SGW-54508
Revision 0

WMA C September 2012 Quarterly Groundwater Monitoring Report

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

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Document Type: TR Program/Project: SGRP

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Date Published
March 2013

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APPROVED
By Delores Pinkal at 10:53 am, Mar 21, 2013

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Terms

AEA	*Atomic Energy Act of 1954*
DWS	drinking water standard
LLWMA	Low-Level Waste Management Area
OU	operable unit
RCRA	*Resource Conservation and Recovery Act of 1976*
WMA	Waste Management Area

1 Purpose

This report provides the September 2012 quarterly monitoring results at the 241-C Tank Farm. This report meets the requirements of "Agreement on Content of Tank Waste Retrieval Work Plan" (letter 04-TPD-083) in which quarterly groundwater monitoring sample results are to be provided to the Washington State Department of Ecology during tank retrievals. The 04-TPD-083 letter agreed to the quarterly analyses as provided in PNNL-13024, *RCRA Groundwater Monitoring Plan for Single-Shell Tank Waste Management Area C at the Hanford Site*. The agreed-upon analyses include *Resource Conservation and Recovery Act of 1976* (RCRA) and *Atomic Energy Act of 1954* (AEA) constituents from the following: anions, cyanide, metals, gross beta, technetium-99, total uranium, and low-level gamma scan. Quarterly samples are required at four of the current twelve Waste Management Area (WMA) C monitoring wells (299-E27-7, 299-E27-14, 299-E27-15, and 299-E27-22) per RPP-22393, *241-C-102, 241-C-104, 241-C-107, 241-C-108, and 241-C-112 Tank Waste Retrieval Work Plan* (Figure 1).

2 Background

Since the 04-TPD-083 letter was issued, the 241-C Tank Farm has entered into a RCRA groundwater quality assessment program in accordance with "Dangerous Waste Regulations," "Interim Status Facility Standards," *Washington Administrative Code* (WAC 173-303-400) and, by reference, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," "Ground-Water Monitoring," *Code of Federal Regulations*, (40 CFR 265, Subpart F). The assessment program was initiated from a July 2009 verified exceedance of the critical mean for specific conductance in downgradient Well 299-E27-14 (Figure 1). During the assessment, the dangerous waste constituent cyanide was found beneath the 241-C Tank Farm within the groundwater, but not in the upgradient Well 299-E27-22. Thus, it was determined that the 241-C Tank Farm has affected the groundwater.

Other potential dangerous waste constituents associated with the 241-C Tank Farm have not been found. The site remains in the groundwater quality assessment program at present and assessment monitoring is being completed in accordance with DOE/RL-2009-77, *Groundwater Quality Assessment Plan for the Single-Shell Tank Waste Management Area C*. Three wells (299-E27-24, 299-E27-25, and 299-E27-155) were added to the network per DOE/RL-2009-77 for a total of 12 WMA C monitoring network wells. Appendix A provides the WMA C monitoring well network attributes.

Because the site is in a groundwater quality assessment program, quarterly samples are being completed at all WMA C monitoring wells. In addition, the AEA requirements above are being evaluated at all WMA C wells to determine appropriate inclusion in the revised *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* operable unit sampling and analysis plan (DOE/RL-2001-49, *Groundwater Sampling and Analysis Plan for the 200-BP-5 Operable Unit*).

3 Groundwater Flow and Rate

This section discusses data and information being used to determine the direction and rate of groundwater flow near WMA C. As the site hydrologic conditions recover from past large-scale waste water discharges and return to more natural conditions, ascertaining the direction and rate of groundwater flow in 200 East Area in general is hindered by the presence of sediments below the water table that have a high hydraulic conductivity and contribute to a flat water table. The range in water table elevations is only a few centimeters across the 200 East Area and the water level measurements in wells exhibit some degree of spatial variability attributed to a number of sources of measurement error. In the vicinity of the WMA C, the average flow rate and direction is currently inferred – based in part on water-level

measurements in another part of the 200 East Area and in the evaluation and interpretation of local-scale plume migration.

In an effort to develop an improved understanding of the groundwater gradient (G) in the 200 East Area a detailed study of water levels was undertaken in the northwest corner of the 200 East Area in the vicinity of the Low-Level WMA-1. The study found that errors present in water-level measurements exceeded the relief of the water table gradient (ECF-200EAST-12-0086, *Calculations in Support of the Low Hydraulic Gradient Evaluation Study for the 200 East Area Unconfined Aquifer*). This same study also indicated a greater degree of accuracy of water-level measurements could be obtained using:

- Greater precision well surveys
- Gyroscope surveys of well bores to correct for deviation from true vertical
- Use wells with short screen lengths, minimizing the chance of vertical hydraulic gradient
- Normalization of the hydraulic head to a constant barometric pressure within the wells
- Standardization of the measuring tape
- Use statistical test (ANOVA) to assess the trend-surface analysis results

The use of these activities and analyses in the evaluation of water-levels measured in wells led to a refined estimate of the direction of groundwater flow and hydraulic gradient (G) in the area of the LLWMA-1, with a gradient range of 1.4E-05 and 4.5E-05 as shown in Appendix B. The derived hydraulic gradient at LLWMA-1 is applicable to WMA C in part because the sediments beneath the water table at LLWMA-1 and WMA C are of the same origin, Hanford lower gravels. In addition, the Hanford gravels are interconnected, extending from northwest of LLWMA-1 to and beyond WMA C and quite possibly part of the same depositional event. Thus, because of the degree of accuracy associated with obtaining these measurements and the sediment relationship between LLWMA-1 and WMA C the gradient measurements from LLWMA-1 will be applied to WMA C until a similar low-gradient network can be arranged at WMA C.

The new effective porosity (n_e) used to estimate groundwater flow rates at WMA C was derived from field and laboratory tests associated with the Hanford lower gravel sequence. An effective porosity of 0.6 was derived from a pumping test at well 699-62-43, within the Hanford gravel sequence with a similar sediment profile to wells at WMA C (HW-60601, *Aquifer Characteristics and Ground-Water Movement at Hanford*). A similar effective porosity, 0.1, from Hanford gravels was derived from laboratory tests discussed in PNNL-19277, *Conceptual Models for Migration of Key Groundwater Contaminants Through the Vadose Zone and Into the Unconfined Aquifer Below the B-Complex*. Based on these tests an effective porosity of 0.1 is considered representative of the Hanford gravels within the aquifer beneath WMA C.

To obtain a representative range of hydraulic conductivity values (K) past pumping and slug tests associated with the Hanford lower gravel sequence were reviewed. The hydraulic conductivity range was based on six separate investigations described below.

- A hydraulic conductivity of 518 m/day derived from hydraulic properties measured during a pumping test at Well 699-62-43 (HW-60601).

- Hydraulic conductivity values of 2,100; 1,100; and 1,100 m/day derived from hydraulic properties measured during pumping tests at three wells (299-E27-8, 299-E27-9, and 299-E27-10) screened across the Hanford gravel sequence and located north of WMA C, respectively (WHC-SD-EN-TI-019, *Hydrogeologic Model for the 200 East Groundwater Aggregate Area*).

- Hydraulic conductivity values of 100 to 108 m/day from a slug test completed at WMA C Well 299-E27-23 (PNNL-14656, *Borehole Data Package for Four CY 2003 RCRA Wells 299-E27-4, 299-E27-21, 299-E27-22, and 299-E27-23 at Single-Shell Tank, Waste Management Area C, Hanford Site, Washington*).

- A hydraulic conductivity value of 2,850 m/day derived from hydraulic properties measured during a slug tests at a depth of 10 meters below the water table at Well 299-E27-25 (SGW-48722, *Borehole Summary Report for the ARRA Instatllation of Five RCRA Groundwater Monitoring Wells in the 200 Areas, FY 2010*). Note the results of this slug test were not published because the open interval and well radius were not controlled leading to an over estimate of the hydraulic conductivity by 25 percent. Thus, a 2,100 m/day hydraulic conductivity was considered more reasonable for this test.

There were other slug tests at two wells within WMA C that were considered not representative because of issues associated with testing or possible well drilling. One of the wells was 299-E27-24, in which sloughing at the test intervals lead to lack of well radius control. In addition, the open interval was not controlled. The lack of these controls and the lack of formation integrity lead to the decision that results at this well were not representative; however, the lack of structural integrity of the formation indicates the gravels are most likely associated with the Hanford formation. The other questionable slug test results were associated with Well 299-E27-22. At this well greater hydraulic conductivity results were derived; however, by comparison of the geologist log with another well the sediments contained more fines. Thus, the results were contrary to the sediment description and indicate possible issues associated with drilling and/or well control during testing. More detail is provided for these tests below.

- Three hydraulic conductivity values ranging from of 3,650 to 51,500 m/day were derived from hydraulic properties measured during slug tests at a depth of 4, 10, and 15 m below the water table at Well 299-E27-24 (SGW-48722). Note the results of these slug tests have not been published because the open interval and well radius were not controlled and sloughing conditions existed before testing. Thus, the calculations are not considered representative of the formation; however, provided evidence of Hanford gravels to the top of the Elephant Mountain Basalt.

- Hydraulic conductivity values ranging from 1888 to 6888 m/day were derived from hydraulic properties measured during slug tests for Well 299-E27-22 (PNNL-14656). Upon comparison of the geologist borehole logs for Wells 299-E27-22 and 299-E27-23, it is uncertain why such a significant increase in hydraulic conductivity was derived at Well 299-E27-22. The sediment borehole log description at 299-E27-22 indicate a more dominant silt matrix with less gravel content than at Well 299-E27-23, which had a derived hydraulic conductivity of 100 to 108 m/day. Both wells were drilled by Becker Hammer and logged by the same geologist. Based on the comparison of these values with the slug tests completed at Well 299-E27-23 there may have been some field control issues similar to Well 299-E27-24 resulting in nonrepresentative results and thus are not considered representative.

The range of the six derived hydraulic conductivity results considered representative of the Hanford gravel at WMA C range from 100 to 2,100 m/day. Using the discussed hydraulic parameters above, the flow rate beneath WMA C may range between 0.014 to 0.95 m/day, based on the formula $V=(K*G)/n_e$ (Dricoll, Groundwater and Wells). This range bounds the flow rate derived from a migrating subregional sulfate plume through WMA C from the late 1990s to 2007, 0.09 m/day (DOE/RL-2008-01, *Hanford Site Groundwater Monitoring for Fiscal Year 2007*). On a regional basis it also is consists with flow from west of the 200 East Area, which was estimated at 28 to 34 m/year (0.077 to 0.093 m/day) (DOE/RL-2008-66, *Hanford Site Groundwater Monitoring for Fiscal Year 2008*). Finally, it even bounds the recent southeast migration of nitrate and technetium-99 near the BY Cribs, which was calculated at approximately 0.5 m/day. Like with the gradient determination this is considered the representative range

beneath WMA C until a more accurate low-gradient network is developed at WMA C and/or a pumping test with radial draw down measurements at a nearby monitoring well are performed.

A recent flow direction change in the northwest corner of the 200 East appears to be the driver for the changing flow direction at WMA C. Groundwater flow in the northwest corner of 200 East Area has changed from predominantly northwest to southeast. This flow direction change coincides with technetium-99 increases in Wells 299-E27-21 and 299-E27-24 at WMA C, which are located southeast of Well 299-E27-23, near a source of technetium-99 drainage from the vadose zone. Also coincident with the flow change are decreasing concentrations of other contaminants west of the 241-C tank farm, indicating a change in flow direction. These plus other observations not discussed provide sufficient evidence for the determination of a current southeast flow direction at WMA C. Although the current conditions indicate a southeast flow direction, the flow direction may be still in a state of flux. Thus, continued monitoring is required to ensure conditions have stabilized, but for 2012, the flow direction is considered southeast.

4 Quarterly Results Discussion

During September all twelve WMA C wells were sampled as scheduled. The following is a discussion of the results of interest for constituents analyzed per the 04-TPD-083 letter and DOE/RL-2009-77. Appendix C provides all 837 results for the September WMA C sampling event.

4.1 Field Parameters and Quality Control

The pH measured in monitoring wells at WMA C in September ranged between 7.79 and 8.26. The greatest levels were reported at Wells 299-E27-13 and 299-E27-15. In general, the wells screened across the upper part of the aquifer had higher pH ranging from 8.1 to 8.3. Well 299-E27-14 is the only upper aquifer well that was less than 8.0, at 7.87. In all the other wells, pH ranged between 7.8 and 8.0, with the lowest at Well 299-E27-24.

Specific conductance measurements in the twelve wells near the 241-C tank farm ranged between 391 and 1157 µS/cm. The lowest value was from upgradient Well 299-E27-12 and the greatest specific conductance was at Well 299-E27-14. The elevated specific conductance reflects the elevated nitrate and sulfate concentration levels measured in these wells. The specific conductance was in reasonable agreement with the sum of the anions and cations.

Iodine-129 was sampled again in September at all WMA C wells to check if the significantly lower results and reanalysis from the previous quarter were representative of the groundwater. All 10 wells with suspect lower activity last quarter were found to have similar results to the March 2012 sampling event rather than the June 2012 sampling event. Thus, the June results for all wells except 299-E27-4 and 299-E27-7 were flagged as suspect.

Three volatile organic results were considered to be associated with lab contamination or false positives and were flagged “Y” as suspect. The only other detected volatile organic was chloroform and is discussed in Section 4.7.

4.2 Nitrate and Sulfate

This section discusses results for nitrate and sulfate. Nitrate exceeded the drinking water standard (DWS) of 45 mg/L in the same four WMA C wells as last quarter (299-E27-14, 299-E27-23, 299-E27-24, and 299-E27-155). Two additional wells also exceeded the DWS for nitrate (299-E27-21 and 299-E27-25). Sulfate exceeded the secondary DWS of 250 mg/L in the same three wells that exceeded the DWS last quarter (299-E27-14, 299-E27-24, and 299-E27-25). Comparison of the nitrate and sulfate exceedances of

the DWS in Wells 299-E27-14 and 299-E27-24, considered downgradient wells, with other WMA C wells is evidence that groundwater has been affected by a source or sources within the 241-C Tank Farm.

4.2.1 Nitrate

Of the four wells screened at the top of the aquifer (299-E27-12, 299-E27-13, 299-E27-14, and 299-E27-15), Well 299-E27-14 is the only well with nitrate concentrations exceeding the DWS (Figure 2). The others three wells have the lowest nitrate concentrations at WMA C.

The two deepest wells, 299-E27-24 and 299-E27-155, which are screened at the bottom of the unconfined aquifer, continue to have elevated nitrate levels. September nitrate levels associated with Well 299-E27-155 saw the first increase since the groundwater flow direction change in the northwest corner of 200 East Area, by rising 4.5 mg/L (Figure 2). Nitrate levels at Well 299-E27-24 continued at about the same concentration, ranging between 67.7 and 72.2 mg/L, since being completed in December of 2010.

The wells north and east of the 241-C tank farm (299-E27-4, 299-E27-7, and 299-E27- 22), which have screen intervals that are three times longer than those screened near the top of the aquifer, have all shown significant nitrate increases over the past few years (Figure 2). The past increases appear to be associated with either southward migration of a nitrate plume from the 216-B-2 Ditches (Figure 3) or drainage into the aquifer from WMA C sources, or both. The bases for the increases from the 216-B-2 Ditches are the past southward flow of sulfate migration (Figure 4) and the higher nitrate concentrations to the north (Figure 5). Because the Wells 299-E27-12 and 299-E27-15 do not show the same nitrate increases as Wells 299-E27-4, 299-E27-7, and 299-E27- 22, the elevated portion of the nitrate plume is deeper than the screen interval of these two north boundary wells. More recently, the nitrate levels appear to be stabilizing or decreasing slightly in all north WMA C wells (Figure 2). The stable or decreasing levels appear to be consistent with the past decline of nitrate at upgradient Well 299-E27-10, located near the 216-B-2 Ditches (Figure 5). Alternatively, the stable to declining results may be associated with the change in flow direction, from southward to southeast. The past increases at these wells may also be associated with migration from sources within or adjacent the 241-C tank farm. Two potential sources are discussed below.

Further south, nitrate concentrations in Wells 299-E27-23 and 299-E27-21 have increased above nitrate levels seen in the north wells of the 241-C tank farm (Figure 2). In addition, nitrate levels at Well 299-E27-21 increased above the DWS for the first time and the concentration in that well is now nearly equivalent to that of Well 299-E27-23. The elevated nitrate levels at these two wells indicate a nitrate source from within or adjacent the 241-C Tank Farm. Because of the spatial distance between elevated nitrate concentrations at Well 299-E27-14 versus Well 299-E27-23 and the past southward flow direction there appears to be more than one source within and/or adjacent the 241-C Tank Farm.

Finally, nitrate levels in upgradient Well 299-E27-25 appear to have stabilized. Recent concentrations levels have ranged between 43.6 and 46 mg/L since August 2011. The stability in these concentrations reflect a similar pattern exhibited at Well 299-E27-10 over the past couple years (Figure 5). Because nitrate concentrations are greater in this well than the other north wells at 241-C tank farm the preferential flow path from the 216-B-2 Ditches is considered currently southeast.

4.2.2 Sulfate

The sulfate results at WMA C are similar to that of nitrate (Figure 6). The most significant sulfate concentrations continue to be at Wells 299-E27-14, 299-E27-24, and 299-E27-25. Results from these wells continue to exceed the secondary DWS of 250 mg/L. The remainder of the wells range from 65.6 to 208 mg/L.

The greatest sulfate concentrations are in Wells 299-E27-14 and 299-E27-24. Sulfate and nitrate concentration levels in these two wells continue to indicate a source of contaminant drainage from within the 241-C tank farm. Because Well 299-E27-14 is screened across the upper part of the aquifer and Well 299-E27-24 is screened across the bottom of the aquifer, data from these wells suggests drainage from the 241-C tank farm has migrated throughout the vertical extent of the aquifer. Concentrations in Well 299-E27-14 indicate sulfate concentrations are still increasing as seen in Figure 6. However, concentrations in Well 299-E27-24 are stable (Figure 6).

Sulfate concentrations in another well, 299-E27-25, also exceeded the secondary DWS. Results at this well are affected by sub regional sulfate plume migrating southeast from beneath the 216-B-2 Ditches (Figure 4). The sulfate levels in this well are much greater than observed at the other wells (299-E27-4, 299-E27-12, 299-E27-15, and 299-E27-22) located in the north part of the 241-C tank farm indicating a preferential southeast flow direction from the 216-B-2 Ditches.

Well 299-E27-155 continues to have sulfate concentrations exceeding 200 mg/L; however, has not exceeded the secondary DWS. The sulfate concentrations had been decreasing, but rose this quarter to 208 mg/L. This well is screened across the lower part of the aquifer and appears to indicate contaminants in the past migrated to the bottom of the aquifer and to the southwest of WMA C. This may have been because flow in this area was not significant, which allowed contaminants to spread throughout the aquifer. It might also indicate contaminants from the 241-C tank farm had a greater density than the surrounding groundwater allowing contamination to migrate to the bottom of the aquifer.

4.3 Cyanide

The dangerous waste constituent cyanide only exceeded the detection limit in two wells for the September sampling event: 299-E27-14, and 299-E27-24. The concentrations were 8.5 and 9.8 µg/L, respectively. The cyanide results associated with these wells are significantly lower than the 200 µg/L DWS. In addition, since the flow direction change cyanide has decreased in concentration and is no longer reported in three of the WMA C wells (299-E27-4, 299-E27-7, and 299-E27-155).

4.4 Technetium-99

Technetium-99 activity in seven of the twelve WMA C monitoring wells sampled in September exceeded the 900 pCi/L DWS (Figure 7). Activity is trending down in Well 299-E27-23, which has had the greatest activity of all the WMA C well for the past six years. Activity is also decreasing at Wells 299-E27-4 and 299-E27-155. The decline in technetium-99 in all these wells appears to be associated with the flow direction and flow rate change. Technetium-99 in Wells 299-E27-21 and 299-E27-24 has been increasing since the flow direction change and is now considered downgradient of the technetium-99 source of drainage near Well 299-E27-23. Well 299-E27-13, located just north of Well 299-E27-23, also increased in technetium-99 activity between March and September of this year (Figure 7). The increase may be associated with the point of drainage near Well 299-E27-23 or redistribution from past plume migration towards Well 299-E27-4. Finally, Well 299-E27-14 continues with stable technetium-99 activity ranging between 1,500 and 2,600 pCi/L since 2006 (Figure 7).

4.5 Uranium

Uranium values at WMA C are 4 µg/L or less in all but three wells at WMA C. The exceptions are Wells 299-E27-14, 299-E27-24, and 299-E27-155 (Figure 8). The uranium concentration received from the laboratory for Well 299-E27-14 increased 2 µg/L to 10.8 µg/L. The uranium concentration at Well 299-E27-24 increased 0.15 µg/L to 7.0 µg/L. These two wells appear to be increasing in unison and appear to be from the same source of uranium. Uranium at Well 299-E27-155 increased 3.07 µg/L from

the March sample event to 8.41 µg/L. Note the uranium for the June sampling event for Well 299-E27-155 was flagged because it was out of trend and is not considered representative of the conditions at the time. Because the September uranium concentrations at Well 299-E27-155 is the greatest concentrations reported at this well and the increases are coincident with the flow direction change the source of this uranium is uncertain. It should be noted that significant levels of uranium have been and are associated with the 216-B-5 Injection Well located to the west.

4.6 Low-Level Gamma

Gamma results for the four wells required by the 04-TPD-083 letter were all less than detect.

4.7 Volatile Organics

Volatile organic analyses were limited to one well, 299-E27-12, because it was the only well to have continuous concentrations of chloroform. A previous quarterly report determined chloroform is from an upgradient source (SGW-51057, *WMA C April Through June 2011 Quarterly Groundwater Monitoring Summary Report*). All the other organics studied during the assessment were not detected, determined to be false positives, or associated with laboratory contaminants. Thus, the assessment of organic dangerous waste/dangerous waste constituents for the 241-C Tank Farm has been discontinued. The ongoing analyses of volatile organics at Well 299-E27-12 are being considered as a part of investigations at the 200-BP-5 OU to evaluate regional sources such as the unplanned release associated with the 216-B-2-2 Ditch.

Evaluation of the laboratory results from September 2012 showed an increase from 0.21 µg/L in June to 0.27 µg/L. A steady increase of chloroform in this well has been seen since March of 2010. The results are considered authentic because of the consecutive detections over the past couple years and the more than double increase since first detection.

5 Conclusion

Because of the continued presence of cyanide, a dangerous waste constituent, in Wells 299-E27-14 and 299-E27-24, the 241-C Tank Farm remains in a groundwater quality assessment program. Note, measured cyanide concentrations in the WMA C monitoring network are much lower than the DWS of 200 µg/L. Nitrate, sulfate, and technetium-99 also appear to be associated with releases from the 241-C Tank Farm as these constituents are much higher in the downgradient wells compared to upgradient wells and exceed the groundwater DWSs.

Several methods have been used to interpret the flow direction at WMA C in the past. Most recently, various contaminants have been used to determine the flow direction. This method is still applicable because of the significant technetium-99 plume at Well 299-E27-23. Wells to the southeast, 299-E27-21 and 299-E27-24, are increasing significantly and appear to mimic the trend at Well 299-E27-23. The recent increases are coincident with flow changes in the northwest corner of the 200 East Area, which appear to have a regional influence. Based on this information and other groundwater flow observations, it is determined that the flow direction at WMA C is currently southeast. Although the current conditions indicate a southeast flow direction, the flow direction may be still in a state of flux. Thus, continued monitoring is required to ensure conditions have stabilized, but for 2012, the flow direction is considered southeast.

The flow rate at WMA C has not been determined for several years because of a flat water table. A recent study performed to evaluate the low water table gradient at LLWMA-1 provided actions that were able to derive the water table gradient with statistical confirmation. Based on the accuracy of the gradient

measurement process at LLWMA-1 and the consistent nature of the sediments beneath the water table at LLWMA-1 and WMA C, Hanford lower gravels, the gradient measurements from LLWMA-1 are being applied to WMA C until a similar low-gradient network can be arranged at WMA C. In addition, a review of representative hydraulic parameters for the Hanford lower gravel sequence was completed. Based on past tests and the derived flow rate of these parameters compared with other regional flow rate determinations, the following numerical values where determined to be representative of the Hanford gravel parameters beneath WMA C: effective porosity (n_e) of 0.1, hydraulic conductivity (K) range of 100 to 2,100 m/day, and a gradient (G) range from 1.4E-5 to 4.5E-5. Using the formula $V=(K*G)/n_e$ the flow rate (V) beneath WMA C in 2012 has ranged between 0.014 to 0.95 m/day or 5 to 350 m/year. The flow rate is considered to be more towards the lower end because of flow comparisons to the north and west; however, it also accounts for potential highly conductive paleochannel gravels extending from near the BY Cribs. As with the gradient determination this is considered the representative range beneath WMA C until a more accurate low-gradient network is developed at WMA C and/or a pumping test with radial draw down measurements at a nearby monitoring well.

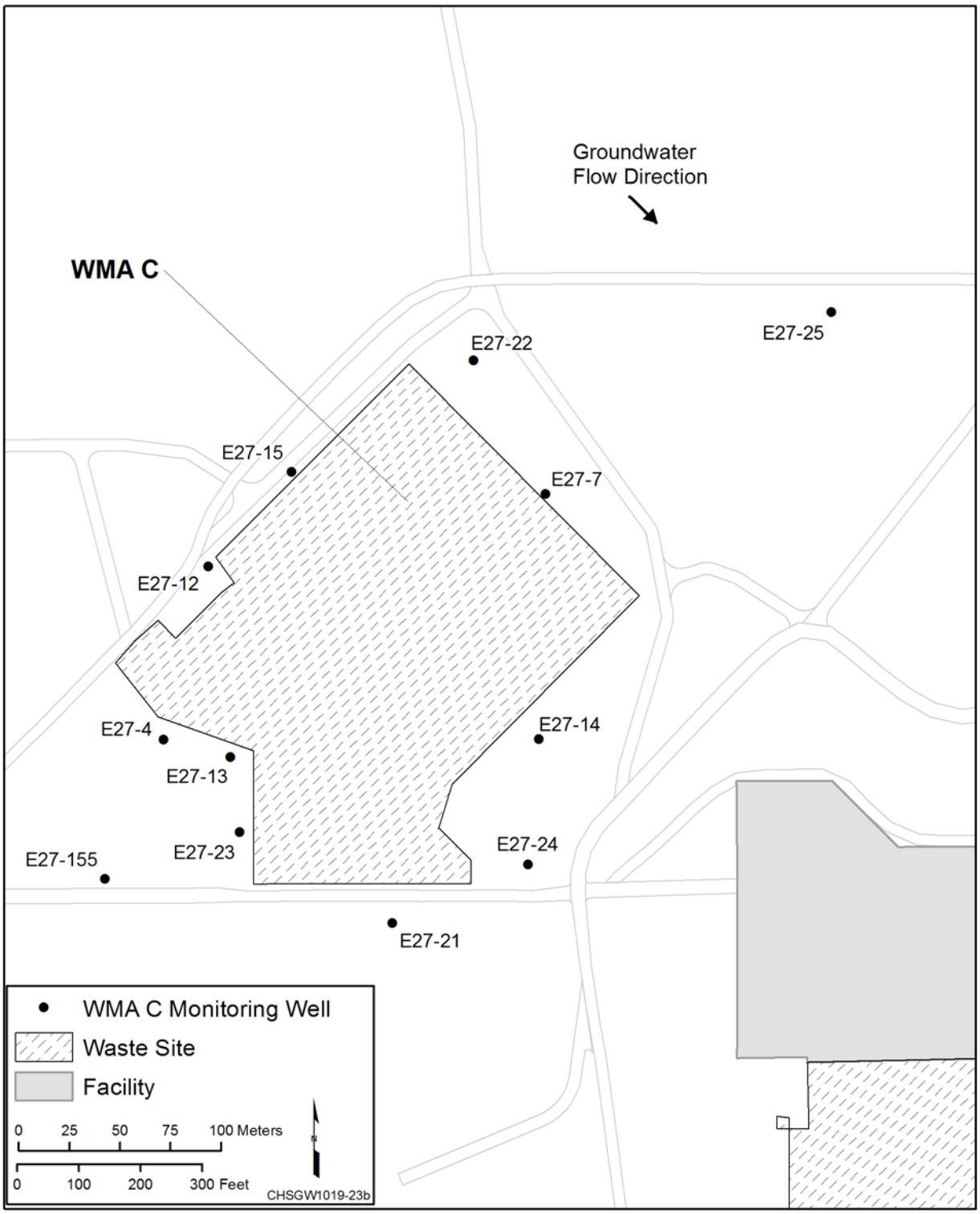

Figure 1. WMA C Monitoring Wells

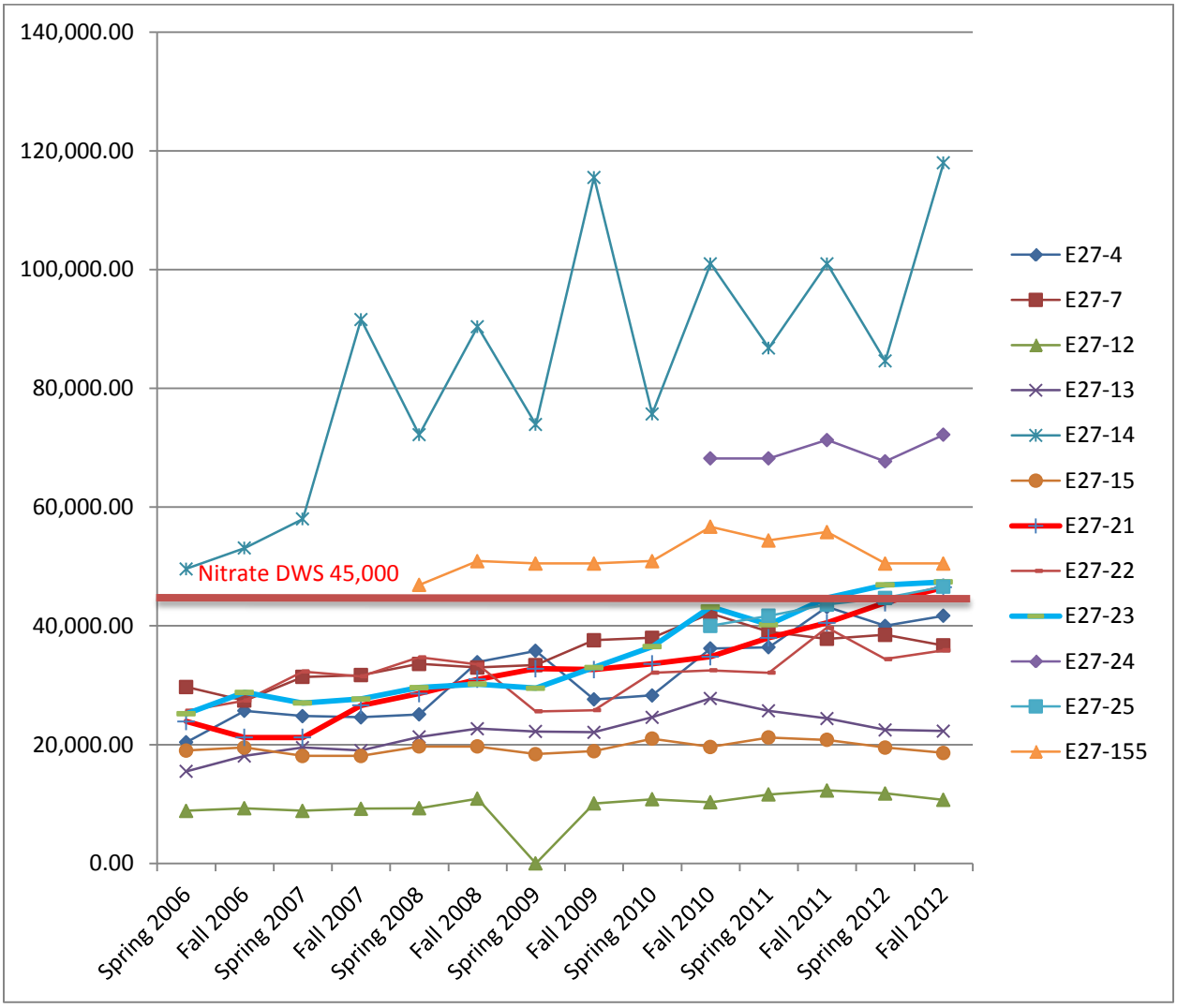

Figure 2. History of Nitrate Results at WMA C

Figure 3. 2011 Nitrate Plume Map for WMA C and the 216-B-2 Ditches

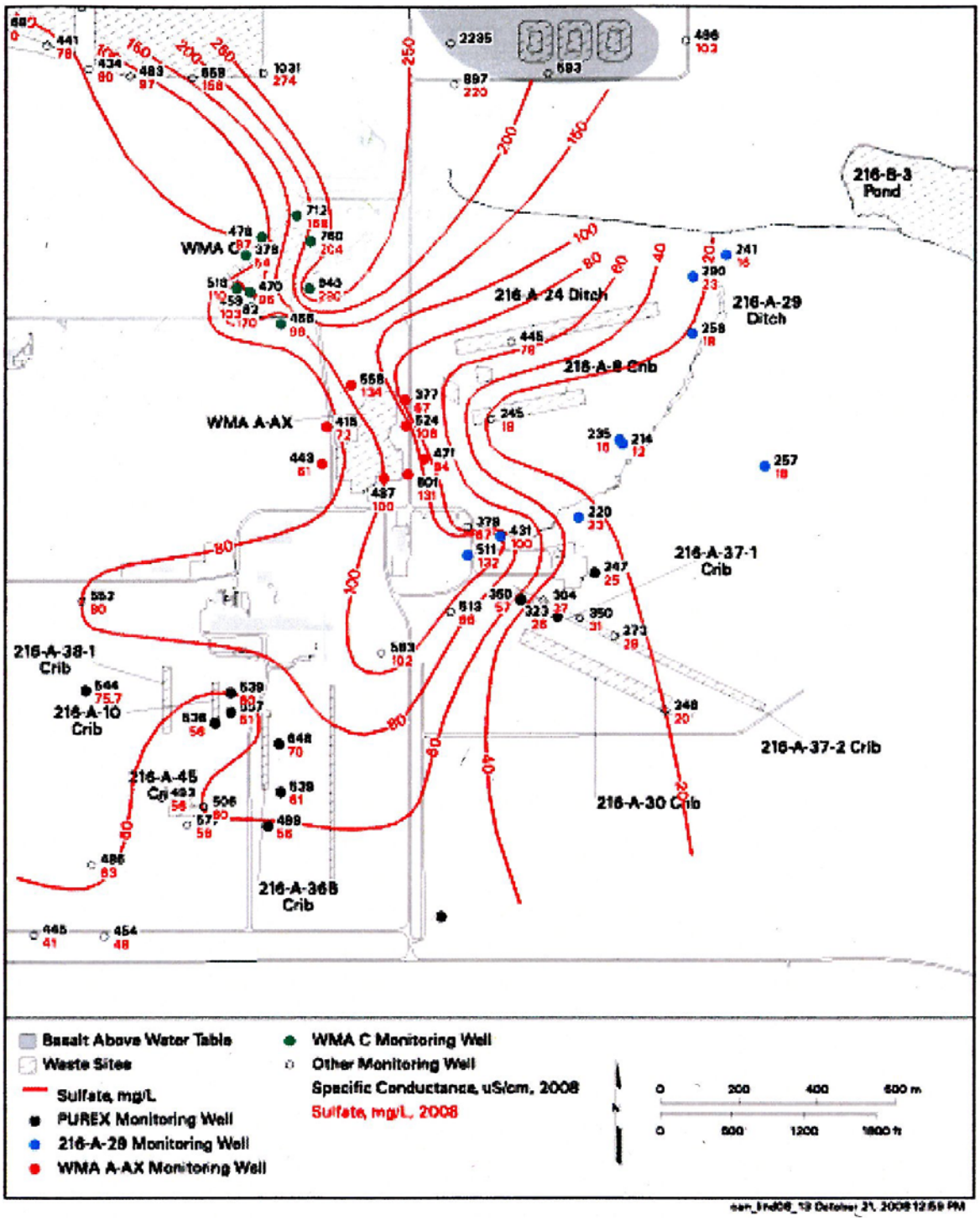

Figure 4. 2008 Regional Sulfate Plume

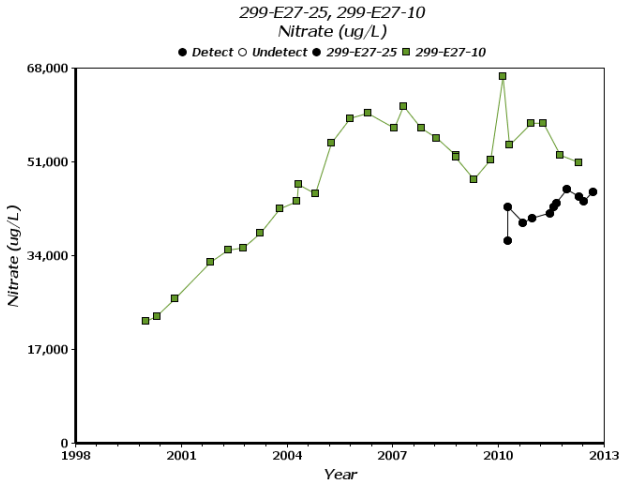

Figure 5. Nitrate Results at Wells 299-E27-10 and 299-E27-25

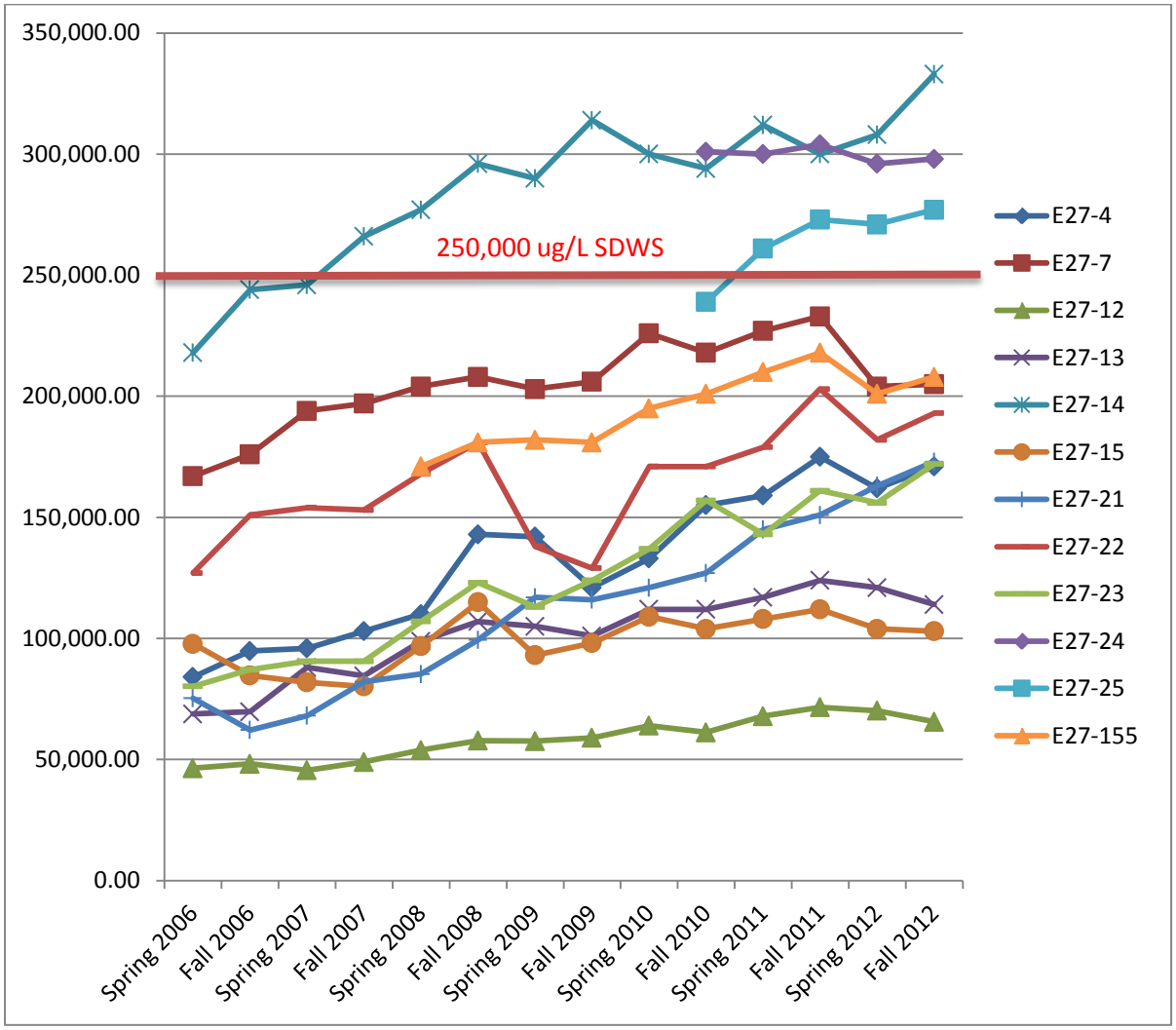

Figure 6. History of Sulfate Results at WMA C

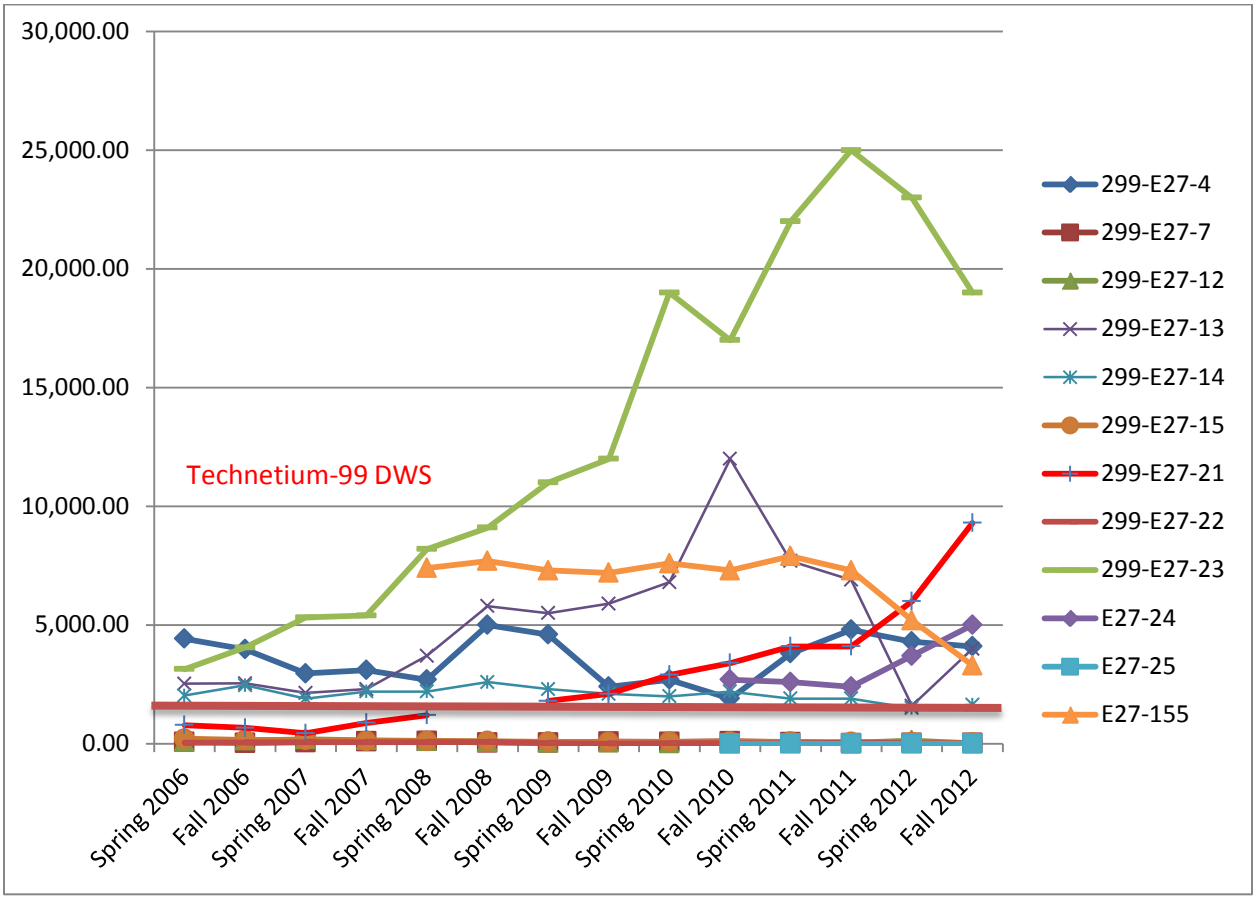

Figure 7. History of Technetium-99 Results at WMA C

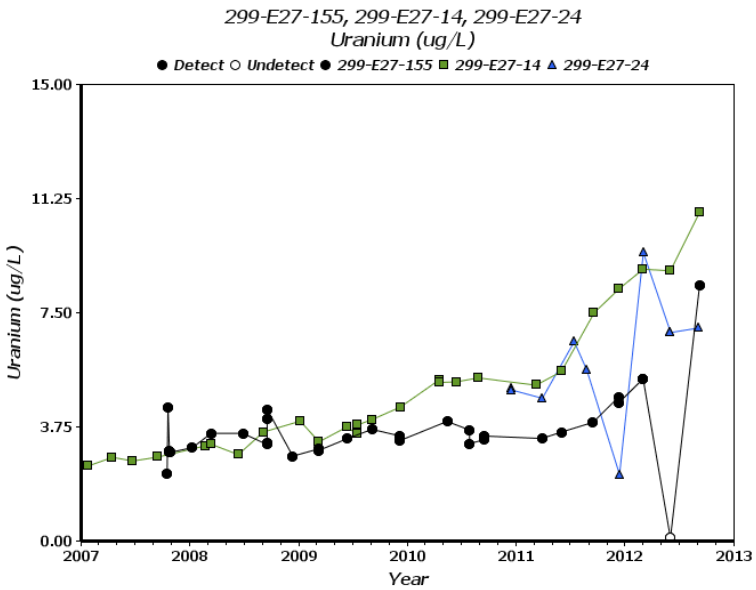

Figure 8. History of Uranium Results at Wells 299-E27-14, 299-E27-24, and 299-E27-155

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Appendix A

Monitoring Well Attributes

Table A-1. Waste Management Area C Groundwater Monitoring Well Attributes

Well Name	Construction Date	Screen Top (ft bgs)	Screen Bottom (ft bgs)	Water Level Date	Depth to Water (ft bgs)	Screened Water Column (ft)	Estimated Depth to Basalt (ft bgs)	Percentage of Screen in Aquifer
299-E27-4[TM]	2003	270.3	305.3	3/30/2009	271.1	32.6	321	68.5
299-E27-7[TM]	1982	241.0	281.0	3/30/2009	236.8	44.2	287	80
299-E27-12[T]	1989	246.5	267.6	3/24/2009	260.7	6.9	305	15.8
299-E27-13[T]	1989	253.6	274.7	3/13/2008	269.4	5.3	317	16.4
299-E27-14[T]	1989	245.8	266.8	3/24/2009	258.5	8.4	312	15.7
299-E27-15[T]	1989	238.0	259.0	3/30/2009	253.5	5.9	294	14.5
299-E27-155[B]	2007	380.4	345.4	3/09/2009	281.2	35.0	336*	61.4
299-E27-21[TM]	2003	271.4	306.4	3/30/2009	272.2	34.2	329	60.2
299-E27-22[TM]	2003	228.1	268.0	3/30/2009	231.1	36.9	268*	100
299-E27-23[TM]	2003	273.5	308.5	3/30/2009	274.4	34.1	328	63.6
299-E27-24[B]	2010	294.6	314.6	6/8/2010	265.26	20.0	315*	40.2
299-E27-25[T]	2010	209.14	229.16	4/19/2010	213.6	15.6	246*	48.2

* Actual depth based on drilling depth to basalt

Bgs = below ground surface

B = Screened across the bottom of the aquifer

T = Screened across the top of the aquifer

TM = Screened across the top and middle part of the aquifer

Appendix B

Hydraulic Head Calculations

Table B-1. LLWMA-1 Water Table Measurements and Gradient and Azimuth Determinations

Well Name	12/29/2011	1/25/2012	2/28/2012	4/18/2012	5/15/2012	6/14/2012	7/24/2012	8/16/2012	9/12/2012
299-E28-1	121.826	121.804	121.808	NM	121.801	121.792	121.789	121.795	121.887
299-E28-17	NM	121.735	121.813	121.79	121.793	121.779	121.773	121.774	121.799
299-E28-18	121.835	121.823	121.822	NM	121.803	121.794	121.793	121.805	121.827
299-E28-27	121.831	121.816	121.817	121.803	121.806	121.79	121.797	121.8	121.811
299-E32-5	121.839	121.830	121.824	121.811	121.809	121.788	121.804	121.809	NM
299-E32-6	121.839	121.610	121.822	121.802	121.803	121.79	121.802	121.851	121.828
299-E32-8	121.846	121.842	121.822	121.810	121.810	121.796	121.812	121.820	121.829
299-E33-28	121.835	121.795	121.819	121.807	121.801	121.792	121.799	121.803	121.827
299-E33-339	121.830	121.821	121.814	121.799	121.802	121.795	121.797	121.799	121.811
299-E33-34	121.838	121.824	121.821	121.806	121.804	121.793	120.795	121.809	121.822
299-E33-38	121.832	121.811	121.845	121.805	NM	121.796	121.798	121.802	121.816
699-49-55A	121.860	121.840	121.843	121.8	121.824	121.816	121.827	121.834	121.882
699-49-57A	121.857	121.842	121.825	121.812	121.817	121.810	121.825	121.833	121.857
699-50-56	121.900	121.880	121.868	121.835	121.839	121.830	121.867	121.887	121.918
Range (m)	0.082	0.270	0.06	0.045	0.046	0.051	1.072	0.113	0.119
Gradient (m/m)	2.62E-05	2.57E-05	2.04E-05	1.43E-05	1.57E-05	2.04E-05	2.96E-05	3.24E-05	4.47E-05
Dir. (azimuth)	172	144	196	172	188	200	177	151	174
R^2	0.77	0.68	0.61	0.79	0.80	0.82	0.88	0.75	0.80
p-value	0.0006	0.0056	0.0056	0.0020	0.0003	0.0001	0.0000	0.0005	0.0007
Stat. significant?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The upper part of the table shows the well, date of measurement, and the derived water levels. The lower part of the table shows the range in the measurements, the gradient, azimuth, R^2 ratio, the p value, and whether the gradient is statistically significant (95 percent confidence or more). Briefly, the R^2 ratio is the goodness of fit coefficient. Basically, it is the ratio of the sum of squares because of the regression to the total sum of squares. If the ratio of the two sums is close to 1, indicating unity, then the fit is considered good. Likewise, the p-value is the probability that the degree of an apparent spatially dependent trend observed in the data (or a trend of even greater degree) would occur solely by random chance. Thus, if the p-value is less than 0.05, the fitted trend surface is deemed statistically significant.

Appendix C

Groundwater Analytical Data for WMA C, September 2012

Terms

DF	Dilution Factor
EQL	Estimated Quantitation Limit
GC	Gas Chromatograph
GFAA	Graphite-Furnace Atomic Absorption
IDL	Instrument Detection Limit
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MS	Mass Spectrometer
MSA	Method of Standard Additions
NTU	Nephelometric Turbidity Unit
PCB	Polychlorinated Biphenyl
PQL	Practical Quantitation Limit
QC	Quality Control
RDL	Required Detection Limit
TIC	Tentatively Identified Compound

The definitions of laboratory qualifiers and review qualifiers are provided below.

NOTES:

- The “Filtered” column indicates if the samples were (Y) or were not (N) filtered when they were collected in the field.
- The “Review Qualifier” definitions include:
  - A = Chain of custody problem.
  - F = The result is undergoing further review.
- The “Lab Qualifier” column definitions are identified below:

Code Translation

* INORGANICS – Duplicate analysis not within control limits.

\+ INORGANICS – Correlation coefficient for Method of Standard Additions (MSA) is < 0.995.

\> WETCHEM – Result greater than quantifiable range or greater than upper limit of the analysis range.

A ORGANICS – Valid for Tentatively Identified Compounds (TICs) only: The TIC is a suspected aldol-condensation product.

B INORGANICS and WETCHEM – The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the Instrument Detection Limit/ Method Detection Limit (IDL/MDL) (as appropriate).

B flag (INORGANIC and WETCHEM) – [analyte] ≥ MDL

< Estimated Quantitation Limit (EQL)
= 5X or 10X the MDL

ORGANICS – The analyte was detected in both the associated Quality Control (QC) blank and in the sample.

RADIONUCLIDES – The associated QC sample blank has a result >= 2X the Minimum Detectable Activity (MDA) and, after corrections, result is >= MDA for this sample.

C INORGANICS/WETCHEM – The analyte was detected in both the sample and the associated QC blank, and the sample concentration was <= 5X the blank concentration.

ORGANICS (PESTICIDE only) – The identification of a pesticide confirmed by gas chromatograph/mass spectrometer (GC/MS).

D ALL – Analyte was reported at a secondary dilution factor (DF), typically DF>1 (i.e., the primary preparation required dilution to either bring the analyte within the calibration range or to minimize interference). Required for organics/wetchem if the sample was diluted.

E INORGANICS – Reported value is estimated because of interference.

ORGANICS – Concentration exceeds the calibration range of the GC/MS.

J ORGANICS – Estimated value; (1) constituent detected at a level less than the Required Detection Limit (RDL) or Practical Quantitation Limit (PQL) and greater than or equal to the MDL, (2) estimated concentration for TICs.

M INORGANICS – Duplicate precision criteria not met.

N ALL (except GC/MS based analysis) – Spike and/or spike duplicate sample recovery is outside control limits.

ORGANICS (GC/MS only) – Presumptive evidence of compound based on mass spectral library search.

P ORGANICS (Polychlorinated Biphenyl [PCB] only) – Aroclor target analyte with greater than 25 percent difference between column analyses.

Q ORGANICS (Dioxins and PCB-congeners only) – Estimated maximum concentration. Used if one of the qualitative identification criteria is not met (e.g., Cl isotopic ratios outside theoretical range.)

S INORGANICS – Reported value determined by the Method of Standard Additions (MSA).

T ORGANICS (GC/MS only) – Spike and/or spike duplicate sample recovery is outside control limits.

U ALL – Analyzed for but not detected above limiting criteria. Limiting criteria may be any of the following: value reported < 0; value reported < counting error; value reported < total analytical error; value_rptd <=contract MDL/IDL/MDA/PQL. Note – When another qualifier accompanies a “U” qualifier the result is always considered non-detected. The qualifier combinations :UJ” and “UL” indicate that the result was non-detected, but the detection limit (i.e., value reported in the VALUE_RPTD or MIN_DETECTABLE_ACTIVITY [rad analysis only] fields was estimated.

W INORGANICS – Post-digestion spike recovery for Graphite-furnace atomic absorption (GFAA) out of control limit. Sample absorbency < 50 percent of spike absorbency.

X ALL – The result-specific translation of this qualifier code is provided in the hardcopy data report and/or case narrative. Additional result-specific translation information may also be found in the RESULT_COMMENT field for this record.

Y Same as X if more than one flag is required.

Z Same as X and Y if more than two flags are required.

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-12	B2LKM9	9/6/2012	N	1,1,1,2-Tetrachloroethane	0.09	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,1,1-Trichloroethane	0.07	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,1,2,2-Tetrachloroethane	0.1	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,1,2-Trichloroethane	0.15	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,1-Dichloroethane	0.07	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,1-Dichloroethene	0.08	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,2,3-Trichloropropane	0.15	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,2-Dibromo-3-chloropropane	0.41	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,2-Dibromoethane	0.13	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,2-Dichloroethane	0.1	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,2-Dichloroethene (Total)	0.15	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,2-Dichloropropane	0.1	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,4-Dichlorobenzene	0.12	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1,4-Dioxane	7.6	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	1-Butanol	12	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	2-Butanone	0.52	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	2-Hexanone	0.22	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	4-Methyl-2-pentanone	0.12	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Acetone	0.75	ug/L	J	Y
299-E27-12	B2LKM9	9/6/2012	N	Acetonitrile	2	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Acrolein	2.8	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Acrylonitrile	0.58	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Alkalinity	110000	ug/L		
299-E27-12	B2LKM9	9/6/2012	N	Allyl chloride	0.11	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Antimony	36	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-12	B2LKN5	9/6/2012	Y	Antimony	36	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Barium	40.7	ug/L		
299-E27-12	B2LKN5	9/6/2012	Y	Barium	39.6	ug/L		
299-E27-12	B2LKM9	9/6/2012	N	Benzene	0.06	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Beryllium	4	ug/L	U	
299-E27-12	B2LKN5	9/6/2012	Y	Beryllium	4	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Bromo-dichloromethane	0.09	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Bromoform	0.17	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Bromomethane	0.25	ug/L	U	
299-E27-12	B2LKN5	9/6/2012	Y	Cadmium	4	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Cadmium	4	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Calcium	48700	ug/L		
299-E27-12	B2LKN5	9/6/2012	Y	Calcium	47900	ug/L		
299-E27-12	B2LKM9	9/6/2012	N	Carbon disulfide	0.05	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Carbon tetrachloride	0.13	ug/L	U	
299-E27-12	B2LKN3	9/6/2012	N	Chloride	14100	ug/L	D	
299-E27-12	B2LKM9	9/6/2012	N	Chlorobenzene	0.15	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Chloroethane	0.1	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Chloroform	0.27	ug/L	J	
299-E27-12	B2LKM9	9/6/2012	N	Chloromethane	0.08	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Chloroprene	0.1	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Chromium	5.9	ug/L	B	
299-E27-12	B2LKN5	9/6/2012	Y	Chromium	5	ug/L	U	
299-E27-12	B2LKN5	9/6/2012	Y	Cobalt	4	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Cobalt	4	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-12	B2LKN1	9/6/2012	N	Copper	4	ug/L	U	
299-E27-12	B2LKN5	9/6/2012	Y	Copper	4	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Cyanide	4	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Dibromo-chloromethane	0.13	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Dibromomethane	0.21	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Dichloro-difluoromethane	0.08	ug/L	U	
299-E27-12	B2LYP3	9/6/2012	N	Dissolved oxygen	8540	ug/L		
299-E27-12	B2LKM9	9/6/2012	N	Ethyl cyanide	1.4	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Ethyl methacrylate	0.11	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Ethylbenzene	0.09	ug/L	U	
299-E27-12	B2LKN3	9/6/2012	N	Fluoride	132	ug/L	BD	
299-E27-12	B2LN74	9/6/2012	N	Gross beta	15	pCi/L		
299-E27-12	B2LN72	9/6/2012	N	Iodine-129	7.02	pCi/L		
299-E27-12	B2LKM9	9/6/2012	N	Iodomethane	0.09	ug/L	U	
299-E27-12	B2LKN5	9/6/2012	Y	Iron	19	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Iron	24.3	ug/L	B	
299-E27-12	B2LKM9	9/6/2012	N	Isobutyl alcohol	8.7	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Magnesium	13800	ug/L		
299-E27-12	B2LKN5	9/6/2012	Y	Magnesium	13500	ug/L		
299-E27-12	B2LKN5	9/6/2012	Y	Manganese	4	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Manganese	4	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Methacrylonitrile	0.5	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Methyl methacrylate	0.26	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Methylene chloride	0.66	ug/L	J	Y
299-E27-12	B2LKN1	9/6/2012	N	Nickel	4	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-12	B2LKN5	9/6/2012	Y	Nickel	4	ug/L	U	
299-E27-12	B2LKN3	9/6/2012	N	Nitrate	10700	ug/L	D	
299-E27-12	B2LKN3	9/6/2012	N	Nitrite	125	ug/L	UD	
299-E27-12	B2LKN5	9/6/2012	Y	Potassium	7050	ug/L		
299-E27-12	B2LKN1	9/6/2012	N	Potassium	7140	ug/L		
299-E27-12	B2LKN5	9/6/2012	Y	Silver	4	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Silver	4	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Sodium	13000	ug/L		
299-E27-12	B2LKN5	9/6/2012	Y	Sodium	12700	ug/L		
299-E27-12	B2LYP3	9/6/2012	N	Specific Conductance	391	uS/cm		
299-E27-12	B2LKN1	9/6/2012	N	Strontium	227	ug/L		
299-E27-12	B2LKN5	9/6/2012	Y	Strontium	232	ug/L		
299-E27-12	B2LKM9	9/6/2012	N	Styrene	0.07	ug/L	U	
299-E27-12	B2LKN3	9/6/2012	N	Sulfate	65600	ug/L	D	
299-E27-12	B2LN74	9/6/2012	N	Technetium-99	13	pCi/L		
299-E27-12	B2LYP3	9/6/2012	N	Temperature	18.6	Deg C		
299-E27-12	B2LKM9	9/6/2012	N	Tetrachloroethene	0.18	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Tetrahydrofuran	1.1	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Toluene	0.17	ug/L	J	Y
299-E27-12	B2LKM9	9/6/2012	N	Trichloroethene	0.25	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Trichloromono-fluoromethane	0.11	ug/L	U	
299-E27-12	B2LN74	9/6/2012	N	Tritium	970	pCi/L		
299-E27-12	B2LYP3	9/6/2012	N	Turbidity	0.32	NTU		
299-E27-12	B2LN74	9/6/2012	N	Uranium	3.32	ug/L	D	
299-E27-12	B2LKN5	9/6/2012	Y	Vanadium	15.7	ug/L	B	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-12	B2LKN1	9/6/2012	N	Vanadium	20.5	ug/L	B	
299-E27-12	B2LKM9	9/6/2012	N	Vinyl acetate	0.18	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Vinyl chloride	0.08	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	Xylenes (total)	0.2	ug/L	U	
299-E27-12	B2LKN5	9/6/2012	Y	Zinc	5	ug/L	U	
299-E27-12	B2LKN1	9/6/2012	N	Zinc	5	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	cis-1,2-Dichloroethylene	0.09	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	cis-1,3-Dichloropropene	0.07	ug/L	U	
299-E27-12	B2LYP3	9/6/2012	N	pH Measurement	8.1	unitless		
299-E27-12	B2LKM9	9/6/2012	N	trans-1,2-Dichloroethylene	0.08	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	trans-1,3-Dichloropropene	0.08	ug/L	U	
299-E27-12	B2LKM9	9/6/2012	N	trans-1,4-Dichloro-2-butene	0.29	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Alkalinity	93000	ug/L		
299-E27-13	B2LKN9	9/19/2012	Y	Antimony	36	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Antimony	36	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Barium	44	ug/L		
299-E27-13	B2LKN9	9/19/2012	Y	Barium	45.3	ug/L		
299-E27-13	B2LKN9	9/19/2012	Y	Beryllium	4	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Beryllium	4	ug/L	U	
299-E27-13	B2LKN9	9/19/2012	Y	Cadmium	4	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Cadmium	4	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Calcium	60200	ug/L		
299-E27-13	B2LKN9	9/19/2012	Y	Calcium	61700	ug/L		
299-E27-13	B2LKN8	9/19/2012	N	Chloride	21100	ug/L	D	
299-E27-13	B2LKN7	9/19/2012	N	Chromium	11.1	ug/L	B	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-13	B2LKN9	9/19/2012	Y	Chromium	5	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Cobalt	4	ug/L	U	
299-E27-13	B2LKN9	9/19/2012	Y	Cobalt	4	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Copper	4	ug/L	U	
299-E27-13	B2LKN9	9/19/2012	Y	Copper	4	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Cyanide	4	ug/L	U	
299-E27-13	B2LYP7	9/19/2012	N	Dissolved oxygen	9530	ug/L		
299-E27-13	B2LKN8	9/19/2012	N	Fluoride	119	ug/L	BD	
299-E27-13	B2LN77	9/19/2012	N	Gross beta	2800	pCi/L		
299-E27-13	B2LN76	9/19/2012	N	Iodine-129	6.31	pCi/L		
299-E27-13	B2LKN7	9/19/2012	N	Iron	41.6	ug/L	B	
299-E27-13	B2LKN9	9/19/2012	Y	Iron	19	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Magnesium	17400	ug/L		
299-E27-13	B2LKN9	9/19/2012	Y	Magnesium	17700	ug/L		
299-E27-13	B2LKN9	9/19/2012	Y	Manganese	4	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Manganese	4	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Nickel	4.1	ug/L	B	
299-E27-13	B2LKN9	9/19/2012	Y	Nickel	4	ug/L	U	
299-E27-13	B2LKN8	9/19/2012	N	Nitrate	22300	ug/L	D	
299-E27-13	B2LKN8	9/19/2012	N	Nitrite	153	ug/L	BD	
299-E27-13	B2LKN7	9/19/2012	N	Potassium	7690	ug/L		
299-E27-13	B2LKN9	9/19/2012	Y	Potassium	7820	ug/L		
299-E27-13	B2LKN7	9/19/2012	N	Silver	4	ug/L	U	
299-E27-13	B2LKN9	9/19/2012	Y	Silver	4	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Sodium	13200	ug/L		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-13	B2LKN9	9/19/2012	Y	Sodium	13400	ug/L		
299-E27-13	B2LYP7	9/19/2012	N	Specific Conductance	534	uS/cm		
299-E27-13	B2LKN7	9/19/2012	N	Strontium	303	ug/L		
299-E27-13	B2LKN9	9/19/2012	Y	Strontium	314	ug/L		
299-E27-13	B2LKN8	9/19/2012	N	Sulfate	114000	ug/L	D	
299-E27-13	B2LN77	9/19/2012	N	Technetium-99	4000	pCi/L		
299-E27-13	B2LYP7	9/19/2012	N	Temperature	18.7	Deg C		
299-E27-13	B2LN77	9/19/2012	N	Tritium	880	pCi/L		
299-E27-13	B2LYP7	9/19/2012	N	Turbidity	1.59	NTU		
299-E27-13	B2LN77	9/19/2012	N	Uranium	3.59	ug/L	D	
299-E27-13	B2LKN9	9/19/2012	Y	Vanadium	18.4	ug/L	B	
299-E27-13	B2LKN7	9/19/2012	N	Vanadium	17.9	ug/L	B	
299-E27-13	B2LKN9	9/19/2012	Y	Zinc	5	ug/L	U	
299-E27-13	B2LKN7	9/19/2012	N	Zinc	5	ug/L	U	
299-E27-13	B2LYP7	9/19/2012	N	pH Measurement	8.26	unitless		
299-E27-14	B2LKP4	9/7/2012	N	Alkalinity	75000	ug/L		
299-E27-14	B2LKP8	9/7/2012	Y	Antimony	36	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Antimony	36	ug/L	U	
299-E27-14	B2LN80	9/7/2012	N	Antimony-125	0.531	pCi/L	U	
299-E27-14	B2LKP8	9/7/2012	Y	Barium	94.2	ug/L		
299-E27-14	B2LKP4	9/7/2012	N	Barium	97.5	ug/L		
299-E27-14	B2LKP8	9/7/2012	Y	Beryllium	4	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Beryllium	4	ug/L	U	
299-E27-14	B2LN80	9/7/2012	N	Beryllium-7	3.44	pCi/L	U	
299-E27-14	B2LKP8	9/7/2012	Y	Cadmium	4	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-14	B2LKP4	9/7/2012	N	Cadmium	4	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Calcium	141000	ug/L		
299-E27-14	B2LKP8	9/7/2012	Y	Calcium	138000	ug/L		
299-E27-14	B2LN80	9/7/2012	N	Cesium-134	0.801	pCi/L	U	
299-E27-14	B2LN80	9/7/2012	N	Cesium-137	0.55	pCi/L	U	
299-E27-14	B2LKP6	9/7/2012	N	Chloride	50700	ug/L	D	
299-E27-14	B2LKP4	9/7/2012	N	Chromium	9.4	ug/L	B	
299-E27-14	B2LKP8	9/7/2012	Y	Chromium	5	ug/L	U	
299-E27-14	B2LKP8	9/7/2012	Y	Cobalt	4	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Cobalt	4	ug/L	U	
299-E27-14	B2LN80	9/7/2012	N	Cobalt-60	1.01	pCi/L	U	
299-E27-14	B2LKP8	9/7/2012	Y	Copper	4	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Copper	4	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Cyanide	8.48	ug/L	B	
299-E27-14	B2LYR1	9/7/2012	N	Dissolved oxygen	8740	ug/L		
299-E27-14	B2LN80	9/7/2012	N	Europium-152	0.868	pCi/L	U	
299-E27-14	B2LN80	9/7/2012	N	Europium-154	0.34	pCi/L	U	
299-E27-14	B2LN80	9/7/2012	N	Europium-155	-0.425	pCi/L	U	
299-E27-14	B2LKP6	9/7/2012	N	Fluoride	126	ug/L	BD	
299-E27-14	B2LN82	9/7/2012	N	Gross beta	1000	pCi/L		
299-E27-14	B2LN80	9/7/2012	N	Iodine-129	5.25	pCi/L		
299-E27-14	B2LKP4	9/7/2012	N	Iron	39.1	ug/L	B	
299-E27-14	B2LKP8	9/7/2012	Y	Iron	27.4	ug/L	B	
299-E27-14	B2LKP8	9/7/2012	Y	Magnesium	41200	ug/L		
299-E27-14	B2LKP4	9/7/2012	N	Magnesium	42700	ug/L		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-14	B2LKP4	9/7/2012	N	Manganese	4	ug/L	U	
299-E27-14	B2LKP8	9/7/2012	Y	Manganese	4	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Nickel	8.8	ug/L	B	
299-E27-14	B2LKP8	9/7/2012	Y	Nickel	6.5	ug/L	B	
299-E27-14	B2LKP6	9/7/2012	N	Nitrate	118000	ug/L	D	
299-E27-14	B2LKP6	9/7/2012	N	Nitrite	125	ug/L	UD	
299-E27-14	B2LKP8	9/7/2012	Y	Potassium	10600	ug/L		
299-E27-14	B2LKP4	9/7/2012	N	Potassium	10900	ug/L		
299-E27-14	B2LN80	9/7/2012	N	Potassium-40	15.1	pCi/L	U	
299-E27-14	B2LN80	9/7/2012	N	Ruthenium-106	-2.72	pCi/L	U	
299-E27-14	B2LKP8	9/7/2012	Y	Silver	4	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Silver	4	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Sodium	25600	ug/L		
299-E27-14	B2LKP8	9/7/2012	Y	Sodium	24600	ug/L		
299-E27-14	B2LYR1	9/7/2012	N	Specific Conductance	1157	uS/cm		
299-E27-14	B2LKP4	9/7/2012	N	Strontium	670	ug/L		
299-E27-14	B2LKP8	9/7/2012	Y	Strontium	647	ug/L		
299-E27-14	B2LKP6	9/7/2012	N	Sulfate	333000	ug/L	D	
299-E27-14	B2LKP4	9/7/2012	N	Technetium-99	1600	pCi/L		
299-E27-14	B2LN80	9/7/2012	N	Technetium-99	1640	pCi/L		
299-E27-14	B2LYR1	9/7/2012	N	Temperature	19.1	Deg C		
299-E27-14	B2LN82	9/7/2012	N	Tritium	930	pCi/L		
299-E27-14	B2LYR1	9/7/2012	N	Turbidity	1.31	NTU		
299-E27-14	B2LN82	9/7/2012	N	Uranium	10.8	ug/L	D	
299-E27-14	B2LKP4	9/7/2012	N	Vanadium	17.4	ug/L	B	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-14	B2LKP8	9/7/2012	Y	Vanadium	16.8	ug/L	B	
299-E27-14	B2LKP8	9/7/2012	Y	Zinc	5	ug/L	U	
299-E27-14	B2LKP4	9/7/2012	N	Zinc	5	ug/L	U	
299-E27-14	B2LYR1	9/7/2012	N	pH Measurement	7.87	unitless		
299-E27-15	B2LKR1	9/6/2012	N	Alkalinity	100000	ug/L		
299-E27-15	B2LKR1	9/6/2012	N	Antimony	36	ug/L	U	
299-E27-15	B2LKR3	9/6/2012	Y	Antimony	36	ug/L	U	
299-E27-15	B2LN84	9/6/2012	N	Antimony-125	1.34	pCi/L	U	
299-E27-15	B2LKR1	9/6/2012	N	Barium	46.8	ug/L		
299-E27-15	B2LKR3	9/6/2012	Y	Barium	45.1	ug/L		
299-E27-15	B2LKR3	9/6/2012	Y	Beryllium	4	ug/L	U	
299-E27-15	B2LKR1	9/6/2012	N	Beryllium	4	ug/L	U	
299-E27-15	B2LN84	9/6/2012	N	Beryllium-7	-15.2	pCi/L	U	
299-E27-15	B2LKR3	9/6/2012	Y	Cadmium	4	ug/L	U	
299-E27-15	B2LKR1	9/6/2012	N	Cadmium	4	ug/L	U	
299-E27-15	B2LKR1	9/6/2012	N	Calcium	56700	ug/L		
299-E27-15	B2LKR3	9/6/2012	Y	Calcium	56200	ug/L		
299-E27-15	B2LN84	9/6/2012	N	Cesium-134	-0.68	pCi/L	U	
299-E27-15	B2LN84	9/6/2012	N	Cesium-137	-0.146	pCi/L	U	
299-E27-15	B2LKR2	9/6/2012	N	Chloride	19300	ug/L	D	
299-E27-15	B2LKR1	9/6/2012	N	Chromium	15.6	ug/L	B	
299-E27-15	B2LKR3	9/6/2012	Y	Chromium	5	ug/L	U	
299-E27-15	B2LKR3	9/6/2012	Y	Cobalt	4	ug/L	U	
299-E27-15	B2LKR1	9/6/2012	N	Cobalt	4	ug/L	U	
299-E27-15	B2LN84	9/6/2012	N	Cobalt-60	-0.587	pCi/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-15	B2LKR3	9/6/2012	Y	Copper	4	ug/L	U	
299-E27-15	B2LKR1	9/6/2012	N	Copper	4	ug/L	U	
299-E27-15	B2LKR1	9/6/2012	N	Cyanide	4	ug/L	U	
299-E27-15	B2LYR5	9/6/2012	N	Dissolved oxygen	8330	ug/L		
299-E27-15	B2LN84	9/6/2012	N	Europium-152	-0.52	pCi/L	U	
299-E27-15	B2LN84	9/6/2012	N	Europium-154	-5.32	pCi/L	U	
299-E27-15	B2LN84	9/6/2012	N	Europium-155	-0.296	pCi/L	U	
299-E27-15	B2LKR2	9/6/2012	N	Fluoride	124	ug/L	BD	
299-E27-15	B2LN85	9/6/2012	N	Gross beta	40	pCi/L		
299-E27-15	B2LN84	9/6/2012	N	Iodine-129	6.37	pCi/L		
299-E27-15	B2LKR3	9/6/2012	Y	Iron	23.3	ug/L	B	
299-E27-15	B2LKR1	9/6/2012	N	Iron	76.3	ug/L	B	
299-E27-15	B2LKR1	9/6/2012	N	Magnesium	17700	ug/L		
299-E27-15	B2LKR3	9/6/2012	Y	Magnesium	17400	ug/L		
299-E27-15	B2LKR1	9/6/2012	N	Manganese	4	ug/L	B	
299-E27-15	B2LKR3	9/6/2012	Y	Manganese	4	ug/L	U	
299-E27-15	B2LKR3	9/6/2012	Y	Nickel	9	ug/L	B	
299-E27-15	B2LKR1	9/6/2012	N	Nickel	25.6	ug/L		
299-E27-15	B2LKR2	9/6/2012	N	Nitrate	18600	ug/L	D	
299-E27-15	B2LKR2	9/6/2012	N	Nitrite	182	ug/L	BD	
299-E27-15	B2LKR3	9/6/2012	Y	Potassium	7720	ug/L		
299-E27-15	B2LKR1	9/6/2012	N	Potassium	7850	ug/L		
299-E27-15	B2LN84	9/6/2012	N	Potassium-40	-38.6	pCi/L	U	
299-E27-15	B2LN84	9/6/2012	N	Ruthenium-106	-1.69	pCi/L	U	
299-E27-15	B2LKR3	9/6/2012	Y	Silver	4	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-15	B2LKR1	9/6/2012	N	Silver	4	ug/L	U	
299-E27-15	B2LKR3	9/6/2012	Y	Sodium	14600	ug/L		
299-E27-15	B2LKR1	9/6/2012	N	Sodium	15200	ug/L		
299-E27-15	B2LYR5	9/6/2012	N	Specific Conductance	463	uS/cm		
299-E27-15	B2LKR3	9/6/2012	Y	Strontium	298	ug/L		
299-E27-15	B2LKR1	9/6/2012	N	Strontium	304	ug/L		
299-E27-15	B2LKR2	9/6/2012	N	Sulfate	103000	ug/L	D	
299-E27-15	B2LKR1	9/6/2012	N	Technetium-99	39	pCi/L		
299-E27-15	B2LN84	9/6/2012	N	Technetium-99	41.1	pCi/L		
299-E27-15	B2LYR5	9/6/2012	N	Temperature	18.9	Deg C		
299-E27-15	B2LN85	9/6/2012	N	Tritium	960	pCi/L		
299-E27-15	B2LYR5	9/6/2012	N	Turbidity	1.03	NTU		
299-E27-15	B2LN85	9/6/2012	N	Uranium	3.93	ug/L	D	
299-E27-15	B2LKR1	9/6/2012	N	Vanadium	16.6	ug/L	B	
299-E27-15	B2LKR3	9/6/2012	Y	Vanadium	16	ug/L	B	
299-E27-15	B2LKR3	9/6/2012	Y	Zinc	5	ug/L	U	
299-E27-15	B2LKR1	9/6/2012	N	Zinc	5	ug/L	U	
299-E27-15	B2LYR5	9/6/2012	N	pH Measurement	8.26	unitless		
299-E27-155	B2LKR6	9/7/2012	N	Alkalinity	110000	ug/L		
299-E27-155	B2LKR6	9/7/2012	N	Antimony	36	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Antimony	36	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Barium	62.9	ug/L		
299-E27-155	B2LKR6	9/7/2012	N	Barium	62	ug/L		
299-E27-155	B2LKR6	9/7/2012	N	Beryllium	4	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Beryllium	4	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-155	B2LKT0	9/7/2012	Y	Cadmium	4	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Cadmium	4	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Calcium	91100	ug/L		
299-E27-155	B2LKT0	9/7/2012	Y	Calcium	92200	ug/L		
299-E27-155	B2LKR8	9/7/2012	N	Chloride	30100	ug/L	D	
299-E27-155	B2LKR6	9/7/2012	N	Chromium	5	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Chromium	6.1	ug/L	B	
299-E27-155	B2LKT0	9/7/2012	Y	Cobalt	4	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Cobalt	4	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Copper	4	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Copper	4	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Cyanide	4	ug/L	U	
299-E27-155	B2LKR8	9/7/2012	N	Fluoride	93.9	ug/L	BD	
299-E27-155	B2LN90	9/7/2012	N	Gross beta	2100	pCi/L		
299-E27-155	B2LN88	9/7/2012	N	Iodine-129	5.09	pCi/L		
299-E27-155	B2LKT0	9/7/2012	Y	Iron	19	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Iron	19	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Magnesium	27400	ug/L		
299-E27-155	B2LKT0	9/7/2012	Y	Magnesium	27800	ug/L		
299-E27-155	B2LKT0	9/7/2012	Y	Manganese	4	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Manganese	4	ug/L	U	
299-E27-155	B2LKR6	9/7/2012	N	Nickel	4	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Nickel	4	ug/L	U	
299-E27-155	B2LKR8	9/7/2012	N	Nitrate	50500	ug/L	D	
299-E27-155	B2LKR8	9/7/2012	N	Nitrite	192	ug/L	BD	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-155	B2LKT0	9/7/2012	Y	Potassium	10000	ug/L		
299-E27-155	B2LKR6	9/7/2012	N	Potassium	9920	ug/L		
299-E27-155	B2LKR6	9/7/2012	N	Silver	4	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Silver	4	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Sodium	22600	ug/L		
299-E27-155	B2LKR6	9/7/2012	N	Sodium	22200	ug/L		
299-E27-155	B2LYR9	9/7/2012	N	Specific Conductance	793	uS/cm		
299-E27-155	B2LKT0	9/7/2012	Y	Strontium	468	ug/L		
299-E27-155	B2LKR6	9/7/2012	N	Strontium	460	ug/L		
299-E27-155	B2LKR8	9/7/2012	N	Sulfate	208000	ug/L	D	
299-E27-155	B2LN90	9/7/2012	N	Technetium-99	3300	pCi/L		
299-E27-155	B2LYR9	9/7/2012	N	Temperature	21.3	Deg C		
299-E27-155	B2LN90	9/7/2012	N	Tritium	1800	pCi/L		
299-E27-155	B2LYR9	9/7/2012	N	Turbidity	0.22	NTU		
299-E27-155	B2LN90	9/7/2012	N	Uranium	8.41	ug/L	D	
299-E27-155	B2LKT0	9/7/2012	Y	Vanadium	13.9	ug/L	B	
299-E27-155	B2LKR6	9/7/2012	N	Vanadium	12.5	ug/L	B	
299-E27-155	B2LKR6	9/7/2012	N	Zinc	5	ug/L	U	
299-E27-155	B2LKT0	9/7/2012	Y	Zinc	5	ug/L	U	
299-E27-155	B2LYR9	9/7/2012	N	pH Measurement	7.95	unitless		
299-E27-21	B2LKT2	9/5/2012	N	Alkalinity	81000	ug/L		
299-E27-21	B2LKT4	9/5/2012	Y	Antimony	36	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Antimony	36	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Barium	53.9	ug/L		
299-E27-21	B2LKT4	9/5/2012	Y	Barium	55.1	ug/L		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-21	B2LKT2	9/5/2012	N	Beryllium	4	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Beryllium	4	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Cadmium	4	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Cadmium	4	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Calcium	85300	ug/L		
299-E27-21	B2LKT2	9/5/2012	N	Calcium	84400	ug/L		
299-E27-21	B2LKT3	9/5/2012	N	Chloride	21900	ug/L	D	
299-E27-21	B2LKT4	9/5/2012	Y	Chromium	6.1	ug/L	B	
299-E27-21	B2LKT2	9/5/2012	N	Chromium	5	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Cobalt	4	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Cobalt	4	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Copper	4.3	ug/L	B	
299-E27-21	B2LKT2	9/5/2012	N	Copper	4	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Cyanide	4	ug/L	U	
299-E27-21	B2LYT5	9/5/2012	N	Dissolved oxygen	8980	ug/L		
299-E27-21	B2LYT4	9/5/2012	N	Dissolved oxygen	9000	ug/L		
299-E27-21	B2LYT3	9/5/2012	N	Dissolved oxygen	8980	ug/L		
299-E27-21	B2LYT6	9/5/2012	N	Dissolved oxygen	9010	ug/L		
299-E27-21	B2LKT3	9/5/2012	N	Fluoride	56.3	ug/L	BD	
299-E27-21	B2LN93	9/5/2012	N	Gross beta	6100	pCi/L		
299-E27-21	B2LN92	9/5/2012	N	Iodine-129	4.61	pCi/L		
299-E27-21	B2LKT4	9/5/2012	Y	Iron	19	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Iron	19	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Magnesium	23800	ug/L		
299-E27-21	B2LKT4	9/5/2012	Y	Magnesium	24300	ug/L		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-21	B2LKT4	9/5/2012	Y	Manganese	4	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Manganese	4	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Nickel	4	ug/L	U	
299-E27-21	B2LKT2	9/5/2012	N	Nickel	4	ug/L	U	
299-E27-21	B2LKT3	9/5/2012	N	Nitrate	46500	ug/L	D	
299-E27-21	B2LKT3	9/5/2012	N	Nitrite	156	ug/L	BD	
299-E27-21	B2LKT4	9/5/2012	Y	Potassium	9080	ug/L		
299-E27-21	B2LKT2	9/5/2012	N	Potassium	8970	ug/L		
299-E27-21	B2LKT2	9/5/2012	N	Silver	4	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Silver	4	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Sodium	17700	ug/L		
299-E27-21	B2LKT2	9/5/2012	N	Sodium	17100	ug/L		
299-E27-21	B2LYT3	9/5/2012	N	Specific Conductance	668	uS/cm		
299-E27-21	B2LYT4	9/5/2012	N	Specific Conductance	673	uS/cm		
299-E27-21	B2LYT6	9/5/2012	N	Specific Conductance	668	uS/cm		
299-E27-21	B2LYT5	9/5/2012	N	Specific Conductance	667	uS/cm		
299-E27-21	B2LKT2	9/5/2012	N	Strontium	404	ug/L		
299-E27-21	B2LKT4	9/5/2012	Y	Strontium	412	ug/L		
299-E27-21	B2LKT3	9/5/2012	N	Sulfate	173000	ug/L	D	
299-E27-21	B2LN93	9/5/2012	N	Technetium-99	9300	pCi/L		
299-E27-21	B2LYT5	9/5/2012	N	Temperature	19.4	Deg C		
299-E27-21	B2LYT4	9/5/2012	N	Temperature	19.4	Deg C		
299-E27-21	B2LYT6	9/5/2012	N	Temperature	19.4	Deg C		
299-E27-21	B2LYT3	9/5/2012	N	Temperature	19.4	Deg C		
299-E27-21	B2LN93	9/5/2012	N	Tritium	950	pCi/L		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-21	B2LYT4	9/5/2012	N	Turbidity	0.85	NTU		
299-E27-21	B2LYT3	9/5/2012	N	Turbidity	0.87	NTU		
299-E27-21	B2LYT5	9/5/2012	N	Turbidity	0.43	NTU		
299-E27-21	B2LYT6	9/5/2012	N	Turbidity	0.55	NTU		
299-E27-21	B2LN93	9/5/2012	N	Uranium	2.87	ug/L	D	
299-E27-21	B2LKT4	9/5/2012	Y	Vanadium	19.8	ug/L	B	
299-E27-21	B2LKT2	9/5/2012	N	Vanadium	18.2	ug/L	B	
299-E27-21	B2LKT2	9/5/2012	N	Zinc	5	ug/L	U	
299-E27-21	B2LKT4	9/5/2012	Y	Zinc	5	ug/L	U	
299-E27-21	B2LYT3	9/5/2012	N	pH Measurement	7.9	unitless		
299-E27-21	B2LYT6	9/5/2012	N	pH Measurement	7.9	unitless		
299-E27-21	B2LYT5	9/5/2012	N	pH Measurement	7.9	unitless		
299-E27-21	B2LYT4	9/5/2012	N	pH Measurement	7.9	unitless		
299-E27-22	B2LKT7	9/6/2012	N	Alkalinity	93000	ug/L		
299-E27-22	B2LKT9	9/6/2012	Y	Antimony	36	ug/L	U	
299-E27-22	B2LKT7	9/6/2012	N	Antimony	36	ug/L	U	
299-E27-22	B2LN95	9/6/2012	N	Antimony-125	-2.6	pCi/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Barium	60	ug/L		
299-E27-22	B2LKT7	9/6/2012	N	Barium	58.9	ug/L		
299-E27-22	B2LKT7	9/6/2012	N	Beryllium	4	ug/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Beryllium	4	ug/L	U	
299-E27-22	B2LN95	9/6/2012	N	Beryllium-7	-1.94	pCi/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Cadmium	4	ug/L	U	
299-E27-22	B2LKT7	9/6/2012	N	Cadmium	4	ug/L	U	
299-E27-22	B2LKT7	9/6/2012	N	Calcium	91800	ug/L		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-22	B2LKT9	9/6/2012	Y	Calcium	94600	ug/L		
299-E27-22	B2LN95	9/6/2012	N	Cesium-134	1.3	pCi/L	U	
299-E27-22	B2LN95	9/6/2012	N	Cesium-137	0.4	pCi/L	U	
299-E27-22	B2LKT8	9/6/2012	N	Chloride	40000	ug/L	D	
299-E27-22	B2LKT9	9/6/2012	Y	Chromium	5	ug/L	U	
299-E27-22	B2LKT7	9/6/2012	N	Chromium	7.9	ug/L	B	
299-E27-22	B2LKT7	9/6/2012	N	Cobalt	4	ug/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Cobalt	4	ug/L	U	
299-E27-22	B2LN95	9/6/2012	N	Cobalt-60	0.381	pCi/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Copper	4	ug/L	U	
299-E27-22	B2LKT7	9/6/2012	N	Copper	4	ug/L	U	
299-E27-22	B2LKT7	9/6/2012	N	Cyanide	4	ug/L	U	
299-E27-22	B2LYT7	9/6/2012	N	Dissolved oxygen	9040	ug/L		
299-E27-22	B2LN95	9/6/2012	N	Europium-152	1.74	pCi/L	U	
299-E27-22	B2LN95	9/6/2012	N	Europium-154	-2.4	pCi/L	U	
299-E27-22	B2LN95	9/6/2012	N	Europium-155	0.243	pCi/L	U	
299-E27-22	B2LKT8	9/6/2012	N	Fluoride	120	ug/L	BD	
299-E27-22	B2LN96	9/6/2012	N	Gross beta	24	pCi/L		
299-E27-22	B2LN95	9/6/2012	N	Iodine-129	7.09	pCi/L		
299-E27-22	B2LKT7	9/6/2012	N	Iron	44.9	ug/L	B	
299-E27-22	B2LKT9	9/6/2012	Y	Iron	28.3	ug/L	B	
299-E27-22	B2LKT7	9/6/2012	N	Magnesium	25500	ug/L		
299-E27-22	B2LKT9	9/6/2012	Y	Magnesium	26200	ug/L		
299-E27-22	B2LKT7	9/6/2012	N	Manganese	4	ug/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Manganese	4	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-22	B2LKT7	9/6/2012	N	Nickel	4.4	ug/L	B	
299-E27-22	B2LKT9	9/6/2012	Y	Nickel	5.8	ug/L	B	
299-E27-22	B2LKT8	9/6/2012	N	Nitrate	35900	ug/L	D	
299-E27-22	B2LKT8	9/6/2012	N	Nitrite	125	ug/L	BD	
299-E27-22	B2LKT9	9/6/2012	Y	Potassium	9540	ug/L		
299-E27-22	B2LKT7	9/6/2012	N	Potassium	9380	ug/L		
299-E27-22	B2LN95	9/6/2012	N	Potassium-40	-19.2	pCi/L	U	
299-E27-22	B2LN95	9/6/2012	N	Ruthenium-106	-0.983	pCi/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Silver	4	ug/L	U	
299-E27-22	B2LKT7	9/6/2012	N	Silver	4	ug/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Sodium	18100	ug/L		
299-E27-22	B2LKT7	9/6/2012	N	Sodium	17600	ug/L		
299-E27-22	B2LYT7	9/6/2012	N	Specific Conductance	701	uS/cm		
299-E27-22	B2LKT7	9/6/2012	N	Strontium	448	ug/L		
299-E27-22	B2LKT9	9/6/2012	Y	Strontium	463	ug/L		
299-E27-22	B2LKT8	9/6/2012	N	Sulfate	193000	ug/L	D	
299-E27-22	B2LN96	9/6/2012	N	Technetium-99	14	pCi/L		
299-E27-22	B2LYT7	9/6/2012	N	Temperature	19	Deg C		
299-E27-22	B2LN96	9/6/2012	N	Tritium	370	pCi/L		
299-E27-22	B2LYT7	9/6/2012	N	Turbidity	0.6	NTU		
299-E27-22	B2LN96	9/6/2012	N	Uranium	3.9	ug/L	D	
299-E27-22	B2LKT7	9/6/2012	N	Vanadium	15.5	ug/L	B	
299-E27-22	B2LKT9	9/6/2012	Y	Vanadium	11.2	ug/L	B	
299-E27-22	B2LKT7	9/6/2012	N	Zinc	5	ug/L	U	
299-E27-22	B2LKT9	9/6/2012	Y	Zinc	5	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-22	B2LYT7	9/6/2012	N	pH Measurement	7.94	unitless		
299-E27-23	B2LKV1	9/28/2012	N	Alkalinity	87000	ug/L		
299-E27-23	B2LKV2	9/28/2012	N	Alkalinity	87000	ug/L		
299-E27-23	B2LKV6	9/28/2012	Y	Antimony	36	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Antimony	36	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Antimony	36	ug/L	U	
299-E27-23	B2LKV2	9/28/2012	N	Antimony	36	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Barium	55.9	ug/L		
299-E27-23	B2LKV1	9/28/2012	N	Barium	56.8	ug/L		
299-E27-23	B2LKV2	9/28/2012	N	Barium	56.1	ug/L		
299-E27-23	B2LKV6	9/28/2012	Y	Barium	54.5	ug/L		
299-E27-23	B2LKV2	9/28/2012	N	Beryllium	4	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Beryllium	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Beryllium	4	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Beryllium	4	ug/L	U	
299-E27-23	B2LKV2	9/28/2012	N	Cadmium	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Cadmium	4	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Cadmium	4	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Cadmium	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Calcium	82200	ug/L		
299-E27-23	B2LKV6	9/28/2012	Y	Calcium	78700	ug/L		
299-E27-23	B2LKV5	9/28/2012	Y	Calcium	81200	ug/L		
299-E27-23	B2LKV2	9/28/2012	N	Calcium	80100	ug/L		
299-E27-23	B2LKV3	9/28/2012	N	Chloride	25500	ug/L	D	
299-E27-23	B2LKV4	9/28/2012	N	Chloride	25600	ug/L	D	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-23	B2LKV1	9/28/2012	N	Chromium	6.8	ug/L	B	
299-E27-23	B2LKV6	9/28/2012	Y	Chromium	7.3	ug/L	B	
299-E27-23	B2LKV2	9/28/2012	N	Chromium	7.9	ug/L	B	
299-E27-23	B2LKV5	9/28/2012	Y	Chromium	7.9	ug/L	B	
299-E27-23	B2LKV2	9/28/2012	N	Cobalt	4	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Cobalt	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Cobalt	4	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Cobalt	4	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Copper	4	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Copper	4	ug/L	U	
299-E27-23	B2LKV2	9/28/2012	N	Copper	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Copper	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Cyanide	4	ug/L	U	
299-E27-23	B2LKV2	9/28/2012	N	Cyanide	4	ug/L	U	
299-E27-23	B2LN97	9/28/2012	N	Dissolved oxygen	9090	ug/L		
299-E27-23	B2LKV4	9/28/2012	N	Fluoride	90.4	ug/L	BD	
299-E27-23	B2LKV3	9/28/2012	N	Fluoride	110	ug/L	BD	
299-E27-23	B2LNB1	9/28/2012	N	Gross beta	14000	pCi/L		
299-E27-23	B2LNB0	9/28/2012	N	Gross beta	14000	pCi/L		
299-E27-23	B2LN99	9/28/2012	N	Iodine-129	4.52	pCi/L		
299-E27-23	B2LN98	9/28/2012	N	Iodine-129	2.26	pCi/L		
299-E27-23	B2LKV5	9/28/2012	Y	Iron	19	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Iron	19	ug/L	U	
299-E27-23	B2LKV2	9/28/2012	N	Iron	19	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Iron	19	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-23	B2LKV5	9/28/2012	Y	Magnesium	23800	ug/L		
299-E27-23	B2LKV6	9/28/2012	Y	Magnesium	23300	ug/L		
299-E27-23	B2LKV2	9/28/2012	N	Magnesium	24000	ug/L		
299-E27-23	B2LKV1	9/28/2012	N	Magnesium	24200	ug/L		
299-E27-23	B2LKV2	9/28/2012	N	Manganese	4	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Manganese	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Manganese	4	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Manganese	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Nickel	4	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Nickel	4	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Nickel	4	ug/L	U	
299-E27-23	B2LKV2	9/28/2012	N	Nickel	4	ug/L	U	
299-E27-23	B2LKV3	9/28/2012	N	Nitrate	47400	ug/L	D	
299-E27-23	B2LKV4	9/28/2012	N	Nitrate	47400	ug/L	D	
299-E27-23	B2LKV3	9/28/2012	N	Nitrite	142	ug/L	BD	
299-E27-23	B2LKV4	9/28/2012	N	Nitrite	171	ug/L	BD	
299-E27-23	B2LKV2	9/28/2012	N	Potassium	9620	ug/L		
299-E27-23	B2LKV5	9/28/2012	Y	Potassium	9480	ug/L		
299-E27-23	B2LKV6	9/28/2012	Y	Potassium	9260	ug/L		
299-E27-23	B2LKV1	9/28/2012	N	Potassium	9590	ug/L		
299-E27-23	B2LKV2	9/28/2012	N	Silver	4	ug/L	U	
299-E27-23	B2LKV5	9/28/2012	Y	Silver	4	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Silver	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Silver	4	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Sodium	16400	ug/L		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-23	B2LKV2	9/28/2012	N	Sodium	16400	ug/L		
299-E27-23	B2LKV6	9/28/2012	Y	Sodium	15900	ug/L		
299-E27-23	B2LKV5	9/28/2012	Y	Sodium	16100	ug/L		
299-E27-23	B2LN97	9/28/2012	N	Specific Conductance	658	uS/cm		
299-E27-23	B2LKV6	9/28/2012	Y	Strontium	397	ug/L		
299-E27-23	B2LKV5	9/28/2012	Y	Strontium	406	ug/L		
299-E27-23	B2LKV2	9/28/2012	N	Strontium	399	ug/L		
299-E27-23	B2LKV1	9/28/2012	N	Strontium	409	ug/L		
299-E27-23	B2LKV3	9/28/2012	N	Sulfate	171000	ug/L	D	
299-E27-23	B2LKV4	9/28/2012	N	Sulfate	172000	ug/L	D	
299-E27-23	B2LNB0	9/28/2012	N	Technetium-99	19000	pCi/L		
299-E27-23	B2LNB1	9/28/2012	N	Technetium-99	19000	pCi/L		
299-E27-23	B2LN97	9/28/2012	N	Temperature	19.3	Deg C		
299-E27-23	B2LNB1	9/28/2012	N	Tritium	1000	pCi/L		
299-E27-23	B2LNB0	9/28/2012	N	Tritium	920	pCi/L		
299-E27-23	B2LN97	9/28/2012	N	Turbidity	0.22	NTU		
299-E27-23	B2LNB1	9/28/2012	N	Uranium	3.88	ug/L	D	
299-E27-23	B2LNB0	9/28/2012	N	Uranium	4.16	ug/L	D	
299-E27-23	B2LKV5	9/28/2012	Y	Vanadium	17.6	ug/L	B	
299-E27-23	B2LKV6	9/28/2012	Y	Vanadium	18	ug/L	B	
299-E27-23	B2LKV1	9/28/2012	N	Vanadium	19.7	ug/L	B	
299-E27-23	B2LKV2	9/28/2012	N	Vanadium	21.1	ug/L	B	
299-E27-23	B2LKV5	9/28/2012	Y	Zinc	5	ug/L	U	
299-E27-23	B2LKV6	9/28/2012	Y	Zinc	5	ug/L	U	
299-E27-23	B2LKV1	9/28/2012	N	Zinc	5	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-23	B2LKV2	9/28/2012	N	Zinc	5	ug/L	U	
299-E27-23	B2LN97	9/28/2012	N	pH Measurement	8.01	unitless		
299-E27-24	B2LKV8	9/5/2012	N	Alkalinity	82000	ug/L		
299-E27-24	B2LKW0	9/5/2012	Y	Antimony	36	ug/L	U	
299-E27-24	B2LKV8	9/5/2012	N	Antimony	36	ug/L	U	
299-E27-24	B2LKW0	9/5/2012	Y	Barium	81.2	ug/L		
299-E27-24	B2LKV8	9/5/2012	N	Barium	79.4	ug/L		
299-E27-24	B2LKW0	9/5/2012	Y	Beryllium	4	ug/L	U	
299-E27-24	B2LKV8	9/5/2012	N	Beryllium	4	ug/L	U	
299-E27-24	B2LKV8	9/5/2012	N	Cadmium	4	ug/L	U	
299-E27-24	B2LKW0	9/5/2012	Y	Cadmium	4	ug/L	U	
299-E27-24	B2LKW0	9/5/2012	Y	Calcium	129000	ug/L		
299-E27-24	B2LKV8	9/5/2012	N	Calcium	126000	ug/L		
299-E27-24	B2LKV9	9/5/2012	N	Chloride	42700	ug/L	D	
299-E27-24	B2LKW0	9/5/2012	Y	Chromium	5.5	ug/L	B	
299-E27-24	B2LKV8	9/5/2012	N	Chromium	12	ug/L	B	
299-E27-24	B2LKV8	9/5/2012	N	Cobalt	4	ug/L	U	
299-E27-24	B2LKW0	9/5/2012	Y	Cobalt	4	ug/L	U	
299-E27-24	B2LKV8	9/5/2012	N	Copper	4	ug/L	U	
299-E27-24	B2LKW0	9/5/2012	Y	Copper	4	ug/L	U	
299-E27-24	B2LKV8	9/5/2012	N	Cyanide	9.81	ug/L	B	
299-E27-24	B2LKV9	9/5/2012	N	Fluoride	75.4	ug/L	BD	
299-E27-24	B2LNB4	9/5/2012	N	Gross beta	3300	pCi/L		
299-E27-24	B2LNB3	9/5/2012	N	Iodine-129	3.85	pCi/L		
299-E27-24	B2LKW0	9/5/2012	Y	Iron	19.9	ug/L	B	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-24	B2LKV8	9/5/2012	N	Iron	40.3	ug/L	B	
299-E27-24	B2LKW0	9/5/2012	Y	Magnesium	36500	ug/L		
299-E27-24	B2LKV8	9/5/2012	N	Magnesium	35800	ug/L		
299-E27-24	B2LKV8	9/5/2012	N	Manganese	4	ug/L	U	
299-E27-24	B2LKW0	9/5/2012	Y	Manganese	4	ug/L	U	
299-E27-24	B2LKV8	9/5/2012	N	Nickel	4	ug/L	U	
299-E27-24	B2LKW0	9/5/2012	Y	Nickel	8	ug/L	B	
299-E27-24	B2LKV9	9/5/2012	N	Nitrate	72200	ug/L	D	
299-E27-24	B2LKV9	9/5/2012	N	Nitrite	168	ug/L	BD	
299-E27-24	B2LKV8	9/5/2012	N	Potassium	10800	ug/L		
299-E27-24	B2LKW0	9/5/2012	Y	Potassium	11000	ug/L		
299-E27-24	B2LKW0	9/5/2012	Y	Silver	4	ug/L	U	
299-E27-24	B2LKV8	9/5/2012	N	Silver	4	ug/L	U	
299-E27-24	B2LKV8	9/5/2012	N	Sodium	23700	ug/L		
299-E27-24	B2LKW0	9/5/2012	Y	Sodium	24400	ug/L		
299-E27-24	B2LYV5	9/5/2012	N	Specific Conductance	985	uS/cm		
299-E27-24	B2LYV6	9/5/2012	N	Specific Conductance	985	uS/cm		
299-E27-24	B2LYV8	9/5/2012	N	Specific Conductance	986	uS/cm		
299-E27-24	B2LYV7	9/5/2012	N	Specific Conductance	986	uS/cm		
299-E27-24	B2LKV8	9/5/2012	N	Strontium	609	ug/L		
299-E27-24	B2LKW0	9/5/2012	Y	Strontium	625	ug/L		
299-E27-24	B2LKV9	9/5/2012	N	Sulfate	298000	ug/L	D	
299-E27-24	B2LNB4	9/5/2012	N	Technetium-99	5000	pCi/L		
299-E27-24	B2LYV6	9/5/2012	N	Temperature	18.8	Deg C		
299-E27-24	B2LYV7	9/5/2012	N	Temperature	18.8	Deg C		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-24	B2LYV5	9/5/2012	N	Temperature	18.9	Deg C		
299-E27-24	B2LYV8	9/5/2012	N	Temperature	18.8	Deg C		
299-E27-24	B2LNB4	9/5/2012	N	Tritium	870	pCi/L		
299-E27-24	B2LYV8	9/5/2012	N	Turbidity	0.86	NTU		
299-E27-24	B2LYV6	9/5/2012	N	Turbidity	0.88	NTU		
299-E27-24	B2LYV5	9/5/2012	N	Turbidity	2.36	NTU		
299-E27-24	B2LYV7	9/5/2012	N	Turbidity	0.9	NTU		
299-E27-24	B2LNB4	9/5/2012	N	Uranium	7	ug/L	D	
299-E27-24	B2LKW0	9/5/2012	Y	Vanadium	16.1	ug/L	B	
299-E27-24	B2LKV8	9/5/2012	N	Vanadium	14.7	ug/L	B	
299-E27-24	B2LKV8	9/5/2012	N	Zinc	5.7	ug/L	B	
299-E27-24	B2LKW0	9/5/2012	Y	Zinc	6.1	ug/L	B	
299-E27-24	B2LYV7	9/5/2012	N	pH Measurement	7.79	unitless		
299-E27-24	B2LYV6	9/5/2012	N	pH Measurement	7.79	unitless		
299-E27-24	B2LYV8	9/5/2012	N	pH Measurement	7.79	unitless		
299-E27-24	B2LYV5	9/5/2012	N	pH Measurement	7.79	unitless		
299-E27-25	B2LKW2	9/6/2012	N	Alkalinity	78000	ug/L		
299-E27-25	B2LKW4	9/6/2012	Y	Antimony	36	ug/L	U	
299-E27-25	B2LKW2	9/6/2012	N	Antimony	36	ug/L	U	
299-E27-25	B2LKW4	9/6/2012	Y	Barium	61.1	ug/L		
299-E27-25	B2LKW2	9/6/2012	N	Barium	60.7	ug/L		
299-E27-25	B2LKW4	9/6/2012	Y	Beryllium	4	ug/L	U	
299-E27-25	B2LKW2	9/6/2012	N	Beryllium	4	ug/L	U	
299-E27-25	B2LKW2	9/6/2012	N	Cadmium	4	ug/L	U	
299-E27-25	B2LKW4	9/6/2012	Y	Cadmium	4	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-25	B2LKW4	9/6/2012	Y	Calcium	123000	ug/L		
299-E27-25	B2LKW2	9/6/2012	N	Calcium	119000	ug/L		
299-E27-25	B2LKW3	9/6/2012	N	Chloride	55400	ug/L	D	
299-E27-25	B2LKW2	9/6/2012	N	Chromium	9.5	ug/L	B	
299-E27-25	B2LKW4	9/6/2012	Y	Chromium	5	ug/L	U	
299-E27-25	B2LKW4	9/6/2012	Y	Cobalt	4	ug/L	U	
299-E27-25	B2LKW2	9/6/2012	N	Cobalt	4	ug/L	U	
299-E27-25	B2LKW2	9/6/2012	N	Copper	4	ug/L	U	
299-E27-25	B2LKW4	9/6/2012	Y	Copper	4	ug/L	U	
299-E27-25	B2LKW2	9/6/2012	N	Cyanide	4	ug/L	U	
299-E27-25	B2LYV9	9/6/2012	N	Dissolved oxygen	8890	ug/L		
299-E27-25	B2LKW3	9/6/2012	N	Fluoride	113	ug/L	BD	
299-E27-25	B2LNB7	9/6/2012	N	Gross beta	13	pCi/L		
299-E27-25	B2LNB6	9/6/2012	N	Iodine-129	2.85	pCi/L		
299-E27-25	B2LKW2	9/6/2012	N	Iron	65.5	ug/L	B	
299-E27-25	B2LKW4	9/6/2012	Y	Iron	26	ug/L	B	
299-E27-25	B2LKW2	9/6/2012	N	Magnesium	33500	ug/L		
299-E27-25	B2LKW4	9/6/2012	Y	Magnesium	34000	ug/L		
299-E27-25	B2LKW4	9/6/2012	Y	Manganese	4	ug/L	U	
299-E27-25	B2LKW2	9/6/2012	N	Manganese	4	ug/L	U	
299-E27-25	B2LKW4	9/6/2012	Y	Nickel	5.8	ug/L	B	
299-E27-25	B2LKW2	9/6/2012	N	Nickel	6.7	ug/L	B	
299-E27-25	B2LKW3	9/6/2012	N	Nitrate	45600	ug/L	D	
299-E27-25	B2LKW3	9/6/2012	N	Nitrite	131	ug/L	BD	
299-E27-25	B2LKW4	9/6/2012	Y	Potassium	10000	ug/L		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-25	B2LKW2	9/6/2012	N	Potassium	9920	ug/L		
299-E27-25	B2LKW2	9/6/2012	N	Silver	4	ug/L	U	
299-E27-25	B2LKW4	9/6/2012	Y	Silver	4	ug/L	U	
299-E27-25	B2LKW4	9/6/2012	Y	Sodium	19200	ug/L		
299-E27-25	B2LKW2	9/6/2012	N	Sodium	18900	ug/L		
299-E27-25	B2LYV9	9/6/2012	N	Specific Conductance	886	uS/cm		
299-E27-25	B2LKW2	9/6/2012	N	Strontium	547	ug/L		
299-E27-25	B2LKW4	9/6/2012	Y	Strontium	562	ug/L		
299-E27-25	B2LKW3	9/6/2012	N	Sulfate	277000	ug/L	D	
299-E27-25	B2LNB7	9/6/2012	N	Technetium-99	-1.1	pCi/L	U	
299-E27-25	B2LYV9	9/6/2012	N	Temperature	19.1	Deg C		
299-E27-25	B2LNB7	9/6/2012	N	Tritium	210	pCi/L	U	
299-E27-25	B2LYV9	9/6/2012	N	Turbidity	1.33	NTU		
299-E27-25	B2LNB7	9/6/2012	N	Uranium	3.83	ug/L	D	
299-E27-25	B2LKW2	9/6/2012	N	Vanadium	11.1	ug/L	B	
299-E27-25	B2LKW4	9/6/2012	Y	Vanadium	12.6	ug/L	B	
299-E27-25	B2LKW4	9/6/2012	Y	Zinc	5	ug/L	U	
299-E27-25	B2LKW2	9/6/2012	N	Zinc	5	ug/L	U	
299-E27-25	B2LYV9	9/6/2012	N	pH Measurement	7.89	unitless		
299-E27-4	B2LKW6	9/5/2012	N	Alkalinity	90000	ug/L		
299-E27-4	B2LKW6	9/5/2012	N	Antimony	36	ug/L	U	
299-E27-4	B2LKW8	9/5/2012	Y	Antimony	36	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Barium	60.2	ug/L		
299-E27-4	B2LKW8	9/5/2012	Y	Barium	59.1	ug/L		
299-E27-4	B2LKW8	9/5/2012	Y	Beryllium	4	ug/L	U	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-4	B2LKW6	9/5/2012	N	Beryllium	4	ug/L	U	
299-E27-4	B2LKW8	9/5/2012	Y	Cadmium	4	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Cadmium	4	ug/L	U	
299-E27-4	B2LKW8	9/5/2012	Y	Calcium	85200	ug/L		
299-E27-4	B2LKW6	9/5/2012	N	Calcium	88400	ug/L		
299-E27-4	B2LKW7	9/5/2012	N	Chloride	25900	ug/L	D	
299-E27-4	B2LKW6	9/5/2012	N	Chromium	5	ug/L	B	
299-E27-4	B2LKW8	9/5/2012	Y	Chromium	5	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Cobalt	4	ug/L	U	
299-E27-4	B2LKW8	9/5/2012	Y	Cobalt	4	ug/L	U	
299-E27-4	B2LKW8	9/5/2012	Y	Copper	4	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Copper	4	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Cyanide	4	ug/L	U	
299-E27-4	B2LKW7	9/5/2012	N	Fluoride	108	ug/L	BD	
299-E27-4	B2LNC0	9/5/2012	N	Gross beta	2600	pCi/L		
299-E27-4	B2LNB9	9/5/2012	N	Iodine-129	4.43	pCi/L		
299-E27-4	B2LKW8	9/5/2012	Y	Iron	19	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Iron	23.1	ug/L	B	
299-E27-4	B2LKW8	9/5/2012	Y	Magnesium	23900	ug/L		
299-E27-4	B2LKW6	9/5/2012	N	Magnesium	24400	ug/L		
299-E27-4	B2LKW8	9/5/2012	Y	Manganese	4	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Manganese	4	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Nickel	10.6	ug/L	B	
299-E27-4	B2LKW8	9/5/2012	Y	Nickel	10.6	ug/L	B	
299-E27-4	B2LKW7	9/5/2012	N	Nitrate	41700	ug/L	D	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-4	B2LKW7	9/5/2012	N	Nitrite	297	ug/L	BD	
299-E27-4	B2LKW8	9/5/2012	Y	Potassium	8940	ug/L		
299-E27-4	B2LKW6	9/5/2012	N	Potassium	9110	ug/L		
299-E27-4	B2LKW6	9/5/2012	N	Silver	4	ug/L	U	
299-E27-4	B2LKW8	9/5/2012	Y	Silver	4	ug/L	U	
299-E27-4	B2LKW6	9/5/2012	N	Sodium	16300	ug/L		
299-E27-4	B2LKW8	9/5/2012	Y	Sodium	16100	ug/L		
299-E27-4	B2LYW4	9/5/2012	N	Specific Conductance	681	uS/cm		
299-E27-4	B2LYW6	9/5/2012	N	Specific Conductance	680	uS/cm		
299-E27-4	B2LYW5	9/5/2012	N	Specific Conductance	680	uS/cm		
299-E27-4	B2LYW3	9/5/2012	N	Specific Conductance	680	uS/cm		
299-E27-4	B2LKW8	9/5/2012	Y	Strontium	416	ug/L		
299-E27-4	B2LKW6	9/5/2012	N	Strontium	426	ug/L		
299-E27-4	B2LKW7	9/5/2012	N	Sulfate	171000	ug/L	D	
299-E27-4	B2LNC0	9/5/2012	N	Technetium-99	4100	pCi/L		
299-E27-4	B2LYW3	9/5/2012	N	Temperature	19.8	Deg C		
299-E27-4	B2LYW6	9/5/2012	N	Temperature	19.8	Deg C		
299-E27-4	B2LYW5	9/5/2012	N	Temperature	19.8	Deg C		
299-E27-4	B2LYW4	9/5/2012	N	Temperature	19.8	Deg C		
299-E27-4	B2LNC0	9/5/2012	N	Tritium	890	pCi/L		
299-E27-4	B2LYW3	9/5/2012	N	Turbidity	0.32	NTU		
299-E27-4	B2LYW4	9/5/2012	N	Turbidity	0.49	NTU		
299-E27-4	B2LYW6	9/5/2012	N	Turbidity	0.66	NTU		
299-E27-4	B2LYW5	9/5/2012	N	Turbidity	0.64	NTU		
299-E27-4	B2LNC0	9/5/2012	N	Uranium	3.92	ug/L	D	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-4	B2LKW6	9/5/2012	N	Vanadium	16.5	ug/L	B	
299-E27-4	B2LKW8	9/5/2012	Y	Vanadium	17	ug/L	B	
299-E27-4	B2LKW6	9/5/2012	N	Zinc	5	ug/L	U	
299-E27-4	B2LKW8	9/5/2012	Y	Zinc	5	ug/L	U	
299-E27-4	B2LYW5	9/5/2012	N	pH Measurement	7.98	unitless		
299-E27-4	B2LYW6	9/5/2012	N	pH Measurement	7.98	unitless		
299-E27-4	B2LYW4	9/5/2012	N	pH Measurement	7.99	unitless		
299-E27-4	B2LYW3	9/5/2012	N	pH Measurement	7.99	unitless		
299-E27-7	B2LKX1	9/5/2012	N	Alkalinity	84000	ug/L		
299-E27-7	B2LKX3	9/5/2012	Y	Antimony	36	ug/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Antimony	36	ug/L	U	
299-E27-7	B2LNC2	9/5/2012	N	Antimony-125	-1.89	pCi/L	U	
299-E27-7	B2LKX3	9/5/2012	Y	Barium	58.8	ug/L		
299-E27-7	B2LKX1	9/5/2012	N	Barium	57.9	ug/L		
299-E27-7	B2LKX3	9/5/2012	Y	Beryllium	4	ug/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Beryllium	4	ug/L	U	
299-E27-7	B2LNC2	9/5/2012	N	Beryllium-7	-10.7	pCi/L	U	
299-E27-7	B2LKX3	9/5/2012	Y	Cadmium	4	ug/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Cadmium	4	ug/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Calcium	100000	ug/L		
299-E27-7	B2LKX3	9/5/2012	Y	Calcium	102000	ug/L		
299-E27-7	B2LNC2	9/5/2012	N	Cesium-134	-0.814	pCi/L	U	
299-E27-7	B2LNC2	9/5/2012	N	Cesium-137	-1.19	pCi/L	U	
299-E27-7	B2LKX2	9/5/2012	N	Chloride	40100	ug/L	D	
299-E27-7	B2LKX1	9/5/2012	N	Chromium	7.3	ug/L	B	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-7	B2LKX3	9/5/2012	Y	Chromium	5	ug/L	U	
299-E27-7	B2LKX3	9/5/2012	Y	Cobalt	4	ug/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Cobalt	4	ug/L	U	
299-E27-7	B2LNC2	9/5/2012	N	Cobalt-60	1.2	pCi/L	U	
299-E27-7	B2LKX3	9/5/2012	Y	Copper	4	ug/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Copper	4	ug/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Cyanide	4	ug/L	U	
299-E27-7	B2LYW7	9/5/2012	N	Dissolved oxygen	9000	ug/L		
299-E27-7	B2LYW8	9/5/2012	N	Dissolved oxygen	9020	ug/L		
299-E27-7	B2LYW9	9/5/2012	N	Dissolved oxygen	8970	ug/L		
299-E27-7	B2LYX0	9/5/2012	N	Dissolved oxygen	8950	ug/L		
299-E27-7	B2LNC2	9/5/2012	N	Europium-152	-0.588	pCi/L	U	
299-E27-7	B2LNC2	9/5/2012	N	Europium-154	0.318	pCi/L	U	
299-E27-7	B2LNC2	9/5/2012	N	Europium-155	-0.185	pCi/L	U	
299-E27-7	B2LKX2	9/5/2012	N	Fluoride	70.4	ug/L	BD	
299-E27-7	B2LNC3	9/5/2012	N	Gross beta	25	pCi/L		
299-E27-7	B2LNC2	9/5/2012	N	Iodine-129	5.53	pCi/L		
299-E27-7	B2LKX3	9/5/2012	Y	Iron	22	ug/L	B	
299-E27-7	B2LKX1	9/5/2012	N	Iron	101	ug/L		
299-E27-7	B2LKX3	9/5/2012	Y	Magnesium	28000	ug/L		
299-E27-7	B2LKX1	9/5/2012	N	Magnesium	27500	ug/L		
299-E27-7	B2LKX1	9/5/2012	N	Manganese	4	ug/L	U	
299-E27-7	B2LKX3	9/5/2012	Y	Manganese	4	ug/L	U	
299-E27-7	B2LKX3	9/5/2012	Y	Nickel	6.5	ug/L	B	
299-E27-7	B2LKX1	9/5/2012	N	Nickel	5	ug/L	B	

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-7	B2LKX2	9/5/2012	N	Nitrate	36700	ug/L	D	
299-E27-7	B2LKX2	9/5/2012	N	Nitrite	125	ug/L	UD	
299-E27-7	B2LKX1	9/5/2012	N	Potassium	9610	ug/L		
299-E27-7	B2LKX3	9/5/2012	Y	Potassium	9900	ug/L		
299-E27-7	B2LNC2	9/5/2012	N	Potassium-40	30.7	pCi/L	U	
299-E27-7	B2LNC2	9/5/2012	N	Ruthenium-106	-4.52	pCi/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Silver	4	ug/L	U	
299-E27-7	B2LKX3	9/5/2012	Y	Silver	4	ug/L	U	
299-E27-7	B2LKX1	9/5/2012	N	Sodium	16800	ug/L		
299-E27-7	B2LKX3	9/5/2012	Y	Sodium	17100	ug/L		
299-E27-7	B2LYW9	9/5/2012	N	Specific Conductance	769	uS/cm		
299-E27-7	B2LYW8	9/5/2012	N	Specific Conductance	770	uS/cm		
299-E27-7	B2LYX0	9/5/2012	N	Specific Conductance	770	uS/cm		
299-E27-7	B2LYW7	9/5/2012	N	Specific Conductance	768	uS/cm		
299-E27-7	B2LKX3	9/5/2012	Y	Strontium	526	ug/L		
299-E27-7	B2LKX1	9/5/2012	N	Strontium	518	ug/L		
299-E27-7	B2LKX2	9/5/2012	N	Sulfate	205000	ug/L	D	
299-E27-7	B2LKX1	9/5/2012	N	Technetium-99	25	pCi/L		
299-E27-7	B2LNC2	9/5/2012	N	Technetium-99	30.5	pCi/L		
299-E27-7	B2LYX0	9/5/2012	N	Temperature	20.5	Deg C		
299-E27-7	B2LYW8	9/5/2012	N	Temperature	20.5	Deg C		
299-E27-7	B2LYW9	9/5/2012	N	Temperature	20.5	Deg C		
299-E27-7	B2LYW7	9/5/2012	N	Temperature	20.4	Deg C		
299-E27-7	B2LNC3	9/5/2012	N	Tritium	660	pCi/L		
299-E27-7	B2LYW8	9/5/2012	N	Turbidity	2.73	NTU		

Table C-1. September 2012 Sample Results

Well Name	Sample Number	Sample Date	Filtered Flag	Standard Constituent Long Name	Standard Value Reported	Standard Analytical L Units Reported	Lab Qualifier	Review Qualifier
299-E27-7	B2LYX0	9/5/2012	N	Turbidity	2.45	NTU		
299-E27-7	B2LYW9	9/5/2012	N	Turbidity	1.95	NTU		
299-E27-7	B2LYW7	9/5/2012	N	Turbidity	2.23	NTU		
299-E27-7	B2LNC3	9/5/2012	N	Uranium	3.97	ug/L	D	
299-E27-7	B2LKX3	9/5/2012	Y	Vanadium	14.7	ug/L	B	
299-E27-7	B2LKX1	9/5/2012	N	Vanadium	13.1	ug/L	B	
299-E27-7	B2LKX1	9/5/2012	N	Zinc	5	ug/L	U	
299-E27-7	B2LKX3	9/5/2012	Y	Zinc	5	ug/L	U	
299-E27-7	B2LYW9	9/5/2012	N	pH Measurement	7.93	unitless		
299-E27-7	B2LYW8	9/5/2012	N	pH Measurement	7.93	unitless		
299-E27-7	B2LYW7	9/5/2012	N	pH Measurement	7.93	unitless		
299-E27-7	B2LYX0	9/5/2012	N	pH Measurement	7.93	unitless		

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