# Appendix B

## Groundwater Sample Results for Contaminants of Concern: August 2008, February 2009, and the Baseline Period

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# Contents

## Tables

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*Table B-1. Baseline, August 2008, and February 2009 Molybdenum Concentrations*

| Well Number | Horizon | Baseline Molybdenum Concentration (mg/L) | Year Sampled, Baseline | August 2008 Molybdenum Concentration (mg/L) | February 2009 Molybdenum Concentration (mg/L) |
|---|---|---|---|---|---|
| 0686 | A | 0.0015U | 2002 | 0.00062B | NS |
| 0687 | A | 0.0113 | 2002 | 0.0064 | NS |
| 0688 | A | 0.0015U | 2002 | 0.0036 | NS |
| 0901 | A | 0.00078 | 2001 | 0.00063BU | NS |
| 0906 | A | 0.0137 | 2002 | NS | NS |
| 0929 | A | 0.0015U | 2002 | 0.00039BU | 0.00028B |
| 0940 | A | 0.0015U | 2002 | NS | NS |
| 0941 | A | 0.0284 | 2002 | 0.0015B | 0.0022 |
| 0945 | A | 0.0015U | 2002 | 0.00072B | NS |
| 0946 | A | | | 0.00057BU | NS |
| 0262 | B | 0.432 | 2001 | 1.6 | 1.4 |
| 0263 | B | 0.192 | 2001 | 0.014 | 0.013 |
| 0265 | B | 0.00046 | 2001 | 0.0001U | 0.00018BU |
| 0267 | B | 0.0015U | 2002 | 0.00015B | 0.00018BU |
| 0271 | B | 0.0015U | 2002 | 0.00038B | NS |
| 0281 | B | | | 0.00067B | 0.001 |
| 0282 | B | | | 0.00067B | 0.00058B |
| 0286 | B | | | 0.00043B | 0.00025BU |
| 0287 | B | | | 0.035 | 0.045 |
| 0288 | B | | | 0.00033B | 0.00016BU |
| 0290 | B | | | 0.0008B | 0.00078B |
| 0908 | B | 0.0015U | 2002 | 0.0022 | 0.0022 |
| 0909 | B | 0.0015U | 2002 | 0.00037BU | 0.00024BU |
| 0910 | B | | | 0.00062B | NS |
| 0934 | B | 0.0015U | 2002 | 0.00038BU | 0.00023BU |
| 0935 | B | 0.0015U | 2002 | 0.00024BU | 0.0002BU |
| 0936 | B | 0.0015U | 2002 | NS | NS |
| 0938 | B | 0.001U | 1999 | 0.053 | 0.14 |
| 0942 | B | 0.021 | 2002 | 0.011 | 0.0084 |
| 0943 | B | 0.0015U | 2002 | 0.00092B | NS |
| 0947 | B | 0.0015U | 2002 | 0.00056BU | NS |
| 1126 | B | | | 0.0001U | NS |
| 1129 | B | | | 0.72 | NS |
| 1130 | B | | | 0.08 | NS |
| 1132 | B | | | 0.52 | NS |
| 1133 | B | | | 0.012 | NS |
| 0274 | C | | | 0.00057B | 0.00049B |
| 0276 | C | | | 0.00055BU | 0.00044B |
| 0279 | C | | | 0.00053B | NS |
| 0280 | C | | | 0.00059B | NS |
| 0289 | C | | | 0.00075B | 0.00049B |
| 0683 | C | 0.0015U | 2002 | 0.00064B | NS |
| 0684 | C | 0.0015U | 2002 | 0.00051B | NS |
| 0685 | C | 0.0015U | 2002 | 0.00045B | NS |
| 0689 | C | 0.0015U | 2002 | 0.00083B | NS |
| 0691 | C | 0.0015U | 2002 | 0.00076B | 0.00041B |

*Table B-1 (continued). Baseline, August 2008, and February 2009 Molybdenum Concentrations*

| Well Number | Horizon | Baseline Molybdenum Concentration (mg/L) | Year Sampled, Baseline | August 2008 Molybdenum Concentration (mg/L) | February 2009 Molybdenum Concentration (mg/L) |
|---|---|---|---|---|---|
| 0903 | C | 0.0015U | 2002 | 0.00055BU | NS |
| 0912 | C | 0.0003U | 2001 | 0.00018B | NS |
| 0914 | C | 0.00081 | 2001 | 0.00089B | NS |
| 0917 | C | 0.0013 | 2001 | NS | NS |
| 0930 | C | 0.0015U | 2002 | 0.00022BU | 0.00026BU |
| 0932 | C | 0.0018U | 2002 | 0.00053BU | 0.00035B |
| 1008 | C | 0.0004U | 2000 | NS | NS |
| 1116 | C | 0.0015U | 2002 | 0.00017B | NS |
| 1117 | C | 0.0015U | 2002 | 0.0002B | NS |
| 1118 | C | 0.0015U | 2002 | 0.00061B | NS |
| 0258 | D | 0.00063 | 2000 | 0.00052B | 0.00037B |
| 0261 | D | 0.0026 | 2001 | 0.00054B | NS |
| 0264 | D | 0.0031 | 2001 | 0.00047B | 0.00029BU |
| 0266 | D | 0.00058 | 2001 | 0.00074B | 0.00066B |
| 0272 | D | | | 0.00027B | 0.00019BU |
| 0273 | D | | | 0.024 | 0.019 |
| 0275 | D | | | 0.00037B | 0.00026BU |
| 0277 | D | | | 0.00045BU | NS |
| 0278 | D | | | 0.00041BU | NS |
| 0690 | D | 0.0015U | 2002 | 0.0006B | NS |
| 0692 | D | 0.0015U | 2002 | 0.00062BU | NS |
| 0695 | D | 0.0015U | 2002 | 0.00077B | NS |
| 0904 | D | 0.00077 | 2001 | 0.00059B | NS |
| 0915 | D | 0.00054 | 2001 | 0.00063B | NS |
| 1003 | D | 0.0004U | 2000 | 0.00041BU | NS |
| 1004 | D | 0.0004U | 2000 | 0.00063B | NS |
| 1005 | D | 0.0004U | 2000 | NS | NS |
| 1006 | D | 0.0004U | 2000 | 0.00073B | NS |
| 1007 | D | 0.0004U | 2000 | 0.00039B | NS |
| 1101 | D | 0.0015U | 2002 | 0.00035B | NS |
| 1102 | D | 0.0015U | 2002 | 0.00022B | NS |
| 1103 | D | 0.0015U | 2002 | 0.0029 | NS |
| 1104 | D | 0.0916 | 2002 | NS | NS |
| 1105 | D | 2.96 | 2002 | 1.4 | NS |
| 1106 | D | 1.26 | 2002 | 0.18 | NS |
| 1107 | D | 0.16 | 2002 | 0.026 | NS |
| 1108 | D | 0.0015U | 2002 | 0.0011 | NS |
| 1109 | D | 0.0015U | 2002 | 0.00092B | NS |
| 1110 | D | 0.0015U | 2002 | 0.00029B | NS |
| 1111 | D | 0.0015U | 2002 | 0.00011B | NS |
| 1112 | D | 0.0015U | 2002 | 0.00034B | NS |
| 1113 | D | 0.0015U | 2002 | 0.00014B | NS |
| 1114 | D | 0.0027 | 2002 | 0.014 | NS |
| 1115 | D | 0.0015U | 2002 | 0.00034B | NS |
| 1119 | D | 0.0053 | 2002 | 0.0032 | NS |
| 1120 | D | 0.0815 | 2002 | 0.05 | NS |
| 1121 | D | 0.105 | 2002 | 0.03 | NS |

*Table B-1 (continued). Baseline, August 2008, and February 2009 Molybdenum Concentrations*

| Well Number | Horizon | Baseline Molybdenum Concentration (mg/L) | Year Sampled, Baseline | August 2008 Molybdenum Concentration (mg/L) | February 2009 Molybdenum Concentration (mg/L) |
|---|---|---|---|---|---|
| 1122 | D | 0.0015U | 2002 | 0.00088B | NS |
| 1123 | D | 0.0015U | 2002 | 0.0004B | NS |
| 1124 | D | 0.0015U | 2002 | 0.00016BU | NS |
| 1125 | D | 0.0015U | 2002 | 0.00045B | NS |
| 0251 | E | 0.0015U | 2002 | 0.00033B | 0.00027BU |
| 0268 | E | 0.0015U | 2002 | 0.00028B | 0.0002BU |
| 0920 | E | 0.0003U | 2001 | 0.00044BU | NS |
| 0911 | F | | | 0.00034BU | NS |
| 0913 | G | 0.0003U | 2001 | 0.00043B | NS |
| 0916 | G | 0.00096 | 2001 | 0.001 | NS |
| 0252 | I | 0.0015U | 2002 | 0.00038B | 0.00022BU |
| 0921 | I | 0.0003U | 2001 | 0.00019BU | NS |

B = Result between instrument detection limit and contract required detection limit.
U = Analytical result below detection limit.
NS = Not sampled.

Note:
All data reported for this period correspond to unfiltered samples, except for the following: well 0281 (both Aug-08 and Feb-09), 0691 (Aug-08 only), and extraction wells 1109 and 1110 (Aug-08 only). Samples are filtered only when turbidity is greater than 10 Nephelometric Turbidity Units (NTUs).

*Table B-2. Baseline, August 2008, and February 2009 Nitrate Concentrations*

| Well Number | Horizon | Baseline Nitrate Concentration (mg/L) | Year Sampled, Baseline | August 2008 Nitrate Concentration (mg/L) | February 2009 Nitrate Concentration (mg/L) |
|---|---|---|---|---|---|
| 0686 | A | 32.2 | 2002 | 25 | NS |
| 0687 | A | 60.6 | 2002 | 30 | NS |
| 0688 | A | 35.1 | 2002 | 53 | NS |
| 0901 | A | 13 | 2001 | 21 | NS |
| 0906 | A | 1470 | 2002 | NS | NS |
| 0929 | A | 69.5 | 2002 | 37 | 44 |
| 0940 | A | 1800 | 2002 | NS | NS |
| 0941 | A | 358 | 2002 | 1060 | 885 |
| 0945 | A | 12.7 | 2002 | 24 | NS |
| 0946 | A | | | 36 | NS |
| 0262 | B | 380 | 2001 | 974 | 664 |
| 0263 | B | 1140 | 2001 | 974 | 708 |
| 0265 | B | 720 | 2001 | 1020 | 708 |
| 0267 | B | 1640 | 2002 | 2120 | 1330 |
| 0271 | B | 15.6 | 2002 | 23 | NS |
| 0281 | B | | | 250 | 170 |
| 0282 | B | | | 230 | 150 |
| 0286 | B | | | 110 | 41 |
| 0287 | B | | | 1240 | 1110 |
| 0288 | B | | | 487 | 310 |
| 0290 | B | | | 26 | 19 |
| 0908 | B | 651 | 2002 | 1200 | 930 |
| 0909 | B | 485 | 2002 | 1200 | 753 |
| 0910 | B | | | 20 | NS |
| 0934 | B | 2320 | 2002 | 2300 | 1770 |
| 0935 | B | 525 | 2002 | 1510 | 841 |
| 0936 | B | 2950 | 2002 | NS | NS |
| 0938 | B | 1450 | 1999 | 974 | 620 |
| 0942 | B | 1360 | 2002 | 1590 | 930 |
| 0943 | B | 22.1 | 2002 | 19 | NS |
| 0947 | B | 12.5 | 2002 | 19 | NS |
| 1126 | B | | | 1730 | NS |
| 1129 | B | | | 753 | NS |
| 1130 | B | | | 1240N | NS |
| 1132 | B | | | 380 | NS |
| 1133 | B | | | 230 | NS |
| 0274 | C | | | 19 | 15 |
| 0276 | C | | | 23 | 14 |
| 0279 | C | | | 71 | NS |
| 0280 | C | | | 19 | NS |
| 0289 | C | | | 190 | 230 |
| 0683 | C | 14.1 | 2002 | 20 | NS |
| 0684 | C | 13.9 | 2002 | 20 | NS |
| 0685 | C | 14.3 | 2002 | 22 | NS |
| 0689 | C | 14.3 | 2002 | 18 | NS |
| 0691 | C | 298 | 2002 | 80 | 62 |
| 0903 | C | 54.8 | 2002 | 89 | NS |

*Table B-2 (continued). Baseline, August 2008, and February 2009 Nitrate Concentrations*

| Well Number | Horizon | Baseline Nitrate Concentration (mg/L) | Year Sampled, Baseline | August 2008 Nitrate Concentration (mg/L) | February 2009 Nitrate Concentration (mg/L) |
|---|---|---|---|---|---|
| 0912 | C | 403 | 2001 | 240 | NS |
| 0914 | C | 13 | 2001 | 15 | NS |
| 0917 | C | 15.7 | 2001 | NS | NS |
| 0930 | C | 50.9 | 2002 | 80 | 41 |
| 0932 | C | 25.3 | 2002 | 44 | 31 |
| 1008 | C | 15.7 | 2000 | NS | NS |
| 1116 | C | 106 | 2002 | 280 | NS |
| 1117 | C | 225 | 2002 | 664 | NS |
| 1118 | C | 164 | 2002 | 841 | NS |
| 0258 | D | 15 | 2000 | 19 | 15 |
| 0261 | D | 14 | 2001 | 18 | NS |
| 0264 | D | 24.3 | 2001 | 58 | 42 |
| 0266 | D | 14 | 2001 | 20 | 14 |
| 0272 | D | | | 19 | 16 |
| 0273 | D | | | 240 | 150 |
| 0275 | D | | | 1640 | 1150 |
| 0277 | D | | | 19 | NS |
| 0278 | D | | | 19 | NS |
| 0690 | D | 12.5 | 2002 | 20 | NS |
| 0692 | D | 12.5 | 2002 | 19 | NS |
| 0695 | D | 25.4 | 2002 | 32 | NS |
| 0904 | D | 5.13 | 2001 | 4.2 | NS |
| 0915 | D | 14.1 | 2001 | 17 | NS |
| 1003 | D | 176 | 2000 | 230 | NS |
| 1004 | D | 49.1 | 2000 | 66 | NS |
| 1005 | D | 14.5 | 2000 | NS | NS |
| 1006 | D | 14.1 | 2000 | 21 | NS |
| 1007 | D | 15.3 | 2000 | 20 | NS |
| 1101 | D | 438 | 2002 | 664 | NS |
| 1102 | D | 650 | 2002 | 974 | NS |
| 1103 | D | 1120 | 2002 | 576 | NS |
| 1104 | D | 993 | 2002 | NS | NS |
| 1105 | D | 648 | 2002 | 1280 | NS |
| 1106 | D | 614 | 2002 | 410 | NS |
| 1107 | D | 1060 | 2002 | 330N | NS |
| 1108 | D | 1410 | 2002 | 974 | NS |
| 1109 | D | 798 | 2002 | 531 | NS |
| 1110 | D | 227 | 2002 | 280 | NS |
| 1111 | D | 421 | 2002 | 487 | NS |
| 1112 | D | 617 | 2002 | 240 | NS |
| 1113 | D | 143 | 2002 | 150 | NS |
| 1114 | D | 228 | 2002 | 443 | NS |
| 1115 | D | 766 | 2002 | 531 | NS |
| 1119 | D | 468 | 2002 | 753 | NS |
| 1120 | D | 493 | 2002 | 487 | NS |
| 1121 | D | 573 | 2002 | 130 | NS |
| 1122 | D | 954 | 2002 | 531 | NS |

*Table B-2 (continued). Baseline, August 2008, and February 2009 Nitrate Concentrations*

| Well Number | Horizon | Baseline Nitrate Concentration (mg/L) | Year Sampled, Baseline | August 2008 Nitrate Concentration (mg/L) | February 2009 Nitrate Concentration (mg/L) |
|---|---|---|---|---|---|
| 1123 | D | 643 | 2002 | 120 | NS |
| 1124 | D | 781 | 2002 | 797 | NS |
| 1125 | D | 104 | 2002 | 75 | NS |
| 0251 | E | 426 | 2002 | 23N | 20 |
| 0268 | E | 15.4 | 2002 | 120 | 75 |
| 0920 | E | 14.8 | 2001 | 20 | NS |
| 0911 | F | | | 20 | NS |
| 0913 | G | 12.4 | 2001 | 17 | NS |
| 0916 | G | 11.6 | 2001 | 10 | NS |
| 0252 | I | 15.3 | 2002 | 12 | 10 |
| 0921 | I | 11 | 2001 | 16 | NS |

N = Spike sample recovery not within control limits.
NS = Not sampled.
J = Estimated value.

Note:
All data reported for this period correspond to unfiltered samples, except for the following: well 0281 (both Aug-08 and Feb-09), 0691 (Aug-08 only), and extraction wells 1109 and 1110 (Aug-08 only). Samples are filtered only when turbidity is greater than 10 NTUs.

*Table B-3. Baseline, August 2008, and February 2009 Selenium Concentrations*

| Well Number | Horizon | Baseline Selenium Concentration (mg/L) | Year Sampled, Baseline | August 2008 Selenium Concentration (mg/L) | February 2009 Selenium Concentration (mg/L) |
|---|---|---|---|---|---|
| 0686 | A | 0.0088 | 2002 | 0.0011 | NS |
| 0687 | A | 0.0145 | 2002 | 0.0013 | NS |
| 0688 | A | 0.0033 | 2002 | 0.011 | NS |
| 0901 | A | 0.0024 | 2001 | 0.0025 | NS |
| 0906 | A | 0.0335 | 2002 | NS | NS |
| 0929 | A | 0.0028 | 2002 | 0.0021 | 0.0019 |
| 0940 | A | 0.105 | 2002 | NS | NS |
| 0941 | A | 0.0348 | 2002 | 0.08 | 0.078 |
| 0945 | A | 0.0035 | 2002 | 0.0021 | NS |
| 0946 | A | | | 0.0018 | NS |
| 0262 | B | 0.0621 | 2001 | 0.099 | 0.088 |
| 0263 | B | 0.0632 | 2001 | 0.02 | 0.027 |
| 0265 | B | 0.0071 | 2001 | 0.0064 | 0.0061 |
| 0267 | B | 0.0532 | 2002 | 0.042 | 0.042 |
| 0271 | B | 0.0016 | 2002 | 0.0016 | NS |
| 0281 | B | | | 0.0019 | 0.002 |
| 0282 | B | | | 0.0017 | 0.0015 |
| 0286 | B | | | 0.0022 | 0.0018 |
| 0287 | B | | | 0.084 | 0.093 |
| 0288 | B | | | 0.0033 | 0.0029 |
| 0290 | B | | | 0.0016E | 0.0017 |
| 0908 | B | 0.0163 | 2002 | 0.022 | 0.022 |
| 0909 | B | 0.0224 | 2002 | 0.049 | 0.054 |
| 0910 | B | | | 0.0015 | NS |
| 0934 | B | 0.0116 | 2002 | 0.011 | 0.011 |
| 0935 | B | 0.0195 | 2002 | 0.02 | 0.019 |
| 0936 | B | 0.0869 | 2002 | NS | NS |
| 0938 | B | 0.0432 | 1999 | 0.028 | 0.041 |
| 0942 | B | 0.0348 | 2002 | 0.042 | 0.044 |
| 0943 | B | 0.0021 | 2002 | 0.00093 | NS |
| 0947 | B | 0.0019 | 2002 | 0.0017 | NS |
| 1126 | B | | | 0.044 | NS |
| 1129 | B | | | 0.059 | NS |
| 1130 | B | | | 0.03 | NS |
| 1132 | B | | | 0.042 | NS |
| 1133 | B | | | 0.014 | NS |
| 0274 | C | | | 0.0014 | 0.0015 |
| 0276 | C | | | 0.0016E | 0.0016 |
| 0279 | C | | | 0.0024 | NS |
| 0280 | C | | | 0.0021 | NS |
| 0289 | C | | | 0.0026 | 0.0034 |
| 0683 | C | 0.0022 | 2002 | 0.0016 | NS |
| 0684 | C | 0.0019 | 2002 | 0.0015 | NS |
| 0685 | C | 0.0017 | 2002 | 0.0021 | NS |
| 0689 | C | 0.0014 | 2002 | 0.0014 | NS |
| 0691 | C | 0.0046 | 2002 | 0.0019 | 0.0019E |

*Table B-3 (continued). Baseline, August 2008, and February 2009 Selenium Concentrations*

| Well Number | Horizon | Baseline Selenium Concentration (mg/L) | Year Sampled, Baseline | August 2008 Selenium Concentration (mg/L) | February 2009 Selenium Concentration (mg/L) |
|---|---|---|---|---|---|
| 0903 | C | 0.0023 | 2002 | 0.0019 | NS |
| 0912 | C | 0.0137 | 2001 | 0.0056 | NS |
| 0914 | C | 0.0016 | 2001 | 0.0012 | NS |
| 0917 | C | 0.0017 | 2001 | NS | NS |
| 0930 | C | 0.002 | 2002 | 0.0018 | 0.0014 |
| 0932 | C | 0.0019 | 2002 | 0.0016 | 0.0015 |
| 1008 | C | 0.0015 | 2000 | NS | NS |
| 1116 | C | 0.0018 | 2002 | 0.0033 | NS |
| 1117 | C | 0.0028 | 2002 | 0.011 | NS |
| 1118 | C | 0.0028 | 2002 | 0.019 | NS |
| 0258 | D | 0.0018 | 2000 | 0.0016 | 0.0017 |
| 0261 | D | 0.0021 | 2001 | 0.0017 | NS |
| 0264 | D | 0.0018 | 2001 | 0.0018E | 0.0017 |
| 0266 | D | 0.0013 | 2001 | 0.0012 | 0.0012 |
| 0272 | D | | | 0.0011 | 0.0012 |
| 0273 | D | | | 0.015 | 0.013 |
| 0275 | D | | | 0.017 | 0.02 |
| 0277 | D | | | 0.0014 | NS |
| 0278 | D | | | 0.0013 | NS |
| 0690 | D | 0.0014 | 2002 | 0.0013 | NS |
| 0692 | D | 0.0022 | 2002 | 0.0017 | NS |
| 0695 | D | 0.0019 | 2002 | 0.0017 | NS |
| 0904 | D | 0.0131 | 2001 | 0.018 | NS |
| 0915 | D | 0.0019 | 2001 | 0.0015 | NS |
| 1003 | D | 0.003 | 2000 | 0.0026 | NS |
| 1004 | D | 0.0021 | 2000 | 0.0017E | NS |
| 1005 | D | 0.0014 | 2000 | NS | NS |
| 1006 | D | 0.0013 | 2000 | 0.0013 | NS |
| 1007 | D | 0.0013 | 2000 | 0.0013 | NS |
| 1101 | D | 0.0188 | 2002 | 0.022 | NS |
| 1102 | D | 0.0121 | 2002 | 0.024 | NS |
| 1103 | D | 0.0613 | 2002 | 0.011 | NS |
| 1104 | D | 0.0344 | 2002 | NS | NS |
| 1105 | D | 0.0871 | 2002 | 0.093 | NS |
| 1106 | D | 0.0925 | 2002 | 0.022 | NS |
| 1107 | D | 0.0903 | 2002 | 0.014 | NS |
| 1108 | D | 0.0704 | 2002 | 0.031 | NS |
| 1109 | D | 0.0372 | 2002 | 0.022 | NS |
| 1110 | D | 0.0081 | 2002 | 0.0028 | NS |
| 1111 | D | 0.0172 | 2002 | 0.0059 | NS |
| 1112 | D | 0.0154 | 2002 | 0.0045 | NS |
| 1113 | D | 0.0025 | 2002 | 0.002 | NS |
| 1114 | D | 0.0035 | 2002 | 0.0083 | NS |
| 1115 | D | 0.0362 | 2002 | 0.011 | NS |
| 1119 | D | 0.029 | 2002 | 0.026 | NS |
| 1120 | D | 0.0563 | 2002 | 0.029 | NS |
| 1121 | D | 0.0455 | 2002 | 0.013 | NS |

*Table B-3 (continued). Baseline, August 2008, and February 2009 Selenium Concentrations*

| Well Number | Horizon | Baseline Selenium Concentration (mg/L) | Year Sampled, Baseline | August 2008 Selenium Concentration (mg/L) | February 2009 Selenium Concentration (mg/L) |
|---|---|---|---|---|---|
| 1122 | D | 0.0558 | 2002 | 0.034 | NS |
| 1123 | D | 0.0449 | 2002 | 0.0047 | NS |
| 1124 | D | 0.0186 | 2002 | 0.022 | NS |
| 1125 | D | 0.0025 | 2002 | 0.0021 | NS |
| 0251 | E | 0.0035 | 2002 | 0.0009 | 0.0011 |
| 0268 | E | 0.0018 | 2002 | 0.0018 | 0.0019 |
| 0920 | E | 0.0014 | 2001 | 0.0013 | NS |
| 0911 | F | | | 0.0011 | NS |
| 0913 | G | 0.00063 | 2001 | 0.001 | NS |
| 0916 | G | 0.001 | 2001 | 0.001 | NS |
| 0252 | I | 0.00092 | 2002 | 0.00076 | 0.00051 |
| 0921 | I | 0.00091 | 2001 | 0.001 | NS |

E = Estimated value because of interference.
NS = Not sampled.

Note:
All data reported for this period correspond to unfiltered samples, except for the following: well 0281 (both Aug-08 and Feb-09), 0691 (Aug-08 only), and extraction wells 1109 and 1110 (Aug-08 only). Samples are filtered only when turbidity is greater than 10 NTUs.

*Table B-4. Baseline, August 2008, and February 2009 Sulfate Concentrations*

| Well Number | Horizon | Baseline Sulfate Concentration (mg/L) | Year Sampled, Baseline | August 2008 Sulfate Concentration (mg/L) | February 2009 Sulfate Concentration (mg/L) |
|---|---|---|---|---|---|
| 0686 | A | 98.6 | 2002 | 70 | NS |
| 0687 | A | 329 | 2002 | 81 | NS |
| 0688 | A | 40 | 2002 | 210 | NS |
| 0901 | A | 26.2 | 2001 | 38 | NS |
| 0906 | A | 1660 | 2002 | NS | NS |
| 0929 | A | 28.1 | 2002 | 23 | 22 |
| 0940 | A | 7550 | 2002 | NS | NS |
| 0941 | A | 745 | 2002 | 1200 | 1200 |
| 0945 | A | 32.1 | 2002 | 25 | NS |
| 0946 | A | | | 89 | NS |
| 0262 | B | 931 | 2001 | 1600 | 1400 |
| 0263 | B | 1990 | 2001 | 2200 | 2000 |
| 0265 | B | 1520 | 2001 | 1300 | 1200 |
| 0267 | B | 3680 | 2002 | 3800 | 3300 |
| 0271 | B | 16.4 | 2002 | 19 | NS |
| 0281 | B | | | 130 | 140 |
| 0282 | B | | | 94 | 76 |
| 0286 | B | | | 140 | 34 |
| 0287 | B | | | 1300 | 1300 |
| 0288 | B | | | 540 | 390 |
| 0290 | B | | | 27 | 21 |
| 0908 | B | 2430 | 2002 | 3100 | 2700 |
| 0909 | B | 666 | 2002 | 960 | 910 |
| 0910 | B | | | 17 | NS |
| 0934 | B | 7360 | 2002 | 3000 | 2800 |
| 0935 | B | 2690 | 2002 | 2800 | 2400 |
| 0936 | B | 4360 | 2002 | NS | NS |
| 0938 | B | 2120 | 1999 | 1100N | 950 |
| 0942 | B | 3030 | 2002 | 3400 | 3200 |
| 0943 | B | 29 | 2002 | 51 | NS |
| 0947 | B | 18.7 | 2002 | 20 | NS |
| 1126 | B | | | 3800 | NS |
| 1129 | B | | | 1000 | NS |
| 1130 | B | | | 2000 | NS |
| 1132 | B | | | 720 | NS |
| 1133 | B | | | 210 | NS |
| 0274 | C | | | 18 | 15 |
| 0276 | C | | | 21 | 16 |
| 0279 | C | | | 67 | NS |
| 0280 | C | | | 24 | NS |
| 0289 | C | | | 160 | 280 |
| 0683 | C | 21.6 | 2002 | 22 | NS |
| 0684 | C | 18 | 2002 | 22 | NS |
| 0685 | C | 26.2 | 2002 | 26 | NS |
| 0689 | C | 13.7 | 2002 | 18 | NS |
| 0691 | C | 587 | 2002 | 100 | 110 |
| 0903 | C | 76.5 | 2002 | 79 | NS |

*Table B-4 (continued). Baseline, August 2008, and February 2009 Sulfate Concentrations*

| Well Number | Horizon | Baseline Sulfate Concentration (mg/L) | Year Sampled, Baseline | August 2008 Sulfate Concentration (mg/L) | February 2009 Sulfate Concentration (mg/L) |
|---|---|---|---|---|---|
| 0912 | C | 846 | 2001 | 450 | NS |
| 0914 | C | 15.6 | 2001 | 14 | NS |
| 0917 | C | 13.9 | 2001 | NS | NS |
| 0930 | C | 59.8 | 2002 | 59 | 41 |
| 0932 | C | 30.2 | 2002 | 34 | 31 |
| 1008 | C | 13 | 2000 | NS | NS |
| 1116 | C | 176 | 2002 | 140 | NS |
| 1117 | C | 255 | 2002 | 970 | NS |
| 1118 | C | 163 | 2002 | 2000 | NS |
| 0258 | D | 17.4 | 2000 | 20 | 17 |
| 0261 | D | 18.2 | 2001 | 22 | NS |
| 0264 | D | 37.7 | 2001 | 65 | 60 |
| 0266 | D | 10.9 | 2001 | 13 | 11 |
| 0272 | D | | | 14 | 12 |
| 0273 | D | | | 210 | 160 |
| 0275 | D | | | 2400 | 2200 |
| 0277 | D | | | 20 | NS |
| 0278 | D | | | 15 | NS |
| 0690 | D | 13.8 | 2002 | 15 | NS |
| 0692 | D | 20.8 | 2002 | 19 | NS |
| 0695 | D | 50.4 | 2002 | 59 | NS |
| 0904 | D | 96.5 | 2001 | 140 | NS |
| 0915 | D | 17.8 | 2001 | 20 | NS |
| 1003 | D | 302 | 2000 | 310 | NS |
| 1004 | D | 66.2 | 2000 | 69 | NS |
| 1005 | D | 12.7 | 2000 | NS | NS |
| 1006 | D | 12.2 | 2000 | 14 | NS |
| 1007 | D | 11.7 | 2000 | 14 | NS |
| 1101 | D | 960 | 2002 | 1400 | NS |
| 1102 | D | 1320 | 2002 | 1500 | NS |
| 1103 | D | 2570 | 2002 | 740 | NS |
| 1104 | D | 1870 | 2002 | NS | NS |
| 1105 | D | 1590 | 2002 | 2400 | NS |
| 1106 | D | 1050 | 2002 | 620 | NS |
| 1107 | D | 1200 | 2002 | 350 | NS |
| 1108 | D | 3400 | 2002 | 1900 | NS |
| 1109 | D | 3280 | 2002 | 1300 | NS |
| 1110 | D | 512 | 2002 | 620 | NS |
| 1111 | D | 988 | 2002 | 940N | NS |
| 1112 | D | 1140 | 2002 | 340 | NS |
| 1113 | D | 136 | 2002 | 110 | NS |
| 1114 | D | 328 | 2002 | 680 | NS |
| 1115 | D | 1930 | 2002 | 770 | NS |
| 1119 | D | 1560 | 2002 | 2200 | NS |
| 1120 | D | 2330 | 2002 | 3000 | NS |
| 1121 | D | 2590 | 2002 | 2500 | NS |
| 1122 | D | 2960 | 2002 | 2600 | NS |

*Table B-4 (continued). Baseline, August 2008, and February 2009 Sulfate Concentrations*

| Well Number | Horizon | Baseline Sulfate Concentration (mg/L) | Year Sampled, Baseline | August 2008 Sulfate Concentration (mg/L) | February 2009 Sulfate Concentration (mg/L) |
|---|---|---|---|---|---|
| 1123 | D | 1240 | 2002 | 280 | NS |
| 1124 | D | 1170 | 2002 | 1200 | NS |
| 1125 | D | 165 | 2002 | 100 | NS |
| 0251 | E | 617 | 2002 | 17 | 13 |
| 0268 | E | 17.4 | 2002 | 150 | 130 |
| 0920 | E | 12.7 | 2001 | 14 | NS |
| 0911 | F | | | 10 | NS |
| 0913 | G | 8.43 | 2001 | 9.7 | NS |
| 0916 | G | 13.5 | 2001 | 10 | NS |
| 0252 | I | 19.2 | 2002 | 7.8 | 6.6 |
| 0921 | I | 8.52 | 2001 | 9.1 | NS |

NS = Not sampled.

Note:
All data reported for this period correspond to unfiltered samples, except for the following: well 0281 (both Aug-08 and Feb-09), 0691 (Aug-08 only), and extraction wells 1109 and 1110 (Aug-08 only). Samples are filtered only when turbidity is greater than 10 NTUs.

*Table B-5. Baseline, August 2008, and February 2009 Uranium Concentrations*

| Well Number | Horizon | Baseline Uranium Concentration (mg/L) | Year Sampled, Baseline | August 2008 Uranium Concentration (mg/L) | February 2009 Uranium Concentration (mg/L) |
|---|---|---|---|---|---|
| 0686 | A | 0.0021 | 2002 | 0.00022U | NS |
| 0687 | A | 0.0208 | 2002 | 0.00031U | NS |
| 0688 | A | 0.002 | 2002 | 0.0052 | NS |
| 0901 | A | 0.0026 | 2001 | 0.003 | NS |
| 0906 | A | 0.951 | 2002 | NS | NS |
| 0929 | A | 0.0012 | 2002 | 0.0016 | 0.0016 |
| 0940 | A | 0.546 | 2002 | NS | NS |
| 0941 | A | 0.0886 | 2002 | 0.18 | 0.17 |
| 0945 | A | 0.0031 | 2002 | 0.0015 | NS |
| 0946 | A | | | 0.000093BU | NS |
| 0262 | B | 0.379 | 2001 | 1.4 | 1.2 |
| 0263 | B | 0.485 | 2001 | 0.11 | 0.12 |
| 0265 | B | 0.0897 | 2001 | 0.069 | 0.072 |
| 0267 | B | 0.0731 | 2002 | 0.067 | 0.07 |
| 0271 | B | 0.0014 | 2002 | 0.0014 | NS |
| 0281 | B | | | 0.0068 | 0.0077 |
| 0282 | B | | | 0.0057 | 0.0046 |
| 0286 | B | | | 0.015 | 0.0042 |
| 0287 | B | | | 0.19 | 0.2 |
| 0288 | B | | | 0.021 | 0.016 |
| 0290 | B | | | 0.0016 | 0.0014 |
| 0908 | B | 0.122 | 2002 | 0.1 | 0.093 |
| 0909 | B | 0.0389 | 2002 | 0.055 | 0.059 |
| 0910 | B | | | 0.0012 | NS |
| 0934 | B | 0.312 | 2002 | 0.21 | 0.19 |
| 0935 | B | 0.0868 | 2002 | 0.12 | 0.11 |
| 0936 | B | 0.267 | 2002 | NS | NS |
| 0938 | B | 0.21 | 1999 | 0.35 | 0.66 |
| 0942 | B | 0.246 | 2002 | 0.48 | 0.5 |
| 0943 | B | 0.0049 | 2002 | 0.0071 | NS |
| 0947 | B | 0.0024 | 2002 | 0.0011 | NS |
| 1126 | B | | | 0.064 | NS |
| 1129 | B | | | 0.66 | NS |
| 1130 | B | | | 0.26 | NS |
| 1132 | B | | | 0.54 | NS |
| 1133 | B | | | 0.077 | NS |
| 0274 | C | | | 0.0017 | 0.0015 |
| 0276 | C | | | 0.0016 | 0.0014 |
| 0279 | C | | | 0.0017 | NS |
| 0280 | C | | | 0.0015 | NS |
| 0289 | C | | | 0.016 | 0.022 |
| 0683 | C | 0.0012 | 2002 | 0.0013 | NS |
| 0684 | C | 0.0019 | 2002 | 0.0018 | NS |
| 0685 | C | 0.0012 | 2002 | 0.0013 | NS |
| 0689 | C | 0.0011 | 2002 | 0.0012 | NS |
| 0691 | C | 0.0657 | 2002 | 0.0083 | 0.013 |

*Table B-5 (continued). Baseline, August 2008, and February 2009 Uranium Concentrations*

| Well Number | Horizon | Baseline Uranium Concentration (mg/L) | Year Sampled, Baseline | August 2008 Uranium Concentration (mg/L) | February 2009 Uranium Concentration (mg/L) |
|---|---|---|---|---|---|
| 0903 | C | 0.0022 | 2002 | 0.0022 | NS |
| 0912 | C | 0.0342 | 2001 | 0.021 | NS |
| 0914 | C | 0.0013 | 2001 | 0.000047BU | NS |
| 0917 | C | 0.0013 | 2001 | NS | NS |
| 0930 | C | 0.0023 | 2002 | 0.0028 | 0.0023 |
| 0932 | C | 0.0016 | 2002 | 0.0017 | 0.0017 |
| 1008 | C | 0.001 | 2000 | NS | NS |
| 1116 | C | 0.0081 | 2002 | 0.025 | NS |
| 1117 | C | 0.0151 | 2002 | 0.036 | NS |
| 1118 | C | 0.0098 | 2002 | 0.076 | NS |
| 0258 | D | 0.0018 | 2000 | 0.0014 | 0.0014 |
| 0261 | D | 0.0018 | 2001 | 0.0013 | NS |
| 0264 | D | 0.0033 | 2001 | 0.0032 | 0.0032 |
| 0266 | D | 0.0019 | 2001 | 0.002 | 0.0019 |
| 0272 | D | | | 0.0015 | 0.0015 |
| 0273 | D | | | 0.053 | 0.043 |
| 0275 | D | | | 0.47 | 0.52 |
| 0277 | D | | | 0.0026 | NS |
| 0278 | D | | | 0.0013 | NS |
| 0690 | D | 0.0018 | 2002 | 0.0016 | NS |
| 0692 | D | 0.0015 | 2002 | 0.0017 | NS |
| 0695 | D | 0.002 | 2002 | 0.0023 | NS |
| 0904 | D | 0.0044 | 2001 | 0.0063 | NS |
| 0915 | D | 0.0017 | 2001 | 0.000085BU | NS |
| 1003 | D | 0.0205 | 2000 | 0.021 | NS |
| 1004 | D | 0.0053 | 2000 | 0.0077 | NS |
| 1005 | D | 0.0013 | 2000 | NS | NS |
| 1006 | D | 0.0014 | 2000 | 0.0013 | NS |
| 1007 | D | 0.0012 | 2000 | 0.0013 | NS |
| 1101 | D | 0.245 | 2002 | 0.32 | NS |
| 1102 | D | 0.533 | 2002 | 0.56 | NS |
| 1103 | D | 0.355 | 2002 | 0.15 | NS |
| 1104 | D | 0.194 | 2002 | NS | NS |
| 1105 | D | 2.1 | 2002 | 2.4 | NS |
| 1106 | D | 2.1 | 2002 | 0.42 | NS |
| 1107 | D | 0.118 | 2002 | 0.055 | NS |
| 1108 | D | 0.646 | 2002 | 0.39 | NS |
| 1109 | D | 0.565 | 2002 | 0.57 | NS |
| 1110 | D | 0.0528 | 2002 | 0.12 | NS |
| 1111 | D | 0.161 | 2002 | 0.11 | NS |
| 1112 | D | 0.13 | 2002 | 0.054 | NS |
| 1113 | D | 0.0149 | 2002 | 0.013 | NS |
| 1114 | D | 0.0277 | 2002 | 0.075 | NS |
| 1115 | D | 0.41 | 2002 | 0.083 | NS |
| 1119 | D | 0.555 | 2002 | 0.42 | NS |
| 1120 | D | 1.3 | 2002 | 0.29 | NS |
| 1121 | D | 0.857 | 2002 | 0.14 | NS |

*Table B-5 (continued). Baseline, August 2008, and February 2009 Uranium Concentrations*

| Well Number | Horizon | Baseline Uranium Concentration (mg/L) | Year Sampled, Baseline | August 2008 Uranium Concentration (mg/L) | February 2009 Uranium Concentration (mg/L) |
|---|---|---|---|---|---|
| 1122 | D | 0.878 | 2002 | 0.38 | NS |
| 1123 | D | 0.261 | 2002 | 0.051 | NS |
| 1124 | D | 0.171 | 2002 | 0.2 | NS |
| 1125 | D | 0.0176 | 2002 | 0.014 | NS |
| 0251 | E | 0.0481 | 2002 | 0.002 | 0.0018 |
| 0268 | E | 0.0014 | 2002 | 0.022 | 0.02 |
| 0920 | E | 0.0017 | 2001 | 0.0012 | NS |
| 0911 | F | | | 0.0012 | NS |
| 0913 | G | 0.0016 | 2001 | 0.0013 | NS |
| 0916 | G | 0.0014 | 2001 | 0.000034BU | NS |
| 0252 | I | 0.0024 | 2002 | 0.0021 | 0.0019 |
| 0921 | I | 0.0047 | 2001 | 0.0043 | NS |

B = Result between instrument detection limit and contract required detection limit.
U = Analytical result below detection limit.
NS = Not sampled.

Note:
All data reported for this period correspond to unfiltered samples, except for the following: well 0281 (both Aug-08 and Feb-09), 0691 (Aug-08 only), and extraction wells 1109 and 1110 (Aug-08 only). Samples are filtered only when turbidity is greater than 10 NTUs.

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# Appendix C

# Nitrate, Sulfate, and Uranium Plume Maps

*(See text for an explanation of contouring methods and well-selection criteria)*

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# Contents

## Figures

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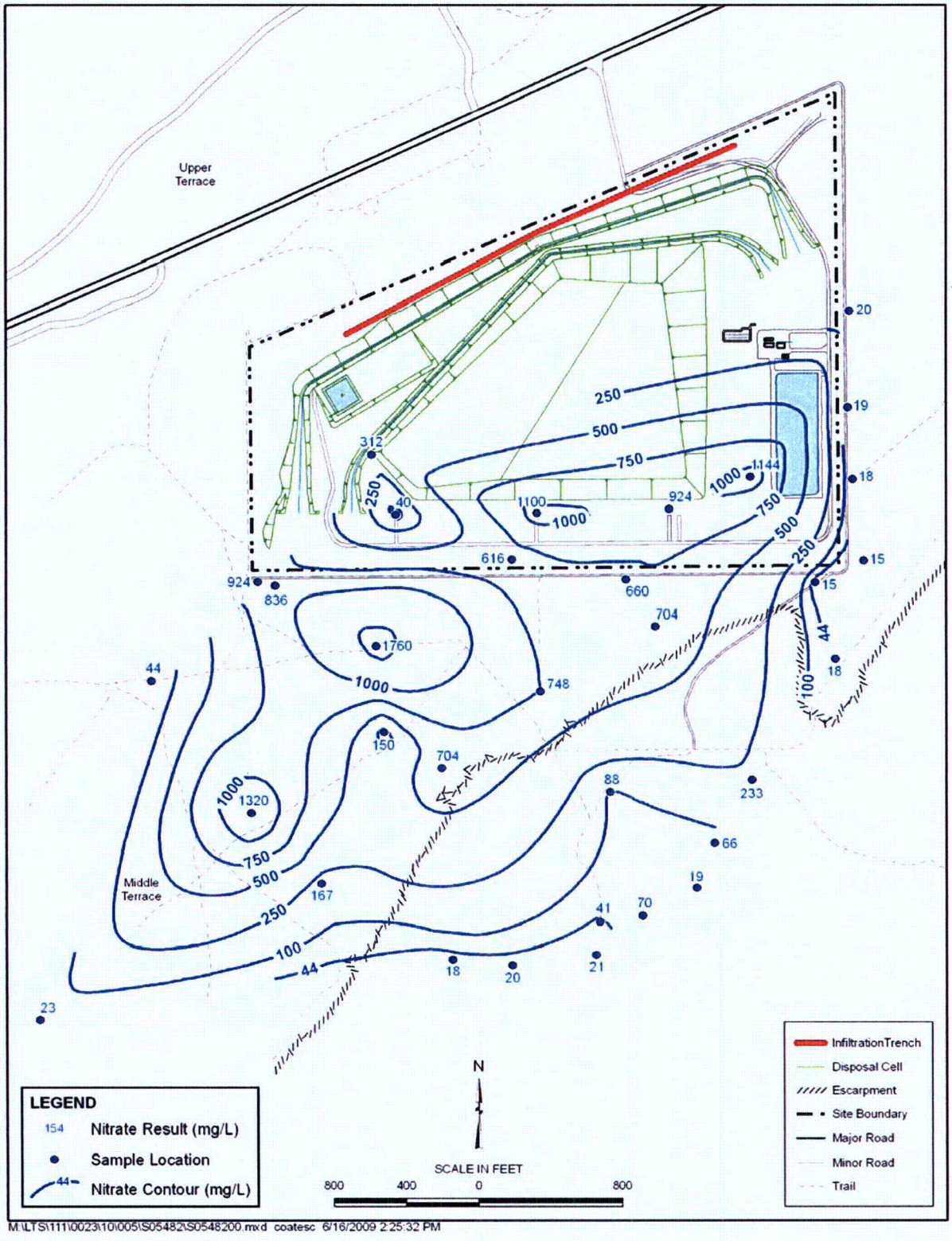


*Figure C–1. Nitrate (mg/L as $NO_3$) Plume Map*

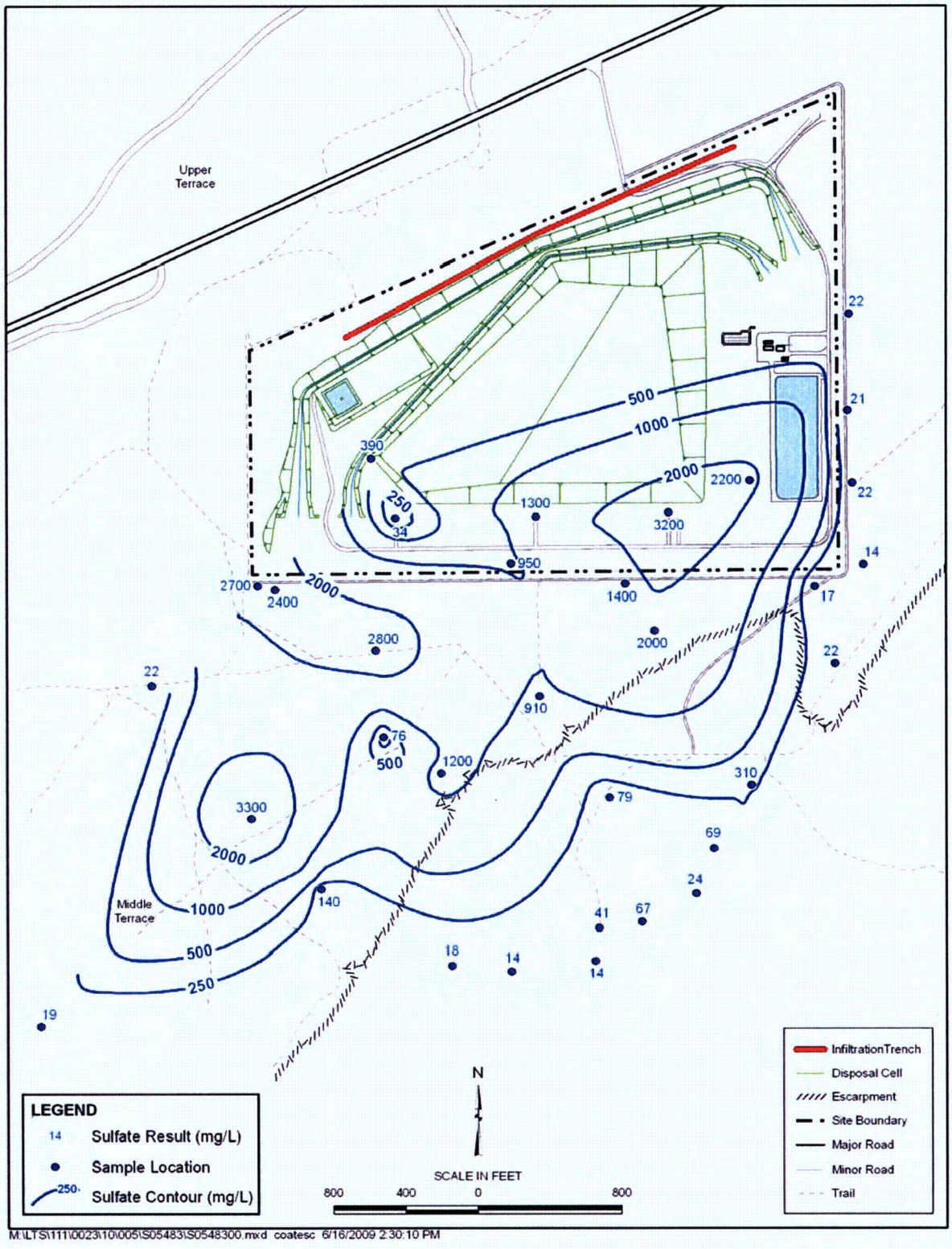


*Figure C–2. Sulfate (mg/L) Plume Map*

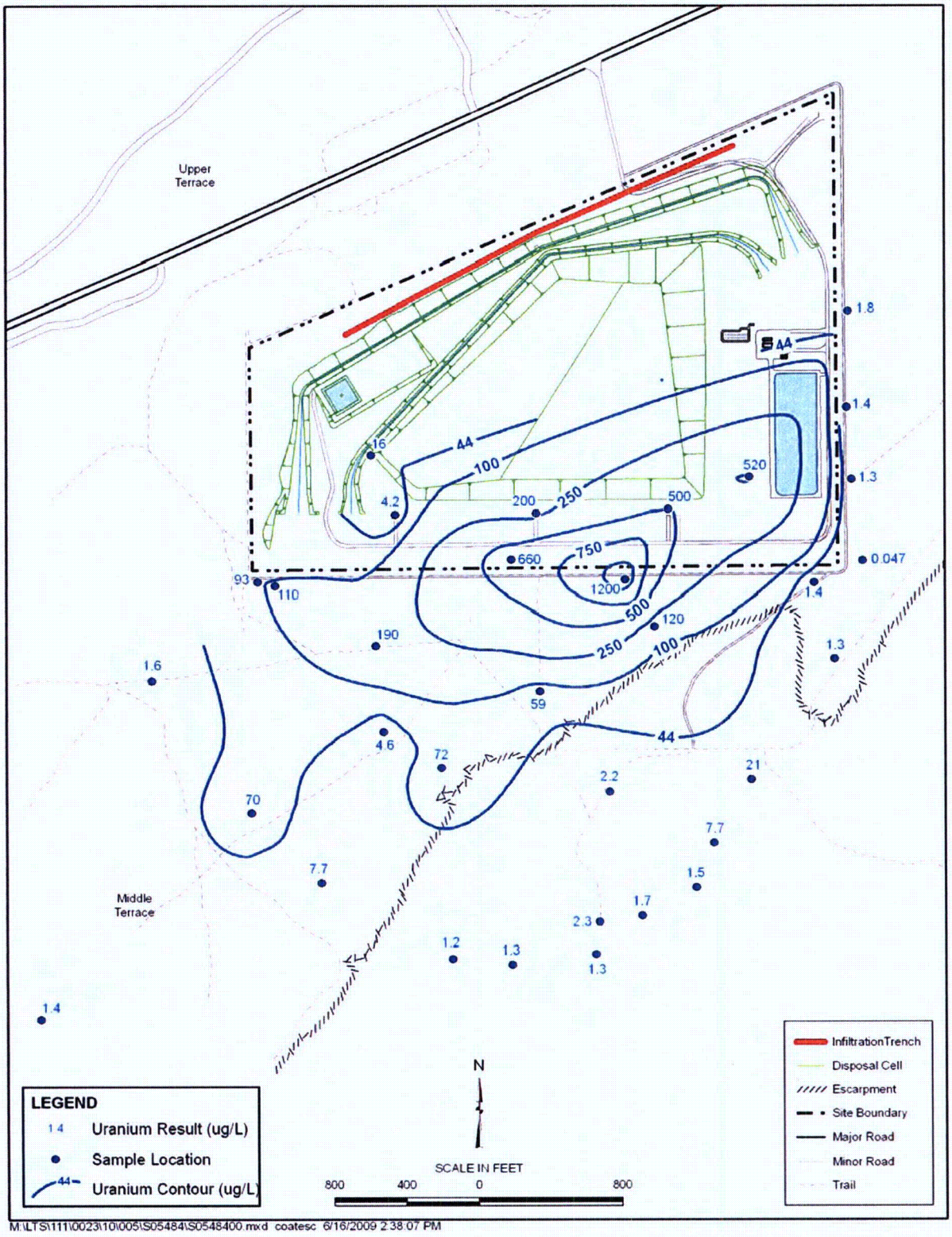


*Figure C–3. Uranium (µg/L) Plume Map*

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# Appendix D

# Monitor Well Water Level Hydrographs

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## Figures

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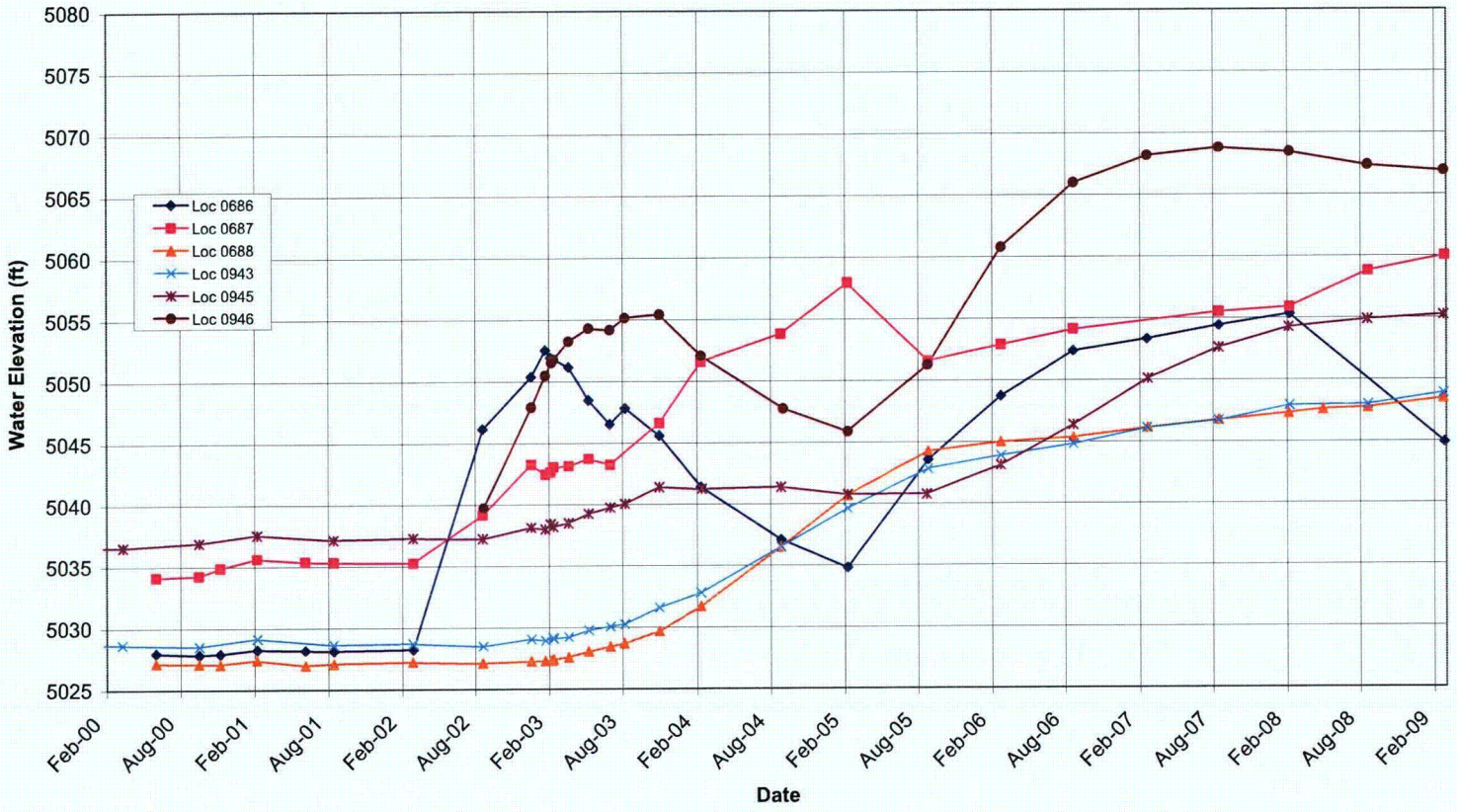


*Figure D−1. Monitor Wells at Infiltration Trench: 0686–0688, 0943, 0945, 0946*

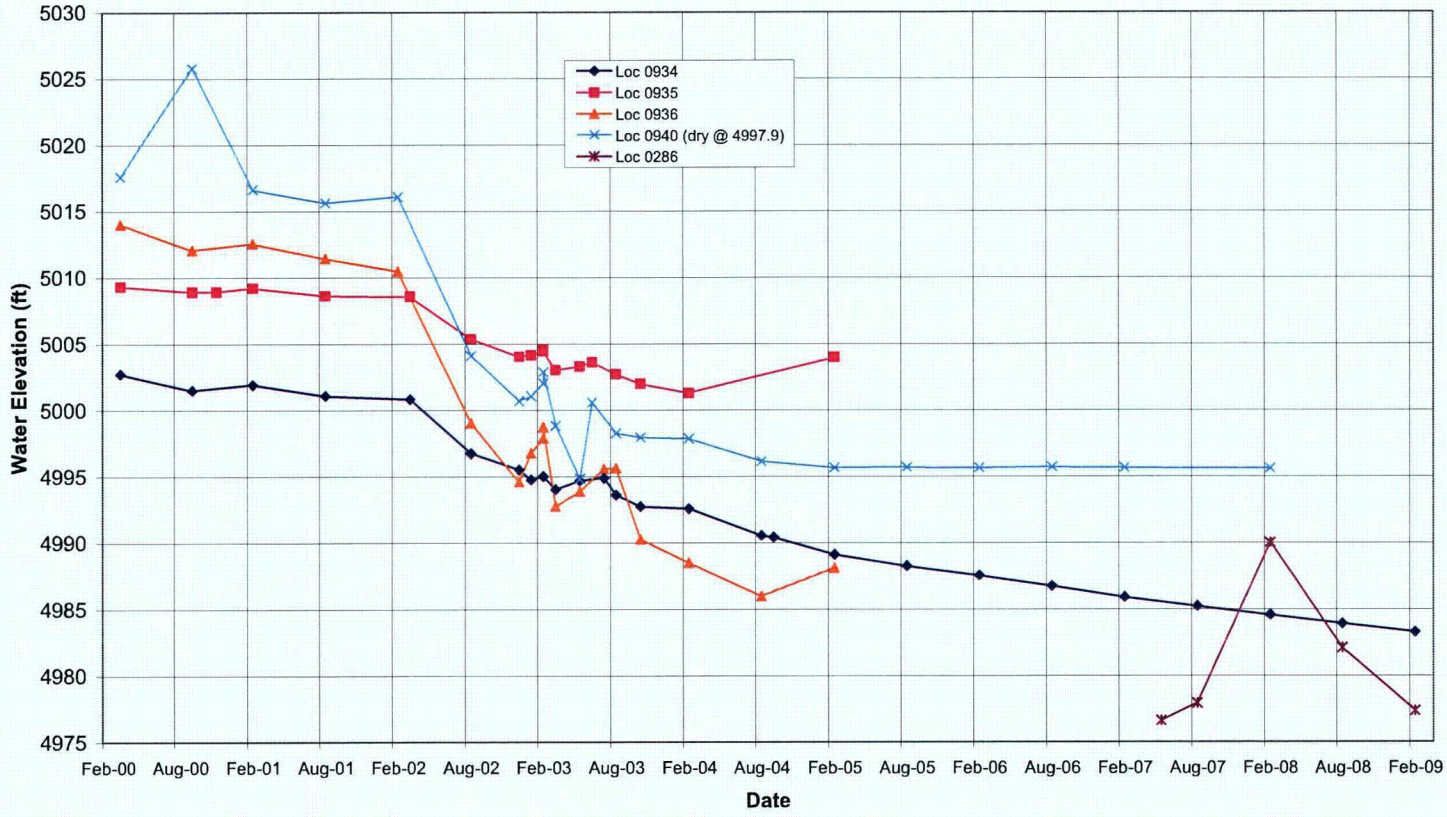


*Figure D-2. Horizon A and B Monitor Wells 286, 934–936, 940*

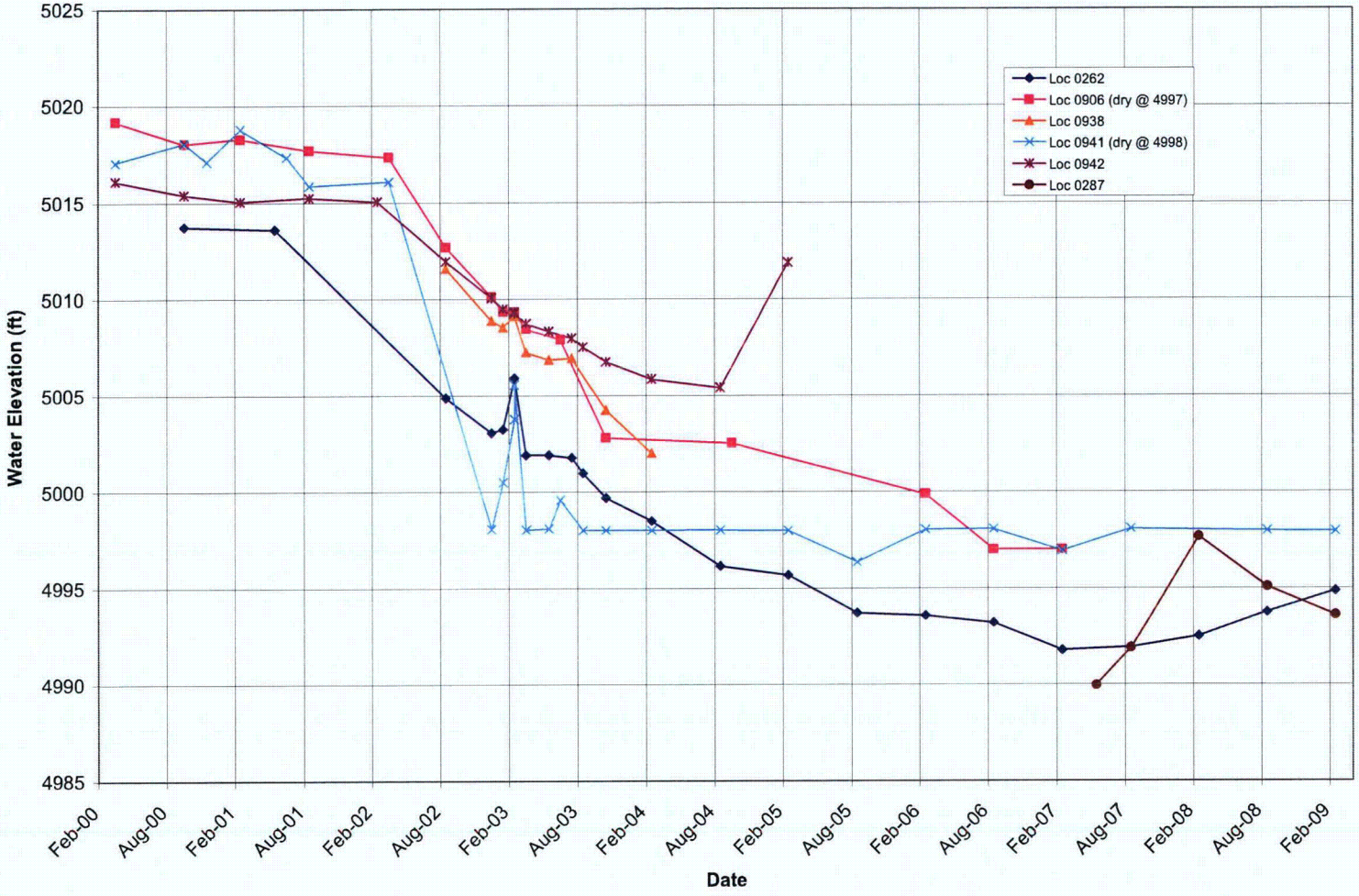


*Figure D−3. Horizon A and B Monitor Wells 262, 287, 906, 938, 941–942*

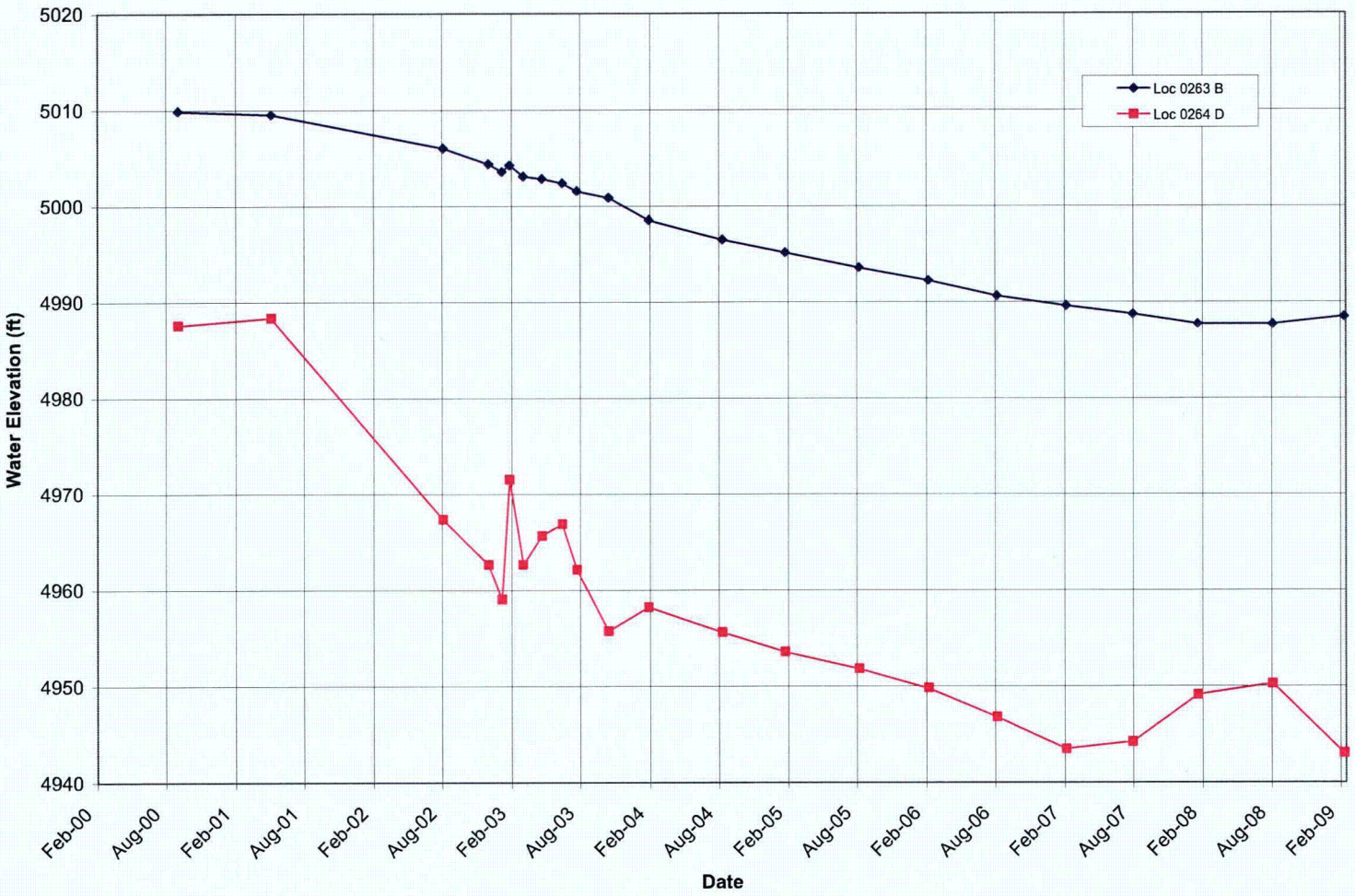


*Figure D-4. Middle Terrace Well Pair 263B and 264D*

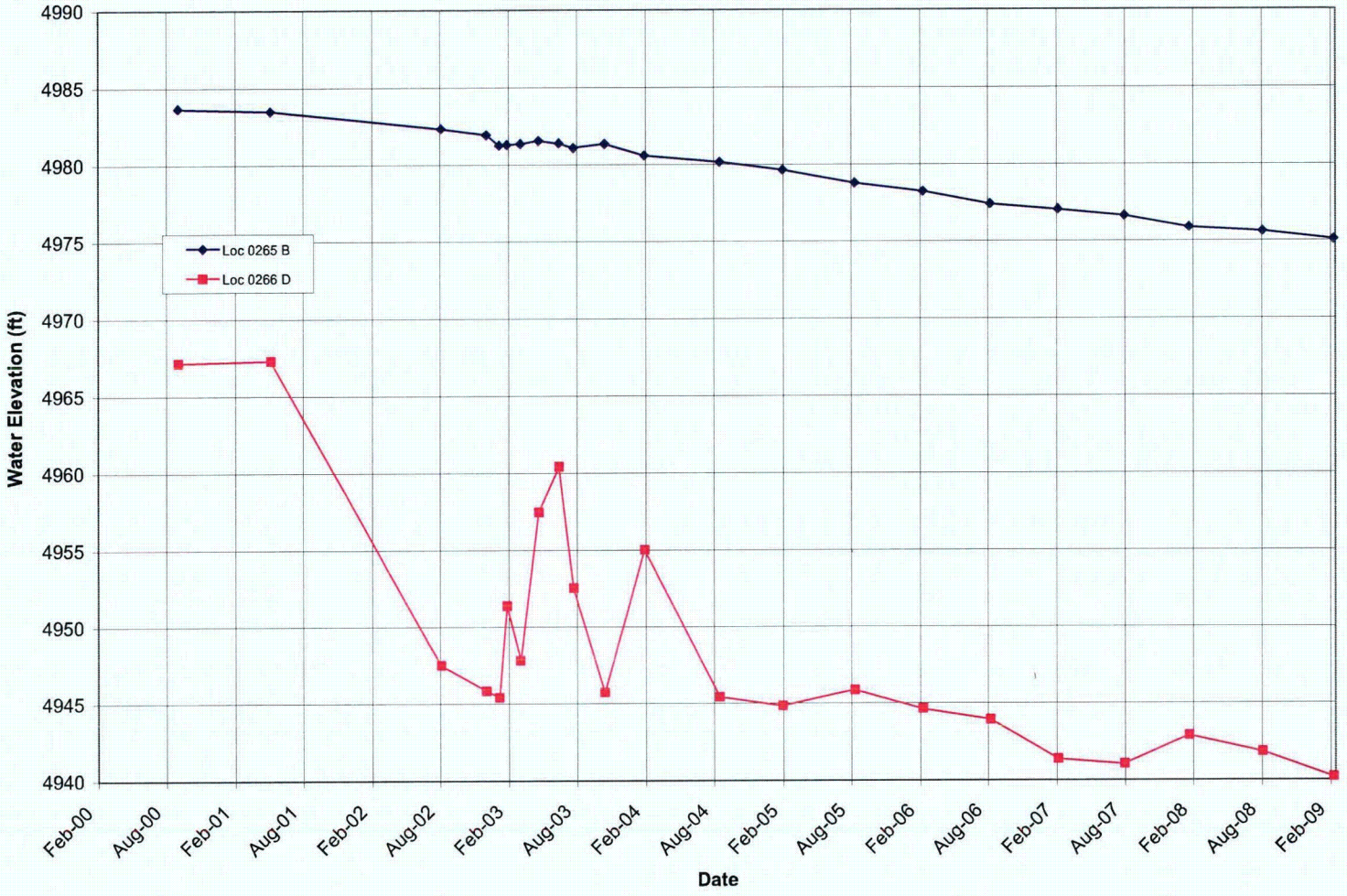


*Figure D-5. Middle Terrace Well Pair 265B and 266D*

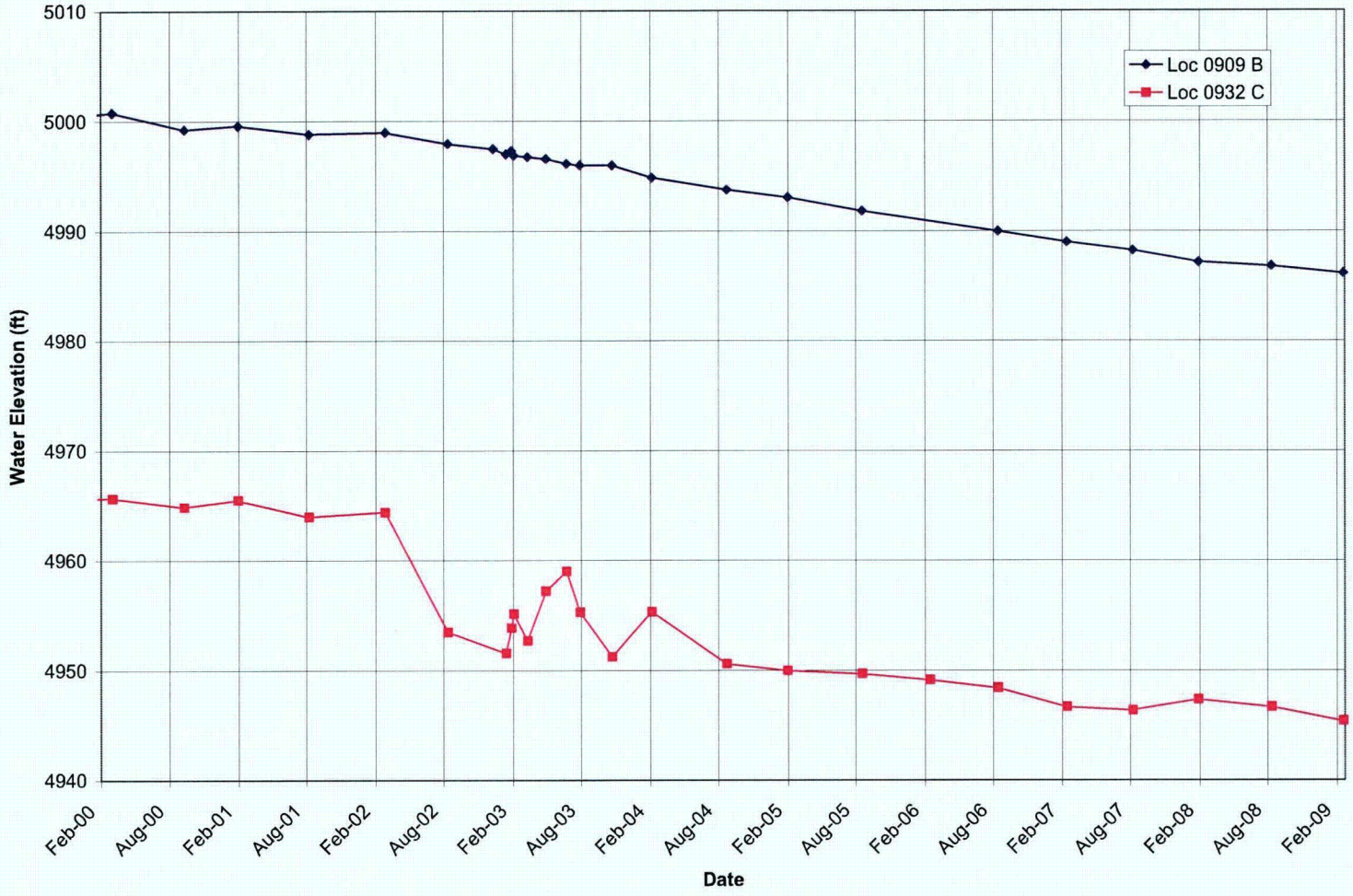


*Figure D-6. Middle Terrace Well Pair 909B and 932C*

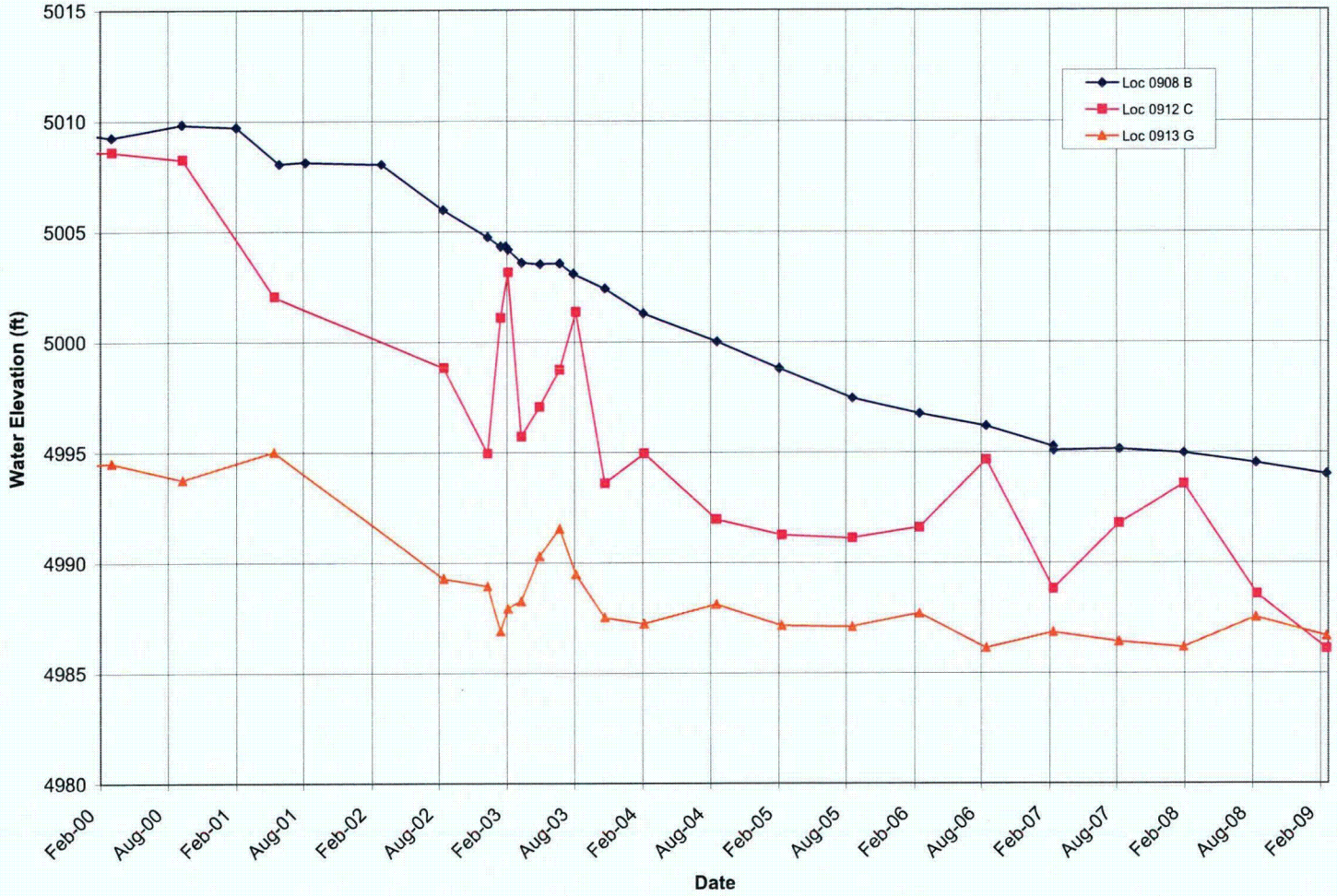


*Figure D−7. Middle Terrace Well Cluster 908B, 912C, and 913G*


*Figure D-8. Middle Terrace Well Cluster 268E, 256I, and 257M*

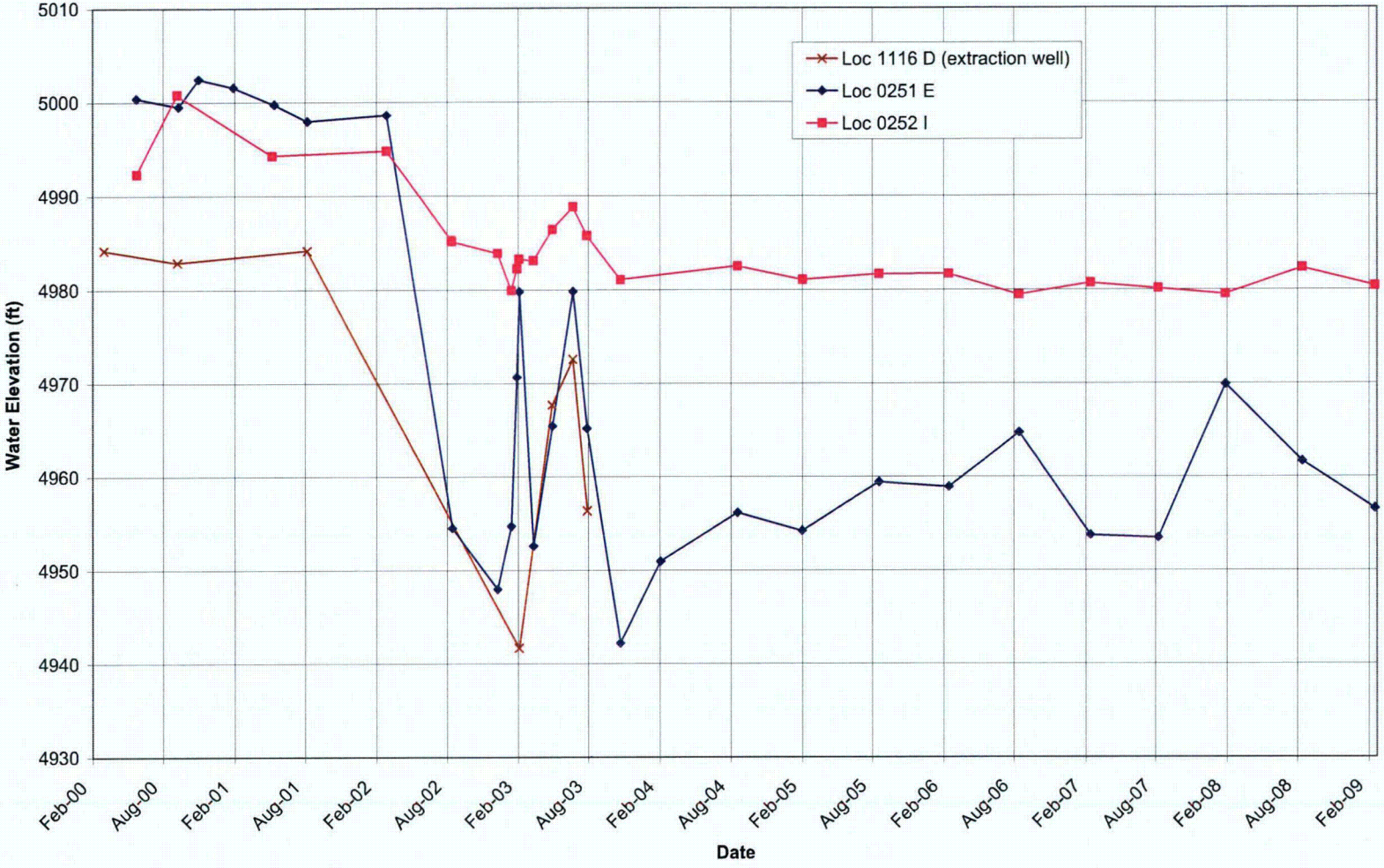


*Figure D-9. Middle Terrace Well Cluster 251E, 252I, and 1116D*

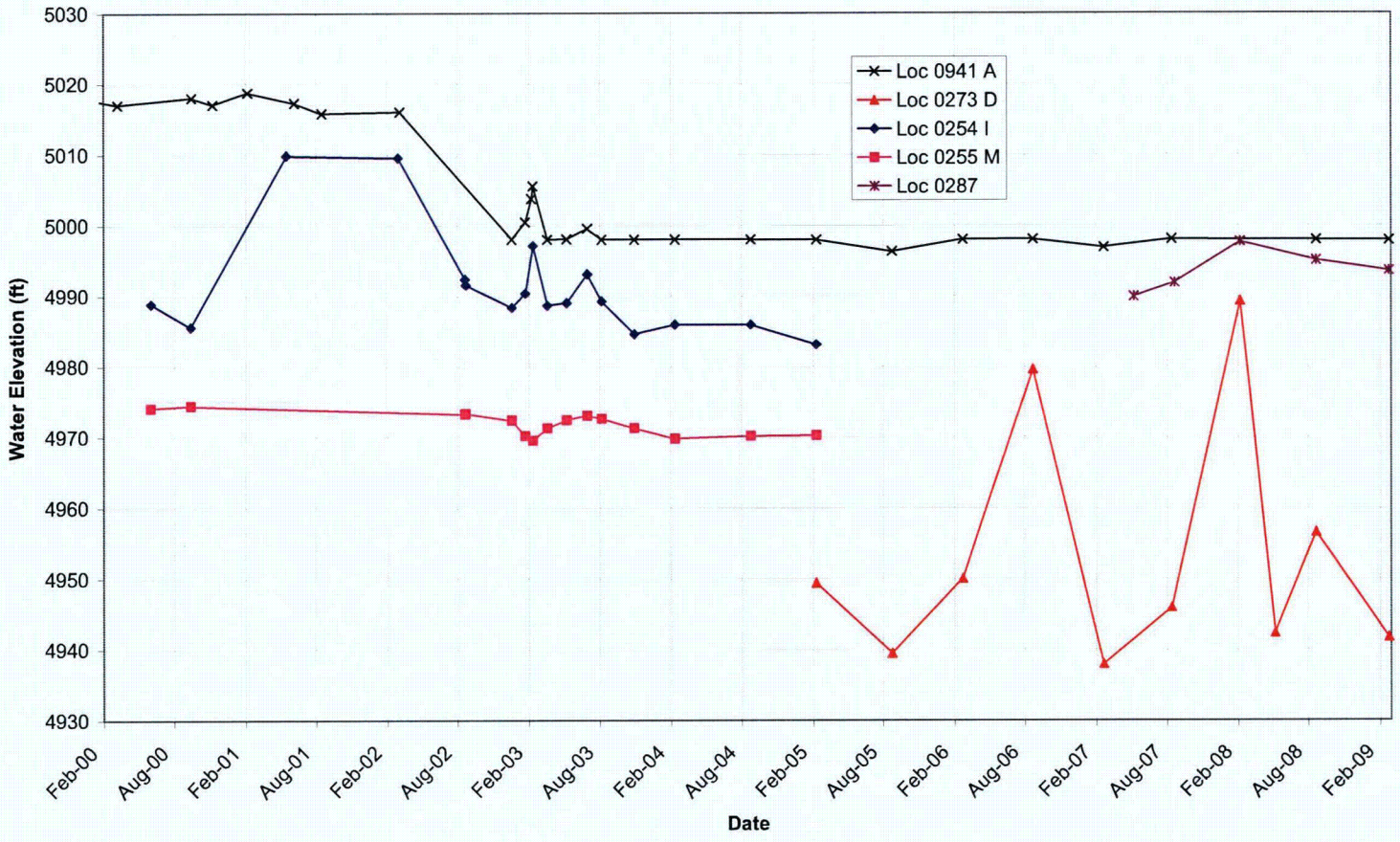


*Figure D–10. Middle Terrace Well Cluster 254I, 255M, 273D, 287, and 941A*

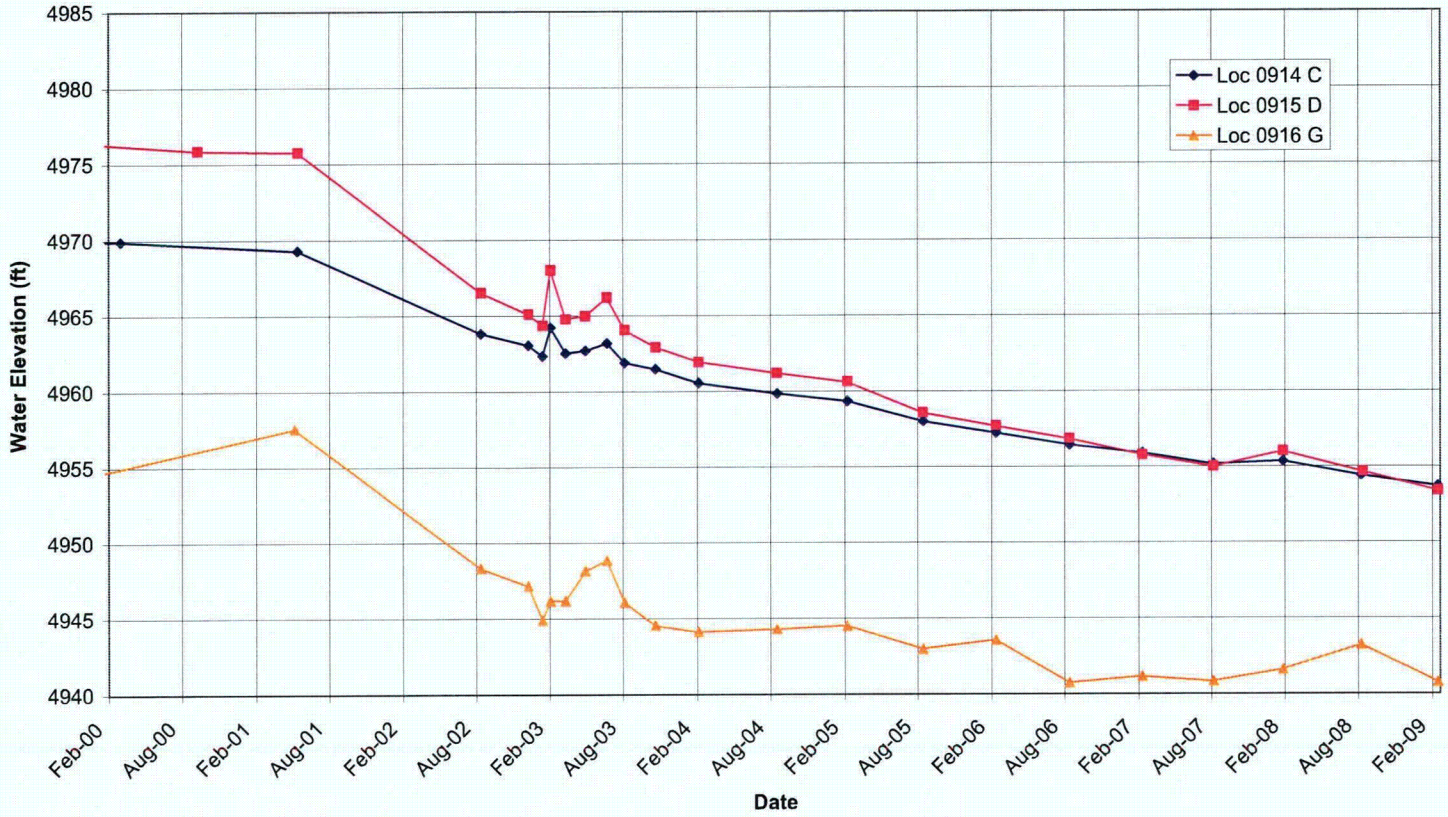


*Figure D-11. Middle Terrace Well Cluster 914C, 915D, and 916G*

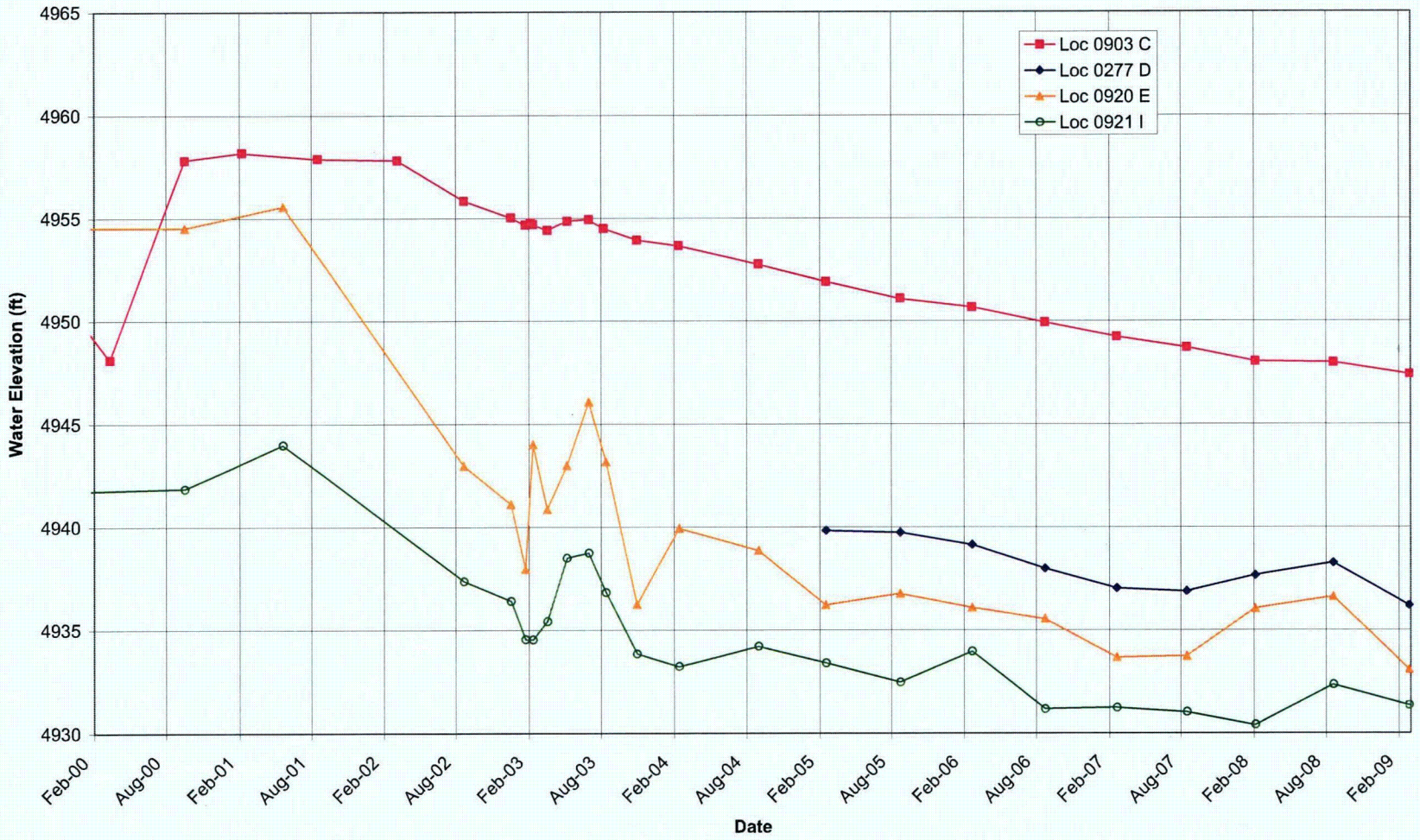


*Figure D–12. Lower Terrace Well Cluster 277D, 903C, 920E, and 921I*

# Appendix E

# Contaminant Concentration Trends at Monitor Wells

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# Contents

## Figures

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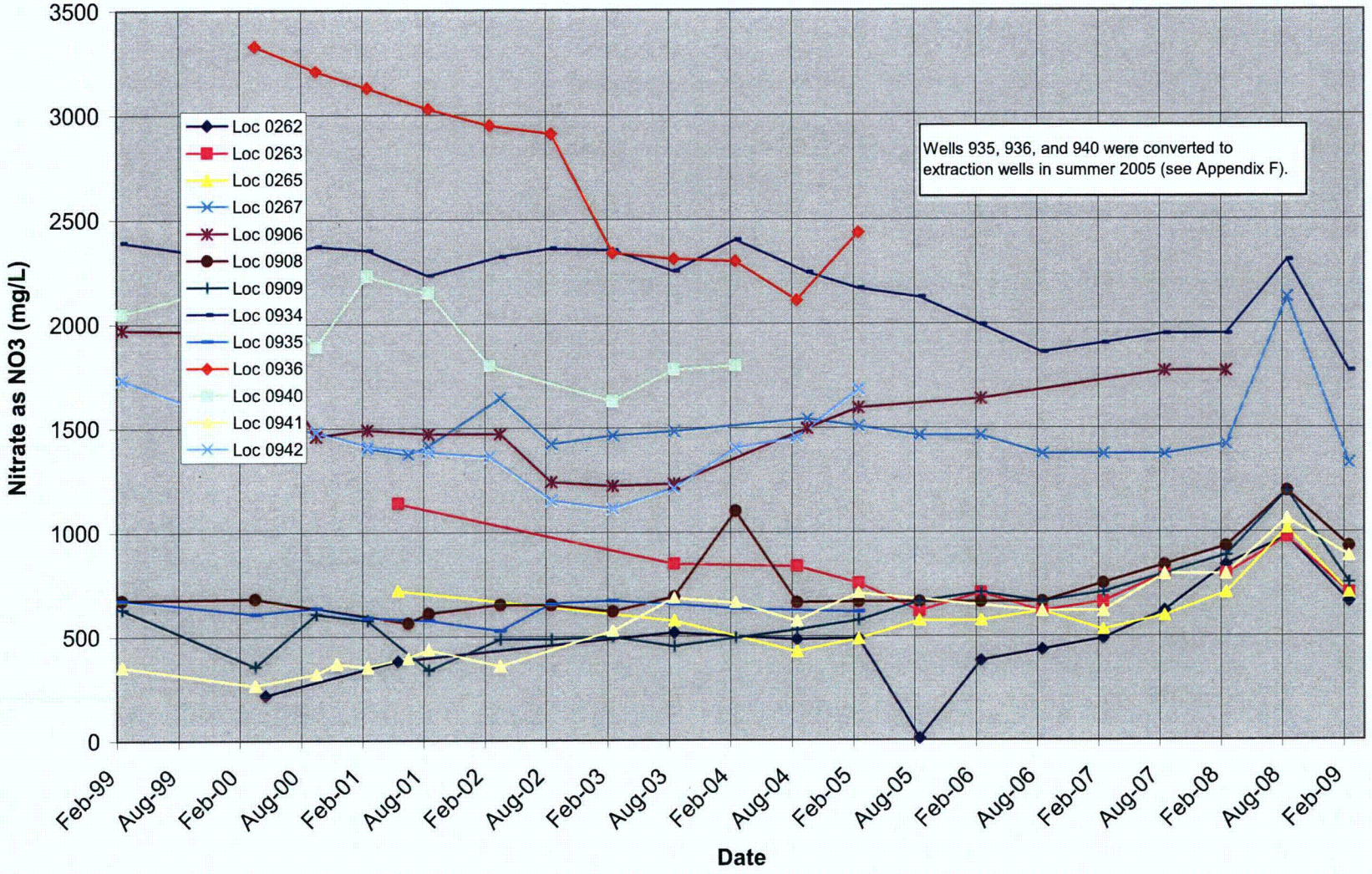


*Figure E-1. Horizons A and B Monitor Wells, Nitrate as $NO_3$ Concentration*

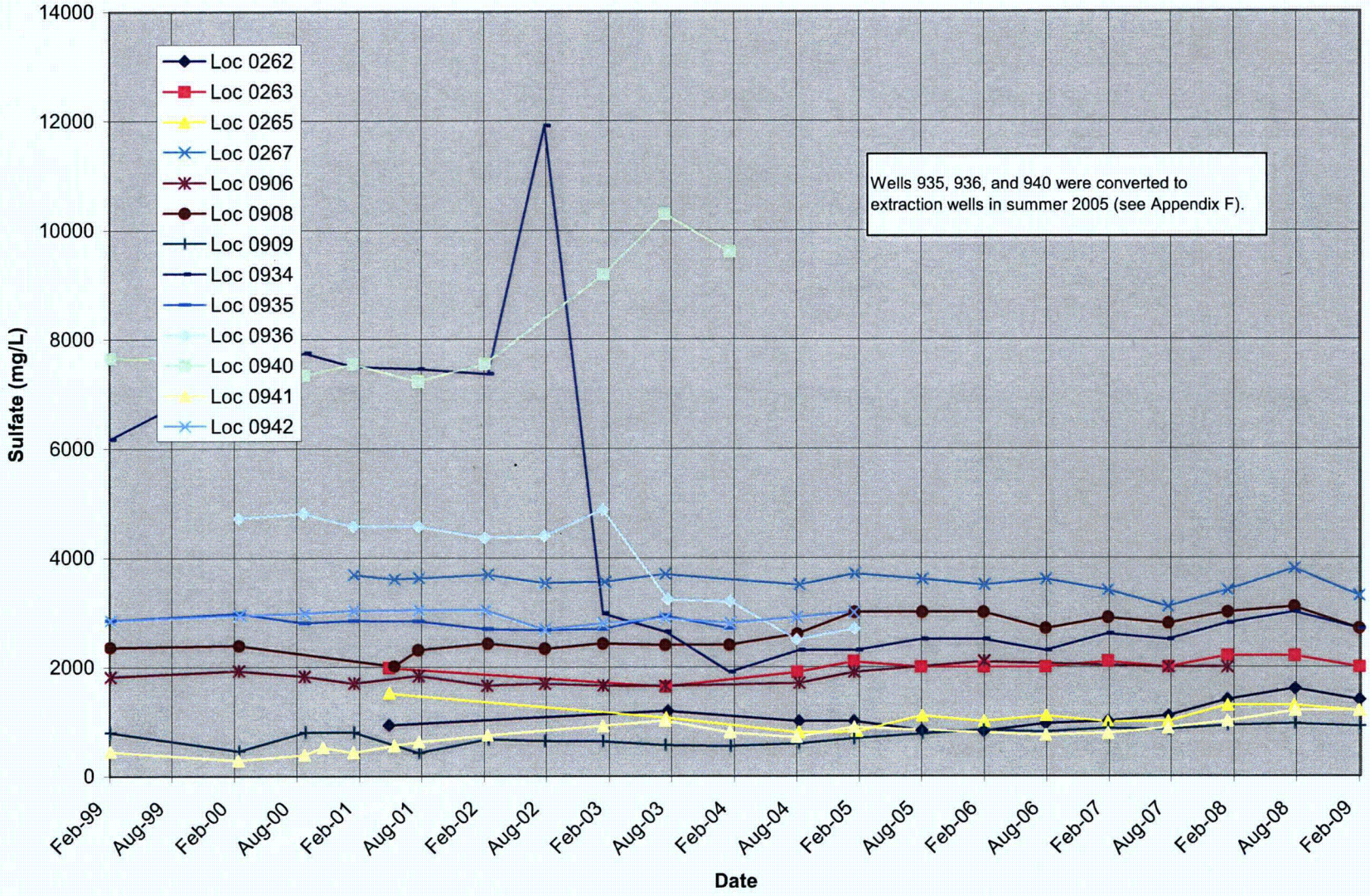


*Figure E-2. Horizons A and B Monitor Wells, Sulfate Concentration*

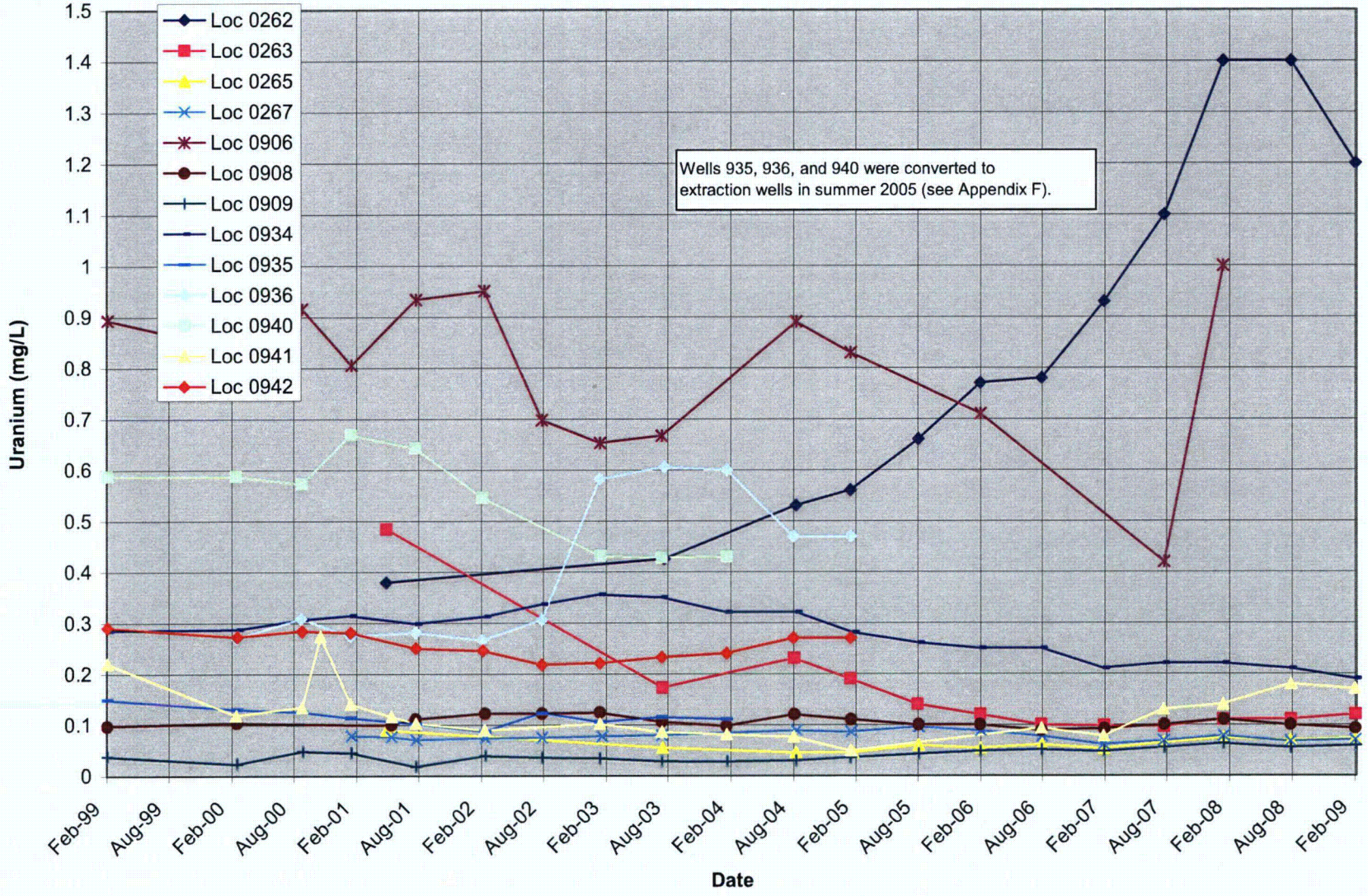


*Figure E−3. Horizons A and B Monitor Wells, Uranium Concentration*

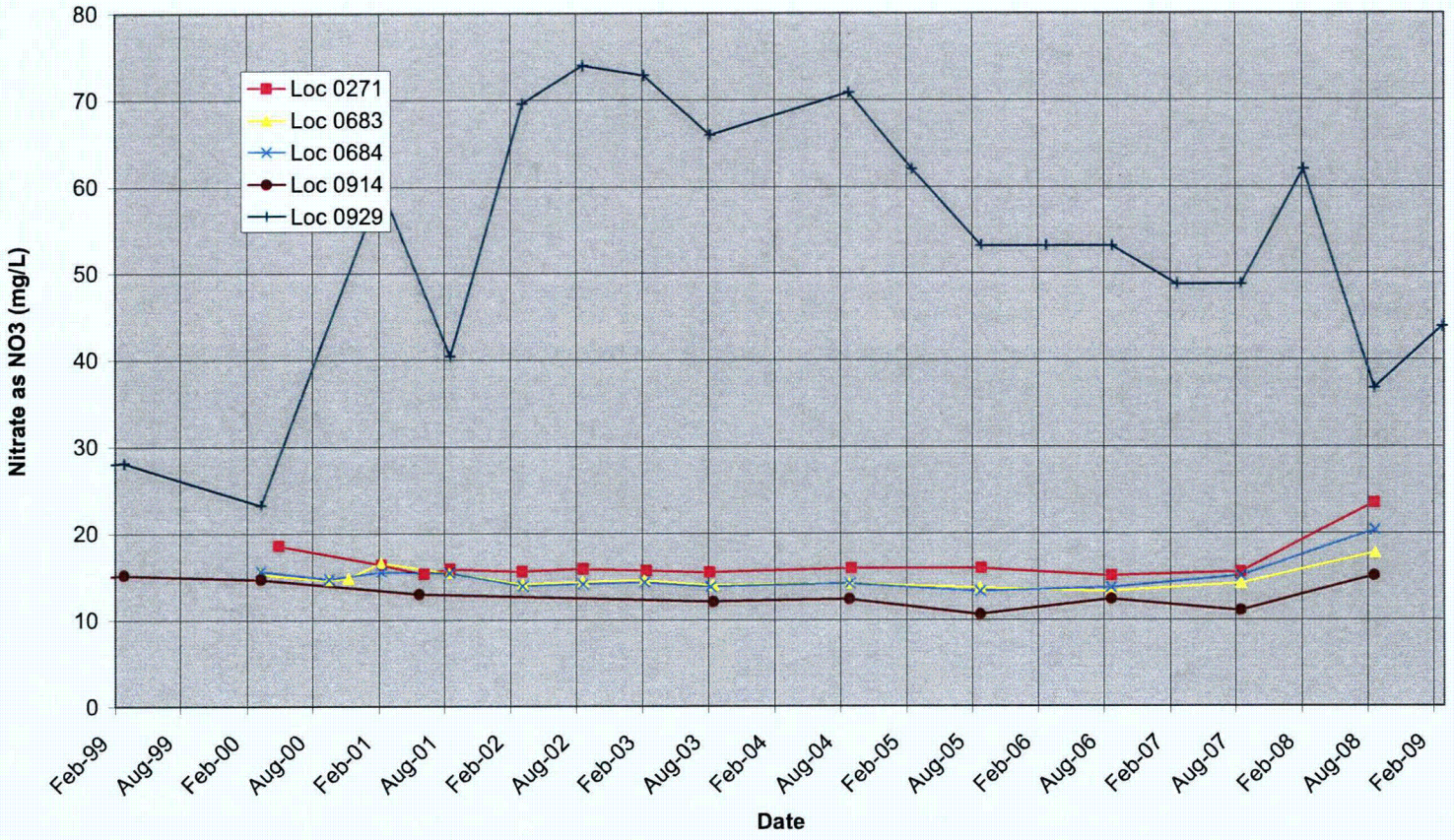


*Figure E-4. Horizons A and B Sentinel Wells, Nitrate as $NO_3$ Concentration*

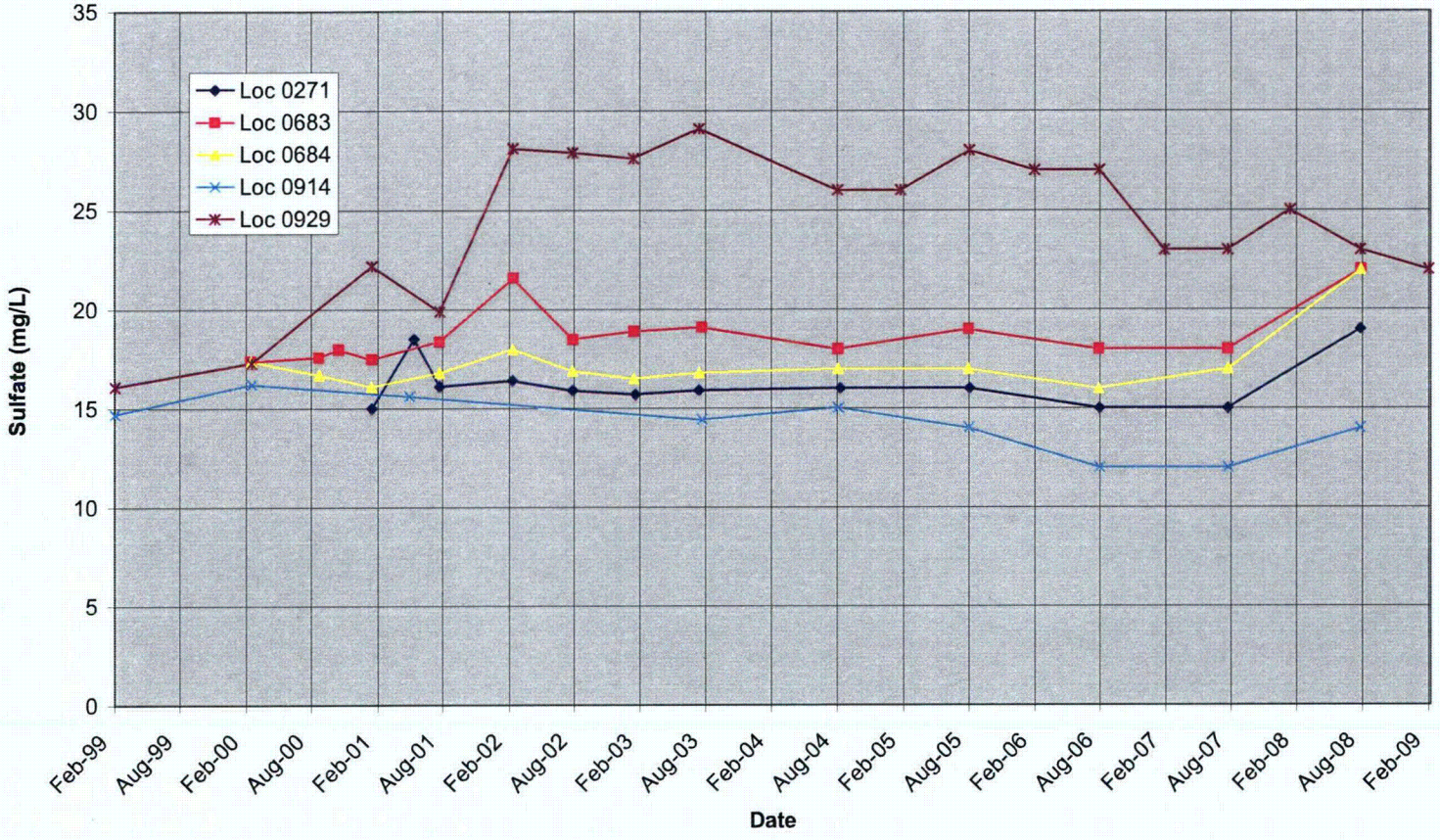


*Figure E-5. Horizons A and B Sentinel Wells, Sulfate Concentration*

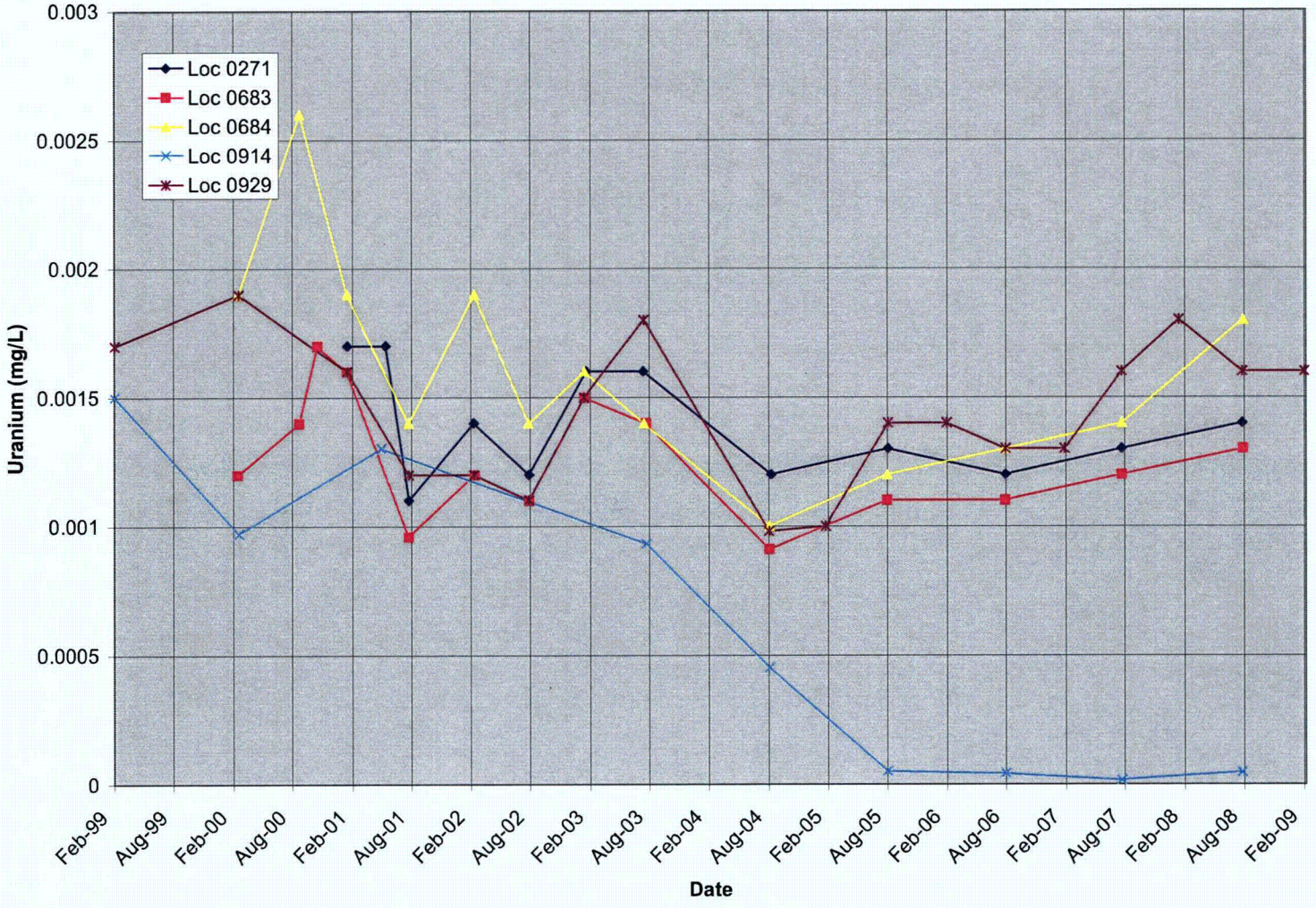


*Figure E-6. Horizons A and B Sentinel Wells, Uranium Concentration*

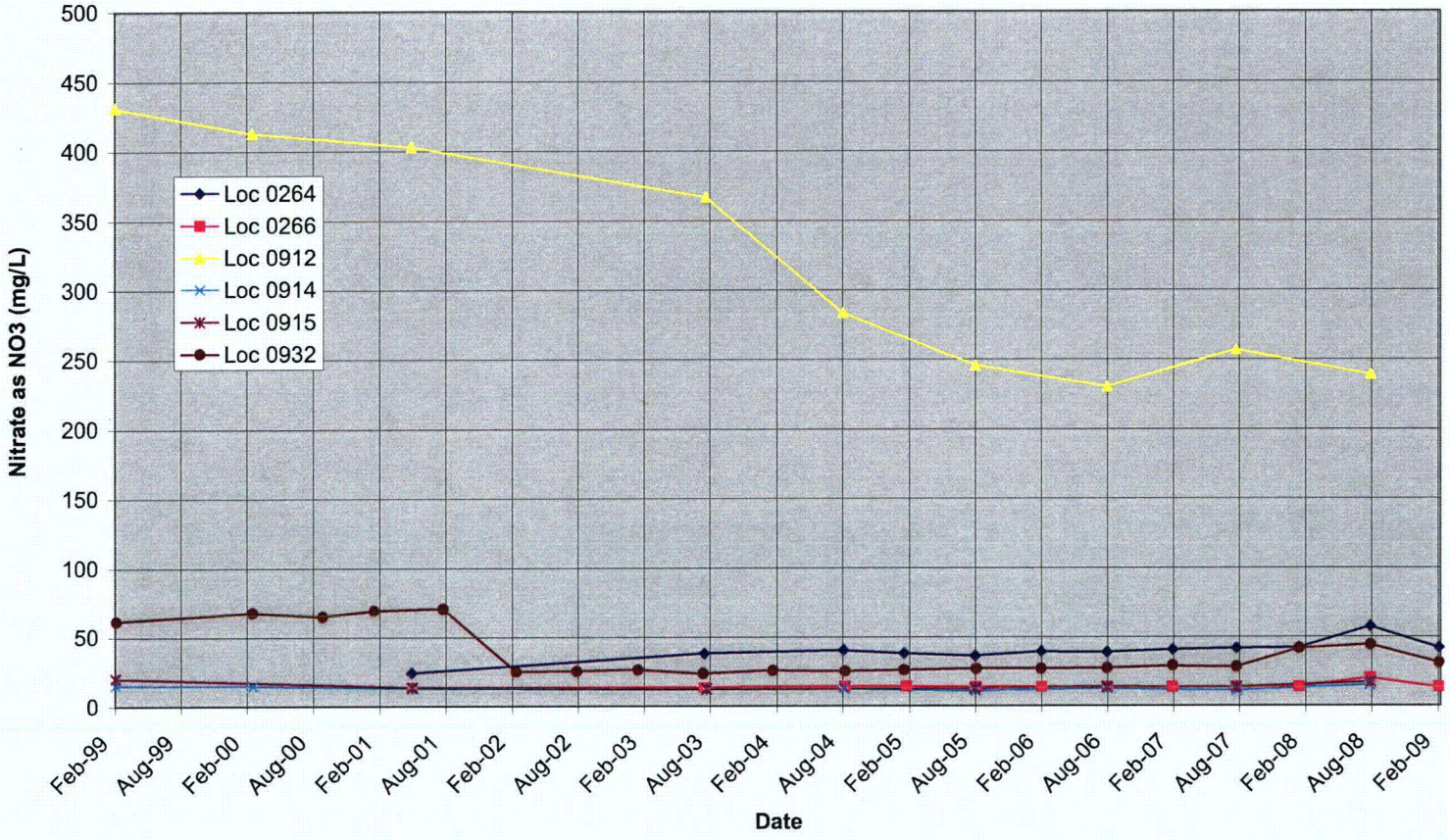


*Figure E-7. Horizons C and D Monitor Wells, Nitrate as $NO_3$ Concentration*

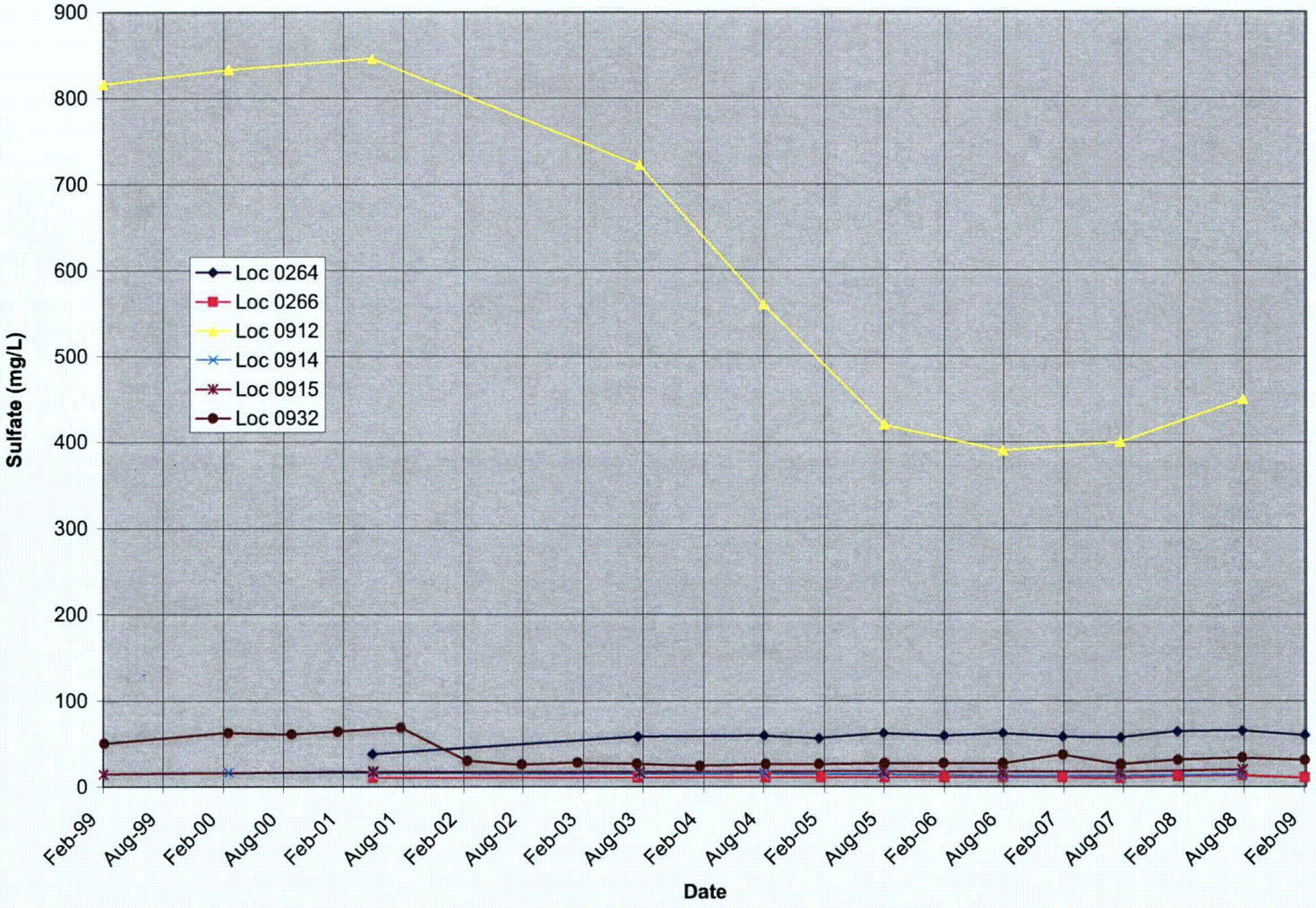


*Figure E-8. Horizons C and D Monitor Wells, Sulfate Concentration*

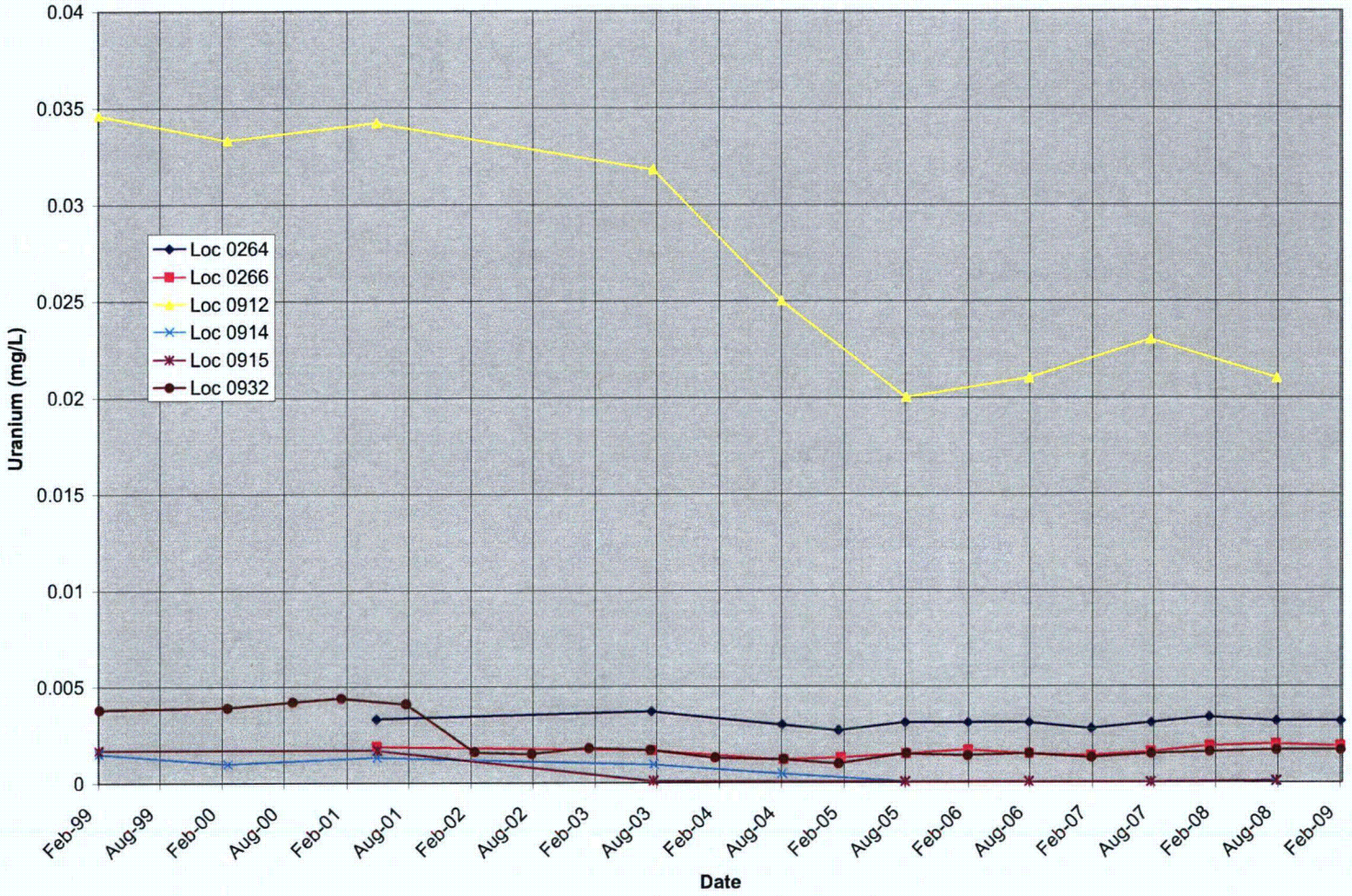


*Figure E-9. Horizons C and D Monitor Wells, Uranium Concentration*

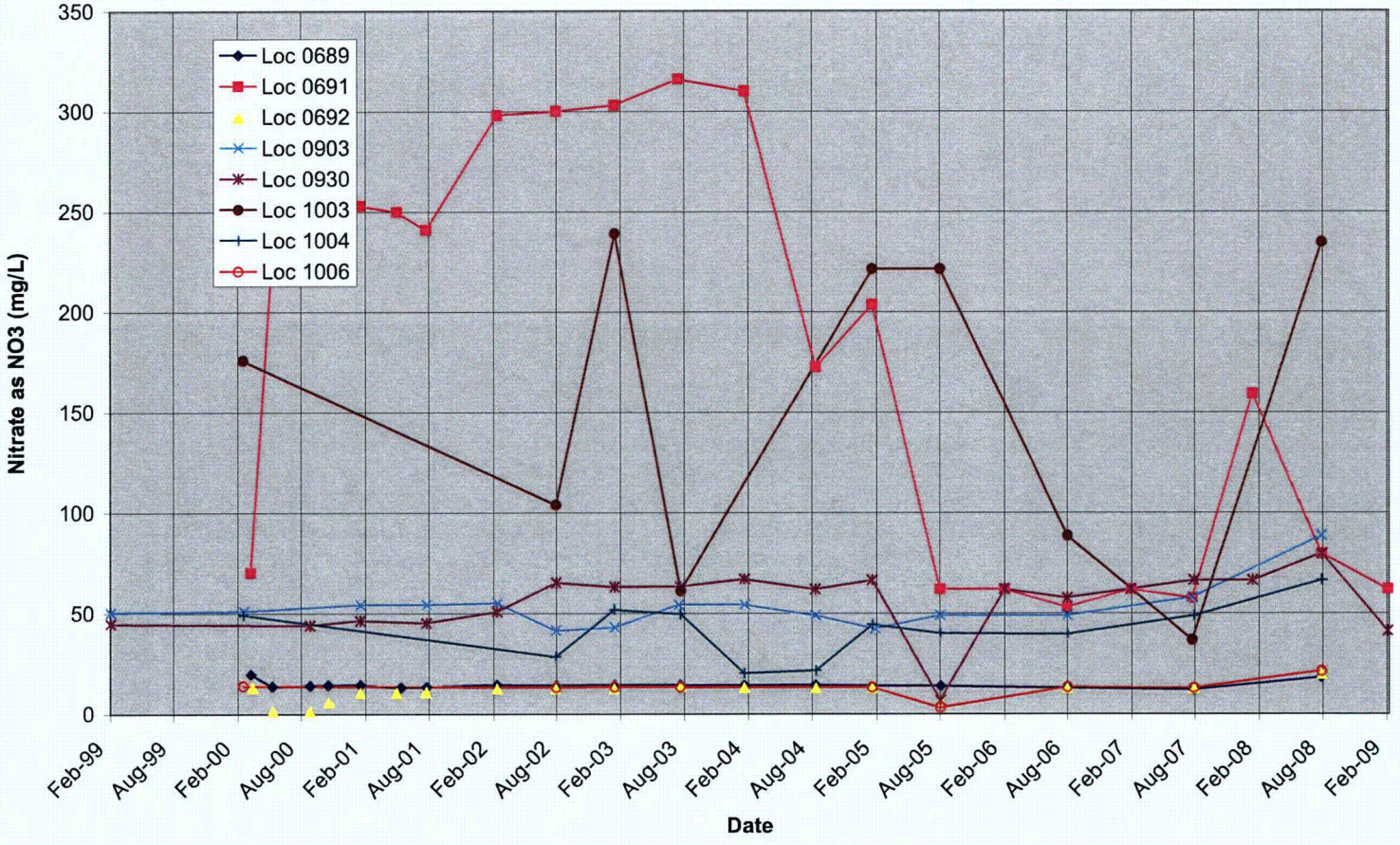


*Figure E-10. Lower Terrace Monitor Wells, Nitrate as $NO_3$ Concentration*

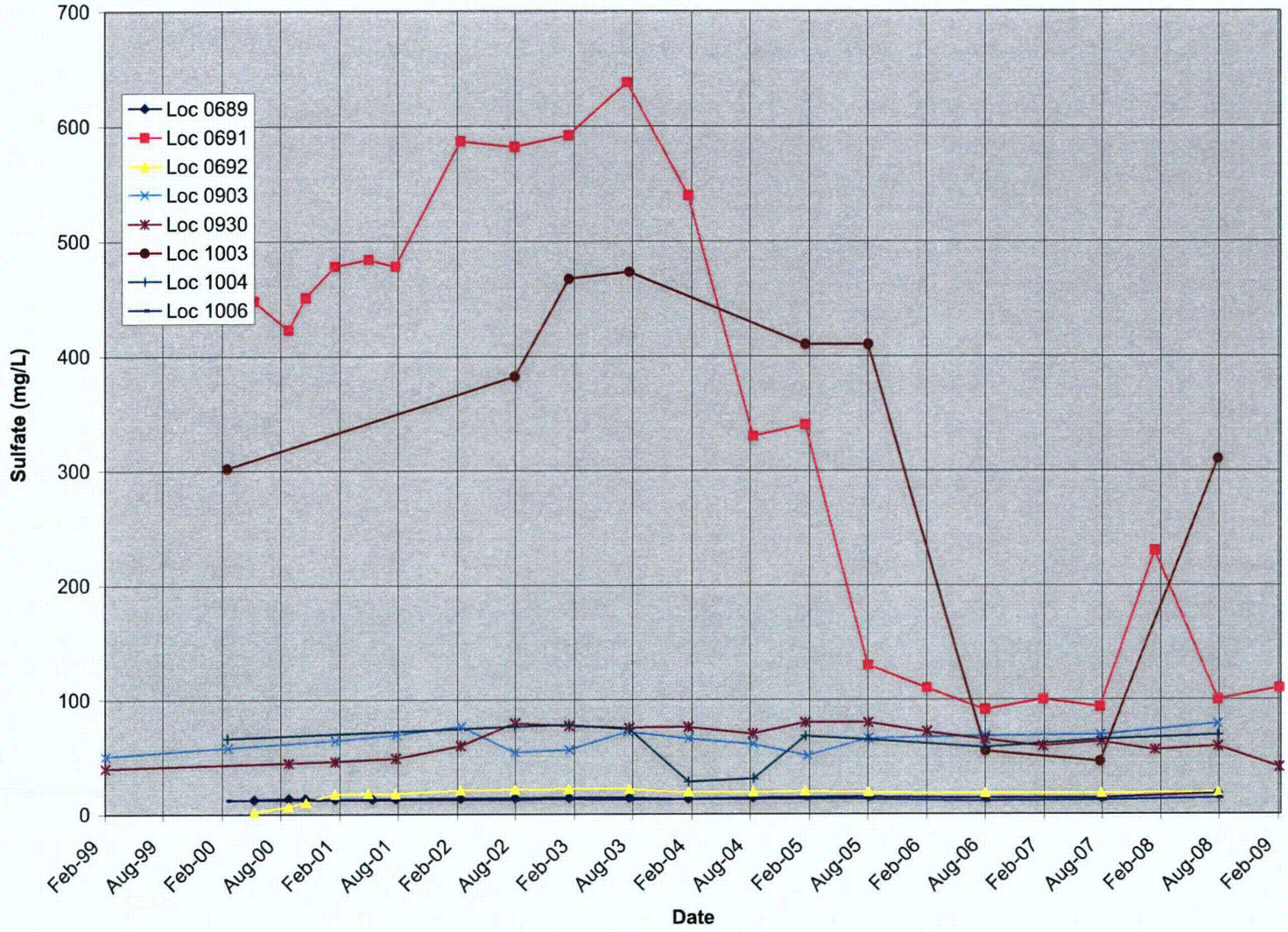


*Figure E-11. Lower Terrace Monitor Wells, Sulfate Concentration*

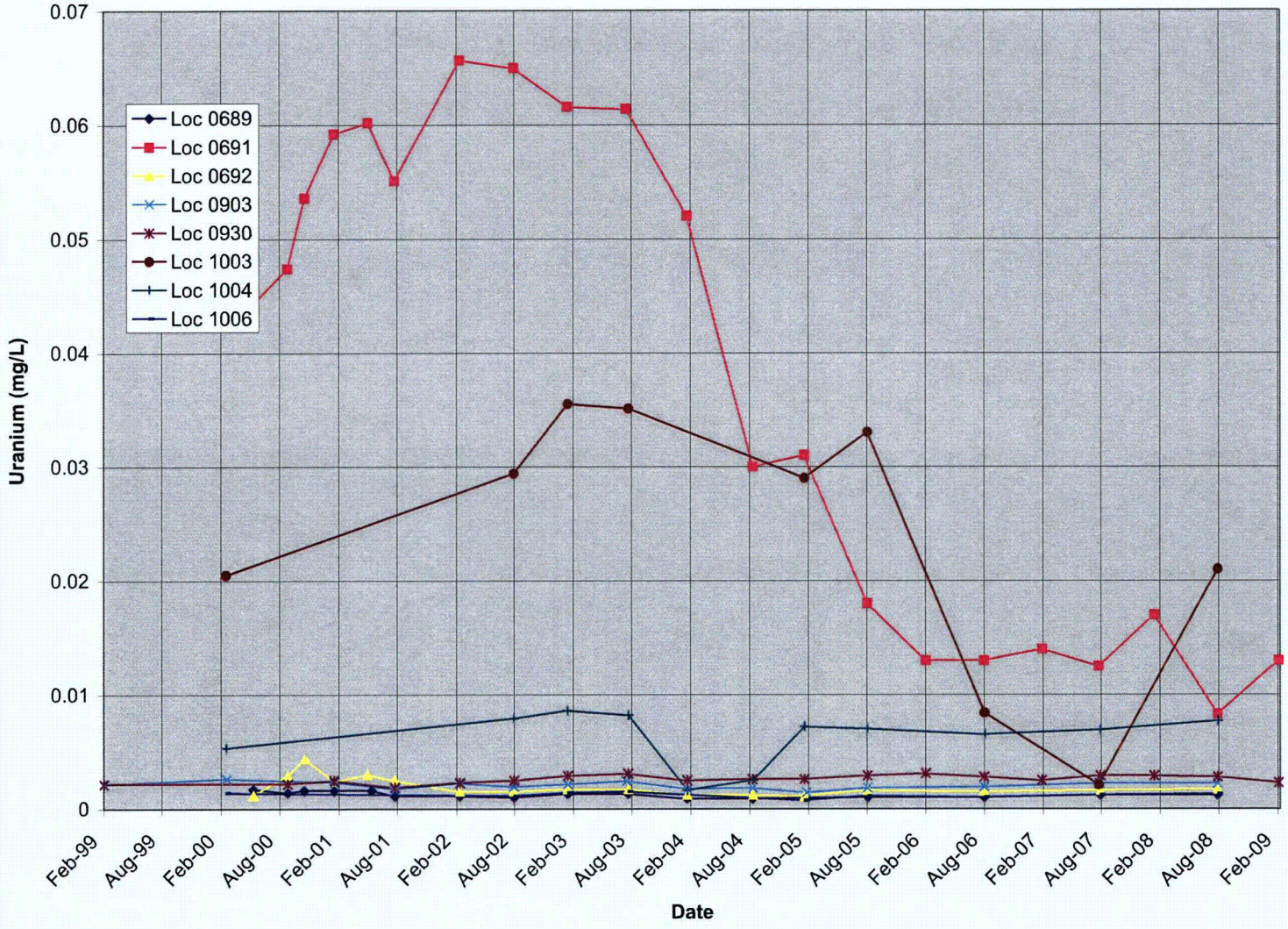


*Figure E-12. Lower Terrace Monitor Wells, Uranium Concentration*

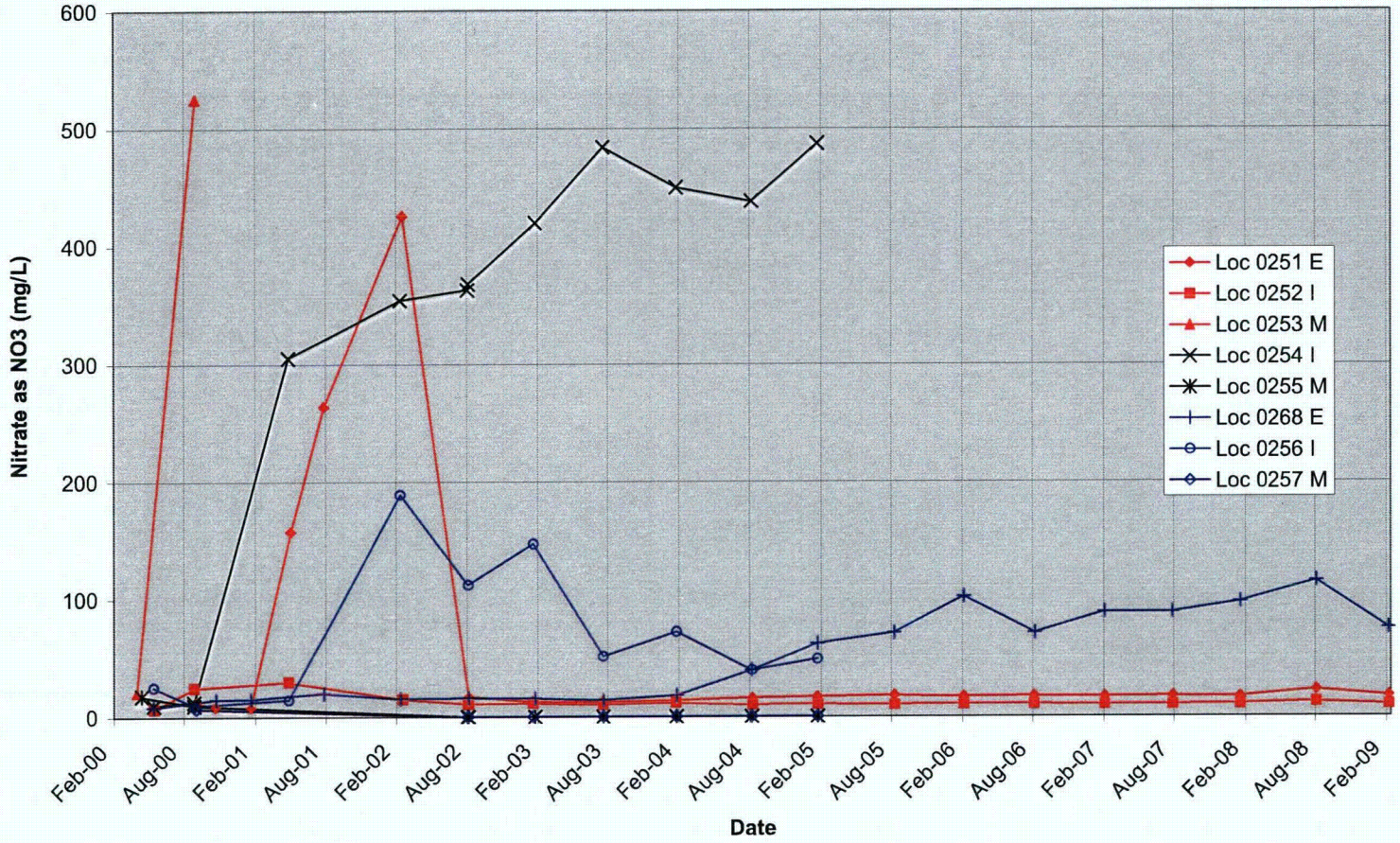


*Figure E-13. Deep Monitor Wells, Nitrate as $NO_3$ Concentration*

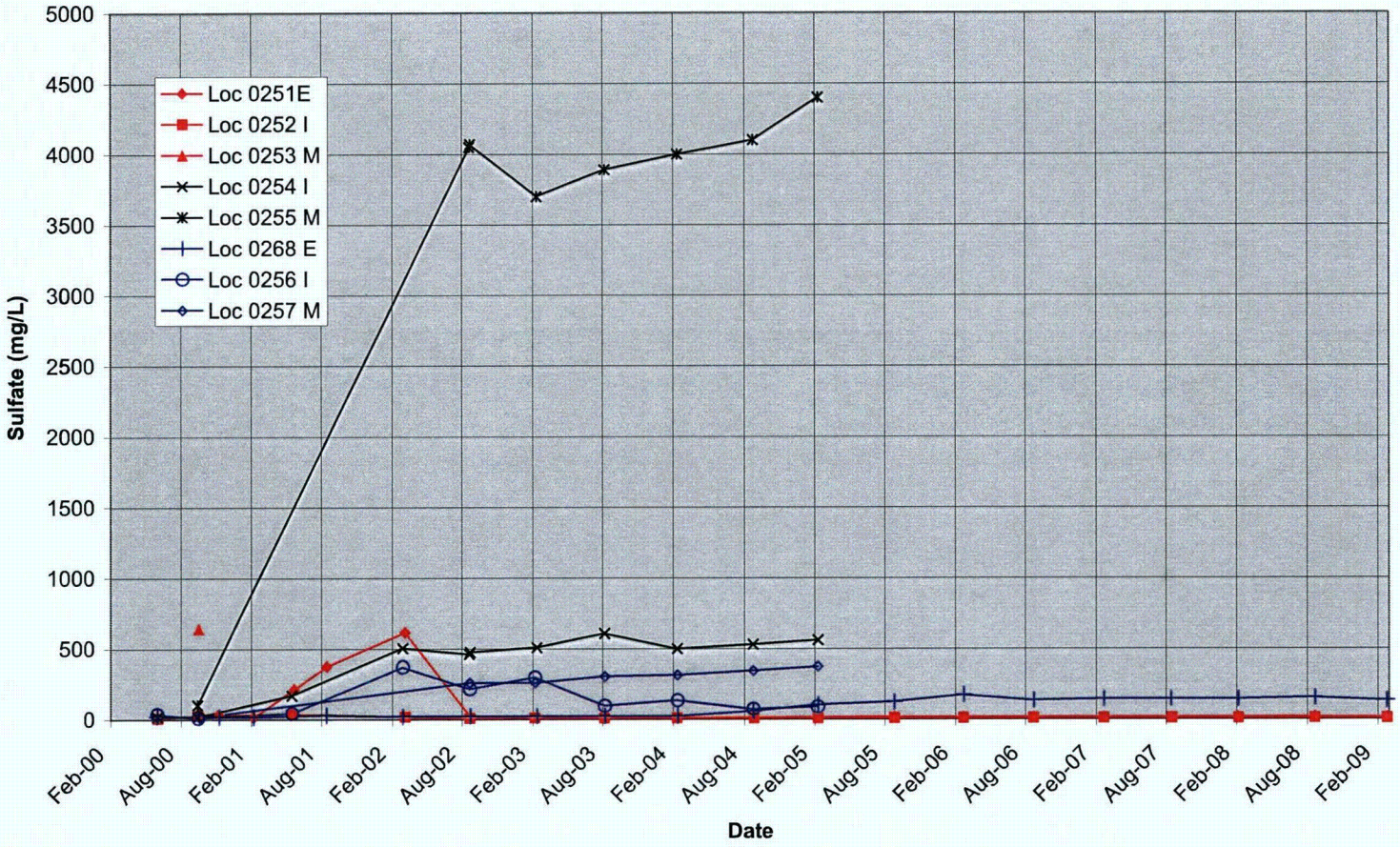


*Figure E-14. Deep Monitor Wells, Sulfate Concentration*

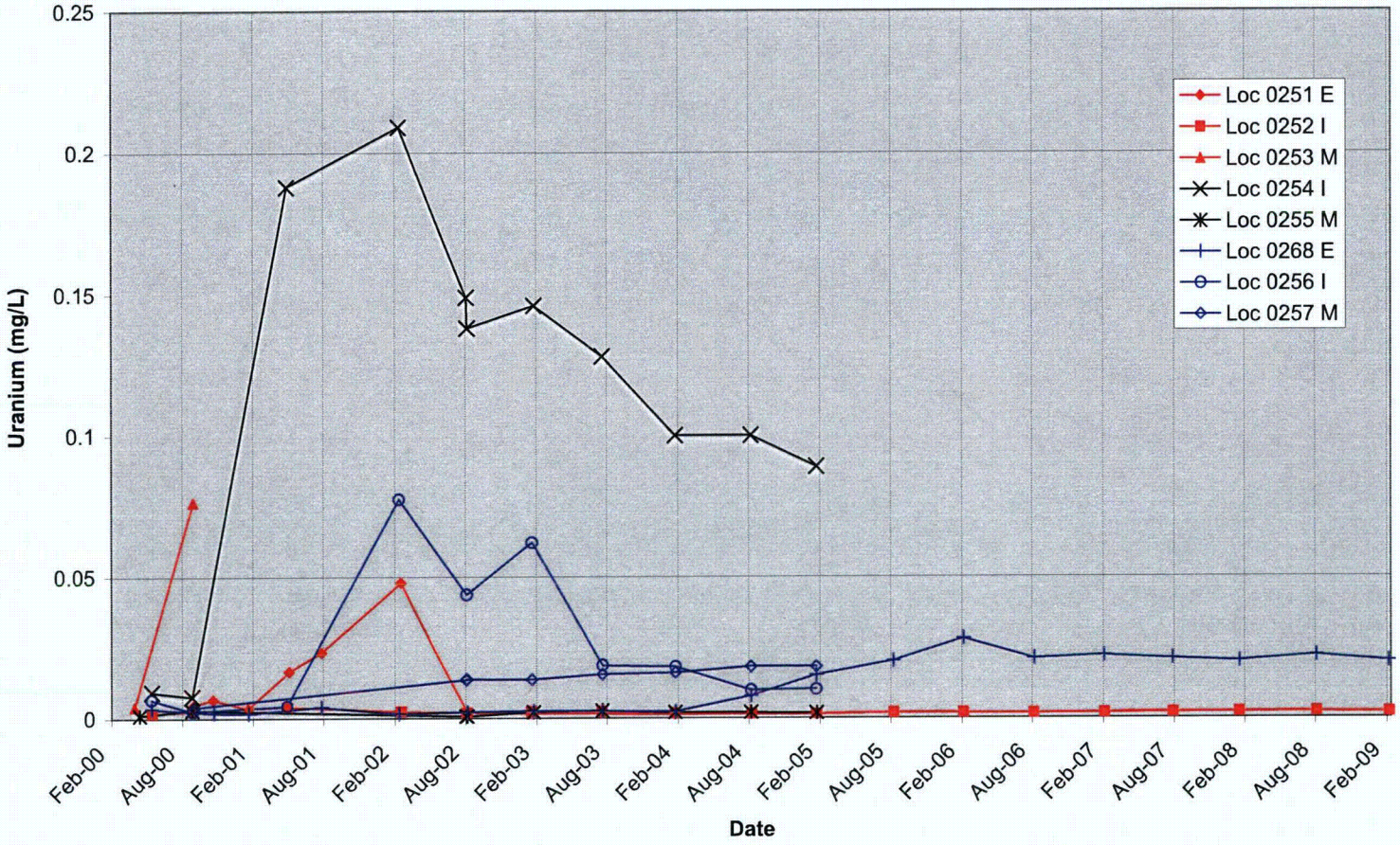


*Figure E-15. Deep Monitor Wells, Uranium Concentration*

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# Appendix F

# Contaminant Concentrations at Extraction Wells

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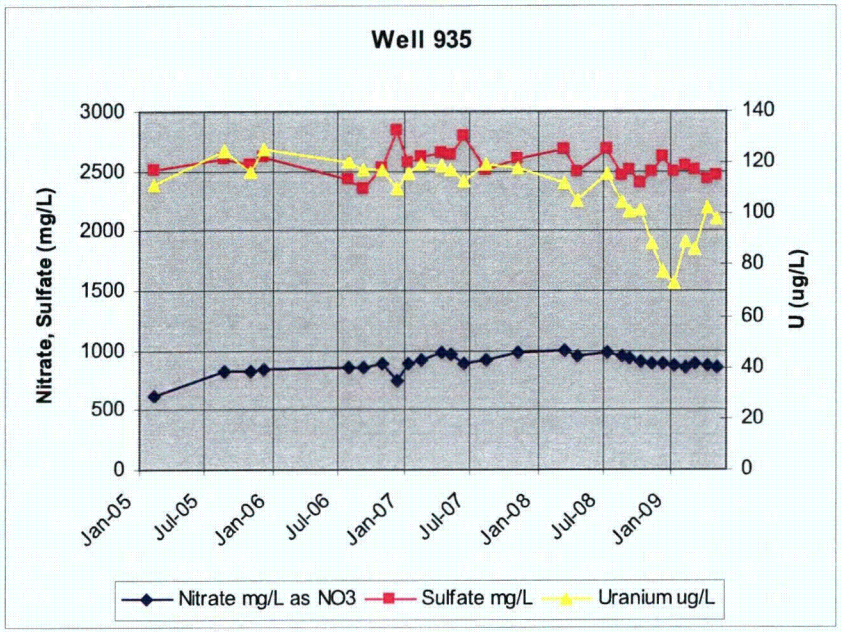
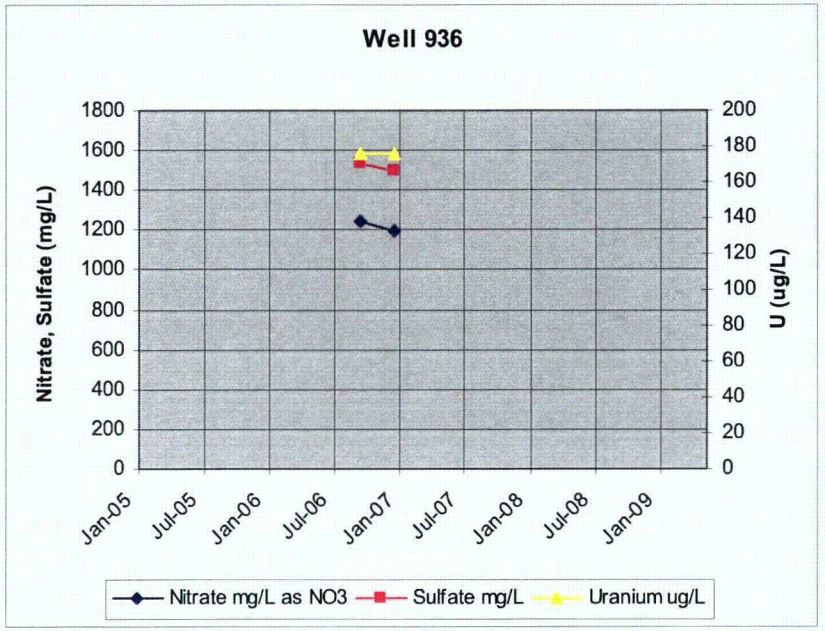
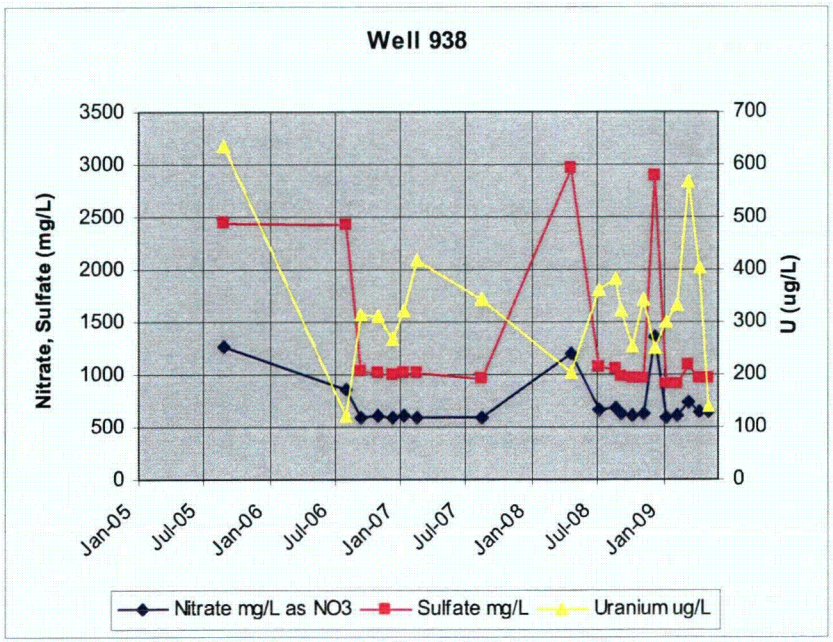
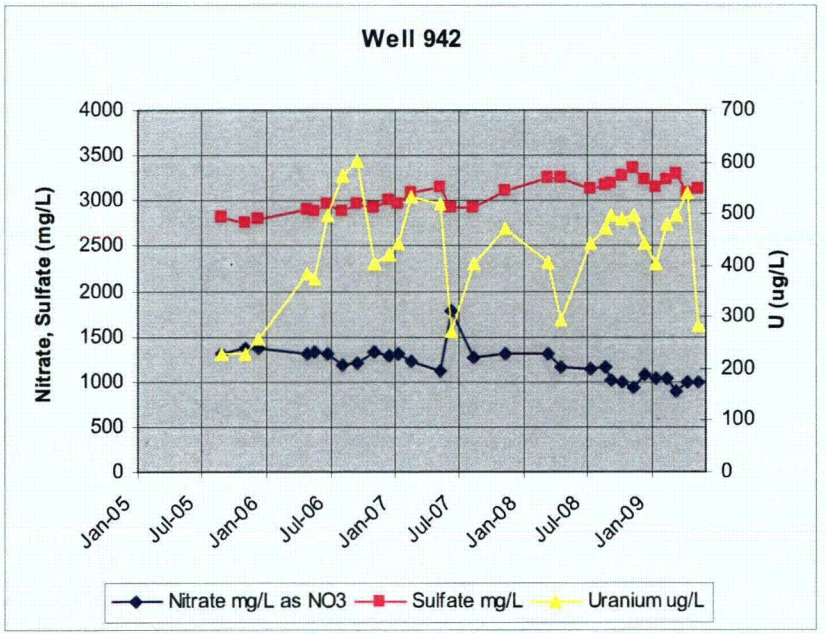
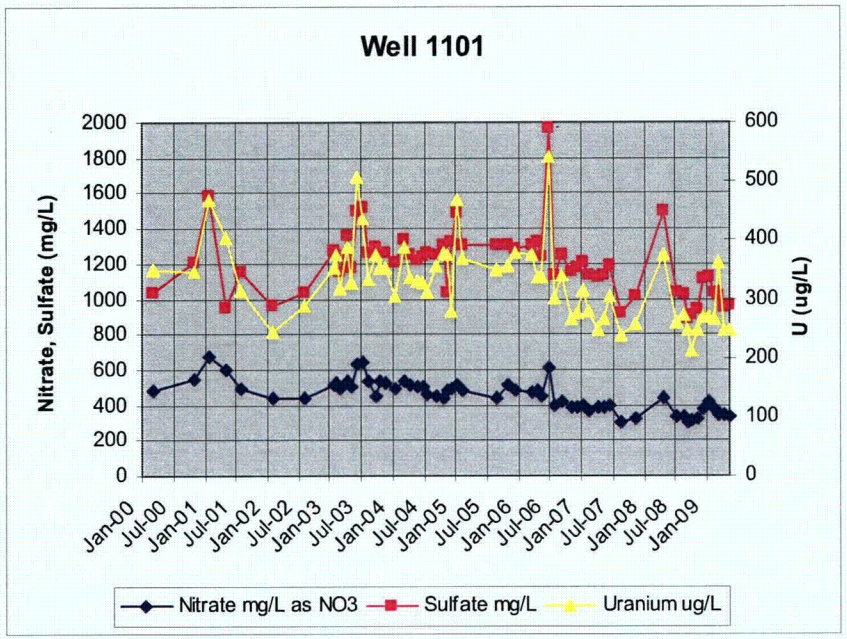
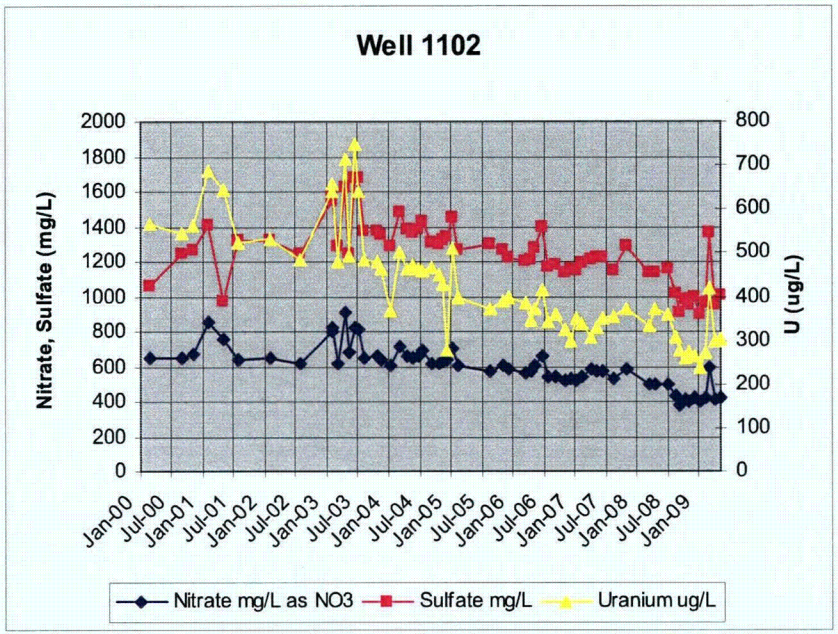

Well 935
Nitrate, Sulfate (mg/L)
U (ug/L)
3000
2500
2000
1500
1000
500
0
140
120
100
80
60
40
20
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

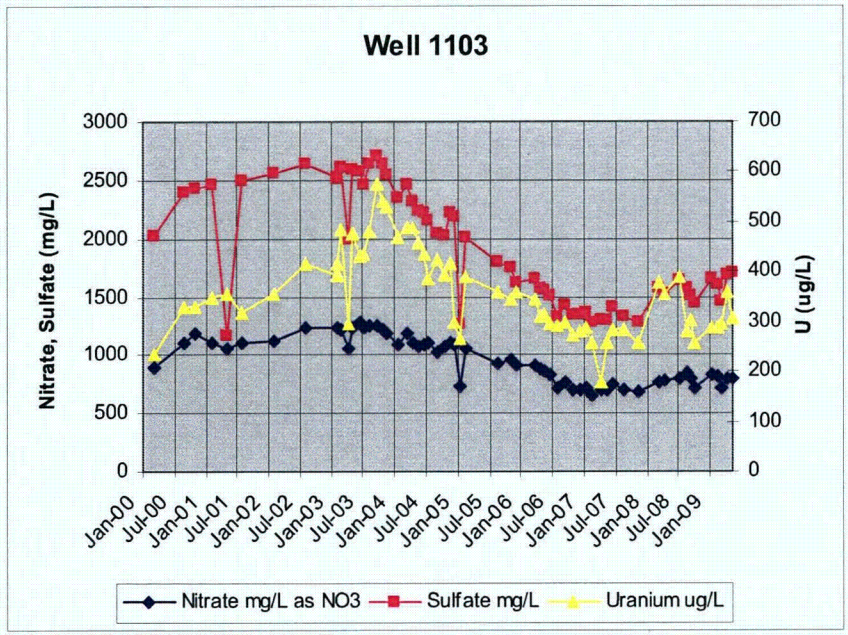

Well 936
Nitrate, Sulfate (mg/L)
U (ug/L)
1800
1600
1400
1200
1000
800
600
400
200
0
200
180
160
140
120
100
80
60
40
20
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

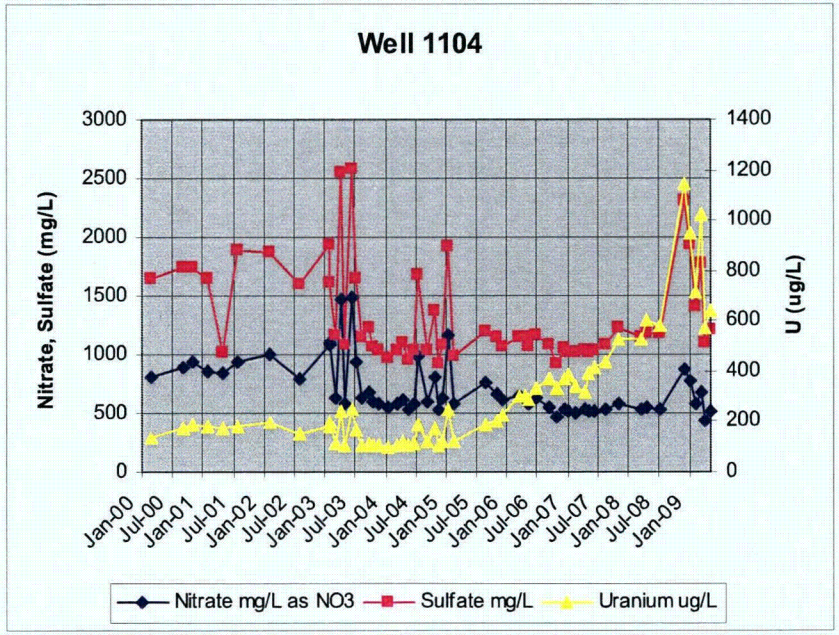

Well 938
Nitrate, Sulfate (mg/L)
U (ug/L)
3500
3000
2500
2000
1500
1000
500
0
700
600
500
400
300
200
100
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

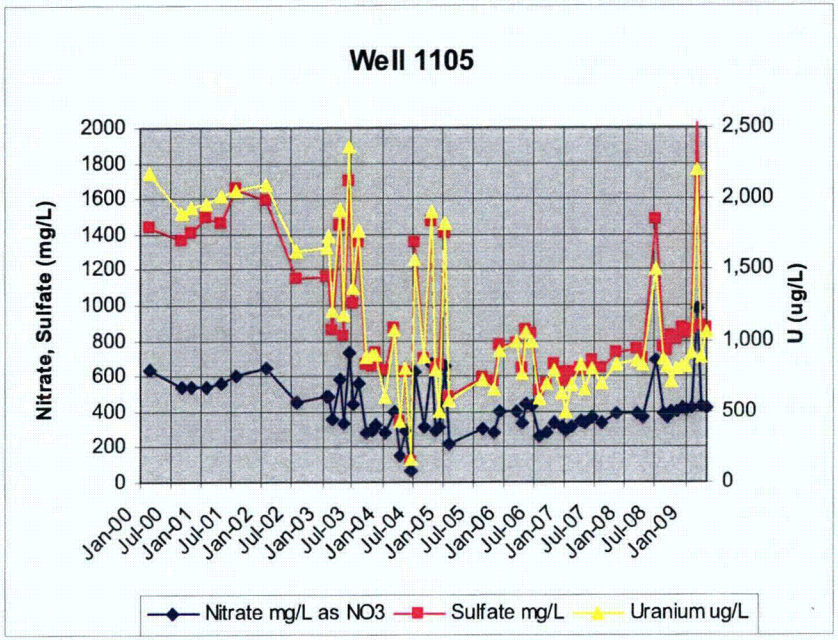

Well 942
Nitrate, Sulfate (mg/L)
U (ug/L)
4000
3500
3000
2500
2000
1500
1000
500
0
700
600
500
400
300
200
100
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

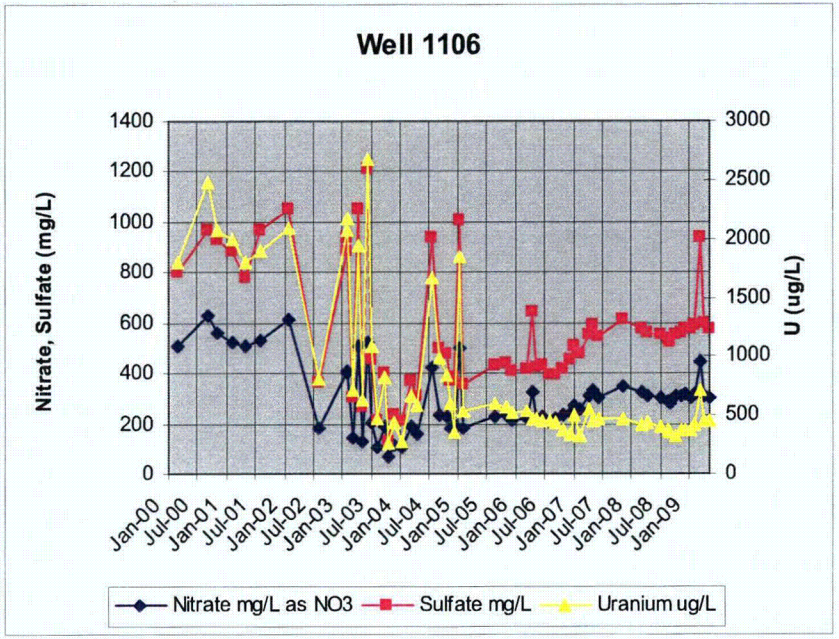

Well 1101
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

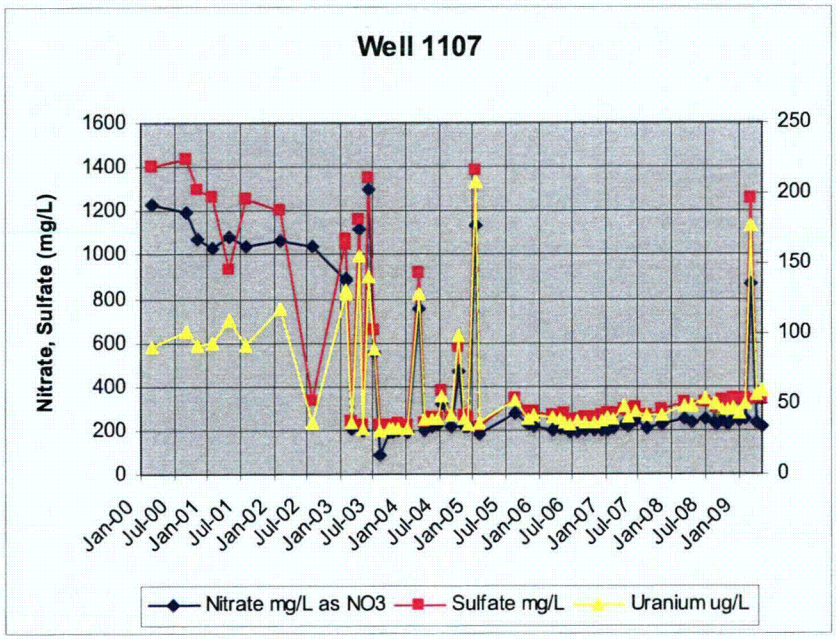

Well 1102
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

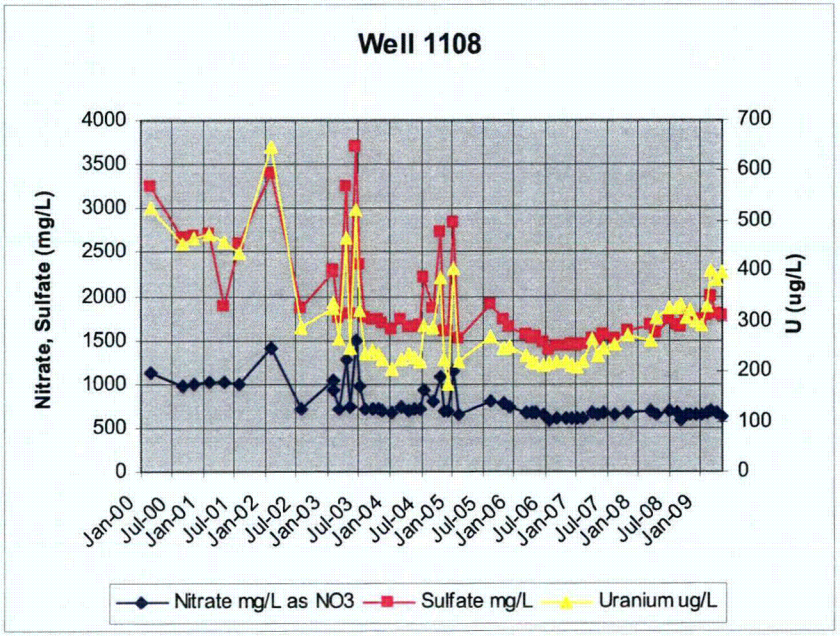

Well 1103
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

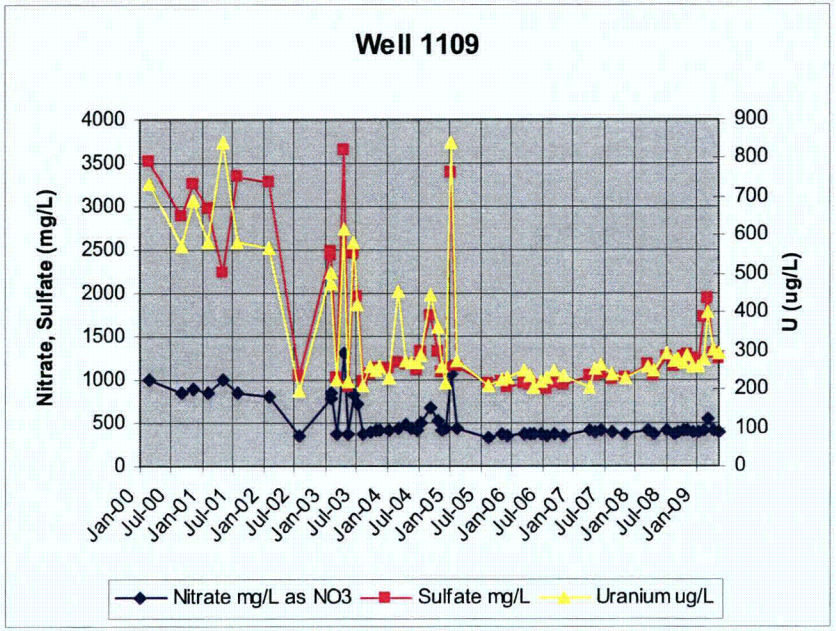

Well 1104
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

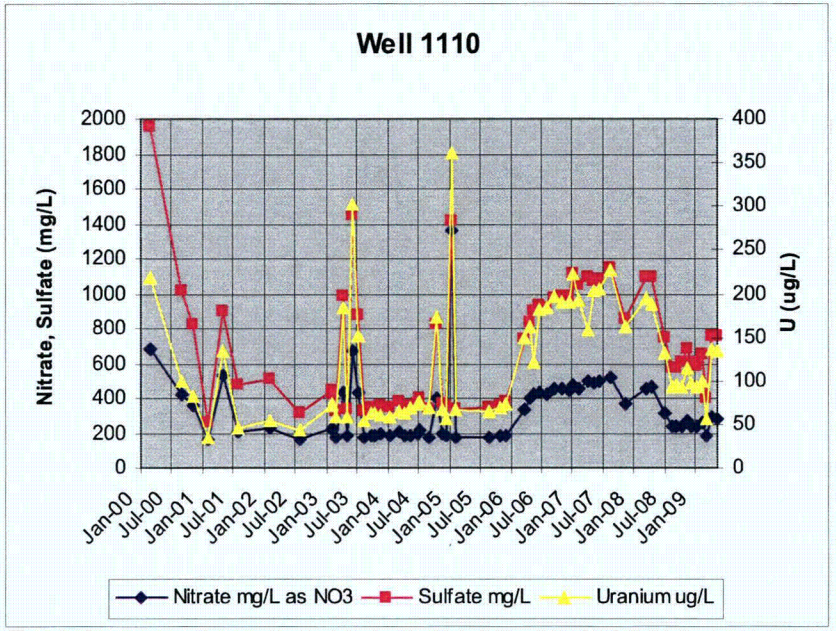

Well 1105
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

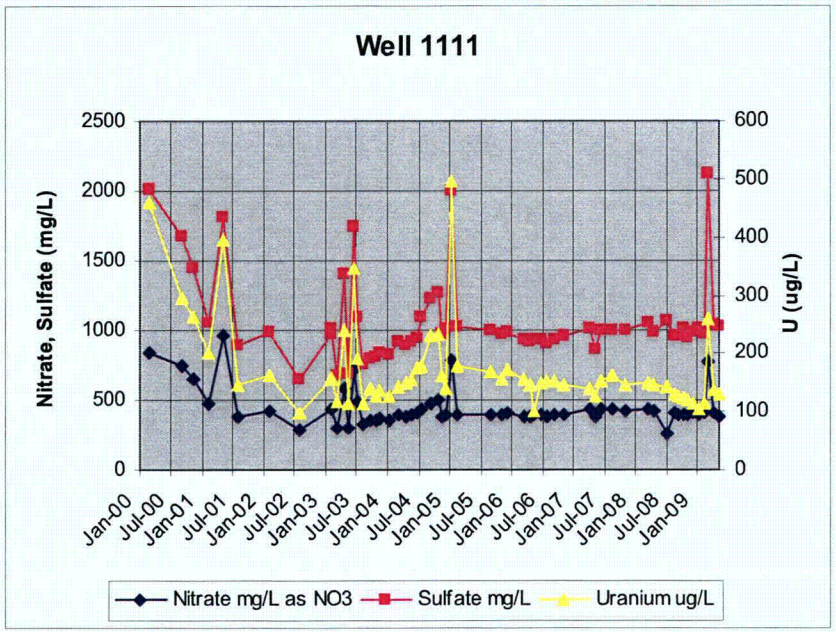

Well 1106
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

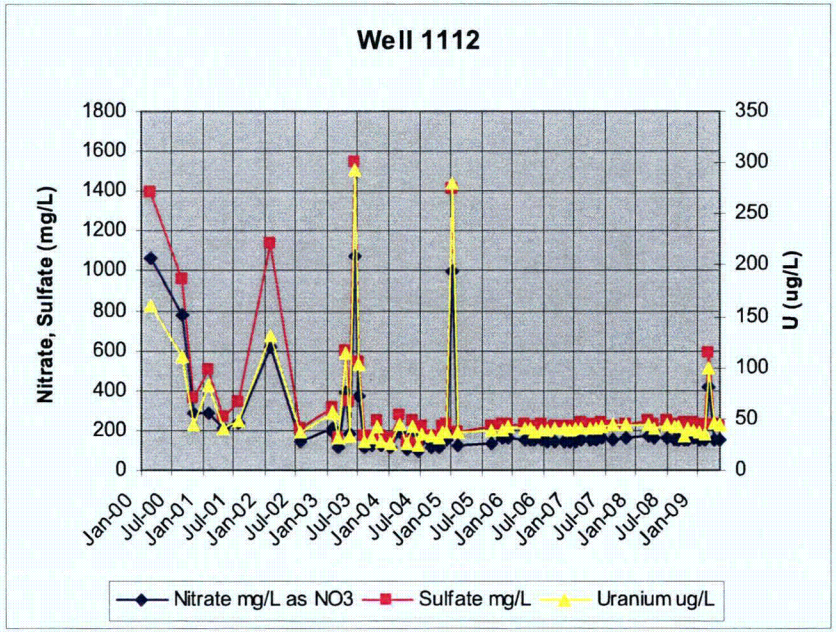

Well 1107
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

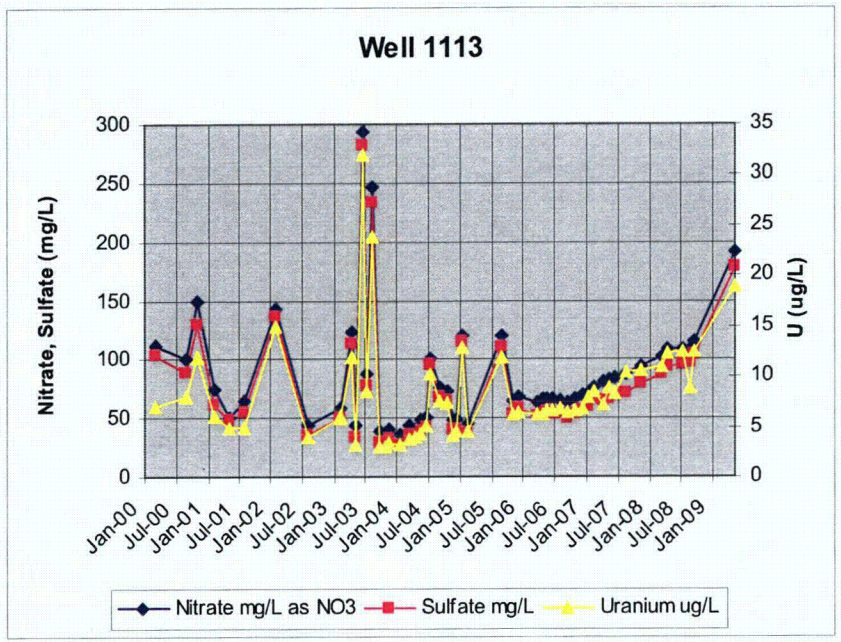

Well 1108
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

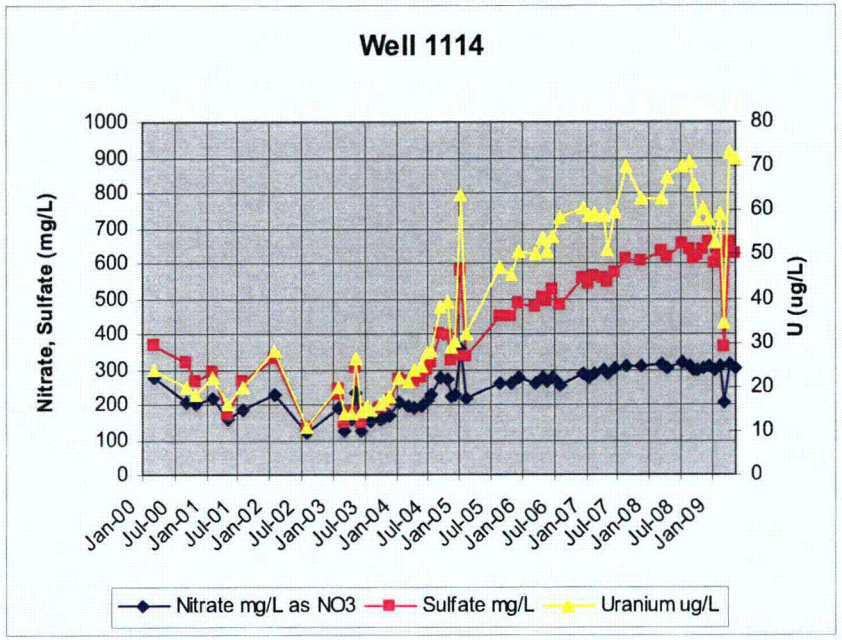

Well 1109
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

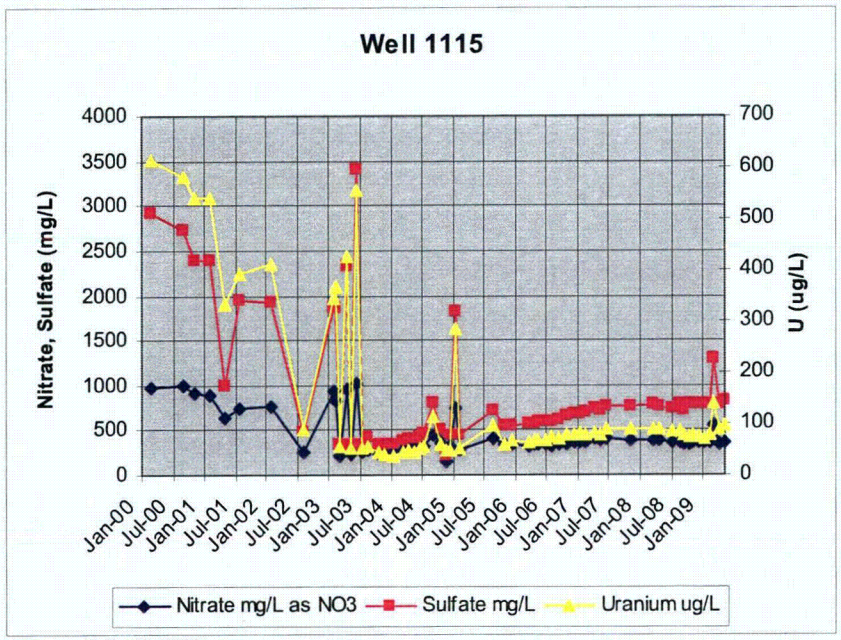

Well 1110
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

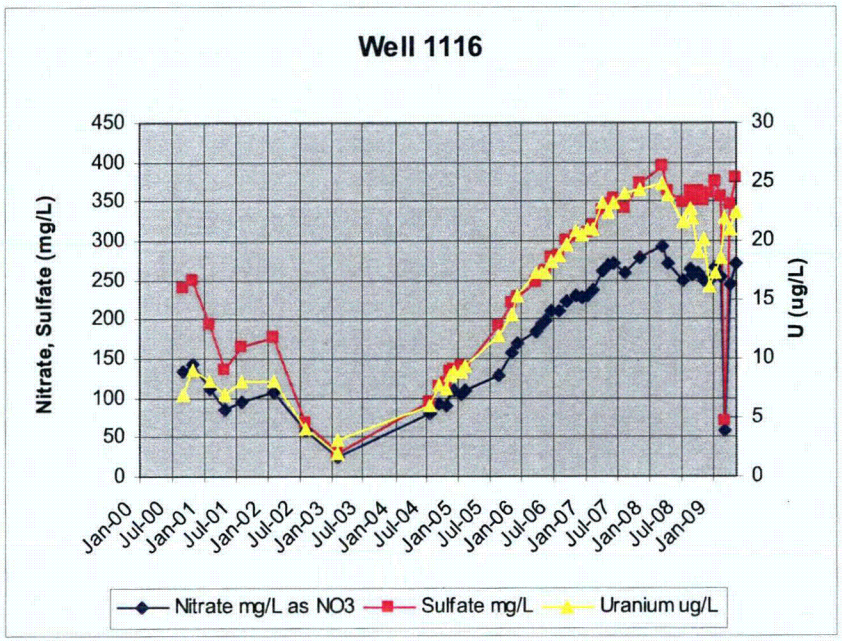

Well 1111
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

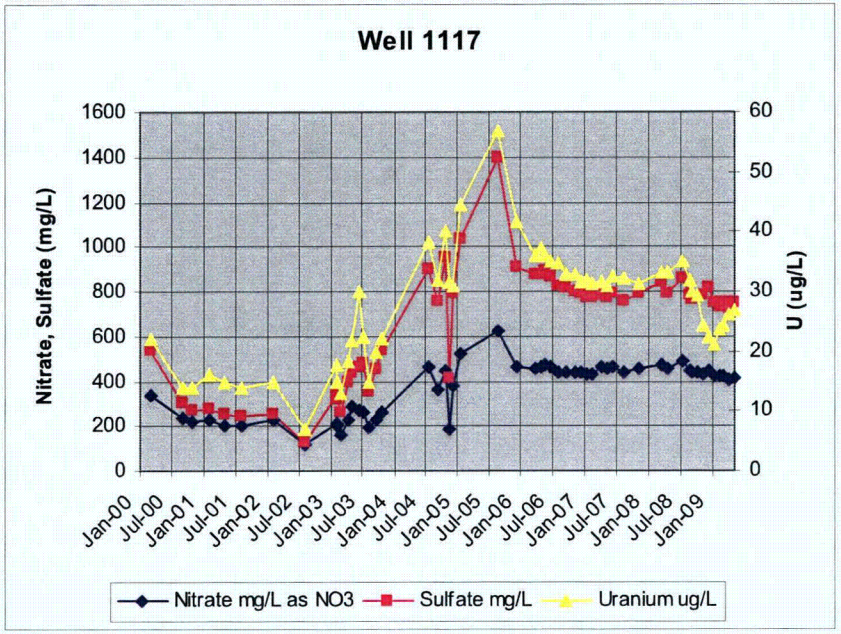

Well 1112
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

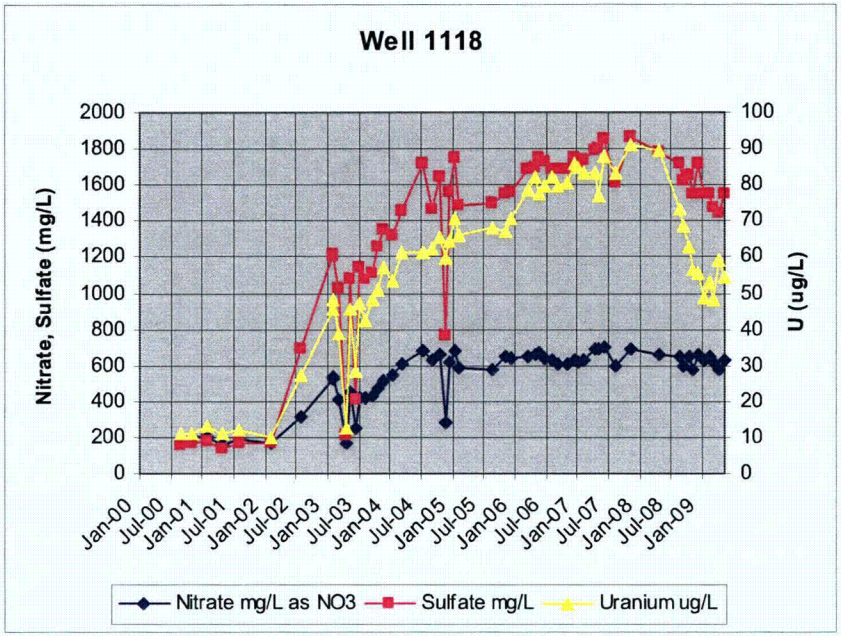

Well 1113
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

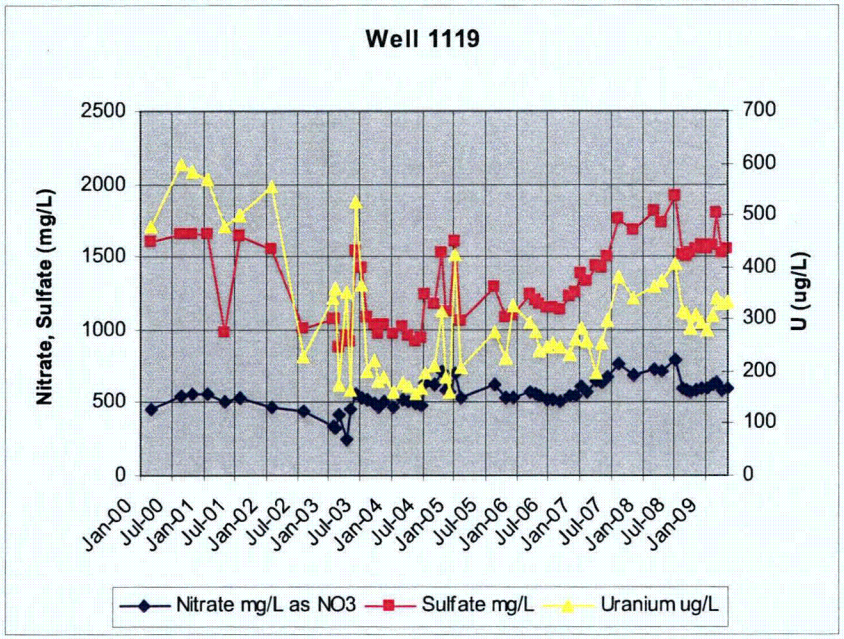

Well 1114
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

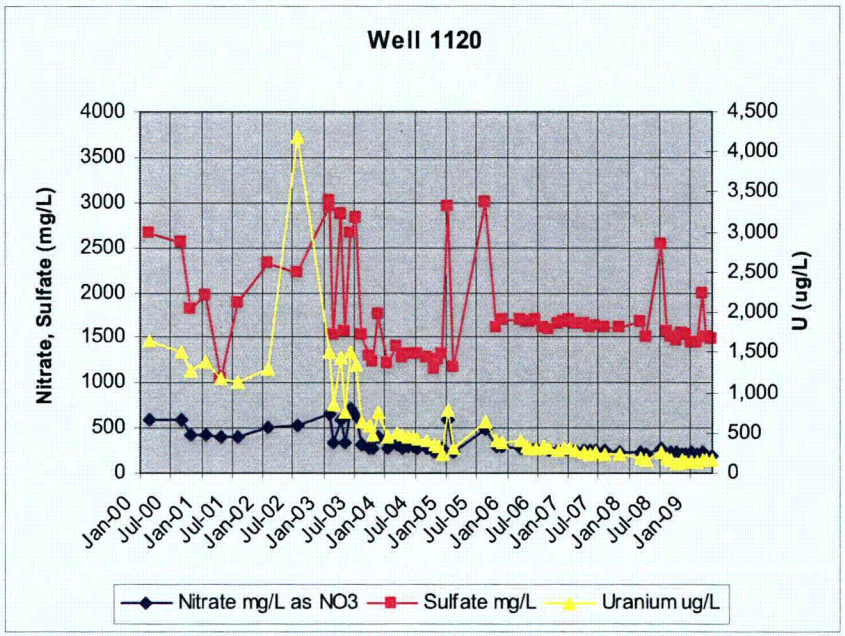

Well 1115
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L


Well 1116
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L


Well 1117
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L


Well 1118
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L


Well 1119
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L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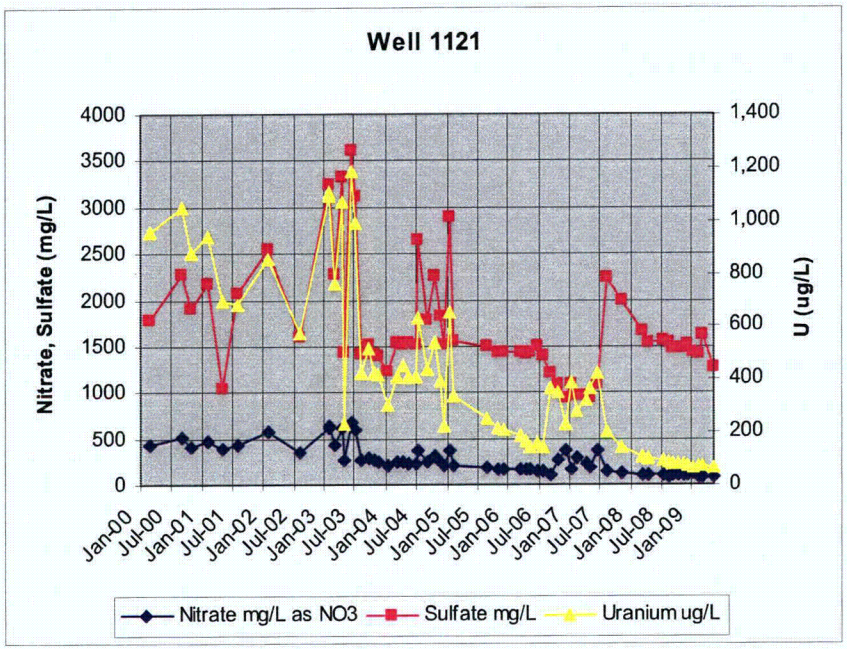
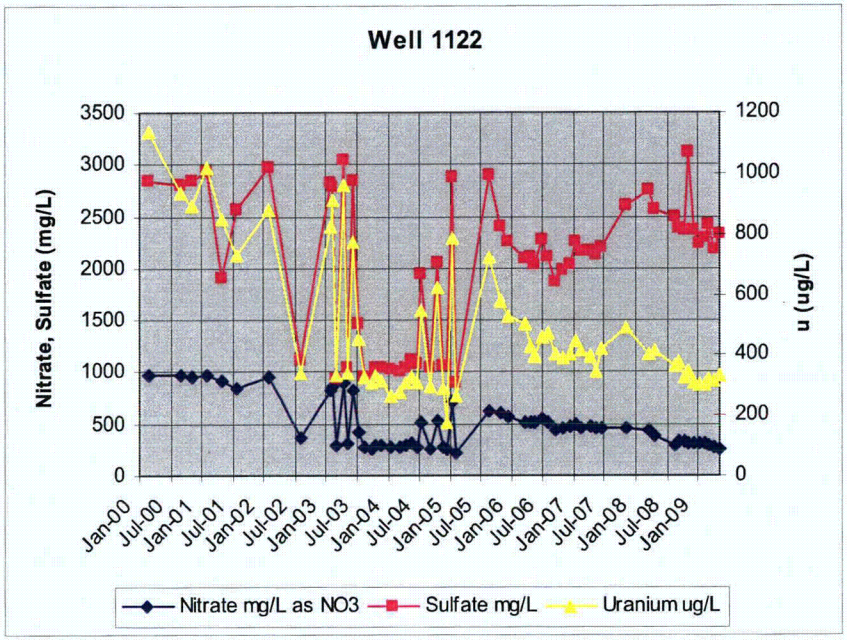
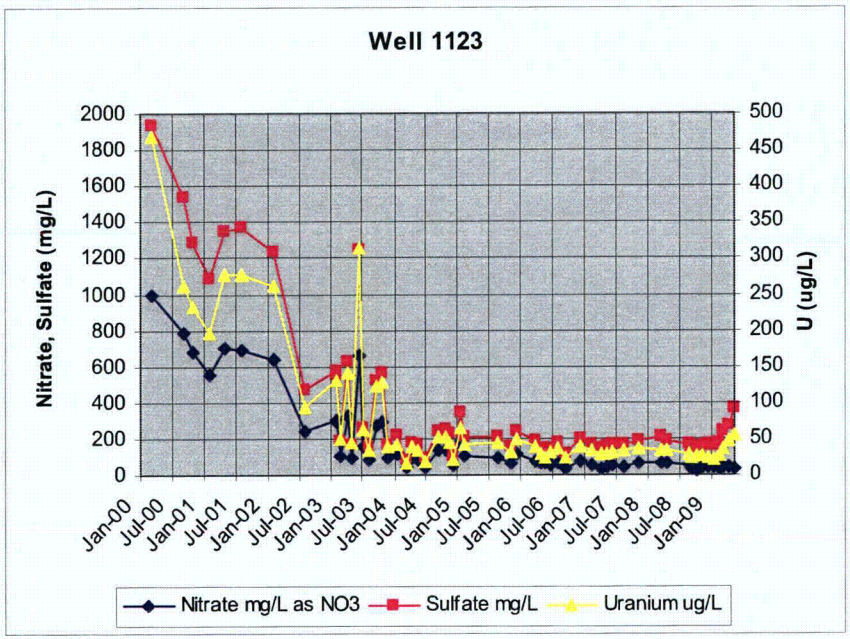
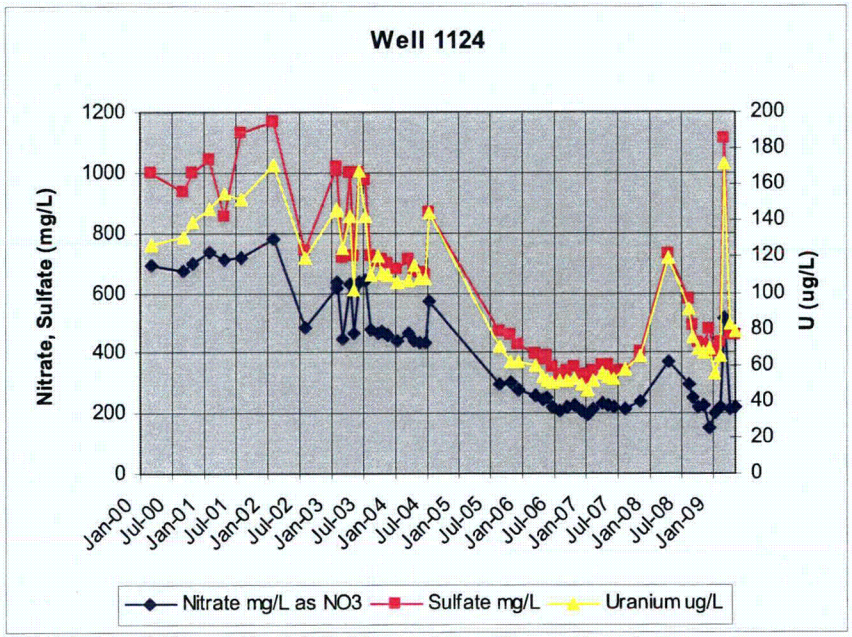
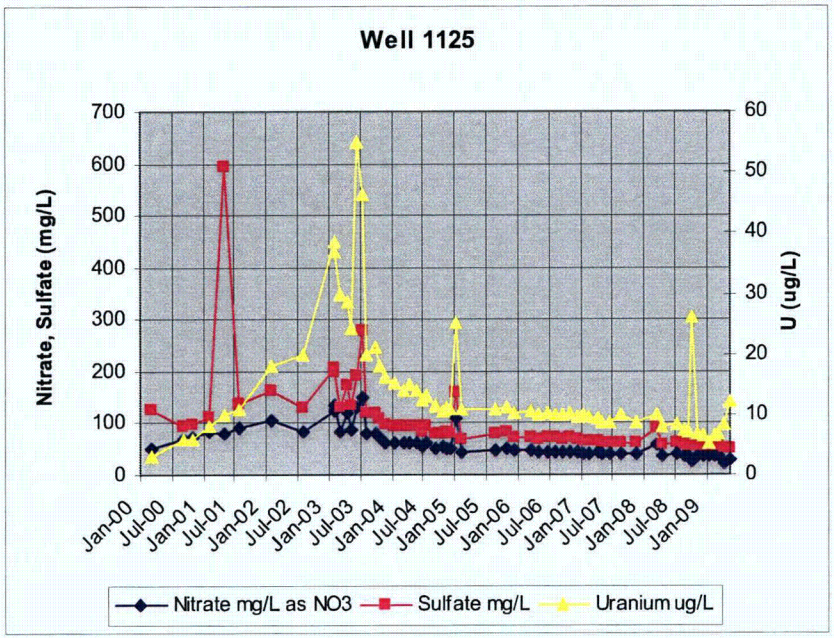
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

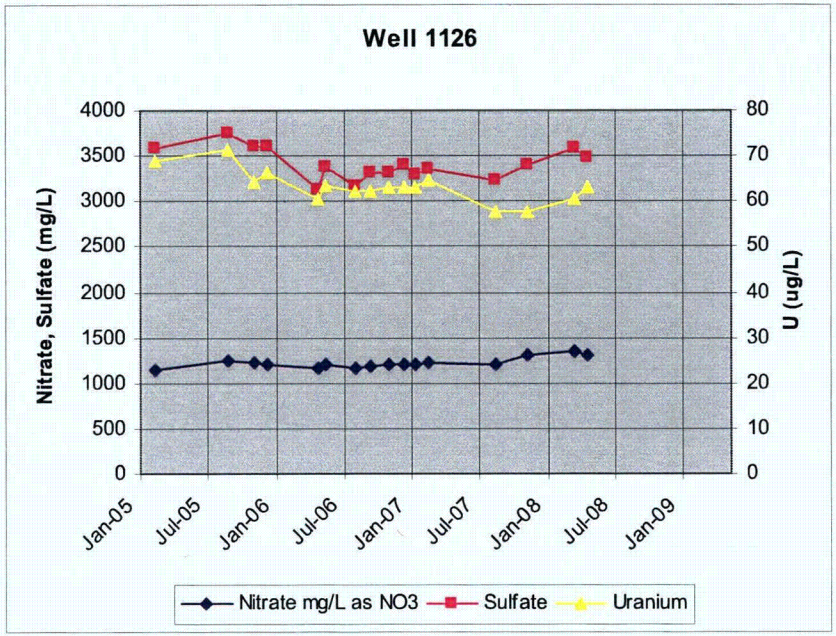

Well 1121
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

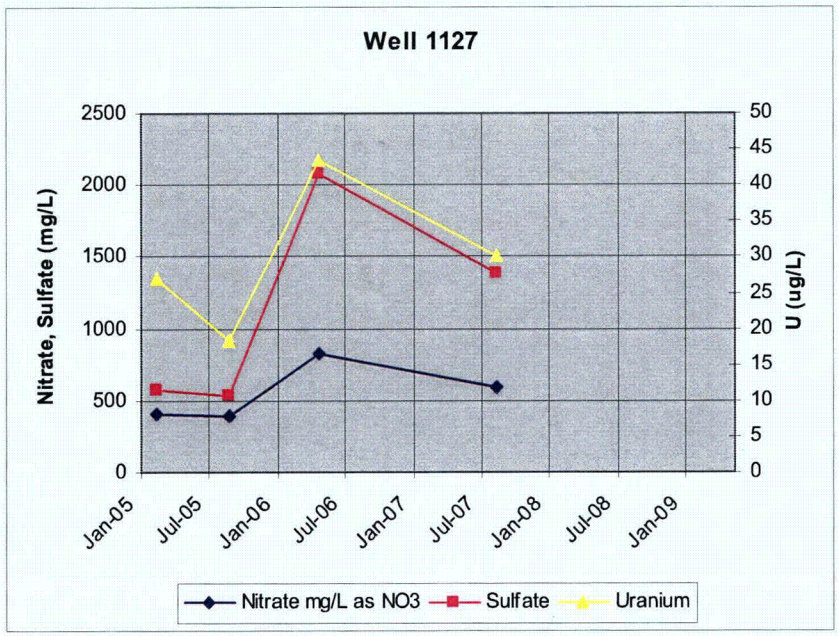

Well 1122
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

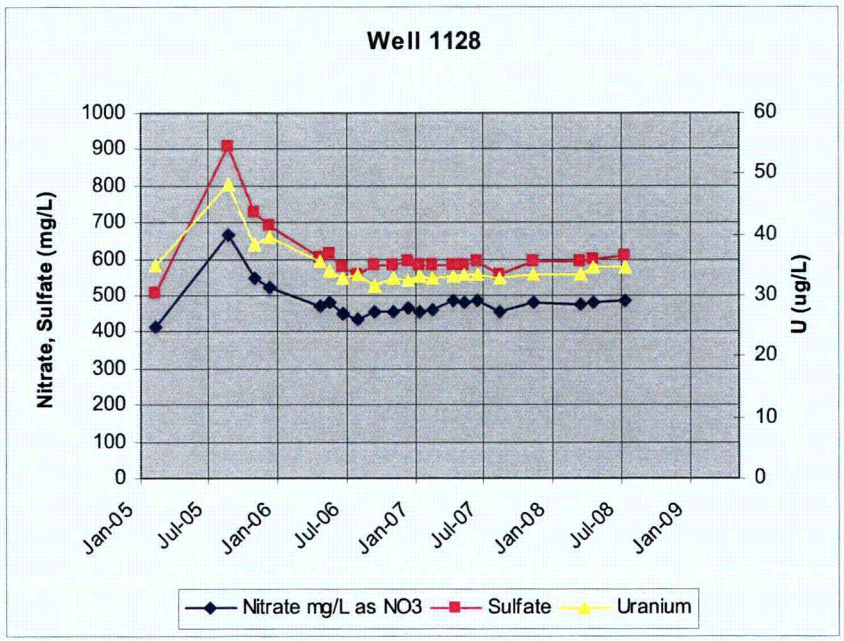

Well 1123
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

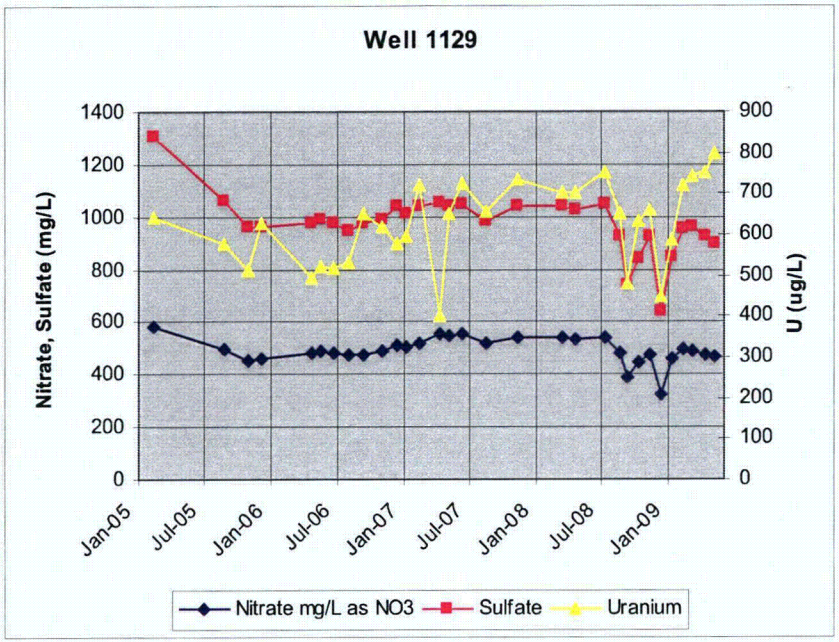

Well 1124
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

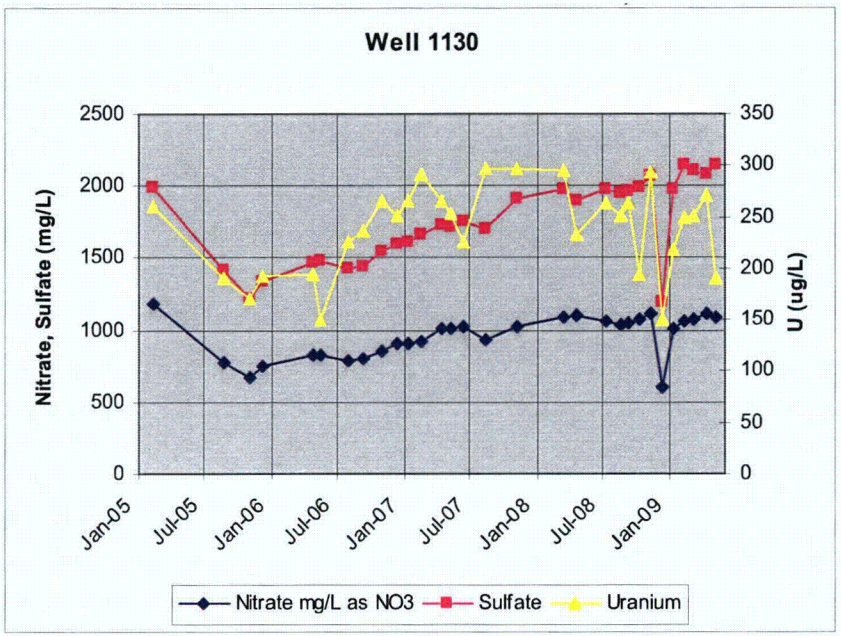

Well 1125
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate mg/L
Uranium ug/L

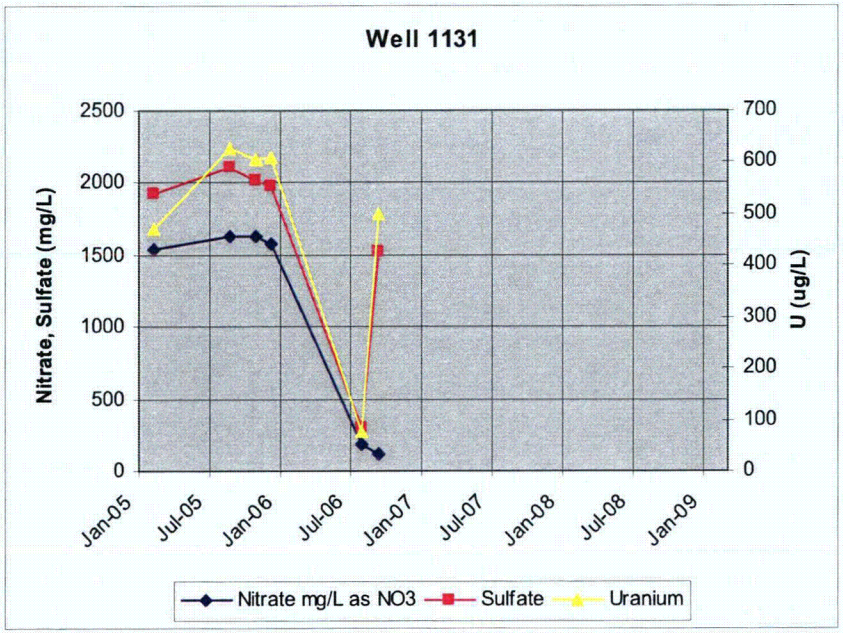

Well 1126
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate
Uranium

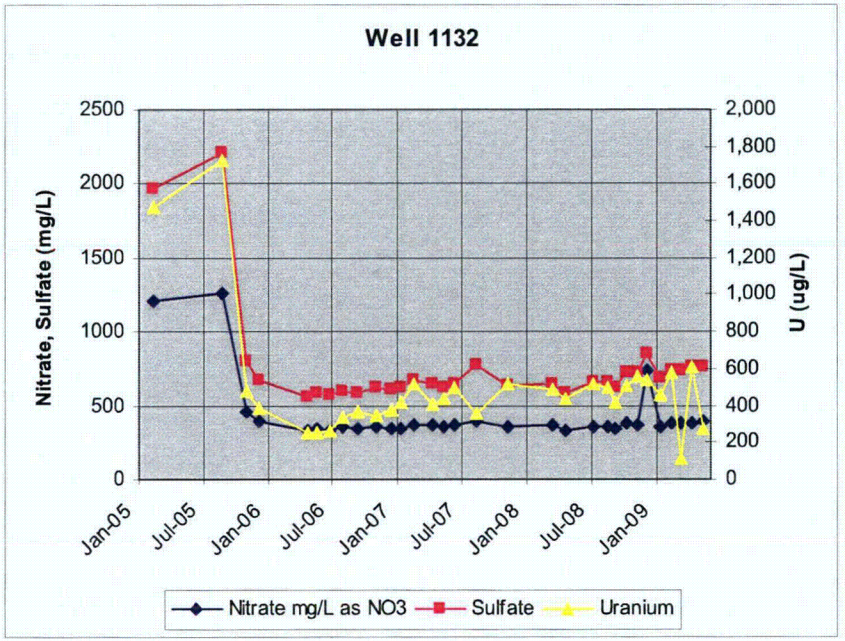

Well 1127
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate
Uranium


Well 1128
Nitrate, Sulfate (mg/L)
U (ug/L)
Nitrate mg/L as NO3
Sulfate
Uranium


Well 1129
Nitrate, Sulfate (mg/L)
U (ug/L)
1400
1200
1000
800
600
400
200
0
900
800
700
600
500
400
300
200
100
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate
Uranium


Well 1130
Nitrate, Sulfate (mg/L)
U (ug/L)
2500
2000
1500
1000
500
0
350
300
250
200
150
100
50
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate
Uranium


Well 1131
Nitrate, Sulfate (mg/L)
U (ug/L)
2500
2000
1500
1000
500
0
700
600
500
400
300
200
100
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate
Uranium


Well 1132
Nitrate, Sulfate (mg/L)
U (ug/L)
2500
2000
1500
1000
500
0
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate
Uranium

Well 1133
Nitrate, Sulfate (mg/L)
U (ug/L)
800
700
600
500
400
300
200
100
0
100
90
80
70
60
50
40
30
20
10
0
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Nitrate mg/L as NO3
Sulfate
Uranium

# Appendix G

# Calculation Sets

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# Contents

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# Calculation 1
# Estimated Volume and Mass of Groundwater Contamination for the Baseline Period

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**Calculation Set #1: Estimated Mass and volume of ground water contamination for the baseline period (originally included in July 2005 annual report)**

**Tuba City, AZ, Disposal Site**

**Objective:** estimate the baseline volume of contaminated groundwater of the Middle Terrace; estimate the baseline mass of dissolved nitrate,sulfate, and uranium in the groundwater

**Method:**
1) estimate the area of the plume from baseline contaminant maps separately for Horizons A and B combined and Horizons C and D combined
2) estimate the vertical thickness of contamination for Horizons A and B combined and Horizons C and D combined
3) assume 25% porosity and compute the separate plume volumes for Horizons A and B combined and Horizons C and D combined
4) compute separate concentration averages for sulfate and uranium for Horizons A and B combined and Horizons C and D combined from baseline contaminant maps
5) multiply concentration average by plume volume to determine contaminant mass for Horizons A and B combined and Horizons C and D combined
6) sum the volume and mass estimates

**Calcualtion:**

**1) map area of contaminant plume**

| | | | |
|---|---|---|---|
| Horizons A and B | plume length (northeast to southwest | 4,000 | ft |
| | plume width | 1,800 | ft |
| | area | 7,200,000 | ft^2 |
| Horizons C and D | plume length (northeast to southwest | 2,500 | ft |
| | plume width | 1,800 | ft |
| | area | 4,500,000 | ft^2 |

**2) thickness of contamination**

| Horizons A and B | | Horizons C and D | |
|---|---|---|---|
| thickness Horizon A | 25 ft | thickness Horizon C | 50 ft |
| thickness Horizon B | 50 ft | thickness Horizon D | 25 ft |
| A&B combined thickness | 75 ft | C&D combined thickness | 75 ft |

assumptions
*approximately the upper half of Horizon A not saturated during baseline period
*Horizon B is fully saturated
*entire thickness of Horizon C contaminated
*Horizon D not contaminated at many locations, assume 50% contaminated thickness

**3) plume volumes**

| | | | |
|---|---|---|---|
| Horizons A and B | volume of contaminated groundwater | 135,000,000 | ft^3 |
| | | 1,012,500,000 | gal |
| | | 3,832,312,500 | L |
| Horizons C and D | volume of contaminated groundwater | 28,125,000 | ft^3 |
| | | 210,937,500 | gal |
| | | 798,398,438 | L |

**4) baseline concentrations**

| Horizons A and B | | | | | Horizons C and D | | | | |
|---|---|---|---|---|---|---|---|---|---|
| well | Horizon | U mg/L | sulfate mg/L | nitrate mg/L as NO3 | well | Horizon | U mg/L | sulfate mg/L | N mg/L as NO3 |
| 262 | B | 0.379 | 931 | 380 | 1101 | D | 0.245 | 960 | 438 |
| 263 | B | 0.485 | 1990 | 1140 | 1102 | D | 0.533 | 1320 | 650 |
| 265 | B | 0.090 | 1520 | 720 | 1103 | D | 0.355 | 2570 | 1120 |
| 267 | B | 0.073 | 3680 | 1640 | 1104 | D | 0.194 | 1870 | 993 |
| 906 | A | 0.951 | 1660 | 1470 | 1105 | D | 2.100 | 1590 | 648 |
| 908 | B | 0.122 | 2430 | 651 | 1106 | D | 2.100 | 1050 | 614 |
| 909 | B | 0.040 | 666 | 485 | 1107 | D | 0.118 | 1200 | 1060 |
| 934 | B | 0.312 | 7360 | 2320 | 1108 | D | 0.646 | 3400 | 1410 |
| 936 | B | 0.267 | 4360 | 2950 | 1109 | D | 0.565 | 3280 | 798 |
| 940 | A | 0.546 | 7550 | 1800 | 1110 | D | 0.053 | 512 | 227 |
| 941 | A | 0.089 | 745 | 358 | 1111 | D | 0.161 | 988 | 421 |
| 942 | B | 0.246 | 3030 | 1360 | 1112 | D | 0.130 | 1140 | 617 |
| 944 | B | 0.950 | 1590 | 1010 | 1113 | D | 0.053 | 250 | 143 |
| geometric mean mg/L | | 0.231 | 2174 | 1028 | 1114 | D | 0.040 | 328 | 228 |
| | | | | | 1115 | D | 0.410 | 1930 | 766 |
| | | | | | 1116 | D | 0.040 | 250 | 106 |
| | | | | | 1117 | D | 0.040 | 255 | 225 |
| | | | | | 1118 | D | 0.040 | 250 | 164 |
| | | | | | 1119 | D | 0.555 | 1560 | 468 |
| | | | | | 1120 | D | 1.3 | 2330 | 493 |
| | | | | | 1121 | D | 0.849 | 2590 | 535 |
| | | | | | 1122 | D | 0.878 | 2960 | 954 |
| | | | | | 1123 | D | 0.261 | 1240 | 643 |
| | | | | | 1124 | D | 0.171 | 1170 | 781 |
| | | | | | 1125 | D | 0.04 | 250 | 104 |
| | | | | | 912 | C | 0.04 | 846 | 403 |
| | | | | | geometric mean mg/L | | 0.214 | 1020 | 464 |

**5) mass calculation**

| | | | | |
|---|---|---|---|---|
| Horizons A and B | mass uranium | 884 | kg | |
| | | 1,949 | lb | |
| | mass sulfate | 8,330,201 | kg | |
| | | 18,359,764 | lb | |
| | mass N as NO3 | 3,940,636 | kg | |
| | | 8,685,162 | lb | |
| Horizons C and D | mass uranium | 171 | kg | |
| | | 377 | lb | |
| | mass sulfate | 814,310 | kg | |
| | | 1,794,738 | lb | |
| | mass N as NO3 | 370,337 | kg | |
| | | 816,223 | lb | |

**6) total volume and masses**

| | | |
|---|---|---|
| **total volume contaminated groundwater** | **163,000,000** | **ft^3** |
| | **1,222,500,000** | **gal** |
| | **4,627,162,500** | **L** |
| **total mass uranium** | **1,055** | **kg** |
| | **2,326** | **lb** |
| **total mass sulfate** | **9,144,511** | **kg** |
| | **20,154,502** | **lb** |
| **total mass nitrate as NO3** | **4,310,973** | **kg** |
| | **9,501,384** | **lb** |

*Figure G-1. Calculation Set, Estimated Mass and Volume of Ground Water Contamination, Tuba City, Arizona, Disposal Site*

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# Calculation 2
# Estimated Aquifer Restoration Time
# Based on Mass and Volume Removal Rates

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| Calculation Set #2: Estimated aquifer restoration time based on mass and volume removal rates | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Tuba City Site | | | | | | | | | | |
| Annual Performance Evaluation Report | | | | | | | | | | |
| Period of Review: April 2008 through March 2009 | | | | | | | | | | |
| | | | | | | | | | | |
| Objective: | estimate aquifer cleanup times | | | | | | | | | |
| | | | | | | | | | | |
| Method: | compare mass and volume removed as of April 1, 2009 to estimates of initial contaminant inventory; predict cleanup time calculated removal rates to date | | | | | | | | | |
| | | | | | | | | | | |
| Calculation: | estimate #1: initial contaminant volume and mass estimates from DOE Baseline Performance Evaluation, May 2003. | | | | | | | | | |
| | estimate #2: initial contaminant volume and mass estimates recalculated for April 2005 - March 2006 Performance Evaluation Report - see Calculation Set #1 | | | | | | | | | |
| | | | | | | | | | | |
| Estimate #1 | | | | | | | | | | |
| | initial mass lb | cumulative removed lb | % removed | | | initial vol gal | cumulative removed gal | # pore vols removed | % plume vol removed | |
| Nitrate | 12,400,000 | 1,030,500.0 | 8 | | | 3.40E+09 | 306,700,000 | 0.090 | 9 | |
| Sulfate | 17,900,000 | 2,579,600.0 | 14 | | | 2.70E+09 | 306,700,000 | 0.114 | 11 | |
| Uranium | 2,800 | 650.0 | 23 | | | 3.00E+09 | 306,700,000 | 0.102 | 10 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | mass removal | | | # yrs | | | pore volume | 1-pore volume | 1-pore volume | # yrs |
| | rate % per yr | cleanup time, yrs | cleanup date | until cleanup | | | removal rate % / yr | cleanup time, yrs | cleanup date | until cleanup |
| Nitrate | 1.2 | 82 | 2084 | 75 | | | 1.3 | 75 | 2077 | 69 |
| Sulfate | 2.1 | 47 | 2049 | 40 | | | 1.7 | 60 | 2062 | 53 |
| Uranium | 3.4 | 29 | 2031 | 22 | | | 1.5 | 67 | 2069 | 60 |
| t1= | 15-Jun-02 | | | | | | | | | |
| t2= | 01-Apr-09 | | | | | | | | | |
| t2 - t1= | 6.8 | yrs | | | | | | | | |
| | | | | | | | | | | |
| Estimate #2 | | | | | | | | | | |
| | initial mass lb | cumulative removed lb | % removed | | | initial vol gal | cumulative removed gal | # pore vols removed | % plume vol removed | |
| Nitrate | 9,500,000 | 1,030,500 | 11 | | | 1.20E+09 | 306,700,000 | 0.256 | 26 | |
| Sulfate | 20,000,000 | 2,579,600 | 13 | | | 1.20E+09 | 306,700,000 | 0.256 | 26 | |
| Uranium | 2,300 | 650 | 28 | | | 1.20E+09 | 306,700,000 | 0.256 | 26 | |
| | | | | | | | | | | |
| | mass removal | | | # yrs | | | pore volume | 1-pore volume | 1-pore volume | # yrs |
| Projection | rate % per yr | cleanup time, yrs | cleanup date | until cleanup | | | removal rate % / yr | cleanup time, yrs | cleanup date | until cleanup |
| Nitrate | 1.6 | 63 | 2065 | 56 | | | 3.8 | 27 | 2029 | 20 |
| Sulfate | 1.9 | 53 | 2055 | 46 | | | 3.8 | 27 | 2029 | 20 |
| Uranium | 4.2 | 24 | 2026 | 17 | | | 3.8 | 27 | 2029 | 20 |
| t1= | 15-Jun-02 | | | | | | | | | |
| t2= | 1-Apr-09 | | | | | | | | | |
| t2 - t1= | 6.8 | yrs | | | | | | | | |

*Figure G-2. Calculation Set 2, Estimated Aquifer Restoration Time Based on Mass and Volume Removal Rates*

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# Calculation 3
# Calculate a Bulk Index of Aquifer Restoration for Sulfate

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**Calculation Set #3: Calculate a bulk index of aquifer restoration for sulfate**

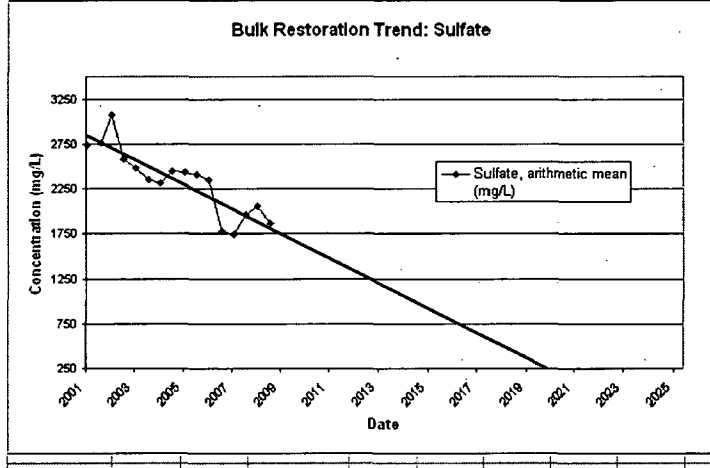
**Tuba City, AZ, Disposal Site**

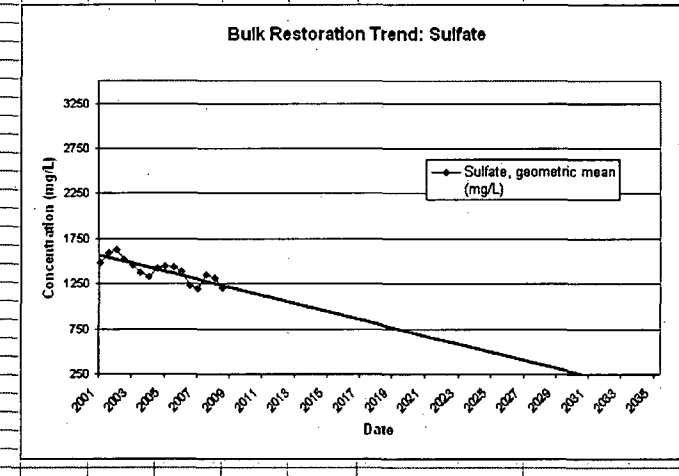
**Objective:** develop a bulk concentration index for measuring restoration progress for sulfate

**Method:** 1) compute an average concentration of a contaminant for a given sampling date/event for a selected group of monitor wells within the contaminant plume
2) plot the computed averages over time

**Calculation:** the selected monitor wells below have the most comprehensive data set and are located throughout the contaminant plume in Horizons A and B;
no historical data exists for Horizons C and D within the contaminant plume
note: where data are absent in the table below, concentrations are carried forward from the previous date as shown in ***bold italic***

| | Sulfate (mg/L) | | | | | | | | | | | | | | Sulfate, | Sulfate, |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| date_sampled | Loc 0262 | Loc 0263 | Loc 0265 | Loc 0267 | Loc 0906 | Loc 0908 | Loc 0909 | Loc 0929 | Loc 0934 | Loc 0936 | Loc 0940 | Loc 0941 | Loc 0942 | | arithmetic mean (mg/L) | geometric mean (mg/L) |
| 08/16/2001 | ***931*** | ***1990*** | ***1520*** | 3620 | 1840 | 2310 | 419 | 19.9 | 7450 | 4570 | 7230 | 620 | 3030 | baseline | 2735 | 1482 |
| 03/06/2002 | ***931*** | ***1990*** | ***1520*** | 3680 | 1660 | 2430 | 666 | 28.1 | 7360 | 4360 | 7550 | 745 | 3030 | baseline | 2765 | 1694 |
| 08/20/2002 | ***931*** | ***1990*** | ***1520*** | 3530 | 1690 | 2330 | 637 | 27.9 | 11900 | 4400 | ***7550*** | ***745*** | 2680 | | 3072 | 1625 |
| 02/06/2003 | ***931*** | ***1990*** | ***1520*** | 3550 | 1680 | 2430 | 629 | 27.6 | 2970 | 4880 | 9180 | 920 | 2790 | | 2575 | 1524 |
| 08/06/2003 | 1190 | 1640 | 1070 | 3690 | 1650 | 2400 | 564 | 29.1 | 2640 | 3240 | 10300 | 1010 | 2690 | | 2486 | 1453 |
| 02/12/2004 | ***1100*** | ***1640*** | ***1070*** | ***3690*** | ***1650*** | 2400 | 540 | ***29.1*** | 1900 | 3200 | 9600 | 800 | 2800 | | 2347 | 1375 |
| 08/31/2004 | 1000 | 1900 | 800 | 3500 | 1700 | 2600 | 590 | 26 | 2300 | 2500 | ***9600*** | 710 | 2900 | | 2317 | 1331 |
| 02/10/2005 | 1000 | 2100 | 810 | 3700 | 1900 | 3000 | 680 | 26 | 2300 | 2700 | ***9600*** | 890 | 3000 | | 2439 | 1426 |
| 08/31/2005 | 830 | 2000 | 1100 | 3600 | ***1900*** | 3000 | 770 | 28 | 2500 | 2600 | ***9600*** | ***890*** | 2800 | | 2432 | 1450 |
| 02/22/2006 | 820 | 2000 | 1000 | 3500 | 2100 | 3000 | 840 | 27 | 2400 | 2100 | ***9600*** | ***890*** | 3000 | | 2406 | 1431 |
| 08/31/2006 | 960 | 2000 | 1100 | 3600 | ***2100*** | 2700 | 810 | 27 | 2300 | 1600 | ***9600*** | 750 | 2900 | | 2342 | 1390 |
| 02/22/2007 | 1000 | 2100 | 990 | 3400 | ***2100*** | 2900 | 870 | 23 | 2600 | ***1600*** | 1701 | 780 | 3100 | | 1782 | 1230 |
| 8/16/2007 | 1100 | 2000 | 1000 | 3100 | 2000 | 2800 | 850 | 23 | 2500 | | 1701 | 880 | 3000 | | 1746 | 1194 |
| 2/5/2008 | 1400 | 2200 | 1300 | 3400 | 2000 | 3000 | 930 | 25 | 2800 | | 2200 | 1000 | 3200 | | 1955 | 1352 |
| 8/20/2008 | 1600 | 2200 | 1300 | 3800 | | 3100 | 960 | 23 | 3000 | | | 1200 | 3400 | | 2058 | 1307 |
| 02/25/2009 | 1400 | 2000 | 1200 | 3300 | | 2700 | 910 | 22 | 2700 | | | 1200 | 3200 | | 1863 | 1200 |




| | | | | | | |
|---|---|---|---|---|---|---|
| t1= | Jun-02 | | | t1= | Jun-02 | |
| t2= | Feb-09 | | | t2= | Feb-09 | |
| t2 - t1= | 6.7 | yr | | t2 - t1= | 6.7 | yr |
| t3= | Jun-18 | extrapolated | | t3= | Jun-30 | extrapolated |
| projected cleanup time from t1= | | 16 | yr | projected cleanup time from t1= | | 28 yr |
| projected cleanup time from t2= | | 9 | yr | projected cleanup time from t2= | | 21 yr |

*Figure G-3. Calculation Set 3, Calculate a Bulk Index of Aquifer Restoration for Sulfate*

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# Calculation 4
# Calculate a Bulk Index of Aquifer Restoration for Uranium

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**Calculation Set #4: Calculate a bulk index of aquifer restoration for uranium**

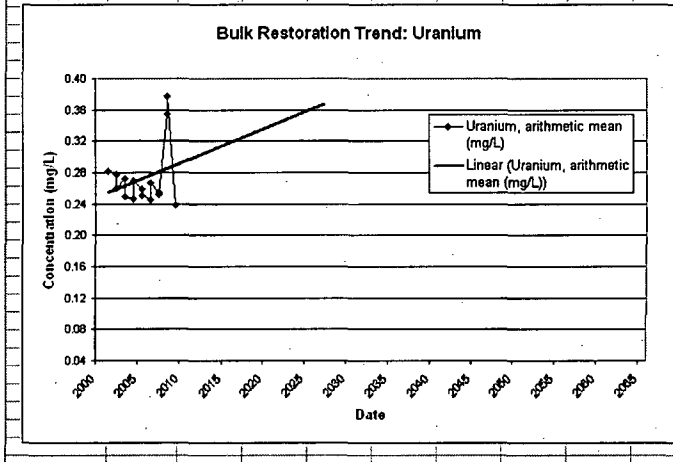
**Tuba City, AZ, Disposal Site**

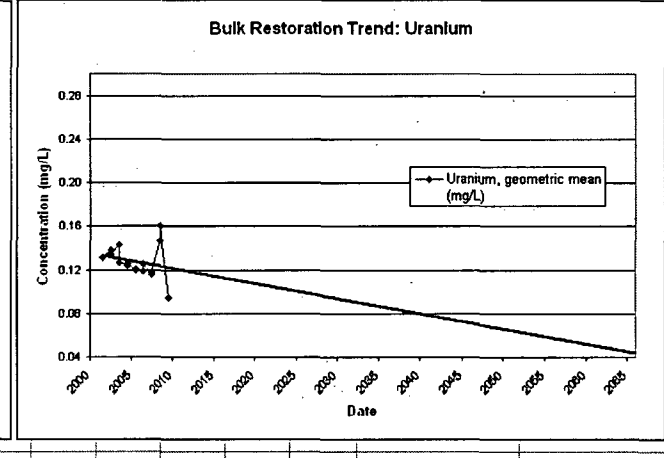
**Objective:** develop a bulk concentration index for measuring restoration progress for uranium

**Method:** 1) compute an average concentration of a contaminant for a given sampling date/event for a selected group of monitor wells within the contaminant plume
2) compare the computed averages over time

**Calculation:** the selected monitor wells below have the most comprehensive data set and are located throughout the contaminant plume in Horizons A and B;
no historical data exists for Horizons C and D within the contaminant plume
note: where data are absent in the table below, concentrations are carried forward from the previous date as shown in *bold italic*

| | Uranium mg/L | | | | | | | | | | | | | | Uranium, | Uranium, |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| date sampled | Loc 0262 | Loc 0263 | Loc 0265 | Loc 0267 | Loc 0906 | Loc 0908 | Loc 0909 | Loc 0929 | Loc 0934 | Loc 0936 | Loc 0940 | Loc 0941 | Loc 0942 | | arithmetic mean (mg/L) | geometric mean (mg/L) |
| 08/16/01 | ***0.379*** | ***0.485*** | ***0.090*** | 0.070 | 0.934 | 0.111 | 0.018 | 0.001 | 0.298 | 0.281 | 0.643 | 0.103 | 0.251 | baseline | 0.2818 | 0.1316 |
| 03/06/02 | ***0.379*** | ***0.485*** | ***0.090*** | 0.073 | 0.951 | 0.122 | 0.039 | 0.001 | 0.312 | 0.267 | 0.546 | 0.089 | 0.246 | baseline | 0.2769 | 0.1378 |
| 08/20/02 | ***0.379*** | ***0.485*** | ***0.090*** | 0.074 | 0.698 | 0.122 | 0.035 | 0.001 | 0.336 | 0.308 | ***0.546*** | ***0.089*** | 0.218 | | 0.2599 | 0.1336 |
| 02/06/03 | ***0.379*** | ***0.485*** | ***0.090*** | 0.077 | 0.653 | 0.124 | 0.033 | 0.002 | 0.355 | 0.582 | 0.432 | 0.102 | 0.221 | | 0.2718 | 0.1428 |
| 08/06/03 | 0.425 | 0.173 | 0.055 | 0.078 | 0.667 | 0.106 | 0.028 | 0.002 | 0.350 | 0.606 | 0.428 | 0.086 | 0.232 | | 0.2489 | 0.1261 |
| 02/12/04 | ***0.425*** | ***0.173*** | ***0.055*** | ***0.078*** | ***0.667*** | 0.097 | 0.027 | ***0.002*** | 0.320 | 0.600 | 0.430 | 0.081 | 0.240 | | 0.2458 | 0.1238 |
| 08/31/04 | 0.530 | 0.230 | 0.045 | 0.088 | 0.890 | 0.120 | 0.029 | 0.001 | 0.320 | 0.470 | ***0.430*** | 0.076 | 0.270 | | 0.2692 | 0.1256 |
| 02/10/05 | 0.560 | 0.190 | 0.045 | 0.086 | 0.830 | 0.110 | 0.035 | 0.001 | 0.280 | 0.470 | ***0.430*** | 0.049 | 0.270 | | 0.2581 | 0.1191 |
| 08/31/05 | 0.660 | 0.140 | 0.060 | 0.095 | ***0.830*** | 0.100 | 0.042 | 0.001 | 0.260 | 0.350 | ***0.430*** | ***0.049*** | 0.230 | | 0.2498 | 0.1205 |
| 02/22/06 | 0.770 | 0.120 | 0.054 | 0.088 | 0.710 | 0.100 | 0.048 | 0.001 | 0.250 | 0.240 | ***0.430*** | ***0.049*** | 0.330 | | 0.2454 | 0.1181 |
| 08/31/06 | 0.780 | 0.100 | 0.061 | 0.077 | ***0.710*** | 0.089 | 0.051 | 0.001 | 0.250 | 0.200 | ***0.430*** | 0.093 | 0.620 | | 0.2663 | 0.1254 |
| 02/22/07 | 0.930 | 0.098 | 0.053 | 0.061 | ***0.710*** | 0.092 | 0.047 | 0.001 | 0.210 | ***0.200*** | 0.365 | 0.078 | 0.460 | | 0.2542 | 0.1154 |
| 08/16/07 | 1.100 | 0.096 | 0.063 | 0.068 | 0.420 | 0.100 | 0.055 | 0.002 | 0.220 | | 0.365 | 0.130 | 0.410 | | 0.2524 | 0.1178 |
| 02/05/08 | 1.400 | 0.110 | 0.074 | 0.078 | 1.000 | 0.110 | 0.063 | 0.002 | 0.220 | | 0.520 | 0.140 | 0.540 | | 0.3547 | 0.1463 |
| 8/20/2008 | 1.400 | 0.110 | 0.069 | 0.670 | | 0.100 | 0.550 | 0.002 | 0.210 | | | 0.180 | 0.480 | | 0.3771 | 0.1605 |
| 02/25/2009 | 1.200 | 0.120 | 0.072 | 0.070 | | 0.093 | 0.059 | 0.002 | 0.100 | | | 0.170 | 0.500 | | 0.2386 | 0.0941 |




| | | | | | | |
|---|---|---|---|---|---|---|
| t1= | 15-Jun-02 | | | t1= | 15-Jun-02 | |
| t2= | 5-Feb-08 | | | t2= | 5-Feb-08 | |
| t2 - t1= | 5.6 | yr | | t2 - t1= | 5.6 | yr |
| t3= | (+) slope | extrapolated | | t3= | Jun-65 | extrapolated |
| projected cleanup time from t1= | | N/A | yr | projected cleanup time from t1= | | 63 yr |
| projected cleanup time from t2= | | N/A | yr | projected cleanup time from t2= | | 57 yr |

*Figure G-4. Calculation Set 4, Calculate a Bulk Index of Aquifer Restoration for Uranium*

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