LMS/RVT/S15739

2016 Verification Monitoring Report, Riverton, Wyoming, Processing Site

October 2017

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Contents

Figures

Tables

Appendixes

Abbreviations

AWSS	alternate water supply system
bgs	below ground surface
Ca	calcium
CFR	*Code of Federal Regulations*
cfs	cubic feet per second
Cl	chlorine
COCs	contaminants of concern
CSM	conceptual site model
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
Fe	iron
ft	feet
ft/s	feet per second
ICs	institutional controls
K	potassium
LM	Office of Legacy Management
LTMP	*Long-Term Management Plan for the Riverton, Wyoming, Processing Site*
MCLs	maximum concentration limits
Mg	magnesium
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
Mn	manganese
Na	sodium
NANRO	Northern Arapaho Natural Resources Office
NAW&SD	Northern Arapaho Water & Sewer Department
NRZs	naturally reduced zones
ORP	oxidation reduction potential
pCi/L	picocuries per liter
^{226}Ra	radium-226
^{228}Ra	radium-228
SLAC	Stanford Linear Accelerator Center

SO_4	sulfate
^{230}Th	thorium
TIC	total inorganic carbon
TOC	total organic carbon

Executive Summary

This verification monitoring report presents data collected during calendar year 2016 and provides updates on the natural flushing compliance strategy and conceptual site model at the Riverton, Wyoming, Processing Site (Riverton site). Activities included monitoring institutional controls (ICs); routine sampling of groundwater, surface water, and domestic wells; collection of soil samples to evaluate effectiveness of the existing compliance strategy; and flushing and sampling of the alternate water supply system (AWSS).

IC monitoring was conducted to verify that ICs are in place and working in order to ensure that potential exposure to contaminated groundwater is minimized during the natural flushing period. IC monitoring consisted of two components: (1) sampling of domestic wells and the AWSS and (2) land and water use verification. Land and water use inspections within the IC boundary verified that warning signs around the oxbow lake were in place and in good condition. Land and water use inspections also resulted in discovery of a new surface water feature caused by flooding of the Little Wind River. This new surface water feature is located in a typically dry side channel of the Little Wind River and receives discharge of contaminated groundwater.

Concentrations of uranium and molybdenum at the site continued to remain above the standards for groundwater in numerous surficial aquifer wells, and uranium and molybdenum concentrations increased in monitoring wells that were impacted by flooding of the Little Wind River in May 2016. Sampling results from semiconfined monitoring wells and domestic wells continued to indicate no impact from site-related contaminants.

In addition to routine monitoring, soil sampling was conducted in areas outside the groundwater plume to determine background concentrations in the silt layer overlying the alluvial aquifer. This sampling identified background uranium concentrations ranging from 0.8 to 3.1 milligrams per kilogram.

Flushing and sampling of the AWSS was also conducted in August 2016. Historically, the flushing program was effective in controlling the buildup of radionuclides in the system; however, in 2016, flow rates measured during flushing were lower than they were in previous years at some hydrants, which prevented an effective flush of the system and resulted in elevated radium concentrations at two locations. A condition assessment of the AWSS is needed to identify required maintenance and to determine the current system configuration in order to obtain an effective flush of the system.

Several types of information, including contaminants mobilized by flood events, the current plume size and contaminant concentration levels, groundwater modeling results, historical data, and experience at other Uranium Mill Tailings Radiation Control Act sites, indicates natural flushing of the surficial aquifer is occurring at the Riverton site, but the rate at which it is occurring might not meet the 100-year regulatory time frame. Additional ongoing evaluation of the data will likely produce a better understanding of the site's processes before a final decision regarding the natural flushing compliance strategy is made or before an alternate compliance strategy is chosen.

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1.0 Introduction

This verification monitoring report presents data collected during calendar year 2016 and provides updates on the natural flushing compliance strategy and conceptual site model (CSM) at the Riverton, Wyoming, Processing Site (Riverton site). Data from 2016 were generated from one routine groundwater, surface water, and alternate water supply system (AWSS) sampling event conducted at the Riverton site during August. Soil samples were collected at six background locations in August.

The compliance strategy for the Riverton site is natural flushing in conjunction with institutional controls (ICs) (DOE 1998a). Monitoring required during the natural flushing period is referred to as verification monitoring because its purpose is to verify that the natural flushing strategy is progressing as predicted and to verify that ICs are in place and functioning as intended. Data collected during verification monitoring are reported annually in a verification monitoring report. These reports have been issued annually since 2001, and the reports from 2005 to 2015 are available on the U.S. Department of Energy (DOE) Office of Legacy Management (LM) website at https://www.lm.doe.gov/Riverton/Sites.aspx. All water quality data for the Riverton site are archived in the environmental database at the LM office in Grand Junction, Colorado. Water quality data also are available for viewing with dynamic mapping via the Geospatial Environmental Mapping System (GEMS) website at https://gems.lm.doe.gov/#&site=RVT. The monitoring program at the Riverton site is specified in the *Long-Term Management Plan for the Riverton, Wyoming, Processing Site* (LTMP) (DOE 2009), which is in the process of being updated.

2.0 Site Conditions

2.1 Surface Remediation

A uranium and vanadium ore processing mill operated from 1958 to 1963 at the Riverton site. A tailings pile covered about 72 acres of the 140-acre site. The tailings and associated slurry water were the primary, original source of groundwater contamination of the surficial aquifer. In 1988 and 1989, the tailings pile was excavated down to an average depth of 4 feet (ft) below ground surface (bgs) based on a radium (^{226}Ra) soil standard in Title 40 *Code of Federal Regulations* Part 192 (40 CFR 192). Surface remediation activities resulted in removal of about 1.8 million cubic yards of tailings and associated materials from the site, which were encapsulated at the Gas Hills East, Wyoming, Disposal Site (Figure 1) (DOE 1998a). Soils at and below the water table with elevated thorium (^{230}Th) concentrations were left in place (DOE 1991) on portions of the former mill site as permitted by the supplemental standards provision of 40 CFR 192. Additional details about the Riverton site, along with links to site documents and data, can be found at https://www.lm.doe.gov/Riverton/Sites.aspx.

2.2 Hydrogeology

The Riverton site is located on an alluvial terrace between the Wind River and the Little Wind River approximately 2.3 miles southwest of the town of Riverton, Wyoming (Figure 1). Groundwater is in three aquifers beneath the site: (1) a surficial unconfined aquifer (surficial aquifer), (2) a middle semiconfined aquifer, and (3) a deeper confined aquifer (DOE 1998b).

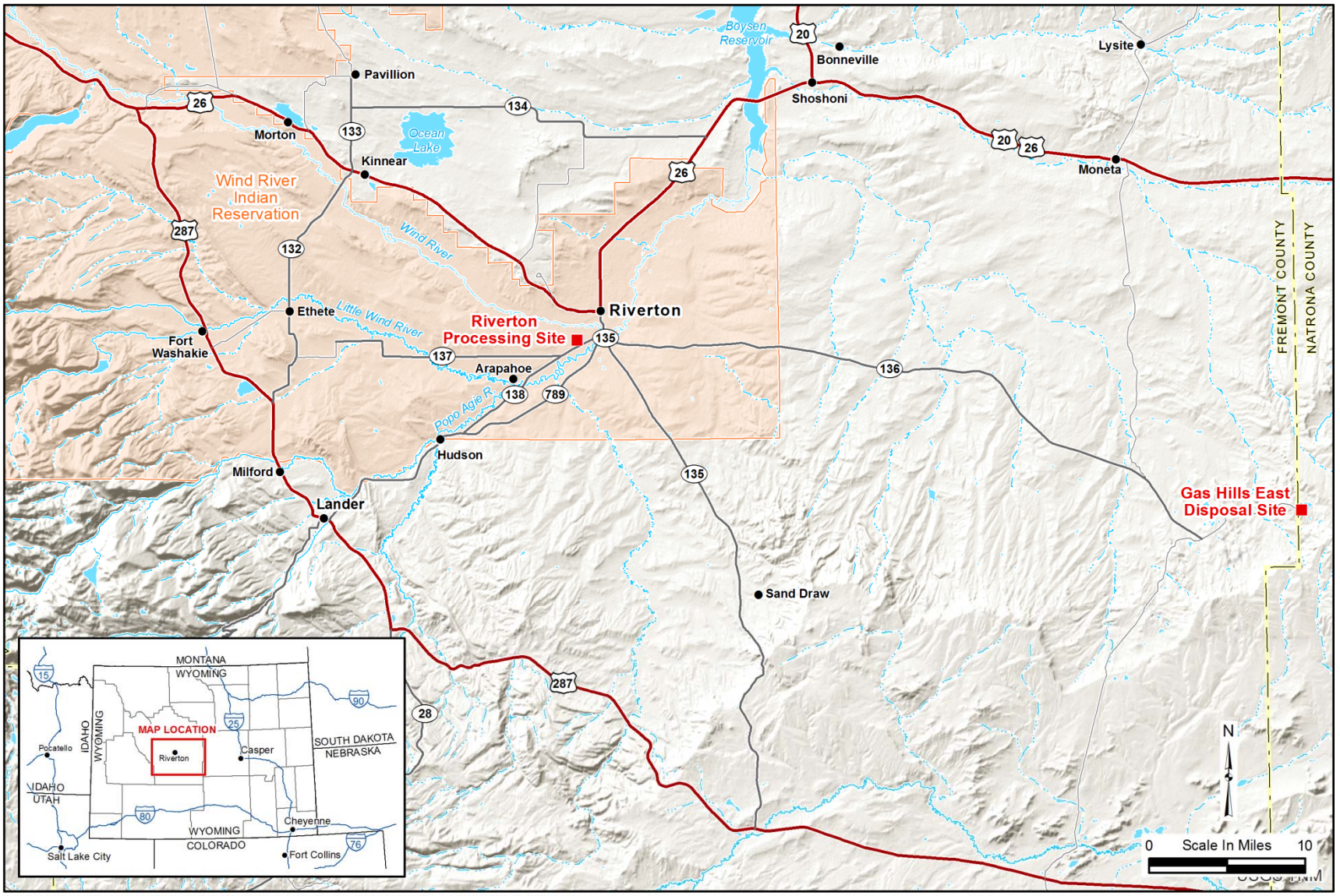

Figure 1. Site Location Map

The surficial aquifer consists of approximately 15 to 20 ft of unconsolidated alluvial material; the semiconfined and confined aquifers are composed of shales and sandstones of the upper units of the Eocene Wind River Formation, which is over 500 ft thick in the vicinity of the site. Depth to groundwater in the surficial aquifer is generally less than 10 ft bgs. For compliance purposes, the uppermost aquifer, which is the aquifer in which compliance with groundwater standards is assessed, comprises the surficial aquifer and semiconfined aquifer. Groundwater in the uppermost aquifer flows to the southeast.

Because the Riverton site is located on an alluvial terrace between the Wind River and the Little Wind River, site conditions have been influenced by periodic flooding of these rivers. Influence of river flooding includes the following:

- Formation of the oxbow lake in 1995
- Formation of a groundwater seep in a normally dry side channel of the Little Wind River in 2016
- Spikes in groundwater contaminant concentrations in areas inundated by flood waters
- High groundwater elevations that can leave contaminants in the unsaturated zone
- High groundwater elevations that leached contaminants from the former tailings pile (White et al. 1984)

Significant floods of the Little Wind River that likely affected the site occurred in 1963, 1965, 1967, 1983, 1991, 1995, 2010, and 2016, when peak river discharge was greater than 8000 cubic feet per second (cfs) (USGS 2012a). Significant floods of the Wind River that likely affected the site occurred in 1963, 1967, 1971, 1991, 1997, 1999, and 2011, when peak stream discharge was greater than 8000 cfs (USGS 2012b). Discharge data and flood data from the Little Wind River are presented in Section 4.2.1.

2.3 Water Quality

Shallow groundwater beneath and downgradient from the site was contaminated as a result of uranium-processing activities from 1958 through 1963 (DOE 1998b). Contaminants of concern (COCs) in the groundwater beneath the Riverton site are manganese, molybdenum, sulfate, and uranium. COCs were selected using a screening process that compared contaminant concentrations with the maximum concentration limits (MCLs) in 40 CFR 192, as appropriate, and evaluated potential human health risks and ecological risks. (Note: The MCLs for groundwater discussed herein are different than the MCLs for the U.S. Environmental Protection Agency [EPA] drinking water standards that are applied to the AWSS.) The COC-selection process is detailed in the *Environmental Assessment of Ground Water Compliance at the Riverton, Wyoming, Uranium Mill Tailings Site* (DOE 1998c). Molybdenum and uranium were selected as indicator contaminants for compliance monitoring in the *Final Ground Water Compliance Action Plan for the Riverton, Wyoming, Title I UMTRA Project Site* (DOE 1998a). These contaminants were selected as indicator contaminants because they are the most widely distributed and because they form significant aqueous plumes in the uppermost aquifer in the vicinity of the site. The MCLs for molybdenum and uranium are 0.10 milligram per liter (mg/L) and 30 picocuries per liter (pCi/L), respectively.

In order to provide a consistent comparison with historical data, uranium concentrations continue to be measured in milligrams per liter; therefore, the uranium standard referenced in this report has been converted from 30 pCi/L to 0.044 mg/L (which assumes secular equilibrium of uranium isotopes) to allow direct comparison of uranium data to the standard.

2.4 Institutional Controls

To protect human health and the environment during the natural flushing period, ICs are required to control exposure to contaminated groundwater. An IC boundary has been established at the Riverton site (Figure 2), delineating the area that requires protection. The IC boundary was set to encompass the area of current groundwater contamination and a surrounding buffer zone to account for potential future plume migration.

2.4.1 Site Institutional Controls

Cooperative efforts are ongoing among DOE, the Northern Arapaho Tribe and the Eastern Shoshone Tribe, and the State of Wyoming to implement viable and enforceable ICs at the Riverton site. ICs currently in place include the following:

- An AWSS, funded by DOE and currently operated by Northern Arapaho Water & Sewer Department (NAW&SD), supplies potable water to residents within the IC boundary to minimize use of groundwater.
- Warning signs installed around the oxbow lake explain that the contaminated water is not safe for human consumption, with instructions not to drink from, fish in, or swim in the lake.
- A tribal ordinance places restrictions on well installation, prohibits surface impoundments, authorizes access to inspect and sample new wells, and provides notification to drilling contractors of the groundwater contamination within the IC boundary. Restrictions on well installation include a minimum depth of 150 ft bgs (approximately 50 ft below the top of the confined aquifer) and a requirement that surface casing be installed through the contaminated upper aquifer.
- DOE's notification to area drilling contractors of the existing groundwater contamination.
- A State of Wyoming Department of Environmental Quality notification of existing groundwater contamination to be provided to persons on privately owned land who apply for a gravel pit permit within the IC boundary.
- A U.S. Bureau of Indian Affairs notification of existing groundwater contamination to be provided to persons on tribal land who apply for a surface impoundment within or adjacent to the IC boundary.
- Notification to DOE by the Wyoming State Engineer's Office when permit applications are received for wells or surface impoundments within or adjacent to the IC boundary, providing DOE with a copy of the application (so that DOE may comment on it), and incorporating DOE's comments on the permit, if approved.
- An easement and covenant to restrict land use and well drilling on the former mill site property, which was finalized on June 29, 2009; the former mill site was purchased by Chemtrade Refinery Services Inc. (Chemtrade).

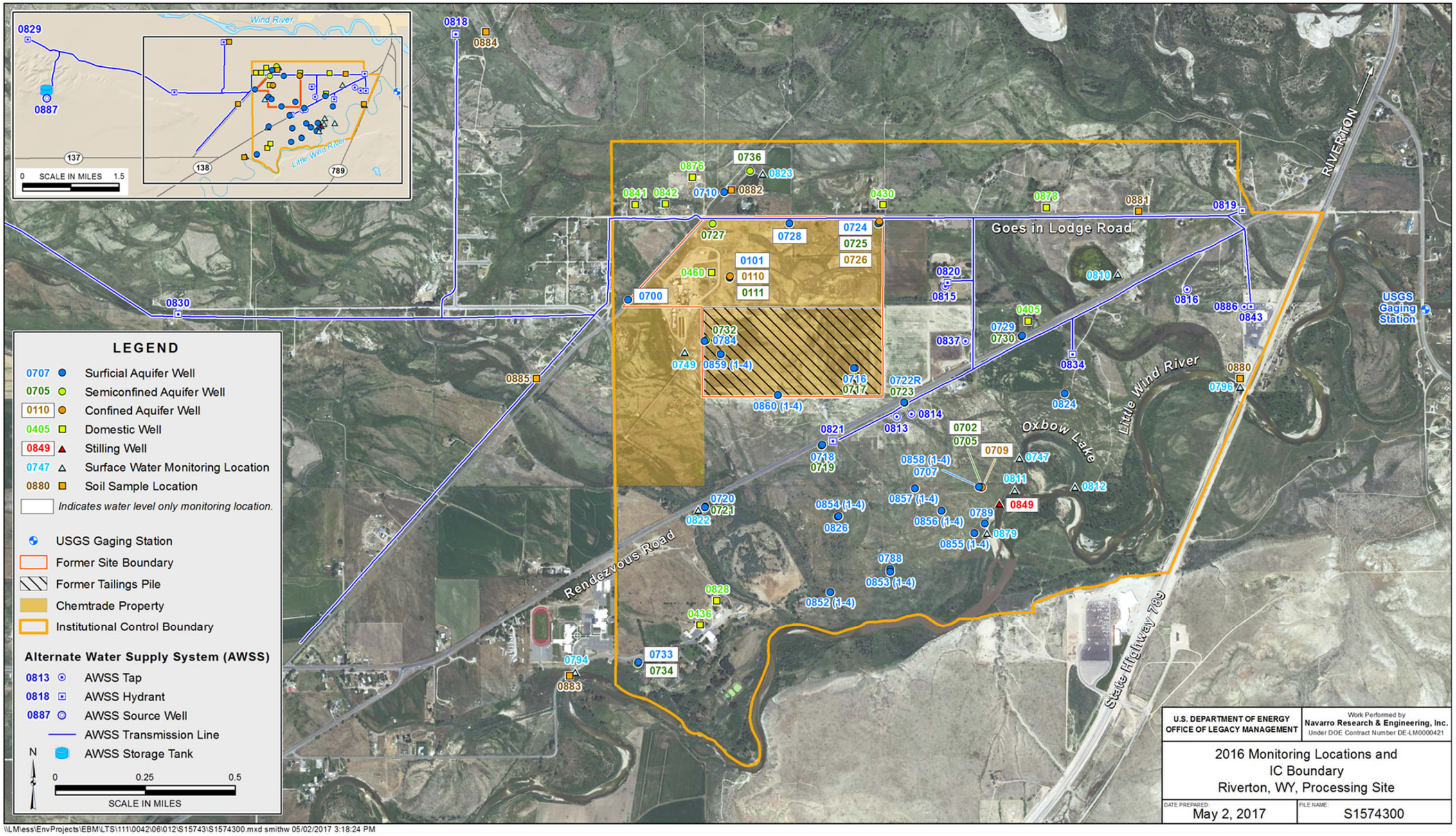

Figure 2. 2016 Monitoring Locations and IC Boundary at the Riverton Site

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2.4.2 Institutional Control Monitoring

The LTMP specifies ongoing IC monitoring to verify that ICs are in place and working in order to ensure that potential exposure to contaminated groundwater is minimized during the natural flushing period. IC monitoring consists of two components: (1) sampling and (2) land and water use verification. The sampling component consists of sampling domestic wells and the AWSS. The land and water use verification consists of periodic inspection of land within the IC boundary to verify and document that no additional land or water uses expose or involve shallow groundwater, such as new wells, gravel pits, seeps, and recreational ponds.

Eight domestic wells were sampled during the August sampling event. Domestic well location 0430 was not sampled during the August sampling event because the pump was not working. Results for samples collected from domestic wells are presented in Section 4.1.2.2 and Appendix A.

The Northern Arapaho Water & Sewer Department is responsible for ensuring that the quality, safety, and quantity of the water in the AWSS are adequate. The organization is also required to maintain compliance with EPA standards that regulate community water systems. To assist in this effort and to maintain the AWSS as a viable IC, DOE has worked with the Northern Arapaho Tribe to ensure cooperative efforts and funding for ongoing maintenance, flushing, sampling, and capital improvements of the AWSS.

In March of 2016, flushing and sampling of the AWSS was conducted by NAW&SD and Northern Arapaho Natural Resources Office (NANRO) personnel. In August of 2016, a second, scheduled flushing and sampling event was conducted as a joint effort among NAW&SD, NANRO, and DOE. Elevated radium results from the August event prompted an additional, non-routine flushing and sampling event in October 2016. The radium concentration in a sample collected from tap location 0816 was elevated in October, which prompted collection of an additional sample from that location in December 2016, which was below the drinking water MCL. Bottled water was supplied to the residence in December 2016 until the results of the December sample were received in January 2017. Results of the 2016 DOE hydrant flushing and sampling events are presented in Section 4.4 and Appendix B.

Inspection of areas within the IC boundary is a requirement of the LTMP. Land and water use verification within the IC boundary was conducted by NANRO personnel prior to the August sampling event and by the sampling crews during the August sampling event. Warning signs around the oxbow lake were verified to be in place and in good condition (Figure 3). In May, NANRO personnel discovered evidence of a new land disturbance caused by flooding of the Little Wind River. A new surface water feature was formed by the flood in a side channel of the Little Wind River. This location (0879) was sampled during the August sampling event (Figure 4).

Figure 3. Warning Sign at the Oxbow Lake

Figure 4. New Surface Water Sampling Location 0879

3.0 Monitoring Program

The verification monitoring program consists of 56 monitoring wells, 9 domestic wells, and 10 surface water locations, which are listed in Table 1 and shown in Figure 2. In 2016, The annual sampling event was conducted in August, and water samples were analyzed for COCs (manganese, molybdenum, sulfate, and uranium), major cations (calcium, magnesium, potassium, and sodium) and additional major anions (chloride), and field measurements of temperature, pH, specific conductance, oxidation-reduction potential, dissolved oxygen, alkalinity, and turbidity at each sampling location. In addition, water samples from selected wells were analyzed for ferrous iron, tritium, and organic compounds. Water levels were measured in all wells in the monitoring network during the annual sampling event. Other sampling activities during the August sampling event included soil sampling and AWSS hydrant flushing and sampling.

Table 1. 2016 Sampling Network at the Riverton Site

Location ID	Description	Rationale	Comments
DOE Monitoring Wells			
0705	Semiconfined aquifer	Monitor semiconfined aquifer	
0707	Surficial aquifer	Monitor centroid of plume	
0710	Surficial aquifer	Background location	
0716	Surficial aquifer	Monitor upgradient portion of plume	
0717	Semiconfined aquifer	Monitor semiconfined aquifer	
0718	Surficial aquifer	Monitor lateral plume movement	
0719	Semiconfined aquifer	Monitor semiconfined aquifer	
0720	Surficial aquifer	Monitor lateral plume movement	
0721	Semiconfined aquifer	Monitor semiconfined aquifer	
0722R	Surficial aquifer	Monitor centroid of plume	
0723	Semiconfined aquifer	Monitor semiconfined aquifer	
0727	Semiconfined aquifer	Geochemical evidence of connection with surficial aquifer	
0729	Surficial aquifer	Monitor lateral plume movement	
0730	Semiconfined aquifer	Monitor semiconfined aquifer	
0732	Semiconfined aquifer	Geochemical evidence of connection with surficial aquifer	
0784	Surficial aquifer	Monitor lateral plume movement	
0788	Surficial aquifer	Monitor lateral plume movement	
0789	Surficial aquifer	Monitor centroid of plume	
0824	Surficial aquifer	Monitor lateral plume movement	
0826	Surficial aquifer	Monitor lateral plume movement	
852 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well
853 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well
854 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well
855 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well
856 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well
857 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well
858 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well
859 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well
860 (1–4)	Surficial aquifer	Monitor vertical variation in the surficial aquifer	Multilevel monitoring well

Table 1. 2016 Sampling Network at the Riverton Site (continued)

Location ID	Description	Rationale	Comments
Domestic Wells			
0405	Confined aquifer	Potential point of exposure	Private residence
0436	Confined aquifer	Potential point of exposure	St. Stephens Mission
0460	Confined aquifer	Potential point of exposure	Chemtrade refinery
0828	Confined aquifer	Potential point of exposure	St. Stephens Mission
0841	Semiconfined aquifer	Potential point of exposure	Private residence
0842	Confined aquifer	Potential point of exposure	Private residence
0876	Confined aquifer	Potential point of exposure	Private residence
0878	Confined aquifer	Potential point of exposure	Private residence
Surface Water			
0747	Oxbow lake	Impacted by groundwater discharge	
0749	Chemtrade refinery discharge ditch	Effluent from sulfuric acid plant	
0794	Little Wind River	Upstream of predicted plume discharge	
0796	Little Wind River	Downstream of predicted plume discharge	
0810	Pond—former gravel pit	Potential for impact—within IC boundary	
0811	Little Wind River	Within area of predicted plume discharge	
0812	Little Wind River	Within area of predicted plume discharge	
0822	West side ditch	Potential for impact—within IC boundary	
0823	Pond—former gravel pit	Upgradient of plume—within IC area	
0879	Seep	Impacted by groundwater discharge	Side channel of the Little Wind River scoured out by the flood

Note:
[a] All domestic wells are completed in the confined aquifer, except for well 0841, which might be completed in the semiconfined aquifer.

4.0 Results of 2016 Monitoring

4.1 Groundwater

4.1.1 Groundwater Flow

Water levels were measured at all wells (except domestic wells) in the monitoring network (Figure 2) in August to verify groundwater flow direction and to assess vertical gradients throughout the IC area. Water level data are included in Appendix C.

Assessment of horizontal groundwater flow direction in the surficial aquifer is required to ensure that the monitoring network is adequate for assessing contaminant plume movement and to ensure that the IC boundary provides a sufficient buffer to prevent access to contaminated groundwater. As shown in Figure 5, groundwater elevation contours for the surficial aquifer indicated a general flow direction to the southeast in August. In addition to water levels measured in August, continuous water level measurements were recorded by pressure transducers installed in wells along the groundwater flow path (Figure 6). Groundwater elevations displayed in Figure 6 demonstrate that the groundwater flow does not generally reverse direction throughout the year except during flood stage of the Little Wind River when groundwater elevations in monitoring wells adjacent to the river (0707 and 0789) increase considerably more than monitoring wells further from the river (like 0722R).

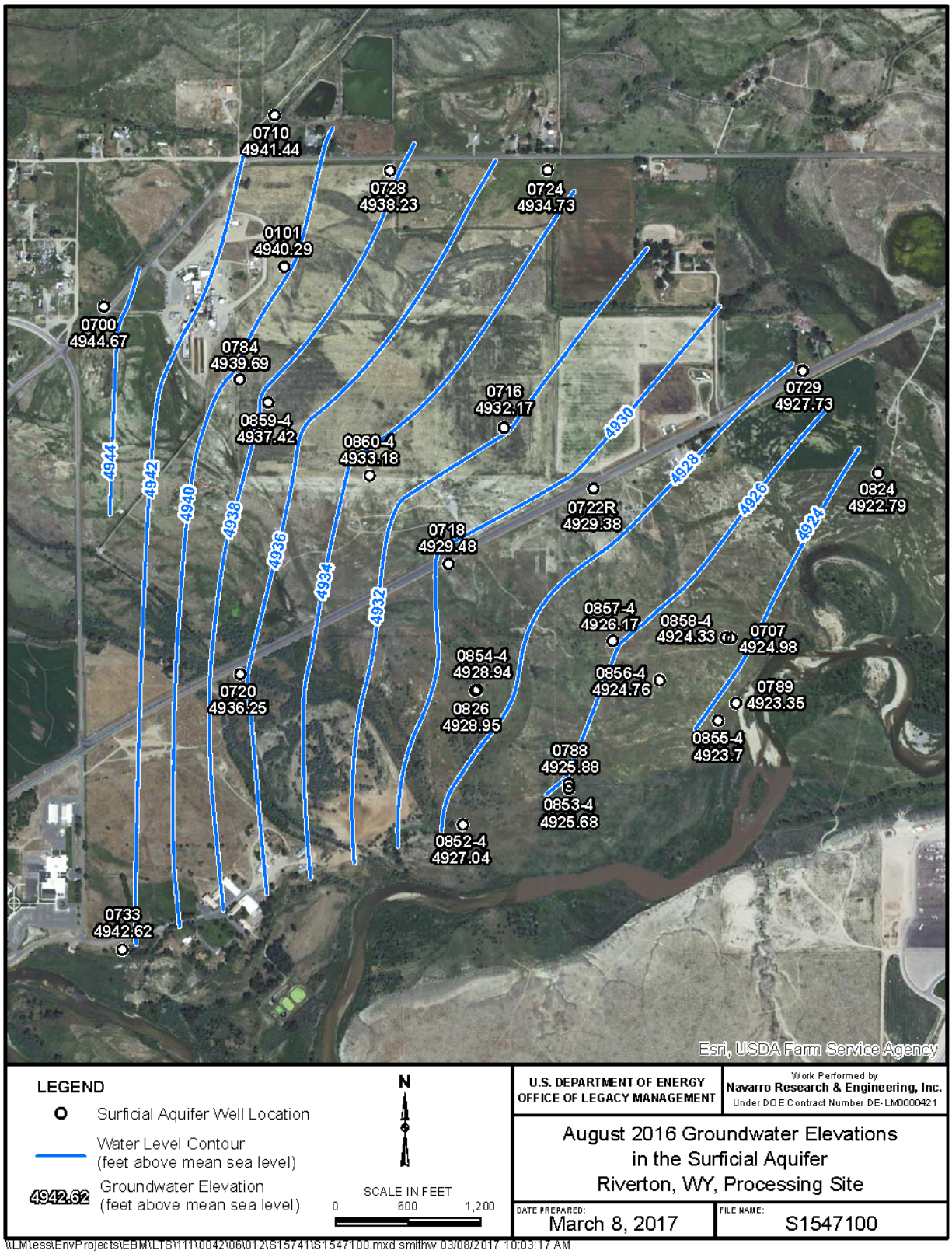

Figure 5. August 2016 Groundwater Elevations in the Surficial Aquifer at the Riverton Site

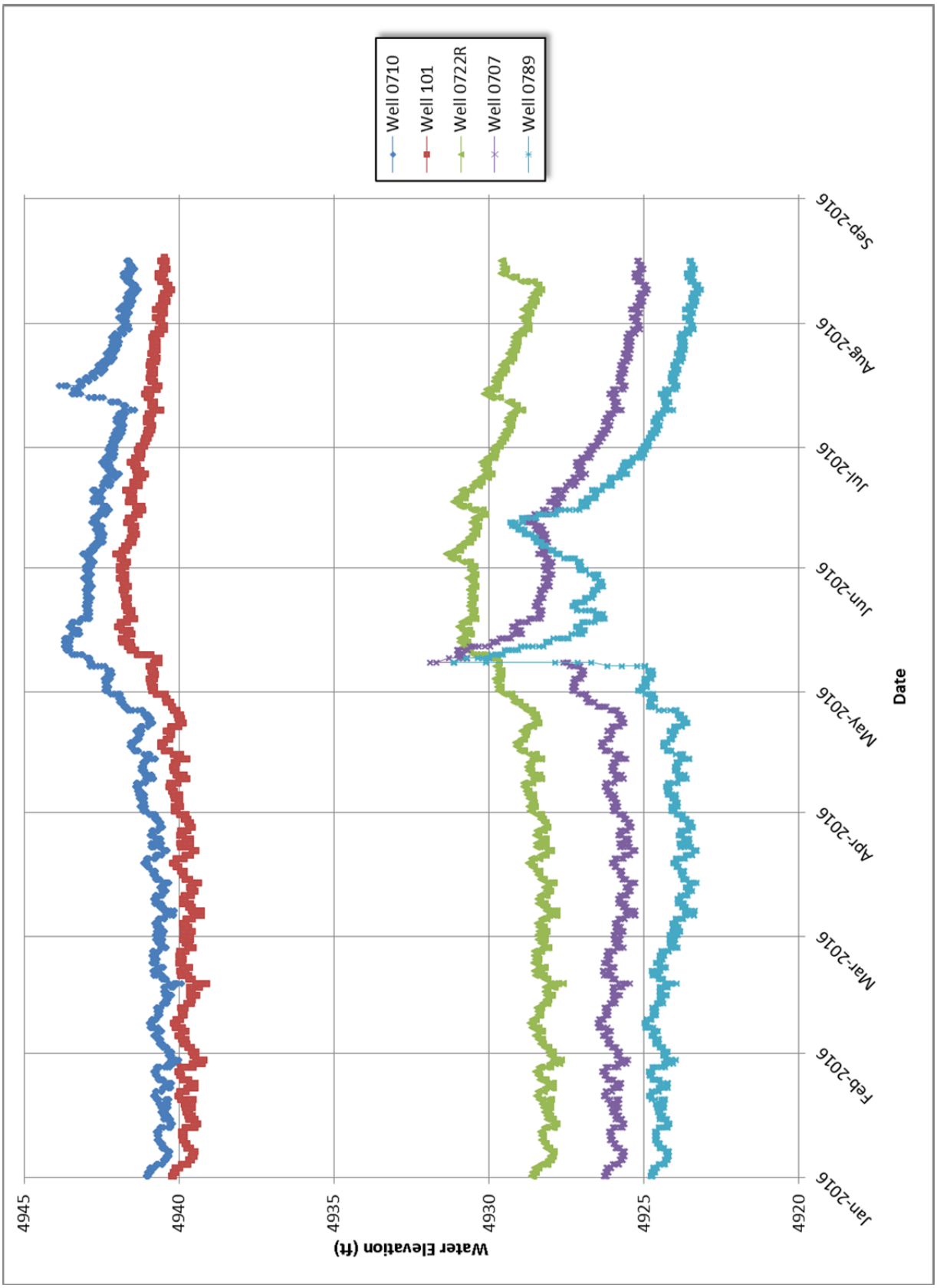

Figure 6. Continuous Water Elevations in Selected Surficial Aquifer Wells

Vertical gradients are used to assess the direction that groundwater will flow vertically. The methods traditionally applied to assess vertical flow use a negative gradient to indicate potential for upward groundwater flow and a positive gradient to indicate potential for downward groundwater flow. Regardless of the direction and magnitude indicated by gradient, vertical migration of groundwater between the Riverton site aquifers is expected to be relatively minor because of the low vertical hydraulic conductivities of the confining layers separating aquifers. Vertical gradients are calculated from monitoring wells in an upper aquifer (aquifer 1) and lower aquifer (aquifer 2) using the following formula: $(GE_1 - GE_2) \div (SE_1 - SE_2)$, where GE = groundwater elevation and SE = screen elevation at the midpoint of the screen. Table 2 shows vertical gradients calculated (from August data) from grouped monitoring wells. General observations from Table 2 include the following:

- Vertical gradients in the confined aquifer are upward at one location and downward at two locations.
- The well cluster adjacent to the sulfuric acid plant (0101, 0111, and 0110) has a downward vertical gradient between the confined aquifer and surficial aquifer, which is likely a reflection of continuous long-term pumping of the confined aquifer from the acid-plant production well.
- Vertical gradients between the surficial and semiconfined aquifer vary but tend to be downward near surface water features and upward away from surface water features. Surface water is likely recharging the surficial aquifer, causing a localized increase in heads in the surficial aquifer and a resulting downward vertical gradient.

Table 2. August 2016 Vertical Gradients at the Riverton Site

Well ID	Aquifer	Water Elevation	Vertical Gradient[a]
0724	Surficial	4934.73	
0725	Semiconfined	4934.80	-0.004
0726	Confined	4934.30	0.004
0101	Surficial	4940.29	
0111	Semiconfined	4938.90	0.052
0110	Confined	4938.87	0.027
0784	Surficial	4939.69	
0732	Semiconfined	4938.15	0.058
0716	Surficial	4932.17	
0717	Semiconfined	4932.53	-0.010
0707	Surficial	4924.98	
0705	Semiconfined	4924.74	0.008
0709	Confined	4926.91	-0.025
0718	Surficial	4929.48	
0719	Semiconfined	4929.99	-0.026
0722R	Surficial	4929.38	
0723	Semiconfined	4929.47	-0.003
0720	Surficial	4936.25	
0721	Semiconfined	4932.56	0.103
0729	Surficial	4927.73	

Table 2. August 2016 Vertical Gradients at the Riverton Site (continued)

Well ID	Aquifer	Water Elevation	Vertical Gradient[a]
0730	Semiconfined	4928.49	-0.033
0733	Surficial	4942.62	
0734	Semiconfined	4940.17	0.107

Note:
[a] The vertical gradient from the semiconfined aquifer is between the semiconfined aquifer and the surficial aquifer, and the vertical gradient from the confined aquifer is between the confined aquifer and the surficial aquifer. A negative value indicates an upward vertical gradient; a positive value indicates a downward vertical gradient.

4.1.2 Groundwater Quality

Figure 7 through Figure 12 summarize surficial aquifer data from the 2016 sampling events. Time-concentration plots for molybdenum in wells located within contaminant plumes and wells bordering the contaminant plumes in the surficial aquifer are shown in Figure 7 and Figure 8, respectively. The distribution of molybdenum in the surficial aquifer from the August 2016 sampling event is shown in Figure 9. Time-concentration plots for uranium in wells located within contaminant plumes and wells on the lateral edge of the contaminant plumes in the surficial aquifer are shown in Figure 10 and Figure 11, respectively. The distribution of uranium in the surficial aquifer, based on August 2016 sampling results, is shown in Figure 12.

As shown in the plots and figures, concentrations of molybdenum and uranium in groundwater in the surficial aquifer are still above their respective MCLs. In 2010, the molybdenum and uranium concentrations in wells 0707, 0788, 0789, and 0826 increased dramatically following flooding of the Little Wind River, and increases again occurred in these wells following the 2016 flood. Increases in uranium concentrations in 2010 and 2016 included wells on the western edge of the plume (0788 and 0826), where sample concentrations exceeded the uranium standard, are likely due to a secondary source of uranium in the unsaturated zone. Following the 2010 flood, uranium concentrations in these wells were back below the MCL in 2013 and remained below the MCL through 2015 (Figure 11). Uranium concentration spikes from 2010 in wells 0707 and 0789 were back to pre-flood (2009) levels by 2012 and remained near pre-flood levels in 2014 and 2015 (Figure 10). Presumably, without another flood, the post-2016 flood concentrations for molybdenum and uranium should decline to pre-2010 flood concentrations over the next several years.

Concentrations of molybdenum and uranium in groundwater in the semiconfined aquifer are still below corresponding MCLs in areas where the overlying surficial aquifer groundwater is contaminated, which indicates no significant impact from site-related contamination in this unit (Figure 13 and Figure 14, respectively). Appendix D provides groundwater quality data by parameter for monitoring wells in the long-term monitoring network sampled during 2016.

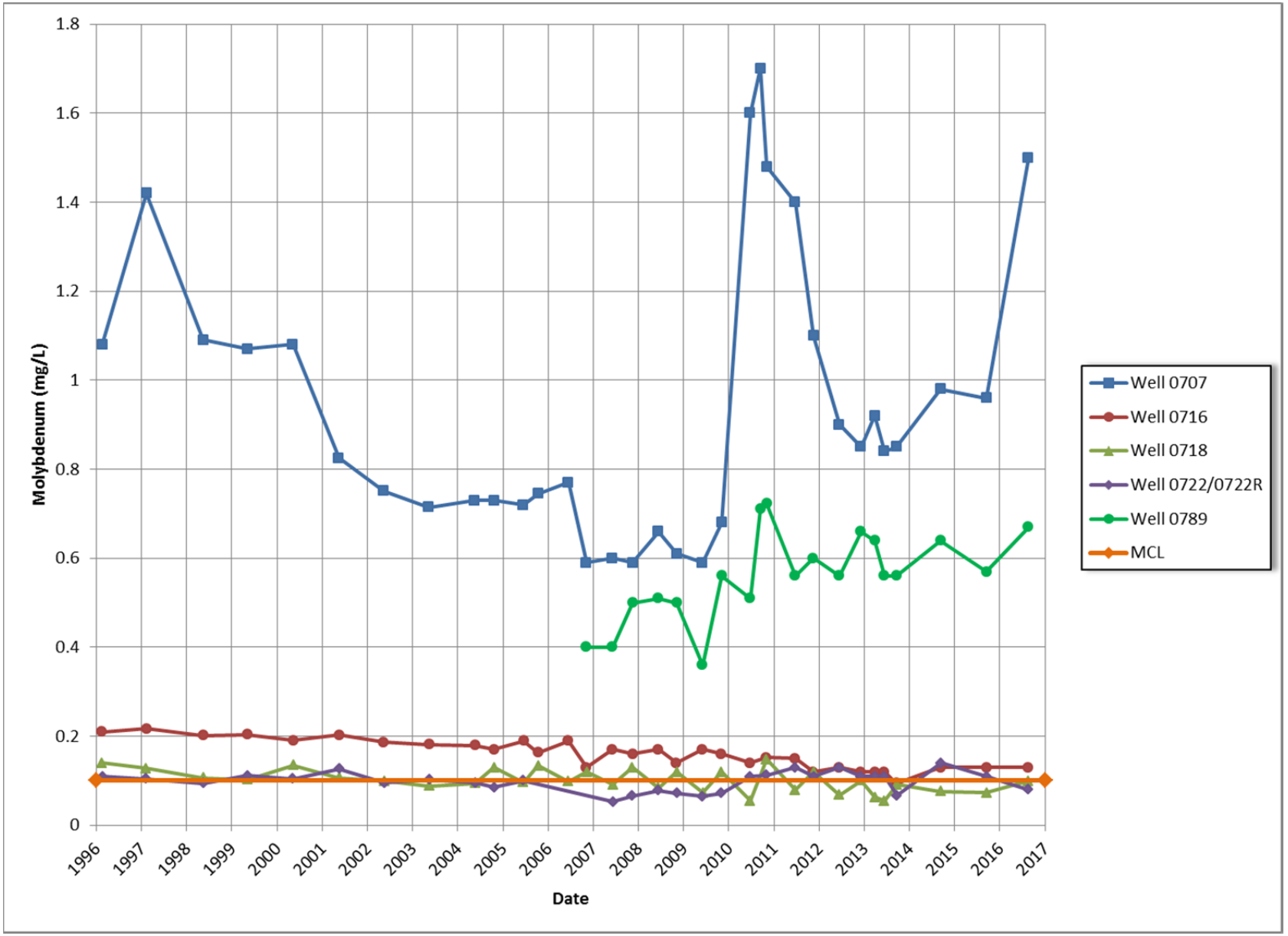

Figure 7. Molybdenum Concentrations in Surficial Aquifer Wells Within the Contaminant Plume

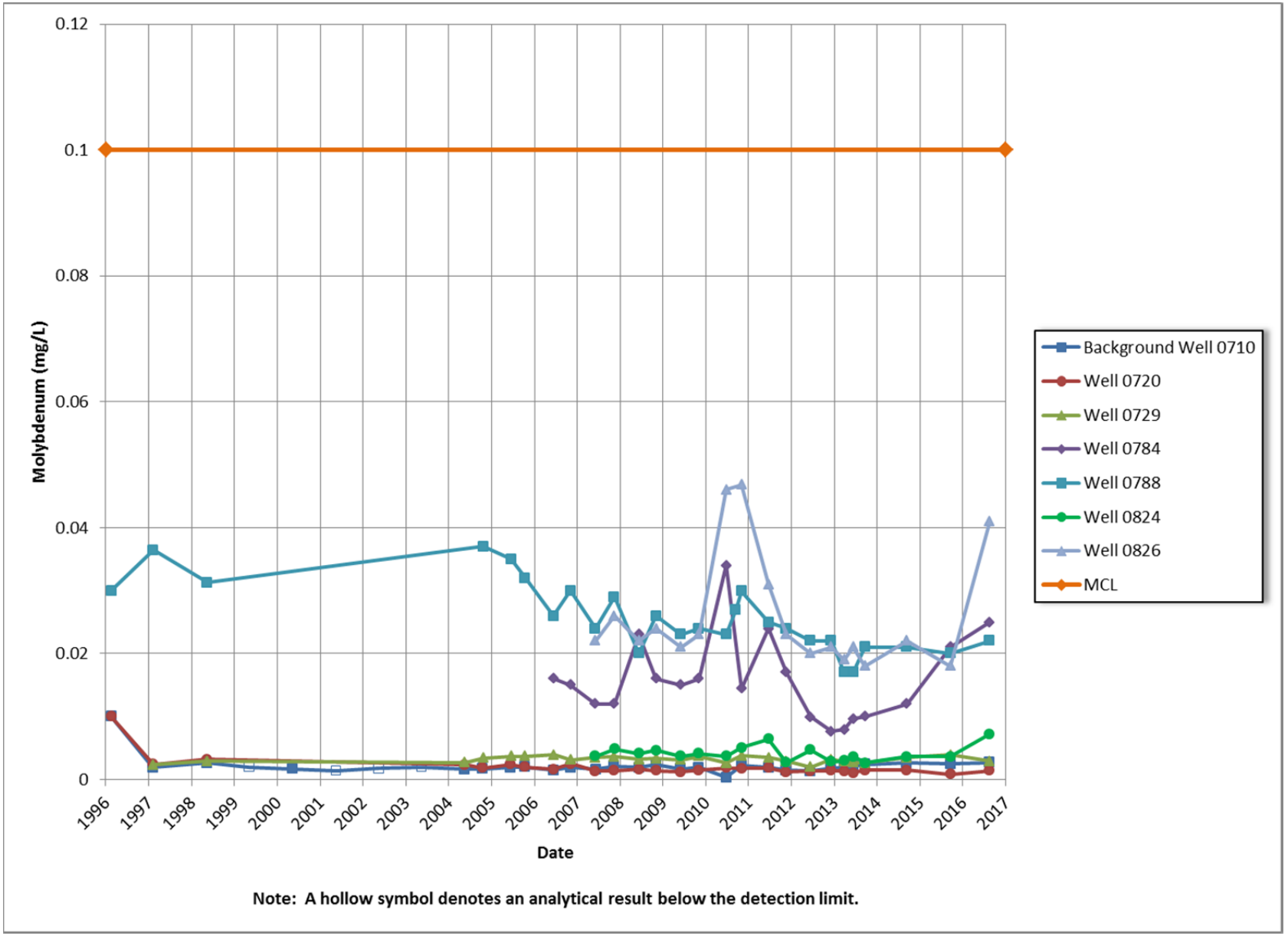

Figure 8. Molybdenum Concentrations in Surficial Aquifer Wells on the Edge of the Contaminant Plume

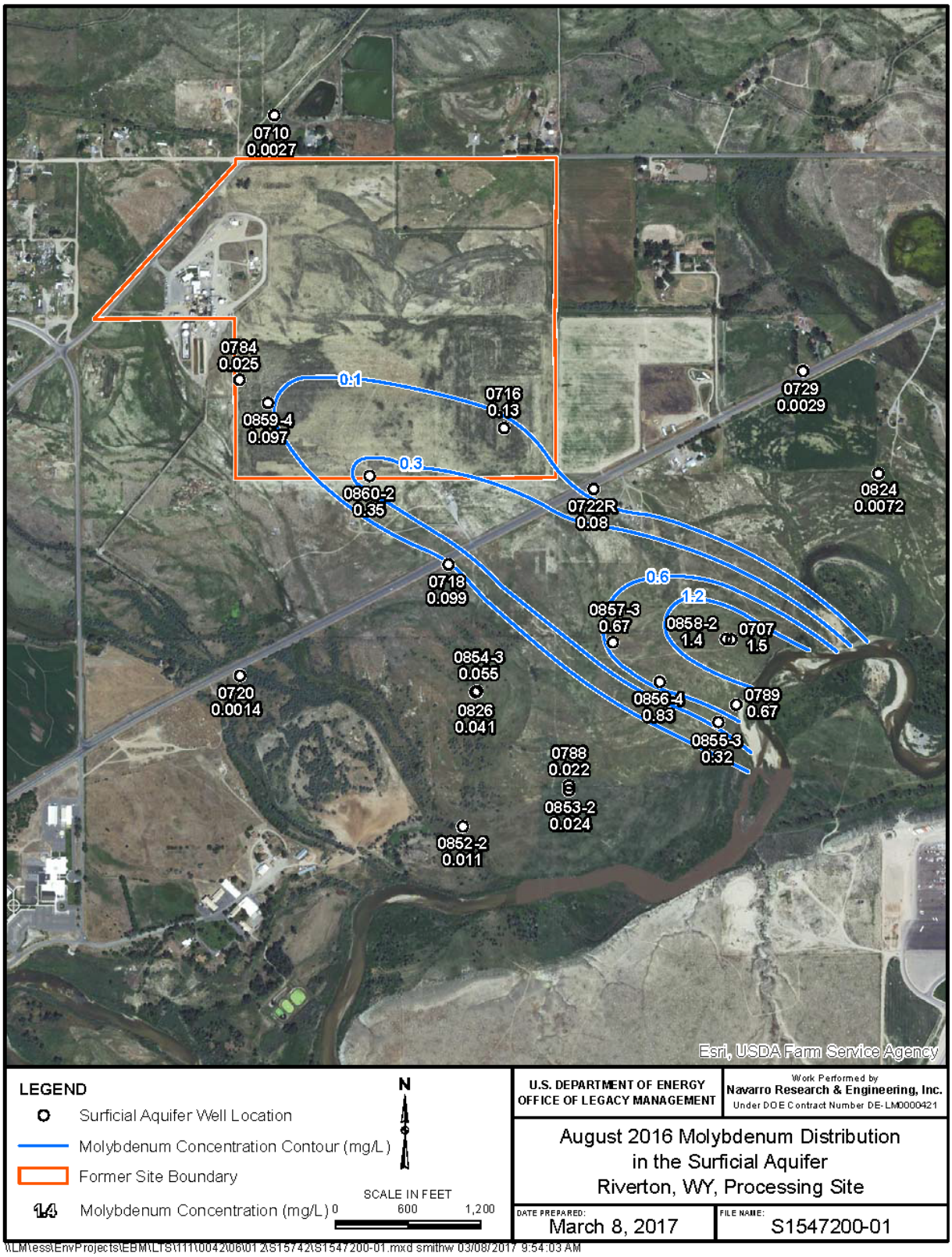

Figure 9. Molybdenum Distribution in the Surficial Aquifer at the Riverton Site in August 2016

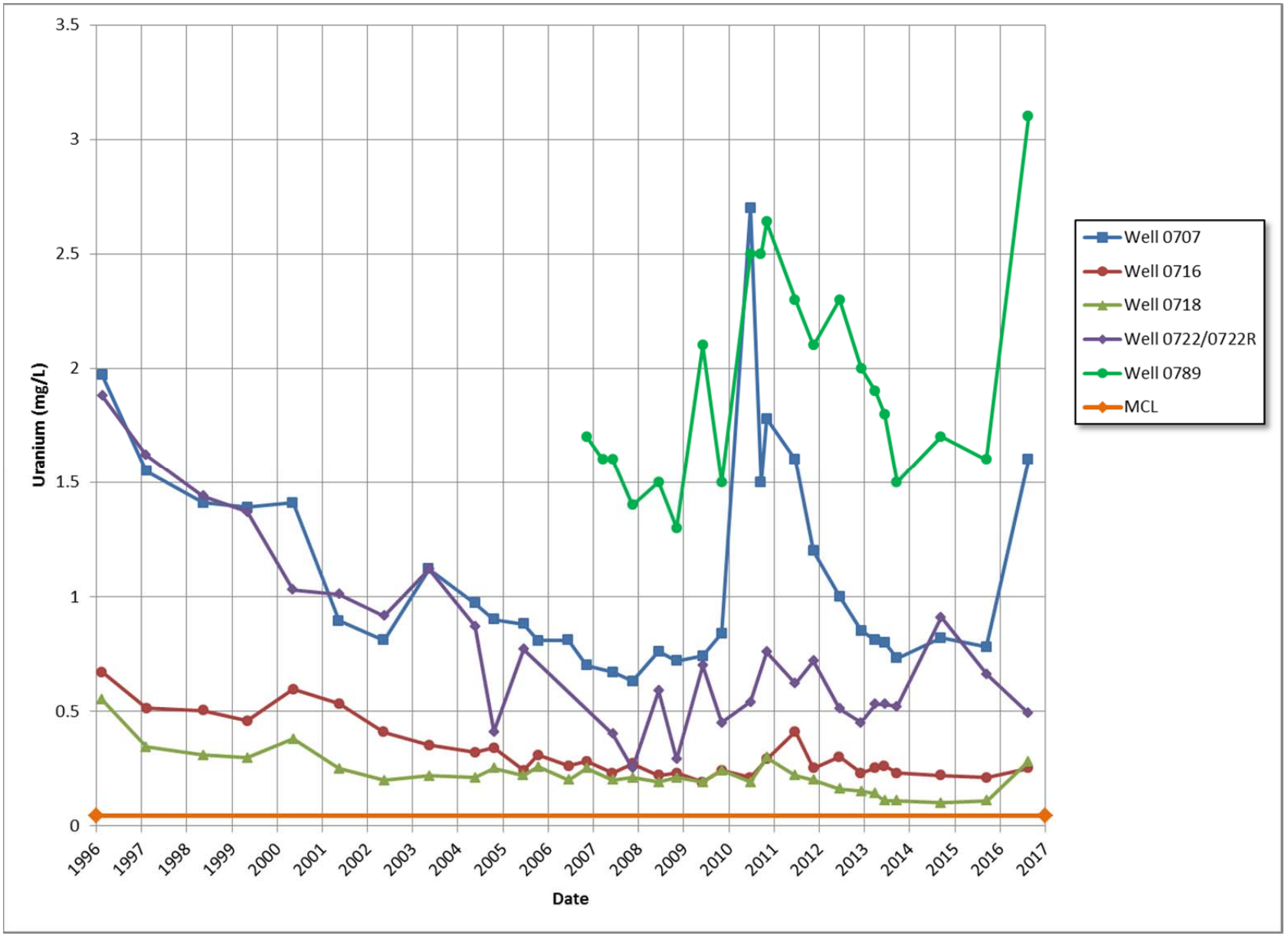

Figure 10. Uranium Concentrations in Surficial Aquifer Wells Within the Contaminant Plume

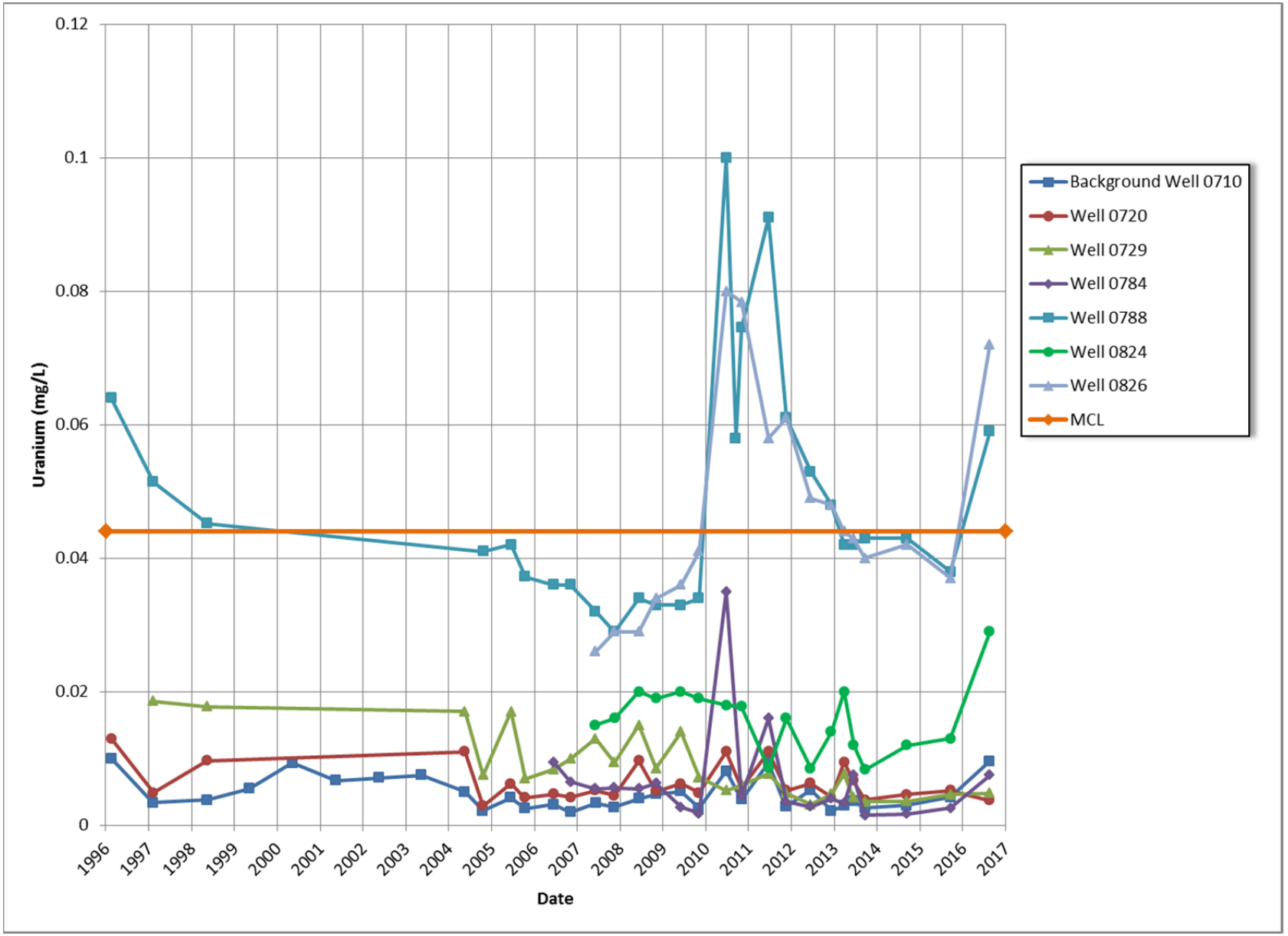

Figure 11. Uranium Concentrations in Surficial Aquifer Wells on the Edge of the Contaminant Plume

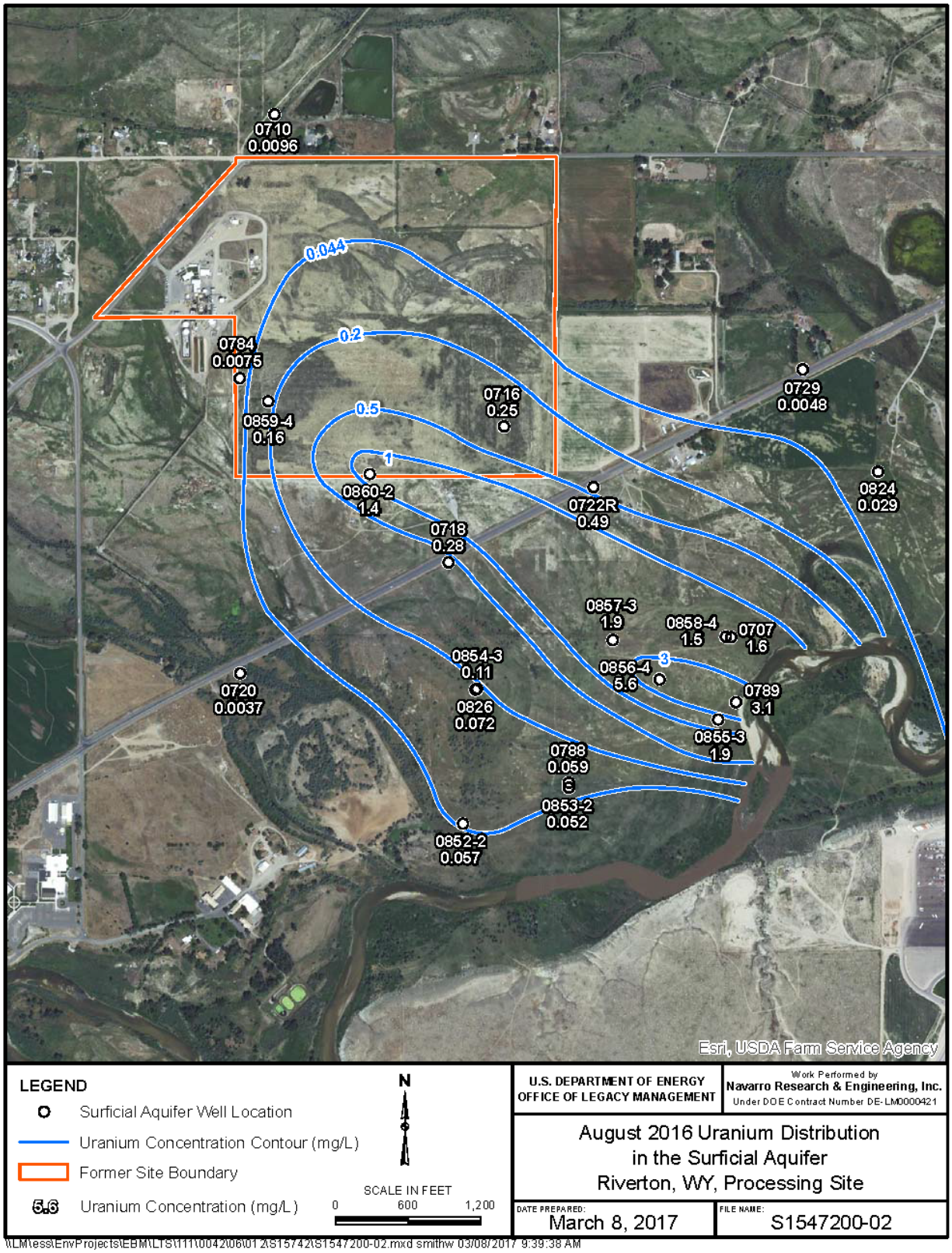

Figure 12. Uranium Distribution in the Surficial Aquifer at the Riverton Site in August 2016

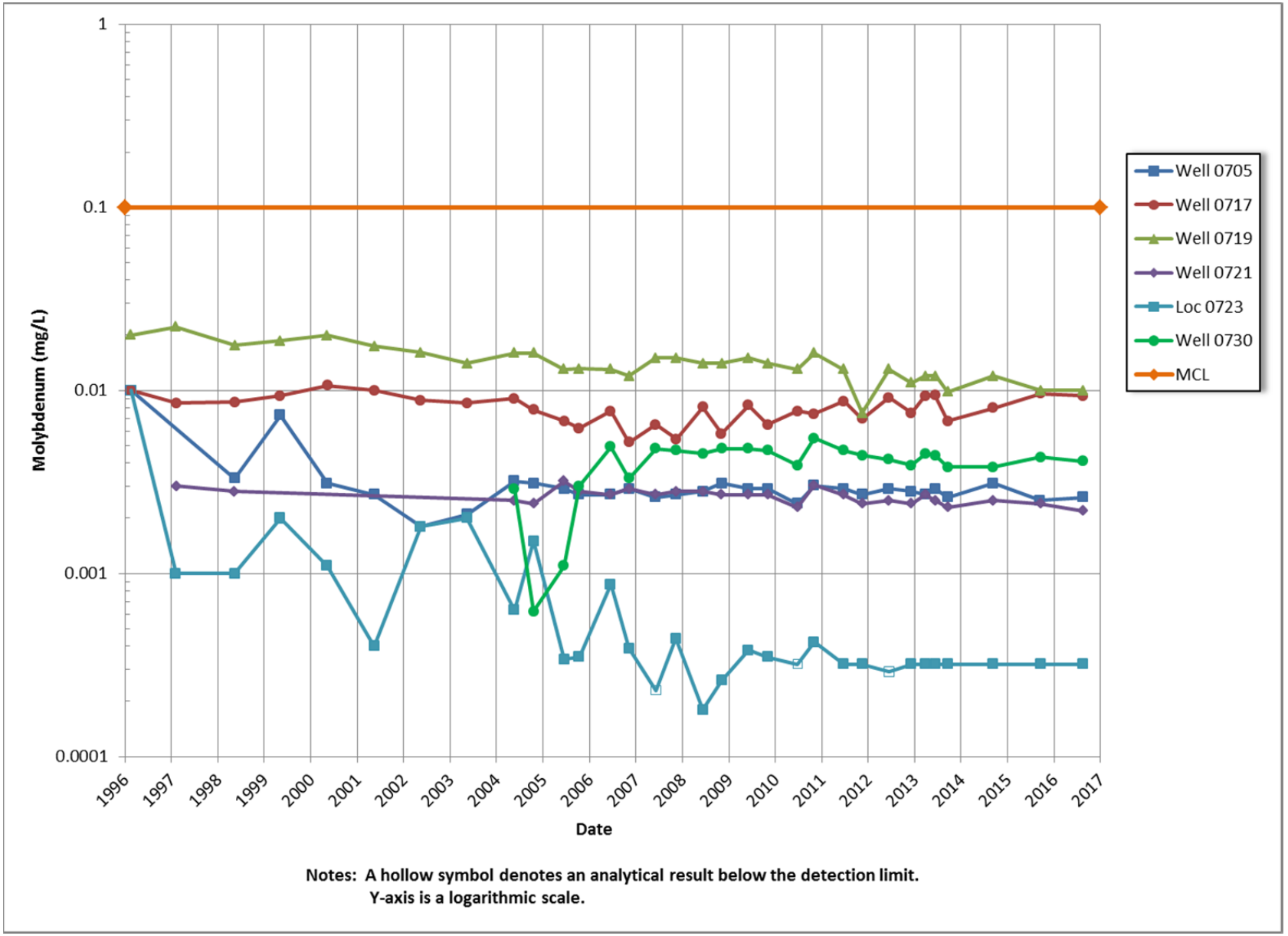

Figure 13. Molybdenum Concentrations in Semiconfined Aquifer Wells

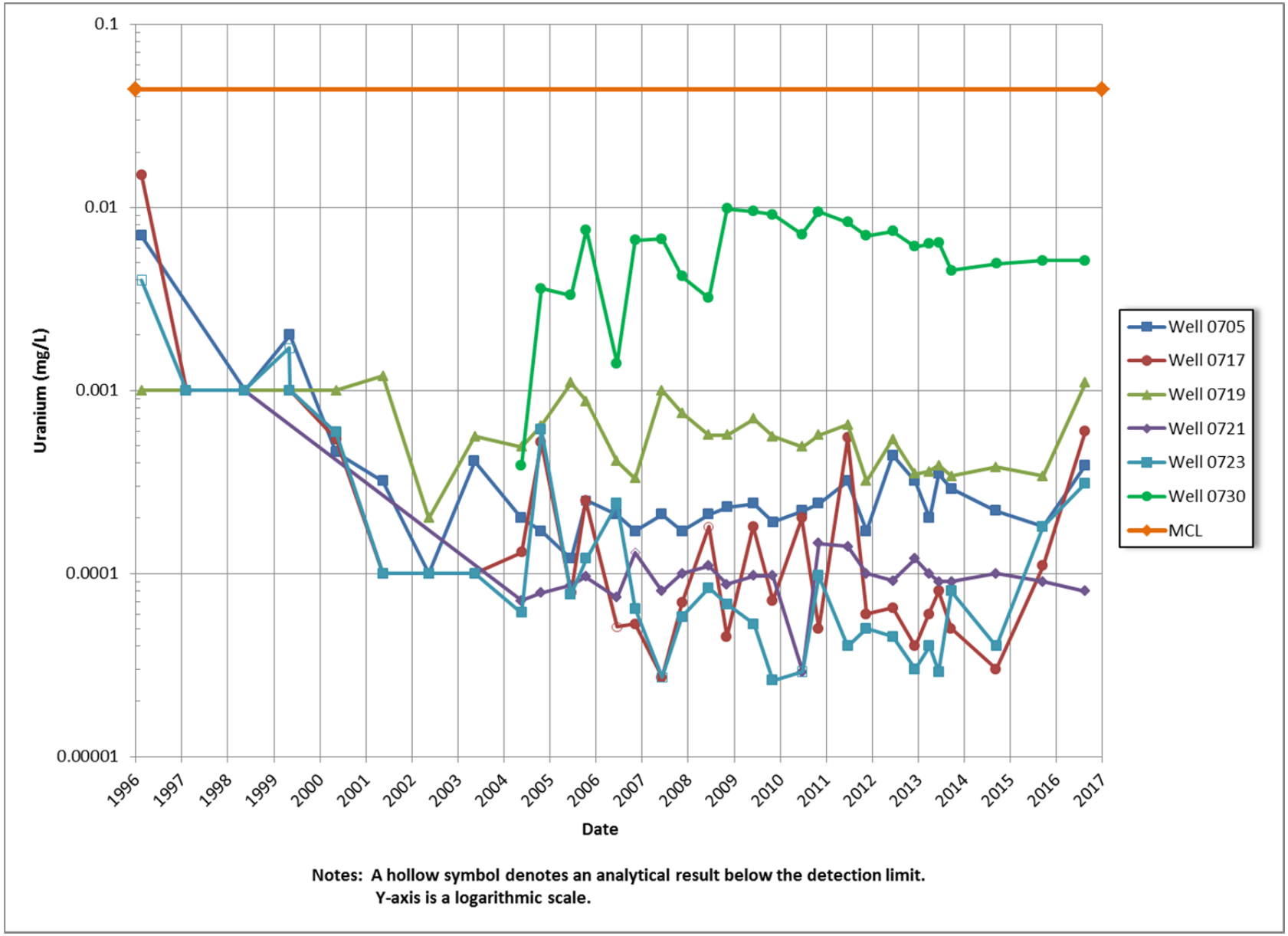

Figure 14. Uranium Concentrations in Semiconfined Aquifer Wells

4.1.2.1 Multilevel Monitoring Wells

Nine multilevel groundwater monitoring wells (0852 through 0860) were installed in 2015. Construction details and initial sampling in 2015 are provided in the *2015 Advanced Site Investigation and Monitoring Report, Riverton, Wyoming, Processing Site* (DOE 2016). These wells were sampling again in August 2016 using the analyte list discussed in Section 3.0. Because of the low water table elevation at the time of sampling, all top ports in the multilevel wells and port 2 in well 0857 were dry.

The uranium and molybdenum plumes using 2016 data (Figure 9 and Figure 12, respectively) included data from the multilevel monitoring wells where the port with the highest uranium or molybdenum concentration was plotted. Using all of the same wells and ports in Figure 9 and Figure 12, the concentration data from 2015 was subtracted from the 2016 data and plotted as uranium and molybdenum concentration differences (Figure 15 and Figure 16, respectively). The results in Figure 15 and Figure 16 show that the largest increases in uranium and molybdenum concentrations from 2015 to 2016 appear to be over the respective plumes. In general, monitoring wells with the highest uranium or molybdenum concentrations also had the greatest increases in concentrations in 2016. These increases were even greater where monitoring wells were inundated by flood waters on May 8, 2016 (see flooded area in Figure 15 and Figure 16), with the exception of well 0855. Well 0855 may be an exception due to the occurrence of a clayey silt layer at approximately 5 to 7 feet bgs with high organic carbon content. Thus, well 0855 has groundwater flow and geochemical controls that are different from the other surrounding wells in this area that were also flooded (0856, 0858, 0707, and 0789). Well 0852 was within the flooded area and showed an increase in uranium concentrations (Figure 16), but uranium isotopes from this well were slightly greater than background well 0710, indicating a non-mill related source of the uranium (DOE 2016). These data appear to confirm the conceptual model that uranium and molybdenum can get concentrated in the overlying unsaturated zone with uranium and molybdenum release during flooding and high water tables (DOE 2016; Dam et al. 2015). While this process is amplified over the plume, it can occur naturally, thus creating post-flood uranium concentrations in well 0852 that exceed standards.

Other wells that are within the uranium and molybdenum plumes, but outside of the flooding area (0860, 0718, and 0857), also showed significant concentration increases from 2015 to 2016 (Figure 15 and Figure 16). However, these wells did not have increases that were as great as the wells within the flooded area. It is important to note that the May 8, 2016, flood was not a typical spring flooding event due to mountain snow melt, but was a combination of warm weather and a significant rainfall (2.10 inches at the Riverton, Wyoming, airport and 4.45 inches upstream at Lander, Wyoming, airport May 6–8, 2016) (NOAA 2017). The distribution of increased groundwater concentrations of uranium and molybdenum in 2016 indicate that solid-phase uranium and molybdenum are likely concentrated above background in the unsaturated zone over the plume within and outside of the flood-prone area. Thus, the solid-phase uranium and molybdenum in areas outside of the flood-prone areas, but over their respective plumes, can be released by extreme precipitation events.

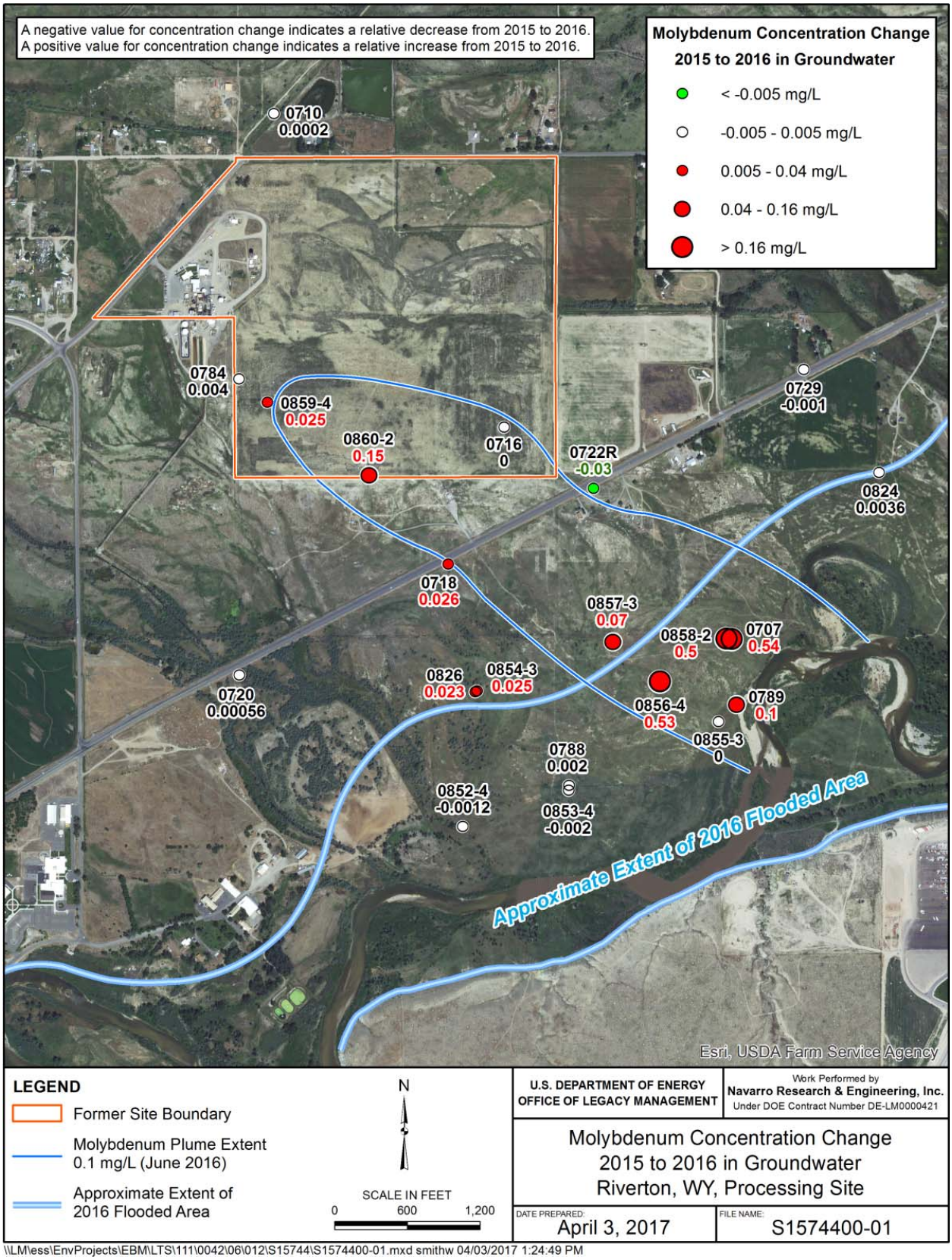

Figure 15. Molybdenum Concentration Change 2015 to 2016 in Groundwater at the Riverton Site

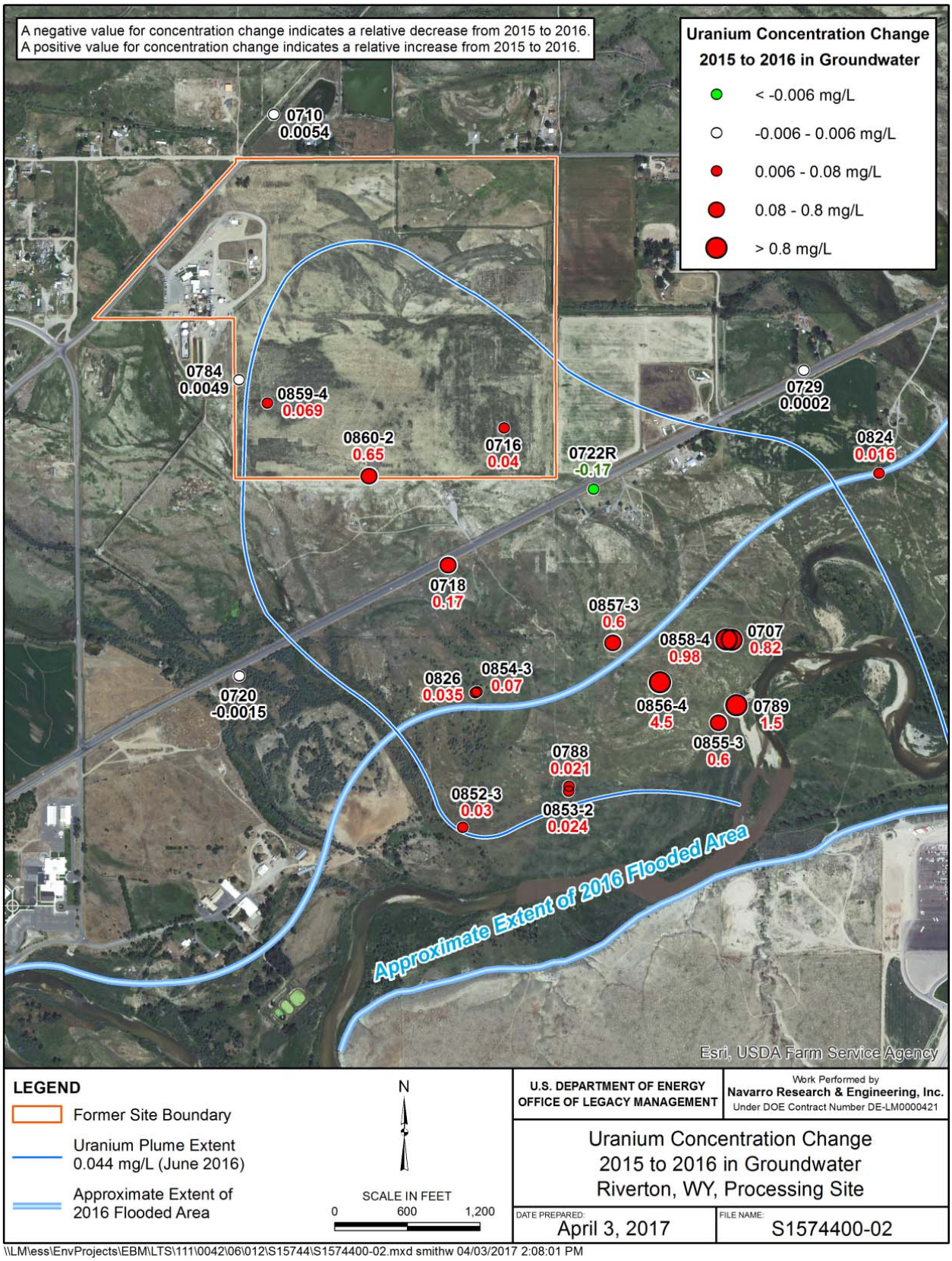

Figure 16. Uranium Concentration Change 2015 to 2016 in Groundwater at the Riverton Site

A full graphical comparison of the results for all analytes sampled in 2015 and 2016 for wells 0852 through 0860 is provided in Appendix E. For the major cations calcium (Ca), magnesium (Mg), potassium (K), sodium (Na) and major anions chlorine (Cl) and sulfate (SO_4), the 2016 data shows higher constituent concentrations in 2016 than 2015 for all wells, except for Ca in 0859-4 and Cl in 860-2. Likewise, the specific conductance value was higher in 2016 for all wells, except for 0855-4. These data indicate an overall increase in total dissolved constituents likely due to the flooding and the high precipitation event May 6–8, 2016, that mobilized constituents from the unsaturated zone, as discussed above.

No annual trends for manganese (Mn), iron (Fe), oxidation reduction potential (ORP), or dissolved oxygen are apparent as these constituents are controlled more by the existing aquifer solids and less by the flushing of the unsaturated zone. The trends in 2016 are similar to data from 2015 (DOE 2016) including a higher oxidation state in the middle of the aquifer, higher dissolved oxygen, lower Mn and Fe concentrations, and a higher ORP. Alkalinity trends between 2015 and 2016 are not readily apparent, but alkalinity is not directly controlled by the amount of dissolved solids and is controlled more by calcite dissolution or precipitation. Values for pH in 2016 were lower than 2015 in all wells (except for 0860-2), with an average decrease of 0.29 pH units. The reason for this pH decrease is unknown.

4.1.2.2 Domestic Wells

Domestic wells used as potable water sources at residences within the IC boundary were sampled in 2016; most of these wells are completed in the confined aquifer with the exception of well 0841, which is likely completed in the semiconfined aquifer. Domestic well 0430 was not sampled in 2016 because the pump was not working. Results from domestic wells did not indicate any impacts from the Riverton site. Concentrations of molybdenum in samples collected from domestic wells were two orders of magnitude below the standard, and concentrations of uranium in samples collected from domestic wells were one to three orders of magnitude below the standard.

Figure 17 and Figure 18 show time-concentration graphs for molybdenum and uranium, respectively. Appendix A provides data obtained from sampling domestic wells in 2016.

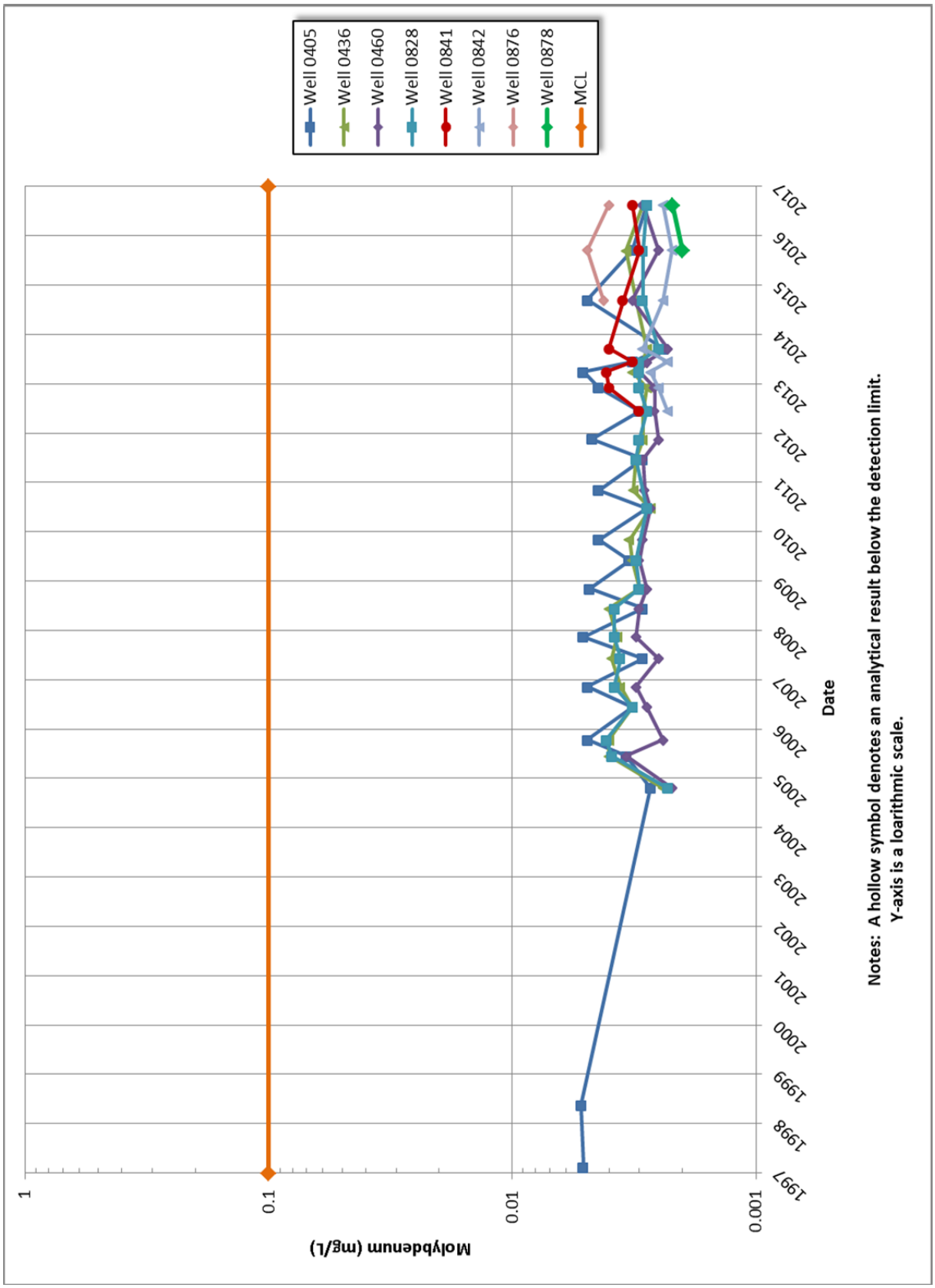

Figure 17. Molybdenum Concentrations in Domestic Wells

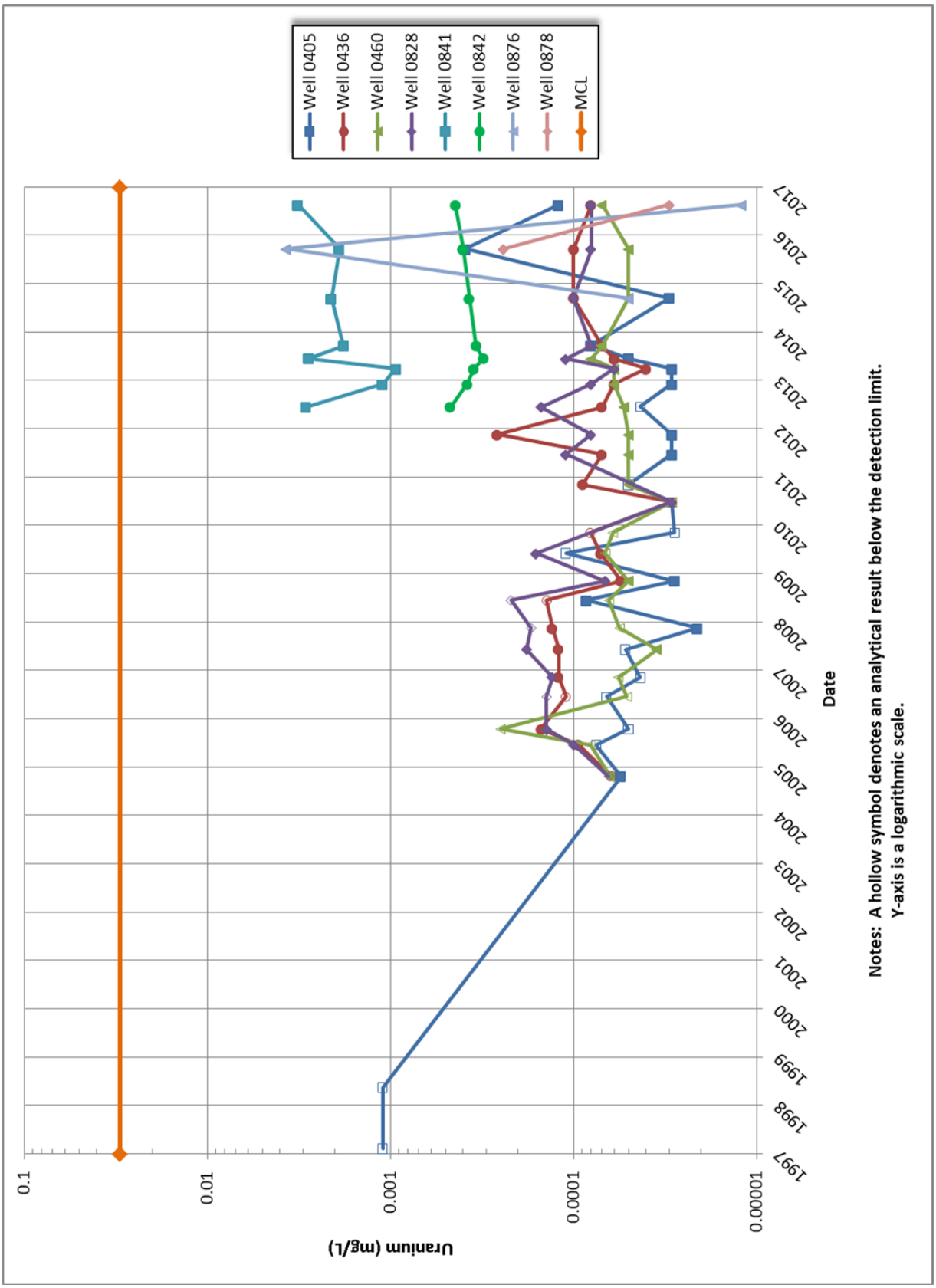

Figure 18. Uranium Concentrations in Domestic Wells

4.2 Surface Water

4.2.1 Surface Water Flow

Surface water flow in the Little Wind River has a direct impact on conditions at the Riverton site. The 2010 flood of the Little Wind River demonstrated a direct correlation between flooding of the Little Wind River and increased contaminant concentrations in the surficial aquifer (DOE 2011). This correlation was confirmed in 2016 with flooding of the Little Wind River in May. In addition, flooding of the Little Wind River has impacted the geomorphology of the Riverton site with development and evolution of surface water features such as the oxbow lake.

Flooding of the Little Wind River (Figure 19) was caused by heavy regional rains that occurred on May 6–8, as discussed in Section 4.1.2.1. The river obtained a peak discharge of 11,200 cfs on May 8, 2016, which was the third highest discharge recorded at the U.S. Geological Survey gaging station (USGS 2012a) since 1941. Figure 20 shows the highest peak discharges recorded since the start of milling operations (1958) at the gaging station located approximately 1.6 miles east of the former mill site (the gaging station location is shown in Figure 2). Discharge in the Little Wind River is statistically the highest in June, which reflects spring runoff from the Wind River Range. An assessment of Little Wind River discharge data from June indicates that spring runoff/flow in the river was above normal in 2015 and 2016, after being below normal from 2012 through 2014 (Table 3).

Table 3. Discharge from the Little Wind River

Year[a]	Mean June Discharge (cfs)	Deviation from Normal[b] June Discharge (cfs)	Maximum Discharge (cfs)
2000	1089	-1211	2720
2001	233.2	-2066.8	2090
2002	740.6	-1559.4	1930
2003	861.7	-1438.3	2490
2004	1591	-709	4120
2005	2272	-28	4520
2006	642.4	-1657.6	1710
2007	738.9	-1561.1	1910
2008	2175	-125	3730
2009	3012	712	4190
2010	5829	3529	13,300
2011	2861	561	7210
2012	594	-1706	1610
2013	587	-1713	1640
2014	1333	-967	3140
2015	2538	238	4240
2016	3443	1143	11,200

Notes:
[a] U.S. Geological Survey gaging station statistics.
[b] Based on a mean June discharge of 2300 cfs since 1941.

Figure 19. Flooding of the Little Wind River in May 2016

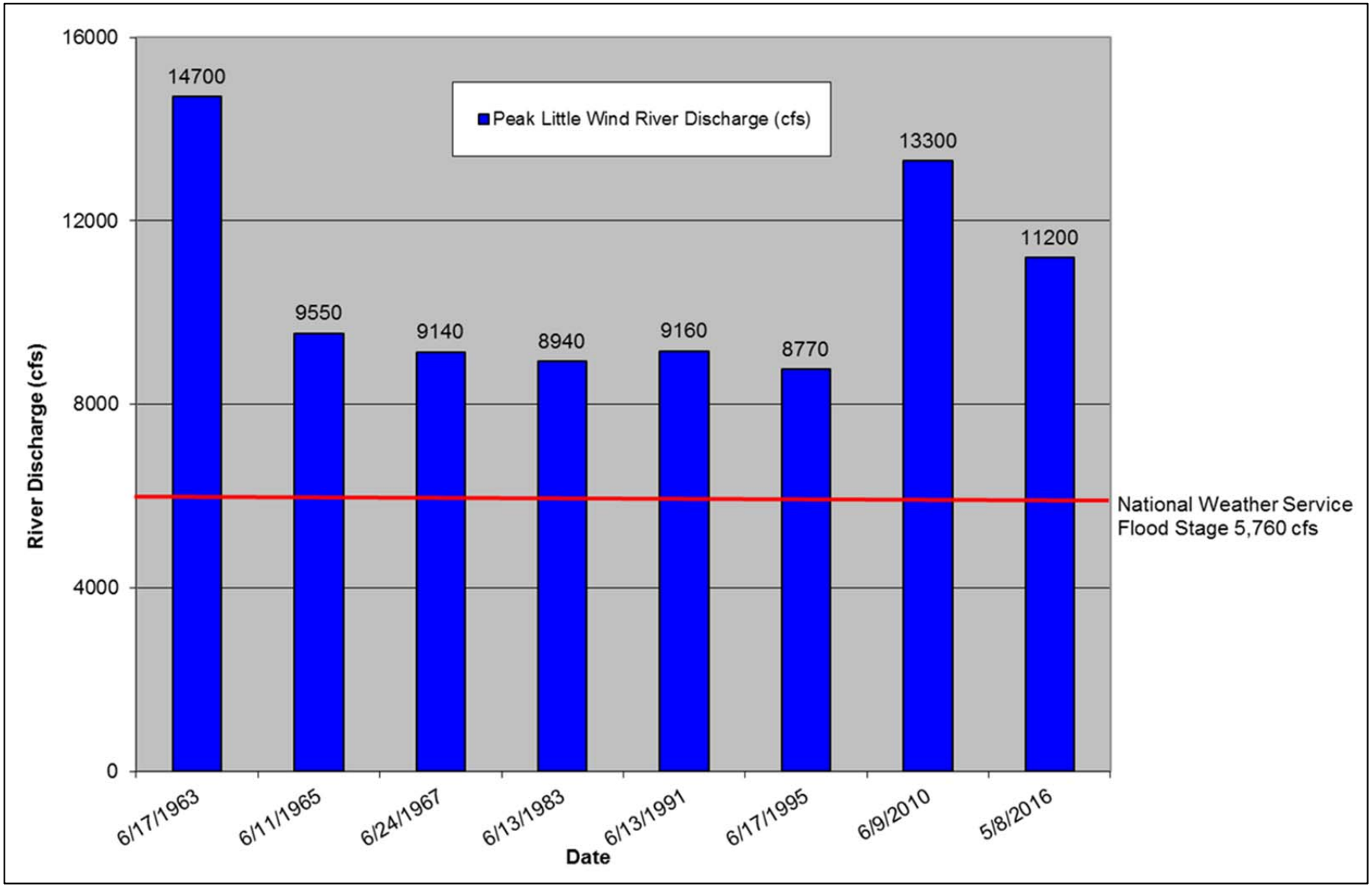

Figure 20. Historical Maximum Discharges of the Little Wind River

4.2.2 Surface Water Quality

Samples were collected at four locations on the Little Wind River (Figure 2), which flows generally to the northeast. Contaminated groundwater discharges to the Little Wind River, but there is no evidence that it adversely impacts surface water quality in the river. Molybdenum and uranium concentrations measured in samples collected from river locations adjacent to and downstream of the groundwater plume (locations 0811, 0812, and 0796) are comparable to concentrations from river samples collected upstream of the groundwater plume (location 0794), as shown in Figure 21 and Figure 22, respectively. Appendix F provides surface water quality data by parameter for all surface water locations sampled during 2016.

Two ponds (locations 0810 and 0823) formed from groundwater discharge into former gravel pits were sampled as part of the long-term monitoring network. These ponds are primarily used for fishing and swimming and are cross-gradient (0810) and upgradient (0823) from contaminant plumes. Samples collected from the ponds had concentrations of molybdenum and uranium that were below their respective groundwater MCLs and comparable to background groundwater concentrations, which indicates no discernible impacts from the site. Figure 23 and Figure 24 show concentrations of molybdenum and uranium, respectively, over time in these ponds.

Concentrations of molybdenum and uranium in the oxbow lake (location 0747) have varied over time (see Figure 23 for molybdenum and Figure 24 for uranium). This variability is partially attributed to the time samples are taken. If inflow from the Little Wind River to the oxbow lake occurred just prior to or during the sampling event, then contaminant concentrations are diluted. Hydraulic and water quality data indicate that the oxbow lake is fed by the discharge of contaminated groundwater; therefore, elevated concentrations are expected. Variability in uranium concentrations in the oxbow lake is also attributed to fluctuations in groundwater chemistry. In 2016, the concentration of uranium (0.63 mg/L) in the sample collected from the oxbow lake reflected the spike of uranium in the groundwater, which is attributed to the flood of the Little Wind River in May of 2016. Overall, molybdenum concentrations in the oxbow lake have been below the groundwater MCL for molybdenum, and uranium concentrations in the oxbow lake have remained above the groundwater MCL for uranium.

In 2016, the Little Wind River was not flowing into the oxbow lake during the August sampling event when low-flow conditions were observed. Field observations since 2002 indicate the oxbow lake is gradually filling with sediment and vegetation over time, as expected. Numerous abandoned meanders (oxbows) of the Wind and Little Wind Rivers are evident from aerial photographs. Eventually, the oxbow lake will fill in as other abandoned channels have and not be an expression of surface water at the Riverton site. Figure 25 and Figure 26 show photographs of the oxbow lake in May of 2002 and August of 2016, respectively, which illustrates the progress of the vegetation and sedimentation filling in the ponded water.

In May 2016, a new surface water feature was formed by flooding of the Little Wind River. High river flows scoured out a side channel of the river, leaving a depression that subsequently filled with groundwater after the river receded (Figure 4). This new location (0879) was sampled during the August sampling event. Compared to the molybdenum and uranium groundwater plumes (Figure 9 and Figure 12, respectively), this new seep is just south of the center of the contaminant plumes. Results for location 0879 showed concentrations of molybdenum (0.23 mg/L), sulfate (11,000 mg/L), and uranium (1.5 mg/L) above background concentrations but similar in concentration to the nearby groundwater.

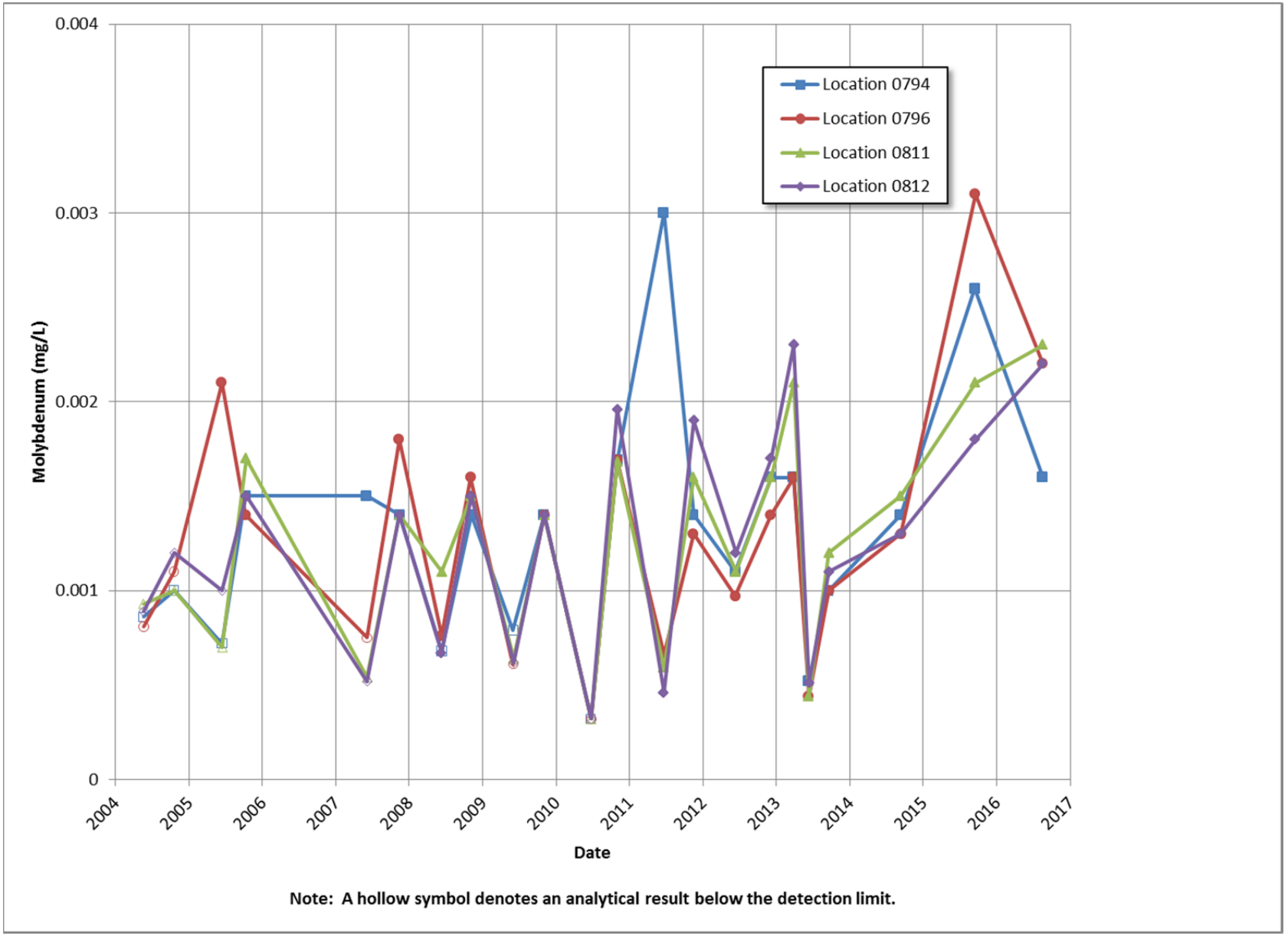

Figure 21. Molybdenum Concentrations in Little Wind River Locations

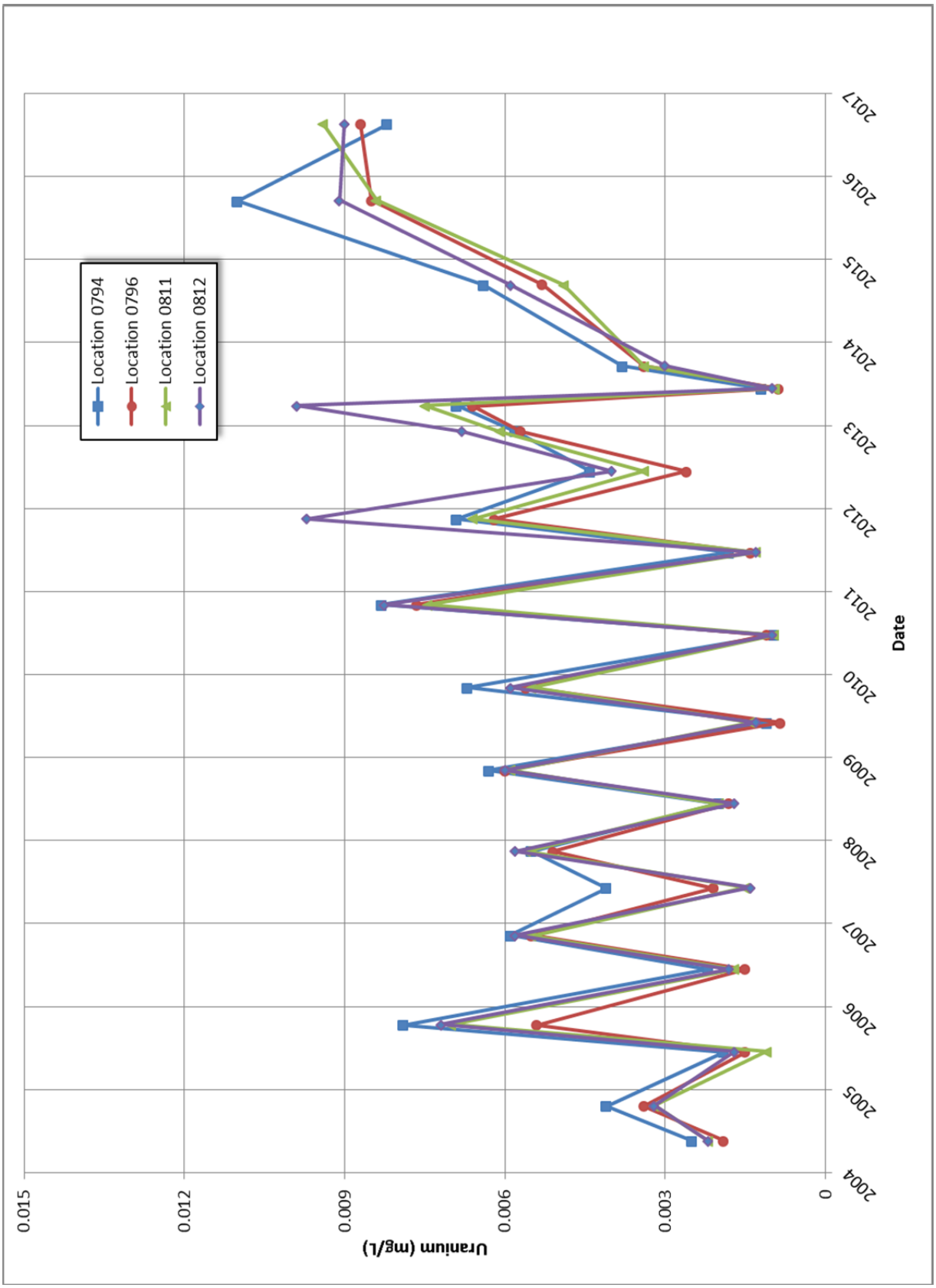

Figure 22. Uranium Concentrations in Little Wind River Locations

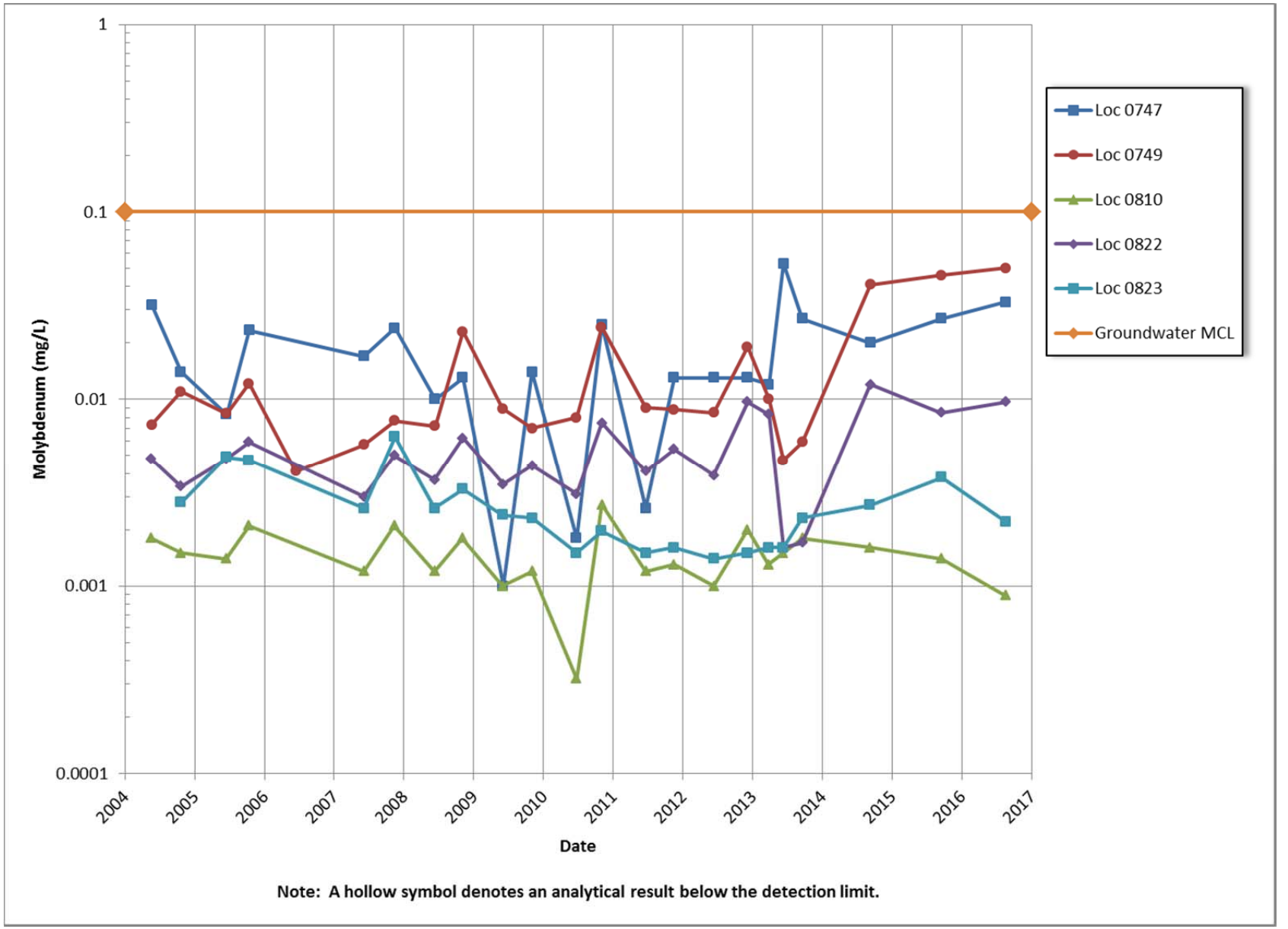

Figure 23. Molybdenum Concentrations in Ponds and Ditches

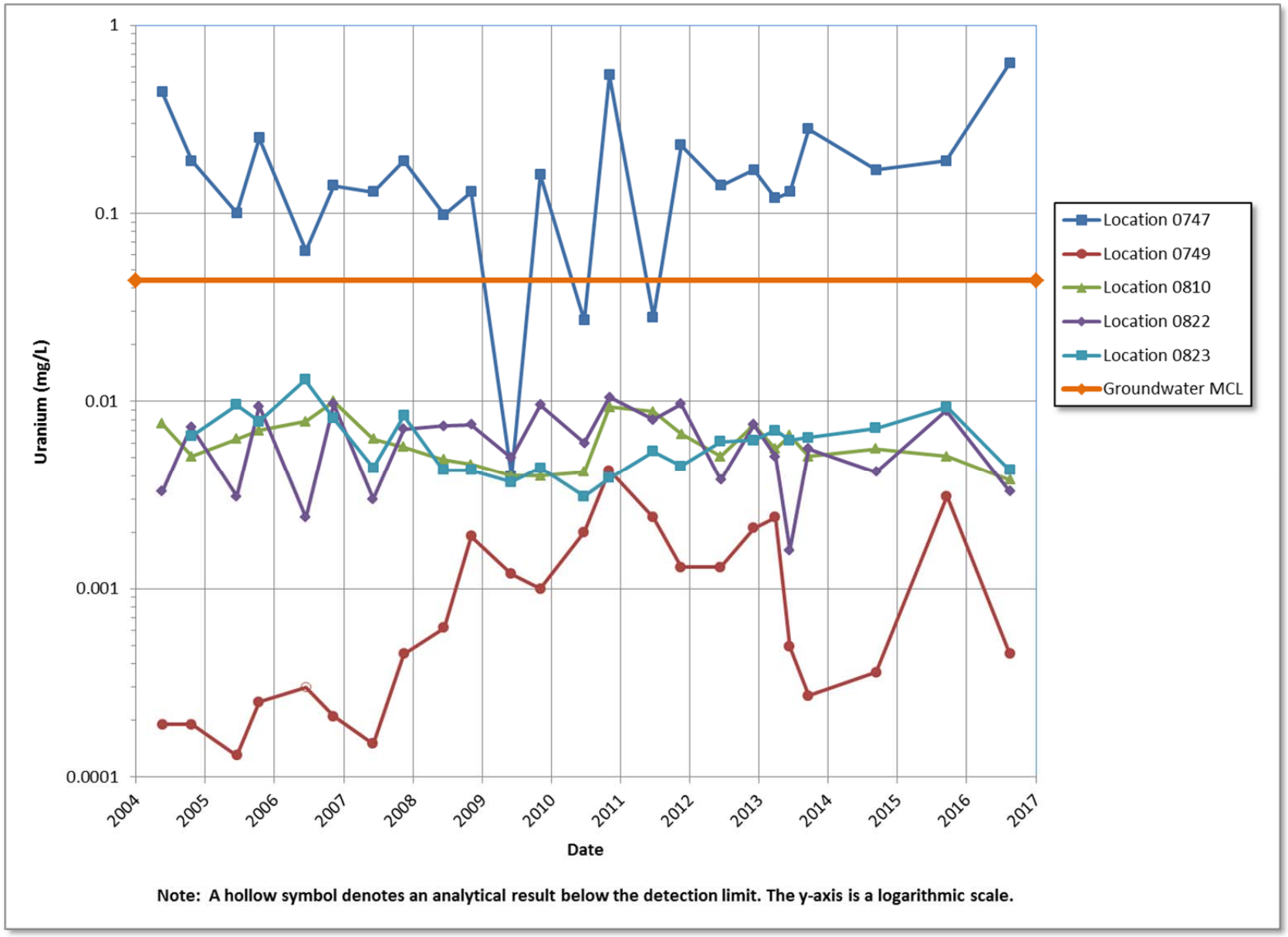

Figure 24. Uranium Concentrations in Ponds and Ditches

Figure 25. Oxbow Lake in May 2002

Figure 26. Oxbow Lake in August 2016

The sample collected at the ditch that carries discharge water from the Chemtrade sulfuric acid refinery (location 0749) had elevated concentrations of sulfate that have been in the 1500–3000 mg/L range from 2004 to March of 2013. In June of 2013, however, concentrations were significantly reduced (550 mg/L at location 0749) because of a change in plant processes that reduced sulfate in the water discharge and in the air emissions. Discharge from the ditch is regulated through a National Pollutant Discharge Elimination System permit issued to Chemtrade and administered by EPA. Since 2013, sulfate concentrations in the ditch have been generally lower but variable (Figure 27) with a concentration of 900 mg/L measured in August of 2016. The unlined ditch is a continual source of sulfate to the surficial aquifer.

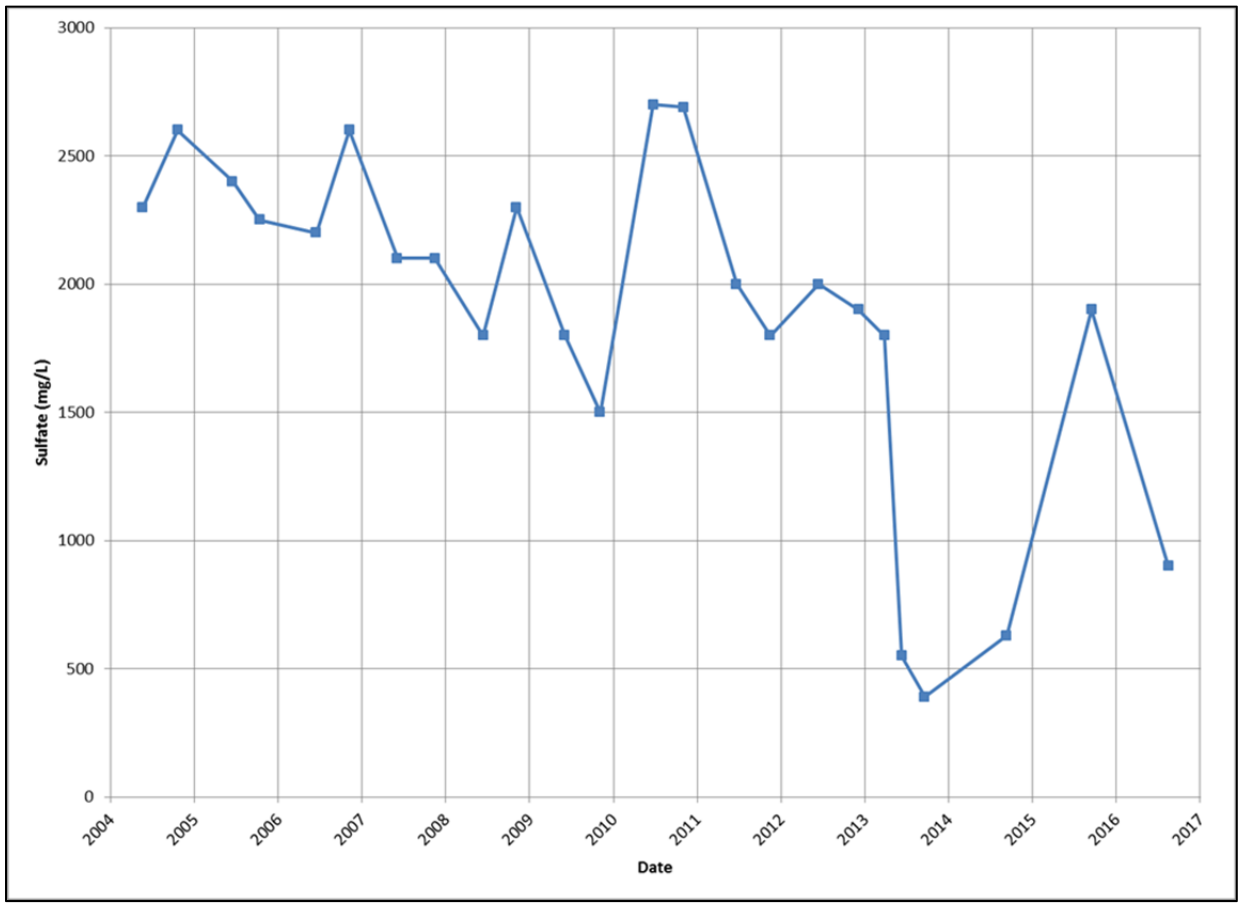

Figure 27. Sulfate Concentrations at Location 0749

Concentrations of molybdenum and uranium in the Chemtrade ditch (0749) are below the groundwater MCLs, but concentrations indicate a small contribution from plant processes. The concentration of molybdenum in the sample collected from the ditch (0.05 mg/L) was elevated compared to the molybdenum concentration in process water used by the sulfuric acid plant that is supplied by well 0460 (0.0029 mg/L), which indicates a minor molybdenum input from plant processes. The concentration of uranium in the sample collected from the ditch was very low (0.00045 mg/L) but slightly elevated compared to concentrations of the process water used at the plant (0.00007 mg/L).

Downstream of the Chemtrade ditch, a sample was collected from the west side irrigation ditch (0822). The molybdenum concentrations were slightly lower and uranium concentration slightly

higher in the west side irrigation ditch sample compared to the Chemtrade ditch sample (0749), which reflects a mixing with background water upstream of the site along the flow path from 0749 to 0822. The low molybdenum and uranium concentrations (Figure 23 and Figure 24) indicate minimal site impacts to the water quality in the ditch.

4.3 Soil

Detailed soil sampling was completed at the site in 2015 during trenching and sonic drilling, which is discussed in the *2015 Advanced Site Investigation and Monitoring Report, Riverton, Wyoming, Processing Site* (DOE 2016). Data from this previous work indicated that the silt layer had higher concentrations of many measured analytes across the site compared to the underlying sand and gravel. Uniquely higher concentrations of uranium in the silt occurred over the uranium plume (DOE 2016). However, location 0852 was the only location that was outside of the uranium plume. Thus, additional soil sampling in 2016 focused on background locations that are outside of the uranium plume footprint. Sampling procedures and the full analyte list are the same as that completed for the DOE (2016) report. All of the soil sampling results are provided in Appendix G and are graphically presented relative to depth in Appendix H. The sample locations are located in Figure 2 and a brief discussion of the locations and lithologic details are provided in Table 4. Photographs of all the hand-augered cores are available.

Table 4. Soil Sampling Information

Location	Sample ID	Depth (ft)	Description
0880	880-1	0.3	Silty clay, 10% silt, slightly damp but starting to dry out at the surface, roots and organic mat material, color 7.5YR 3/3.
	880-2	1.3	Silty clay, 10% silt, damp, small roots throughout, no organic mat material, color 7.5YR 4/3.
	880-3	2.1	Silty clay, 50% silt, less cohesive than above and lighter in color (probably due to increasing silt content), damp, small roots, slight mottling with white streaks, color 7.5YR 5/3.
	880-4	2.7	Clay, damp, 10–20%, strong white mottling, small roots, darker color than above, color 7.5YR 3/2.
0881	881-1	0.5	Clean dry silt, increasing moisture with depth, slightly darker in color with added moisture, color 7.5YR 7/1.
	881-2	1.5	
	881-3	2.5	Clayey silt, color 7.5YR 5/2.
	881-4	3.5	Clean fine sand, color 7.5YR 5/2.
	881-5	4.5	Silty clay, 10% silt, white and red iron mottling, color 7.5YR 4/2.
0882	0882-1	0.5	Silt, dry, strong white evaporite mottling, color 7.5YR 5/2.
	0882-2	1.5	Silt, damp, small roots, color 7.5YR 4/3.
	0882-3	2.7	Fine sand, very clean, color 7.5YR 5/2.
	0882-4	3.6	
0883	0883-1	0.5	Silty clay, damp, no layering, 20% silt, small roots, color 7.5YR 4/3.
	0883-2	1.5	
	0883-3	2.4	Clayey silt, small roots, 40% clay, damp, color 7.5YR 4/3.
0884	0884-1	0.5	Silt, powder dry, color 7.5YR 6/2.
	0884-2	1.1	
0885	0885-1	0.08	Gravelly silt, even mix of silt, sand, and gravel, very dry, some organic mat material, color 7.5YR 6/3.
	0885-2	0.08–0.25	

In Appendix H, the results for the new background locations 0880 through 0885 are plotted against prior locations 0852 (outside of the uranium plume) and 0855 (over the uranium plume). Note that only the results for silt samples in 0852 and 0855 are plotted because all the deeper samples are sand and gravel. For all the analytes beside uranium, only sulfate, total inorganic carbon (TIC), and one sample for molybdenum show a signature of being uniquely higher in 0855. For uranium (Figure 28), the majority of the new background samples range from 0.77 to 2.37 milligrams per kilogram (mg/kg), which incorporates the range of uranium concentrations from the silt in 0852. Two new background samples, 0880 at −0.3ft. and 0882 at −0.5 ft, have uranium concentrations of 3.11 and 3.09 mg/kg, respectively (Figure 28). These samples appear to be associated with high total organic carbon content (Appendix G) near the surface. In addition, sample 0882 at −0.5 ft had strong evaporite mottling (Figure 29). These new data indicate that background concentrations of uranium up to 3.1 mg/kg are possible, but the majority of the data indicate background uranium concentrations of the silt being between 0.8 and 2 mg/kg. For comparison, uranium concentrations in the sand and gravel aquifer away from the zone underneath the former tailings impoundment and below the organic-rich naturally reduced zone in 0855 and 0877 are generally less than 1 mg/kg.

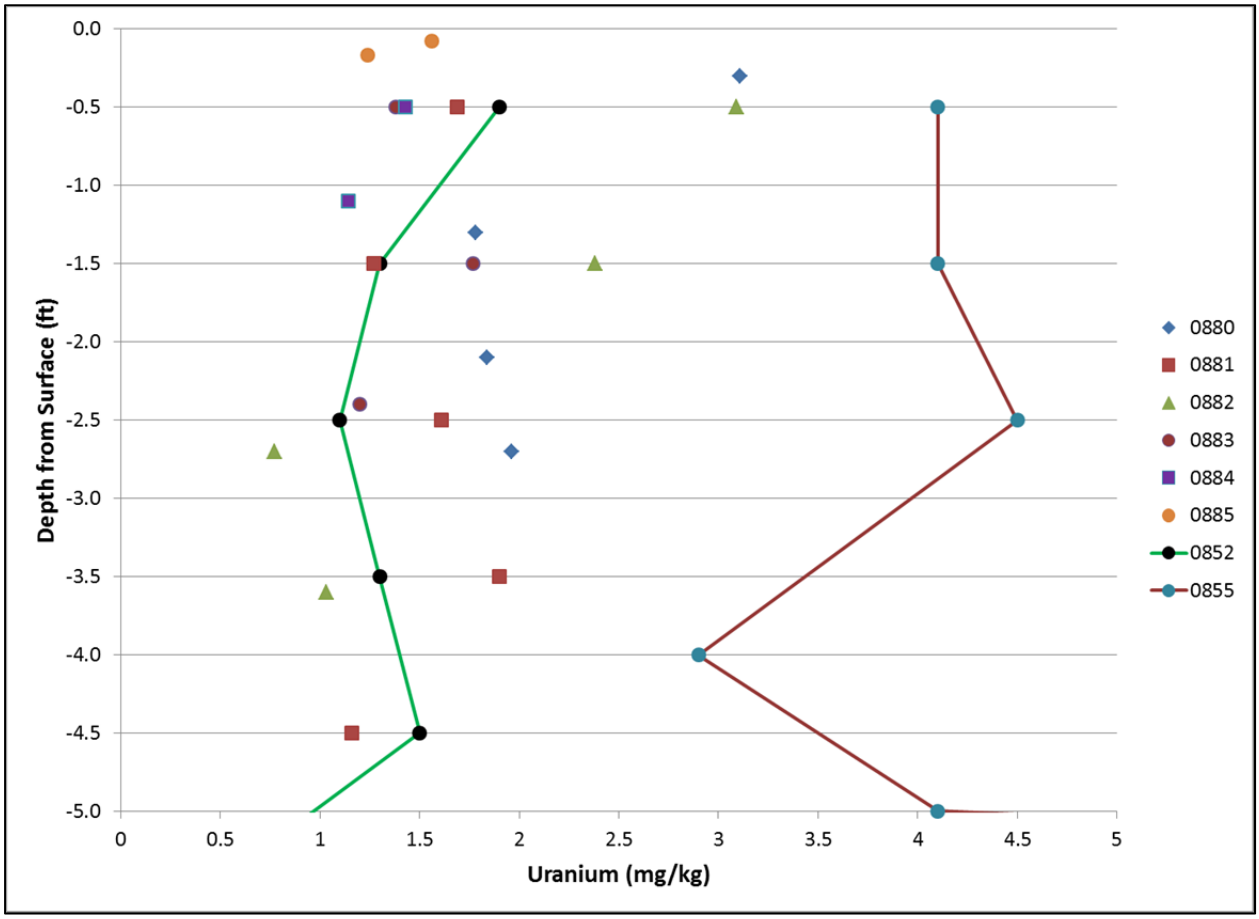

Figure 28. Solid-phase Uranium Concentrations with Depth Below the Surface from New Sample Locations 0880 through 0885 Compared to Prior Location 0852 Outside of the Uranium Plume and Prior Sampling from over the Uranium Plume at Location 0855

Figure 29. Soil Sample from Location 0882 (depth indicated in feet). White flecks are evaporite.

4.4 AWSS Monitoring

The AWSS was installed in 1998 by the Indian Health Service. DOE provided $800,000 in funding, which included 25% of the cost of a new 1 million gallon storage tank (Figure 30). As a component of ICs for the Riverton site, the AWSS is designed to supply drinking water to residents within the IC boundary so they don't have to drink groundwater that could potentially be impacted by the contaminated surficial aquifer. The AWSS is an addition to a preexisting water supply system and consists of 8.5 miles of transmission pipeline running from the 1 million gallon tank (Figure 2).

Babits (2003) identified elevated concentrations of radionuclides in the AWSS in 2002, and DOE confirmed these results in 2004 (DOE 2005). In response to these findings, DOE funded an independent analysis of the AWSS, and the analysis recommended implementation of a flushing program to determine if flushing would reduce the radionuclide concentrations to acceptable levels (ASCG Inc. 2005). Based on the recommendation of the independent analysis, DOE implemented a 2-year flushing study to determine if flushing would reduce radionuclide concentrations and control radionuclide buildup in the AWSS (DOE 2006). Results of the study indicated that a unidirectional flushing program should be implemented on a 6-month frequency (DOE 2008).

Figure 30. AWSS 1 Million Gallon Tank

Flushing of the AWSS in 2016 consisted of two scheduled semiannual events in March and August, and two unscheduled events in October and December. In March of 2016, a scheduled flushing and sampling event was conducted by NAW&SD and NANRO. DOE was not involved in this event, so results are not included in this report. A second, scheduled flushing and sampling event was conducted in August of 2016, and two unscheduled events were conducted in October and December of 2016. These events were a joint effort among NAW&SD, NANRO, and DOE, and results from these events are detailed in this section.

Flushing and sampling was conducted in accordance with the *Alternate Water Supply System Flushing Plan, Riverton, Wyoming* (DOE 2012). In August, eight hydrant locations on the AWSS were flushed and sampled, and four tap locations were sampled. Two samples were collected at each of seven hydrant locations—one sample 5 minutes into the flush and one sample at the end of the flush, as specified in the plan. Only end-of-flush samples were collected at hydrant locations 0834 and 0843 because of the short flushing time. AWSS samples were analyzed for radium-226 (^{226}Ra), radium-228 (^{228}Ra), and uranium, and field measurements of chlorine, temperature, pH, specific conductance, ORP, dissolved oxygen, alkalinity, and turbidity were measured at each location.

Monitoring of hydrant and tap locations was conducted to determine the effectiveness of the flushing program in reducing radionuclide concentrations and maintaining them at acceptable levels. The flushing program is successful when the combined concentrations of ^{226}Ra and ^{228}Ra are below the federal drinking water MCL of 5 pCi/L, and the uranium concentrations are below the federal drinking water MCL of 0.03 mg/L. Results from samples collected from AWSS

hydrant and tap locations in August are summarized in Table 5 and provided in Appendix B. As shown in Table 5, two samples exceeded MCL for the combined concentrations of ^{226}Ra and ^{228}Ra at the end of the flush—the sample from hydrant location 0843 had a combined radium concentration of 22.14 pCi/L and tap location 0816 had a combined radium concentration of 5.68 pCi/L. Several 5-minute sample radium concentrations exceeded the MCL; however, elevated concentrations are expected because high water velocities scour the pipe and remove the accumulated radium. All uranium results were three orders of magnitude below the MCL.

Because two samples exceeded the radium MCL during the August sampling event, a flushing event with targeted sampling was conducted in October of 2016. All hydrants were flushed during this event. Samples were analyzed for ^{226}Ra and ^{228}Ra only. Following are the locations and rationale for each location sampled during the October sampling event:

- AWSS hydrant location 0843: The combined radium concentration from the August 2016 flushing/sampling event was 22.14 pCi/L, which exceeded the drinking water MCL of 5 pCi/L.
- AWSS tap location 0886: This new tap location is located next to the 0843 hydrant and was sampled to assess radium concentrations in the adjacent buildings where people are drinking the water.
- AWSS tap location 0816: The combined radium concentration from the August 2016 flushing/sampling event was 5.68 pCi/L, which exceeded the drinking water MCL. This sample was collected to determine if the combined radium concentration returned to levels below the MCL.
- AWSS hydrant location 0821: This hydrant is the terminal hydrant on the AWSS and was sampled to verify the effectiveness of the flushing.
- New water supply well 0887: This water supply well for the AWSS was sampled to determine the radium content in the source water.

Results from the October sampling event indicated that radium concentrations were below the MCL at all locations except at location 0816, which had a combined ^{226}Ra and ^{228}Ra concentration of 5.69 pCi/L. In response to the elevated radium concentrations in October, DOE resampled location 0816 in December of 2016. The December sample was collected between AWSS flushing events and, therefore, represented steady-state conditions with radium concentrations that would be typical throughout the year. Bottled water was supplied to the residence until the sample results were received and validated. The results were below the MCL with combined ^{226}Ra and ^{228}Ra concentrations of 2.97 pCi/L (Table 5).

Table 5. Monitoring Results from the 2016 AWSS Flushing and Sampling Events

ID	Sample	$^{226}Ra + {}^{228}Ra$[a]			Uranium[b]
		August 2016	October 2016	December 2016	August 2016
Hydrants					
0818	5-minute	**9.62**	-	-	0.00003
	End of flush	3.69	-	-	0.00003
0819	5-minute	**10.58**	-	-	0.00006
	End of flush	3.48	-	-	0.00004
0820	5-minute	4.18	-	-	0.00005
	End of flush	3.83	-	-	0.00003
0821	5-minute	**5.34**	-	-	0.00005
	End of flush	3.53	3.87	-	0.00003
0829	5-minute	**7.23**	-	-	0.00004
	End of flush	3.63	-	-	0.00004
0830	5-minute	**5.30**	-	-	0.00005
	End of flush	3.06	-	-	0.00003
0834	End of flush	3.82	-	-	0.00003
0843	End of flush	**22.14**	4.03	-	0.00004
Taps					
0813	After flushing is complete	4.17	-	-	0.00005
0815	After flushing is complete	3.69	-	-	0.00005
0816	After flushing is complete	**5.68**	**5.69**	2.97	0.00008
0837	After flushing is complete	3.43	-	-	0.00003
0886	After flushing is complete	-	3.61	-	-
Supply Well					
0887	New supply well	-	3.25	-	-

Notes:
Values in red indicate measurements above the 5 pCi/L standard.
[a] Units are in pCi/L.
[b] Units are in mg/L.

Monitoring of flow during each hydrant flush was necessary to ensure that the calculated water volume of each section of pipe was removed. Flow meters were installed at each hydrant during flushing to measure the volume of water flushed from the pipe. Volume measurements also were used to calculate the velocity of the water moving through the pipe. Velocity data were used to determine if water movement within the pipeline was sufficient to remove sediment and debris and to scour biofilm from the inside of the pipe. According to the independent analysis (ASCG 2005), flushing velocities of 2–3 feet per second (ft/s) are needed to remove sediment and loosely attached particles, while flushing velocities of greater than 5 ft/s are required to scour and remove buildup of biofilm and material adhering to the wall of the pipe. Table 6 compares 2014 flushing data with 2016 flushing data (flushing was conducted by NAW&SD in 2015).

As shown in Table 6, flushing flow rates and pipe velocities decreased significantly in 2016 at some locations. In fact, the flushing velocity at hydrant 0819 (1.83 ft/s) was not high enough to effectively scour the inside of the pipe. These decreased flushing velocities may be contributing to the elevated radium concentrations measured at tap location 0816 in August and October 2016. Prior to 2016, the radium MCL had not been exceeded in samples collected from any tap location or in any end-of-flush sample from a hydrant (DOE 2008, DOE 2011, DOE 2013a, DOE 2013b, DOE 2014).

Table 6. Comparison of 2014 and 2016 AWSS Flushing Rates

Hydrant Location	March 2014		September 2014		August 2016	
	Average Flow Rate	Average Pipe Velocity	Average Flow Rate	Average Pipe Velocity	Average Flow Rate	Average Pipe Velocity
0829	807.7	5.2	815	5.2	804.0	5.13
0830	692.2	4.4	515	3.3	513.6	3.28
0818	576.5	6.5	630	7.1	590.7	6.70
0819	803.6	5.1	596	3.8	286.7	1.83
0843	396.6	4.5	327	3.7	249.7	2.83
0821	539.2	6.1	563	6.4	264.4	3.00
0820	603.6	6.9	389	4.4	249.5	2.83
0834	457.8	5.2	447	5.1	229.2	2.60
System Average	**610**	**5.5**	**535**	**4.9**	**398.5**	**3.53**

Note:
Flow rates and pipe velocities are given in ft/s.

The decrease in flushing flow rates and pipe velocities measured in 2016 may be attributed to new transmission lines installed in the AWSS that are neither accounted for nor isolated during flushing activities or isolation valves that are not functioning properly. Because of these unknowns in the AWSS and recent elevated radium concentrations in the system, DOE is in the process of subcontracting an engineering firm to conduct a condition assessment of the AWSS. This study will assess the current condition of AWSS components, create accurate as-built drawings, conduct a hydraulic analysis of the system, and make recommendations for an effective flushing program.

5.0 Compliance Strategy Assessment

After surface remediation was completed, groundwater numerical modeling in 1998 predicted that the alluvial aquifer will naturally flush contaminants to levels below applicable standards within the 100-year regulatory time frame. This modeling formed the basis for the natural flushing strategy that was approved in the *Final Ground Water Compliance Action Plan for the Riverton, Wyoming, Title I UMTRA Project Site* (DOE 1998a) in 1998. In previous years, the progress of natural flushing was assessed using three tools: comparison to hydrogeologic modeling predictions, trend analysis, and curve matching and interpolation techniques applied to temporal plots of contaminant concentrations at individual locations. These techniques were based on a CSM of gradually declining contaminant concentrations after surface remediation of

source material on the former mill site. Prior to 2010, these techniques indicated that natural flushing of the surficial aquifer was progressing toward applicable standards.

However, based on observations made in 2010 in context with historical data, the CSM and groundwater computer modeling were too simplistic to account for the spikes in contaminant concentrations in the surficial aquifer groundwater. Spikes in contaminant concentrations are attributed to flooding of the Little Wind River in June 2010, which mobilized contaminants into the saturated zone of the surficial aquifer. Cross-correlation of flood events in the Little Wind River with monitoring data reveal that uranium concentrations spiked in monitoring well 0707 in 1991, 1995, and 2010, which followed floods of the Little Wind River. Figure 31 shows the average uranium concentration in surficial aquifer wells with a long history that have always been above the MCL (0707, 0716, 0718, and 0722/0722R). As shown in Figure 31, the average uranium concentration in these wells increased significantly after the 2010 flood event and increased again after the 2016, but not as much as it had in 2010.

Although the 2010 flood of the Little Wind River caused significant spikes in contaminant concentrations in the surficial aquifer, contaminant concentrations declined to pre-flood concentrations by 2013 (Figure 31). These data indicate that the effects of the 2010 flood are relatively short-lived in context of the 100-year regulatory time frame. For the 2016 flood, significant concentration increases were seen for molybdenum, uranium, and sulfate (Table 7). Without any additional flooding, these contaminant concentrations should again decrease to concentrations similar to pre-flood values within the next few years.

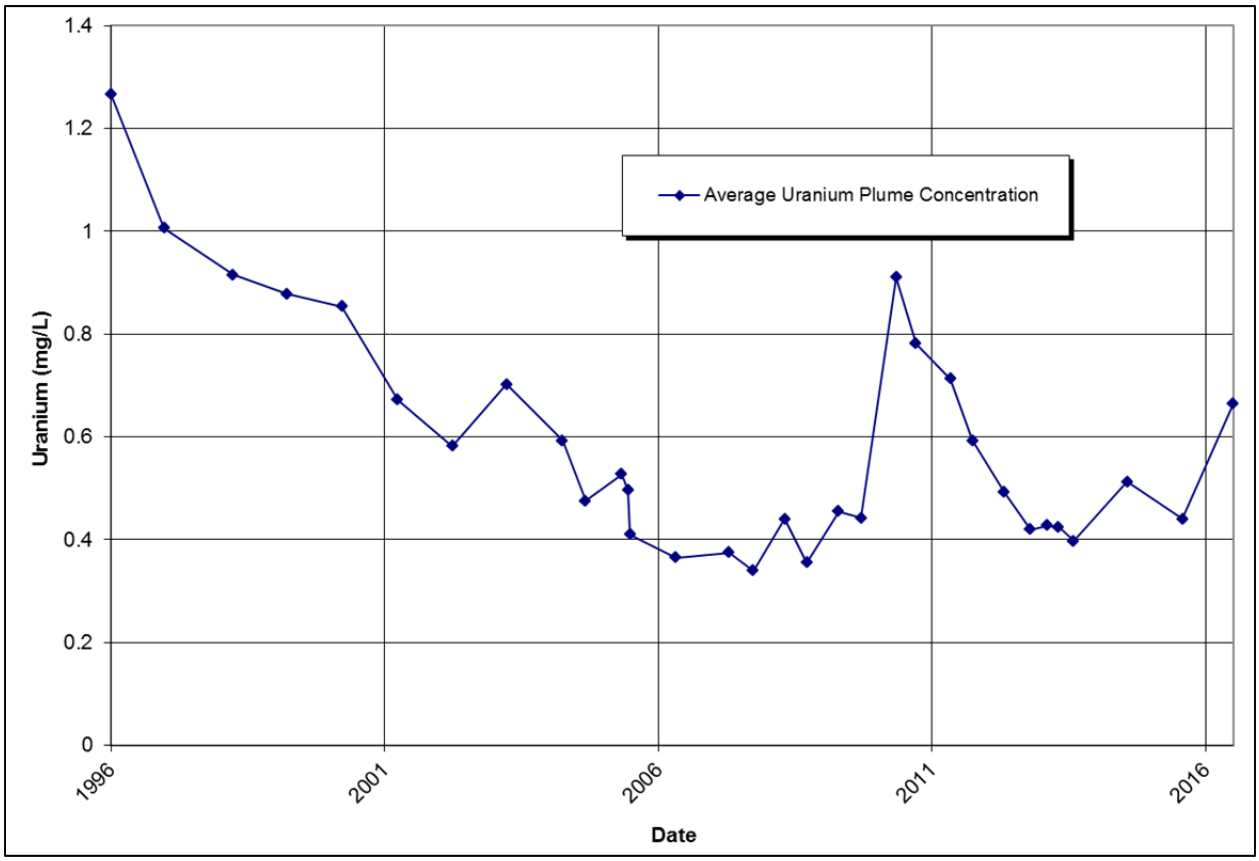

Figure 31. Average Uranium Concentrations in Four Selected Surficial Aquifer Wells

Table 7. Comparison of Pre-Flood (2015) and Post-Flood (2016) Results

Well	Molybdenum[a]		Uranium[a]		Sulfate[a]	
	Pre-flood 2015	Post-flood 2016	Pre-flood 2015	Post-flood 2016	Pre-flood 2015	Post-flood 2016
0707	0.96	1.5	0.78	1.6	2700	5800
0788	0.02	0.022	0.038	0.059	1400	2800
0789	0.57	0.67	1.6	3.1	4700	11,000
0826	0.018	0.041	0.037	0.072	1300	3400
0855-4	0.25	0.25	0.86	1.1	5100	6600
0856-4	0.3	0.83	1.1	5.6	4000	14,000

Note:
[a] Units are in mg/L.

Overall, natural flushing (contaminant movement and removal via groundwater flow) in the surficial aquifer is occurring; however, the rate of flushing does not currently appear to be fast enough to restore the aquifer within the 100-year regulatory time requirement. Several lines of evidence indicate that the natural flushing compliance strategy may not meet the 2089 target date. These include:

- Current plume configurations and magnitude developed from the 2012 enhanced characterization.
  - A uranium concentration of 1.1 mg/L was measured on the former mill site in 2012, which indicates that contaminant plume movement is retarded by aquifer properties, influenced by additional source(s), or both.
  - Uranium concentrations in the center of the plume adjacent to the Little Wind River are greater than 1.5 mg/L, which is very high compared to the uranium standard of 0.044 mg/L.
- Groundwater concentrations of molybdenum and uranium are outside the predicted error range generated from the initial groundwater modeling (Figure 32 and Figure 33).
- Recently completed groundwater modeling indicates aquifer restoration will take longer than 100 years from the present (DOE 2013b).
- At other Uranium Mill Tailings Radiation Control Act sites with similar geology and contaminants, concentrations of groundwater COCs are not attenuating as quickly as predicted by groundwater modeling.
- Graphs of time versus concentration for average concentrations and for individual wells at the Riverton site show that concentrations of contaminants are either declining more slowly than in the past or have leveled out.
- Future flooding of the Little Wind River and extreme precipitation events will likely cause an increase in contaminant concentrations in groundwater, even if the increase is relatively short-lived, which will prolong the time required for natural flushing.
- Additional contaminants in the saturated zone, unsaturated zone, or both may be acting as additional contaminant sources for elevated concentrations in groundwater.

Although the completion of natural flushing within the 100-year regulatory time frame is uncertain, additional evaluation will be required to make a definitive decision on the natural flushing compliance strategy. Data collection to date has provided a better understanding of the Riverton site, including aquifer properties, geochemistry, and potential additional contaminant sources, but these data will need to be thoroughly interpreted and evaluated in order to support the natural flushing compliance strategy or to select a new compliance strategy.

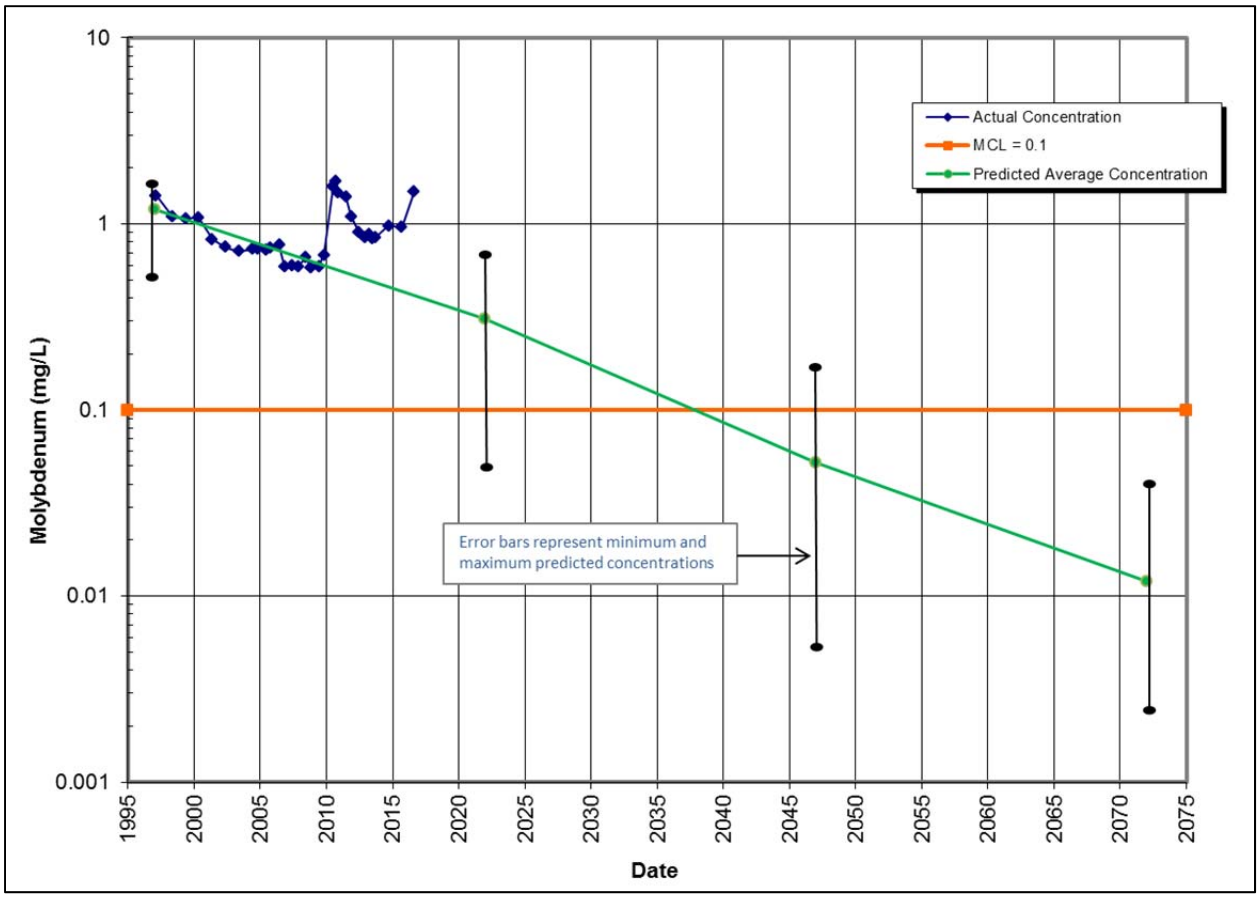

Figure 32. Predicted Versus Measured Molybdenum Concentrations in Well 0707

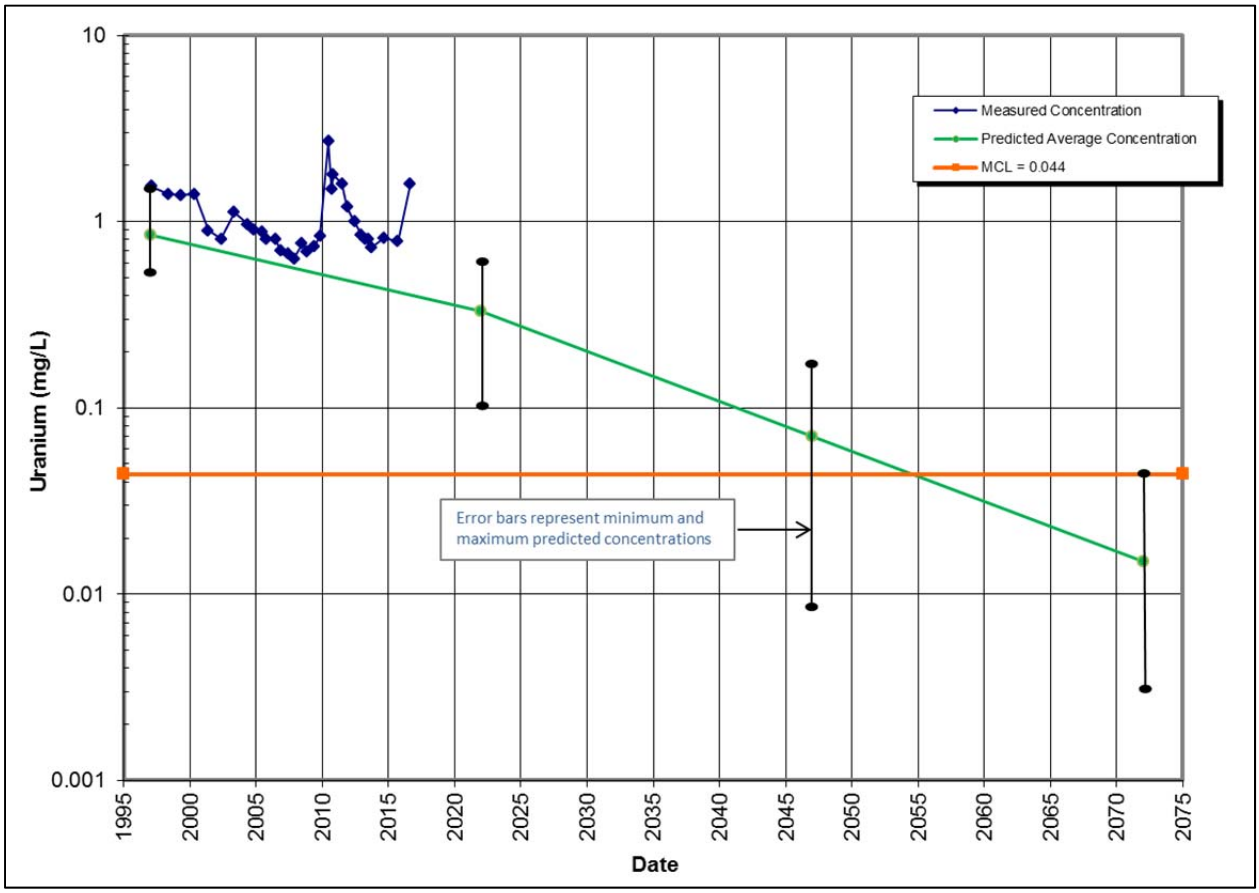

Figure 33. Predicated Versus Measured Uranium Concentrations in Well 0707

6.0 CSM Update

The sampling results from 2016 confirm the CSM provided in the *2015 Advanced Site Investigation and Monitoring Report, Riverton, Wyoming, Processing Site* (DOE 2016). This conceptual model includes an ongoing contaminant source zone underneath the former tailings impoundment in the saturated zone and secondary contaminant sources within the plume footprint in evaporites and naturally reduced zones (NRZs) in the unsaturated zone. Data from 2016 confirm that overland flooding can provide a mechanism to release contaminants, specifically uranium and molybdenum, from the unsaturated zone. Whether or not the NRZs are a source or sink for uranium and molybdenum is still being investigated by Stanford Linear Accelerator Center (SLAC) personnel.

The observation that uranium, molybdenum, and other dissolved constituents have increased in wells that are within the contaminant plume, but outside of the flooded area, confirms the CSM regarding secondary contaminant sources in the unsaturated zone. Although the magnitude of the contaminant increases were not as large as those within the flooded areas, concentrations outside the flooded areas also increased (Figure 15 and Figure 16). The increase in contaminant concentrations is likely due to the precipitation event associated with the 2016 flood that resulted in approximately 2 inches of rainfall in the vicinity of the Riverton site (NOAA 2017). The precipitation at the site appears to have been sufficient to mobilize these secondary sources into

the underlying groundwater. Mobilization of contaminants outside the flooded areas did not occur during the 2010 flood because that flood was caused by spring runoff in the Little Wind River and did not have an associated precipitation event.

7.0 Conclusion and Recommendations

Verification monitoring results from 2016 verify that mill-related groundwater contamination continues to impact the surficial aquifer and oxbow lake, but ICs are in place and functioning as intended to protect human health and the environment from the groundwater contamination. In addition, verification monitoring results continue to verify that mill-related contamination has not impacted any potable domestic wells within the IC boundary installed in the semiconfined aquifer or the confined aquifer, or water quality in the Little Wind River, or the gravel pit ponds. However, in May 2016, a new surface water feature was formed by the flooding of the Little Wind River. High river flows scoured out a side channel of the river, leaving a depression that subsequently filled with groundwater after the river receded. The concentrations of molybdenum and uranium measured in this depression were 0.23 and 1.5 mg/L, respectively, compared to groundwater MCLs of 0.1 and 0.044 mg/L respectively. A thorough risk assessment is currently being planned with coordination between the DOE, Argonne National Laboratory, and the Northern Arapahoe Tribe to address any human health and environmental risk posed by groundwater discharge of the contaminant plumes in the area from the oxbow lake to this new surface water feature.

Additional investigations of soils at the Riverton site, specifically the silt layer, have determined that background uranium concentrations in the silt layer are generally in the range of 0.8 to 2.4 mg/kg for uranium. However, background concentrations of uranium as high as 3.1 mg/kg were measured. These data will be useful in evaluating how much mill-related uranium is contained in the unsaturated zone over the uranium plume compared to background.

Prior to 2016, the radium MCL in the AWSS system had not been exceeded in samples collected from any tap location or in any end-of-flush sample from a hydrant. Results from the AWSS flushing program provide evidence that the flushing program is effective in controlling the buildup of naturally occurring radionuclides found in the source wells for the system when adequate flushing rates are achieved. Two samples exceeded the radium MCL during the August 2016 sampling event. These exceedances were likely due to decreases in flushing flow rates and pipe velocities that were measured in 2016; they may be attributable to new transmission lines installed in the AWSS that are neither accounted for nor isolated during flushing activities, or isolation valves that are not functioning properly. Additional flushing was completed, and all tap locations and end-of-flush samples from hydrants were below the combined radium MCL by December 2016. DOE is in the process of subcontracting an engineering firm to conduct a condition assessment of the AWSS.

Molybdenum and uranium concentrations in the surficial aquifer groundwater remain above their respective MCLs. After the 2010 flood on the Little Wind River, molybdenum and uranium concentrations increased, but then returned to their pre-flood levels by 2013. Another flood on the Little Wind River in May 2016 confirmed that contaminant concentrations tend to spike after a flood event in the flooded area. In addition, contaminant concentrations spiked outside of the flooded area over the plume, likely due to the large precipitation event that caused the 2016 flood

in contrast to the snow melt event that caused the 2010 flood. Numerous lines of evidence indicate that the rate of natural flushing may not be rapid enough to meet the 100-year regulatory limit.

DOE has continued to pursue better understanding of the CSM, contaminant distributions, and properties of the unsaturated zone of the surficial aquifer at the Riverton site. As a result, additional characterization has been completed over the past several years and additional background soil data collection completes the detailed data collection. Ongoing work at this point involves thorough interpretations and evaluations of existing data in order to further define the conceptual model and understand geochemical processes that control contaminant fate and transport. These evaluations will form the scientific basis for making decisions on a path-forward compliance strategy.

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Appendix A

Domestic Well Data

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GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:14:02 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Alkalinity, Phenolphthalein (As CaCO3)													
Alkalinity, Phenolphthalein (As CaCO3)	0405	WL	mg/L	8/17/2016	(N)F	NR	N	0			#	-	-
Alkalinity, Phenolphthalein (As CaCO3)	0436	WL	mg/L	8/18/2016	(N)F	NR	N	0			#	-	-
Alkalinity, Phenolphthalein (As CaCO3)	0460	WL	mg/L	8/17/2016	(N)F	NR	N	0			#	-	-
Alkalinity, Phenolphthalein (As CaCO3)	0828	WL	mg/L	8/18/2016	(N)F		O	0			#	-	-
Alkalinity, Phenolphthalein (As CaCO3)	0876	WL	mg/L	8/17/2016	(N)F			0			#	-	-
Alkalinity, Total (As CaCO3)													
Alkalinity, Total (As CaCO3)	0405	WL	mg/L	8/17/2016	(N)F	NR	N	105			#	-	-
Alkalinity, Total (As CaCO3)	0436	WL	mg/L	8/18/2016	(N)F	NR	N	142			#	-	-
Alkalinity, Total (As CaCO3)	0460	WL	mg/L	8/17/2016	(N)F	NR	N	163			#	-	-
Alkalinity, Total (As CaCO3)	0828	WL	mg/L	8/18/2016	(N)F		O	180			#	-	-
Alkalinity, Total (As CaCO3)	0841	WL	mg/L	8/17/2016	(N)F			202			#	-	-
Alkalinity, Total (As CaCO3)	0842	WL	mg/L	8/17/2016	(N)F			164			#	-	-
Alkalinity, Total (As CaCO3)	0876	WL	mg/L	8/17/2016	(N)F			34			#	-	-
Alkalinity, Total (As CaCO3)	0878	WL	mg/L	8/17/2016	(N)F			139			#	-	-
Calcium													
Calcium	0405	WL	mg/L	8/17/2016	(N)F	NR	N	7			#	0.012	-
Calcium	0436	WL	mg/L	8/18/2016	(N)F	NR	N	3.9			#	0.012	-
Calcium	0460	WL	mg/L	8/17/2016	(N)F	NR	N	3.5			#	0.012	-
Calcium	0828	WL	mg/L	8/18/2016	(N)F		O	3.9			#	0.012	-
Calcium	0841	WL	mg/L	8/17/2016	(N)F			110			#	0.012	-
Calcium	0842	WL	mg/L	8/17/2016	(N)F			58			#	0.012	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:14:02 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Calcium	0876	WL	mg/L	8/17/2016	(N)F			5.1			#	0.012	-
Calcium	0878	WL	mg/L	8/17/2016	(N)F			5.2			#	0.012	-
Chloride													
Chloride	0405	WL	mg/L	8/17/2016	(N)F	NR	N	21			#	0.3	-
Chloride	0436	WL	mg/L	8/18/2016	(N)F	NR	N	16			#	0.3	-
Chloride	0460	WL	mg/L	8/17/2016	(N)F	NR	N	12			#	0.15	-
Chloride	0828	WL	mg/L	8/18/2016	(N)F		O	15			#	0.3	-
Chloride	0841	WL	mg/L	8/17/2016	(N)F			35			#	0.3	-
Chloride	0842	WL	mg/L	8/17/2016	(N)F			20			#	0.15	-
Chloride	0876	WL	mg/L	8/17/2016	(N)F			41			#	0.3	-
Chloride	0878	WL	mg/L	8/17/2016	(N)F			10			#	0.3	-
Dissolved Oxygen													
Dissolved Oxygen	0405	WL	mg/L	8/17/2016	(N)F	NR	N	2.78			#	-	-
Dissolved Oxygen	0436	WL	mg/L	8/18/2016	(N)F	NR	N	2.00			#	-	-
Dissolved Oxygen	0460	WL	mg/L	8/17/2016	(N)F	NR	N	4.54			#	-	-
Dissolved Oxygen	0828	WL	mg/L	8/18/2016	(N)F		O	2.26			#	-	-
Dissolved Oxygen	0841	WL	mg/L	8/17/2016	(N)F			1.53			#	-	-
Dissolved Oxygen	0842	WL	mg/L	8/17/2016	(N)F			3.08			#	-	-
Dissolved Oxygen	0876	WL	mg/L	8/17/2016	(N)F			2.37			#	-	-
Dissolved Oxygen	0878	WL	mg/L	8/17/2016	(N)F			2.27			#	-	-
Magnesium													
Magnesium	0405	WL	mg/L	8/17/2016	(N)F	NR	N	0.076	J		#	0.013	-
Magnesium	0436	WL	mg/L	8/18/2016	(N)F	NR	N	0.07	J		#	0.013	-
Magnesium	0460	WL	mg/L	8/17/2016	(N)F	NR	N	0.051	J		#	0.013	-
Magnesium	0828	WL	mg/L	8/18/2016	(N)F		O	0.08	J		#	0.013	-
Magnesium	0841	WL	mg/L	8/17/2016	(N)F			19			#	0.013	-
Magnesium	0842	WL	mg/L	8/17/2016	(N)F			6.4			#	0.013	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:14:02 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Magnesium	0876	WL	mg/L	8/17/2016	(N)F			0.052	J		#	0.013	-
Magnesium	0878	WL	mg/L	8/17/2016	(N)F			0.049	J		#	0.013	-
Manganese													
Manganese	0405	WL	mg/L	8/17/2016	(N)F	NR	N	0.0023	J		#	0.00011	-
Manganese	0436	WL	mg/L	8/18/2016	(N)F	NR	N	0.0038	J		#	0.00011	-
Manganese	0460	WL	mg/L	8/17/2016	(N)F	NR	N	0.0025	J		#	0.00011	-
Manganese	0828	WL	mg/L	8/18/2016	(N)F		O	0.0051			#	0.00011	-
Manganese	0841	WL	mg/L	8/17/2016	(N)F			0.11			#	0.00011	-
Manganese	0842	WL	mg/L	8/17/2016	(N)F			0.06			#	0.00011	-
Manganese	0876	WL	mg/L	8/17/2016	(N)F			0.0026	J		#	0.00011	-
Manganese	0878	WL	mg/L	8/17/2016	(N)F			0.0063			#	0.00011	-
Molybdenum													
Molybdenum	0405	WL	mg/L	8/17/2016	(N)F	NR	N	0.0028			#	0.00032	-
Molybdenum	0436	WL	mg/L	8/18/2016	(N)F	NR	N	0.0029			#	0.00032	-
Molybdenum	0460	WL	mg/L	8/17/2016	(N)F	NR	N	0.0029			#	0.00032	-
Molybdenum	0828	WL	mg/L	8/18/2016	(N)F		O	0.0028			#	0.00032	-
Molybdenum	0841	WL	mg/L	8/17/2016	(N)F			0.0032			#	0.00032	-
Molybdenum	0842	WL	mg/L	8/17/2016	(N)F			0.0024			#	0.00032	-
Molybdenum	0876	WL	mg/L	8/17/2016	(N)F			0.004			#	0.00032	-
Molybdenum	0878	WL	mg/L	8/17/2016	(N)F			0.0022			#	0.00032	-
Oxidation Reduction Potential													
Oxidation Reduction Potential	0405	WL	mV	8/17/2016	(N)F	NR	N	111.0			#	-	-
Oxidation Reduction Potential	0436	WL	mV	8/18/2016	(N)F	NR	N	153.6			#	-	-
Oxidation Reduction Potential	0460	WL	mV	8/17/2016	(N)F	NR	N	186.0			#	-	-
Oxidation Reduction Potential	0828	WL	mV	8/18/2016	(N)F		O	206.0			#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:14:02 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Oxidation Reduction Potential	0841	WL	mV	8/17/2016	(N)F			173.0			#	-	-
Oxidation Reduction Potential	0842	WL	mV	8/17/2016	(N)F			88.5			#	-	-
Oxidation Reduction Potential	0876	WL	mV	8/17/2016	(N)F			-47.0			#	-	-
Oxidation Reduction Potential	0878	WL	mV	8/17/2016	(N)F			69.9			#	-	-
pH													
pH	0405	WL	s.u.	8/17/2016	(N)F	NR	N	8.49			#	-	-
pH	0436	WL	s.u.	8/18/2016	(N)F	NR	N	8.79			#	-	-
pH	0460	WL	s.u.	8/17/2016	(N)F	NR	N	8.61			#	-	-
pH	0828	WL	s.u.	8/18/2016	(N)F		O	8.75			#	-	-
pH	0841	WL	s.u.	8/17/2016	(N)F			7.55			#	-	-
pH	0842	WL	s.u.	8/17/2016	(N)F			7.87			#	-	-
pH	0876	WL	s.u.	8/17/2016	(N)F			9.00			#	-	-
pH	0878	WL	s.u.	8/17/2016	(N)F			8.27			#	-	-
Potassium													
Potassium	0405	WL	mg/L	8/17/2016	(N)F	NR	N	0.7	J		#	0.11	-
Potassium	0436	WL	mg/L	8/18/2016	(N)F	NR	N	0.73	J		#	0.11	-
Potassium	0460	WL	mg/L	8/17/2016	(N)F	NR	N	0.65	J		#	0.11	-
Potassium	0828	WL	mg/L	8/18/2016	(N)F		O	0.71	J		#	0.11	-
Potassium	0841	WL	mg/L	8/17/2016	(N)F			4.1			#	0.11	-
Potassium	0842	WL	mg/L	8/17/2016	(N)F			0.86	J		#	0.11	-
Potassium	0876	WL	mg/L	8/17/2016	(N)F			0.53	J		#	0.11	-
Potassium	0878	WL	mg/L	8/17/2016	(N)F			0.66	J		#	0.11	-
Sodium													
Sodium	0405	WL	mg/L	8/17/2016	(N)F	NR	N	190			#	0.066	-
Sodium	0436	WL	mg/L	8/18/2016	(N)F	NR	N	170			#	0.066	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:14:02 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Sodium	0460	WL	mg/L	8/17/2016	(N)F	NR	N	140			#	0.0066	-
Sodium	0828	WL	mg/L	8/18/2016	(N)F		O	170			#	0.066	-
Sodium	0841	WL	mg/L	8/17/2016	(N)F			88			#	0.0066	-
Sodium	0842	WL	mg/L	8/17/2016	(N)F			83			#	0.0066	-
Sodium	0876	WL	mg/L	8/17/2016	(N)F			150			#	0.0066	-
Sodium	0878	WL	mg/L	8/17/2016	(N)F			170			#	0.066	-
Specific Conductance													
Specific Conductance	0405	WL	umhos/cm	8/17/2016	(N)F	NR	N	936			#	-	-
Specific Conductance	0436	WL	umhos/cm	8/18/2016	(N)F	NR	N	807			#	-	-
Specific Conductance	0460	WL	umhos/cm	8/17/2016	(N)F	NR	N	683			#	-	-
Specific Conductance	0828	WL	umhos/cm	8/18/2016	(N)F		O	864			#	-	-
Specific Conductance	0841	WL	umhos/cm	8/17/2016	(N)F			997			#	-	-
Specific Conductance	0842	WL	umhos/cm	8/17/2016	(N)F			705			#	-	-
Specific Conductance	0876	WL	umhos/cm	8/17/2016	(N)F			807			#	-	-
Specific Conductance	0878	WL	umhos/cm	8/17/2016	(N)F			847			#	-	-
Sulfate													
Sulfate	0405	WL	mg/L	8/17/2016	(N)F	NR	N	340			#	1.5	-
Sulfate	0436	WL	mg/L	8/18/2016	(N)F	NR	N	260			#	1.5	-
Sulfate	0460	WL	mg/L	8/17/2016	(N)F	NR	N	200			#	0.75	-
Sulfate	0828	WL	mg/L	8/18/2016	(N)F		O	250			#	1.5	-
Sulfate	0841	WL	mg/L	8/17/2016	(N)F			330			#	1.5	-
Sulfate	0842	WL	mg/L	8/17/2016	(N)F			200			#	0.75	-
Sulfate	0876	WL	mg/L	8/17/2016	(N)F			320			#	1.5	-
Sulfate	0878	WL	mg/L	8/17/2016	(N)F			280			#	1.5	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:14:02 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Temperature													
Temperature	0405	WL	C	8/17/2016	(N)F	NR	N	15.22			#	-	-
Temperature	0436	WL	C	8/18/2016	(N)F	NR	N	24.31			#	-	-
Temperature	0460	WL	C	8/17/2016	(N)F	NR	N	20.38			#	-	-
Temperature	0828	WL	C	8/18/2016	(N)F		O	19.35			#	-	-
Temperature	0841	WL	C	8/17/2016	(N)F			20.87			#	-	-
Temperature	0842	WL	C	8/17/2016	(N)F			15.32			#	-	-
Temperature	0876	WL	C	8/17/2016	(N)F			19.27			#	-	-
Temperature	0878	WL	C	8/17/2016	(N)F			15.19			#	-	-
Tritium													
Tritium	0460	WL	pCi/L	8/17/2016	(N)F	NR	N	-0.559	U		#	2.99	± 1.67
Turbidity													
Turbidity	0405	WL	NTU	8/17/2016	(N)F	NR	N	0.80			#	-	-
Turbidity	0436	WL	NTU	8/18/2016	(N)F	NR	N	1.07			#	-	-
Turbidity	0460	WL	NTU	8/17/2016	(N)F	NR	N	2.83			#	-	-
Turbidity	0828	WL	NTU	8/18/2016	(N)F		O	1.61			#	-	-
Turbidity	0841	WL	NTU	8/17/2016	(N)F			1.3			#	-	-
Turbidity	0842	WL	NTU	8/17/2016	(N)F			2.53			#	-	-
Turbidity	0876	WL	NTU	8/17/2016	(N)F			2.53			#	-	-
Turbidity	0878	WL	NTU	8/17/2016	(N)F			2.99			#	-	-
Uranium													
Uranium	0405	WL	mg/L	8/17/2016	(N)F	NR	N	0.00012			#	0.000012	-
Uranium	0436	WL	mg/L	8/18/2016	(N)F	NR	N	0.00008	J		#	0.000012	-
Uranium	0460	WL	mg/L	8/17/2016	(N)F	NR	N	0.00007	J		#	0.000012	-
Uranium	0828	WL	mg/L	8/18/2016	(N)F		O	0.00008	J		#	0.000012	-
Uranium	0841	WL	mg/L	8/17/2016	(N)F			0.0032			#	0.000012	-
Uranium	0842	WL	mg/L	8/17/2016	(N)F			0.00044			#	0.000012	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:14:02 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Uranium	0876	WL	mg/L	8/17/2016	(N)F			0.000012	U		#	0.000012	-
Uranium	0878	WL	mg/L	8/17/2016	(N)F			0.00003	J		#	0.000012	-

ZONES OF COMPLETION:

NR	NO RECOVERY OF DATA FOR CLASSIFYING

LOCATION TYPE:

WL	WELL

DATA QUALIFIERS:

F	Low flow sampling method used.
G	Possible grout contamination, pH > 9.
J	Estimated Value.
L	Less than 3 bore volumes purged prior to sampling.
N	Tentatively identified compund (TIC).
Q	Qualitative result due to sampling technique
R	Unusable result.
U	Parameter analyzed for but was not detected.
X	Location is undefined.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated Value.
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:14:02 PM

PARAMETER	LOCATION CODE/TYPE	UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA	QA	DETECTION LIMIT	UNCERTAINTY

P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Parameter analyzed for but was not detected.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined qualifier, see case narrative.
Y	Laboratory defined qualifier, see case narrative.
Z	Laboratory defined qualifier, see case narrative.

SAMPLE TYPES:
(F) Filtered Sample
(N) Nonfiltered Sample

Type Codes: F-Field Sample R-Replicate FR-Field Sample with Replicates
D-Duplicate N-Not Known S-Split Sample

FLOW CODES:

B	BACKGROUND	C	CROSS GRADIENT	D	DOWN GRADIENT
F	OFF-SITE	N	UNKNOWN	O	ON-SITE
U	UPGRADIENT				

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

Appendix B

AWSS Data

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Analyte	Location			Units	Sample Date	Sample ID	Depth Range (ft bls)		Result	Qualifiers		Validated	Detection Limit	Uncertainty
	Code	Type	Subtype							Lab	Data			
Alkalinity, Total (As CaCO3)														
Alkalinity, Total (As CaCO3)	0816	DS	TAP	mg/L	10/18/2016	(N)F	0	0	111			Y		
Alkalinity, Total (As CaCO3)	0821	DS	HDRT	mg/L	10/18/2016	(N)F	0	0	108			Y		
Alkalinity, Total (As CaCO3)	0843	DS	HDRT	mg/L	10/18/2016	(N)F	0	0	114			Y		
Alkalinity, Total (As CaCO3)	0886	DS		mg/L	10/18/2016	(N)F	0	0	118			Y		
Alkalinity, Total (As CaCO3)	0887	WL		mg/L	10/18/2016	(N)F			142			Y		
Chlorine, Total Residual														
Chlorine, Total Residual	0816	DS	TAP	mg/L	10/18/2016	(N)F	0	0	0.51			Y		
Chlorine, Total Residual	0821	DS	HDRT	mg/L	10/18/2016	(N)F	0	0	0.51			Y		
Chlorine, Total Residual	0843	DS	HDRT	mg/L	10/18/2016	(N)F	0	0	0.55			Y		
Chlorine, Total Residual	0886	DS		mg/L	10/18/2016	(N)F	0	0	0.36			Y		
Chlorine, Total Residual	0887	WL		mg/L	10/18/2016	(N)F			0			Y		
Dissolved Oxygen														
Dissolved Oxygen	0813	DS	TAP	mg/L	8/16/2016	(N)F	0	0	1.47			Y		
Dissolved Oxygen	0815	DS	TAP	mg/L	8/16/2016	(N)F	0	0	1.63			Y		
Dissolved Oxygen	0816	DS	TAP	mg/L	8/16/2016	(N)F	0	0	1.85			Y		
Dissolved Oxygen	0816	DS	TAP	mg/L	10/18/2016	(N)F	0	0	10.62			Y		
Dissolved Oxygen	0818	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.47			Y		
Dissolved Oxygen	0818	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.57			Y		
Dissolved Oxygen	0819	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.78			Y		
Dissolved Oxygen	0819	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.36			Y		
Dissolved Oxygen	0820	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.5			Y		
Dissolved Oxygen	0820	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.8			Y		
Dissolved Oxygen	0821	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.65			Y		
Dissolved Oxygen	0821	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.77			Y		
Dissolved Oxygen	0821	DS	HDRT	mg/L	10/18/2016	(N)F	0	0	7.48			Y		
Dissolved Oxygen	0829	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.72			Y		
Dissolved Oxygen	0829	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.73			Y		
Dissolved Oxygen	0830	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.78			Y		
Dissolved Oxygen	0830	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.65			Y		
Dissolved Oxygen	0834	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	1.62			Y		
Dissolved Oxygen	0837	DS	TAP	mg/L	8/16/2016	(N)F	0	0	1.75			Y		
Dissolved Oxygen	0843	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	7.3			Y		
Dissolved Oxygen	0843	DS	HDRT	mg/L	10/18/2016	(N)F	0	0	9.74			Y		
Dissolved Oxygen	0886	DS		mg/L	10/18/2016	(N)F	0	0	5.27			Y		
Dissolved Oxygen	0887	WL		mg/L	10/18/2016	(N)F			2.55			Y		
Oxidation Reduction Potential														
Oxidation Reduction Potential	0813	DS	TAP	mV	8/16/2016	(N)F	0	0	311			Y		
Oxidation Reduction Potential	0815	DS	TAP	mV	8/16/2016	(N)F	0	0	319.5			Y		
Oxidation Reduction Potential	0816	DS	TAP	mV	8/16/2016	(N)F	0	0	285.3			Y		
Oxidation Reduction Potential	0816	DS	TAP	mV	10/18/2016	(N)F	0	0	342.4			Y		
Oxidation Reduction Potential	0818	DS	HDRT	mV	8/16/2016	(N)F	0	0	310.3			Y		
Oxidation Reduction Potential	0818	DS	HDRT	mV	8/16/2016	(N)F	0	0	278.3			Y		
Oxidation Reduction Potential	0819	DS	HDRT	mV	8/16/2016	(N)F	0	0	273.2			Y		
Oxidation Reduction Potential	0819	DS	HDRT	mV	8/16/2016	(N)F	0	0	293.8			Y		
Oxidation Reduction Potential	0820	DS	HDRT	mV	8/16/2016	(N)F	0	0	289.8			Y		
Oxidation Reduction Potential	0820	DS	HDRT	mV	8/16/2016	(N)F	0	0	278.8			Y		
Oxidation Reduction Potential	0821	DS	HDRT	mV	8/16/2016	(N)F	0	0	254.7			Y		
Oxidation Reduction Potential	0821	DS	HDRT	mV	8/16/2016	(N)F	0	0	295.6			Y		
Oxidation Reduction Potential	0821	DS	HDRT	mV	10/18/2016	(N)F	0	0	359			Y		
Oxidation Reduction Potential	0829	DS	HDRT	mV	8/16/2016	(N)F	0	0	315.1			Y		
Oxidation Reduction Potential	0830	DS	HDRT	mV	8/16/2016	(N)F	0	0	296.2			Y		
Oxidation Reduction Potential	0830	DS	HDRT	mV	8/16/2016	(N)F	0	0	306.8			Y		
Oxidation Reduction Potential	0834	DS	HDRT	mV	8/16/2016	(N)F	0	0	285.7			Y		
Oxidation Reduction Potential	0837	DS	TAP	mV	8/16/2016	(N)F	0	0	306.7			Y		
Oxidation Reduction Potential	0843	DS	HDRT	mV	8/16/2016	(N)F	0	0	300.9			Y		
Oxidation Reduction Potential	0843	DS	HDRT	mV	10/18/2016	(N)F	0	0	276.5			Y		
Oxidation Reduction Potential	0886	DS		mV	10/18/2016	(N)F	0	0	278.9			Y		
Oxidation Reduction Potential	0887	WL		mV	10/18/2016	(N)F			116.2			Y		

Analyte	Location			Units	Sample Date	Sample ID	Depth Range (ft bls)		Result	Qualifiers		Validated	Detection Limit	Uncertainty
	Code	Type	Subtype							Lab	Data			
pH														
pH	0813	DS	TAP	s.u.	8/16/2016	(N)F	0	0	8.35			Y		
pH	0815	DS	TAP	s.u.	8/16/2016	(N)F	0	0	8.36			Y		
pH	0816	DS	TAP	s.u.	8/16/2016	(N)F	0	0	8.41			Y		
pH	0816	DS	TAP	s.u.	10/18/2016	(N)F	0	0	7.86			Y		
pH	0818	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.37			Y		
pH	0818	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.27			Y		
pH	0819	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.32			Y		
pH	0819	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.37			Y		
pH	0820	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.4			Y		
pH	0820	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.35			Y		
pH	0821	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.34			Y		
pH	0821	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.43			Y		
pH	0821	DS	HDRT	s.u.	10/18/2016	(N)F	0	0	7.52			Y		
pH	0829	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.3			Y		
pH	0829	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	7.84			Y		
pH	0830	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.25			Y		
pH	0830	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.35			Y		
pH	0834	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.4			Y		
pH	0837	DS	TAP	s.u.	8/16/2016	(N)F	0	0	8.4			Y		
pH	0843	DS	HDRT	s.u.	8/16/2016	(N)F	0	0	8.33			Y		
pH	0843	DS	HDRT	s.u.	10/18/2016	(N)F	0	0	7.6			Y		
pH	0886	DS		s.u.	10/18/2016	(N)F	0	0	8.3			Y		
pH	0887	WL		s.u.	10/18/2016	(N)F			8.05			Y		
Radium-226														
Radium-226	0813	DS	TAP	pCi/L	8/16/2016	(N)F	0	0	1.01			Y	0.154	0.371
Radium-226	0815	DS	TAP	pCi/L	8/16/2016	(N)F	0	0	0.789			Y	0.163	0.318
Radium-226	0816	DS	TAP	pCi/L	8/16/2016	(N)F	0	0	1.28			Y	0.151	0.443
Radium-226	0816	DS	TAP	pCi/L	8/16/2016	()D	0	0	1.12			Y	0.154	0.401
Radium-226	0816	DS	TAP	pCi/L	10/18/2016	(N)F	0	0	1.5			Y	0.294	0.529
Radium-226	0816	DS	TAP	pCi/L	10/18/2016	(N)D	0	0	1.88			Y	0.514	0.625
Radium-226	0816	DS	TAP	pCi/L	12/8/2016	(N)F	0	0	4.05			Y	0.546	1.16
Radium-226	0816	DS	TAP	pCi/L	12/8/2016	(N)F	0	0	1.06			Y	0.297	0.385
Radium-226	0818	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	2.04			Y	0.152	0.638
Radium-226	0818	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.931			Y	0.178	0.358
Radium-226	0819	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	2.76			Y	0.171	0.833
Radium-226	0819	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.97			Y	0.169	0.37
Radium-226	0820	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.952			Y	0.177	0.374
Radium-226	0820	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.922			Y	0.156	0.351
Radium-226	0821	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	1.26			Y	0.181	0.445
Radium-226	0821	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.629			Y	0.158	0.272
Radium-226	0821	DS	HDRT	pCi/L	10/18/2016	(N)F	0	0	0.964			Y	0.273	0.376
Radium-226	0829	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	1.9			Y	0.167	0.61
Radium-226	0829	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.687			Y	0.15	0.285
Radium-226	0830	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.831			Y	0.147	0.32
Radium-226	0830	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.847			Y	0.176	0.334
Radium-226	0834	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	0.793			Y	0.159	0.317
Radium-226	0837	DS	TAP	pCi/L	8/16/2016	(N)F	0	0	0.826			Y	0.167	0.33
Radium-226	0843	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	4.74			Y	0.156	1.33
Radium-226	0843	DS	HDRT	pCi/L	10/18/2016	(N)F	0	0	1.2			Y	0.392	0.47
Radium-226	0886	DS		pCi/L	10/18/2016	(N)F	0	0	1.12		J	Y	0.42	0.444
Radium-226	0887	WL		pCi/L	10/18/2016	(N)F			0.694		J	Y	0.316	0.315

Analyte	Location			Units	Sample Date	Sample ID	Depth Range (ft bls)		Result	Qualifiers		Validated	Detection Limit	Uncertainty
	Code	Type	Subtype							Lab	Data			
Radium-228														
Radium-228	0813	DS	TAP	pCi/L	8/16/2016	(N)F	0	0	3.16			Y	0.786	0.965
Radium-228	0815	DS	TAP	pCi/L	8/16/2016	(N)F	0	0	2.9			Y	0.759	0.901
Radium-228	0816	DS	TAP	pCi/L	8/16/2016	()D	0	0	3.67			Y	0.67	1.04
Radium-228	0816	DS	TAP	pCi/L	8/16/2016	(N)F	0	0	4.4			Y	0.796	1.23
Radium-228	0816	DS	TAP	pCi/L	10/18/2016	(N)F	0	0	4.19			Y	0.564	1.28
Radium-228	0816	DS	TAP	pCi/L	10/18/2016	(N)D	0	0	4.53			Y	0.506	1.32
Radium-228	0816	DS	TAP	pCi/L	12/8/2016	(N)F	0	0	1.91		J	Y	0.725	0.742
Radium-228	0818	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	2.76			Y	0.707	0.855
Radium-228	0818	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	7.58			Y	0.782	1.93
Radium-228	0819	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	2.51			Y	0.66	0.788
Radium-228	0819	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	7.82			Y	0.649	1.95
Radium-228	0820	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	2.91			Y	0.683	0.881
Radium-228	0820	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	3.23			Y	0.662	0.943
Radium-228	0821	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	2.9			Y	0.665	0.873
Radium-228	0821	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	4.08			Y	0.682	1.13
Radium-228	0821	DS	HDRT	pCi/L	10/18/2016	(N)F	0	0	2.91			Y	0.683	1.01
Radium-228	0829	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	2.94			Y	0.701	0.894
Radium-228	0829	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	5.33			Y	0.664	1.4
Radium-228	0830	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	2.21			Y	0.675	0.734
Radium-228	0830	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	4.47			Y	0.687	1.22
Radium-228	0834	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	3.03			Y	0.674	0.902
Radium-228	0837	DS	TAP	pCi/L	8/16/2016	(N)F	0	0	2.6			Y	0.783	0.849
Radium-228	0843	DS	HDRT	pCi/L	8/16/2016	(N)F	0	0	17.4			Y	0.71	4.15
Radium-228	0843	DS	HDRT	pCi/L	10/18/2016	(N)F	0	0	2.83			Y	0.581	0.947
Radium-228	0886	DS		pCi/L	10/18/2016	(N)F	0	0	2.49		J	Y	0.89	1.01
Radium-228	0887	WL		pCi/L	10/18/2016	(N)F			2.56			Y	0.509	0.834
Specific Conductance														
Specific Conductance	0813	DS	TAP	mhos/cr	8/16/2016	(N)F	0	0	570			Y		
Specific Conductance	0815	DS	TAP	mhos/cr	8/16/2016	(N)F	0	0	568			Y		
Specific Conductance	0816	DS	TAP	mhos/cr	8/16/2016	(N)F	0	0	575			Y		
Specific Conductance	0816	DS	TAP	mhos/cr	10/18/2016	(N)F	0	0	569			Y		
Specific Conductance	0818	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	568			Y		
Specific Conductance	0818	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	572			Y		
Specific Conductance	0819	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	575			Y		
Specific Conductance	0819	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	568			Y		
Specific Conductance	0820	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	571			Y		
Specific Conductance	0820	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	572			Y		
Specific Conductance	0821	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	579			Y		
Specific Conductance	0821	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	570			Y		
Specific Conductance	0821	DS	HDRT	mhos/cr	10/18/2016	(N)F	0	0	575			Y		
Specific Conductance	0829	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	600			Y		
Specific Conductance	0829	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	569			Y		
Specific Conductance	0830	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	569			Y		
Specific Conductance	0830	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	567			Y		
Specific Conductance	0834	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	570			Y		
Specific Conductance	0837	DS	TAP	mhos/cr	8/16/2016	(N)F	0	0	570			Y		
Specific Conductance	0843	DS	HDRT	mhos/cr	8/16/2016	(N)F	0	0	574			Y		
Specific Conductance	0843	DS	HDRT	mhos/cr	10/18/2016	(N)F	0	0	582			Y		
Specific Conductance	0886	DS		umhos/cr	10/18/2016	(N)F	0	0	572			Y		
Specific Conductance	0887	WL		umhos/cr	10/18/2016	(N)F			573			Y		

Analyte	Location			Units	Sample Date	Sample ID	Depth Range (ft bls)		Result	Qualifiers		Validated	Detection Limit	Uncertainty
	Code	Type	Subtype							Lab	Data			
Temperature														
Temperature	0813	DS	TAP	C	8/16/2016	(N)F	0	0	17.9			Y		
Temperature	0815	DS	TAP	C	8/16/2016	(N)F	0	0	17.79			Y		
Temperature	0816	DS	TAP	C	8/16/2016	(N)F	0	0	17.2			Y		
Temperature	0816	DS	TAP	C	10/18/2016	(N)F	0	0	11.21			Y		
Temperature	0818	DS	HDRT	C	8/16/2016	(N)F	0	0	18.75			Y		
Temperature	0818	DS	HDRT	C	8/16/2016	(N)F	0	0	19.18			Y		
Temperature	0819	DS	HDRT	C	8/16/2016	(N)F	0	0	18.65			Y		
Temperature	0819	DS	HDRT	C	8/16/2016	(N)F	0	0	17.33			Y		
Temperature	0820	DS	HDRT	C	8/16/2016	(N)F	0	0	17.49			Y		
Temperature	0820	DS	HDRT	C	8/16/2016	(N)F	0	0	17.7			Y		
Temperature	0821	DS	HDRT	C	8/16/2016	(N)F	0	0	18.51			Y		
Temperature	0821	DS	HDRT	C	8/16/2016	(N)F	0	0	17.81			Y		
Temperature	0821	DS	HDRT	C	10/18/2016	(N)F	0	0	13.89			Y		
Temperature	0829	DS	HDRT	C	8/16/2016	(N)F	0	0	18.32			Y		
Temperature	0829	DS	HDRT	C	8/16/2016	(N)F	0	0	17.08			Y		
Temperature	0830	DS	HDRT	C	8/16/2016	(N)F	0	0	17.38			Y		
Temperature	0830	DS	HDRT	C	8/16/2016	(N)F	0	0	18.12			Y		
Temperature	0834	DS	HDRT	C	8/16/2016	(N)F	0	0	17.81			Y		
Temperature	0837	DS	TAP	C	8/16/2016	(N)F	0	0	17.71			Y		
Temperature	0843	DS	HDRT	C	8/16/2016	(N)F	0	0	20.26			Y		
Temperature	0843	DS	HDRT	C	10/18/2016	(N)F	0	0	14.41			Y		
Temperature	0886	DS		C	10/18/2016	(N)F	0	0	14.81			Y		
Temperature	0887	WL		C	10/18/2016	(N)F			15.94			Y		
Total Residual Chlorine														
Total Residual Chlorine	0813	DS	TAP	mg/L	8/16/2016	(N)F	0	0	0.63			Y		
Total Residual Chlorine	0815	DS	TAP	mg/L	8/16/2016	(N)F	0	0	0.64			Y		
Total Residual Chlorine	0816	DS	TAP	mg/L	8/16/2016	(N)F	0	0	0.65			Y		
Total Residual Chlorine	0818	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.66			Y		
Total Residual Chlorine	0818	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.67			Y		
Total Residual Chlorine	0819	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.7			Y		
Total Residual Chlorine	0819	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.63			Y		
Total Residual Chlorine	0820	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.62			Y		
Total Residual Chlorine	0820	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.63			Y		
Total Residual Chlorine	0821	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.55			Y		
Total Residual Chlorine	0821	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.62			Y		
Total Residual Chlorine	0829	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.58			Y		
Total Residual Chlorine	0829	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.64			Y		
Total Residual Chlorine	0830	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.63			Y		
Total Residual Chlorine	0830	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.64			Y		
Total Residual Chlorine	0834	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.63			Y		
Total Residual Chlorine	0837	DS	TAP	mg/L	8/16/2016	(N)F	0	0	0.64			Y		
Total Residual Chlorine	0843	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.95			Y		

Analyte	Location			Units	Sample Date	Sample ID	Depth Range (ft bls)		Result	Qualifiers		Validated	Detection Limit	Uncertainty
	Code	Type	Subtype							Lab	Data			
Turbidity														
Turbidity	0813	DS	TAP	NTU	8/16/2016	(N)F	0	0	0.53			Y		
Turbidity	0815	DS	TAP	NTU	8/16/2016	(N)F	0	0	0.63			Y		
Turbidity	0816	DS	TAP	NTU	8/16/2016	(N)F	0	0	1.97			Y		
Turbidity	0816	DS	TAP	NTU	10/18/2016	(N)F	0	0	1.39			Y		
Turbidity	0816	DS	TAP	NTU	12/8/2016	(N)F	0	0	0.9			Y		
Turbidity	0818	DS	HDRT	NTU	8/16/2016	(N)F	0	0	4.08			Y		
Turbidity	0818	DS	HDRT	NTU	8/16/2016	(N)F	0	0	0.8			Y		
Turbidity	0819	DS	HDRT	NTU	8/16/2016	(N)F	0	0	0.69			Y		
Turbidity	0819	DS	HDRT	NTU	8/16/2016	(N)F	0	0	4.57			Y		
Turbidity	0820	DS	HDRT	NTU	8/16/2016	(N)F	0	0	0.52			Y		
Turbidity	0820	DS	HDRT	NTU	8/16/2016	(N)F	0	0	0.84			Y		
Turbidity	0821	DS	HDRT	NTU	8/16/2016	(N)F	0	0	0.63			Y		
Turbidity	0821	DS	HDRT	NTU	8/16/2016	(N)F	0	0	1.67			Y		
Turbidity	0821	DS	HDRT	NTU	10/18/2016	(N)F	0	0	0.96			Y		
Turbidity	0829	DS	HDRT	NTU	8/16/2016	(N)F	0	0	0.84			Y		
Turbidity	0829	DS	HDRT	NTU	8/16/2016	(N)F	0	0	4.74			Y		
Turbidity	0830	DS	HDRT	NTU	8/16/2016	(N)F	0	0	0.51			Y		
Turbidity	0830	DS	HDRT	NTU	8/16/2016	(N)F	0	0	1.54			Y		
Turbidity	0834	DS	HDRT	NTU	8/16/2016	(N)F	0	0	0.52			Y		
Turbidity	0837	DS	TAP	NTU	8/16/2016	(N)F	0	0	0.86			Y		
Turbidity	0843	DS	HDRT	NTU	8/16/2016	(N)F	0	0	7.77			Y		
Turbidity	0843	DS	HDRT	NTU	10/18/2016	(N)F	0	0	1.5			Y		
Turbidity	0886	DS		NTU	10/18/2016	(N)F	0	0	0.56			Y		
Turbidity	0887	WL		NTU	10/18/2016	(N)F			6.97			Y		
Uranium														
Uranium	0813	DS	TAP	mg/L	8/16/2016	(N)F	0	0	0.00005	J		Y	0.00001	
Uranium	0815	DS	TAP	mg/L	8/16/2016	(N)F	0	0	0.00005	J		Y	0.00001	
Uranium	0816	DS	TAP	mg/L	8/16/2016	(N)F	0	0	0.00008	J		Y	0.00001	
Uranium	0816	DS	TAP	mg/L	8/16/2016	()D	0	0	0.00003	J		Y	0.00001	
Uranium	0818	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00003	J		Y	0.00001	
Uranium	0818	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00003	J		Y	0.00001	
Uranium	0819	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00006	J		Y	0.00001	
Uranium	0819	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00004	J		Y	0.00001	
Uranium	0820	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00005	J		Y	0.00001	
Uranium	0820	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00003	J		Y	0.00001	
Uranium	0821	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00005	J		Y	0.00001	
Uranium	0821	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00003	J		Y	0.00001	
Uranium	0829	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00004	J		Y	0.00001	
Uranium	0829	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00004	J		Y	0.00001	
Uranium	0830	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00005	J		Y	0.00001	
Uranium	0830	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00003	J		Y	0.00001	
Uranium	0834	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00003	J		Y	0.00001	
Uranium	0837	DS	TAP	mg/L	8/16/2016	(N)F	0	0	0.00003	J		Y	0.00001	
Uranium	0843	DS	HDRT	mg/L	8/16/2016	(N)F	0	0	0.00004	J		Y	0.00001	

Notes:

Location Type:

DS = Domestic Supply

Location Subtypes

HDRT = Hydrant

TAP = Tap in Domestic Supply System

Sample ID

(F) Filtered sample

(N) Nonfiltered sample

Validated

Y Validated according to Quality Assurance Guidelines

Lab/Data Qualifiers

J = Estimated value

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Appendix C

Static Water Level Data

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Static Water Level Data

Location	Date	Top of Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft)	Water Level Flag
0101	8/17/2016	4950.68	10.39	4940.29	
0110	8/17/2016	4950.19	13.24	4938.87	
0111	8/17/2016	4948.85	9.95	4938.90	
0700	8/17/2016	4951.97	7.30	4944.67	
0702	8/16/2016	4931.92	7.03	4924.89	
0705	8/18/2016	4931.91	7.17	4924.74	
0707	8/18/2016	4931.30	6.32	4924.98	
0709	8/16/2016	4931.64	4.73	4926.91	
0710	8/17/2016	4947.69	6.25	4941.44	
0716	8/17/2016	4940.69	8.52	4932.17	
0717	8/17/2016	4940.30	7.77	4932.53	
0718	8/17/2016	4937.60	8.64	4929.48	
0719	8/17/2016	4937.55	8.14	4929.99	
0720	8/17/2016	4941.15	4.90	4936.25	
0721	8/17/2016	4941.05	8.49	4932.56	
0722R	8/18/2016	4937.83	8.45	4929.38	
0723	8/18/2016	4936.01	7.19	4929.47	
0724	8/17/2016	4941.93	7.20	4934.73	
0725	8/17/2016	4942.21	7.41	4934.80	
0726	8/17/2016	4942.20	7.90	4934.30	
0727	8/17/2016	4952.26	10.33	4941.93	
0728	8/17/2016	4946.63	8.40	4938.23	
0729	8/18/2016	4932.75	5.65	4927.73	
0730	8/18/2016	4933.08	5.39	4928.49	
0732	8/17/2016	4946.58	8.43	4938.15	
0733	8/23/2016	4947.46	4.84	4942.62	
0734	8/23/2016	4946.84	6.67	4940.17	
0736	8/17/2016	4946.43	7.32	4939.11	
0784	8/17/2016	4947.00	7.31	4939.69	
0788	8/18/2016	4935.43	9.55	4925.88	
0789	8/18/2016	4933.08	9.73	4923.35	
0824	8/18/2016	4929.38	6.59	4922.79	
0826	8/17/2016	4937.36	8.41	4928.95	
0852-1	8/17/2016	4938.00			D
0852-2	8/17/2016	4938.00			I
0852-3	8/17/2016	4938.00			I
0852-4	8/17/2016	4938.30	11.26	4927.04	
0853-1	8/16/2016	4935.81			D
0853-2	8/16/2016	4935.81			I
0853-3	8/16/2016	4935.81			I
0853-4	8/16/2016	4935.98	10.30	4925.68	
0854-1	8/17/2016	4937.19			D
0854-2	8/17/2016	4937.19			I

Static Water Level Data

Location	Date	Top of Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft)	Water Level Flag
0854-3	8/17/2016	4937.19			I
0854-4	8/17/2016	4937.42	8.48	4928.94	
0855-1	8/17/2016	4931.02			D
0855-2	8/17/2016	4931.02			I
0855-3	8/17/2016	4931.02			I
0855-4	8/17/2016	4931.48	7.78	4923.70	
0856-1	8/16/2016	4933.63			D
0856-2	8/16/2016	4933.63			I
0856-3	8/16/2016	4933.63			I
0856-4	8/16/2016	4933.87	9.11	4924.76	
0857-1	8/17/2016	4935.51			D
0857-2	8/17/2016	4935.51			D
0857-3	8/17/2016	4935.51			I
0857-4	8/17/2016	4935.76	9.59	4926.17	
0858-1	8/16/2016	4932.14			D
0858-2	8/16/2016	4932.14			I
0858-3	8/16/2016	4932.14			I
0858-4	8/16/2016	4932.39	8.06	4924.33	
0859-1	8/17/2016	4945.98			D
0859-2	8/17/2016	4945.98			I
0859-3	8/17/2016	4945.98			I
0859-4	8/17/2016	4946.26	8.84	4937.42	
0860-1	8/17/2016	4944.10			D
0860-2	8/17/2016	4944.10			I
0860-3	8/17/2016	4944.10			I
0860-4	8/17/2016	4944.38	11.20	4933.18	

Note:
Water level flags: D = dry, I = inaccessible.

Appendix D

Monitoring Well Data

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GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
1,1,1,2-Tetrachloroethane													
1,1,1,2-Tetrachloroethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,1,1-Trichloroethane													
1,1,1-Trichloroethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,1,2,2-Tetrachloroethane													
1,1,2,2-Tetrachloroethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,1,2-Trichloroethane													
1,1,2-Trichloroethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,1-Dichloroethane													
1,1-Dichloroethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,1-Dichloroethene													
1,1-Dichloroethene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,1-Dichloropropene													
1,1-Dichloropropene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,2,3-Trichlorobenzene													
1,2,3-Trichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.200	U	F	#	0.2	-
1,2,3-Trichloropropane													
1,2,3-Trichloropropane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,2,4-Trichlorobenzene													
1,2,4-Trichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
1,2,4-Trichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,2,4-Trimethylbenzene													
1,2,4-Trimethylbenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,2-Dibromo-3-chloropropane													
1,2-Dibromo-3-chloropropane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,2-Dibromoethane													
1,2-Dibromoethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
1,2-Dichlorobenzene													
1,2-Dichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,2-Dichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
1,2-Dichloroethane													
1,2-Dichloroethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,2-Dichloropropane													
1,2-Dichloropropane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,3,5-Trimethylbenzene													
1,3,5-Trimethylbenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,3-Dichlorobenzene													
1,3-Dichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,3-Dichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
1,3-Dichloropropane													
1,3-Dichloropropane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,4-Dichlorobenzene													
1,4-Dichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
1,4-Dichlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2,2-Dichloropropane													
2,2-Dichloropropane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
2,4,5-Trichlorophenol													
2,4,5-Trichlorophenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2,4,6-Trichlorophenol													
2,4,6-Trichlorophenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2,4-Dichlorophenol													
2,4-Dichlorophenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2,4-Dimethylphenol													
2,4-Dimethylphenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
2,4-Dinitrophenol													
2,4-Dinitrophenol	0859-4	WL	ug/L	8/17/2016	(N)F			5.00	U	F	#	5	-
2,4-Dinitrotoluene													
2,4-Dinitrotoluene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2,6-Dinitrotoluene													
2,6-Dinitrotoluene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2-Butanone													
2-Butanone	0859-4	WL	ug/L	8/17/2016	(N)F			0.500	U	F	#	0.5	-
2-Chloronaphthalene													
2-Chloronaphthalene	0859-4	WL	ug/L	8/17/2016	(N)F			0.410	U	F	#	0.41	-
2-Chlorophenol													
2-Chlorophenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2-Chlorotoluene													
2-Chlorotoluene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
2-Hexanone													
2-Hexanone	0859-4	WL	ug/L	8/17/2016	(N)F			0.500	U	F	#	0.5	-
2-Methylnaphthalene													
2-Methylnaphthalene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
2-Methylphenol													
2-Methylphenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2-Nitroaniline													
2-Nitroaniline	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
2-Nitrophenol													
2-Nitrophenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
3,3'-Dichlorobenzidine													
3,3'-Dichlorobenzidine	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
3-Nitroaniline													
3-Nitroaniline	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
4,6-Dinitro-2-methyl phenol													
4,6-Dinitro-2-methyl phenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
4-Bromophenyl-phenyl ether													
4-Bromophenyl-phenyl ether	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
4-Chloro-3-methylphenol													
4-Chloro-3-methylphenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
4-Chloroaniline													
4-Chloroaniline	0859-4	WL	ug/L	8/17/2016	(N)F			3.30	U	F	#	3.3	-
4-Chlorophenyl phenyl ether													
4-Chlorophenyl phenyl ether	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
4-Chlorotoluene													
4-Chlorotoluene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
4-Methyl-2-Pentanone													
4-Methyl-2-Pentanone	0859-4	WL	ug/L	8/17/2016	(N)F			0.500	U	F	#	0.5	-
4-Nitroaniline													
4-Nitroaniline	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
4-Nitrophenol													
4-Nitrophenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Acenaphthene													
Acenaphthene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Acenaphthylene													
Acenaphthylene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Acetone													
Acetone	0859-4	WL	ug/L	8/17/2016	(N)F			0.500	U	F	#	0.5	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Alkalinity, Total (As CaCO3)													
Alkalinity, Total (As CaCO3)	0705	WL	mg/L	8/18/2016	(F)F	SE	D	65		FQ	#	-	-
Alkalinity, Total (As CaCO3)	0707	WL	mg/L	8/18/2016	()F	SF	D	445		F	#	-	-
Alkalinity, Total (As CaCO3)	0710	WL	mg/L	8/17/2016	(N)F	SF	U	206		F	#	-	-
Alkalinity, Total (As CaCO3)	0716	WL	mg/L	8/17/2016	(N)F	SF	O	315		F	#	-	-
Alkalinity, Total (As CaCO3)	0717	WL	mg/L	8/17/2016	(N)F	SE	O	221		F	#	-	-
Alkalinity, Total (As CaCO3)	0718	WL	mg/L	8/17/2016	(N)F	SF	D	338		F	#	-	-
Alkalinity, Total (As CaCO3)	0719	WL	mg/L	8/17/2016	(N)F	SE	D	83		FQ	#	-	-
Alkalinity, Total (As CaCO3)	0720	WL	mg/L	8/17/2016	(N)F	SF	C	185		F	#	-	-
Alkalinity, Total (As CaCO3)	0721	WL	mg/L	8/17/2016	(N)F	SE	C	113		F	#	-	-
Alkalinity, Total (As CaCO3)	0722R	WL	mg/L	8/18/2016	(N)F	SF		325		F	#	-	-
Alkalinity, Total (As CaCO3)	0723	WL	mg/L	8/18/2016	(N)F	SE	D	314		F	#	-	-
Alkalinity, Total (As CaCO3)	0727	WL	mg/L	8/17/2016	(N)F	SE	U	171		F	#	-	-
Alkalinity, Total (As CaCO3)	0729	WL	mg/L	8/18/2016	(N)F	SF	D	310		F	#	-	-
Alkalinity, Total (As CaCO3)	0732	WL	mg/L	8/17/2016	(N)F	SE	U	291		F	#	-	-
Alkalinity, Total (As CaCO3)	0784	WL	mg/L	8/17/2016	(N)F	SF	U	200		F	#	-	-
Alkalinity, Total (As CaCO3)	0788	WL	mg/L	8/18/2016	()F	SF	C	449		F	#	-	-
Alkalinity, Total (As CaCO3)	0789	WL	mg/L	8/18/2016	()F	SF	D	554		F	#	-	-
Alkalinity, Total (As CaCO3)	0824	WL	mg/L	8/18/2016	(N)F	SF		380		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Alkalinity, Total (As CaCO3)	0826	WL	mg/L	8/17/2016	()F	SF		425		F	#	-	-
Alkalinity, Total (As CaCO3)	0852-2	WL	mg/L	8/17/2016	()F			501		F	#	-	-
Alkalinity, Total (As CaCO3)	0852-3	WL	mg/L	8/17/2016	()F			479		F	#	-	-
Alkalinity, Total (As CaCO3)	0852-4	WL	mg/L	8/17/2016	()F			462		F	#	-	-
Alkalinity, Total (As CaCO3)	0853-2	WL	mg/L	8/16/2016	()F			444		F	#	-	-
Alkalinity, Total (As CaCO3)	0853-3	WL	mg/L	8/16/2016	()F			404		F	#	-	-
Alkalinity, Total (As CaCO3)	0853-4	WL	mg/L	8/16/2016	()F			389		F	#	-	-
Alkalinity, Total (As CaCO3)	0854-2	WL	mg/L	8/17/2016	()F			450		F	#	-	-
Alkalinity, Total (As CaCO3)	0854-3	WL	mg/L	8/17/2016	()F			452		F	#	-	-
Alkalinity, Total (As CaCO3)	0854-4	WL	mg/L	8/17/2016	()F			468		F	#	-	-
Alkalinity, Total (As CaCO3)	0855-2	WL	mg/L	8/17/2016	()F			569		F	#	-	-
Alkalinity, Total (As CaCO3)	0855-3	WL	mg/L	8/17/2016	()F			509		F	#	-	-
Alkalinity, Total (As CaCO3)	0855-4	WL	mg/L	8/17/2016	()F			487		F	#	-	-
Alkalinity, Total (As CaCO3)	0856-2	WL	mg/L	8/16/2016	()F			462		F	#	-	-
Alkalinity, Total (As CaCO3)	0856-3	WL	mg/L	8/16/2016	()F			460		F	#	-	-
Alkalinity, Total (As CaCO3)	0856-4	WL	mg/L	8/16/2016	()F			482		F	#	-	-
Alkalinity, Total (As CaCO3)	0857-3	WL	mg/L	8/17/2016	()F			539		F	#	-	-
Alkalinity, Total (As CaCO3)	0857-4	WL	mg/L	8/17/2016	()F			486		F	#	-	-
Alkalinity, Total (As CaCO3)	0858-2	WL	mg/L	8/16/2016	()F			389		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Alkalinity, Total (As CaCO3)	0858-3	WL	mg/L	8/16/2016	()F			394		F	#	-	-
Alkalinity, Total (As CaCO3)	0858-4	WL	mg/L	8/16/2016	()F			382		F	#	-	-
Alkalinity, Total (As CaCO3)	0859-2	WL	mg/L	8/17/2016	(N)F			307		F	#	-	-
Alkalinity, Total (As CaCO3)	0859-3	WL	mg/L	8/17/2016	(N)F			326		F	#	-	-
Alkalinity, Total (As CaCO3)	0859-4	WL	mg/L	8/17/2016	(N)F			346		F	#	-	-
Alkalinity, Total (As CaCO3)	0860-2	WL	mg/L	8/17/2016	(N)F			257		F	#	-	-
Alkalinity, Total (As CaCO3)	0860-3	WL	mg/L	8/17/2016	(N)F			282		F	#	-	-
Alkalinity, Total (As CaCO3)	0860-4	WL	mg/L	8/17/2016	(N)F			284		F	#	-	-
Anthracene													
Anthracene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Benz(a)anthracene													
Benz(a)anthracene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Benzene													
Benzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Benzo(a)pyrene													
Benzo(a)pyrene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Benzo(b)fluoranthene													
Benzo(b)fluoranthene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Benzo(g,h,i)Perylene													
Benzo(g,h,i)Perylene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Benzo(k)fluoranthene													
Benzo(k)fluoranthene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Benzoic acid													
Benzoic acid	0859-4	WL	ug/L	8/17/2016	(N)F			6.00	U	F	#	6	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Benzyl Alcohol													
Benzyl Alcohol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Bis(2-chloroethoxy)methane													
Bis(2-chloroethoxy) methane	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Bis(2-chloroethyl) ether													
Bis(2-chloroethyl) ether	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Bis(2-chloroisopropyl) ether													
Bis(2-chloroisopropyl) ether	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Bis(2-ethylhexyl) phthalate													
Bis(2-ethylhexyl) phthalate	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Bromobenzene													
Bromobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Bromochloromethane													
Bromochloromethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Bromodichloromethane													
Bromodichloromethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Bromoform													
Bromoform	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Bromomethane													
Bromomethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Butyl benzyl phthalate													
Butyl benzyl phthalate	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Calcium													
Calcium	0705	WL	mg/L	8/18/2016	(F)F	SE	D	30		FQ	#	0.012	-
Calcium	0707	WL	mg/L	8/18/2016	()F	SF	D	740		F	#	0.12	-
Calcium	0710	WL	mg/L	8/17/2016	(N)F	SF	U	120		F	#	0.012	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Calcium	0716	WL	mg/L	8/17/2016	(N)F	SF	O	170		F	#	0.012	-
Calcium	0717	WL	mg/L	8/17/2016	(N)F	SE	O	94		F	#	0.012	-
Calcium	0718	WL	mg/L	8/17/2016	(N)F	SF	D	620		F	#	0.06	-
Calcium	0719	WL	mg/L	8/17/2016	(N)F	SE	D	84		FQ	#	0.012	-
Calcium	0720	WL	mg/L	8/17/2016	(N)F	SF	C	98		F	#	0.012	-
Calcium	0721	WL	mg/L	8/17/2016	()D	SE	C	8.6		F	#	0.012	-
Calcium	0721	WL	mg/L	8/17/2016	(N)F	SE	C	8.6		F	#	0.012	-
Calcium	0722R	WL	mg/L	8/18/2016	(N)F	SF		270		F	#	0.012	-
Calcium	0723	WL	mg/L	8/18/2016	(N)F	SE	D	320		F	#	0.06	-
Calcium	0727	WL	mg/L	8/17/2016	(N)F	SE	U	61		F	#	0.012	-
Calcium	0729	WL	mg/L	8/18/2016	(N)F	SF	D	92		F	#	0.012	-
Calcium	0730	WL	mg/L	8/18/2016	(N)F	SE	D	82		FQ	#	0.012	-
Calcium	0732	WL	mg/L	8/17/2016	(N)F	SE	U	510		F	#	0.06	-
Calcium	0784	WL	mg/L	8/17/2016	(N)F	SF	U	240		F	#	0.06	-
Calcium	0788	WL	mg/L	8/18/2016	()F	SF	C	420		F	#	0.06	-
Calcium	0789	WL	mg/L	8/18/2016	()F	SF	D	500		F	#	0.06	-
Calcium	0824	WL	mg/L	8/18/2016	(N)F	SF		110		F	#	0.012	-
Calcium	0826	WL	mg/L	8/17/2016	()F	SF		480		F	#	0.06	-
Calcium	0852-2	WL	mg/L	8/17/2016	()D			410		F	#	0.06	-
Calcium	0852-2	WL	mg/L	8/17/2016	()F			400		F	#	0.06	-
Calcium	0852-3	WL	mg/L	8/17/2016	()F			390		F	#	0.06	-
Calcium	0852-4	WL	mg/L	8/17/2016	()F			370		F	#	0.06	-
Calcium	0853-2	WL	mg/L	8/16/2016	()F			410		F	#	0.06	-
Calcium	0853-3	WL	mg/L	8/16/2016	()F			500		F	#	0.06	-
Calcium	0853-4	WL	mg/L	8/16/2016	()F			490		F	#	0.06	-
Calcium	0854-2	WL	mg/L	8/17/2016	()F			570		F	#	0.12	-
Calcium	0854-3	WL	mg/L	8/17/2016	()F			610		F	#	0.12	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Calcium	0854-4	WL	mg/L	8/17/2016	()F			620		F	#	0.12	-
Calcium	0855-2	WL	mg/L	8/17/2016	()F			520		F	#	0.12	-
Calcium	0855-3	WL	mg/L	8/17/2016	()F			710		F	#	0.12	-
Calcium	0855-4	WL	mg/L	8/17/2016	()F			670		F	#	0.12	-
Calcium	0856-2	WL	mg/L	8/16/2016	()F			560		F	#	0.12	-
Calcium	0856-3	WL	mg/L	8/16/2016	()F			470		F	#	0.12	-
Calcium	0856-4	WL	mg/L	8/16/2016	()D			480		F	#	0.12	-
Calcium	0856-4	WL	mg/L	8/16/2016	()F			490		F	#	0.12	-
Calcium	0857-3	WL	mg/L	8/17/2016	()F			600		F	#	0.12	-
Calcium	0857-4	WL	mg/L	8/17/2016	()F			670		F	#	0.12	-
Calcium	0858-2	WL	mg/L	8/16/2016	()F			670		F	#	0.12	-
Calcium	0858-3	WL	mg/L	8/16/2016	()F			740		F	#	0.12	-
Calcium	0858-4	WL	mg/L	8/16/2016	()F			690		F	#	0.12	-
Calcium	0859-2	WL	mg/L	8/17/2016	(N)F			440		F	#	0.12	-
Calcium	0859-3	WL	mg/L	8/17/2016	(N)F			470		F	#	0.12	-
Calcium	0859-4	WL	mg/L	8/17/2016	(N)F			440		F	#	0.12	-
Calcium	0860-2	WL	mg/L	8/17/2016	(N)F			500		F	#	0.12	-
Calcium	0860-3	WL	mg/L	8/17/2016	(N)F			470		F	#	0.12	-
Calcium	0860-4	WL	mg/L	8/17/2016	(N)F			450		F	#	0.12	-
Carbon Disulfide													
Carbon Disulfide	0859-4	WL	ug/L	8/17/2016	(N)F			0.500	U	F	#	0.5	-
Carbon tetrachloride													
Carbon tetrachloride	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Chloride													
Chloride	0705	WL	mg/L	8/18/2016	(F)F	SE	D	49		FQ	#	0.48	-
Chloride	0707	WL	mg/L	8/18/2016	()F	SF	D	230		F	#	6	-
Chloride	0710	WL	mg/L	8/17/2016	(N)F	SF	U	33		F	#	0.3	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Chloride	0716	WL	mg/L	8/17/2016	(N)F	SF	O	60		F	#	0.6	-
Chloride	0717	WL	mg/L	8/17/2016	(N)F	SE	O	48		F	#	0.75	-
Chloride	0718	WL	mg/L	8/17/2016	(N)F	SF	D	240		F	#	3	-
Chloride	0719	WL	mg/L	8/17/2016	(N)F	SE	D	39		FQ	#	0.6	-
Chloride	0720	WL	mg/L	8/17/2016	(N)F	SF	C	9.7		F	#	0.24	-
Chloride	0721	WL	mg/L	8/17/2016	()D	SE	C	30		F	#	0.3	-
Chloride	0721	WL	mg/L	8/17/2016	(N)F	SE	C	25		F	#	0.24	-
Chloride	0722R	WL	mg/L	8/18/2016	(N)F	SF		16		F	#	0.6	-
Chloride	0723	WL	mg/L	8/18/2016	(N)F	SE	D	54		F	#	2.4	-
Chloride	0727	WL	mg/L	8/17/2016	(N)F	SE	U	14		F	#	0.12	-
Chloride	0729	WL	mg/L	8/18/2016	(N)F	SF	D	5.8		F	#	0.06	-
Chloride	0730	WL	mg/L	8/18/2016	(N)F	SE	D	7		FQ	#	0.12	-
Chloride	0732	WL	mg/L	8/17/2016	(N)F	SE	U	41		F	#	2.4	-
Chloride	0784	WL	mg/L	8/17/2016	(N)F	SF	U	29		F	#	2.4	-
Chloride	0788	WL	mg/L	8/18/2016	()F	SF	C	96		F	#	3	-
Chloride	0789	WL	mg/L	8/18/2016	()F	SF	D	650		F	#	12	-
Chloride	0824	WL	mg/L	8/18/2016	(N)F	SF		8		F	#	0.3	-
Chloride	0826	WL	mg/L	8/17/2016	()F	SF		100		F	#	3	-
Chloride	0852-2	WL	mg/L	8/17/2016	()D			120		FJ	#	2.4	-
Chloride	0852-2	WL	mg/L	8/17/2016	()F			160		FJ	#	2.4	-
Chloride	0852-3	WL	mg/L	8/17/2016	()F			110		F	#	2.4	-
Chloride	0852-4	WL	mg/L	8/17/2016	()F			110		F	#	1.2	-
Chloride	0853-2	WL	mg/L	8/16/2016	()F			130		F	#	3	-
Chloride	0853-3	WL	mg/L	8/16/2016	()F			120		F	#	3	-
Chloride	0853-4	WL	mg/L	8/16/2016	()F			120		F	#	3	-
Chloride	0854-2	WL	mg/L	8/17/2016	()F			160		F	#	6	-
Chloride	0854-3	WL	mg/L	8/17/2016	()F			170		F	#	6	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Chloride	0854-4	WL	mg/L	8/17/2016	()F			170		F	#	6	-
Chloride	0855-2	WL	mg/L	8/17/2016	()F			680		F	#	7.5	-
Chloride	0855-3	WL	mg/L	8/17/2016	()F			740		F	#	7.5	-
Chloride	0855-4	WL	mg/L	8/17/2016	()F			560		F	#	6	-
Chloride	0856-2	WL	mg/L	8/16/2016	()F			440		F	#	7.5	-
Chloride	0856-3	WL	mg/L	8/16/2016	()F			490		F	#	7.5	-
Chloride	0856-4	WL	mg/L	8/16/2016	()D			1100		F	#	12	-
Chloride	0856-4	WL	mg/L	8/16/2016	()F			1300		F	#	12	-
Chloride	0857-3	WL	mg/L	8/17/2016	()F			370		F	#	6	-
Chloride	0857-4	WL	mg/L	8/17/2016	()F			320		F	#	6	-
Chloride	0858-2	WL	mg/L	8/16/2016	()F			220		F	#	6	-
Chloride	0858-3	WL	mg/L	8/16/2016	()F			240		F	#	6	-
Chloride	0858-4	WL	mg/L	8/16/2016	()F			240		F	#	6	-
Chloride	0859-2	WL	mg/L	8/17/2016	(N)F			73		F	#	3	-
Chloride	0859-3	WL	mg/L	8/17/2016	(N)F			70		F	#	3	-
Chloride	0859-4	WL	mg/L	8/17/2016	(N)F			82		F	#	3	-
Chloride	0860-2	WL	mg/L	8/17/2016	(N)F			68		F	#	3	-
Chloride	0860-3	WL	mg/L	8/17/2016	(N)F			74		F	#	3	-
Chloride	0860-4	WL	mg/L	8/17/2016	(N)F			70		F	#	3	-
Chlorobenzene													
Chlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Chlorodibromomethane													
Chlorodibromomethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Chloroethane													
Chloroethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Chloroform													
Chloroform	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Chloromethane													
Chloromethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Chrysene													
Chrysene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
cis-1,2-Dichloroethene													
cis-1,2-Dichloroethene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
cis-1,3-Dichloropropene													
cis-1,3-Dichloropropene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Dibenz(a,h)anthracene													
Dibenz(a,h)anthracene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Dibenzofuran													
Dibenzofuran	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Dibromomethane													
Dibromomethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Dichlorodifluoromethane													
Dichlorodifluoromethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Diethyl phthalate													
Diethyl phthalate	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Dimethyl phthalate													
Dimethyl phthalate	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Di-n-butyl phthalate													
Di-n-butyl phthalate	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Di-n-octyl phthalate													
Di-n-octyl phthalate	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Diphenylamine													
Diphenylamine	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Dissolved Oxygen													
Dissolved Oxygen	0705	WL	mg/L	8/18/2016	(F)F	SE	D	9.66		FQ	#	-	-
Dissolved Oxygen	0707	WL	mg/L	8/18/2016	()F	SF	D	1.20		F	#	-	-
Dissolved Oxygen	0710	WL	mg/L	8/17/2016	(N)F	SF	U	0.39		F	#	-	-
Dissolved Oxygen	0716	WL	mg/L	8/17/2016	(N)F	SF	O	0.77		F	#	-	-
Dissolved Oxygen	0717	WL	mg/L	8/17/2016	(N)F	SE	O	0.59		F	#	-	-
Dissolved Oxygen	0718	WL	mg/L	8/17/2016	(N)F	SF	D	0.98		F	#	-	-
Dissolved Oxygen	0719	WL	mg/L	8/17/2016	(N)F	SE	D	1.91		FQ	#	-	-
Dissolved Oxygen	0720	WL	mg/L	8/17/2016	(N)F	SF	C	3.15		F	#	-	-
Dissolved Oxygen	0721	WL	mg/L	8/17/2016	(N)F	SE	C	0.56		F	#	-	-
Dissolved Oxygen	0722R	WL	mg/L	8/18/2016	(N)F	SF		1.47		F	#	-	-
Dissolved Oxygen	0723	WL	mg/L	8/18/2016	(N)F	SE	D	0.34		F	#	-	-
Dissolved Oxygen	0727	WL	mg/L	8/17/2016	(N)F	SE	U	0.90		F	#	-	-
Dissolved Oxygen	0729	WL	mg/L	8/18/2016	(N)F	SF	D	0.35		F	#	-	-
Dissolved Oxygen	0730	WL	mg/L	8/18/2016	(N)F	SE	D	0.88		FQ	#	-	-
Dissolved Oxygen	0732	WL	mg/L	8/17/2016	(N)F	SE	U	0.81		F	#	-	-
Dissolved Oxygen	0784	WL	mg/L	8/17/2016	(N)F	SF	U	0.96		F	#	-	-
Dissolved Oxygen	0788	WL	mg/L	8/18/2016	()F	SF	C	1.73		F	#	-	-
Dissolved Oxygen	0789	WL	mg/L	8/18/2016	()F	SF	D	0.98		F	#	-	-
Dissolved Oxygen	0824	WL	mg/L	8/18/2016	(N)F	SF		1.73		F	#	-	-
Dissolved Oxygen	0826	WL	mg/L	8/17/2016	()F	SF		1.41		F	#	-	-
Dissolved Oxygen	0852-2	WL	mg/L	8/17/2016	()F			4.55		F	#	-	-
Dissolved Oxygen	0852-3	WL	mg/L	8/17/2016	()F			1.31		F	#	-	-
Dissolved Oxygen	0852-4	WL	mg/L	8/17/2016	()F			1.42		F	#	-	-
Dissolved Oxygen	0853-2	WL	mg/L	8/16/2016	()F			1.61		F	#	-	-
Dissolved Oxygen	0853-3	WL	mg/L	8/16/2016	()F			1.37		F	#	-	-
Dissolved Oxygen	0853-4	WL	mg/L	8/16/2016	()F			1.98		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:22 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Dissolved Oxygen	0854-2	WL	mg/L	8/17/2016	()F			2.03		F	#	-	-
Dissolved Oxygen	0854-3	WL	mg/L	8/17/2016	()F			5.27		F	#	-	-
Dissolved Oxygen	0854-4	WL	mg/L	8/17/2016	()F			0.98		F	#	-	-
Dissolved Oxygen	0855-2	WL	mg/L	8/17/2016	()F			1.39		F	#	-	-
Dissolved Oxygen	0855-3	WL	mg/L	8/17/2016	()F			3.38		F	#	-	-
Dissolved Oxygen	0855-4	WL	mg/L	8/17/2016	()F			1.46		F	#	-	-
Dissolved Oxygen	0856-2	WL	mg/L	8/16/2016	()F			1.29		F	#	-	-
Dissolved Oxygen	0856-3	WL	mg/L	8/16/2016	()F			2.86		F	#	-	-
Dissolved Oxygen	0856-4	WL	mg/L	8/16/2016	()F			2.38		F	#	-	-
Dissolved Oxygen	0857-3	WL	mg/L	8/17/2016	()F			5.33		F	#	-	-
Dissolved Oxygen	0857-4	WL	mg/L	8/17/2016	()F			1.34		F	#	-	-
Dissolved Oxygen	0858-2	WL	mg/L	8/16/2016	()F			2.27		F	#	-	-
Dissolved Oxygen	0858-3	WL	mg/L	8/16/2016	()F			2.44		F	#	-	-
Dissolved Oxygen	0858-4	WL	mg/L	8/16/2016	()F			2.12		F	#	-	-
Dissolved Oxygen	0859-2	WL	mg/L	8/17/2016	(N)F			0.97		F	#	-	-
Dissolved Oxygen	0859-3	WL	mg/L	8/17/2016	(N)F			1.19		F	#	-	-
Dissolved Oxygen	0859-4	WL	mg/L	8/17/2016	(N)F			1.13		F	#	-	-
Dissolved Oxygen	0860-2	WL	mg/L	8/17/2016	(N)F			0.92		F	#	-	-
Dissolved Oxygen	0860-3	WL	mg/L	8/17/2016	(N)F			0.87		F	#	-	-
Dissolved Oxygen	0860-4	WL	mg/L	8/17/2016	(N)F			0.79		F	#	-	-
Ethylbenzene													
Ethylbenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Field Ferrous Iron													
Field Ferrous Iron	0852-2	WL	mg/L	8/17/2016	()F			0.05		F	#	-	-
Field Ferrous Iron	0852-3	WL	mg/L	8/17/2016	()F			0.07		F	#	-	-
Field Ferrous Iron	0852-4	WL	mg/L	8/17/2016	()F			0.05		F	#	-	-
Field Ferrous Iron	0853-2	WL	mg/L	8/16/2016	()F			0.80		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Field Ferrous Iron	0853-3	WL	mg/L	8/16/2016	()F			0.51		F	#	-	-
Field Ferrous Iron	0853-4	WL	mg/L	8/16/2016	()F			3.49		F	#	-	-
Field Ferrous Iron	0854-2	WL	mg/L	8/17/2016	()F			1.31		F	#	-	-
Field Ferrous Iron	0854-3	WL	mg/L	8/17/2016	()F			0.61		F	#	-	-
Field Ferrous Iron	0854-4	WL	mg/L	8/17/2016	()F			3.37		F	#	-	-
Field Ferrous Iron	0855-2	WL	mg/L	8/17/2016	()F			1.64		F	#	-	-
Field Ferrous Iron	0855-3	WL	mg/L	8/17/2016	()F			0.19		F	#	-	-
Field Ferrous Iron	0855-4	WL	mg/L	8/17/2016	()F			1.81		F	#	-	-
Field Ferrous Iron	0856-2	WL	mg/L	8/16/2016	()F			0.80		F	#	-	-
Field Ferrous Iron	0856-3	WL	mg/L	8/16/2016	()F			0.69		F	#	-	-
Field Ferrous Iron	0856-4	WL	mg/L	8/16/2016	()F			0.71		F	#	-	-
Field Ferrous Iron	0857-3	WL	mg/L	8/17/2016	()F			0.27		F	#	-	-
Field Ferrous Iron	0857-4	WL	mg/L	8/17/2016	()F			2.95		F	#	-	-
Field Ferrous Iron	0858-2	WL	mg/L	8/16/2016	()F			1.42		F	#	-	-
Field Ferrous Iron	0858-3	WL	mg/L	8/16/2016	()F			0.48		F	#	-	-
Field Ferrous Iron	0858-4	WL	mg/L	8/16/2016	()F			0.58		F	#	-	-
Fluoranthene													
Fluoranthene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Fluorene													
Fluorene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Hexachlorobenzene													
Hexachlorobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Hexachlorobutadiene													
Hexachlorobutadiene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Hexachlorobutadiene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Hexachlorocyclopentadiene													
Hexachlorocyclopentadiene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Hexachloroethane													
Hexachloroethane	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
Indeno(1,2,3-cd)pyrene													
Indeno(1,2,3-cd)pyrene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Isophorone													
Isophorone	0859-4	WL	ug/L	8/17/2016	(N)F			3.50	U	F	#	3.5	-
Isopropylbenzene													
Isopropylbenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
m+p Methylphenol													
m+p Methylphenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.70	U	F	#	3.7	-
Magnesium													
Magnesium	0705	WL	mg/L	8/18/2016	(F)F	SE	D	2.1		FQ	#	0.013	-
Magnesium	0707	WL	mg/L	8/18/2016	()F	SF	D	270		F	#	0.13	-
Magnesium	0710	WL	mg/L	8/17/2016	(N)F	SF	U	25		F	#	0.013	-
Magnesium	0716	WL	mg/L	8/17/2016	(N)F	SF	O	42		F	#	0.013	-
Magnesium	0717	WL	mg/L	8/17/2016	(N)F	SE	O	6.1		F	#	0.013	-
Magnesium	0718	WL	mg/L	8/17/2016	(N)F	SF	D	160		F	#	0.065	-
Magnesium	0719	WL	mg/L	8/17/2016	(N)F	SE	D	3.7		FQ	#	0.013	-
Magnesium	0720	WL	mg/L	8/17/2016	(N)F	SF	C	23		F	#	0.013	-
Magnesium	0721	WL	mg/L	8/17/2016	()D	SE	C	0.12	J	FJ	#	0.013	-
Magnesium	0721	WL	mg/L	8/17/2016	(N)F	SE	C	0.095	J	FJ	#	0.013	-
Magnesium	0722R	WL	mg/L	8/18/2016	(N)F	SF		25		F	#	0.013	-
Magnesium	0723	WL	mg/L	8/18/2016	(N)F	SE	D	12		F	#	0.065	-
Magnesium	0727	WL	mg/L	8/17/2016	(N)F	SE	U	7.2		F	#	0.013	-
Magnesium	0729	WL	mg/L	8/18/2016	(N)F	SF	D	22		F	#	0.013	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Magnesium	0730	WL	mg/L	8/18/2016	(N)F	SE	D	14		FQ	#	0.013	-
Magnesium	0732	WL	mg/L	8/17/2016	(N)F	SE	U	31		F	#	0.065	-
Magnesium	0784	WL	mg/L	8/17/2016	(N)F	SF	U	41		F	#	0.065	-
Magnesium	0788	WL	mg/L	8/18/2016	()F	SF	C	130		F	#	0.065	-
Magnesium	0789	WL	mg/L	8/18/2016	()F	SF	D	580		F	#	0.065	-
Magnesium	0824	WL	mg/L	8/18/2016	(N)F	SF		27		F	#	0.013	-
Magnesium	0826	WL	mg/L	8/17/2016	()F	SF		140		F	#	0.065	-
Magnesium	0852-2	WL	mg/L	8/17/2016	()D			110		F	#	0.065	-
Magnesium	0852-2	WL	mg/L	8/17/2016	()F			110		F	#	0.065	-
Magnesium	0852-3	WL	mg/L	8/17/2016	()F			92		F	#	0.065	-
Magnesium	0852-4	WL	mg/L	8/17/2016	()F			88		F	#	0.065	-
Magnesium	0853-2	WL	mg/L	8/16/2016	()F			130		F	#	0.065	-
Magnesium	0853-3	WL	mg/L	8/16/2016	()F			120		F	#	0.065	-
Magnesium	0853-4	WL	mg/L	8/16/2016	()F			110		F	#	0.065	-
Magnesium	0854-2	WL	mg/L	8/17/2016	()F			180		F	#	0.13	-
Magnesium	0854-3	WL	mg/L	8/17/2016	()F			180		F	#	0.13	-
Magnesium	0854-4	WL	mg/L	8/17/2016	()F			180		F	#	0.13	-
Magnesium	0855-2	WL	mg/L	8/17/2016	()F			440		F	#	0.13	-
Magnesium	0855-3	WL	mg/L	8/17/2016	()F			480		F	#	0.13	-
Magnesium	0855-4	WL	mg/L	8/17/2016	()F			320		F	#	0.13	-
Magnesium	0856-2	WL	mg/L	8/16/2016	()F			320		F	#	0.13	-
Magnesium	0856-3	WL	mg/L	8/16/2016	()F			400		F	#	0.13	-
Magnesium	0856-4	WL	mg/L	8/16/2016	()D			870		F	#	0.13	-
Magnesium	0856-4	WL	mg/L	8/16/2016	()F			890		F	#	0.13	-
Magnesium	0857-3	WL	mg/L	8/17/2016	()F			280		F	#	0.13	-
Magnesium	0857-4	WL	mg/L	8/17/2016	()F			250		F	#	0.13	-
Magnesium	0858-2	WL	mg/L	8/16/2016	()F			230		F	#	0.13	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Magnesium	0858-3	WL	mg/L	8/16/2016	()F			240		F	#	0.13	-
Magnesium	0858-4	WL	mg/L	8/16/2016	()F			240		F	#	0.13	-
Magnesium	0859-2	WL	mg/L	8/17/2016	(N)F			71		F	#	0.13	-
Magnesium	0859-3	WL	mg/L	8/17/2016	(N)F			94		F	#	0.13	-
Magnesium	0859-4	WL	mg/L	8/17/2016	(N)F			160		F	#	0.13	-
Magnesium	0860-2	WL	mg/L	8/17/2016	(N)F			75		F	#	0.13	-
Magnesium	0860-3	WL	mg/L	8/17/2016	(N)F			53		F	#	0.13	-
Magnesium	0860-4	WL	mg/L	8/17/2016	(N)F			49		F	#	0.13	-
Manganese													
Manganese	0705	WL	mg/L	8/18/2016	(F)F	SE	D	0.0012	J	FQ	#	0.00011	-
Manganese	0707	WL	mg/L	8/18/2016	()F	SF	D	2.2		F	#	0.0011	-
Manganese	0710	WL	mg/L	8/17/2016	(N)F	SF	U	0.014		F	#	0.00011	-
Manganese	0716	WL	mg/L	8/17/2016	(N)F	SF	O	0.35		F	#	0.00011	-
Manganese	0717	WL	mg/L	8/17/2016	(N)F	SE	O	0.17		F	#	0.00011	-
Manganese	0718	WL	mg/L	8/17/2016	(N)F	SF	D	0.71		F	#	0.00057	-
Manganese	0719	WL	mg/L	8/17/2016	(N)F	SE	D	0.15		FQ	#	0.00011	-
Manganese	0720	WL	mg/L	8/17/2016	(N)F	SF	C	0.0029	J	F	#	0.00011	-
Manganese	0721	WL	mg/L	8/17/2016	()D	SE	C	0.0029	J	F	#	0.00011	-
Manganese	0721	WL	mg/L	8/17/2016	(N)F	SE	C	0.0032	J	F	#	0.00011	-
Manganese	0722R	WL	mg/L	8/18/2016	(N)F	SF		0.0034	J	F	#	0.00011	-
Manganese	0723	WL	mg/L	8/18/2016	(N)F	SE	D	0.42		F	#	0.00057	-
Manganese	0727	WL	mg/L	8/17/2016	(N)F	SE	U	0.14		F	#	0.00011	-
Manganese	0729	WL	mg/L	8/18/2016	(N)F	SF	D	0.029		F	#	0.00011	-
Manganese	0730	WL	mg/L	8/18/2016	(N)F	SE	D	0.041		FQ	#	0.00011	-
Manganese	0732	WL	mg/L	8/17/2016	(N)F	SE	U	1		F	#	0.00057	-
Manganese	0784	WL	mg/L	8/17/2016	(N)F	SF	U	1.5		F	#	0.00057	-
Manganese	0788	WL	mg/L	8/18/2016	()F	SF	C	0.44		F	#	0.00057	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Manganese	0789	WL	mg/L	8/18/2016	()F	SF	D	0.22		F	#	0.00057	-
Manganese	0824	WL	mg/L	8/18/2016	(N)F	SF		0.0091		F	#	0.00011	-
Manganese	0826	WL	mg/L	8/17/2016	()F	SF		3.3		F	#	0.00057	-
Manganese	0852-2	WL	mg/L	8/17/2016	()D			1.9		F	#	0.00057	-
Manganese	0852-2	WL	mg/L	8/17/2016	()F			1.9		F	#	0.00057	-
Manganese	0852-3	WL	mg/L	8/17/2016	()F			2.2		F	#	0.00057	-
Manganese	0852-4	WL	mg/L	8/17/2016	()F			2.2		F	#	0.00057	-
Manganese	0853-2	WL	mg/L	8/16/2016	()F			1.3		F	#	0.00057	-
Manganese	0853-3	WL	mg/L	8/16/2016	()F			2.3		F	#	0.00057	-
Manganese	0853-4	WL	mg/L	8/16/2016	()F			2.4		F	#	0.00057	-
Manganese	0854-2	WL	mg/L	8/17/2016	()F			3.2		F	#	0.0011	-
Manganese	0854-3	WL	mg/L	8/17/2016	()F			3.4		F	#	0.0011	-
Manganese	0854-4	WL	mg/L	8/17/2016	()F			4.2		F	#	0.0011	-
Manganese	0855-2	WL	mg/L	8/17/2016	()F			1.2		F	#	0.0011	-
Manganese	0855-3	WL	mg/L	8/17/2016	()F			1.7		F	#	0.0011	-
Manganese	0855-4	WL	mg/L	8/17/2016	()F			2.3		F	#	0.0011	-
Manganese	0856-2	WL	mg/L	8/16/2016	()F			0.57		F	#	0.0011	-
Manganese	0856-3	WL	mg/L	8/16/2016	()F			0.56		F	#	0.0011	-
Manganese	0856-4	WL	mg/L	8/16/2016	()D			3.4		F	#	0.0011	-
Manganese	0856-4	WL	mg/L	8/16/2016	()F			3.4		F	#	0.0011	-
Manganese	0857-3	WL	mg/L	8/17/2016	()F			2.2		F	#	0.0011	-
Manganese	0857-4	WL	mg/L	8/17/2016	()F			2.5		F	#	0.0011	-
Manganese	0858-2	WL	mg/L	8/16/2016	()F			1.2		F	#	0.0011	-
Manganese	0858-3	WL	mg/L	8/16/2016	()F			1.5		F	#	0.0011	-
Manganese	0858-4	WL	mg/L	8/16/2016	()F			1.6		F	#	0.0011	-
Manganese	0859-2	WL	mg/L	8/17/2016	(N)F			0.56		F	#	0.0011	-
Manganese	0859-3	WL	mg/L	8/17/2016	(N)F			1.5		F	#	0.0011	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Manganese	0859-4	WL	mg/L	8/17/2016	(N)F			2.1		F	#	0.0011	-
Manganese	0860-2	WL	mg/L	8/17/2016	(N)F			0.2		F	#	0.0011	-
Manganese	0860-3	WL	mg/L	8/17/2016	(N)F			1.6		F	#	0.0011	-
Manganese	0860-4	WL	mg/L	8/17/2016	(N)F			1.8		F	#	0.0011	-
Methylene chloride													
Methylene chloride	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Molybdenum													
Molybdenum	0705	WL	mg/L	8/18/2016	(F)F	SE	D	0.0026		FQ	#	0.00032	-
Molybdenum	0707	WL	mg/L	8/18/2016	()F	SF	D	1.5		F	#	0.00032	-
Molybdenum	0710	WL	mg/L	8/17/2016	(N)F	SF	U	0.0027		F	#	0.00032	-
Molybdenum	0716	WL	mg/L	8/17/2016	(N)F	SF	O	0.13		F	#	0.00032	-
Molybdenum	0717	WL	mg/L	8/17/2016	(N)F	SE	O	0.0093		F	#	0.00032	-
Molybdenum	0718	WL	mg/L	8/17/2016	(N)F	SF	D	0.099		F	#	0.00032	-
Molybdenum	0719	WL	mg/L	8/17/2016	(N)F	SE	D	0.01		FQ	#	0.00032	-
Molybdenum	0720	WL	mg/L	8/17/2016	(N)F	SF	C	0.0014	J	F	#	0.00032	-
Molybdenum	0721	WL	mg/L	8/17/2016	()D	SE	C	0.0025		F	#	0.00032	-
Molybdenum	0721	WL	mg/L	8/17/2016	(N)F	SE	C	0.0022		F	#	0.00032	-
Molybdenum	0722R	WL	mg/L	8/18/2016	(N)F	SF		0.08		F	#	0.00032	-
Molybdenum	0723	WL	mg/L	8/18/2016	(N)F	SE	D	0.00032	U	F	#	0.00032	-
Molybdenum	0727	WL	mg/L	8/17/2016	(N)F	SE	U	0.0038		F	#	0.00032	-
Molybdenum	0729	WL	mg/L	8/18/2016	(N)F	SF	D	0.0029		F	#	0.00032	-
Molybdenum	0730	WL	mg/L	8/18/2016	(N)F	SE	D	0.0041		FQ	#	0.00032	-
Molybdenum	0732	WL	mg/L	8/17/2016	(N)F	SE	U	0.028		F	#	0.00032	-
Molybdenum	0784	WL	mg/L	8/17/2016	(N)F	SF	U	0.025		F	#	0.00032	-
Molybdenum	0788	WL	mg/L	8/18/2016	()F	SF	C	0.022		F	#	0.00032	-
Molybdenum	0789	WL	mg/L	8/18/2016	()F	SF	D	0.67		F	#	0.00032	-
Molybdenum	0824	WL	mg/L	8/18/2016	(N)F	SF		0.0072		F	#	0.00032	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Molybdenum	0826	WL	mg/L	8/17/2016	()F	SF		0.041		F	#	0.00032	-
Molybdenum	0852-2	WL	mg/L	8/17/2016	()D			0.012		F	#	0.00032	-
Molybdenum	0852-2	WL	mg/L	8/17/2016	()F			0.011		F	#	0.00032	-
Molybdenum	0852-3	WL	mg/L	8/17/2016	()F			0.0095		F	#	0.00032	-
Molybdenum	0852-4	WL	mg/L	8/17/2016	()F			0.0098		F	#	0.00032	-
Molybdenum	0853-2	WL	mg/L	8/16/2016	()F			0.024		F	#	0.00032	-
Molybdenum	0853-3	WL	mg/L	8/16/2016	()F			0.018		F	#	0.00032	-
Molybdenum	0853-4	WL	mg/L	8/16/2016	()F			0.014		F	#	0.00032	-
Molybdenum	0854-2	WL	mg/L	8/17/2016	()F			0.053		F	#	0.00032	-
Molybdenum	0854-3	WL	mg/L	8/17/2016	()F			0.055		F	#	0.00032	-
Molybdenum	0854-4	WL	mg/L	8/17/2016	()F			0.055		F	#	0.00032	-
Molybdenum	0855-2	WL	mg/L	8/17/2016	()F			0.28		F	#	0.00032	-
Molybdenum	0855-3	WL	mg/L	8/17/2016	()F			0.32		F	#	0.00032	-
Molybdenum	0855-4	WL	mg/L	8/17/2016	()F			0.25		F	#	0.00032	-
Molybdenum	0856-2	WL	mg/L	8/16/2016	()F			0.51		F	#	0.00032	-
Molybdenum	0856-3	WL	mg/L	8/16/2016	()F			0.6		F	#	0.00032	-
Molybdenum	0856-4	WL	mg/L	8/16/2016	()D			0.85		F	#	0.00032	-
Molybdenum	0856-4	WL	mg/L	8/16/2016	()F			0.83		F	#	0.00032	-
Molybdenum	0857-3	WL	mg/L	8/17/2016	()F			0.67		F	#	0.00032	-
Molybdenum	0857-4	WL	mg/L	8/17/2016	()F			0.61		F	#	0.00032	-
Molybdenum	0858-2	WL	mg/L	8/16/2016	()F			1.4		F	#	0.00032	-
Molybdenum	0858-3	WL	mg/L	8/16/2016	()F			1.4		F	#	0.00032	-
Molybdenum	0858-4	WL	mg/L	8/16/2016	()F			1.4		F	#	0.00032	-
Molybdenum	0859-2	WL	mg/L	8/17/2016	(N)F			0.068		F	#	0.00032	-
Molybdenum	0859-3	WL	mg/L	8/17/2016	(N)F			0.079		F	#	0.00032	-
Molybdenum	0859-4	WL	mg/L	8/17/2016	(N)F			0.097		F	#	0.00032	-
Molybdenum	0860-2	WL	mg/L	8/17/2016	(N)F			0.35		F	#	0.00032	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Molybdenum	0860-3	WL	mg/L	8/17/2016	(N)F			0.29		F	#	0.00032	-
Molybdenum	0860-4	WL	mg/L	8/17/2016	(N)F			0.29		F	#	0.00032	-
Naphthalene													
Naphthalene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Naphthalene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
n-Butylbenzene													
n-Butylbenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Nitrobenzene													
Nitrobenzene	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
N-Nitrosodi-n-propylamine													
N-Nitrosodi-n-propylamine	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
n-Propylbenzene													
n-Propylbenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Oxidation Reduction Potential													
Oxidation Reduction Potential	0705	WL	mV	8/18/2016	(F)F	SE	D	122.4		FQ	#	-	-
Oxidation Reduction Potential	0707	WL	mV	8/18/2016	()F	SF	D	49.6		F	#	-	-
Oxidation Reduction Potential	0710	WL	mV	8/17/2016	(N)F	SF	U	209.0		F	#	-	-
Oxidation Reduction Potential	0716	WL	mV	8/17/2016	(N)F	SF	O	2.8		F	#	-	-
Oxidation Reduction Potential	0717	WL	mV	8/17/2016	(N)F	SE	O	-125.6		F	#	-	-
Oxidation Reduction Potential	0718	WL	mV	8/17/2016	(N)F	SF	D	30.1		F	#	-	-
Oxidation Reduction Potential	0719	WL	mV	8/17/2016	(N)F	SE	D	-106.4		FQ	#	-	-
Oxidation Reduction Potential	0720	WL	mV	8/17/2016	(N)F	SF	C	52.2		F	#	-	-
Oxidation Reduction Potential	0721	WL	mV	8/17/2016	(N)F	SE	C	-85.5		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Oxidation Reduction Potential	0722R	WL	mV	8/18/2016	(N)F	SF		37.4		F	#	-	-
Oxidation Reduction Potential	0723	WL	mV	8/18/2016	(N)F	SE	D	-59.8		F	#	-	-
Oxidation Reduction Potential	0727	WL	mV	8/17/2016	(N)F	SE	U	154.6		F	#	-	-
Oxidation Reduction Potential	0729	WL	mV	8/18/2016	(N)F	SF	D	67.2		F	#	-	-
Oxidation Reduction Potential	0730	WL	mV	8/18/2016	(N)F	SE	D	-46.6		FQ	#	-	-
Oxidation Reduction Potential	0732	WL	mV	8/17/2016	(N)F	SE	U	-6.0		F	#	-	-
Oxidation Reduction Potential	0784	WL	mV	8/17/2016	(N)F	SF	U	-26.7		F	#	-	-
Oxidation Reduction Potential	0788	WL	mV	8/18/2016	()F	SF	C	211.1		F	#	-	-
Oxidation Reduction Potential	0789	WL	mV	8/18/2016	()F	SF	D	97.1		F	#	-	-
Oxidation Reduction Potential	0824	WL	mV	8/18/2016	(N)F	SF		-48.8		F	#	-	-
Oxidation Reduction Potential	0826	WL	mV	8/17/2016	()F	SF		79.8		F	#	-	-
Oxidation Reduction Potential	0852-2	WL	mV	8/17/2016	()F			173.5		F	#	-	-
Oxidation Reduction Potential	0852-3	WL	mV	8/17/2016	()F			182.4		F	#	-	-
Oxidation Reduction Potential	0852-4	WL	mV	8/17/2016	()F			178.0		F	#	-	-
Oxidation Reduction Potential	0853-2	WL	mV	8/16/2016	()F			-32.4		F	#	-	-
Oxidation Reduction Potential	0853-3	WL	mV	8/16/2016	()F			-5.2		F	#	-	-
Oxidation Reduction Potential	0853-4	WL	mV	8/16/2016	()F			-81.8		F	#	-	-
Oxidation Reduction Potential	0854-2	WL	mV	8/17/2016	()F			-15.9		F	#	-	-
Oxidation Reduction Potential	0854-3	WL	mV	8/17/2016	()F			15.5		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Oxidation Reduction Potential	0854-4	WL	mV	8/17/2016	()F			-77.9		F	#	-	-
Oxidation Reduction Potential	0855-2	WL	mV	8/17/2016	()F			-40.1		F	#	-	-
Oxidation Reduction Potential	0855-3	WL	mV	8/17/2016	()F			34.3		F	#	-	-
Oxidation Reduction Potential	0855-4	WL	mV	8/17/2016	()F			-37.8		F	#	-	-
Oxidation Reduction Potential	0856-2	WL	mV	8/16/2016	()F			25.3		F	#	-	-
Oxidation Reduction Potential	0856-3	WL	mV	8/16/2016	()F			59.4		F	#	-	-
Oxidation Reduction Potential	0856-4	WL	mV	8/16/2016	()F			52.7		F	#	-	-
Oxidation Reduction Potential	0857-3	WL	mV	8/17/2016	()F			30.1		F	#	-	-
Oxidation Reduction Potential	0857-4	WL	mV	8/17/2016	()F			-51.3		F	#	-	-
Oxidation Reduction Potential	0858-2	WL	mV	8/16/2016	()F			38.1		F	#	-	-
Oxidation Reduction Potential	0858-3	WL	mV	8/16/2016	()F			53.2		F	#	-	-
Oxidation Reduction Potential	0858-4	WL	mV	8/16/2016	()F			41.6		F	#	-	-
Oxidation Reduction Potential	0859-2	WL	mV	8/17/2016	(N)F			-42.9		F	#	-	-
Oxidation Reduction Potential	0859-3	WL	mV	8/17/2016	(N)F			-58.8		F	#	-	-
Oxidation Reduction Potential	0859-4	WL	mV	8/17/2016	(N)F			-66.1		F	#	-	-
Oxidation Reduction Potential	0860-2	WL	mV	8/17/2016	(N)F			-57.7		F	#	-	-
Oxidation Reduction Potential	0860-3	WL	mV	8/17/2016	(N)F			-108.6		F	#	-	-
Oxidation Reduction Potential	0860-4	WL	mV	8/17/2016	(N)F			-11.5		F	#	-	-
Pentachlorophenol													
Pentachlorophenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
pH													
pH	0705	WL	s.u.	8/18/2016	(F)F	SE	D	7.83		FQ	#	-	-
pH	0707	WL	s.u.	8/18/2016	()F	SF	D	6.78		F	#	-	-
pH	0710	WL	s.u.	8/17/2016	(N)F	SF	U	7.00		F	#	-	-
pH	0716	WL	s.u.	8/17/2016	(N)F	SF	O	7.10		F	#	-	-
pH	0717	WL	s.u.	8/17/2016	(N)F	SE	O	7.76		F	#	-	-
pH	0718	WL	s.u.	8/17/2016	(N)F	SF	D	7.01		F	#	-	-
pH	0719	WL	s.u.	8/17/2016	(N)F	SE	D	7.70		FQ	#	-	-
pH	0720	WL	s.u.	8/17/2016	(N)F	SF	C	7.20		F	#	-	-
pH	0721	WL	s.u.	8/17/2016	(N)F	SE	C	8.76		F	#	-	-
pH	0722R	WL	s.u.	8/18/2016	(N)F	SF		6.93		F	#	-	-
pH	0723	WL	s.u.	8/18/2016	(N)F	SE	D	7.08		F	#	-	-
pH	0727	WL	s.u.	8/17/2016	(N)F	SE	U	7.78		F	#	-	-
pH	0729	WL	s.u.	8/18/2016	(N)F	SF	D	6.89		F	#	-	-
pH	0730	WL	s.u.	8/18/2016	(N)F	SE	D	7.14		FQ	#	-	-
pH	0732	WL	s.u.	8/17/2016	(N)F	SE	U	7.12		F	#	-	-
pH	0784	WL	s.u.	8/17/2016	(N)F	SF	U	7.24		F	#	-	-
pH	0788	WL	s.u.	8/18/2016	()F	SF	C	6.96		F	#	-	-
pH	0789	WL	s.u.	8/18/2016	()F	SF	D	6.94		F	#	-	-
pH	0824	WL	s.u.	8/18/2016	(N)F	SF		6.71		F	#	-	-
pH	0826	WL	s.u.	8/17/2016	()F	SF		6.92		F	#	-	-
pH	0852-2	WL	s.u.	8/17/2016	()F			7.11		F	#	-	-
pH	0852-3	WL	s.u.	8/17/2016	()F			7.12		F	#	-	-
pH	0852-4	WL	s.u.	8/17/2016	()F			7.10		F	#	-	-
pH	0853-2	WL	s.u.	8/16/2016	()F			6.90		F	#	-	-
pH	0853-3	WL	s.u.	8/16/2016	()F			6.91		F	#	-	-
pH	0853-4	WL	s.u.	8/16/2016	()F			7.03		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
pH	0854-2	WL	s.u.	8/17/2016	()F			6.85		F	#	-	-
pH	0854-3	WL	s.u.	8/17/2016	()F			6.93		F	#	-	-
pH	0854-4	WL	s.u.	8/17/2016	()F			6.93		F	#	-	-
pH	0855-2	WL	s.u.	8/17/2016	()F			6.91		F	#	-	-
pH	0855-3	WL	s.u.	8/17/2016	()F			6.90		F	#	-	-
pH	0855-4	WL	s.u.	8/17/2016	()F			6.86		F	#	-	-
pH	0856-2	WL	s.u.	8/16/2016	()F			6.90		F	#	-	-
pH	0856-3	WL	s.u.	8/16/2016	()F			6.93		F	#	-	-
pH	0856-4	WL	s.u.	8/16/2016	()F			6.82		F	#	-	-
pH	0857-3	WL	s.u.	8/17/2016	()F			6.88		F	#	-	-
pH	0857-4	WL	s.u.	8/17/2016	()F			6.84		F	#	-	-
pH	0858-2	WL	s.u.	8/16/2016	()F			6.80		F	#	-	-
pH	0858-3	WL	s.u.	8/16/2016	()F			6.79		F	#	-	-
pH	0858-4	WL	s.u.	8/16/2016	()F			6.76		F	#	-	-
pH	0859-2	WL	s.u.	8/17/2016	(N)F			6.93		F	#	-	-
pH	0859-3	WL	s.u.	8/17/2016	(N)F			6.87		F	#	-	-
pH	0859-4	WL	s.u.	8/17/2016	(N)F			6.85		F	#	-	-
pH	0860-2	WL	s.u.	8/17/2016	(N)F			7.05		F	#	-	-
pH	0860-3	WL	s.u.	8/17/2016	(N)F			6.93		F	#	-	-
pH	0860-4	WL	s.u.	8/17/2016	(N)F			6.94		F	#	-	-
Phenanthrene													
Phenanthrene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
Phenol													
Phenol	0859-4	WL	ug/L	8/17/2016	(N)F			3.00	U	F	#	3	-
p-Isopropyltoluene													
p-Isopropyltoluene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Potassium													
Potassium	0705	WL	mg/L	8/18/2016	(F)F	SE	D	1.9		FQ	#	0.11	-
Potassium	0707	WL	mg/L	8/18/2016	()F	SF	D	26		F	#	1.1	-
Potassium	0710	WL	mg/L	8/17/2016	(N)F	SF	U	3.6		F	#	0.11	-
Potassium	0716	WL	mg/L	8/17/2016	(N)F	SF	O	7.8		F	#	0.11	-
Potassium	0717	WL	mg/L	8/17/2016	(N)F	SE	O	1.6		F	#	0.11	-
Potassium	0718	WL	mg/L	8/17/2016	(N)F	SF	D	21		F	#	0.54	-
Potassium	0719	WL	mg/L	8/17/2016	(N)F	SE	D	1.8		FQ	#	0.11	-
Potassium	0720	WL	mg/L	8/17/2016	(N)F	SF	C	3.3		F	#	0.11	-
Potassium	0721	WL	mg/L	8/17/2016	()D	SE	C	0.57	J	F	#	0.11	-
Potassium	0721	WL	mg/L	8/17/2016	(N)F	SE	C	0.58	J	F	#	0.11	-
Potassium	0722R	WL	mg/L	8/18/2016	(N)F	SF		9.5		F	#	0.11	-
Potassium	0723	WL	mg/L	8/18/2016	(N)F	SE	D	3	J	F	#	0.54	-
Potassium	0727	WL	mg/L	8/17/2016	(N)F	SE	U	1.3		F	#	0.11	-
Potassium	0729	WL	mg/L	8/18/2016	(N)F	SF	D	7.9		F	#	0.11	-
Potassium	0730	WL	mg/L	8/18/2016	(N)F	SE	D	2.7		FQ	#	0.11	-
Potassium	0732	WL	mg/L	8/17/2016	(N)F	SE	U	2.8	J	F	#	0.54	-
Potassium	0784	WL	mg/L	8/17/2016	(N)F	SF	U	8.5		F	#	0.54	-
Potassium	0788	WL	mg/L	8/18/2016	()F	SF	C	13		F	#	0.54	-
Potassium	0789	WL	mg/L	8/18/2016	()F	SF	D	45		F	#	0.54	-
Potassium	0824	WL	mg/L	8/18/2016	(N)F	SF		7.5		F	#	0.11	-
Potassium	0826	WL	mg/L	8/17/2016	()F	SF		16		F	#	0.54	-
Potassium	0852-2	WL	mg/L	8/17/2016	()D			12		F	#	0.54	-
Potassium	0852-2	WL	mg/L	8/17/2016	()F			12		F	#	0.54	-
Potassium	0852-3	WL	mg/L	8/17/2016	()F			9.4		F	#	0.54	-
Potassium	0852-4	WL	mg/L	8/17/2016	()F			9.5		F	#	0.54	-
Potassium	0853-2	WL	mg/L	8/16/2016	()F			13		F	#	0.54	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Potassium	0853-3	WL	mg/L	8/16/2016	()F			12		F	#	0.54	-
Potassium	0853-4	WL	mg/L	8/16/2016	()F			11		F	#	0.54	-
Potassium	0854-2	WL	mg/L	8/17/2016	()F			18		F	#	1.1	-
Potassium	0854-3	WL	mg/L	8/17/2016	()F			17		F	#	1.1	-
Potassium	0854-4	WL	mg/L	8/17/2016	()F			18		F	#	1.1	-
Potassium	0855-2	WL	mg/L	8/17/2016	()F			30		F	#	1.1	-
Potassium	0855-3	WL	mg/L	8/17/2016	()F			31		F	#	1.1	-
Potassium	0855-4	WL	mg/L	8/17/2016	()F			21		F	#	1.1	-
Potassium	0856-2	WL	mg/L	8/16/2016	()F			36		F	#	1.1	-
Potassium	0856-3	WL	mg/L	8/16/2016	()F			40		F	#	1.1	-
Potassium	0856-4	WL	mg/L	8/16/2016	()D			52		F	#	1.1	-
Potassium	0856-4	WL	mg/L	8/16/2016	()F			53		F	#	1.1	-
Potassium	0857-3	WL	mg/L	8/17/2016	()F			34		F	#	1.1	-
Potassium	0857-4	WL	mg/L	8/17/2016	()F			29		F	#	1.1	-
Potassium	0858-2	WL	mg/L	8/16/2016	()F			24		F	#	1.1	-
Potassium	0858-3	WL	mg/L	8/16/2016	()F			24		F	#	1.1	-
Potassium	0858-4	WL	mg/L	8/16/2016	()F			24		F	#	1.1	-
Potassium	0859-2	WL	mg/L	8/17/2016	(N)F			13		F	#	1.1	-
Potassium	0859-3	WL	mg/L	8/17/2016	(N)F			14		F	#	1.1	-
Potassium	0859-4	WL	mg/L	8/17/2016	(N)F			17		F	#	1.1	-
Potassium	0860-2	WL	mg/L	8/17/2016	(N)F			21		F	#	1.1	-
Potassium	0860-3	WL	mg/L	8/17/2016	(N)F			13		F	#	1.1	-
Potassium	0860-4	WL	mg/L	8/17/2016	(N)F			12		F	#	1.1	-
Pyrene													
Pyrene	0859-4	WL	ug/L	8/17/2016	(N)F			0.300	U	F	#	0.3	-
sec-Butylbenzene													
sec-Butylbenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Sodium													
Sodium	0705	WL	mg/L	8/18/2016	(F)F	SE	D	200		FQ	#	0.066	-
Sodium	0707	WL	mg/L	8/18/2016	()F	SF	D	1200		F	#	0.066	-
Sodium	0710	WL	mg/L	8/17/2016	(N)F	SF	U	69		F	#	0.0066	-
Sodium	0716	WL	mg/L	8/17/2016	(N)F	SF	O	180		F	#	0.066	-
Sodium	0717	WL	mg/L	8/17/2016	(N)F	SE	O	320		F	#	0.066	-
Sodium	0718	WL	mg/L	8/17/2016	(N)F	SF	D	930		F	#	0.33	-
Sodium	0719	WL	mg/L	8/17/2016	(N)F	SE	D	180		FQ	#	0.066	-
Sodium	0720	WL	mg/L	8/17/2016	(N)F	SF	C	37		F	#	0.0066	-
Sodium	0721	WL	mg/L	8/17/2016	()D	SE	C	170		F	#	0.066	-
Sodium	0721	WL	mg/L	8/17/2016	(N)F	SE	C	170		F	#	0.066	-
Sodium	0722R	WL	mg/L	8/18/2016	(N)F	SF		120		F	#	0.0066	-
Sodium	0723	WL	mg/L	8/18/2016	(N)F	SE	D	610		F	#	0.033	-
Sodium	0727	WL	mg/L	8/17/2016	(N)F	SE	U	67		F	#	0.0066	-
Sodium	0729	WL	mg/L	8/18/2016	(N)F	SF	D	28		F	#	0.0066	-
Sodium	0730	WL	mg/L	8/18/2016	(N)F	SE	D	95		FQ	#	0.0066	-
Sodium	0732	WL	mg/L	8/17/2016	(N)F	SE	U	270		F	#	0.033	-
Sodium	0784	WL	mg/L	8/17/2016	(N)F	SF	U	480		F	#	0.033	-
Sodium	0788	WL	mg/L	8/18/2016	()F	SF	C	700		F	#	0.033	-
Sodium	0789	WL	mg/L	8/18/2016	()F	SF	D	3200		F	#	0.33	-
Sodium	0824	WL	mg/L	8/18/2016	(N)F	SF		71		F	#	0.0066	-
Sodium	0826	WL	mg/L	8/17/2016	()F	SF		800		F	#	0.33	-
Sodium	0852-2	WL	mg/L	8/17/2016	()D			570		F	#	0.033	-
Sodium	0852-2	WL	mg/L	8/17/2016	()F			580		F	#	0.033	-
Sodium	0852-3	WL	mg/L	8/17/2016	()F			460		F	#	0.033	-
Sodium	0852-4	WL	mg/L	8/17/2016	()F			460		F	#	0.033	-
Sodium	0853-2	WL	mg/L	8/16/2016	()F			820		F	#	0.33	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Sodium	0853-3	WL	mg/L	8/16/2016	()F			610		F	#	0.033	-
Sodium	0853-4	WL	mg/L	8/16/2016	()F			550		F	#	0.033	-
Sodium	0854-2	WL	mg/L	8/17/2016	()F			1000		F	#	0.066	-
Sodium	0854-3	WL	mg/L	8/17/2016	()F			1000		F	#	0.066	-
Sodium	0854-4	WL	mg/L	8/17/2016	()F			960		F	#	0.066	-
Sodium	0855-2	WL	mg/L	8/17/2016	()F			2400		F	#	0.66	-
Sodium	0855-3	WL	mg/L	8/17/2016	()F			2400		F	#	0.66	-
Sodium	0855-4	WL	mg/L	8/17/2016	()F			1700		F	#	0.66	-
Sodium	0856-2	WL	mg/L	8/16/2016	()F			2300		F	#	0.66	-
Sodium	0856-3	WL	mg/L	8/16/2016	()F			2700		F	#	0.66	-
Sodium	0856-4	WL	mg/L	8/16/2016	()D			3900		F	#	0.66	-
Sodium	0856-4	WL	mg/L	8/16/2016	()F			4000		F	#	0.66	-
Sodium	0857-3	WL	mg/L	8/17/2016	()F			1800		F	#	0.66	-
Sodium	0857-4	WL	mg/L	8/17/2016	()F			1500		F	#	0.066	-
Sodium	0858-2	WL	mg/L	8/16/2016	()F			1200		F	#	0.066	-
Sodium	0858-3	WL	mg/L	8/16/2016	()F			1200		F	#	0.066	-
Sodium	0858-4	WL	mg/L	8/16/2016	()F			1200		F	#	0.066	-
Sodium	0859-2	WL	mg/L	8/17/2016	(N)F			900		F	#	0.066	-
Sodium	0859-3	WL	mg/L	8/17/2016	(N)F			1000		F	#	0.066	-
Sodium	0859-4	WL	mg/L	8/17/2016	(N)F			1200		F	#	0.066	-
Sodium	0860-2	WL	mg/L	8/17/2016	(N)F			570		F	#	0.066	-
Sodium	0860-3	WL	mg/L	8/17/2016	(N)F			600		F	#	0.066	-
Sodium	0860-4	WL	mg/L	8/17/2016	(N)F			600		F	#	0.066	-
Specific Conductance													
Specific Conductance	0705	WL	umhos/cm	8/18/2016	(F)F	SE	D	1095		FQ	#	-	-
Specific Conductance	0707	WL	umhos/cm	8/18/2016	()F	SF	D	8095		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Specific Conductance	0710	WL	umhos/cm	8/17/2016	(N)F	SF	U	1025		F	#	-	-
Specific Conductance	0716	WL	umhos/cm	8/17/2016	(N)F	SF	O	1643		F	#	-	-
Specific Conductance	0717	WL	umhos/cm	8/17/2016	(N)F	SE	O	1853		F	#	-	-
Specific Conductance	0718	WL	umhos/cm	8/17/2016	(N)F	SF	D	5758		F	#	-	-
Specific Conductance	0719	WL	umhos/cm	8/17/2016	(N)F	SE	D	1227		FQ	#	-	-
Specific Conductance	0720	WL	umhos/cm	8/17/2016	(N)F	SF	C	762		F	#	-	-
Specific Conductance	0721	WL	umhos/cm	8/17/2016	(N)F	SE	C	865		F	#	-	-
Specific Conductance	0722R	WL	umhos/cm	8/18/2016	(N)F	SF		1676		F	#	-	-
Specific Conductance	0723	WL	umhos/cm	8/18/2016	(N)F	SE	D	3765		F	#	-	-
Specific Conductance	0727	WL	umhos/cm	8/17/2016	(N)F	SE	U	621		F	#	-	-
Specific Conductance	0729	WL	umhos/cm	8/18/2016	(N)F	SF	D	704		F	#	-	-
Specific Conductance	0730	WL	umhos/cm	8/18/2016	(N)F	SE	D	870		FQ	#	-	-
Specific Conductance	0732	WL	umhos/cm	8/17/2016	(N)F	SE	U	2981		F	#	-	-
Specific Conductance	0784	WL	umhos/cm	8/17/2016	(N)F	SF	U	3148		F	#	-	-
Specific Conductance	0788	WL	umhos/cm	8/18/2016	()F	SF	C	4586		F	#	-	-
Specific Conductance	0789	WL	umhos/cm	8/18/2016	()F	SF	D	14196		F	#	-	-
Specific Conductance	0824	WL	umhos/cm	8/18/2016	(N)F	SF		934		F	#	-	-
Specific Conductance	0826	WL	umhos/cm	8/17/2016	()F	SF		4985		F	#	-	-
Specific Conductance	0852-2	WL	umhos/cm	8/17/2016	()F			4085		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Specific Conductance	0852-3	WL	umhos/cm	8/17/2016	()F			3546		F	#	-	-
Specific Conductance	0852-4	WL	umhos/cm	8/17/2016	()F			3510		F	#	-	-
Specific Conductance	0853-2	WL	umhos/cm	8/16/2016	()F			4993		F	#	-	-
Specific Conductance	0853-3	WL	umhos/cm	8/16/2016	()F			4376		F	#	-	-
Specific Conductance	0853-4	WL	umhos/cm	8/16/2016	()F			4087		F	#	-	-
Specific Conductance	0854-2	WL	umhos/cm	8/17/2016	()F			6345		F	#	-	-
Specific Conductance	0854-3	WL	umhos/cm	8/17/2016	()F			6268		F	#	-	-
Specific Conductance	0854-4	WL	umhos/cm	8/17/2016	()F			6210		F	#	-	-
Specific Conductance	0855-2	WL	umhos/cm	8/17/2016	()F			11710		F	#	-	-
Specific Conductance	0855-3	WL	umhos/cm	8/17/2016	()F			11801		F	#	-	-
Specific Conductance	0855-4	WL	umhos/cm	8/17/2016	()F			8888		F	#	-	-
Specific Conductance	0856-2	WL	umhos/cm	8/16/2016	()F			10623		F	#	-	-
Specific Conductance	0856-3	WL	umhos/cm	8/16/2016	()F			11814		F	#	-	-
Specific Conductance	0856-4	WL	umhos/cm	8/16/2016	()F			17581		F	#	-	-
Specific Conductance	0857-3	WL	umhos/cm	8/17/2016	()F			9498		F	#	-	-
Specific Conductance	0857-4	WL	umhos/cm	8/17/2016	()F			8537		F	#	-	-
Specific Conductance	0858-2	WL	umhos/cm	8/16/2016	()F			7410		F	#	-	-
Specific Conductance	0858-3	WL	umhos/cm	8/16/2016	()F			7644		F	#	-	-
Specific Conductance	0858-4	WL	umhos/cm	8/16/2016	()F			7649		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Specific Conductance	0859-2	WL	umhos/cm	8/17/2016	(N)F			5495		F	#	-	-
Specific Conductance	0859-3	WL	umhos/cm	8/17/2016	(N)F			5842		F	#	-	-
Specific Conductance	0859-4	WL	umhos/cm	8/17/2016	(N)F			7300		F	#	-	-
Specific Conductance	0860-2	WL	umhos/cm	8/17/2016	(N)F			4322		F	#	-	-
Specific Conductance	0860-3	WL	umhos/cm	8/17/2016	(N)F			4235		F	#	-	-
Specific Conductance	0860-4	WL	umhos/cm	8/17/2016	(N)F			4161		F	#	-	-
Styrene													
Styrene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Sulfate													
Sulfate	0705	WL	mg/L	8/18/2016	(F)F	SE	D	430		FQ	#	2.4	-
Sulfate	0707	WL	mg/L	8/18/2016	()F	SF	D	5800		F	#	30	-
Sulfate	0710	WL	mg/L	8/17/2016	(N)F	SF	U	280		F	#	1.5	-
Sulfate	0716	WL	mg/L	8/17/2016	(N)F	SF	O	600		F	#	3	-
Sulfate	0717	WL	mg/L	8/17/2016	(N)F	SE	O	750		F	#	3.8	-
Sulfate	0718	WL	mg/L	8/17/2016	(N)F	SF	D	3600		F	#	15	-
Sulfate	0719	WL	mg/L	8/17/2016	(N)F	SE	D	500		FQ	#	3	-
Sulfate	0720	WL	mg/L	8/17/2016	(N)F	SF	C	170		F	#	1.2	-
Sulfate	0721	WL	mg/L	8/17/2016	()D	SE	C	380		FJ	#	1.5	-
Sulfate	0721	WL	mg/L	8/17/2016	(N)F	SE	C	310		FJ	#	1.2	-
Sulfate	0722R	WL	mg/L	8/18/2016	(N)F	SF		690		F	#	3	-
Sulfate	0723	WL	mg/L	8/18/2016	(N)F	SE	D	1900		F	#	12	-
Sulfate	0727	WL	mg/L	8/17/2016	(N)F	SE	U	150		F	#	0.6	-
Sulfate	0729	WL	mg/L	8/18/2016	(N)F	SF	D	68		F	#	0.3	-
Sulfate	0730	WL	mg/L	8/18/2016	(N)F	SE	D	140		FQ	#	0.6	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:23 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Sulfate	0732	WL	mg/L	8/17/2016	(N)F	SE	U	1800		F	#	12	-
Sulfate	0784	WL	mg/L	8/17/2016	(N)F	SF	U	1800		F	#	12	-
Sulfate	0788	WL	mg/L	8/18/2016	()F	SF	C	2800		F	#	15	-
Sulfate	0789	WL	mg/L	8/18/2016	()F	SF	D	11000		F	#	60	-
Sulfate	0824	WL	mg/L	8/18/2016	(N)F	SF		180		F	#	1.5	-
Sulfate	0826	WL	mg/L	8/17/2016	()F	SF		3400		F	#	15	-
Sulfate	0852-2	WL	mg/L	8/17/2016	()D			1700		FJ	#	12	-
Sulfate	0852-2	WL	mg/L	8/17/2016	()F			2300		FJ	#	12	-
Sulfate	0852-3	WL	mg/L	8/17/2016	()F			1900		F	#	12	-
Sulfate	0852-4	WL	mg/L	8/17/2016	()F			2000		F	#	6	-
Sulfate	0853-2	WL	mg/L	8/16/2016	()F			3300		F	#	15	-
Sulfate	0853-3	WL	mg/L	8/16/2016	()F			2800		F	#	15	-
Sulfate	0853-4	WL	mg/L	8/16/2016	()F			2700		F	#	15	-
Sulfate	0854-2	WL	mg/L	8/17/2016	()F			4500		F	#	30	-
Sulfate	0854-3	WL	mg/L	8/17/2016	()F			4700		F	#	30	-
Sulfate	0854-4	WL	mg/L	8/17/2016	()F			4700		F	#	30	-
Sulfate	0855-2	WL	mg/L	8/17/2016	()F			8800		F	#	38	-
Sulfate	0855-3	WL	mg/L	8/17/2016	()F			9300		F	#	38	-
Sulfate	0855-4	WL	mg/L	8/17/2016	()F			6600		F	#	30	-
Sulfate	0856-2	WL	mg/L	8/16/2016	()F			7900		F	#	38	-
Sulfate	0856-3	WL	mg/L	8/16/2016	()F			9000		F	#	38	-
Sulfate	0856-4	WL	mg/L	8/16/2016	()D			13000		F	#	60	-
Sulfate	0856-4	WL	mg/L	8/16/2016	()F			14000		F	#	60	-
Sulfate	0857-3	WL	mg/L	8/17/2016	()F			7800		F	#	30	-
Sulfate	0857-4	WL	mg/L	8/17/2016	()F			6800		F	#	30	-
Sulfate	0858-2	WL	mg/L	8/16/2016	()F			5600		F	#	30	-
Sulfate	0858-3	WL	mg/L	8/16/2016	()F			5900		F	#	30	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:24 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Sulfate	0858-4	WL	mg/L	8/16/2016	()F			5900		F	#	30	-
Sulfate	0859-2	WL	mg/L	8/17/2016	(N)F			3600		F	#	15	-
Sulfate	0859-3	WL	mg/L	8/17/2016	(N)F			4000		F	#	15	-
Sulfate	0859-4	WL	mg/L	8/17/2016	(N)F			4800		F	#	15	-
Sulfate	0860-2	WL	mg/L	8/17/2016	(N)F			2900		F	#	15	-
Sulfate	0860-3	WL	mg/L	8/17/2016	(N)F			2700		F	#	15	-
Sulfate	0860-4	WL	mg/L	8/17/2016	(N)F			2600		F	#	15	-
Temperature													
Temperature	0705	WL	C	8/18/2016	(F)F	SE	D	11.12		FQ	#	-	-
Temperature	0707	WL	C	8/18/2016	()F	SF	D	13.20		F	#	-	-
Temperature	0710	WL	C	8/17/2016	(N)F	SF	U	11.17		F	#	-	-
Temperature	0716	WL	C	8/17/2016	(N)F	SF	O	15.26		F	#	-	-
Temperature	0717	WL	C	8/17/2016	(N)F	SE	O	12.95		F	#	-	-
Temperature	0718	WL	C	8/17/2016	(N)F	SF	D	15.78		F	#	-	-
Temperature	0719	WL	C	8/17/2016	(N)F	SE	D	14.32		FQ	#	-	-
Temperature	0720	WL	C	8/17/2016	(N)F	SF	C	13.57		F	#	-	-
Temperature	0721	WL	C	8/17/2016	(N)F	SE	C	12.86		F	#	-	-
Temperature	0722R	WL	C	8/18/2016	(N)F	SF		16.08		F	#	-	-
Temperature	0723	WL	C	8/18/2016	(N)F	SE	D	14.15		F	#	-	-
Temperature	0727	WL	C	8/17/2016	(N)F	SE	U	14.63		F	#	-	-
Temperature	0729	WL	C	8/18/2016	(N)F	SF	D	17.14		F	#	-	-
Temperature	0730	WL	C	8/18/2016	(N)F	SE	D	16.53		FQ	#	-	-
Temperature	0732	WL	C	8/17/2016	(N)F	SE	U	14.06		F	#	-	-
Temperature	0784	WL	C	8/17/2016	(N)F	SF	U	19.26		F	#	-	-
Temperature	0788	WL	C	8/18/2016	()F	SF	C	13.03		F	#	-	-
Temperature	0789	WL	C	8/18/2016	()F	SF	D	13.52		F	#	-	-
Temperature	0824	WL	C	8/18/2016	(N)F	SF		14.28		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:24 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Temperature	0826	WL	C	8/17/2016	()F	SF		12.20		F	#	-	-
Temperature	0852-2	WL	C	8/17/2016	()F			12.04		F	#	-	-
Temperature	0852-3	WL	C	8/17/2016	()F			12.93		F	#	-	-
Temperature	0852-4	WL	C	8/17/2016	()F			11.16		F	#	-	-
Temperature	0853-2	WL	C	8/16/2016	()F			14.66		F	#	-	-
Temperature	0853-3	WL	C	8/16/2016	()F			14.51		F	#	-	-
Temperature	0853-4	WL	C	8/16/2016	()F			13.02		F	#	-	-
Temperature	0854-2	WL	C	8/17/2016	()F			14.51		F	#	-	-
Temperature	0854-3	WL	C	8/17/2016	()F			13.85		F	#	-	-
Temperature	0854-4	WL	C	8/17/2016	()F			12.72		F	#	-	-
Temperature	0855-2	WL	C	8/17/2016	()F			14.19		F	#	-	-
Temperature	0855-3	WL	C	8/17/2016	()F			13.96		F	#	-	-
Temperature	0855-4	WL	C	8/17/2016	()F			11.27		F	#	-	-
Temperature	0856-2	WL	C	8/16/2016	()F			17.28		F	#	-	-
Temperature	0856-3	WL	C	8/16/2016	()F			16.22		F	#	-	-
Temperature	0856-4	WL	C	8/16/2016	()F			15.69		F	#	-	-
Temperature	0857-3	WL	C	8/17/2016	()F			18.16		F	#	-	-
Temperature	0857-4	WL	C	8/17/2016	()F			16.33		F	#	-	-
Temperature	0858-2	WL	C	8/16/2016	()F			13.60		F	#	-	-
Temperature	0858-3	WL	C	8/16/2016	()F			13.67		F	#	-	-
Temperature	0858-4	WL	C	8/16/2016	()F			10.78		F	#	-	-
Temperature	0859-2	WL	C	8/17/2016	(N)F			19.08		F	#	-	-
Temperature	0859-3	WL	C	8/17/2016	(N)F			18.5		F	#	-	-
Temperature	0859-4	WL	C	8/17/2016	(N)F			17.00		F	#	-	-
Temperature	0860-2	WL	C	8/17/2016	(N)F			18.18		F	#	-	-
Temperature	0860-3	WL	C	8/17/2016	(N)F			16.61		F	#	-	-
Temperature	0860-4	WL	C	8/17/2016	(N)F			15.09		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:24 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
tert-Butylbenzene													
tert-Butylbenzene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Tetrachloroethene													
Tetrachloroethene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Toluene													
Toluene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Total Xylenes													
Total Xylenes	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
trans-1,2-Dichloroethene													
trans-1,2-Dichloroethene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
trans-1,3-dichloropropene													
trans-1,3-dichloropropene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Trichloroethene													
Trichloroethene	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Trichlorofluoromethane													
Trichlorofluoromethane	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-
Tritium													
Tritium	0784	WL	pCi/L	8/17/2016	(N)F	SF	U	5.31		J	#	2.91	± 2.37
Turbidity													
Turbidity	0705	WL	NTU	8/18/2016	(F)F	SE	D	19.9		FQ	#	-	-
Turbidity	0707	WL	NTU	8/18/2016	()F	SF	D	6.33		F	#	-	-
Turbidity	0710	WL	NTU	8/17/2016	(N)F	SF	U	1.71		F	#	-	-
Turbidity	0716	WL	NTU	8/17/2016	(N)F	SF	O	1.69		F	#	-	-
Turbidity	0717	WL	NTU	8/17/2016	(N)F	SE	O	0.29		F	#	-	-
Turbidity	0718	WL	NTU	8/17/2016	(N)F	SF	D	1.10		F	#	-	-
Turbidity	0719	WL	NTU	8/17/2016	(N)F	SE	D	4.59		FQ	#	-	-
Turbidity	0720	WL	NTU	8/17/2016	(N)F	SF	C	0.88		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:24 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Turbidity	0721	WL	NTU	8/17/2016	(N)F	SE	C	0.43		F	#	-	-
Turbidity	0722R	WL	NTU	8/18/2016	(N)F	SF		0.63		F	#	-	-
Turbidity	0723	WL	NTU	8/18/2016	(N)F	SE	D	1.27		F	#	-	-
Turbidity	0727	WL	NTU	8/17/2016	(N)F	SE	U	1.37		F	#	-	-
Turbidity	0729	WL	NTU	8/18/2016	(N)F	SF	D	4.91		F	#	-	-
Turbidity	0730	WL	NTU	8/18/2016	(N)F	SE	D	2.14		FQ	#	-	-
Turbidity	0732	WL	NTU	8/17/2016	(N)F	SE	U	0.69		F	#	-	-
Turbidity	0784	WL	NTU	8/17/2016	(N)F	SF	U	5.77		F	#	-	-
Turbidity	0788	WL	NTU	8/18/2016	()F	SF	C	0.68		F	#	-	-
Turbidity	0789	WL	NTU	8/18/2016	()F	SF	D	5.76		F	#	-	-
Turbidity	0824	WL	NTU	8/18/2016	(N)F	SF		0.52		F	#	-	-
Turbidity	0826	WL	NTU	8/17/2016	()F	SF		0.82		F	#	-	-
Turbidity	0852-2	WL	NTU	8/17/2016	()F			1.54		F	#	-	-
Turbidity	0852-3	WL	NTU	8/17/2016	()F			1.71		F	#	-	-
Turbidity	0852-4	WL	NTU	8/17/2016	()F			1.40		F	#	-	-
Turbidity	0853-2	WL	NTU	8/16/2016	()F			1.15		F	#	-	-
Turbidity	0853-3	WL	NTU	8/16/2016	()F			1.76		F	#	-	-
Turbidity	0853-4	WL	NTU	8/16/2016	()F			3.03		F	#	-	-
Turbidity	0854-2	WL	NTU	8/17/2016	()F			0.35		F	#	-	-
Turbidity	0854-3	WL	NTU	8/17/2016	()F			1.88		F	#	-	-
Turbidity	0854-4	WL	NTU	8/17/2016	()F			1.76		F	#	-	-
Turbidity	0855-2	WL	NTU	8/17/2016	()F			2.19		F	#	-	-
Turbidity	0855-3	WL	NTU	8/17/2016	()F			2.96		F	#	-	-
Turbidity	0855-4	WL	NTU	8/17/2016	()F			7.40		F	#	-	-
Turbidity	0856-2	WL	NTU	8/16/2016	()F			1.05		F	#	-	-
Turbidity	0856-3	WL	NTU	8/16/2016	()F			3.18		F	#	-	-
Turbidity	0856-4	WL	NTU	8/16/2016	()F			4.77		F	#	-	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:24 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Turbidity	0857-3	WL	NTU	8/17/2016	()F			2.10		F	#	-	-
Turbidity	0857-4	WL	NTU	8/17/2016	()F			2.08		F	#	-	-
Turbidity	0858-2	WL	NTU	8/16/2016	()F			1.50		F	#	-	-
Turbidity	0858-3	WL	NTU	8/16/2016	()F			1.92		F	#	-	-
Turbidity	0858-4	WL	NTU	8/16/2016	()F			0.93		F	#	-	-
Turbidity	0859-2	WL	NTU	8/17/2016	(N)F			1.53		F	#	-	-
Turbidity	0859-3	WL	NTU	8/17/2016	(N)F			1.95		F	#	-	-
Turbidity	0859-4	WL	NTU	8/17/2016	(N)F			4.64		F	#	-	-
Turbidity	0860-2	WL	NTU	8/17/2016	(N)F			3.75		F	#	-	-
Turbidity	0860-3	WL	NTU	8/17/2016	(N)F			0.69		F	#	-	-
Turbidity	0860-4	WL	NTU	8/17/2016	(N)F			9.86		F	#	-	-
Uranium													
Uranium	0705	WL	mg/L	8/18/2016	(F)F	SE	D	0.00039		FQ	#	0.000012	-
Uranium	0707	WL	mg/L	8/18/2016	()F	SF	D	1.6		F	#	0.00012	-
Uranium	0710	WL	mg/L	8/17/2016	(N)F	SF	U	0.0096		F	#	0.000012	-
Uranium	0716	WL	mg/L	8/17/2016	(N)F	SF	O	0.25		F	#	0.000012	-
Uranium	0717	WL	mg/L	8/17/2016	(N)F	SE	O	0.0006		F	#	0.000012	-
Uranium	0718	WL	mg/L	8/17/2016	(N)F	SF	D	0.28		F	#	0.000012	-
Uranium	0719	WL	mg/L	8/17/2016	(N)F	SE	D	0.0011		FQ	#	0.000012	-
Uranium	0720	WL	mg/L	8/17/2016	(N)F	SF	C	0.0037		F	#	0.000012	-
Uranium	0721	WL	mg/L	8/17/2016	()D	SE	C	0.0011		FJ	#	0.000012	-
Uranium	0721	WL	mg/L	8/17/2016	(N)F	SE	C	0.00008	J	FJ	#	0.000012	-
Uranium	0722R	WL	mg/L	8/18/2016	(N)F	SF		0.49		F	#	0.000012	-
Uranium	0723	WL	mg/L	8/18/2016	(N)F	SE	D	0.00031		F	#	0.000012	-
Uranium	0727	WL	mg/L	8/17/2016	(N)F	SE	U	0.0026		F	#	0.000012	-
Uranium	0729	WL	mg/L	8/18/2016	(N)F	SF	D	0.0048		F	#	0.000012	-
Uranium	0730	WL	mg/L	8/18/2016	(N)F	SE	D	0.0051		FQ	#	0.000012	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:24 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Uranium	0732	WL	mg/L	8/17/2016	(N)F	SE	U	0.0051		F	#	0.000012	-
Uranium	0784	WL	mg/L	8/17/2016	(N)F	SF	U	0.0075		F	#	0.000012	-
Uranium	0788	WL	mg/L	8/18/2016	()F	SF	C	0.059		F	#	0.000012	-
Uranium	0789	WL	mg/L	8/18/2016	()F	SF	D	3.1		F	#	0.00012	-
Uranium	0824	WL	mg/L	8/18/2016	(N)F	SF		0.029		F	#	0.000012	-
Uranium	0826	WL	mg/L	8/17/2016	()F	SF		0.072		F	#	0.000012	-
Uranium	0852-2	WL	mg/L	8/17/2016	()D			0.063		F	#	0.000012	-
Uranium	0852-2	WL	mg/L	8/17/2016	()F			0.057		F	#	0.000012	-
Uranium	0852-3	WL	mg/L	8/17/2016	()F			0.051		F	#	0.000012	-
Uranium	0852-4	WL	mg/L	8/17/2016	()F			0.051		F	#	0.000012	-
Uranium	0853-2	WL	mg/L	8/16/2016	()F			0.052		F	#	0.000012	-
Uranium	0853-3	WL	mg/L	8/16/2016	()F			0.052		F	#	0.000012	-
Uranium	0853-4	WL	mg/L	8/16/2016	()F			0.044		F	#	0.000012	-
Uranium	0854-2	WL	mg/L	8/17/2016	()F			0.1		F	#	0.000012	-
Uranium	0854-3	WL	mg/L	8/17/2016	()F			0.11		F	#	0.000012	-
Uranium	0854-4	WL	mg/L	8/17/2016	()F			0.095		F	#	0.000012	-
Uranium	0855-2	WL	mg/L	8/17/2016	()F			1.8		F	#	0.00012	-
Uranium	0855-3	WL	mg/L	8/17/2016	()F			1.9		F	#	0.00012	-
Uranium	0855-4	WL	mg/L	8/17/2016	()F			1.1		F	#	0.00012	-
Uranium	0856-2	WL	mg/L	8/16/2016	()F			1.9		F	#	0.00012	-
Uranium	0856-3	WL	mg/L	8/16/2016	()F			2.4		F	#	0.00012	-
Uranium	0856-4	WL	mg/L	8/16/2016	()D			4.9		F	#	0.0012	-
Uranium	0856-4	WL	mg/L	8/16/2016	()F			5.6		F	#	0.00061	-
Uranium	0857-3	WL	mg/L	8/17/2016	()F			1.9		F	#	0.00012	-
Uranium	0857-4	WL	mg/L	8/17/2016	()F			1.7		F	#	0.00012	-
Uranium	0858-2	WL	mg/L	8/16/2016	()F			1.4		F	#	0.00012	-
Uranium	0858-3	WL	mg/L	8/16/2016	()F			1.5		F	#	0.00012	-

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:24 PM

PARAMETER	LOCATION CODE/TYPE		UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA		QA	DETECTION LIMIT	UNCERTAINTY
Uranium	0858-4	WL	mg/L	8/16/2016	()F			1.5		F	#	0.00012	-
Uranium	0859-2	WL	mg/L	8/17/2016	(N)F			0.089		F	#	0.000012	-
Uranium	0859-3	WL	mg/L	8/17/2016	(N)F			0.11		F	#	0.000012	-
Uranium	0859-4	WL	mg/L	8/17/2016	(N)F			0.16		F	#	0.000012	-
Uranium	0860-2	WL	mg/L	8/17/2016	(N)F			1.4		F	#	0.00012	-
Uranium	0860-3	WL	mg/L	8/17/2016	(N)F			0.98		F	#	0.000012	-
Uranium	0860-4	WL	mg/L	8/17/2016	(N)F			0.86		F	#	0.000012	-
Vinyl chloride													
Vinyl chloride	0859-4	WL	ug/L	8/17/2016	(N)F			0.160	U	F	#	0.16	-

ZONES OF COMPLETION:

SE	SEMICONFINED SANDSTONE
SF	SURFICIAL

LOCATION TYPE:

WL	WELL

DATA QUALIFIERS:

F	Low flow sampling method used.
G	Possible grout contamination, pH > 9.
J	Estimated Value.
L	Less than 3 bore volumes purged prior to sampling.
N	Tentatively identified compund (TIC).
Q	Qualitative result due to sampling technique
R	Unusable result.
U	Parameter analyzed for but was not detected.
X	Location is undefined.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	Result above upper detection limit.

GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (EQuIS201) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:40:24 PM

PARAMETER	LOCATION CODE/TYPE	UNITS	SAMPLE DATE	SAMPLE TYPE	ZONE COMPLETION	FLOW REL.	RESULT	QUALIFIERS LAB/DATA	QA	DETECTION LIMIT	UNCERTAINTY

A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated Value.
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Parameter analyzed for but was not detected.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined qualifier, see case narrative.
Y	Laboratory defined qualifier, see case narrative.
Z	Laboratory defined qualifier, see case narrative.

SAMPLE TYPES:
(F) Filtered Sample
(N) Nonfiltered Sample

Type Codes: F-Field Sample R-Replicate FR-Field Sample with Replicates
D-Duplicate N-Not Known S-Split Sample

FLOW CODES:

B	BACKGROUND	C	CROSS GRADIENT	D	DOWN GRADIENT
F	OFF-SITE	N	UNKNOWN	O	ON-SITE
U	UPGRADIENT				

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

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Appendix E

Graphs of Multilevel Well Data with Depth for 2015 and 2016

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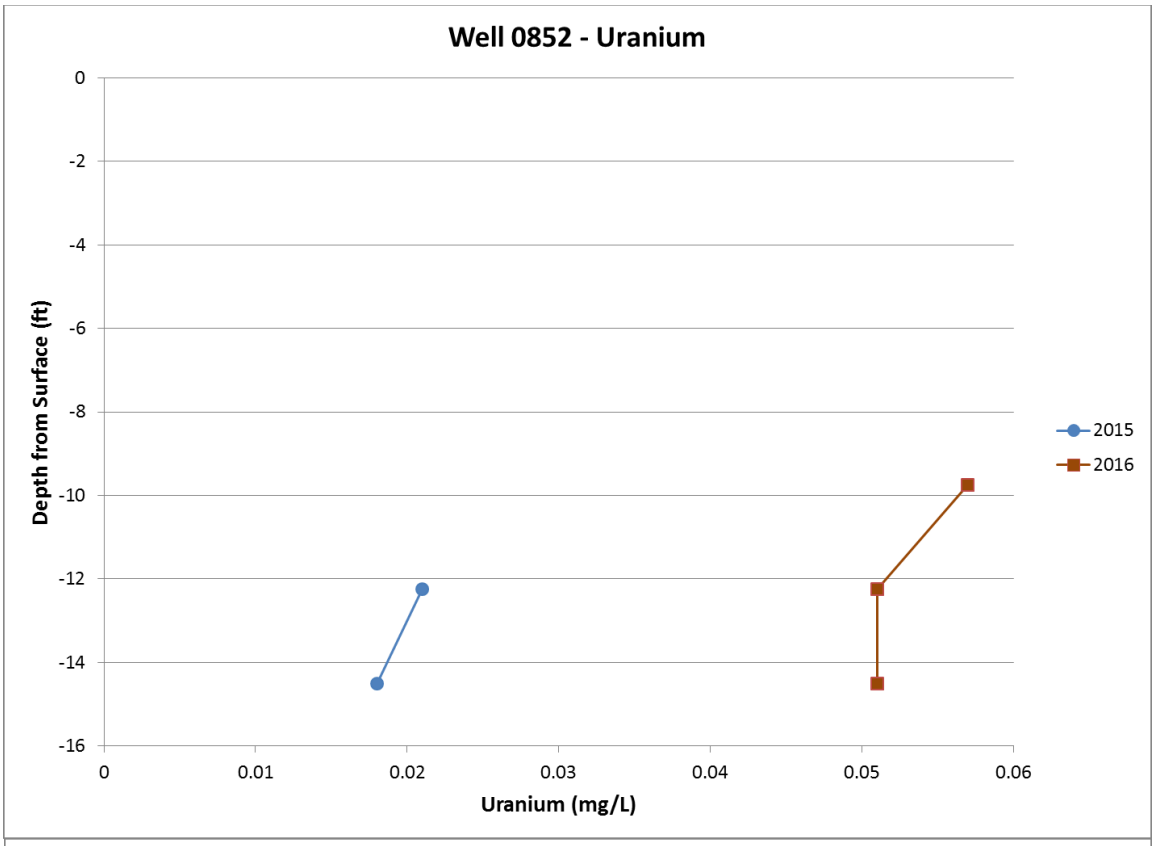
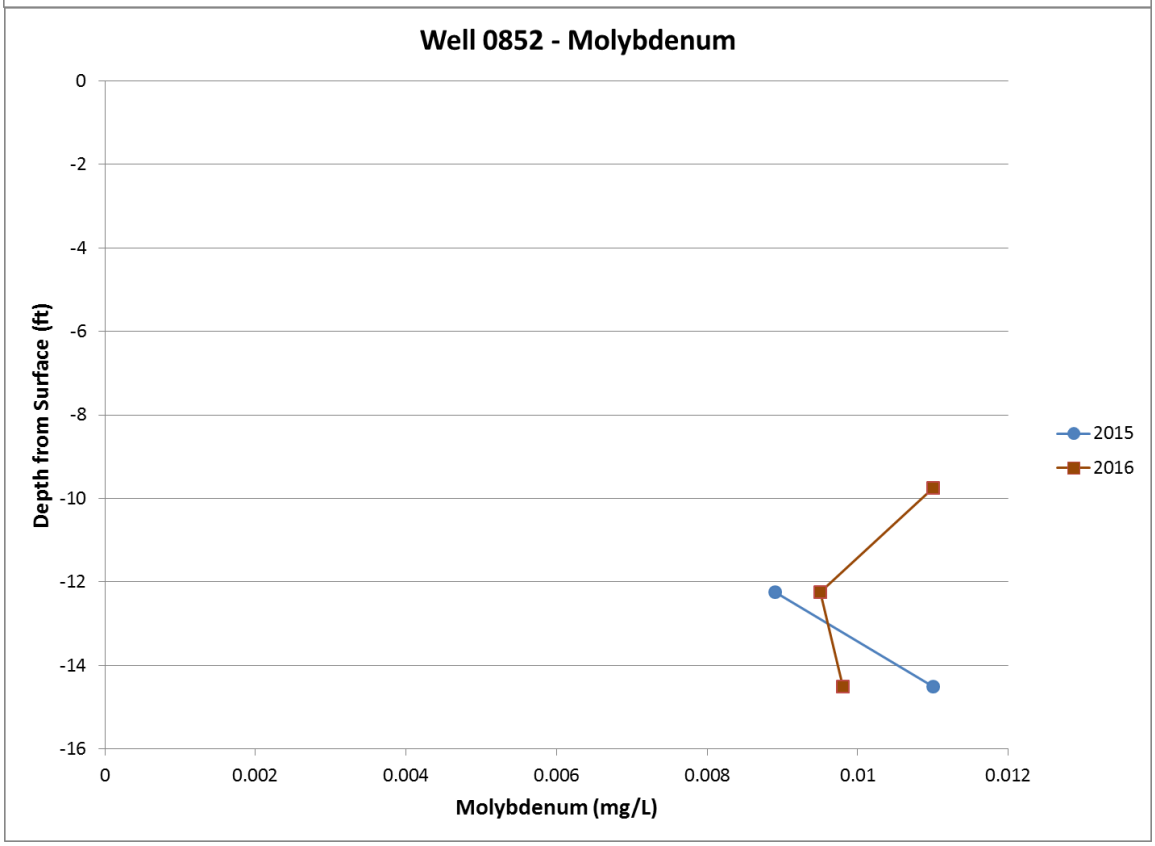
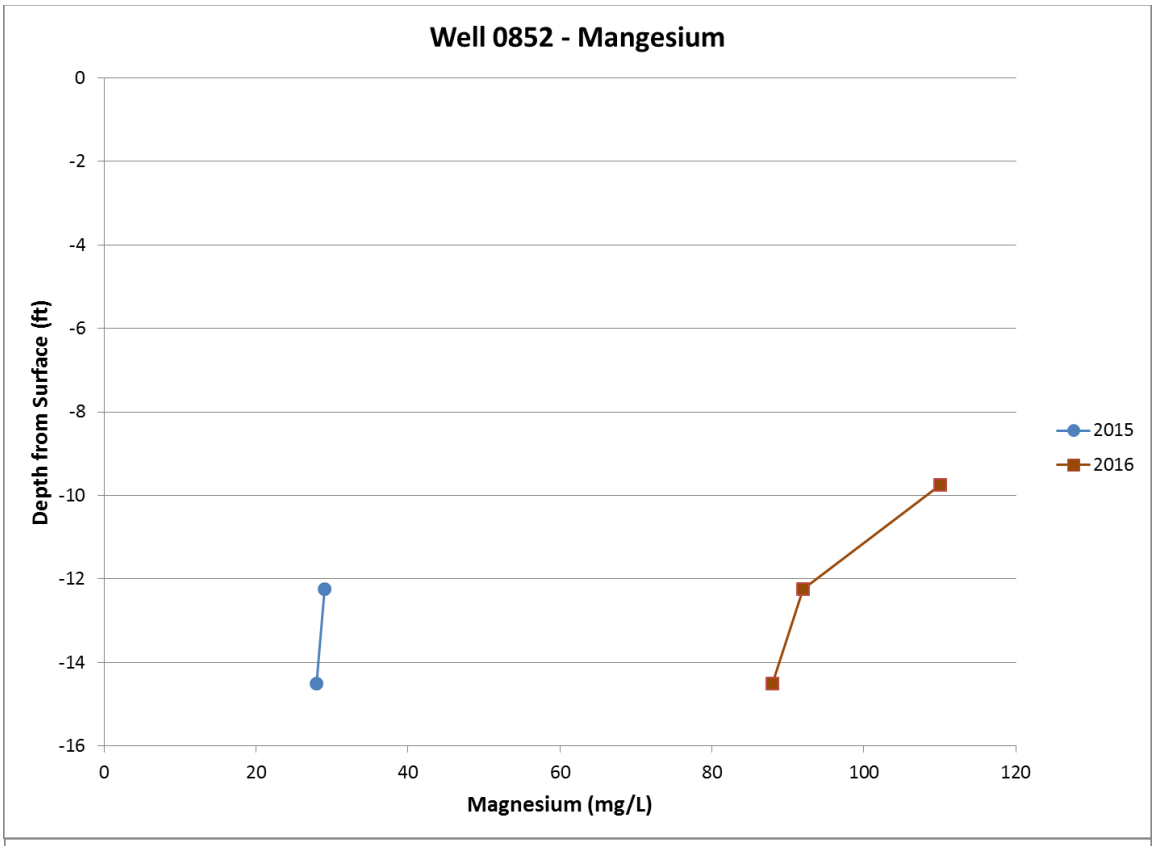
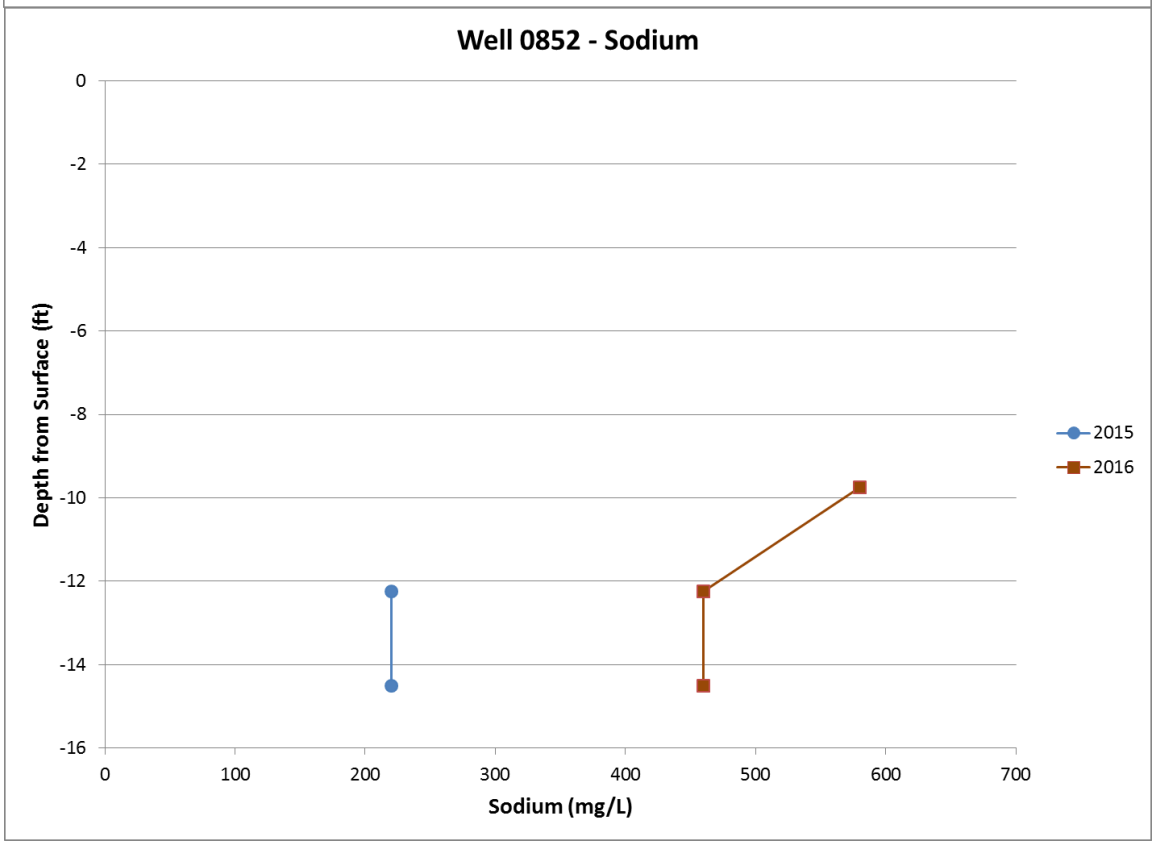
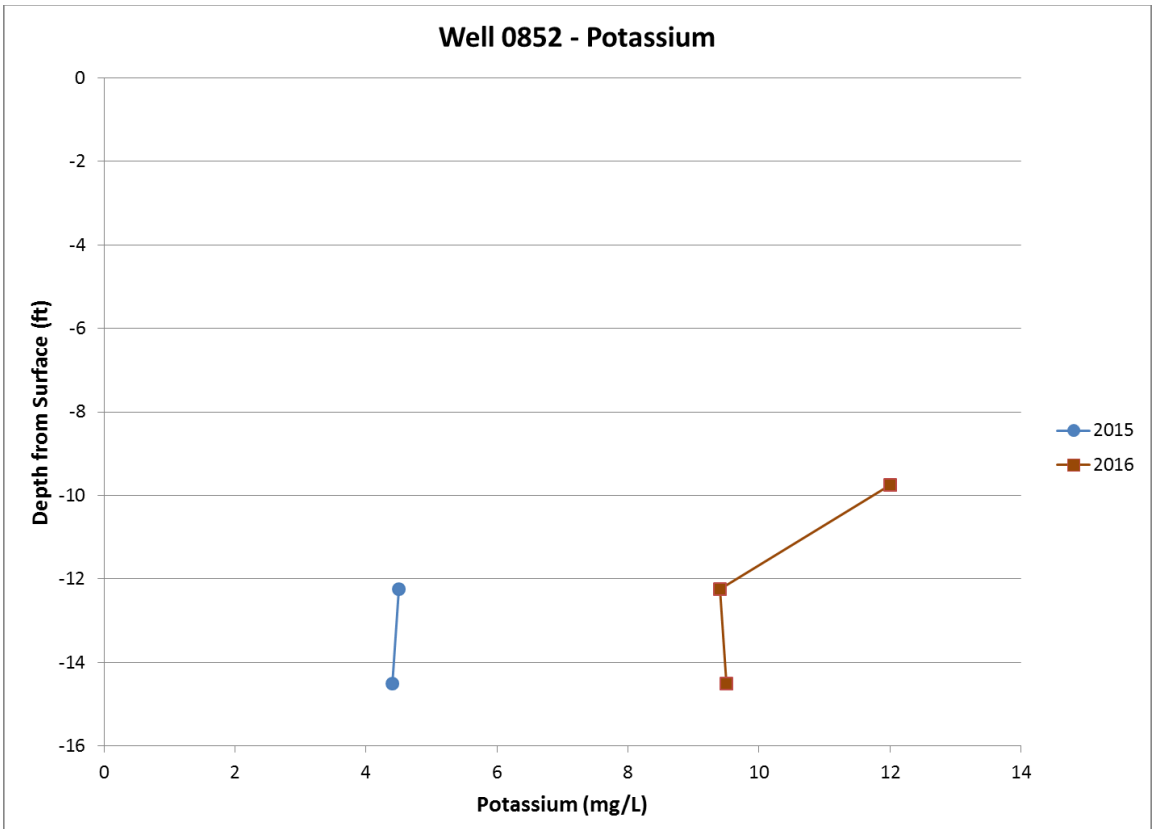
Well 0852

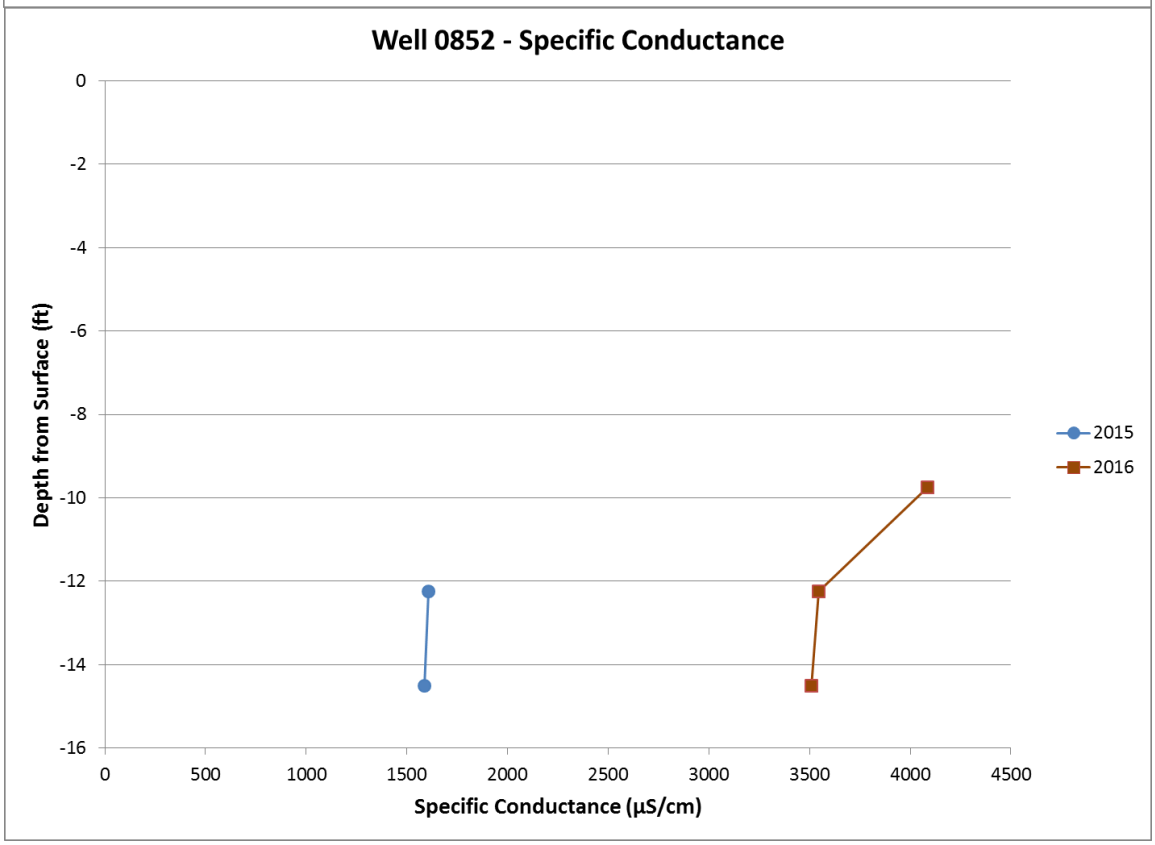

Well 0852 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
0.01
0.02
0.03
0.04
0.05
0.06
Uranium (mg/L)
2015
2016

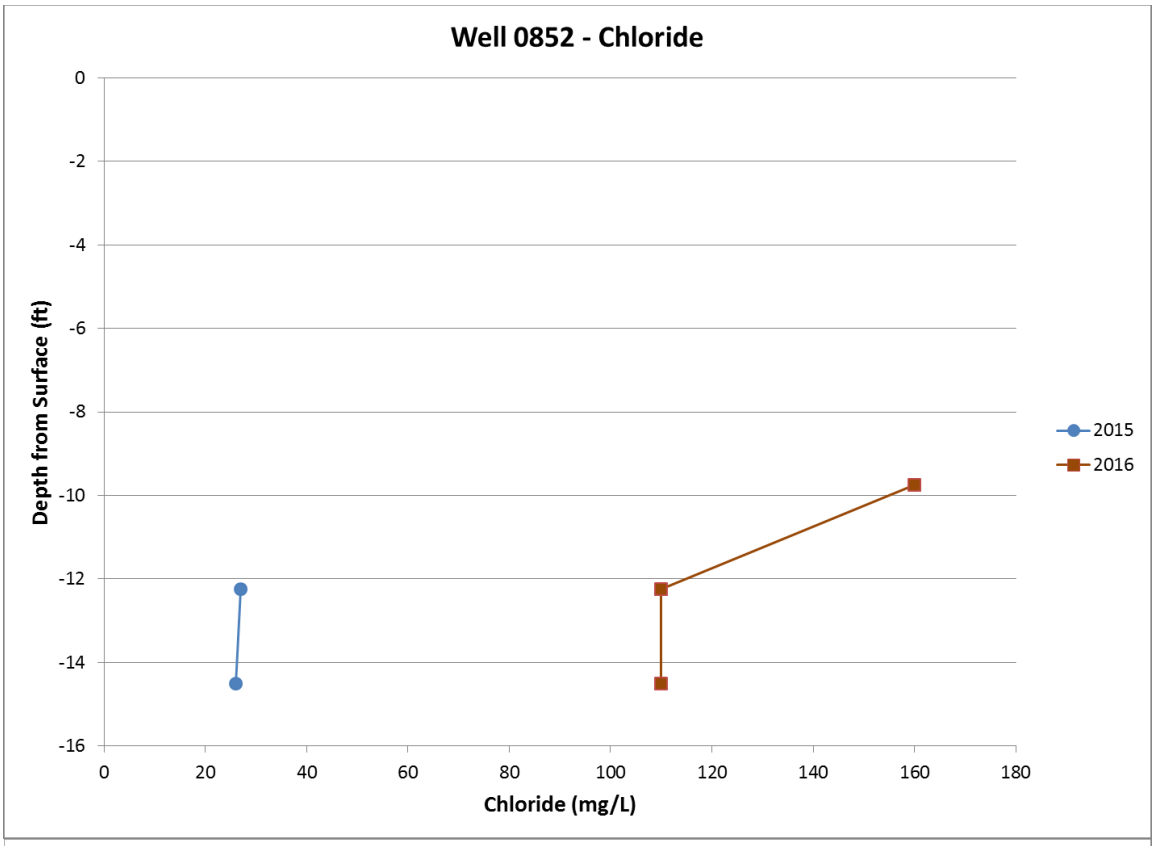

Well 0852 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
0.002
0.004
0.006
0.008
0.01
0.012
Molybdenum (mg/L)
2015
2016

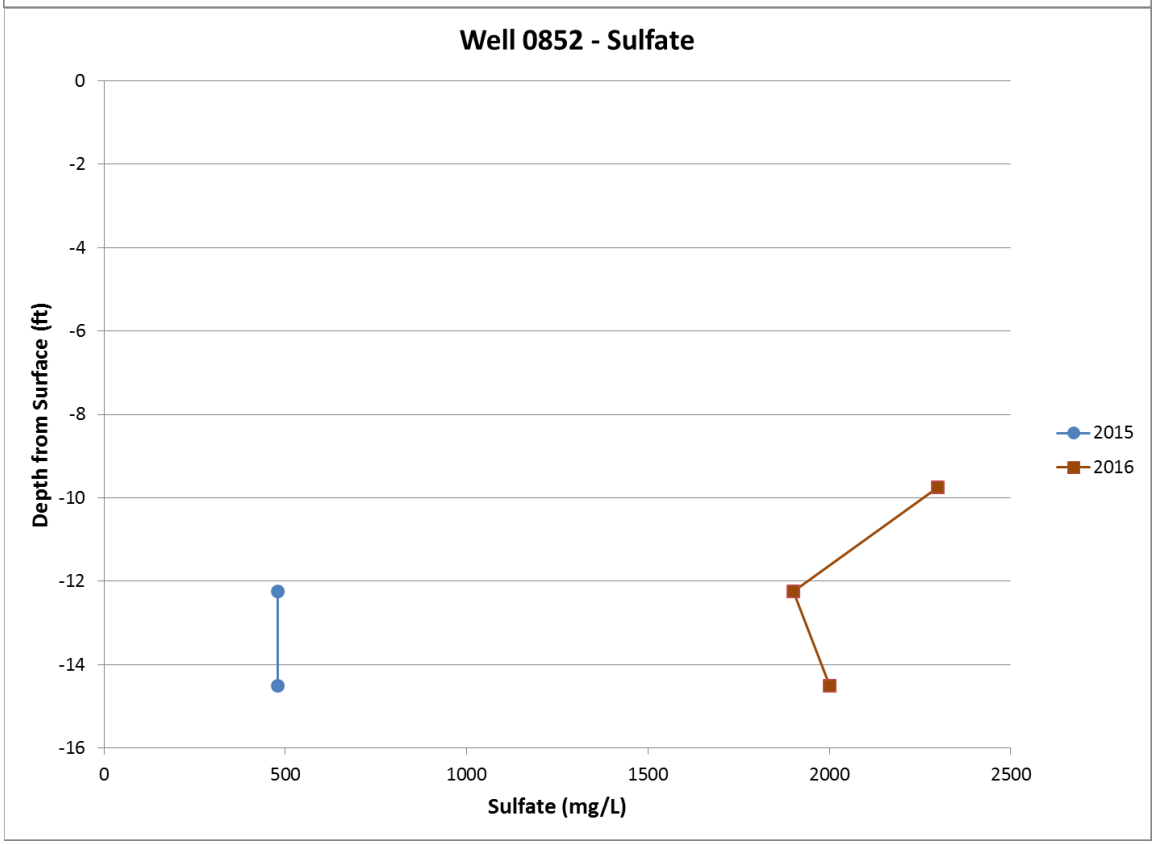

Well 0852 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
20
40
60
80
100
120
Magnesium (mg/L)
2015
2016

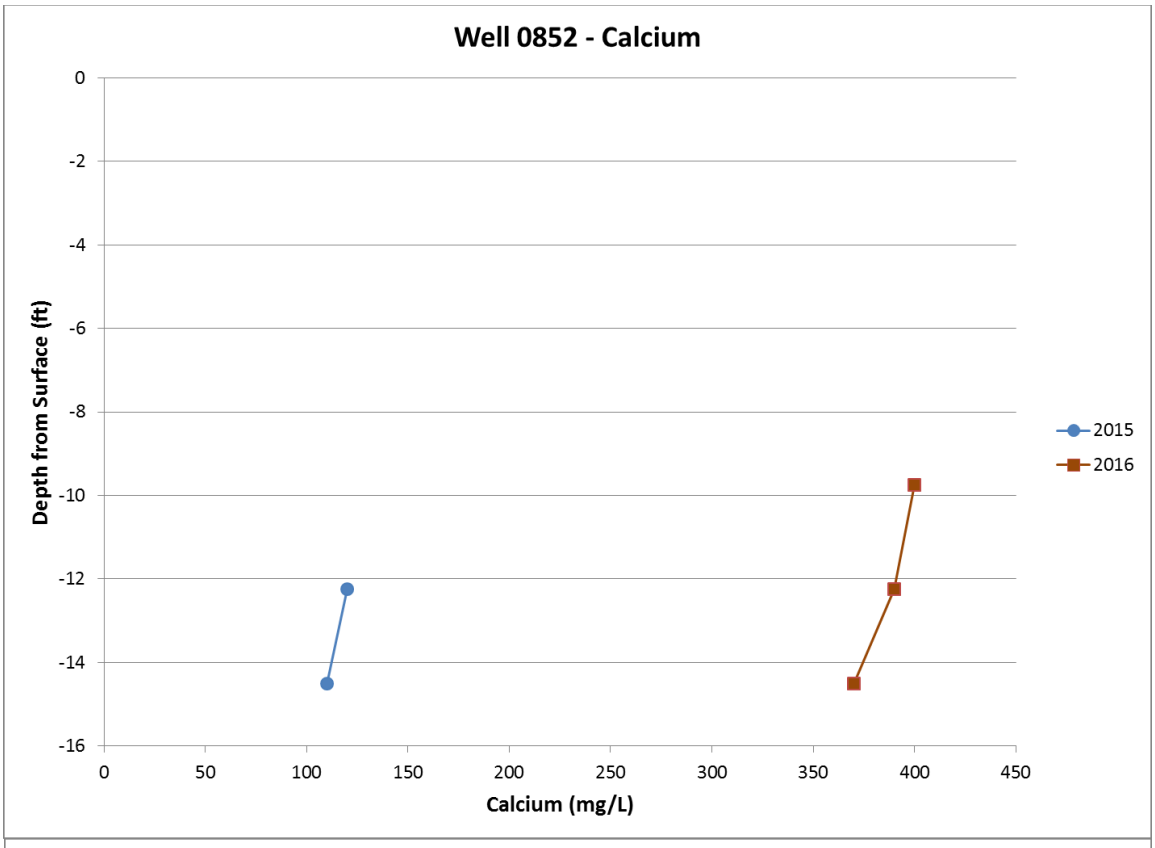

Well 0852 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
100
200
300
400
500
600
700
Sodium (mg/L)
2015
2016

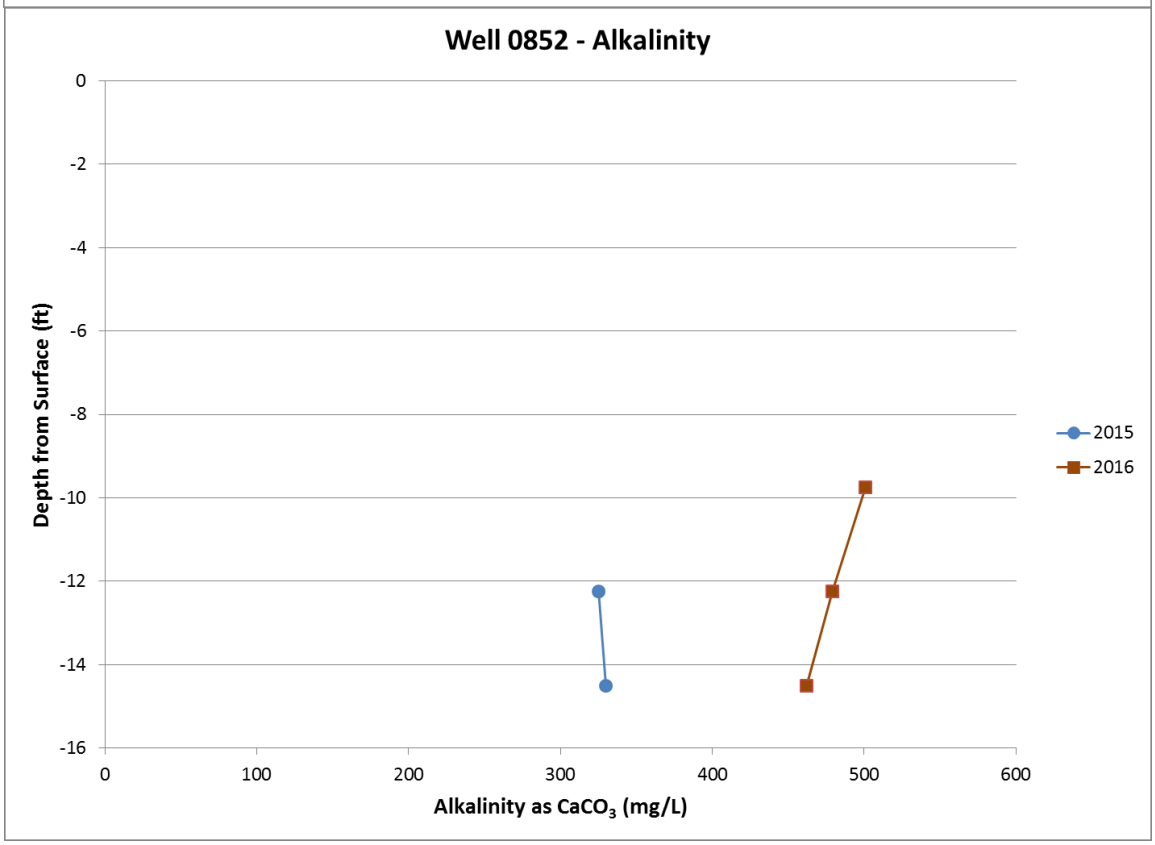

Well 0852 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
2
4
6
8
10
12
14
Potassium (mg/L)
2015
2016

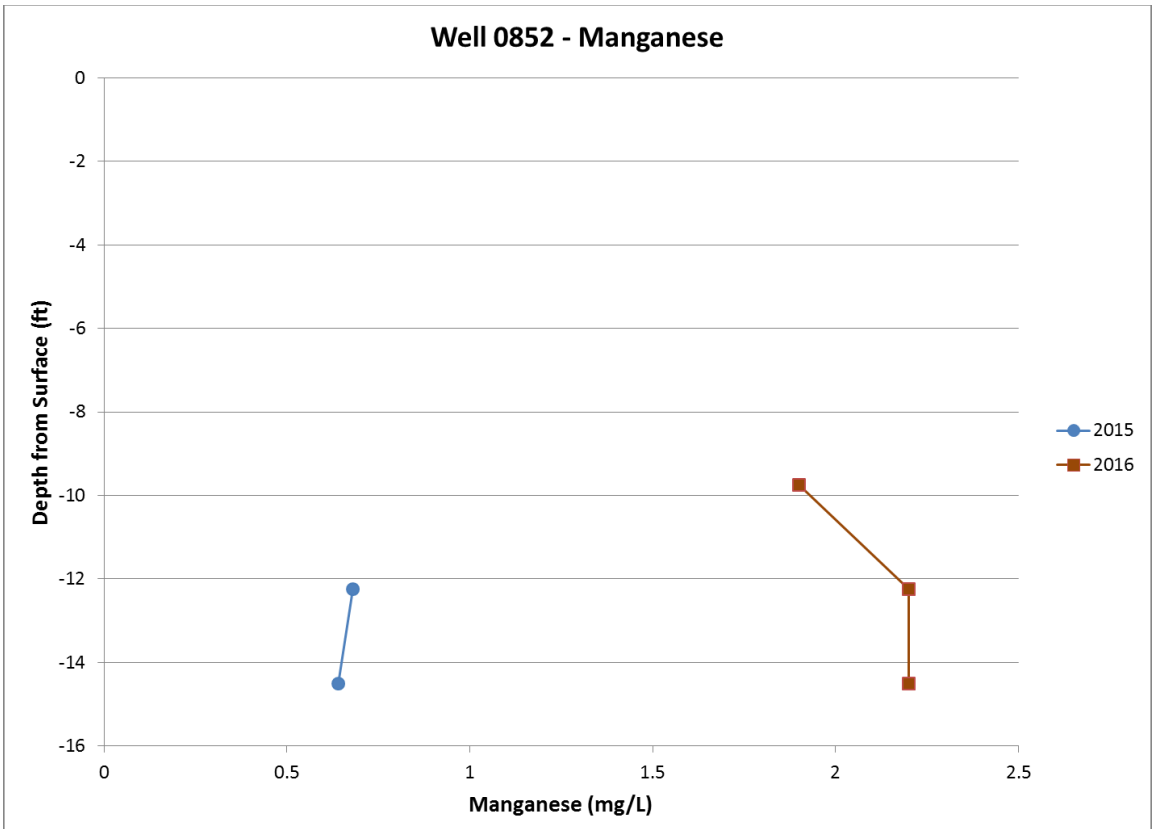

Well 0852 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Specific Conductance (µS/cm)
2015
2016

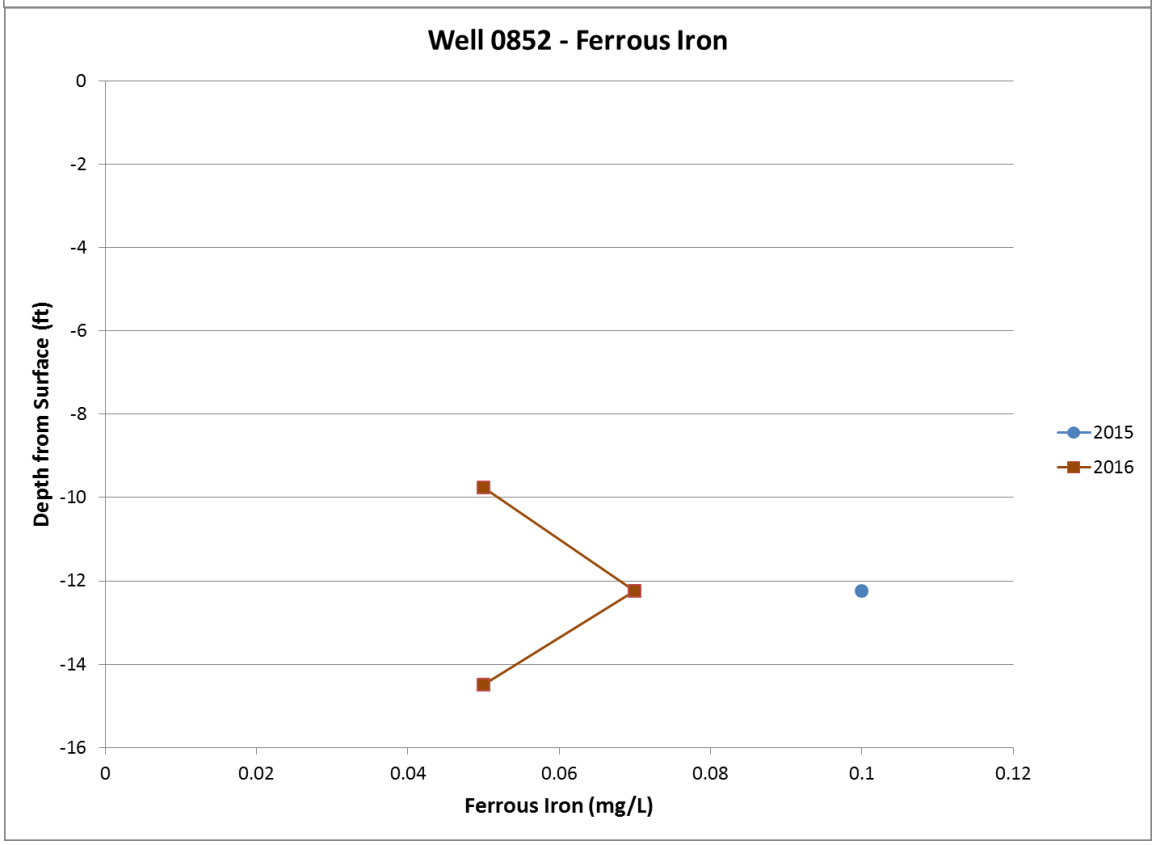

Well 0852 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
20
40
60
80
100
120
140
160
180
Chloride (mg/L)
2015
2016

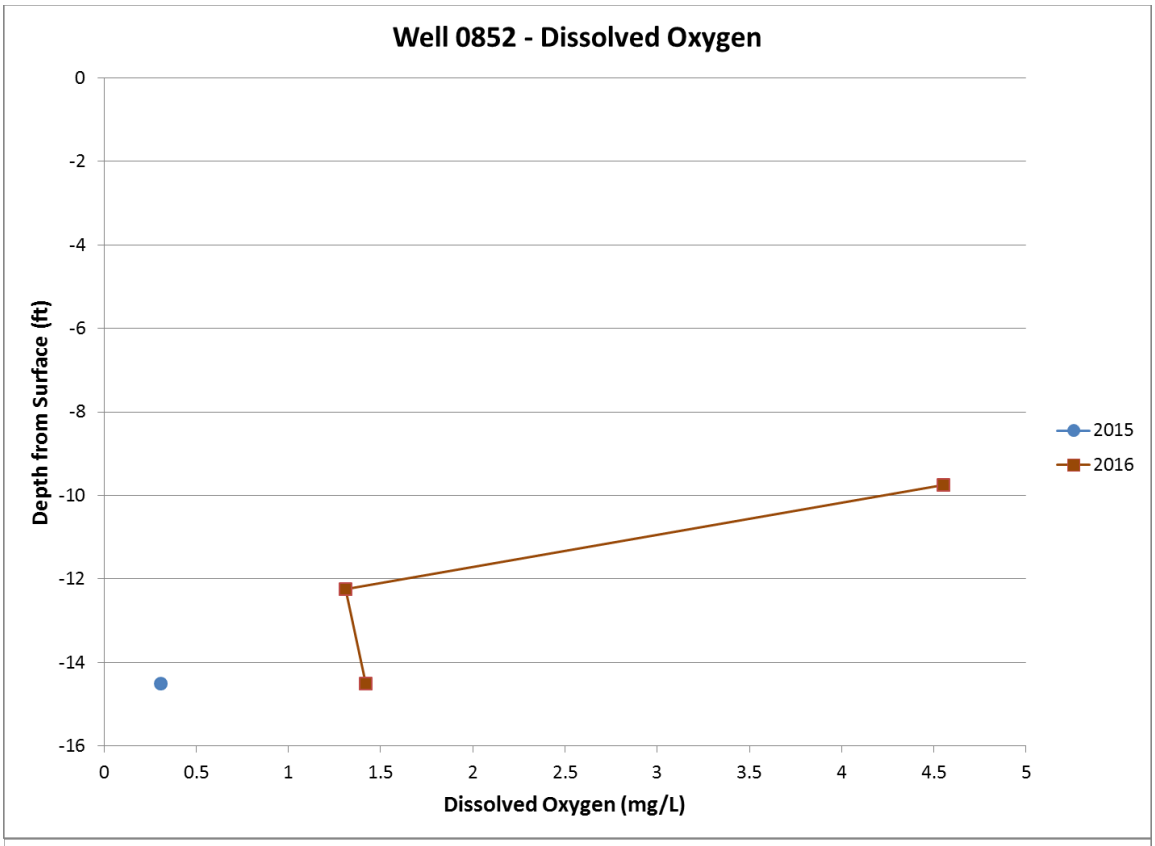

Well 0852 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
500
1000
1500
2000
2500
Sulfate (mg/L)
2015
2016

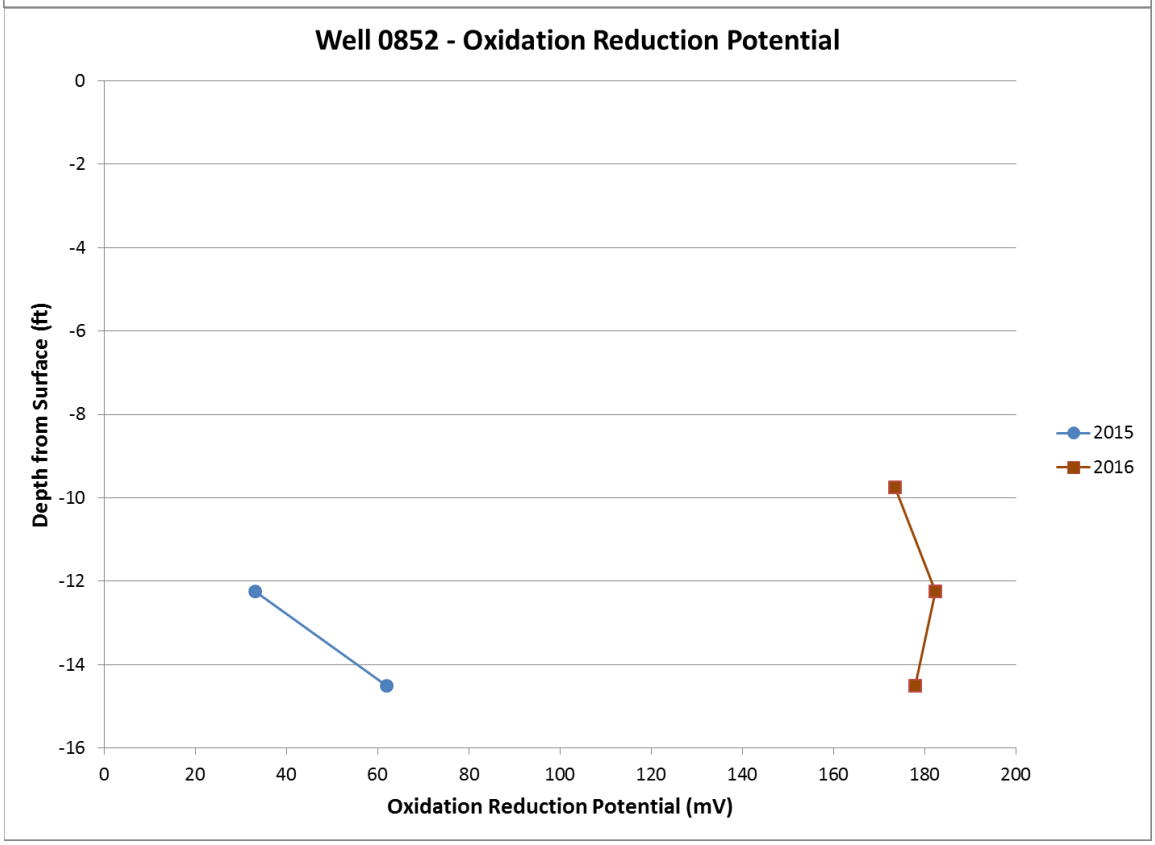

Well 0852 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
50
100
150
200
250
300
350
400
450
Calcium (mg/L)
2015
2016

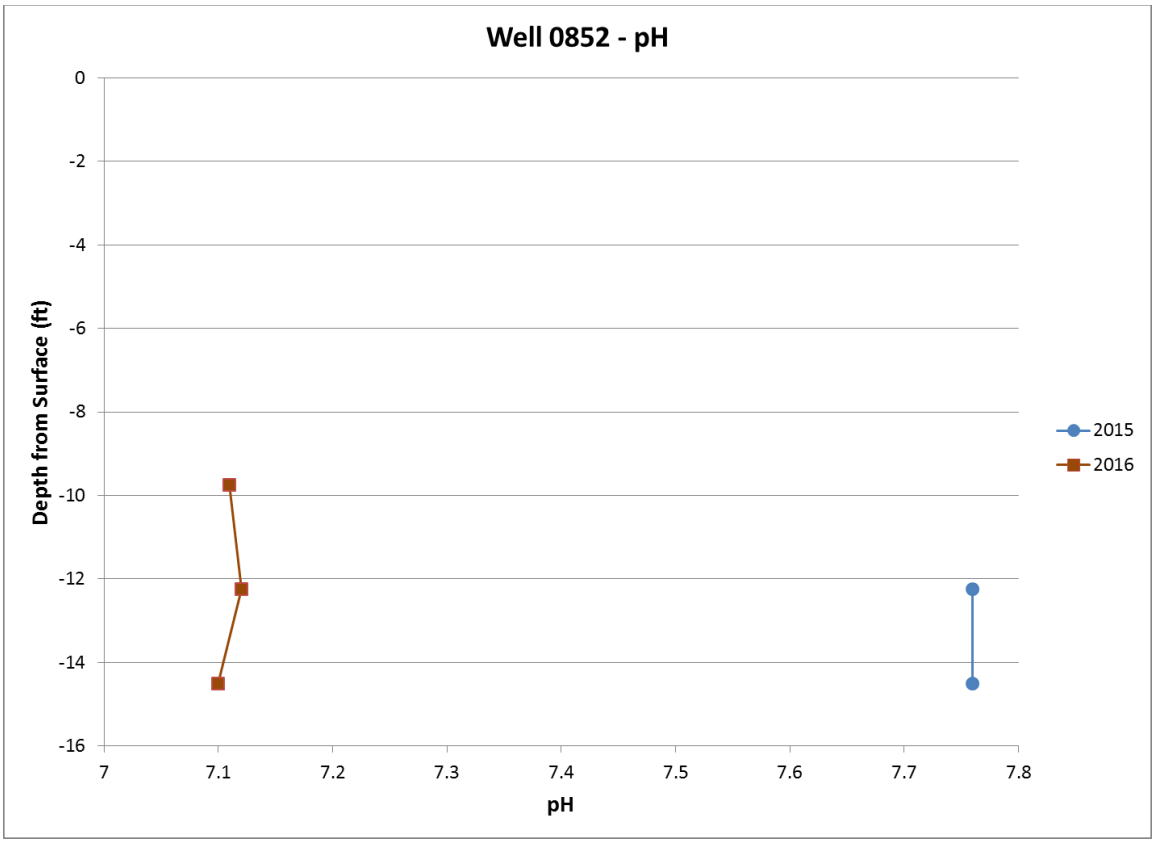

Well 0852 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
100
200
300
400
500
600
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0852 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
0.5
1
1.5
2
2.5
Manganese (mg/L)
2015
2016


Well 0852 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
0.02
0.04
0.06
0.08
0.1
0.12
Ferrous Iron (mg/L)
2015
2016


Well 0852 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Dissolved Oxygen (mg/L)
2015
2016


Well 0852 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
0
20
40
60
80
100
120
140
160
180
200
Oxidation Reduction Potential (mV)
2015
2016


Well 0852 - pH
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
7
7.1
7.2
7.3
7.4
7.5
7.6
7.7
7.8
pH
2015
2016

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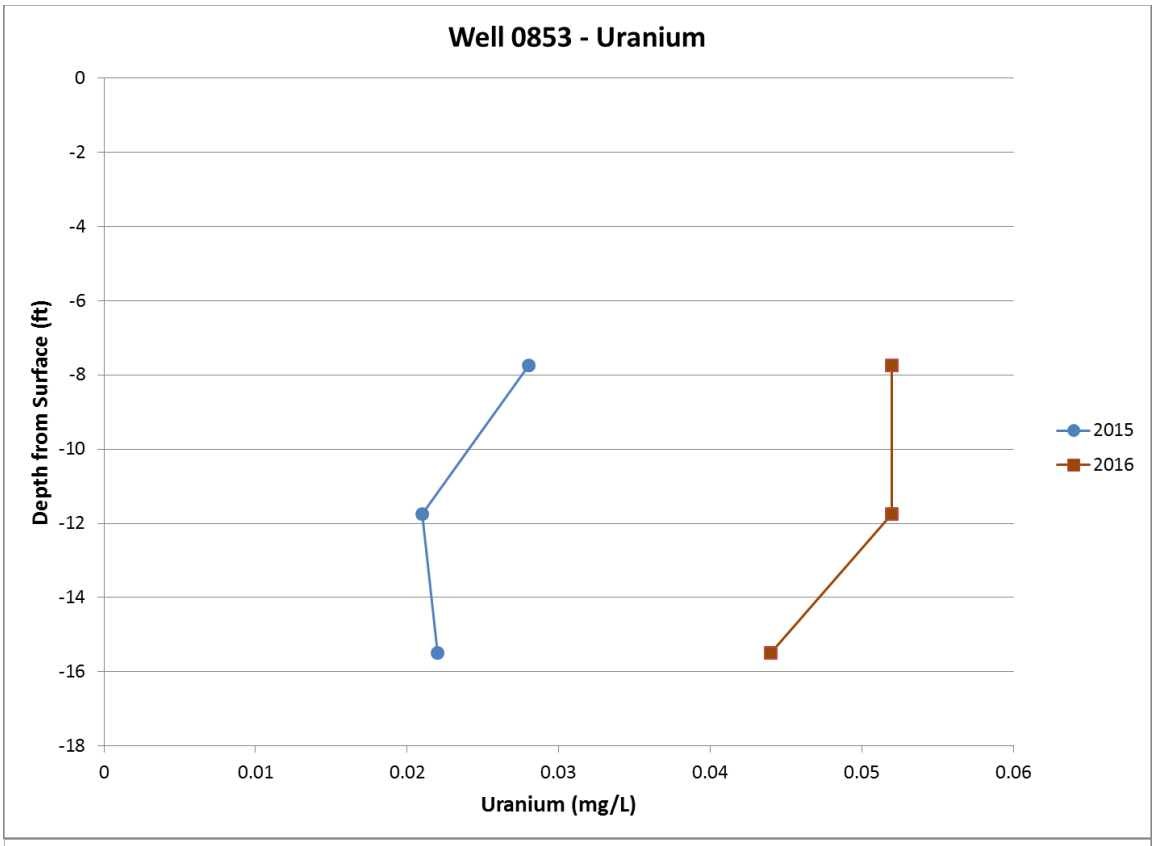
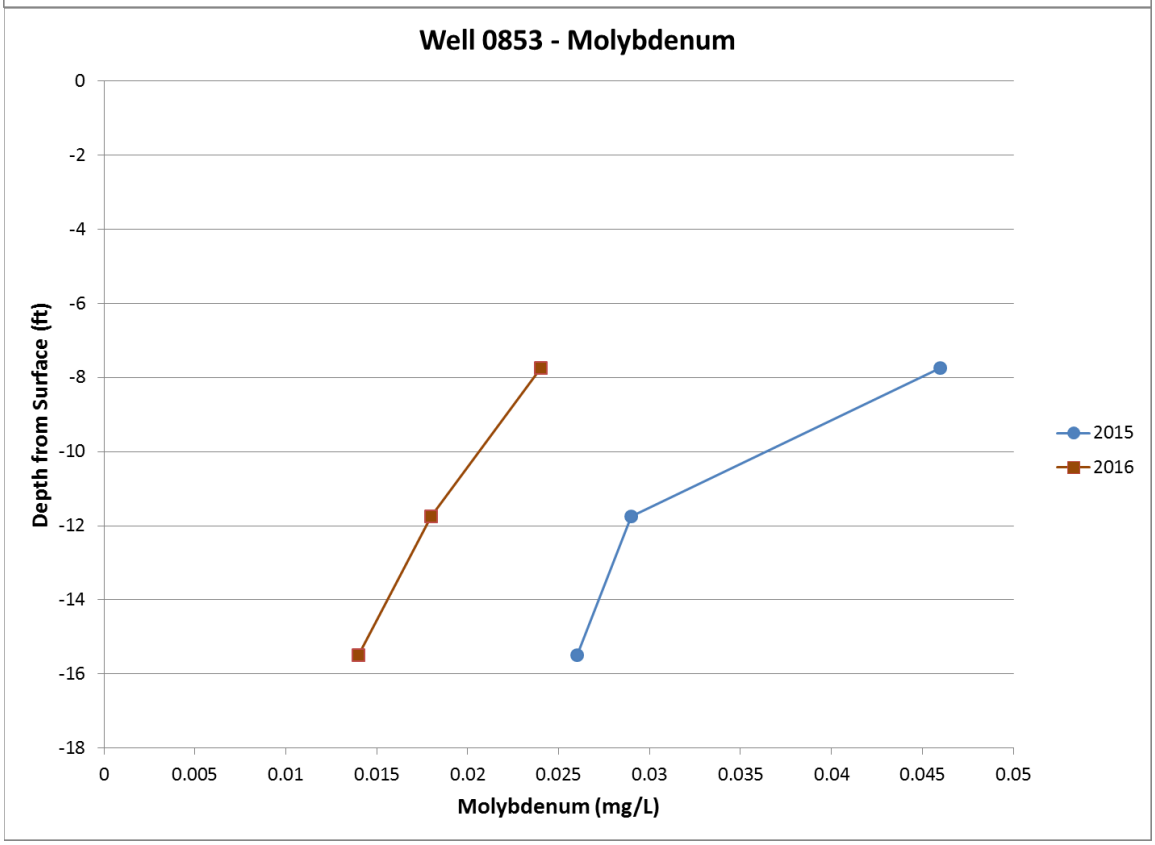
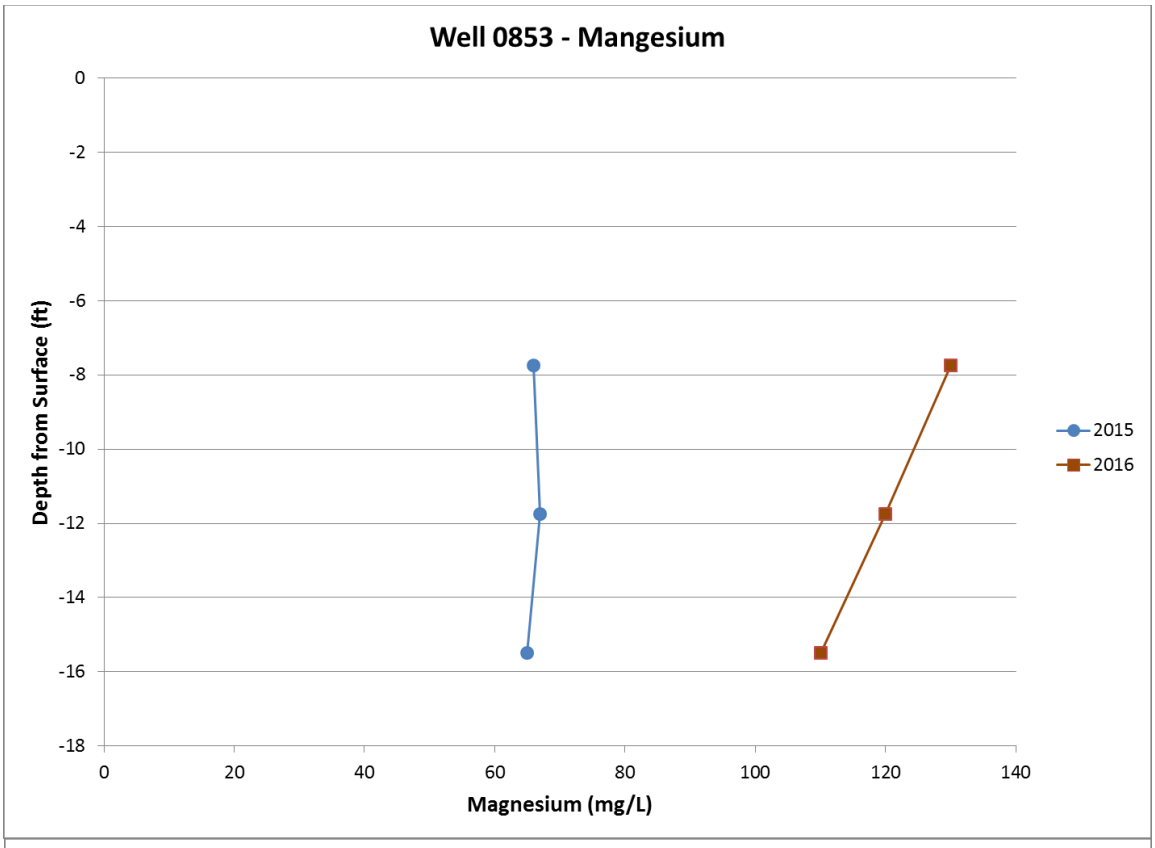
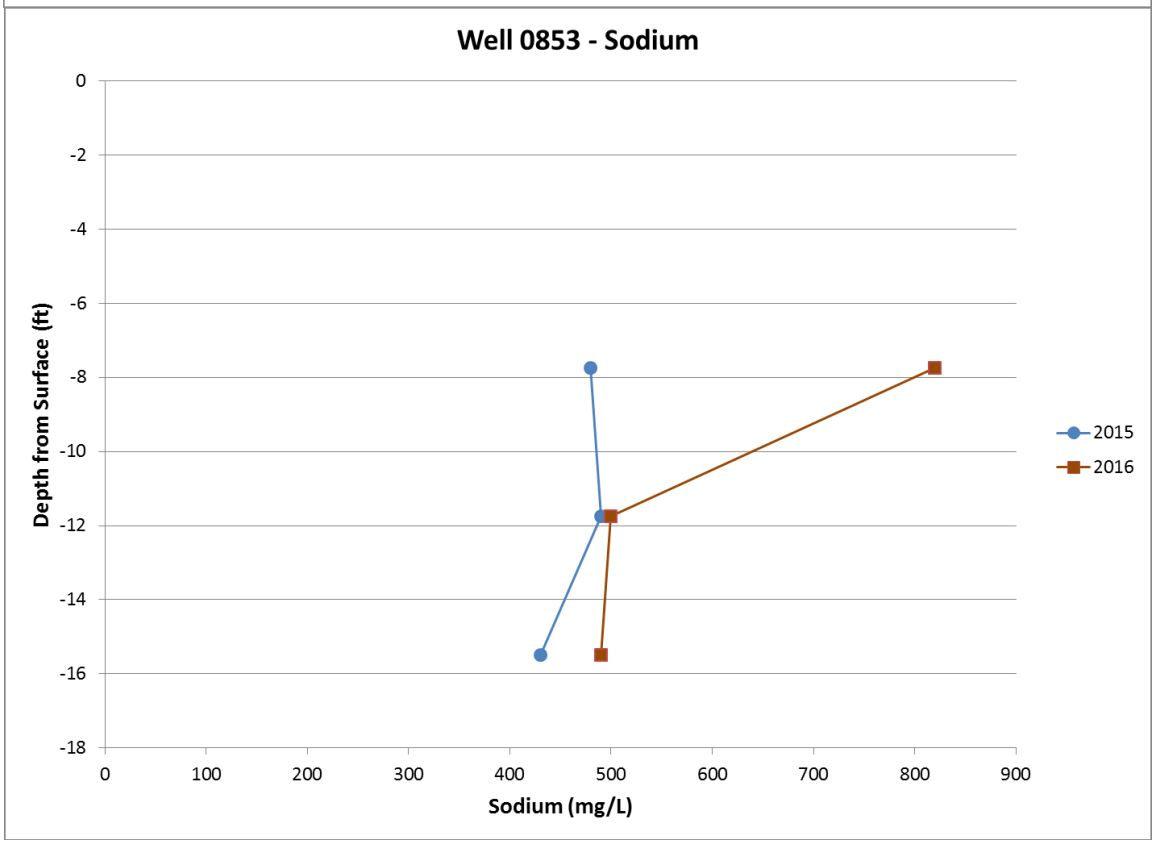
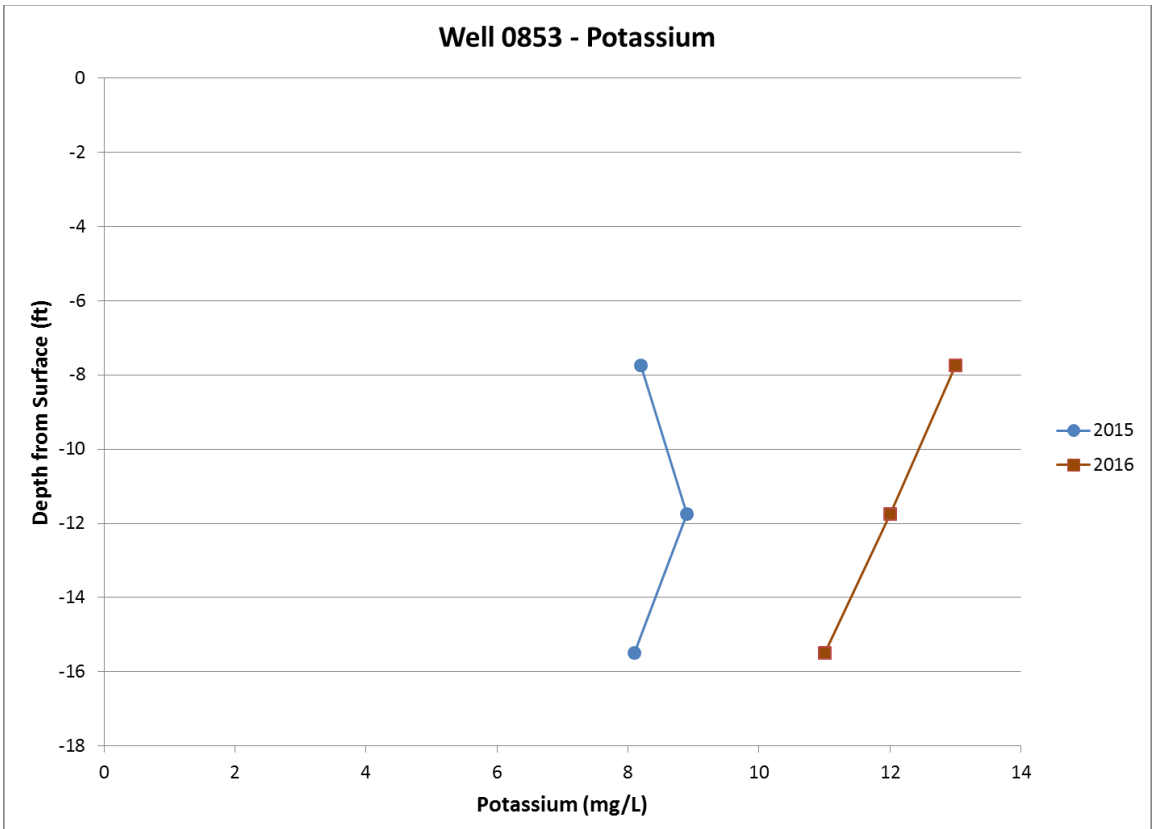
Well 0853

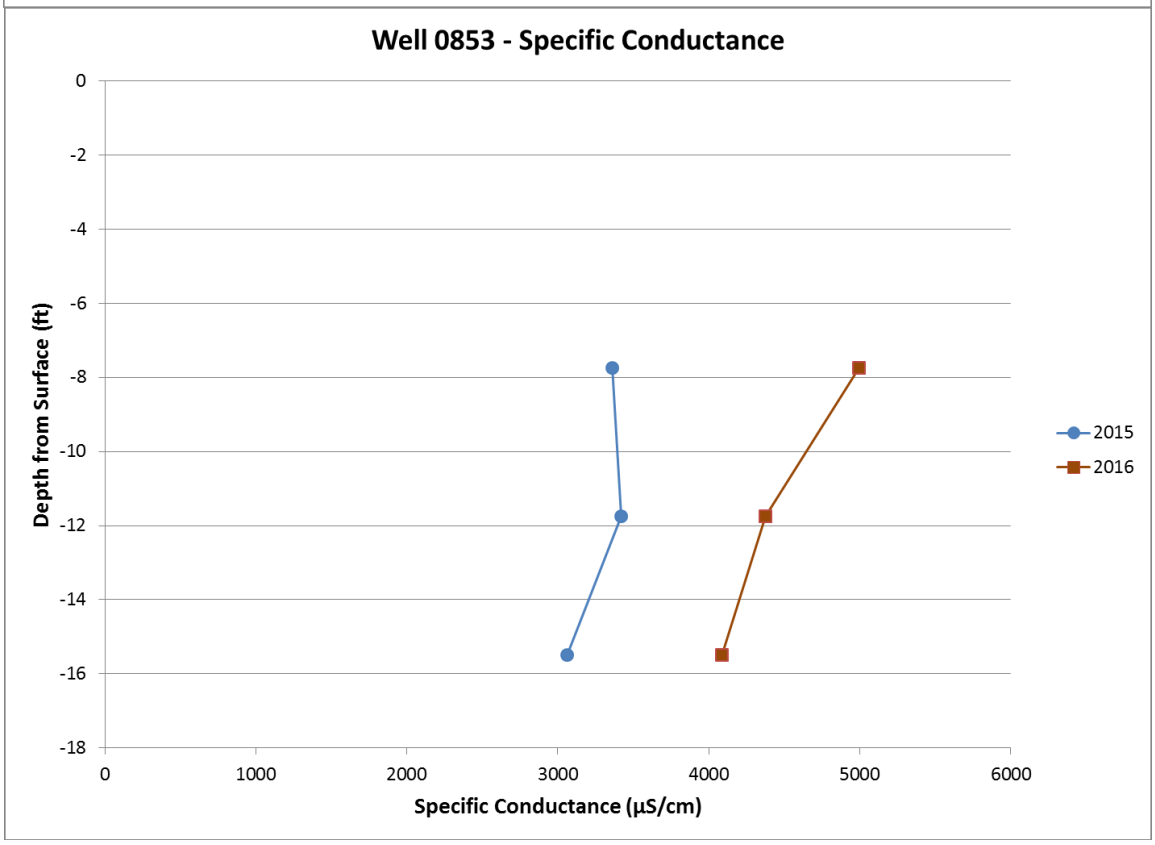

Well 0853 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
0.01
0.02
0.03
0.04
0.05
0.06
Uranium (mg/L)
2015
2016

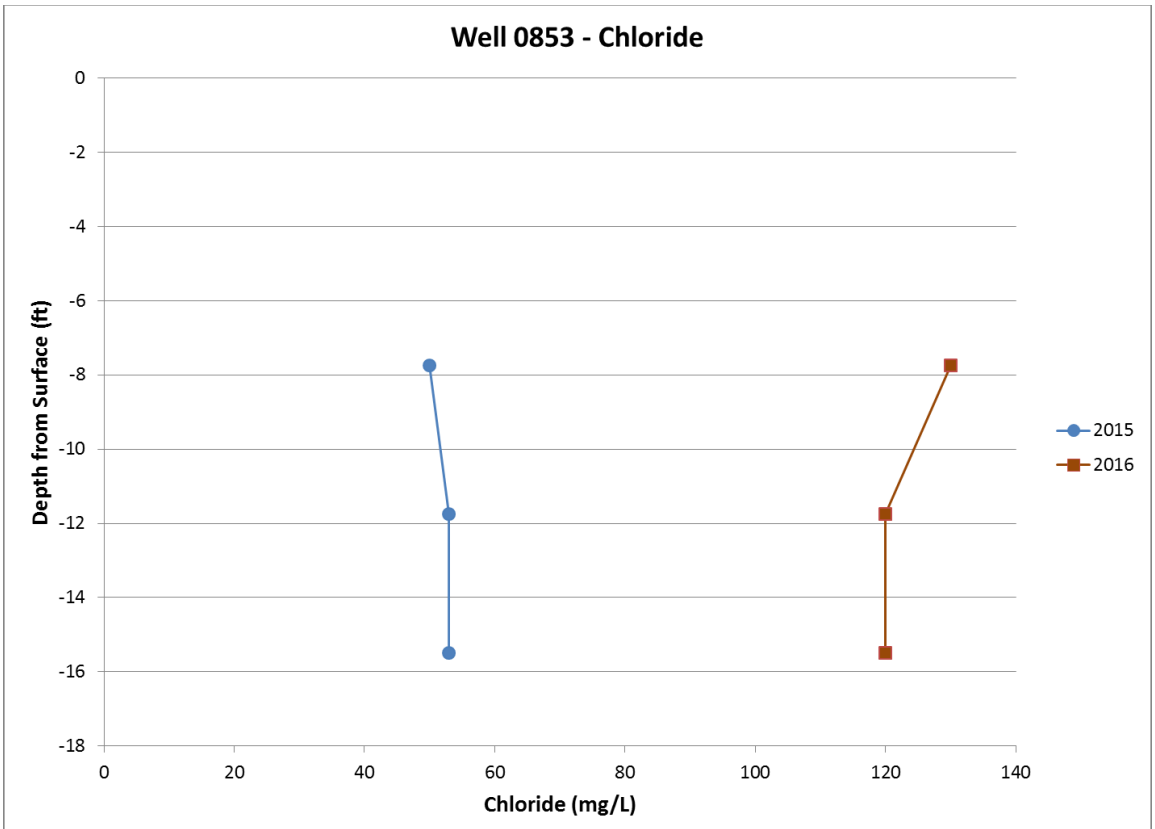

Well 0853 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
Molybdenum (mg/L)
2015
2016

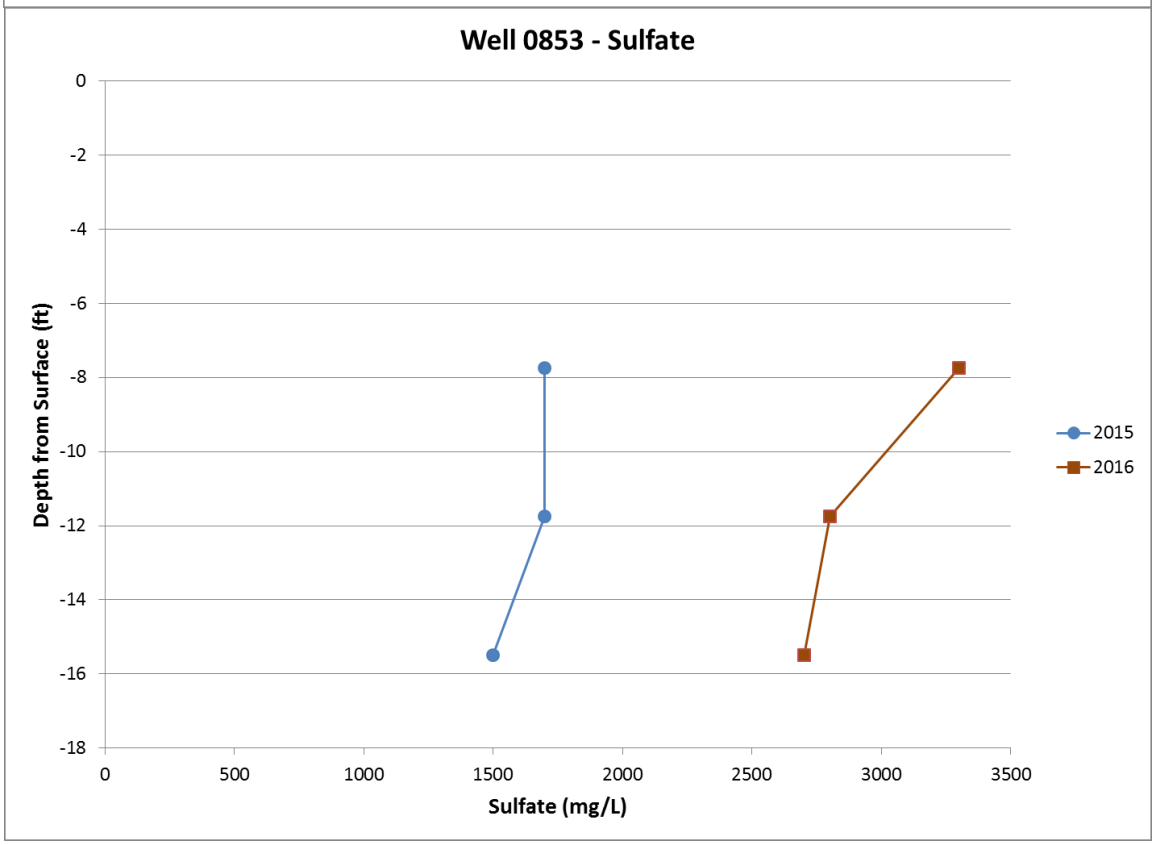

Well 0853 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
20
40
60
80
100
120
140
Magnesium (mg/L)
2015
2016

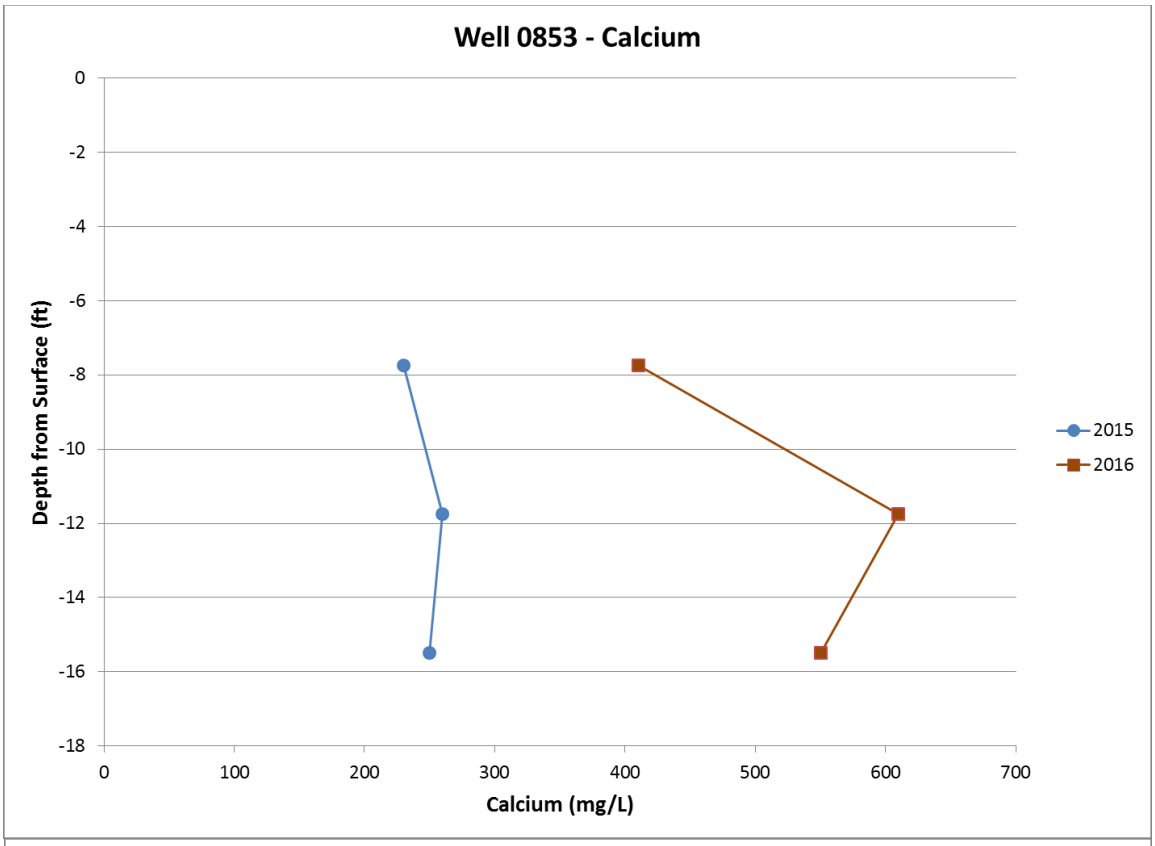

Well 0853 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
100
200
300
400
500
600
700
800
900
Sodium (mg/L)
2015
2016

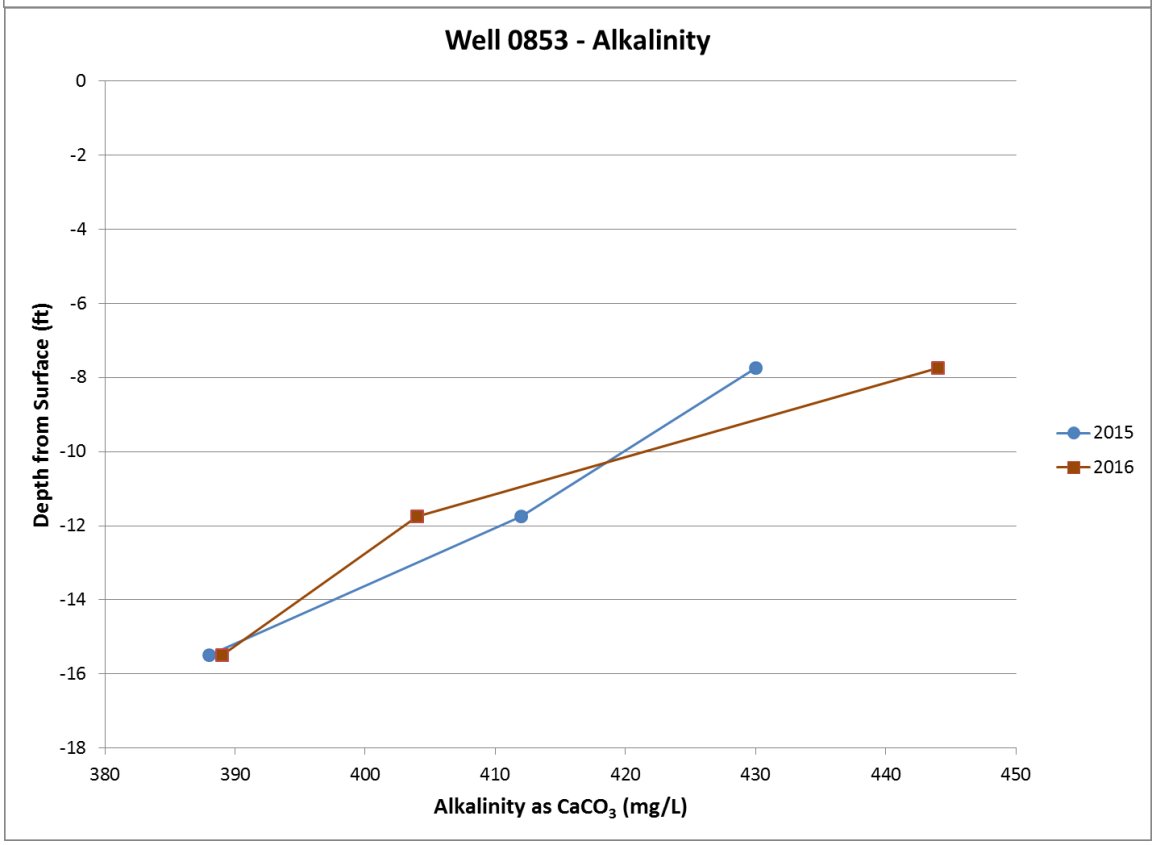

Well 0853 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
2
4
6
8
10
12
14
Potassium (mg/L)
2015
2016

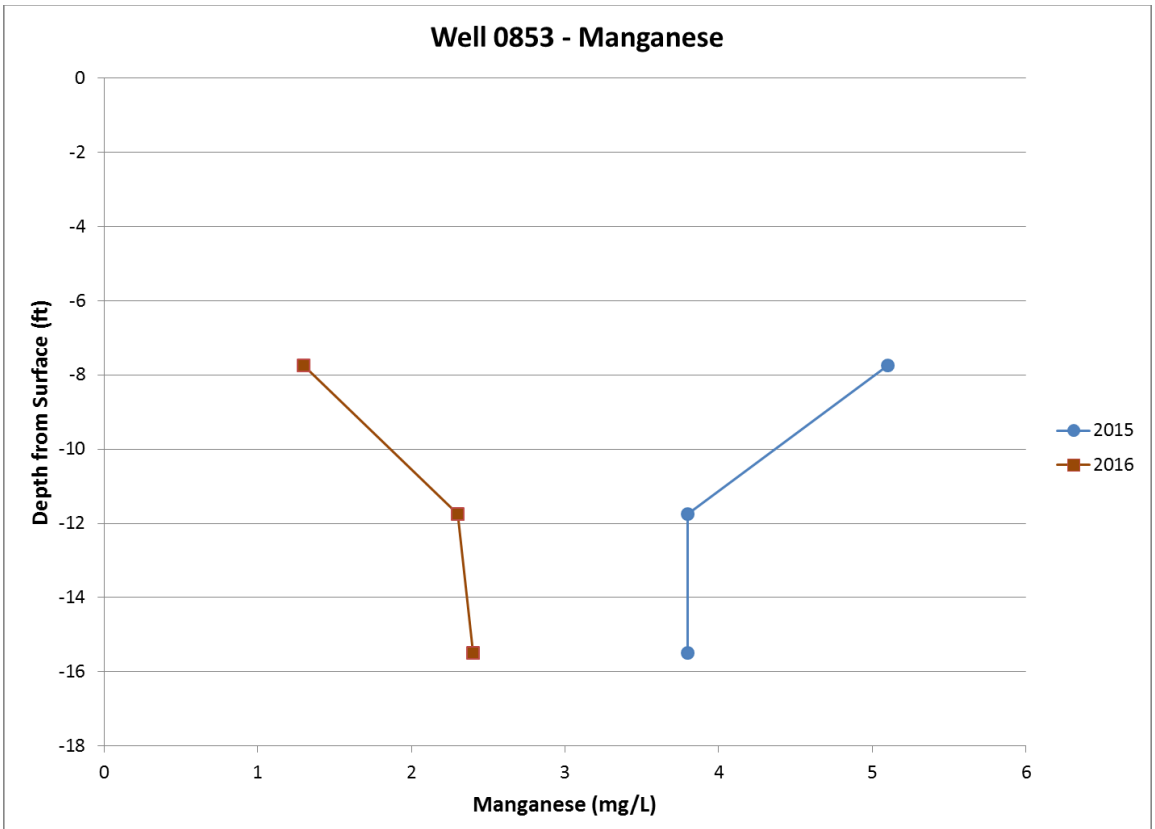

Well 0853 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
1000
2000
3000
4000
5000
6000
Specific Conductance (µS/cm)
2015
2016

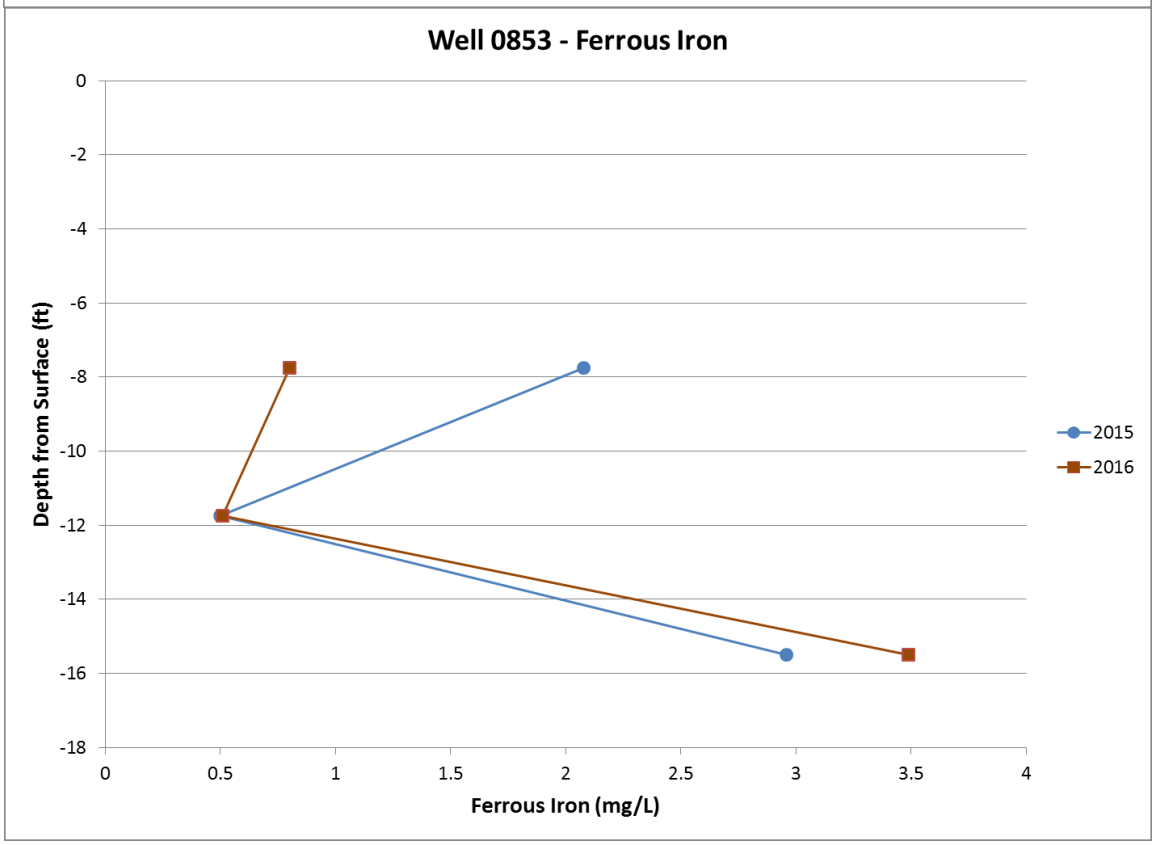

Well 0853 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
20
40
60
80
100
120
140
Chloride (mg/L)
2015
2016

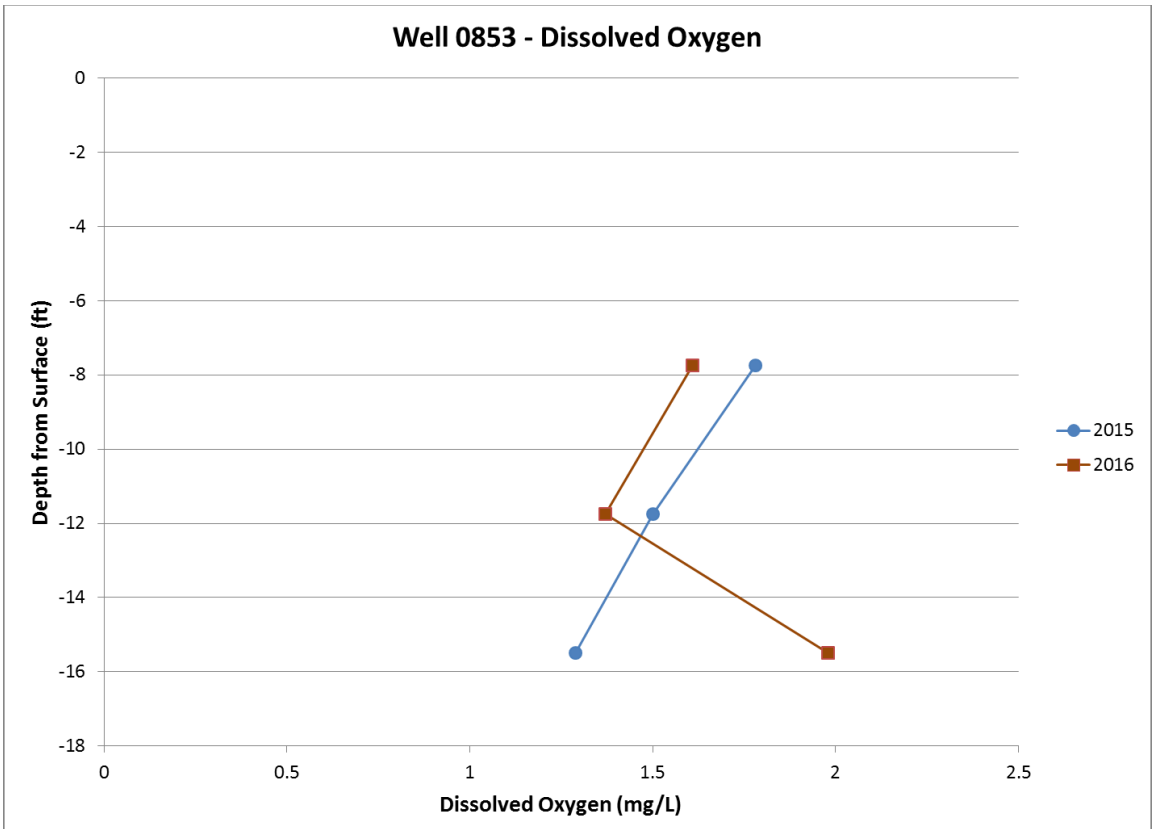

Well 0853 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
500
1000
1500
2000
2500
3000
3500
Sulfate (mg/L)
2015
2016

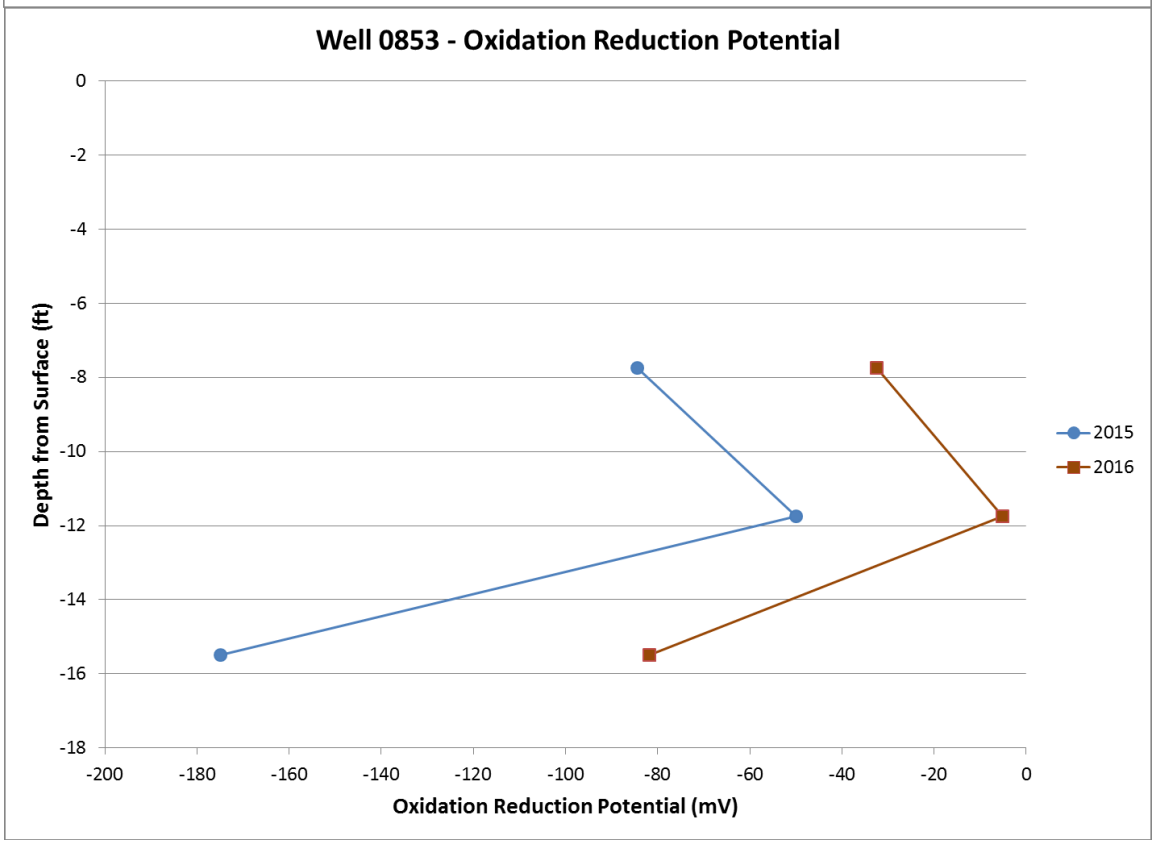

Well 0853 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
100
200
300
400
500
600
700
Calcium (mg/L)
2015
2016

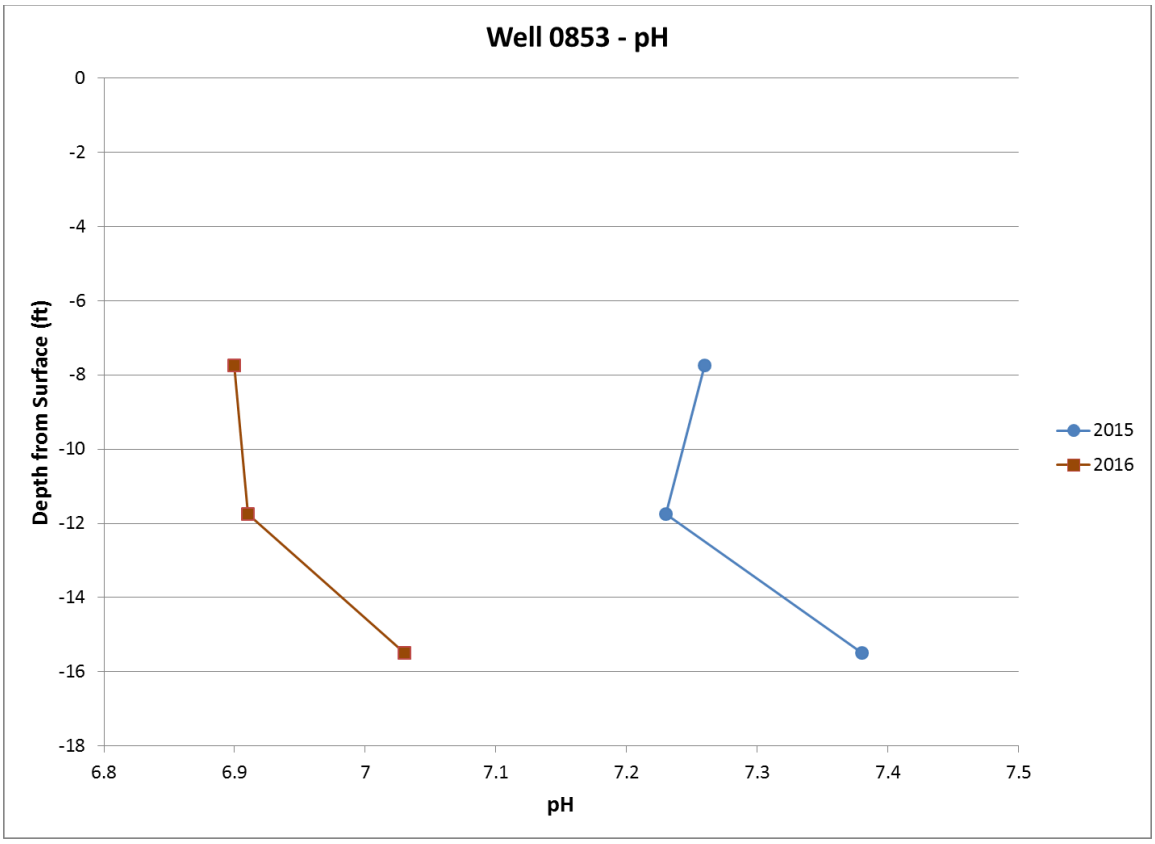

Well 0853 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
380
390
400
410
420
430
440
450
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0853 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
1
2
3
4
5
6
Manganese (mg/L)
2015
2016


Well 0853 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
0.5
1
1.5
2
2.5
3
3.5
4
Ferrous Iron (mg/L)
2015
2016


Well 0853 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
0.5
1
1.5
2
2.5
Dissolved Oxygen (mg/L)
2015
2016


Well 0853 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-200
-180
-160
-140
-120
-100
-80
-60
-40
-20
0
Oxidation Reduction Potential (mV)
2015
2016


Well 0853 - pH
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
6.8
6.9
7
7.1
7.2
7.3
7.4
7.5
pH
2015
2016

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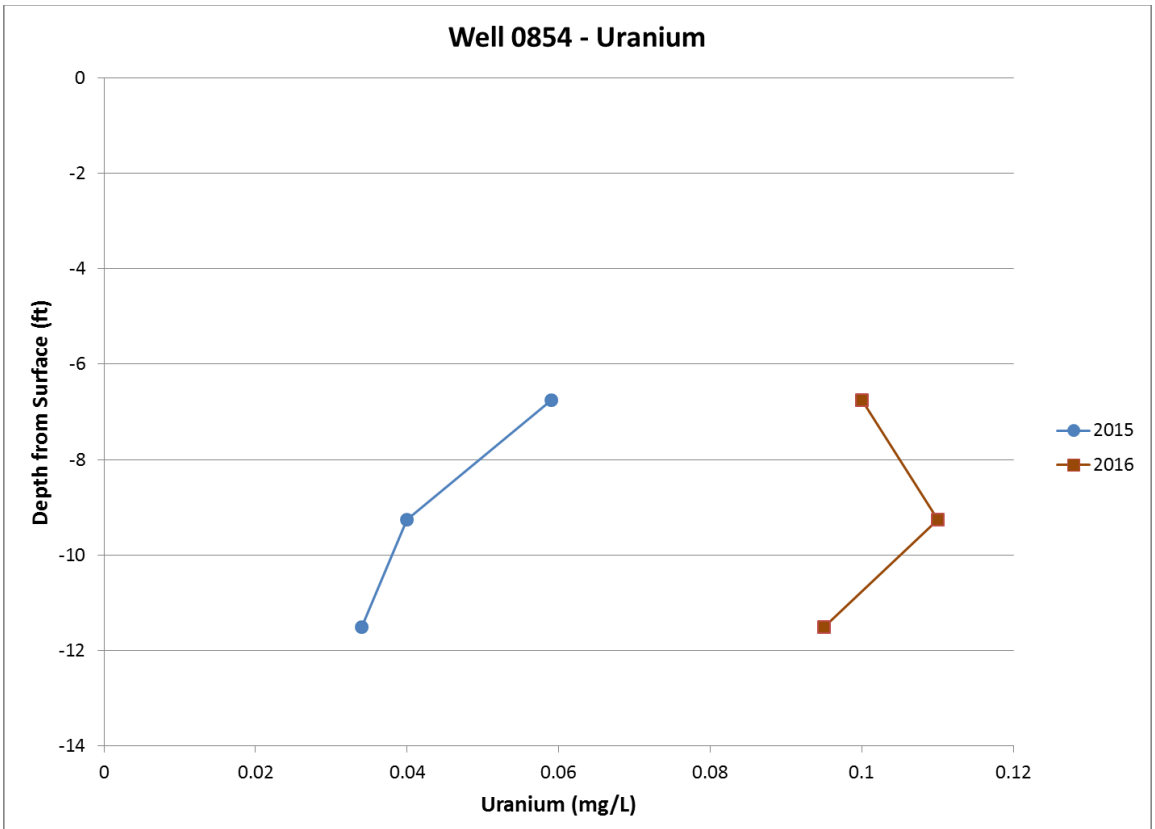
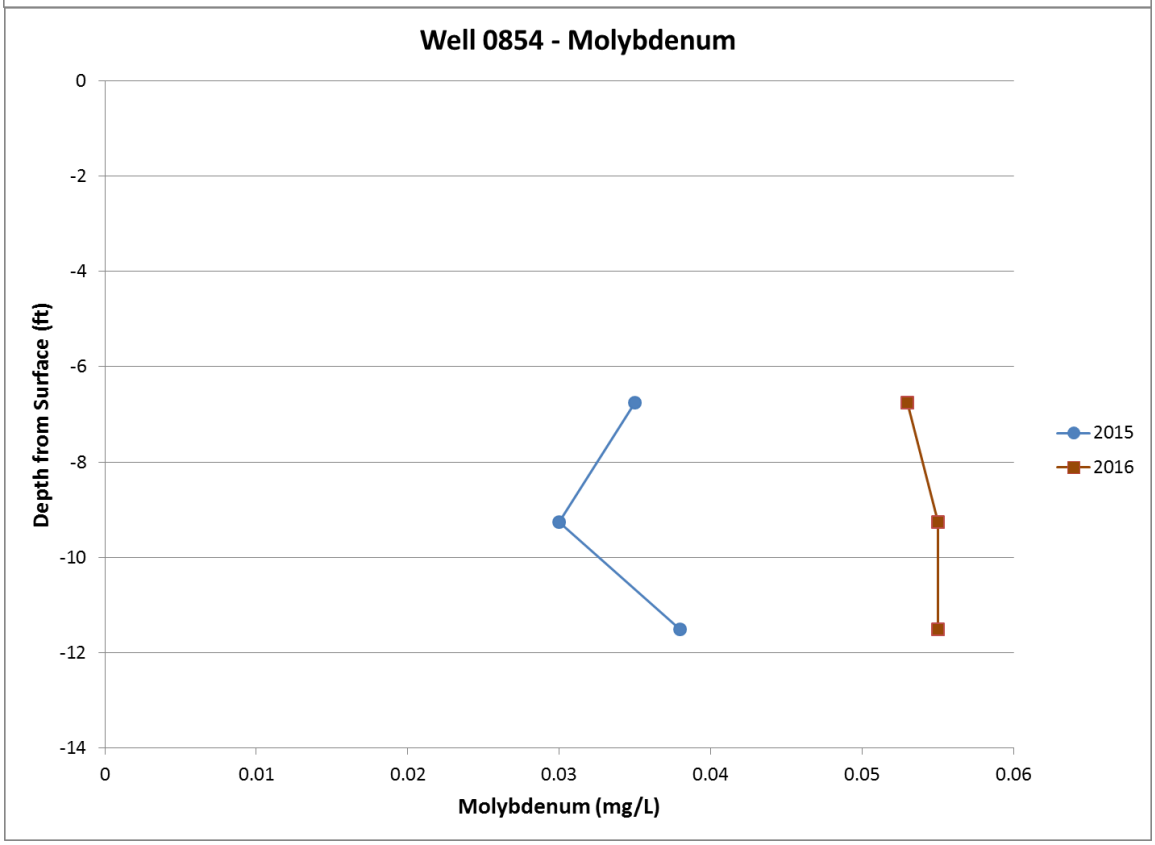
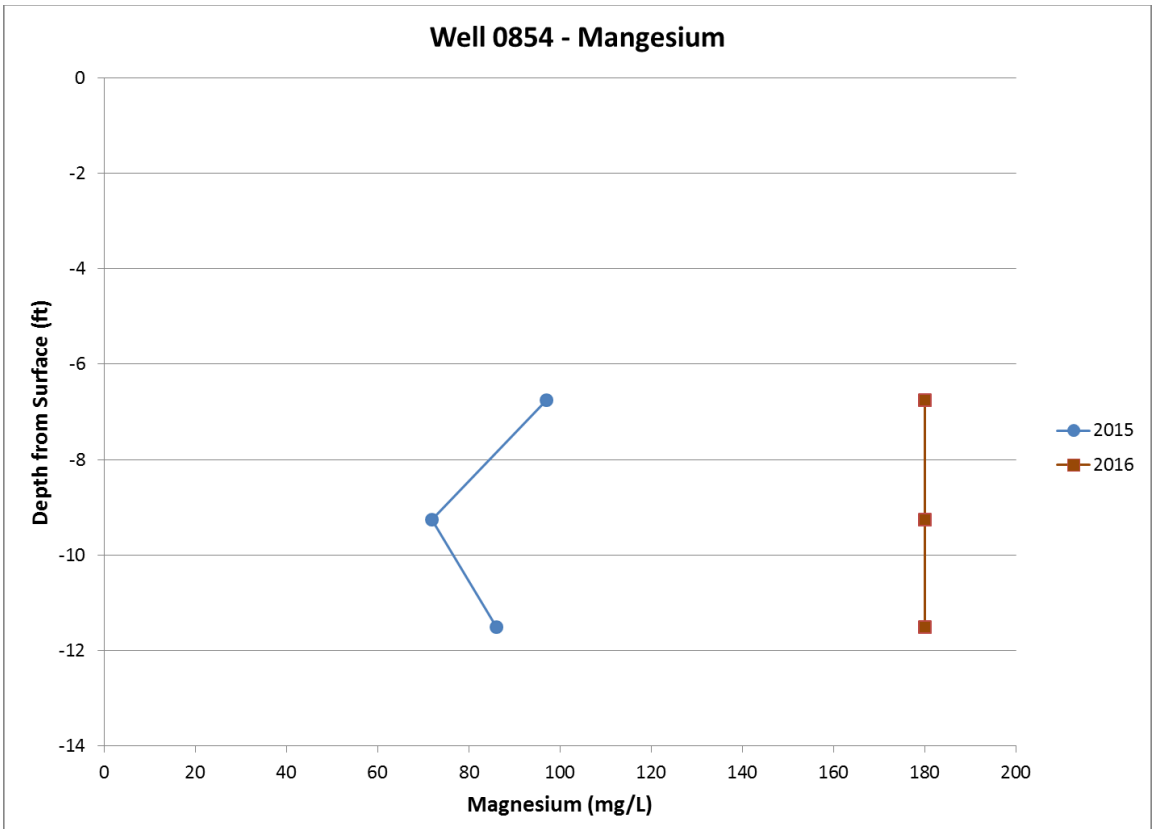
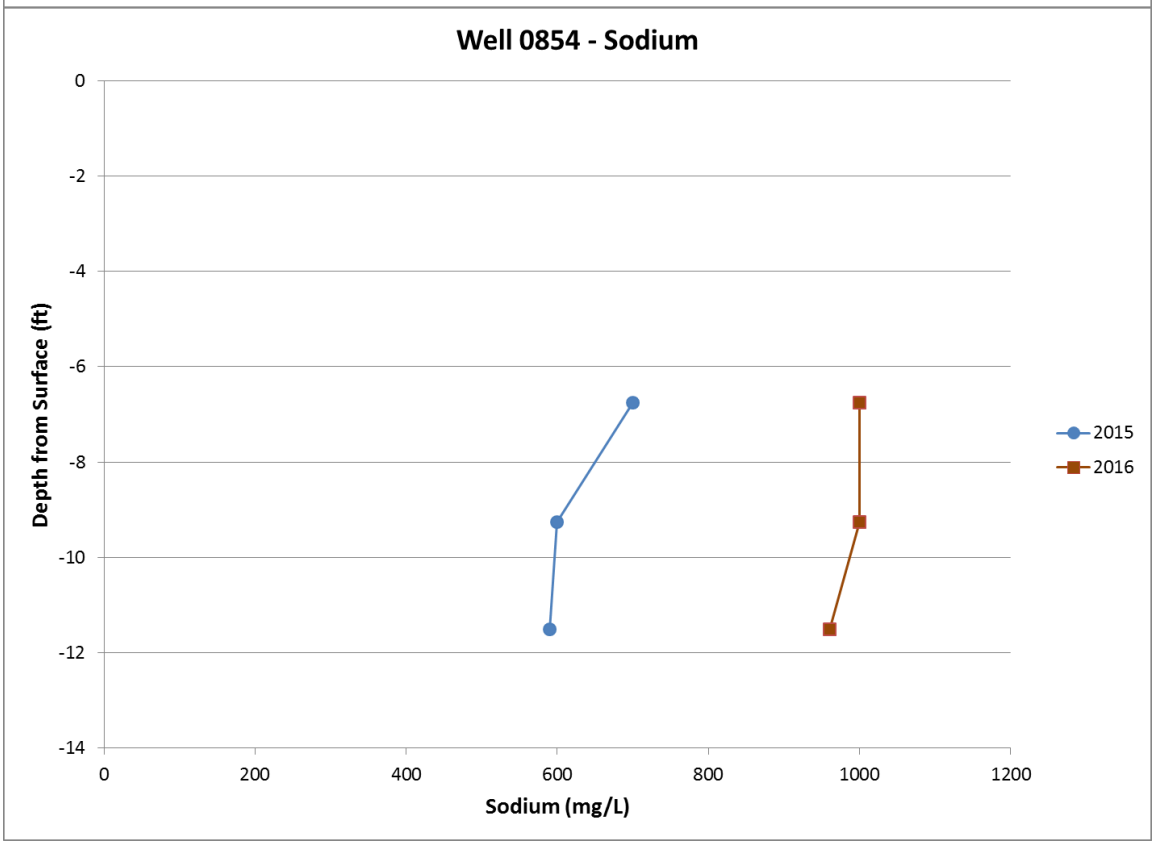
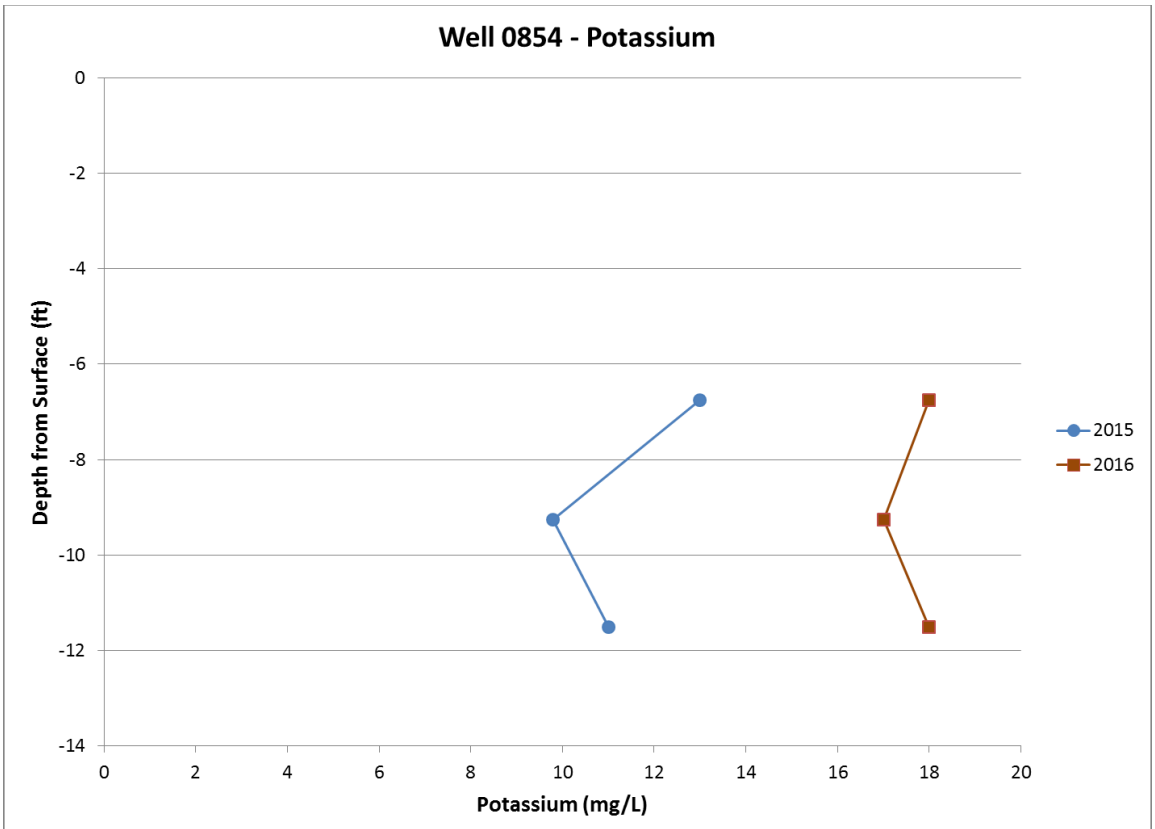
Well 0854

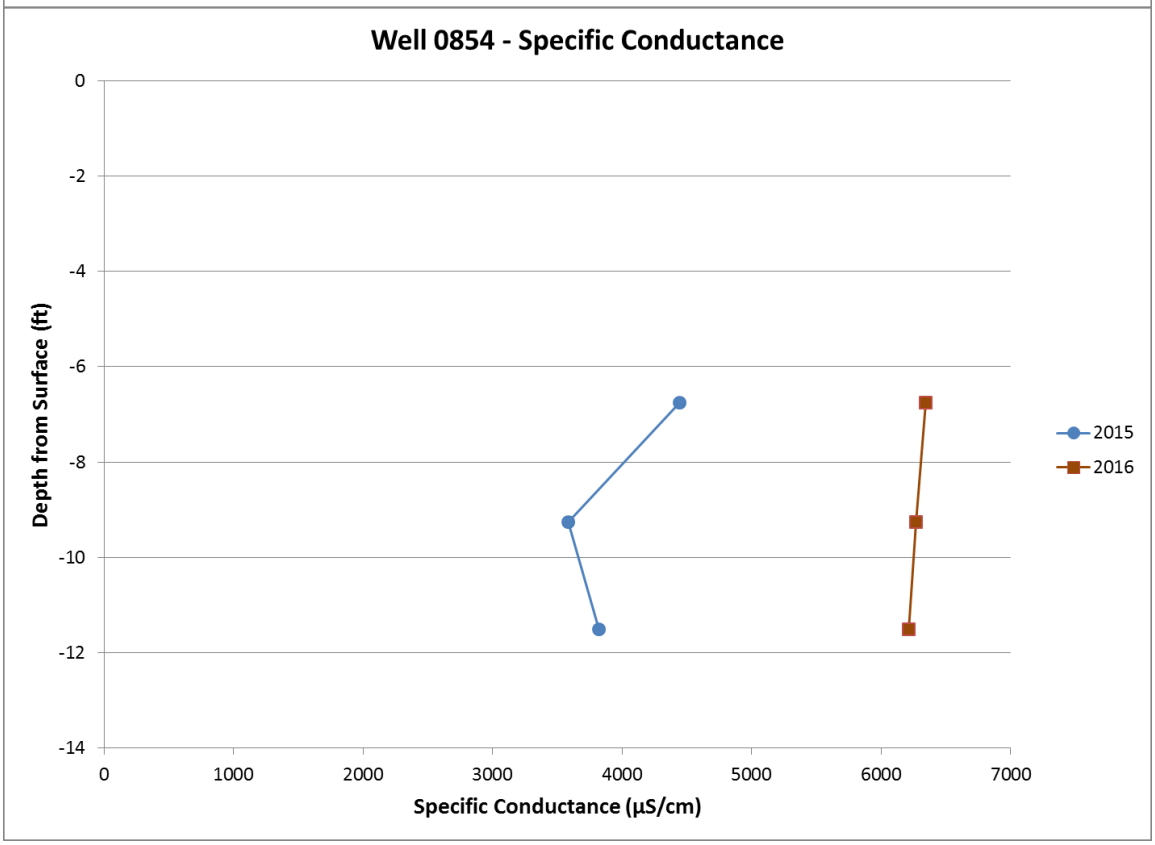

Well 0854 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
0.02
0.04
0.06
0.08
0.1
0.12
Uranium (mg/L)
2015
2016

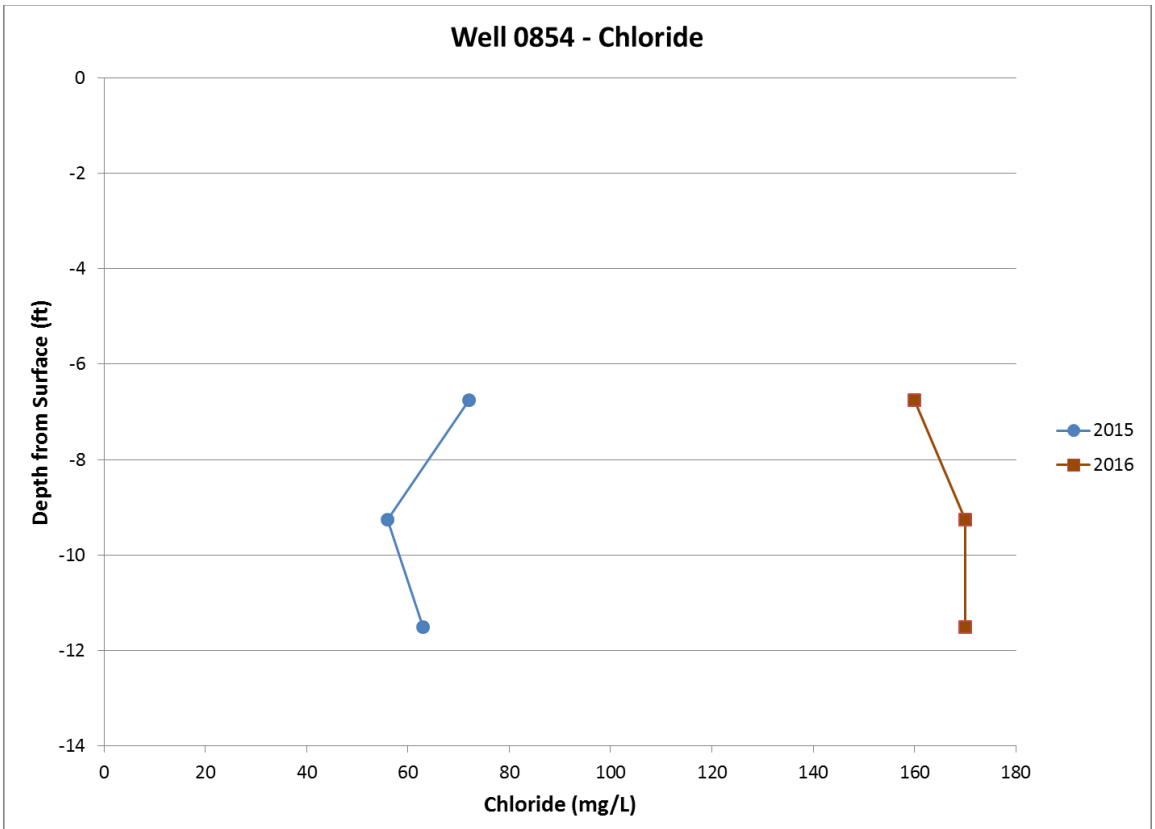

Well 0854 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
0.01
0.02
0.03
0.04
0.05
0.06
Molybdenum (mg/L)
2015
2016

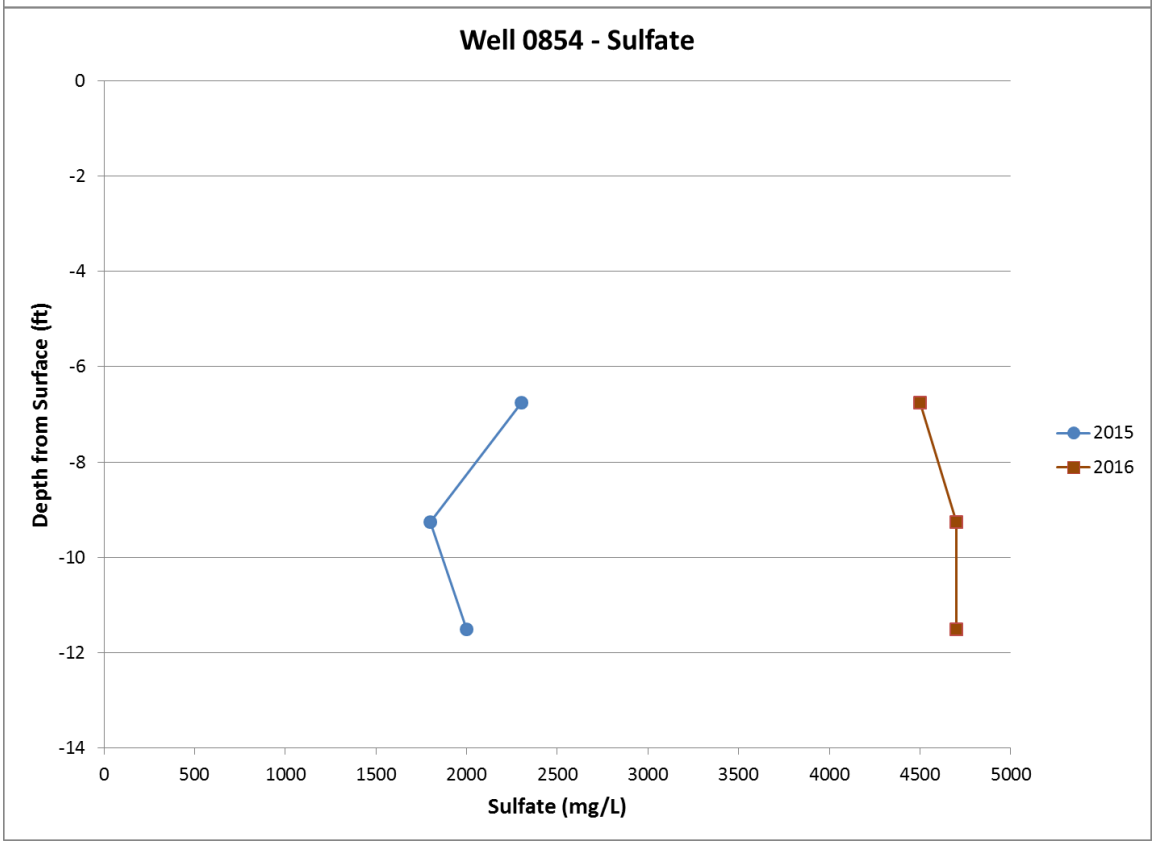

Well 0854 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
20
40
60
80
100
120
140
160
180
200
Magnesium (mg/L)
2015
2016

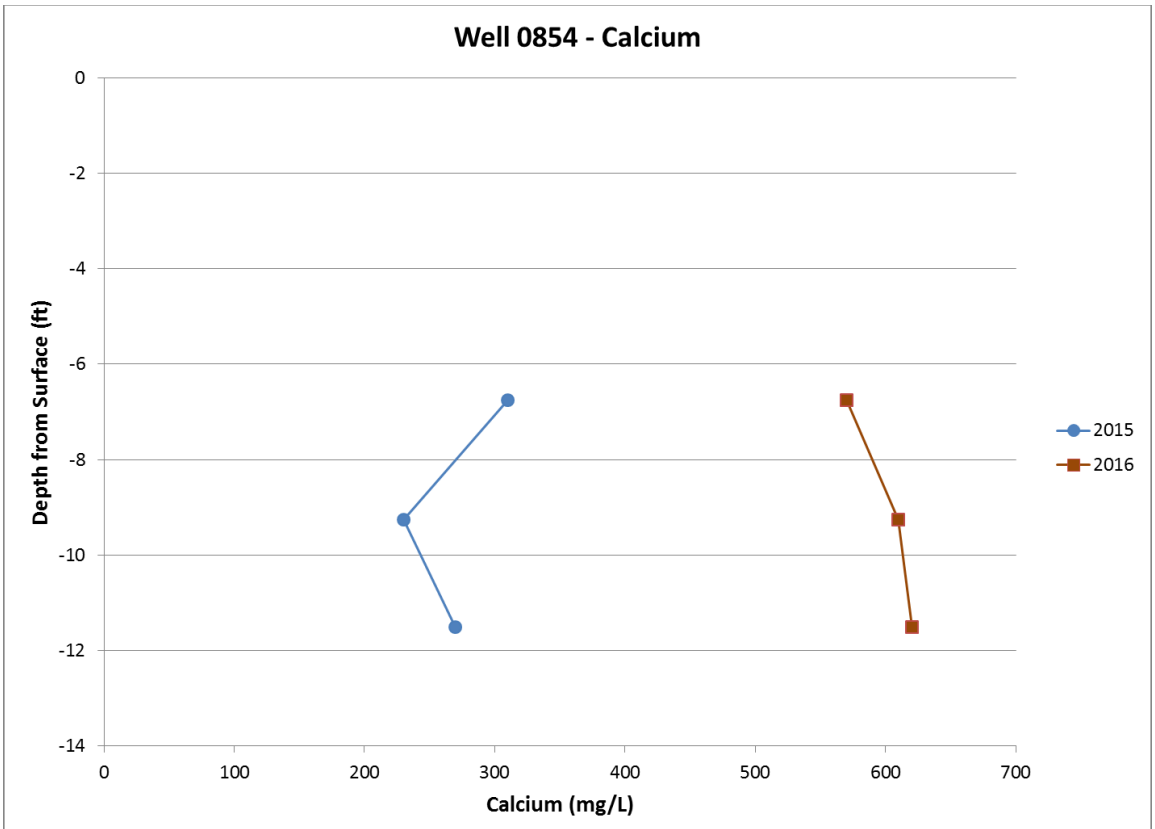

Well 0854 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
200
400
600
800
1000
1200
Sodium (mg/L)
2015
2016

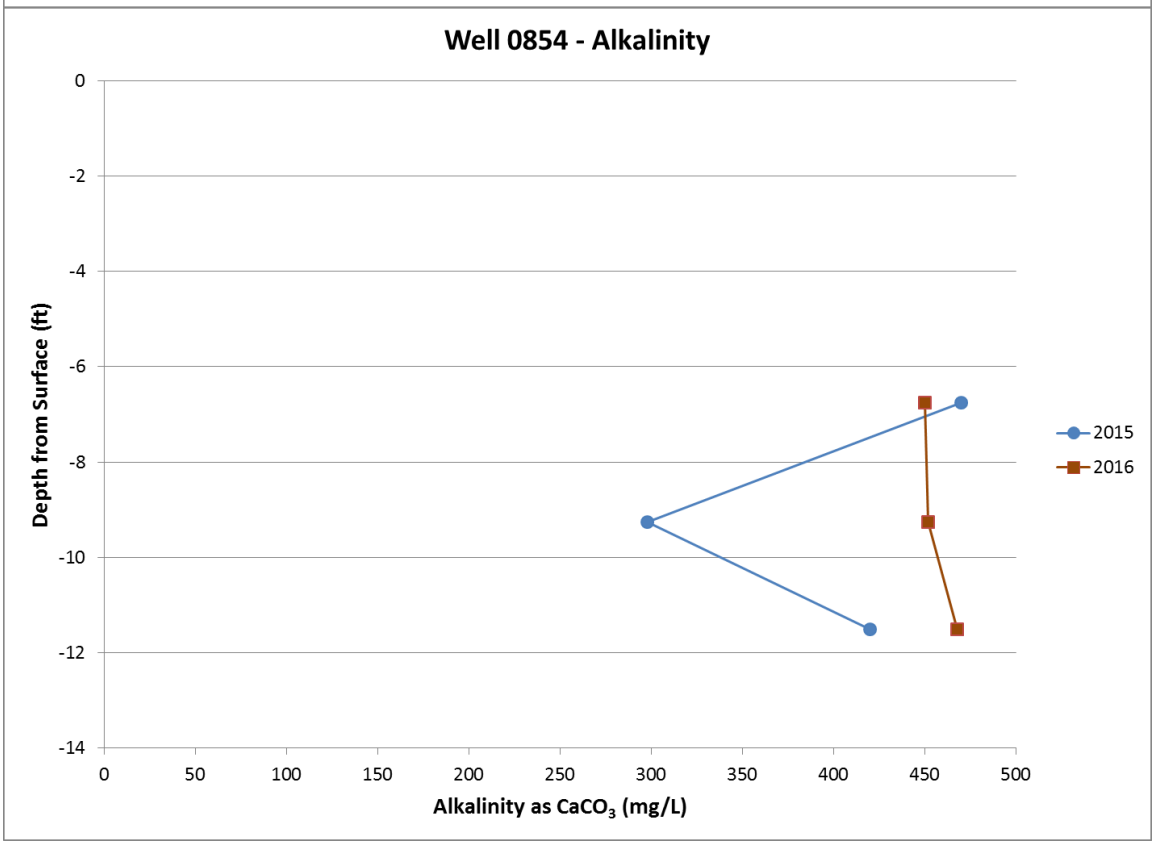

Well 0854 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
2
4
6
8
10
12
14
16
18
20
Potassium (mg/L)
2015
2016

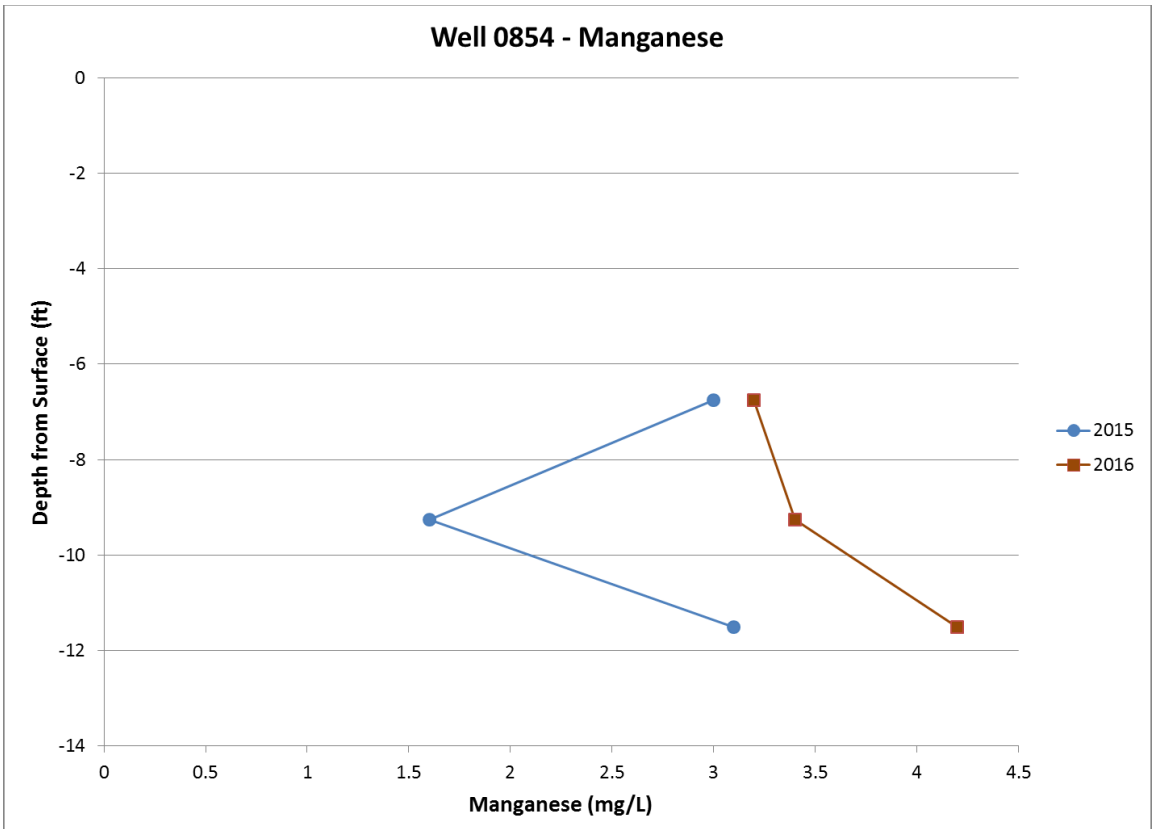

Well 0854 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
1000
2000
3000
4000
5000
6000
7000
Specific Conductance (µS/cm)
2015
2016

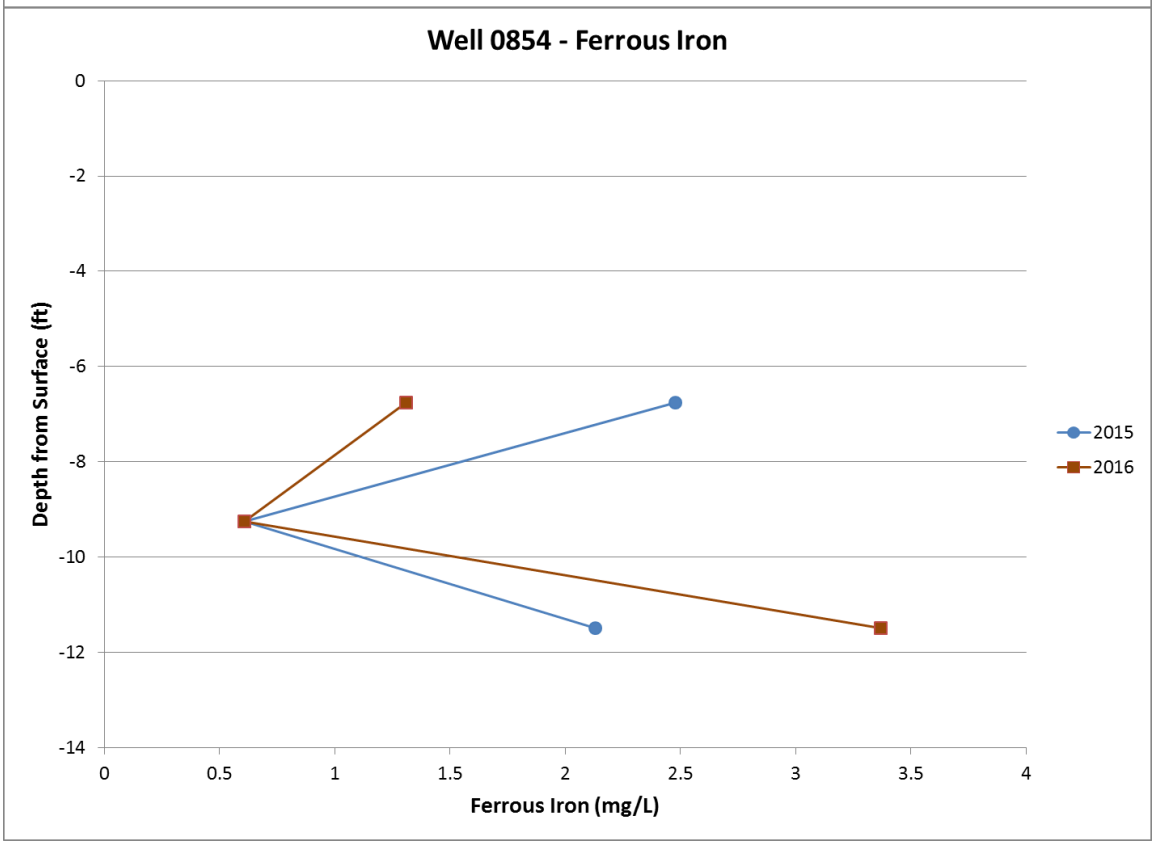

Well 0854 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
20
40
60
80
100
120
140
160
180
Chloride (mg/L)
2015
2016

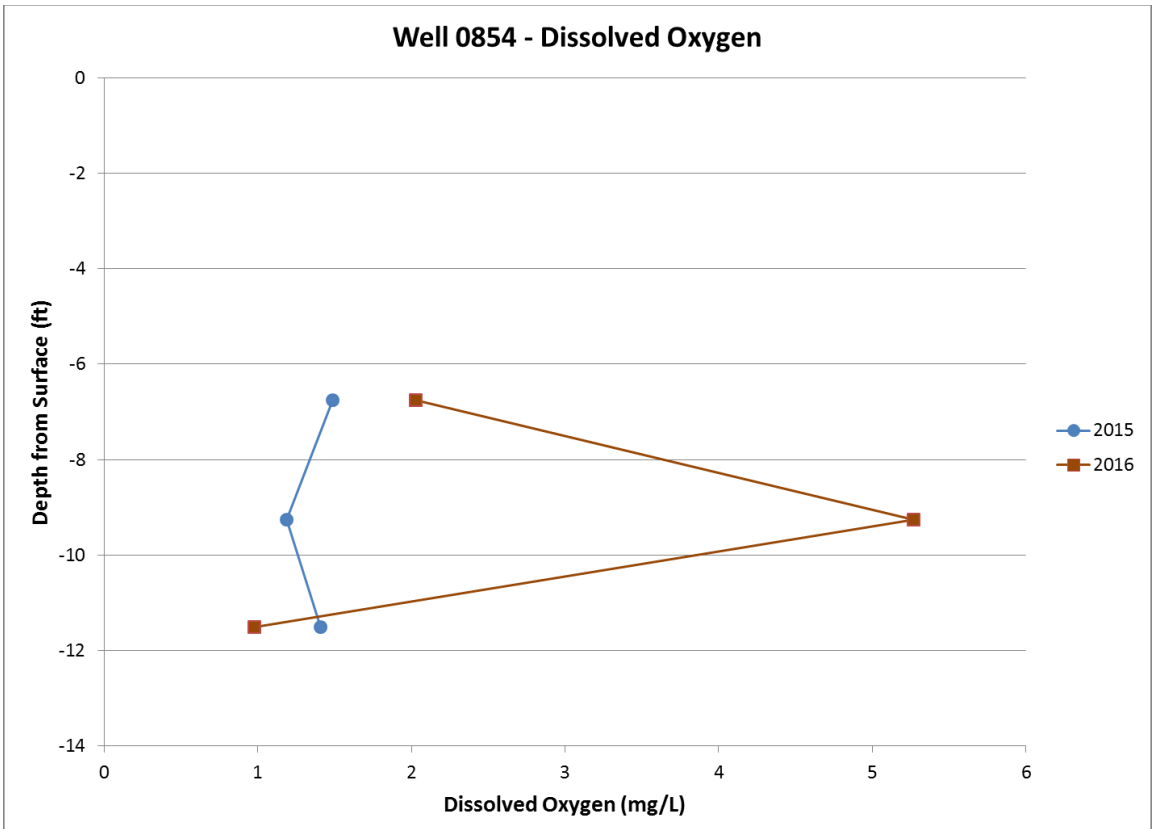

Well 0854 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
Sulfate (mg/L)
2015
2016

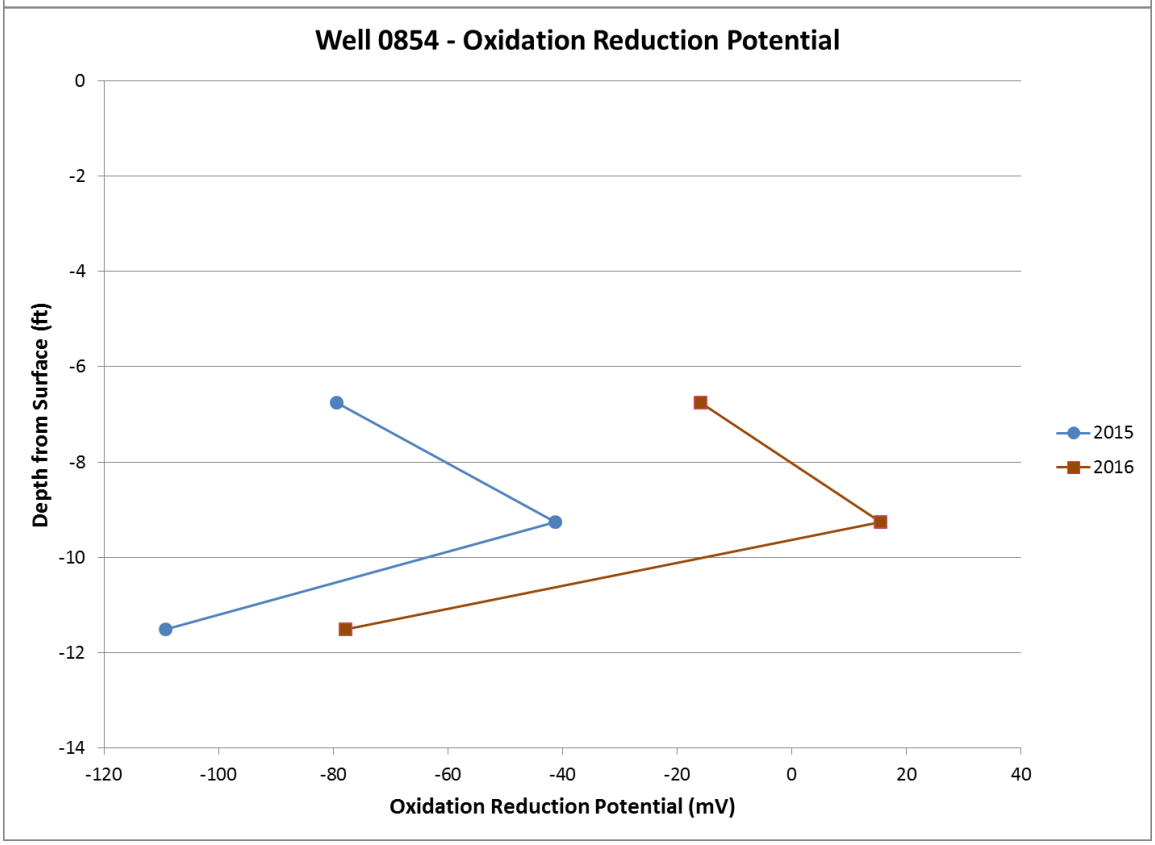

Well 0854 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
100
200
300
400
500
600
700
Calcium (mg/L)
2015
2016

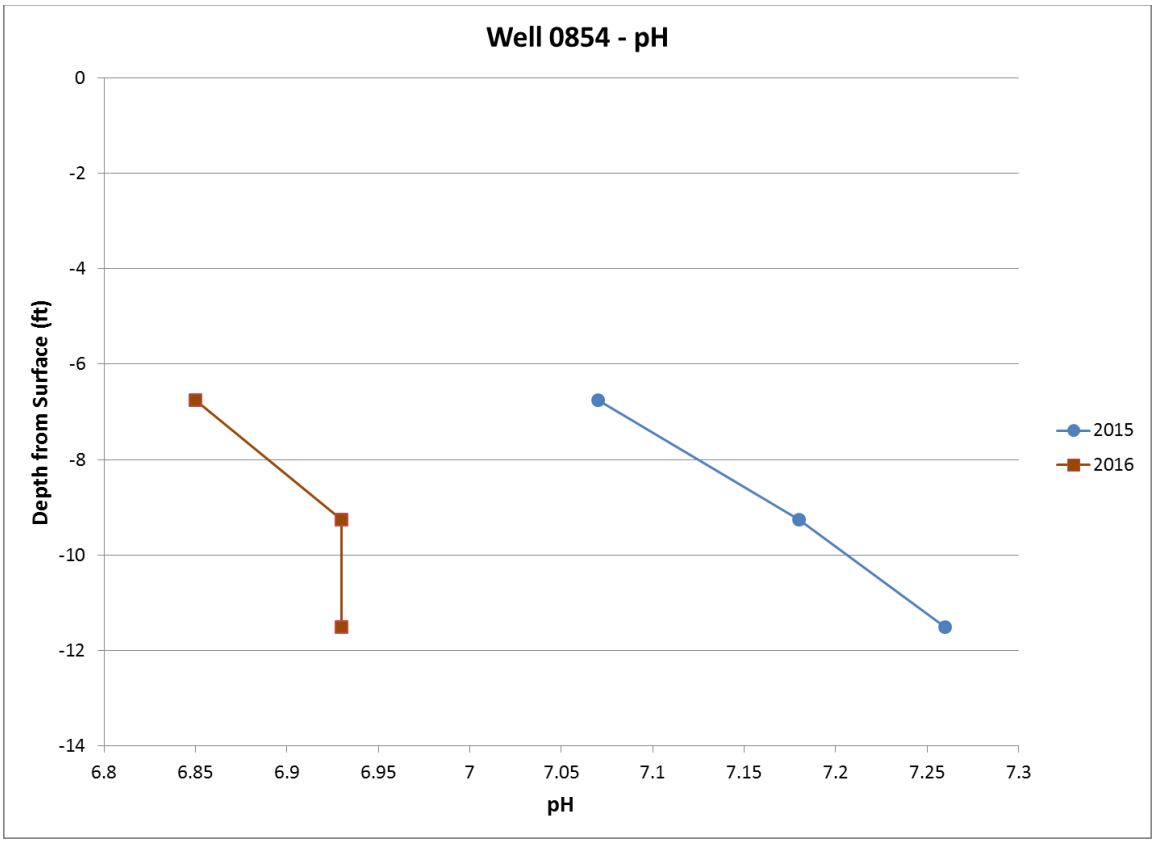

Well 0854 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
50
100
150
200
250
300
350
400
450
500
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0854 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
Manganese (mg/L)
2015
2016


Well 0854 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
0.5
1
1.5
2
2.5
3
3.5
4
Ferrous Iron (mg/L)
2015
2016


Well 0854 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
0
1
2
3
4
5
6
Dissolved Oxygen (mg/L)
2015
2016


Well 0854 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-120
-100
-80
-60
-40
-20
0
20
40
Oxidation Reduction Potential (mV)
2015
2016


Well 0854 - pH
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
6.8
6.85
6.9
6.95
7
7.05
7.1
7.15
7.2
7.25
7.3
pH
2015
2016

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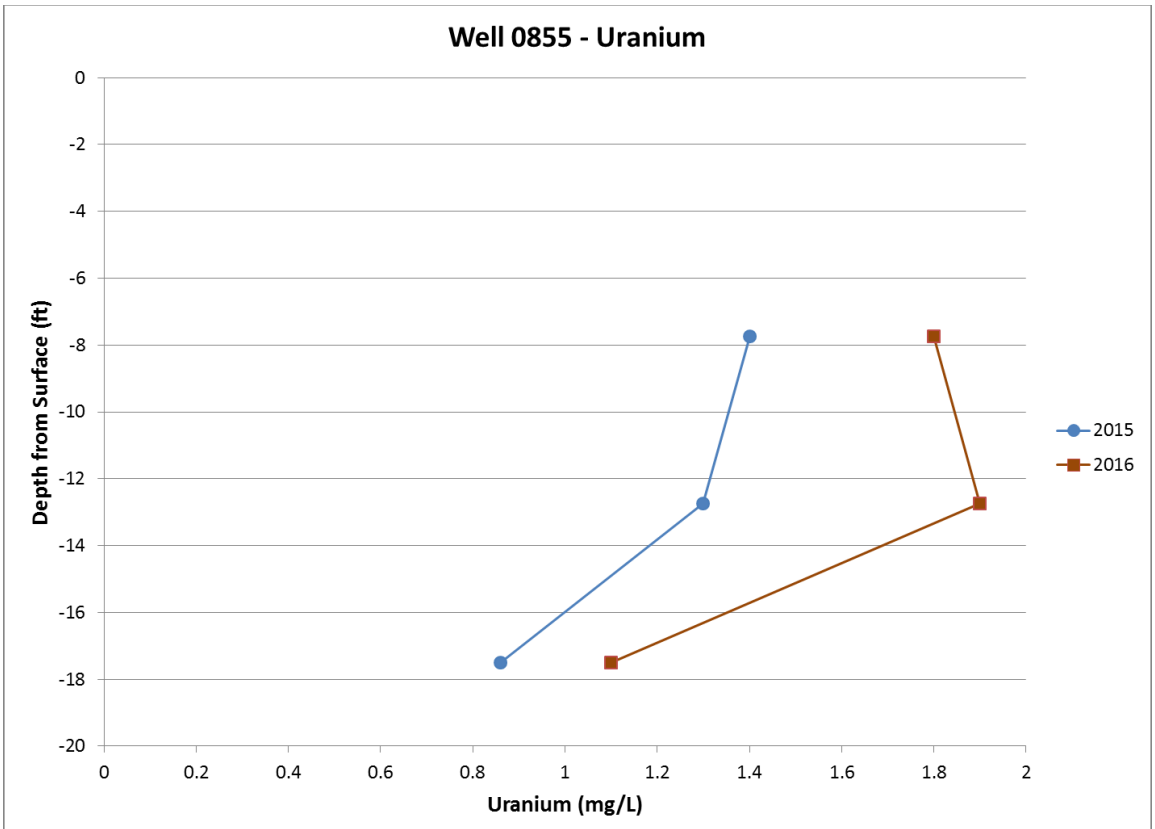
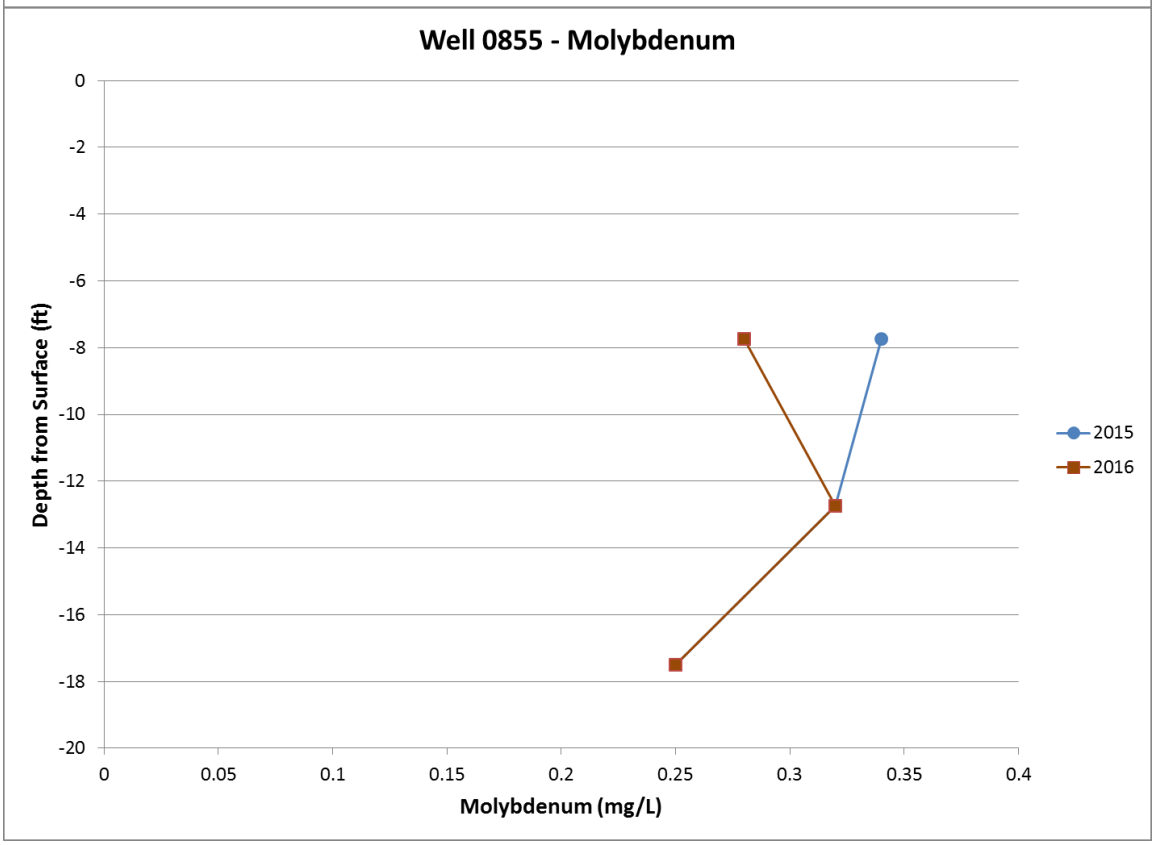
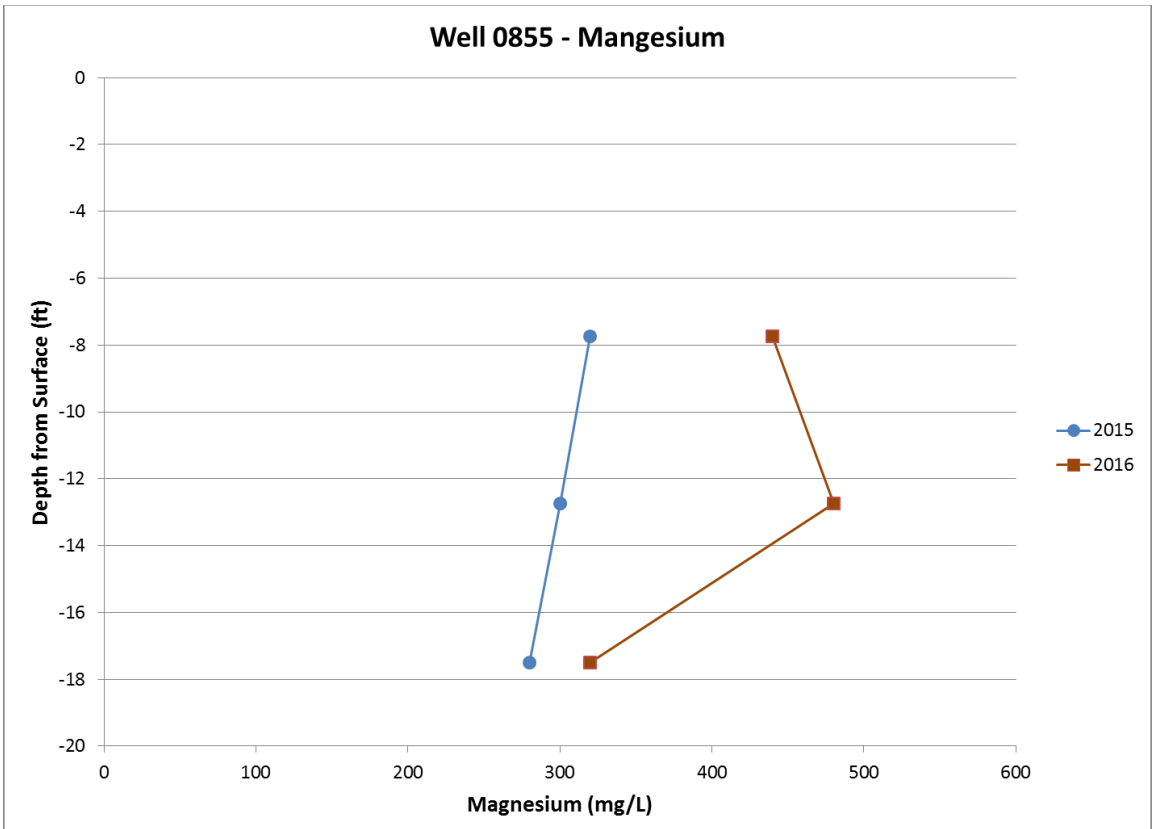
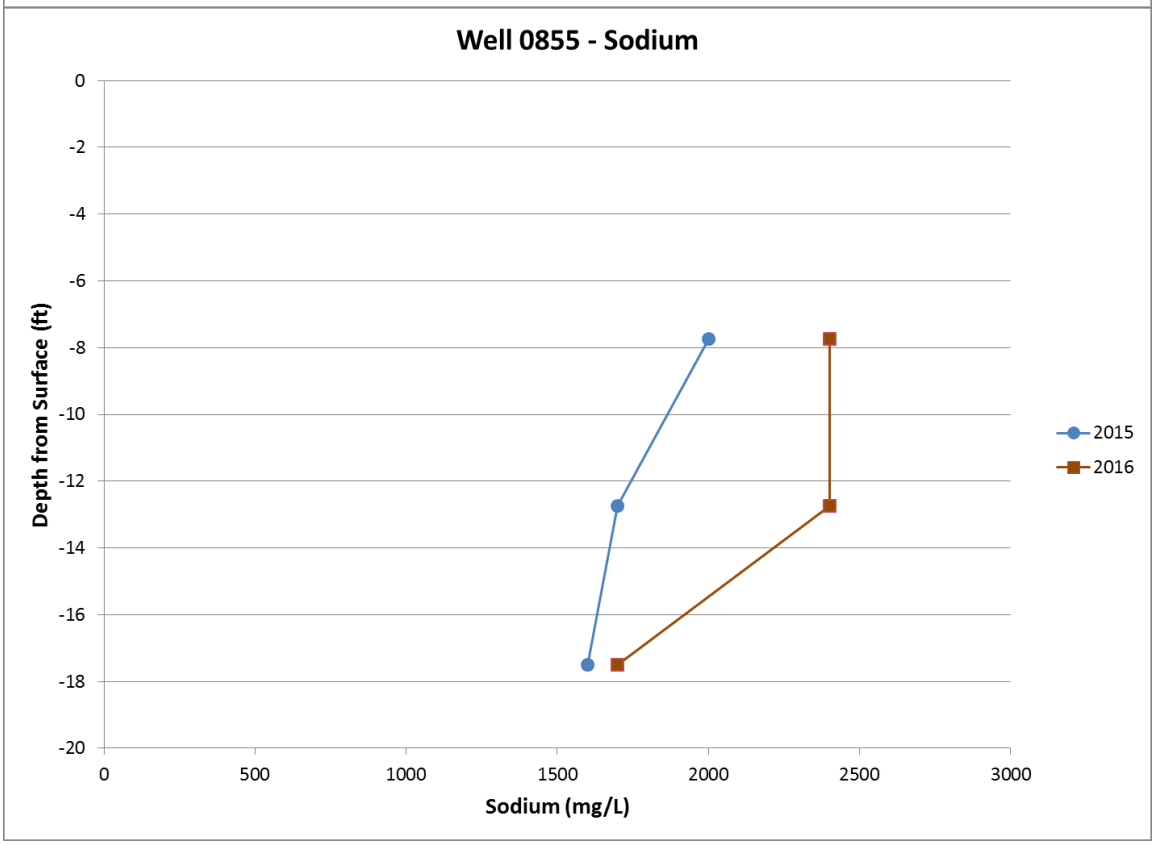
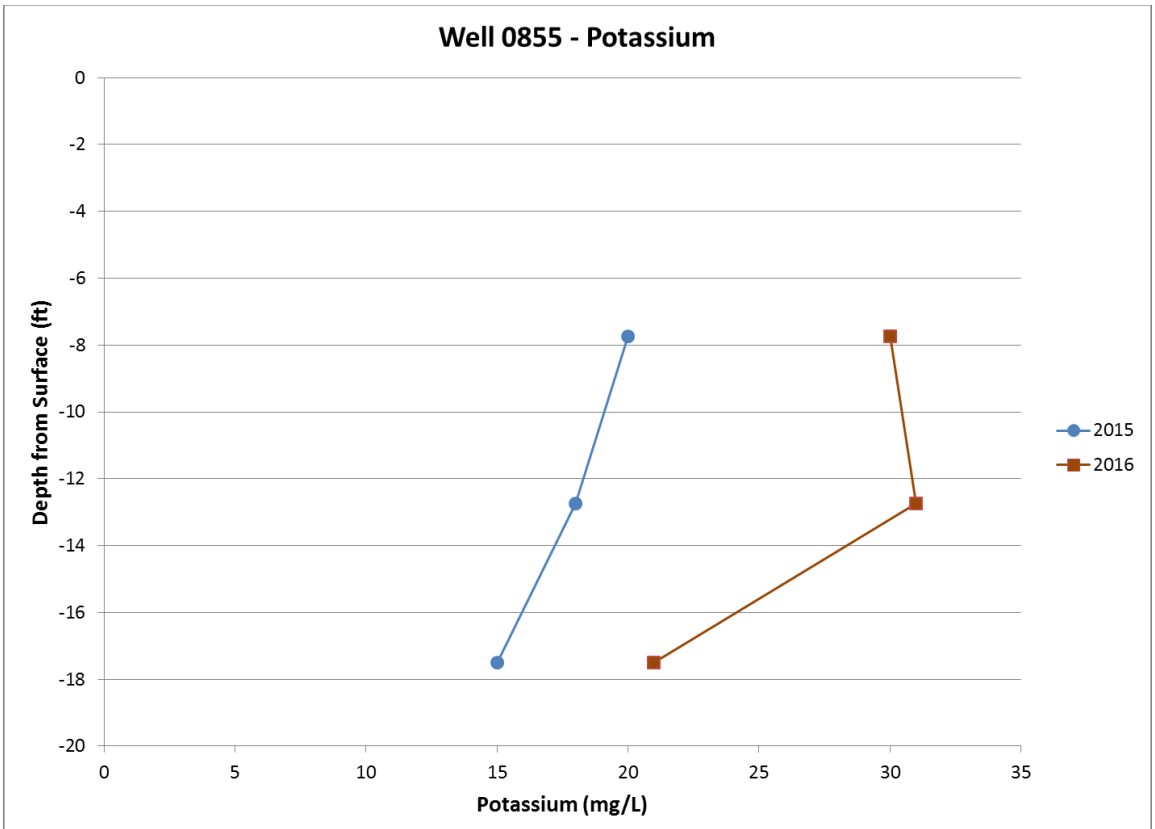
Well 0855

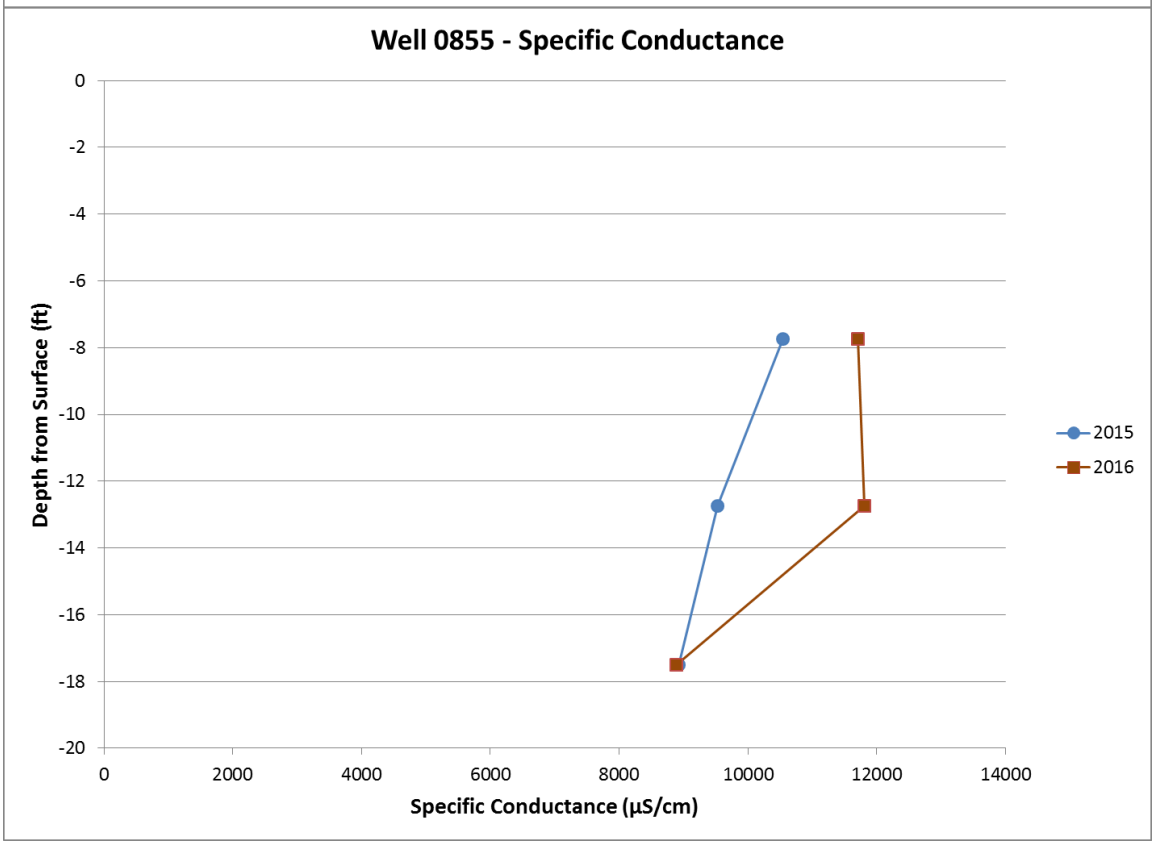

Well 0855 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Uranium (mg/L)
2015
2016

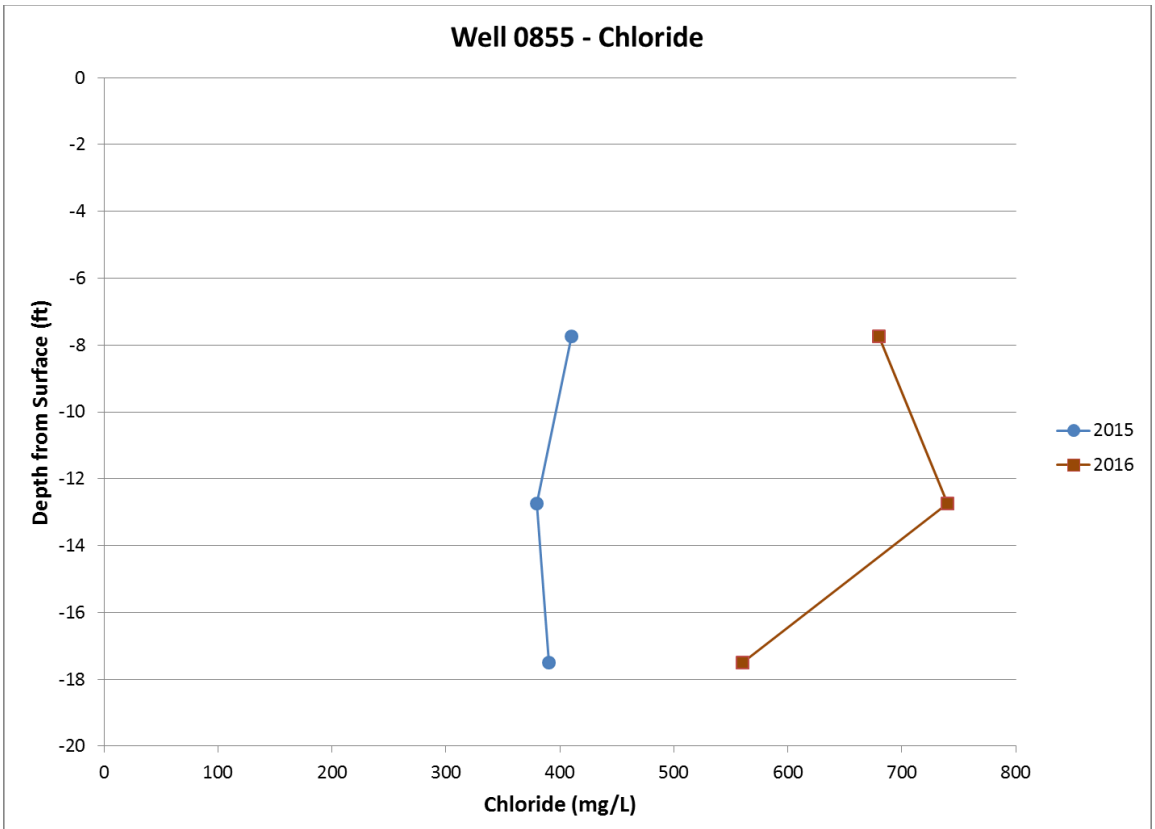

Well 0855 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Molybdenum (mg/L)
2015
2016

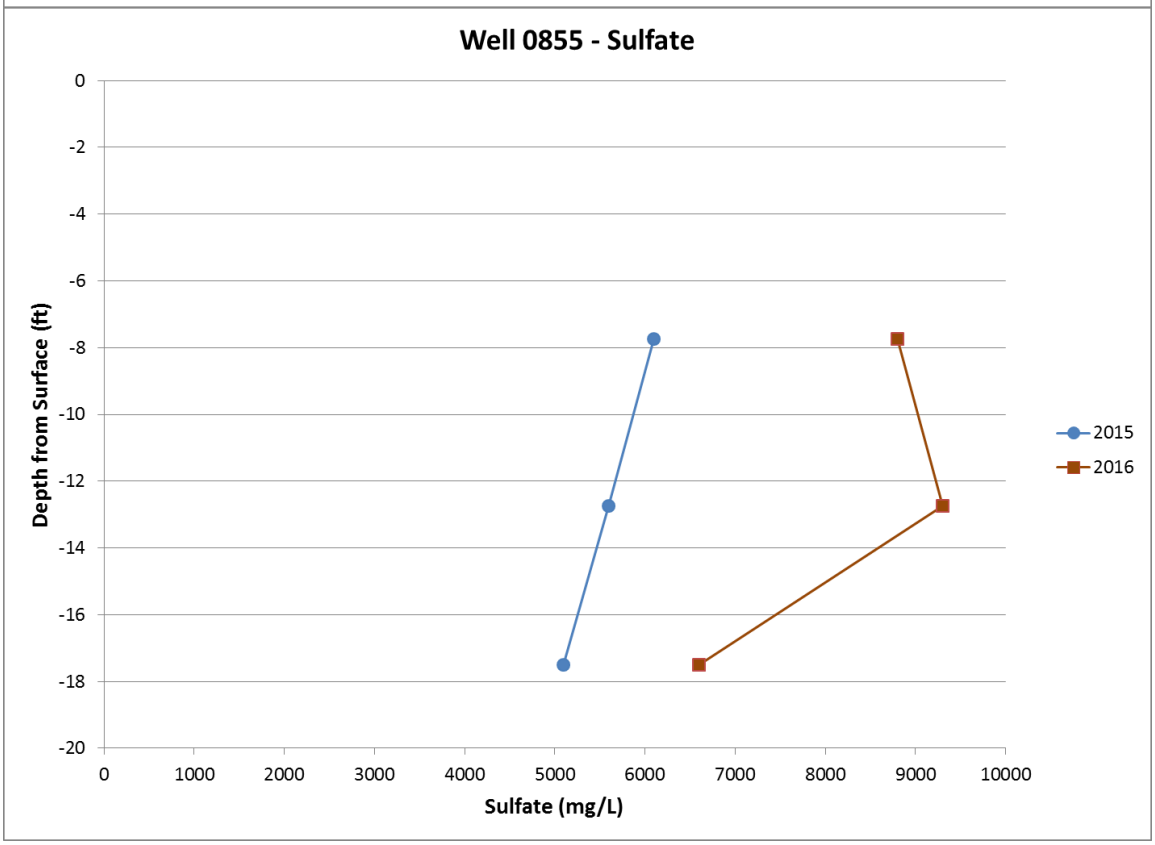

Well 0855 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
100
200
300
400
500
600
Magnesium (mg/L)
2015
2016

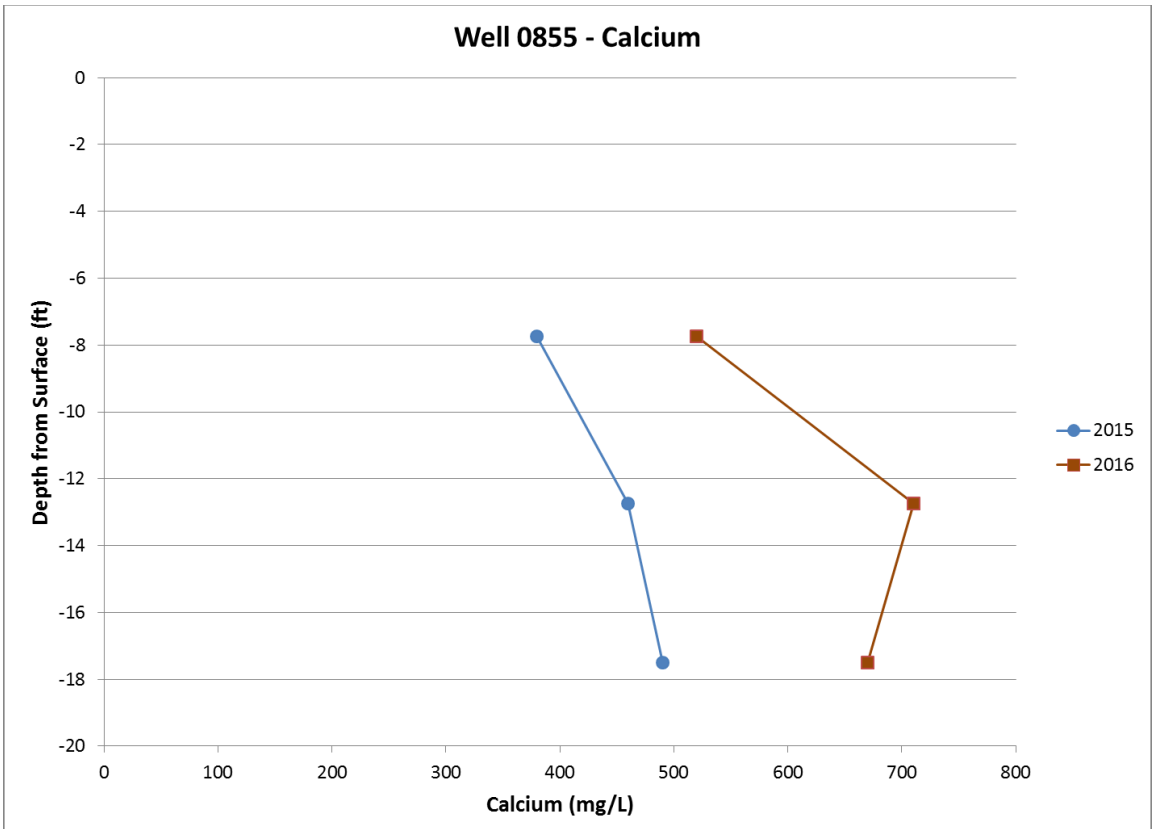

Well 0855 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
500
1000
1500
2000
2500
3000
Sodium (mg/L)
2015
2016

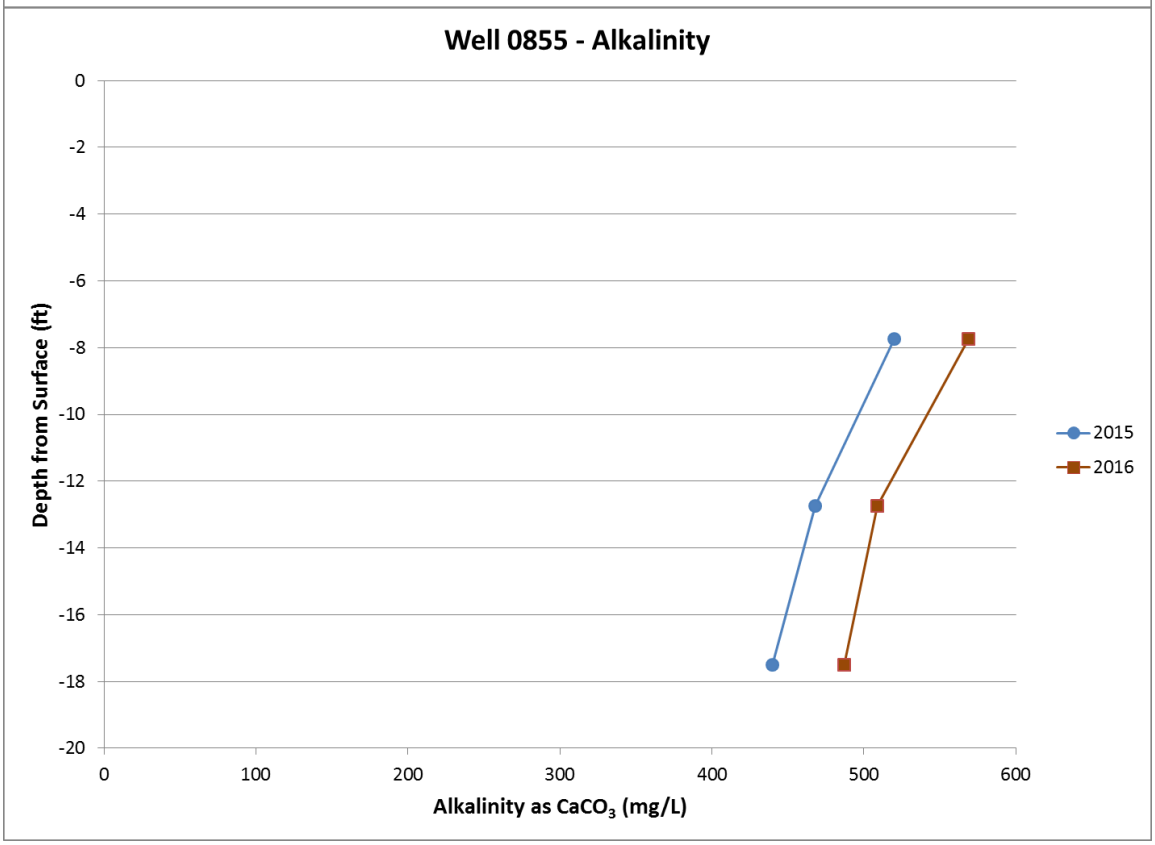

Well 0855 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
5
10
15
20
25
30
35
Potassium (mg/L)
2015
2016

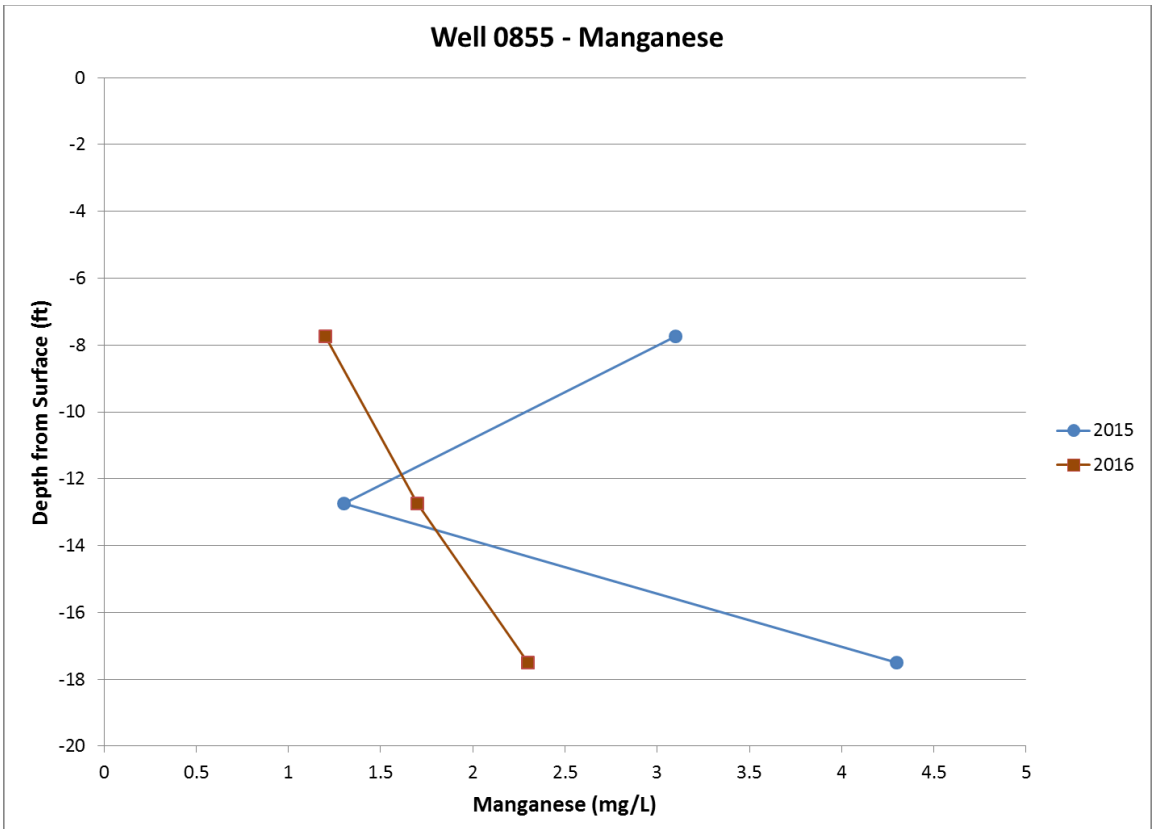

Well 0855 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
2000
4000
6000
8000
10000
12000
14000
Specific Conductance (µS/cm)
2015
2016

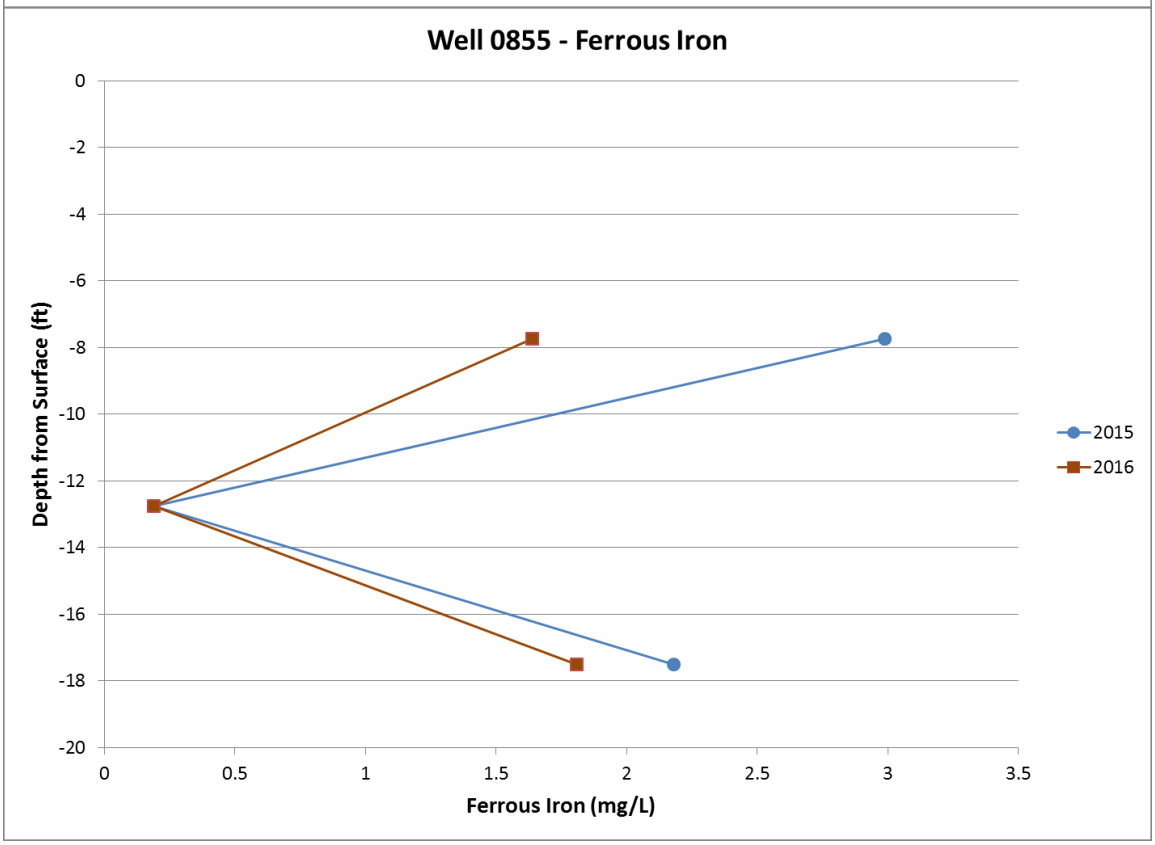

Well 0855 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
100
200
300
400
500
600
700
800
Chloride (mg/L)
2015
2016

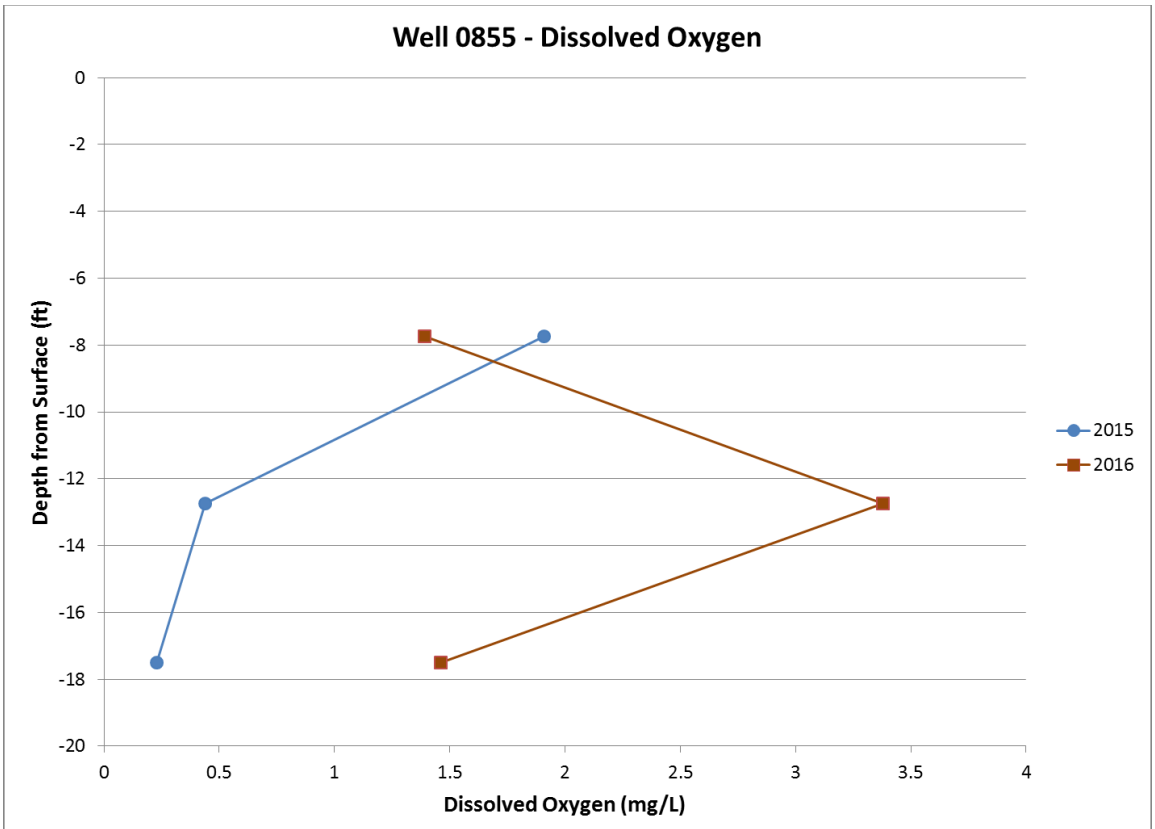

Well 0855 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
Sulfate (mg/L)
2015
2016

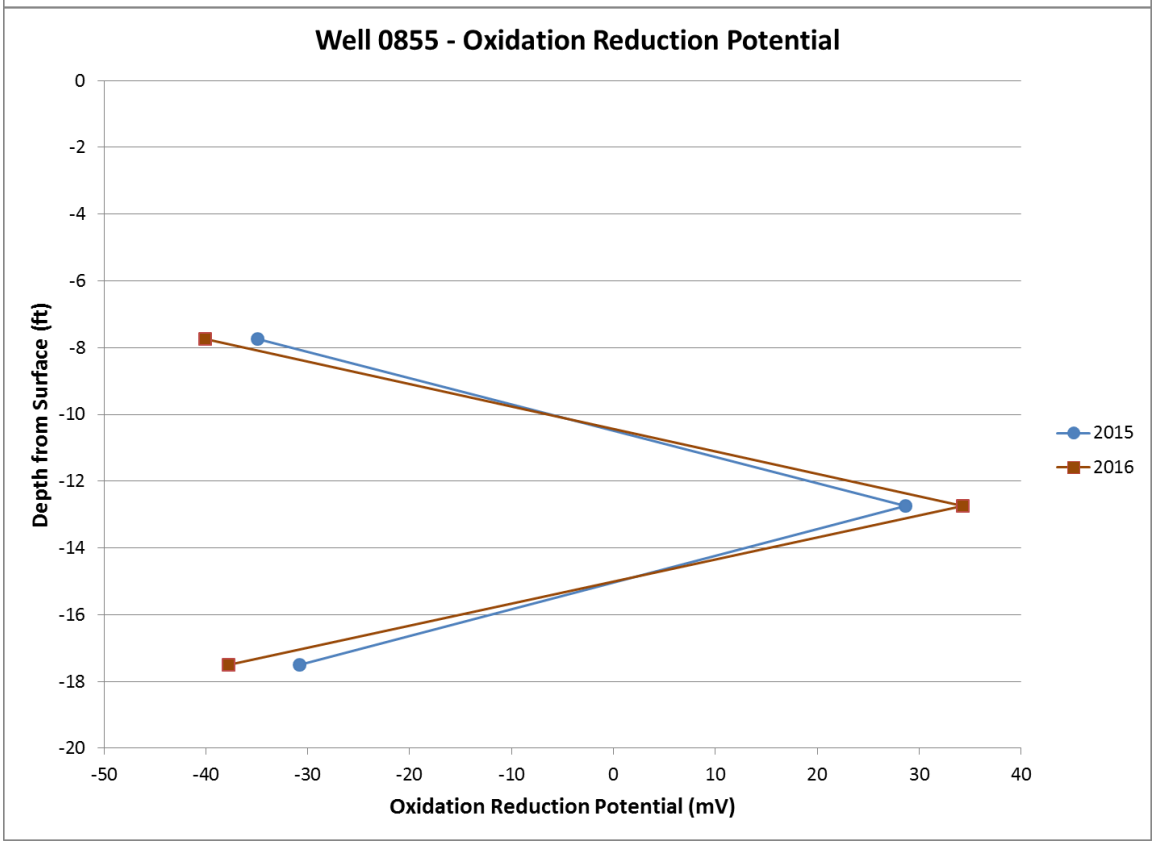

Well 0855 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
100
200
300
400
500
600
700
800
Calcium (mg/L)
2015
2016

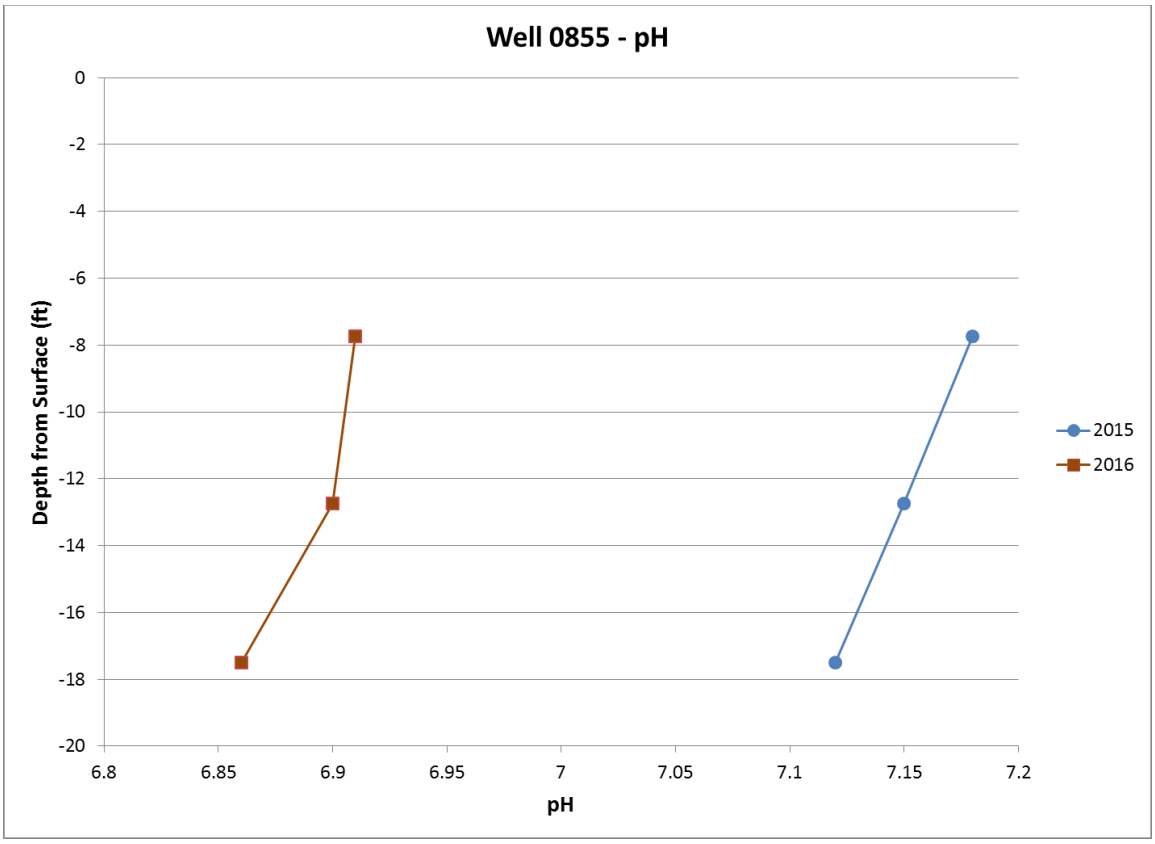

Well 0855 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
100
200
300
400
500
600
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0855 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Manganese (mg/L)
2015
2016


Well 0855 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.5
1
1.5
2
2.5
3
3.5
Ferrous Iron (mg/L)
2015
2016


Well 0855 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.5
1
1.5
2
2.5
3
3.5
4
Dissolved Oxygen (mg/L)
2015
2016


Well 0855 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-50
-40
-30
-20
-10
0
10
20
30
40
Oxidation Reduction Potential (mV)
2015
2016


Well 0855 - pH
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
6.8
6.85
6.9
6.95
7
7.05
7.1
7.15
7.2
pH
2015
2016

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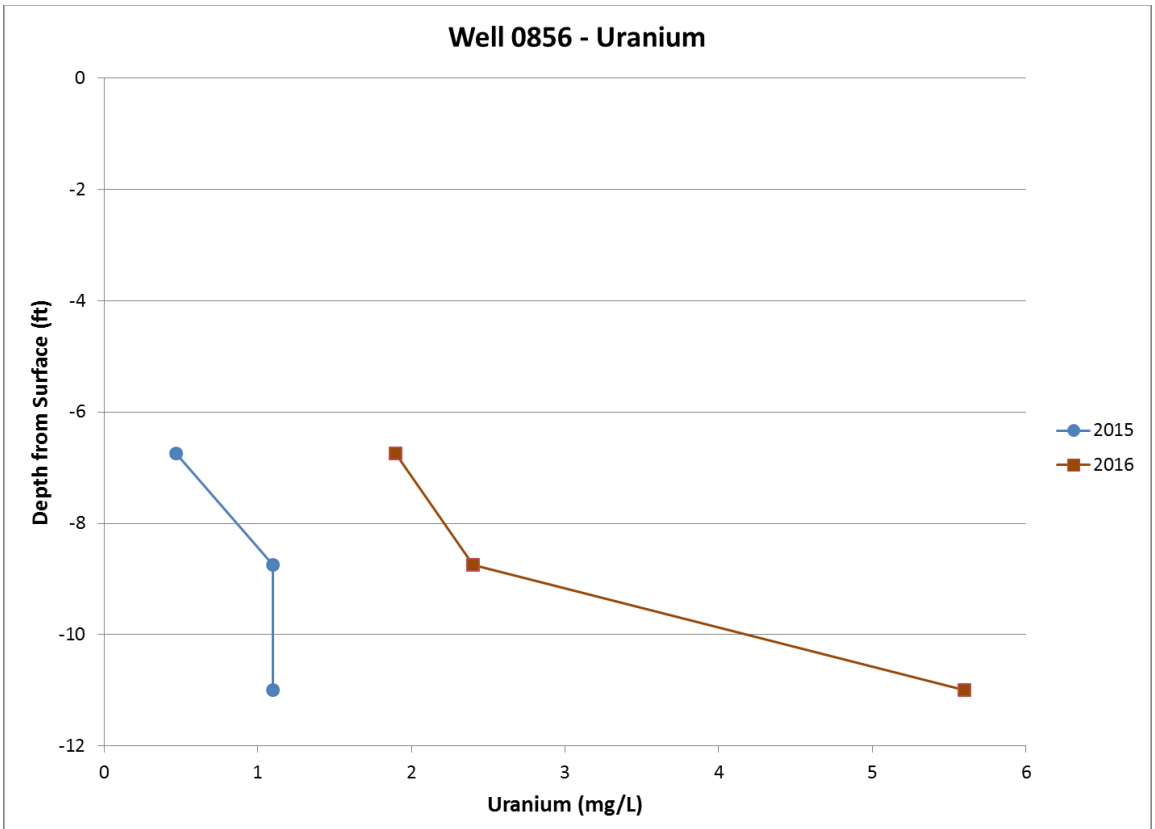
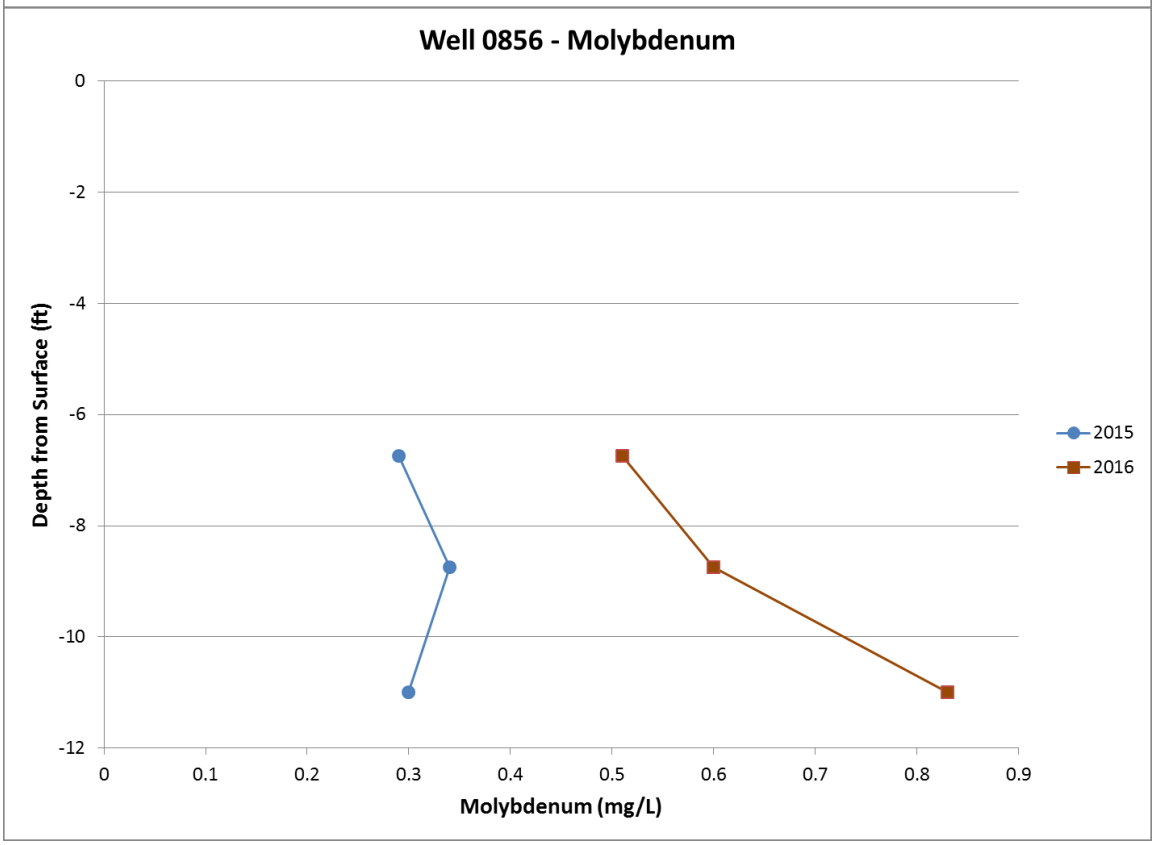
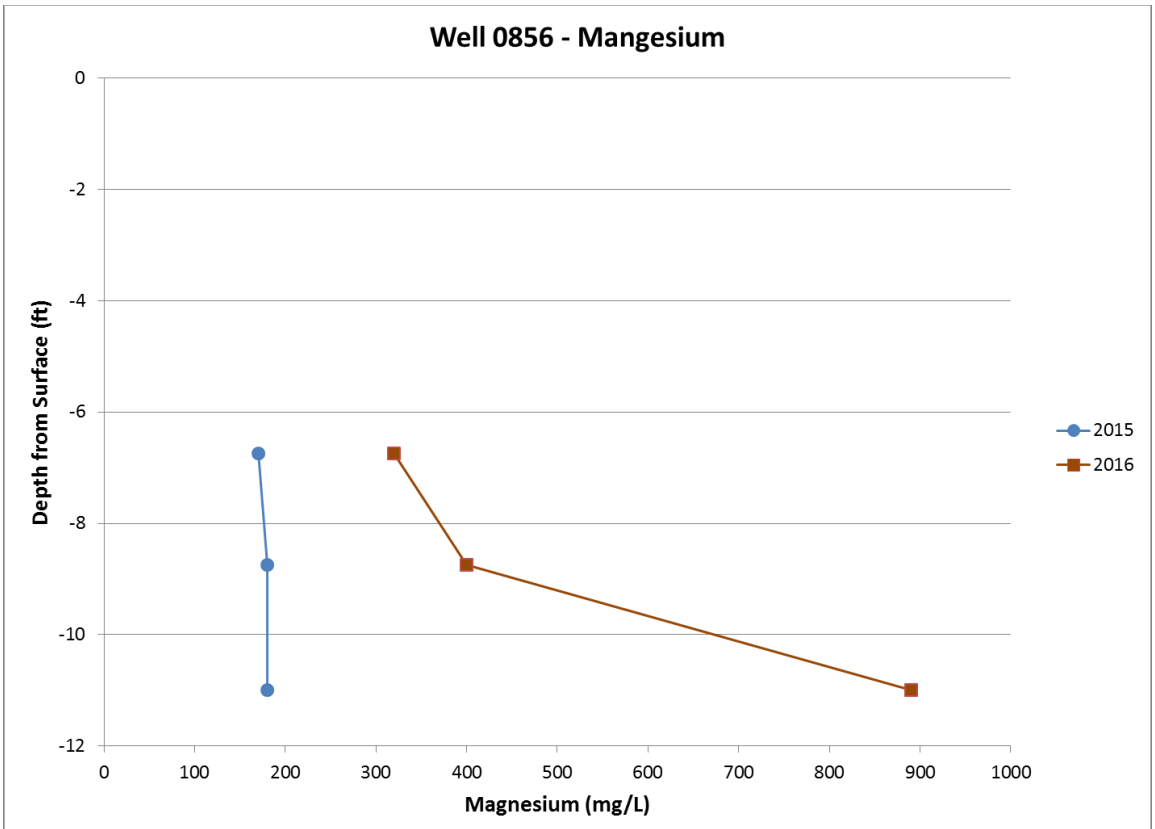
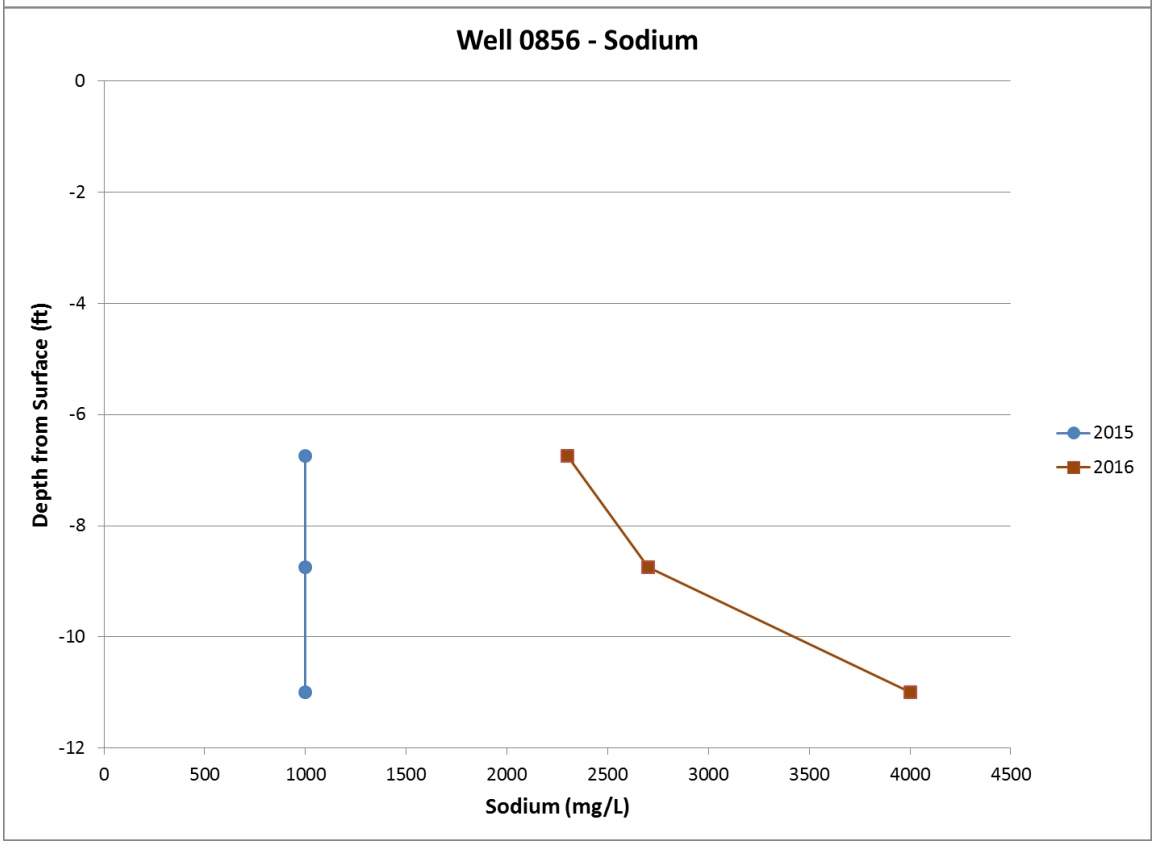
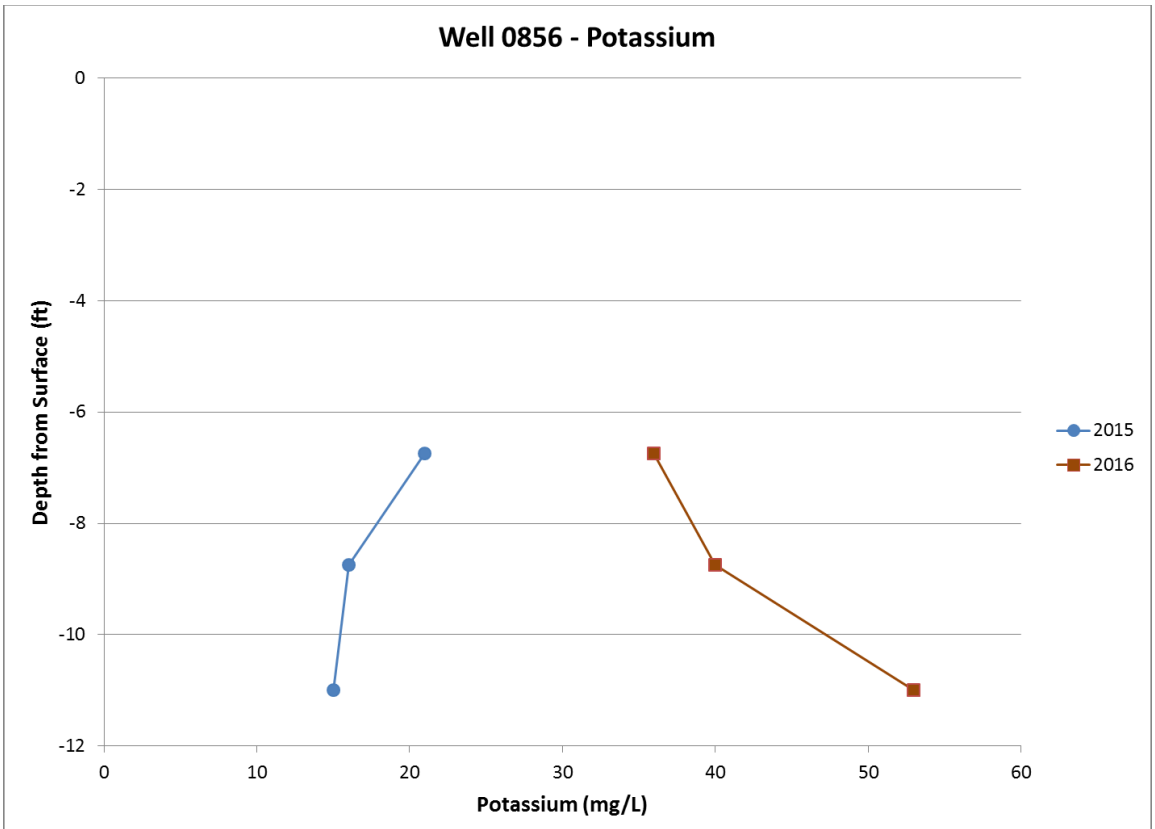
Well 0856

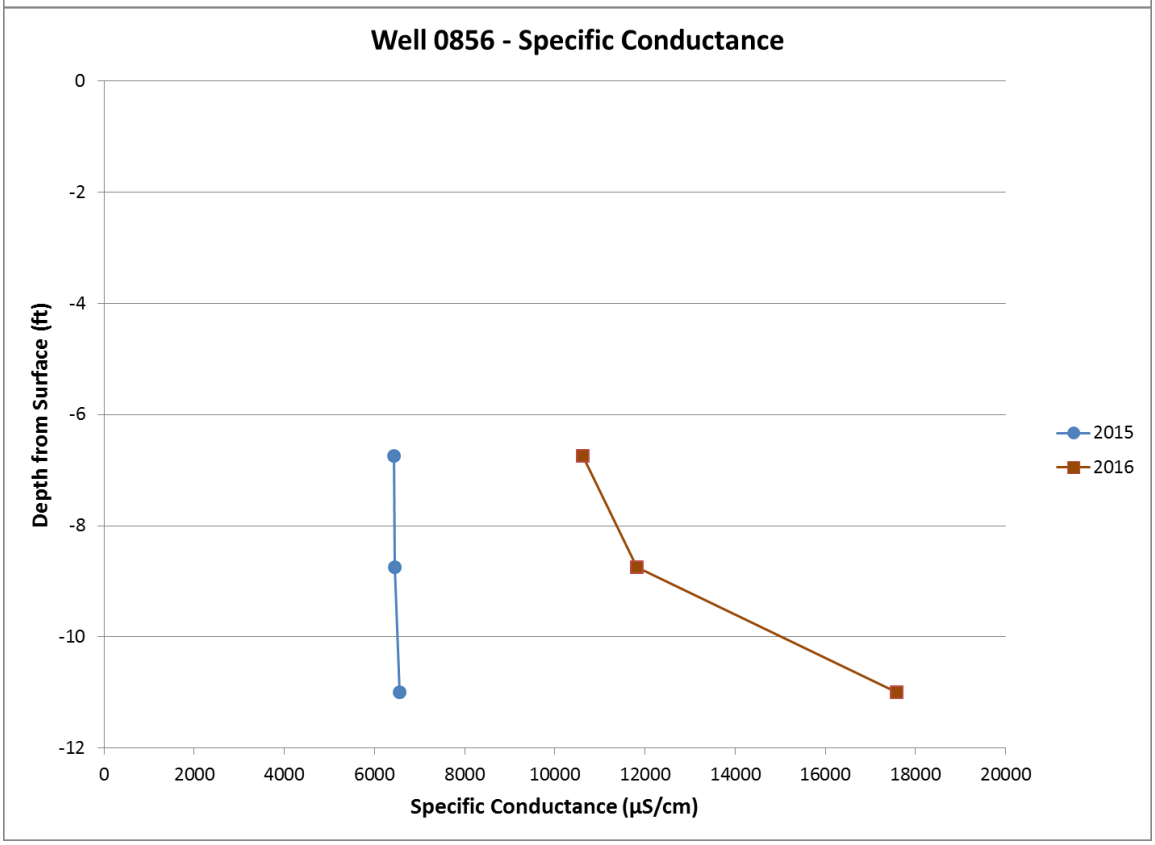

Well 0856 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
1
2
3
4
5
6
Uranium (mg/L)
2015
2016

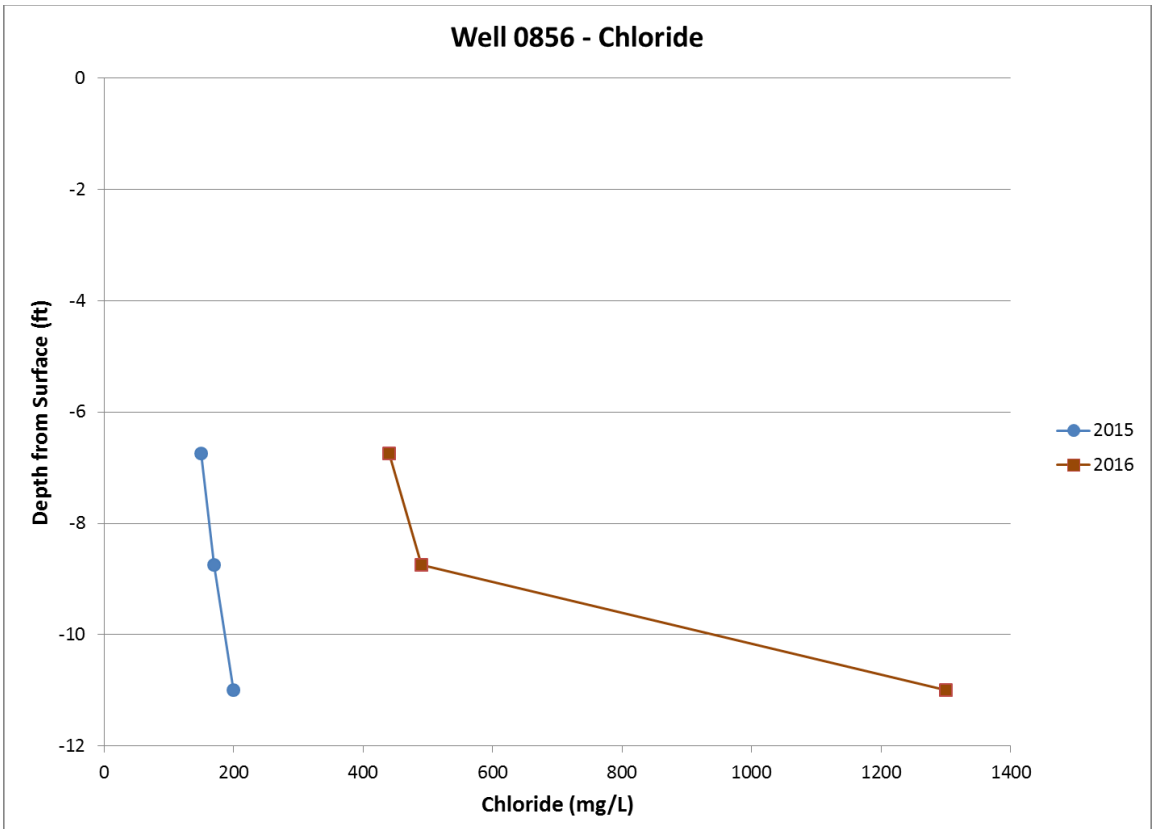

Well 0856 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
Molybdenum (mg/L)
2015
2016

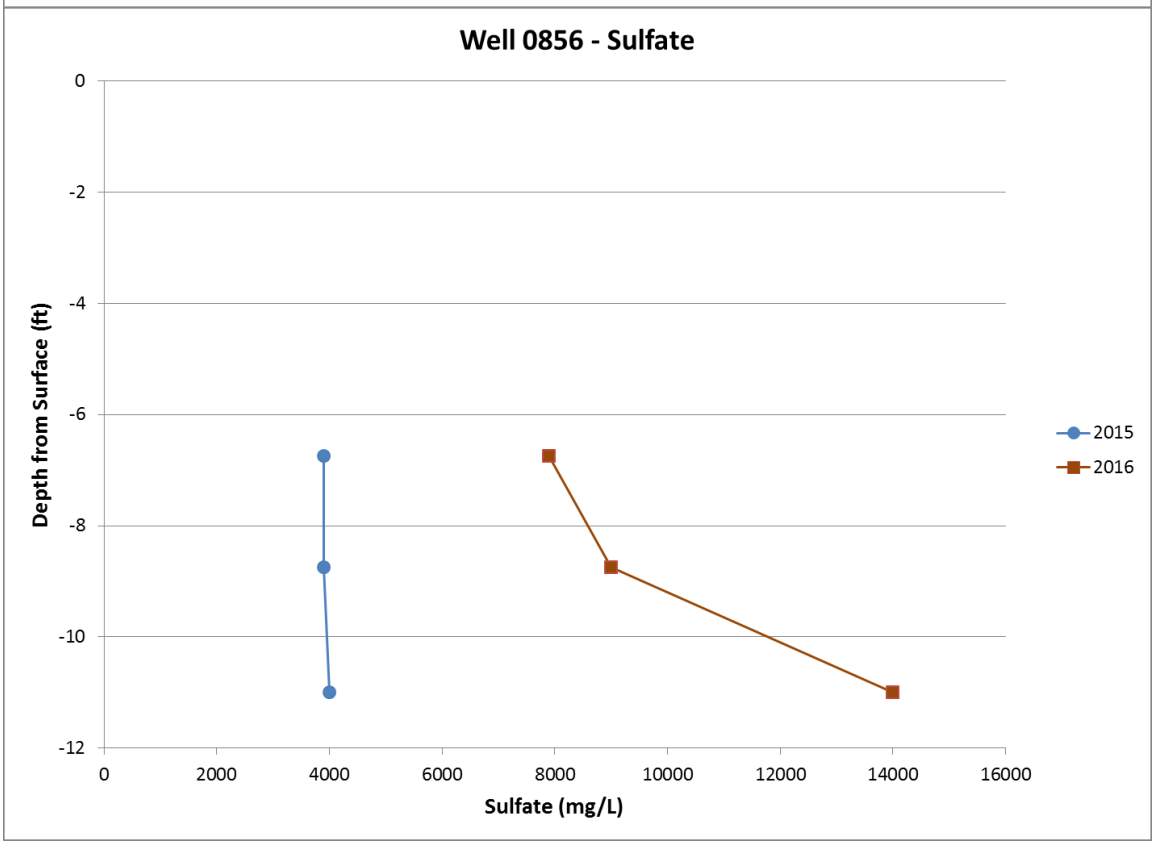

Well 0856 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
100
200
300
400
500
600
700
800
900
1000
Magnesium (mg/L)
2015
2016

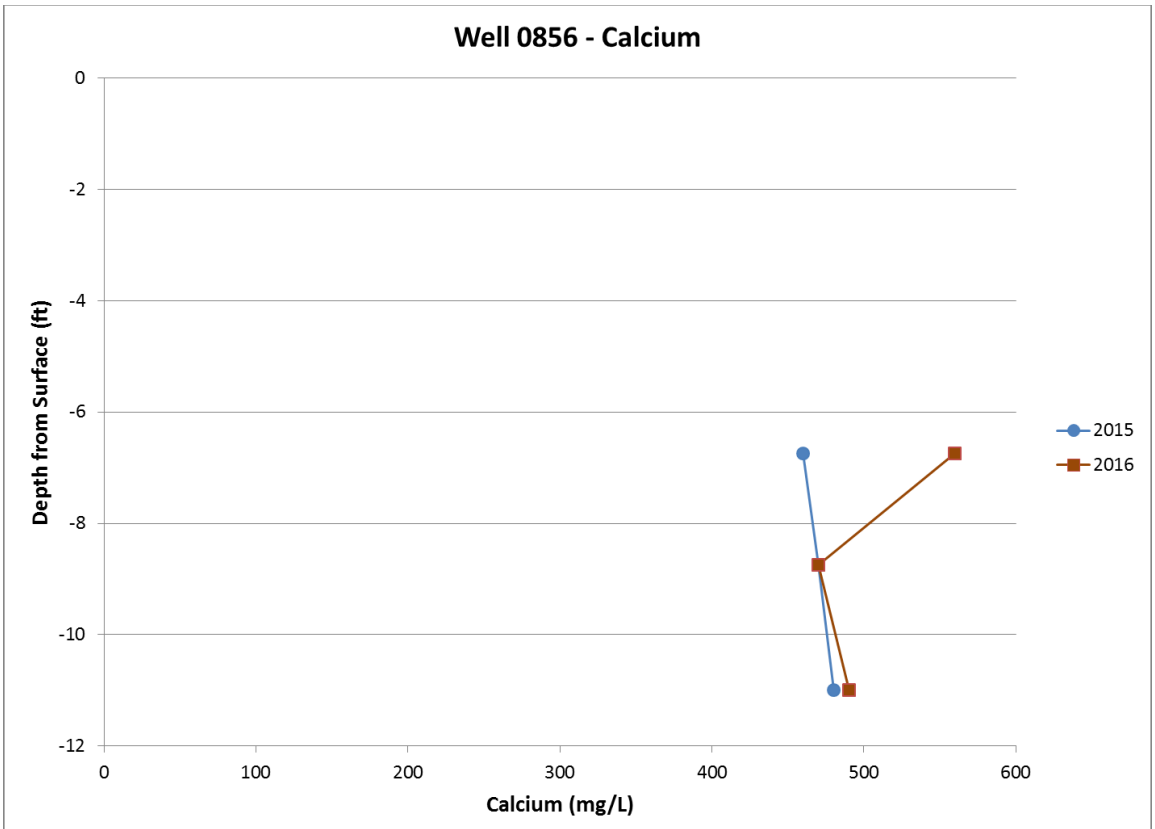

Well 0856 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Sodium (mg/L)
2015
2016

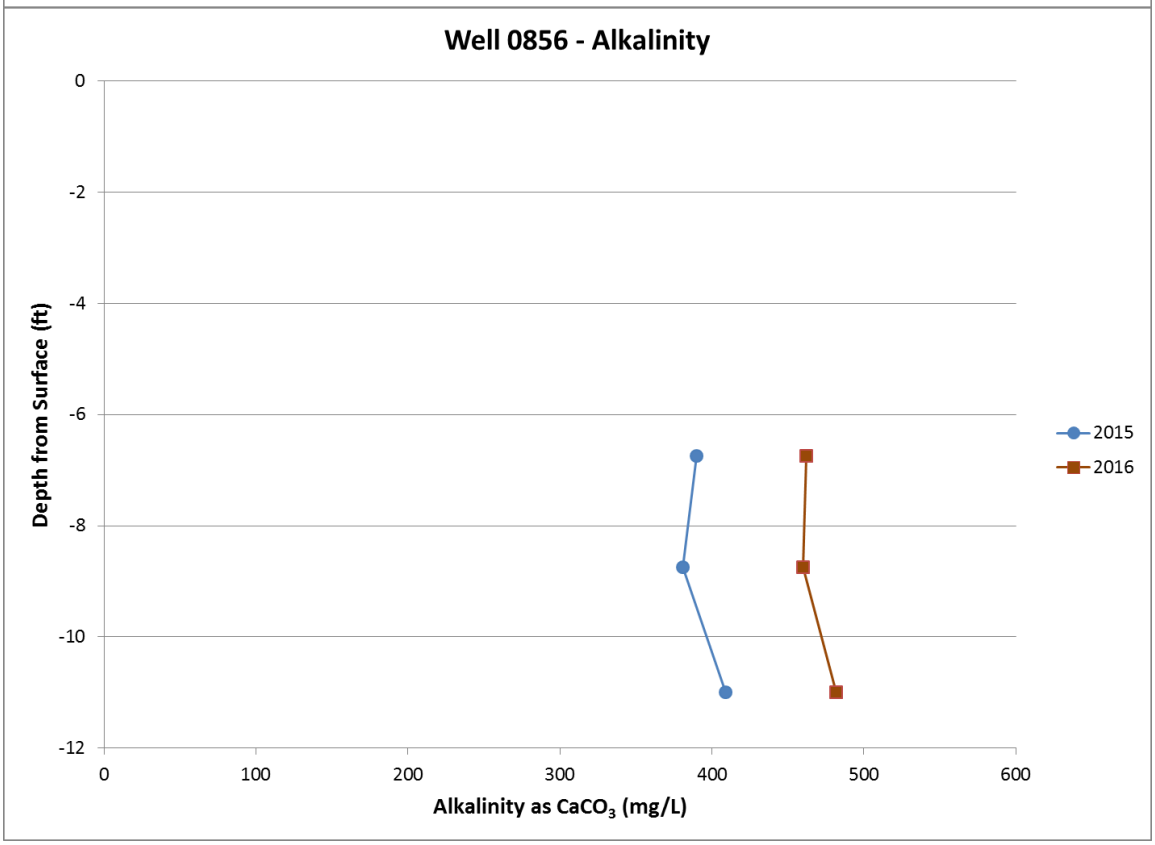

Well 0856 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
10
20
30
40
50
60
Potassium (mg/L)
2015
2016

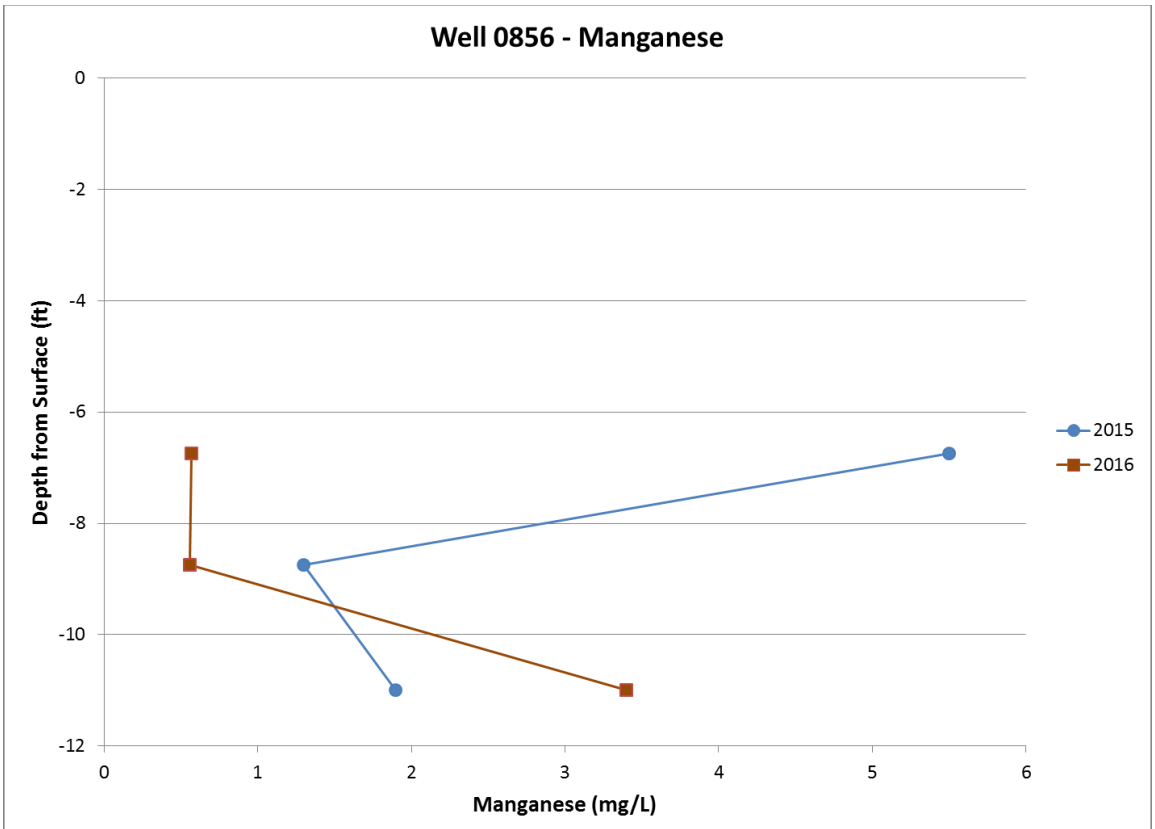

Well 0856 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
Specific Conductance (µS/cm)
2015
2016

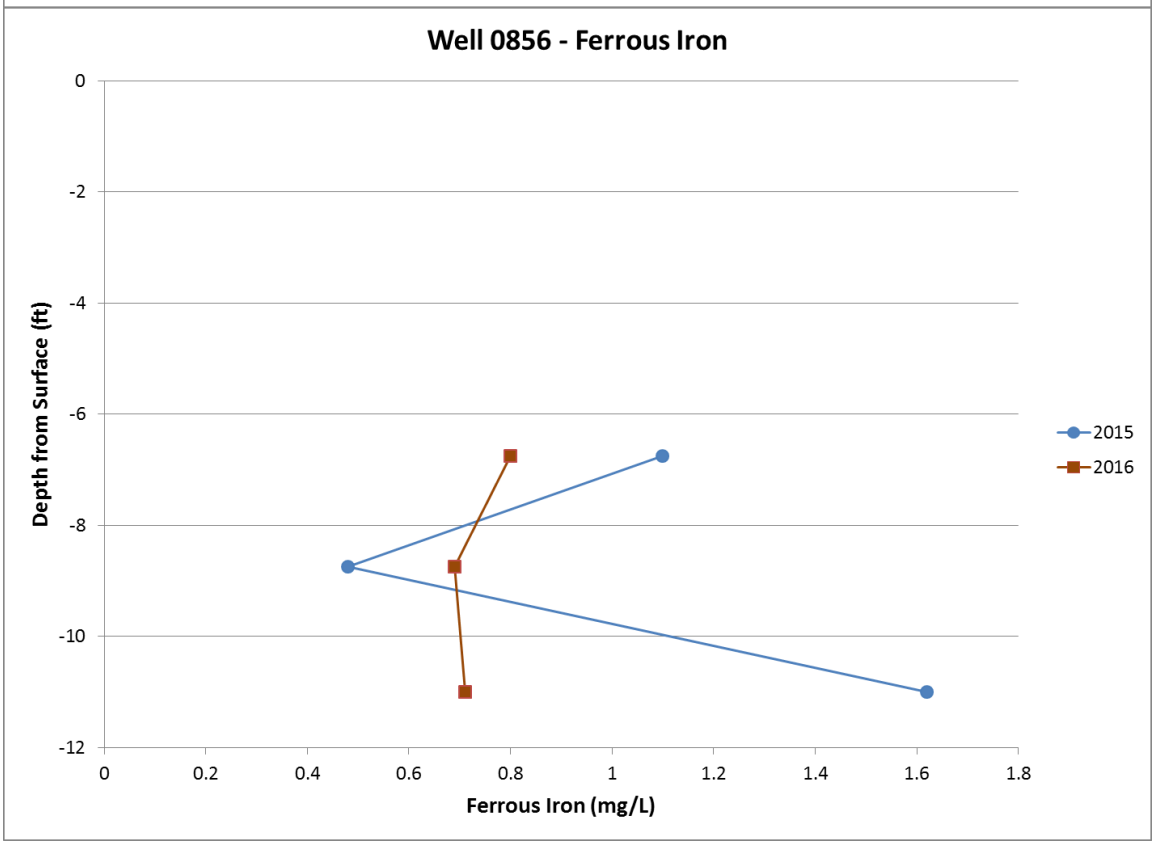

Well 0856 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
200
400
600
800
1000
1200
1400
Chloride (mg/L)
2015
2016

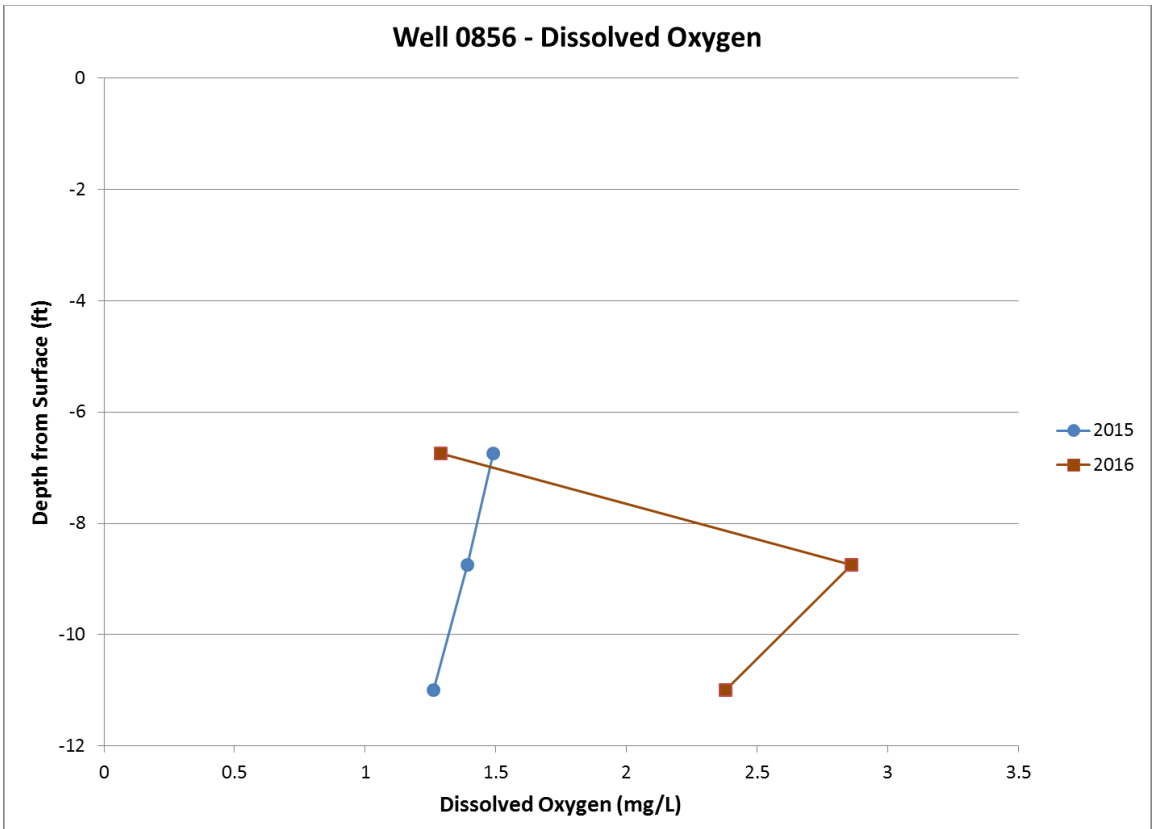

Well 0856 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
2000
4000
6000
8000
10000
12000
14000
16000
Sulfate (mg/L)
2015
2016

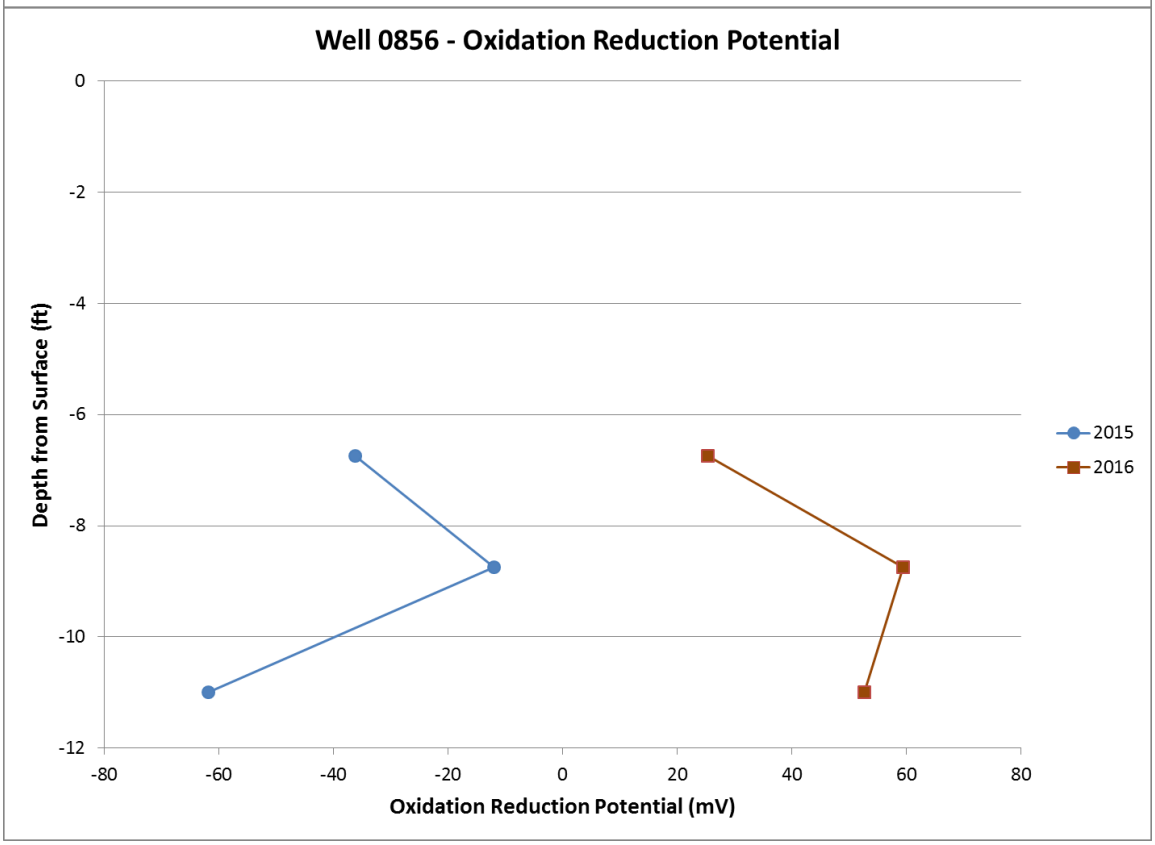

Well 0856 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
100
200
300
400
500
600
Calcium (mg/L)
2015
2016

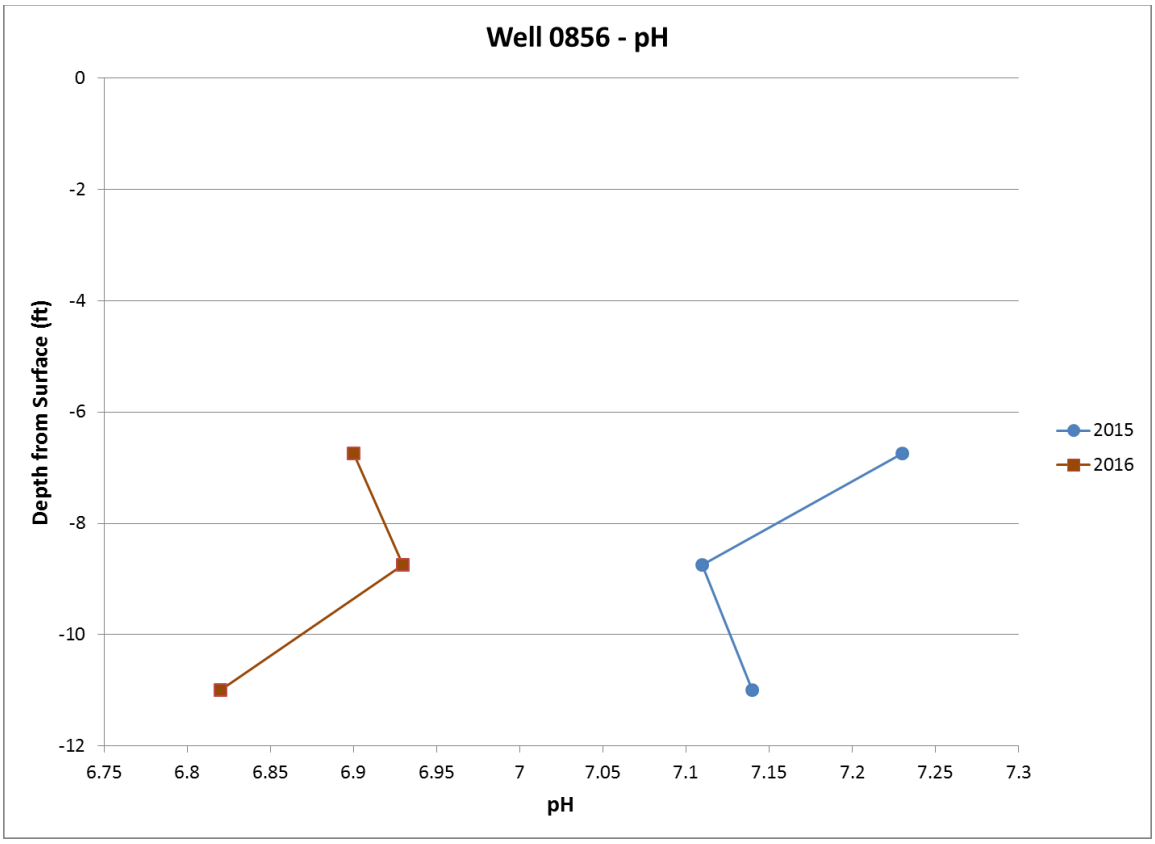

Well 0856 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
100
200
300
400
500
600
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0856 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
1
2
3
4
5
6
Manganese (mg/L)
2015
2016


Well 0856 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
Ferrous Iron (mg/L)
2015
2016


Well 0856 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.5
1
1.5
2
2.5
3
3.5
Dissolved Oxygen (mg/L)
2015
2016


Well 0856 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-80
-60
-40
-20
0
20
40
60
80
Oxidation Reduction Potential (mV)
2015
2016


Well 0856 - pH
0
-2
-4
-6
-8
-10
-12
Depth from Surface (ft)
6.75
6.8
6.85
6.9
6.95
7
7.05
7.1
7.15
7.2
7.25
7.3
pH
2015
2016

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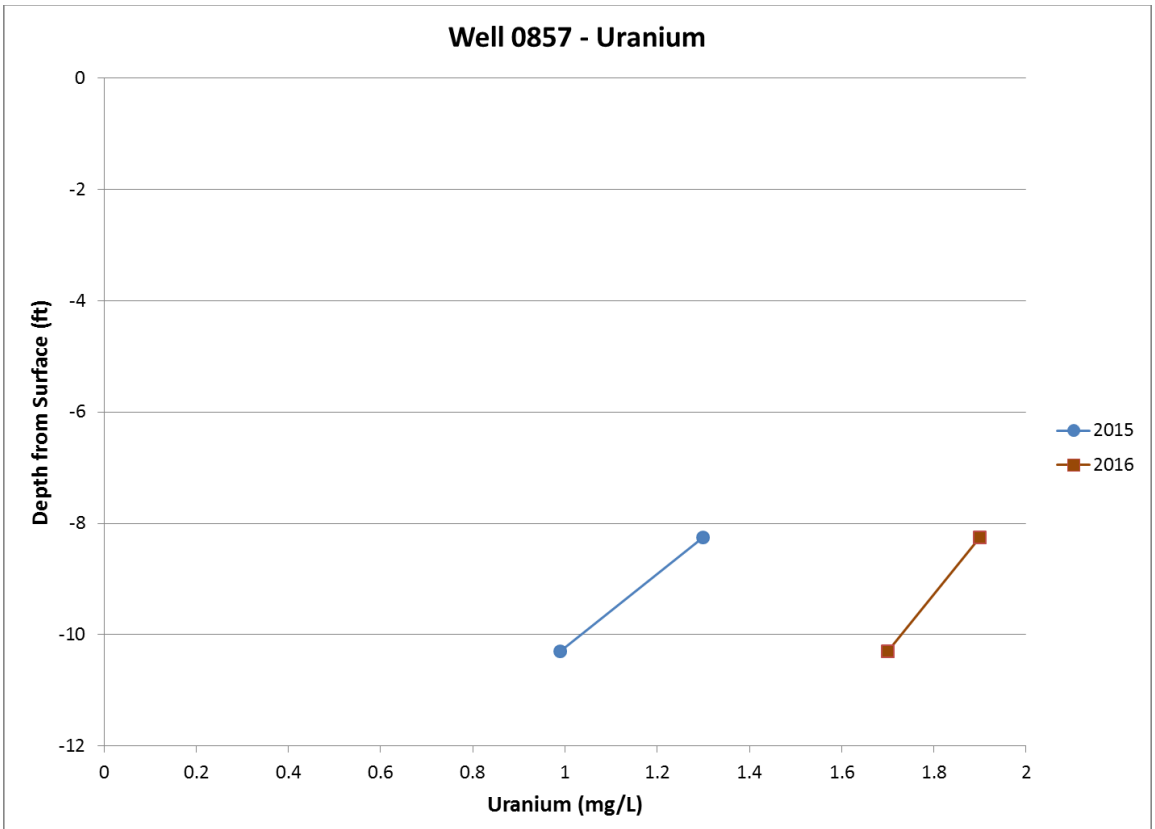
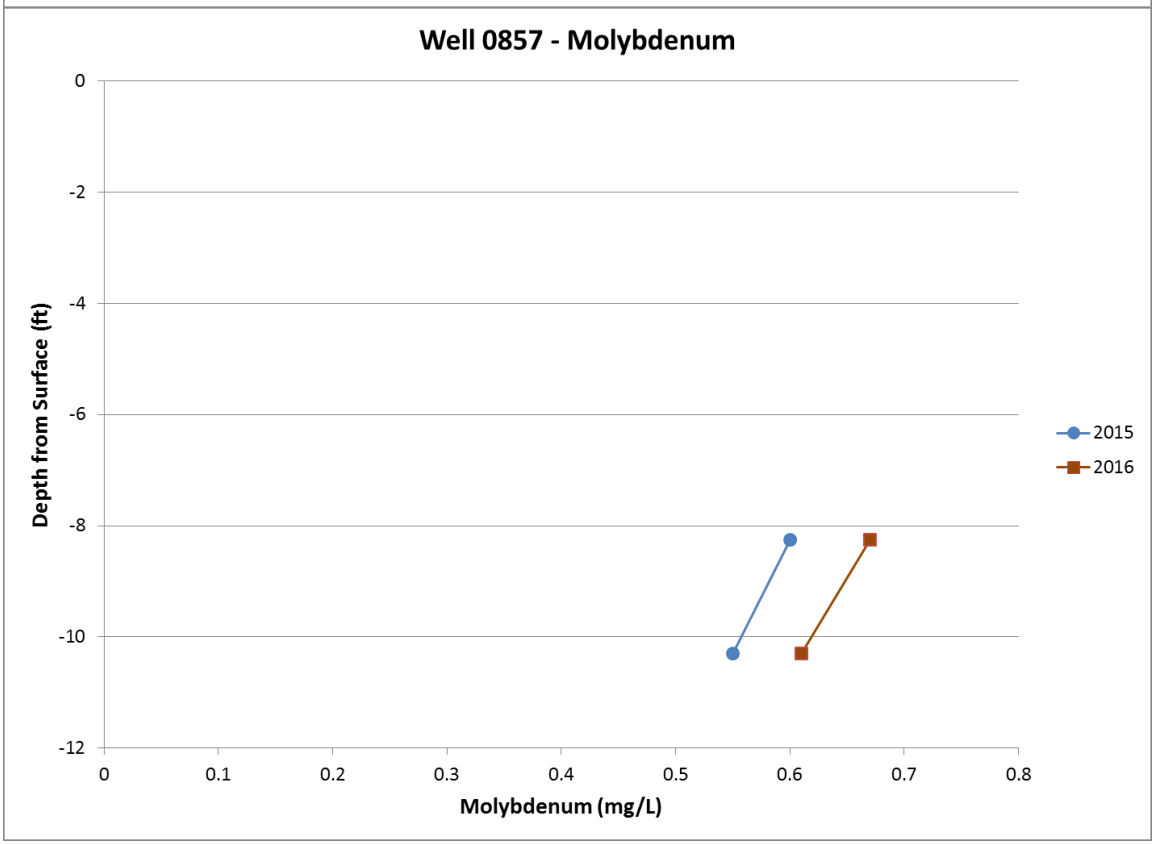
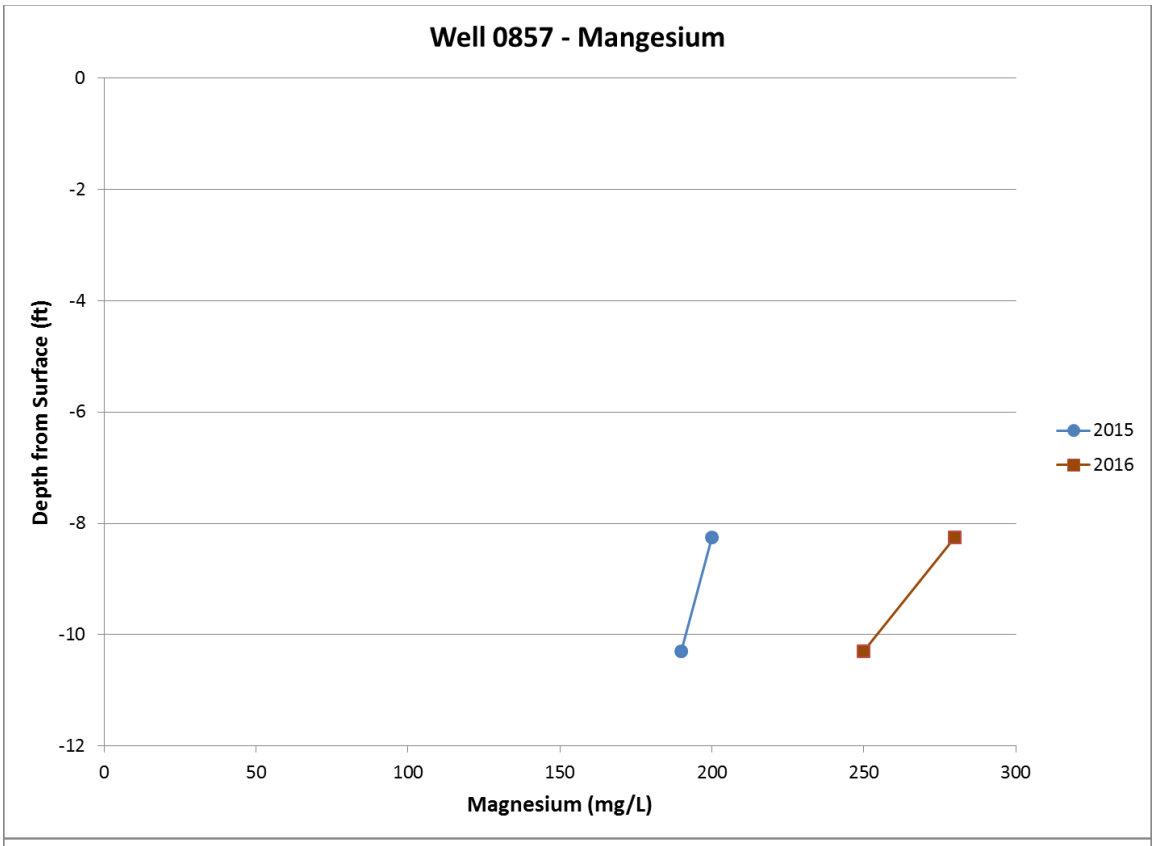
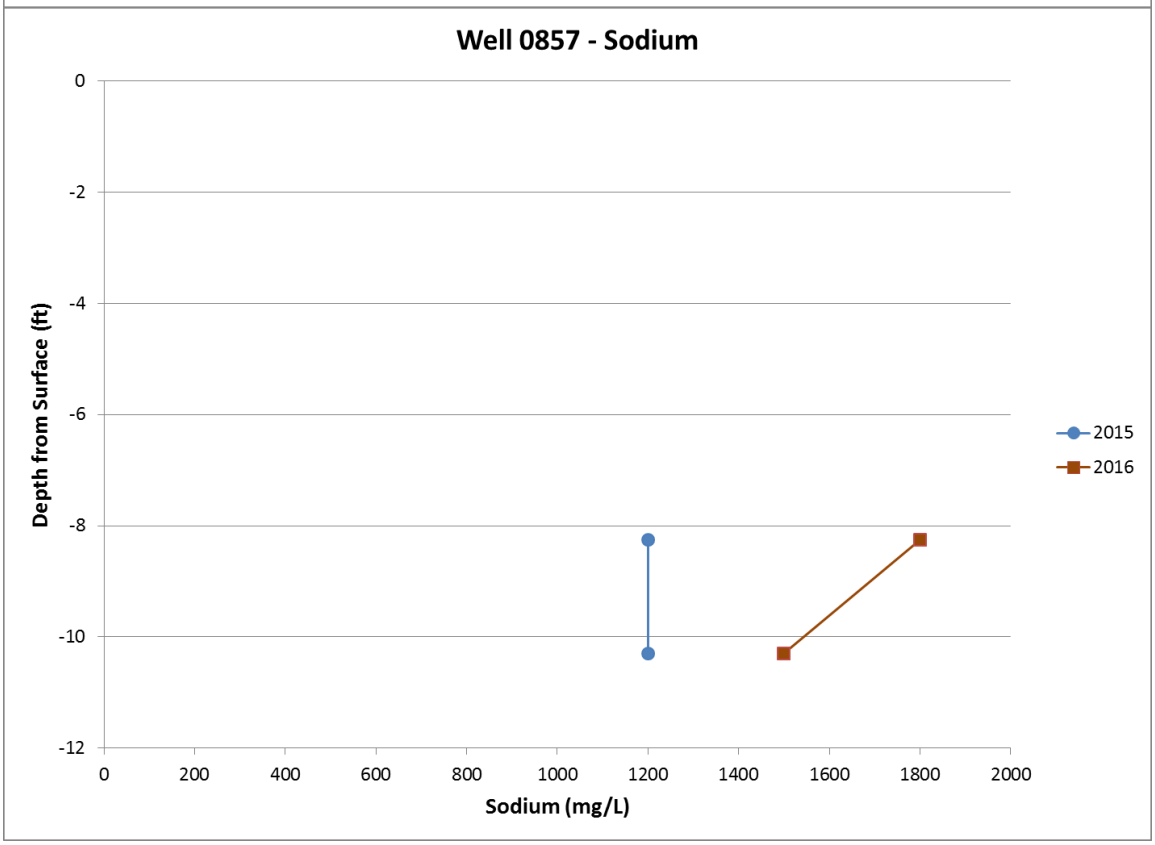
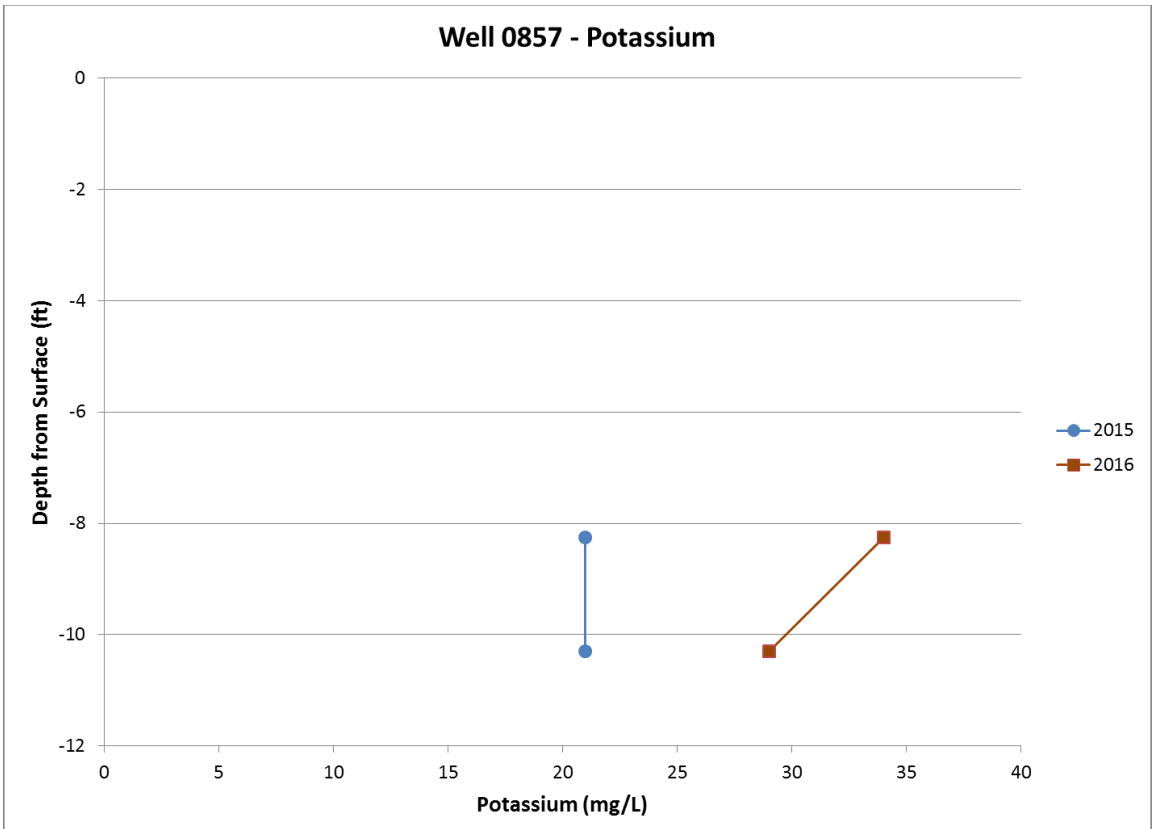
Well 0857

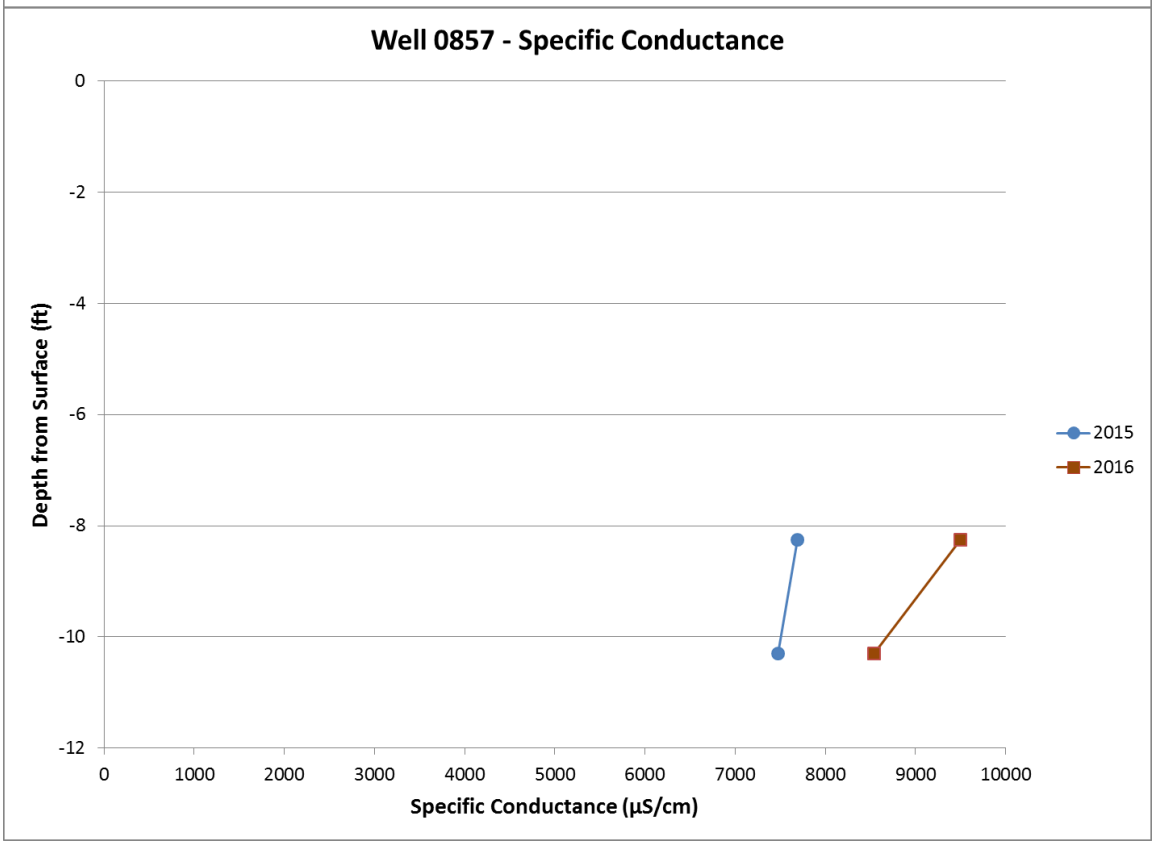

Well 0857 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Uranium (mg/L)
2015
2016

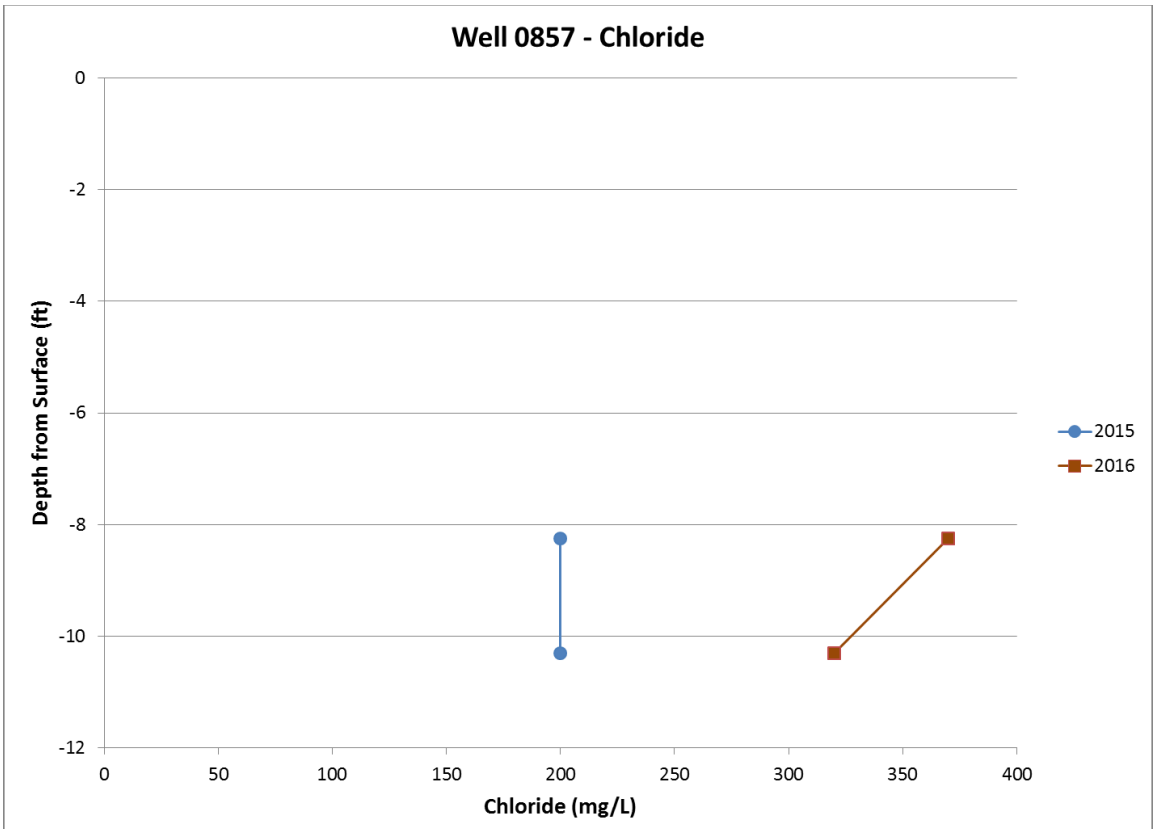

Well 0857 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Molybdenum (mg/L)
2015
2016

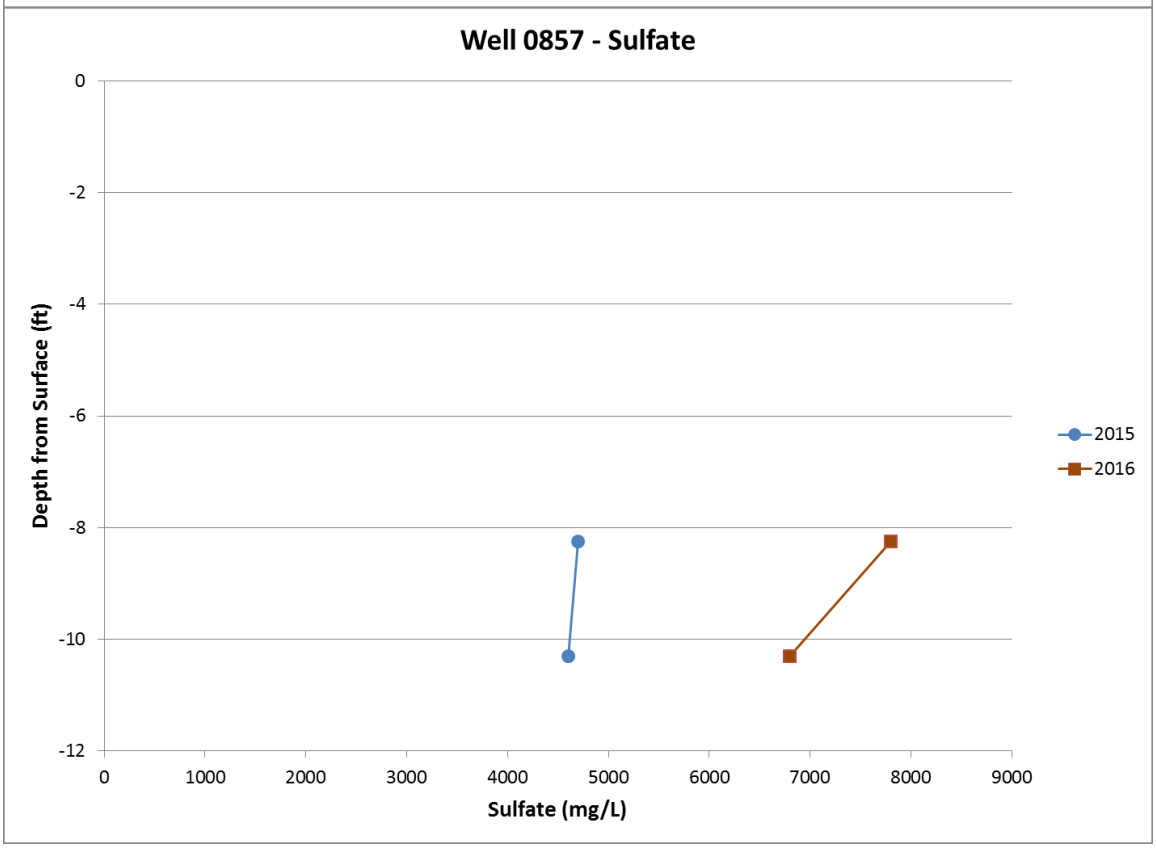

Well 0857 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
50
100
150
200
250
300
Magnesium (mg/L)
2015
2016

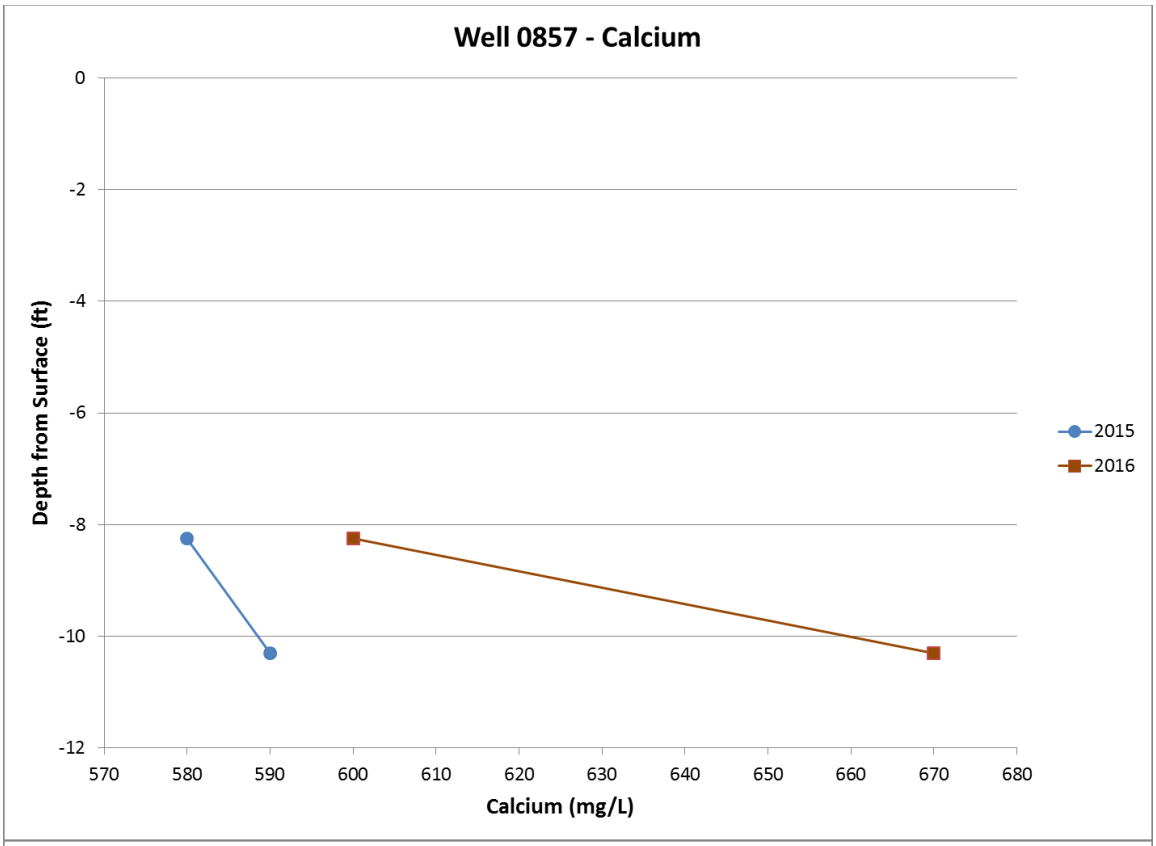

Well 0857 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Sodium (mg/L)
2015
2016

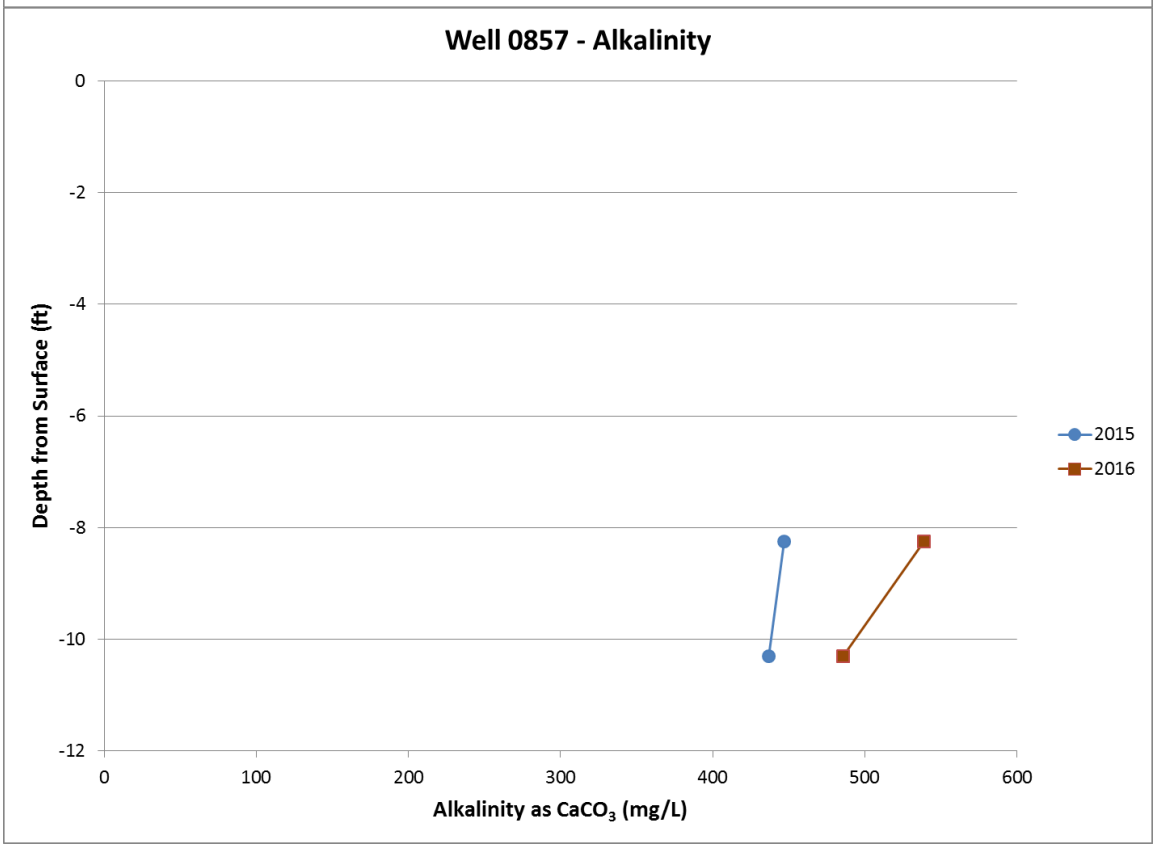

Well 0857 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
5
10
15
20
25
30
35
40
Potassium (mg/L)
2015
2016

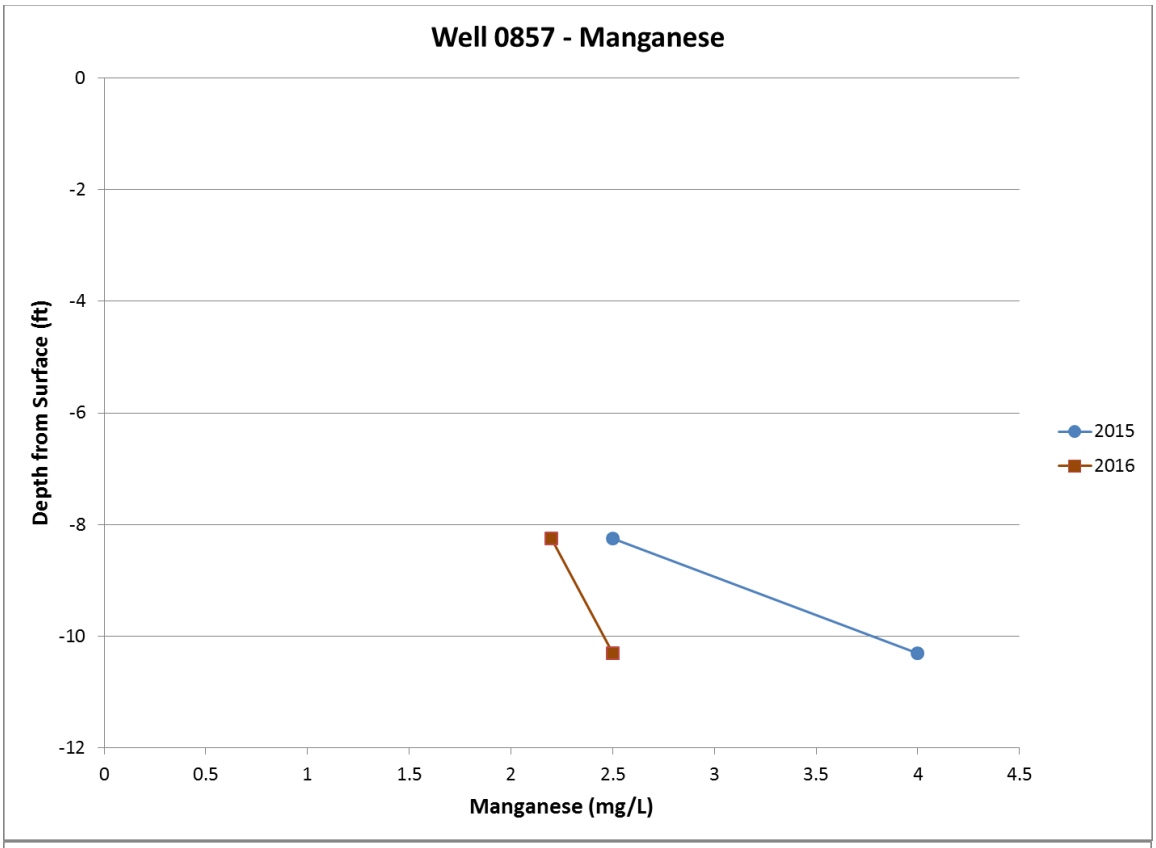

Well 0857 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
Specific Conductance (µS/cm)
2015
2016

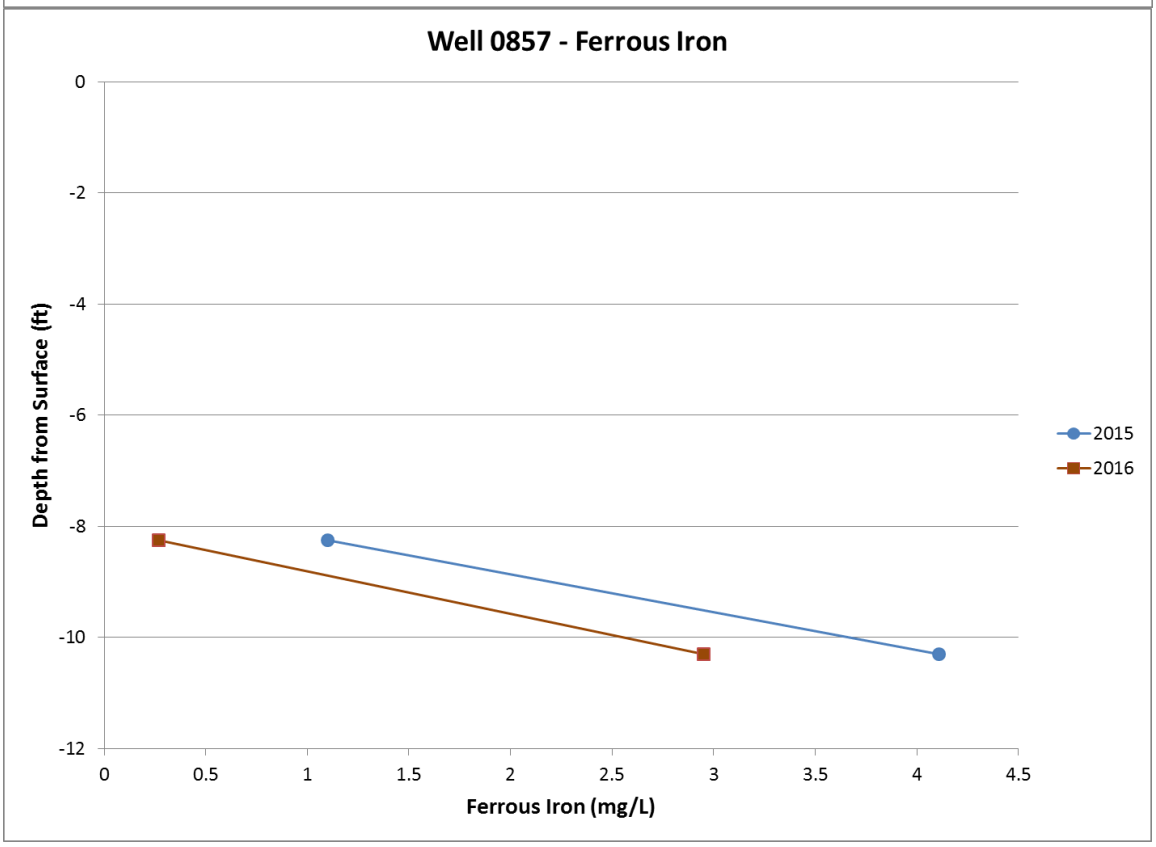

Well 0857 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
50
100
150
200
250
300
350
400
Chloride (mg/L)
2015
2016

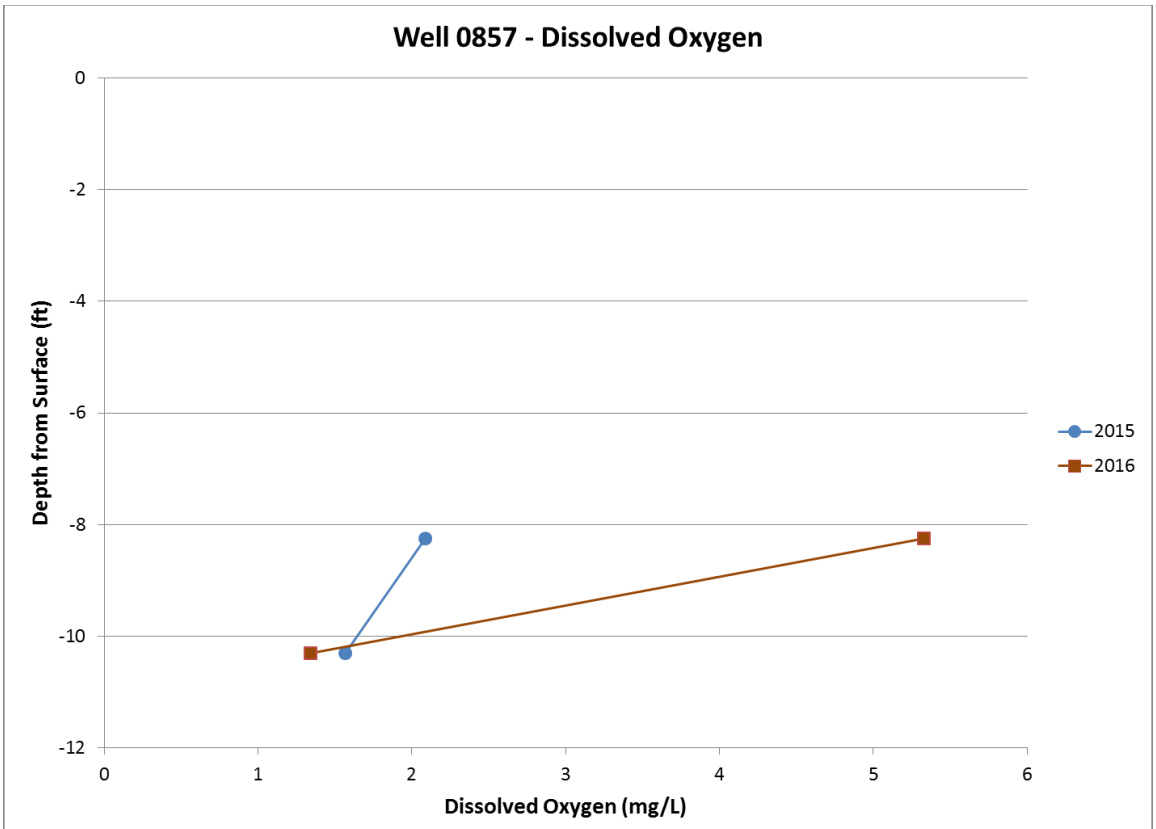

Well 0857 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
Sulfate (mg/L)
2015
2016

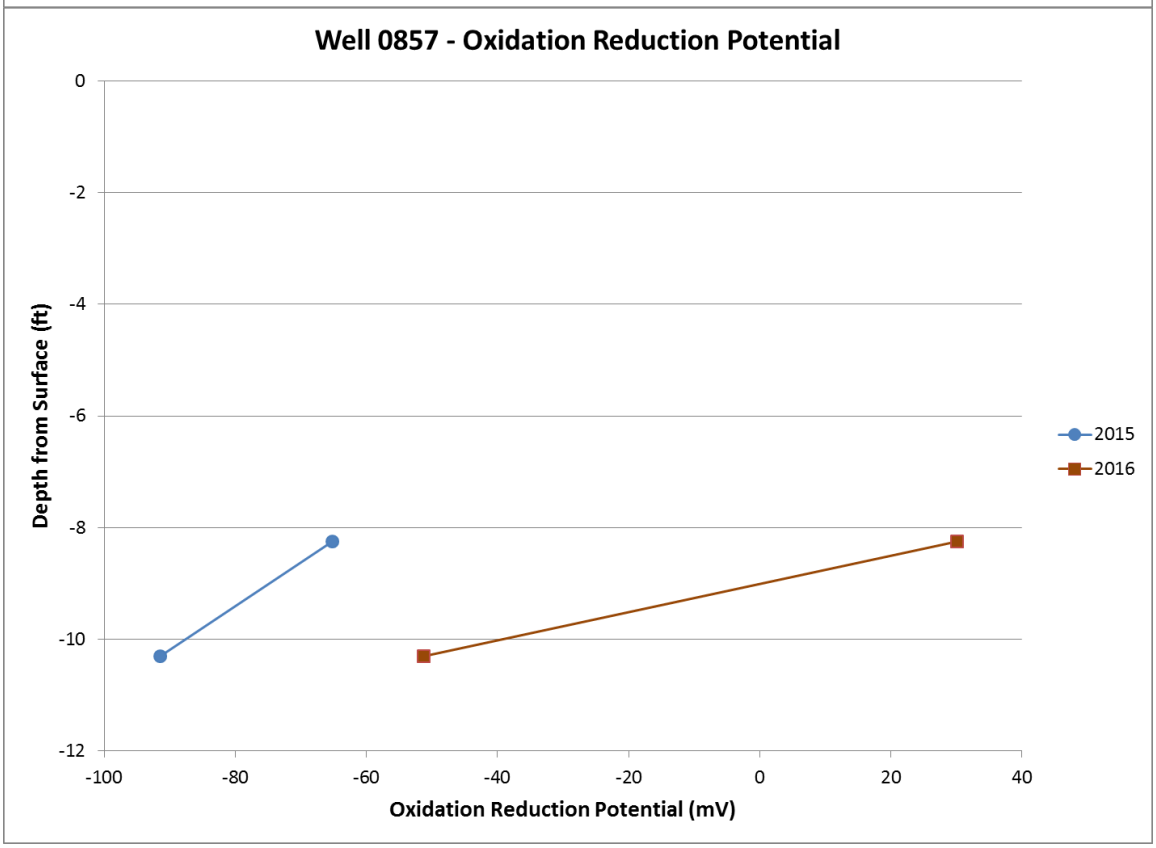

Well 0857 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
570
580
590
600
610
620
630
640
650
660
670
680
Calcium (mg/L)
2015
2016

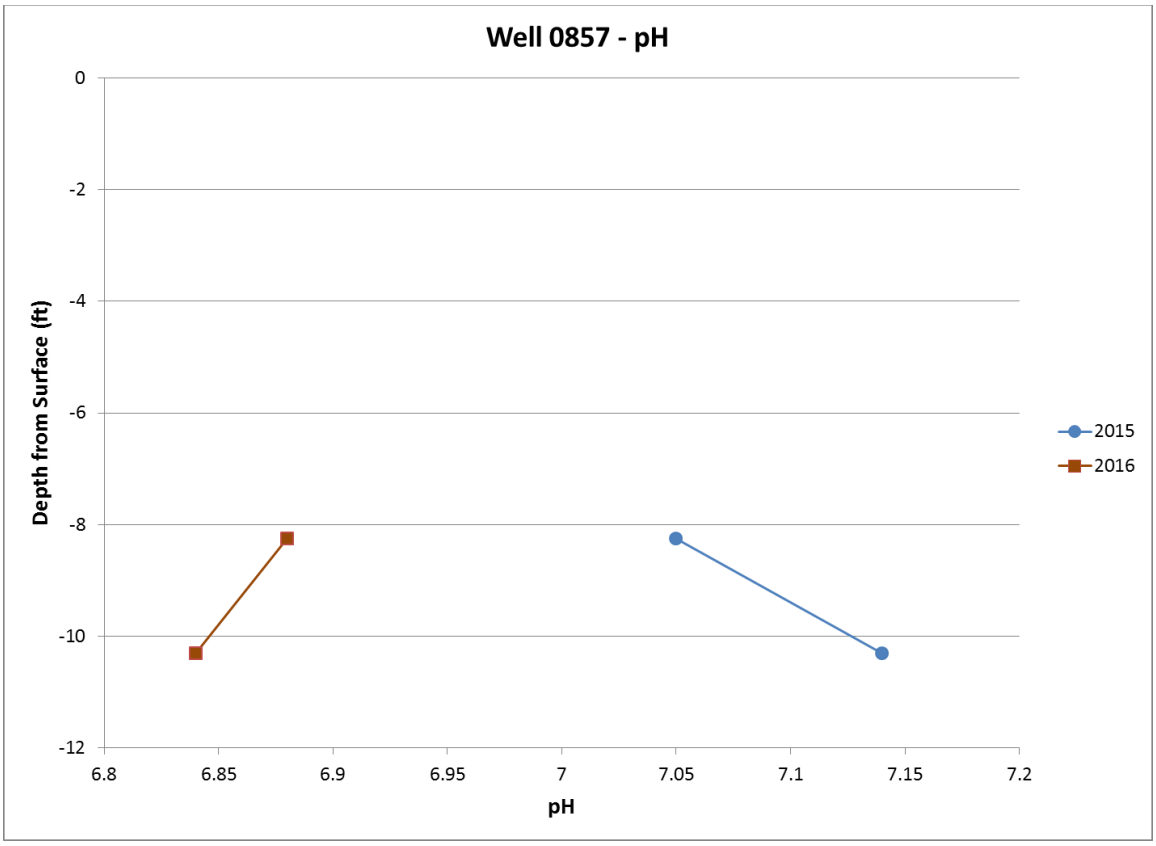

Well 0857 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
100
200
300
400
500
600
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0857 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
Manganese (mg/L)
2015
2016


Well 0857 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
Ferrous Iron (mg/L)
2015
2016


Well 0857 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
1
2
3
4
5
6
Dissolved Oxygen (mg/L)
2015
2016


Well 0857 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-100
-80
-60
-40
-20
0
20
40
Oxidation Reduction Potential (mV)
2015
2016


Well 0857 - pH
0
-2
-4
-6
-8
-10
-12
Depth from Surface (ft)
6.8
6.85
6.9
6.95
7
7.05
7.1
7.15
7.2
pH
2015
2016

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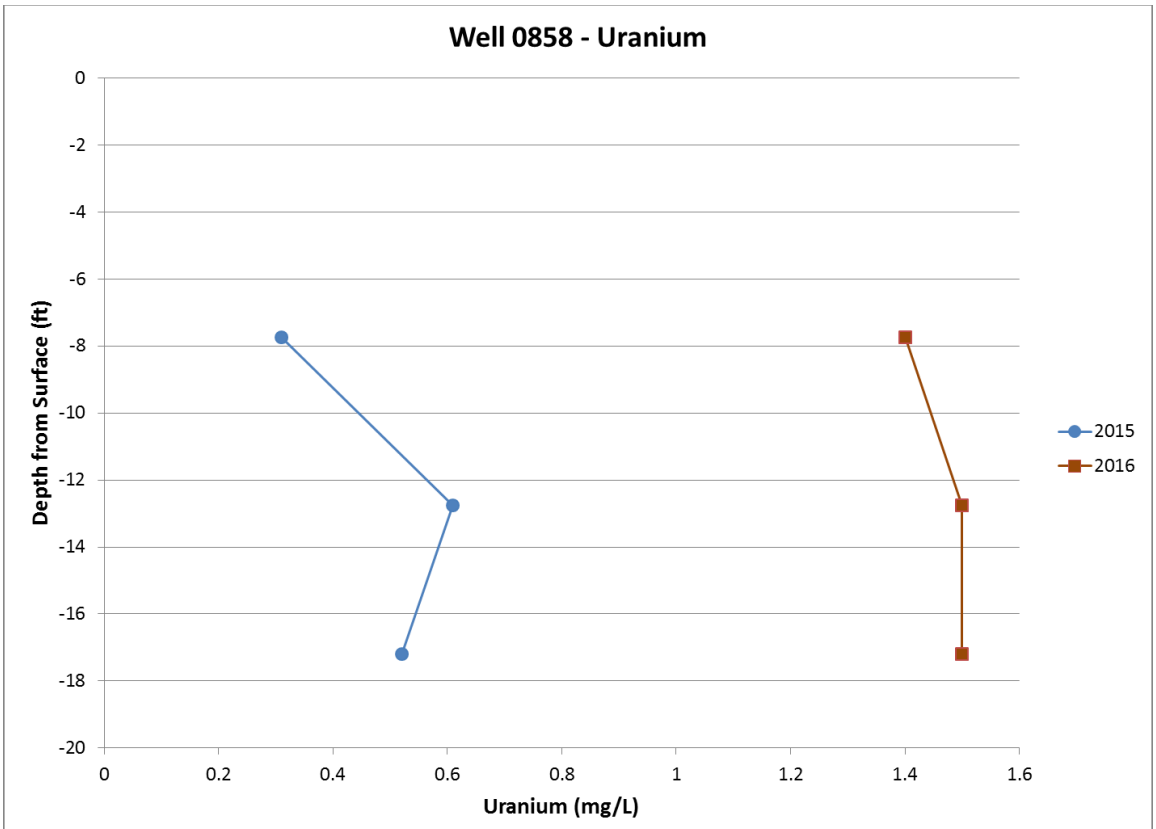
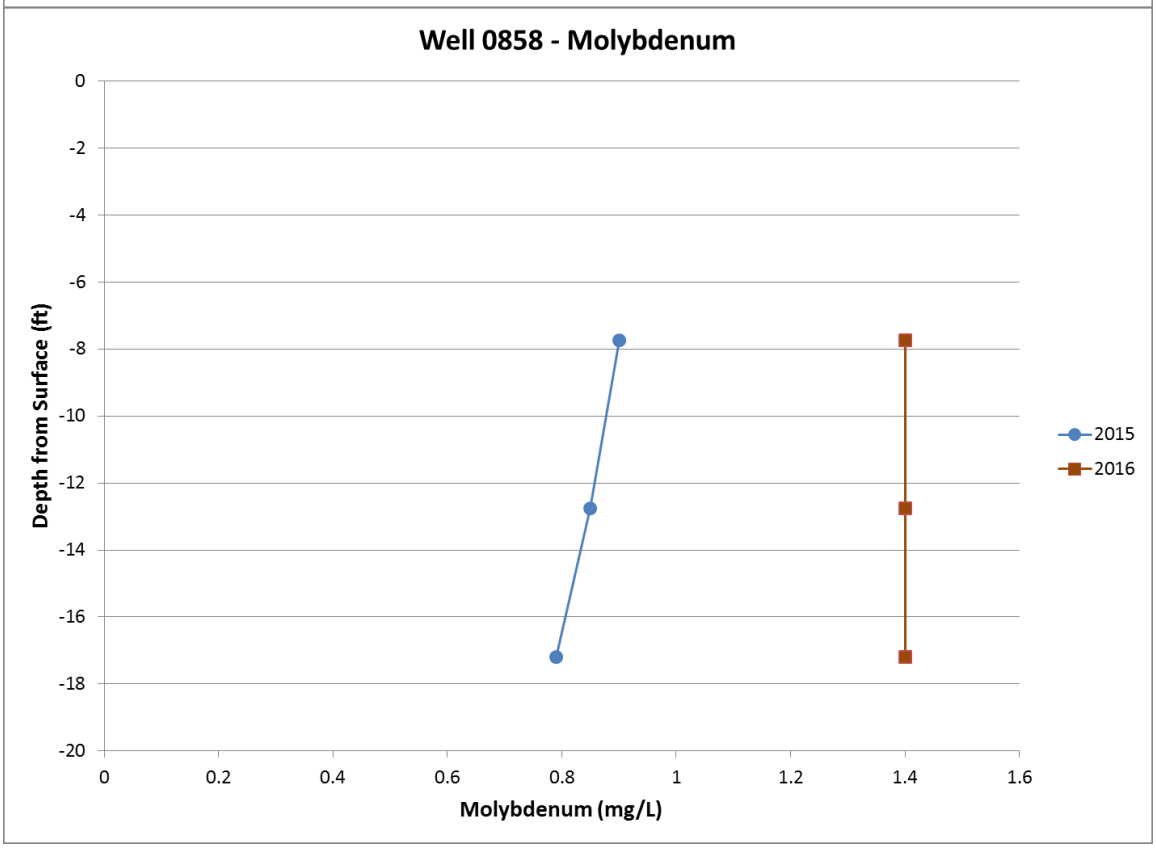
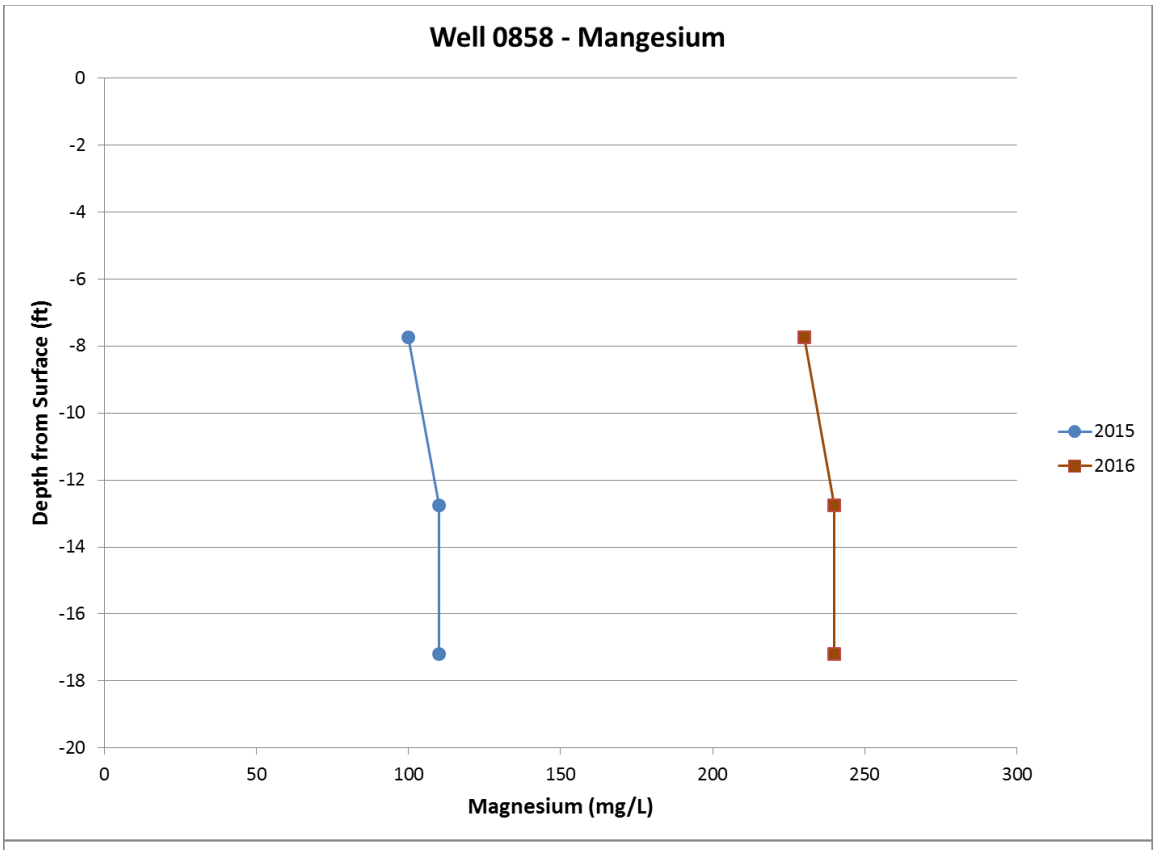
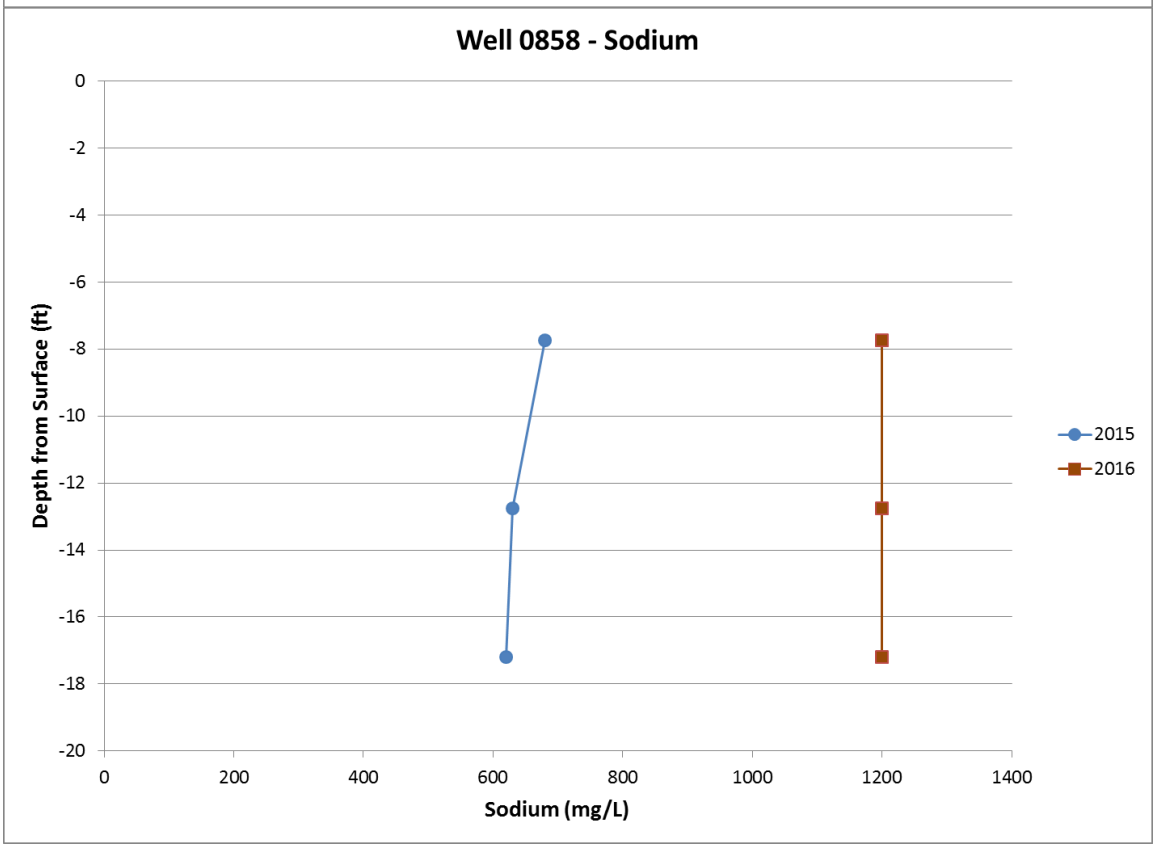
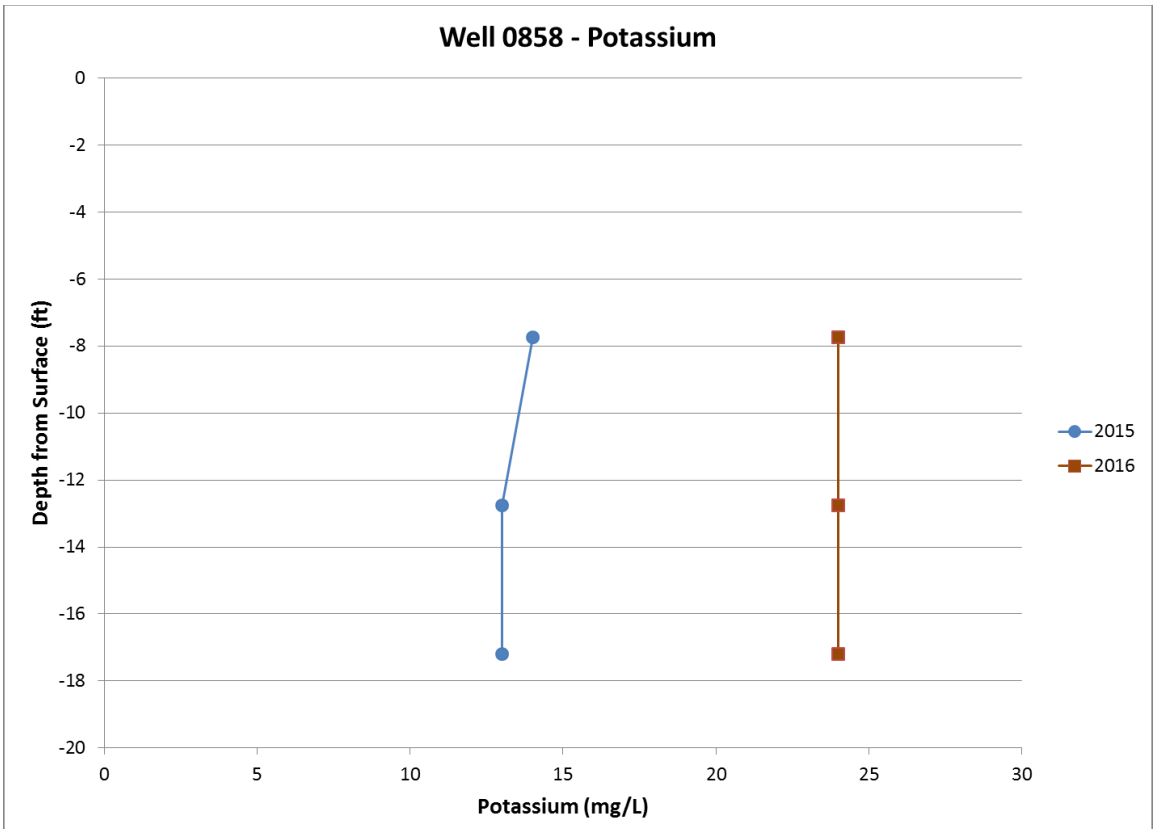
Well 0858

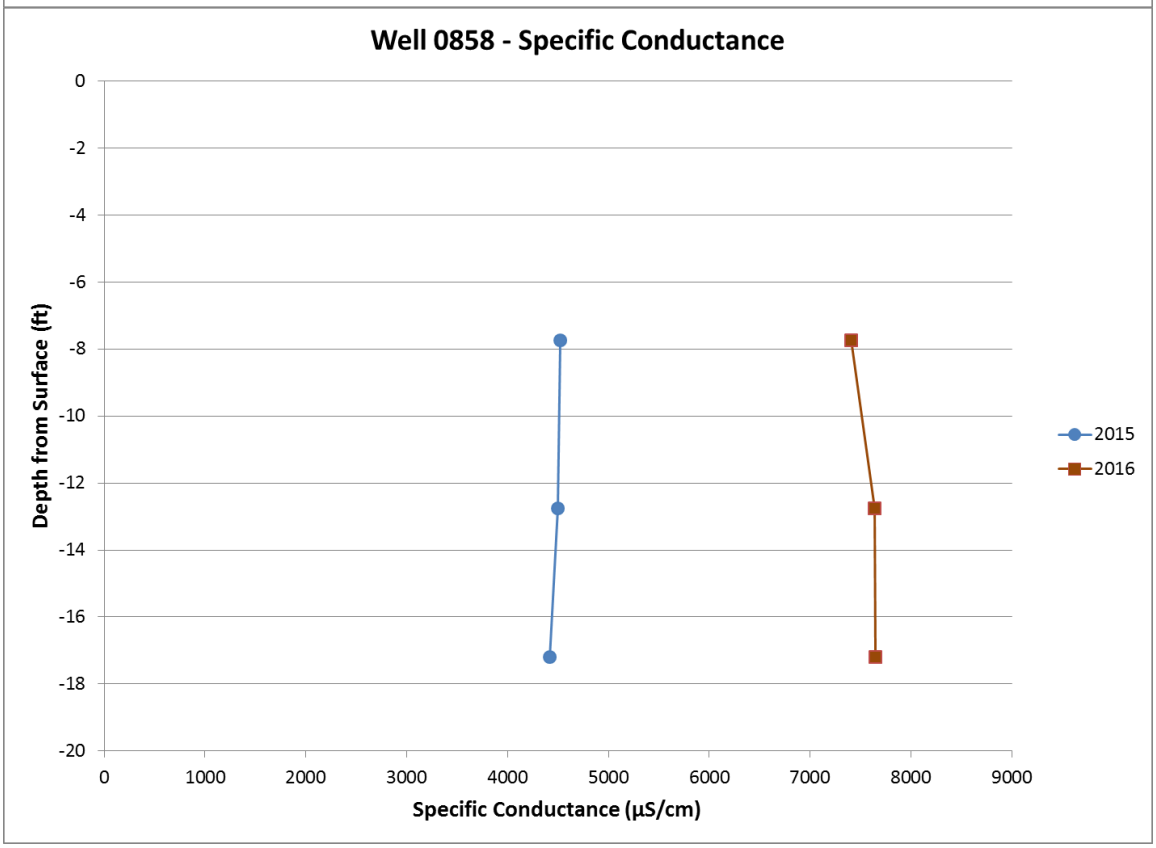

Well 0858 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Uranium (mg/L)
2015
2016

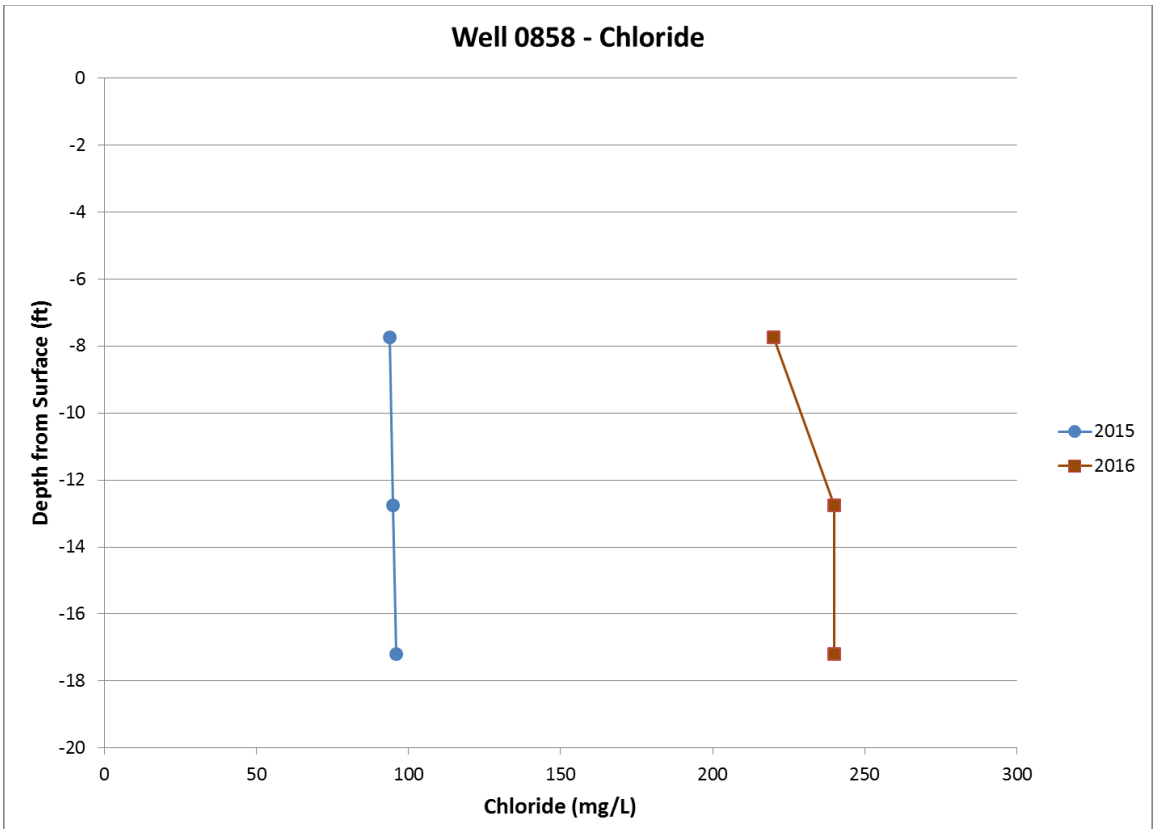

Well 0858 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Molybdenum (mg/L)
2015
2016

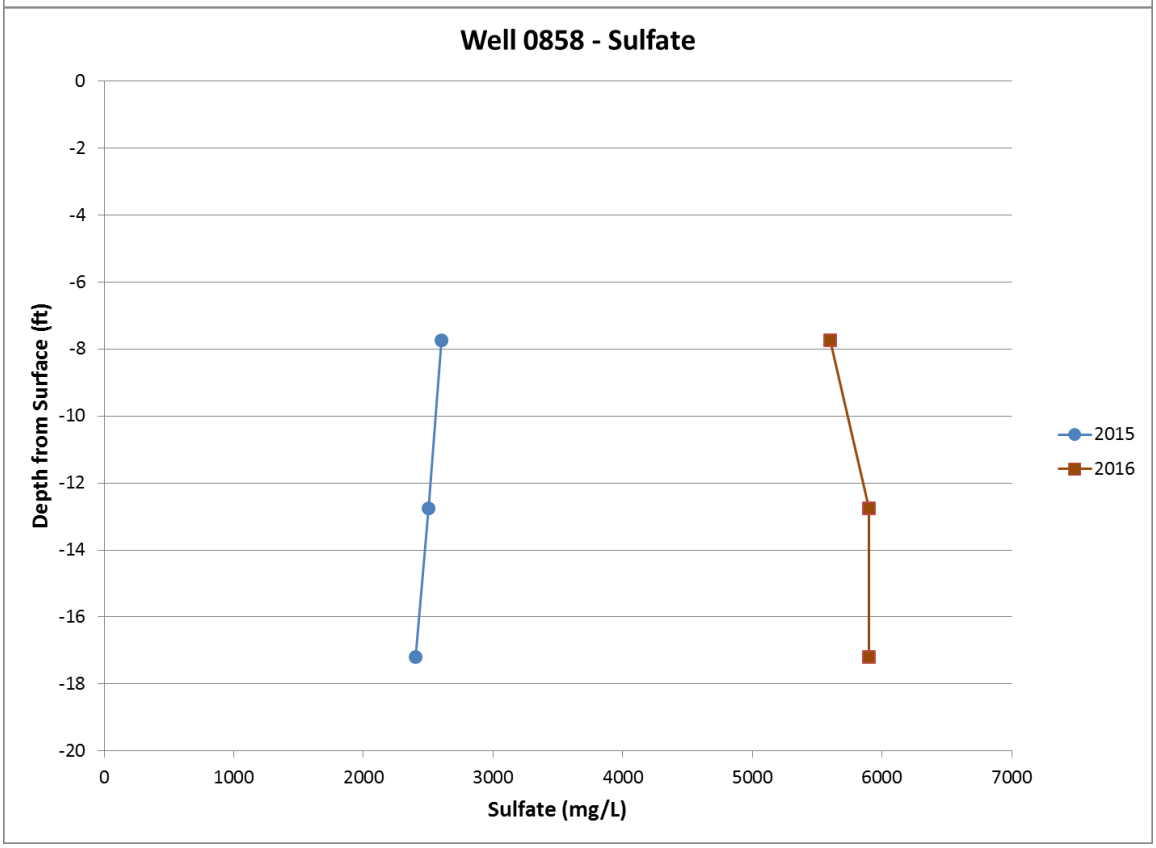

Well 0858 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
50
100
150
200
250
300
Magnesium (mg/L)
2015
2016

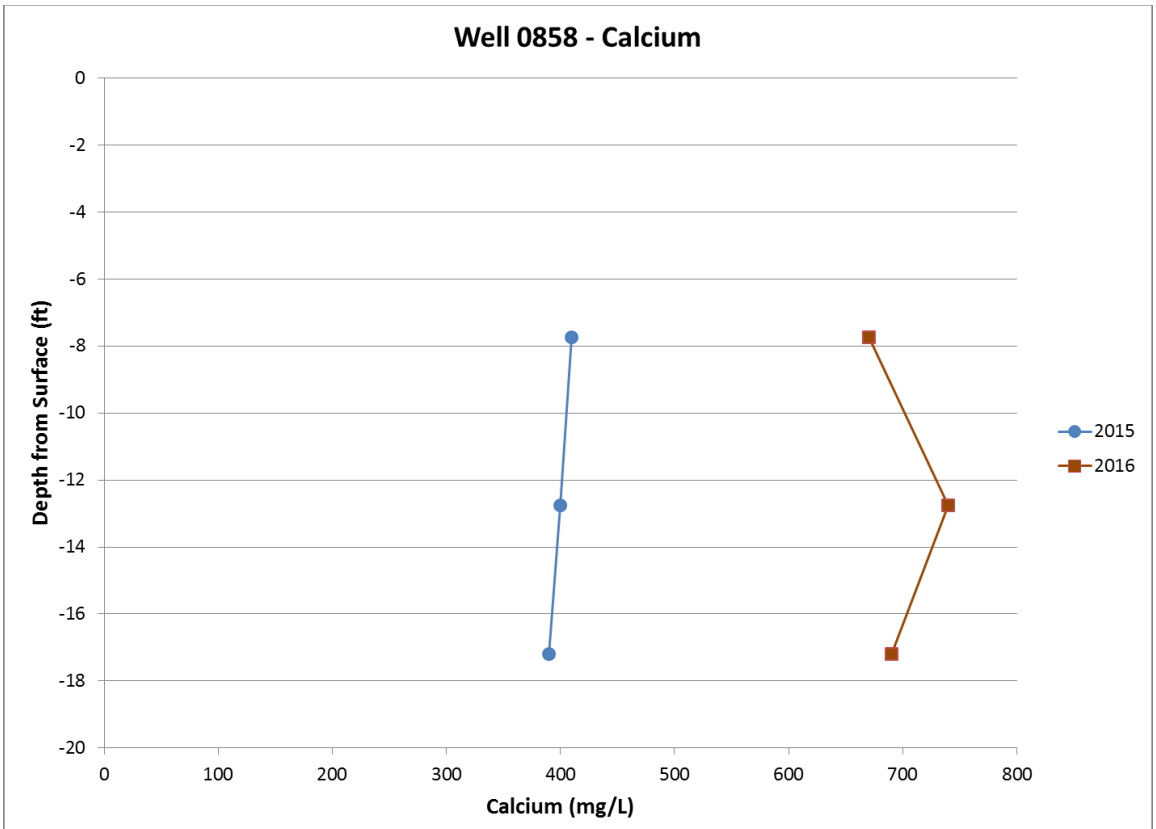

Well 0858 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
200
400
600
800
1000
1200
1400
Sodium (mg/L)
2015
2016

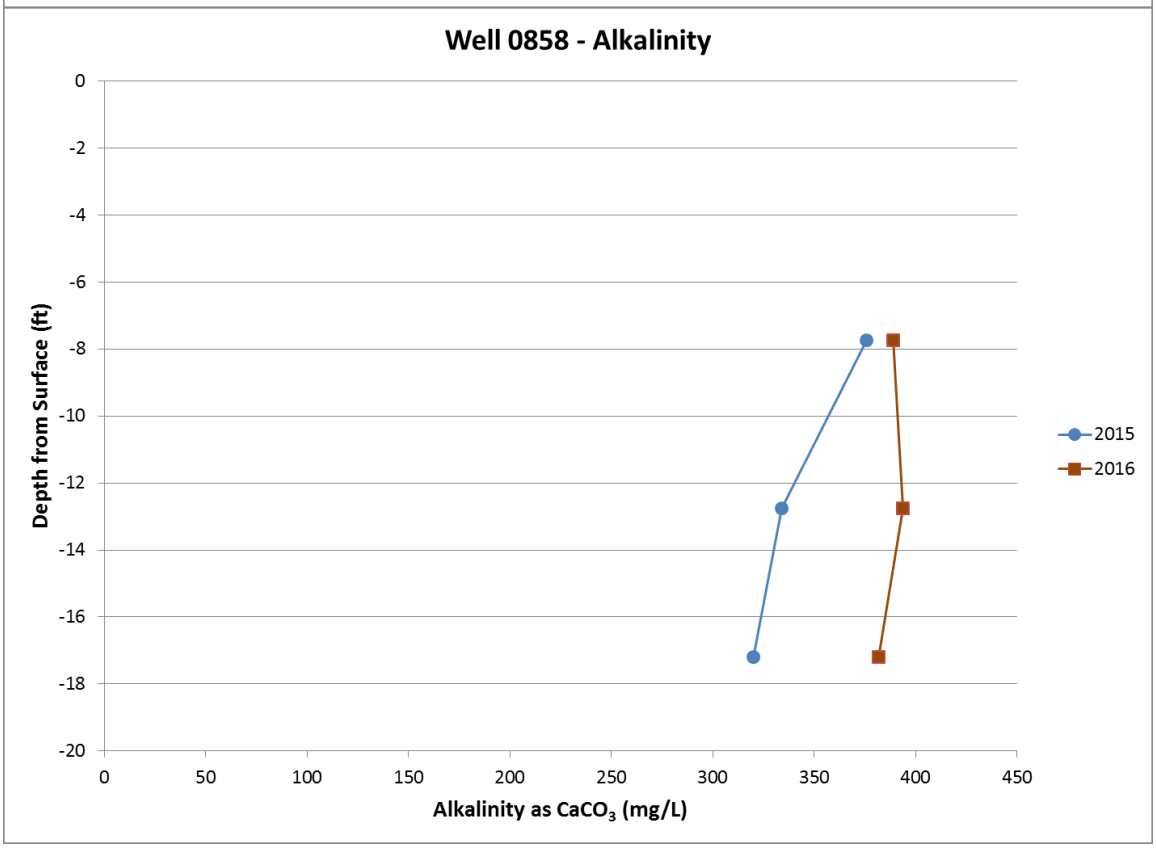

Well 0858 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
5
10
15
20
25
30
Potassium (mg/L)
2015
2016

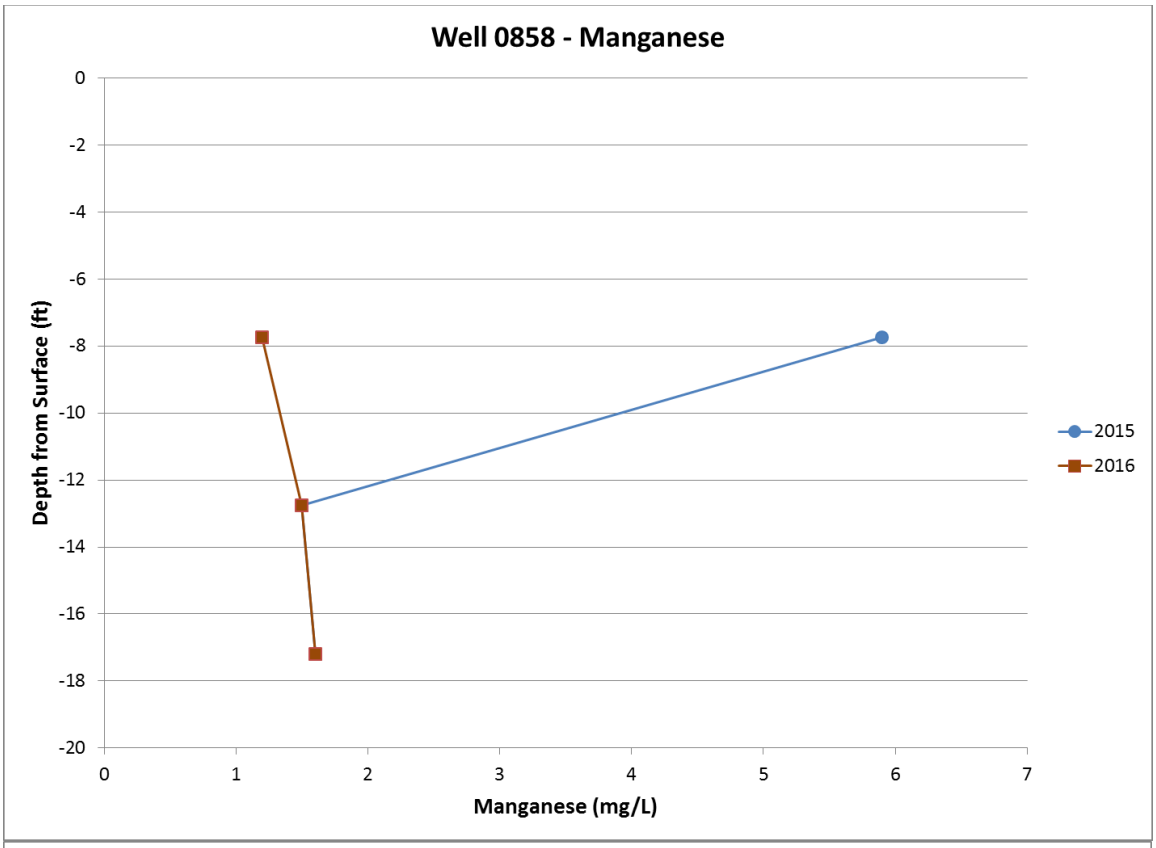

Well 0858 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
Specific Conductance (µS/cm)
2015
2016

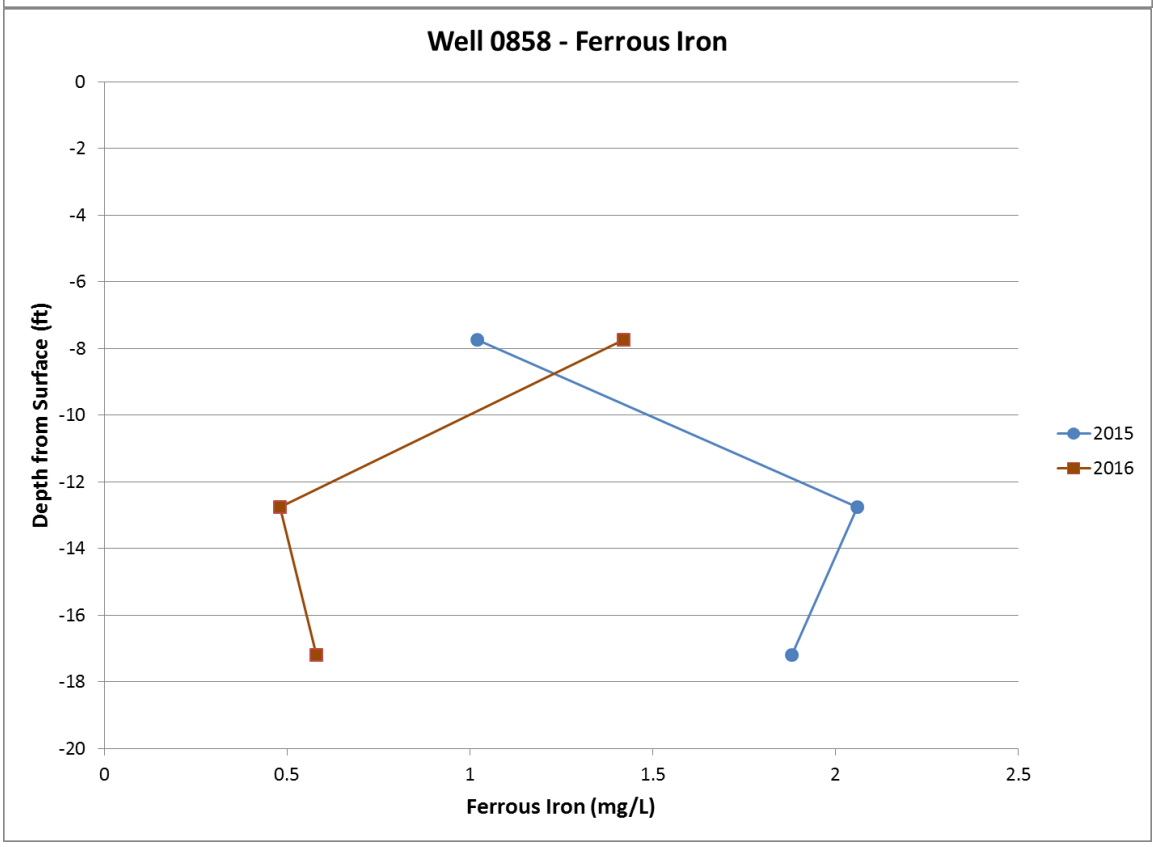

Well 0858 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
50
100
150
200
250
300
Chloride (mg/L)
2015
2016

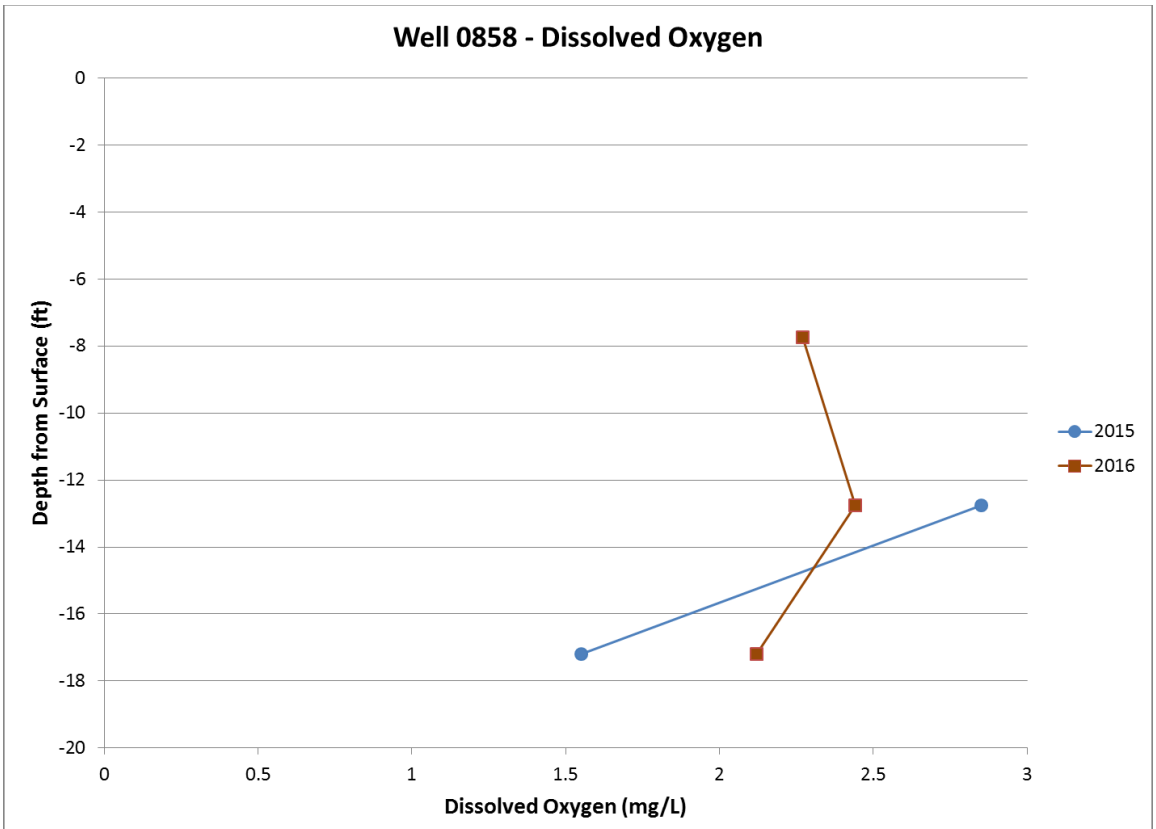

Well 0858 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
1000
2000
3000
4000
5000
6000
7000
Sulfate (mg/L)
2015
2016

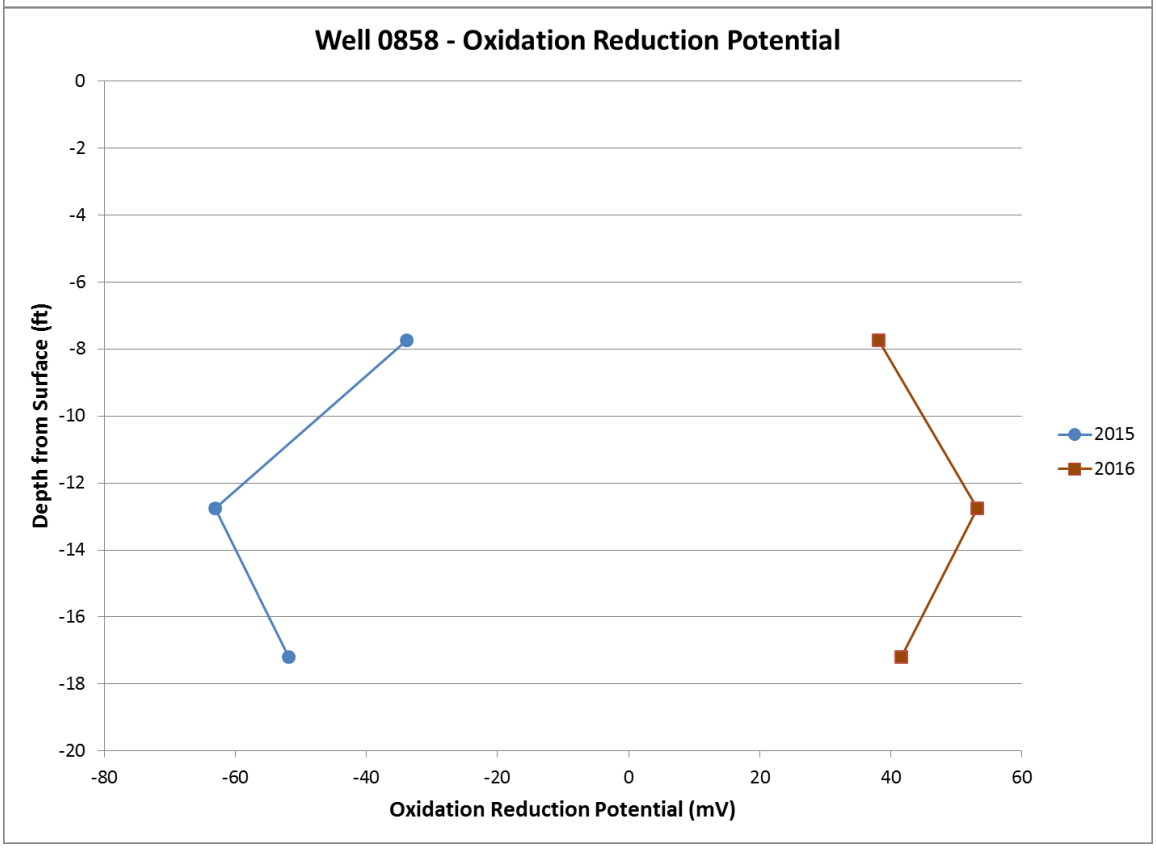

Well 0858 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
100
200
300
400
500
600
700
800
Calcium (mg/L)
2015
2016

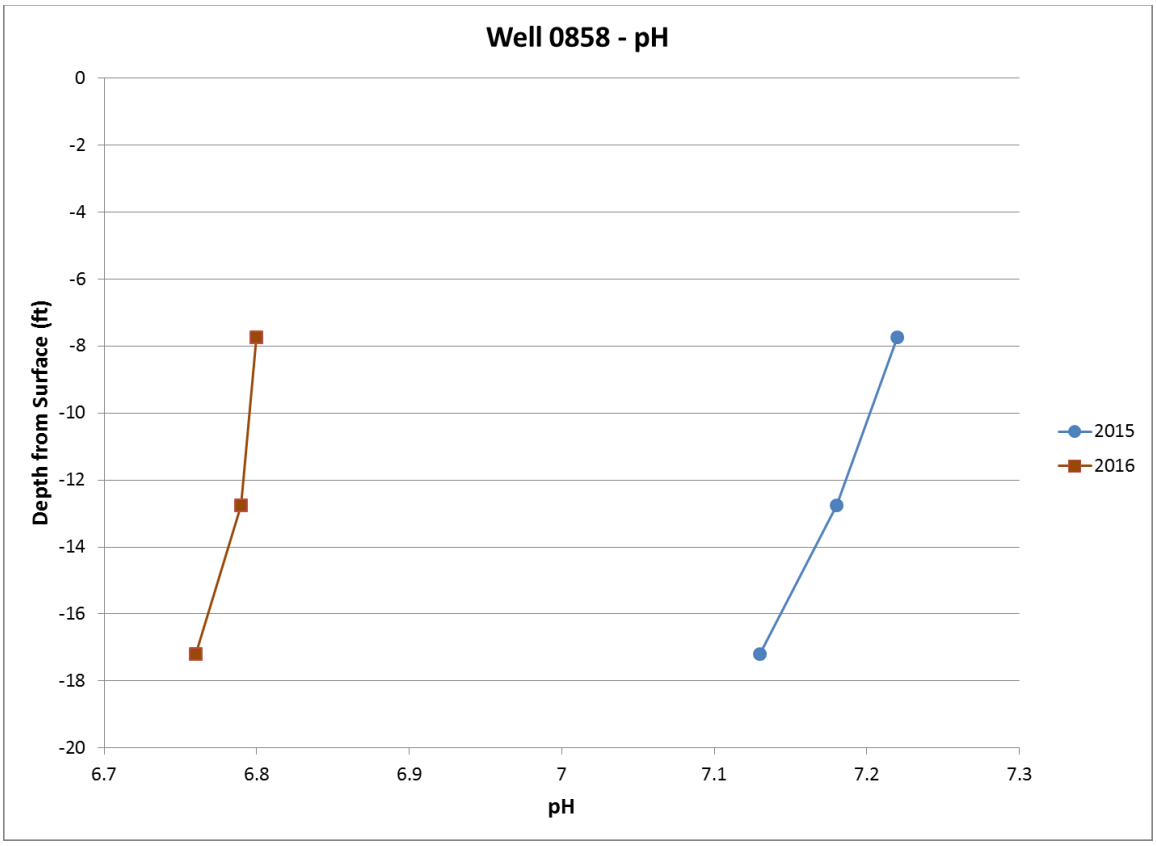

Well 0858 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
50
100
150
200
250
300
350
400
450
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0858 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
1
2
3
4
5
6
7
Manganese (mg/L)
2015
2016


Well 0858 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.5
1
1.5
2
2.5
Ferrous Iron (mg/L)
2015
2016


Well 0858 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
0
0.5
1
1.5
2
2.5
3
Dissolved Oxygen (mg/L)
2015
2016


Well 0858 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-80
-60
-40
-20
0
20
40
60
Oxidation Reduction Potential (mV)
2015
2016


Well 0858 - pH
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
Depth from Surface (ft)
6.7
6.8
6.9
7
7.1
7.2
7.3
pH
2015
2016

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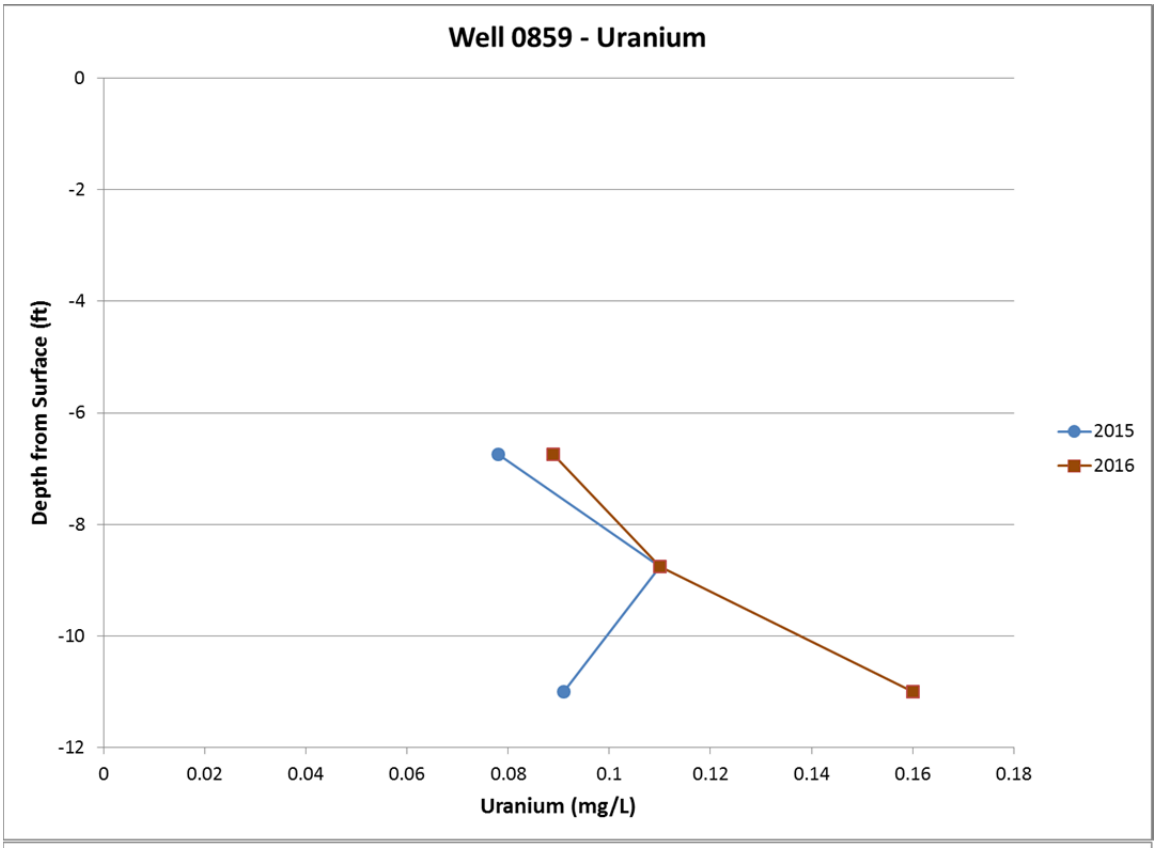
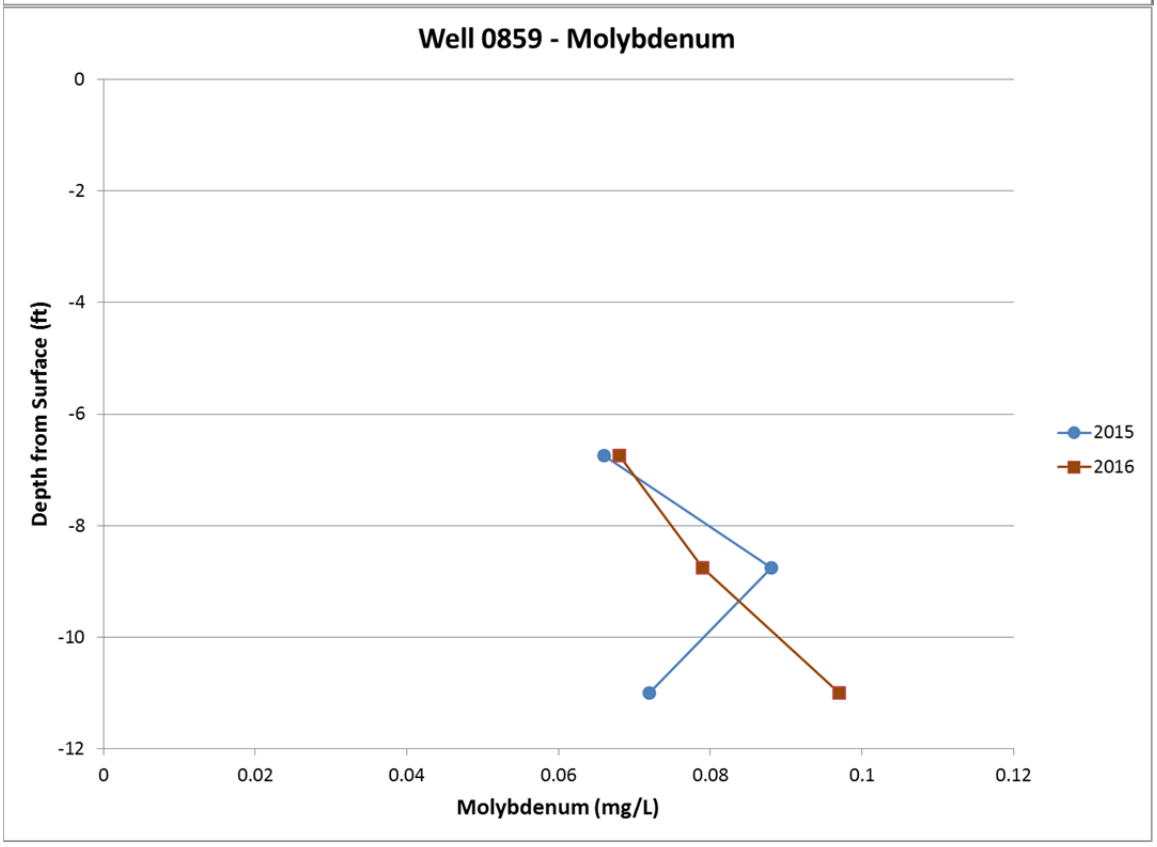
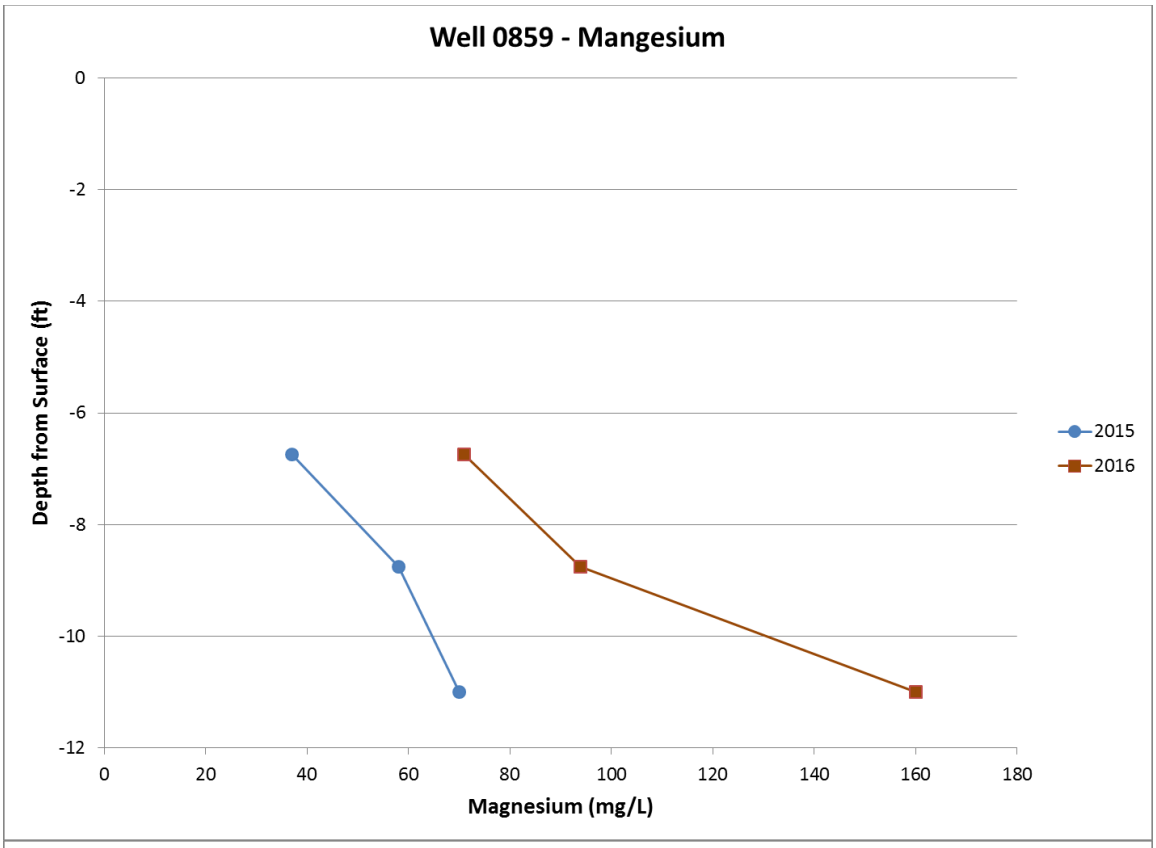
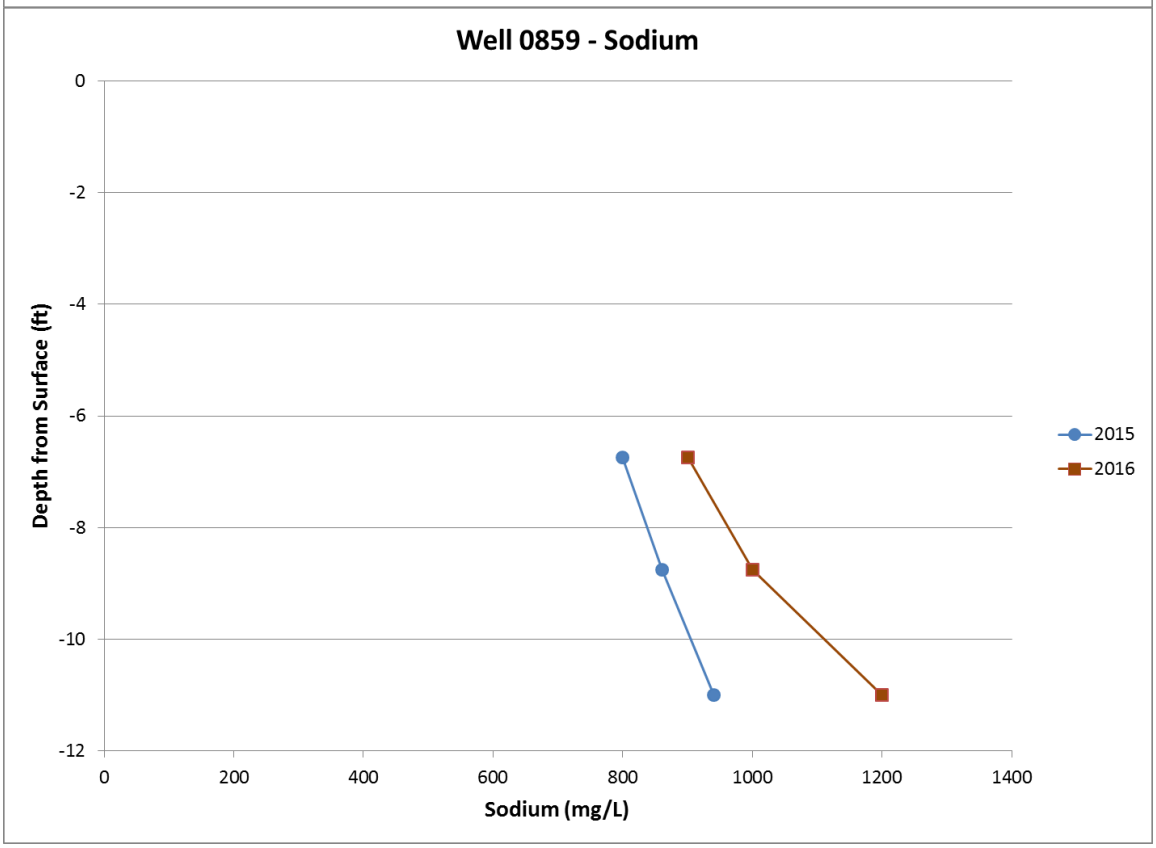
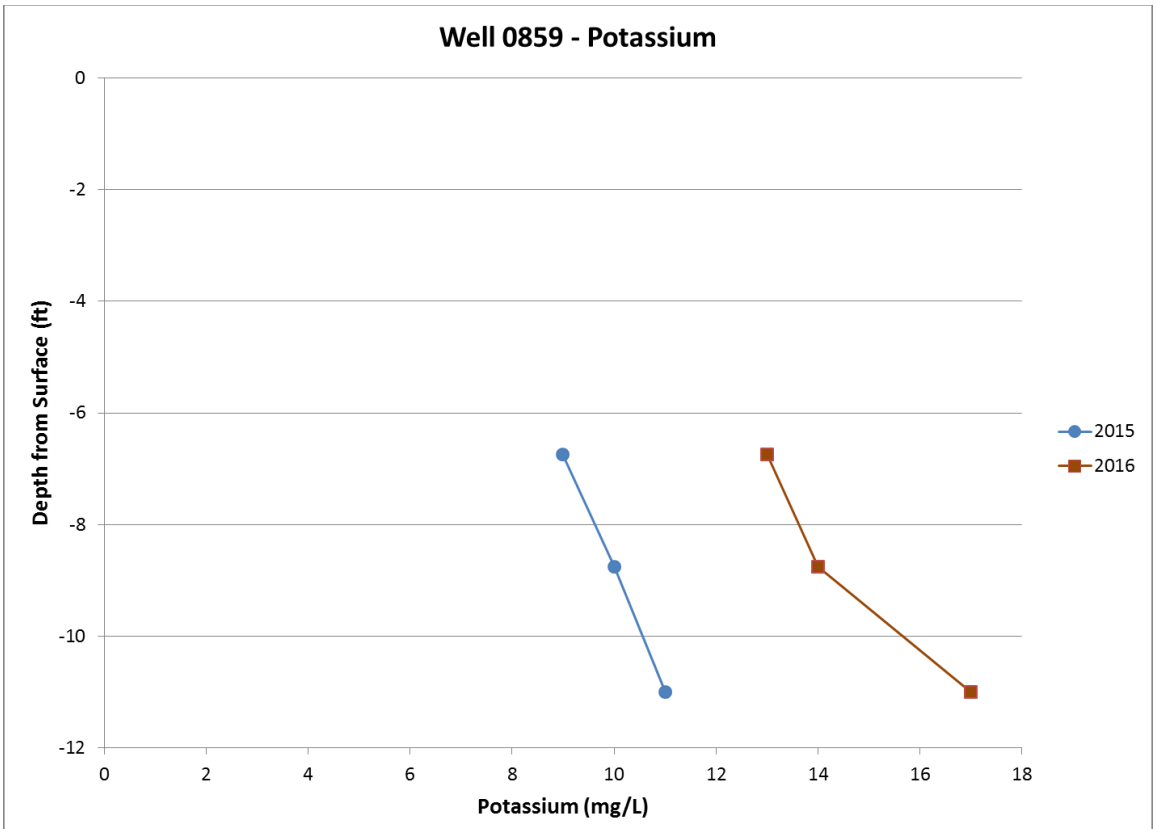
Well 0859

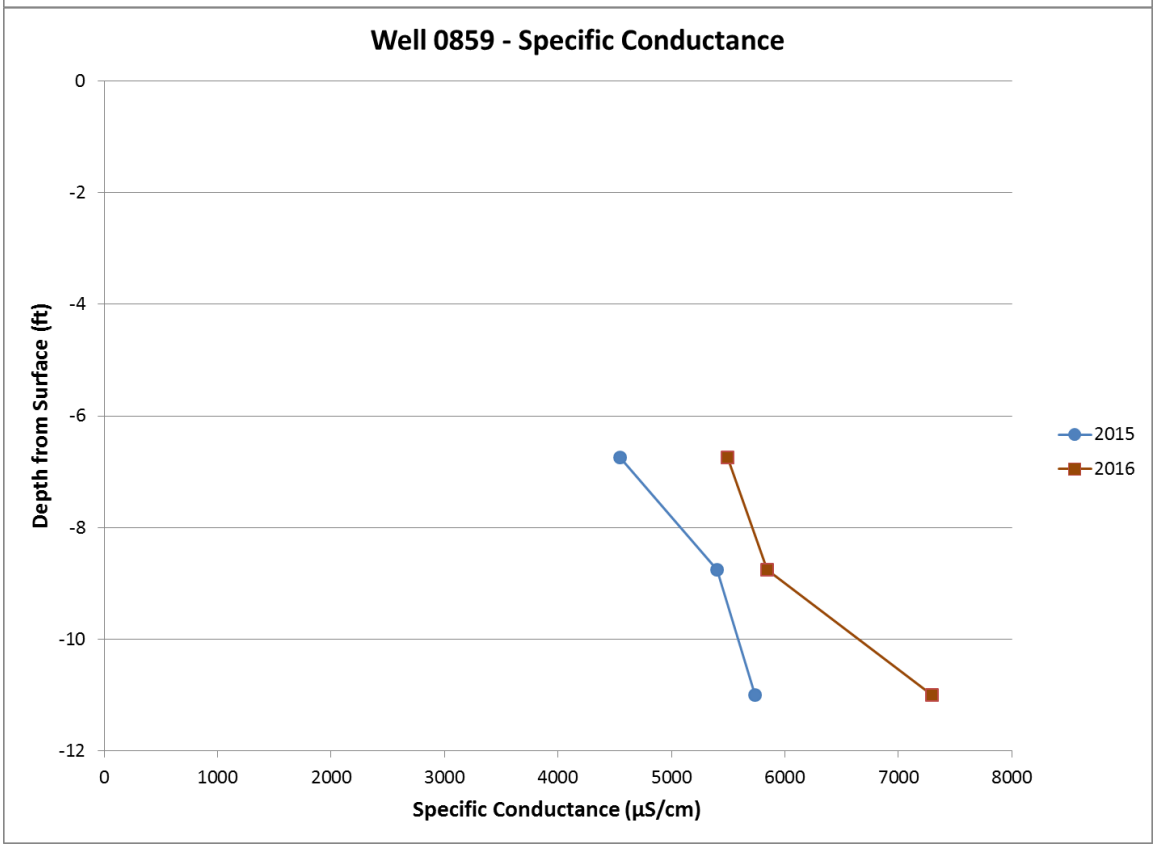

Well 0859 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
Uranium (mg/L)
2015
2016

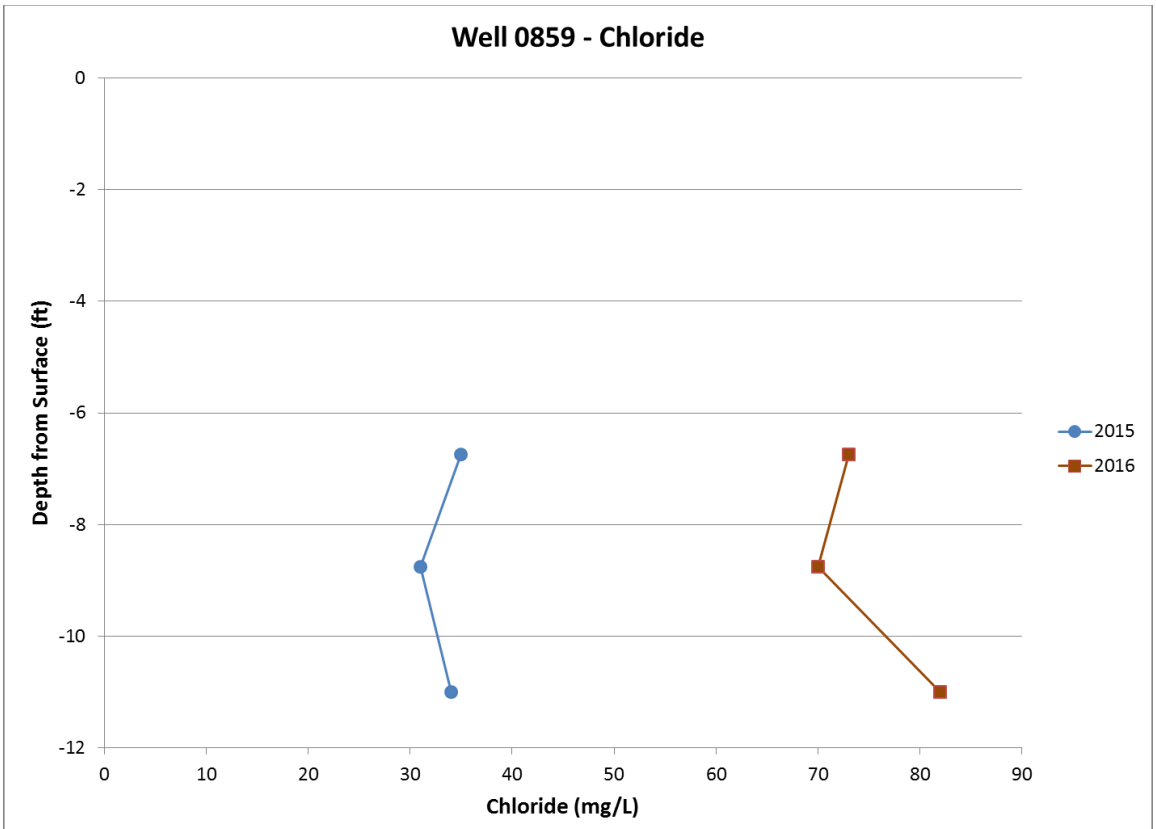

Well 0859 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.02
0.04
0.06
0.08
0.1
0.12
Molybdenum (mg/L)
2015
2016

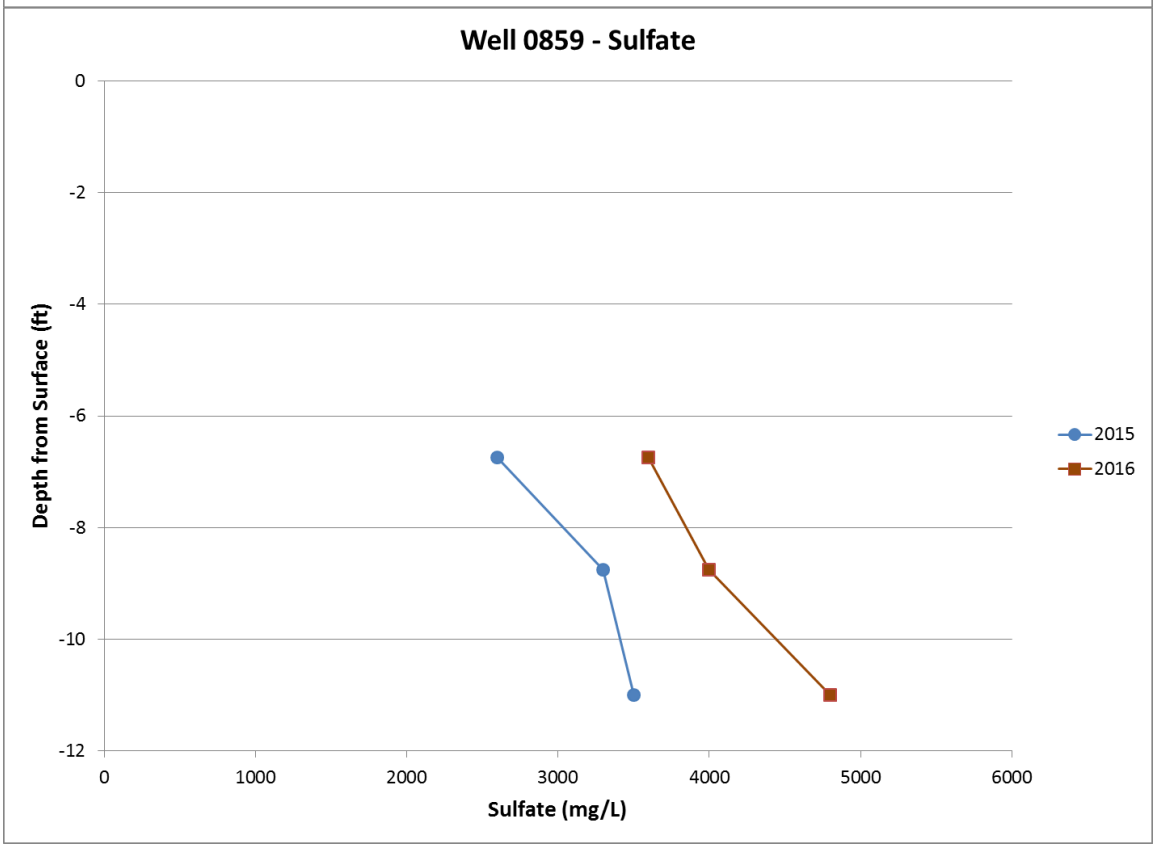

Well 0859 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
20
40
60
80
100
120
140
160
180
Magnesium (mg/L)
2015
2016

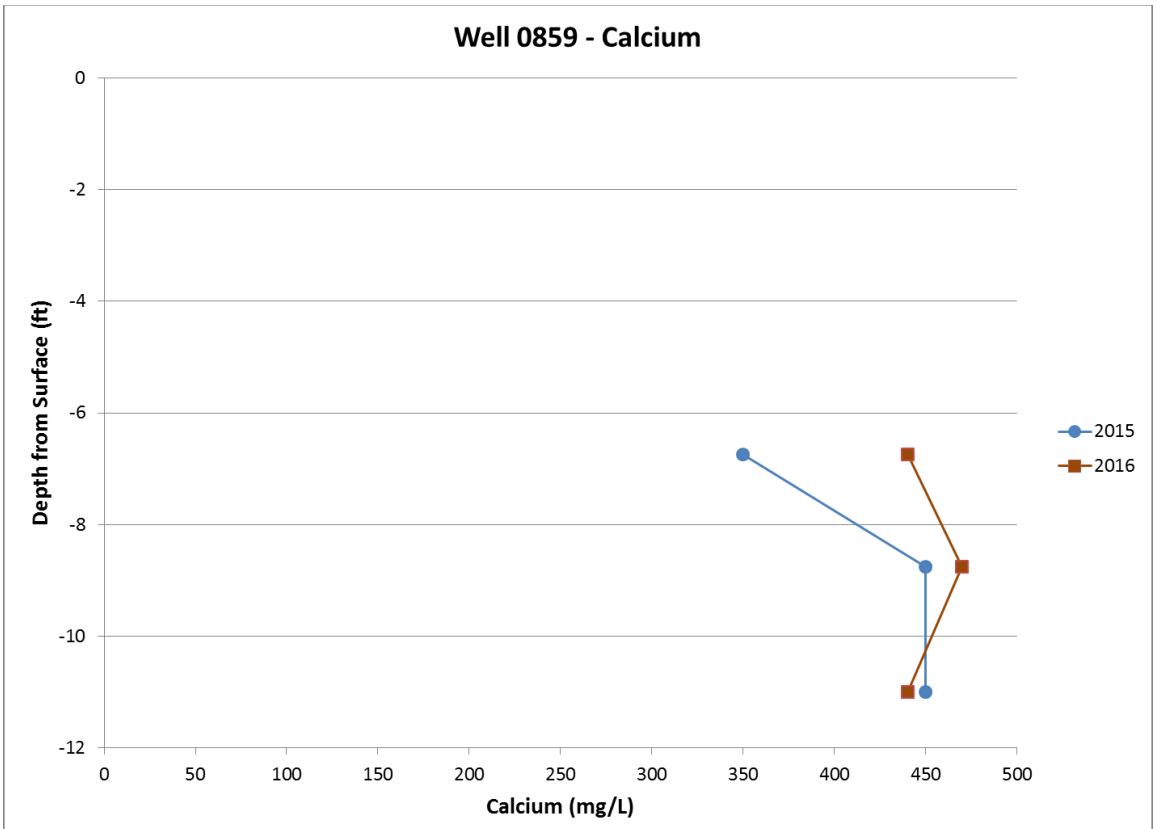

Well 0859 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
200
400
600
800
1000
1200
1400
Sodium (mg/L)
2015
2016

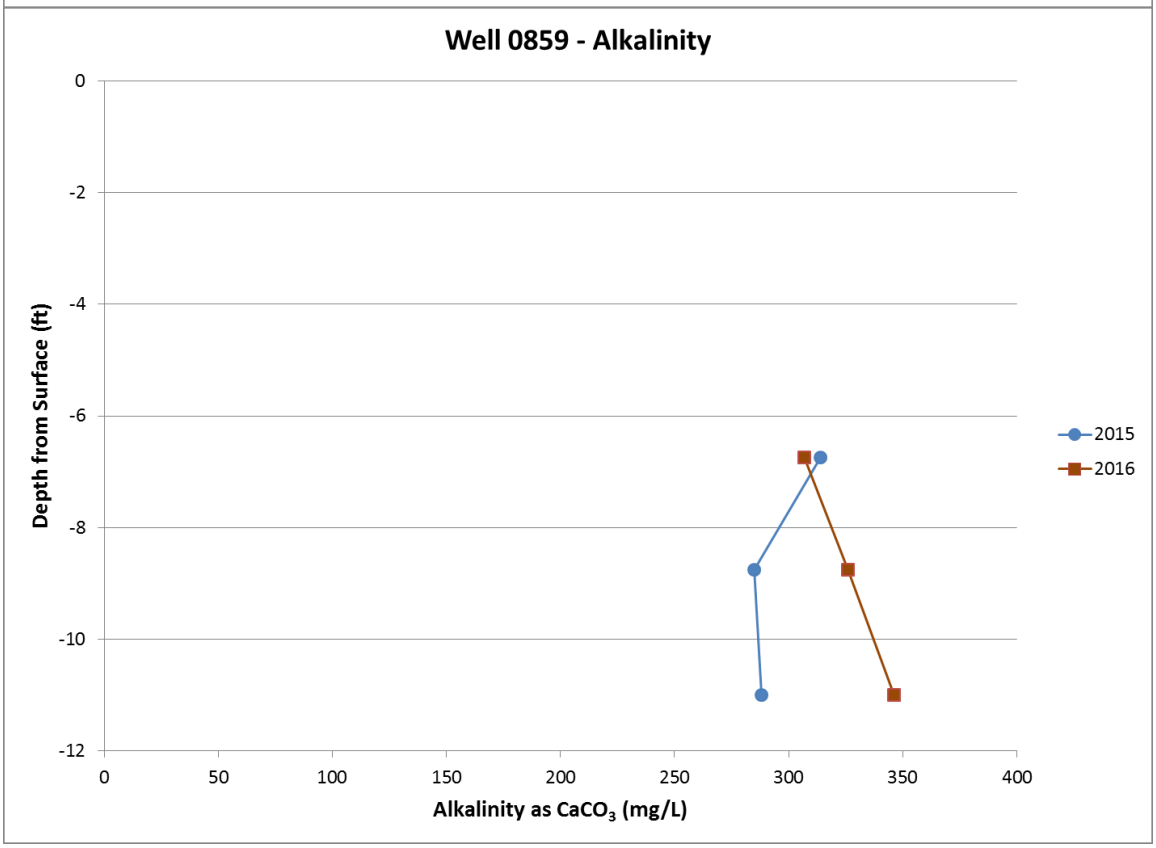

Well 0859 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
2
4
6
8
10
12
14
16
18
Potassium (mg/L)
2015
2016

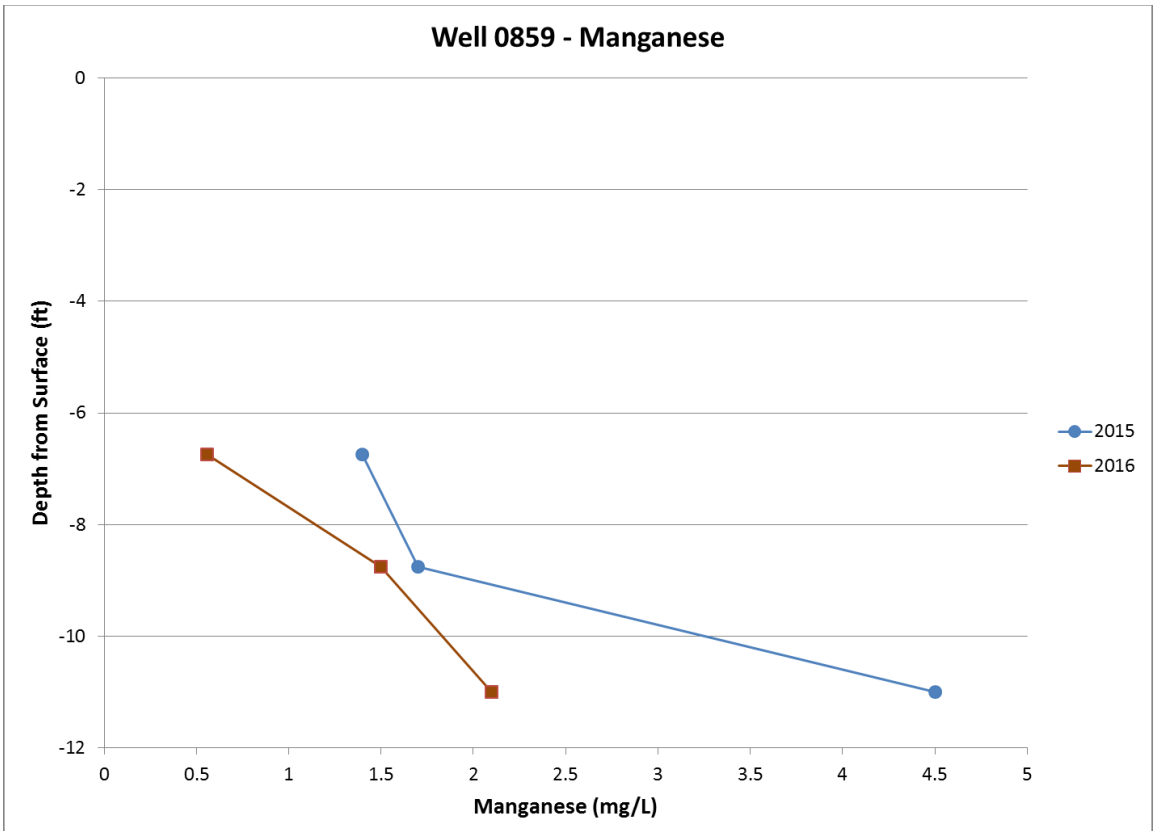

Well 0859 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
1000
2000
3000
4000
5000
6000
7000
8000
Specific Conductance (µS/cm)
2015
2016

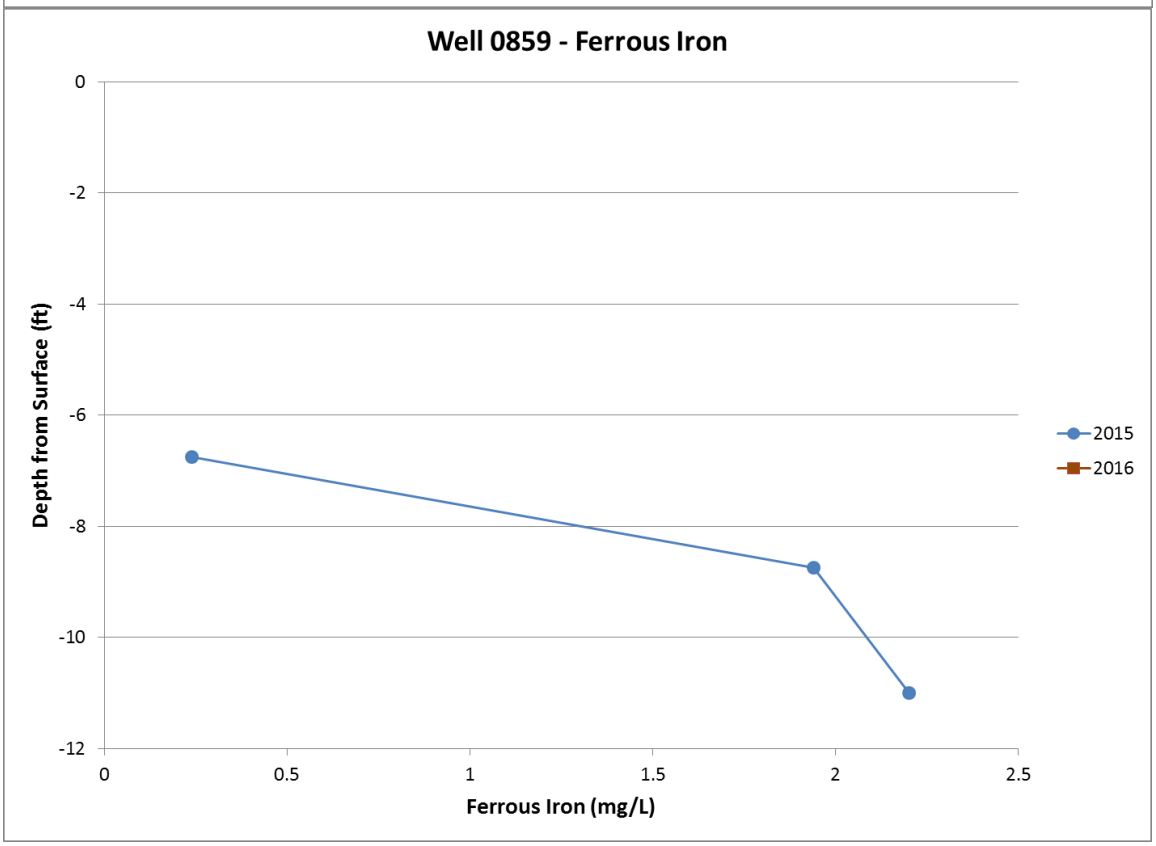

Well 0859 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
10
20
30
40
50
60
70
80
90
Chloride (mg/L)
2015
2016

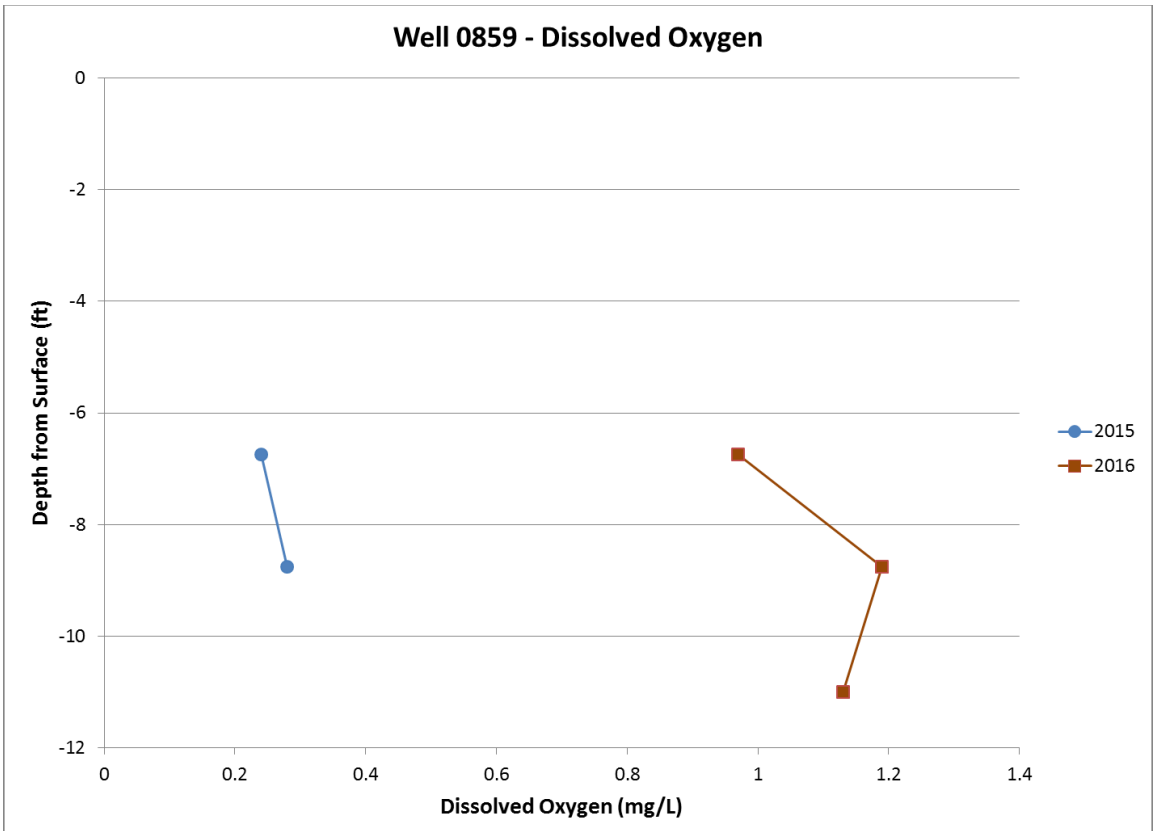

Well 0859 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
1000
2000
3000
4000
5000
6000
Sulfate (mg/L)
2015
2016

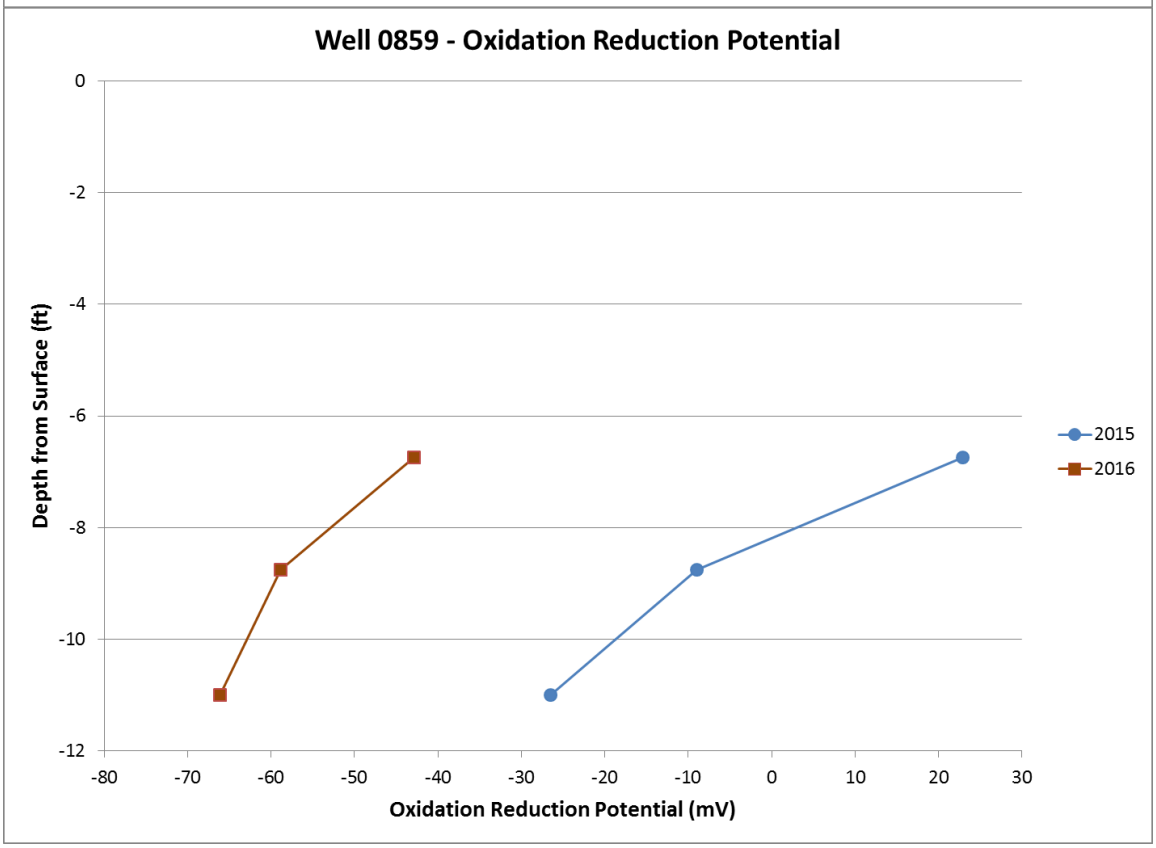

Well 0859 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
50
100
150
200
250
300
350
400
450
500
Calcium (mg/L)
2015
2016

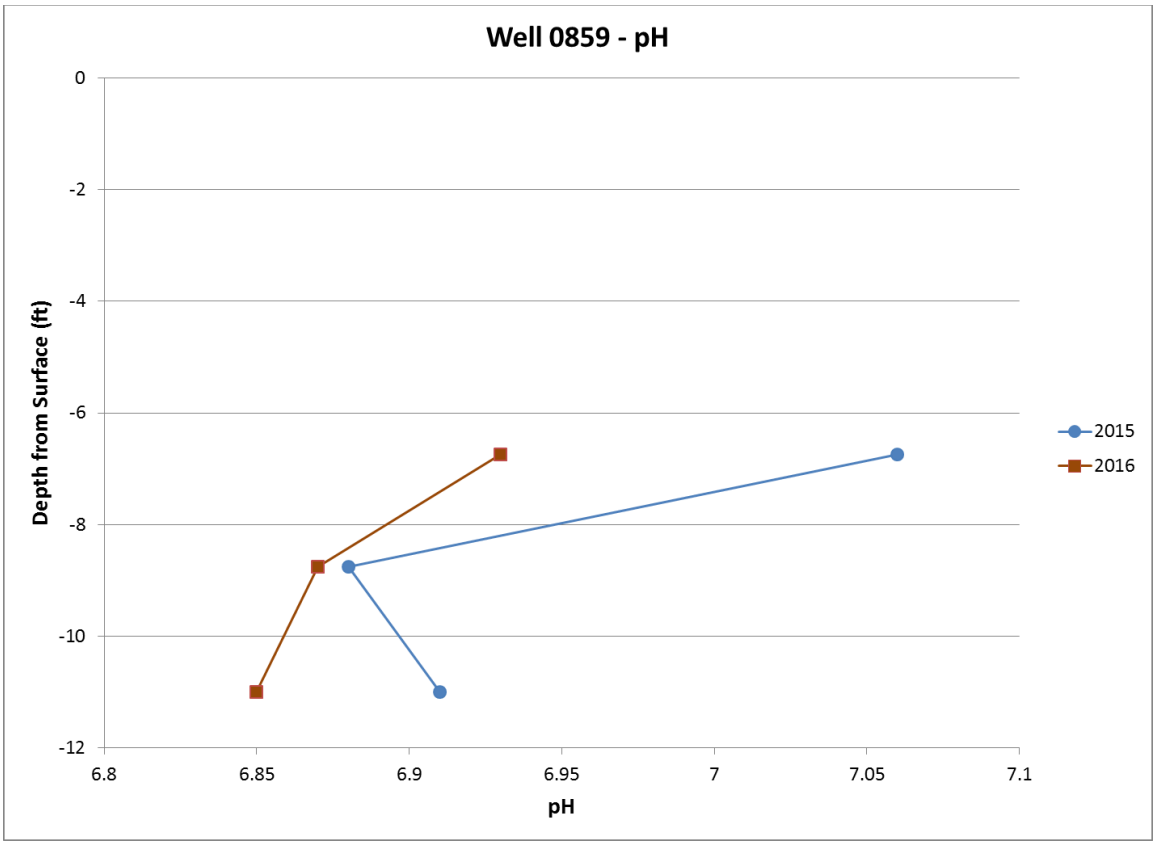

Well 0859 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
50
100
150
200
250
300
350
400
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0859 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Manganese (mg/L)
2015
2016


Well 0859 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.5
1
1.5
2
2.5
Ferrous Iron (mg/L)
2015
2016


Well 0859 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
0
0.2
0.4
0.6
0.8
1
1.2
1.4
Dissolved Oxygen (mg/L)
2015
2016


Well 0859 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-80
-70
-60
-50
-40
-30
-20
-10
0
10
20
30
Oxidation Reduction Potential (mV)
2015
2016


Well 0859 - pH
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
6.8
6.85
6.9
6.95
7
7.05
7.1
pH
2015
2016

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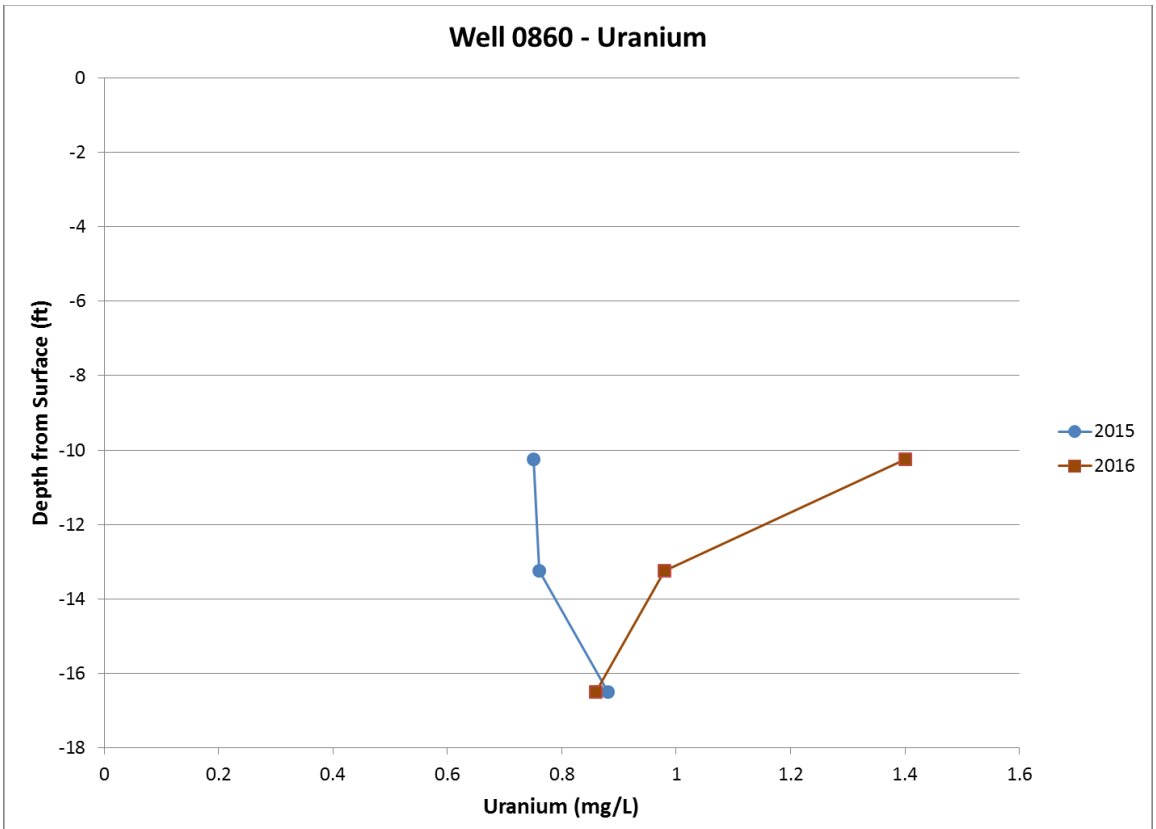
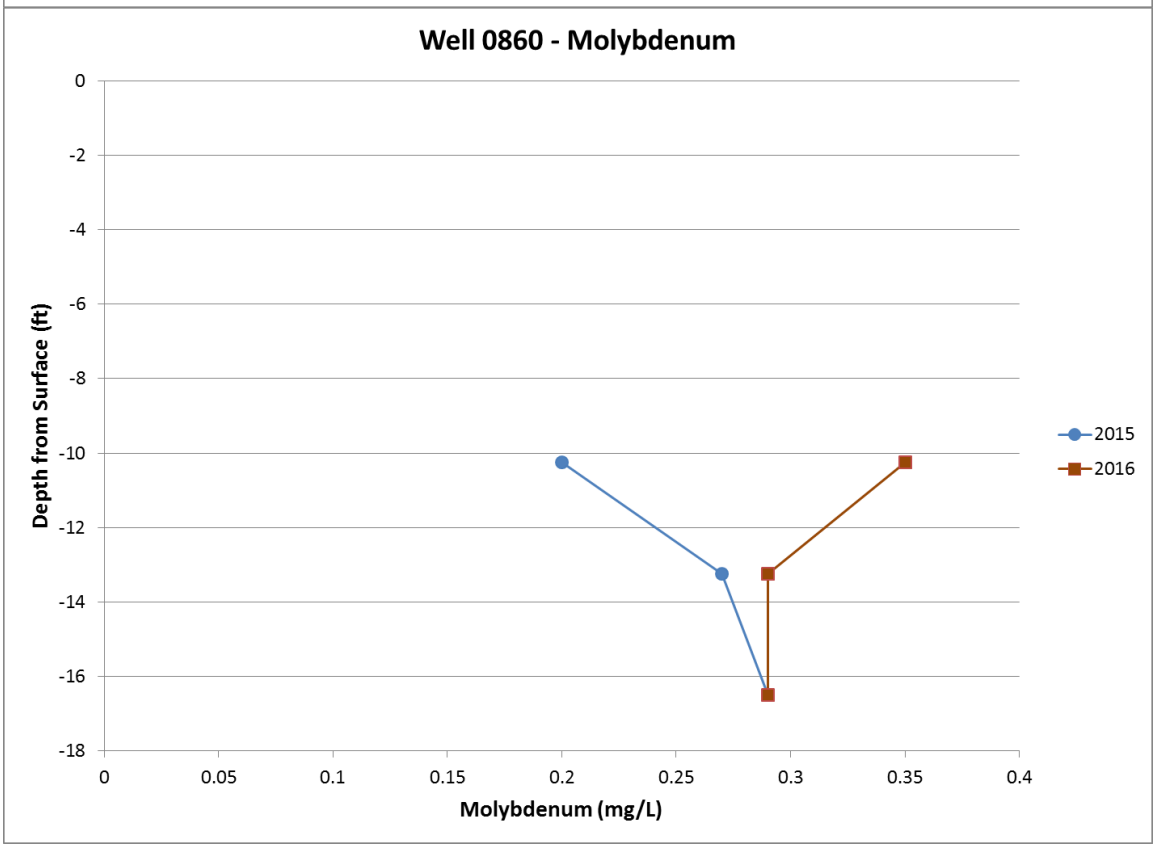
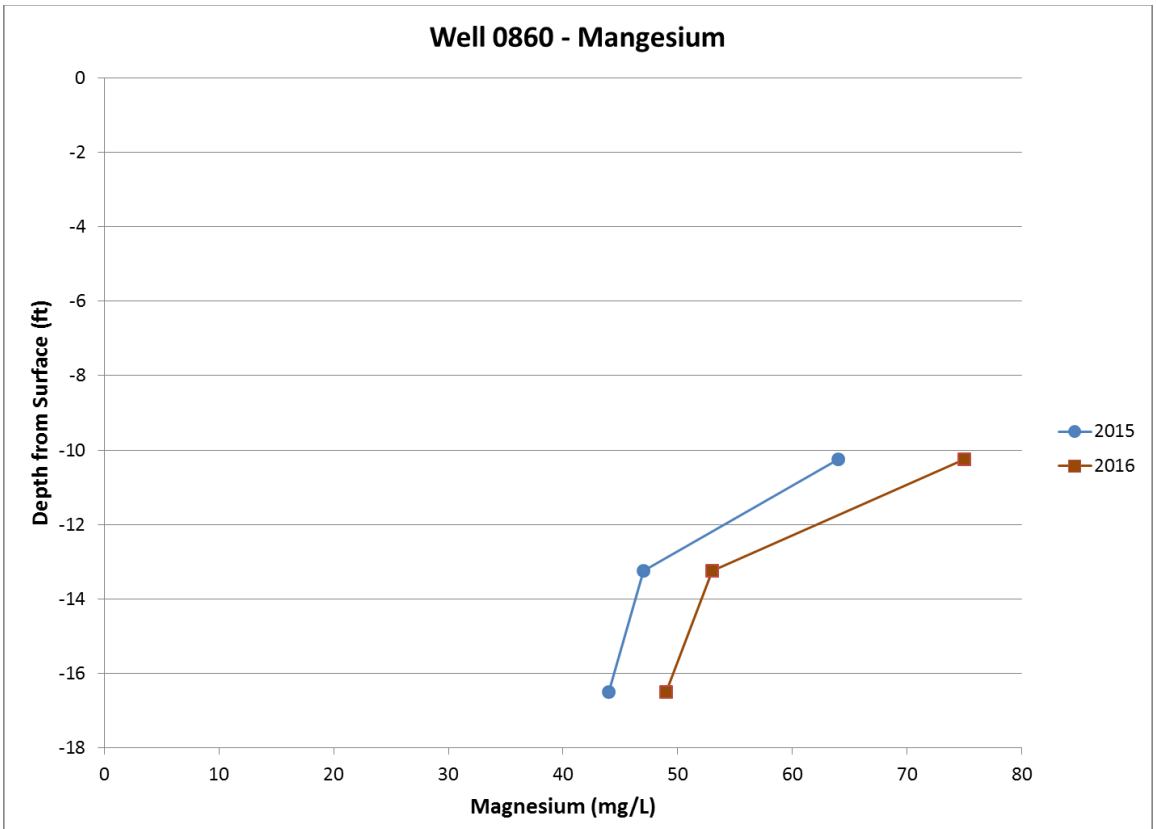
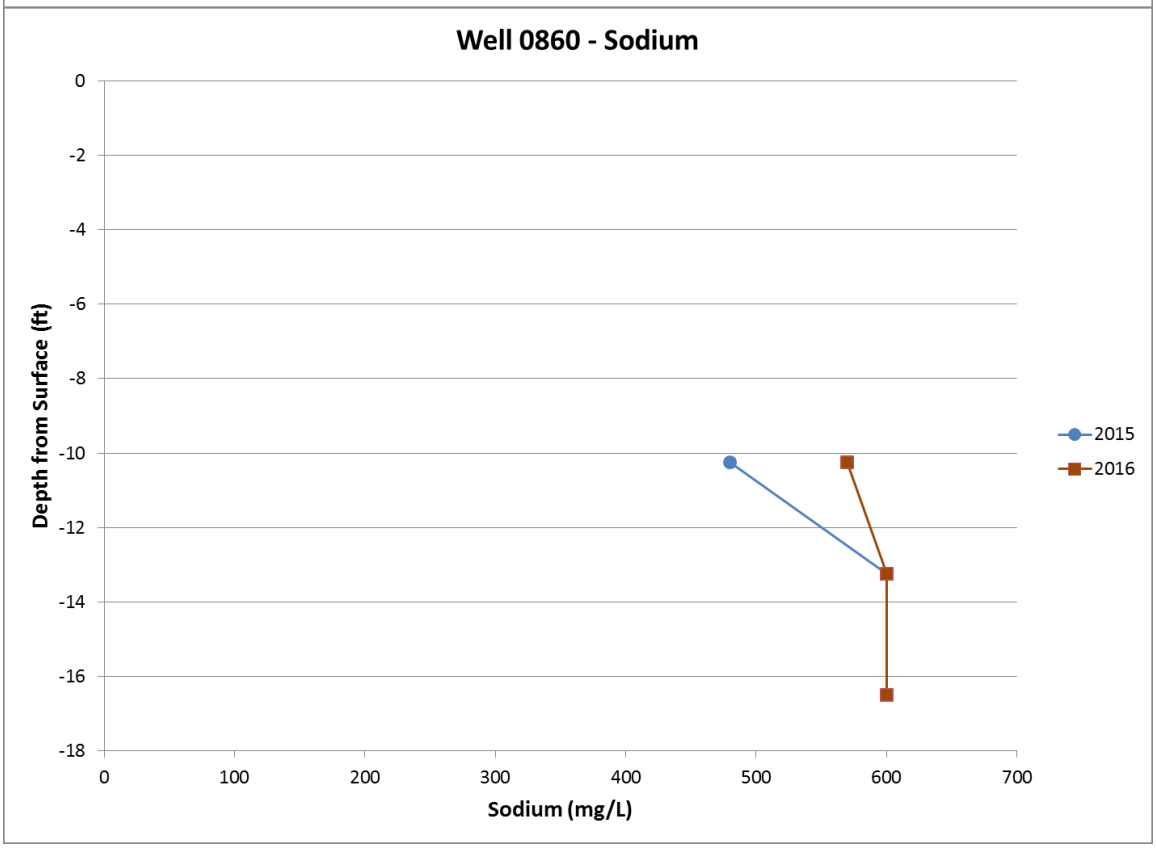
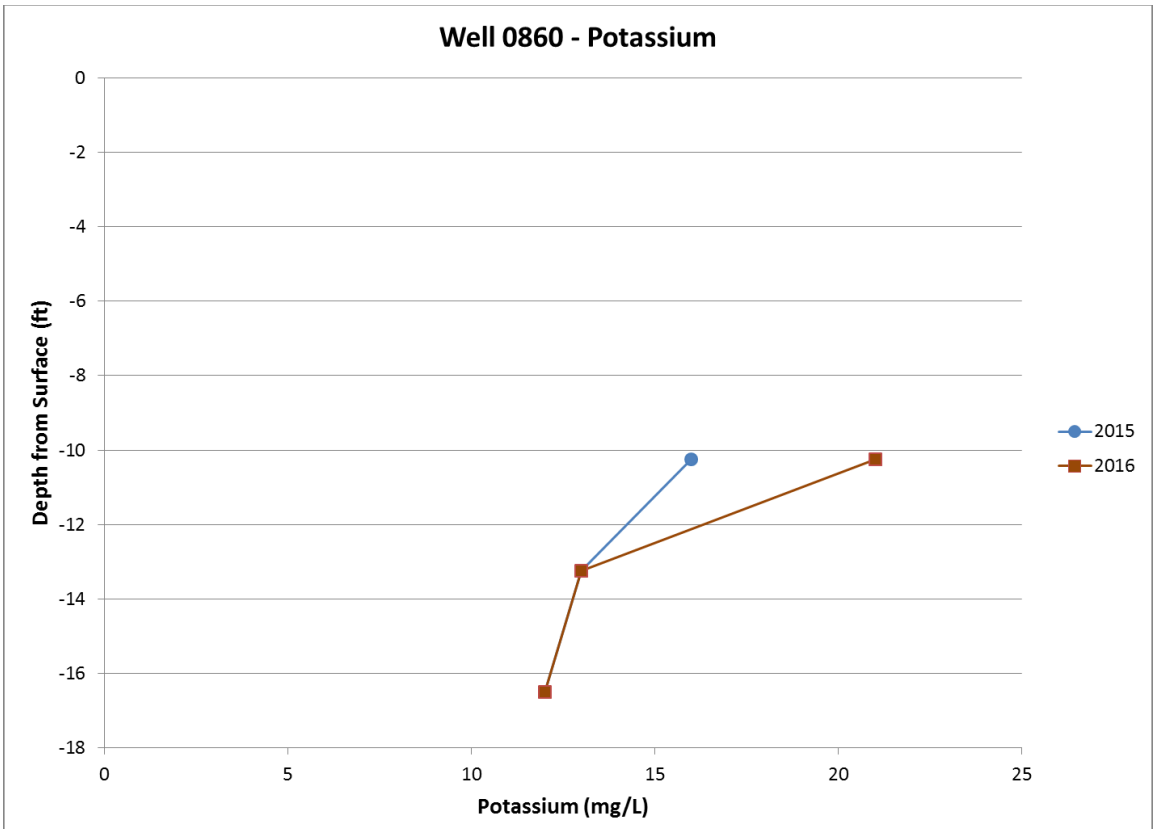
Well 0860

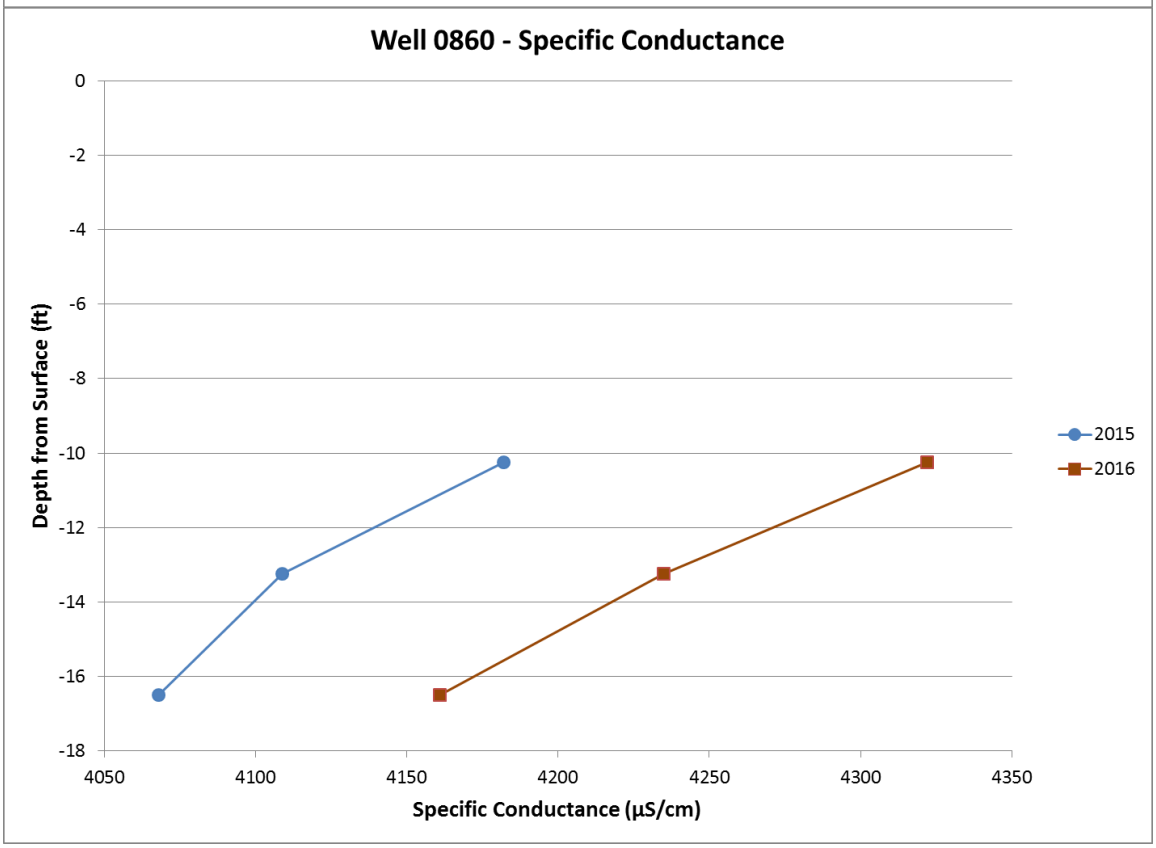

Well 0860 - Uranium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Uranium (mg/L)
2015
2016

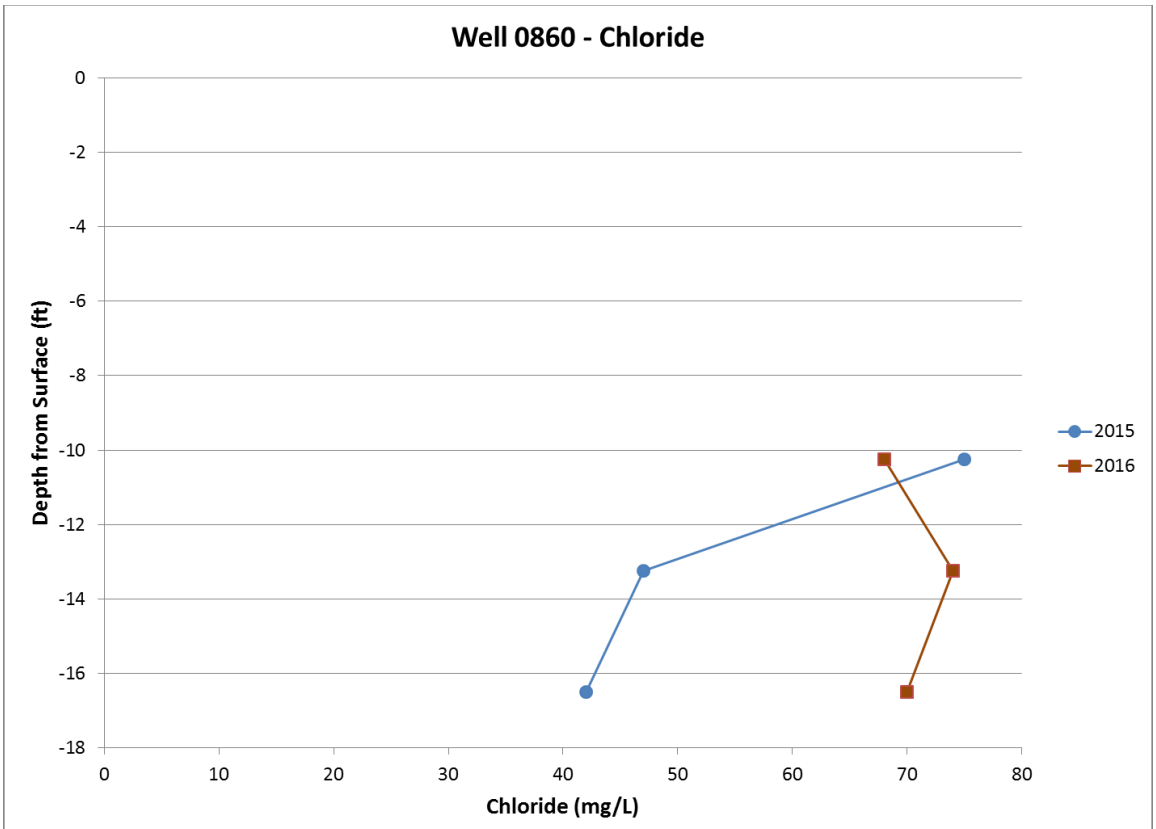

Well 0860 - Molybdenum
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
Molybdenum (mg/L)
2015
2016

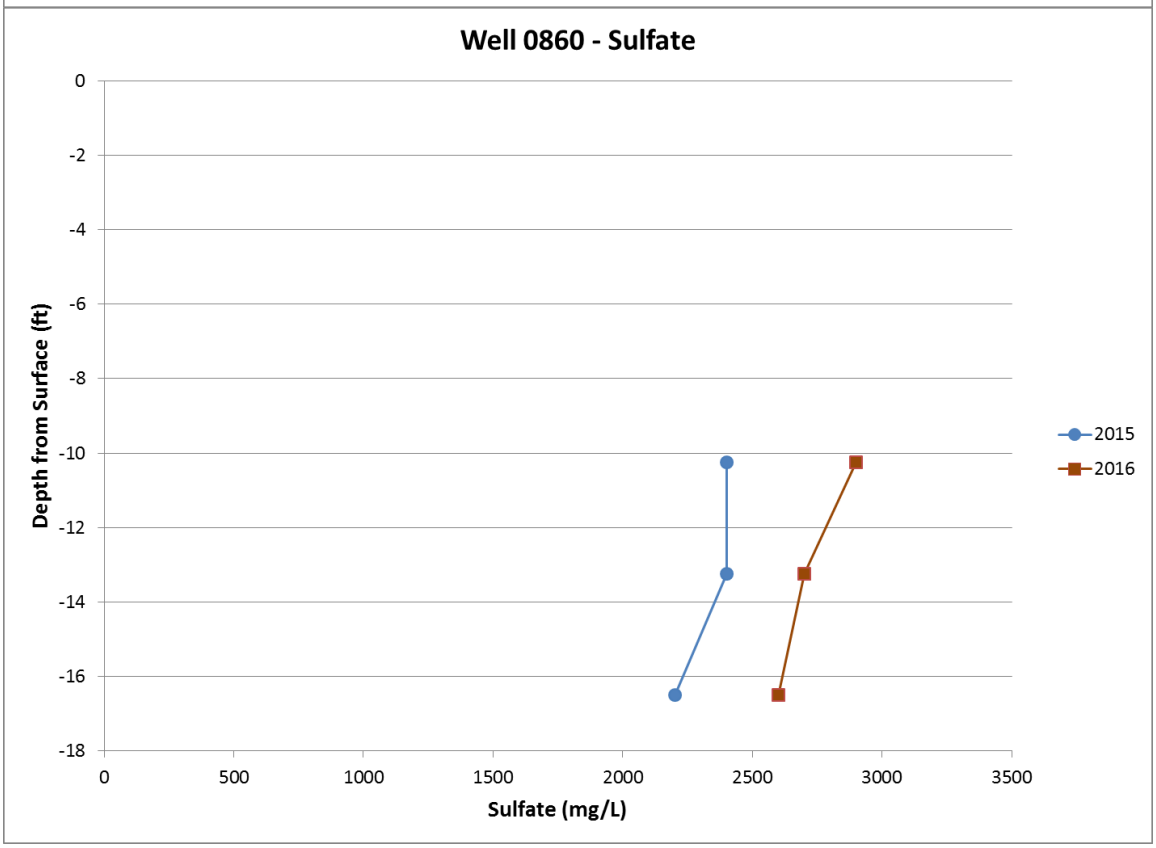

Well 0860 - Mangesium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
10
20
30
40
50
60
70
80
Magnesium (mg/L)
2015
2016

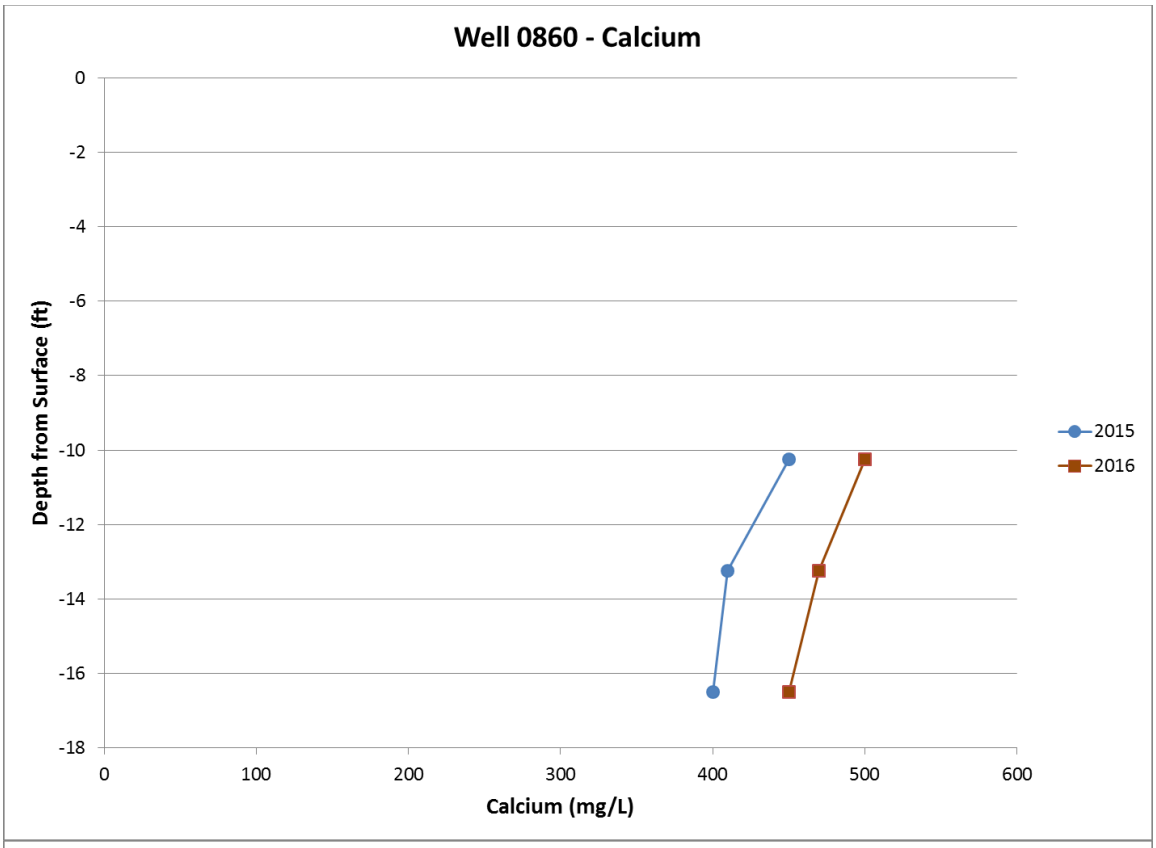

Well 0860 - Sodium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
100
200
300
400
500
600
700
Sodium (mg/L)
2015
2016

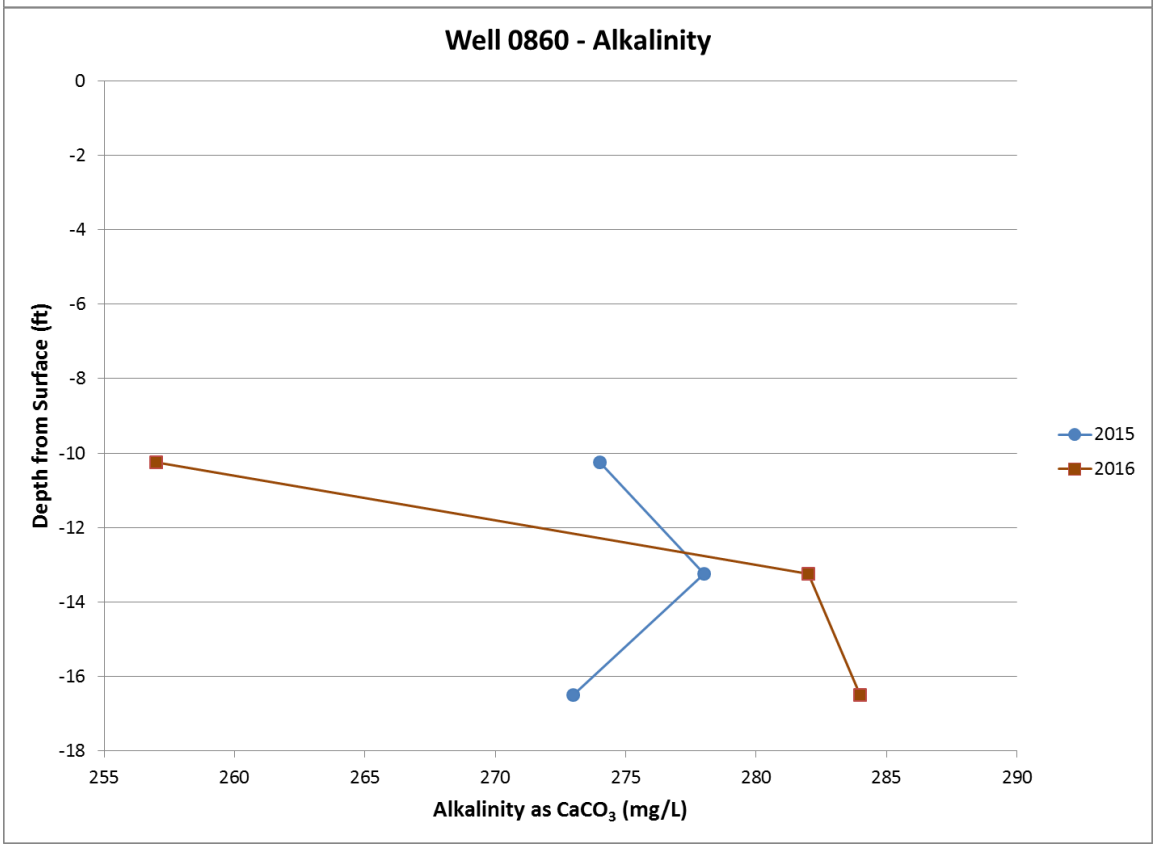

Well 0860 - Potassium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
5
10
15
20
25
Potassium (mg/L)
2015
2016

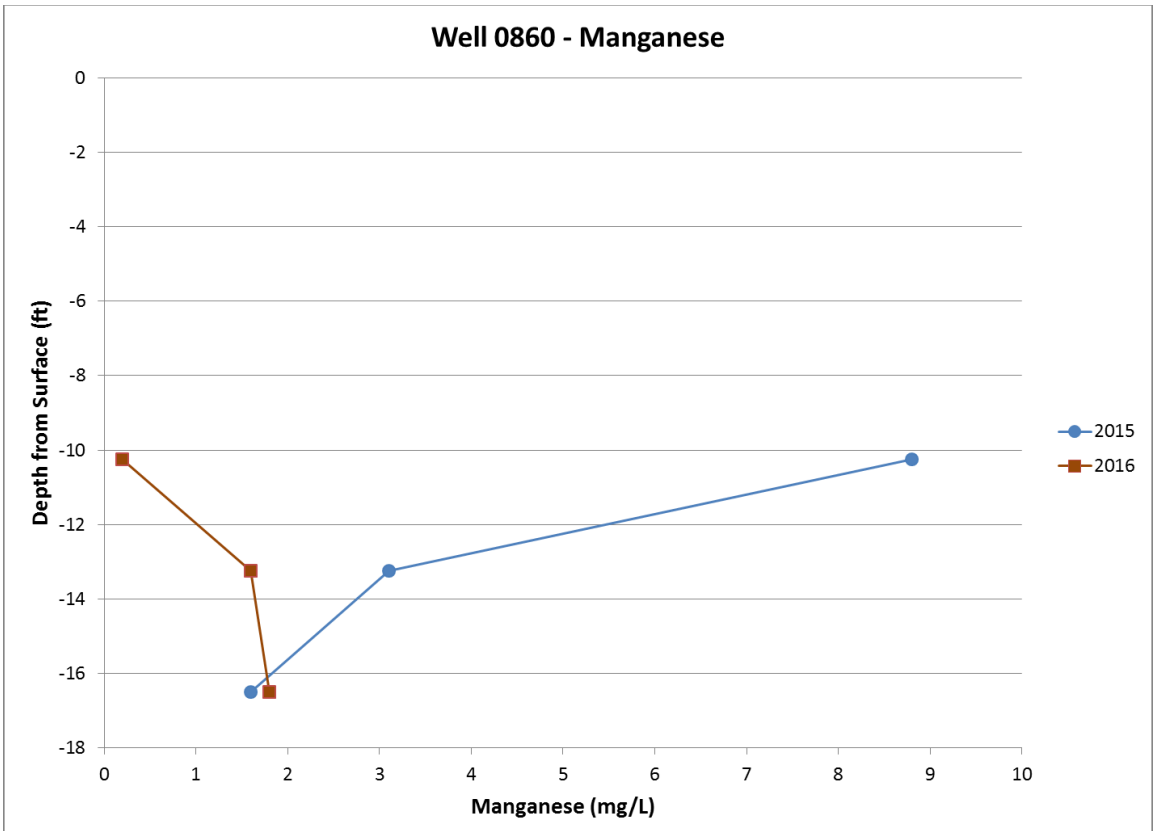

Well 0860 - Specific Conductance
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
4050
4100
4150
4200
4250
4300
4350
Specific Conductance (µS/cm)
2015
2016

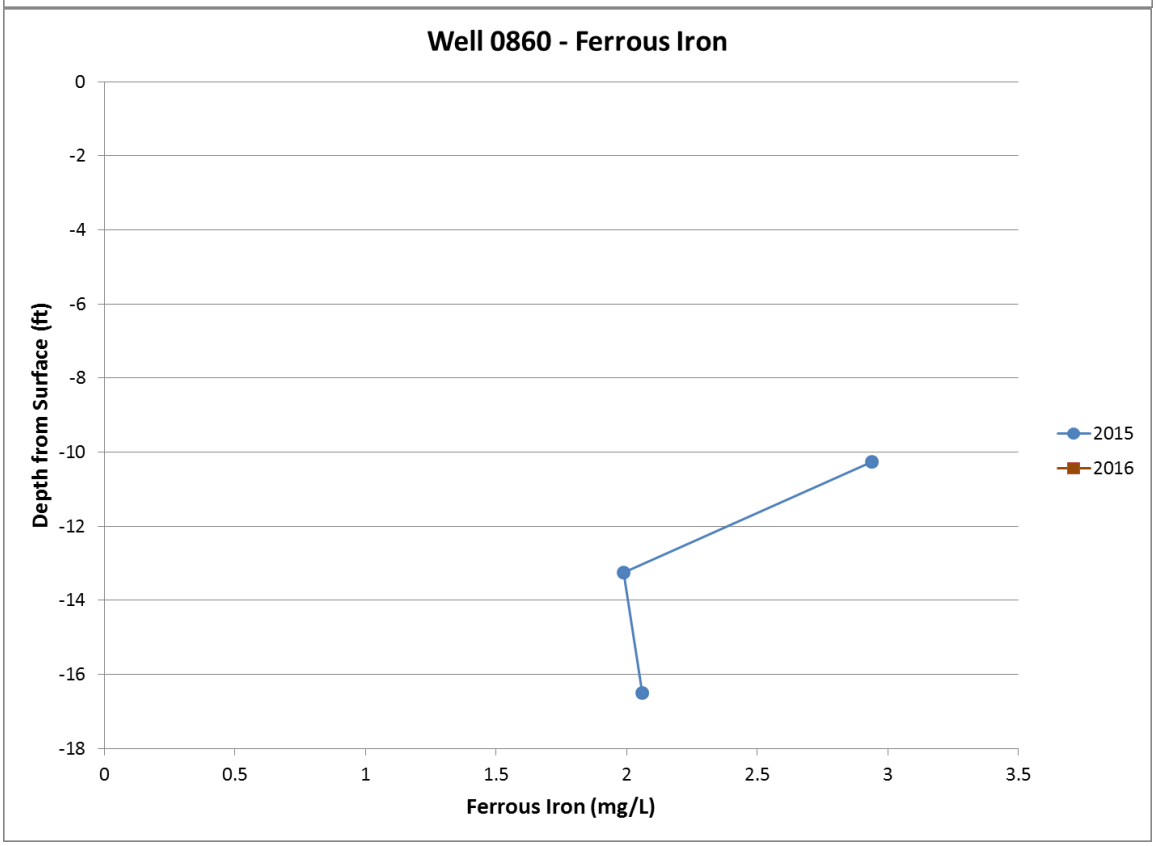

Well 0860 - Chloride
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
10
20
30
40
50
60
70
80
Chloride (mg/L)
2015
2016

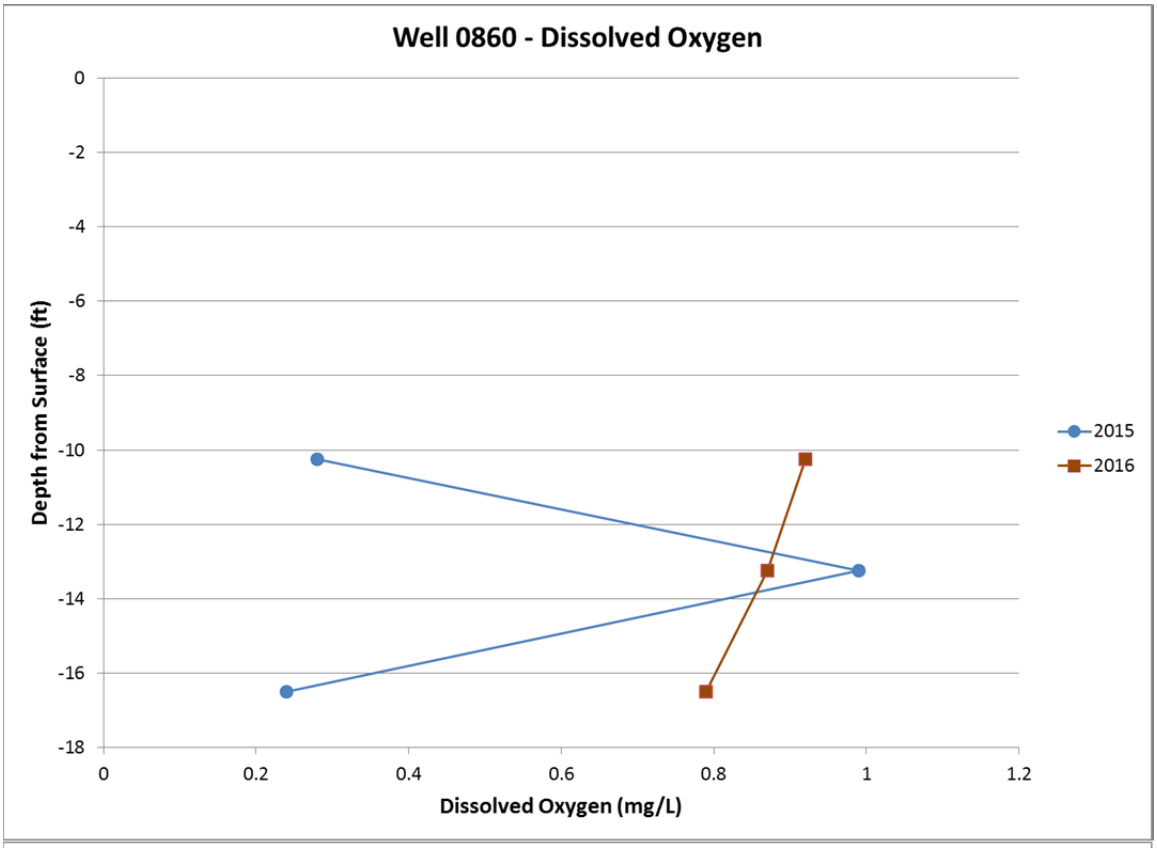

Well 0860 - Sulfate
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
500
1000
1500
2000
2500
3000
3500
Sulfate (mg/L)
2015
2016

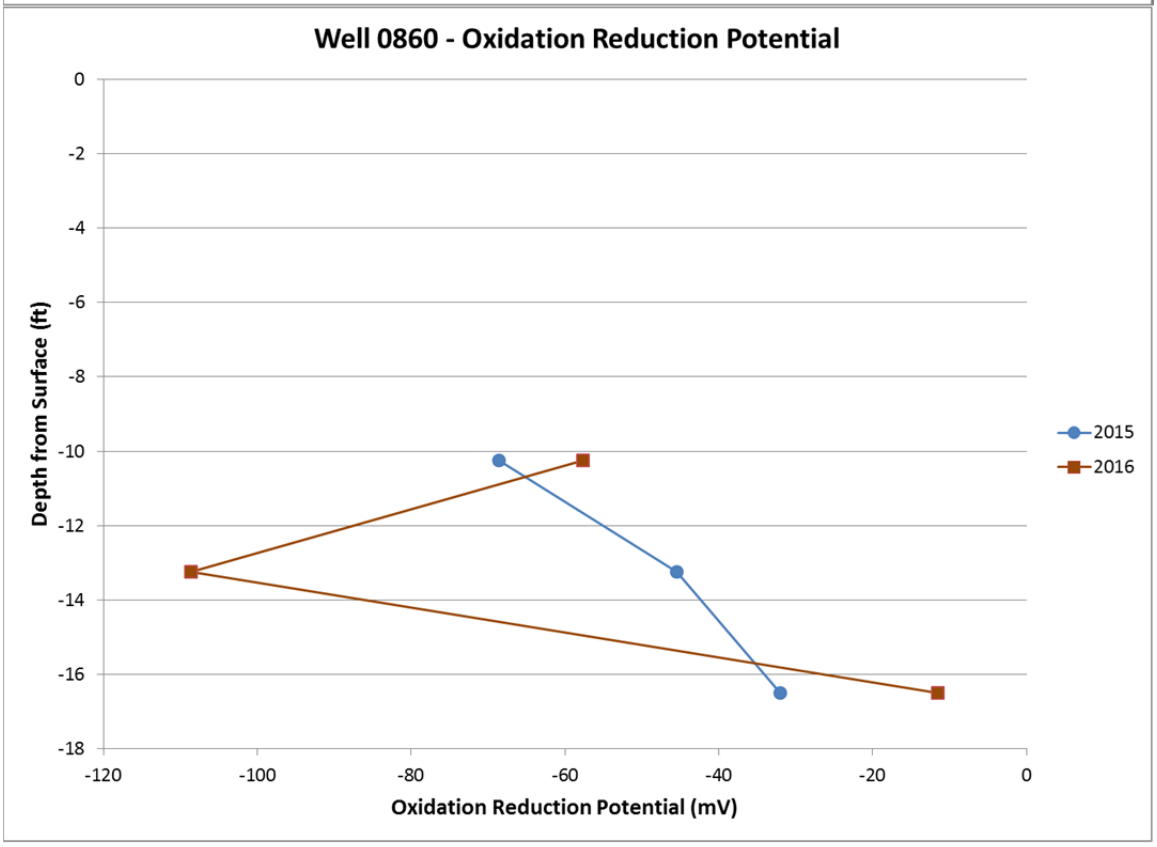

Well 0860 - Calcium
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
100
200
300
400
500
600
Calcium (mg/L)
2015
2016

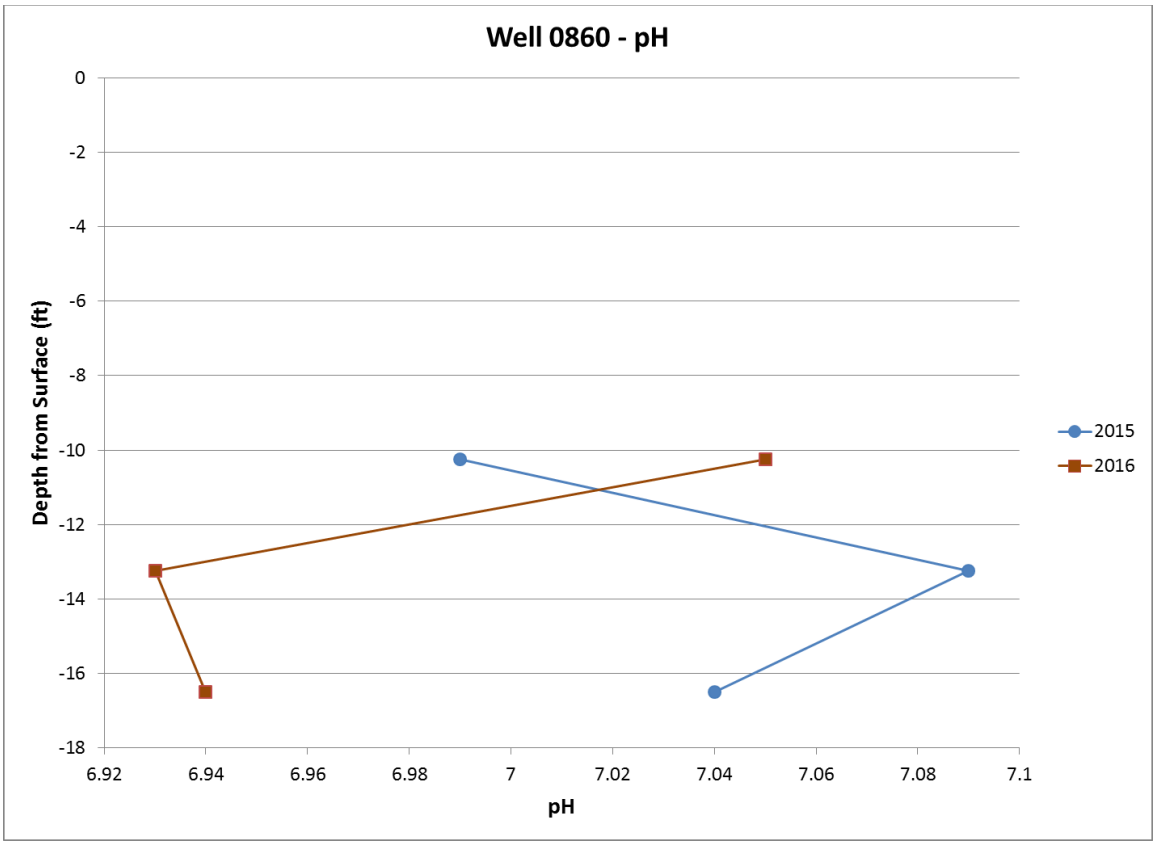

Well 0860 - Alkalinity
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
255
260
265
270
275
280
285
290
Alkalinity as CaCO3 (mg/L)
2015
2016


Well 0860 - Manganese
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
1
2
3
4
5
6
7
8
9
10
Manganese (mg/L)
2015
2016


Well 0860 - Ferrous Iron
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
0.5
1
1.5
2
2.5
3
3.5
Ferrous Iron (mg/L)
2015
2016


Well 0860 - Dissolved Oxygen
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
0
0.2
0.4
0.6
0.8
1
1.2
Dissolved Oxygen (mg/L)
2015
2016


Well 0860 - Oxidation Reduction Potential
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-120
-100
-80
-60
-40
-20
0
Oxidation Reduction Potential (mV)
2015
2016


Well 0860 - pH
Depth from Surface (ft)
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
6.92
6.94
6.96
6.98
7
7.02
7.04
7.06
7.08
7.1
pH
2015
2016

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Appendix F

Surface Water Data

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SURFACE WATER QUALITY DATA BY PARAMETER (EQuIS800) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:49:30 PM

PARAMETER	UNITS	LOCATION CODE	SAMPLE DATE	SAMPLE TYPE	RESULT	QUALIFIERS LAB/DATA		QA	DETECT. LIMIT	UNCERTAINTY
Alkalinity, Phenolphthalein (As CaCO3)										
Alkalinity, Phenolphthalein (As CaCO3)	mg/L	0810	8/17/2016	(N)F	0			#	-	-
Alkalinity, Phenolphthalein (As CaCO3)	mg/L	0823	8/17/2016	(N)F	0			#	-	-
Alkalinity, Total (As CaCO3)										
Alkalinity, Total (As CaCO3)	mg/L	0747	8/18/2016	(F)F	340			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0749	8/17/2016	(F)F	8			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0794	8/18/2016	(N)F	209			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0796	8/18/2016	(N)F	202			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0810	8/17/2016	(N)F	361			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0811	8/18/2016	()F	211			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0812	8/18/2016	(N)F	231			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0822	8/18/2016	()F	266			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0823	8/17/2016	(N)F	42			#	-	-
Alkalinity, Total (As CaCO3)	mg/L	0879	8/18/2016	(F)F	520			#	-	-
Calcium										
Calcium	mg/L	0747	8/18/2016	(F)F	560			#	0.06	-
Calcium	mg/L	0749	8/17/2016	(F)F	65			#	0.012	-
Calcium	mg/L	0794	8/18/2016	(N)F	110			#	0.012	-
Calcium	mg/L	0796	8/18/2016	(N)F	110			#	0.012	-
Calcium	mg/L	0810	8/17/2016	(N)F	14			#	0.012	-
Calcium	mg/L	0811	8/18/2016	()F	110			#	0.012	-
Calcium	mg/L	0812	8/18/2016	(N)F	110			#	0.012	-
Calcium	mg/L	0822	8/18/2016	()F	95			#	0.012	-
Calcium	mg/L	0823	8/17/2016	(N)F	130			#	0.012	-
Calcium	mg/L	0879	8/18/2016	(F)F	530			#	0.12	-
Chloride										
Chloride	mg/L	0747	8/18/2016	(F)F	77			#	3	-
Chloride	mg/L	0749	8/17/2016	(F)F	13			#	0.75	-
Chloride	mg/L	0794	8/18/2016	(N)F	15			#	0.48	-
Chloride	mg/L	0796	8/18/2016	(N)F	15			#	0.48	-
Chloride	mg/L	0810	8/17/2016	(N)F	42			#	0.6	-
Chloride	mg/L	0811	8/18/2016	()F	16			#	0.48	-

SURFACE WATER QUALITY DATA BY PARAMETER (EQuIS800) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:49:31 PM

PARAMETER	UNITS	LOCATION CODE	SAMPLE DATE	SAMPLE TYPE	RESULT	QUALIFIERS LAB/DATA		QA	DETECT. LIMIT	UNCERTAINTY
Chloride	mg/L	0812	8/18/2016	(N)F	16			#	0.48	-
Chloride	mg/L	0822	8/18/2016	()F	9.9			#	0.3	-
Chloride	mg/L	0823	8/17/2016	(N)F	220			#	1.2	-
Chloride	mg/L	0879	8/18/2016	(F)F	790			#	7.5	-
Dissolved Oxygen										
Dissolved Oxygen	mg/L	0747	8/18/2016	(F)F	7.89			#	-	-
Dissolved Oxygen	mg/L	0749	8/17/2016	(F)F	7.16			#	-	-
Dissolved Oxygen	mg/L	0794	8/18/2016	(N)F	7.58			#	-	-
Dissolved Oxygen	mg/L	0796	8/18/2016	(N)F	10.09			#	-	-
Dissolved Oxygen	mg/L	0810	8/17/2016	(N)F	10.49			#	-	-
Dissolved Oxygen	mg/L	0811	8/18/2016	()F	8.00			#	-	-
Dissolved Oxygen	mg/L	0812	8/18/2016	(N)F	9.0			#	-	-
Dissolved Oxygen	mg/L	0822	8/18/2016	()F	7.06			#	-	-
Dissolved Oxygen	mg/L	0823	8/17/2016	(N)F	9.64			#	-	-
Dissolved Oxygen	mg/L	0879	8/18/2016	(F)F	9.61			#	-	-
Magnesium										
Magnesium	mg/L	0747	8/18/2016	(F)F	150			#	0.065	-
Magnesium	mg/L	0749	8/17/2016	(F)F	0.49	J		#	0.013	-
Magnesium	mg/L	0794	8/18/2016	(N)F	44			#	0.013	-
Magnesium	mg/L	0796	8/18/2016	(N)F	40			#	0.013	-
Magnesium	mg/L	0810	8/17/2016	(N)F	100			#	0.013	-
Magnesium	mg/L	0811	8/18/2016	()F	44			#	0.013	-
Magnesium	mg/L	0812	8/18/2016	(N)F	43			#	0.013	-
Magnesium	mg/L	0822	8/18/2016	()F	21			#	0.013	-
Magnesium	mg/L	0823	8/17/2016	(N)F	83			#	0.013	-
Magnesium	mg/L	0879	8/18/2016	(F)F	510			#	0.13	-
Manganese										
Manganese	mg/L	0747	8/18/2016	(F)F	3			#	0.00057	-
Manganese	mg/L	0749	8/17/2016	(F)F	0.032			#	0.00011	-
Manganese	mg/L	0794	8/18/2016	(N)F	0.045			#	0.00011	-
Manganese	mg/L	0796	8/18/2016	(N)F	0.05			#	0.00011	-
Manganese	mg/L	0810	8/17/2016	(N)F	0.018			#	0.00011	-
Manganese	mg/L	0811	8/18/2016	()F	0.055			#	0.00011	-
Manganese	mg/L	0812	8/18/2016	(N)F	0.056			#	0.00011	-
Manganese	mg/L	0822	8/18/2016	()F	0.14			#	0.00011	-
Manganese	mg/L	0823	8/17/2016	(N)F	0.077			#	0.00011	-
Manganese	mg/L	0879	8/18/2016	(F)F	0.97			#	0.0011	-

SURFACE WATER QUALITY DATA BY PARAMETER (EQuIS800) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:49:31 PM

PARAMETER	UNITS	LOCATION CODE	SAMPLE DATE	SAMPLE TYPE	RESULT	QUALIFIERS LAB/DATA		QA	DETECT. LIMIT	UNCERTAINTY
Molybdenum										
Molybdenum	mg/L	0747	8/18/2016	(F)F	0.033			#	0.00032	-
Molybdenum	mg/L	0749	8/17/2016	(F)F	0.05			#	0.00032	-
Molybdenum	mg/L	0794	8/18/2016	(N)F	0.0016	J		#	0.00032	-
Molybdenum	mg/L	0796	8/18/2016	(N)F	0.0022			#	0.00032	-
Molybdenum	mg/L	0810	8/17/2016	(N)F	0.00089	J		#	0.00032	-
Molybdenum	mg/L	0811	8/18/2016	()F	0.0023			#	0.00032	-
Molybdenum	mg/L	0812	8/18/2016	(N)F	0.0022			#	0.00032	-
Molybdenum	mg/L	0822	8/18/2016	()F	0.0097			#	0.00032	-
Molybdenum	mg/L	0823	8/17/2016	(N)F	0.0022			#	0.00032	-
Molybdenum	mg/L	0879	8/18/2016	(F)F	0.23			#	0.00032	-
Oxidation Reduction Potential										
Oxidation Reduction Potential	mV	0747	8/18/2016	(F)F	122			#	-	-
Oxidation Reduction Potential	mV	0749	8/17/2016	(F)F	99.7			#	-	-
Oxidation Reduction Potential	mV	0794	8/18/2016	(N)F	161.0			#	-	-
Oxidation Reduction Potential	mV	0796	8/18/2016	(N)F	216.2			#	-	-
Oxidation Reduction Potential	mV	0810	8/17/2016	(N)F	89.8			#	-	-
Oxidation Reduction Potential	mV	0811	8/18/2016	()F	116			#	-	-
Oxidation Reduction Potential	mV	0812	8/18/2016	(N)F	72			#	-	-
Oxidation Reduction Potential	mV	0822	8/18/2016	()F	149.4			#	-	-
Oxidation Reduction Potential	mV	0823	8/17/2016	(N)F	23.9			#	-	-
Oxidation Reduction Potential	mV	0879	8/18/2016	(F)F	171.6			#	-	-
pH										
pH	s.u.	0747	8/18/2016	(F)F	7.44			#	-	-
pH	s.u.	0749	8/17/2016	(F)F	7.45			#	-	-
pH	s.u.	0794	8/18/2016	(N)F	8.17			#	-	-
pH	s.u.	0796	8/18/2016	(N)F	8.19			#	-	-
pH	s.u.	0810	8/17/2016	(N)F	9.11			#	-	-
pH	s.u.	0811	8/18/2016	()F	8.03			#	-	-
pH	s.u.	0812	8/18/2016	(N)F	8.20			#	-	-
pH	s.u.	0822	8/18/2016	()F	7.79			#	-	-
pH	s.u.	0823	8/17/2016	(N)F	9.44			#	-	-
pH	s.u.	0879	8/18/2016	(F)F	8.08			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (EQuIS800) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:49:31 PM

PARAMETER	UNITS	LOCATION CODE	SAMPLE DATE	SAMPLE TYPE	RESULT	QUALIFIERS LAB/DATA		QA	DETECT. LIMIT	UNCERTAINTY
Potassium										
Potassium	mg/L	0747	8/18/2016	(F)F	17			#	0.54	-
Potassium	mg/L	0749	8/17/2016	(F)F	1.7			#	0.11	-
Potassium	mg/L	0794	8/18/2016	(N)F	5.1			#	0.11	-
Potassium	mg/L	0796	8/18/2016	(N)F	5			#	0.11	-
Potassium	mg/L	0810	8/17/2016	(N)F	17			#	0.11	-
Potassium	mg/L	0811	8/18/2016	()F	5.2			#	0.11	-
Potassium	mg/L	0812	8/18/2016	(N)F	5.1			#	0.11	-
Potassium	mg/L	0822	8/18/2016	()F	4.2			#	0.11	-
Potassium	mg/L	0823	8/17/2016	(N)F	15			#	0.11	-
Potassium	mg/L	0879	8/18/2016	(F)F	34			#	1.1	-
Sodium										
Sodium	mg/L	0747	8/18/2016	(F)F	480			#	0.033	-
Sodium	mg/L	0749	8/17/2016	(F)F	320			#	0.066	-
Sodium	mg/L	0794	8/18/2016	(N)F	83			#	0.0066	-
Sodium	mg/L	0796	8/18/2016	(N)F	77			#	0.0066	-
Sodium	mg/L	0810	8/17/2016	(N)F	210			#	0.066	-
Sodium	mg/L	0811	8/18/2016	()F	86			#	0.0066	-
Sodium	mg/L	0812	8/18/2016	(N)F	85			#	0.0066	-
Sodium	mg/L	0822	8/18/2016	()F	110			#	0.0066	-
Sodium	mg/L	0823	8/17/2016	(N)F	340			#	0.066	-
Sodium	mg/L	0879	8/18/2016	(F)F	3000			#	0.66	-
Specific Conductance										
Specific Conductance	umhos/cm	0747	8/18/2016	(F)F	4301			#	-	-
Specific Conductance	umhos/cm	0749	8/17/2016	(F)F	1811			#	-	-
Specific Conductance	umhos/cm	0794	8/18/2016	(N)F	1118			#	-	-
Specific Conductance	umhos/cm	0796	8/18/2016	(N)F	1087			#	-	-
Specific Conductance	umhos/cm	0810	8/17/2016	(N)F	1635			#	-	-
Specific Conductance	umhos/cm	0811	8/18/2016	()F	1128			#	-	-
Specific Conductance	umhos/cm	0812	8/18/2016	(N)F	1154			#	-	-
Specific Conductance	umhos/cm	0822	8/18/2016	()F	986			#	-	-
Specific Conductance	umhos/cm	0823	8/17/2016	(N)F	2592			#	-	-
Specific Conductance	umhos/cm	0879	8/18/2016	(F)F	14321			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (EQuIS800) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:49:31 PM

PARAMETER	UNITS	LOCATION CODE	SAMPLE DATE	SAMPLE TYPE	RESULT	QUALIFIERS LAB/DATA		QA	DETECT. LIMIT	UNCERTAINTY
Sulfate										
Sulfate	mg/L	0747	8/18/2016	(F)F	2700			#	15	-
Sulfate	mg/L	0749	8/17/2016	(F)F	900			#	3.8	-
Sulfate	mg/L	0794	8/18/2016	(N)F	420			#	2.4	-
Sulfate	mg/L	0796	8/18/2016	(N)F	380			#	2.4	-
Sulfate	mg/L	0810	8/17/2016	(N)F	530			#	3	-
Sulfate	mg/L	0811	8/18/2016	()F	420			#	2.4	-
Sulfate	mg/L	0812	8/18/2016	(N)F	420			#	2.4	-
Sulfate	mg/L	0822	8/18/2016	()F	280			#	1.5	-
Sulfate	mg/L	0823	8/17/2016	(N)F	1100			#	6	-
Sulfate	mg/L	0879	8/18/2016	(F)F	11000			#	38	-
Temperature										
Temperature	C	0747	8/18/2016	(F)F	22.90			#	-	-
Temperature	C	0749	8/17/2016	(F)F	23.23			#	-	-
Temperature	C	0794	8/18/2016	(N)F	19.69			#	-	-
Temperature	C	0796	8/18/2016	(N)F	20.46			#	-	-
Temperature	C	0810	8/17/2016	(N)F	25.71			#	-	-
Temperature	C	0811	8/18/2016	()F	20.14			#	-	-
Temperature	C	0812	8/18/2016	(N)F	19.87			#	-	-
Temperature	C	0822	8/18/2016	()F	16.64			#	-	-
Temperature	C	0823	8/17/2016	(N)F	24.63			#	-	-
Temperature	C	0879	8/18/2016	(F)F	20.35			#	-	-
Tritium										
Tritium	pCi/L	0749	8/17/2016	(N)F	1	U		#	3.15	± 1.87
Turbidity										
Turbidity	NTU	0747	8/18/2016	(F)F	254			#	-	-
Turbidity	NTU	0749	8/17/2016	(F)F	13.5			#	-	-
Turbidity	NTU	0794	8/18/2016	(N)F	6.70			#	-	-
Turbidity	NTU	0796	8/18/2016	(N)F	7.33			#	-	-
Turbidity	NTU	0810	8/17/2016	(N)F	4.26			#	-	-
Turbidity	NTU	0811	8/18/2016	()F	5.91			#	-	-
Turbidity	NTU	0812	8/18/2016	(N)F	8.20			#	-	-
Turbidity	NTU	0822	8/18/2016	()F	5.26			#	-	-
Turbidity	NTU	0823	8/17/2016	(N)F	8.57			#	-	-
Turbidity	NTU	0879	8/18/2016	(F)F	14.3			#	-	-
Uranium										
Uranium	mg/L	0747	8/18/2016	(F)F	0.63			#	0.000012	-

SURFACE WATER QUALITY DATA BY PARAMETER (EQuIS800) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:49:31 PM

PARAMETER	UNITS	LOCATION CODE	SAMPLE DATE	SAMPLE TYPE	RESULT	QUALIFIERS LAB/DATA		QA	DETECT. LIMIT	UNCERTAINTY
Uranium	mg/L	0749	8/17/2016	(F)F	0.00045			#	0.000012	-
Uranium	mg/L	0794	8/18/2016	(N)F	0.0082			#	0.000012	-
Uranium	mg/L	0796	8/18/2016	(N)F	0.0087			#	0.000012	-
Uranium	mg/L	0810	8/17/2016	(N)F	0.0038			#	0.000012	-
Uranium	mg/L	0811	8/18/2016	()F	0.0094			#	0.000012	-
Uranium	mg/L	0812	8/18/2016	(N)F	0.009			#	0.000012	-
Uranium	mg/L	0822	8/18/2016	()F	0.0033			#	0.000012	-
Uranium	mg/L	0823	8/17/2016	(N)F	0.0043			#	0.000012	-
Uranium	mg/L	0879	8/18/2016	(F)F	1.5			#	0.00012	-

DATA QUALIFIERS:

F Low flow sampling method used.
G Possible grout contamination, pH > 9.
J Estimated Value.
L Less than 3 bore volumes purged prior to sampling.
N Tentatively identified compund (TIC).
Q Qualitative result due to sampling technique
R Unusable result.
U Parameter analyzed for but was not detected.
X Location is undefined.

LAB QUALIFIERS:

* Replicate analysis not within control limits.
\+ Correlation coefficient for MSA < 0.995.
> Result above upper detection limit.
A TIC is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C Pesticide result confirmed by GC-MS.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H Holding time expired, value suspect.
I Increased detection limit due to required dilution.
J Estimated Value.
M GFAA duplicate injection precision not met.
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
S Result determined by method of standard addition (MSA).
U Parameter analyzed for but was not detected.
W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X Laboratory defined qualifier, see case narrative.
Y Laboratory defined qualifier, see case narrative.
Z Laboratory defined qualifier, see case narrative.

SAMPLE TYPES:

(F) Filtered Sample Type Codes: F-Field Sample R-Replicate FR-Field Sample with Replicates
(N) Nonfiltered Sample D-Duplicate N-Not Known S-Split Sample

SURFACE WATER QUALITY DATA BY PARAMETER (EQuIS800) FOR SITE RVT01, Riverton Processing Site

REPORT DATE: 6/27/2017 2:49:31 PM

PARAMETER	UNITS	LOCATION CODE	SAMPLE DATE	SAMPLE TYPE	RESULT	QUALIFIERS LAB/DATA	QA	DETECT. LIMIT	UNCERTAINTY

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

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Appendix G

Soils Data

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Location	Parameter	Result (mg/kg)	Start Depth (ft bgs)	End Depth (ft bgs)	Lab Qualifiers	Method Detection Limit (mg/kg)
Location 0880						
0880	Calcium	10,800	0	1		8
0880	Calcium	18,600	1	2		8
0880	Calcium	18,600	2	3		8
0880	Calcium	18,800	3	4		8
0880	Chloride	3.01	0	1	H	0.72
0880	Chloride	1.69	1	2	JH	0.72
0880	Chloride	2.76	2	3	H	0.72
0880	Chloride	2.43	3	4	JH	0.72
0880	Iron	20,100	0	1		8
0880	Iron	20,900	1	2		8
0880	Iron	16,700	2	3		8
0880	Iron	22,100	3	4		8
0880	Magnesium	9270	0	1		8.5
0880	Magnesium	9840	1	2		8.5
0880	Magnesium	7620	2	3		8.5
0880	Magnesium	11,100	3	4		8.5
0880	Manganese	257	0	1	*	0.2
0880	Manganese	358	1	2	*	0.2
0880	Manganese	355	2	3	*	0.2
0880	Manganese	346	3	4	*	0.2
0880	Molybdenum	0.262	0	1		0.08
0880	Molybdenum	0.254	1	2		0.08
0880	Molybdenum	0.275	2	3		0.08
0880	Molybdenum	0.186	3	4	B	0.08
0880	Potassium	4690	0	1	N	6.4
0880	Potassium	4000	1	2	N	6.4
0880	Potassium	2770	2	3	N	6.4
0880	Potassium	3630	3	4	N	6.4
0880	Sodium	249	0	1		7
0880	Sodium	223	1	2		7
0880	Sodium	235	2	3		7
0880	Sodium	452	3	4		7
0880	Sulfate	23.4	0	1	H	1.33
0880	Sulfate	13	1	2	H	1.33
0880	Sulfate	22.8	2	3	H	1.33
0880	Sulfate	19	3	4	H	1.33
0880	Total carbon average	27,500	0	1		200
0880	Total carbon average	11,800	1	2		200
0880	Total carbon average	8210	2	3		200
0880	Total carbon average	16,200	3	4		200
0880	Total inorganic carbon average	200	0	1	U	200
0880	Total inorganic carbon average	1570	1	2		200
0880	Total inorganic carbon average	720	2	3		200
0880	Total inorganic carbon average	7610	3	4		200
0880	Total organic carbon average	29,400	0	1		200

Location	Parameter	Result (mg/kg)	Start Depth (ft bgs)	End Depth (ft bgs)	Lab Qualifiers	Method Detection Limit (mg/kg)
Location 0880 (continued)						
0880	Total organic carbon average	10,200	1	2		200
0880	Total organic carbon average	7490	2	3		200
0880	Total organic carbon average	8630	3	4		200
0880	Uranium	3.11	0	1		0.0132
0880	Uranium	1.78	1	2		0.0132
0880	Uranium	1.84	2	3		0.0132
0880	Uranium	1.96	3	4		0.0132
Location 0881						
0881	Calcium	31,100	0	1		8
0881	Calcium	21,700	1	2		8
0881	Calcium	31,300	2	3		8
0881	Calcium	14,100	3	4		8
0881	Calcium	47,600	4	5		8
0881	Chloride	8.47	0	1	H	0.72
0881	Chloride	17.2	1	2	H	0.72
0881	Chloride	163	2	3	H	0.72
0881	Chloride	83.7	3	4	H	0.72
0881	Chloride	16.6	4	5	H	0.72
0881	Iron	13,900	0	1		8
0881	Iron	11,800	1	2		8
0881	Iron	13,300	2	3		8
0881	Iron	12,900	3	4		8
0881	Iron	13,800	4	5		8
0881	Magnesium	10,700	0	1		8.5
0881	Magnesium	8000	1	2		8.5
0881	Magnesium	10,300	2	3		8.5
0881	Magnesium	4740	3	4		8.5
0881	Magnesium	9060	4	5		8.5
0881	Manganese	287	0	1	*	0.2
0881	Manganese	234	1	2	*	0.2
0881	Manganese	242	2	3	*	0.2
0881	Manganese	151	3	4	*	0.2
0881	Manganese	328	4	5	*	0.2
0881	Molybdenum	0.26	0	1		0.08
0881	Molybdenum	0.192	1	2	B	0.08
0881	Molybdenum	0.18	2	3	B	0.08
0881	Molybdenum	0.087	3	4	B	0.08
0881	Molybdenum	0.112	4	5	B	0.08
0881	Potassium	2240	0	1	N	6.4
0881	Potassium	1420	1	2	N	6.4
0881	Potassium	1370	2	3	N	6.4
0881	Potassium	518	3	4	N	6.4
0881	Potassium	794	4	5	N	6.4
0881	Sodium	1350	0	1		7
0881	Sodium	1510	1	2		7

Location	Parameter	Result (mg/kg)	Start Depth (ft bgs)	End Depth (ft bgs)	Lab Qualifiers	Method Detection Limit (mg/kg)
Location 0881 (continued)						
0881	Sodium	2310	2	3		7
0881	Sodium	591	3	4		7
0881	Sodium	633	4	5		7
0881	Sulfate	2010	0	1	H	1.33
0881	Sulfate	779	1	2	H	1.33
0881	Sulfate	1910	2	3	H	1.33
0881	Sulfate	666	3	4	H	1.33
0881	Sulfate	181	4	5	H	1.33
0881	Total carbon average	16,500	0	1		200
0881	Total carbon average	10,100	1	2		200
0881	Total carbon average	13,400	2	3		200
0881	Total carbon average	5080	3	4		200
0881	Total carbon average	23,100	4	5		200
0881	Total inorganic carbon average	5540	0	1		200
0881	Total inorganic carbon average	4580	1	2		200
0881	Total inorganic carbon average	5100	2	3		200
0881	Total inorganic carbon average	2040	3	4		200
0881	Total inorganic carbon average	11,000	4	5		200
0881	Total organic carbon average	11,000	0	1		200
0881	Total organic carbon average	5490	1	2		200
0881	Total organic carbon average	8280	2	3		200
0881	Total organic carbon average	3040	3	4		200
0881	Total organic carbon average	12,100	4	5		200
0881	Uranium	1.69	0	1		0.0132
0881	Uranium	1.27	1	2		0.0132
0881	Uranium	1.61	2	3		0.0132
0881	Uranium	1.9	3	4		0.0132
0881	Uranium	1.16	4	5		0.0132
Location 0882						
0882	Calcium	38,300	0	1		8
0882	Calcium	27,500	1	2		8
0882	Calcium	7030	2	3		8
0882	Calcium	7240	3	4		8
0882	Chloride	83.1	0	1	H	0.72
0882	Chloride	316	1	2	H	0.72
0882	Chloride	48.9	2	3	H	0.72
0882	Chloride	59.7	3	4	H	0.72
0882	Iron	12,700	0	1		8
0882	Iron	12,900	1	2		8
0882	Iron	8350	2	3		8
0882	Iron	7850	3	4		8
0882	Magnesium	9560	0	1		8.5
0882	Magnesium	7850	1	2		8.5
0882	Magnesium	3540	2	3		8.5
0882	Magnesium	2570	3	4		8.5

Location	Parameter	Result (mg/kg)	Start Depth (ft bgs)	End Depth (ft bgs)	Lab Qualifiers	Method Detection Limit (mg/kg)
Location 0882 (continued)						
0882	Manganese	247	0	1	*	0.2
0882	Manganese	249	1	2	*	0.2
0882	Manganese	150	2	3	*	0.2
0882	Manganese	117	3	4	*	0.2
0882	Molybdenum	0.713	0	1		0.08
0882	Molybdenum	0.452	1	2		0.08
0882	Molybdenum	0.186	2	3	B	0.08
0882	Molybdenum	0.121	3	4	B	0.08
0882	Potassium	3190	0	1	N	6.4
0882	Potassium	2250	1	2	N	6.4
0882	Potassium	767	2	3	N	6.4
0882	Potassium	440	3	4	N	6.4
0882	Sodium	1240	0	1		7
0882	Sodium	3590	1	2		7
0882	Sodium	527	2	3		7
0882	Sodium	408	3	4		7
0882	Sulfate	10,400	0	1	H	1.33
0882	Sulfate	3480	1	2	H	1.33
0882	Sulfate	313	2	3	H	1.33
0882	Sulfate	1130	3	4	H	1.33
0882	Total carbon average	41,800	0	1		200
0882	Total carbon average	14,900	1	2		200
0882	Total carbon average	2560	2	3		200
0882	Total carbon average	2920	3	4		200
0882	Total inorganic carbon average	7640	0	1		1840
0882	Total inorganic carbon average	3510	1	2		200
0882	Total inorganic carbon average	200	2	3	U	200
0882	Total inorganic carbon average	2030	3	4		200
0882	Total organic carbon average	34,100	0	1		200
0882	Total organic carbon average	11,400	1	2		200
0882	Total organic carbon average	2580	2	3		200
0882	Total organic carbon average	890	3	4		200
0882	Uranium	3.09	0	1		0.0132
0882	Uranium	2.38	1	2		0.0132
0882	Uranium	0.77	2	3		0.0132
0882	Uranium	1.03	3	4		0.0132
Location 0883						
0883	Calcium	25,100	0	1		8
0883	Calcium	26,000	1	2		8
0883	Calcium	20,000	2	3		8
0883	Calcium	23,800	4			8
0883	Chloride	188	0	1	H	0.72
0883	Chloride	276	1	2	H	0.72
0883	Chloride	223	2	3	H	0.72
0883	Chloride	268	4		H	0.72

Location	Parameter	Result (mg/kg)	Start Depth (ft bgs)	End Depth (ft bgs)	Lab Qualifiers	Method Detection Limit (mg/kg)
Location 0883 (continued)						
0883	Iron	13,100	0	1		8
0883	Iron	17,800	1	2		8
0883	Iron	11,200	2	3		8
0883	Iron	12,500	4			8
0883	Magnesium	8500	0	1		8.5
0883	Magnesium	9750	1	2		8.5
0883	Magnesium	7780	2	3		8.5
0883	Magnesium	8250	4			8.5
0883	Manganese	267	0	1	*	0.2
0883	Manganese	363	1	2	*	0.2
0883	Manganese	220	2	3	*	0.2
0883	Manganese	248	4		*	0.2
0883	Molybdenum	0.337	0	1		0.08
0883	Molybdenum	0.572	1	2		0.08
0883	Molybdenum	0.436	2	3		0.08
0883	Molybdenum	0.516	4			0.08
0883	Potassium	1940	0	1	N	6.4
0883	Potassium	2670	1	2	N	6.4
0883	Potassium	1490	2	3	N	6.4
0883	Potassium	1710	4		N	6.4
0883	Sodium	6640	0	1		7
0883	Sodium	9590	1	2		7
0883	Sodium	5780	2	3		7
0883	Sodium	7300	4			7
0883	Sulfate	5540	0	1	H	1.33
0883	Sulfate	7000	1	2	H	1.33
0883	Sulfate	5120	2	3	H	1.33
0883	Sulfate	5880	4		H	1.33
0883	Total carbon average	14,700	0	1		200
0883	Total carbon average	13,100	1	2		200
0883	Total carbon average	10,100	2	3		200
0883	Total carbon average	11,200	4			200
0883	Total inorganic carbon average	3670	0	1		200
0883	Total inorganic carbon average	6340	1	2		200
0883	Total inorganic carbon average	5070	2	3		200
0883	Total inorganic carbon average	2620	4			200
0883	Total organic carbon average	11,000	0	1		200
0883	Total organic carbon average	6770	1	2		200
0883	Total organic carbon average	5050	2	3		200
0883	Total organic carbon average	8610	4			200
0883	Uranium	1.38	0	1		0.0132
0883	Uranium	1.77	1	2		0.0132
0883	Uranium	1.2	2	3		0.0132
0883	Uranium	1.58	4			0.0132

Location	Parameter	Result (mg/kg)	Start Depth (ft bgs)	End Depth (ft bgs)	Lab Qualifiers	Method Detection Limit (mg/kg)
Location 0884						
0884	Calcium	32,400	0	1		8
0884	Calcium	22,700	1	2		8
0884	Chloride	47.8	0	1	H	0.72
0884	Chloride	15	1	2	H	0.72
0884	Iron	13,300	0	1		8
0884	Iron	11,700	1	2		8
0884	Magnesium	9160	0	1		8.5
0884	Magnesium	7080	1	2		8.5
0884	Manganese	321	0	1	*	0.2
0884	Manganese	225	1	2	*	0.2
0884	Molybdenum	0.193	0	1	B	0.08
0884	Molybdenum	0.221	1	2		0.08
0884	Potassium	1930	0	1	N	6.4
0884	Potassium	1250	1	2	N	6.4
0884	Sodium	2290	0	1		7
0884	Sodium	1210	1	2		7
0884	Sulfate	3090	0	1	H	1.33
0884	Sulfate	2210	1	2	H	1.33
0884	Total carbon average	18,300	0	1		200
0884	Total carbon average	10,000	1	2		200
0884	Total inorganic carbon average	8270	0	1		200
0884	Total inorganic carbon average	4530	1	2		200
0884	Total organic carbon average	10,000	0	1		200
0884	Total organic carbon average	5510	1	2		200
0884	Uranium	1.43	0	1		0.0132
0884	Uranium	1.14	1	2		0.0132
Location 0885						
0885	Calcium	3990	0	1		8
0885	Calcium	3500	1	2		8
0885	Chloride	1.52	0	1	JH	0.72
0885	Chloride	1.48	1	2	JH	0.72
0885	Iron	10,900	0	1		8
0885	Iron	12,300	1	2		8
0885	Magnesium	4450	0	1		8.5
0885	Magnesium	5030	1	2		8.5
0885	Manganese	300	0	1	*	0.2
0885	Manganese	298	1	2	*	0.2
0885	Molybdenum	0.257	0	1		0.08
0885	Molybdenum	0.238	1	2		0.08
0885	Potassium	2450	0	1	N	6.4
0885	Potassium	2690	1	2	N	6.4
0885	Sodium	142	0	1		7
0885	Sodium	147	1	2		7
0885	Sulfate	6.44	0	1	H	1.33
0885	Sulfate	5.85	1	2	H	1.33

Location	Parameter	Result (mg/kg)	Start Depth (ft bgs)	End Depth (ft bgs)	Lab Qualifiers	Method Detection Limit (mg/kg)
Location 0885 (continued)						
0885	Total carbon average	14,400	0	1		200
0885	Total carbon average	9270	1	2		200
0885	Total inorganic carbon average	200	0	1	U	200
0885	Total inorganic carbon average	200	1	2	U	200
0885	Total organic carbon average	16,300	0	1		200
0885	Total organic carbon average	9180	1	2		200
0885	Uranium	1.56	0	1		0.0132
0885	Uranium	1.24	1	2		0.0132

Notes:
Lab qualifiers are defined as:
* = Replicate analysis not within control limits.
B = Inorganic: result is between the IDL and CRDL. Organic and radiochemistry: analyte also found in method blank.
H = Holding time expired, value suspect.
J = Estimated value.
N = Inorganic or radiochemical: spike sample recovery not within control limits. Organic: tentatively identified compound (TIC).
U = Parameter analyzed for but was not detected.

Abbreviations:
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram

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Appendix H

Graphs of 2016 Soils Data with Depth

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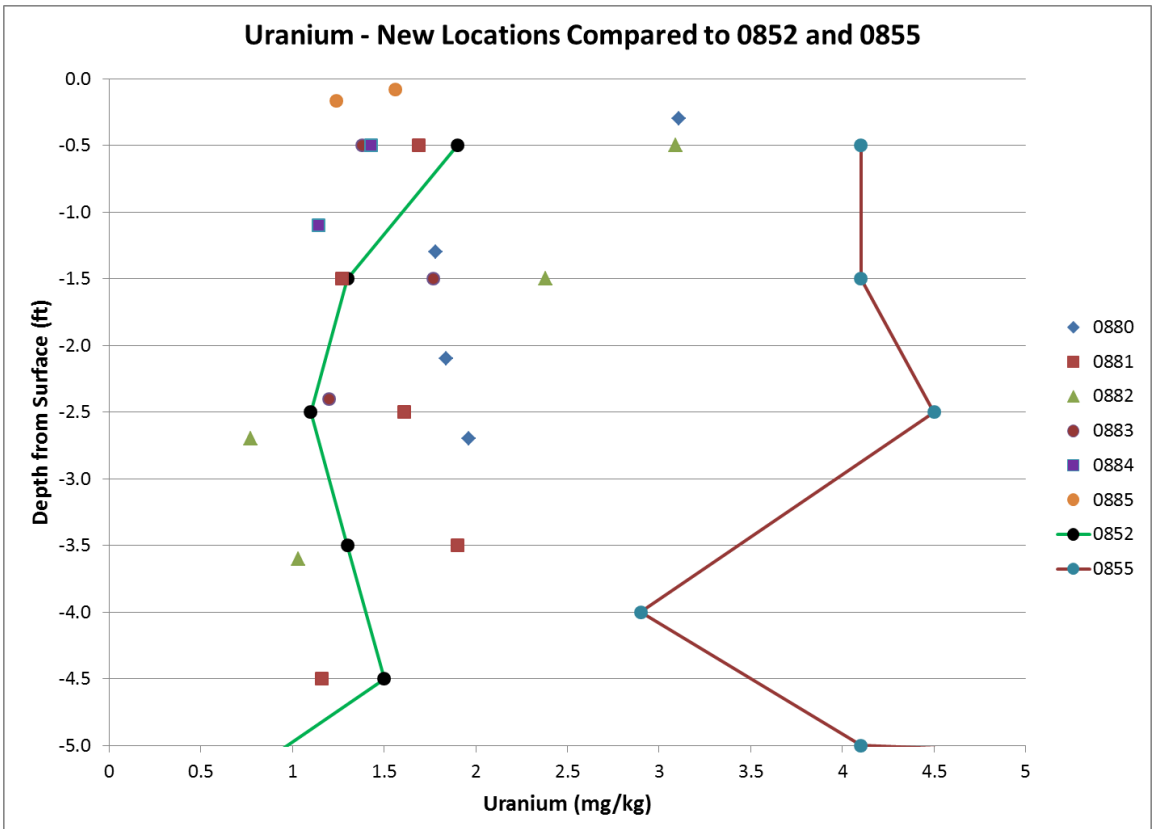
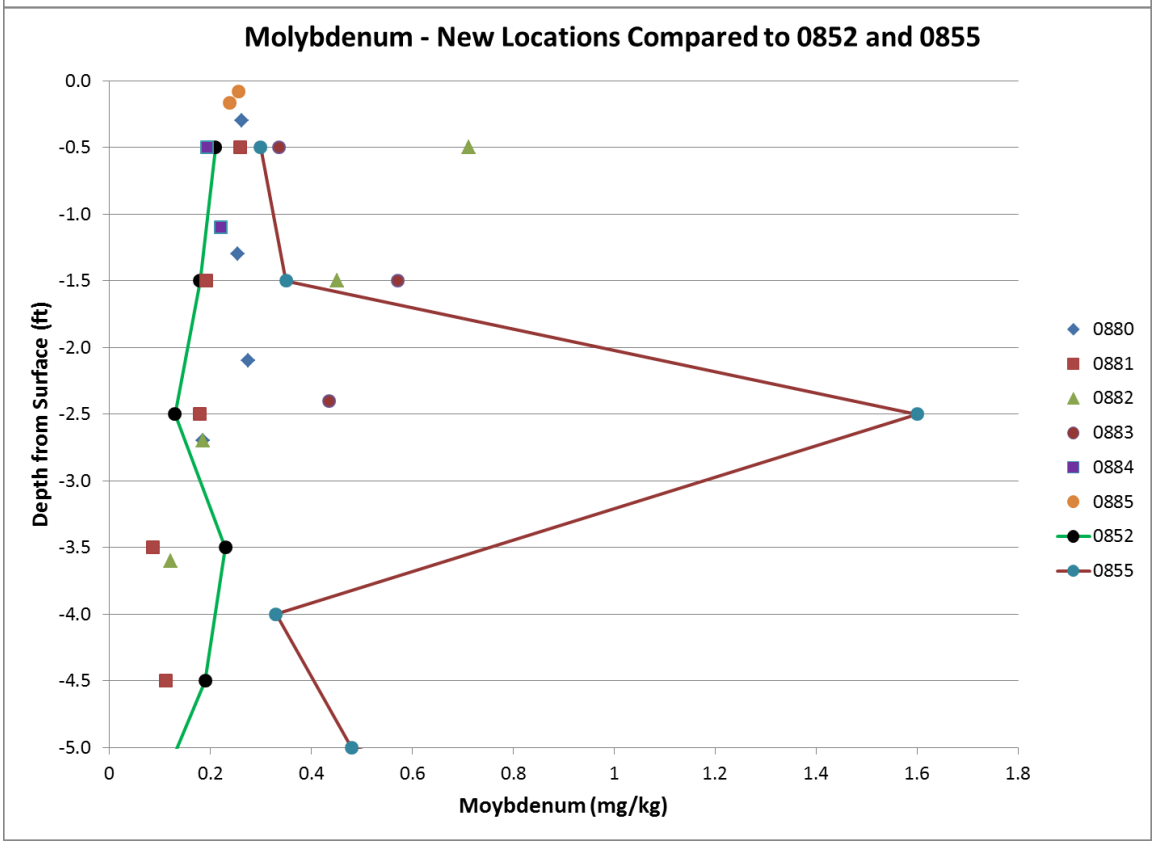
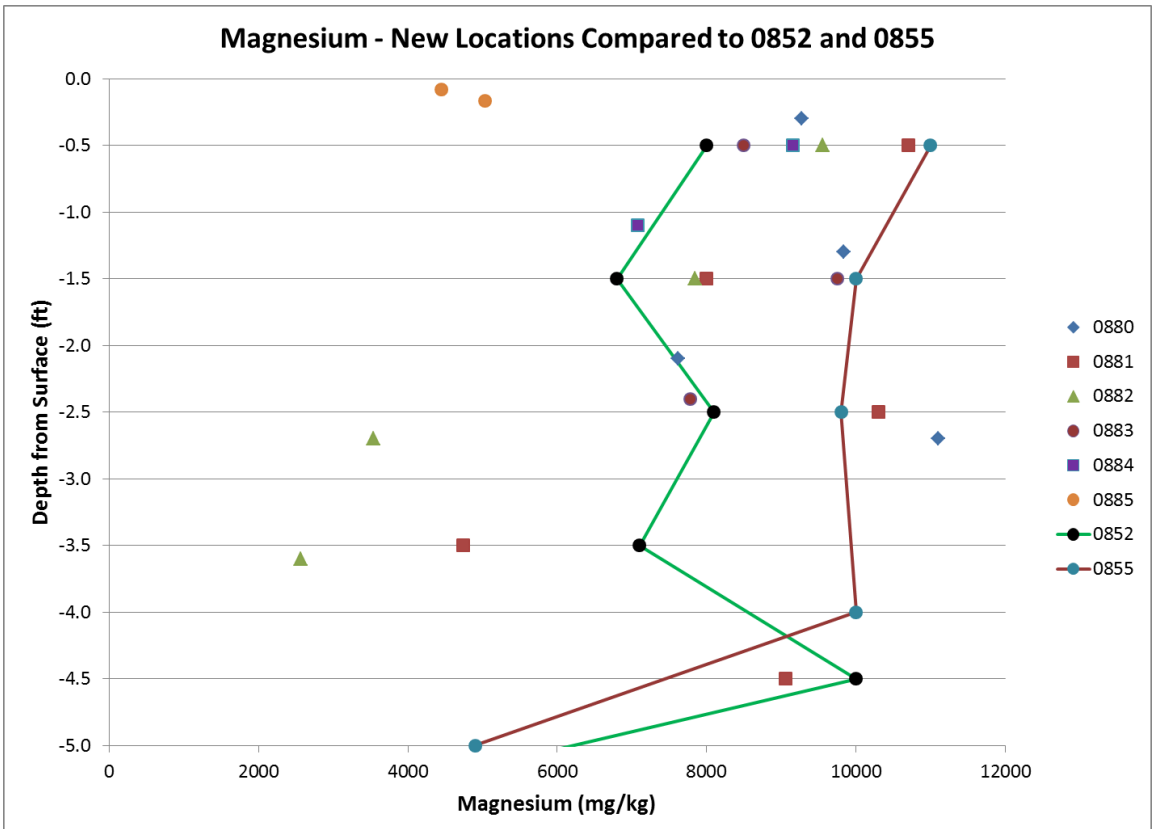
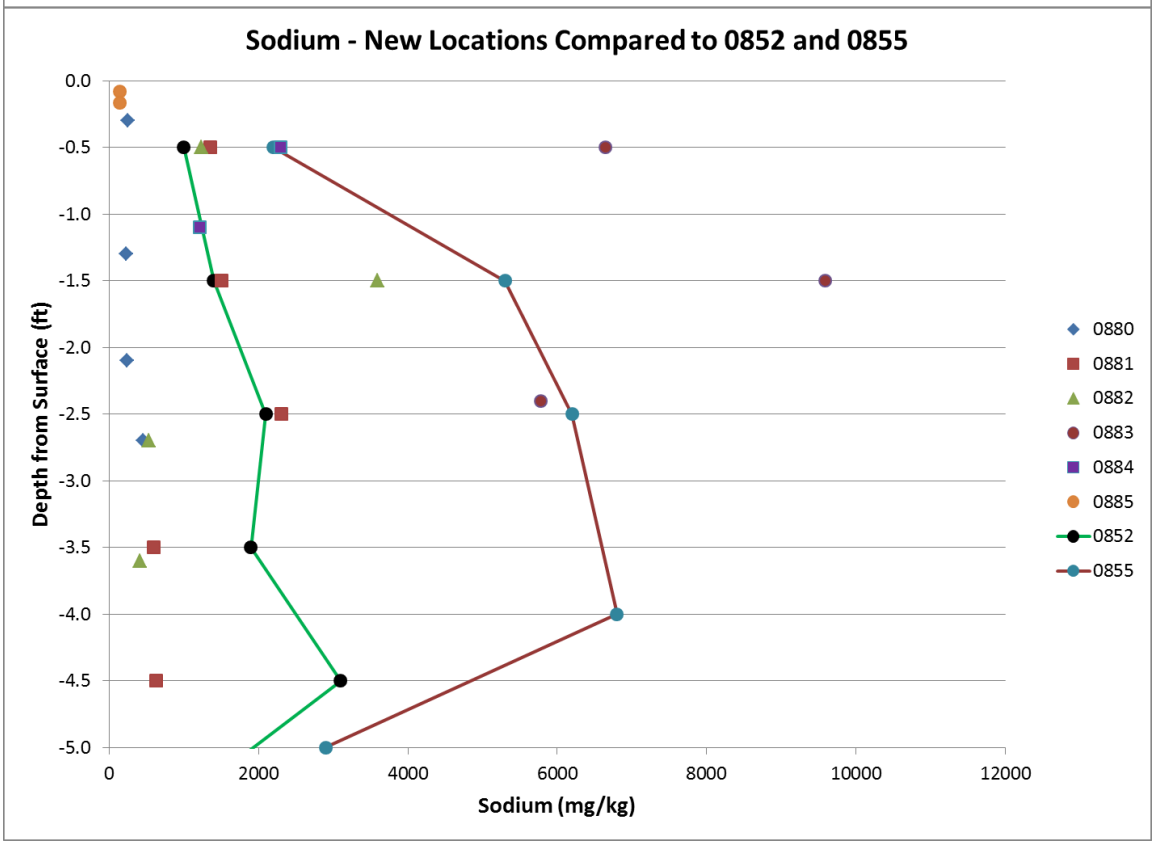
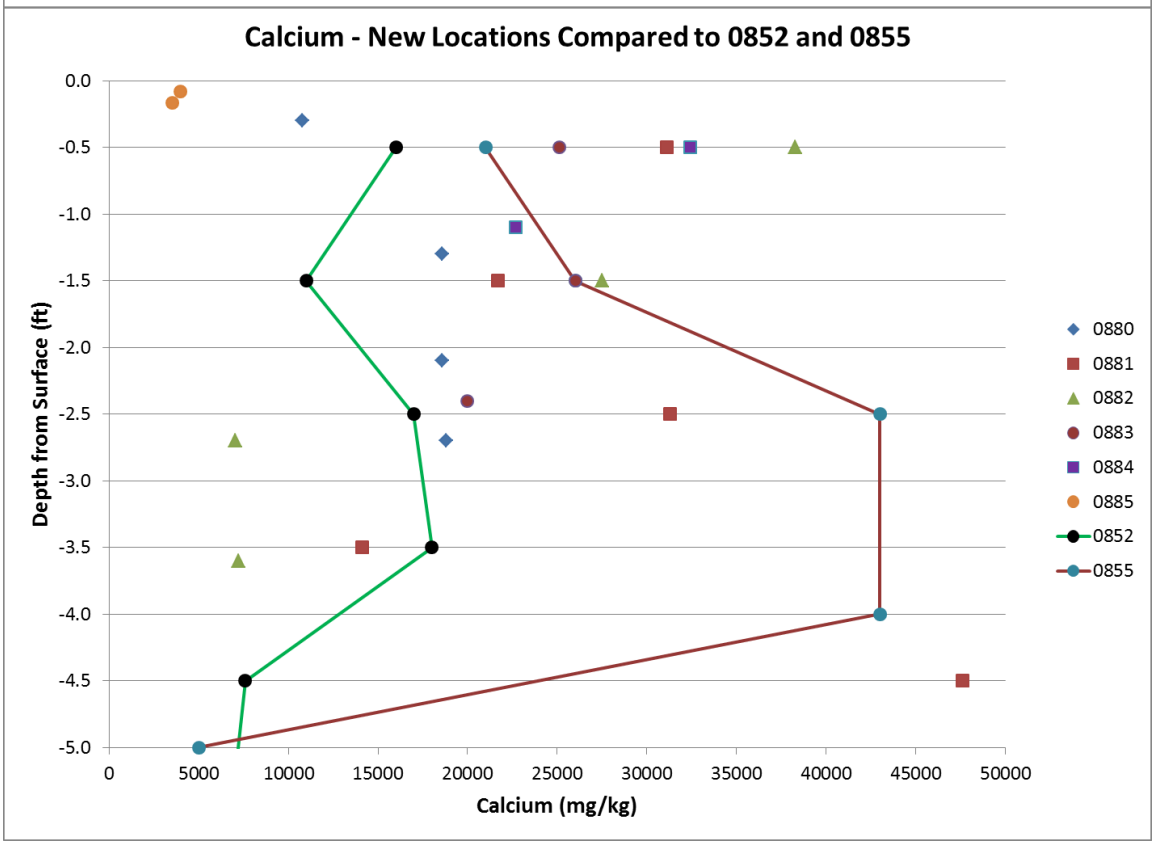

Uranium - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Uranium (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855

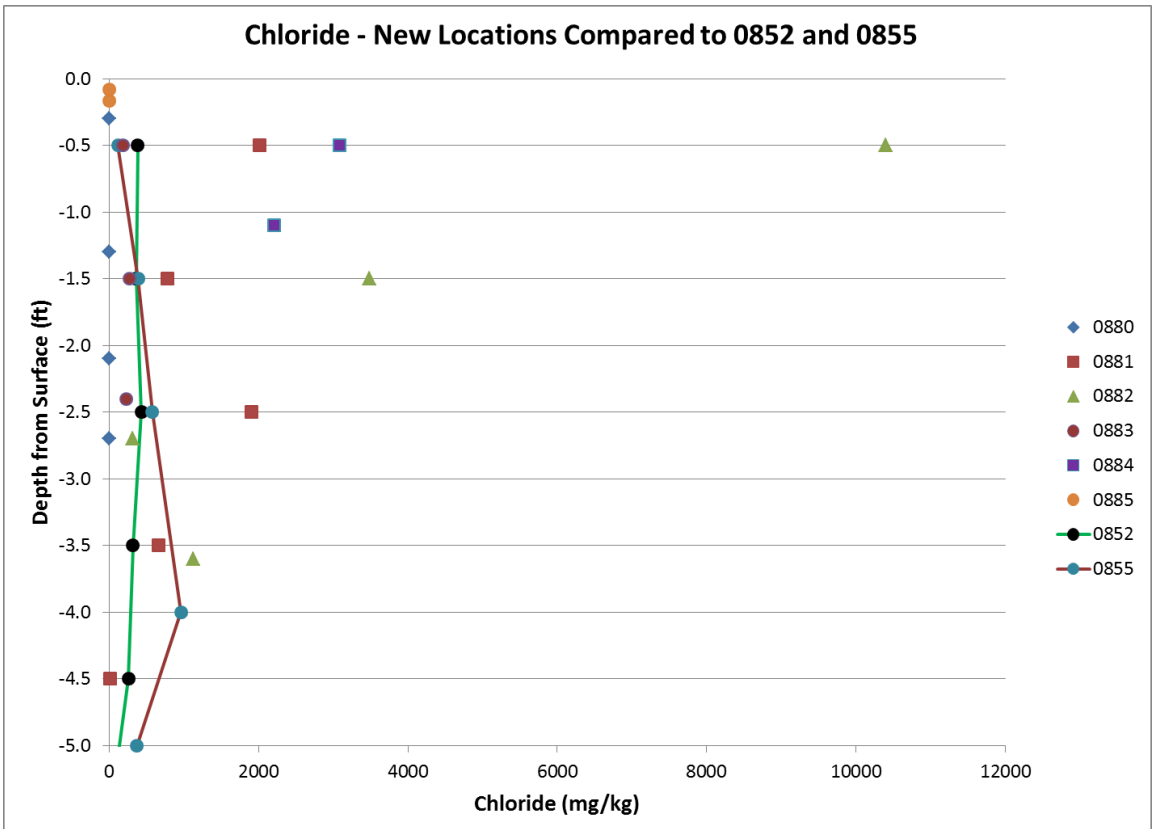

Molybdenum - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
Moybdenum (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855

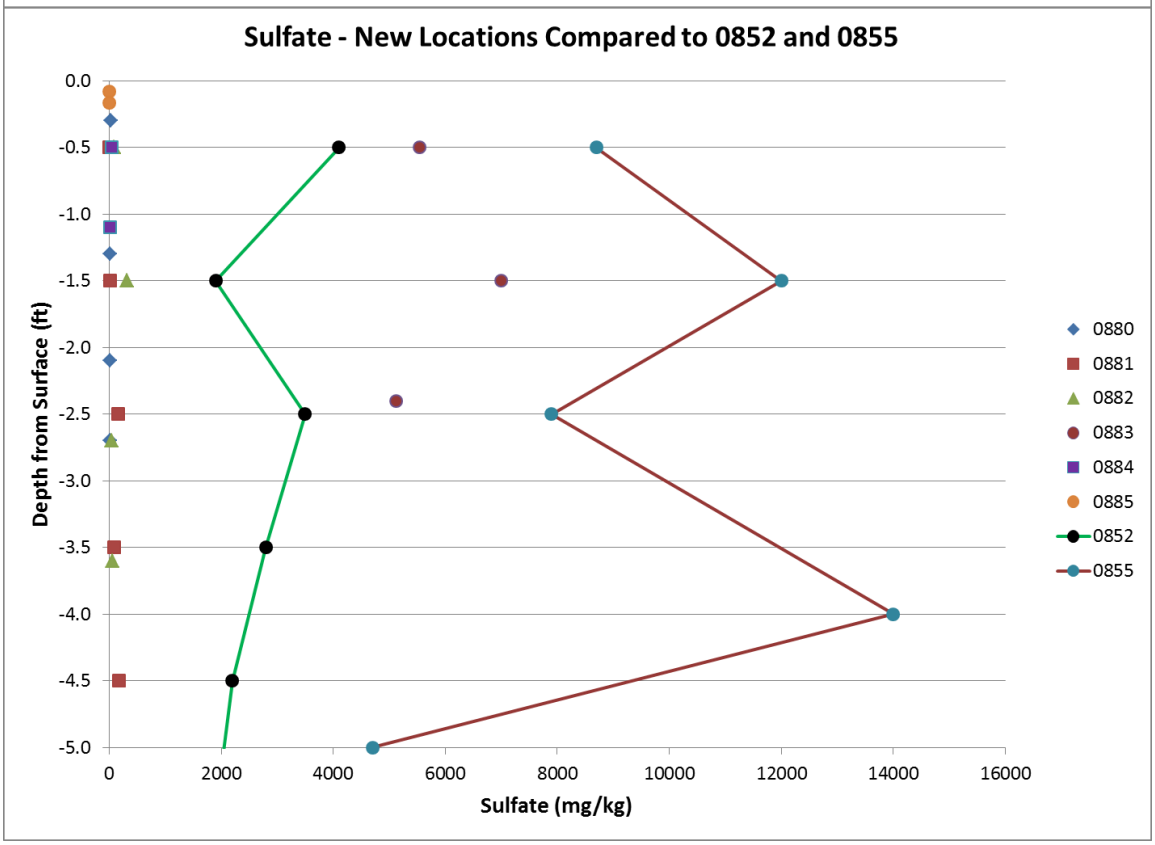

Magnesium - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
2000
4000
6000
8000
10000
12000
Magnesium (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855

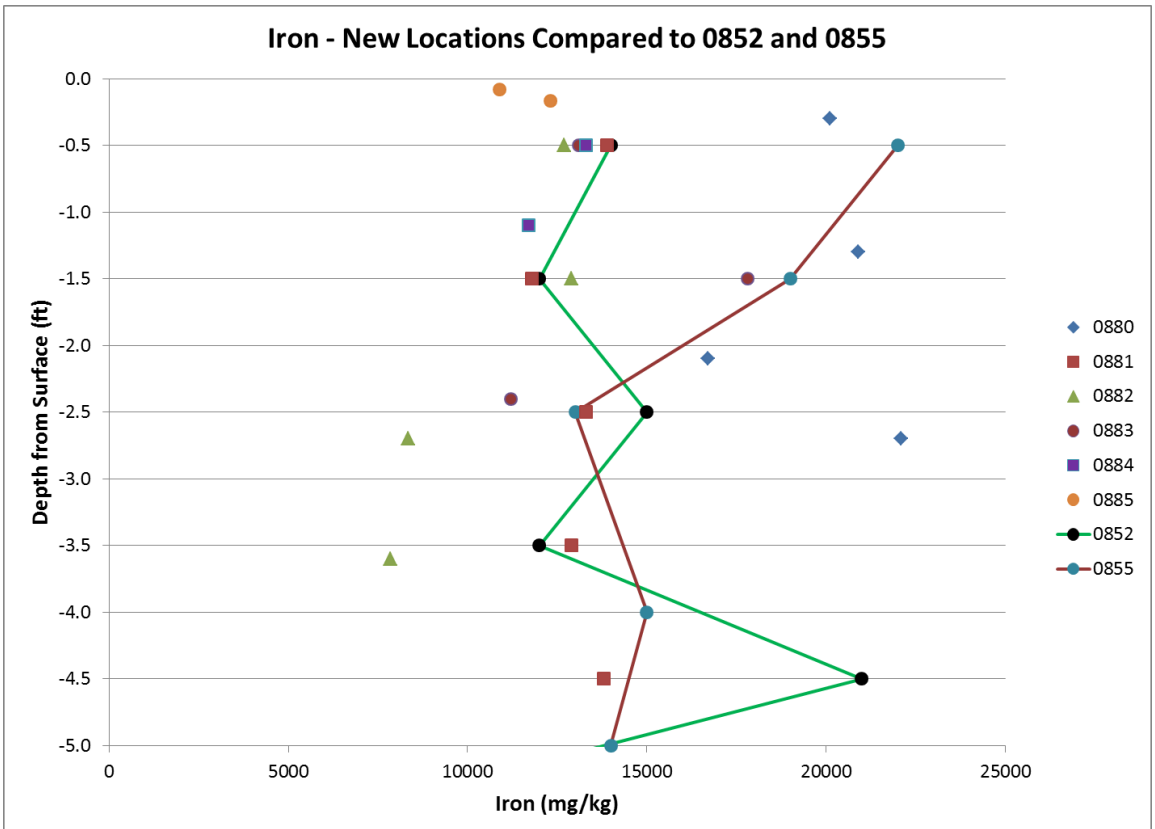

Sodium - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
2000
4000
6000
8000
10000
12000
Sodium (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855

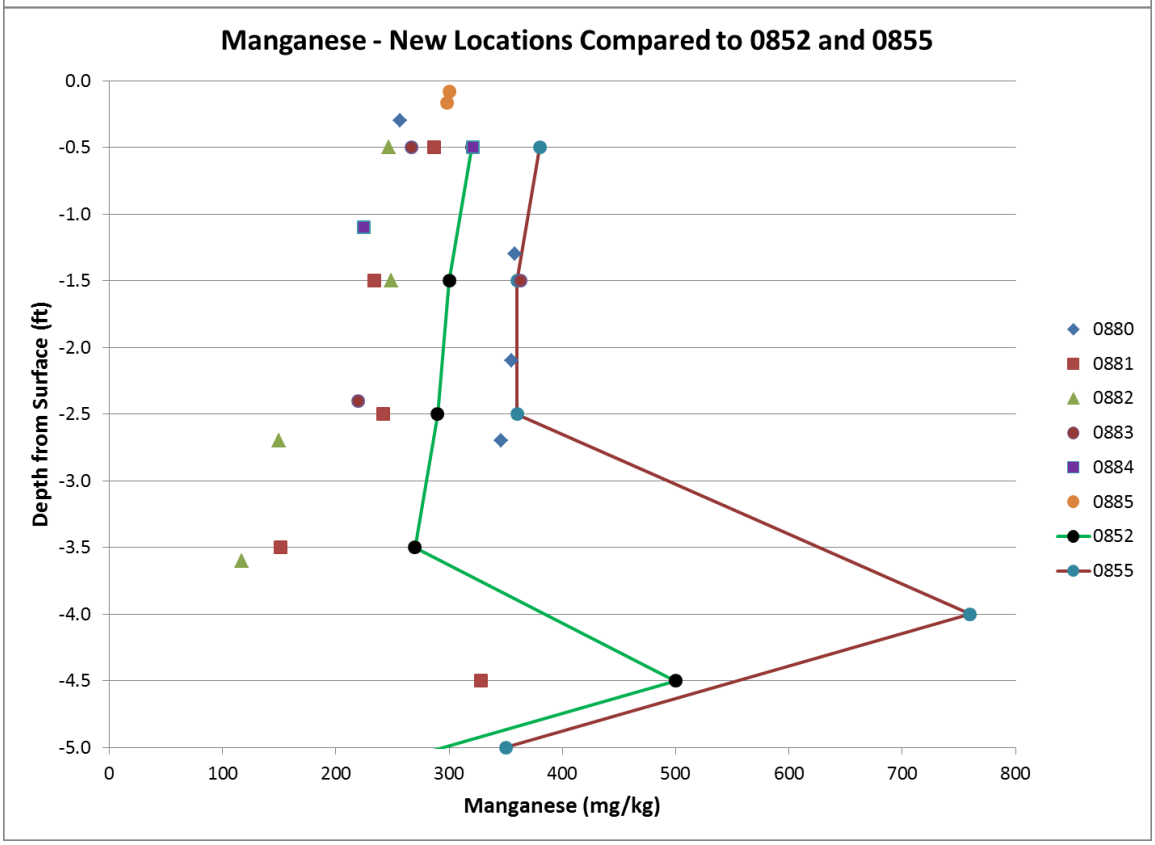

Potassium - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
1000
2000
3000
4000
5000
6000
Potassium (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855

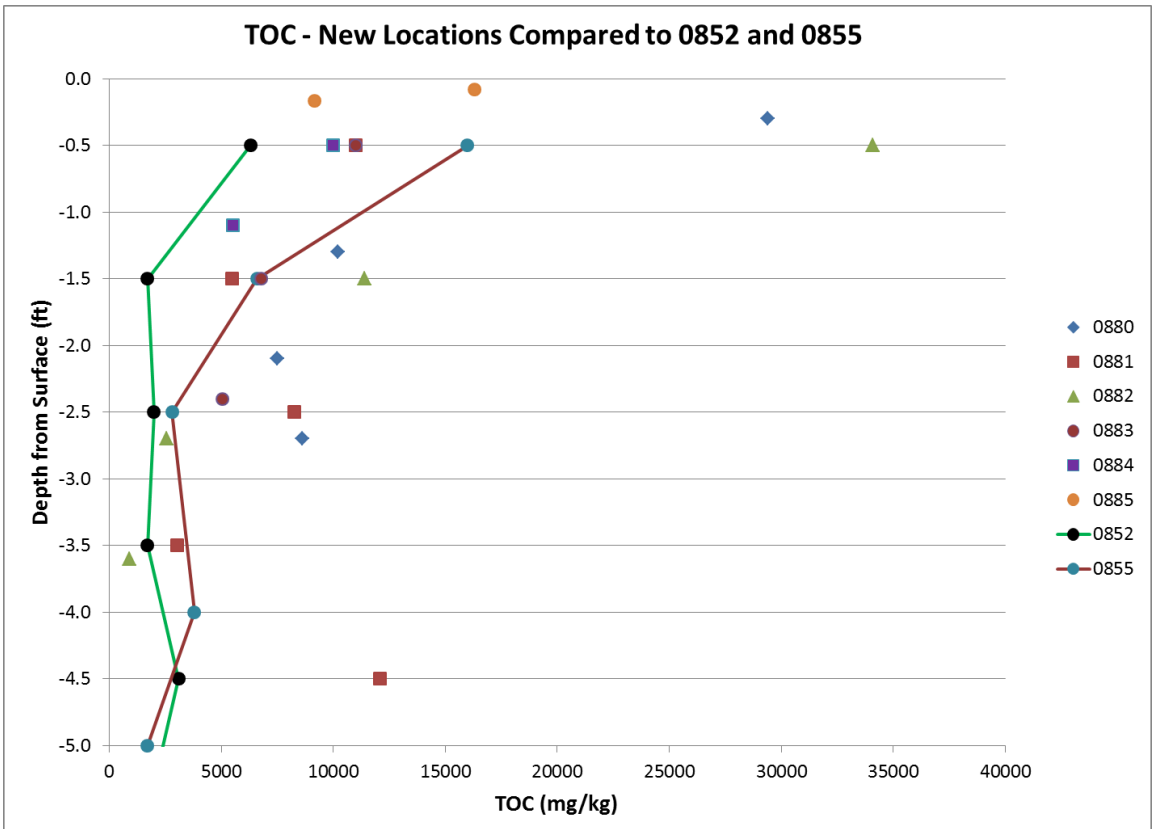

Calcium - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
Calcium (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855

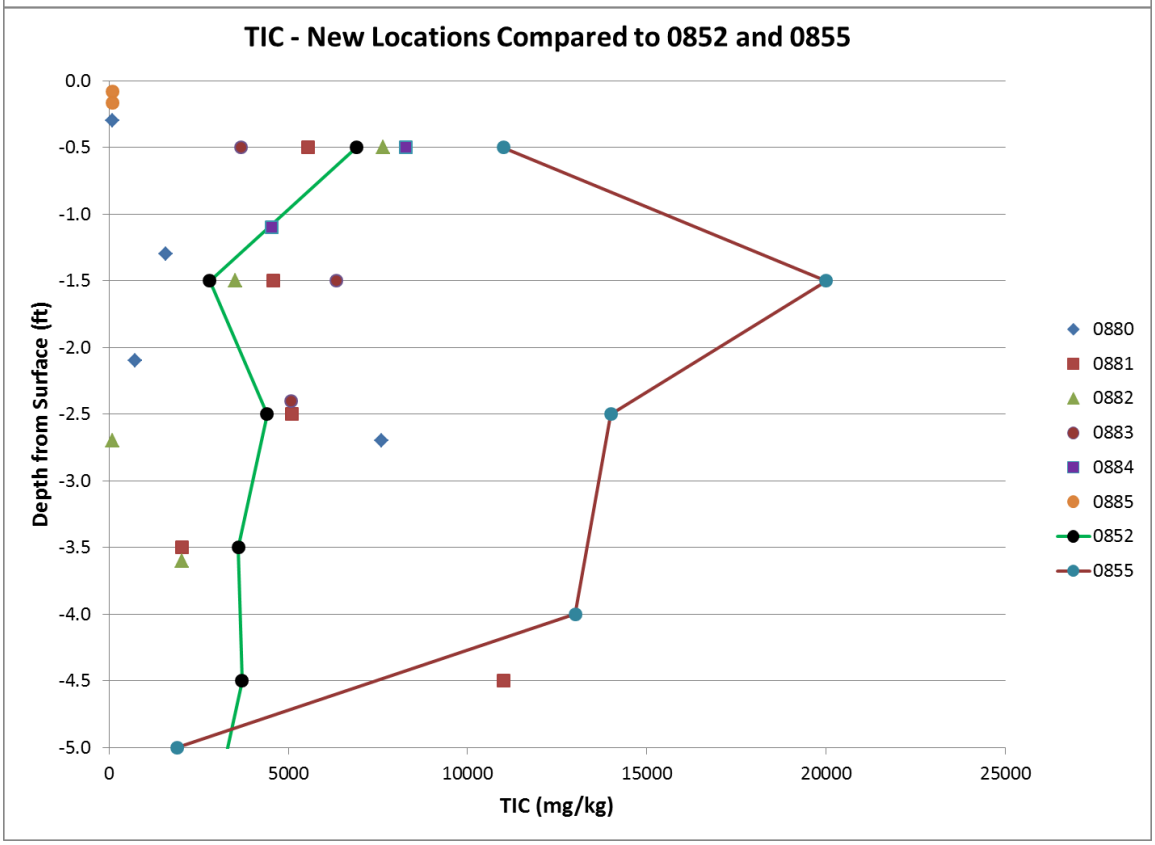

Chloride - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
2000
4000
6000
8000
10000
12000
Chloride (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855


Sulfate - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
2000
4000
6000
8000
10000
12000
14000
16000
Sulfate (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855


Iron - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
5000
10000
15000
20000
25000
Iron (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855


Manganese - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
100
200
300
400
500
600
700
800
Manganese (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855


TOC - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
5000
10000
15000
20000
25000
30000
35000
40000
TOC (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855


TIC - New Locations Compared to 0852 and 0855
Depth from Surface (ft)
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
0
5000
10000
15000
20000
25000
TIC (mg/kg)
0880
0881
0882
0883
0884
0885
0852
0855