

United States Department of Energy

Savannah River Site



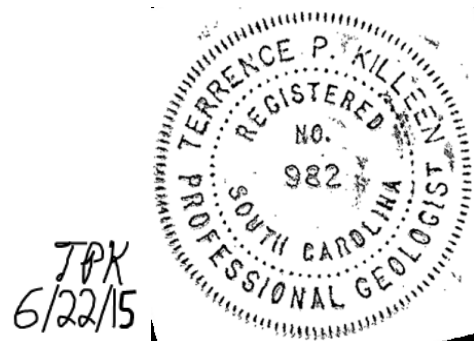
Z-AREA SALTSTONE DISPOSAL FACILITY GROUNDWATER MONITORING MIDYEAR REPORT FOR 2015 (U)

Class 3 Landfill Permit #025500-1603

SRNS-TR-2015-00132

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Table of Contents

1.0	Site Description and Background	1
2.0	Groundwater Monitoring	1
3.0	Groundwater Flow Direction and Rate	2
4.0	Groundwater Constituents and Parameters	3
5.0	Results	3
6.0	Discussion	4
7.0	Conclusion	7
8.0	References	8
Figure 1.	Z-Area Location within the Savannah River Site.....	10
Figure 2.	Monitoring Well Locations at the SDF	11
Figure 3.	First Quarter 2015 Water Table Elevations (ft-msl).....	12
Figure 4.	Z-Area Cross Section with 2015 Water Table.....	13
Figure 5.	ZBG 2 Nonvolatile Beta, Tc-99, Nitrate, and Conductivity Groundwater Trends	14
Figure 6.	ZBG Well Tritium Groundwater Trends	15
Table 1.	List of Analytes and Parameters for the SDF	16
Table 2.	Laboratory Results for Saltstone Wells (1Q15)	18
Table 3.	Field Measurements for Saltstone Wells (1Q15)	32
Table 4.	Water Elevations for Saltstone Wells (1Q15)	36

1.0 SITE DESCRIPTION AND BACKGROUND

The SRS Z-Area Saltstone Disposal Facility (SDF) Class 3 Landfill is located within Z-Area (Figure 1) on the Savannah River Site (SRS) in Aiken County, and is operated by Savannah River Remediation LLC (SRR) for the U.S. Department of Energy (USDOE). Z-Area is approximately 238 acres which currently contains two rectangular Saltstone Disposal Units (SDUs), formerly referred to as vaults, six circular SDUs, and one large circular SDU (SDU 6) currently under construction (Figure 2).

2.0 GROUNDWATER MONITORING

In accordance with the SRS Z-Area SDF Class 3 Landfill permit (SCDHEC 2011), a groundwater monitoring plan is in place to monitor groundwater in the vicinity of the SDF (WSRC 2005). Eighteen wells located up-gradient and down-gradient of the SDF (Figure 2) are sampled semiannually and biennially for the constituents and parameters listed in Table 1. Seven wells, installed in 2012, monitor SDUs 2A, 2B, 3A, 3B, 5A and 5B, and provide an additional background well (Figure 2). SDU Cell 2B was put into service in September 2012, SDU Cell 2A was put into service in December 2012, and both cells were completely filled in 2014. SDU 5 was put into service on December 5, 2013, and is actively being filled in 2015. SDU 3 has not been placed in operation yet, but will be put into operation, as needed by the SDF. In 2014, a deeper well (ZBG002C) was installed adjacent to an existing shallow well (ZBG 2), at which contaminated water was observed. Also in 2014, due to concerns of groundwater contamination from Sedimentation Basin #4, a shallow well (ZBG016D) and a deeper well (ZBG016C) were installed to monitor perched water in the vadose zone and the groundwater. The monitoring well network and monitoring plan are designed to effectively detect any release associated with SDUs in the SDF. As additional SDUs are constructed, or as conditions change at the facility, the monitoring network will be expanded accordingly.

Groundwater samples were collected during the first quarter of 2015 in accordance with the *Hydrogeologic Data Collection Procedures and Specifications* (SRNS 2010), and the samples were sent to SCDHEC certified labs for analyses. Two thresholds (8 pCi/L and 30 pCi/L) were established for gross beta (i.e. nonvolatile beta) analyses as part of the *Groundwater Monitoring Plan for the Z-Area Saltstone Disposal Facility* (WSRC 2005). If the 8 pCi/L threshold is

exceeded by a well sample, then the exceeding well is to be resampled within 30 days for the Contingent Analysis 1 (Strontium-90 [Sr-90]) listed in Table 1. If the contingent Sr-90 analysis is above detection, then it will be added to the list of semiannual analytes. If the 30 pCi/L threshold is exceeded by a well sample, then the exceeding well and the applicable background well (ZBG 1 or ZBG015D) are to be resampled within 30 days for the Contingent Analyses 2 listed in Table 1. If any contingent analyte is above background well concentrations, then it will be added to the list of semiannual analytes. If the following sample event confirms the exceedance results for a constituent(s) then a characterization plan to determine plume extent will be developed and submitted to SCDHEC within 60 days (WSRC 2005).

3.0 GROUNDWATER FLOW DIRECTION AND RATE

Water level data collected for first quarter of 2015 are presented in Figure 3. Groundwater flow is radial in this area of SRS. The water table at SDU 1 and SDU 4 indicate groundwater flow is to the northeast, groundwater flow at SDUs 2A and 2B is to the north, and groundwater flow at SDUs 3A, 3B, 5A and 5B is to the northwest (Figures 3). Flow rates can be estimated using the distance and head difference between wells with the following equation:

$$Q = \frac{K}{n} \times \frac{dh}{dl}$$

Where:

- Q = Flow (ft/day);
- K = Hydraulic Conductivity (ft/day) = 13 ft/day*;
- n = Effective Porosity (%) = 0.25*;
- dh = Difference in Head (ft) = 13.4 ft; and
- dl = Distance between Wells (ft) = 805 ft.

* In 2013 these parameters were changed to be consistent with the Performance Assessment modeling data in the SRS General Separations Area (GSA).

The hydraulic conductivity (K) is 13 ft/day, and the effective porosity (n) value is 25 percent (WSRC 2007). The head difference (dh) was 13.4 ft for the first quarter of 2015. The horizontal distance (dl) is 805 ft, which is the distance between wells ZBG 7 and ZBG 4 (Figures 2 and 3).

The first quarter groundwater flow rate is calculated as follows:

$$\text{First Quarter: } Q = \frac{13 \text{ ft/day}}{0.25} \times \frac{13.4 \text{ ft}}{805 \text{ ft}}$$

$$Q = 0.86559 \text{ ft/day or } 315.9 \text{ ft/year}$$

The first quarter 2015 groundwater flow rate (315.9 ft/yr) is slightly lower, but similar, to the fourth quarter 2014 flow rate of 320.7 ft/yr (SRNS 2014a). The water table in the GSA is located in the Upper Aquifer Zone of the Upper Three Runs Aquifer (UTRA-UAZ). However, as the water table approaches McQueens Branch and Upper Three Runs, the water table drops into the underlying Lower Aquifer Zone of the Upper Three Runs Aquifer (UTRA-LAZ) (Figure 4). The Tan Clay Confining Zone (TCCZ) separates the UTRA-LAZ from the overlying UTRA-UAZ.

4.0 GROUNDWATER CONSTITUENTS AND PARAMETERS

In accordance with the Z-Area SDF Class 3 Landfill Permit (SCDHEC 2011), the monitoring wells were sampled during the first quarter of 2015 for the semiannual and biennial analytes and the parameters listed in Table 1. The next samples for semiannual analyses will be collected in the third quarter of 2015, and the next samples for biennial analyses will be collected in the first quarter of 2017.

5.0 RESULTS

Groundwater samples were collected during the first quarter of 2015 from the nine wells monitoring SDUs 1 and 4 at the Z-Area SDF (Figure 2). Groundwater samples were also collected during the first quarter of 2015 from the seven wells monitoring SDUs 2A, 2B, 3A, 3B, 5A, and 5B at the Z-Area SDF. Groundwater samples were collected during the first quarter of 2015 for one (ZBG016C) of the two wells monitoring Sedimentation Basin #4, but ZBG016D was dry (Figure 2). The laboratory results are presented in Table 2; the field measurements are presented in Table 3; and the water elevation data are presented in Table 4.

Groundwater monitoring results are compared to Practical Quantitation Limits (PQLs), background concentrations, and Groundwater Protection Standards (GWPS). PQLs are indicators of laboratory instrument sensitivity, but are not regulatory limits, nor are they risk-based. The PQL is the lowest concentration of an analyte which can be reliably quantified in a given sample. In contrast, the method detection limit (MDL) is the lowest concentration of an analyte which can be detected, but not quantified, in a given sample. Background concentrations

are based on historical data from wells (ZBG 1 and ZBG015D) upgradient of the SDF. Comparison with background is important because several SRS facilities are upgradient of the SDF. The GWPSs for the SDF are based on the Primary Drinking Water Standards (PDWS), or proposed PDWS, or Secondary Drinking Water Standards (SDWS), or background concentrations (WSRC 2005), and are listed in Table 1. Unlike PQLs and background concentrations, GWPSs are regulatory limits, and exceedances are relevant to water quality.

6.0 DISCUSSION

The following constituents exceeded the PQL in one or more wells monitoring the SDF (Table 2):

- Bismuth-214 (Bi-214);
- Gross Alpha*
- Lead-214 (Pb-214);
- Nitrate-Nitrite as Nitrogen;
- Nonvolatile Beta**;
- Radium-226 (Ra-226)
- Technetium-99 (Tc-99);
- Toluene; and
- Tritium (H-3).

* No gross alpha result exceeded its respective PQL, but gross alpha results are discussed below because gross alpha results have been above their PQLs in previous years.

** Results exceeded the 30 pCi/L threshold for nonvolatile beta (gross beta) requiring all the Contingent 1 and Contingent 2 analyses listed in table 1.

Well ZBG015D has had four independent (quarterly) samples to establish initial background concentrations, as required by the monitoring plan (WSRC 2005). Data from well ZBG015D is now used for background comparisons to monitoring data collected at wells downgradient of SDUs 1 and 4. Data from well ZBG 1 is used for background comparisons to monitoring data collected at wells downgradient of SDUs 2A, 2B, 3A, 3B, 5A, and 5B, as well ZBG 1 is positioned upgradient of those SDUs (Figures 2 and 3).

The maximum gross alpha concentration in the first quarter 2015 was an estimated value of J3.13 pCi/L at well ZBG 2, which is both below the PQL (5.72 pCi/L) and the SDF GWPS (15 pCi/L). Since 1/1/2004, gross alpha results above the MDL have been detected in 16 of the 18 wells, including the background wells. Collectively, the ZBG well data indicate the gross alpha concentrations are naturally-occurring in origin. The maximum Ra-226 concentration in the first

quarter 2015 was 0.90 pCi/L at well ZBG 2, which is above the historic maximum (0.32 pCi/L) for background well ZBG015D, but less than the SDF GWPS (5 pCi/L). The first quarter 2015 Ra-226 concentration (0.90 pCi/L) at well ZBG 2 is less than the historic maximum (2.6 pCi/L) for background well ZBG 1 in 2004. Since 1/1/2004, Ra-226 results above the MDL have been detected in 16 of the 18 wells, and Ra-226 is commonly detected in the groundwater (USGS 2011). Collectively, the ZBG well data indicate the Ra-226 concentrations are naturally-occurring in origin.

The maximum Bi-214 concentration in the first quarter 2015 was 303 pCi/L at well ZBG 2, which is above the historic maximum (160 pCi/L) for background well ZBG015D, but below the 4 mrem GWPS for Bi-214 (18,900 pCi/L). The maximum Pb-214 concentration in the first quarter 2015 was 327 pCi/L at well ZBG 2, which is above the historic maximum (171 pCi/L) for background well ZBG015D, but below the 4 mrem GWPS for Pb-214 (1,800 pCi/L). Pb-214 and Bi-214 are short-lived daughter products in the naturally-occurring uranium-238 decay series, and is supported by Ra-226, which is commonly detected in the groundwater (USGS 2011). While Bi-214, Pb-214, and Radium-226 are above background well concentrations, these radionuclides appear to be of natural origin, not related to SDF operations, but do contribute to gross alpha and nonvolatile beta activities.

Toluene was detected in 15 of the 18 ZBG well samples, with the maximum result (1.10 µg/L) in the ZBG 4 first quarter of 2015 well sample. This exceeds the maximum toluene result at ZBG015D of 0.77 µg/L also for the first quarter of 2015 sample, but is well below the SDF GWPS for toluene (1,000 µg/L). The maximum toluene result at former background well (ZBG 1) was 1.37 µg/L for the 7/12/2006 sample. In the first quarter of 2015, toluene was also detected in all four of the volatile organic trip blanks shipped and analyzed with the ZBG well samples, though at lower concentrations (0.14 – 0.28 µg/L). Since 1/1/2004, the maximum toluene result was 25 µg/L at well ZBG009D on 2/8/2012 when the well was first sampled, which was before SDU 2 was put into service. Toluene is a common laboratory contaminant (USEPA 1989). Collectively, the data indicate the toluene results above detection in the ZBG well samples are laboratory artifacts rather than actual contamination.

Samples from well ZBG 2 continue to have the highest groundwater concentrations for nitrates, nonvolatile beta, and Tc-99. ZBG 2 nonvolatile beta groundwater concentrations show an increase from 101 pCi/L for the September 2014 sample to 158 pCi/L for the February 2015 sample (Figure 5). The ZBG 2 February 2015 nonvolatile beta sample result (158 pCi/L) exceeds the 8 pCi/L threshold for nonvolatile beta, which initiated performing the Sr-90 analyses for well ZBG 2. The ZBG 2 Sr-90 results for the February sample was below the MDL (0.305 pCi/L) for Sr-90. The ZBG 2 February sample result for Tc-99 was 238 pCi/L, but Tc-99 did not exceed the GWPS (900 pCi/L) (Figure 5). The ZBG 2 February 2015 sample nonvolatile beta result (158 pCi/L) also exceeded the 30 pCi/L threshold, which initiated performing all the Contingent 2 analyses (Table 1) for well ZBG 2, and the background wells (ZBG015D and ZBG 1). No additional anthropogenic radionuclides were identified by the Contingent 2 analyses, only the Tc-99 (238 pCi/L) at well ZBG 2. It is not uncommon for a Tc-99 result to be higher than a nonvolatile beta result for the same sample, as some Tc-99 is volatilized by the drying step in the nonvolatile beta analytical method. In contrast the Tc-99 analytical method does not include a drying step, thus avoiding any volatilization of Tc-99. Well ZBG 2 had the highest sum of beta-emitting radionuclides (Bi-214, Pb-214, Tc-99, and tritium) greater than their PQLs (non-qualified results in Table 2), which is 2.33 mrem, but is below the GWPS (4 mrem).

ZBG 2 nitrate concentrations increased from 4.14 mg/L for the September 2014 sample to 9.9 mg/L for the February 2015 sample (Figure 5). The ZBG 2 February sample nitrate result (9.9 mg/L) did not exceed the Saltstone GWPS (10 mg/L), but the result exceeded the PQL and background well (ZBG015D) maximum nitrate result (0.67 mg/L). If the nitrate concentration in groundwater continues to rise at well ZBG 2 at the current rate, then it will very likely exceed the GWPS. Groundwater conductivity at well ZBG 2 increased from 60 μ S/cm for the September 2014 sample to 102 μ S/cm for the February 2015 sample (Figure 5).

The maximum tritium concentration was 3.02 pCi/mL at well ZBG 7, which is below the historic maximum (4.02 pCi/mL) for the background well ZBG015D. The long-term background well (ZBG 1) has indicated steadily decreasing tritium concentration trends from 19.0 pCi/mL in 1987 to 1.76 pCi/mL in 2015. All the SDF monitoring wells, including ZBG 6, appear to be following this trend. The ZBG 1 and ZBG015D data indicate the tritium in Z-Area is from an up-gradient source (Figure 6).

In the first quarter of 2015, wells ZBG012D, ZBG013D, and ZBG014D had the highest specific conductance (168-207 $\mu\text{S}/\text{cm}$), alkalinity (68-74 mg/L), and pH (7.7-7.8) measurements. These elevated field measurements are consistent for these wells and appear to be related to the geologic formation as calcium carbonate material was identified in the lithology cores while installing these wells. In addition, wells ZBG012D, ZBG013D and ZBG014D monitor SDU 3 and SDU 5, which have only started receiving saltstone material in December 2013; therefore the elevated values are the baseline groundwater conditions for these wells.

7.0 CONCLUSION

In the first quarter of 2015, groundwater at well ZBG 2 showed increases in Tc-99 activity (238 pCi/L), nitrate concentration (9.90 mg/L), and conductivity (102 $\mu\text{S}/\text{cm}$). Likewise, the nonvolatile beta groundwater concentrations increased (158 pCi/L) at well ZBG 2, which initiated all the contingent analyses. The only contingent analysis above its PQL was Tc-99 at well ZBG 2. However, Tc-99 and nitrate groundwater concentrations at well ZBG 2 remain below their respective GWPS. Well ZBG 2 is screened in the UTRA-UAZ. In 2014, well (ZBG002C) was installed adjacent to ZBG 2, but is screened in the deeper UTRA-LAZ. The three samples collected to date at ZBG002C indicate no contamination is migrating through the TCCZ. In 2014, data from well ZBG 2 initiated the development of a characterization plan (SRNS 2014b) for nonvolatile beta, Tc-99 and nitrates in the groundwater in Z-Area. This characterization plan is being implemented in the summer of 2015. The groundwater characterization plan also includes abandoning well ZBG 2, as it nearly penetrates through the entire TCCZ at this location, and is a potential pathway for contamination into the LAZ. A replacement well (ZBG002D) will be installed with the screen zone resting on top of the TCCZ.

Surface water contamination (i.e. Pu-238, U-238, U-234, Th-232, Th-230, Th-228, Cs-137, I-129, Tc-99, Tritium, nonvolatile beta, and gross alpha) was detected in Sedimentation Basin #4 and the old Z-01 Outfall drainage (SRNS 2012) (Figure 2). Sediment contamination (i.e. Pu-239, Pu-238, U-238, U-235, U-234, Cs-137, nonvolatile beta, and gross alpha) was detected in Sedimentation Basin #4 and in the old Z-01 Outfall drainage channel (SRNS 2012). In 2014, two groundwater monitoring wells (ZBG016C and ZBG016D) were installed downgradient of Sedimentation Basin #4 in the UTRA-UAZ and UTRA-LAZ (Figure 2). The data for the three samples collected to date at ZBG016C indicate there have not been any impacts to the

groundwater at Sedimentation Basin #4. The screen zone for well ZBG016D was positioned on top of the TCCZ to monitor for potentially contaminated perched water at this location in the vadose zone. Well ZBG016D has been dry since installation, indicating there has not been any perched water at this location since installation.

8.0 REFERENCES

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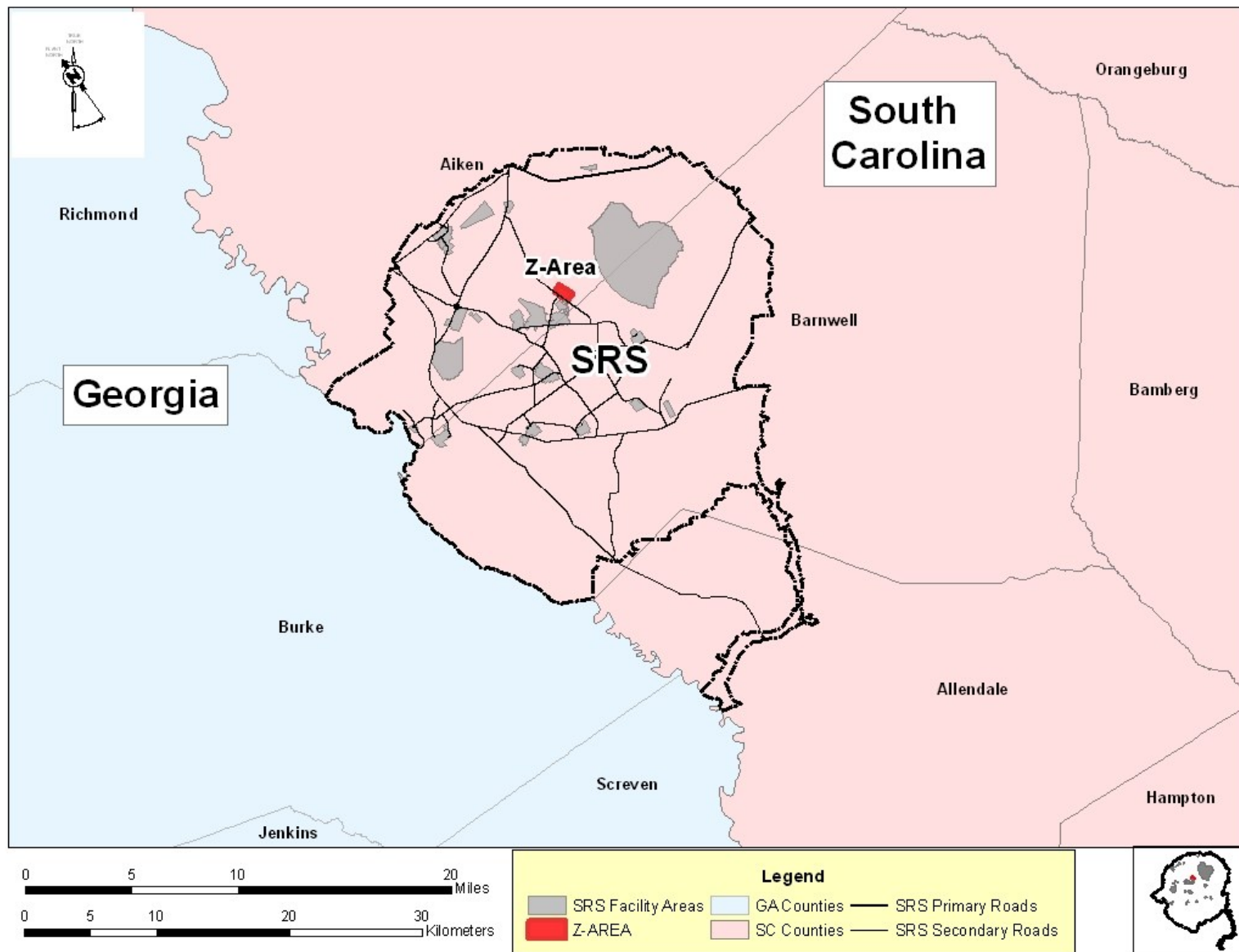


Figure 1. Z-Area Location within the Savannah River Site

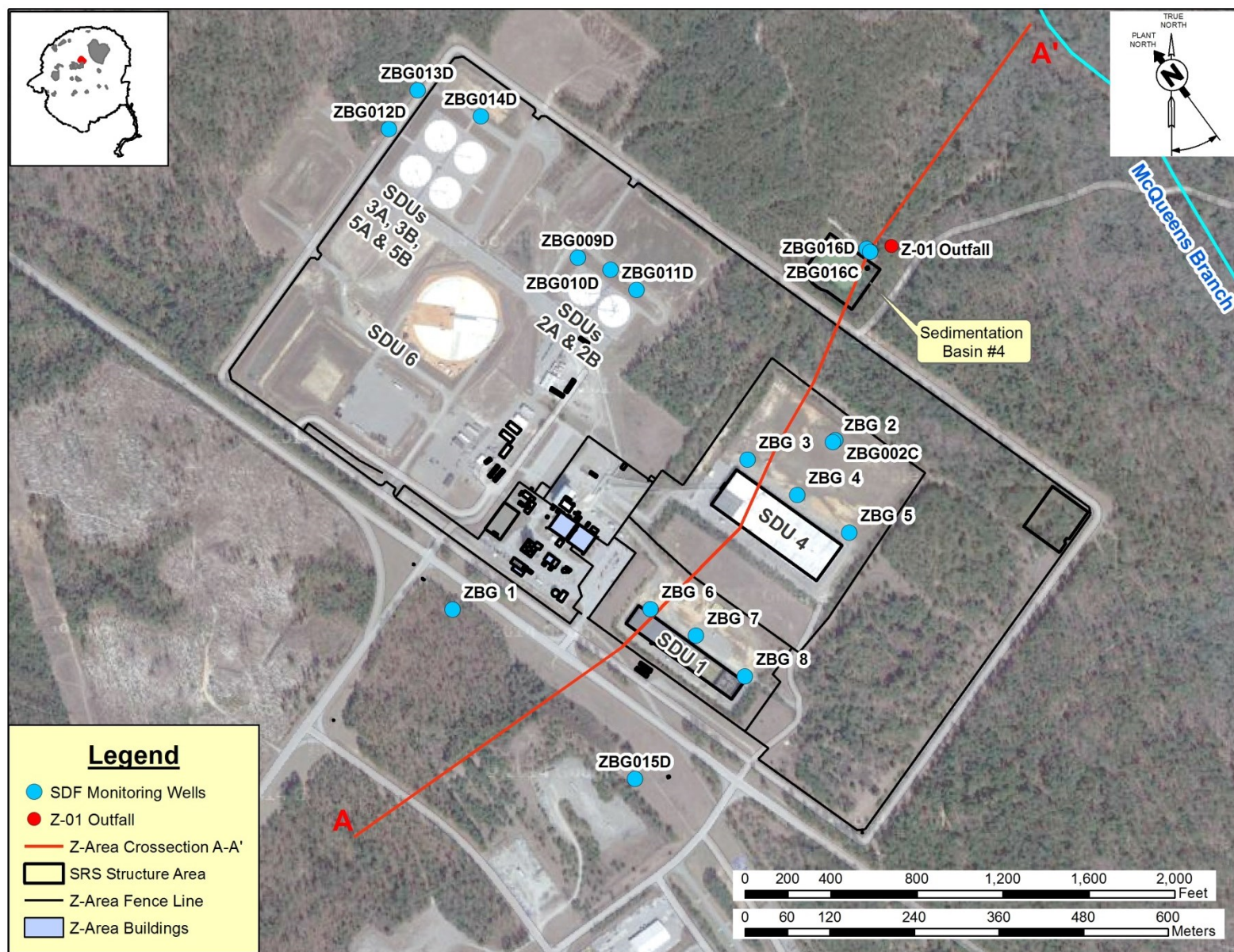


Figure 2. Monitoring Well Locations at the SDF

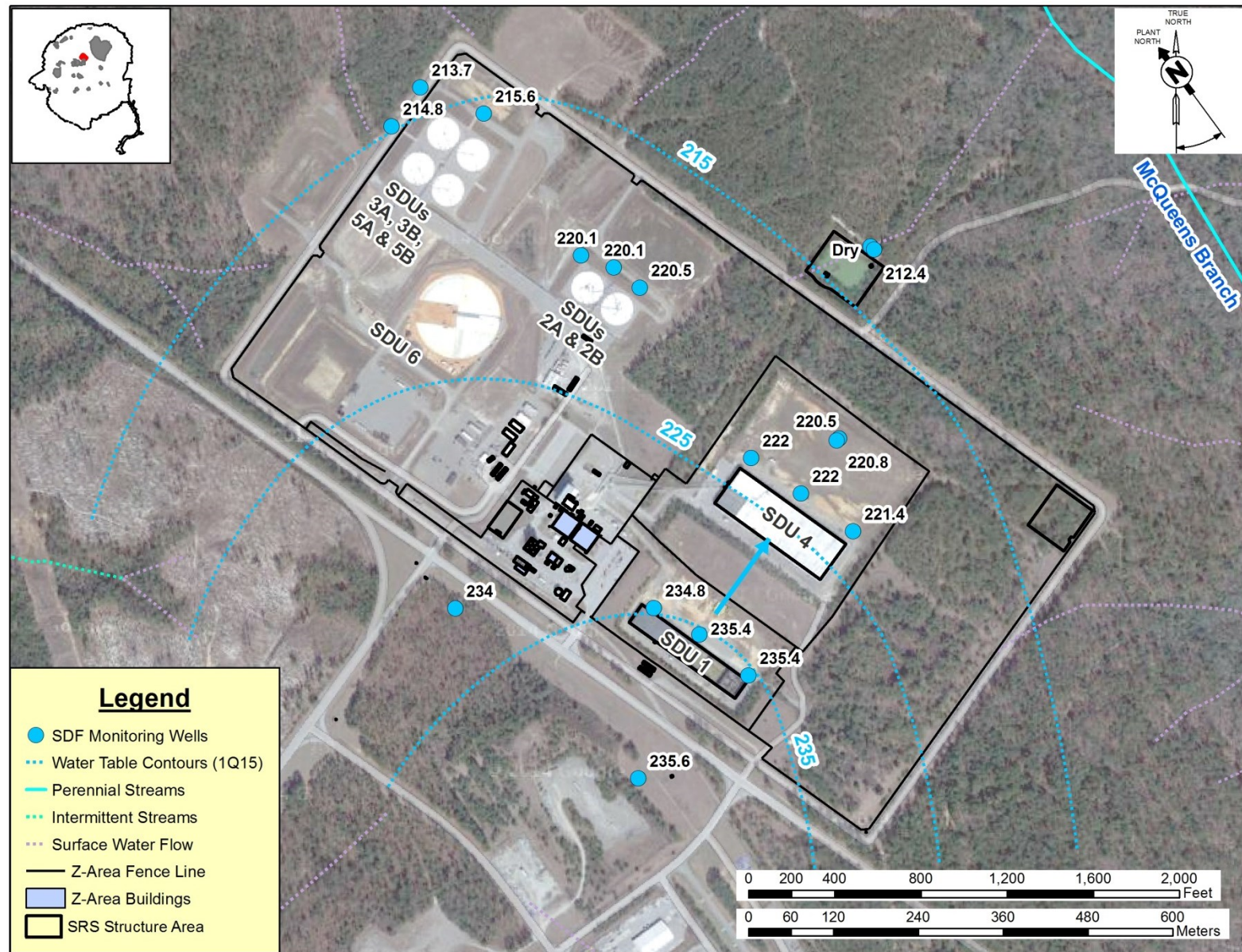


Figure 3. First Quarter 2015 Water Table Elevations (ft-msl)

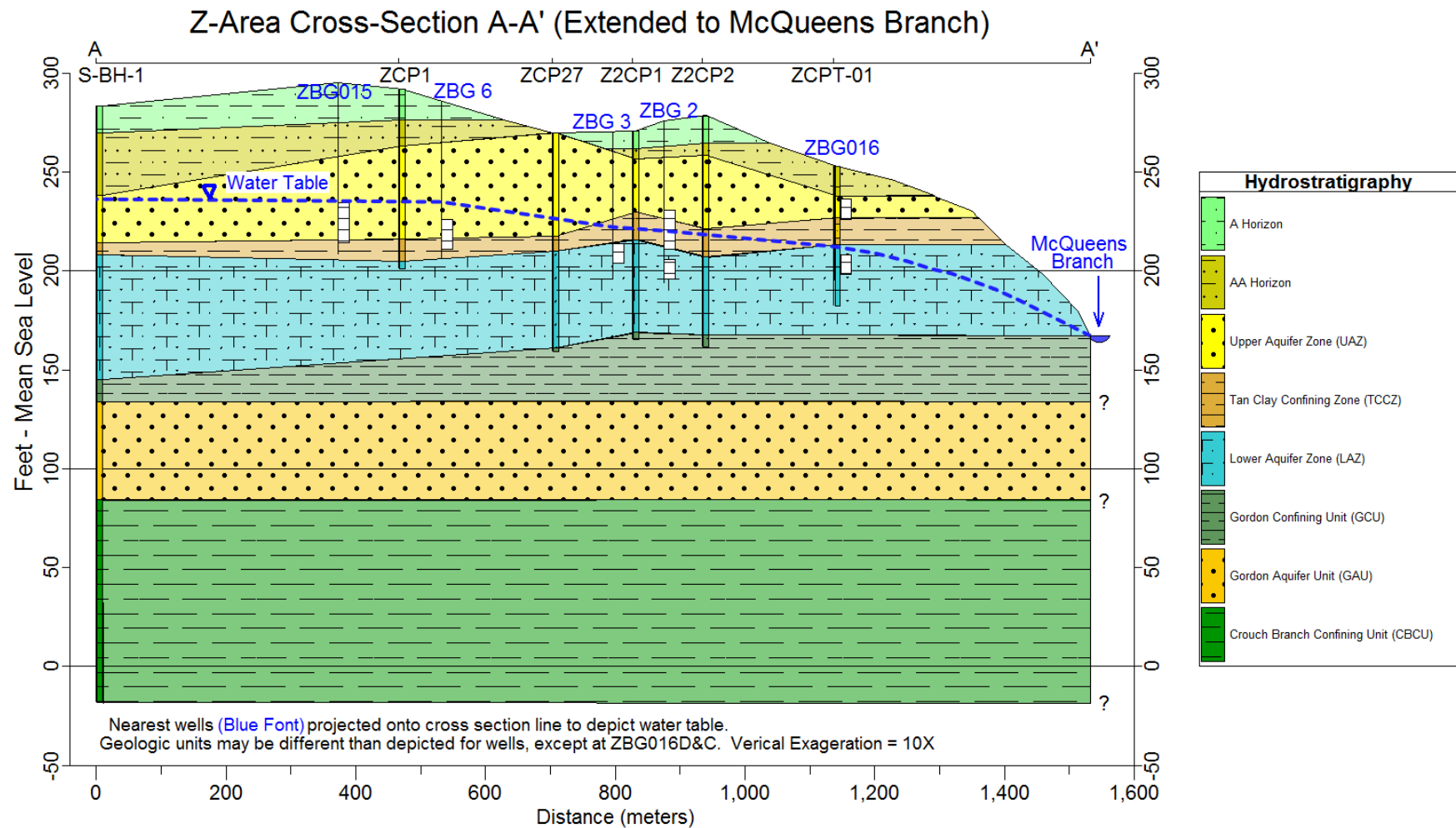


Figure 4. Z-Area Cross Section with 2015 Water Table.

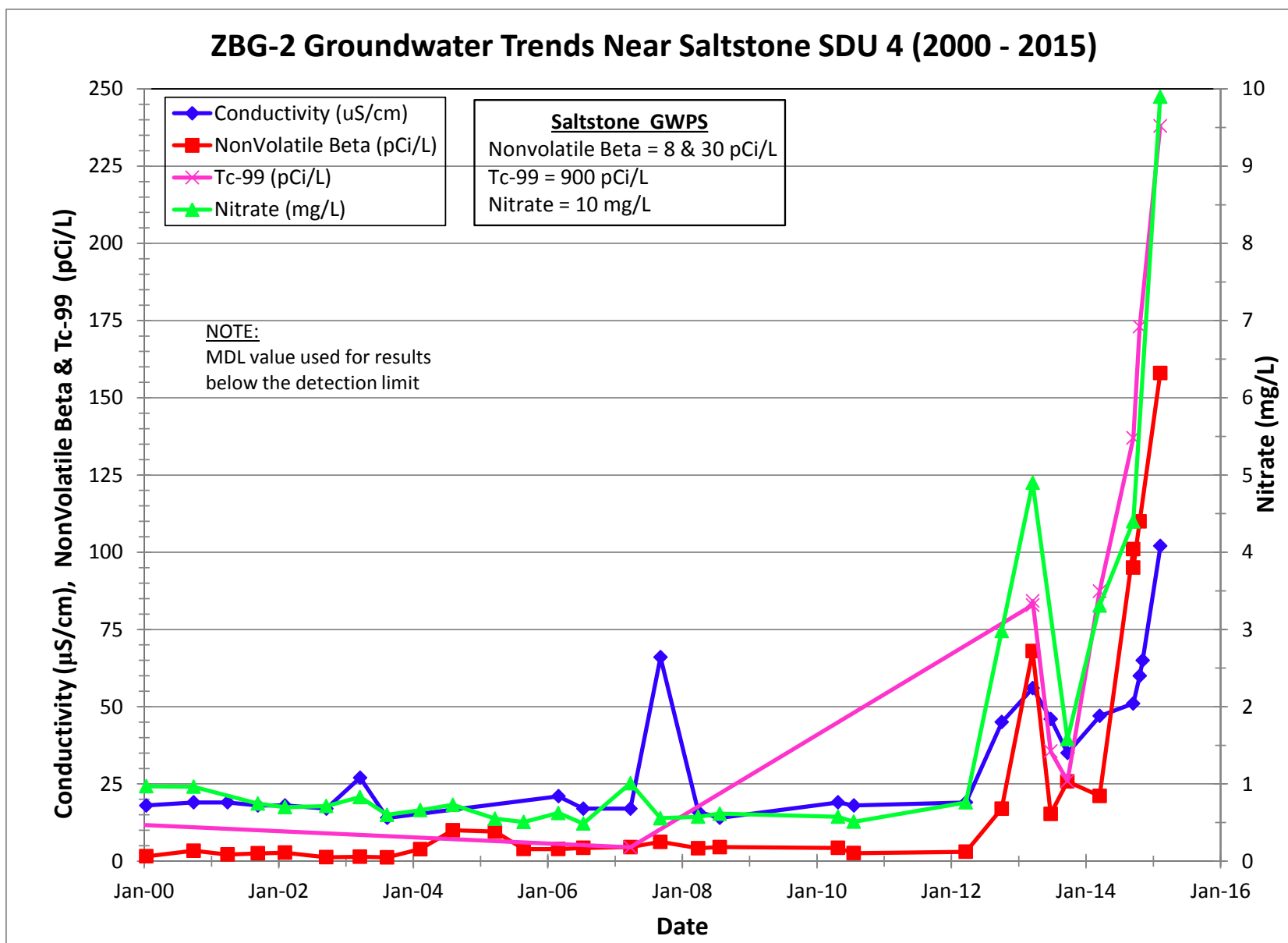


Figure 5. ZBG 2 Nonvolatile Beta, Tc-99, Nitrate, and Conductivity Groundwater Trends

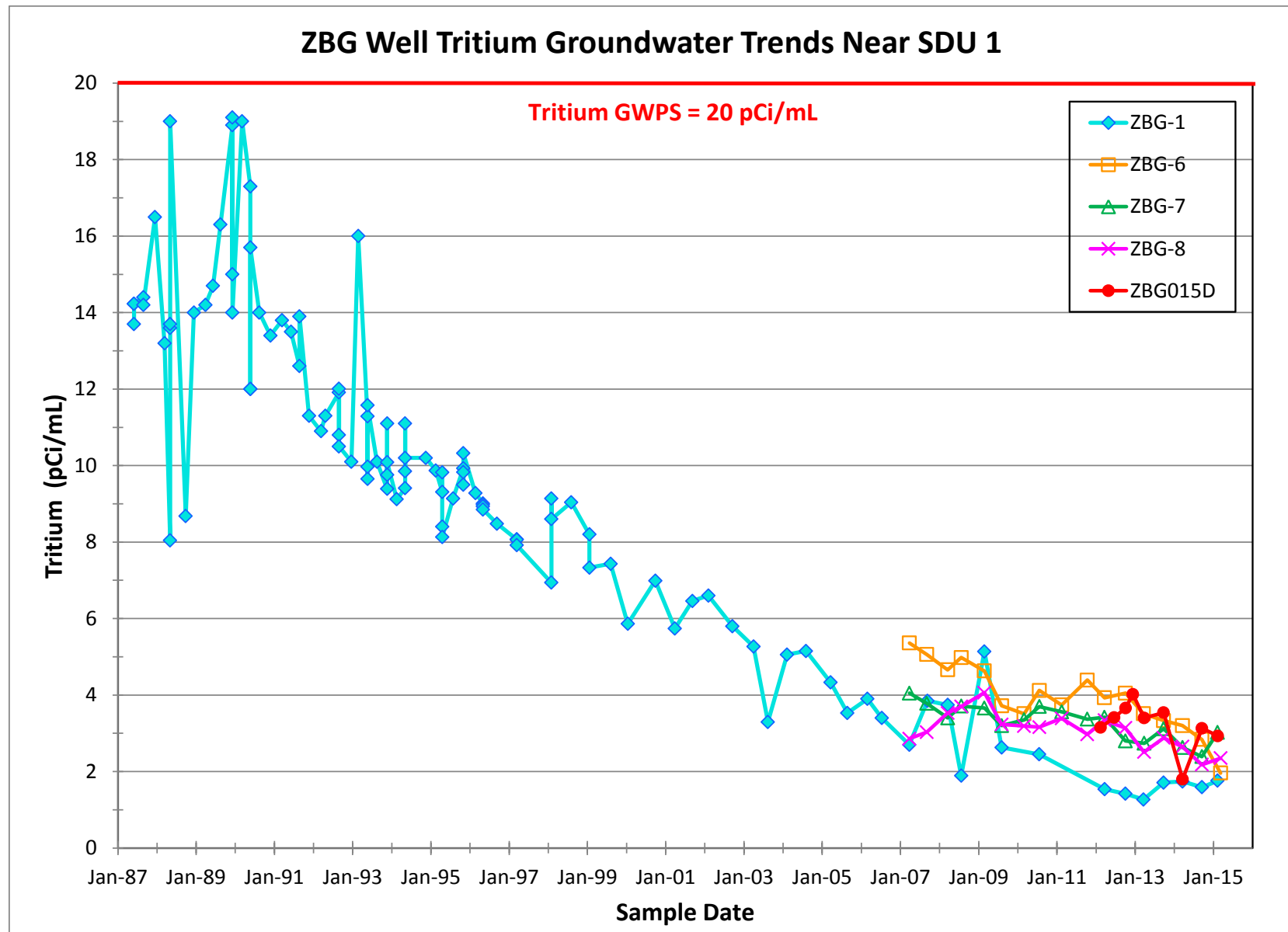


Figure 6. ZBG Well Tritium Groundwater Trends

Table 1. List of Analytes and Parameters for the SDF

Semiannual Constituents	Groundwater Protection Standard	Units
pH	NA	pH
Specific Conductance	NA	μS/cm
Groundwater Elevations	NA	ft-msl
Nitrate (Nitrate/Nitrite)	10,000	μg/L
Gross Alpha	15	pCi/L
Gross Beta ^{1,2} (Nonvolatile Beta)	8 / 30	pCi/L
Gamma Spectroscopy-Emitters (Beta-Emitters)	4	mrem
Iodine-129 (I-129)	1	pCi/L
Technetium-99 (Tc-99)	900	pCi/L
Tritium	20	pCi/mL
Biennial Constituents	Groundwater Protection Standard	Units
Radium-226 (Ra-226)	5 (Ra-226 + Ra-228)	pCi/L
Radium-228 (Ra-228)	5 (Ra-226 + Ra-228)	pCi/L
Benzene	5	μg/L
Tetrachloroethylene	5	μg/L
Toluene	1000	μg/L
Trichloroethylene	5	μg/L
Contingent Analysis 1	Groundwater Protection Standard	Units
Strontium-90 (Sr-90)	8	pCi/L
Contingent Analyses 2	Groundwater Protection Standard	Units
Carbon-14 (C-14)	2000	pCi/L
Cobalt-60 (Co-60)	100	pCi/L
Cesium-137 (Cs-137)	200	pCi/L
Gross Beta (Re-analysis)	30	pCi/L
Niobium-94 (Nb-94)	707 ³	pCi/L
Nickel-59 (Ni-59)	300	pCi/L
Nickel-63 (Ni-63)	50	pCi/L
Plutonium-241 (Pu-241)	62.6 ³	pCi/L
Ruthenium-106 (Ru-106)	30	pCi/L
Antimony (Sb-125)	300	pCi/L
Technetium-99 (Tc-99)	900	pCi/L
¹ If Gross Beta is equal to or exceeds 8 pCi/L then Contingent Analysis 1 is analyzed for that sample.		
² If Gross Beta is equal to or exceeds 30 pCi/L then all Contingent Analyses 2 are analyzed for that well and the background well.		
³ Proposed Drinking Water Standard. NA = Not Applicable.		

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Table 2. Laboratory Results for Saltstone Wells (1Q15)

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG 1	2/9/15	ACTINIUM-228	38.80	84.60	U	13.80	pCi/L	REG	REG
ZBG 1	2/9/15	ACTINIUM-228	56.90	85.90	U	4.10	pCi/L	REG	LD
ZBG 1	2/9/15	AMERICIUM-241	22.90	49.50	U	3.93	pCi/L	REG	LD
ZBG 1	2/9/15	ANTIMONY-125	24.70	54.10	U	9.60	pCi/L	REG	REG
ZBG 1	2/9/15	ANTIMONY-125	42.20	86.40	U	5.25	pCi/L	REG	LD
ZBG 1	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG 1	2/9/15	BISMUTH-214	32.10	84.50	J	82.44	pCi/L	REG	LD
ZBG 1	2/9/15	BISMUTH-214	26.70	72.10	J	55.30	pCi/L	REG	REG
ZBG 1	2/9/15	CARBON-14	10.70	22.90	U	-5.05	pCi/L	REG	LD
ZBG 1	2/9/15	CARBON-14	10.80	23.28	U	-2.34	pCi/L	REG	REG
ZBG 1	2/9/15	CESIUM-137	16.30	34.38	U	2.31	pCi/L	REG	LD
ZBG 1	2/9/15	CESIUM-137	11.60	25.00	U	3.15	pCi/L	REG	REG
ZBG 1	2/9/15	COBALT-60	8.55	17.51	U	0.99	pCi/L	REG	LD
ZBG 1	2/9/15	COBALT-60	15.80	33.68	U	-3.41	pCi/L	REG	REG
ZBG 1	2/9/15	GROSS ALPHA	1.39	3.16	U	0.95	pCi/L	REG	REG
ZBG 1	2/9/15	IODINE-129	0.62	1.36	U	-0.16	pCi/L	REG	REG
ZBG 1	2/9/15	LEAD-212	26.60	82.40	U	-4.17	pCi/L	REG	LD
ZBG 1	2/9/15	LEAD-212	24.30	66.30	U	-2.68	pCi/L	REG	REG
ZBG 1	2/9/15	LEAD-214	27.40	66.60		72.97	pCi/L	REG	LD
ZBG 1	2/9/15	LEAD-214	24.70	64.50	J	57.40	pCi/L	REG	REG
ZBG 1	2/9/15	NICKEL-59	2.26	4.94	U	0.00	pCi/L	REG	REG
ZBG 1	2/9/15	NICKEL-63	3.23	7.05	U	1.38	pCi/L	REG	REG
ZBG 1	2/9/15	NIOBIUM-94	13.30	17.46	U	-0.31	pCi/L	REG	REG
ZBG 1	2/9/15	NIOBIUM-94	16.60	34.66	U	0.40	pCi/L	REG	LD
ZBG 1	2/9/15	NITRATE-NITRITE AS NITROGEN	0.02	0.20		1.80	mg/L	REG	REG
ZBG 1	2/9/15	NONVOLATILE BETA	0.85	2.13	J	1.72	pCi/L	REG	REG
ZBG 1	2/9/15	PLUTONIUM-241	6.84	14.22	U	4.30	pCi/L	REG	LD
ZBG 1	2/9/15	PLUTONIUM-241	4.89	10.21	U	3.99	pCi/L	REG	REG
ZBG 1	2/9/15	POTASSIUM-40	196.00	426.00	U	-13.00	pCi/L	REG	REG
ZBG 1	2/9/15	POTASSIUM-40	273.00	751.00	U	-35.88	pCi/L	REG	LD
ZBG 1	2/9/15	RADIUM-226	0.13	0.40		0.54	pCi/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG 1	2/9/15	RADIUM-228	0.32	0.73	U	0.25	pCi/L	REG	REG
ZBG 1	2/9/15	RUTHENIUM-106	144.00	304.00	U	-16.12	pCi/L	REG	LD
ZBG 1	2/9/15	RUTHENIUM-106	110.00	194.40	U	21.40	pCi/L	REG	REG
ZBG 1	2/9/15	STRONTIUM-90	0.32	0.72	U	0.26	pCi/L	REG	REG
ZBG 1	2/9/15	TECHNETIUM-99	2.17	4.77	U	0.58	pCi/L	REG	REG
ZBG 1	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG 1	2/9/15	THALLIUM-208	12.70	19.90	U	1.36	pCi/L	REG	REG
ZBG 1	2/9/15	THALLIUM-208	16.70	33.28	U	0.22	pCi/L	REG	LD
ZBG 1	2/9/15	TOLUENE	0.07	1.00	J	0.81	µg/L	REG	REG
ZBG 1	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG 1	2/9/15	TRITIUM	0.38	1.04		1.76	pCi/mL	REG	REG
ZBG 2	2/9/15	ACTINIUM-228	45.10	69.70	U	8.02	pCi/L	REG	REG
ZBG 2	2/9/15	ANTIMONY-125	41.80	67.40	U	1.45	pCi/L	REG	REG
ZBG 2	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG 2	2/9/15	BISMUTH-214	29.50	105.50		303.00	pCi/L	REG	REG
ZBG 2	2/9/15	CARBON-14	10.70	22.82	U	-5.29	pCi/L	REG	REG
ZBG 2	2/9/15	CESIUM-137	12.40	25.86	U	0.02	pCi/L	REG	REG
ZBG 2	2/9/15	COBALT-60	5.38	9.52	U	0.00	pCi/L	REG	REG
ZBG 2	2/9/15	GROSS ALPHA	1.84	4.62	J	3.13	pCi/L	REG	REG
ZBG 2	2/9/15	GROSS ALPHA	1.97	4.61	U	1.94	pCi/L	REG	LD
ZBG 2	2/9/15	IODINE-129	0.67	1.46	U	-0.04	pCi/L	REG	REG
ZBG 2	2/9/15	IODINE-129	0.66	1.42	U	0.18	pCi/L	REG	LD
ZBG 2	2/9/15	LEAD-212	24.80	64.20	U	-1.64	pCi/L	REG	REG
ZBG 2	2/9/15	LEAD-214	25.30	89.50		327.00	pCi/L	REG	REG
ZBG 2	2/9/15	NICKEL-59	2.28	5.10	U	0.00	pCi/L	REG	REG
ZBG 2	2/9/15	NICKEL-63	3.27	7.21	U	2.11	pCi/L	REG	REG
ZBG 2	2/9/15	NIOBIUM-94	9.37	14.47	U	2.44	pCi/L	REG	REG
ZBG 2	2/9/15	NITRATE-NITRITE AS NITROGEN	0.05	0.50		9.90	mg/L	REG	REG
ZBG 2	2/9/15	NONVOLATILE BETA	1.01	9.15		158.00	pCi/L	REG	REG
ZBG 2	2/9/15	NONVOLATILE BETA	1.02	8.94		151.50	pCi/L	REG	LD
ZBG 2	2/9/15	PLUTONIUM-241	3.90	8.40	U	-0.41	pCi/L	REG	REG
ZBG 2	2/9/15	POTASSIUM-40	200.00	710.00	U	-43.10	pCi/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG 2	2/9/15	RADIUM-226	0.11	0.43		0.90	pCi/L	REG	REG
ZBG 2	2/9/15	RADIUM-228	0.35	0.80	U	0.29	pCi/L	REG	REG
ZBG 2	2/9/15	RUTHENIUM-106	81.50	173.90	U	18.30	pCi/L	REG	REG
ZBG 2	2/9/15	STRONTIUM-90	0.29	0.63	U	0.06	pCi/L	REG	LD
ZBG 2	2/9/15	STRONTIUM-90	0.31	0.65	U	0.01	pCi/L	REG	REG
ZBG 2	2/9/15	TECHNETIUM-99	2.04	11.36		238.00	pCi/L	REG	REG
ZBG 2	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG 2	2/9/15	THALLIUM-208	12.00	15.70	U	-0.82	pCi/L	REG	REG
ZBG 2	2/9/15	TOLUENE	0.07	1.00	U	1.00	µg/L	REG	REG
ZBG 2	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG 2	2/9/15	TRITIUM	0.38	1.11		2.42	pCi/mL	REG	REG
ZBG 3	2/9/15	ACTINIUM-228	37.10	75.20	U	3.40	pCi/L	REG	REG
ZBG 3	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG 3	2/9/15	BISMUTH-214	25.20	66.60	J	35.40	pCi/L	REG	REG
ZBG 3	2/9/15	CESIUM-137	8.96	19.30	U	-1.89	pCi/L	REG	REG
ZBG 3	2/9/15	COBALT-60	8.99	18.40	U	0.71	pCi/L	REG	REG
ZBG 3	2/9/15	GROSS ALPHA	2.26	4.51	U	0.43	pCi/L	REG	REG
ZBG 3	2/9/15	IODINE-129	0.70	1.64	U	0.31	pCi/L	REG	REG
ZBG 3	2/9/15	LEAD-212	17.60	39.30	U	-9.32	pCi/L	REG	REG
ZBG 3	2/9/15	LEAD-214	26.20	61.80	J	34.30	pCi/L	REG	REG
ZBG 3	2/9/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.88	mg/L	REG	REG
ZBG 3	2/9/15	NONVOLATILE BETA	4.19	8.57	U	-0.54	pCi/L	REG	REG
ZBG 3	2/9/15	POTASSIUM-40	161.00	311.00	U	-64.50	pCi/L	REG	REG
ZBG 3	2/9/15	RADIUM-226	0.16	0.39	J	0.24	pCi/L	REG	REG
ZBG 3	2/9/15	RADIUM-228	0.37	0.81	U	0.11	pCi/L	REG	REG
ZBG 3	2/9/15	TECHNETIUM-99	2.02	4.50	U	1.60	pCi/L	REG	LD
ZBG 3	2/9/15	TECHNETIUM-99	2.14	4.78	U	1.80	pCi/L	REG	REG
ZBG 3	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG 3	2/9/15	THALLIUM-208	10.30	21.70	U	-1.01	pCi/L	REG	REG
ZBG 3	2/9/15	TOLUENE	0.07	1.00	J	0.17	µg/L	REG	REG
ZBG 3	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG 3	2/9/15	TRITIUM	0.41	1.11		1.86	pCi/mL	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG 4	2/9/15	ACTINIUM-228	43.60	89.70	U	2.55	pCi/L	REG	REG
ZBG 4	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG 4	2/9/15	BISMUTH-214	26.70	59.00	U	17.30	pCi/L	REG	REG
ZBG 4	2/9/15	CESIUM-137	12.10	24.80	U	4.67	pCi/L	REG	REG
ZBG 4	2/9/15	COBALT-60	11.50	23.90	U	-0.05	pCi/L	REG	REG
ZBG 4	2/9/15	GROSS ALPHA	2.30	2.79	U	-0.36	pCi/L	REG	REG
ZBG 4	2/9/15	IODINE-129	0.67	1.44	U	0.27	pCi/L	REG	REG
ZBG 4	2/9/15	LEAD-212	20.00	43.60	U	-2.41	pCi/L	REG	REG
ZBG 4	2/9/15	LEAD-214	25.70	54.70	U	10.00	pCi/L	REG	REG
ZBG 4	2/9/15	NITRATE-NITRITE AS NITROGEN	0.01	0.10		1.10	mg/L	REG	REG
ZBG 4	2/9/15	NONVOLATILE BETA	4.08	9.92	U	3.71	pCi/L	REG	REG
ZBG 4	2/9/15	POTASSIUM-40	183.00	357.00	U	-123.00	pCi/L	REG	REG
ZBG 4	2/9/15	RADIUM-226	0.14	0.34	J	0.20	pCi/L	REG	REG
ZBG 4	2/9/15	RADIUM-228	0.39	0.87	U	0.23	pCi/L	REG	REG
ZBG 4	2/9/15	TECHNETIUM-99	2.13	5.01		5.55	pCi/L	REG	REG
ZBG 4	2/9/15	TECHNETIUM-99	2.15	5.05		5.78	pCi/L	REG	LD
ZBG 4	2/9/15	TECHNETIUM-99	2.38	5.60		6.90	pCi/L	REG	RERUN
ZBG 4	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG 4	2/9/15	THALLIUM-208	12.30	26.20	U	-2.02	pCi/L	REG	REG
ZBG 4	2/9/15	TOLUENE	0.07	1.00		1.10	µg/L	REG	REG
ZBG 4	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG 4	2/9/15	TRITIUM	0.38	1.06		1.92	pCi/mL	REG	REG
ZBG 5	2/9/15	ACTINIUM-228	34.20	76.40	U	-11.30	pCi/L	REG	REG
ZBG 5	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG 5	2/9/15	BISMUTH-214	20.10	41.90	U	3.65	pCi/L	REG	REG
ZBG 5	2/9/15	CESIUM-137	8.95	18.80	U	0.15	pCi/L	REG	REG
ZBG 5	2/9/15	COBALT-60	7.47	15.40	U	-0.41	pCi/L	REG	REG
ZBG 5	2/9/15	GROSS ALPHA	2.33	4.01	U	0.04	pCi/L	REG	REG
ZBG 5	2/9/15	IODINE-129	0.64	1.39	U	0.06	pCi/L	REG	REG
ZBG 5	2/9/15	LEAD-212	18.30	39.80	U	-0.23	pCi/L	REG	REG
ZBG 5	2/9/15	LEAD-214	21.90	47.10	U	5.08	pCi/L	REG	REG
ZBG 5	2/9/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.39	mg/L	REG	REG

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ZBG 5	2/9/15	NONVOLATILE BETA	4.14	9.27	U	1.47	pCi/L	REG	REG
ZBG 5	2/9/15	POTASSIUM-40	170.00	328.00	U	-34.10	pCi/L	REG	REG
ZBG 5	2/9/15	RADIUM-226	0.12	0.25	U	0.03	pCi/L	REG	REG
ZBG 5	2/9/15	RADIUM-228	0.35	0.74	U	-0.03	pCi/L	REG	REG
ZBG 5	2/9/15	TECHNETIUM-99	2.26	5.10	J	2.68	pCi/L	REG	RERUN
ZBG 5	2/9/15	TECHNETIUM-99	2.02	4.60	J	2.96	pCi/L	REG	REG
ZBG 5	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG 5	2/9/15	THALLIUM-208	10.80	22.50	U	-0.04	pCi/L	REG	REG
ZBG 5	2/9/15	TOLUENE	0.07	1.00	J	0.62	µg/L	REG	REG
ZBG 5	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG 5	2/9/15	TRITIUM	0.41	0.97	J	0.56	pCi/mL	REG	REG
ZBG 6	3/10/15	ACTINIUM-228	38.00	79.60	U	-4.38	pCi/L	REG	REG
ZBG 6	3/10/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG 6	3/10/15	BISMUTH-214	23.70	49.00	U	13.70	pCi/L	REG	REG
ZBG 6	3/10/15	CESIUM-137	8.86	18.50	U	0.65	pCi/L	REG	REG
ZBG 6	3/10/15	COBALT-60	8.70	17.50	U	1.60	pCi/L	REG	REG
ZBG 6	3/10/15	GROSS ALPHA	2.15	5.57	U	1.55	pCi/L	REG	REG
ZBG 6	3/10/15	IODINE-129	0.65	1.70	U	0.63	pCi/L	REG	LD
ZBG 6	3/10/15	IODINE-129	0.66	1.44	U	0.22	pCi/L	REG	REG
ZBG 6	3/10/15	LEAD-212	18.10	40.70	U	-8.10	pCi/L	REG	REG
ZBG 6	3/10/15	LEAD-214	22.50	48.60	U	1.49	pCi/L	REG	REG
ZBG 6	3/10/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.39	mg/L	REG	REG
ZBG 6	3/10/15	NONVOLATILE BETA	3.95	8.49	U	0.80	pCi/L	REG	REG
ZBG 6	3/10/15	POTASSIUM-40	200.00	381.00	U	24.60	pCi/L	REG	REG
ZBG 6	3/10/15	RADIUM-226	0.08	0.31		0.82	pCi/L	REG	REG
ZBG 6	3/10/15	RADIUM-228	0.35	0.84	J	0.57	pCi/L	REG	REG
ZBG 6	3/10/15	TECHNETIUM-99	1.90	4.10	U	-0.36	pCi/L	REG	REG
ZBG 6	3/10/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG 6	3/10/15	THALLIUM-208	10.50	22.30	U	-2.33	pCi/L	REG	REG
ZBG 6	3/10/15	TOLUENE	0.07	1.00	J	0.25	µg/L	REG	REG
ZBG 6	3/10/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG 6	3/10/15	TRITIUM	0.44	1.17		1.96	pCi/mL	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG 7	2/9/15	ACTINIUM-228	39.90	81.50	U	5.62	pCi/L	REG	REG
ZBG 7	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG 7	2/9/15	BISMUTH-214	22.70	49.40	U	19.00	pCi/L	REG	REG
ZBG 7	2/9/15	CESIUM-137	7.82	16.70	U	-1.52	pCi/L	REG	REG
ZBG 7	2/9/15	COBALT-60	9.06	17.60	U	3.89	pCi/L	REG	REG
ZBG 7	2/9/15	GROSS ALPHA	2.26	4.99	U	0.81	pCi/L	REG	REG
ZBG 7	2/9/15	IODINE-129	0.70	1.92	U	0.63	pCi/L	REG	REG
ZBG 7	2/9/15	LEAD-212	17.20	38.30	U	-8.13	pCi/L	REG	REG
ZBG 7	2/9/15	LEAD-214	23.70	57.70	U	19.60	pCi/L	REG	REG
ZBG 7	2/9/15	NITRATE-NITRITE AS NITROGEN	0.01	0.10		0.95	mg/L	REG	REG
ZBG 7	2/9/15	NONVOLATILE BETA	4.24	9.40	U	1.25	pCi/L	REG	REG
ZBG 7	2/9/15	POTASSIUM-40	168.00	324.00	U	-48.30	pCi/L	REG	REG
ZBG 7	2/9/15	RADIUM-226	0.11	0.36		0.53	pCi/L	REG	REG
ZBG 7	2/9/15	RADIUM-228	0.37	0.81	U	0.14	pCi/L	REG	REG
ZBG 7	2/9/15	TECHNETIUM-99	2.21	4.77	U	-0.53	pCi/L	REG	REG
ZBG 7	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG 7	2/9/15	THALLIUM-208	10.60	21.80	U	0.95	pCi/L	REG	REG
ZBG 7	2/9/15	TOLUENE	0.07	1.00	J	0.80	µg/L	REG	REG
ZBG 7	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG 7	2/9/15	TRITIUM	0.38	1.16		3.02	pCi/mL	REG	REG
ZBG 8	3/10/15	ACTINIUM-228	41.50	84.40	U	12.60	pCi/L	REG	REG
ZBG 8	3/10/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG 8	3/10/15	BISMUTH-214	16.30	58.60	J	26.20	pCi/L	REG	REG
ZBG 8	3/10/15	CESIUM-137	9.26	19.60	U	-0.18	pCi/L	REG	REG
ZBG 8	3/10/15	COBALT-60	9.55	19.40	U	1.77	pCi/L	REG	REG
ZBG 8	3/10/15	GROSS ALPHA	2.16	5.60	U	1.56	pCi/L	REG	REG
ZBG 8	3/10/15	IODINE-129	0.69	1.52	U	0.03	pCi/L	REG	REG
ZBG 8	3/10/15	LEAD-212	17.30	39.90	U	-15.60	pCi/L	REG	REG
ZBG 8	3/10/15	LEAD-214	25.90	73.60	J	32.60	pCi/L	REG	REG
ZBG 8	3/10/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.92	mg/L	REG	REG
ZBG 8	3/10/15	NONVOLATILE BETA	3.95	8.40	U	0.57	pCi/L	REG	REG
ZBG 8	3/10/15	POTASSIUM-40	197.00	380.00	U	-21.20	pCi/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG 8	3/10/15	RADIUM-226	0.08	0.32		0.85	pCi/L	REG	REG
ZBG 8	3/10/15	RADIUM-228	0.41	0.89	U	0.15	pCi/L	REG	REG
ZBG 8	3/10/15	TECHNETIUM-99	2.01	4.35	U	-0.34	pCi/L	REG	REG
ZBG 8	3/10/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG 8	3/10/15	THALLIUM-208	10.10	21.50	U	-2.57	pCi/L	REG	REG
ZBG 8	3/10/15	TOLUENE	0.07	1.00	J	0.20	µg/L	REG	REG
ZBG 8	3/10/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG 8	3/10/15	TRITIUM	0.44	1.20		2.35	pCi/mL	REG	REG
ZBG002C	2/9/15	ACTINIUM-228	36.10	79.60	U	-22.20	pCi/L	REG	REG
ZBG002C	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG002C	2/9/15	BISMUTH-214	27.30	56.80	U	6.46	pCi/L	REG	REG
ZBG002C	2/9/15	CESIUM-137	10.60	21.60	U	3.64	pCi/L	REG	REG
ZBG002C	2/9/15	COBALT-60	10.70	20.90	U	3.57	pCi/L	REG	REG
ZBG002C	2/9/15	GROSS ALPHA	2.33	2.84	U	-0.36	pCi/L	REG	REG
ZBG002C	2/9/15	IODINE-129	0.68	1.47	U	0.25	pCi/L	REG	REG
ZBG002C	2/9/15	LEAD-212	19.10	42.30	U	-7.08	pCi/L	REG	REG
ZBG002C	2/9/15	LEAD-214	26.60	56.30	U	14.50	pCi/L	REG	REG
ZBG002C	2/9/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.75	mg/L	REG	REG
ZBG002C	2/9/15	NONVOLATILE BETA	4.09	9.11	U	1.34	pCi/L	REG	REG
ZBG002C	2/9/15	POTASSIUM-40	222.00	426.00	U	-5.64	pCi/L	REG	REG
ZBG002C	2/9/15	RADIUM-226	0.13	0.29	U	0.05	pCi/L	REG	REG
ZBG002C	2/9/15	RADIUM-228	0.36	0.74	U	-0.09	pCi/L	REG	REG
ZBG002C	2/9/15	TECHNETIUM-99	2.01	4.43	U	0.80	pCi/L	REG	REG
ZBG002C	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG002C	2/9/15	THALLIUM-208	12.50	26.80	U	-2.80	pCi/L	REG	REG
ZBG002C	2/9/15	TOLUENE	0.07	1.00	U	1.00	µg/L	REG	REG
ZBG002C	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG002C	2/9/15	TRITIUM	0.38	1.03		1.63	pCi/mL	REG	REG
ZBG009D	2/10/15	ACTINIUM-228	34.20	73.70	U	-16.90	pCi/L	REG	REG
ZBG009D	2/10/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG009D	2/10/15	BISMUTH-214	22.50	49.50	J	25.30	pCi/L	REG	REG
ZBG009D	2/10/15	CESIUM-137	10.70	22.00	U	4.33	pCi/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG009D	2/10/15	COBALT-60	8.65	18.10	U	-1.01	pCi/L	REG	REG
ZBG009D	2/10/15	GROSS ALPHA	2.24	5.06	U	0.86	pCi/L	REG	REG
ZBG009D	2/10/15	IODINE-129	0.67	1.48	U	-0.18	pCi/L	REG	REG
ZBG009D	2/10/15	LEAD-212	19.30	41.60	U	3.89	pCi/L	REG	REG
ZBG009D	2/10/15	LEAD-214	20.50	44.80	U	-0.07	pCi/L	REG	REG
ZBG009D	2/10/15	NITRATE-NITRITE AS NITROGEN	0.02	0.20		1.52	mg/L	REG	LD
ZBG009D	2/10/15	NITRATE-NITRITE AS NITROGEN	0.02	0.20		1.50	mg/L	REG	REG
ZBG009D	2/10/15	NONVOLATILE BETA	3.77	7.89	U	0.31	pCi/L	REG	REG
ZBG009D	2/10/15	POTASSIUM-40	175.00	338.00	U	-28.70	pCi/L	REG	REG
ZBG009D	2/10/15	RADIUM-226	0.13	0.34	J	0.21	pCi/L	REG	REG
ZBG009D	2/10/15	RADIUM-228	0.31	0.66	U	0.01	pCi/L	REG	REG
ZBG009D	2/10/15	TECHNETIUM-99	2.12	4.60	U	-0.41	pCi/L	REG	REG
ZBG009D	2/10/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG009D	2/10/15	THALLIUM-208	10.20	22.60	U	-1.57	pCi/L	REG	REG
ZBG009D	2/10/15	TOLUENE	0.07	1.00	U	1.00	µg/L	REG	REG
ZBG009D	2/10/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG009D	2/10/15	TRITIUM	0.42	1.17		2.36	pCi/mL	REG	REG
ZBG010D	2/10/15	ACTINIUM-228	33.40	70.70	U	-12.40	pCi/L	REG	REG
ZBG010D	2/10/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG010D	2/10/15	BISMUTH-214	16.40	47.50	U	15.50	pCi/L	REG	REG
ZBG010D	2/10/15	CESIUM-137	9.07	19.10	U	-0.03	pCi/L	REG	REG
ZBG010D	2/10/15	COBALT-60	10.00	20.40	U	1.90	pCi/L	REG	REG
ZBG010D	2/10/15	GROSS ALPHA	2.26	4.01	U	0.07	pCi/L	REG	REG
ZBG010D	2/10/15	IODINE-129	0.64	1.56	U	-0.14	pCi/L	REG	REG
ZBG010D	2/10/15	LEAD-212	18.90	40.60	U	6.53	pCi/L	REG	REG
ZBG010D	2/10/15	LEAD-214	24.80	62.50	J	31.00	pCi/L	REG	REG
ZBG010D	2/10/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.40	mg/L	REG	REG
ZBG010D	2/10/15	NONVOLATILE BETA	3.75	7.14	U	-1.08	pCi/L	REG	REG
ZBG010D	2/10/15	POTASSIUM-40	165.00	320.00	U	-62.80	pCi/L	REG	REG
ZBG010D	2/10/15	RADIUM-226	0.13	0.38		0.46	pCi/L	REG	REG
ZBG010D	2/10/15	RADIUM-228	0.30	0.70	U	0.30	pCi/L	REG	REG
ZBG010D	2/10/15	TECHNETIUM-99	2.12	4.58	U	-0.61	pCi/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG010D	2/10/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG010D	2/10/15	THALLIUM-208	11.10	23.30	U	-1.51	pCi/L	REG	REG
ZBG010D	2/10/15	TOLUENE	0.07	1.00	J	0.38	µg/L	REG	REG
ZBG010D	2/10/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG010D	2/10/15	TRITIUM	0.42	1.10		1.67	pCi/mL	REG	REG
ZBG011D	2/10/15	ACTINIUM-228	42.30	86.60	U	32.60	pCi/L	REG	REG
ZBG011D	2/10/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG011D	2/10/15	BISMUTH-214	20.70	43.70	U	-0.49	pCi/L	REG	REG
ZBG011D	2/10/15	CESIUM-137	9.75	20.10	U	3.03	pCi/L	REG	REG
ZBG011D	2/10/15	COBALT-60	8.90	17.70	U	2.20	pCi/L	REG	REG
ZBG011D	2/10/15	GROSS ALPHA	2.34	4.16	U	0.08	pCi/L	REG	REG
ZBG011D	2/10/15	IODINE-129	0.61	1.35	U	-0.20	pCi/L	REG	REG
ZBG011D	2/10/15	LEAD-212	18.80	40.40	U	5.55	pCi/L	REG	REG
ZBG011D	2/10/15	LEAD-214	20.60	46.40	U	-9.81	pCi/L	REG	REG
ZBG011D	2/10/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.15	mg/L	REG	REG
ZBG011D	2/10/15	NONVOLATILE BETA	3.77	7.90	U	0.36	pCi/L	REG	REG
ZBG011D	2/10/15	POTASSIUM-40	160.00	310.00	U	-71.50	pCi/L	REG	REG
ZBG011D	2/10/15	RADIUM-226	0.15	0.35	U	0.13	pCi/L	REG	REG
ZBG011D	2/10/15	RADIUM-228	0.35	0.77	U	0.12	pCi/L	REG	REG
ZBG011D	2/10/15	TECHNETIUM-99	2.13	4.61	U	-0.48	pCi/L	REG	REG
ZBG011D	2/10/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG011D	2/10/15	THALLIUM-208	10.60	22.20	U	-1.12	pCi/L	REG	REG
ZBG011D	2/10/15	TOLUENE	0.07	1.00	J	0.31	µg/L	REG	REG
ZBG011D	2/10/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG011D	2/10/15	TRITIUM	0.41	0.95	J	0.44	pCi/mL	REG	REG
ZBG012D	2/9/15	ACTINIUM-228	34.20	71.40	U	-7.98	pCi/L	REG	REG
ZBG012D	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG012D	2/9/15	BISMUTH-214	19.30	40.40	U	1.08	pCi/L	REG	REG
ZBG012D	2/9/15	CESIUM-137	8.42	17.50	U	0.79	pCi/L	REG	REG
ZBG012D	2/9/15	COBALT-60	8.09	17.60	U	-3.37	pCi/L	REG	REG
ZBG012D	2/9/15	GROSS ALPHA	2.40	4.12	U	0.03	pCi/L	REG	REG
ZBG012D	2/9/15	IODINE-129	0.67	2.05	J	1.27	pCi/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG012D	2/9/15	LEAD-212	19.10	41.00	U	8.58	pCi/L	REG	REG
ZBG012D	2/9/15	LEAD-214	20.60	44.90	U	-0.22	pCi/L	REG	REG
ZBG012D	2/9/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.35	mg/L	REG	REG
ZBG012D	2/9/15	NONVOLATILE BETA	4.15	9.96	U	3.38	pCi/L	REG	REG
ZBG012D	2/9/15	POTASSIUM-40	161.00	312.00	U	-63.00	pCi/L	REG	REG
ZBG012D	2/9/15	RADIUM-226	0.14	0.29	U	0.05	pCi/L	REG	REG
ZBG012D	2/9/15	RADIUM-228	0.32	0.70	U	0.15	pCi/L	REG	REG
ZBG012D	2/9/15	TECHNETIUM-99	2.09	4.59	U	0.55	pCi/L	REG	REG
ZBG012D	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG012D	2/9/15	THALLIUM-208	10.60	22.40	U	-2.39	pCi/L	REG	REG
ZBG012D	2/9/15	TOLUENE	0.07	1.00	J	0.97	µg/L	REG	REG
ZBG012D	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG012D	2/9/15	TRITIUM	0.38	1.05		1.83	pCi/mL	REG	REG
ZBG013D	2/11/15	ACTINIUM-228	35.00	73.50	U	-9.19	pCi/L	REG	REG
ZBG013D	2/11/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG013D	2/11/15	BISMUTH-214	23.40	51.40	U	6.52	pCi/L	REG	REG
ZBG013D	2/11/15	CESIUM-137	9.40	20.10	U	-1.16	pCi/L	REG	REG
ZBG013D	2/11/15	COBALT-60	9.83	19.70	U	2.82	pCi/L	REG	REG
ZBG013D	2/11/15	GROSS ALPHA	2.43	4.83	U	0.45	pCi/L	REG	REG
ZBG013D	2/11/15	IODINE-129	0.70	1.52	U	0.45	pCi/L	REG	REG
ZBG013D	2/11/15	LEAD-212	17.80	38.90	U	-1.73	pCi/L	REG	REG
ZBG013D	2/11/15	LEAD-214	22.50	48.70	U	3.20	pCi/L	REG	REG
ZBG013D	2/11/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.12	mg/L	REG	REG
ZBG013D	2/11/15	NONVOLATILE BETA	4.21	9.72	U	2.32	pCi/L	REG	REG
ZBG013D	2/11/15	POTASSIUM-40	184.00	352.00	U	13.40	pCi/L	REG	REG
ZBG013D	2/11/15	RADIUM-226	0.16	0.33	U	0.03	pCi/L	REG	REG
ZBG013D	2/11/15	RADIUM-228	0.29	0.64	U	0.15	pCi/L	REG	REG
ZBG013D	2/11/15	TECHNETIUM-99	2.57	5.49	U	-1.52	pCi/L	REG	REG
ZBG013D	2/11/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG013D	2/11/15	THALLIUM-208	10.80	22.70	U	-1.58	pCi/L	REG	REG
ZBG013D	2/11/15	TOLUENE	0.07	1.00	U	1.00	µg/L	REG	REG
ZBG013D	2/11/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG013D	2/11/15	TRITIUM	0.47	1.02	U	-0.03	pCi/mL	REG	REG
ZBG014D	2/11/15	ACTINIUM-228	40.90	83.90	U	5.51	pCi/L	REG	REG
ZBG014D	2/11/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG014D	2/11/15	BISMUTH-214	21.40	46.20	U	-7.03	pCi/L	REG	REG
ZBG014D	2/11/15	CESIUM-137	9.25	19.20	U	1.80	pCi/L	REG	REG
ZBG014D	2/11/15	COBALT-60	8.00	17.10	U	-2.22	pCi/L	REG	REG
ZBG014D	2/11/15	GROSS ALPHA	2.40	4.12	U	0.04	pCi/L	REG	REG
ZBG014D	2/11/15	IODINE-129	0.66	1.58	U	0.22	pCi/L	REG	REG
ZBG014D	2/11/15	LEAD-212	18.60	39.90	U	6.75	pCi/L	REG	REG
ZBG014D	2/11/15	LEAD-214	21.50	46.70	U	2.60	pCi/L	REG	REG
ZBG014D	2/11/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05		0.37	mg/L	REG	REG
ZBG014D	2/11/15	NONVOLATILE BETA	4.15	8.32	U	-0.91	pCi/L	REG	REG
ZBG014D	2/11/15	POTASSIUM-40	174.00	341.00	U	-56.60	pCi/L	REG	REG
ZBG014D	2/11/15	RADIUM-226	0.07	0.16	U	0.05	pCi/L	REG	REG
ZBG014D	2/11/15	RADIUM-226	0.07	0.17	J	0.08	pCi/L	REG	LD
ZBG014D	2/11/15	RADIUM-228	0.40	0.81	U	-0.23	pCi/L	REG	REG
ZBG014D	2/11/15	RADIUM-228	0.42	0.86	U	-0.12	pCi/L	REG	LD
ZBG014D	2/11/15	TECHNETIUM-99	2.00	4.26	U	-1.23	pCi/L	REG	REG
ZBG014D	2/11/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG014D	2/11/15	THALLIUM-208	10.90	23.10	U	-3.05	pCi/L	REG	REG
ZBG014D	2/11/15	TOLUENE	0.07	1.00	U	1.00	µg/L	REG	REG
ZBG014D	2/11/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG014D	2/11/15	TRITIUM	0.48	1.10	J	0.65	pCi/mL	REG	REG
ZBG015D	2/11/15	ACTINIUM-228	35.40	59.20	U	3.62	pCi/L	REG	REG
ZBG015D	2/11/15	ACTINIUM-228	32.00	66.40	U	5.54	pCi/L	REG	LD
ZBG015D	2/11/15	AMERICIUM-241	19.20	41.80	U	4.71	pCi/L	REG	LD
ZBG015D	2/11/15	ANTIMONY-125	21.20	41.60	U	2.55	pCi/L	REG	REG
ZBG015D	2/11/15	ANTIMONY-125	26.90	55.30	U	0.79	pCi/L	REG	LD
ZBG015D	2/11/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG015D	2/11/15	BISMUTH-214	30.40	63.00	U	12.64	pCi/L	REG	LD
ZBG015D	2/11/15	BISMUTH-214	22.50	51.90	J	37.00	pCi/L	REG	REG
ZBG015D	2/11/15	CARBON-14	10.80	23.18	U	-3.48	pCi/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG015D	2/11/15	CESIUM-137	10.60	21.86	U	0.07	pCi/L	REG	REG
ZBG015D	2/11/15	CESIUM-137	13.50	28.08	U	0.36	pCi/L	REG	LD
ZBG015D	2/11/15	COBALT-60	12.20	18.24	U	0.53	pCi/L	REG	REG
ZBG015D	2/11/15	COBALT-60	16.50	34.22	U	1.61	pCi/L	REG	LD
ZBG015D	2/11/15	GROSS ALPHA	1.37	2.94	U	0.44	pCi/L	REG	REG
ZBG015D	2/11/15	IODINE-129	0.65	1.44	U	-0.15	pCi/L	REG	REG
ZBG015D	2/11/15	LEAD-212	22.90	334.90	U	-7.67	pCi/L	REG	REG
ZBG015D	2/11/15	LEAD-212	19.60	45.60	U	-1.70	pCi/L	REG	LD
ZBG015D	2/11/15	LEAD-214	19.10	52.30		53.30	pCi/L	REG	REG
ZBG015D	2/11/15	LEAD-214	21.00	57.80		70.10	pCi/L	REG	LD
ZBG015D	2/11/15	NICKEL-59	2.29	5.05	U	0.00	pCi/L	REG	LD
ZBG015D	2/11/15	NICKEL-59	2.22	4.92	U	0.00	pCi/L	REG	REG
ZBG015D	2/11/15	NICKEL-63	3.15	6.77	U	0.19	pCi/L	REG	REG
ZBG015D	2/11/15	NICKEL-63	3.24	7.16	U	1.97	pCi/L	REG	LD
ZBG015D	2/11/15	NIOBIUM-94	11.10	22.88	U	0.37	pCi/L	REG	LD
ZBG015D	2/11/15	NIOBIUM-94	7.95	17.55	U	3.51	pCi/L	REG	REG
ZBG015D	2/11/15	NITRATE-NITRITE AS NITROGEN	0.02	0.20		1.30	mg/L	REG	REG
ZBG015D	2/11/15	NONVOLATILE BETA	0.84	2.00	J	1.19	pCi/L	REG	REG
ZBG015D	2/11/15	PLUTONIUM-241	4.17	8.77	U	-1.16	pCi/L	REG	REG
ZBG015D	2/11/15	POTASSIUM-40	194.00	474.00	U	-16.94	pCi/L	REG	LD
ZBG015D	2/11/15	POTASSIUM-40	190.00	714.00	U	-47.20	pCi/L	REG	REG
ZBG015D	2/11/15	RADIUM-226	0.09	0.26		0.30	pCi/L	REG	REG
ZBG015D	2/11/15	RADIUM-228	0.39	0.88	U	0.31	pCi/L	REG	REG
ZBG015D	2/11/15	RUTHENIUM-106	87.00	182.20	U	-7.52	pCi/L	REG	REG
ZBG015D	2/11/15	RUTHENIUM-106	86.80	211.20	U	6.01	pCi/L	REG	LD
ZBG015D	2/11/15	STRONTIUM-90	0.30	0.67	U	0.22	pCi/L	REG	REG
ZBG015D	2/11/15	TECHNETIUM-99	2.26	4.90	U	-0.36	pCi/L	REG	REG
ZBG015D	2/11/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG015D	2/11/15	THALLIUM-208	12.10	30.54	U	-0.88	pCi/L	REG	REG
ZBG015D	2/11/15	THALLIUM-208	13.70	16.30	U	0.49	pCi/L	REG	LD
ZBG015D	2/11/15	TOLUENE	0.07	1.00	J	0.77	µg/L	REG	REG
ZBG015D	2/11/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG015D	2/11/15	TRITIUM	0.47	1.32		2.93	pCi/mL	REG	REG
ZBG016C	2/9/15	ACTINIUM-228	34.60	73.50	U	-12.40	pCi/L	FD	REG
ZBG016C	2/9/15	ACTINIUM-228	39.10	81.30	U	-2.62	pCi/L	REG	REG
ZBG016C	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	FD	REG
ZBG016C	2/9/15	BENZENE	0.06	1.00	U	1.00	µg/L	REG	REG
ZBG016C	2/9/15	BISMUTH-214	17.40	53.90	J	27.10	pCi/L	FD	REG
ZBG016C	2/9/15	BISMUTH-214	24.20	58.00	U	22.10	pCi/L	REG	REG
ZBG016C	2/9/15	CESIUM-137	9.64	19.80	U	3.21	pCi/L	REG	REG
ZBG016C	2/9/15	CESIUM-137	9.69	20.10	U	1.82	pCi/L	FD	REG
ZBG016C	2/9/15	COBALT-60	9.49	18.20	U	5.49	pCi/L	FD	REG
ZBG016C	2/9/15	COBALT-60	7.52	16.60	U	-3.70	pCi/L	REG	REG
ZBG016C	2/9/15	GROSS ALPHA	2.27	3.89	U	0.04	pCi/L	FD	REG
ZBG016C	2/9/15	GROSS ALPHA	2.27	2.76	U	-0.36	pCi/L	REG	REG
ZBG016C	2/9/15	IODINE-129	0.69	1.67	U	0.01	pCi/L	REG	REG
ZBG016C	2/9/15	IODINE-129	0.67	1.45	U	0.32	pCi/L	FD	REG
ZBG016C	2/9/15	IODINE-129	0.68	1.49	U	0.06	pCi/L	REG	LD
ZBG016C	2/9/15	LEAD-212	19.80	42.40	U	8.44	pCi/L	FD	REG
ZBG016C	2/9/15	LEAD-212	17.80	39.50	U	-6.91	pCi/L	REG	REG
ZBG016C	2/9/15	LEAD-214	22.70	48.70	U	8.64	pCi/L	REG	REG
ZBG016C	2/9/15	LEAD-214	18.10	56.80	J	30.80	pCi/L	FD	REG
ZBG016C	2/9/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05	J	0.01	mg/L	REG	REG
ZBG016C	2/9/15	NITRATE-NITRITE AS NITROGEN	0.00	0.05	U	0.05	mg/L	FD	REG
ZBG016C	2/9/15	NONVOLATILE BETA	4.13	9.16	U	1.23	pCi/L	FD	REG
ZBG016C	2/9/15	NONVOLATILE BETA	4.07	9.52	U	2.52	pCi/L	REG	REG
ZBG016C	2/9/15	POTASSIUM-40	161.00	314.00	U	-70.60	pCi/L	REG	REG
ZBG016C	2/9/15	POTASSIUM-40	164.00	319.00	U	-70.50	pCi/L	FD	REG
ZBG016C	2/9/15	RADIUM-226	0.11	0.26	U	0.10	pCi/L	REG	REG
ZBG016C	2/9/15	RADIUM-226	0.17	0.38	U	0.08	pCi/L	FD	REG
ZBG016C	2/9/15	RADIUM-228	0.31	0.66	U	0.02	pCi/L	REG	REG
ZBG016C	2/9/15	RADIUM-228	0.33	0.71	U	0.02	pCi/L	FD	REG
ZBG016C	2/9/15	TECHNETIUM-99	2.04	4.50	U	0.72	pCi/L	FD	REG
ZBG016C	2/9/15	TECHNETIUM-99	2.02	4.46	U	0.98	pCi/L	REG	REG

WELL	DATE	ANALYTE	MDL	PQL	QUALIFIER	RESULT	UNITS	SAMPLE TYPE	ANALYSIS CODE
ZBG016C	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	FD	REG
ZBG016C	2/9/15	TETRACHLOROETHYLENE (PCE)	0.18	1.00	U	1.00	µg/L	REG	REG
ZBG016C	2/9/15	THALLIUM-208	10.50	22.60	U	-4.87	pCi/L	FD	REG
ZBG016C	2/9/15	THALLIUM-208	10.70	22.10	U	1.15	pCi/L	REG	REG
ZBG016C	2/9/15	TOLUENE	0.07	1.00	J	0.54	µg/L	REG	REG
ZBG016C	2/9/15	TOLUENE	0.07	1.00	J	0.15	µg/L	FD	REG
ZBG016C	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	FD	REG
ZBG016C	2/9/15	TRICHLOROETHYLENE (TCE)	0.25	1.00	U	1.00	µg/L	REG	REG
ZBG016C	2/9/15	TRITIUM	0.38	1.03		1.68	pCi/mL	FD	REG
ZBG016C	2/9/15	TRITIUM	0.42	1.07		1.44	pCi/mL	REG	REG

Notes:

1Q15 First Quarter of 2015
FD Field Duplicate Sample
LD Laboratory Duplicate QC Analysis
MDL Method Detection Limit
µg/L micrograms per liter
mg/L milligrams per liter
pCi/L picoCuries per liter
pCi/mL picoCuries per milliliter
PQL Practical Quantitation Limit
QUALIFIER USEPA Functional Guideline Codes applied by labs.
REG Regular Sample; Regular Laboratory Analysis of Sample
RERUN Requested Reanalysis of Original Sample

USEPA Functional Guideline Codes

J The detected analyte was positively identified but the result is approximate.
NJ The detected analyte was only tentatively identified and the result is approximate. All usable TIC results receive this code.
U The analyte was analyzed for, but not detected. The sample detection and quantitation limits (MDL & PQL) are valid unless blank contamination is indicated.
UJ The analyte was analyzed for, but not detected. The MDL & PQL are approximate, and may be inaccurate or imprecise.
R The sample result is rejected as unusable due to serious deficiencies in meeting quality control criteria. The analyte may be present or absent.

Table 3. Field Measurements for Saltstone Wells (1Q15)

WELL	DATE	ANALYTE	VALUE	UNITS
ZBG 1	2/9/15	AIR TEMPERATURE	20.10	°C
ZBG 1	2/9/15	FLOW RATE	1.00	gal/min
ZBG 1	2/9/15	PH	5.30	pH
ZBG 1	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO ₃)	0.00	mg/L
ZBG 1	2/9/15	SPECIFIC CONDUCTANCE	31.00	µS/cm
ZBG 1	2/9/15	TOTAL ALKALINITY (AS CaCO ₃)	2.00	mg/L
ZBG 1	2/9/15	TURBIDITY	0.70	NTU
ZBG 1	2/9/15	VOLUME PURGED	3.00	gal
ZBG 1	2/9/15	WATER TEMPERATURE	21.30	°C
ZBG 2	2/9/15	AIR TEMPERATURE	14.60	°C
ZBG 2	2/9/15	FLOW RATE	1.00	gal/min
ZBG 2	2/9/15	PH	4.50	pH
ZBG 2	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO ₃)	0.00	mg/L
ZBG 2	2/9/15	SPECIFIC CONDUCTANCE	102.00	µS/cm
ZBG 2	2/9/15	TOTAL ALKALINITY (AS CaCO ₃)	0.00	mg/L
ZBG 2	2/9/15	TURBIDITY	1.60	NTU
ZBG 2	2/9/15	VOLUME PURGED	16.00	gal
ZBG 2	2/9/15	WATER TEMPERATURE	21.10	°C
ZBG 3	2/9/15	AIR TEMPERATURE	13.10	°C
ZBG 3	2/9/15	FLOW RATE	3.00	gal/min
ZBG 3	2/9/15	PH	3.90	pH
ZBG 3	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO ₃)	0.00	mg/L
ZBG 3	2/9/15	SPECIFIC CONDUCTANCE	21.00	µS/cm
ZBG 3	2/9/15	TOTAL ALKALINITY (AS CaCO ₃)	0.00	mg/L
ZBG 3	2/9/15	TURBIDITY	2.40	NTU
ZBG 3	2/9/15	VOLUME PURGED	21.00	gal
ZBG 3	2/9/15	WATER TEMPERATURE	20.40	°C
ZBG 4	2/9/15	AIR TEMPERATURE	15.60	°C
ZBG 4	2/9/15	FLOW RATE	0.20	gal/min
ZBG 4	2/9/15	PH	6.10	pH
ZBG 4	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO ₃)	0.00	mg/L
ZBG 4	2/9/15	SPECIFIC CONDUCTANCE	24.00	µS/cm
ZBG 4	2/9/15	TOTAL ALKALINITY (AS CaCO ₃)	6.00	mg/L
ZBG 4	2/9/15	TURBIDITY	7.00	NTU
ZBG 4	2/9/15	VOLUME PURGED	3.00	gal
ZBG 4	2/9/15	WATER TEMPERATURE	19.00	°C
ZBG 5	2/9/15	AIR TEMPERATURE	13.20	°C
ZBG 5	2/9/15	FLOW RATE	0.20	gal/min
ZBG 5	2/9/15	PH	7.10	pH
ZBG 5	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO ₃)	0.00	mg/L
ZBG 5	2/9/15	SPECIFIC CONDUCTANCE	99.00	µS/cm
ZBG 5	2/9/15	TOTAL ALKALINITY (AS CaCO ₃)	40.00	mg/L
ZBG 5	2/9/15	TURBIDITY	2.70	NTU
ZBG 5	2/9/15	VOLUME PURGED	3.00	gal
ZBG 5	2/9/15	WATER TEMPERATURE	19.20	°C
ZBG 6	3/10/15	AIR TEMPERATURE	16.40	°C

WELL	DATE	ANALYTE	VALUE	UNITS
ZBG 6	3/10/15	FLOW RATE	0.10	gal/min
ZBG 6	3/10/15	PH	4.90	pH
ZBG 6	3/10/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG 6	3/10/15	SPECIFIC CONDUCTANCE	17.00	µS/cm
ZBG 6	3/10/15	TOTAL ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG 6	3/10/15	TURBIDITY	3.40	NTU
ZBG 6	3/10/15	VOLUME PURGED	1.00	gal
ZBG 6	3/10/15	WATER TEMPERATURE	20.00	°C
ZBG 7	2/9/15	AIR TEMPERATURE	19.00	°C
ZBG 7	2/9/15	FLOW RATE	0.20	gal/min
ZBG 7	2/9/15	PH	5.30	pH
ZBG 7	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG 7	2/9/15	SPECIFIC CONDUCTANCE	17.00	µS/cm
ZBG 7	2/9/15	TOTAL ALKALINITY (AS CaCO3)	3.00	mg/L
ZBG 7	2/9/15	TURBIDITY	0.80	NTU
ZBG 7	2/9/15	VOLUME PURGED	3.00	gal
ZBG 7	2/9/15	WATER TEMPERATURE	19.60	°C
ZBG 8	3/10/15	AIR TEMPERATURE	13.60	°C
ZBG 8	3/10/15	FLOW RATE	0.10	gal/min
ZBG 8	3/10/15	PH	4.80	pH
ZBG 8	3/10/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG 8	3/10/15	SPECIFIC CONDUCTANCE	18.00	µS/cm
ZBG 8	3/10/15	TOTAL ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG 8	3/10/15	TURBIDITY	1.80	NTU
ZBG 8	3/10/15	VOLUME PURGED	1.00	gal
ZBG 8	3/10/15	WATER TEMPERATURE	19.50	°C
ZBG002C	2/9/15	AIR TEMPERATURE	17.10	°C
ZBG002C	2/9/15	FLOW RATE	0.50	gal/min
ZBG002C	2/9/15	PH	6.30	pH
ZBG002C	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG002C	2/9/15	SPECIFIC CONDUCTANCE	54.00	µS/cm
ZBG002C	2/9/15	TOTAL ALKALINITY (AS CaCO3)	18.00	mg/L
ZBG002C	2/9/15	TURBIDITY	1.00	NTU
ZBG002C	2/9/15	VOLUME PURGED	4.00	gal
ZBG002C	2/9/15	WATER TEMPERATURE	19.80	°C
ZBG009D	2/10/15	AIR TEMPERATURE	12.20	°C
ZBG009D	2/10/15	FLOW RATE	0.20	gal/min
ZBG009D	2/10/15	PH	5.00	pH
ZBG009D	2/10/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG009D	2/10/15	SPECIFIC CONDUCTANCE	28.00	µS/cm
ZBG009D	2/10/15	TOTAL ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG009D	2/10/15	TURBIDITY	2.00	NTU
ZBG009D	2/10/15	VOLUME PURGED	2.00	gal
ZBG009D	2/10/15	WATER TEMPERATURE	18.80	°C
ZBG010D	2/10/15	AIR TEMPERATURE	12.80	°C
ZBG010D	2/10/15	FLOW RATE	0.20	gal/min
ZBG010D	2/10/15	PH	5.70	pH
ZBG010D	2/10/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L

WELL	DATE	ANALYTE	VALUE	UNITS
ZBG010D	2/10/15	SPECIFIC CONDUCTANCE	22.00	µS/cm
ZBG010D	2/10/15	TOTAL ALKALINITY (AS CaCO3)	2.00	mg/L
ZBG010D	2/10/15	TURBIDITY	0.20	NTU
ZBG010D	2/10/15	VOLUME PURGED	1.00	gal
ZBG010D	2/10/15	WATER TEMPERATURE	19.00	°C
ZBG011D	2/10/15	AIR TEMPERATURE	15.20	°C
ZBG011D	2/10/15	FLOW RATE	0.20	gal/min
ZBG011D	2/10/15	PH	5.00	pH
ZBG011D	2/10/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG011D	2/10/15	SPECIFIC CONDUCTANCE	52.00	µS/cm
ZBG011D	2/10/15	TOTAL ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG011D	2/10/15	TURBIDITY	0.30	NTU
ZBG011D	2/10/15	VOLUME PURGED	2.00	gal
ZBG011D	2/10/15	WATER TEMPERATURE	19.00	°C
ZBG012D	2/9/15	AIR TEMPERATURE	22.00	°C
ZBG012D	2/9/15	FLOW RATE	0.30	gal/min
ZBG012D	2/9/15	PH	7.70	pH
ZBG012D	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG012D	2/9/15	SPECIFIC CONDUCTANCE	172.00	µS/cm
ZBG012D	2/9/15	TOTAL ALKALINITY (AS CaCO3)	73.00	mg/L
ZBG012D	2/9/15	TURBIDITY	0.80	NTU
ZBG012D	2/9/15	VOLUME PURGED	3.00	gal
ZBG012D	2/9/15	WATER TEMPERATURE	19.50	°C
ZBG013D	2/11/15	AIR TEMPERATURE	9.30	°C
ZBG013D	2/11/15	FLOW RATE	0.20	gal/min
ZBG013D	2/11/15	PH	7.80	pH
ZBG013D	2/11/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG013D	2/11/15	SPECIFIC CONDUCTANCE	207.00	µS/cm
ZBG013D	2/11/15	TOTAL ALKALINITY (AS CaCO3)	74.00	mg/L
ZBG013D	2/11/15	TURBIDITY	0.10	NTU
ZBG013D	2/11/15	VOLUME PURGED	2.00	gal
ZBG013D	2/11/15	WATER TEMPERATURE	19.00	°C
ZBG014D	2/11/15	AIR TEMPERATURE	1.20	°C
ZBG014D	2/11/15	FLOW RATE	0.20	gal/min
ZBG014D	2/11/15	PH	7.70	pH
ZBG014D	2/11/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG014D	2/11/15	SPECIFIC CONDUCTANCE	168.00	µS/cm
ZBG014D	2/11/15	TOTAL ALKALINITY (AS CaCO3)	68.00	mg/L
ZBG014D	2/11/15	TURBIDITY	0.10	NTU
ZBG014D	2/11/15	VOLUME PURGED	2.00	gal
ZBG014D	2/11/15	WATER TEMPERATURE	18.70	°C
ZBG015D	2/11/15	AIR TEMPERATURE	16.80	°C
ZBG015D	2/11/15	FLOW RATE	0.20	gal/min
ZBG015D	2/11/15	PH	5.10	pH
ZBG015D	2/11/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG015D	2/11/15	SPECIFIC CONDUCTANCE	24.00	µS/cm
ZBG015D	2/11/15	TOTAL ALKALINITY (AS CaCO3)	0.00	mg/L
ZBG015D	2/11/15	TURBIDITY	0.30	NTU

WELL	DATE	ANALYTE	VALUE	UNITS
ZBG015D	2/11/15	VOLUME PURGED	2.00	gal
ZBG015D	2/11/15	WATER TEMPERATURE	18.90	°C
ZBG016C	2/9/15	AIR TEMPERATURE	19.30	°C
ZBG016C	2/9/15	FLOW RATE	0.20	gal/min
ZBG016C	2/9/15	PH	5.40	pH
ZBG016C	2/9/15	PHENOLPHTHALEIN ALKALINITY (AS CaCO ₃)	0.00	mg/L
ZBG016C	2/9/15	SPECIFIC CONDUCTANCE	24.00	µS/cm
ZBG016C	2/9/15	TOTAL ALKALINITY (AS CaCO ₃)	2.00	mg/L
ZBG016C	2/9/15	TURBIDITY	2.00	NTU
ZBG016C	2/9/15	VOLUME PURGED	2.00	gal
ZBG016C	2/9/15	WATER TEMPERATURE	19.30	°C

Notes:

1Q15 = First Quarter of 2015

°C = Degrees Celsius

gal/min = gallons per minute

µS/cm = microSiemens per centimeter

mg/L = milligrams per liter

NTU = Nephelometric Turbidity Units

gal = gallons

Table 4. Water Elevations for Saltstone Wells (1Q15)

Well	Reference Elevation (ft-msl)	Screen Zone Elevation (ft-msl)	Date	Dry Well?	Water Depth (ft-bgs)	Water Elevation (ft-msl)	Aquifer
ZBG 1	291.40	220.0 – 240.1	2/23/15	No	57.4	234.0	UTRA-UAZ
ZBG 2	278.10	210.9 – 230.9	2/9/15	No	57.3	220.8	UTRA-UAZ
ZBG002C	278.56	195.8 - 205.8	2/9/15	No	58.0	220.5	UTRA-LAZ
ZBG 3	272.63	204.0 – 214.0	2/9/15	No	50.6	222.0	UTRA-LAZ
ZBG 4	274.11	205.4 – 215.4	2/9/15	No	52.1	222.0	UTRA-LAZ
ZBG 5	272.33	203.8 – 213.8	2/9/15	No	50.9	221.4	UTRA-LAZ
ZBG 6	288.03	211.0 – 226.0	3/10/15	No	53.3	234.8	UTRA-UAZ
ZBG 7	287.35	210.2 – 225.2	2/9/15	No	52.0	235.4	UTRA-UAZ
ZBG 8	288.42	213.0 – 228.0	3/10/15	No	53.0	235.4	UTRA-UAZ
ZBG009D	275.58	197.7 – 212.7	2/10/15	No	55.5	220.1	UTRA-LAZ
ZBG010D	277.32	199.5 – 214.5	2/10/15	No	57.3	220.1	UTRA-LAZ
ZBG011D	280.71	202.8 – 217.8	2/10/15	No	60.2	220.5	UTRA-LAZ
ZBG012D	261.97	178.7 – 193.7	2/9/15	No	47.2	214.8	UTRA-LAZ
ZBG013D	262.48	179.7 – 194.7	2/11/15	No	48.8	213.7	UTRA-LAZ
ZBG014D	267.58	175.1 – 190.1	2/11/15	No	52.0	215.6	UTRA-LAZ
ZBG015D	297.97	214.3 – 234.3	2/11/15	No	62.4	235.6	UTRA-UAZ
ZBG016C	255.53	197.69 - 207.69	2/9/15	No	43.2	212.4	UTRA-LAZ
ZBG016D	256.10	226.25 - 236.25	2/9/15	Yes	ND	ND	UTRA-UAZ

Notes:

ND = No Data

ft = feet

ft-msl = feet above mean sea level

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