Annual Groundwater Monitoring Report

Kentucky Power Company

Mitchell Plant

Bottom Ash Pond

Moundsville, WV

January 2020

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KENTUCKY POWER℠

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BOUNDLESS ENERGY℠

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I. Overview

This *Annual Groundwater Monitoring Report* (Report) has been prepared to report the status of activities for the preceding year for the Bottom Ash Pond at Kentucky Power Company's, a wholly owned subsidiary of American Electric Power Company (AEP), Mitchell Power Plant. The USEPA's CCR rules require that the Annual Groundwater Monitoring Report be posted to the operating record for the preceding year no later than January 31st.

In general, the following activities were completed in 2019:

- In accordance with 40 CFR 257.95(d)(1), groundwater samples were collected and analyzed for all Appendix III constituents and those Appendix IV constituents that were detected during the previous sampling in accordance with 40 CFR 257.95(b) in August 2018. This occurred in April/May, 2019. In accordance with 40 CFR 257.95(b), groundwater samples were collected and analyzed for all Appendix IV constituents. This occurred in June 2019. All sampling was performed in accordance with 40 CFR 257.95 *et seq.*, and AEP's *Groundwater Sampling and Analysis Plan (2016)*;
- Groundwater data underwent various validation tests, including tests for completeness, valid values, transcription errors, and consistent units;
- Statistical analysis of the assessment monitoring samples collected in August 2018 and April/May 2019 was completed in January and July 2019, respectively.
- Because no statistically significant levels (SSLs) above the groundwater protection standard were detected, assessment monitoring continued.
- No alternative source demonstrations (ASDs) relative to the Appendix IV SSLs above the groundwater protection standard were pursued.
- As required by 40 CFR 257.95(d)(1), groundwater samples were collected and analyzed for all Appendix III constituents and those Appendix IV constituents that were detected during the June 2019 sampling in accordance with 40 CFR 257.95(b). This occurred in October 2019.

The major components of this annual report, to the extent applicable at this time, are presented in sections that follow:

- A map, aerial photograph or a drawing showing the CCR management unit(s), all groundwater monitoring wells and monitoring well identification numbers;
- All of the monitoring data collected, including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected, and whether the sample was collected as part of detection monitoring or assessment monitoring programs (Attached as **Appendix 1**);

- Statistical comparison of monitoring data to determine if there have been statistically significant levels above the groundwater protection standards (Attached as **Appendix 2**, where applicable);
- A discussion of whether any alternate source demonstration were performed, and the conclusions (Attached as **Appendix 3**, where applicable);
- A summary of any transition between monitoring programs, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring (Notices attached as **Appendix 4**, where applicable);
- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a statement as to why that happened (Attached as **Appendix 5**, where applicable); and
- Other information required to be included in the annual report such as an alternate monitoring frequency, or assessment of corrective measures, if applicable.

In addition, this report summarizes key actions completed, and where applicable, describes any problems encountered and actions taken to resolve those problems. The report includes a projection of key activities for the upcoming year.

II. Groundwater Monitoring Well Locations and Identification Numbers

A figure that depicts the PE-certified groundwater monitoring network, the monitoring well locations, and their corresponding identification is provided in Appendix 1.

III. Monitoring Wells Installed or Decommissioned

There were no monitoring wells installed or decommissioned in 2019. The network design, as summarized in the *Groundwater Monitoring Network Design Report* (2016) and as posted at the CCR web site for Mitchell Plant, did not change. That design report, viewable on the AEP CCR web site, discusses the facility location, the hydrogeological setting, the hydrostratigraphic units, the uppermost aquifer, downgradient monitoring well locations and the upgradient monitoring well locations.

IV. Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction and Discussion

Appendix 1 contains tables showing the groundwater quality data collected during the establishment of background quality, detection monitoring, and assessment monitoring. Static water elevation data from each monitoring event also are shown in Appendix 1, along with the groundwater velocities, groundwater flow direction, and potentiometric maps developed after each sampling event.

V. Groundwater Quality Data Statistical Analysis

Statistical analysis of the assessment monitoring samples taken in August 2018 and in April/May 2019 was completed in January 2019 and July 2019, respectively. No SSLs above the groundwater protection standards were identified during either analysis. The results of these statistical analyses are documented in the corresponding statistical analysis summary reports, which are provided in Appendix 2.

As required by 40 CFR 257.95(d)(1), groundwater samples were collected and analyzed for all Appendix III constituents and those Appendix IV constituents that were detected during the June 2019 sampling in accordance with 40 CFR 257.95(b). This occurred in October 2019. Based on the results, Appendix IV groundwater protection standards are being calculated and will be statistically compared to Appendix IV concentrations in downgradient wells. Statistical analysis and the setting of Appendix IV groundwater protection standards and will be completed in February 2020.

VI. Alternative Source Demonstrations

ASDs relative to Appendix IV SSLs above the groundwater protection standard were not necessary because no SSLs above the groundwater protection standards were identified in 2019. A statement to this effect is provided in Appendix 3.

VII. Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency

No transition between monitoring requirements occurred in 2019; the CCR unit remained in assessment monitoring over the entire year. A statement to this effect is provided in Appendix 4.

The bottom ash pond will remain in assessment monitoring unless all Appendix III and IV parameters are below background values for two consecutive monitoring events, at which point, the CCR Unit would return to detection monitoring. If one or more Appendix IV parameters exceed the respective groundwater protection standard due to a release from the bottom ash pond, and are not demonstrated to be caused by a source other than the CCR unit or resulting from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality by means of an ASD, an assessment of corrective measures will be undertaken as required by 40 CFR 257.96.

Regarding defining an alternate monitoring frequency, the groundwater velocity and monitoring well production is high enough at this facility that no modification of the semiannual detection monitoring effort is necessary.

VIII. Other Information Required

The bottom ash pond has progressed from detection monitoring to its current status in assessment monitoring. All required information has been included in this annual groundwater monitoring report.

IX. Description of Any Problems Encountered in 2019 and Actions Taken

No significant problems were encountered. The low flow sampling effort went smoothly and the schedule was met to support this annual groundwater report preparation.

X. A Projection of Key Activities for the Upcoming Year

Key activities for 2020 include:

- Assessment monitoring on a semiannual schedule;
- Evaluation of the assessment monitoring results from a statistical analysis viewpoint, looking for any statistically significant increases over an established groundwater protection standard, or whether the concentrations have returned below background concentrations;
- Responding to any new data received in light of what the CCR rule requires;
- Preparation of the next annual groundwater report.

APPENDIX 1 - Groundwater Data Tables and Figures

Tables follow showing the groundwater monitoring data collected, the rate of groundwater flow each time groundwater was sampled, the number of samples collected per monitoring well, dates that the samples were collected, and whether each sample was collected as part of a detection monitoring or an assessment monitoring program. Figures follow showing the PE-certified groundwater monitoring network with the corresponding well identifications along with static water elevation data and groundwater flow directions each time groundwater was sampled in the form of annotated satellite images.

Table 1 - Groundwater Data Summary: MW-1504
Mitchell - BAP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/13/2016	Background	0.054	220	99.1	0.23	6.9	990	375
8/1/2016	Background	0.070	220	103	0.25	7.0	970	403
9/26/2016	Background	0.098	225	103	0.24	7.1	946	389
11/8/2016	Background	0.053	219	92.8	0.19	7.1	930	369
2/7/2017	Background	0.162	218	81.7	0.20	7.1	904	291
4/4/2017	Background	0.105	237	89.8	0.21	7.3	924	362
5/16/2017	Background	0.113	225	93.5	0.22	7.2	995	371
7/19/2017	Background	0.129	230	96.3	0.15	7.2	999	405
10/9/2017	Detection	0.114	212	93.4	0.24	7.2	982	392
4/11/2018	Assessment	0.063	204	83.6	0.19	7.0	842	291
8/22/2018	Assessment	0.096	230	91.9	0.20	7.3	936	372
5/1/2019	Assessment	0.05 J	220	81.8	0.17	8.0	926	317
6/11/2019	Assessment	0.04 J	183	78.5	0.17	7.6	829	261

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-1504
Mitchell - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/13/2016	Background	0.03 J	0.73	46.2	0.01 J	0.04	0.4	0.523	0.0838	0.23	0.379	0.002	<0.002 U	0.59	0.1	0.02 J
8/1/2016	Background	0.02 J	0.52	42.7	0.009 J	0.04	0.5	0.549	0.248	0.25	0.222	<0.0002 U	0.002 J	0.74	0.07 J	0.02 J
9/26/2016	Background	<0.05 U	0.38	36.7	<0.02 U	0.03 J	0.3	0.362	0.656	0.24	0.104	0.007	<0.002 U	2.31	0.2 J	0.1 J
11/8/2016	Background	0.02 J	0.36	38.4	<0.005 U	0.03	0.469	0.249	1.748	0.19	0.041	0.004	<0.002 U	0.66	<0.03 U	0.089
2/7/2017	Background	0.02 J	0.39	33.8	<0.005 U	0.03	0.53	0.239	0.563	0.20	0.022	0.008	<0.002 U	0.94	<0.03 U	0.09
4/4/2017	Background	0.02 J	0.35	40.5	<0.005 U	0.04	0.283	0.277	0.327	0.21	0.021	0.009	<0.002 U	0.81	0.06 J	0.11
5/16/2017	Background	0.02 J	0.46	37.3	<0.004 U	0.04	0.25	0.319	0.3882	0.22	0.01 J	0.011	<0.002 U	0.55	0.05 J	0.02 J
7/19/2017	Background	0.03 J	0.41	34.9	<0.004 U	0.04	0.175	0.382	0.401	0.15	0.087	0.012	<0.002 U	1.25	<0.03 U	0.03 J
4/11/2018	Assessment	0.02 J	0.36	36.9	0.005 J	0.03	0.562	0.114	0.349	0.19	0.052	0.004	<0.004 U	0.41	0.04 J	0.03 J
8/22/2018	Assessment	0.05 J	0.28	37.9	<0.004 U	0.03	0.331	0.093	1.048	0.20	0.037	0.006	<0.002 U	0.33	0.04 J	0.03 J
5/1/2019	Assessment	<0.02 U	0.22	36.4	<0.02 U	0.03 J	0.305	0.071	0.675	0.17	0.02 J	<0.009 U	<0.002 U	<0.4 U	<0.03 U	<0.1 U
6/11/2019	Assessment	<0.02 U	0.24	33.5	<0.02 U	<0.01 U	0.05 J	0.04 J	0.261	0.17	<0.02 U	<0.009 U	<0.002 U	<0.4 U	0.7	<0.1 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-1505
Mitchell - BAP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/14/2016	Background	10.8	288	365	<0.05 U	7.1	1530	337
8/1/2016	Background	10.6	294	358	<0.05 U	7.1	1580	337
9/26/2016	Background	10.3	289	345	<0.05 U	7.2	1420	317
11/8/2016	Background	9.12	261	316	<0.05 U	7.2	1470	307
2/7/2017	Background	10.0	296	318	<0.05 U	7.2	1340	317
4/4/2017	Background	8.80	293	303	<0.05 U	7.3	1350	324
5/16/2017	Background	10.1	278	298	<0.05 U	7.2	1550	316
7/19/2017	Background	9.13	267	293	<0.05 U	7.3	1390	318
10/10/2017	Detection	8.70	255	287	<0.05 U	7.2	1270	327
12/27/2017	Detection	8.02	259	288	- -	7.3	1220	- -
4/11/2018	Assessment	8.00	282	289	<0.05 U	7.0	1220	401
8/22/2018	Assessment	8.00	274	284	0.02 J	7.3	1520	383
5/1/2019	Assessment	7.31	287	285	<0.01 U	7.8	1580	408
6/11/2019	Assessment	7.79	279	261	0.03 J	7.7	1450	404

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-1505
Mitchell - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/14/2016	Background	0.06	1.40	57.7	0.049	0.03	33.2	0.966	0.466	<0.05 U	1.02	0.006	0.002 J	2.94	0.2	0.074
8/1/2016	Background	0.11	3.73	81.0	0.150	0.05	10.4	2.69	1.2271	<0.05 U	3.69	0.011	0.013	0.95	0.9	0.093
9/26/2016	Background	<0.05 U	0.79	47.2	<0.02 U	0.03 J	0.9	0.404	0.912	<0.05 U	0.546	0.008	<0.002 U	7.35	0.4 J	0.464
11/8/2016	Background	0.07	2.14	63.3	0.091	0.03	7.07	1.77	1.26	<0.05 U	2.06	0.007	0.006	0.90	0.5	0.093
2/7/2017	Background	0.04 J	1.16	51.7	0.035	0.03	9.06	0.772	1.236	<0.05 U	0.697	0.010	0.002 J	1.21	0.5	0.102
4/4/2017	Background	0.03 J	0.41	47.2	<0.005 U	0.02	11.0	0.509	0.4842	<0.05 U	0.091	0.007	<0.002 U	1.54	0.3	0.057
5/16/2017	Background	0.04 J	0.73	45.5	0.01 J	0.02	4.93	0.594	0.604	<0.05 U	0.224	0.017	<0.002 U	0.85	0.4	0.067
7/19/2017	Background	0.04 J	0.78	45.9	0.02 J	0.03 J	2.38	0.628	1.222	<0.05 U	0.434	0.012	<0.002 U	1.69	0.9	0.08 J
4/11/2018	Assessment	0.03 J	0.44	46.0	0.006 J	0.03	1.16	0.151	0.582	<0.05 U	0.116	0.005	<0.002 U	0.67	0.7	0.065
8/22/2018	Assessment	0.05 J	0.38	48.0	0.007 J	0.03	1.40	0.257	0.576	0.02 J	0.150	0.008	<0.002 U	1.35	0.4	0.070
5/1/2019	Assessment	0.03 J	0.29	48.7	<0.02 U	0.03 J	0.665	0.199	0.2396	<0.01 U	0.07 J	<0.009 U	<0.002 U	0.6 J	0.9	<0.1 U
6/11/2019	Assessment	0.03 J	0.28	49.3	<0.02 U	0.03 J	0.849	0.155	0.526	0.03 J	0.04 J	0.01 J	<0.002 U	0.7 J	0.4	<0.1 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-1506
Mitchell - BAP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/14/2016	Background	8.04	275	422	0.07 J	7.1	1640	315
8/2/2016	Background	9.72	299	418	0.07 J	7.0	1600	325
9/27/2016	Background	6.77	304	428	<0.05 U	7.2	1610	323
11/9/2016	Background	5.50	281	392	<0.05 U	7.4	1510	285
2/8/2017	Background	5.70	289	395	<0.05 U	7.3	1350	292
4/5/2017	Background	5.59	282	389	<0.05 U	7.4	1430	301
5/17/2017	Background	7.11	278	393	<0.05 U	7.3	1520	307
7/19/2017	Background	6.26	277	379	<0.05 U	7.3	1480	297
10/10/2017	Detection	8.03	257	357	<0.05 U	7.3	1390	326
12/27/2017	Detection	6.14	264	383	- -	7.3	1280	- -
4/11/2018	Assessment	5.73	275	382	<0.05 U	7.1	1300	347
8/22/2018	Assessment	5.91	270	369	0.05 J	7.4	1590	349
5/1/2019	Assessment	5.24	280	331	0.03 J	7.9	1360	347
6/11/2019	Assessment	5.27	265	315	0.05 J	7.8	1370	335

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-1506
Mitchell - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/14/2016	Background	0.07	1.65	73.0	0.053	0.04	1.1	1.31	0.488	0.07 J	1.25	0.006	0.004 J	0.74	0.2	0.070
8/2/2016	Background	0.05 J	1.01	70.4	0.026	0.04	0.8	0.799	0.670	0.07 J	0.601	0.015	0.003 J	0.68	0.09 J	0.060
9/27/2016	Background	0.05 J	1.14	62.0	0.030	0.03	1.0	0.739	1.263	<0.05 U	0.744	0.015	0.002 J	0.55	0.2	0.064
11/9/2016	Background	0.03 J	0.64	57.4	0.01 J	0.02 J	0.959	0.251	2.196	<0.05 U	0.272	0.008	<0.002 U	0.45	0.07 J	0.05 J
2/8/2017	Background	0.03 J	0.62	52.9	0.008 J	0.02 J	4.28	0.305	0.4008	<0.05 U	0.217	0.013	<0.002 U	1.07	<0.03 U	0.066
4/5/2017	Background	0.04 J	0.81	60.1	0.021	0.02	3.87	0.891	0.438	<0.05 U	0.574	0.011	0.002 J	0.49	0.08 J	0.04 J
5/17/2017	Background	0.05 J	1.26	60.9	0.027	0.03	2.83	0.768	0.226	<0.05 U	0.726	0.016	0.002 J	1.22	0.1	0.05 J
7/19/2017	Background	0.18	0.80	54.9	0.02 J	0.02 J	3.15	0.932	0.889	<0.05 U	0.457	0.016	<0.002 U	1.14	<0.06 U	0.06 J
4/11/2018	Assessment	0.03 J	0.73	55.4	0.021	0.02 J	2.01	0.476	0.592	<0.05 U	0.477	0.009	0.002 J	1.23	0.1	0.05 J
8/22/2018	Assessment	0.06	0.46	54.6	0.01 J	0.02	2.47	0.581	1.723	0.05 J	0.319	0.010	<0.002 U	0.50	0.09 J	0.050
5/1/2019	Assessment	0.03 J	0.34	53.5	<0.02 U	0.02 J	0.752	0.256	0.1879	0.03 J	0.135	0.02 J	<0.002 U	2 J	0.07 J	<0.1 U
6/11/2019	Assessment	0.03 J	0.42	49.8	<0.02 U	0.01 J	1.11	0.290	1.009	0.05 J	0.234	<0.009 U	<0.002 U	0.4 J	0.04 J	<0.1 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-1507
Mitchell - BAP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/14/2016	Background	13.2	333	529	0.06 J	7.0	1070	339
8/2/2016	Background	12.2	323	497	0.07 J	7.0	1890	332
9/27/2016	Background	14.1	355	517	0.06 J	7.1	1840	345
11/9/2016	Background	12.1	325	480	0.06 J	7.1	1840	314
2/8/2017	Background	11.1	312	401	0.06 J	7.1	1480	276
4/5/2017	Background	10.6	324	445	0.05 J	7.2	1630	306
5/17/2017	Background	12.1	308	437	0.05 J	7.2	1680	310
7/19/2017	Background	11.1	298	447	<0.05 U	7.2	1740	308
10/10/2017	Detection	10.7	289	430	0.06 J	7.2	1660	316
12/27/2017	Detection	10.4	284	450	- -	7.2	1380	- -
4/11/2018	Assessment	10.4	296	400	0.06 J	6.9	1390	347
8/21/2018	Assessment	9.29	272	331	0.07	7.2	1430	323
5/1/2019	Assessment	8.36	271	296	0.07	8.0	1270	346
6/11/2019	Assessment	8.41	257	279	0.07	7.8	1340	349

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-1507
Mitchell - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/14/2016	Background	0.05 J	2.19	84.5	0.142	0.07	3.6	3.18	0.521	0.06 J	4.07	0.011	0.025	0.25	0.7	0.051
8/2/2016	Background	0.12	4.54	104	0.168	0.07	10.4	4.10	2.09	0.07 J	4.48	0.019	0.016	2.14	0.5	0.078
9/27/2016	Background	0.10	3.58	92.0	0.134	0.06	14.0	3.06	2.029	0.06 J	2.96	0.020	0.010	1.80	0.5	0.08 J
11/9/2016	Background	0.11	4.15	102	0.202	0.07	12.6	4.50	1.784	0.06 J	3.97	0.016	0.010	12.8	0.5	0.09 J
2/8/2017	Background	0.08	2.16	73.6	0.089	0.04	6.16	1.77	16.587	0.06 J	1.86	0.013	0.007	2.31	0.3	0.081
4/5/2017	Background	0.06	1.51	71.3	0.053	0.04	19.4	1.26	0.600	0.05 J	1.17	0.011	0.006	5.29	0.2	0.053
5/17/2017	Background	0.11	1.30	63.6	0.031	0.04	12.6	0.990	0.767	0.05 J	0.799	0.024	0.003 J	4.54	0.2	0.04 J
7/19/2017	Background	0.06 J	1.29	62.0	0.044	0.04	12.1	2.37	1.215	<0.05 U	0.999	0.018	0.004 J	4.37	0.1 J	0.06 J
4/11/2018	Assessment	0.07	1.67	71.2	0.062	0.04	21.3	1.45	0.701	0.06 J	1.56	0.012	0.006	2.73	0.3	0.059
8/21/2018	Assessment	0.08	0.47	62.1	0.01 J	0.03	2.00	0.426	1.419	0.07	0.308	0.010	0.002 J	0.87	0.08 J	0.05 J
5/1/2019	Assessment	0.03 J	0.43	53.9	<0.02 U	0.03 J	2.35	0.331	0.496	0.07	0.239	<0.009 U	<0.002 U	1 J	0.07 J	<0.1 U
6/11/2019	Assessment	0.03 J	0.24	52.2	<0.02 U	0.03 J	0.315	0.160	1.454	0.07	<0.02 U	0.01 J	0.003 J	0.4 J	0.04 J	<0.1 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-1508
Mitchell - BAP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/14/2016	Background	0.509	204	211	0.1 J	6.9	1060	291
8/1/2016	Background	0.690	218	237	0.1 J	7.0	1100	302
9/26/2016	Background	1.03	215	238	0.1 J	7.0	1110	304
11/8/2016	Background	1.36	234	227	0.08 J	7.2	1140	304
2/8/2017	Background	1.04	236	220	0.08 J	7.1	1070	301
4/5/2017	Background	0.780	228	215	0.08 J	7.2	1070	311
5/16/2017	Background	0.846	218	208	0.07 J	7.1	1130	296
7/18/2017	Background	1.00	224	214	0.06 J	7.1	1110	305
10/9/2017	Detection	0.881	207	212	0.08 J	7.1	1200	322
4/11/2018	Assessment	0.806	229	200	0.08	6.9	1050	302
8/21/2018	Assessment	0.952	219	204	0.08	7.2	1080	313
5/1/2019	Assessment	0.622	221	178	0.08	8.2	978	287
6/12/2019	Assessment	0.679	209	163	0.08	7.1	988	285

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-1508
Mitchell - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/14/2016	Background	0.04 J	1.05	48.7	0.038	0.09	0.8	3.21	0.763	0.1 J	1.61	0.009	0.003 J	0.93	0.5	0.04 J
8/1/2016	Background	0.04 J	1.07	51.7	0.037	0.07	1.2	2.22	0.0803	0.1 J	1.34	<0.0002 U	0.008	0.74	0.7	0.03 J
9/26/2016	Background	0.06 J	1.65	50.2	0.06 J	0.07 J	2.3	2.34	0.596	0.1 J	1.69	0.007	0.003 J	1.17	0.8	<0.05 U
11/8/2016	Background	0.05 J	1.32	53.9	0.058	0.05	1.70	2.17	2.782	0.08 J	2.06	0.003	0.002 J	0.63	0.7	0.03 J
2/8/2017	Background	0.04 J	0.97	46.1	0.042	0.04	1.34	1.40	12.465	0.08 J	1.32	0.009	0.003 J	0.53	0.7	0.04 J
4/5/2017	Background	0.04 J	1.09	49.9	0.049	0.04	1.74	1.66	0.394	0.08 J	1.71	0.008	0.004 J	0.35	0.9	0.03 J
5/16/2017	Background	0.04 J	1.21	47.0	0.041	0.03	1.32	1.12	0.931	0.07 J	1.13	0.014	<0.002 U	0.46	0.9	0.04 J
7/18/2017	Background	0.04 J	1.11	45.1	0.040	0.04	1.33	1.27	0.597	0.06 J	1.20	0.012	<0.002 U	0.68	0.6	0.04 J
4/11/2018	Assessment	0.04 J	1.04	46.4	0.040	0.04	1.40	1.03	0.236	0.08	1.11	0.008	<0.004 U	0.45	0.7	0.05 J
8/21/2018	Assessment	0.06	0.44	40.1	0.01 J	0.04	0.691	0.678	0.3152	0.08	0.384	0.007	<0.002 U	0.25	0.4	0.03 J
5/1/2019	Assessment	0.03 J	0.60	37.4	0.02 J	0.03 J	0.735	0.637	0.636	0.08	0.540	<0.009 U	<0.002 U	<0.4 U	0.3	<0.1 U
6/12/2019	Assessment	<0.02 U	0.41	35.2	<0.02 U	0.03 J	0.59	0.419	0.295	0.08	0.336	<0.009 U	<0.002 U	<0.4 U	0.2	<0.1 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-1509
Mitchell - BAP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/14/2016	Background	12.4	280	435	0.16	7.0	1730	380
8/9/2016	Background	11.6	292	401	0.16	7.1	1670	388
9/27/2016	Background	10.6	292	371	0.1 J	7.1	1540	418
11/8/2016	Background	8.29	258	333	0.1 J	7.1	1410	400
2/7/2017	Background	7.65	280	360	0.15	7.1	1450	416
4/5/2017	Background	6.22	290	358	0.1 J	7.2	1560	416
5/17/2017	Background	7.36	284	354	0.1 J	7.2	1520	420
7/19/2017	Background	6.54	279	346	0.1 J	7.2	1560	418
10/10/2017	Detection	6.70	277	345	0.1 J	7.2	1490	432
12/27/2017	Detection	6.31	271	315	- -	7.1	1360	- -
4/11/2018	Assessment	6.81	272	324	0.15	6.9	1390	488
8/21/2018	Assessment	6.97	279	323	0.14	7.2	1540	465
5/1/2019	Assessment	8.73	287	328	0.13	8.5	1480	429
6/11/2019	Assessment	8.37	273	311	0.13	7.8	1410	432

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-1509
Mitchell - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/14/2016	Background	0.03 J	0.55	64.4	0.008 J	0.03	2.5	0.514	0.816	0.16	0.102	0.0009 J	<0.002 U	1.43	0.1	0.03 J
8/9/2016	Background	0.03 J	0.62	64.4	0.01 J	0.02	0.5	0.484	0.45569	0.16	0.251	0.015	<0.002 U	1.00	0.1	0.03 J
9/27/2016	Background	0.03 J	0.39	61.0	<0.005 U	0.02	4.6	0.424	2.664	0.1 J	0.024	0.018	<0.002 U	1.07	0.2	0.04 J
11/8/2016	Background	0.03 J	0.40	62.0	<0.005 U	0.02	0.627	0.253	0.413	0.1 J	0.006 J	0.012	<0.002 U	0.59	0.1	0.05 J
2/7/2017	Background	0.03 J	0.50	56.7	<0.005 U	0.02	0.650	0.130	1.399	0.15	0.056	0.011	<0.002 U	0.66	0.09 J	0.04 J
4/5/2017	Background	0.02 J	0.33	63.5	<0.005 U	0.02 J	1.15	0.189	0.304	0.1 J	0.01 J	0.012	<0.002 U	0.48	0.2	0.03 J
5/17/2017	Background	0.02 J	0.56	61.5	<0.004 U	0.01 J	1.05	0.255	1.673	0.1 J	0.02 J	0.022	0.002 J	0.56	0.2	0.03 J
7/19/2017	Background	0.03 J	0.65	58.5	0.01 J	0.01 J	0.857	0.344	1.134	0.1 J	0.22	0.017	<0.002 U	0.80	0.2 J	0.04 J
4/11/2018	Assessment	0.03 J	0.42	52.8	0.005 J	0.01 J	0.657	0.215	0.792	0.15	0.062	0.009	0.002 J	0.34	0.2	0.057
8/21/2018	Assessment	0.09	0.33	53.8	<0.004 U	0.008 J	0.777	0.132	0.736	0.14	0.035	0.012	<0.002 U	0.32	0.3	0.03 J
5/1/2019	Assessment	0.03 J	0.33	47.2	<0.02 U	0.01 J	2.28	0.324	0.4075	0.13	0.114	<0.009 U	<0.002 U	<0.4 U	0.2 J	<0.1 U
6/11/2019	Assessment	0.03 J	0.28	48.6	<0.02 U	0.02 J	1.47	0.097	0.559	0.13	0.05 J	0.02 J	<0.002 U	<0.4 U	0.2	<0.1 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-1510
Mitchell - BAP
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/14/2016	Background	9.36	283	334	0.06 J	7.0	1520	358
8/2/2016	Background	9.18	294	333	0.06 J	7.0	1410	356
9/27/2016	Background	10.1	296	338	0.05 J	7.1	1410	367
11/9/2016	Background	9.22	280	325	<0.05 U	7.1	1420	332
2/8/2017	Background	10.4	281	314	0.06 J	7.2	1270	325
4/5/2017	Background	9.23	261	303	0.06 J	7.3	1330	313
5/17/2017	Background	10.8	249	306	0.05 J	7.2	1340	307
7/18/2017	Background	9.86	255	311	<0.05 U	7.2	1410	309
10/9/2017	Detection	8.70	249	327	0.05 J	7.2	1520	356
12/27/2017	Detection	8.83	261	339	- -	7.2	1300	- -
4/12/2018	Assessment	10.4	292	322	<0.05 U	7.0	1290	398
8/21/2018	Assessment	9.13	268	334	0.09	7.3	1550	428
5/1/2019	Assessment	8.83	287	325	0.10	8.1	1460	467
6/12/2019	Assessment	8.50	266	293	0.10	6.9	1430	469

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-1510
Mitchell - BAP
Appendix IV Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/14/2016	Background	0.03 J	0.72	50.8	0.02 J	0.01 J	0.6	0.257	0.331	0.06 J	0.282	0.003	<0.002 U	0.65	0.2	0.057
8/2/2016	Background	0.03 J	0.62	49.0	0.02 J	0.009 J	0.7	0.256	1.383	0.06 J	0.269	0.016	<0.002 U	0.92	0.2	0.02 J
9/27/2016	Background	0.03 J	0.70	48.7	0.02 J	0.009 J	0.8	0.329	0.865	0.05 J	0.333	0.014	<0.002 U	0.45	0.2	0.04 J
11/9/2016	Background	0.02 J	0.58	44.6	0.02 J	0.01 J	0.655	0.230	0.88	<0.05 U	0.261	0.009	<0.002 U	0.33	0.1	0.03 J
2/8/2017	Background	0.02 J	0.47	39.5	<0.005 U	0.005 J	0.521	0.073	6.828	0.06 J	0.066	0.013	<0.002 U	0.42	0.08 J	0.02 J
4/5/2017	Background	0.02 J	0.36	41.4	<0.005 U	0.006 J	2.34	0.175	1.12829	0.06 J	0.094	0.011	<0.002 U	0.27	0.07 J	<0.01 U
5/17/2017	Background	0.02 J	0.53	40.2	<0.004 U	0.005 J	1.40	0.138	0.176	0.05 J	0.049	0.015	<0.002 U	0.28	0.1	0.01 J
7/18/2017	Background	0.02 J	0.51	41.0	0.007 J	0.008 J	6.41	0.234	0.97	<0.05 U	0.125	0.014	<0.002 U	0.85	0.1	0.01 J
4/12/2018	Assessment	0.03 J	0.42	43.3	0.01 J	0.005 J	27.4	0.217	0.094	<0.05 U	0.119	0.006	0.002 J	3.30	0.1	0.02 J
8/21/2018	Assessment	0.03 J	0.37	42.6	0.008 J	0.006 J	5.64	0.383	1.237	0.09	0.133	0.011	<0.002 U	0.43	0.1	0.01 J
5/1/2019	Assessment	0.02 J	0.29	41.7	<0.02 U	<0.01 U	1.75	0.172	0.5725	0.1	0.105	0.01 J	<0.002 U	<0.4 U	0.2 J	<0.1 U
6/12/2019	Assessment	0.02 J	0.27	41.3	<0.02 U	<0.01 U	0.697	0.105	0.4098	0.1	0.07 J	0.02 J	<0.002 U	<0.4 U	0.2 J	<0.1 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1: Residence Time Calculation Summary
Mitchell Bottom Ash Ponds

Geosyntec Consultants, Inc.

CCR Management Unit	Monitoring Well	Well Diameter (inches)	2019-04		2019-06	
			Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Bottom Ash Pond	MW-1504 [1]	2.0	33.2	1.8	16.4	3.7
	MW-1505 [2]	2.0	23.1	2.6	39.1	1.6
	MW-1506 [2]	2.0	15.6	3.9	38.8	1.6
	MW-1507 [2]	2.0	11.9	5.1	17.2	3.5
	MW-1508 [3]	2.0	45.5	1.3	20.0	3.0
	MW-1509 [2]	2.0	39.5	1.5	14.1	4.3
	MW-1510 [1]	2.0	15.0	4.1	11.4	5.3

Notes:
[1] - Sidegradient Well
[2] - Downgradient Well
[3] - Upgradient Well

Monitoring Well Network

- Compliance Sampling Location
- Upgradient Sampling Location
- Bottom Ash Pond

Notes

- Monitoring well coordinates provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (CEC, 2016) provided by AEP.

250 125 0 250 Feet

Site Layout
Bottom Ash Pond

Mitchell Power Generation Plant - Bottom Ash Pond
Marshall County, West Virginia

Geosyntec consultants

Columbus, Ohio | 2018/01/26

Figure **1**

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Legend

- Groundwater Monitoring Well
- Groundwater Flow Direction
- Groundwater Elevation Contour

Notes

- Monitoring well coordinates and water level data (collected on April 30, 2019) provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (CEC, 2016) provided by AEP.
- Groundwater and river elevation units are feet above mean sea level (NAVD 88).

250 125 0 250 Feet

Potentiometric Surface Map - Uppermost Aquifer
April 2019

Mitchell Power Generation Plant - Bottom Ash Pond
Marshall County, West Virginia

Geosyntec consultants

Columbus, Ohio | 2019/12/13

Figure **2**

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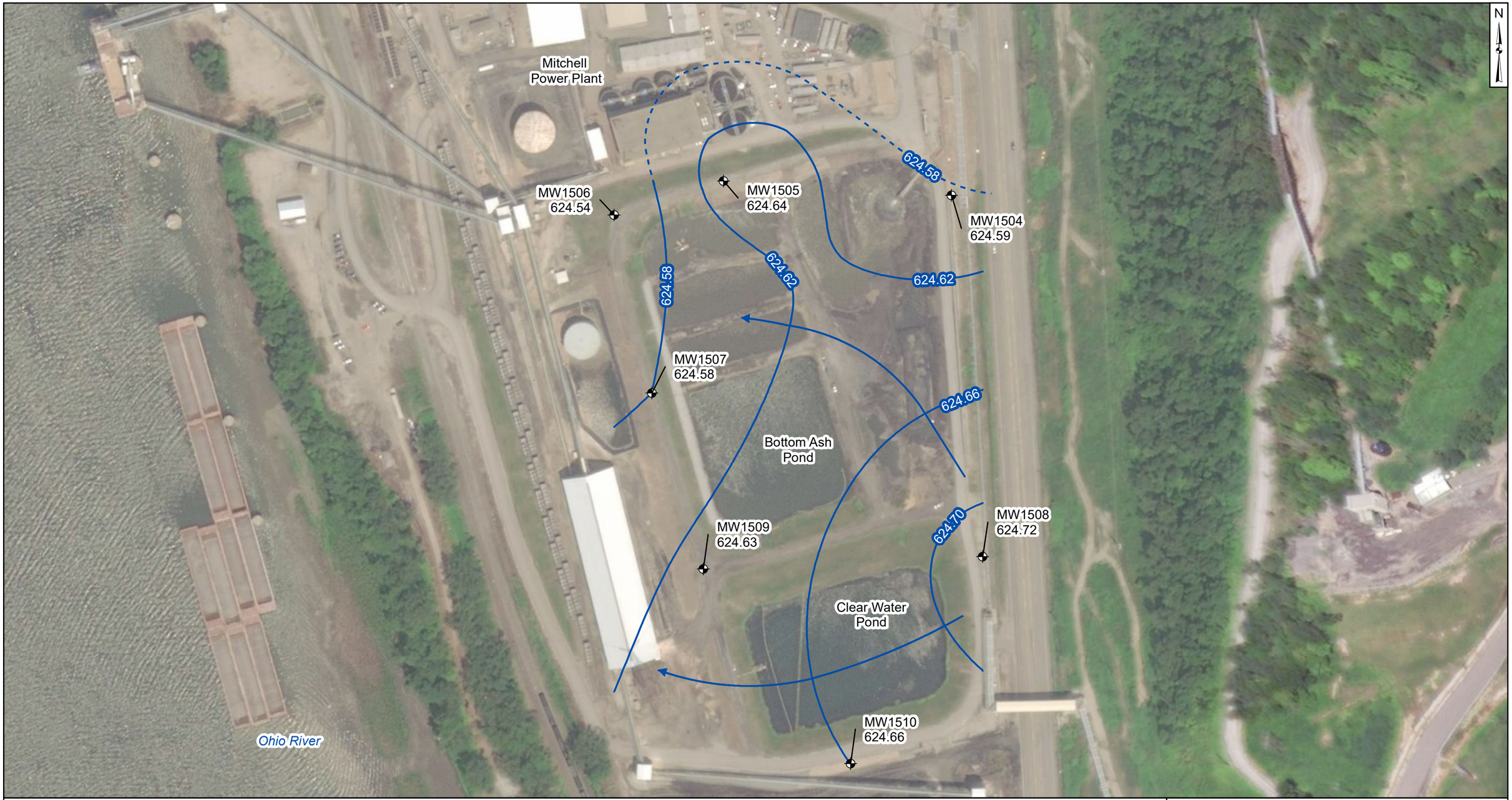

Legend

- Groundwater Monitoring Well
- Groundwater Flow Direction
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)

Notes

- Monitoring well coordinates and water level data (collected on June 11, 2019) provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (CEC, 2016) provided by AEP.
- Groundwater and river elevation units are feet above mean sea level (NAVD 88).

250 125 0 250 Feet

Potentiometric Surface Map - Uppermost Aquifer
June 2019

Mitchell Power Generation Plant - Bottom Ash Pond
Marshall County, West Virginia

Geosyntec consultants

Columbus, Ohio | 2019/12/11

Figure **3**

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APPENDIX 2 - Statistical Analyses

The January and July 2019 statistical analysis summaries concluding that no SSLs were identified at the CCR unit follow.

STATISTICAL ANALYSIS SUMMARY
BOTTOM ASH POND
Mitchell Plant
Moundsville, West Virginia

Submitted to

1 Riverside Plaza
Columbus, Ohio 43215-2372

Submitted by

Geosyntec consultants

engineers | scientists | innovators

941 Chatham Lane
Suite 103
Columbus, Ohio 43221

January 8, 2019

CHA8473

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

AEP	American Electric Power
BAP	Bottom Ash Pond
CCR	Coal Combustion Residuals
CCV	Continuing Calibration Verification
CFR	Code of Federal Regulations
GWPS	Groundwater Protection Standard
LCL	Lower Confidence Limit
LFB	Laboratory Fortified Blanks
LRB	Laboratory Reagent Blanks
MCL	Maximum Contaminant Level
NELAP	National Environmental Laboratory Accreditation Program
QA	Quality Assurance
QC	Quality Control
RSL	Regional Screening Level
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
TDS	Total Dissolved Solids
UPL	Upper Prediction Limit
USEPA	United States Environmental Protection Agency
UTL	Upper Tolerance Limit

SECTION 1

EXECUTIVE SUMMARY

In accordance with the United States Environmental Protection Agency's (USEPA's) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (40 CFR 257.90-257.98, "CCR rule"), groundwater monitoring has been conducted at the Bottom Ash Pond (BAP), an existing CCR unit at the Mitchell Power Plant located in Moundsville, West Virginia.

Based on detection monitoring conducted in 2017, statistically significant increases (SSIs) over background were concluded for boron, calcium, chloride, and total dissolved solids (TDS) at the BAP. An alternate source was not identified at the time, so two assessment monitoring events were conducted at the BAP in 2018, in accordance with 40 CFR 257.95.

Groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues were identified which would impact the usability of the data.

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. Groundwater protection standards (GWPSs) were established for the Appendix IV parameters. Confidence intervals were calculated for Appendix IV parameters at the compliance wells to assess whether Appendix IV parameters were present at a statistically significant level (SSL) above the GWPS. No SSLs were identified, but Appendix III concentrations for boron, calcium, chloride, sulfate, and TDS remained above background. Thus, either the unit will remain in assessment monitoring or an alternative source demonstration will be conducted to evaluate if the unit can return to detection monitoring. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

SECTION 2

BOTTOM ASH POND EVALUATION

2.1 Data Validation & QA/QC

During the assessment monitoring program, two sets of samples were collected for analysis from each upgradient and downgradient well to meet the requirements of 40 CFR 257.95(b) and 257.95(d)(1). Samples from both sampling events were analyzed for the Appendix III and Appendix IV parameters. A summary of data collected during assessment monitoring may be found in Table 1.

Chemical analysis was completed by an analytical laboratory certified by the National Environmental Laboratory Accreditation Program (NELAP). Quality assurance and quality control (QA/QC) samples completed by the analytical laboratory included the use of laboratory reagent blanks (LRBs), continuing calibration verification (CCV) samples, and laboratory fortified blanks (LFBs).

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.9.5 statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues were noted which would impact data usability.

2.2 Statistical Analysis

Statistical analyses for the BAP were conducted in accordance with the January 2017 *Statistical Analysis Plan* (AEP, 2017), except where noted below. Time series plots and results for all completed statistical tests are provided in Attachment B.

The data obtained to meet the requirements of 40 CFR 257.95(b) and 257.95(d)(1) were screened for potential outliers. No outliers were identified. Outliers identified from the background and detection monitoring events conducted through January 2018 were summarized in a previous report (Geosyntec, 2018).

2.2.1 Establishment of GWPSs

A GWPS was established for each Appendix IV parameter in accordance with 40 CFR 257.95(h) and the *Statistical Analysis Plan* (AEP, 2017). The established GWPS was determined to be the greater value of the background concentration and the maximum contaminant level (MCL) or regional screening level (RSL) for each Appendix IV parameter. To determine background concentrations, an upper tolerance limit (UTL) was calculated using pooled data from the background wells collected during the background monitoring and assessment monitoring events.

Generally, tolerance limits were calculated parametrically with 95% coverage and 95% confidence. Non-parametric tolerance limits were calculated for cadmium, fluoride, mercury, selenium, and thallium due to apparent non-normal distributions. Tolerance limits and the final GWPSs are summarized in Table 2.

2.2.2 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, non-parametric confidence limits were calculated in some cases (e.g., when the data did not appear to be normally distributed or when the non-detect frequency was too high). An SSL was concluded if the lower confidence limit (LCL) exceeded the GWPS (i.e., if the entire confidence interval exceeded the GWPS). Calculated confidence limits are shown in Attachment B.

No SSLs were identified at the Mitchell BAP.

2.2.3 Evaluation of Potential Appendix III SSIs

The CCR rule allows CCR units to move from assessment monitoring to detection monitoring if all Appendix III and Appendix IV parameters were at or below background levels for two consecutive sampling events [40 CFR 257.95(e)]. Since no Appendix IV SSLs were identified, Appendix III results were analyzed to assess whether concentrations of Appendix III parameters at the compliance wells exceeded background concentrations.

Prediction limits were calculated for the Appendix III parameters to represent background values. As described in the January 2018 *Statistical Analysis Summary* report (Geosyntec, 2018), intrawell tests were used to evaluate potential SSIs for fluoride and sulfate, whereas interwell tests were used to evaluate potential SSIs for boron, calcium, chloride, pH, and TDS.

Prediction limits for the interwell tests were recalculated using data collected during the 2018 assessment monitoring events. Twelve data points (i.e., two samples from six background wells) were added to the background dataset for each interwell test. New data were tested for outliers prior to being added to the background dataset. The updated prediction limits were calculated for a one-of-two retesting procedure, as during detection monitoring. The values of the updated prediction limits were similar to the values of the prediction limits calculated during detection monitoring. The revised prediction limits were used to evaluate potential SSIs for boron, calcium, chloride, pH, and TDS.

For the intrawell tests, limited data made it possible to add only two data points (i.e., two samples from each compliance well) to each background dataset. Because two sample results are insufficient to compare against the existing background dataset, the prediction limits were not updated for the intrawell tests at this time. The prediction limits calculated during detection monitoring were used to evaluate potential SSIs for fluoride and sulfate.

Data collected during the second assessment monitoring event from each compliance well were compared to the prediction limits to evaluate SSIs. The results from this event and the prediction limits are summarized in Table 3. The following exceedances of the upper prediction limits (UPLs) were noted:

- Boron concentrations exceeded the interwell UPL of 1.36 mg/L at MW-1505 (8.00 mg/L for both events), MW-1506 (5.73 mg/L and 5.91 mg/L), MW-1507 (10.4 mg/L and 9.29 mg/L), MW-1509 (6.81 mg/L and 6.97 mg/L), and MW-1510 (10.3 mg/L and 9.13 mg/L).

- Calcium concentrations exceeded the interwell UPL of 241 mg/L at MW-1505 (282 mg/L and 274 mg/L), MW-1506 (275 mg/L and 270 mg/L), MW-1507 (296 mg/L and 272 mg/L), MW-1509 (272 mg/L and 279 mg/L), and MW-1510 (292 mg/L and 268 mg/L).

- Chloride concentrations exceeded the interwell UPL of 238 mg/L at MW-1505 (289 mg/L and 284 mg/L), MW-1506 (382 mg/L and 369 mg/L), MW-1507 (400 mg/L and 331 mg/L), MW-1509 (324 mg/L and 323 mg/L), and MW-1510 (322 mg/L and 334 mg/L).

- Sulfate concentrations exceeded the intrawell UPL of 351 mg/L at MW-1505 (401 mg/L and 383 mg/L), the intrawell UPL of 345 mg/L at MW-1506 (347 mg/L and 349 mg/L), the intrawell UPL of 450 mg/L at MW-1509 (488 mg/L and 465 mg/L), and the intrawell UPL of 399 mg/L at MW-1510 (428 mg/L).

- TDS concentrations exceeded the interwell UPL of 1193 mg/L at MW-1505 (1220 mg/L and 1520 mg/L), MW-1506 (1300 mg/L and 1590 mg/L), MW-1507 (1390 mg/L and 1430 mg/L), MW-1509 (1390 mg/L and 1540 mg/L), and MW-1510 (1290 mg/L and 1550 mg/L).

Based on these results, concentrations of Appendix III parameters exceeded background levels at compliance wells at the Mitchell BAP during assessment monitoring. As a result, the Mitchell BAP CCR unit will remain in assessment monitoring.

2.3 Conclusions

Two assessment monitoring events were conducted in 2018 in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, with no QA/QC issues identified that impacted data usability. A review of outliers identified no potential outliers in the 2018 data. GWPSs were established for the Appendix IV parameters. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval exceeded the GWPS. No SSLs were identified.

The Appendix III results were evaluated to assess whether concentrations of Appendix III parameters exceeded background levels. Interwell tests were used to evaluate potential SSIs for boron, calcium, chloride, pH and TDS, and intrawell tests were used to evaluate potential SSIs for fluoride and sulfate. The prediction limits for the interwell tests were updated with additional data

collected from the background wells. Prediction limits were recalculated using a one-of-two retesting procedure. The prediction limits calculated during detection monitoring were used for the intrawell tests. Boron, calcium, chloride, sulfate, and TDS results exceeded background levels.

Based on this evaluation, the Mitchell BAP CCR unit will remain in assessment monitoring.

SECTION 3

REFERENCES

American Electric Power (AEP). 2017. Statistical Analysis Plan – Mitchell Plant. January 2017.

Geosyntec Consultants (Geosyntec). 2018. Statistical Analysis Summary – Bottom Ash Pond, Mitchell Plant, Moundsville, West Virginia. January 15, 2018.

TABLES

Table 1 – Groundwater Data Summary
Mitchell – Bottom Ash Pond

Geosyntec Consultants, Inc.

Parameter	Unit	MW-1504		MW-1505		MW-1506		MW-1507		MW-1508		MW-1509		MW-1510	
		4/11/2018	8/22/2018	4/11/2018	8/22/2018	4/11/2018	8/22/2018	4/11/2018	8/21/2018	4/11/2018	8/21/2018	4/11/2018	8/21/2018	4/12/2018	8/21/2018
Antimony	µg/L	0.0200 J	0.0500 J	0.0300 J	0.0500 J	0.0300 J	0.0600	0.0700	0.0800	0.0400 J	0.0600	0.0300 J	0.0900	0.0300 J	0.0300 J
Arsenic	µg/L	0.360	0.280	0.440	0.380	0.730	0.460	1.67	0.470	1.04	0.440	0.420	0.330	0.420	0.370
Barium	µg/L	36.9	37.9	46.0	48.0	55.4	54.6	71.2	62.1	46.4	40.1	52.8	53.8	43.3	42.6
Beryllium	µg/L	0.00500 J	0.02 U	0.00600 J	0.00700 J	0.0210	0.0100 J	0.0620	0.0100 J	0.0400	0.0100 J	0.00500 J	0.02 U	0.0100 J	0.00800 J
Boron	mg/L	0.0630	0.0960	8.00	8.00	5.73	5.91	10.4	9.29	0.806	0.952	6.81	6.97	10.4	9.13
Cadmium	µg/L	0.0300	0.0300	0.0300	0.0300	0.0200 J	0.0200	0.0400	0.0300	0.0400	0.0400	0.0100 J	0.00800 J	0.00500 J	0.00600 J
Calcium	mg/L	204	230	282	274	275	270	296	272	229	219	272	279	292	268
Chloride	mg/L	83.6	91.9	289	284	382	369	400	331	200	204	324	323	322	334
Chromium	µg/L	0.562	0.331	1.16	1.40	2.01	2.47	21.3	2.00	1.40	0.691	0.657	0.777	27.4	5.64
Cobalt	µg/L	0.114	0.0930	0.151	0.257	0.476	0.581	1.45	0.426	1.03	0.678	0.215	0.132	0.217	0.383
Combined Radium	pCi/L	0.349	1.05	0.582	0.576	0.592	1.72	0.701	1.42	0.236	0.315	0.792	0.736	0.0940	1.24
Fluoride	mg/L	0.190	0.200	0.20 U	0.0200 J	0.02 U	0.0500 J	0.0600 J	0.0700	0.0800	0.0800	0.150	0.140	0.20 U	0.0900
Lead	µg/L	0.0520	0.0370	0.116	0.150	0.477	0.319	1.56	0.308	1.11	0.384	0.0620	0.0350	0.119	0.133
Lithium	mg/L	0.00400	0.00600	0.00500	0.00800	0.00900	0.0100	0.0120	0.0100	0.00800	0.00700	0.00900	0.0120	0.00600	0.0110
Mercury	µg/L	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.00600	0.00200 J	0.01 U	0.005 U	0.00200 J	0.005 U	0.00200 J	0.005 U
Molybdenum	µg/L	0.410	0.330	0.670	1.35	1.23	0.500	2.73	0.870	0.450	0.250	0.340	0.320	3.30	0.430
Selenium	µg/L	0.0400 J	0.0400 J	0.700	0.400	0.100	0.0900 J	0.300	0.0800 J	0.700	0.400	0.200	0.300	0.100	0.100
Total Dissolved Solids	mg/L	842	936	1220	1520	1300	1590	1390	1430	1050	1080	1390	1540	1290	1550
Sulfate	mg/L	291	372	401	383	347	349	347	323	302	313	488	465	398	428
Thallium	µg/L	0.0300 J	0.0300 J	0.0650	0.0700	0.0500 J	0.0500	0.0590	0.0500 J	0.0500 J	0.0300 J	0.0570	0.0300 J	0.0200 J	0.0100 J
pH	SU	6.98	7.34	7.02	7.33	7.08	7.40	6.93	7.23	6.90	7.17	6.92	7.24	6.95	7.30

Notes:
µg/L: micrograms per liter
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
U: Parameter was not present in concentrations above method detection limit and is reported as the reporting limit
J: Estimated value. Parameter was detected in concentrations below the reporting limit

Table 2: Groundwater Protection Standards
Mitchell Plant - Bottom Ash Pond

Constituent Name	MCL	RSL	Background Limit
Antimony, Total (mg/L)	0.006		0.000091
Arsenic, Total (mg/L)	0.01		0.0018
Barium, Total (mg/L)	2		0.06
Beryllium, Total (mg/L)	0.004		0.000077
Cadmium, Total (mg/L)	0.005		0.00009
Chromium, Total (mg/L)	0.1		0.0024
Cobalt, Total (mg/L)	n/a	0.006	0.0032
Combined Radium, Total (pCi/L)	5		2.41
Fluoride, Total (mg/L)	4		0.25
Lead, Total (mg/L)	n/a	0.015	0.0046
Lithium, Total (mg/L)	n/a	0.04	0.016
Mercury, Total (mg/L)	0.002		0.000008
Molybdenum, Total (mg/L)	n/a	0.1	0.002
Selenium, Total (mg/L)	0.05		0.0009
Thallium, Total (mg/L)	0.002		0.00011

Notes:
Grey cell indicates calculated UTL is higher than MCL.
MCL = Maximum Contaminant Level
RSL = Regional Screening Level
Calculated UTL (Upper Tolerance Limit) represents site-specific background values.
The higher of the calculated UTL or MCL/RSL is used as the GWPS.

Table 3: Appendix III Data Evaluation
Mitchell Plant - Bottom Ash Pond

Geosyntec Consultants, Inc.

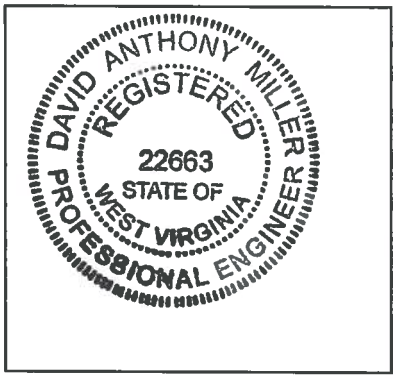
Parameter	Units	Description	MW-1505		MW-1506		MW-1507		MW-1509		MW-1510	
			4/11/2018	8/22/2018	4/11/2018	8/22/2018	4/11/2018	8/21/2018	4/11/2018	8/21/2018	4/12/2018	8/21/2018
Boron	mg/L	Interwell Background Value (UPL)	1.36									
		Assessment Monitoring Result	**8.00**	**8.00**	**5.73**	**5.91**	**10.4**	**9.29**	**6.81**	**6.97**	**10.3**	**9.13**
Calcium	mg/L	Interwell Background Value (UPL)	241									
		Assessment Monitoring Result	**282**	**274**	**275**	**270**	**296**	**272**	**272**	**279**	**292**	**268**
Chloride	mg/L	Interwell Background Value (UPL)	238									
		Assessment Monitoring Result	**289**	**284**	**382**	**369**	**400**	**331**	**324**	**323**	**322**	**334**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.200		0.200		0.200		0.160		0.200	
		Assessment Monitoring Result	0.050	0.020	0.050	0.050	0.060	0.070	0.150	0.140	0.050	0.090
pH	SU	Interwell Background Value (UPL)	7.35									
		Interwell Background Value (LPL)	6.84									
		Assessment Monitoring Result	7.02	7.33	7.08	**7.40**	6.93	7.23	6.92	7.24	6.95	7.30
Sulfate	mg/L	Intrawell Background Value (UPL)	351		345		377		450		399	
		Assessment Monitoring Result	**401**	**383**	**347**	**349**	347	323	**488**	**465**	398	**428**
Total Dissolved Solids	mg/L	Interwell Background Value (UPL)	1193									
		Assessment Monitoring Result	**1220**	**1520**	**1300**	**1590**	**1390**	**1430**	**1390**	**1540**	**1290**	**1550**

Notes:
UPL: Upper prediction limit
LPL: Lower prediction limit
Bold values exceed the background value.
Background values are shaded gray.
Based on a 1-of-2 resampling, a statistically significant increase (SSI)
is only identified when both samples in the detection monitoring

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that the selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Mitchell Bottom Ash Pond CCR management area and that the requirements of 40 CFR 257.93(f) have been met.



DAVID ANTHONY MILLER
Printed Name of Licensed Professional Engineer

David Anthony Miller
Signature

22663	WEST VIRGWIA	01.08.19
License Number	Licensing State	Date

ATTACHMENT B

Statistical Analysis Output

GROUNDWATER STATS CONSULTING

November 12, 2018

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
150 E. Wilson Bridge Rd., #232
Worthington, OH 43085

Dear Ms. Kreinberg,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the evaluation of groundwater data for American Electric Power Company's Mitchell Bottom Ash Pond. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015) as well as with the USEPA Unified Guidance (2009).

Sampling at each of the wells below began at Mitchell Bottom Ash Pond for the CCR program in 2016. The monitoring well network, as provided by Geosyntec Consultants, consists of the following: upgradient wells MW-1504 and MW-1508; and downgradient wells MW-1505, MW-1506, MW-1507, MW-1509 and MW-1510.

Data were sent electronically, and the statistical analysis was conducted according to the Statistical Analysis Plan and screening evaluation prepared by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance, and Senior Advisor to GSC.

The CCR program consists of the following constituents:

- **Appendix III** (Detection Monitoring) **-** boron, calcium, chloride, fluoride, pH, sulfate, and TDS; and
- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium.

Time series plots for Appendix III and IV parameters are provided for all wells and constituents; and are used to evaluate concentrations over the entire record. Values in background which have previously been flagged as outliers may be seen in a lighter font and disconnected symbol on the graphs. Additionally, a summary of flagged values follows this letter.

Evaluation of Appendix III Parameters

Interwell prediction limits combined with a 1-of-2 resample plan were constructed for boron, calcium, chloride, pH, and TDS; and intrawell prediction limits combined with a 1-of-2 resample plan were constructed for fluoride and sulfate. The statistical method for applicable for each parameter was determined based on the results of the screening analysis performed in December 2017.

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered a false positive result and, therefore, no further action is necessary. SSIs were noted for several of the Appendix III parameters and the results of those findings may be found in the Prediction Limit Summary tables following this letter.

When a statistically significant increase is identified, the data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether data are statistically increasing, decreasing or stable. Several statistically significant decreasing trends were noted, but no statistically significant increasing trends were found except for sulfate in downgradient well MW_1509. The Trend Test Summary Table follows this letter.

Appendix IV – Assessment Monitoring Program

Evaluation of Appendix IV Parameters

Parametric tolerance limits were used to calculate background limits from pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage to determine the Alternate Contaminant Level (ACL). The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. These limits were compared to the Maximum Contaminant Levels

(MCLs) and Regional Screening Levels (RSLs) in the Groundwater Protection Standards (GWPS) table following this letter to determine the highest limit for use as the GWPS in the Confidence Interval comparisons.

Confidence intervals were then constructed on downgradient wells for each of the Appendix IV parameters using the highest limit of either the MCL, RSL, or ACL as discussed above. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. No exceedances were noted at any of the downgradient wells. A summary of the confidence interval results follows this letter.

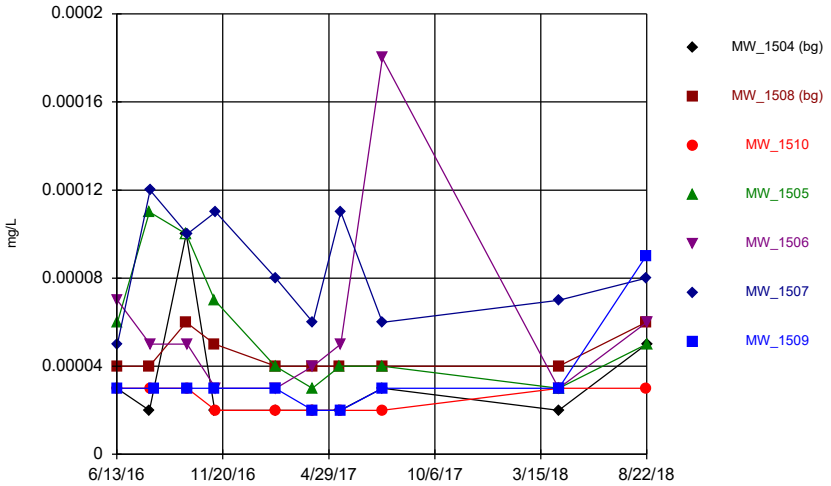
Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Mitchell Bottom Ash Pond. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,

Kristina L. Rayner
Groundwater Statistician

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

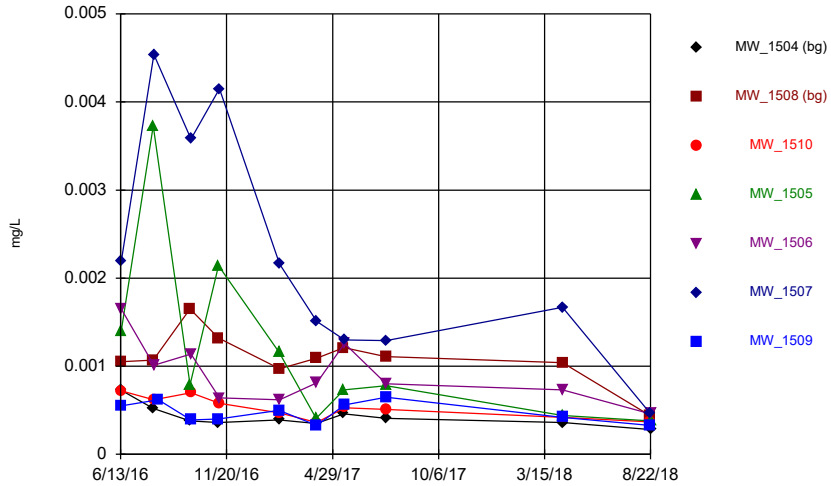
Time Series



Constituent: Antimony, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

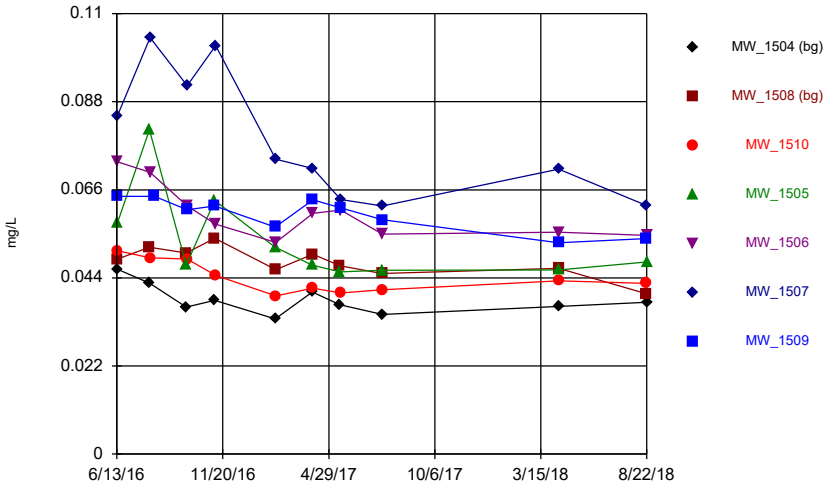
Time Series



Constituent: Arsenic, Total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

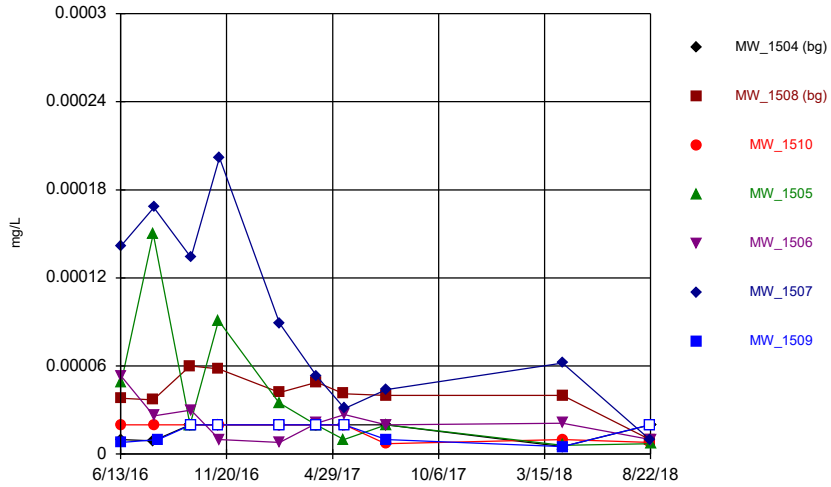
Time Series



Constituent: Barium, Total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

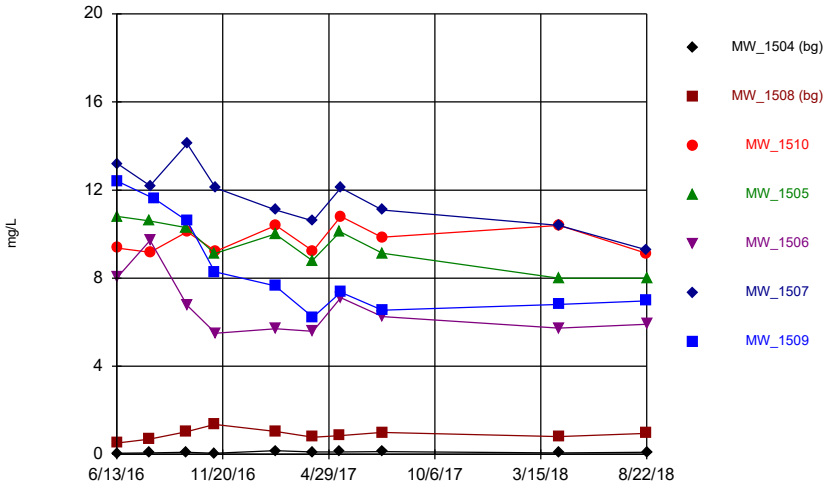
Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Beryllium, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

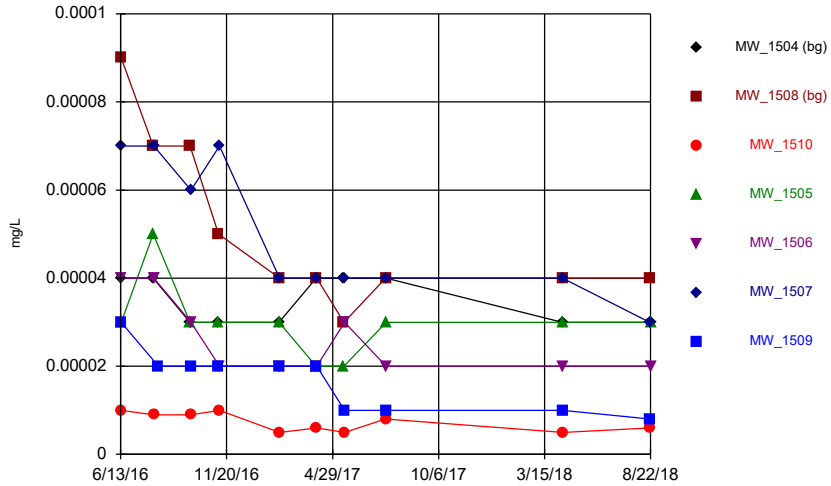
Time Series



Constituent: Boron, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

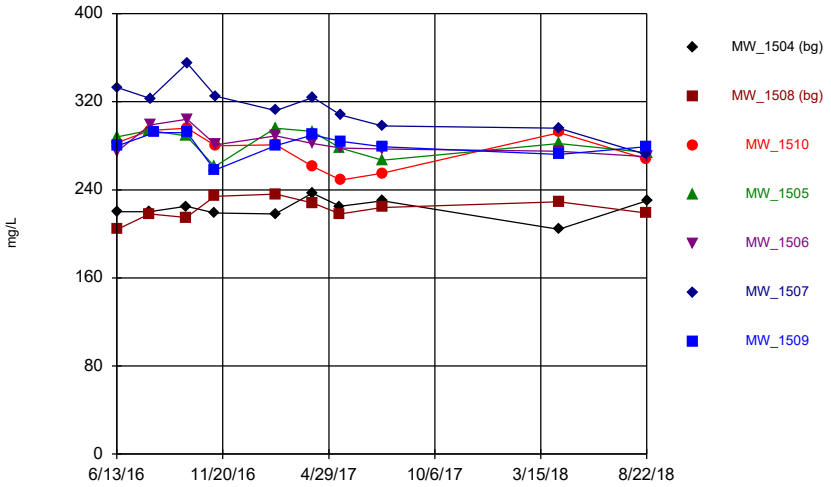
Time Series



Constituent: Cadmium, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

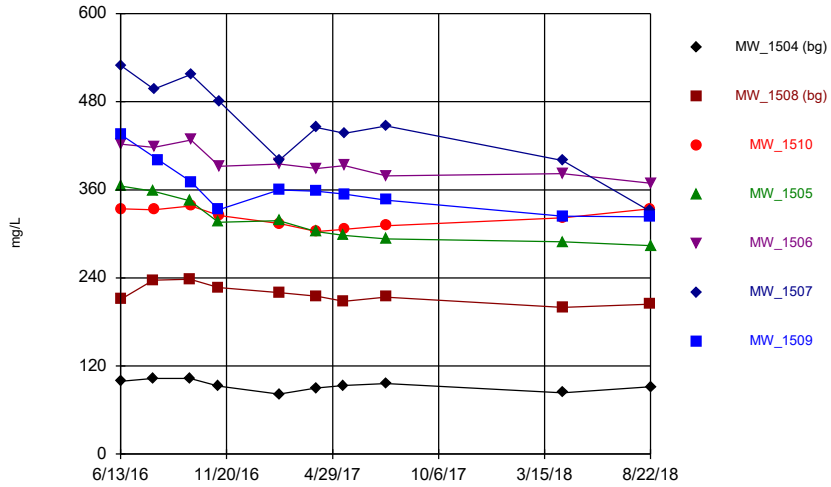
Time Series



Constituent: Calcium, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

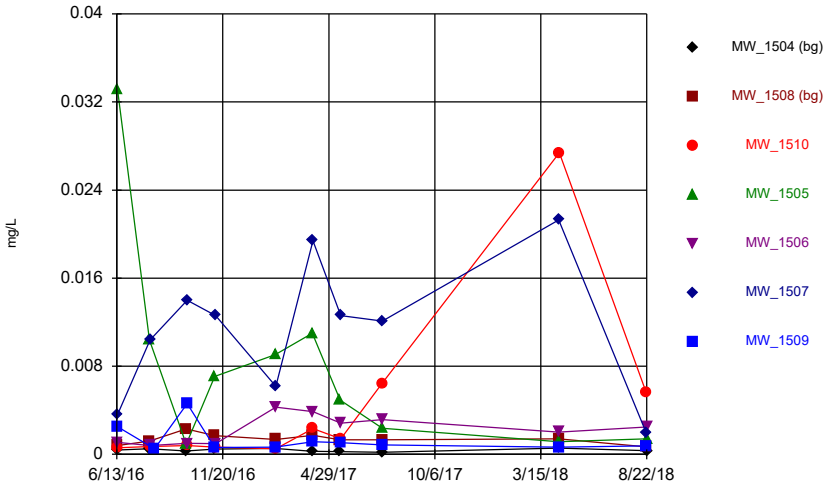
Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Time Series



Constituent: Chloride, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

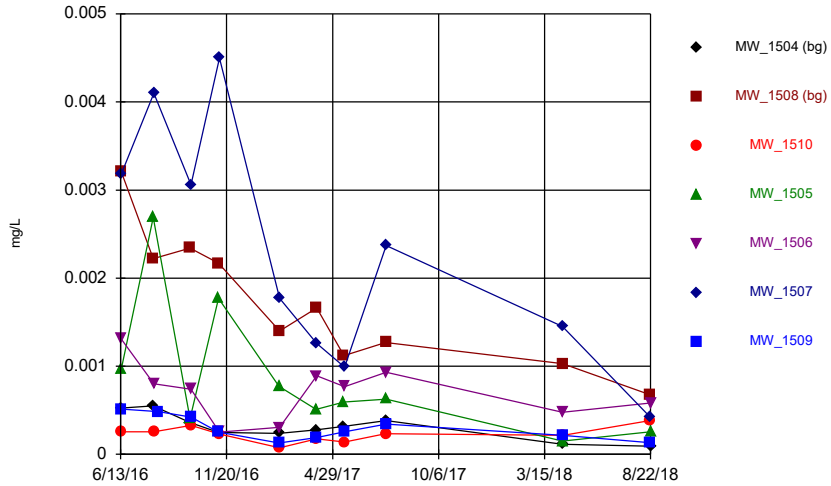
Time Series



Constituent: Chromium, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

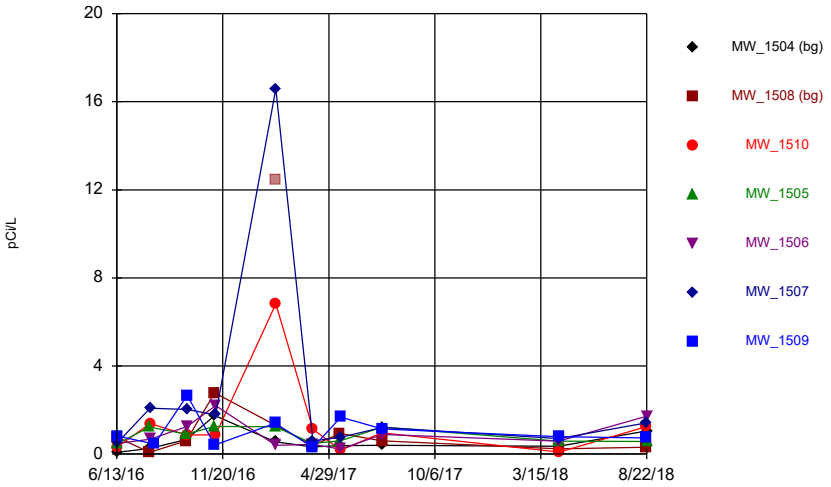
Time Series



Constituent: Cobalt, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

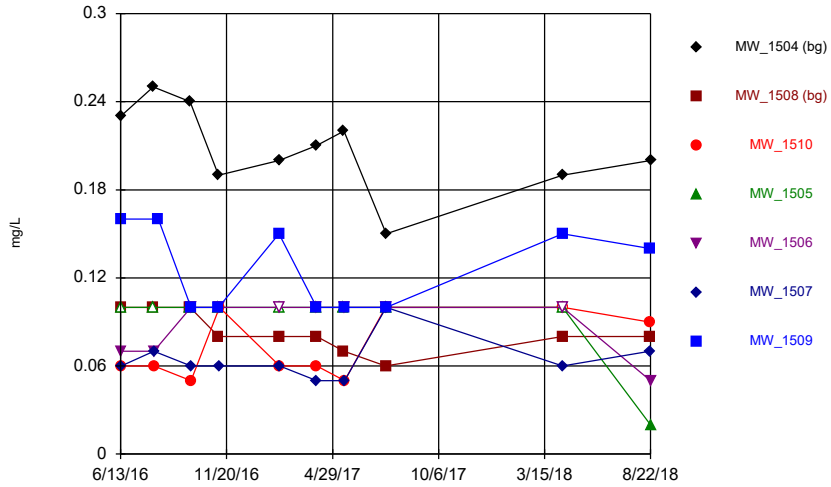
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 11/11/2018 2:37 PM View: Time Series - All Well
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

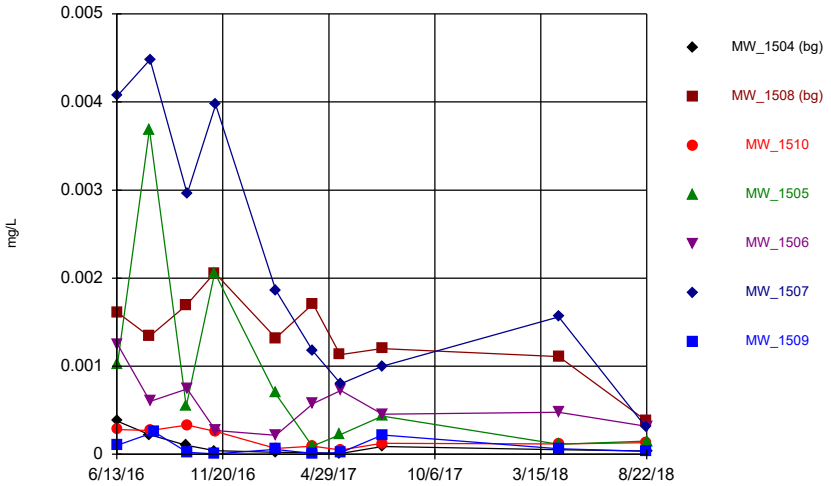
Time Series



Constituent: Fluoride, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

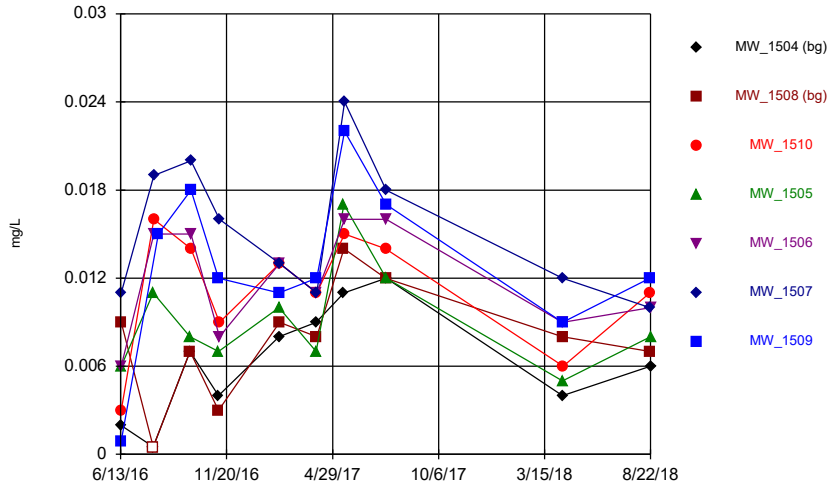
Time Series



Constituent: Lead, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

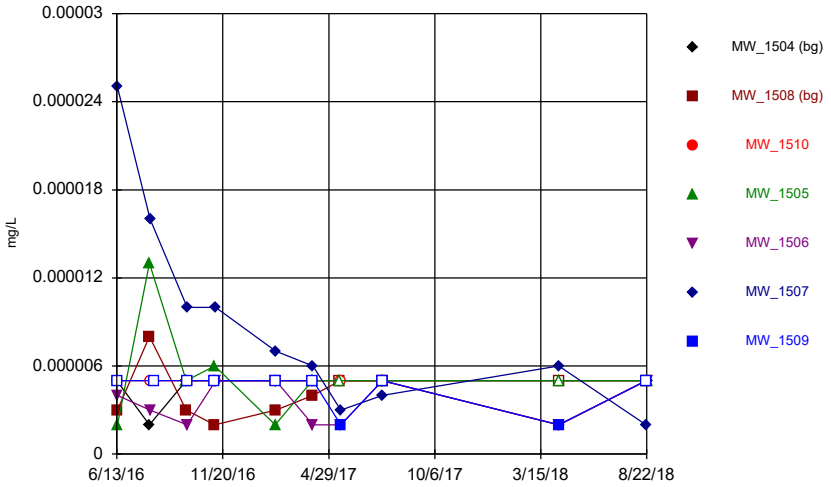
Time Series



Constituent: Lithium, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

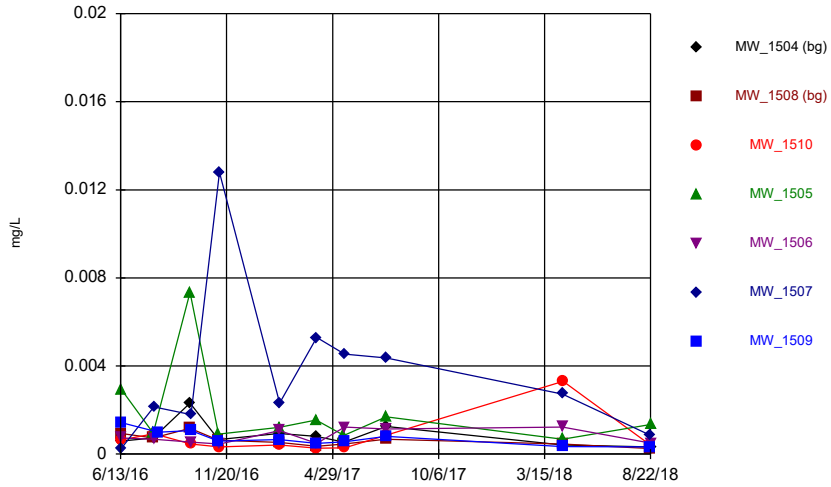
Time Series



Constituent: Mercury, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

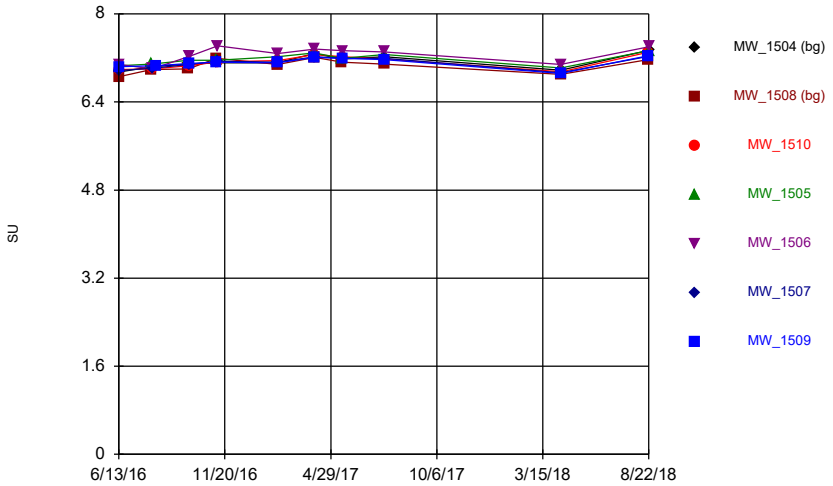
Time Series



Constituent: Molybdenum, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

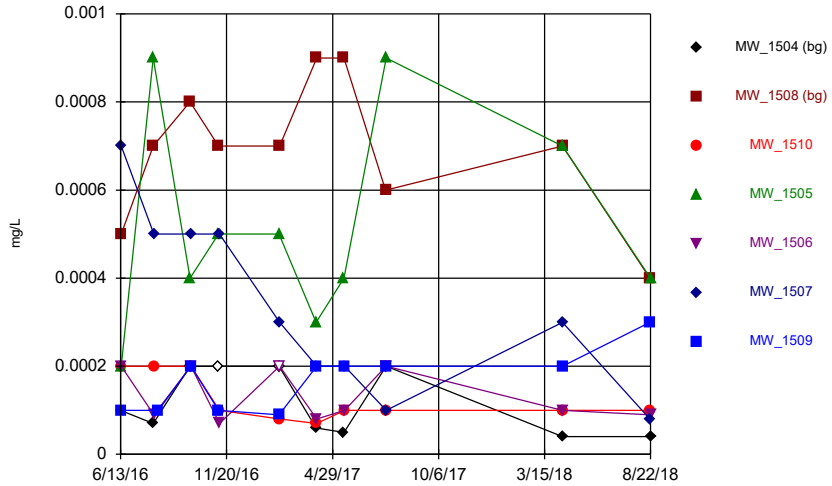
Time Series



Constituent: pH, field Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

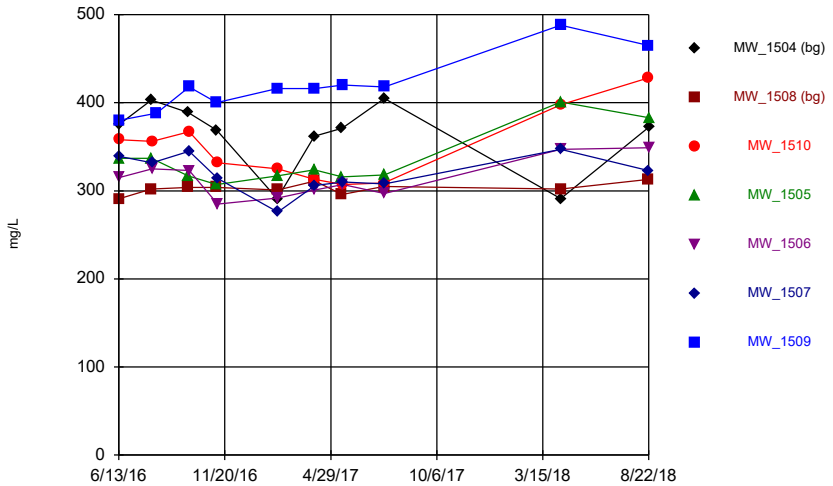
Time Series



Constituent: Selenium, Total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

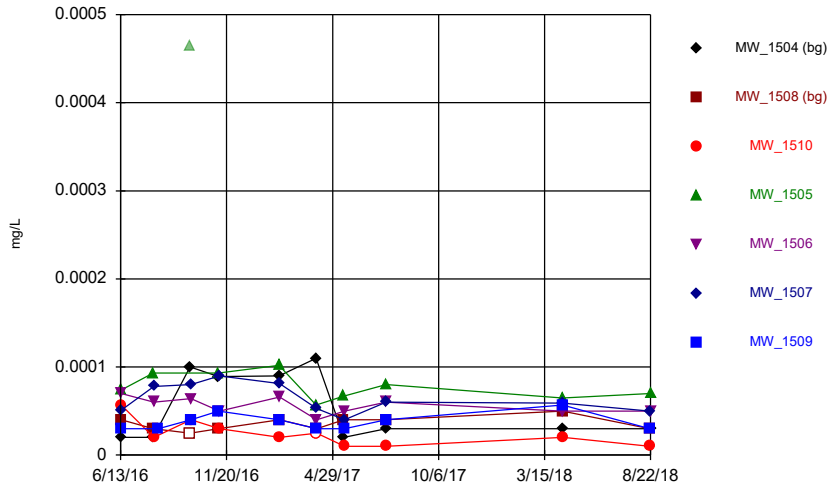
Time Series



Constituent: Sulfate, total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

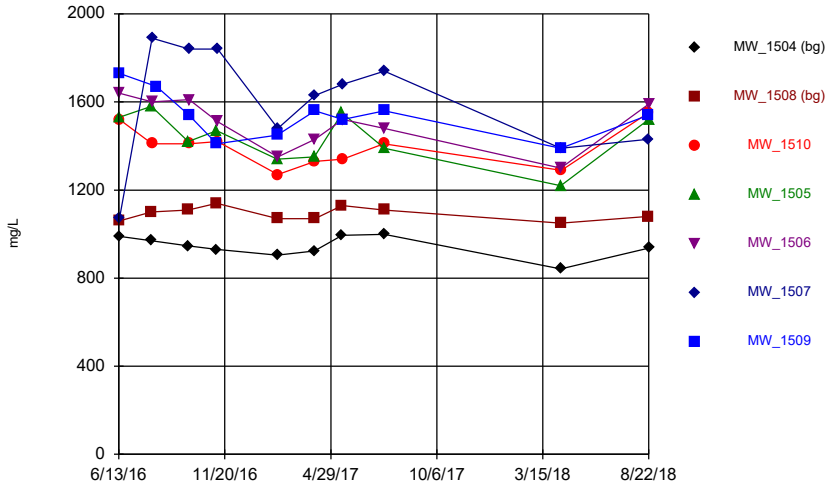
Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium, Total Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:37 PM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Interwell Prediction Limit Summary Table - Significant Results

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 11/11/2018, 2:12 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev	%NDs	ND Adj.	Transform	Alpha	Method
Boron, total (mg/L)	**MW_1510**	**1.36**	**n/a**	**8/21/2018**	**9.13**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Boron, total (mg/L)	**MW_1505**	**1.36**	**n/a**	**8/22/2018**	**8**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Boron, total (mg/L)	**MW_1506**	**1.36**	**n/a**	**8/22/2018**	**5.91**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Boron, total (mg/L)	**MW_1507**	**1.36**	**n/a**	**8/21/2018**	**9.29**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Boron, total (mg/L)	**MW_1509**	**1.36**	**n/a**	**8/21/2018**	**6.97**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Calcium, total (mg/L)	**MW_1510**	**241.2**	**n/a**	**8/21/2018**	**268**	**Yes**	**20**	**222.7**	**9.069**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Calcium, total (mg/L)	**MW_1505**	**241.2**	**n/a**	**8/22/2018**	**274**	**Yes**	**20**	**222.7**	**9.069**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Calcium, total (mg/L)	**MW_1506**	**241.2**	**n/a**	**8/22/2018**	**270**	**Yes**	**20**	**222.7**	**9.069**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Calcium, total (mg/L)	**MW_1507**	**241.2**	**n/a**	**8/21/2018**	**272**	**Yes**	**20**	**222.7**	**9.069**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Calcium, total (mg/L)	**MW_1509**	**241.2**	**n/a**	**8/21/2018**	**279**	**Yes**	**20**	**222.7**	**9.069**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Chloride, total (mg/L)	**MW_1510**	**238**	**n/a**	**8/21/2018**	**334**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Chloride, total (mg/L)	**MW_1505**	**238**	**n/a**	**8/22/2018**	**284**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Chloride, total (mg/L)	**MW_1506**	**238**	**n/a**	**8/22/2018**	**369**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Chloride, total (mg/L)	**MW_1507**	**238**	**n/a**	**8/21/2018**	**331**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
Chloride, total (mg/L)	**MW_1509**	**238**	**n/a**	**8/21/2018**	**323**	**Yes**	**20**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.004024**	NP (normality) 1 of 2
pH, field (SU)	**MW_1506**	**7.352**	**6.838**	**8/22/2018**	**7.4**	**Yes**	**20**	**7.095**	**0.1256**	**0**	**None**	**No**	**0.000752**	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	**MW_1509**	**1193**	**n/a**	**8/21/2018**	**1540**	**Yes**	**20**	**1018**	**85.7**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	**MW_1510**	**1193**	**n/a**	**8/21/2018**	**1550**	**Yes**	**20**	**1018**	**85.7**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	**MW_1505**	**1193**	**n/a**	**8/22/2018**	**1520**	**Yes**	**20**	**1018**	**85.7**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	**MW_1506**	**1193**	**n/a**	**8/22/2018**	**1590**	**Yes**	**20**	**1018**	**85.7**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	**MW_1507**	**1193**	**n/a**	**8/21/2018**	**1430**	**Yes**	**20**	**1018**	**85.7**	**0**	**None**	**No**	**0.001504**	Param 1 of 2

Interwell Prediction Limit Summary Table - All Results

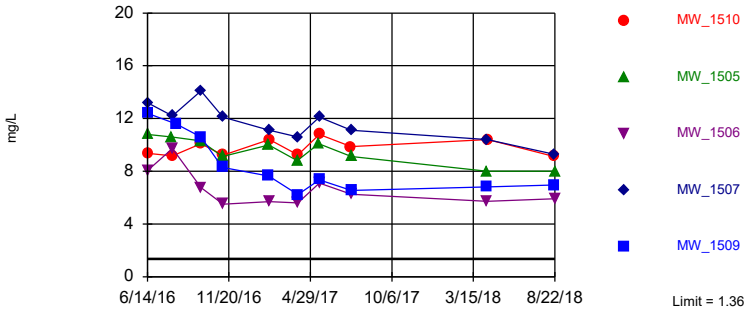
Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 11/11/2018, 2:12 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev	%NDs	ND Adj.	Transform	Alpha	Method
Boron, total (mg/L)	MW_1505	1.36	n/a	8/22/2018	8	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Boron, total (mg/L)	MW_1506	1.36	n/a	8/22/2018	5.91	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Boron, total (mg/L)	MW_1507	1.36	n/a	8/21/2018	9.29	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Boron, total (mg/L)	MW_1509	1.36	n/a	8/21/2018	6.97	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Boron, total (mg/L)	MW_1510	1.36	n/a	8/21/2018	9.13	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Calcium, total (mg/L)	MW_1505	241.2	n/a	8/22/2018	274	Yes	20	222.7	9.069	0	None	No	0.001504	Param 1 of 2
Calcium, total (mg/L)	MW_1506	241.2	n/a	8/22/2018	270	Yes	20	222.7	9.069	0	None	No	0.001504	Param 1 of 2
Calcium, total (mg/L)	MW_1507	241.2	n/a	8/21/2018	272	Yes	20	222.7	9.069	0	None	No	0.001504	Param 1 of 2
Calcium, total (mg/L)	MW_1509	241.2	n/a	8/21/2018	279	Yes	20	222.7	9.069	0	None	No	0.001504	Param 1 of 2
Calcium, total (mg/L)	MW_1510	241.2	n/a	8/21/2018	268	Yes	20	222.7	9.069	0	None	No	0.001504	Param 1 of 2
Chloride, total (mg/L)	MW_1505	238	n/a	8/22/2018	284	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Chloride, total (mg/L)	MW_1506	238	n/a	8/22/2018	369	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Chloride, total (mg/L)	MW_1507	238	n/a	8/21/2018	331	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Chloride, total (mg/L)	MW_1509	238	n/a	8/21/2018	323	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
Chloride, total (mg/L)	MW_1510	238	n/a	8/21/2018	334	Yes	20	n/a	n/a	0	n/a	n/a	0.004024	NP (normality) 1 of 2
pH, field (SU)	MW_1505	7.352	6.838	8/22/2018	7.33	No	20	7.095	0.1256	0	None	No	0.000752	Param 1 of 2
pH, field (SU)	MW_1506	7.352	6.838	8/22/2018	7.4	Yes	20	7.095	0.1256	0	None	No	0.000752	Param 1 of 2
pH, field (SU)	MW_1507	7.352	6.838	8/21/2018	7.23	No	20	7.095	0.1256	0	None	No	0.000752	Param 1 of 2
pH, field (SU)	MW_1509	7.352	6.838	8/21/2018	7.24	No	20	7.095	0.1256	0	None	No	0.000752	Param 1 of 2
pH, field (SU)	MW_1510	7.352	6.838	8/21/2018	7.3	No	20	7.095	0.1256	0	None	No	0.000752	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW_1505	1193	n/a	8/22/2018	1520	Yes	20	1018	85.7	0	None	No	0.001504	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW_1506	1193	n/a	8/22/2018	1590	Yes	20	1018	85.7	0	None	No	0.001504	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW_1507	1193	n/a	8/21/2018	1430	Yes	20	1018	85.7	0	None	No	0.001504	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW_1509	1193	n/a	8/21/2018	1540	Yes	20	1018	85.7	0	None	No	0.001504	Param 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW_1510	1193	n/a	8/21/2018	1550	Yes	20	1018	85.7	0	None	No	0.001504	Param 1 of 2

Exceeds Limit: MW_1510, MW_1505, MW 1506, MW 1507, MW 1509

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values. Annual per-constituent alpha = 0.03952. Individual comparison alpha = 0.004024 (1 of 2). Comparing 5 points to limit.

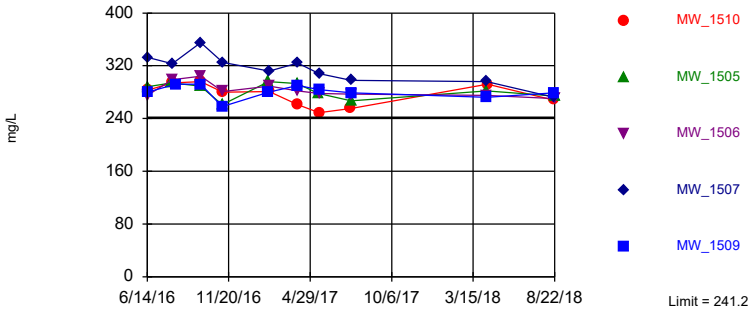
Constituent: Boron, total Analysis Run 11/11/2018 2:10 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit: MW_1510, MW_1505, MW 1506, MW 1507, MW 1509

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=222.7, Std. Dev.=9.069, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9422, critical = 0.868. Kappa = 2.048 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

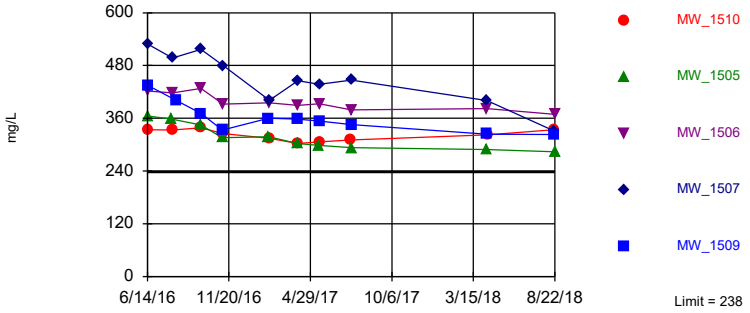
Constituent: Calcium, total Analysis Run 11/11/2018 2:10 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit: MW_1510, MW_1505, MW 1506, MW 1507, MW 1509

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values. Annual per-constituent alpha = 0.03952. Individual comparison alpha = 0.004024 (1 of 2). Comparing 5 points to limit.

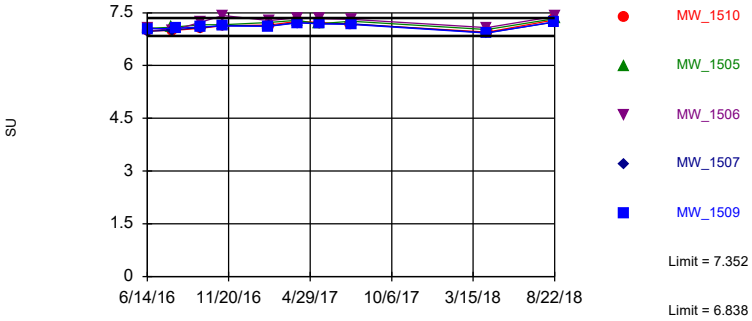
Constituent: Chloride, total Analysis Run 11/11/2018 2:10 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limits: MW_1506

Prediction Limit

Interwell Parametric



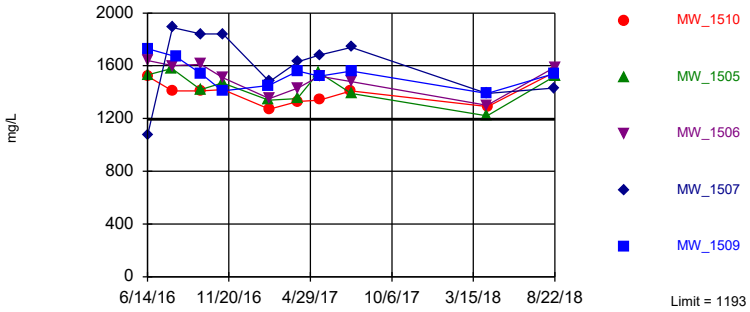
Background Data Summary: Mean=7.095, Std. Dev.=0.1256, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9864, critical = 0.868. Kappa = 2.048 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.000752. Comparing 5 points to limit.

Constituent: pH, field Analysis Run 11/11/2018 2:10 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Exceeds Limit: MW_1510, MW_1505, MW 1506, MW 1507, MW 1509

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=1018, Std. Dev.=85.7, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9477, critical = 0.868. Kappa = 2.048 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:10 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Intrawell Prediction Limit Summary - Significant Results

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 1/8/2019, 9:26 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj	Transform	Alpha	Method
Sulfate, total (mg/L)	**MW_1510**	**399.1**	**n/a**	**8/21/2018**	**428**	**Yes**	**8**	**333.4**	**23.98**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1505**	**350.5**	**n/a**	**8/22/2018**	**383**	**Yes**	**8**	**321.6**	**10.56**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1506**	**345.4**	**n/a**	**8/22/2018**	**349**	**Yes**	**8**	**305.6**	**14.51**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1509**	**449.9**	**n/a**	**8/21/2018**	**465**	**Yes**	**8**	**407**	**15.64**	**0**	**None**	**No**	**0.001504**	Param 1 of 2

Intrawell Prediction Limit Summary - All Results

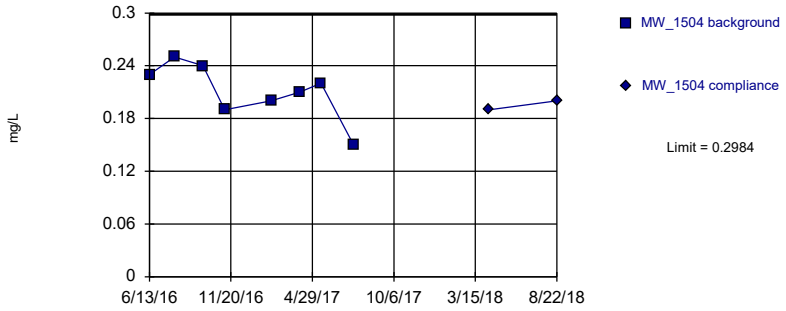
Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 1/8/2019, 9:26 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj	Transform	Alpha	Method
Fluoride, total (mg/L)	MW_1504	0.2984	n/a	8/22/2018	0.2	No	8	0.2113	0.03182	0	None	No	0.001504	Param 1 of 2
Fluoride, total (mg/L)	MW_1508	0.125	n/a	8/21/2018	0.08	No	8	0.08375	0.01506	0	None	No	0.001504	Param 1 of 2
Fluoride, total (mg/L)	MW_1510	0.2	n/a	8/21/2018	0.09	No	8	n/a	n/a	25	n/a	n/a	0.02144	NP (normality) 1 of 2
Fluoride, total (mg/L)	MW_1505	0.2	n/a	8/22/2018	0.02	No	8	n/a	n/a	100	n/a	n/a	0.02144	NP (NDs) 1 of 2
Fluoride, total (mg/L)	MW_1506	0.2	n/a	8/22/2018	0.05	No	8	n/a	n/a	75	n/a	n/a	0.02144	NP (NDs) 1 of 2
Fluoride, total (mg/L)	MW_1507	0.2	n/a	8/21/2018	0.07	No	8	n/a	n/a	12.5	n/a	n/a	0.02144	NP (normality) 1 of 2
Fluoride, total (mg/L)	MW_1509	0.16	n/a	8/21/2018	0.14	No	8	n/a	n/a	0	n/a	n/a	0.02144	NP (normality) 1 of 2
Sulfate, total (mg/L)	MW_1504	468.9	n/a	8/22/2018	372	No	8	370.6	35.86	0	None	No	0.001504	Param 1 of 2
Sulfate, total (mg/L)	MW_1508	318.3	n/a	8/21/2018	313	No	8	301.8	6.042	0	None	No	0.001504	Param 1 of 2
Sulfate, total (mg/L)	**MW_1510**	**399.1**	**n/a**	**8/21/2018**	**428**	**Yes**	**8**	**333.4**	**23.98**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1505**	**350.5**	**n/a**	**8/22/2018**	**383**	**Yes**	**8**	**321.6**	**10.56**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1506**	**345.4**	**n/a**	**8/22/2018**	**349**	**Yes**	**8**	**305.6**	**14.51**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	MW_1507	376.9	n/a	8/21/2018	323	No	8	316.3	22.13	0	None	No	0.001504	Param 1 of 2
Sulfate, total (mg/L)	**MW_1509**	**449.9**	**n/a**	**8/21/2018**	**465**	**Yes**	**8**	**407**	**15.64**	**0**	**None**	**No**	**0.001504**	Param 1 of 2

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2113, Std. Dev.=0.03182, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9517, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Fluoride, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell

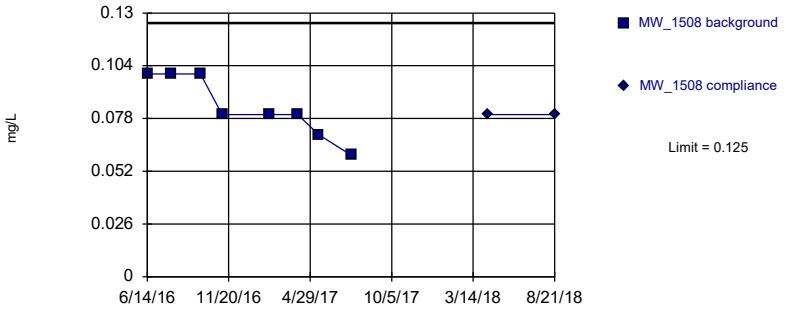
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.08375, Std. Dev.=0.01506, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8711, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Fluoride, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

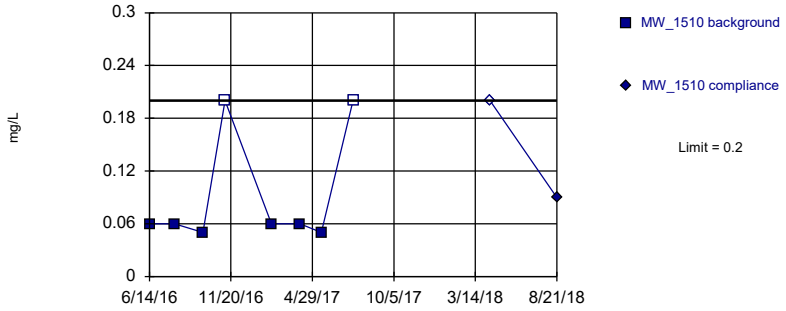
Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 25% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Fluoride, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

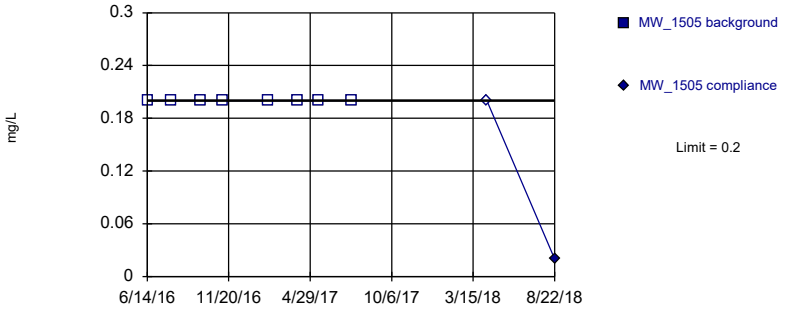
Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Fluoride, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell

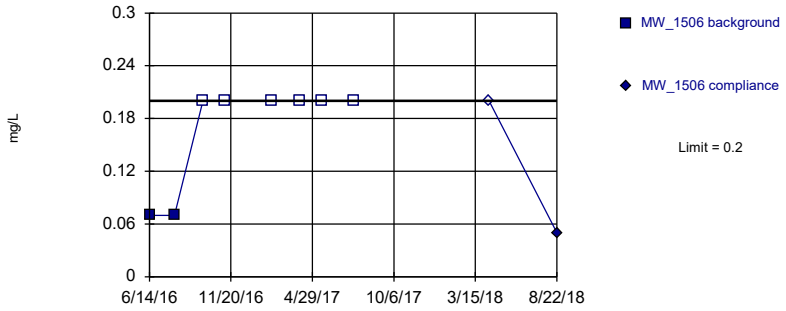
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

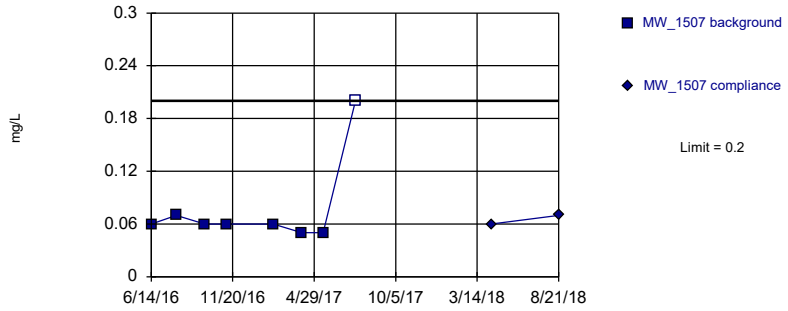
Constituent: Fluoride, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 12.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

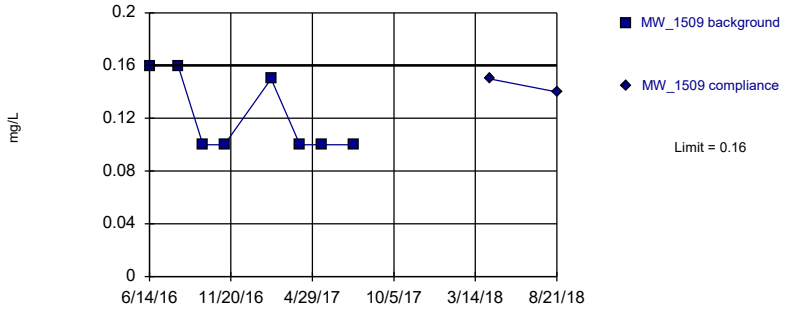
Constituent: Fluoride, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

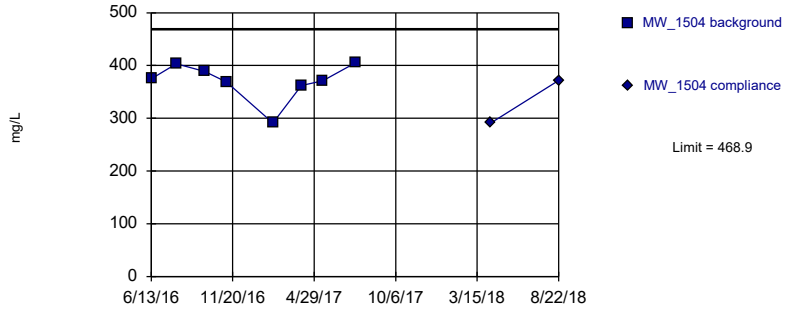
Constituent: Fluoride, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Intrawell Parametric



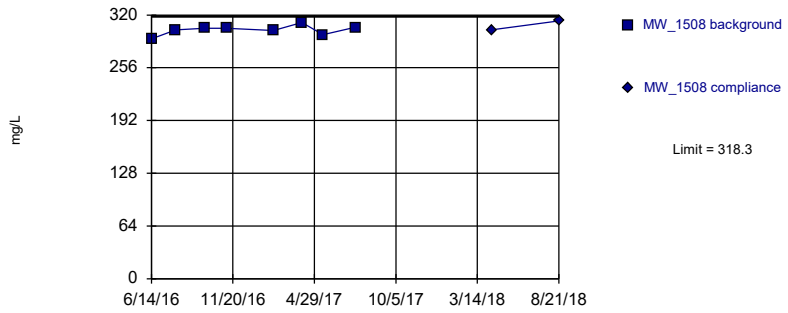
Background Data Summary: Mean=370.6, Std. Dev.=35.86, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8152, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=301.8, Std. Dev.=6.042, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9509, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell

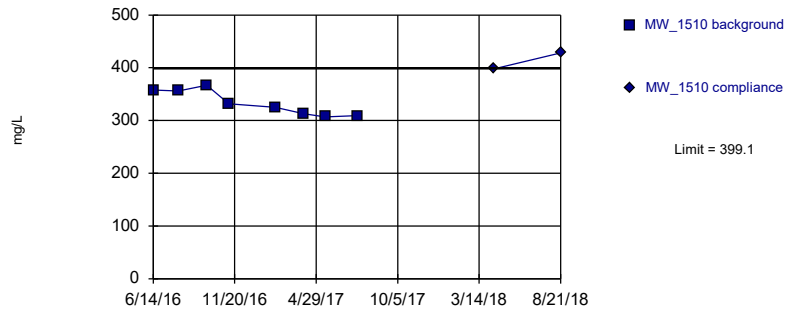
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=333.4, Std. Dev.=23.98, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8854, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell

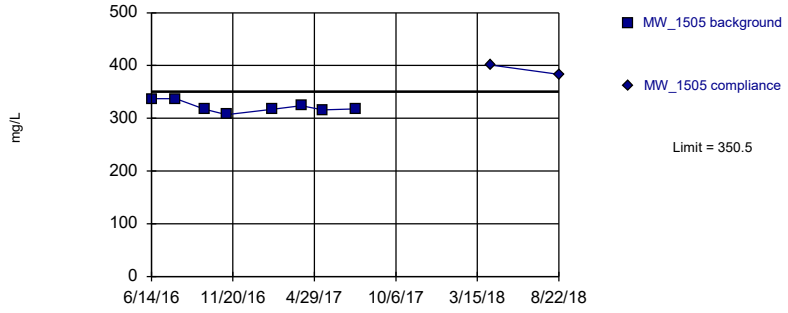
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=321.6, Std. Dev.=10.56, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8719, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell

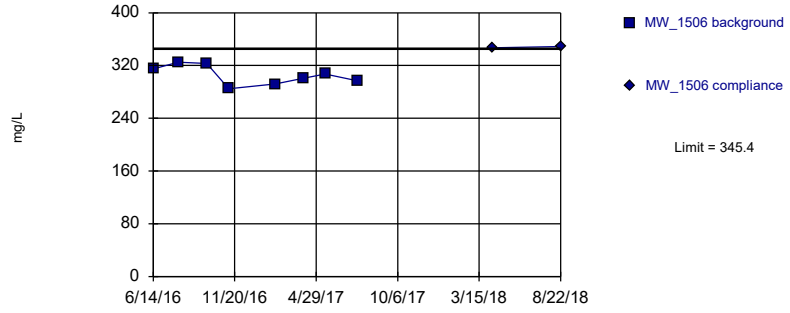
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=305.6, Std. Dev.=14.51, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9536, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

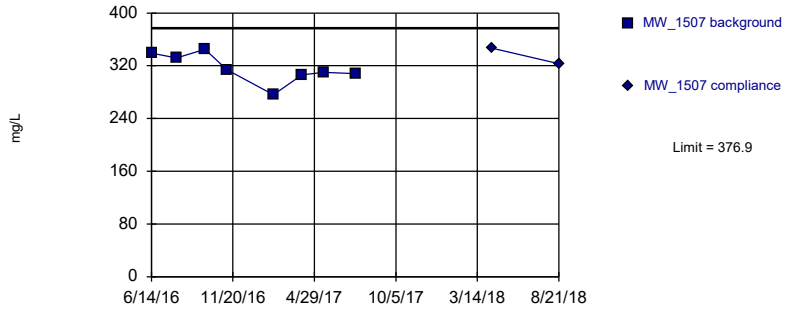
Constituent: Sulfate, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=316.3, Std. Dev.=22.13, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9344, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

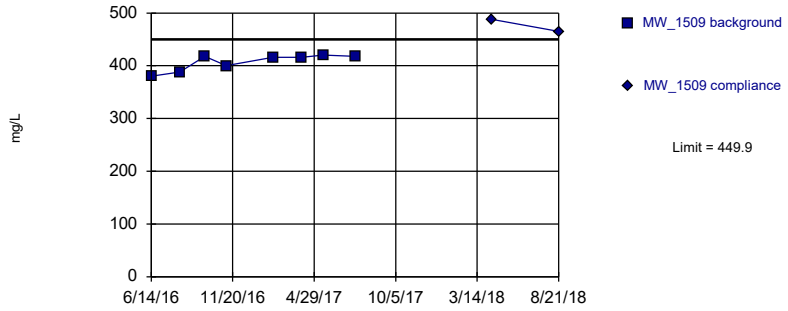
Constituent: Sulfate, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=407, Std. Dev.=15.64, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7926, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 1/7/2019 7:40 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Trend Test Summary Table - Significant Results

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 11/11/2018, 2:30 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron, total (mg/L)	**MW_1505**	**-1.301**	**-32**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	**MW_1507**	**-1.66**	**-33**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	**MW_1509**	**-2.866**	**-31**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium, total (mg/L)	**MW_1507**	**-27.55**	**-35**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1505**	**-41.65**	**-43**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1506**	**-29.8**	**-33**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1507**	**-77.15**	**-33**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1509**	**-33.28**	**-37**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate, total (mg/L)	**MW_1509**	**38.88**	**33**	**30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**

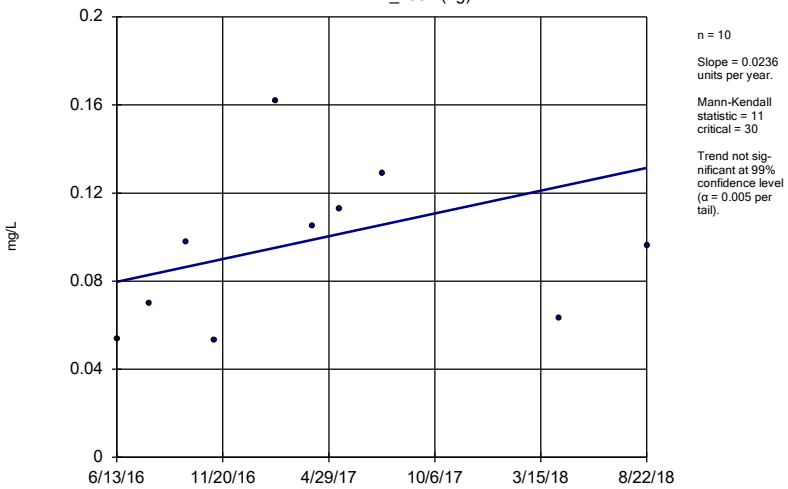
Trend Test Summary Table - All Results

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 11/11/2018, 2:30 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron, total (mg/L)	MW_1504 (bg)	0.0236	11	30	No	10	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	MW_1508 (bg)	0.08374	7	30	No	10	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	MW_1510	0.1475	6	30	No	10	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	**MW_1505**	**-1.301**	**-32**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	MW_1506	-0.7273	-11	-30	No	10	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	**MW_1507**	**-1.66**	**-33**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	**MW_1509**	**-2.866**	**-31**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium, total (mg/L)	MW_1504 (bg)	3.942	6	30	No	10	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1508 (bg)	6.239	12	30	No	10	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1510	-14.75	-17	-30	No	10	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1505	-7.878	-13	-30	No	10	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1506	-8.69	-24	-30	No	10	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	**MW_1507**	**-27.55**	**-35**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium, total (mg/L)	MW_1509	-3.959	-16	-30	No	10	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	MW_1504 (bg)	-6.065	-16	-30	No	10	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	MW_1508 (bg)	-17.1	-27	-30	No	10	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	MW_1510	-7.449	-12	-30	No	10	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	**MW_1505**	**-41.65**	**-43**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1506**	**-29.8**	**-33**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1507**	**-77.15**	**-33**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1509**	**-33.28**	**-37**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, field (SU)	MW_1504 (bg)	0.1587	26	30	No	10	0	n/a	n/a	0.01	NP
pH, field (SU)	MW_1508 (bg)	0.0876	15	30	No	10	0	n/a	n/a	0.01	NP
pH, field (SU)	MW_1506	0.08941	14	30	No	10	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1504 (bg)	-14.8	-8	-30	No	10	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1508 (bg)	5.353	17	30	No	10	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1510	-28.08	-5	-30	No	10	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1505	11.41	7	30	No	10	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1506	13.67	9	30	No	10	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	**MW_1509**	**38.88**	**33**	**30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids [TDS] (m...	MW_1504 (bg)	-42.26	-9	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (m...	MW_1508 (bg)	0	-1	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (m...	MW_1510	-39.25	-6	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (m...	MW_1505	-115.4	-13	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (m...	MW_1506	-130	-19	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (m...	MW_1507	-156	-12	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (m...	MW_1509	-86.9	-15	-30	No	10	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

MW_1504 (bg)



n = 10

Slope = 0.0236 units per year.

Mann-Kendall statistic = 11 critical = 30

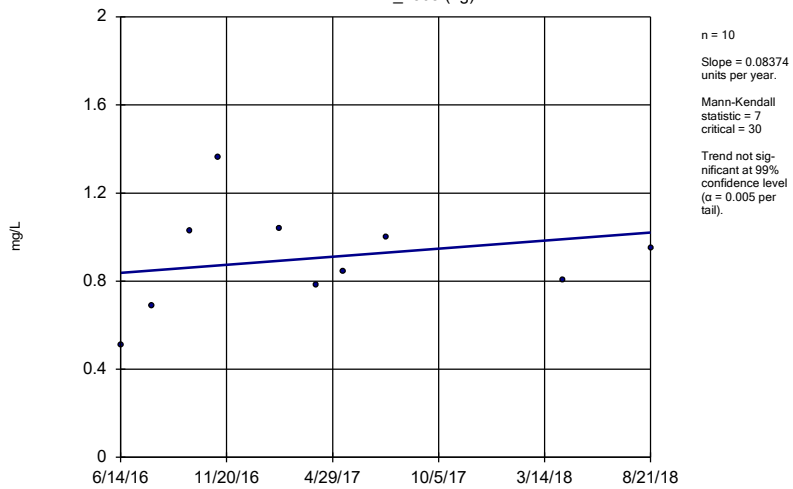
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 10

Slope = 0.08374 units per year.

Mann-Kendall statistic = 7 critical = 30

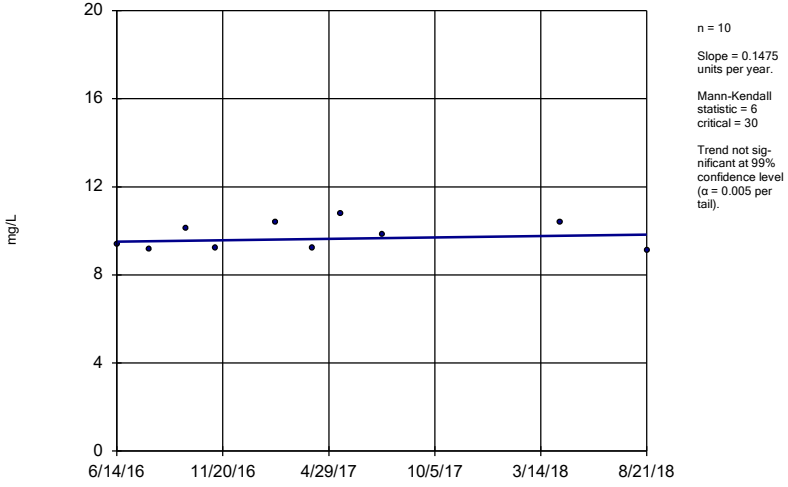
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1510



n = 10

Slope = 0.1475 units per year.

Mann-Kendall statistic = 6 critical = 30

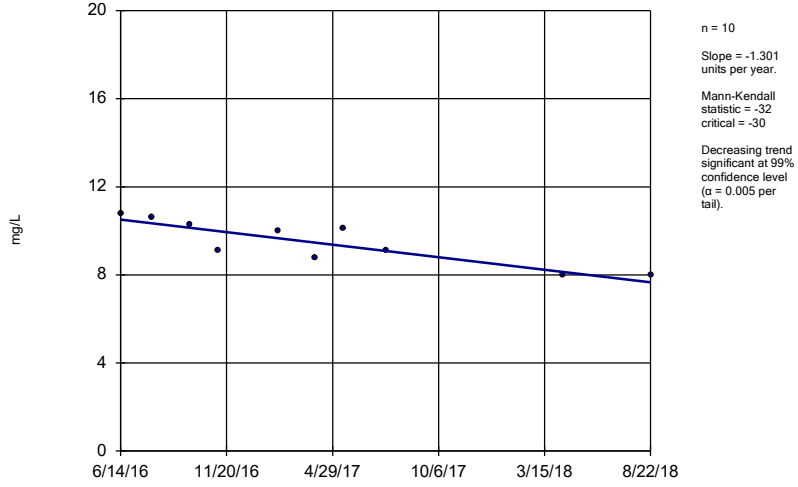
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 10

Slope = -1.301 units per year.

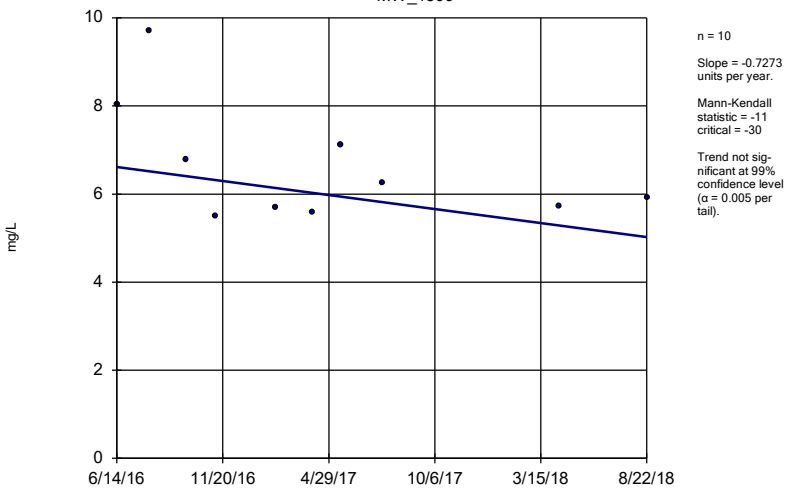
Mann-Kendall statistic = -32 critical = -30

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1506



n = 10

Slope = -0.7273 units per year.

Mann-Kendall statistic = -11 critical = -30

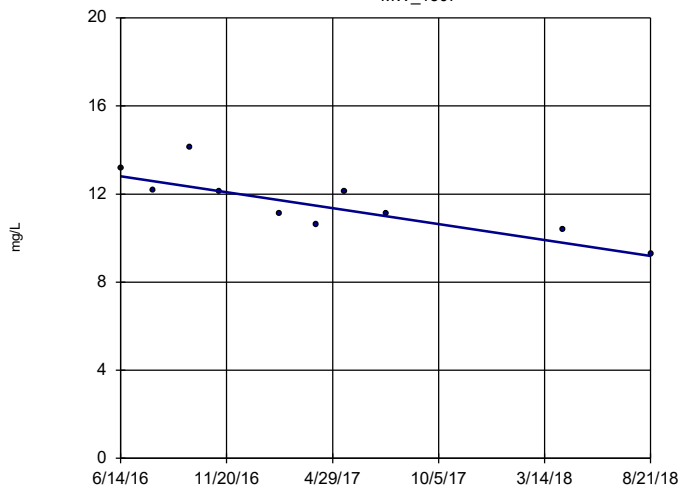
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1507



n = 10

Slope = -1.66 units per year.

Mann-Kendall statistic = -33 critical = -30

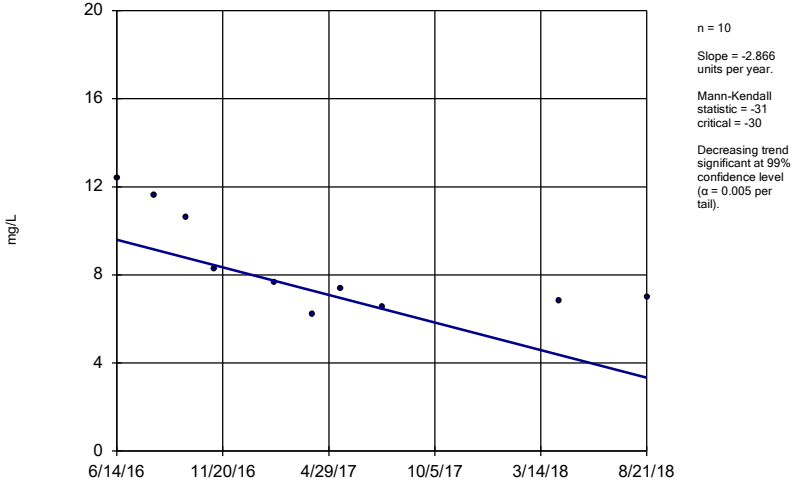
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1509



n = 10

Slope = -2.866 units per year.

Mann-Kendall statistic = -31 critical = -30

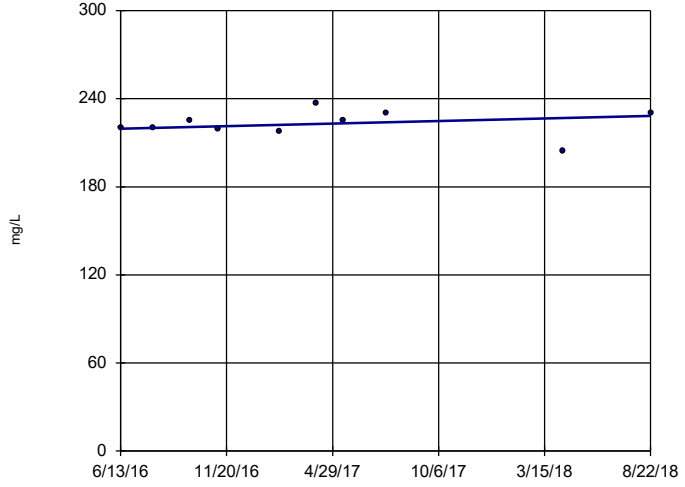
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1504 (bg)



n = 10

Slope = 3.942 units per year.

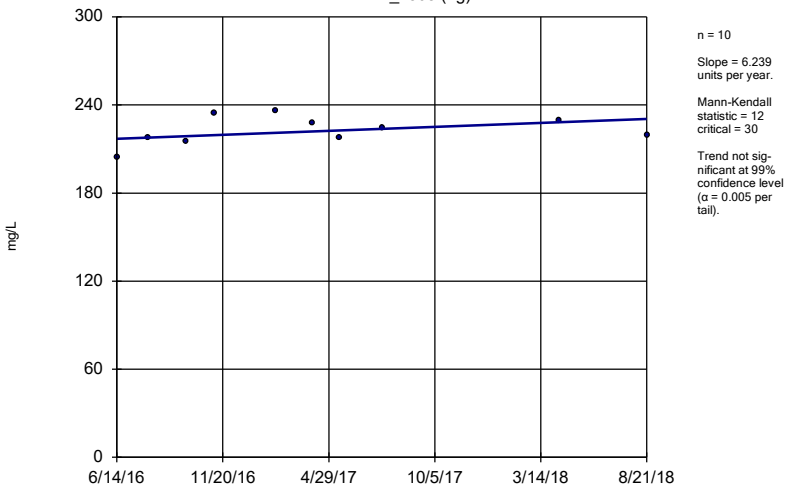
Mann-Kendall statistic = 6 critical = 30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1508 (bg)



n = 10

Slope = 6.239 units per year.

Mann-Kendall statistic = 12
critical = 30

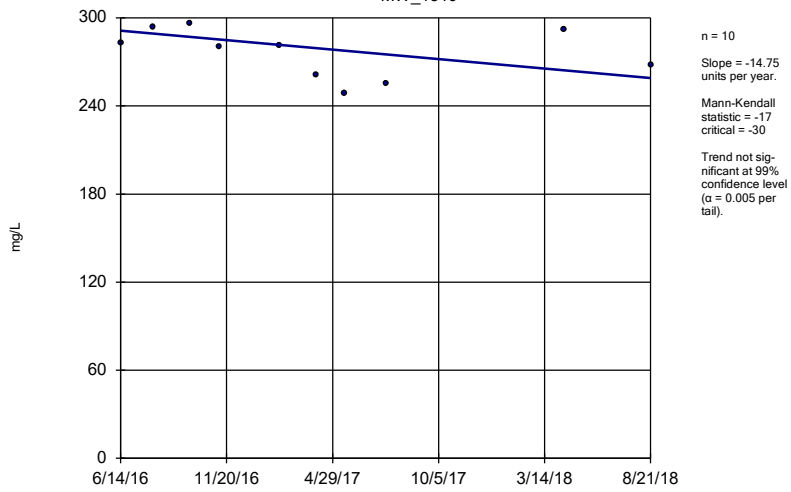
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1510



n = 10

Slope = -14.75 units per year.

Mann-Kendall statistic = -17
critical = -30

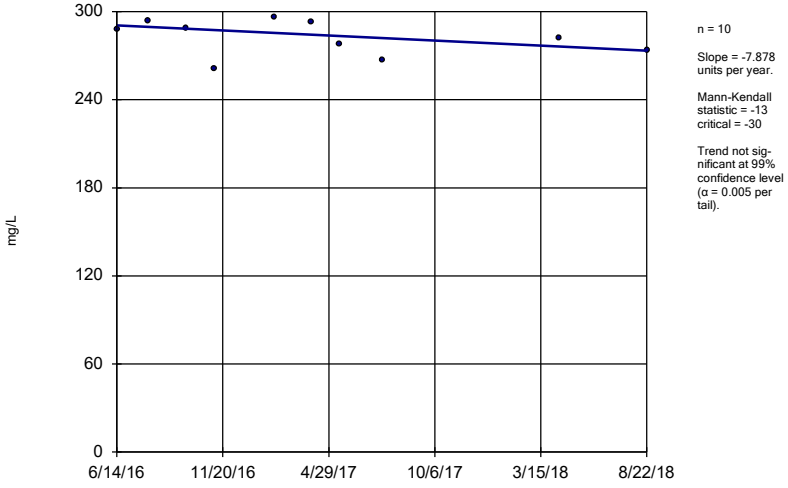
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 10

Slope = -7.878 units per year.

Mann-Kendall statistic = -13
critical = -30

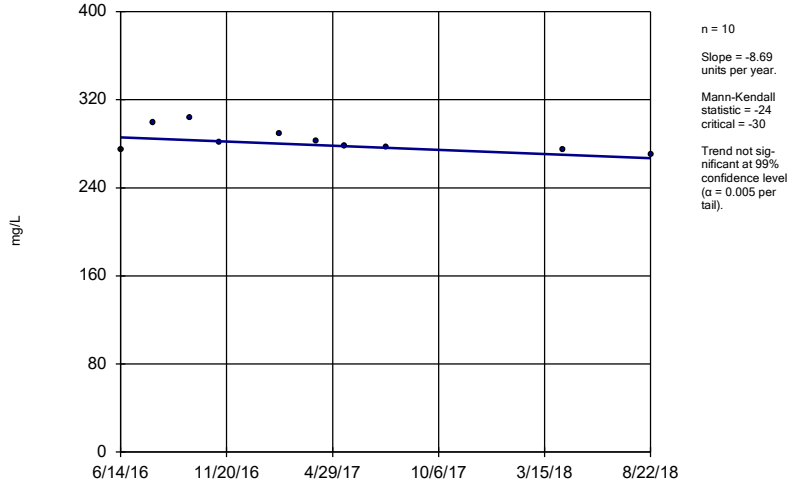
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1506



n = 10

Slope = -8.69 units per year.

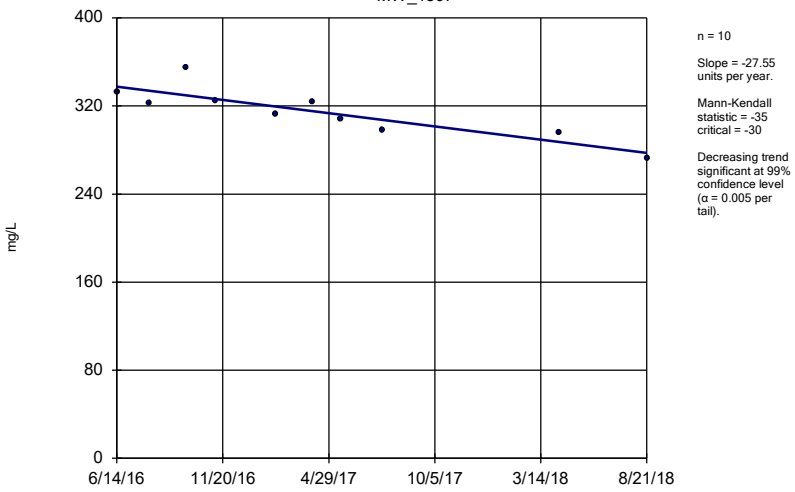
Mann-Kendall statistic = -24
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 11/11/2018 2:28 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1507



n = 10

Slope = -27.55 units per year.

Mann-Kendall statistic = -35 critical = -30

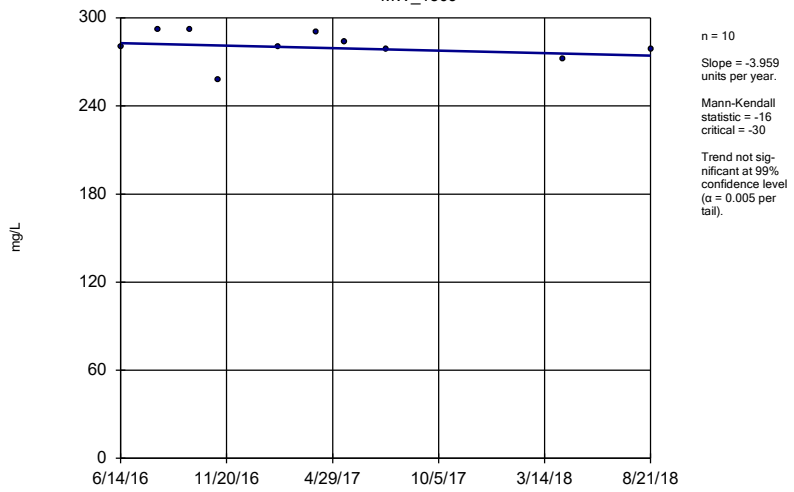
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1509



n = 10

Slope = -3.959 units per year.

Mann-Kendall statistic = -16 critical = -30

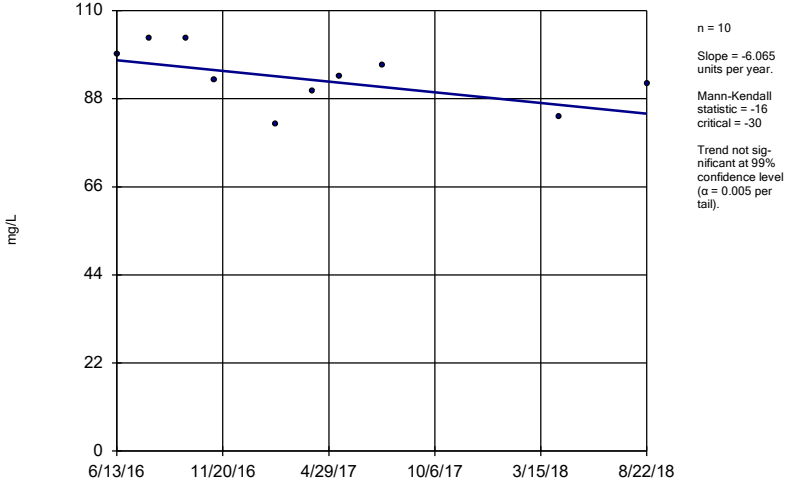
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1504 (bg)



n = 10

Slope = -6.065 units per year.

Mann-Kendall statistic = -16 critical = -30

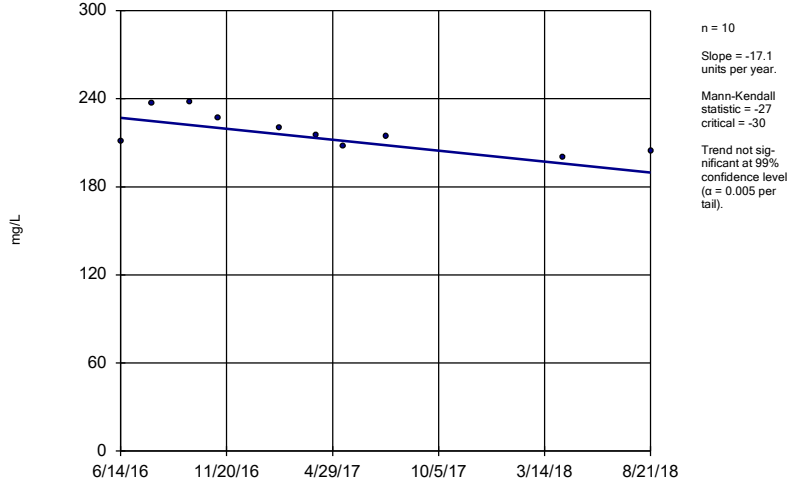
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 10

Slope = -17.1 units per year.

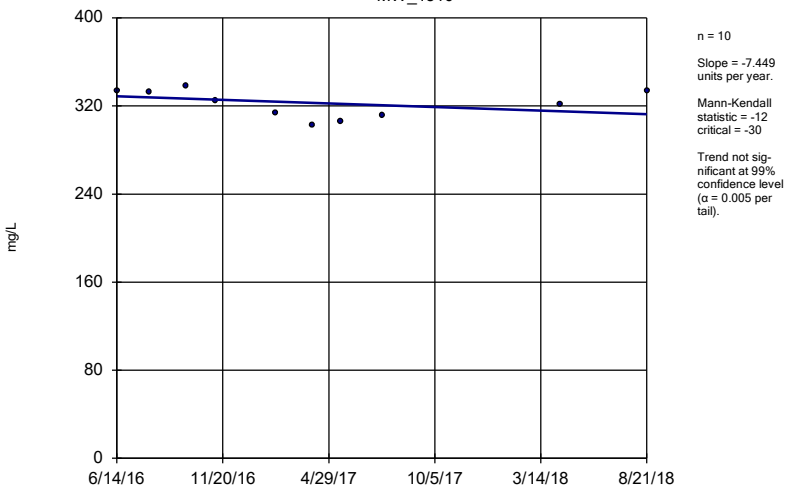
Mann-Kendall statistic = -27 critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1510



n = 10

Slope = -7.449 units per year.

Mann-Kendall statistic = -12 critical = -30

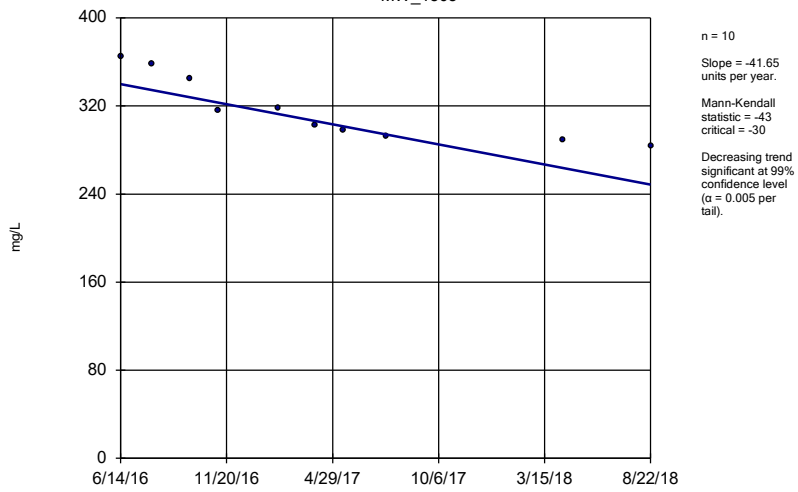
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 10

Slope = -41.65 units per year.

Mann-Kendall statistic = -43 critical = -30

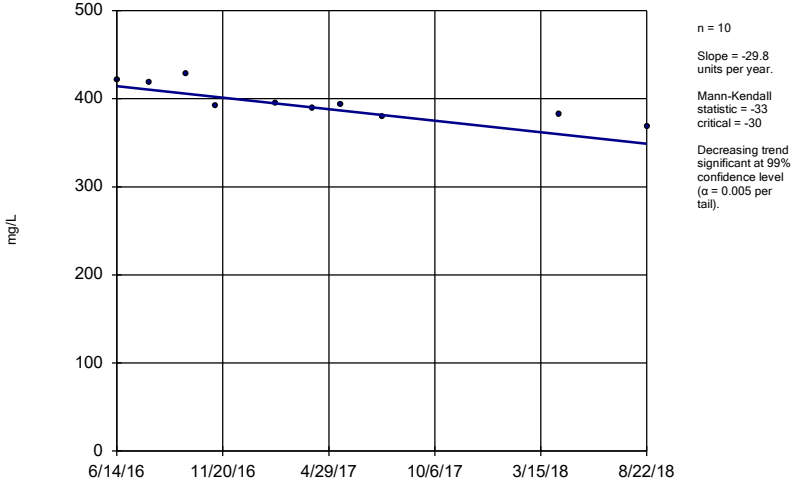
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1506



n = 10

Slope = -29.8 units per year.

Mann-Kendall statistic = -33 critical = -30

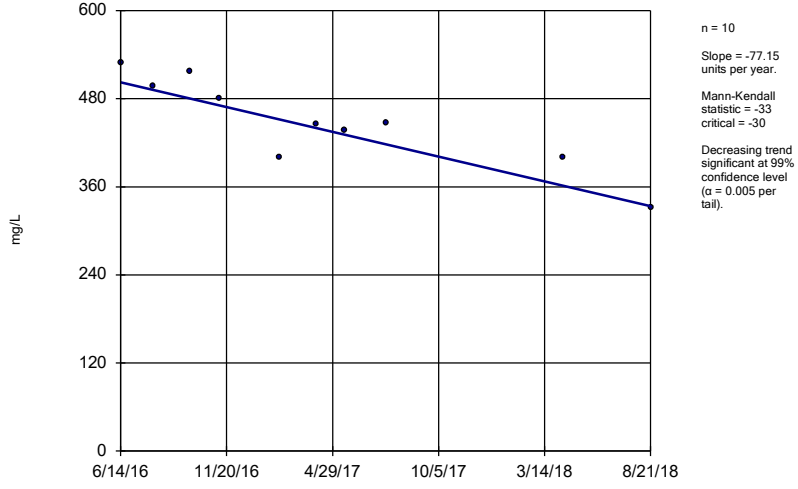
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1507



n = 10

Slope = -77.15 units per year.

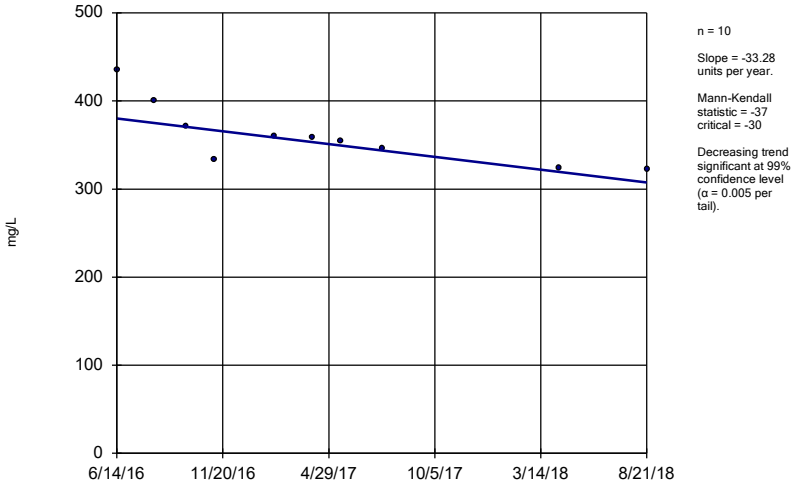
Mann-Kendall statistic = -33 critical = -30

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1509



n = 10

Slope = -33.28 units per year.

Mann-Kendall statistic = -37 critical = -30

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

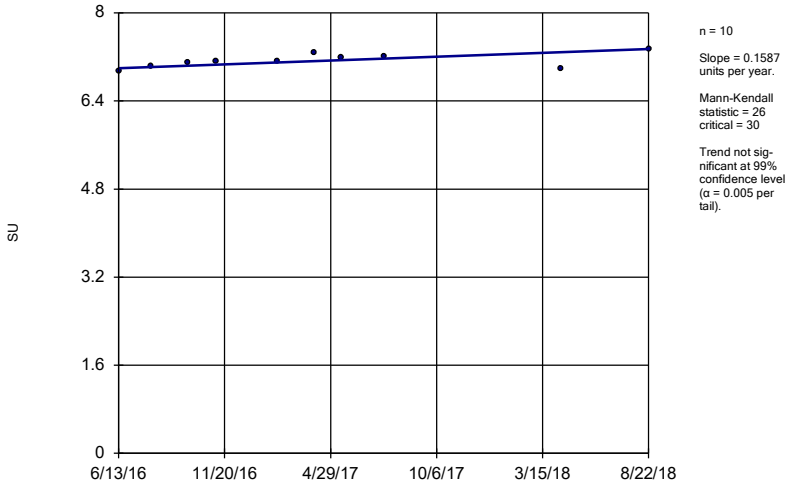
Constituent: Chloride, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1504 (bg)



n = 10

Slope = 0.1587 units per year.

Mann-Kendall statistic = 26 critical = 30

Trend not significant at 99% confidence level (α = 0.005 per tail).

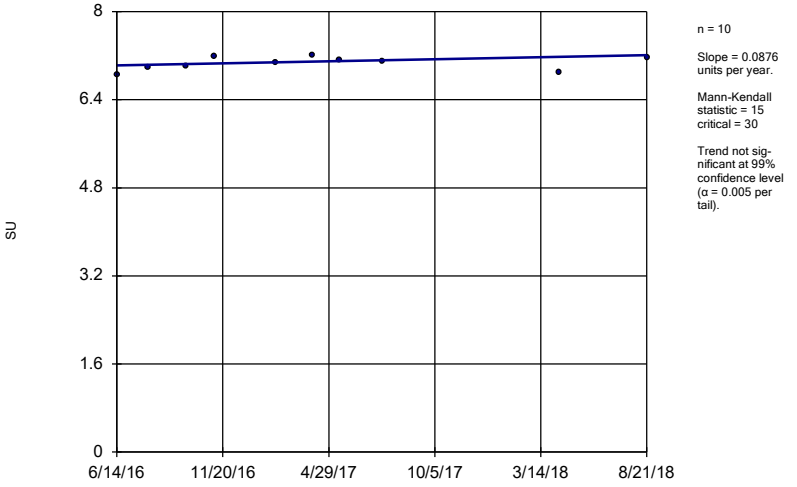
Constituent: pH, field Analysis Run 11/11/2018 2:29 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 10

Slope = 0.0876 units per year.

Mann-Kendall statistic = 15 critical = 30

Trend not significant at 99% confidence level (α = 0.005 per tail).

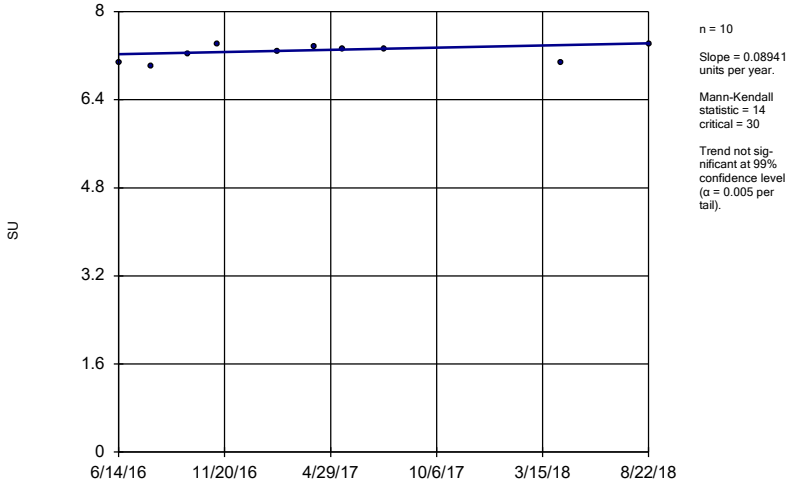
Constituent: pH, field Analysis Run 11/11/2018 2:29 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1506



n = 10

Slope = 0.08941 units per year.

Mann-Kendall statistic = 14 critical = 30

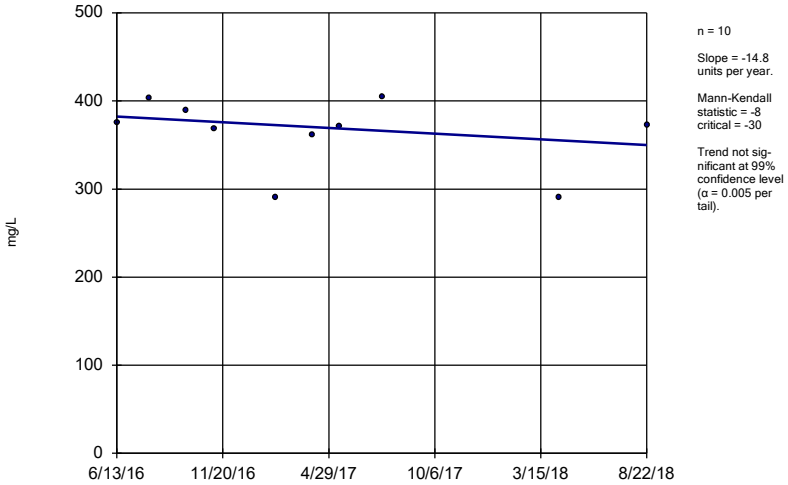
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, field Analysis Run 11/11/2018 2:29 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1504 (bg)



n = 10

Slope = -14.8 units per year.

Mann-Kendall statistic = -8 critical = -30

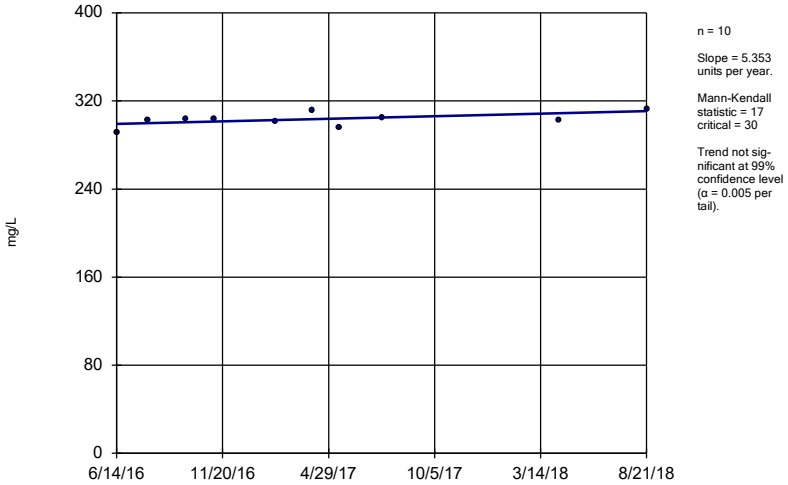
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 10

Slope = 5.353 units per year.

Mann-Kendall statistic = 17 critical = 30

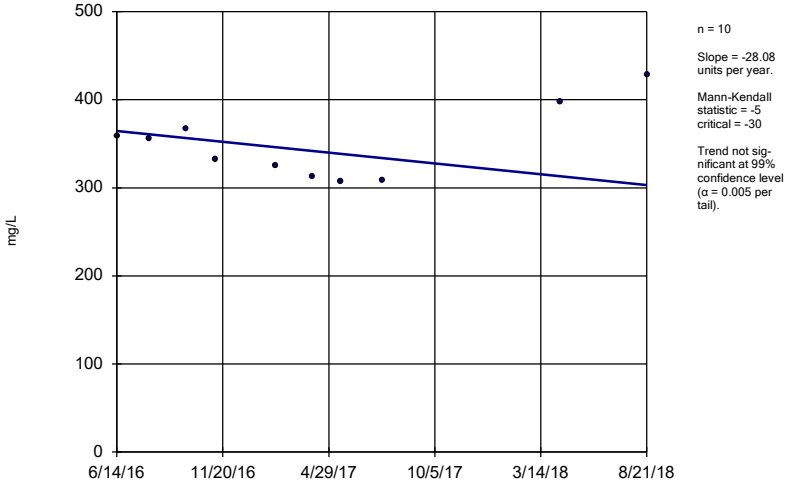
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1510



n = 10

Slope = -28.08 units per year.

Mann-Kendall statistic = -5 critical = -30

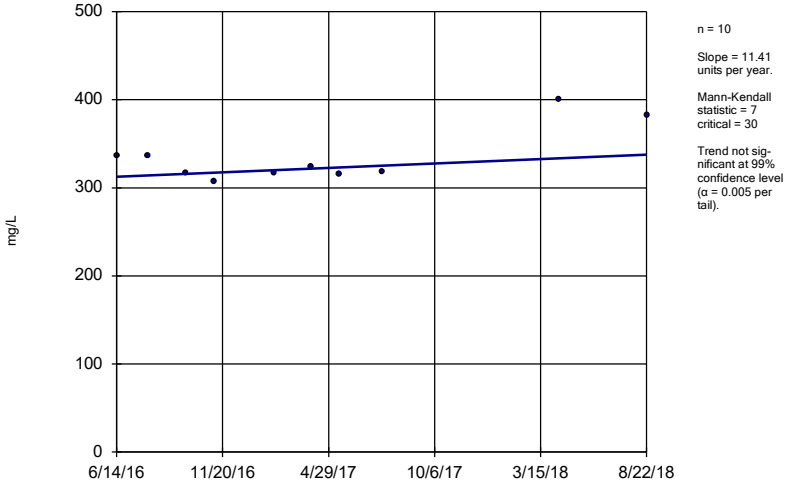
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 10

Slope = 11.41 units per year.

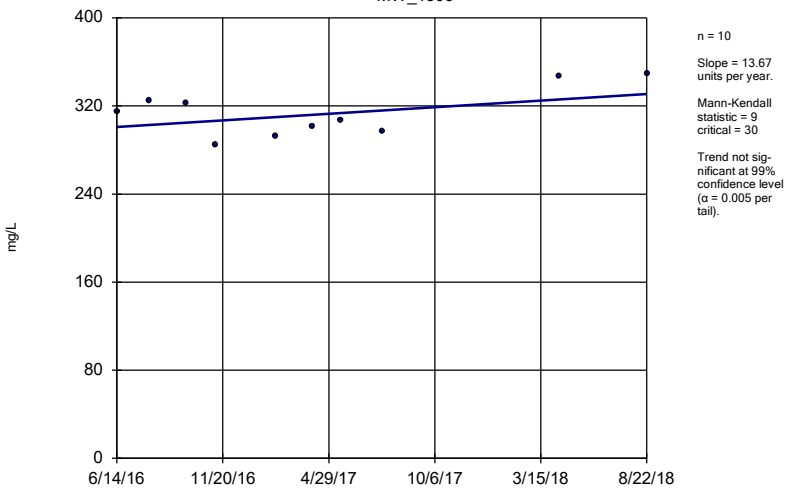
Mann-Kendall statistic = 7 critical = 30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1506



n = 10

Slope = 13.67 units per year.

Mann-Kendall statistic = 9
critical = 30

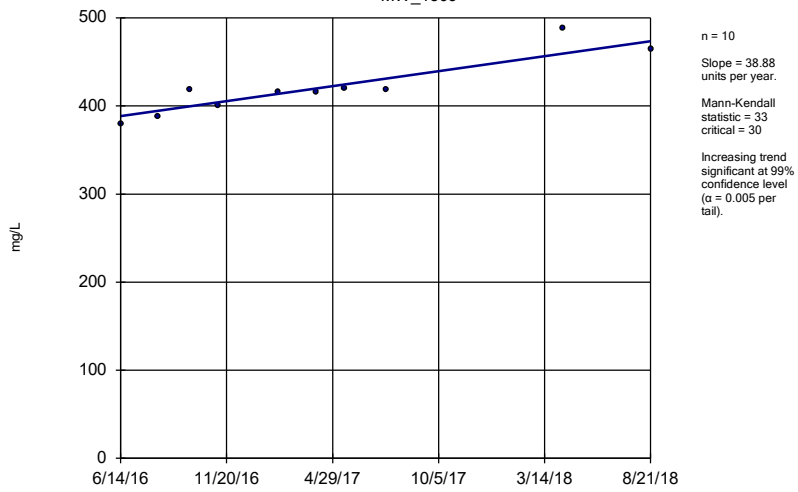
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1509



n = 10

Slope = 38.88 units per year.

Mann-Kendall statistic = 33
critical = 30

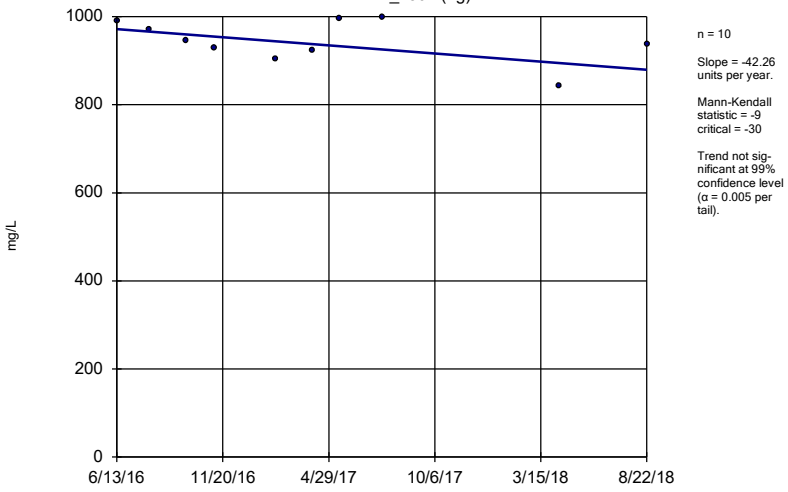
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1504 (bg)



n = 10

Slope = -42.26 units per year.

Mann-Kendall statistic = -9
critical = -30

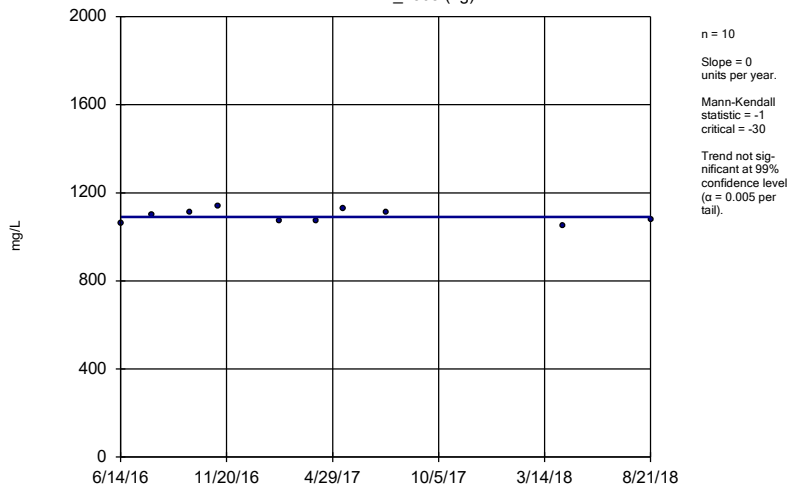
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 10

Slope = 0 units per year.

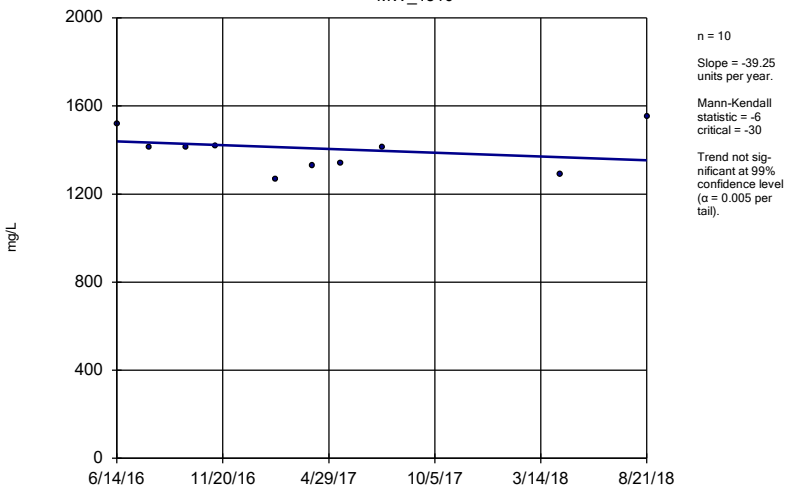
Mann-Kendall statistic = -1
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1510



n = 10

Slope = -39.25 units per year.

Mann-Kendall statistic = -6
critical = -30

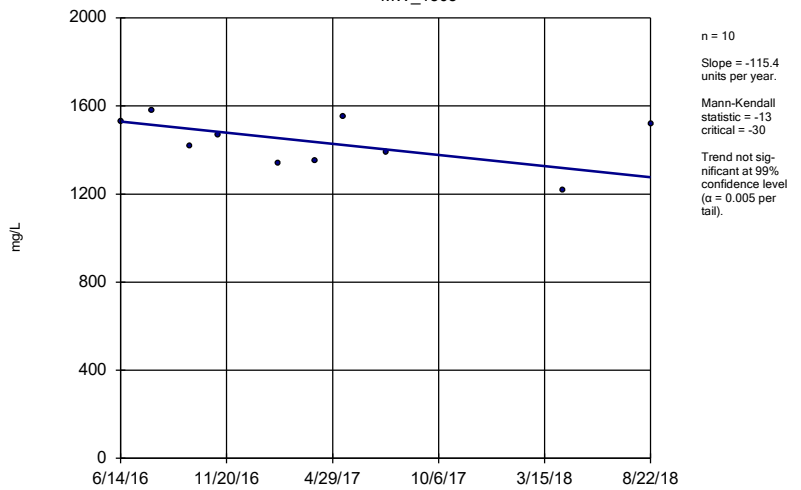
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 10

Slope = -115.4 units per year.

Mann-Kendall statistic = -13
critical = -30

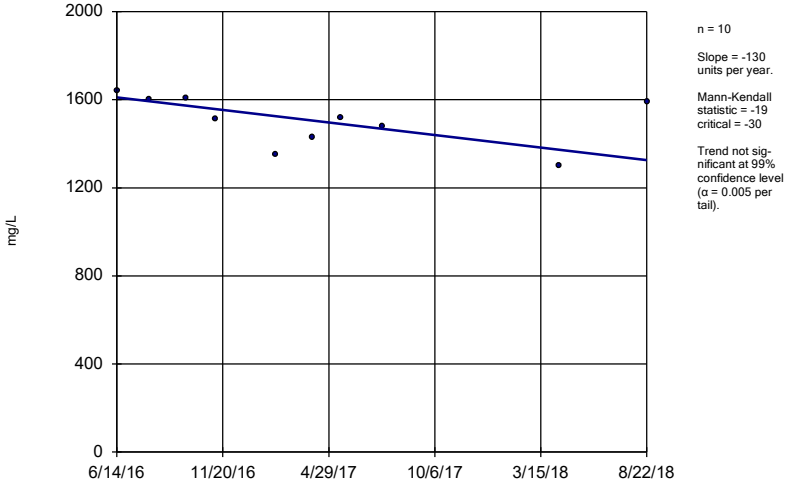
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1506



n = 10

Slope = -130 units per year.

Mann-Kendall statistic = -19
critical = -30

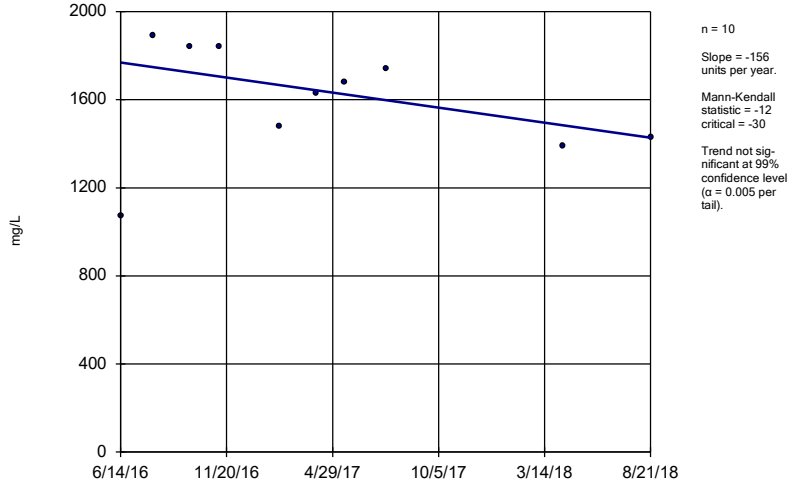
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1507



n = 10

Slope = -156 units per year.

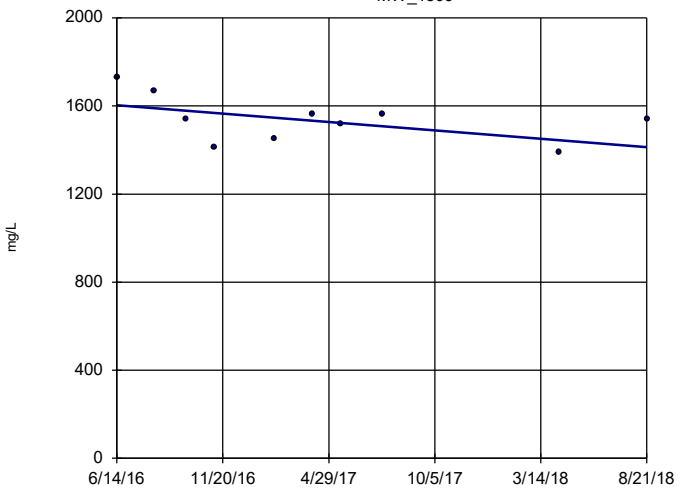
Mann-Kendall statistic = -12
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:29 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1509



n = 10

Slope = -86.9 units per year.

Mann-Kendall statistic = -15 critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 11/11/2018 2:29 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Upper Tolerance Limits

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 11/11/2018, 2:18 PM

Constituent	Well	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	n/a	0.00009103	20	0.006085	0.001443	5	None	sqrt(x)	0.05	Inter
Arsenic, Total (mg/L)	n/a	0.001745	20	0.0007595	0.0004114	0	None	No	0.05	Inter
Barium, Total (mg/L)	n/a	0.05775	20	0.04322	0.006065	0	None	No	0.05	Inter
Beryllium, total (mg/L)	n/a	0.00007696	20	0.00002304	0.00002251	35	Cohen`s	No	0.05	Inter
Cadmium, total (mg/L)	n/a	0.00009	20	n/a	n/a	0	n/a	n/a	0.3585	NP Inter(normality)
Chromium, total (mg/L)	n/a	0.002346	20	0.0008811	0.0006116	0	None	No	0.05	Inter
Cobalt, total (mg/L)	n/a	0.003159	20	0.00101	0.0008968	0	None	No	0.05	Inter
Combined Radium 226 + 228 (pCi/L)	n/a	2.412	19	0.7433	0.3343	0	None	sqrt(x)	0.05	Inter
Fluoride, total (mg/L)	n/a	0.25	20	n/a	n/a	0	n/a	n/a	0.3585	NP Inter(normality)
Lead, total (mg/L)	n/a	0.004584	20	0.07481	0.0381	0	None	x^(1/3)	0.05	Inter
Lithium, total (mg/L)	n/a	0.01616	20	0.00705	0.003801	10	None	No	0.05	Inter
Mercury, total (mg/L)	n/a	0.000008	20	n/a	n/a	65	n/a	n/a	0.3585	NP Inter(normality)
Molybdenum, total (mg/L)	n/a	0.001907	20	0.02624	0.007275	0	None	sqrt(x)	0.05	Inter
Selenium, Total (mg/L)	n/a	0.0009	20	n/a	n/a	15	n/a	n/a	0.3585	NP Inter(normality)
Thallium, Total (mg/L)	n/a	0.00011	20	n/a	n/a	5	n/a	n/a	0.3585	NP Inter(normality)

Confidence Interval - All Results (No Significant Results)

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 11/11/2018, 2:34 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony, total (mg/L)	MW_1505	0.00008225	0.00003175	0.006	No	10	10	No	0.01	Param.
Antimony, total (mg/L)	MW_1506	0.00007	0.00003	0.006	No	10	0	No	0.011	NP (normality)
Antimony, total (mg/L)	MW_1507	0.0001059	0.00006206	0.006	No	10	0	No	0.01	Param.
Antimony, total (mg/L)	MW_1509	0.00003	0.00002	0.006	No	10	0	No	0.011	NP (normality)
Arsenic, Total (mg/L)	MW_1505	0.001934	0.0004216	0.01	No	10	0	sqrt(x)	0.01	Param.
Arsenic, Total (mg/L)	MW_1506	0.001231	0.0005935	0.01	No	10	0	No	0.01	Param.
Arsenic, Total (mg/L)	MW_1507	0.003494	0.001078	0.01	No	10	0	No	0.01	Param.
Arsenic, Total (mg/L)	MW_1509	0.0005793	0.0003707	0.01	No	10	0	No	0.01	Param.
Barium, Total (mg/L)	MW_1505	0.0633	0.0455	2	No	10	0	No	0.011	NP (normality)
Barium, Total (mg/L)	MW_1506	0.06622	0.0541	2	No	10	0	No	0.01	Param.
Barium, Total (mg/L)	MW_1507	0.09293	0.06433	2	No	10	0	No	0.01	Param.
Barium, Total (mg/L)	MW_1509	0.06364	0.05608	2	No	10	0	No	0.01	Param.
Beryllium, total (mg/L)	MW_1505	0.000091	0.000006	0.004	No	10	20	No	0.011	NP (Cohens/xfrm)
Beryllium, total (mg/L)	MW_1506	0.00003432	0.00001088	0.004	No	10	0	No	0.01	Param.
Beryllium, total (mg/L)	MW_1507	0.0001509	0.00003606	0.004	No	10	0	No	0.01	Param.
Beryllium, total (mg/L)	MW_1509	0.00001	0.000005	0.004	No	10	60	No	0.011	NP (normality)
Cadmium, total (mg/L)	MW_1505	0.00003	0.00002	0.005	No	10	0	No	0.011	NP (normality)
Cadmium, total (mg/L)	MW_1506	0.00004	0.00002	0.005	No	10	0	No	0.011	NP (normality)
Cadmium, total (mg/L)	MW_1507	0.00007	0.00003	0.005	No	10	0	No	0.011	NP (normality)
Cadmium, total (mg/L)	MW_1509	0.00002294	0.00001051	0.005	No	10	0	sqrt(x)	0.01	Param.
Chromium, total (mg/L)	MW_1505	0.01444	0.001413	0.1	No	10	0	sqrt(x)	0.01	Param.
Chromium, total (mg/L)	MW_1506	0.003385	0.001108	0.1	No	10	0	No	0.01	Param.
Chromium, total (mg/L)	MW_1507	0.01698	0.005854	0.1	No	10	0	No	0.01	Param.
Chromium, total (mg/L)	MW_1509	0.001897	0.00055	0.1	No	10	0	ln(x)	0.01	Param.
Cobalt, total (mg/L)	MW_1505	0.00144	0.0002788	0.006	No	10	0	sqrt(x)	0.01	Param.
Cobalt, total (mg/L)	MW_1506	0.0009874	0.000423	0.006	No	10	0	No	0.01	Param.
Cobalt, total (mg/L)	MW_1507	0.003528	0.001093	0.006	No	10	0	No	0.01	Param.
Cobalt, total (mg/L)	MW_1509	0.0004193	0.0001687	0.006	No	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW_1505	1.236	0.466	5	No	10	0	No	0.011	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MW_1506	1.462	0.3149	5	No	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW_1507	2.09	0.521	5	No	10	0	No	0.011	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MW_1509	1.68	0.3969	5	No	10	0	No	0.01	Param.
Fluoride, total (mg/L)	MW_1505	0.1	0.02	4	No	10	90	No	0.011	NP (NDs)
Fluoride, total (mg/L)	MW_1506	0.1	0.05	4	No	10	70	No	0.011	NP (normality)
Fluoride, total (mg/L)	MW_1507	0.07	0.05	4	No	10	10	No	0.011	NP (normality)
Fluoride, total (mg/L)	MW_1509	0.16	0.1	4	No	10	0	No	0.011	NP (normality)
Lead, total (mg/L)	MW_1505	0.001631	0.0001178	0.015	No	10	0	sqrt(x)	0.01	Param.
Lead, total (mg/L)	MW_1506	0.0008323	0.0002951	0.015	No	10	0	No	0.01	Param.
Lead, total (mg/L)	MW_1507	0.00358	0.0008556	0.015	No	10	0	No	0.01	Param.
Lead, total (mg/L)	MW_1509	0.00014	0.00001278	0.015	No	10	0	sqrt(x)	0.01	Param.
Lithium, total (mg/L)	MW_1505	0.01226	0.00594	0.04	No	10	0	No	0.01	Param.
Lithium, total (mg/L)	MW_1506	0.01512	0.008684	0.04	No	10	0	No	0.01	Param.
Lithium, total (mg/L)	MW_1507	0.01961	0.01119	0.04	No	10	0	No	0.01	Param.
Lithium, total (mg/L)	MW_1509	0.018	0.007779	0.04	No	10	0	No	0.01	Param.
Mercury, total (mg/L)	MW_1505	0.000006	0.000002	0.002	No	10	60	No	0.011	NP (normality)
Mercury, total (mg/L)	MW_1506	0.000003	0.000002	0.002	No	10	40	No	0.011	NP (normality)
Mercury, total (mg/L)	MW_1507	0.00001513	0.000002669	0.002	No	10	0	No	0.01	Param.
Mercury, total (mg/L)	MW_1509	0.0000025	0.000002	0.002	No	10	80	No	0.011	NP (NDs)
Molybdenum, total (mg/L)	MW_1505	0.002746	0.0007789	0.1	No	10	0	ln(x)	0.01	Param.
Molybdenum, total (mg/L)	MW_1506	0.001095	0.0005189	0.1	No	10	0	No	0.01	Param.
Molybdenum, total (mg/L)	MW_1507	0.00628	0.0009915	0.1	No	10	0	sqrt(x)	0.01	Param.
Molybdenum, total (mg/L)	MW_1509	0.00104	0.0004104	0.1	No	10	0	No	0.01	Param.
Selenium, Total (mg/L)	MW_1505	0.0007336	0.0003064	0.05	No	10	0	No	0.01	Param.
Selenium, Total (mg/L)	MW_1506	0.0002	0.00007	0.05	No	10	20	No	0.011	NP (normality)
Selenium, Total (mg/L)	MW_1507	0.0005199	0.0001561	0.05	No	10	0	No	0.01	Param.

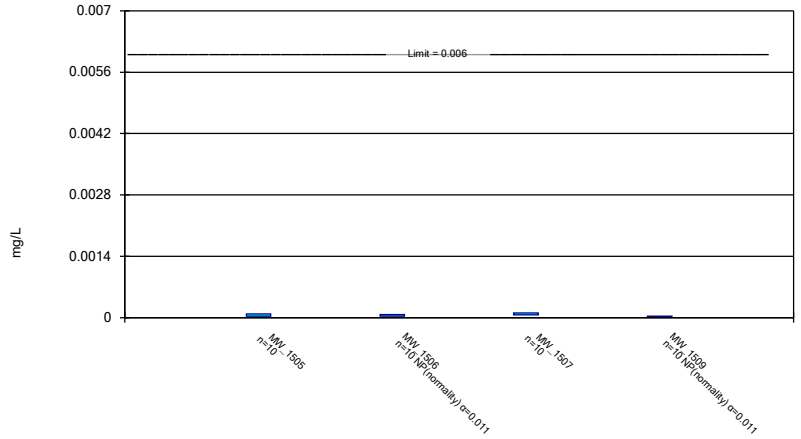
Confidence Interval - All Results (No Significant Results)

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 11/11/2018, 2:34 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Selenium, Total (mg/L)	MW_1509	0.0002	0.00009	0.05	No	10	0	No	0.011	NP (normality)
Thallium, Total (mg/L)	MW_1505	0.00009253	0.00006324	0.002	No	9	0	No	0.01	Param.
Thallium, Total (mg/L)	MW_1506	0.00006437	0.00004763	0.002	No	10	0	No	0.01	Param.
Thallium, Total (mg/L)	MW_1507	0.00007913	0.00004927	0.002	No	10	0	No	0.01	Param.
Thallium, Total (mg/L)	MW_1509	0.00005	0.00003	0.002	No	10	0	No	0.011	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

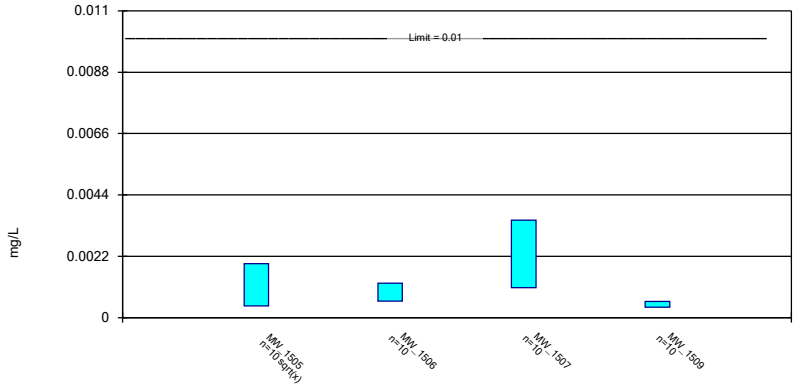


Constituent: Antimony, total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

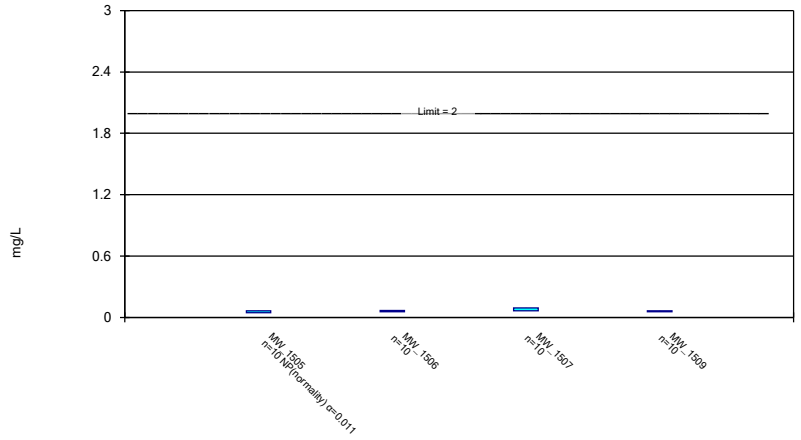


Constituent: Arsenic, Total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

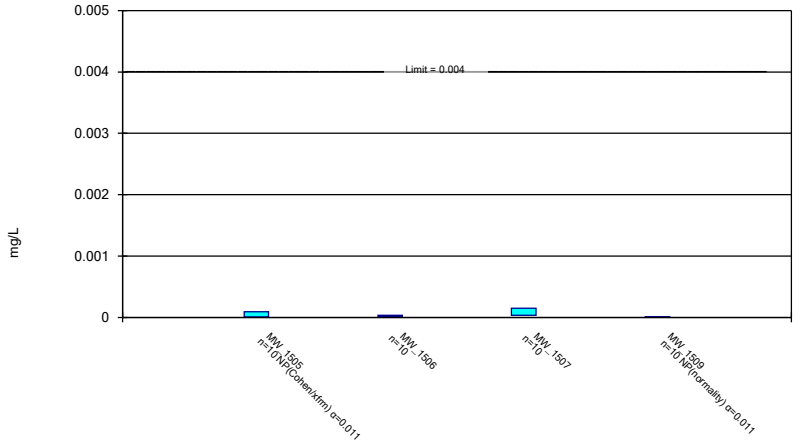


Constituent: Barium, Total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

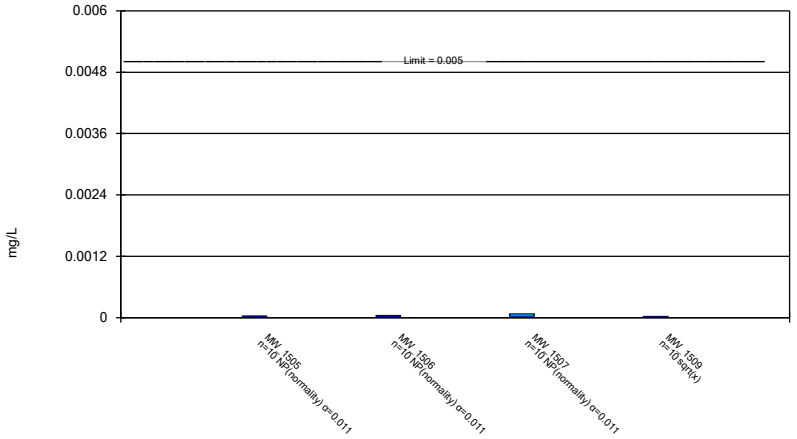
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric and Non-Parametric (NP) Confidence Interval

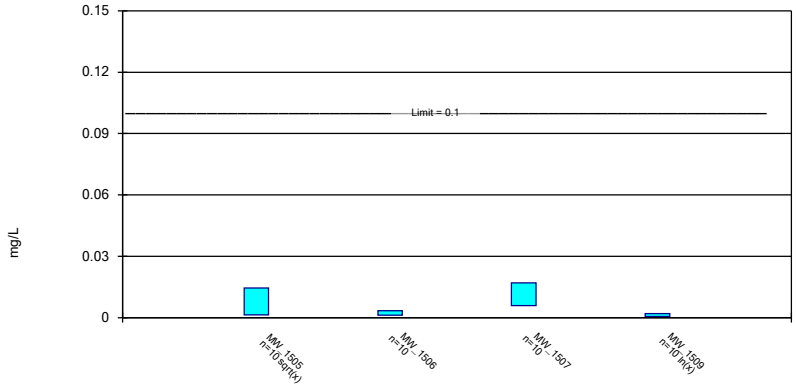
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium, total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

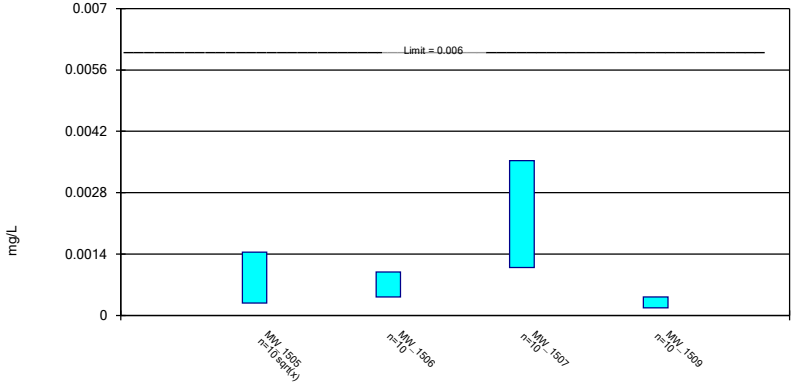
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium, total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

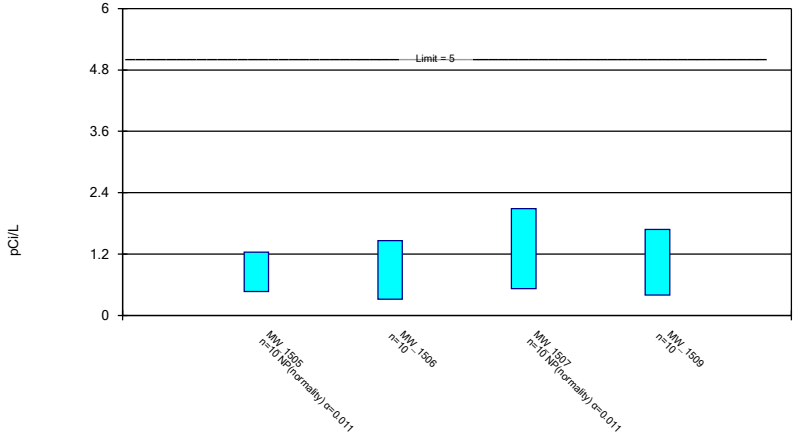
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric and Non-Parametric (NP) Confidence Interval

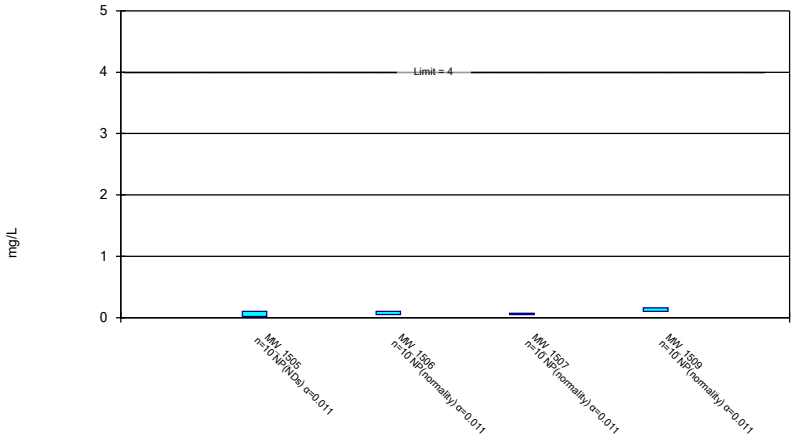
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals -
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

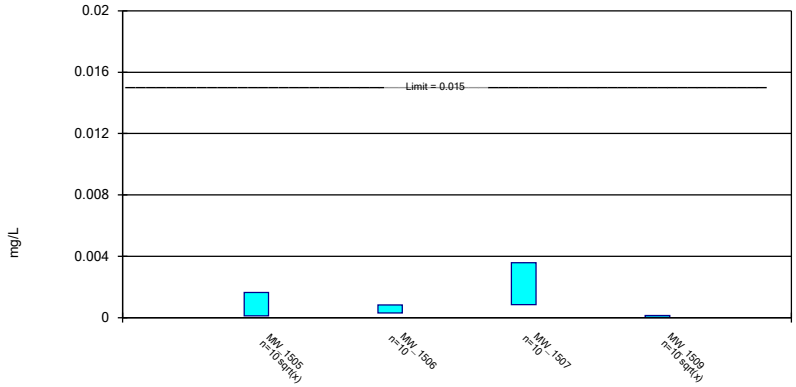


Constituent: Fluoride, total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

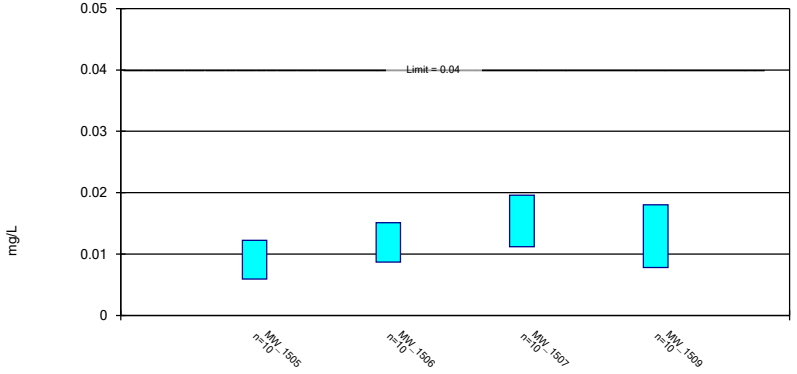


Constituent: Lead, total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

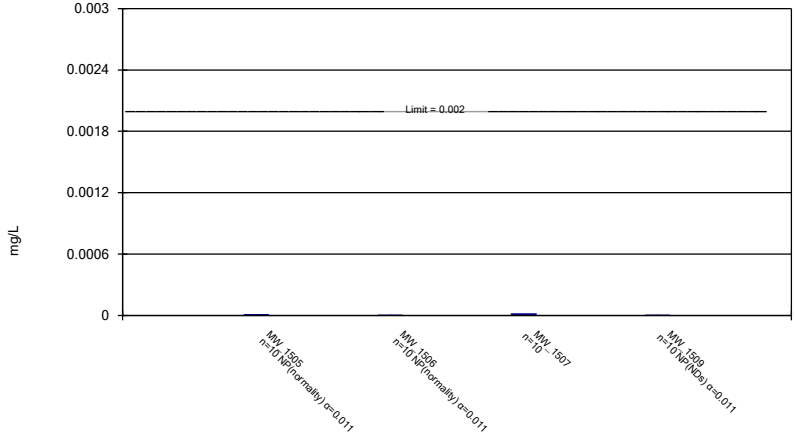


Constituent: Lithium, total Analysis Run 11/11/2018 2:32 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.11e Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

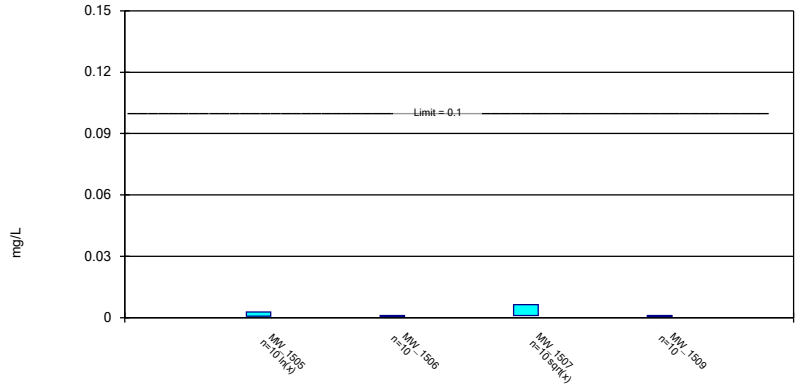
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury, total Analysis Run 11/11/2018 2:33 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

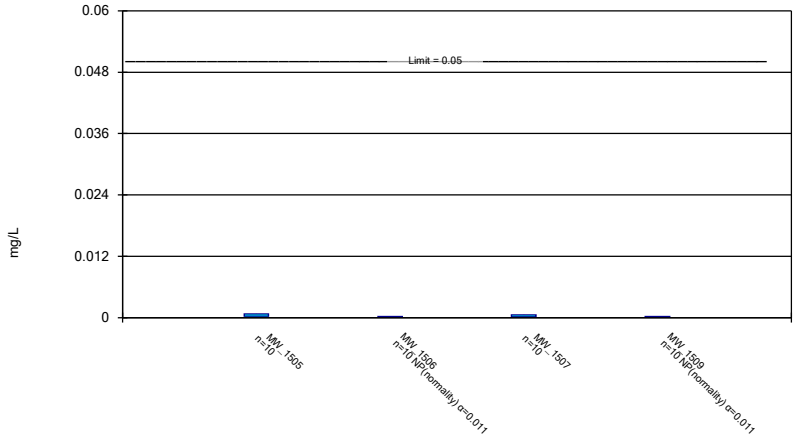
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum, total Analysis Run 11/11/2018 2:33 PM View: Confidence Intervals - Appendix I
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric and Non-Parametric (NP) Confidence Interval

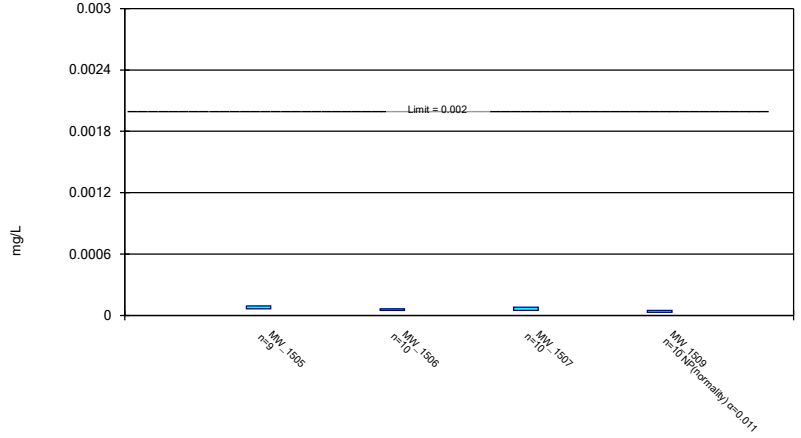
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium, Total Analysis Run 11/11/2018 2:33 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Thallium, Total Analysis Run 11/11/2018 2:33 PM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

STATISTICAL ANALYSIS SUMMARY
BOTTOM ASH POND
Mitchell Plant
Moundsville, West Virginia

Submitted to

1 Riverside Plaza
Columbus, Ohio 43215-2372

Submitted by

Geosyntec consultants

engineers | scientists | innovators

941 Chatham Lane
Suite 103
Columbus, Ohio 43221

July 10, 2019

CHA8473

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

AEP	American Electric Power
ASD	Alternative Source Demonstration
BAP	Bottom Ash Pond
CCR	Coal Combustion Residuals
CCV	Continuing Calibration Verification
CFR	Code of Federal Regulations
GWPS	Groundwater Protection Standard
LCL	Lower Confidence Limit
LFB	Laboratory Fortified Blanks
LRB	Laboratory Reagent Blanks
MCL	Maximum Contaminant Level
NELAP	National Environmental Laboratory Accreditation Program
QA	Quality Assurance
QC	Quality Control
RSL	Regional Screening Level
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
TDS	Total Dissolved Solids
UPL	Upper Prediction Limit
USEPA	United States Environmental Protection Agency
UTL	Upper Tolerance Limit

SECTION 1

EXECUTIVE SUMMARY

In accordance with the United States Environmental Protection Agency's (USEPA's) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (40 CFR 257.90-257.98, "CCR rule"), groundwater monitoring has been conducted at the Bottom Ash Pond (BAP), an existing CCR unit at the Mitchell Power Plant located in Moundsville, West Virginia.

Based on detection monitoring conducted in 2017 and 2018, statistically significant increases (SSIs) over background were concluded for boron, calcium, chloride, and total dissolved solids (TDS and sulfate at the BAP. An alternative source was not identified at the time, so two assessment monitoring events were conducted at the BAP in 2018, in accordance with 40 CFR 257.95. No SSLs were identified and so the unit remained in assessment monitoring. A semi-annual assessment monitoring event was also completed in May 2019, with the results of the May 2019 event documented in this report.

Groundwater data underwent several validation tests, including those for completeness, sample tracking accuracy, transcription errors, and consistent use of measurement units. No data quality issues were identified which would impact the usability of the data.

The monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. Groundwater protection standards (GWPSs) were re-established for the Appendix IV parameters. Confidence intervals were calculated for Appendix IV parameters at the compliance wells to assess whether Appendix IV parameters were present at a statistically significant level (SSL) above the GWPS. No SSLs were identified, but Appendix III concentrations for boron, calcium, chloride, pH, sulfate, and TDS remained above background. Thus, either the unit will remain in assessment monitoring or an alternative source demonstration (ASD) will be conducted to evaluate if the unit can return to detection monitoring. Certification of the selected statistical methods by a qualified professional engineer is documented in Attachment A.

SECTION 2

BOTTOM ASH POND EVALUATION

2.1 Data Validation & QA/QC

During the assessment monitoring program, one set of samples was collected for analysis from each upgradient and downgradient well to meet the requirements of 40 CFR 257.95(d)(1). Samples from the May 2019 semi-annual sampling event were analyzed for the Appendix III and Appendix IV parameters. A summary of data collected during this assessment monitoring event may be found in Table 1.

Chemical analysis was completed by an analytical laboratory certified by the National Environmental Laboratory Accreditation Program (NELAP). Quality assurance and quality control (QA/QC) samples completed by the analytical laboratory included the use of laboratory reagent blanks (LRBs), continuing calibration verification (CCV) samples, and laboratory fortified blanks (LFBs).

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.9.6.14 statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues were noted which would impact data usability.

2.2 Statistical Analysis

Statistical analyses for the BAP were conducted in accordance with the January 2017 *Statistical Analysis Plan* (AEP, 2017), except where noted below. Time series plots and results for all completed statistical tests are provided in Attachment B.

The data obtained to meet the requirements of 40 CFR 257.95(d)(1) were screened for potential outliers. No outliers were identified.

2.2.1 Establishment of GWPSs

A GWPS was established for each Appendix IV parameter in accordance with 40 CFR 257.95(h) and the *Statistical Analysis Plan* (AEP, 2017). The established GWPS was determined to be the greater value of the background concentration and the maximum contaminant level (MCL) or risk-based level specified in 40 CFR 257.95(h)(2) for each Appendix IV parameter. To determine background concentrations, an upper tolerance limit (UTL) was calculated using pooled data from the background wells collected during the background monitoring and assessment monitoring events. Generally, tolerance limits were calculated parametrically with 95% coverage and 95% confidence. Non-parametric tolerance limits were calculated for beryllium, cadmium, fluoride,

mercury, and thallium due to apparent non-normal distributions. Tolerance limits and the final GWPSs are summarized in Table 2.

2.2.2 Evaluation of Potential Appendix IV SSLs

A confidence interval was constructed for each Appendix IV parameter at each compliance well. Confidence limits were generally calculated parametrically ($\alpha = 0.01$); however, non-parametric confidence limits were calculated in some cases (e.g., when the data did not appear to be normally distributed or when the non-detect frequency was too high). An SSL was concluded if the lower confidence limit (LCL) exceeded the GWPS (i.e., if the entire confidence interval exceeded the GWPS). Calculated confidence limits are shown in Attachment B.

No SSLs were identified at the Mitchell BAP.

2.2.3 Evaluation of Potential Appendix III SSIs

The CCR rule allows CCR units to move from assessment monitoring to detection monitoring if all Appendix III and Appendix IV parameters were at or below background levels for two consecutive sampling events [40 CFR 257.95(e)]. Since no Appendix IV SSLs were identified, Appendix III results were analyzed to assess whether concentrations of Appendix III parameters at the compliance wells exceeded background concentrations.

Prediction limits were calculated for the Appendix III parameters to represent background values. As described in the January 2018 *Statistical Analysis Summary* report (Geosyntec, 2018), intrawell tests were used to evaluate potential SSIs for fluoride and sulfate, whereas interwell tests were used to evaluate potential SSIs for boron, calcium, chloride, pH, and TDS.

Prediction limits for the interwell tests were recalculated using data collected during the May 2019 assessment monitoring event. Six data points (i.e., one sample from six background wells) were added to the background dataset for each interwell test. New data were tested for outliers prior to being added to the background dataset. The updated prediction limits were calculated for a one-of-two retesting procedure, as during detection monitoring. The values of the updated prediction limits were similar to the values of the prediction limits calculated during detection monitoring. The revised interwell prediction limits were used to evaluate potential SSIs for boron, calcium, chloride, pH, and TDS.

For the intrawell tests, limited data made it possible to add only one data point (i.e., one sample from each compliance well) to each background dataset. Because one sample result is insufficient to compare against the existing background dataset, the prediction limits were not updated for the intrawell tests at this time. The intrawell prediction limits calculated during detection monitoring were used to evaluate potential SSIs for fluoride and sulfate.

Data collected during the August 2018 and May 2019 assessment monitoring events from each compliance well were compared to the prediction limits to evaluate results above background

values. The results from this event and the prediction limits are summarized in Table 3. The following exceedances of the upper prediction limits (UPLs) were noted:

- Boron concentrations exceeded the interwell UPL of 1.36 mg/L at MW-1505 (8.00 mg/L and 7.31 mg/L), MW-1506 (5.91 mg/L and 5.24 mg/L), MW-1507 (9.29 mg/L and 8.36 mg/L), MW-1509 (6.97 mg/L and 8.36 mg/L), and MW-1510 (9.13 mg/L and 8.83 mg/L).

- Calcium concentrations exceeded the interwell UPL of 240 mg/L at MW-1505 (274 mg/L and 287 mg/L), MW-1505 (270 mg/L and 280 mg/L), MW-1507 (272 mg/L and 271 mg/L), MW-1509 (279 mg/L and 287 mg/L), and MW-1510 (268 mg/L and 287 mg/L).

- Chloride concentrations exceeded the interwell UPL of 238 mg/L at MW-1505 (284 mg/L and 285 mg/L), MW-1506 (369 mg/L and 331 mg/L), MW 1507 (331 mg/L and 296 mg/L), MW-1509 (323 mg/L and 328 mg/L), and MW-1510 (334 mg/L and 325 mg/L).

- The pH result exceeded the interwell UPL of 8.2 SU at MW-1509 (8.5 SU).

- Sulfate concentrations exceeded the intrawell UPL of 351 mg/L at MW-1505 (383 mg/L and 408 mg/L), the intrawell UPL of 345 mg/L at MW-1506 (349 mg/L and 347 mg/L), the intrawell UPL of 450 mg/L at MW-1509 (465 mg/L), and the intrawell UPL of 399 mg/L at MW-1510 (428 mg/L and 467 mg/L).

- TDS concentrations exceeded the interwell UPL of 1182 mg/L at MW-1505 (1520 mg/L and 1580 mg/L), MW-1506 (1590 mg/L and 1360 mg/L), MW-1507 (1430 mg/L and 1270 mg/L), MW-1509 (1540 mg/L and 1480 mg/L), and MW-1510 (1550 mg/L and 1460 mg/L).

Based on these results, concentrations of Appendix III parameters exceeded background levels at compliance wells at the Mitchell BAP during assessment monitoring. As a result, the Mitchell BAP CCR unit will remain in assessment monitoring.

2.3 Conclusions

A semi-annual assessment monitoring event was conducted in accordance with the CCR Rule. The laboratory and field data were reviewed prior to statistical analysis, with no QA/QC issues identified that impacted data usability. A review of outliers identified no potential outliers in the May 2019 data. GWPSs were re-established for the Appendix IV parameters. A confidence interval was constructed at each compliance well for each Appendix IV parameter; SSLs were concluded if the entire confidence interval exceeded the GWPS. No SSLs were identified.

The Appendix III results were evaluated to assess whether concentrations of Appendix III parameters exceeded background levels. Interwell tests were used to evaluate potential SSIs for boron, calcium, chloride, pH, and TDS, and intrawell tests were used to evaluate potential SSIs for fluoride and sulfate. The prediction limits for the interwell tests were updated with additional data collected from the background wells. Prediction limits were recalculated using a one-of-two

retesting procedure. The prediction limits calculated during detection monitoring were used for the intrawell tests. Boron, calcium, chloride, pH, sulfate, and TDS results exceeded background levels.

Based on this evaluation, either the Mitchell BAP CCR unit will remain in assessment monitoring or an ASD will be conducted to evaluate if the unit can return to detection monitoring.

SECTION 3

REFERENCES

American Electric Power (AEP). 2017. Statistical Analysis Plan – Mitchell Plant. January 2017.

Geosyntec Consultants (Geosyntec). 2018. Statistical Analysis Summary – Bottom Ash Pond, Mitchell Plant, Moundsville, West Virginia. January 15, 2018.

TABLES

Table 1 - Groundwater Data Summary
Mitchell Plant - Bottom Ash Pond

Geosyntec Consultants

Parameter	Unit	MW-1504	MW-1505	MW-1506	MW-1507	MW-1508	MW-1509	MW-1510
		5/1/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019	5/1/2019
Antimony	µg/L	0.100 U	0.0300 J	0.0300 J	0.0300 J	0.0300 J	0.0300 J	0.0200 J
Arsenic	µg/L	0.220	0.290	0.340	0.430	0.600	0.330	0.290
Barium	µg/L	36.4	48.7	53.5	53.9	37.4	47.2	41.7
Beryllium	µg/L	0.100 U	0.100 U	0.100 U	0.100 U	0.0200 J	0.100 U	0.100 U
Boron	mg/L	0.0500 J	7.31	5.24	8.36	0.622	8.73	8.83
Cadmium	µg/L	0.0300 J	0.0300 J	0.0200 J	0.0300 J	0.0300 J	0.0100 J	0.0500 U
Calcium	mg/L	220	287	280	271	221	287	287
Chloride	mg/L	81.8	285	331	296	178	328	325
Chromium	µg/L	0.305	0.665	0.752	2.35	0.735	2.28	1.75
Cobalt	µg/L	0.0710	0.199	0.256	0.331	0.637	0.324	0.172
Combined Radium	pCi/L	0.675	0.240	0.188	0.496	0.636	0.408	0.573
Fluoride	mg/L	0.170	0.0600 U	0.0300 J	0.0700	0.0800	0.130	0.100
Lead	µg/L	0.0200 J	0.0700 J	0.135	0.239	0.540	0.114	0.105
Lithium	mg/L	0.0300 U	0.0300 U	0.0200 J	0.0300 U	0.0300 U	0.0300 U	0.0100 J
Mercury	mg/L	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Molybdenum	µg/L	2.00 U	0.600 J	2.00 J	1.00 J	2.00 U	2.00 U	2.00 U
Selenium	µg/L	0.200 U	0.900	0.0700 J	0.0700 J	0.300	0.200 J	0.200 J
Total Dissolved Solids	mg/L	926	1580	1360	1270	978	1480	1460
Sulfate	mg/L	317	408	347	346	287	429	467
Thallium	µg/L	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
pH	SU	8.01	7.80	7.87	8.04	8.18	8.45	8.11

Notes:
µg/L: micrograms per liter
mg/L: milligrams per liter
pCi/L: picocuries per liter
SU: standard unit
U: Non-detect value. For statistical analysis, parameters which were not detected were replaced with the reporting limit.
J: Estimated value. Parameter was detected in concentrations below the reporting limit.
-: Not sampled

Table 2: Groundwater Protection Standards
Mitchell Plant - Bottom Ash Pond

Geosyntec Consultants, Inc.

Constituent Name	MCL	CCR Rule-Specified	Background Limit
Antimony, Total (mg/L)	0.006		0.000068
Arsenic, Total (mg/L)	0.01		0.0017
Barium, Total (mg/L)	2		0.057
Beryllium, Total (mg/L)	0.004		0.0001
Cadmium, Total (mg/L)	0.005		0.00009
Chromium, Total (mg/L)	0.1		0.0023
Cobalt, Total (mg/L)	n/a	0.006	0.0037
Combined Radium, Total (pCi/L)	5		2.26
Fluoride, Total (mg/L)	4		0.25
Lead, Total (mg/L)	n/a	0.015	0.0042
Lithium, Total (mg/L)	n/a	0.04	0.019
Mercury, Total (mg/L)	0.002		0.000008
Molybdenum, Total (mg/L)	n/a	0.1	0.0019
Selenium, Total (mg/L)	0.05		0.0011
Thallium, Total (mg/L)	0.002		0.00025

Notes:
Grey cell indicates calculated UTL is higher than MCL.
MCL = Maximum Contaminant Level
RSL = Regional Screening Level
Calculated UTL (Upper Tolerance Limit) represents site-specific background values.
The higher of the calculated UTL or MCL/Rule-Specified Level is used as the GWPS.

Table 3: Appendix III Data Summary
Mitchell Plant - Bottom Ash Pond

Geosyntec Consultants, Inc.

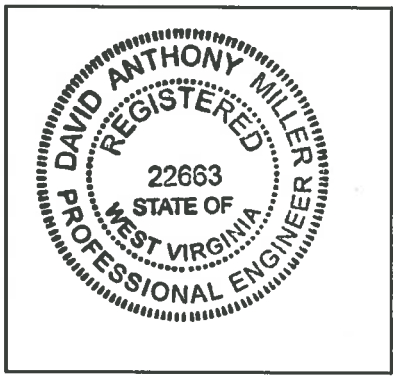
Parameter	Units	Description	MW-1505		MW-1506		MW-1507		MW-1509		MW-1510	
			8/22/2018	5/1/2019	8/22/2018	5/1/2019	8/21/2018	5/1/2019	8/21/2018	5/1/2019	8/21/2018	5/1/2019
Boron	mg/L	Interwell Background Value (UPL)	1.36									
		Detection Monitoring Result	**8.00**	**7.31**	**5.91**	**5.24**	**9.29**	**8.36**	**6.97**	**8.73**	**9.13**	**8.83**
Calcium	mg/L	Interwell Background Value (UPL)	240									
		Detection Monitoring Result	**274**	**287**	**270**	**280**	**272**	**271**	**279**	**287**	**268**	**287**
Chloride	mg/L	Interwell Background Value (UPL)	238									
		Detection Monitoring Result	**284**	**285**	**369**	**331**	**331**	**296**	**323**	**328**	**334**	**325**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.20		0.20		0.11		0.16		0.20	
		Detection Monitoring Result	0.02	0.01	0.05	0.03	0.07	0.07	0.14	0.13	0.09	0.1
pH	SU	Interwell Background Value (UPL)	8.2									
		Interwell Background Value (LPL)	6.9									
		Detection Monitoring Result	7.3	7.8	7.4	7.9	7.2	8.0	7.2	**8.5**	7.3	8.1
Sulfate	mg/L	Intrawell Background Value (UPL)	351		345		377		450		399	
		Detection Monitoring Result	**383**	**408**	**349**	**347**	323	346	**465**	429	**428**	**467**
Total Dissolved Solids	mg/L	Interwell Background Value (UPL)	1182									
		Detection Monitoring Result	**1520**	**1580**	**1590**	**1360**	**1430**	**1270**	**1540**	**1480**	**1550**	**1460**

Notes:
UPL: Upper prediction limit
LPL: Lower prediction limit
Bold values exceed the background value.
Background values are shaded gray.

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

I certify that the selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Mitchell Bottom Ash Pond CCR management area and that the requirements of 40 CFR 257.93(f) have been met.



DAVID ANTHONY MILLER

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

22663	WEST VIRGINIA	07.10.19
License Number	Licensing State	Date

ATTACHMENT B

Statistical Analysis Output

GROUNDWATER STATS CONSULTING

July 10, 2019

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
941 Chatham Lane, #103
Columbus, OH 43221

RE: Mitchell Bottom Ash Pond (BAP) Assessment Event – Spring 2019

Dear Ms. Kreinberg,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the evaluation of groundwater data for the Spring 2019 sample event for American Electric Power Company's Mitchell Bottom Ash Pond. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015) as well as with the USEPA Unified Guidance (2009).

Sampling at each of the wells below began at Mitchell Bottom Ash Pond for the CCR program in 2016. The monitoring well network, as provided by Geosyntec Consultants, consists of the following: upgradient wells MW-1504 and MW-1508; and downgradient wells MW-1505, MW-1506, MW-1507, MW-1509 and MW-1510.

Data were sent electronically, and the statistical analysis was conducted according to the Statistical Analysis Plan and screening evaluation prepared by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting, primary author of the USEPA Unified Guidance, and Senior Advisor to GSC.

The CCR program consists of the following constituents:

- **Appendix III** (Detection Monitoring) **-** boron, calcium, chloride, fluoride, pH, sulfate, and TDS; and

- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium.

Time series plots for Appendix III and IV parameters are provided for all wells and constituents; and are used to evaluate concentrations over the entire record (Figure A). Values in background which have previously been flagged as outliers may be seen in a lighter font and disconnected symbol on the graphs. Additionally, a summary of flagged values follows this letter (Figure B).

Evaluation of Appendix III Parameters

Interwell prediction limits combined with a 1-of-2 resample plan were constructed for boron, calcium, chloride, pH, and TDS; and intrawell prediction limits combined with a 1-of-2 resample plan were constructed for fluoride and sulfate (Figures C & D, respectively). The statistical method selected for each parameter was determined based on the results of the evaluation performed in December 2017; and all proposed background data were screened for outliers and trends at that time. The findings of those reports were submitted with that analysis.

Interwell prediction limits utilize all upgradient well data for construction of statistical limits. During each sample event, upgradient well data are screened for any newly suspected outliers or obvious trending patterns using time series plots. All values flagged as outliers may be seen on the Outlier Summary report following this letter. No obvious trending patterns were observed in the upgradient wells.

Intrawell prediction limits utilize the background data set that was originally screened in 2017. As recommended in the EPA Unified Guidance (2009), the background data set will be tested for the purpose of updating statistical limits using the Mann-Whitney two-sample test when an additional four to eight measurements are available.

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified, and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered a false positive result; therefore, no further action is necessary. Prediction limit exceedances were noted for boron, calcium, chloride, pH, sulfate and TDS in at

least one downgradient well. The results of those findings may be found in the Prediction Limit Summary tables following this letter.

When a statistically significant increase is identified, the data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether data are statistically increasing, decreasing or stable (Figure E). Several statistically significant decreasing trends were noted, but no statistically significant increasing trends were found in any of the downgradient wells. A statistically significant increasing trend was noted for pH in upgradient well MW_1504. When trends are identified in upgradient wells, it typically represents naturally changing groundwater quality unrelated to the site. The Trend Test Summary Table follows this letter.

Evaluation of Appendix IV Parameters

Tolerance limits were used to calculate background limits from all available pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage to determine the Alternate Contaminant Level (ACL) for each constituent (Figure F). Background data are screened for outliers and extreme trending patterns that would lead to artificially elevated statistical limits. Any flagged values may be seen on the Outlier Summary following this letter.

For parametric limits the target is 95% confidence and 95% coverage. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. These limits were compared to the Maximum Contaminant Levels (MCLs) and CCR-Rule specified levels in the Groundwater Protection Standards (GWPS) table following this letter to determine the highest limit for use as the GWPS in the Confidence Interval comparisons (Figure G).

Confidence intervals were then constructed on downgradient wells for each of the Appendix IV parameters using the highest limit of the MCL, CCR-Rule specified levels, or ACL as discussed above (Figure H). Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. No exceedances were noted at any of the downgradient wells. A summary of the confidence interval results follows this letter.

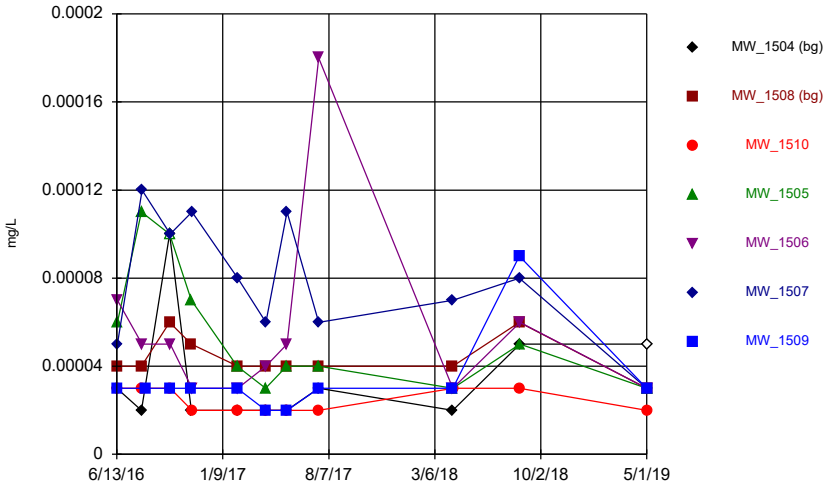
Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Mitchell Bottom Ash Pond. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,

Kristina L. Rayner
Groundwater Statistician

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

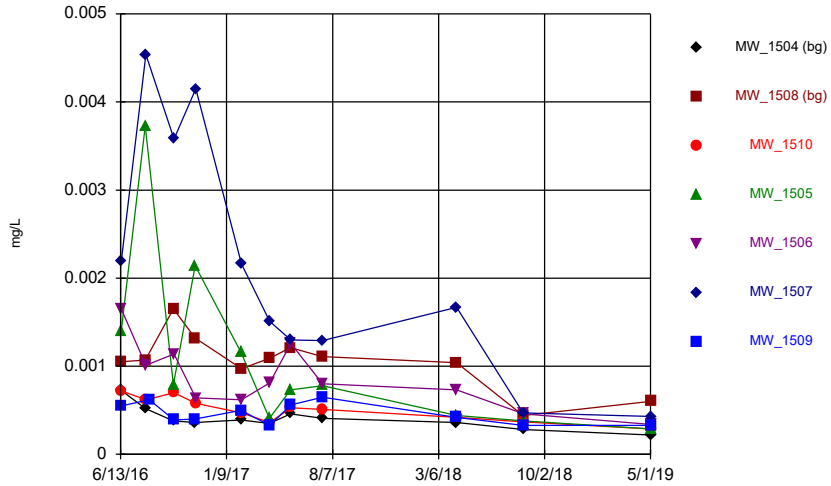
Time Series



Constituent: Antimony, total Analysis Run 7/10/2019 10:41 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

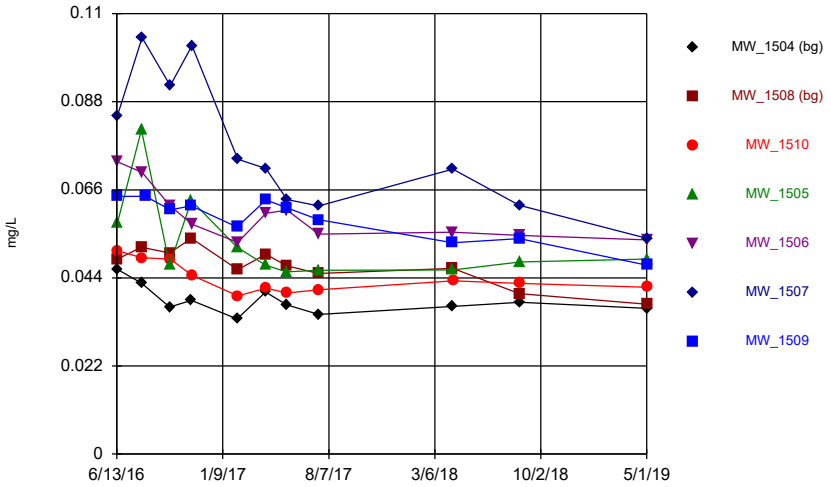
Time Series



Constituent: Arsenic, Total Analysis Run 7/10/2019 10:41 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

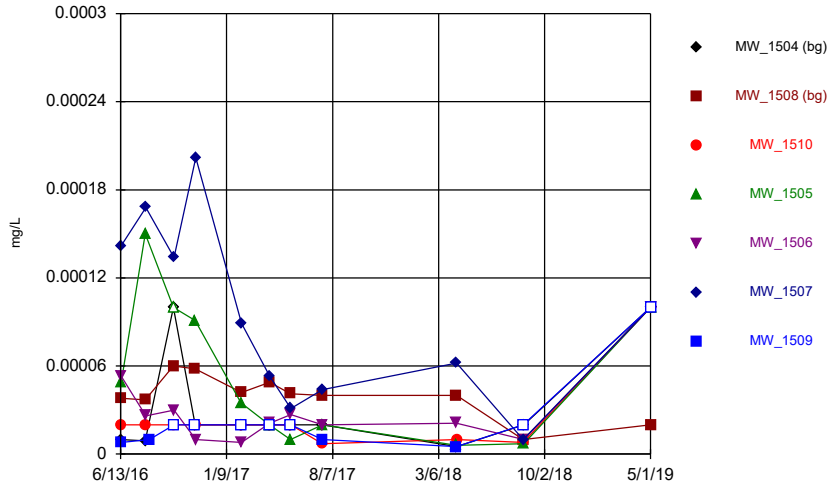
Time Series



Constituent: Barium, Total Analysis Run 7/10/2019 10:41 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

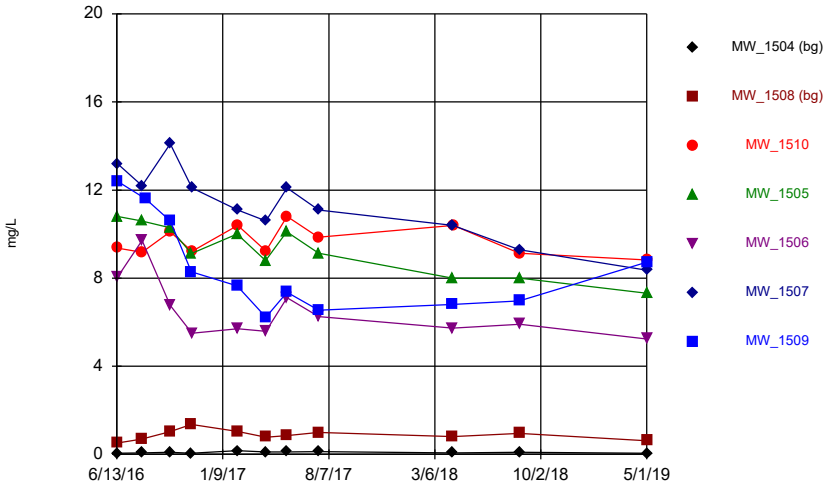
Time Series



Constituent: Beryllium, total Analysis Run 7/10/2019 10:41 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

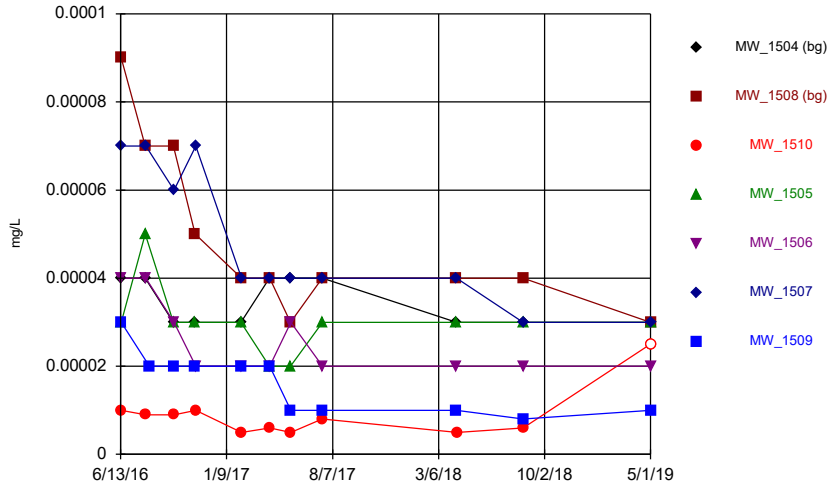
Time Series



Constituent: Boron, total Analysis Run 7/10/2019 10:41 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

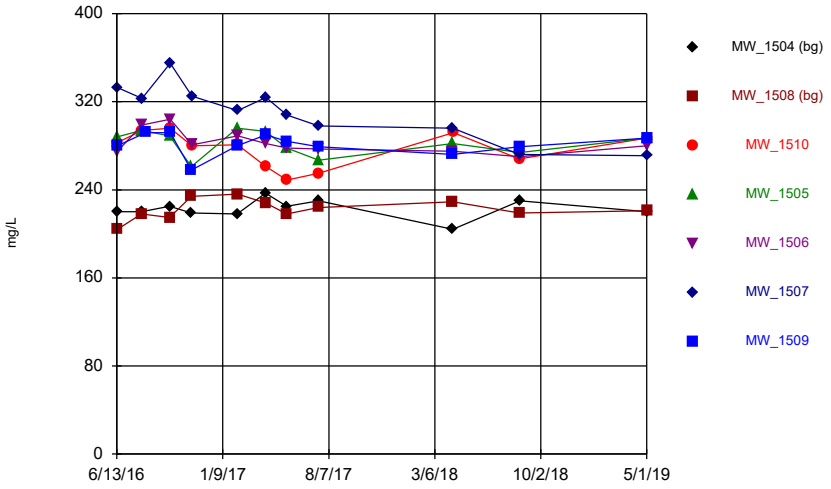
Time Series



Constituent: Cadmium, total Analysis Run 7/10/2019 10:41 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

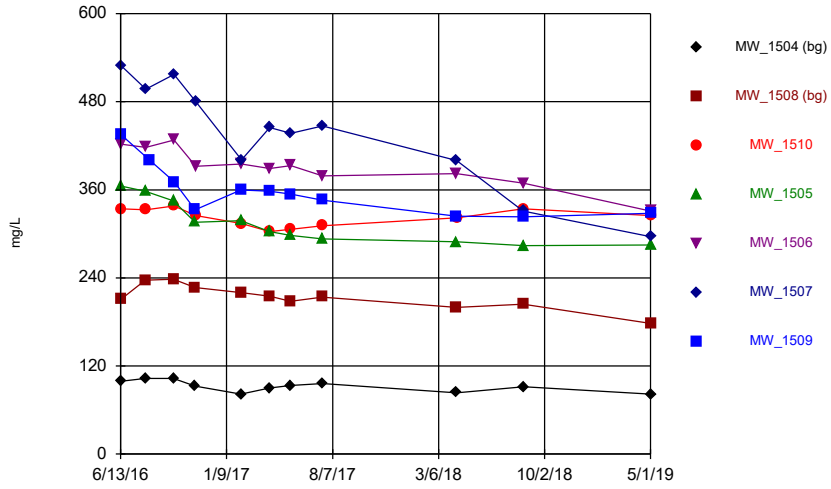
Time Series



Constituent: Calcium, total Analysis Run 7/10/2019 10:41 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

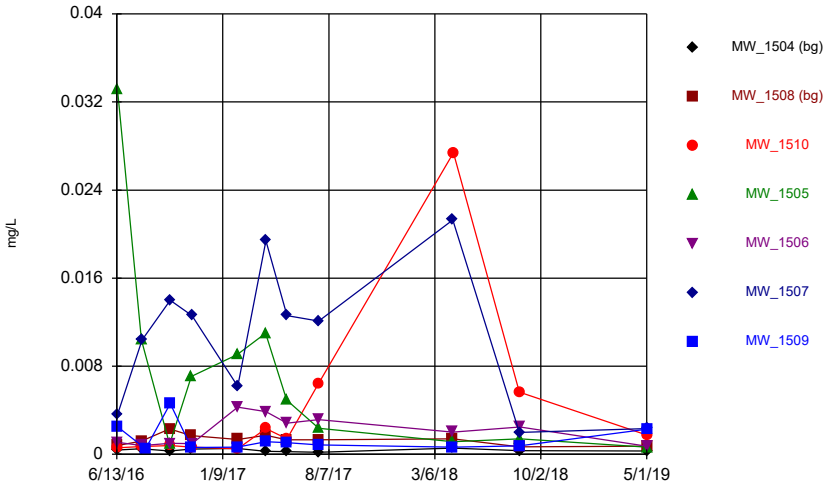
Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

Time Series



Constituent: Chloride, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

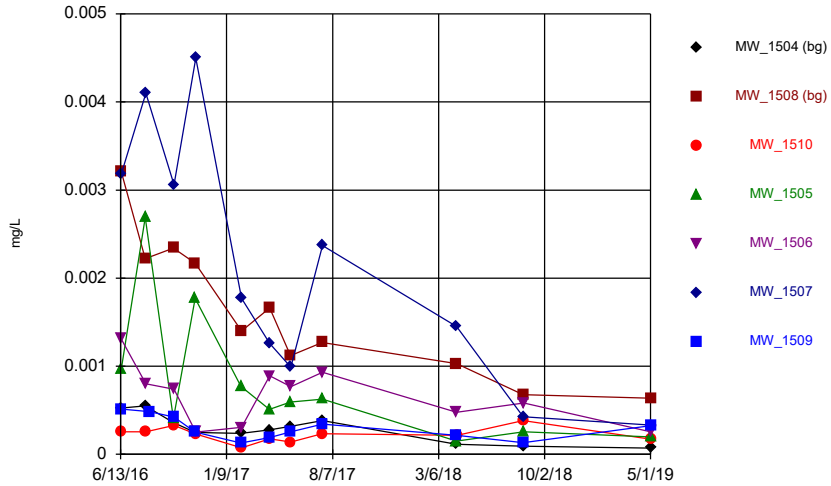
Time Series



Constituent: Chromium, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

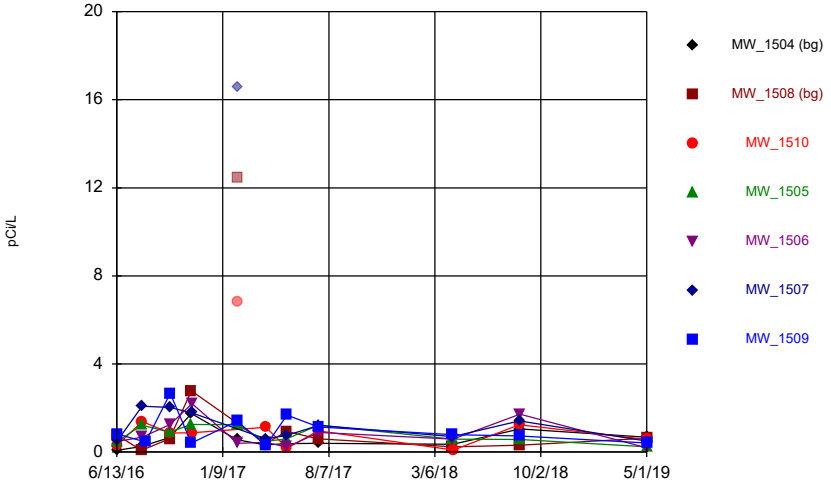
Time Series



Constituent: Cobalt, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

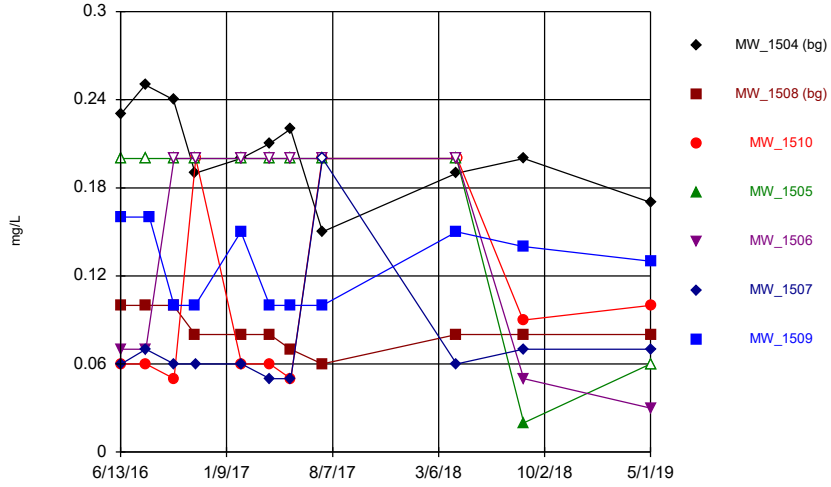
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 7/10/2019 10:42 AM View: Time Series - All Well
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

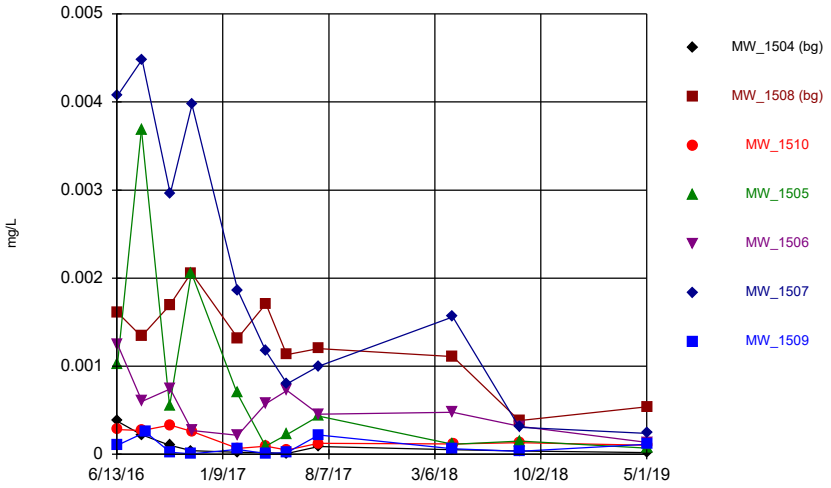
Time Series



Constituent: Fluoride, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

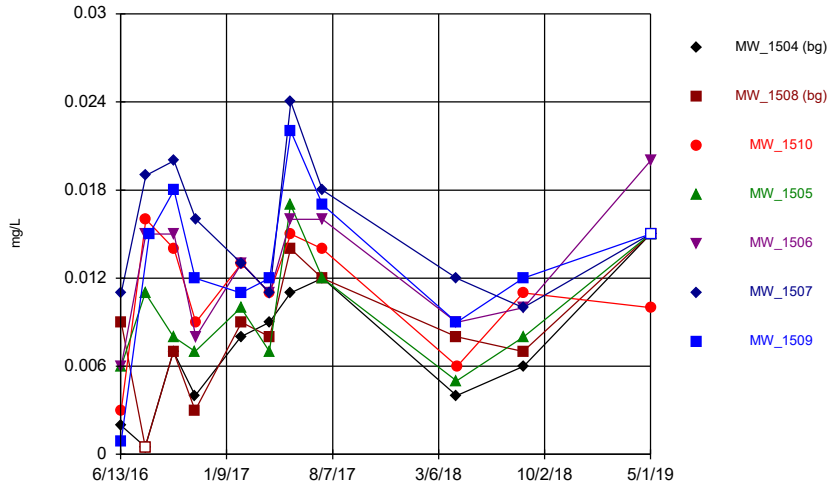
Time Series



Constituent: Lead, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

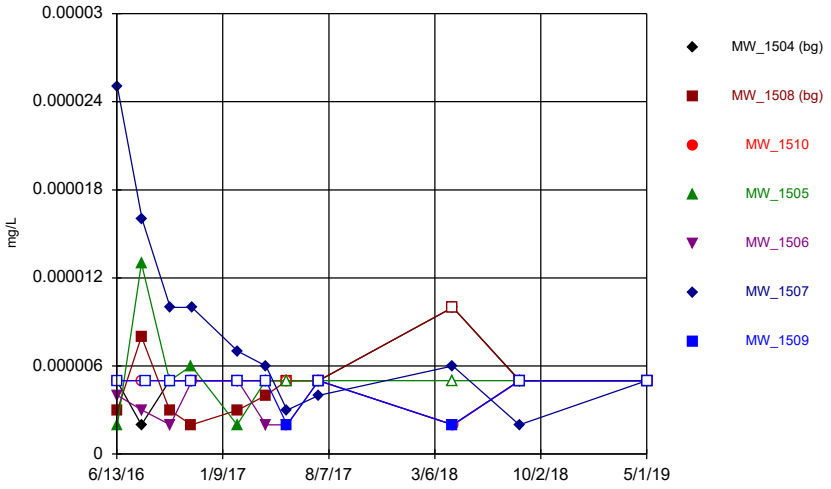
Time Series



Constituent: Lithium, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

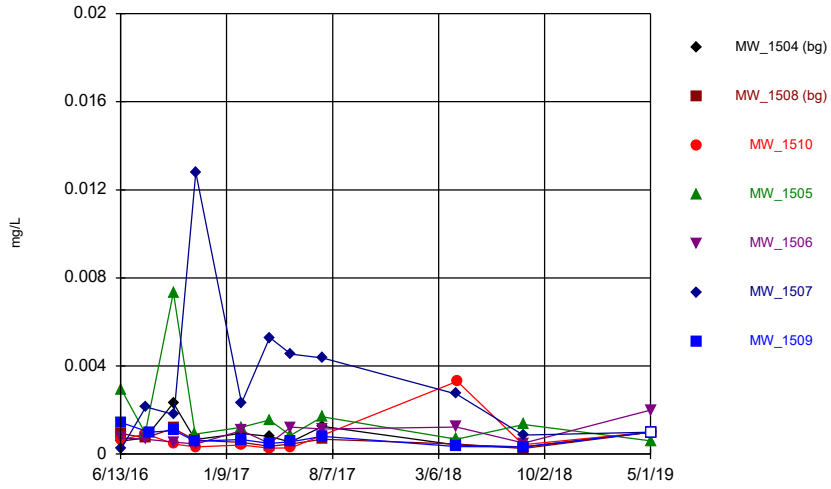
Time Series



Constituent: Mercury, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

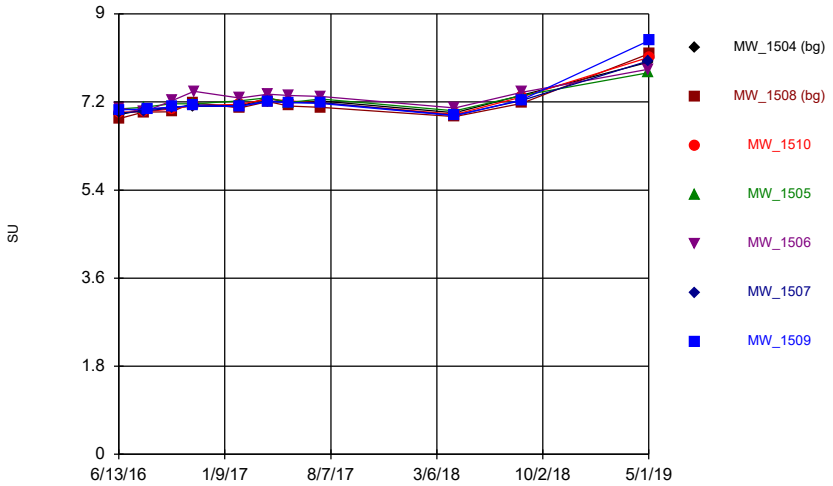
Time Series



Constituent: Molybdenum, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

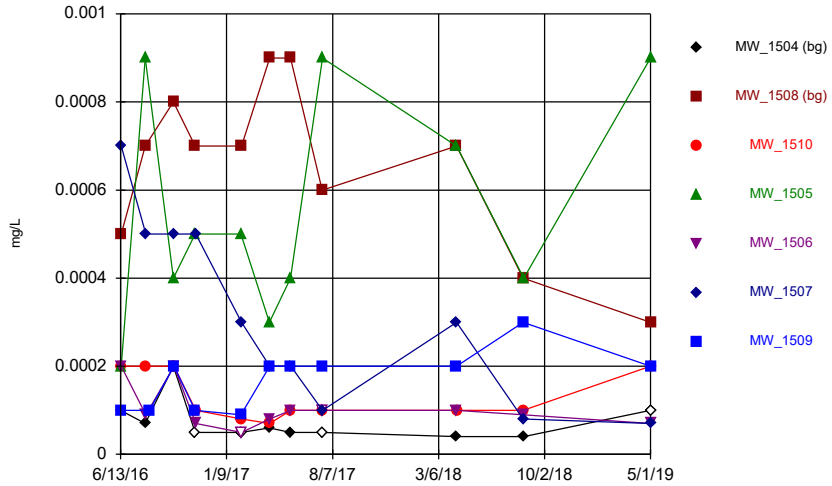
Time Series



Constituent: pH, field Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

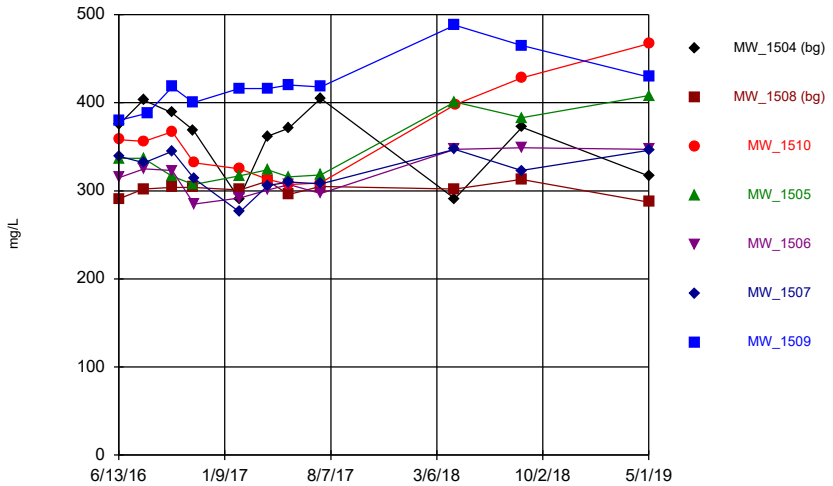
Time Series



Constituent: Selenium, Total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

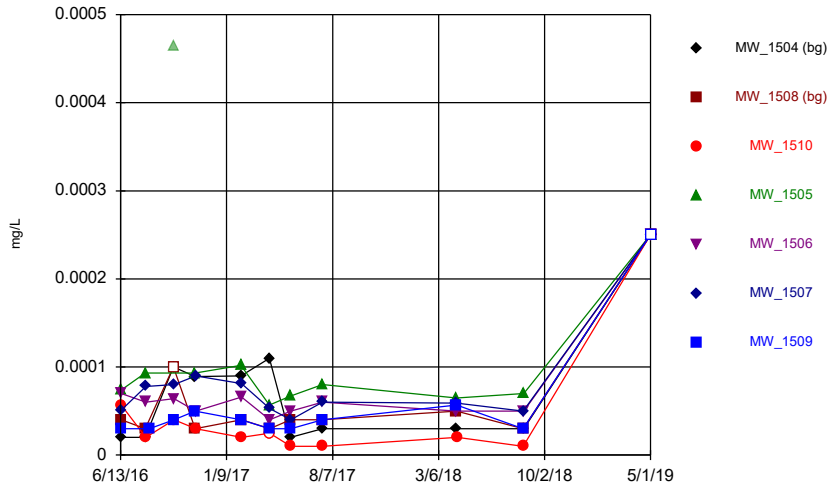
Time Series



Constituent: Sulfate, total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

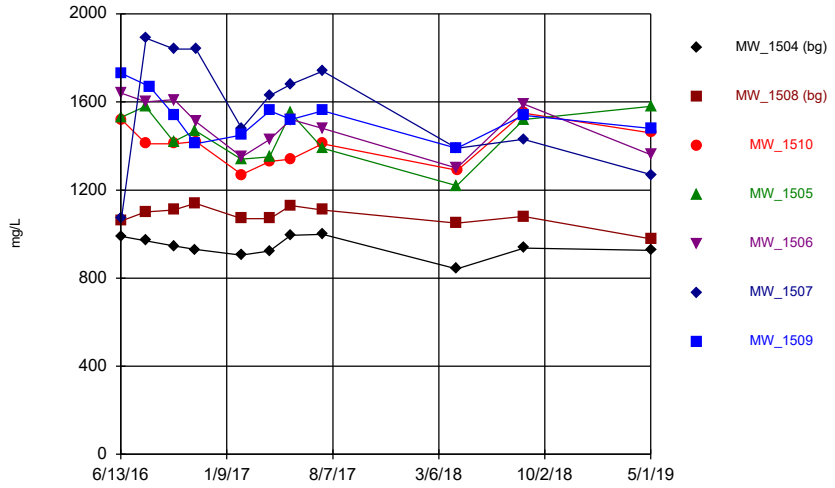
Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium, Total Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 7/10/2019 10:42 AM View: Time Series - All Wells
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Outlier Summary

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/10/2019, 10:43 AM

	MW_1508 Combined Radium 226 + 228 (pCi/L)	MW_1510 Combined Radium 226 + 228 (pCi/L)	MW_1507 Combined Radium 226 + 228 (pCi/L)	MW_1505 Thallium, Total (mg/L)
9/26/2016				0.000464 (o)
2/8/2017	12.465 (o)	6.828 (o)	16.587 (o)	

Interwell Prediction Limit Summary - Significant Results

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/8/2019, 2:00 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron, total (mg/L)	**MW_1510**	**1.36**	**5/1/2019**	**8.83**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Boron, total (mg/L)	**MW_1505**	**1.36**	**5/1/2019**	**7.31**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Boron, total (mg/L)	**MW_1506**	**1.36**	**5/1/2019**	**5.24**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Boron, total (mg/L)	**MW_1507**	**1.36**	**5/1/2019**	**8.36**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Boron, total (mg/L)	**MW_1509**	**1.36**	**5/1/2019**	**8.73**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Calcium, total (mg/L)	**MW_1510**	**239.9**	**5/1/2019**	**287**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Calcium, total (mg/L)	**MW_1505**	**239.9**	**5/1/2019**	**287**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Calcium, total (mg/L)	**MW_1506**	**239.9**	**5/1/2019**	**280**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Calcium, total (mg/L)	**MW_1507**	**239.9**	**5/1/2019**	**271**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Calcium, total (mg/L)	**MW_1509**	**239.9**	**5/1/2019**	**287**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Chloride, total (mg/L)	**MW_1510**	**238**	**5/1/2019**	**325**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Chloride, total (mg/L)	**MW_1505**	**238**	**5/1/2019**	**285**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Chloride, total (mg/L)	**MW_1506**	**238**	**5/1/2019**	**331**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Chloride, total (mg/L)	**MW_1507**	**238**	**5/1/2019**	**296**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Chloride, total (mg/L)	**MW_1509**	**238**	**5/1/2019**	**328**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
pH, field (SU)	**MW_1509**	**8.18**	**5/1/2019**	**8.45**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.006991**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1510**	**1182**	**5/1/2019**	**1460**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1505**	**1182**	**5/1/2019**	**1580**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1506**	**1182**	**5/1/2019**	**1360**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1507**	**1182**	**5/1/2019**	**1270**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1509**	**1182**	**5/1/2019**	**1480**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**

Interwell Prediction Limit Summary - All Results

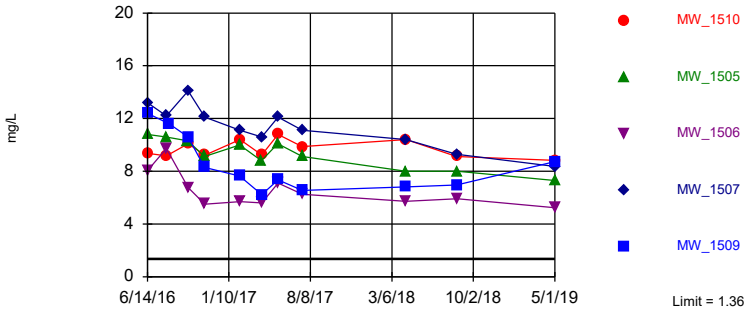
Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/8/2019, 2:00 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron, total (mg/L)	**MW_1510**	**1.36**	**5/1/2019**	**8.83**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Boron, total (mg/L)	**MW_1505**	**1.36**	**5/1/2019**	**7.31**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Boron, total (mg/L)	**MW_1506**	**1.36**	**5/1/2019**	**5.24**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Boron, total (mg/L)	**MW_1507**	**1.36**	**5/1/2019**	**8.36**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Boron, total (mg/L)	**MW_1509**	**1.36**	**5/1/2019**	**8.73**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Calcium, total (mg/L)	**MW_1510**	**239.9**	**5/1/2019**	**287**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Calcium, total (mg/L)	**MW_1505**	**239.9**	**5/1/2019**	**287**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Calcium, total (mg/L)	**MW_1506**	**239.9**	**5/1/2019**	**280**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Calcium, total (mg/L)	**MW_1507**	**239.9**	**5/1/2019**	**271**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Calcium, total (mg/L)	**MW_1509**	**239.9**	**5/1/2019**	**287**	**Yes**	**22**	**222.5**	**8.651**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Chloride, total (mg/L)	**MW_1510**	**238**	**5/1/2019**	**325**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Chloride, total (mg/L)	**MW_1505**	**238**	**5/1/2019**	**285**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Chloride, total (mg/L)	**MW_1506**	**238**	**5/1/2019**	**331**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Chloride, total (mg/L)	**MW_1507**	**238**	**5/1/2019**	**296**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
Chloride, total (mg/L)	**MW_1509**	**238**	**5/1/2019**	**328**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.003495**	**NP Inter (normality) 1 of 2**
pH, field (SU)	MW_1510	8.18	5/1/2019	8.11	No	22	n/a	n/a	0	n/a	n/a	0.006991	NP Inter (normality) 1 of 2
pH, field (SU)	MW_1505	8.18	4/30/2019	7.8	No	22	n/a	n/a	0	n/a	n/a	0.006991	NP Inter (normality) 1 of 2
pH, field (SU)	MW_1506	8.18	4/30/2019	7.87	No	22	n/a	n/a	0	n/a	n/a	0.006991	NP Inter (normality) 1 of 2
pH, field (SU)	MW_1507	8.18	4/30/2019	8.04	No	22	n/a	n/a	0	n/a	n/a	0.006991	NP Inter (normality) 1 of 2
pH, field (SU)	**MW_1509**	**8.18**	**5/1/2019**	**8.45**	**Yes**	**22**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.006991**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1510**	**1182**	**5/1/2019**	**1460**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1505**	**1182**	**5/1/2019**	**1580**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1506**	**1182**	**5/1/2019**	**1360**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1507**	**1182**	**5/1/2019**	**1270**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**MW_1509**	**1182**	**5/1/2019**	**1480**	**Yes**	**22**	**1012**	**84.17**	**0**	**None**	**No**	**0.001504**	**Param Inter 1 of 2**

Exceeds Limit: MW_1510, MW_1505, MW 1506, MW 1507, MW 1509

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. Annual per-constituent alpha = 0.03441. Individual comparison alpha = 0.003495 (1 of 2). Comparing 5 points to limit.

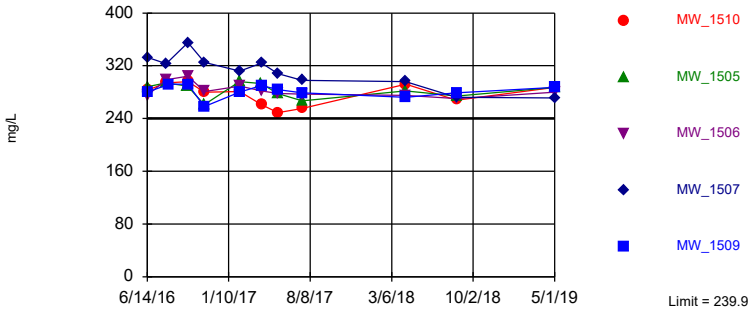
Constituent: Boron, total Analysis Run 7/8/2019 1:58 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit: MW_1510, MW_1505, MW 1506, MW 1507, MW 1509

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=222.5, Std. Dev.=8.651, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9394, critical = 0.878. Kappa = 2.022 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

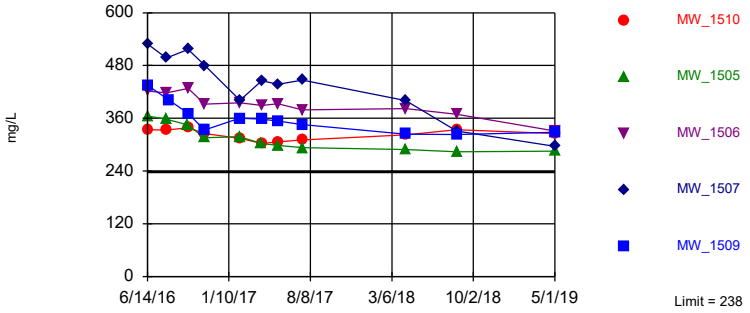
Constituent: Calcium, total Analysis Run 7/8/2019 1:58 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit: MW_1510, MW_1505, MW 1506, MW 1507, MW 1509

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. Annual per-constituent alpha = 0.03441. Individual comparison alpha = 0.003495 (1 of 2). Comparing 5 points to limit.

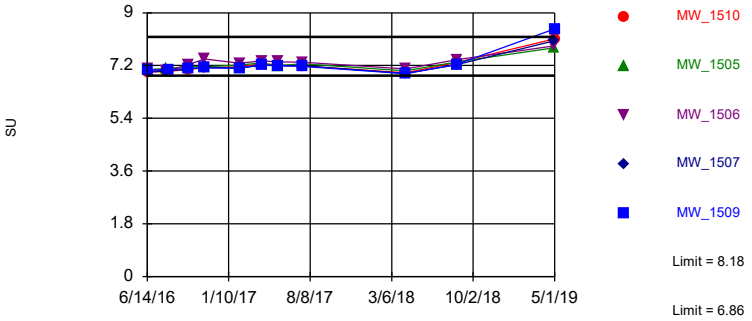
Constituent: Chloride, total Analysis Run 7/8/2019 1:58 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limits: MW_1509

Prediction Limit

Interwell Non-parametric



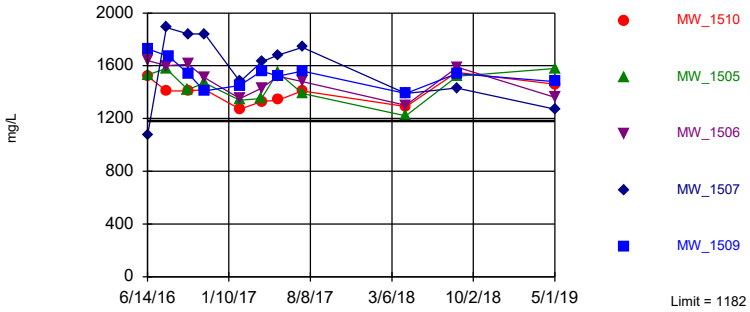
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 22 background values. Annual per-constituent alpha = 0.06882. Individual comparison alpha = 0.006991 (1 of 2). Comparing 5 points to limit.

Constituent: pH, field Analysis Run 7/8/2019 1:58 PM View: PLs - Interwell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Exceeds Limit: MW_1510, MW_1505, MW 1506, MW 1507, MW 1509

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=1012, Std. Dev.=84.17, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9516, critical = 0.878. Kappa = 2.022 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001504. Comparing 5 points to limit.

Constituent: Total Dissolved Solids [TDS] Analysis Run 7/8/2019 1:58 PM View: PLs - Interwell

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Intrawell Prediction Limit Summary - Significant Results

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/8/2019, 2:10 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Sulfate, total (mg/L)	**MW_1510**	**399.1**	**5/1/2019**	**467**	**Yes**	**8**	**333.4**	**23.98**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1505**	**350.5**	**5/1/2019**	**408**	**Yes**	**8**	**321.6**	**10.56**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1506**	**345.4**	**5/1/2019**	**347**	**Yes**	**8**	**305.6**	**14.51**	**0**	**None**	**No**	**0.001504**	Param 1 of 2

Intrawell Prediction Limit Summary - All Results

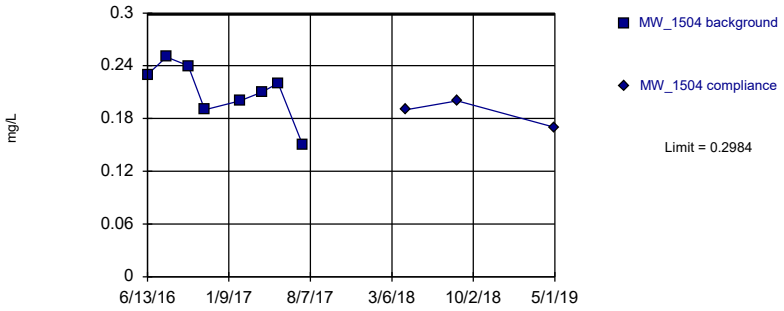
Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/8/2019, 2:10 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Fluoride, total (mg/L)	MW_1504	0.2984	5/1/2019	0.17	No	8	0.2113	0.03182	0	None	No	0.001504	Param 1 of 2
Fluoride, total (mg/L)	MW_1508	0.125	5/1/2019	0.08	No	8	0.08375	0.01506	0	None	No	0.001504	Param 1 of 2
Fluoride, total (mg/L)	MW_1510	0.2	5/1/2019	0.1	No	8	n/a	n/a	25	n/a	n/a	0.02144	NP (normality) 1 of 2
Fluoride, total (mg/L)	MW_1505	0.2	5/1/2019	0.06ND	No	8	n/a	n/a	100	n/a	n/a	0.02144	NP (NDs) 1 of 2
Fluoride, total (mg/L)	MW_1506	0.2	5/1/2019	0.03	No	8	n/a	n/a	75	n/a	n/a	0.02144	NP (NDs) 1 of 2
Fluoride, total (mg/L)	MW_1507	0.2	5/1/2019	0.07	No	8	n/a	n/a	12.5	n/a	n/a	0.02144	NP (normality) 1 of 2
Fluoride, total (mg/L)	MW_1509	0.16	5/1/2019	0.13	No	8	n/a	n/a	0	n/a	n/a	0.02144	NP (normality) 1 of 2
Sulfate, total (mg/L)	MW_1504	468.9	5/1/2019	317	No	8	370.6	35.86	0	None	No	0.001504	Param 1 of 2
Sulfate, total (mg/L)	MW_1508	318.3	5/1/2019	287	No	8	301.8	6.042	0	None	No	0.001504	Param 1 of 2
Sulfate, total (mg/L)	**MW_1510**	**399.1**	**5/1/2019**	**467**	**Yes**	**8**	**333.4**	**23.98**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1505**	**350.5**	**5/1/2019**	**408**	**Yes**	**8**	**321.6**	**10.56**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	**MW_1506**	**345.4**	**5/1/2019**	**347**	**Yes**	**8**	**305.6**	**14.51**	**0**	**None**	**No**	**0.001504**	Param 1 of 2
Sulfate, total (mg/L)	MW_1507	376.9	5/1/2019	346	No	8	316.3	22.13	0	None	No	0.001504	Param 1 of 2
Sulfate, total (mg/L)	MW_1509	449.9	5/1/2019	429	No	8	407	15.64	0	None	No	0.001504	Param 1 of 2

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2113, Std. Dev.=0.03182, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9517, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Fluoride, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell

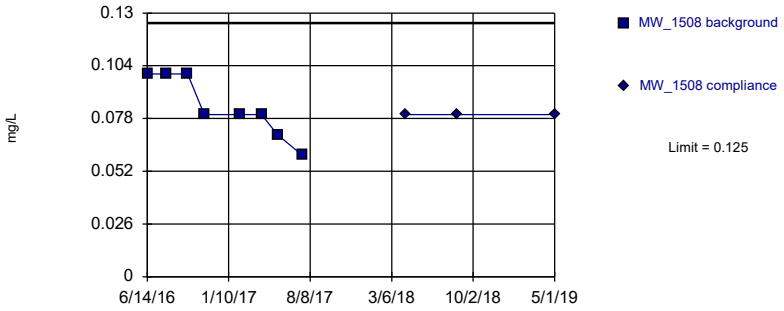
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.08375, Std. Dev.=0.01506, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8711, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Fluoride, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

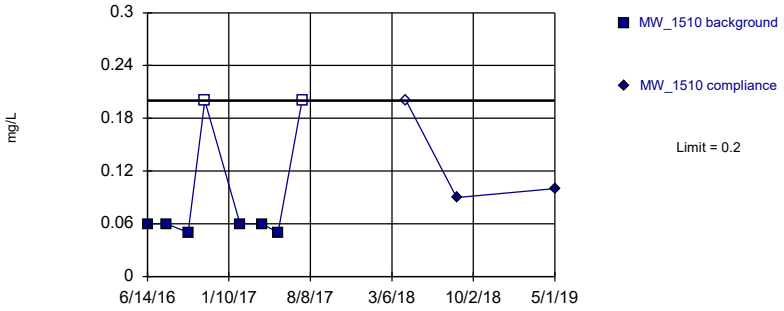
Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 25% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Fluoride, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

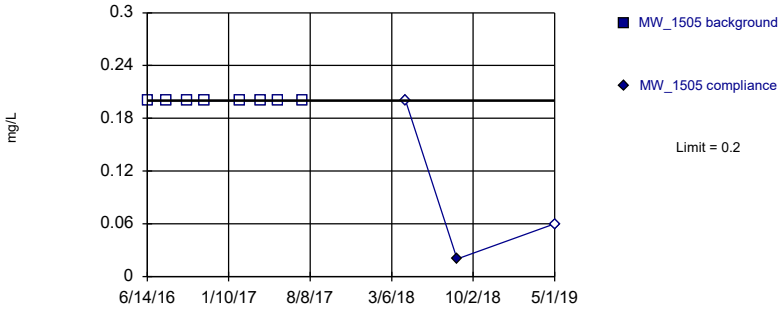
Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Fluoride, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell

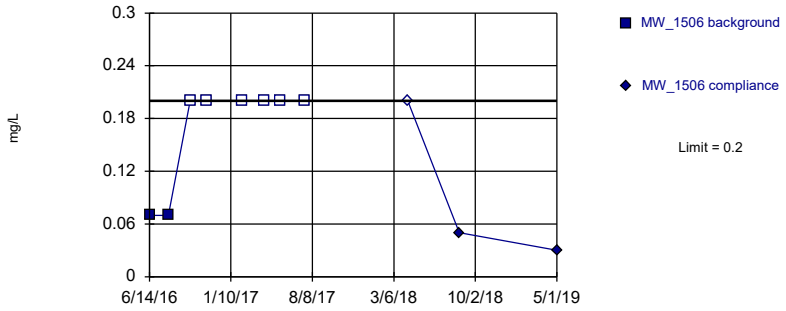
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

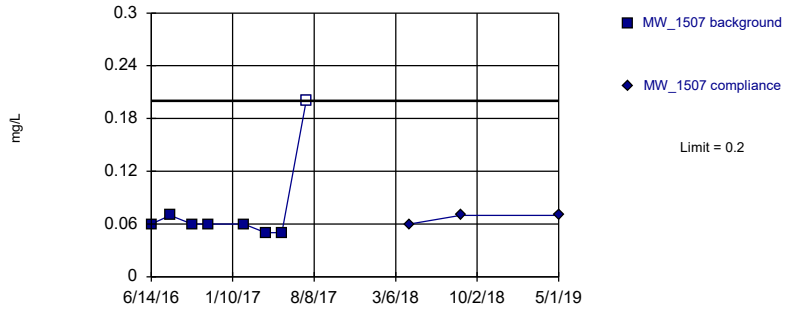
Constituent: Fluoride, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 12.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

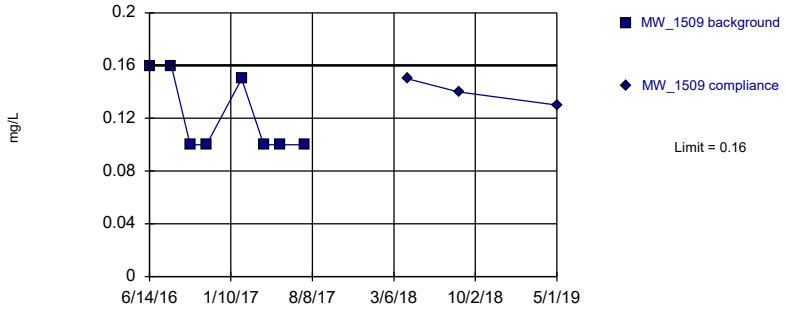
Constituent: Fluoride, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

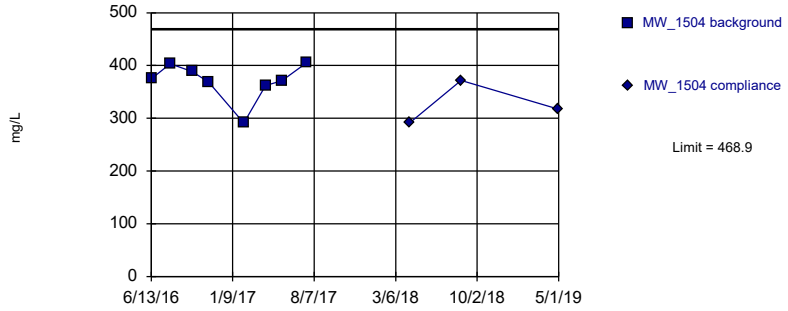
Constituent: Fluoride, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Intrawell Parametric



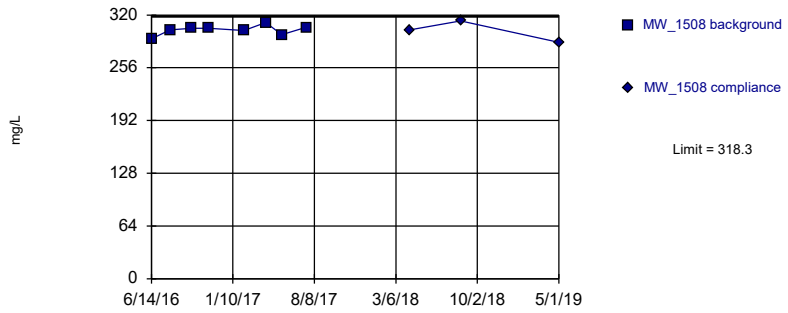
Background Data Summary: Mean=370.6, Std. Dev.=35.86, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8152, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=301.8, Std. Dev.=6.042, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9509, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell

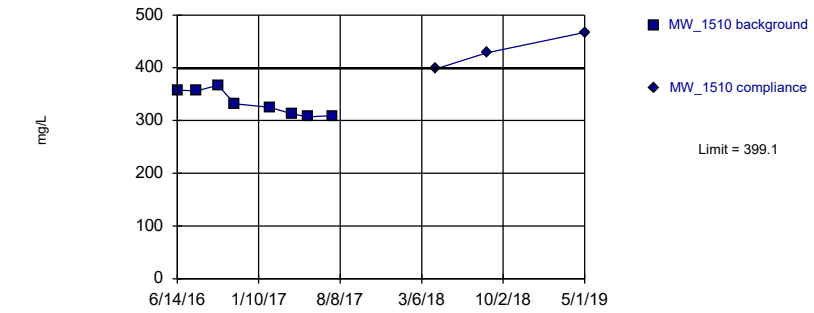
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=333.4, Std. Dev.=23.98, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8854, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell

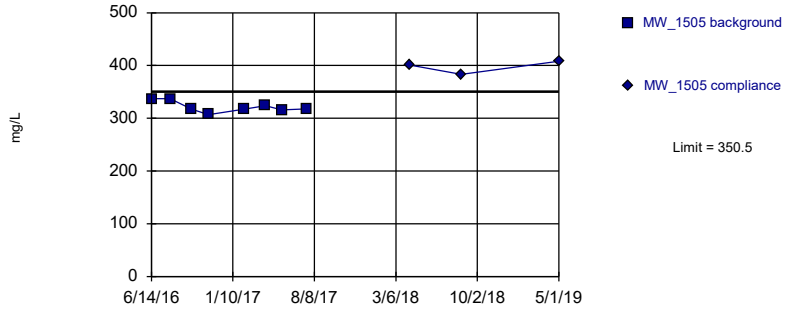
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=321.6, Std. Dev.=10.56, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8719, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell

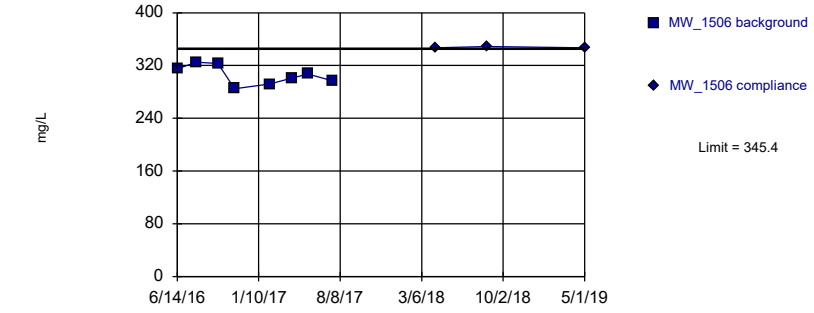
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=305.6, Std. Dev.=14.51, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9536, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

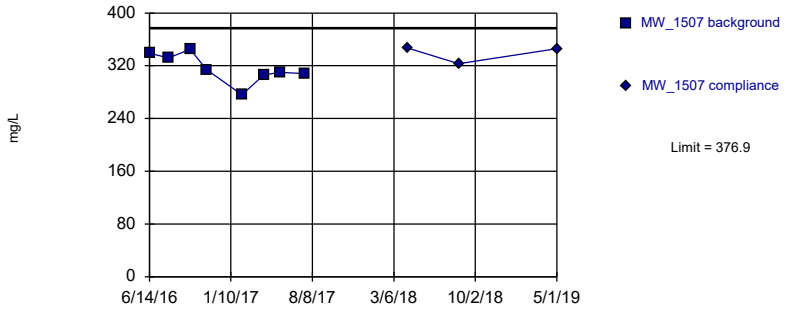
Constituent: Sulfate, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=316.3, Std. Dev.=22.13, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9344, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

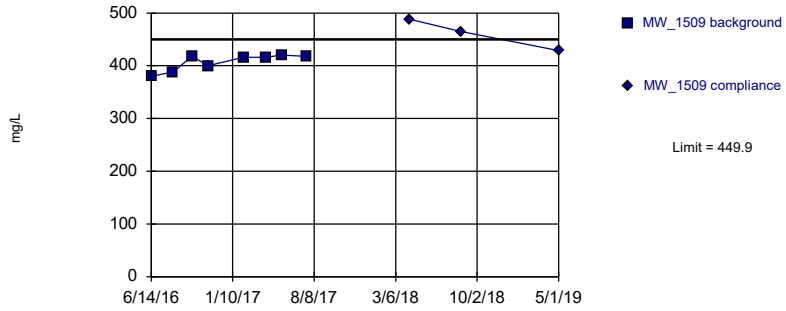
Constituent: Sulfate, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=407, Std. Dev.=15.64, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7926, critical = 0.749. Kappa = 2.74 (c=7, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.001504.

Constituent: Sulfate, total Analysis Run 7/8/2019 2:08 PM View: PLs - Intrawell
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Trend Test Summary Table - Significant Results

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/8/2019, 2:27 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron, total (mg/L)	**MW_1505**	**-1.212**	**-42**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	**MW_1507**	**-1.578**	**-43**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium, total (mg/L)	**MW_1507**	**-25.59**	**-45**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1508 (bg)**	**-18.83**	**-37**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1505**	**-34.76**	**-51**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1506**	**-29.93**	**-43**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1507**	**-76.12**	**-43**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1509**	**-30.58**	**-43**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, field (SU)	**MW_1504 (bg)**	**0.1866**	**36**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**

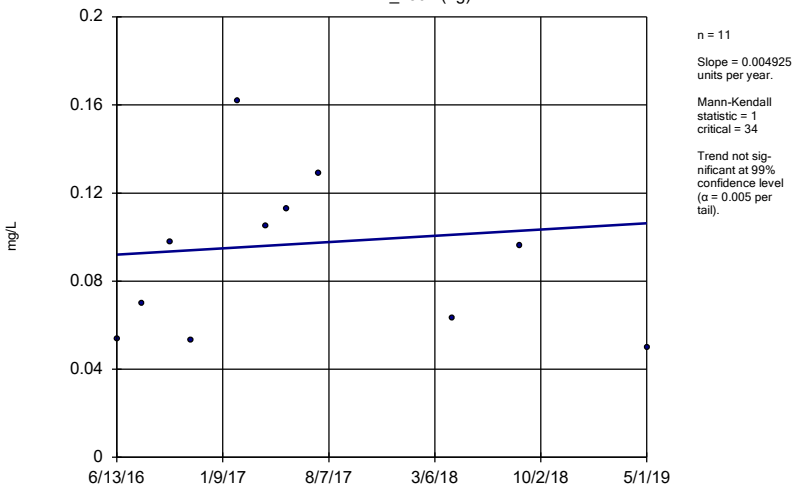
Trend Test Summary Table - All Results

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/8/2019, 2:27 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron, total (mg/L)	MW_1504 (bg)	0.004925	1	34	No	11	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	MW_1508 (bg)	-0.02475	-1	-34	No	11	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	MW_1510	-0.05054	-4	-34	No	11	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	**MW_1505**	**-1.212**	**-42**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	MW_1506	-0.717	-21	-34	No	11	0	n/a	n/a	0.01	NP
Boron, total (mg/L)	**MW_1507**	**-1.578**	**-43**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron, total (mg/L)	MW_1509	-2.466	-27	-34	No	11	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1504 (bg)	0	4	34	No	11	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1508 (bg)	2.104	12	34	No	11	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1510	-6.738	-13	-34	No	11	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1505	-3.288	-13	-34	No	11	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	MW_1506	-6.32	-24	-34	No	11	0	n/a	n/a	0.01	NP
Calcium, total (mg/L)	**MW_1507**	**-25.59**	**-45**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium, total (mg/L)	MW_1509	-1.834	-12	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	MW_1504 (bg)	-6.002	-24	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	**MW_1508 (bg)**	**-18.83**	**-37**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	MW_1510	-5.016	-11	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, total (mg/L)	**MW_1505**	**-34.76**	**-51**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1506**	**-29.93**	**-43**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1507**	**-76.12**	**-43**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, total (mg/L)	**MW_1509**	**-30.58**	**-43**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, field (SU)	**MW_1504 (bg)**	**0.1866**	**36**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, field (SU)	MW_1508 (bg)	0.1505	25	34	No	11	0	n/a	n/a	0.01	NP
pH, field (SU)	MW_1509	0.1304	31	34	No	11	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1504 (bg)	-17.38	-14	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1508 (bg)	1.448	7	34	No	11	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1510	21.89	5	34	No	11	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1505	21.01	17	34	No	11	0	n/a	n/a	0.01	NP
Sulfate, total (mg/L)	MW_1506	13.67	16	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MW_1504 (bg)	-16.52	-13	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MW_1508 (bg)	-19.31	-11	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MW_1510	0	0	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MW_1505	-23.65	-4	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MW_1506	-101.4	-25	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MW_1507	-184.3	-20	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	MW_1509	-51.17	-19	-34	No	11	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

MW_1504 (bg)



n = 11

Slope = 0.004925 units per year.

Mann-Kendall statistic = 1
critical = 34

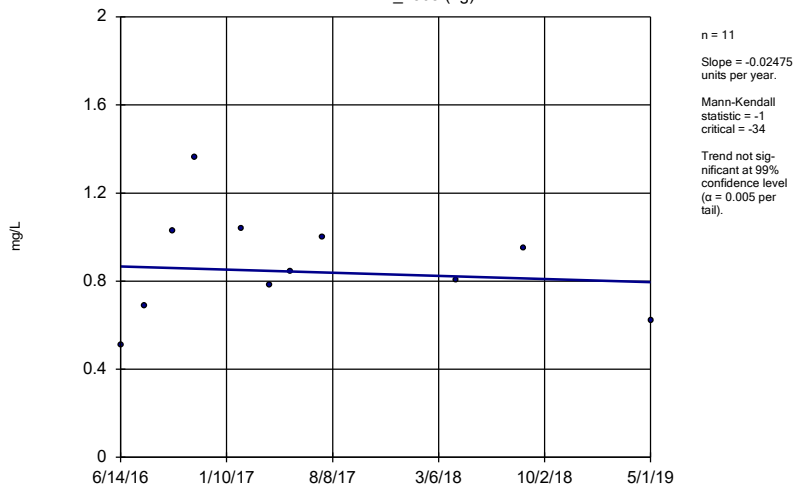
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 11

Slope = -0.02475 units per year.

Mann-Kendall statistic = -1
critical = -34

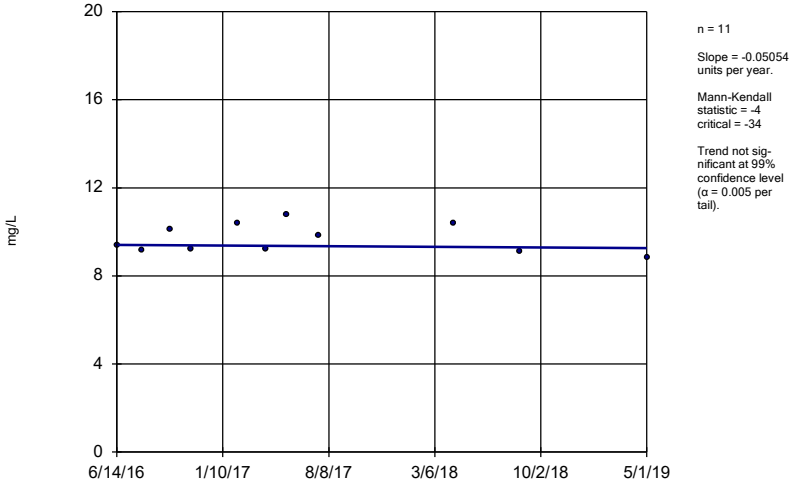
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1510



n = 11

Slope = -0.05054 units per year.

Mann-Kendall statistic = -4
critical = -34

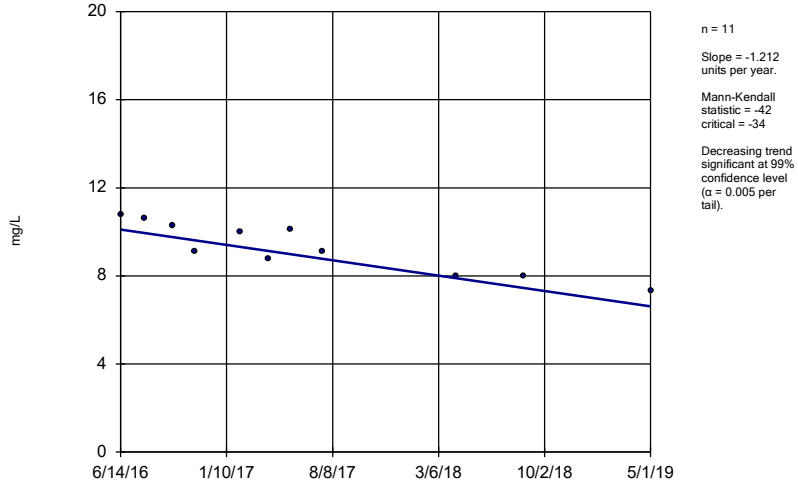
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 11

Slope = -1.212 units per year.

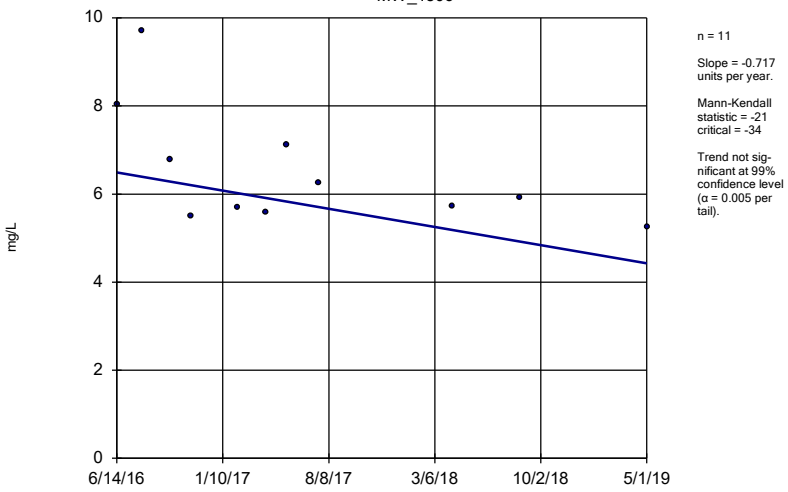
Mann-Kendall statistic = -42
critical = -34

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1506



n = 11

Slope = -0.717 units per year.

Mann-Kendall statistic = -21 critical = -34

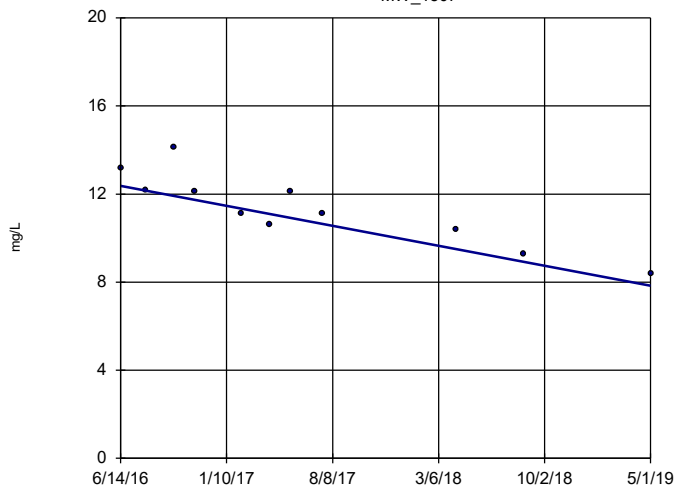
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1507



n = 11

Slope = -1.578 units per year.

Mann-Kendall statistic = -43 critical = -34

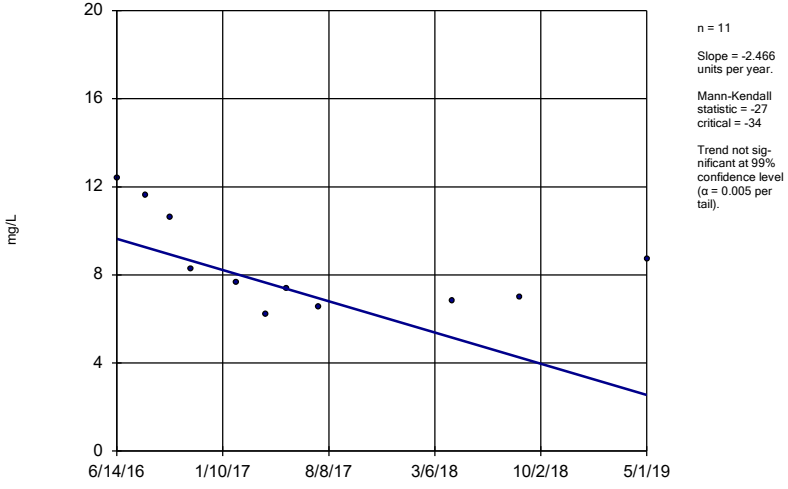
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1509



n = 11

Slope = -2.466 units per year.

Mann-Kendall statistic = -27 critical = -34

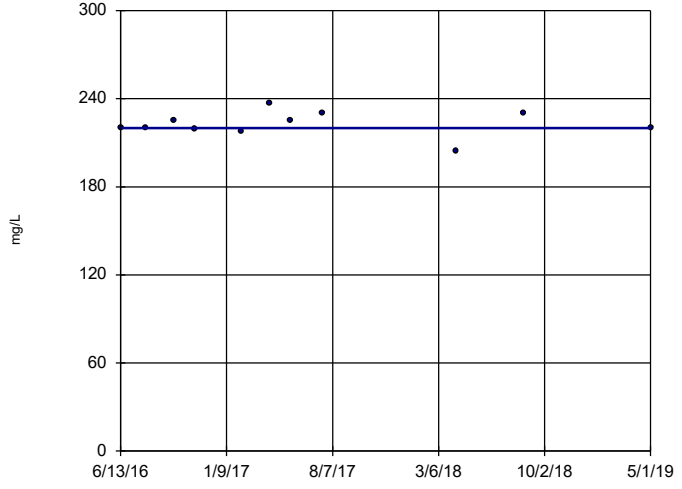
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1504 (bg)



n = 11

Slope = 0 units per year.

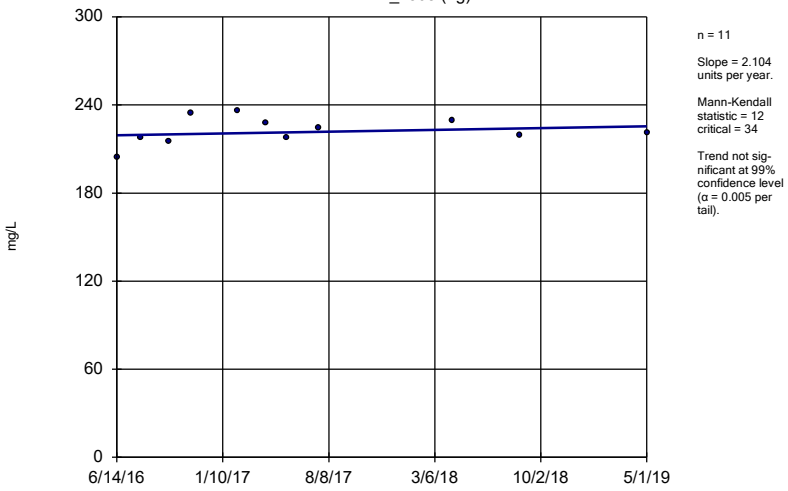
Mann-Kendall statistic = 4 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1508 (bg)



n = 11

Slope = 2.104 units per year.

Mann-Kendall statistic = 12 critical = 34

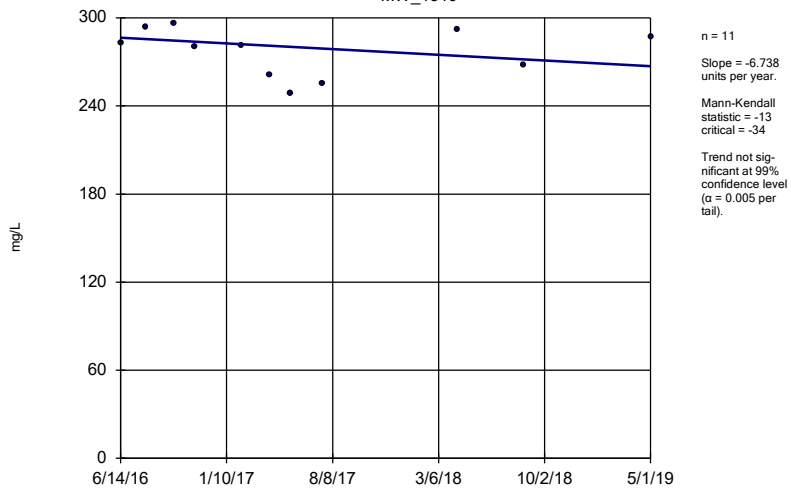
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1510



n = 11

Slope = -6.738 units per year.

Mann-Kendall statistic = -13 critical = -34

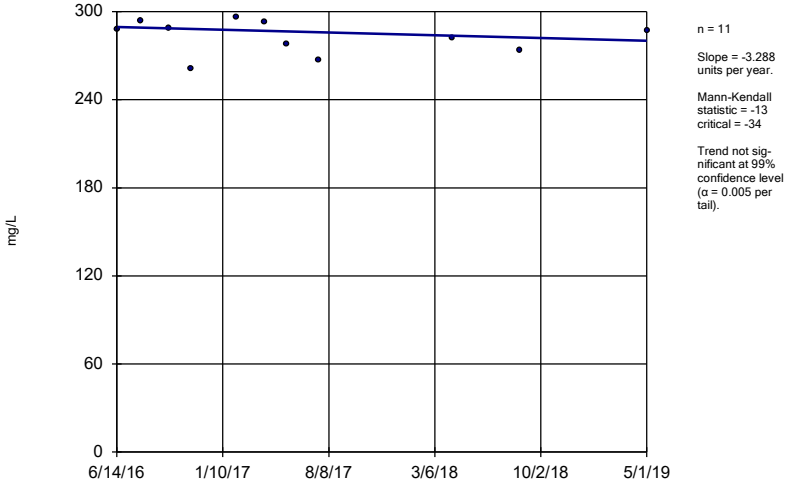
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 11

Slope = -3.288 units per year.

Mann-Kendall statistic = -13 critical = -34

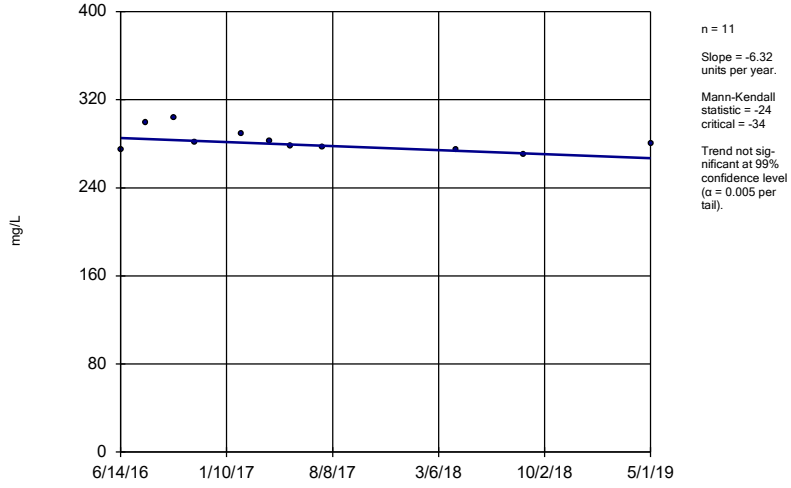
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1506



n = 11

Slope = -6.32 units per year.

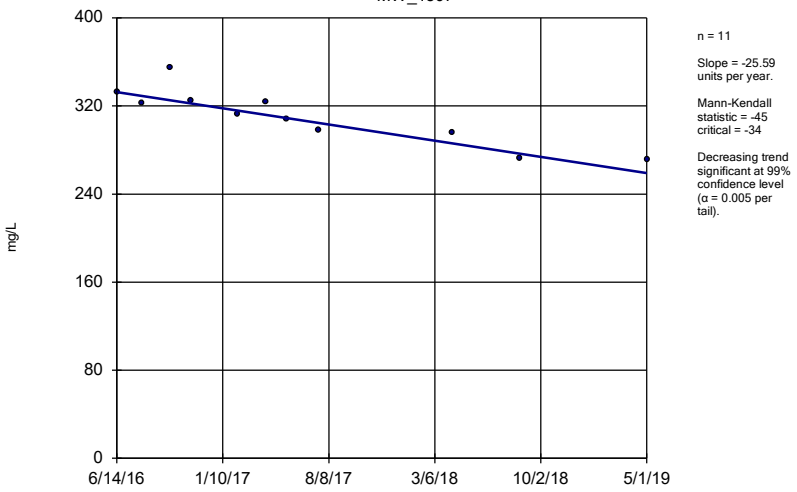
Mann-Kendall statistic = -24 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1507



n = 11

Slope = -25.59 units per year.

Mann-Kendall statistic = -45 critical = -34

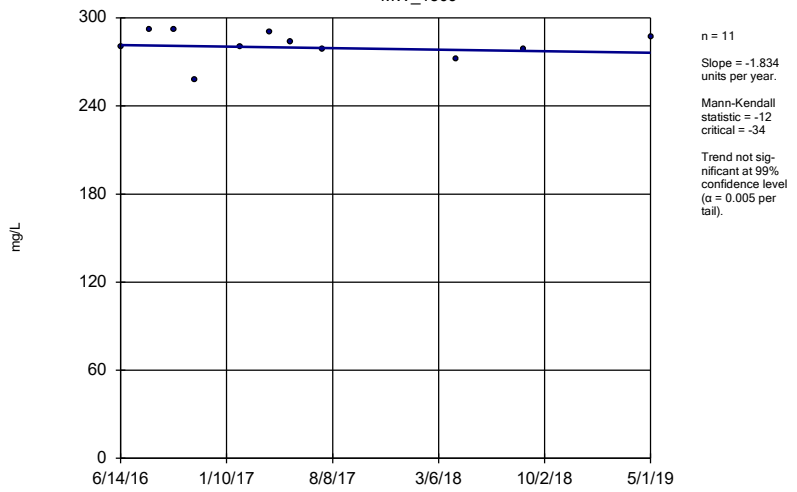
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1509



n = 11

Slope = -1.834 units per year.

Mann-Kendall statistic = -12 critical = -34

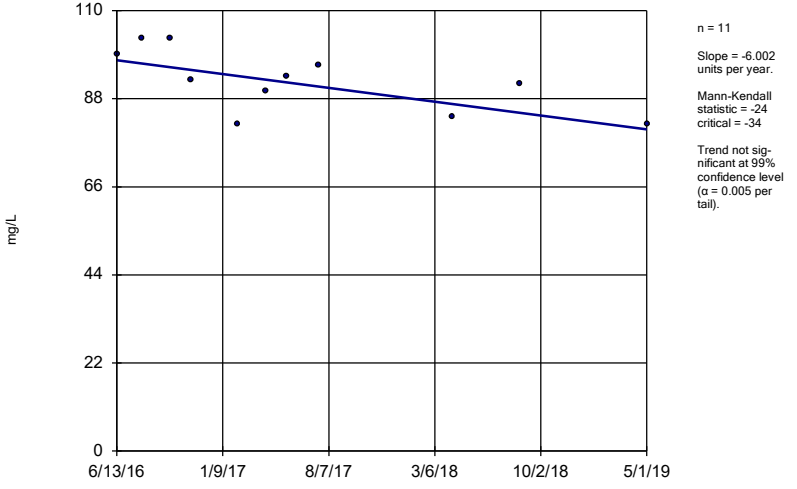
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1504 (bg)



n = 11

Slope = -6.002 units per year.

Mann-Kendall statistic = -24 critical = -34

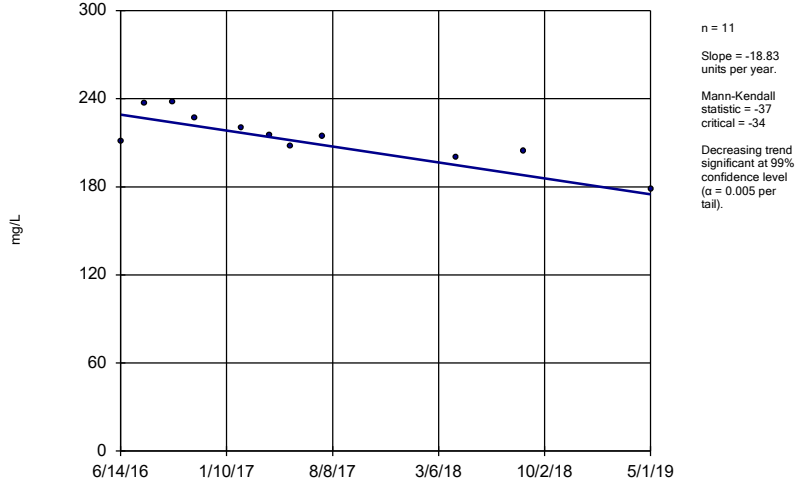
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 11

Slope = -18.83 units per year.

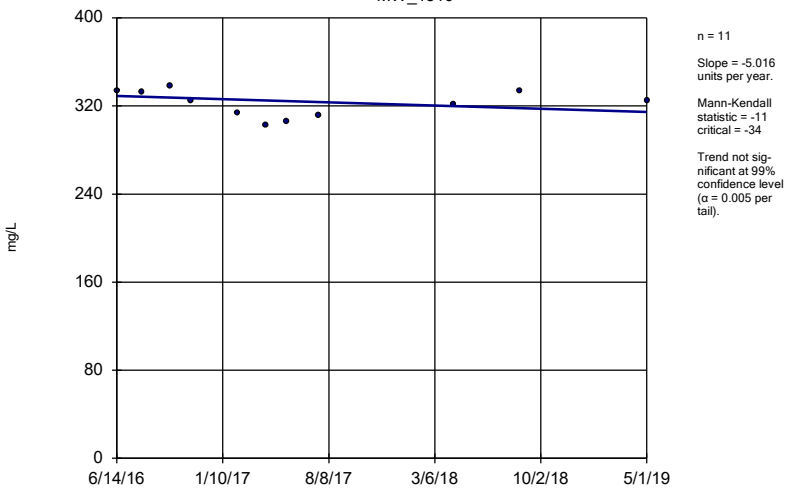
Mann-Kendall statistic = -37 critical = -34

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1510



n = 11

Slope = -5.016 units per year.

Mann-Kendall statistic = -11 critical = -34

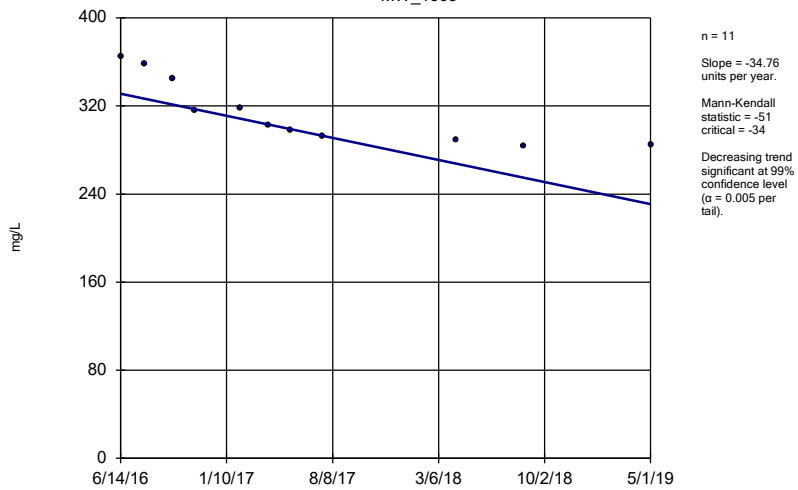
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 11

Slope = -34.76 units per year.

Mann-Kendall statistic = -51 critical = -34

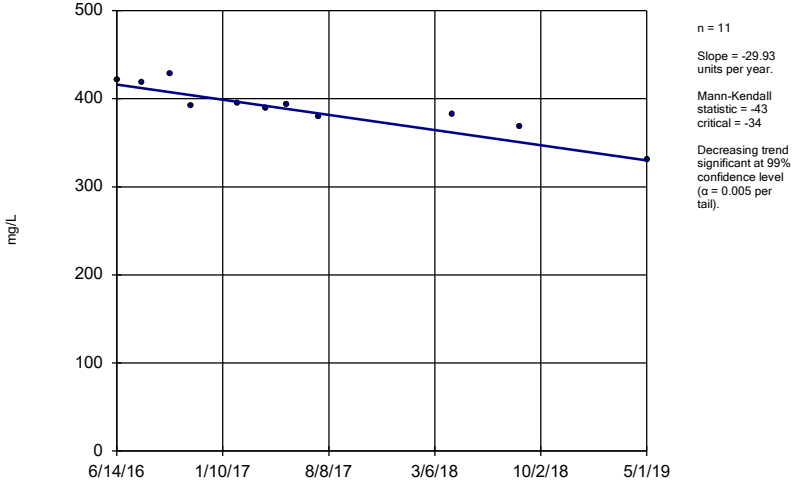
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1506



n = 11

Slope = -29.93 units per year.

Mann-Kendall statistic = -43 critical = -34

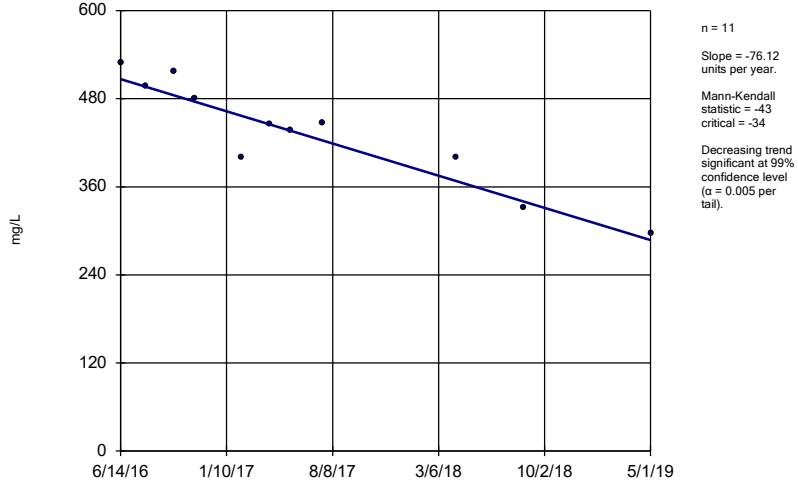
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1507



n = 11

Slope = -76.12 units per year.

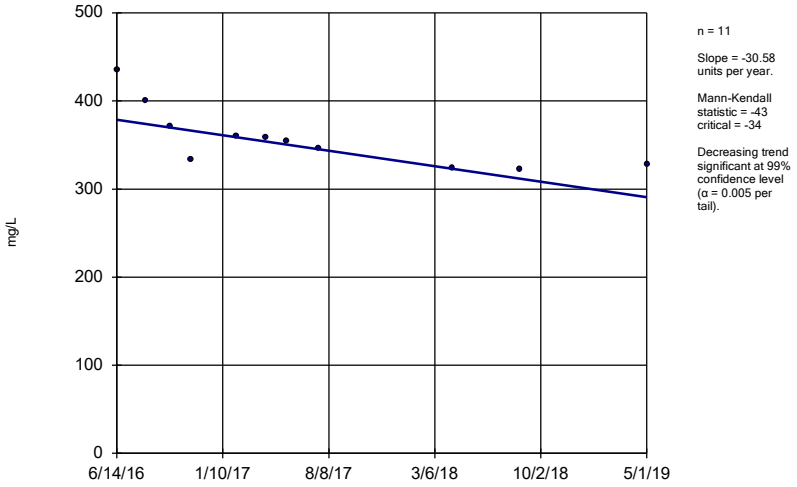
Mann-Kendall statistic = -43 critical = -34

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1509



n = 11

Slope = -30.58 units per year.

Mann-Kendall statistic = -43 critical = -34

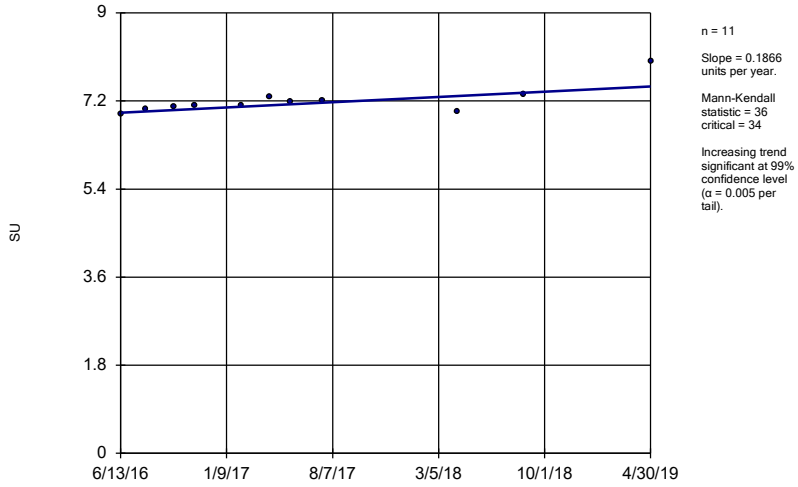
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1504 (bg)



n = 11

Slope = 0.1866 units per year.

Mann-Kendall statistic = 36 critical = 34

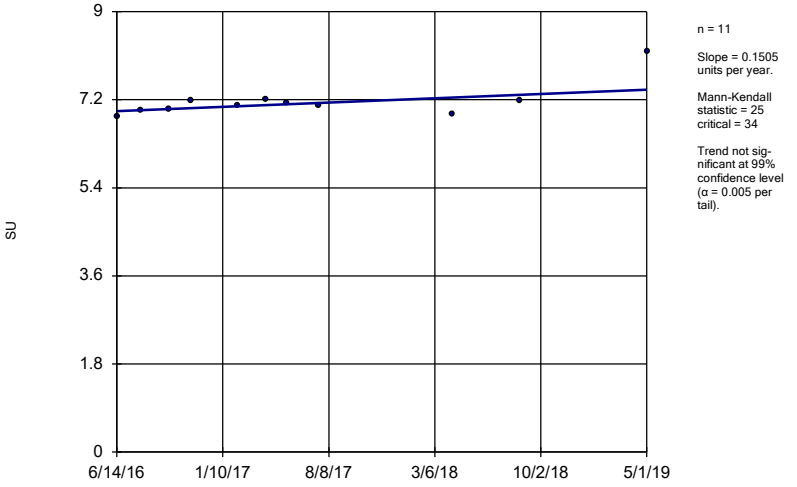
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, field Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 11

Slope = 0.1505 units per year.

Mann-Kendall statistic = 25 critical = 34

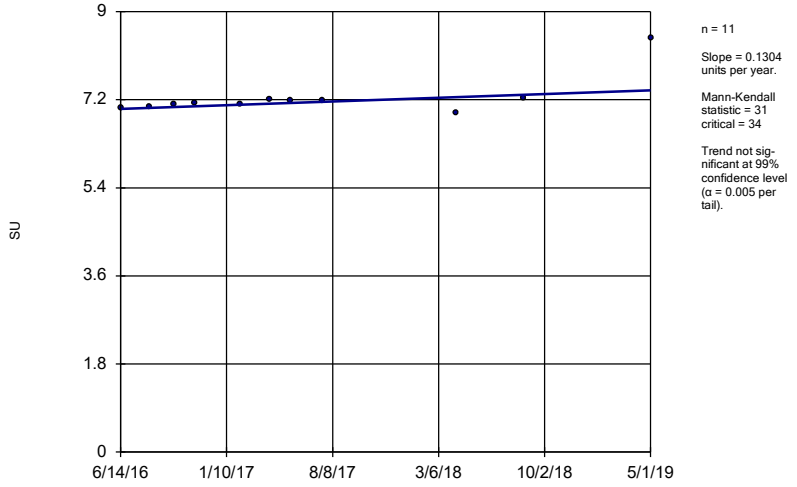
Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, field Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1509



n = 11

Slope = 0.1304 units per year.

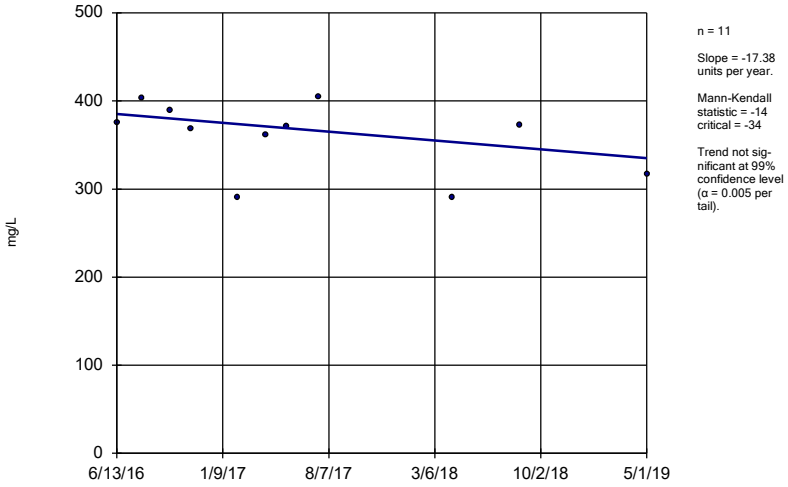
Mann-Kendall statistic = 31 critical = 34

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, field Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1504 (bg)



n = 11

Slope = -17.38 units per year.

Mann-Kendall statistic = -14 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

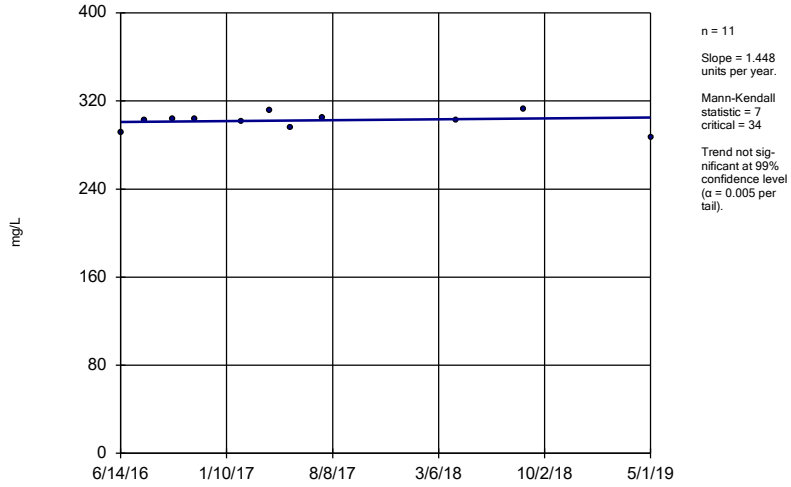
Constituent: Sulfate, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 11

Slope = 1.448 units per year.

Mann-Kendall statistic = 7 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

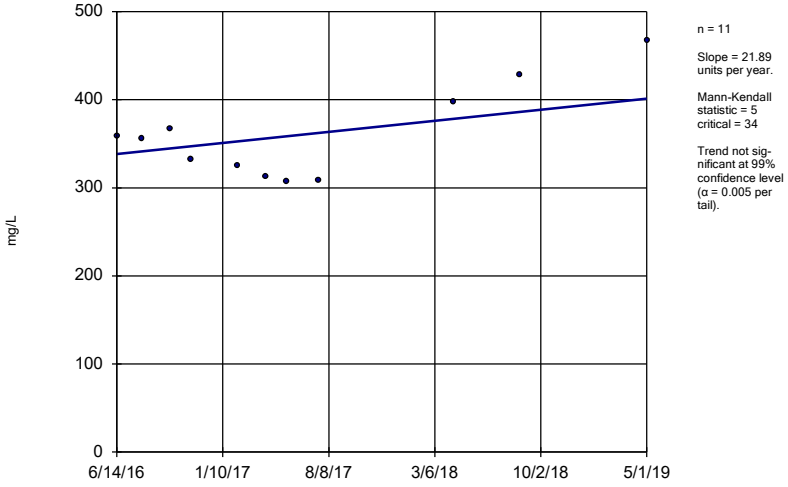
Constituent: Sulfate, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1510



n = 11

Slope = 21.89 units per year.

Mann-Kendall statistic = 5 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

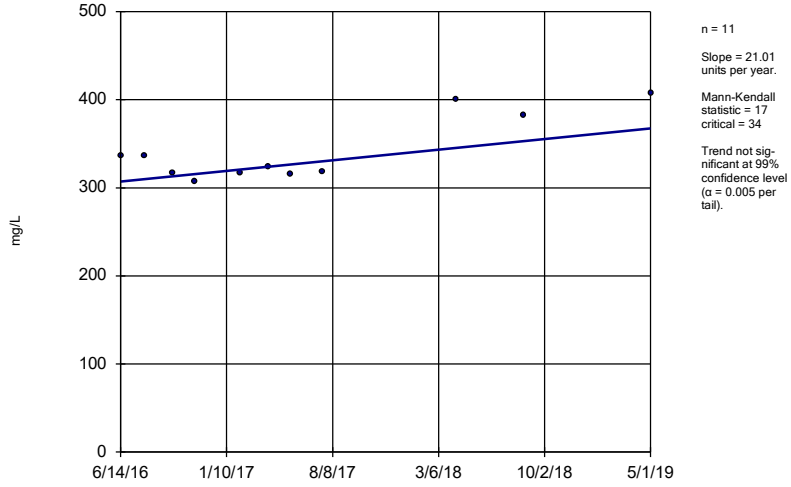
Constituent: Sulfate, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1505



n = 11

Slope = 21.01 units per year.

Mann-Kendall statistic = 17 critical = 34

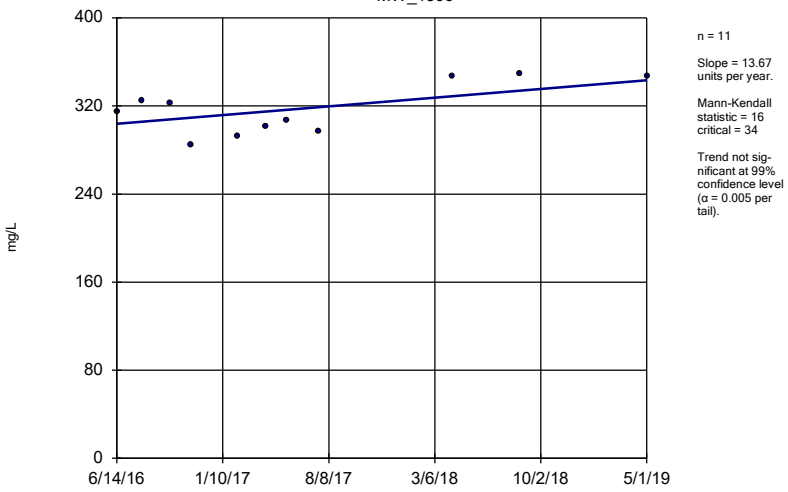
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1506



n = 11

Slope = 13.67 units per year.

Mann-Kendall statistic = 16 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

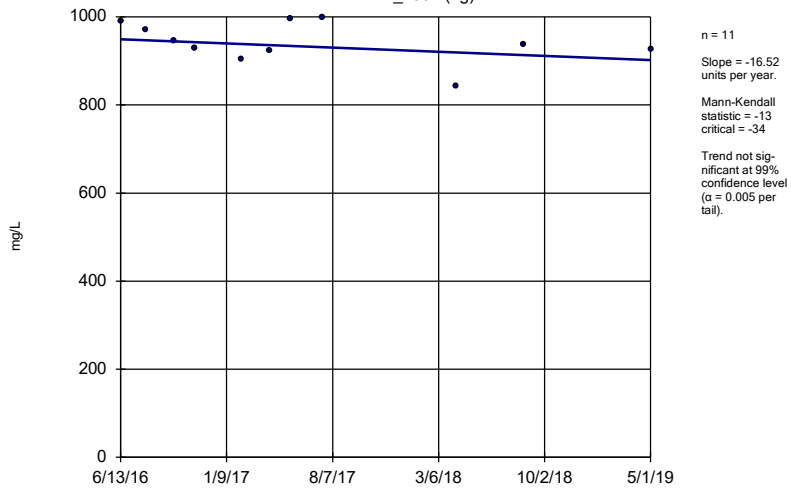
Constituent: Sulfate, total Analysis Run 7/8/2019 2:26 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1504 (bg)



n = 11

Slope = -16.52 units per year.

Mann-Kendall statistic = -13 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

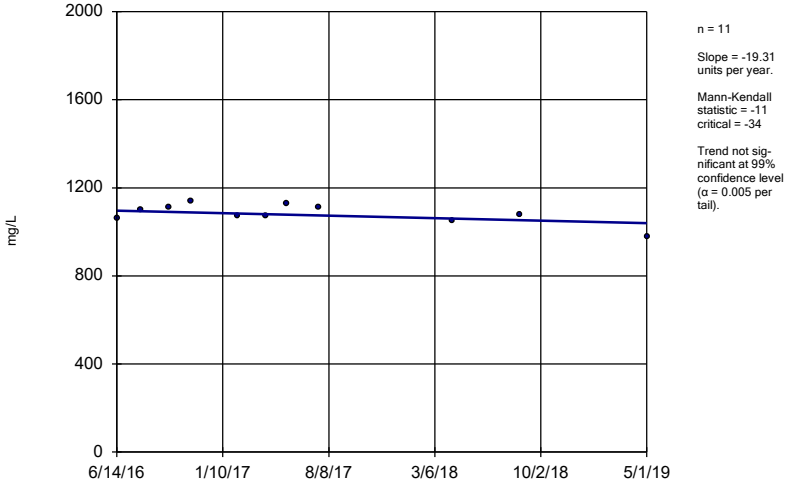
Constituent: Total Dissolved Solids [TDS] Analysis Run 7/8/2019 2:26 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1508 (bg)



n = 11

Slope = -19.31 units per year.

Mann-Kendall statistic = -11 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

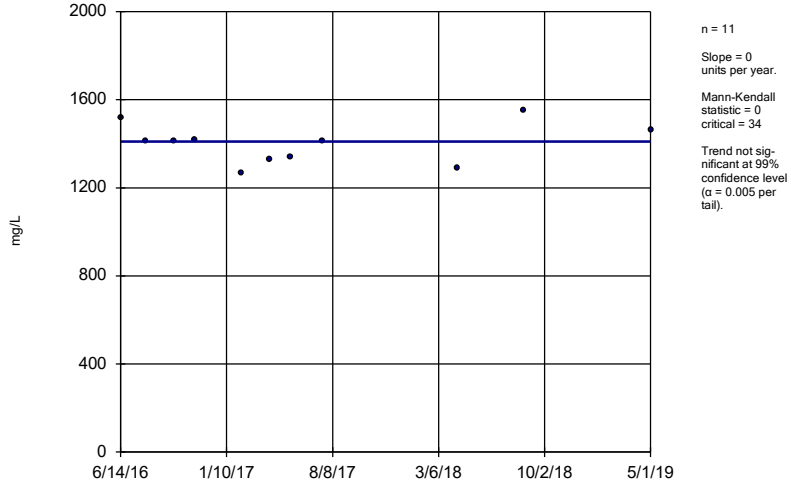
Constituent: Total Dissolved Solids [TDS] Analysis Run 7/8/2019 2:26 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1510



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 34

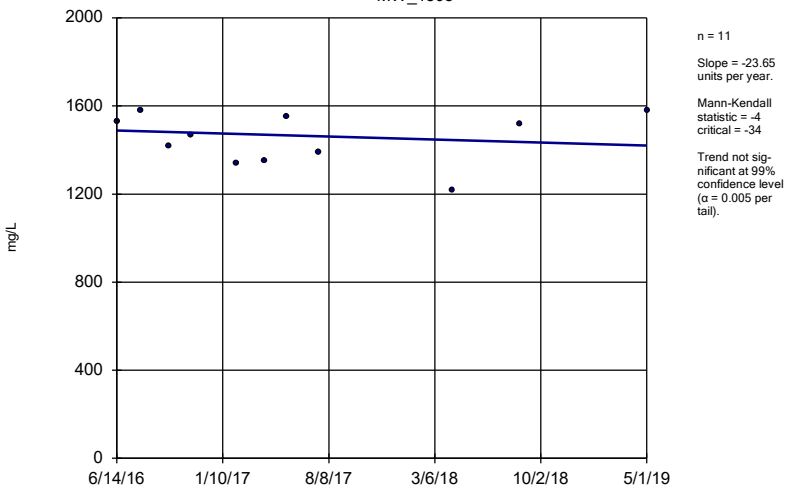
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 7/8/2019 2:26 PM View: Trend Testing

Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sen's Slope Estimator

MW_1505



n = 11

Slope = -23.65 units per year.

Mann-Kendall statistic = -4 critical = -34

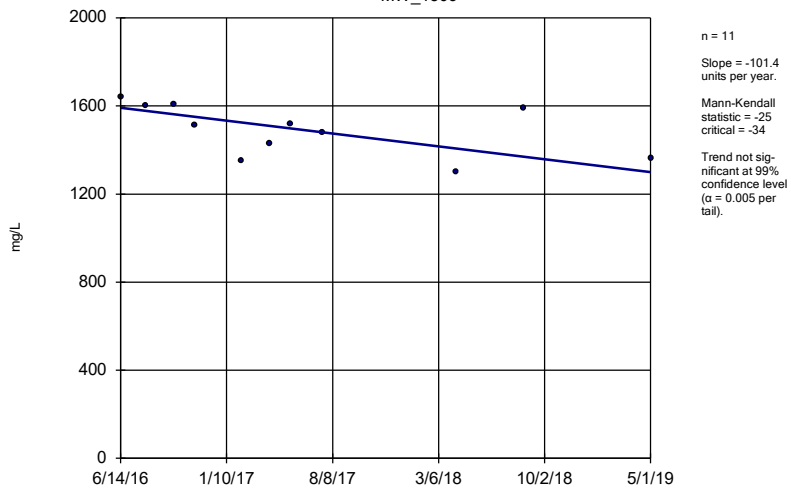
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1506



n = 11

Slope = -101.4 units per year.

Mann-Kendall statistic = -25 critical = -34

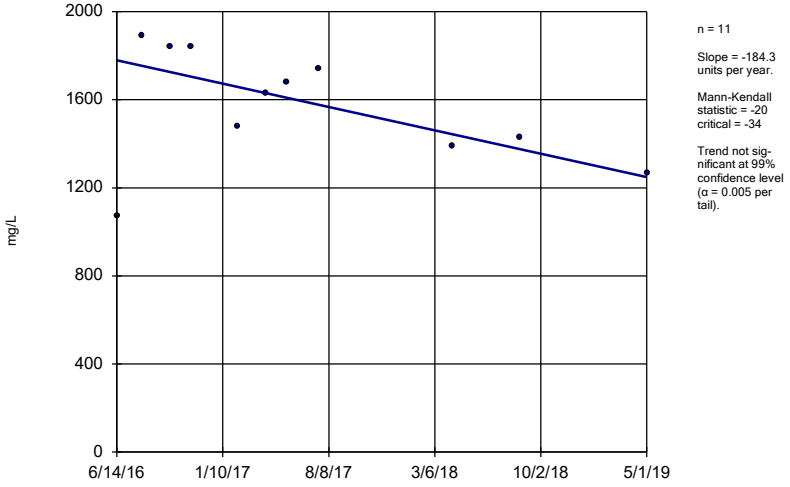
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1507



n = 11

Slope = -184.3 units per year.

Mann-Kendall statistic = -20 critical = -34

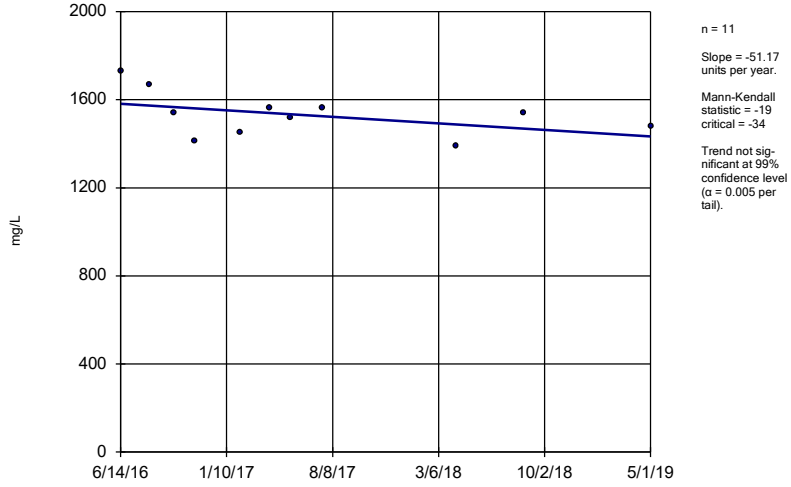
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.18 Sanitas software utilized by Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW_1509



n = 11

Slope = -51.17 units per year.

Mann-Kendall statistic = -19 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 7/8/2019 2:26 PM View: Trend Testing
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Tolerance Limit Summary Table

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/10/2019, 9:44 AM

Constituent	Well	Upper Lim.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony, total (mg/L)	n/a	0.00006792	22	0.00003682	0.00001323	9.091	None	No	0.05	Inter
Arsenic, Total (mg/L)	n/a	0.001688	22	0.0007277	0.0004088	0	None	No	0.05	Inter
Barium, Total (mg/L)	n/a	0.05689	22	0.04265	0.006063	0	None	No	0.05	Inter
Beryllium, total (mg/L)	n/a	0.0001	22	n/a	n/a	36.36	n/a	n/a	0.3235	NP Inter(normality)
Cadmium, total (mg/L)	n/a	0.00009	22	n/a	n/a	0	n/a	n/a	0.3235	NP Inter(normality)
Chromium, total (mg/L)	n/a	0.002247	22	0.0008482	0.0005951	0	None	No	0.05	Inter
Cobalt, total (mg/L)	n/a	0.003646	22	0.02767	0.01392	0	None	sqrt(x)	0.05	Inter
Combined Radium 226 + 228 (pCi/L)	n/a	2.259	21	0.7496	0.3178	0	None	sqrt(x)	0.05	Inter
Fluoride, total (mg/L)	n/a	0.25	22	n/a	n/a	0	n/a	n/a	0.3235	NP Inter(normality)
Lead, total (mg/L)	n/a	0.004213	22	0.07295	0.03769	0	None	x^(1/3)	0.05	Inter
Lithium, total (mg/L)	n/a	0.0193	22	0.16	0.04606	18.18	Kaplan-Meier	x^(1/3)	0.05	Inter
Mercury, total (mg/L)	n/a	0.000008	22	n/a	n/a	68.18	n/a	n/a	0.3235	NP Inter(normality)
Molybdenum, total (mg/L)	n/a	0.001885	22	0.02673	0.007099	9.091	None	sqrt(x)	0.05	Inter
Selenium, Total (mg/L)	n/a	0.001096	22	0.01389	0.008179	18.18	Kaplan-Meier	sqrt(x)	0.05	Inter
Thallium, Total (mg/L)	n/a	0.00025	22	n/a	n/a	13.64	n/a	n/a	0.3235	NP Inter(normality)

Confidence Interval Summary Table - All Results (No Significant)

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/10/2019, 10:24 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Lower Compl.	Sig.	N	%NDs	Transform	Alpha	Method
Antimony, total (mg/L)	MW_1510	0.00003	0.00002	0.006	n/a	No	11	0	No	0.006	NP (normality)
Antimony, total (mg/L)	MW_1505	0.00007514	0.00003259	0.006	n/a	No	11	9.091	sqrt(x)	0.01	Param.
Antimony, total (mg/L)	MW_1506	0.00007	0.00003	0.006	n/a	No	11	0	No	0.006	NP (normality)
Antimony, total (mg/L)	MW_1507	0.0001028	0.00005539	0.006	n/a	No	11	0	No	0.01	Param.
Antimony, total (mg/L)	MW_1509	0.00003	0.00002	0.006	n/a	No	11	0	No	0.006	NP (normality)
Arsenic, Total (mg/L)	MW_1510	0.0006235	0.0003892	0.01	n/a	No	11	0	No	0.01	Param.
Arsenic, Total (mg/L)	MW_1505	0.001759	0.0003922	0.01	n/a	No	11	0	sqrt(x)	0.01	Param.
Arsenic, Total (mg/L)	MW_1506	0.001177	0.0005433	0.01	n/a	No	11	0	No	0.01	Param.
Arsenic, Total (mg/L)	MW_1507	0.003285	0.0009498	0.01	n/a	No	11	0	No	0.01	Param.
Arsenic, Total (mg/L)	MW_1509	0.0005612	0.0003625	0.01	n/a	No	11	0	No	0.01	Param.
Barium, Total (mg/L)	MW_1510	0.04714	0.04064	2	n/a	No	11	0	No	0.01	Param.
Barium, Total (mg/L)	MW_1505	0.0633	0.0459	2	n/a	No	11	0	No	0.006	NP (normality)
Barium, Total (mg/L)	MW_1506	0.06518	0.05393	2	n/a	No	11	0	No	0.01	Param.
Barium, Total (mg/L)	MW_1507	0.0905	0.06227	2	n/a	No	11	0	No	0.01	Param.
Barium, Total (mg/L)	MW_1509	0.06333	0.05409	2	n/a	No	11	0	No	0.01	Param.
Beryllium, total (mg/L)	MW_1510	0.00002	0.000008	0.004	n/a	No	11	36.36	No	0.006	NP (normality)
Beryllium, total (mg/L)	MW_1505	0.0001247	0.00001946	0.004	n/a	No	11	27.27	No	0.01	Param.
Beryllium, total (mg/L)	MW_1506	0.00004617	0.00001128	0.004	n/a	No	11	9.091	sqrt(x)	0.01	Param.
Beryllium, total (mg/L)	MW_1507	0.000145	0.00004317	0.004	n/a	No	11	9.091	No	0.01	Param.
Beryllium, total (mg/L)	MW_1509	0.00002	0.000008	0.004	n/a	No	11	63.64	No	0.006	NP (normality)
Cadmium, total (mg/L)	MW_1510	0.00001	0.000005	0.005	n/a	No	11	9.091	No	0.006	NP (normality)
Cadmium, total (mg/L)	MW_1505	0.00003	0.00002	0.005	n/a	No	11	0	No	0.006	NP (normality)
Cadmium, total (mg/L)	MW_1506	0.00004	0.00002	0.005	n/a	No	11	0	No	0.006	NP (normality)
Cadmium, total (mg/L)	MW_1507	0.00007	0.00003	0.005	n/a	No	11	0	No	0.006	NP (normality)
Cadmium, total (mg/L)	MW_1509	0.00002	0.00001	0.005	n/a	No	11	0	No	0.006	NP (normality)
Chromium, total (mg/L)	MW_1510	0.005133	0.0006327	0.1	n/a	No	11	0	ln(x)	0.01	Param.
Chromium, total (mg/L)	MW_1505	0.01277	0.001233	0.1	n/a	No	11	0	sqrt(x)	0.01	Param.
Chromium, total (mg/L)	MW_1506	0.003187	0.001035	0.1	n/a	No	11	0	No	0.01	Param.
Chromium, total (mg/L)	MW_1507	0.01602	0.005162	0.1	n/a	No	11	0	No	0.01	Param.
Chromium, total (mg/L)	MW_1509	0.001972	0.0006125	0.1	n/a	No	11	0	ln(x)	0.01	Param.
Cobalt, total (mg/L)	MW_1510	0.0002956	0.0001524	0.006	n/a	No	11	0	No	0.01	Param.
Cobalt, total (mg/L)	MW_1505	0.001303	0.0002604	0.006	n/a	No	11	0	sqrt(x)	0.01	Param.
Cobalt, total (mg/L)	MW_1506	0.0009387	0.0003901	0.006	n/a	No	11	0	No	0.01	Param.
Cobalt, total (mg/L)	MW_1507	0.003318	0.000943	0.006	n/a	No	11	0	No	0.01	Param.
Cobalt, total (mg/L)	MW_1509	0.000408	0.0001854	0.006	n/a	No	11	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW_1510	1.166	0.362	5	n/a	No	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW_1505	1.117	0.4851	5	n/a	No	11	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW_1506	1.362	0.287	5	n/a	No	11	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW_1507	1.727	0.5974	5	n/a	No	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MW_1509	1.572	0.3911	5	n/a	No	11	0	No	0.01	Param.
Fluoride, total (mg/L)	MW_1510	0.2	0.05	4	n/a	No	11	27.27	No	0.006	NP (normality)
Fluoride, total (mg/L)	MW_1505	0.2	0.06	4	n/a	No	11	90.91	No	0.006	NP (NDs)
Fluoride, total (mg/L)	MW_1506	0.2	0.05	4	n/a	No	11	63.64	No	0.006	NP (normality)
Fluoride, total (mg/L)	MW_1507	0.07	0.05	4	n/a	No	11	9.091	No	0.006	NP (normality)
Fluoride, total (mg/L)	MW_1509	0.16	0.1	4	n/a	No	11	0	No	0.006	NP (normality)
Lead, total (mg/L)	MW_1510	0.0002496	0.00008419	0.015	n/a	No	11	0	No	0.01	Param.
Lead, total (mg/L)	MW_1505	0.001431	0.0001055	0.015	n/a	No	11	0	sqrt(x)	0.01	Param.
Lead, total (mg/L)	MW_1506	0.0007859	0.0002635	0.015	n/a	No	11	0	No	0.01	Param.
Lead, total (mg/L)	MW_1507	0.003343	0.0007325	0.015	n/a	No	11	0	No	0.01	Param.
Lead, total (mg/L)	MW_1509	0.000137	0.00001798	0.015	n/a	No	11	0	sqrt(x)	0.01	Param.
Lithium, total (mg/L)	MW_1510	0.01439	0.00779	0.04	n/a	No	11	0	No	0.01	Param.
Lithium, total (mg/L)	MW_1505	0.0128	0.006468	0.04	n/a	No	11	9.091	No	0.01	Param.
Lithium, total (mg/L)	MW_1506	0.01614	0.009135	0.04	n/a	No	11	0	No	0.01	Param.
Lithium, total (mg/L)	MW_1507	0.0191	0.01163	0.04	n/a	No	11	9.091	No	0.01	Param.
Lithium, total (mg/L)	MW_1509	0.01764	0.008523	0.04	n/a	No	11	9.091	No	0.01	Param.

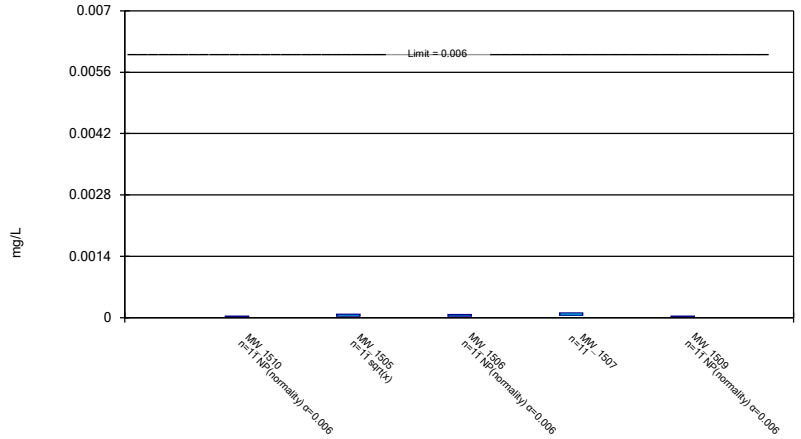
Confidence Interval Summary Table - All Results (No Significant)

Mitchell BAP Client: Geosyntec Data: Mitchell BAP Printed 7/10/2019, 10:24 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Lower Compl.	Sig.	N	%NDs	Transform	Alpha	Method
Mercury, total (mg/L)	MW_1510	0.000005	0.000005	0.002	n/a	No	11	90.91	No	0.006	NP (NDs)
Mercury, total (mg/L)	MW_1505	0.000006	0.000002	0.002	n/a	No	11	63.64	No	0.006	NP (normality)
Mercury, total (mg/L)	MW_1506	0.000005	0.000002	0.002	n/a	No	11	45.45	No	0.006	NP (normality)
Mercury, total (mg/L)	MW_1507	0.00001308	0.000003549	0.002	n/a	No	11	9.091	sqrt(x)	0.01	Param.
Mercury, total (mg/L)	MW_1509	0.000005	0.000002	0.002	n/a	No	11	81.82	No	0.006	NP (NDs)
Molybdenum, total (mg/L)	MW_1510	0.001099	0.0003238	0.1	n/a	No	11	9.091	ln(x)	0.01	Param.
Molybdenum, total (mg/L)	MW_1505	0.002461	0.0007391	0.1	n/a	No	11	0	ln(x)	0.01	Param.
Molybdenum, total (mg/L)	MW_1506	0.001309	0.0005217	0.1	n/a	No	11	0	No	0.01	Param.
Molybdenum, total (mg/L)	MW_1507	0.005653	0.000975	0.1	n/a	No	11	0	sqrt(x)	0.01	Param.
Molybdenum, total (mg/L)	MW_1509	0.001037	0.0004628	0.1	n/a	No	11	9.091	No	0.01	Param.
Selenium, Total (mg/L)	MW_1510	0.0002	0.00008	0.05	n/a	No	11	0	No	0.006	NP (normality)
Selenium, Total (mg/L)	MW_1505	0.0007666	0.0003425	0.05	n/a	No	11	0	No	0.01	Param.
Selenium, Total (mg/L)	MW_1506	0.0002	0.00007	0.05	n/a	No	11	18.18	No	0.006	NP (Cohens/xfrm)
Selenium, Total (mg/L)	MW_1507	0.0004883	0.000139	0.05	n/a	No	11	0	No	0.01	Param.
Selenium, Total (mg/L)	MW_1509	0.0002	0.0001	0.05	n/a	No	11	0	No	0.006	NP (normality)
Thallium, Total (mg/L)	MW_1510	0.000057	0.00001	0.002	n/a	No	11	18.18	No	0.006	NP (Cohens/xfrm)
Thallium, Total (mg/L)	MW_1505	0.000102	0.000065	0.002	n/a	No	10	10	No	0.011	NP (normality)
Thallium, Total (mg/L)	MW_1506	0.00007	0.00005	0.002	n/a	No	11	9.091	No	0.006	NP (normality)
Thallium, Total (mg/L)	MW_1507	0.00009	0.00005	0.002	n/a	No	11	9.091	No	0.006	NP (normality)
Thallium, Total (mg/L)	MW_1509	0.000057	0.00003	0.002	n/a	No	11	9.091	No	0.006	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

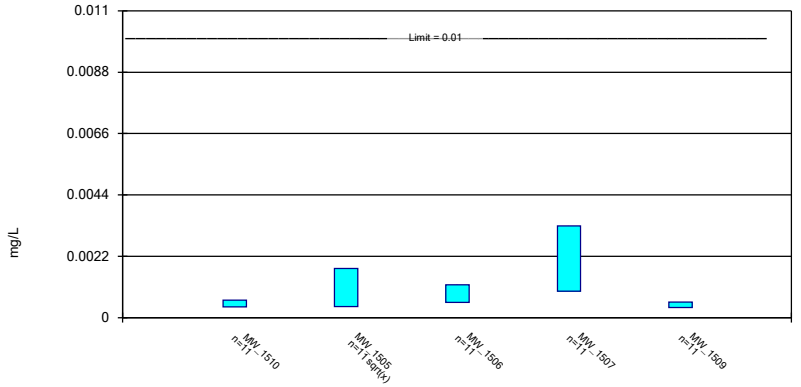


Constituent: Antimony, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

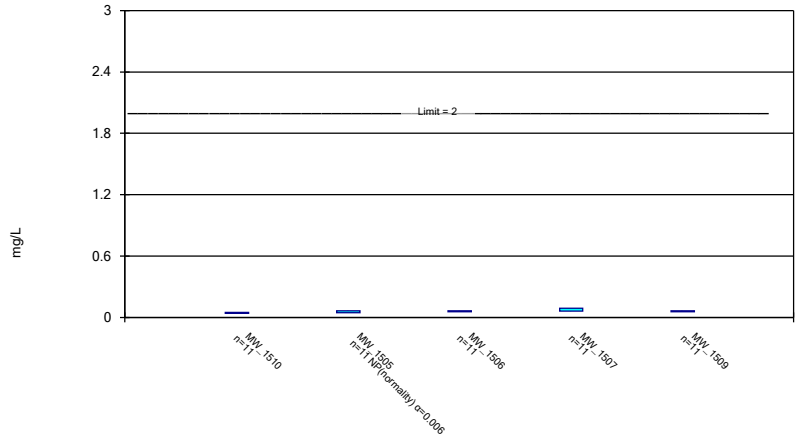


Constituent: Arsenic, Total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

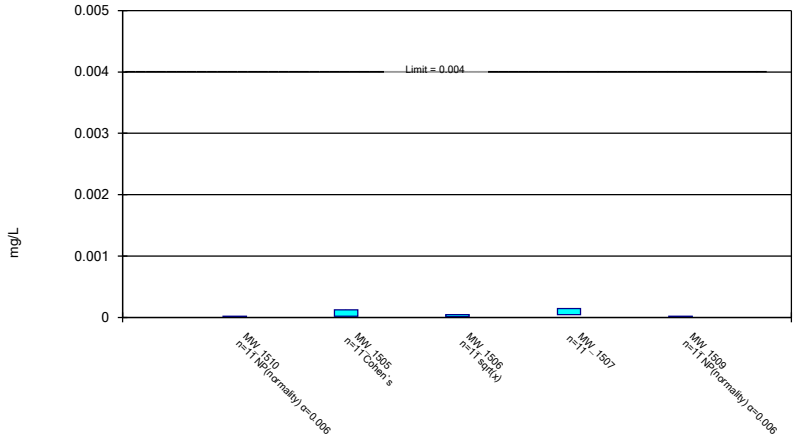


Constituent: Barium, Total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

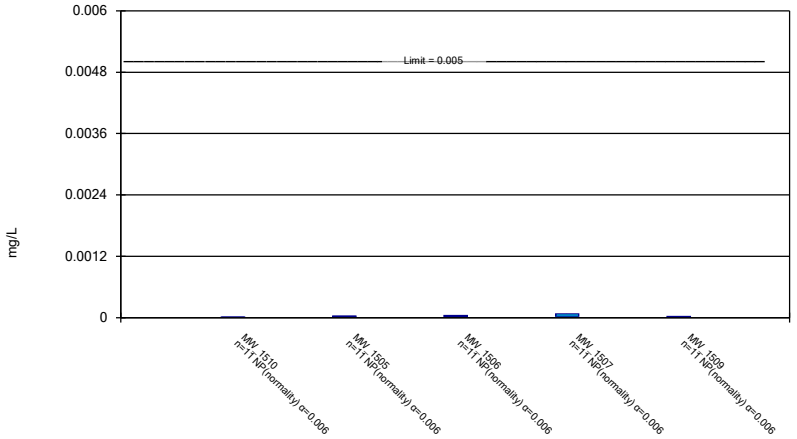
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Beryllium, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Non-Parametric Confidence Interval

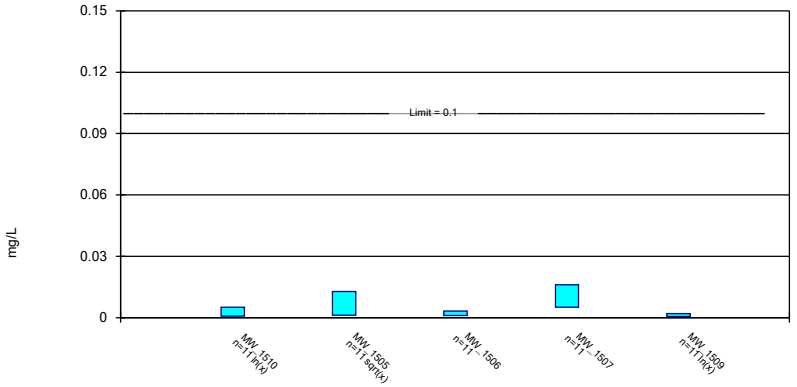
Compliance Limit is not exceeded.



Constituent: Cadmium, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

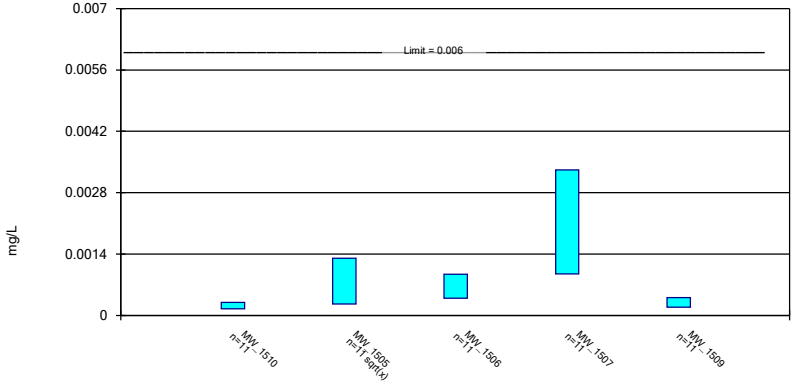
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chromium, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

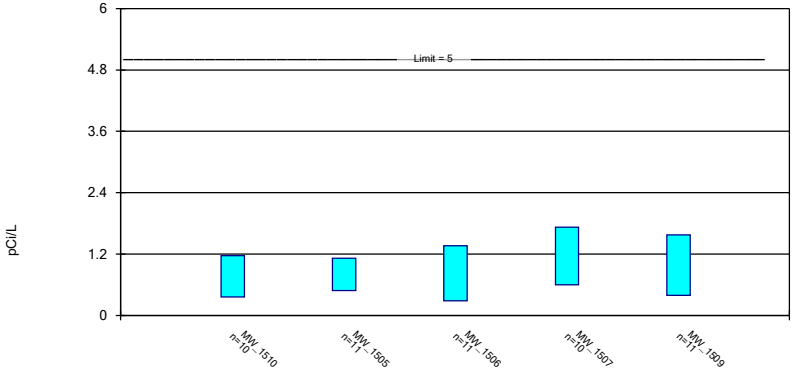
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

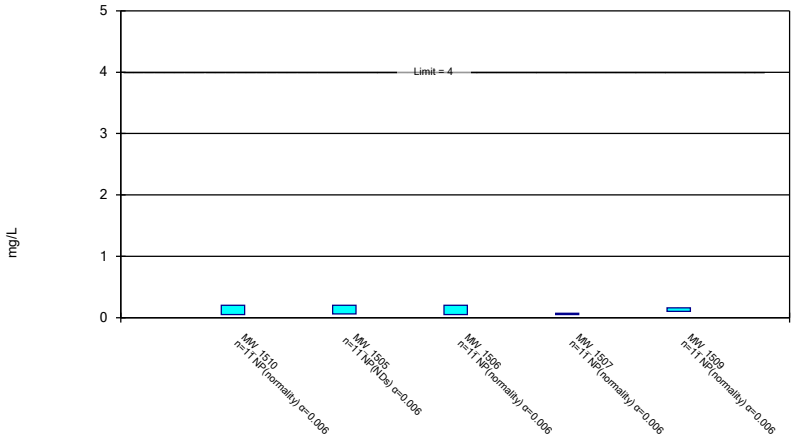
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals -
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Non-Parametric Confidence Interval

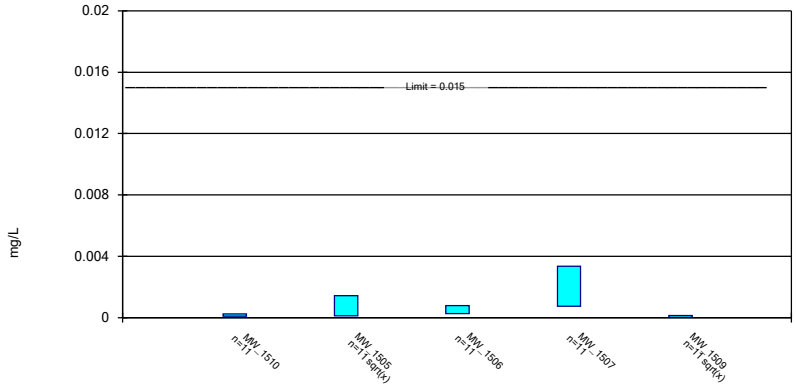
Compliance Limit is not exceeded.



Constituent: Fluoride, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

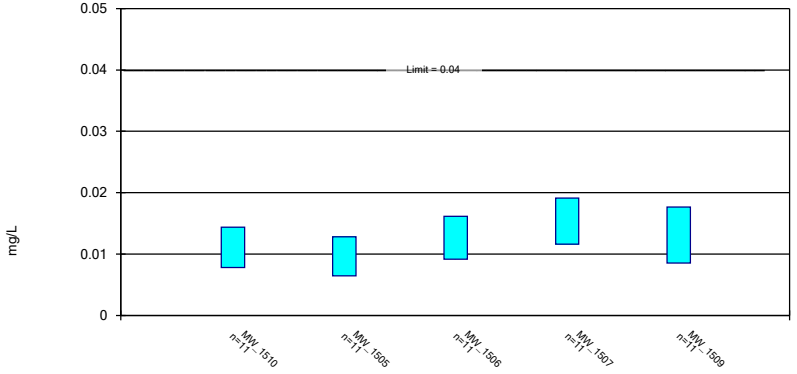
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

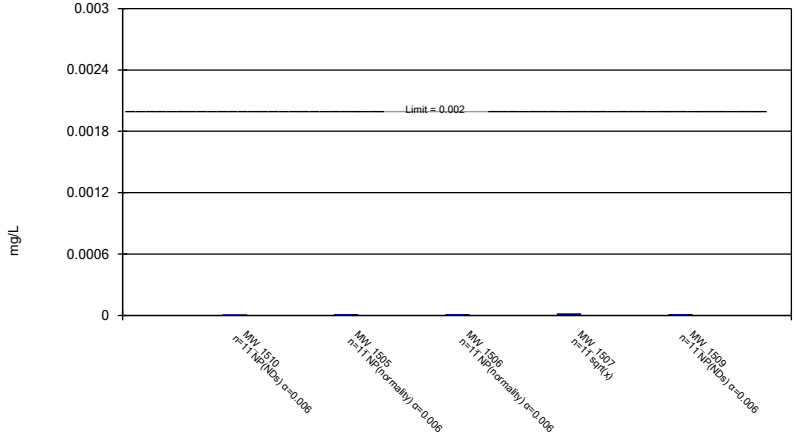
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric and Non-Parametric (NP) Confidence Interval

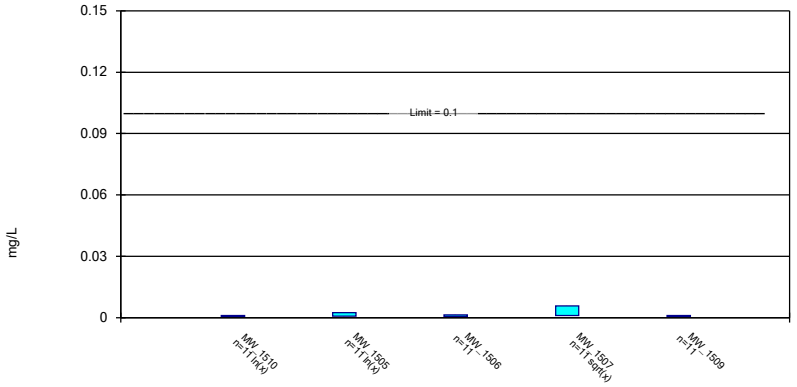
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

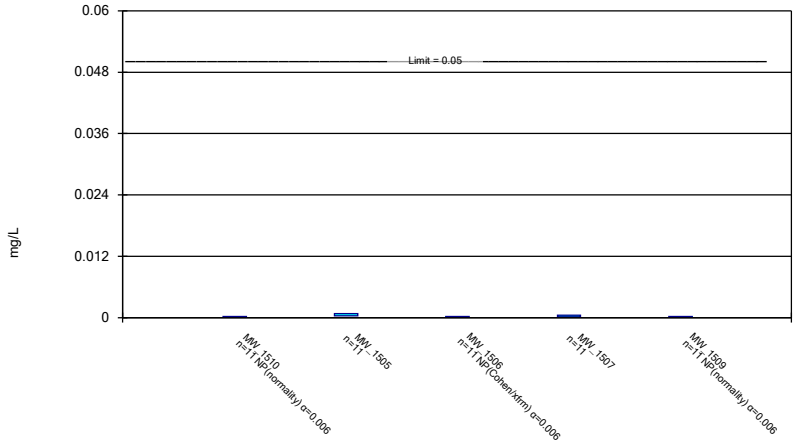


Constituent: Molybdenum, total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix I
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

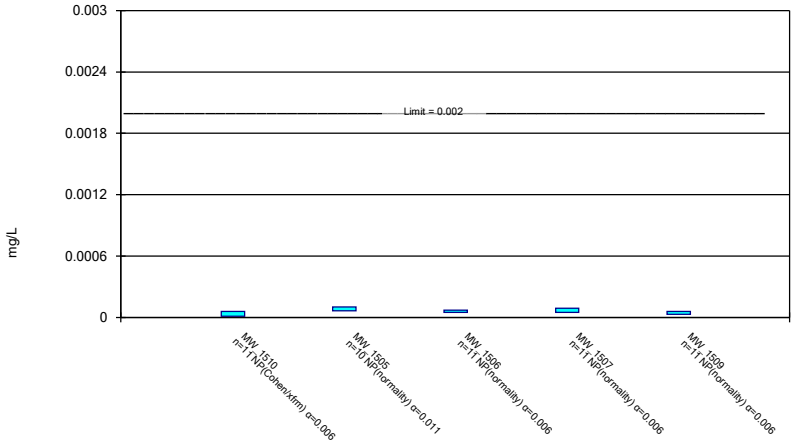


Constituent: Selenium, Total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

Sanitas™ v.9.6.19d Sanitas software utilized by Groundwater Stats Consulting. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium, Total Analysis Run 7/10/2019 10:22 AM View: Confidence Intervals - Appendix IV
Mitchell BAP Client: Geosyntec Data: Mitchell BAP

APPENDIX 3 – Alternative Source Demonstrations

Alternative source demonstrations relative to Appendix IV SSLs above the groundwater protection standard were not necessary because no SSLs above the groundwater protection standards were identified in 2019. Alternative source demonstrations are not applicable at this time.

APPENDIX 4 - Notices for Monitoring Program Transitions

No transition between monitoring requirements occurred in 2019; the CCR unit remained in assessment monitoring over the entire year. Notices for monitoring program transitions are not applicable at this time.

APPENDIX 5 - Well Installation/Decommissioning Logs

No monitoring wells installed or decommissioned in 2019. Well installation/decommissioning logs are not applicable at this time.