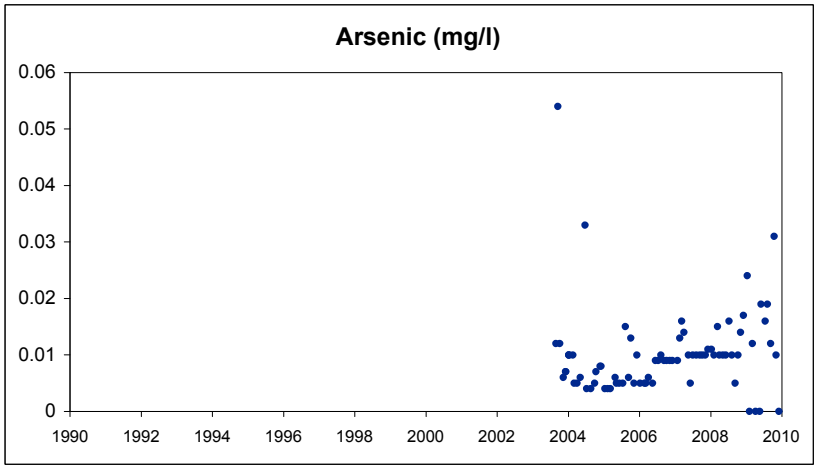

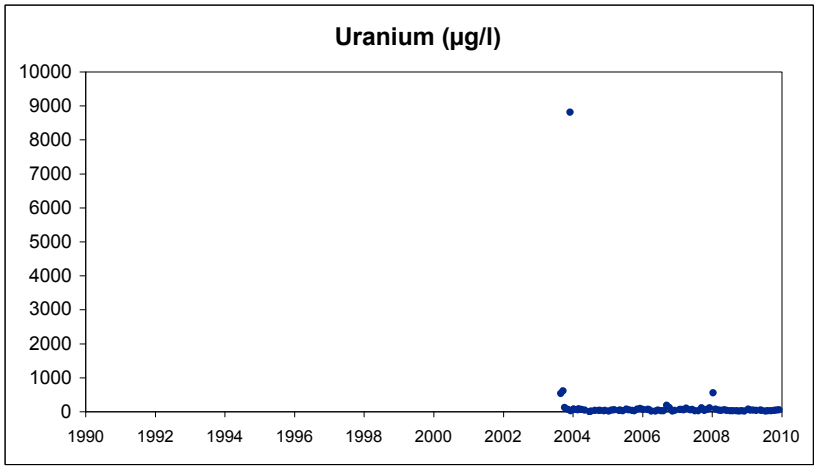

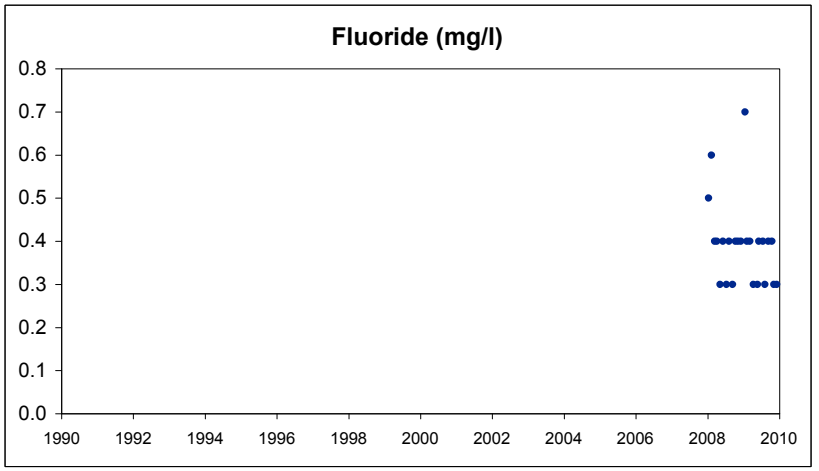

FD-B (French Drain B - Concrete Manhole Near SX Vault)

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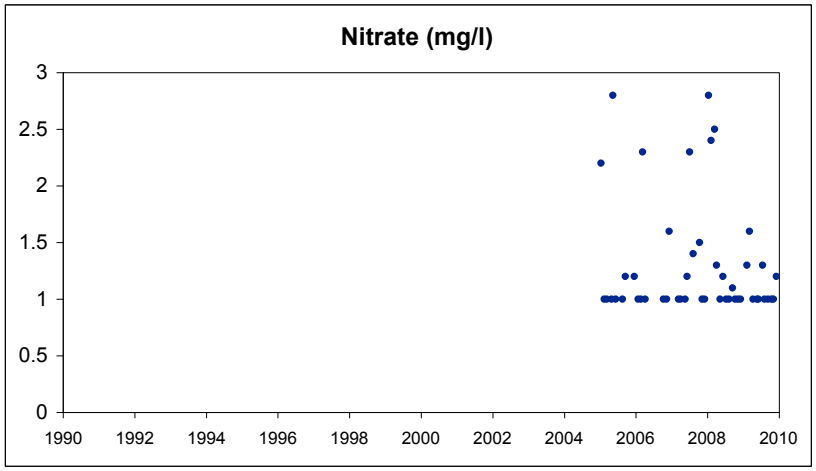

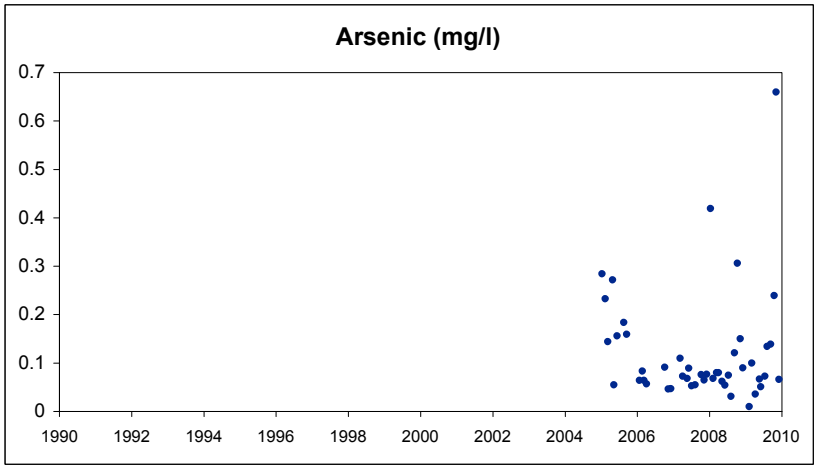

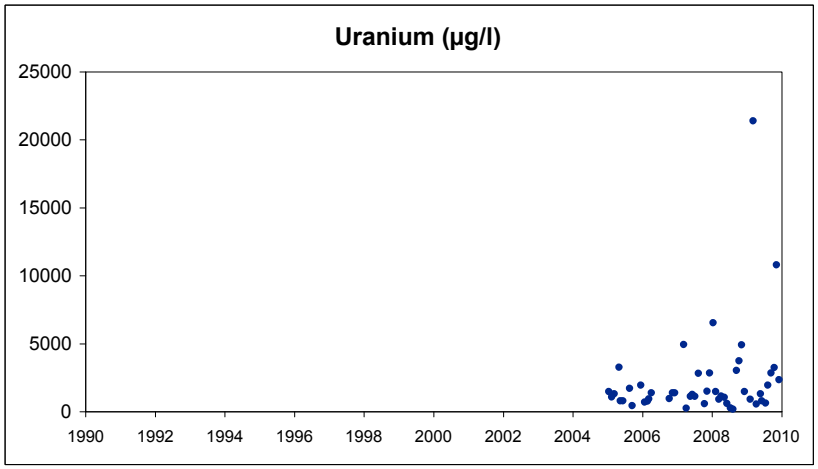

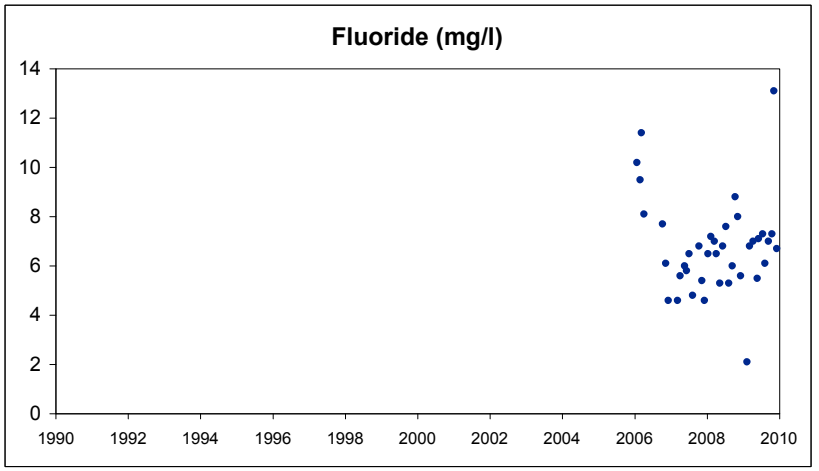

MWRW2

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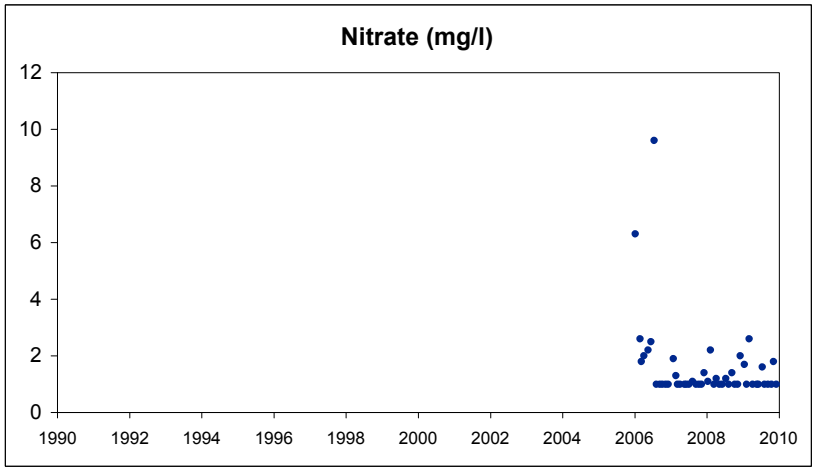

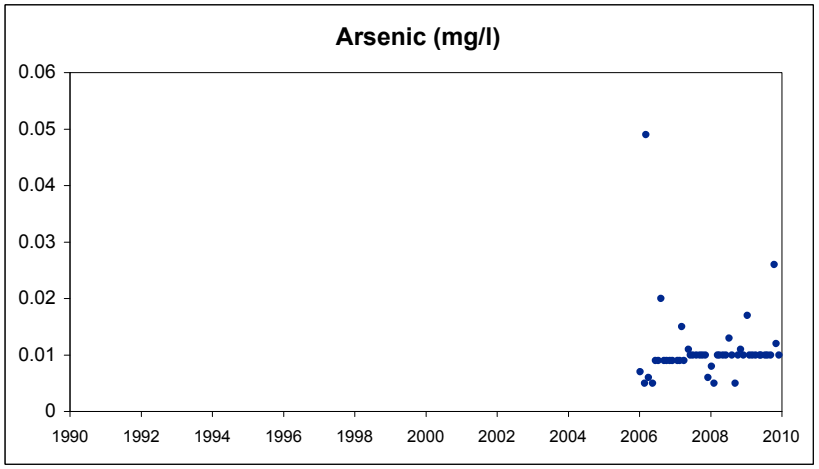

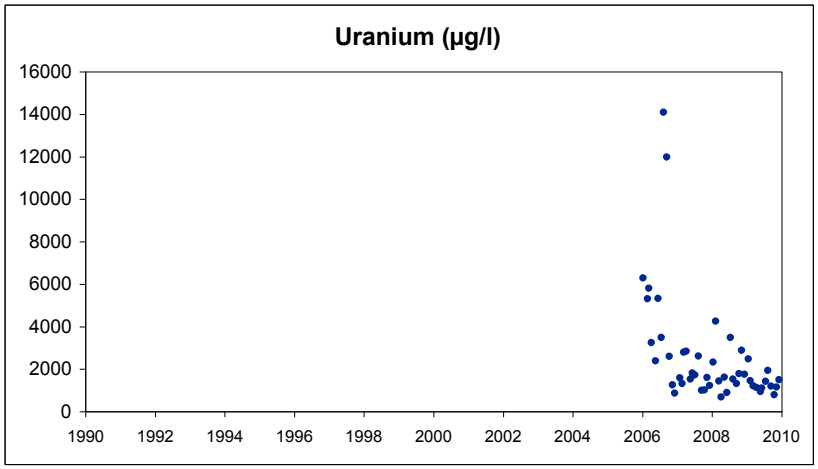

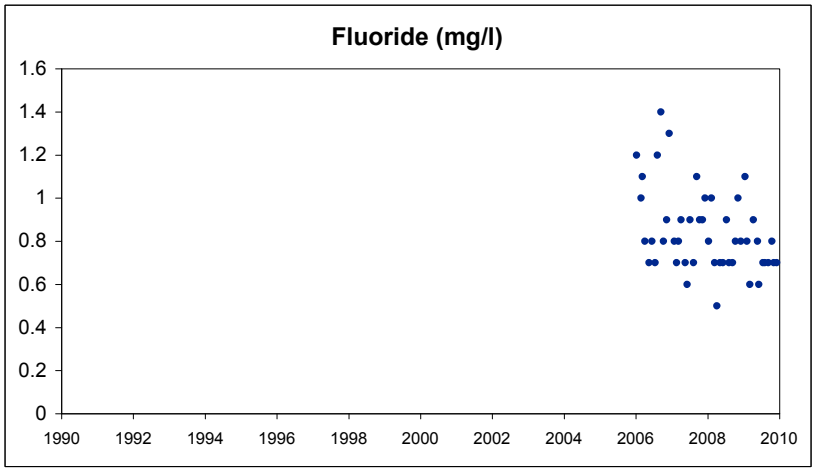

MWRW4

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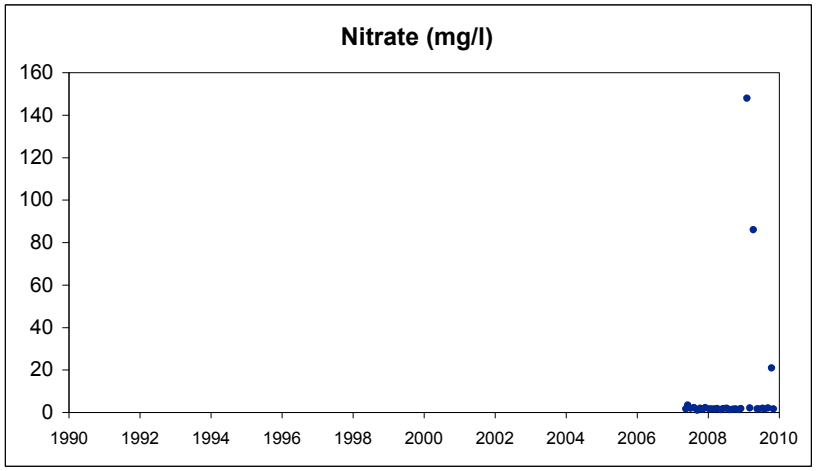

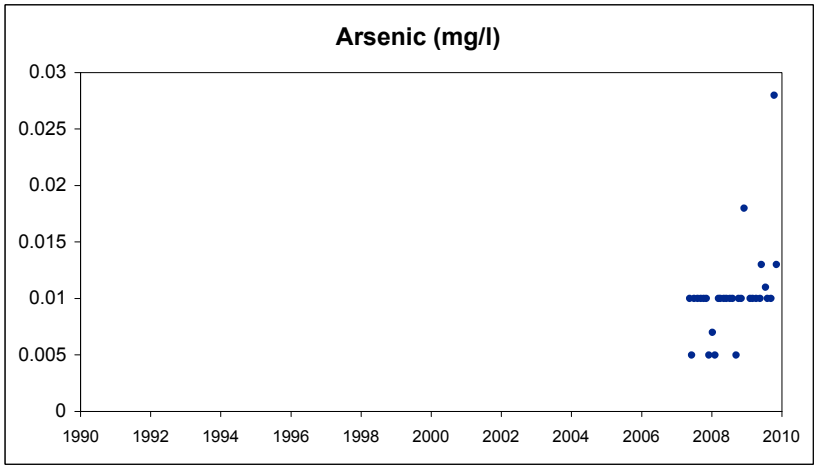

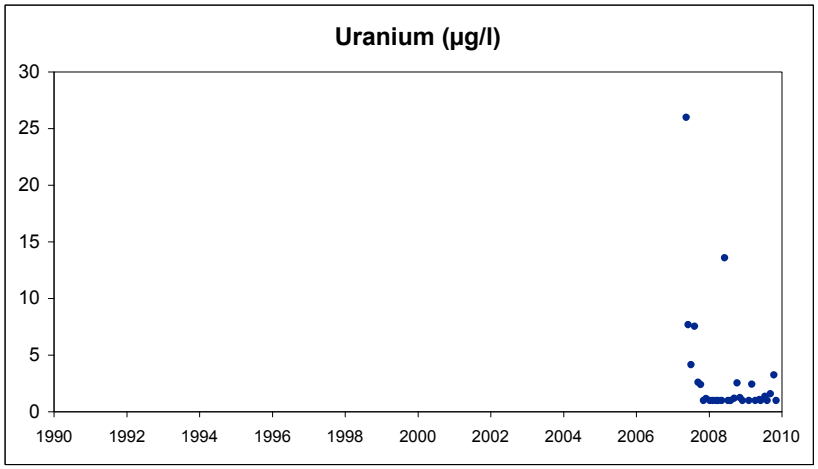

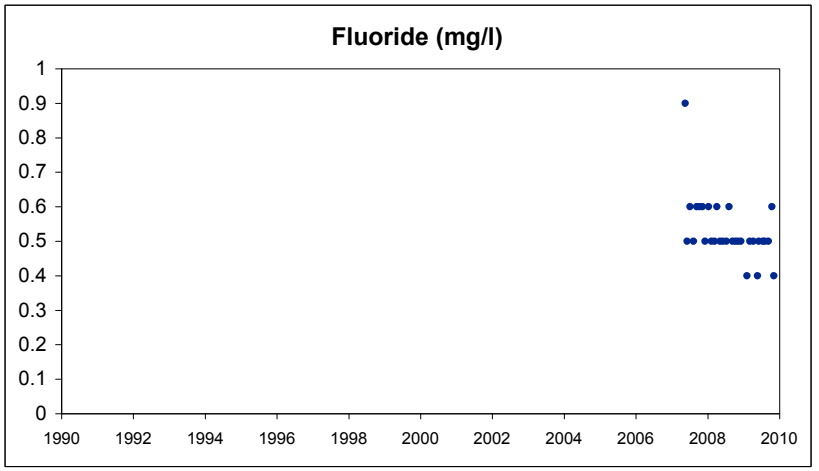

MWRW5

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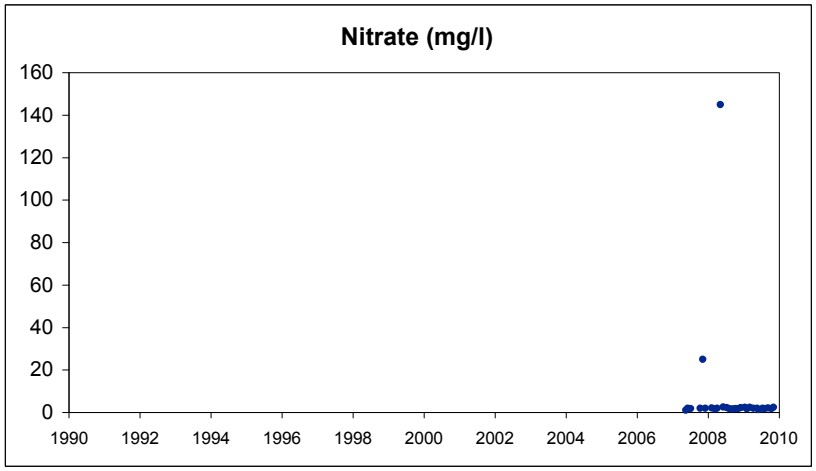

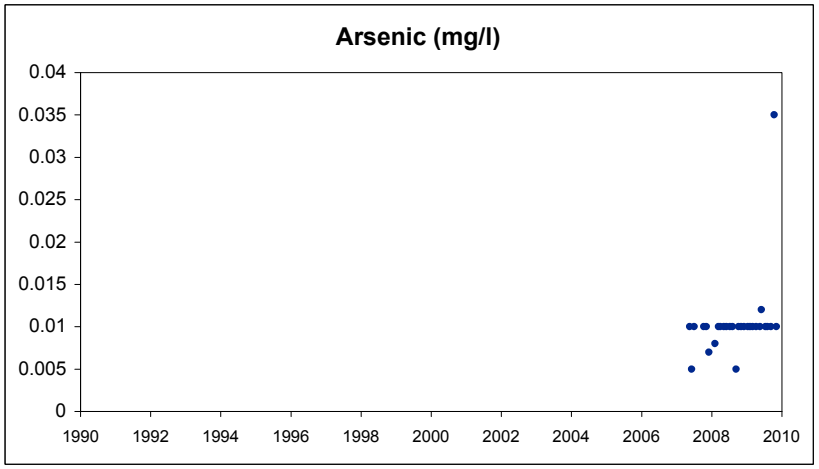

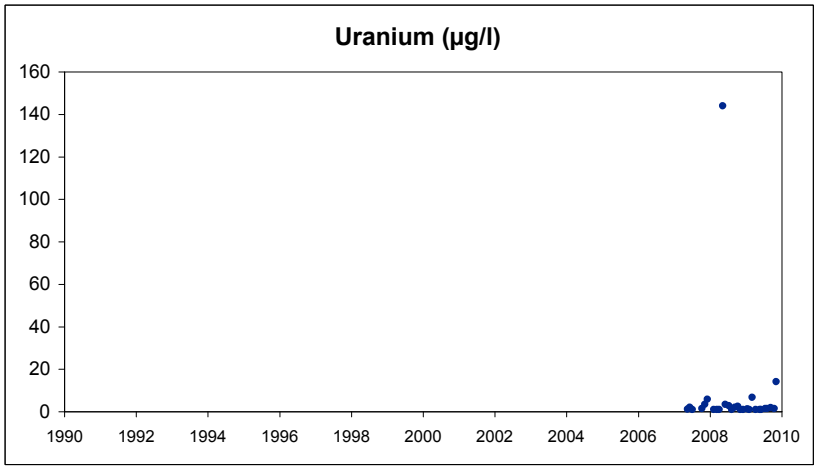

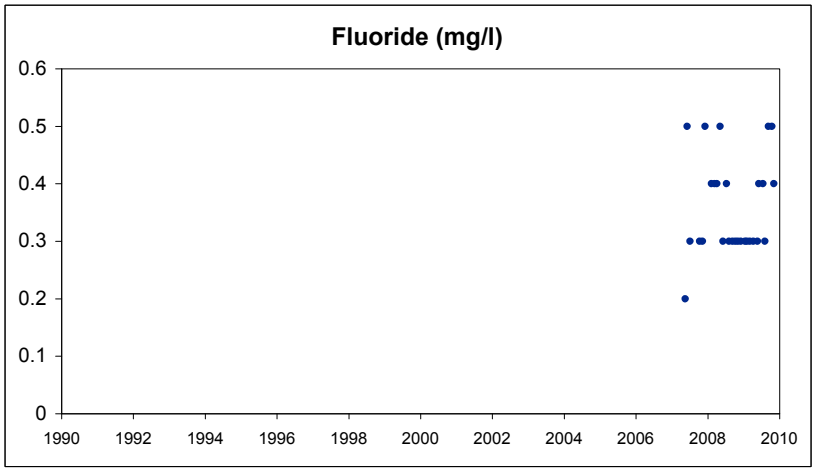

MWRW6

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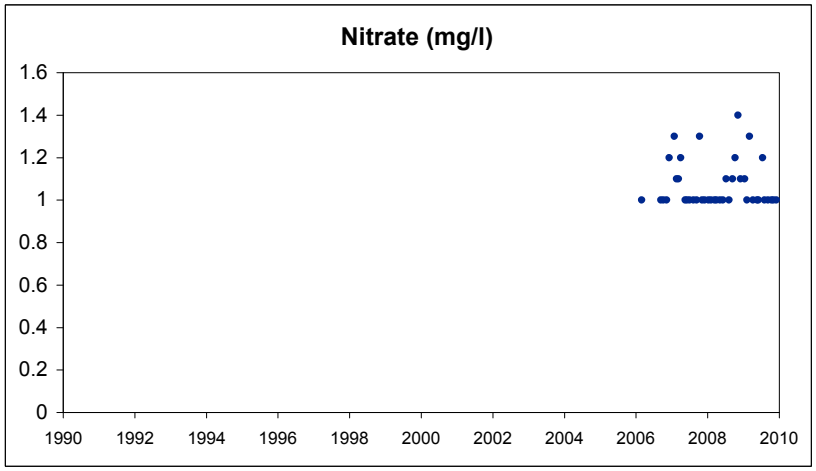

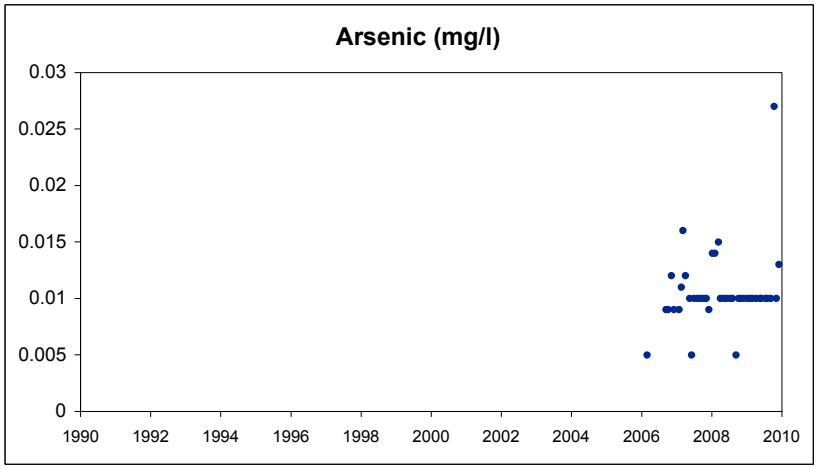

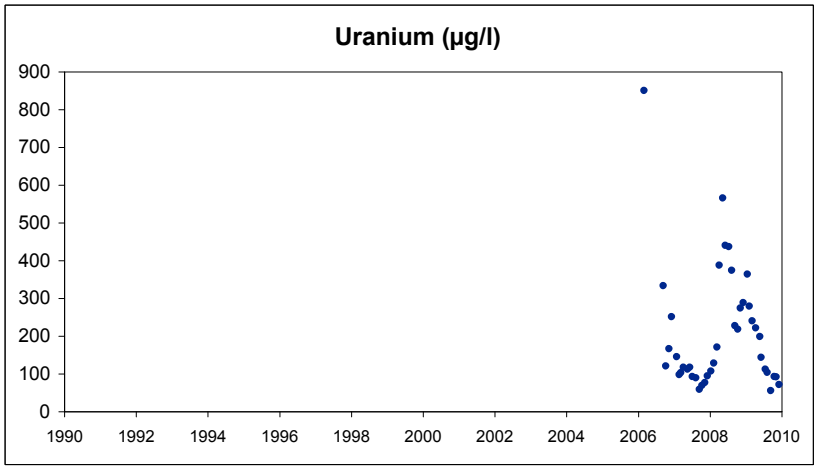

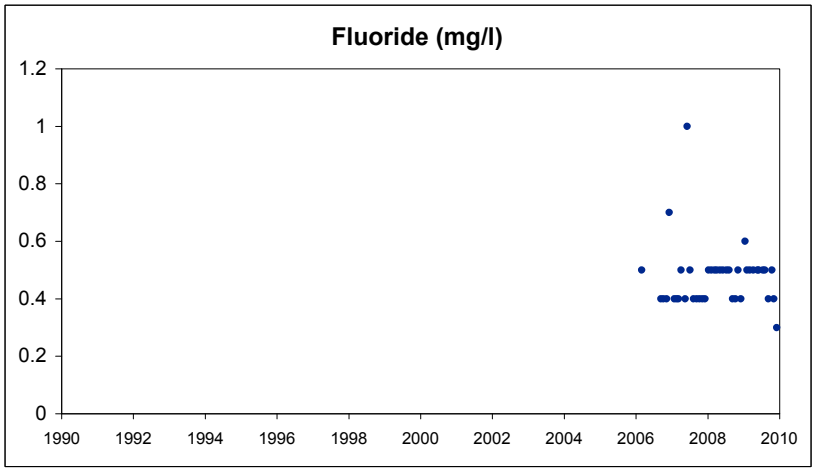

MWRW7

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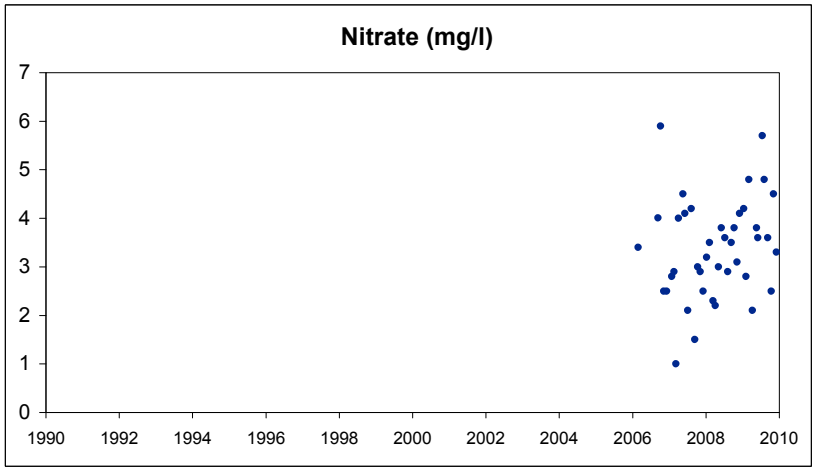

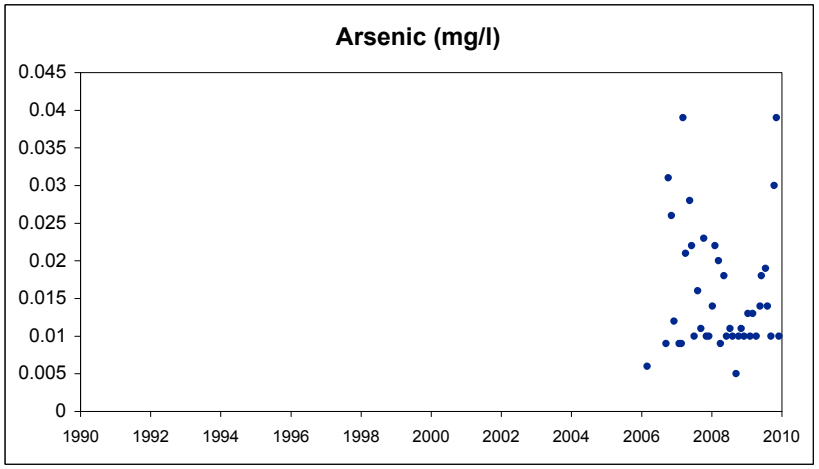

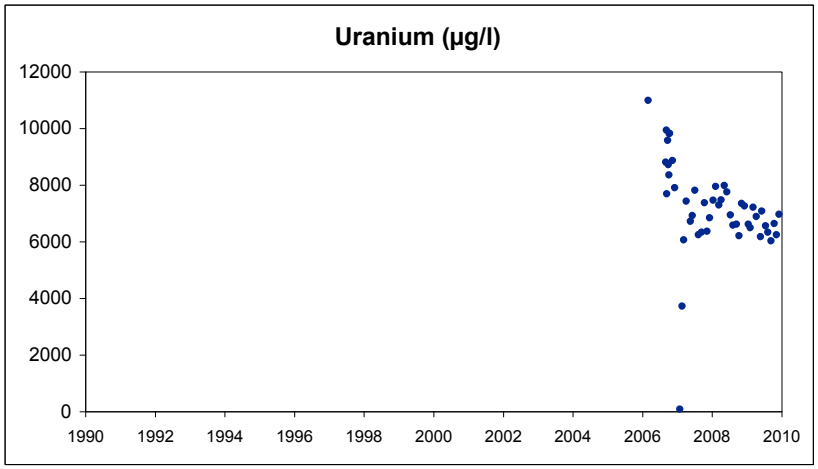

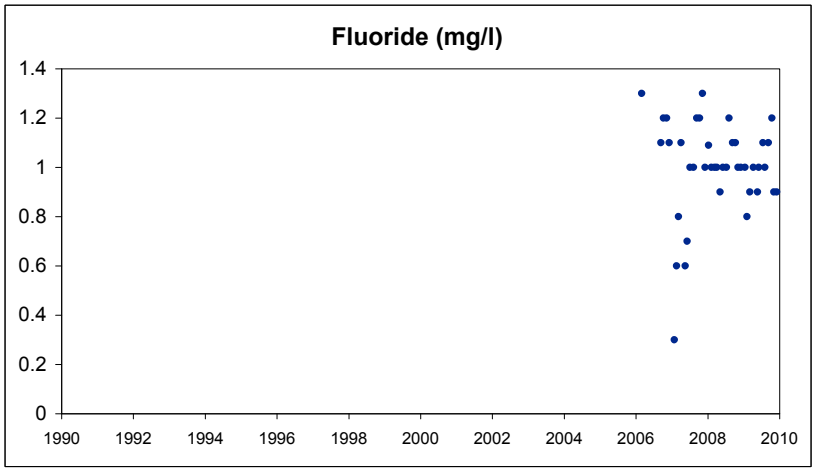

MWRW8

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