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12 January 2023

Lauren Hunt Martin, MS
Illinois Environmental Protection Agency
Bureau of Water
Division of Public Water Supplies
Groundwater Section
1021 N. Grand Avenue
Springfield, IL 62702

Subject: Second Post-Closure Groundwater Monitoring Report
Third Quarter 2022
Grand Tower Energy Center
Closed Coal Combustion Residuals Impoundment
1820 Power Plant Rd
Grand Tower, IL 62942
ERM Project No. 0599247

Dear Lauren:

Environmental Resources Management (ERM) is submitting this report which provides the results and findings of the Grand Tower Energy Center (GTEC) quarterly post-closure groundwater sampling and coal combustion residuals (CCR) impoundment inspection event conducted during the third quarter 2022 at 1820 Power Plant Rd, Grand Tower, Illinois (the "Site") between 13 September and 16 September 2022. A Site location map is provided in Figure 1.

The third quarter 2022 groundwater sampling event was performed in accordance with the post-closure groundwater monitoring program presented within the Grand Tower Operating Permit Application submitted to the Illinois Environmental Protection Administration (IEPA) on 28 October 2021 and further modified according to the Consolidated IEPA Comments dated 17 March 2022. The purpose of the sampling event was to continue the initial five-year period of quarterly groundwater monitoring for the evaluation of the concentration and areal distribution of impacts related to the closed CCR impoundment in Site groundwater. The parameters detected in the groundwater are associated with the historical CCR ash basin, which was capped and closed in 2020. The quarterly results include a summary of field activities, laboratory analytical and constituent trends and evaluation of statistically significant increases or decreases for constituent concentrations to gauge the effectiveness of the closed CCR cell design and implementation. It should be noted that this is the second post-closure sampling event and that a sufficient amount of monitoring data still does not exist to provide an accurate evaluation of recent data trends and whether a statistically significant increase or decrease in the data trends exist during the current five-year monitoring period.

Quarterly site activities, performed in accordance with the proposed post-closure groundwater monitoring program, the results of which are summarized below, include:

- Inspection of the final cover system of the CCR impoundment;
- Inspection of the groundwater monitoring well array;
- Groundwater monitoring;
- Preparation of a quarterly groundwater monitoring results report; and
- Preparation of a quarterly CCR impoundment inspection report.

QUARTERLY CCR IMPOUNDMENT INSPECTION

During the third quarter of 2022, an inspection of the CCR impoundment cover system and associated features was completed, and the quarterly inspection report can be found in Appendix A. Several maintenance items which were noted in the first and second quarter 2022 CCR impoundment inspection reports were observed to be under repair during the third quarter 2022 and have been documented within the attached inspection report. This includes repairs to the adjacent United States Army Corps of Engineers (USACE) levee and repairs along the Site perimeter security fencing to address erosion and fence undermining immediately east of the CCR impoundment. No significant degradation or issues were noted associated with the CCR impoundment cover system.

QUARTERLY MONITORING WELL INSPECTION AND GAUGING

During the third quarter of 2022, monitoring well inspections were conducted on 13 September and the monitoring well inspection forms can be found in Appendix B. The inspection tasks included gauging total depths as well as static groundwater elevations. Both measurements were referenced from the top of casing (TOC) at each of the Site monitoring wells. Total depth and groundwater level measurements were obtained from the monitoring wells using a water level meter with an accuracy of 0.01 foot. Based upon these measurements, a shallow groundwater contour map for the Site was developed for the third quarter of 2022. The groundwater gradient is primarily from east to west towards the Mississippi River except for during times of flooding events that may cause a reverse flow from west to east for a short period of time (Natural Resource Technology, Phase 1 Hydrogeologic Assessment Report, March 2013). Figure 2 shows monitoring well locations with a groundwater contour, groundwater elevations at each monitoring well, and the Mississippi River elevation for the third quarter 2022. The monitoring well protectors and casings were inspected for damage and/or signs of settling that might impact the integrity of the surface seals. During the third quarter 2022 inspection and sampling event, the well screen of monitoring well APW-05 was still found to be occluded > 40%. An attempt was made during the second quarter 2022 to remove the occlusion in APW-05 with a submersible pump; however, the attempt was unsuccessful due to the large grain size of the material. Upon further evaluation it was determined that the material occluding the well appeared to be well sand pack materials and a breach of the well screen was the suspected cause of the well screen occlusion. ERM has scheduled an Illinois licensed well driller to re-drill APW-05 during the first quarter of 2023.

QUARTERLY GROUNDWATER MONITORING

During the third quarter 2022 sampling event, 12 monitoring wells (APW-01R, APW-02, APW-03, APW-04, APW-05, APW-06D, APW-06S, APW-07, APW-08, APW-09, APW-10D, and APW-10S) were sampled. The monitoring wells were purged prior to sampling using a submersible pump according to United States Environmental Protection Administration (USEPA) low flow purging and sampling procedures (“Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells” revised September 19, 2017). The pump intake was placed within the screened interval of each monitoring well sampled and stabilization measurements were collected using a calibrated YSI Professional Plus meter during purging activities for pH, specific conductivity, temperature, dissolved oxygen, and ORP. Turbidity readings were also collected using a Hach 2100Q Turbidimeter. Well purging continued until stabilization of each field

parameter was achieved according to USEPA guidelines for low-flow sampling. Once the field parameters stabilized, the YSI meter was disconnected, and groundwater samples were collected for analysis using the same dedicated polyethylene tubing that was used to purge the well.

Field parameter measurements collected during this sampling event were recorded on field data forms. Copies of the field data forms are included in Appendix C.

The groundwater samples collected were placed in laboratory-provided sample containers for analysis by Teklab, Inc. located in Collinsville, IL which is an IEPA-approved laboratory. Samples were transported under chain-of-custody procedures to the laboratory for analytical testing within laboratory provided coolers containing ice. The laboratory analytical report for the third quarter 2022 sampling event is included in Appendix D.

In accordance with the 3 March 2022 draft comments received from the IEPA Groundwater Section on the post-closure groundwater monitoring program contained in the Operating Permit Application submitted to the IEPA on 28 October 2021, the IEPA evaluates the efficacy of corrective actions for closed CCR impoundments through the comparison of the groundwater analytical results to the groundwater protection standards contained in the Illinois Administrative Code (IAC) Title 35 Section 845.600. Under Section 845.600, the following groundwater parameters are to be monitored:

- Antimony
- Arsenic
- Barium
- Beryllium
- Boron
- Cadmium
- Chloride
- Chromium
- Cobalt
- Fluoride
- Lead
- Lithium
- Mercury
- Molybdenum
- pH
- Selenium
- Sulfate
- Thallium
- TDS
- Radium 226/228
- Calcium
- Turbidity

Groundwater Analytical Results

The analytical results for the post-closure groundwater sampling event conducted during the third quarter 2022 are presented in Table 1. During the third quarter 2022 sampling event, the following analytes were detected in the listed wells above their respective Title 35 Section 845.600 groundwater protection standards for CCR impoundments:

- Sulfate: APW-02, APW-05;
- Arsenic: APW-02, APW-06D, APW-10S;
- Boron: APW-02, APW-05, APW-06D, APW-06S;
- Calcium: APW-02, APW-03, APW-04, APW-05, APW-06D, APW-06S, APW-07, APW-10D, APW-10S;
- Turbidity: APW-01R, APW-02, APW-03, APW-04, APW-06D, APW-07, APW-08, APW-10D, APW-10S;
- Lead: APW-02;
- Lithium: APW-02, APW-06S; and
- Molybdenum: APW-02, APW-05, APW-06S.

APW-10S, located approximately one half mile south of the closed CCR impoundment, continues to exhibit elevated arsenic concentrations. However, the occurrence of arsenic in this well is not considered to be related to the closed CCR impoundment due to its distance and location hydraulically side gradient in relation to the Site. Additionally, the monitoring wells located between the closed CCR impoundment (APW-03, APW-07, APW-08, and APW-09) and the APW-10S well do not exhibit arsenic concentration above the groundwater protection standards in Title 35 Section 845.600.

A Mann-Kendall statistical analysis was performed on groundwater analytical results from monitoring wells with constituents of concern (COCs) that have historically or currently exceed Title 35 Section 845.600 groundwater protection standards between September 2017 and the third quarter 2022. Graphs of the results are included within Attachment E, while Table 2 provides a summary of the Mann-Kendall Test for Trends. The analysis incorporated analytical data from the eight pre-closure groundwater sampling events conducted from September 2017 until February 2018 as well as the June 2022 second quarter and September 2022 third quarter post-closure sampling events. Based on the Mann-Kendall statistical analysis, as shown in Table 2, the following wells exhibit a statistically significant increasing or decreasing trend as of September 2022:

- APW-04: decreasing boron,
- APW-05: decreasing boron and sulfate,
- APW-06D: increasing arsenic, and
- APW-10D: increasing calcium.

At the end of the current five-year monitoring and reporting post-closure time frame, a groundwater performance monitoring report will be submitted to IEPA to either demonstrate restoration of groundwater quality to Class I standards or present a continued groundwater monitoring plan for an additional five years. In addition, the results will be compared to the modeled concentrations to evaluate if a decreasing trend, as defined through modeling, is occurring at the predicted rate. Significant changes from the model results will lead to additional calibration and assessment of future expected rates of decrease for the COCs.

SUMMARY AND CONCLUSIONS

Based upon the results of the third quarter 2022 groundwater sampling event, well inspection, and CCR impoundment inspection, the following observations and conclusions have been made:

- Similar to the groundwater sampling results obtained during the eight pre-closure sampling events in 2017 to 2018, concentrations of boron, arsenic and sulfate continue to be detected at well locations downgradient of the closed CCR impoundment.
- Boron has historically been the key indicator for corrective action and continued monitoring of groundwater at the Site. Based upon a Mann-Kendall analysis incorporating data from the eight rounds of pre-closure groundwater sampling conducted during 2017 and 2018, as well as the second and third quarter 2022 groundwater monitoring events, boron demonstrates a decreasing trend at APW-04 and APW-05 as of the third quarter 2022.
- APW-05 is scheduled for replacement by an Illinois licensed well driller during the first quarter of 2023 due to suspected damage to the well screen which has allowed the sand pack to enter the monitoring well.

- Several maintenance items which were noted during the first and second quarter 2022 CCR impoundment inspection reports were observed to be under repair during the third quarter 2022, including repairs to the adjacent USACE levee and repairs along the Site perimeter security fencing. No significant degradation or issues were noted associated with the CCR impoundment cover system.

If you have any questions, please contact me at (314) 733-4495.

Sincerely,

Alan J. Cork, P.E.
Partner, Engineer

Matt Halley, CHMM
Senior Consultant

Attachments

cc: Mr. John Brodhead, Grand Tower Energy Center (electronic)

FIGURES

DRAWN BY: S. Vickery

Grand Tower Energy Center (GTEC)

Closed Coal Combustion Residuals (CCR) Impoundment

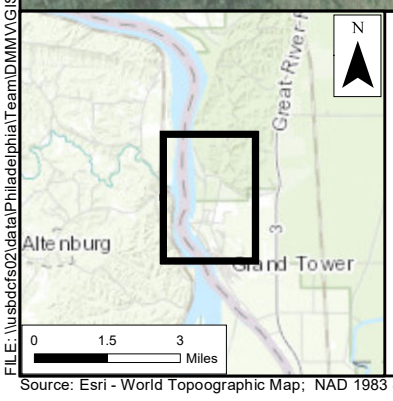
Mississippi River

Grand Tower

Bone Rd
Fountain Bluff
Power Plant Rd
Finger Rd
Perry St
2nd St
1st St
3rd Ave
5th Ave
4th Ave
25th Ave
22nd St
21st St
20th St
Trammel Ln
Brunkhorst Ave
County Road 460
Ford St
Park Rd
Walker Ln
Railroad St
2nd St
Market St
Wills Dr
Main St

N

0 840 1,680 Feet



Legend

- Closed Coal Combustion Residuals (CCR) Impoundment
- Approximate Parcel Boundary

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. World Imagery (3/24/2021)

Figure 1
Site Location Map
Grand Tower Energy Center, LLC
Grand Tower, Illinois
Jackson County

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Source: Esri - World Topoographic Map; NAD 1983 StatePlane Illinois West FIPS 1202 Feet

FILE: \\usbdcfs02\data\PhiladelphiaTeam\DMMV\GIS\Projects\Grand Tower Energy Center\ MXD\FIGURE1-SITELOCATIONMAP_20221003.mxd | REVISED: 10/03/2022 | SCALE: 1:12,000 when printed at 11x17

DRAWN BY: S. Vickery

FILE: \\usbdcfs02\data\Philadelphia\Team\DMMVG\S\Projects\Grand Tower Energy Center\ MXD\Groundwater\FIGUREX-GWC SEPTEMBER2022 20221129.mxd | REVISED: 11/29/2022 | SCALE: 1:3,400 when printed at 11x17

Power Plant Rd

N

APW-1R
333.25

333.2

332

APW-05
331

APW-02
331.83

APW-04
333.19

331.2

APW-06S
331.75

APW-06D
331.82

APW-03
332.9

APW-09
333.08

332

APW-07
331.99

331.6

333

333.2

APW-08
333.36

332.8

331.4

331.4

332.8

332.6

332.6

332.2

332.4

Mississippi River

331.8

*Mississippi River Elevation = 334.45

APW-10D
333.46

APW-10S
331.8

0 230 460 Feet

25th Ave

N

0 0.45 0.9 Miles

Source: Esri - World Topoographic Map; NAD 1983 StatePlane Illinois West FIPS 1202 Feet

Legend

- Monitoring Well Location
- Groundwater Contour (0.2 Ft. Interval)
- 348.37 Groundwater Elevation

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. Date of gauging September 13, 2022
3. Ft AMSL - Feet Above Mean Sea Level
4. (D) - Desiginated Wells not used in contoruing
5. * River stage at Mississippi River Gauge at Grand Tower, IL (NGVD29) (https://rivergages.mvr.usace.army.mil/WaterControl/shefdata2.cfm?sid=CE358576&d=31&dt=E)
6. World Imagery (3/24/2021)

Figure 2
Monitoring Well Locations and Groundwater Contour Map
September 2022
Grand Tower Energy Center, LLC
Grand Tower, Ilinois
Jackson County

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TABLES

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-1R-20170907	APW-1R-20170927	APW-1R-20171018	APW-1R-20171108	APW-1R-20171127	APW-1R-20171228	APW-1R-20180117	APW-1R-20180207	APW-1R-WG-20220615	APW-01R-WG-20220915
			Location ID	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R
			Sample Date	09/05/2017	09/27/2017	10/18/2017	11/08/2017	11/27/2017	12/28/2017	01/17/2018	02/07/2018	06/15/2022	09/15/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.15	0.17	0.16	0.12	0.14	0.15	0.18	0.16	0.21	0.15
Radium-226	NA	pCi/L	NS	0.25 ± .12 U	0.18 ± .09 U	0.307 ± .320	0.13 ± 0.43 U	-0.07 ± 0.16 U	0.23 ± 0.1 U	0.03 ± 0.07 U	-0.04 ± 0.08 U	0.0323 ± 0.141 U	0.24 ± 0.1 U
Radium-228	NA	pCi/L	NS	2.29 ± .98	0.51 ± .39 U	0.12 ± .332	0.57 ± 0.33 U	0.47 ± 0.54 U	0.04 ± 0.34 U	0.98 ± 0.62 J	0.22 ± 0.34 U	0.661 ± 0.257	0.43 ± 0.49 UQM-
Sulfate	NA	mg/L	400	41	65	65	54	58	88	78	79	33	73 S
CALC													
Radium-226/228	NA	pCi/L	5									0.693 ± 0.293	0.67 ± 0.59 U
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									33.9	31.7
GEN CHEM													
Chloride	NA	mg/L	200	5 U	5 U	5 U	5 U	5 U	9	11	10	2	7
Dissolved Solids, Total	NA	mg/L	1200	400	428	376	358 R	412	474	434	392	342	420 H
pH, Lab	NA	pH units	6.22-9.0[2]	6.64	6.54	6.6	6.8	7.11	6.96	7.09	6.52	6.98	6.91
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0012	0.001 U
Arsenic	T	mg/L	0.01	0.0012	0.0012	0.001 U	0.0012	0.0011	0.001 U	0.0011	0.0011	0.0019	0.0019
Barium	D	mg/L	2									0.16	0.153
Barium	T	mg/L	2	0.168	0.193	0.171	0.176	0.165	0.178	0.182	0.18	0.197	0.185
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.163	0.244
Boron	T	mg/L	2	0.218	0.251	0.238	0.211	0.225	0.329	0.357	0.311	0.228	0.242
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									85.6	83.8 S
Calcium	T	mg/L	103.2[1]	84.3 S	93 S	86.2 S	88.2	91.2 S	91	97.1	85.8 S	90.3	91.4
Chromium	D	mg/L	0.1									0.0009 J	0.0015 U
Chromium	T	mg/L	0.1	0.0023	0.0021	0.0033	0.001 U	0.001 U	0.0018	0.0015	0.0015	0.0031	0.0034
Cobalt	D	mg/L	0.006									0.0002 J	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0017	0.0017
Iron	T	mg/L	NS									1.42	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.0062
Lithium	D	mg/L	0.04									0.0127	0.0156
Lithium	T	mg/L	0.04	0.0155	0.018	0.0173	0.0175	0.018	0.0179	0.0164	0.0159	0.0171	0.0169
Manganese	T	mg/L	NS									0.139	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.0043	
Nickel	T	mg/L	NS	0.0044	0.0062	0.0054	0.004	0.0038	0.0046	0.005	0.0057	0.0083	
Selenium	D	mg/L	0.05									0.0028	0.0032
Selenium	T	mg/L	0.05	0.0038	0.004	0.0034	0.0044	0.0041	0.004	0.004	0.0037	0.0028	0.0038
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0014	0.001 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling		
			Sample ID	APW-2-20170907	APW-2-20170927	APW-2-20171020	APW-2-20171109	APW-2-20171129	APW-2-20171227	APW-2-20180119	APW-2-20180207	APW-02-WG-20220616	APW-02-WG-20220914	DUP-002-WG-20220914
			Location ID	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02
			Sample Date	09/06/2017	09/28/2017	10/20/2017	11/09/2017	11/29/2017	12/27/2017	01/19/2018	02/07/2018	06/16/2022	09/14/2022	09/14/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N	FD
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**											
UNSPECIFIED														
Fluoride	NA	mg/L	4	0.24	0.26	0.25	0.24	0.24	0.25	0.26	0.24	0.25	0.22	0.22
Radium-226	NA	pCi/L	NS	1.06 ± 0.21	0.03 ± 0.1 U	-0.132 ± 0.410	1.47 ± 0.26		0.33 ± 0.12 U	0.47 ± 0.15 U	0.97 ± 0.23 J	0.159 ± 0.181 J	0.27 ± 0.1 UQDR	0.14 ± 0.07 U
Radium-228	NA	pCi/L	NS	1.98 ± 0.95	-0.01 ± 0.6 U	0.504 ± 0.378	0.91 ± 0.36 J		0.95 ± 0.52 J	1.08 ± 0.59	0.99 ± 0.5 J	0.308 ± 0.236 J3U	0.4 ± 0.48 UQDR	2.81 ± 1.03
Sulfate	NA	mg/L	400	462	460	472 S	479	472	426	443	416	496	491	490
CALC														
Radium-226/228	NA	pCi/L	5									0.467 ± 0.297 J	0.67 ± 0.58 U	2.95 ± 1.1
FIELD PARAM														
Turbidity, Field	NA	NTU	17.96[1]									38	19.2	
GEN CHEM														
Chloride	NA	mg/L	200	13	12	11	11	12	12	12	12	9	11	10
Dissolved Solids, Total	NA	mg/L	1200	858	880	934	916	870	848	836	888	930	890 H	905 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.09	7.05	7.08	7.07	7.05	7.14	7.06	6.96	7.21	7.32	7.25
METALS														
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0021	0.0006 J	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0117	0.0048	0.0049
Arsenic	T	mg/L	0.01	0.0199	0.0147	0.0212	0.017	0.0169	0.0157	0.0148	0.0243	0.0158	0.026	0.0176
Barium	D	mg/L	2									0.154	0.123	0.135
Barium	T	mg/L	2	0.479	0.355	0.685	0.44	0.427	0.338	0.351	0.739	0.237	0.408	0.238
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.002 U	0.001 U	0.001 U
Boron	D	mg/L	2									8.17	7.49 S	7.9
Boron	T	mg/L	2	8.16	8.73	8.94 S	9	8.98	8.39	8.19	8.24	8.13	9.43	8.72
Cadmium	D	mg/L	0.005									0.0003 J	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									175	136 S	165
Calcium	T	mg/L	103.2[1]	148	145	171 S	157	158	135	134	175	189	198	178
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0374	0.0455	0.0503	0.0235	0.014	0.0566	0.127	0.112	0.0254	0.0148	0.0066
Cobalt	D	mg/L	0.006									0.0003 J	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0057	0.0023	0.0097	0.0041	0.0038	0.0018	0.0028	0.011	0.0011 J	0.0044	0.0011
Iron	T	mg/L	NS									11.7		
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.0115	0.0054	0.0201	0.0096	0.0075	0.0031	0.0048	0.0239	0.0022	0.0119	0.0033
Lithium	D	mg/L	0.04									0.037	0.0374	0.0404
Lithium	T	mg/L	0.04	0.05	0.0455	0.0647	0.0521	0.0542	0.0474	0.045	0.0604	0.0507	0.0559	0.0456
Manganese	T	mg/L	NS									0.752		
Mercury	D	mg/L	0.002										0.0002 U	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00043	0.0002 U
Molybdenum	D	mg/L	0.1									0.201	0.139	0.156
Molybdenum	T	mg/L	0.1	0.172	0.147	0.214	0.175	0.165	0.111	0.0951	0.131	0.24	0.174	0.174
Nickel	D	mg/L	NS									0.0039		
Nickel	T	mg/L	NS	0.0288	0.0263	0.0412	0.0202	0.0135	0.0295	0.0631	0.0725	0.0142		
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-3-20170907	APW-3-20170929	APW-3-20171020	APW-3-20171110	APW-3-20171129	APW-3-20171228	APW-3-20180119	APW-3-20180208	APW-03-WG-20220616	APW-03-WG-20220915
			Location ID	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03
			Sample Date	09/06/2017	09/29/2017	10/20/2017	11/10/2017	11/29/2017	12/28/2017	01/19/2018	02/08/2018	06/16/2022	09/15/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.28	0.29	0.29	0.31	0.27	0.29	0.29	0.34	0.26	0.2
Radium-226	NA	pCi/L	NS	0.53 ± .18 U	0.04 ± 0.09 U	0.409 ± 0.426	0.18 ± 0.11 U	0.33 ± 0.17 U	0.2 ± 0.1 U	0.1 ± 0.1 U	0.31 ± 0.15 U	0.201 ± 0.155	0.56 ± 0.13 U
Radium-228	NA	pCi/L	NS	2.05 ± .96	1.01 ± 0.57	0.492 ± 0.373	0.72 ± 0.37 J	0.31 ± 0.49 U	0.37 ± 0.44 U	1.32 ± 0.68	0.06 ± 0.36 U	1.89 ± 0.26 J3	0.4 ± 0.5 UQDR
Sulfate	NA	mg/L	400	175	222	201	207	204	168	152	194	393	150
CALC													
Radium-226/228	NA	pCi/L	5									2.09 ± 0.303	0.96 ± 0.63 U
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									40.3	56.1
GEN CHEM													
Chloride	NA	mg/L	200	22	21	21	22	19	20	16	23	20	16
Dissolved Solids, Total	NA	mg/L	1200	464	514	486	450	554	504	498	456	724	602 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.88	7.46	7.65	7.93	7.5	7.48	7.26	7.78	7.85	7.46
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0015	0.0014
Arsenic	T	mg/L	0.01	0.0022	0.0029	0.0021	0.0018	0.0023	0.0024	0.0028	0.0018	0.002	0.0046
Barium	D	mg/L	2									0.139	0.124
Barium	T	mg/L	2	0.111	0.146	0.104	0.0814	0.121	0.1	0.15	0.0806	0.158	0.181
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									4.23	1.49
Boron	T	mg/L	2	4.16	4.21 S	4.7	4.67	4.44 S	4.52	4.08	4.92	4.27	1.84
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U
Calcium	D	mg/L	103.2[1]									174	125
Calcium	T	mg/L	103.2[1]	86.3	104 S	88.1	74.9	116 S	95	101	77.1	153	143
Chromium	D	mg/L	0.1									0.0011 J	0.0015 U
Chromium	T	mg/L	0.1	0.0081	0.0053	0.0026	0.001 U	0.001 U	0.005	0.0025	0.001 U	0.0044	0.0083
Cobalt	D	mg/L	0.006									0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.0015	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 J	0.0014
Iron	T	mg/L	NS									1.66	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.0021	0.0042	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.0023
Lithium	D	mg/L	0.04									0.0338	0.0288
Lithium	T	mg/L	0.04	0.0258	0.0262	0.0259	0.0245	0.0308	0.027	0.035	0.0239	0.0361	0.0329
Manganese	T	mg/L	NS									0.321	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.057	0.0342
Molybdenum	T	mg/L	0.1	0.0778	0.0754	0.0761	0.0713	0.0684	0.0748	0.0824	0.0849	0.0601	0.0413
Nickel	D	mg/L	NS									0.0016	
Nickel	T	mg/L	NS	0.0055	0.0051	0.0019	0.001 U	0.001 U	0.0026	0.0025	0.001	0.0033	
Selenium	D	mg/L	0.05									0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-4-20170907	APW-4-20170929	APW-4-20171019	APW-4-20171108	APW-4-20171128	APW-4-20171228	APW-4-20180119	APW-4-20180208	APW-04-WG-20220615	APW-04-WG-20220915
			Location ID	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04
			Sample Date	09/08/2017	09/29/2017	10/19/2017	11/08/2017	11/28/2017	12/28/2017	01/19/2018	02/08/2018	06/15/2022	09/15/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.18	0.19	0.18	0.17	0.18	0.17	0.17	0.16	0.2	0.17
Radium-226	NA	pCi/L	NS	0.38 ± 0.16 U	0.02 ± 0.08 U	-0.272 ± 0.328	0.15 ± 0.09 U	0.09 ± 0.13 U	0.17 ± 0.09 U	-0.05 ± 0.08 U	0.13 ± 0.11 U	0.103 ± 0.164 J	0.5 ± 0.13 U
Radium-228	NA	pCi/L	NS	0.95 ± 0.64 J	-0.45 ± 0.68 U	0.53 ± 0.382	0.64 ± 0.31 U	0.88 ± 0.64 J	0.73 ± 0.36 J	0.34 ± 0.51 U	0.64 ± 0.48 U	0.245 ± 0.235 J	2.15 ± 0.78
Sulfate	NA	mg/L	400	126	116	109	120	107	100	99	92	94	83
CALC													
Radium-226/228	NA	pCi/L	5									0.348 ± 0.287 J	2.65 ± 0.91
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									19.1	18.3
GEN CHEM													
Chloride	NA	mg/L	200	12	11	11	11	11	11	10	11	12	10
Dissolved Solids, Total	NA	mg/L	1200	460	484	452	472	492	514	424	528	430	436 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.31	7.33	7.31	7.42	7.32	7.33	7.25	7.2	7.41	7.51
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0013	0.0013
Arsenic	T	mg/L	0.01	0.0025	0.0018	0.0016	0.0018	0.0016	0.0014	0.0016	0.0015	0.0015	0.0029
Barium	D	mg/L	2									0.116	0.132
Barium	T	mg/L	2	0.145	0.139	0.123	0.13	0.128	0.141	0.155	0.144	0.143	0.165
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									1.41	0.875
Boron	T	mg/L	2	2.37	2.16	2.12	2.21	2.03	1.7	1.33	1.18	1.88	0.973
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									111	93.7
Calcium	T	mg/L	103.2[1]	101 S	105	89.4	97.5	107	107	113	113	97.8	108 S
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0041	0.0025	0.0017	0.001 U	0.001 U	0.0027	0.0037	0.001 U	0.0015 U	0.0251
Cobalt	D	mg/L	0.006									0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0013	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.0025
Iron	T	mg/L	NS									0.563	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0016
Lithium	D	mg/L	0.04									0.0264	0.0283
Lithium	T	mg/L	0.04	0.0404	0.0403	0.0412	0.0406	0.0424	0.0416	0.0411	0.0397	0.036	0.0322
Manganese	T	mg/L	NS									0.192	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0653	0.0445
Molybdenum	T	mg/L	0.1	0.0891	0.084	0.0793	0.0812	0.0748	0.0714	0.0592	0.057	0.0788	0.0494
Nickel	D	mg/L	NS									0.0019	
Nickel	T	mg/L	NS	0.0065	0.0034	0.0029	0.002	0.002	0.0026	0.0039	0.003	0.0045	
Selenium	D	mg/L	0.05									0.0134	0.0101
Selenium	T	mg/L	0.05	0.0158	0.015	0.0149	0.0161	0.014	0.013	0.0101	0.0102	0.0133	0.0111
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
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NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling			
			Sample ID	APW-5-20170907	APW-5-20170928	APW-5-20171019	APW-5-20171109	APW-5-20171129	APW-5-20171227	APW-5-20180118	APW-5-20180207	APW-05-WG-20220616	DUP-001-WG-20220616	APW-05-WG-20220914	DUP-001-WG-20220914
			Location ID	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/29/2017	12/27/2017	01/18/2018	02/07/2018	06/16/2022	06/16/2022	09/14/2022	09/14/2022
			Sample Type	N	N	N	N	N	N	N	N	N	FD	N	FD
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**												
UNSPECIFIED															
Fluoride	NA	mg/L	4	0.34	0.34	0.32	0.32	0.32	0.33	0.36	0.32	0.35	0.33	0.33	0.31
Radium-226	NA	pCi/L	NS	0.37 ± 0.14 U	0.19 ± 0.1 U	0.133 ± 0.370	0.48 ± 0.15 U		0.35 ± 0.12 U	0.13 ± 0.1 U	0.26 ± 0.13 U	0.649 ± 0.316	0.259 ± 0.27 J	0.17 ± 0.08 U	0.11 ± 0.07 U
Radium-228	NA	pCi/L	NS	1.07 ± 0.8	0.89 ± 0.55 J	0.661 ± 0.418	1.17 ± 0.33		0.49 ± 0.42 U	1.04 ± 0.56	0.35 ± 0.4 U	1.1 ± 0.282	0.715 ± 0.31	0.82 ± 0.88 J	0.27 ± 0.55 U
Sulfate	NA	mg/L	400	407	460	399	413	381	394	439	378	224	239	379	403
CALC															
Radium-226/228	NA	pCi/L	5									1.75 ± 0.424	0.973 ± 0.411	0.99 ± 0.96 U	0.38 ± 0.62 U
FIELD PARAM															
Turbidity, Field	NA	NTU	17.96[1]									51.8		9.19	
GEN CHEM															
Chloride	NA	mg/L	200	15	15	15	14	16	16	16	16	19	19	15	15
Dissolved Solids, Total	NA	mg/L	1200	842	832	804	826	790	792	552	804	650	690	750 H	774 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.37	7.3	7.26	7.3	7.26	7.31	7.23	7.18	7.35	7.49	7.55	7.57
METALS															
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U
Arsenic	D	mg/L	0.01									0.002	0.0021	0.001	0.001
Arsenic	T	mg/L	0.01	0.0031	0.0026	0.0015	0.0016	0.0016	0.0019	0.0021	0.0019	0.0048	0.0041	0.0025	0.0023
Barium	D	mg/L	2									0.133	0.132	0.13	0.128
Barium	T	mg/L	2	0.226	0.233	0.183	0.216	0.193	0.214	0.214	0.195	0.187	0.174	0.154	0.152
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.001 U	0.001 U
Boron	D	mg/L	2									7.63	7.7	7.42	7.09
Boron	T	mg/L	2	9.3	10.3	8.89	9.98	9.1	9.83	9.25	8.73	7.67	8.24 S	7.76	7.62
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									139	141	119	131
Calcium	T	mg/L	103.2[1]	136	142	119	131	123	125	121	124	127	129 S	127	137
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0137	0.001 U	0.0041	0.001 U	0.001 U	0.0084	0.0033	0.001 U	0.0016 J	0.003 U	0.0015 U	0.0015 U
Cobalt	D	mg/L	0.006									0.0006 J	0.0005 J	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013 J	0.0011 J	0.001 U	0.001 U
Iron	T	mg/L	NS									2.77	1.89		
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0282	0.029	0.0381	0.0373
Lithium	T	mg/L	0.04	0.0363	0.0443	0.0393	0.0405	0.0415	0.0433	0.0404	0.0397	0.0331	0.0363	0.0408	0.0397
Manganese	T	mg/L	NS									0.9	0.904		
Mercury	D	mg/L	0.002											0.0002 U	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.172	0.17	0.213	0.206
Molybdenum	T	mg/L	0.1	0.172	0.195	0.201	0.168	0.193	0.246	0.244	0.249	0.203	0.195	0.235	0.224
Nickel	D	mg/L	NS									0.0036	0.0035		
Nickel	T	mg/L	NS	0.0074	0.0012	0.0023	0.001 U	0.001 U	0.0043	0.0021	0.001 U	0.0037	0.0039		
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	**APW-6D-20170907**	**APW-6D-20170927**	**APW-6D-20171019**	**APW-6D-20171109**	**APW-6D-20171128**	**APW-6D-20171227**	**APW-6D-20180118**	**APW-6D-20180208**	**N/A**	**APW-06D-WG-20220913**
			Location ID	**APW-06D**	**APW-06D**	**APW-06D**	**APW-06D**	**APW-06D**	**APW-06D**	**APW-06D**	**APW-06D**	**APW-06D**	**APW-06D**
			Sample Date	**09/06/2017**	**09/28/2017**	**10/19/2017**	**11/09/2017**	**11/28/2017**	**12/27/2017**	**01/18/2018**	**02/08/2018**	**6/16/2022**	**09/13/2022**
			Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**		**N**
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**									**Casing deflected, no sample collected during Q2 2022**	
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.22	0.23	0.21	0.22	0.21	0.22	0.23	0.21	N/A	0.2
Radium-226	NA	pCi/L	NS	0.62 ± 0.17 U	0.37 ± 0.11 U	1.22 ± 0.744	0.39 ± 0.15 U	0.38 ± 0.18 U	0.3 ± 0.12 U	0.03 ± 0.08 U	0.2 ± 0.13 U	N/A	0.31 ± 0.1 U
Radium-228	NA	pCi/L	NS	1.07 ± 0.65	0.61 ± 0.33 U	0.549 ± 0.377	0.86 ± 0.37 J	1.4 ± 0.71	0.78 ± 0.48 J	0.74 ± 0.57 J	0.24 ± 0.34 U	N/A	1.46 ± 0.71
Sulfate	NA	mg/L	400	215	228	206	222	230	236	211	189	N/A	272
CALC													
Radium-226/228	NA	pCi/L	5									N/A	1.77 ± 0.81 U
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									N/A	18.5
GEN CHEM													
Chloride	NA	mg/L	200	17	17	16	16	16	16	17	17	N/A	14
Dissolved Solids, Total	NA	mg/L	1200	558	560	562	564	590	516 R	482	584	N/A	670 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.23	7.25	7.23	7.19	7.2	7.22	7.21	7.2	N/A	7.42
METALS													
Antimony	D	mg/L	0.006									N/A	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U
Arsenic	D	mg/L	0.01									N/A	0.004
Arsenic	T	mg/L	0.01	0.0068	0.0101	0.0075	0.0074	0.009	0.0095	0.0106	0.0096	N/A	0.0104
Barium	D	mg/L	2									N/A	0.129
Barium	T	mg/L	2	0.173	0.172	0.142	0.153	0.155	0.163	0.166	0.148	N/A	0.143
Beryllium	D	mg/L	0.004									N/A	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U
Boron	D	mg/L	2									N/A	5.32
Boron	T	mg/L	2	3.72	3.87	3.55	3.58	3.9	3.84	3.3	3.09	N/A	5.51
Cadmium	D	mg/L	0.005									N/A	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U
Calcium	D	mg/L	103.2[1]									N/A	118
Calcium	T	mg/L	103.2[1]	99.9	110	96.7	100	110	107	105 S	105	N/A	123
Chromium	D	mg/L	0.1									N/A	0.0015 U
Chromium	T	mg/L	0.1	0.001 U	0.0013	0.001 U	0.001 U	0.001 U	0.0017	0.003	0.0014	N/A	0.0015 U
Cobalt	D	mg/L	0.006									N/A	0.0013
Cobalt	T	mg/L	0.006	0.0012	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U
Lead	D	mg/L	0.0075									N/A	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U
Lithium	D	mg/L	0.04									N/A	0.0179
Lithium	T	mg/L	0.04	0.016	0.0176	0.0161	0.0163	0.0178	0.0181	0.0165	0.0162	N/A	0.0185
Mercury	D	mg/L	0.002									N/A	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	N/A	0.0002 U
Molybdenum	D	mg/L	0.1									N/A	0.0669
Molybdenum	T	mg/L	0.1	0.0646	0.0606	0.0582	0.0589	0.06	0.0584	0.0465	0.0463	N/A	0.0719
Nickel	T	mg/L	NS	0.0032	0.0028	0.0018	0.002	0.0017	0.0022	0.0032	0.0025	N/A	
Selenium	D	mg/L	0.05									N/A	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U
Thallium	D	mg/L	0.002									N/A	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

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1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-6S-20170907	APW-6S-20170928	APW-6S-20171019	APW-6S-20171109	APW-6S-20171128	APW-6S-20171227	APW-6S-20180118	APW-6S-20180208	APW-6S-WG-20220616	APW-06S-WG-20220913
			Location ID	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/13/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.41	0.26	0.25	0.26	0.25	0.25	0.27	0.24	0.29	0.28
Radium-226	NA	pCi/L	NS	0.36 ± 0.14 U	0.09 ± 0.08 U	0.317 ± 0.331	0.22 ± 0.11 U	0.18 ± 0.13 U	0.11 ± 0.09 U	0.09 ± 0.09 U	0.15 ± 0.11 U	0.269 ± 0.182	0.2 ± 0.08 U
Radium-228	NA	pCi/L	NS	0.56 ± 0.77 U	1.06 ± 0.53	0.481 ± 0.316	0.9 ± 0.4 J	0.92 ± 0.6 J	0.44 ± 0.44 U	0.71 ± 0.53 J	0.89 ± 0.38 J	0.228 ± 0.248 J	2.73 ± 0.9
Sulfate	NA	mg/L	400	127	177	167	151	189	201	233	220	200	227
CALC													
Radium-226/228	NA	pCi/L	5									0.497 ± 0.308	2.93 ± 0.98
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									30.5	15.1
GEN CHEM													
Chloride	NA	mg/L	200	31	28	27	27	26	27	26	25	24	25
Dissolved Solids, Total	NA	mg/L	1200	500	546	574	528	566	588	598	666	600	630 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.16	7.06	7.18	7.23	7.09	7.13	7.09	7.02	7.24	7.38
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0009 J	0.001 U
Arsenic	T	mg/L	0.01	0.0017	0.0016	0.0018	0.002	0.0013	0.0012	0.0011	0.0011	0.0009 J	0.0012
Barium	D	mg/L	2									0.233	0.146
Barium	T	mg/L	2	0.222	0.237	0.205	0.226	0.214	0.213	0.224	0.205	0.25	0.221
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									4.92	5.95
Boron	T	mg/L	2	4.65	5.93	5.83	5.64 S	5.8	6.93 S	7.42	6.66	4.77	6.61
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									124	93.7
Calcium	T	mg/L	103.2[1]	101	97.2	87.5	96.8 S	99.5	98.1	98.7	97.4	115	105
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0027	0.0173	0.0028	0.001 U	0.001 U	0.0048	0.0012	0.001 U	0.0028	0.0015 U
Cobalt	D	mg/L	0.006									0.0002 J	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U
Iron	T	mg/L	NS									9.35	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0028
Lithium	D	mg/L	0.04									0.0355	0.0384
Lithium	T	mg/L	0.04	0.0335	0.0413	0.04	0.0415	0.042	0.0458	0.0451	0.0417	0.0363	0.041
Manganese	T	mg/L	NS									0.53	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.229	0.235
Molybdenum	T	mg/L	0.1	0.249	0.287	0.272	0.243	0.274	0.314	0.324	0.323	0.237	0.271
Nickel	D	mg/L	NS									0.0015	
Nickel	T	mg/L	NS	0.0021	0.009	0.0021	0.0012	0.001 U	0.0031	0.0016	0.0012	0.0027	
Selenium	D	mg/L	0.05									0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
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1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-7-20170907	APW-7-20170928	APW-7-20171019	APW-7-20171109	APW-7-20171128	APW-7-20171227	APW-7-20180118	APW-7-20180208	APW-07-WG-20220616	APW-07-WG-20220914
			Location ID	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07
			Sample Date	09/07/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/14/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.35	0.21	0.19	0.2	0.2	0.19	0.2	0.18	0.18	0.17
Radium-226	NA	pCi/L	NS	0.47 ± 0.15 U	0 ± 0.06 U	0.505 ± 0.396	0.11 ± 0.08 U	0.16 ± 0.14 U	0.25 ± 0.1 U	0.14 ± 0.09 U	0.24 ± 0.14 U	0.333 ± 0.208	0.18 ± 0.09 U
Radium-228	NA	pCi/L	NS	-0.42 ± 0.79 U	0.76 ± 0.61 J	0.785 ± 0.412	1.13 ± 0.39	0.61 ± 0.51 U	0.14 ± 0.35 U	1.19 ± 0.55	0.53 ± 0.4 U	0.766 ± 0.234	1.45 ± 0.72
Sulfate	NA	mg/L	400	66	59	52	50	61	63	67	64	72	78
CALC													
Radium-226/228	NA	pCi/L	5									1.1 ± 0.313	1.63 ± 0.81 U
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									66.2	34.8
GEN CHEM													
Chloride	NA	mg/L	200	15	15	14	15	16	15	15	15	11	12
Dissolved Solids, Total	NA	mg/L	1200	762	786	624	730	742	736	720	740	780	815 H
pH, Lab	NA	pH units	6.22-9.0[2]	6.84	6.84	6.86	6.87	6.83	6.96	6.97	6.88	6.88	7.02
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U
Arsenic	T	mg/L	0.01	0.0014	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0023	0.0016
Barium	D	mg/L	2									0.334	0.255
Barium	T	mg/L	2	0.465	0.448	0.394	0.401	0.37	0.374	0.38	0.359	0.374	0.382
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.148	0.193
Boron	T	mg/L	2	0.235	0.308	0.302	0.3	0.278	0.342	0.298	0.318	0.168	0.208
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									222	199
Calcium	T	mg/L	103.2[1]	192	204	171	187	196	193	191	185	238	210
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0017	0.0063	0.0026	0.001 U	0.001 U	0.0329	0.001 U	0.001 U	0.0041	0.0021
Cobalt	D	mg/L	0.006									0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 J	0.001 U
Iron	T	mg/L	NS									17.3	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0074	0.001 U
Lithium	D	mg/L	0.04									0.0126	0.0148
Lithium	T	mg/L	0.04	0.0147	0.0181	0.0172	0.0176	0.0185	0.0191	0.0181	0.0178	0.0143	0.0161
Manganese	T	mg/L	NS									1.11	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0026	0.0026
Molybdenum	T	mg/L	0.1	0.0046	0.0036	0.0033	0.0023	0.003	0.0044	0.0037	0.0036	0.0035	0.003
Nickel	D	mg/L	NS									0.0008 J	
Nickel	T	mg/L	NS	0.0014	0.0033	0.0013	0.001 U	0.001 U	0.015	0.001 U	0.001 U	0.0042	
Selenium	D	mg/L	0.05									0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-8-20170907	APW-8-20170928	APW-8-20171018	APW-8-20171108	APW-8-20171127	APW-8-20171227	APW-8-20180117	APW-8-20180208	APW-08-WG-20220616	APW-08-WG-20220915
			Location ID	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08
			Sample Date	09/07/2017	09/28/2017	10/18/2017	11/08/2017	11/27/2017	12/27/2017	01/17/2018	02/08/2018	06/16/2022	09/15/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.3	0.3	0.29	0.29	0.28	0.28	0.3	0.28	0.29	0.26
Radium-226	NA	pCi/L	NS	0.22 ± 0.12 U	0.12 ± 0.08 U	0.2 ± 0.393	0.11 ± 0.1 U	0.35 ± 0.16 U	0.14 ± 0.08 U	0.21 ± 0.11 U	0.39 ± 0.15 U	0.208 ± 0.236 J	0.27 ± 0.1 U
Radium-228	NA	pCi/L	NS	1.13 ± 0.63	0.88 ± 0.48 J	1.3 ± 0.545	0.37 ± 0.25 U	0.77 ± 0.55 J	1.31 ± 0.58	0.64 ± 0.49 U	0.49 ± 0.43 U	0.526 ± 0.224	0.86 ± 0.62 J
Sulfate	NA	mg/L	400	43	40	38	40	39	38	39	37	39	39
CALC													
Radium-226/228	NA	pCi/L	5									0.735 ± 0.325	1.13 ± 0.72 U
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									119	139
GEN CHEM													
Chloride	NA	mg/L	200	9	10	10	10	10	11	12	11	9	11
Dissolved Solids, Total	NA	mg/L	1200	438	458	436	446	466	410	398	442	382	372 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.04	7.07	7	7.12	7.25	7.11	7.04	7.04	7.34	7.47
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U
Arsenic	T	mg/L	0.01	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.0022	0.0015
Barium	D	mg/L	2									0.194	0.163
Barium	T	mg/L	2	0.207	0.256	0.219	0.24	0.217	0.223	0.226	0.215	0.235	0.19
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.0777	0.0993
Boron	T	mg/L	2	0.132	0.154	0.135	0.138	0.141	0.145	0.151	0.132	0.115	0.11
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U
Calcium	D	mg/L	103.2[1]									108	79.7
Calcium	T	mg/L	103.2[1]	97.4	105	92.6	101	102	98.6	95	97.8	93.3	85.1
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0018	0.0023	0.001 U	0.0059	0.001 U	0.0021	0.001 U	0.001 U	0.0054	0.0016
Cobalt	D	mg/L	0.006									0.0013	0.001 U
Cobalt	T	mg/L	0.006	0.0017	0.0013	0.001	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.0013
Iron	T	mg/L	NS									3.14	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0024	0.001 U
Lithium	D	mg/L	0.04									0.0141	0.0142
Lithium	T	mg/L	0.04	0.0196	0.0206	0.0207	0.0216	0.0223	0.0216	0.0192	0.0196	0.016	0.016
Manganese	T	mg/L	NS									0.202	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0008 J	0.0015 U
Molybdenum	T	mg/L	0.1	0.0011	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 J	0.0015 U
Nickel	D	mg/L	NS									0.0023	
Nickel	T	mg/L	NS	0.0039	0.0043	0.0029	0.0062	0.0026	0.0027	0.0026	0.0026	0.0054	
Selenium	D	mg/L	0.05									0.0027	0.0068
Selenium	T	mg/L	0.05	0.008	0.0141	0.0132	0.0149	0.0135	0.0141	0.0149	0.013	0.0036	0.0077
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
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FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
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2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
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Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-9-20170907	APW-9-20170927	APW-9-20171018	APW-9-20171108	APW-9-20171127	APW-9-20171228	APW-9-20180117	APW-9-20180208	APW-09-WG-20220615	APW-09-WG-20220913
			Location ID	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09
			Sample Date	09/05/2017	09/27/2017	10/18/2017	11/08/2017	11/27/2017	12/28/2017	01/17/2018	02/08/2018	06/15/2022	09/13/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.19	0.22	0.21	0.2	0.2	0.2	0.22	0.19	0.23	0.19
Radium-226	NA	pCi/L	NS	0.17 ± .12 U	0.03 ± 0.07 U	-0.229 ± 0.389	0.14 ± 0.09 U	-0.06 ± 0.1 U	0.14 ± 0.08 U	0.05 ± 0.08 U	0.13 ± 0.13 U	0.267 ± 0.199	0.24 ± 0.09 U
Radium-228	NA	pCi/L	NS	0.91 ± .69 J	0.67 ± 0.56 U	0.275 ± 0.316	0.49 ± 0.29 U	1.07 ± 0.48 U	1.06 ± 0.51	0.46 ± 0.46 U	0.23 ± 0.37 U	-0.213 ± 0.244 U	0.22 ± 0.49 U
Sulfate	NA	mg/L	400	65	47	53	65	50	42	28	25	104	39
CALC													
Radium-226/228	NA	pCi/L	5									0.267 ± 0.315 J	0.46 ± 0.58 U
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									34.2	7.3
GEN CHEM													
Chloride	NA	mg/L	200	13	13	13	13	13	13	13	768	13	12
Dissolved Solids, Total	NA	mg/L	1200	364 R	372	324	366	392	278	348	3380	424	380 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.31	7.35	7.39	7.39	7.52	7.42	7.57	7.33	7.48	7.59
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0019	0.0021
Arsenic	T	mg/L	0.01	0.0031	0.0024	0.0018	0.0022	0.002	0.002	0.0022	0.0022	0.0026	0.0025
Barium	D	mg/L	2									0.129	0.111
Barium	T	mg/L	2	0.227	0.171	0.118	0.133	0.121	0.129	0.133	0.125	0.186	0.134
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									1.32	0.327
Boron	T	mg/L	2	0.877	0.569	0.668	0.792	0.506	0.369	0.317	0.255	1.61	0.329
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									107 S	76.5
Calcium	T	mg/L	103.2[1]	85.9	85.3	76.5	81.9	85.6	81.5 S	80.3	92	110	89.5
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0148	0.0021	0.001 U	0.001 U	0.001 U	0.0011	0.0016	0.001 U	0.0011 J	0.0015 U
Cobalt	D	mg/L	0.006									0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0031	0.0014	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U
Iron	T	mg/L	NS									0.496	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0039
Lithium	D	mg/L	0.04									0.0184	0.0137
Lithium	T	mg/L	0.04	0.0176	0.0173	0.0174	0.018	0.0167	0.0173	0.0155	0.0148	0.0246	0.0143
Manganese	T	mg/L	NS									0.599	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0351	0.0182
Molybdenum	T	mg/L	0.1	0.0223	0.0252	0.0327	0.0303	0.0247	0.0246	0.0223	0.0224	0.0455	0.0194
Nickel	D	mg/L	NS									0.0017	
Nickel	T	mg/L	NS	0.012	0.0032	0.001 U	0.001	0.001 U	0.001 U	0.0012	0.001 U	0.004	
Selenium	D	mg/L	0.05									0.021	0.0142
Selenium	T	mg/L	0.05	0.0126	0.0139	0.017	0.0186	0.0138	0.0143	0.0147	0.0134	0.0219	0.0151
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-10D-20170907	APW-10D-20170927	APW-10D-20171019	APW-10D-20171109	APW-10D-20171128	APW-10D-20171228	APW-10D-20180118	APW-10D-20180209	APW-10D-WG-20220615	APW-10D-WG-20220916
			Location ID	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D
			Sample Date	09/07/2017	09/27/2017	10/19/2017	11/09/2017	11/28/2017	12/28/2017	01/18/2018	02/09/2018	06/15/2022	09/16/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.1	0.12	0.1	0.1 U	0.11	0.1	0.11	0.1 U	0.12	0.1
Radium-226	NA	pCi/L	NS	0.34 ± 0.12 U	-0.11 ± 0.1 U	0.121 ± 0.337	0.19 ± 0.12 U	0.16 ± 0.13 U	0.23 ± 0.1 U	0.08 ± 0.1 U	0 ± 0.07 U	0.249 ± 0.207	0.22 ± 0.09 U
Radium-228	NA	pCi/L	NS	1.16 ± 0.52	1.72 ± 0.64	0.633 ± 0.366	0.98 ± 0.33 J	0.47 ± 0.55 U	0.34 ± 0.37 U	0.98 ± 0.6 J	0.59 ± 0.43 U	1.19 ± 0.311	0.56 ± 0.58 U
Sulfate	NA	mg/L	400	38	44	43	42	42	44	44	44	41	43
CALC													
Radium-226/228	NA	pCi/L	5									1.44 ± 0.374	0.78 ± 0.67 U
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									46.9	21.9
GEN CHEM													
Chloride	NA	mg/L	200	24	17	17	15	17	16	14	16	16	18
Dissolved Solids, Total	NA	mg/L	1200	466	474	442	468	482	448	448	512	452	460 H
pH, Lab	NA	pH units	6.22-9.0[2]	7.12	7.11	7.05	7.11	7.12	7.15	7.03	7.03	7.21	7.29
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0008 J	0.001 U
Arsenic	T	mg/L	0.01	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.0017	0.0057
Barium	D	mg/L	2									0.342	0.321
Barium	T	mg/L	2	0.437	0.304	0.363	0.325	0.284	0.295	0.391	0.357	0.407	0.418
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.0786	0.0711
Boron	T	mg/L	2	0.0999	0.101	0.0843	0.0713	0.0885	0.0922	0.0923	0.0906	0.118	0.0731
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									143	124
Calcium	T	mg/L	103.2[1]	118	136	120	121	125	123	148 S	124 S	135	374
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0036	0.0078	0.0022	0.0011	0.001 U	0.001 U	0.0042	0.001 U	0.0015 U	0.0148
Cobalt	D	mg/L	0.006									0.0025	0.0021
Cobalt	T	mg/L	0.006	0.0039	0.0024	0.0025	0.0032	0.0017	0.0013	0.0026	0.0026	0.0034	0.0049
Iron	T	mg/L	NS									0.758	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.002
Lithium	D	mg/L	0.04									0.0135	0.0135
Lithium	T	mg/L	0.04	0.0147	0.0155	0.0146	0.0146	0.0153	0.0155	0.0142	0.014	0.018	0.0156
Manganese	T	mg/L	NS									1.16	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.0024	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.0054	
Nickel	T	mg/L	NS	0.0095	0.0077	0.0065	0.0057	0.0035	0.0025	0.0072	0.0053	0.007	
Selenium	D	mg/L	0.05									0.001 U	0.0016
Selenium	T	mg/L	0.05	0.001 U	0.0011	0.0012	0.0013	0.001 U	0.0014	0.0016	0.0016	0.001 U	0.0021
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U

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Empty cells = not analyzed
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Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-10S-20170907	APW-10S-20170927	APW-10S-20171019	APW-10S-20171109	APW-10S-20171128	APW-10S-20171228	APW-10S-20180118	APW-10S-20180209	APW-10S-WG-20220615	APW-10S-WG-20220915
			Location ID	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S
			Sample Date	09/07/2017	09/27/2017	10/19/2017	11/09/2017	11/28/2017	12/28/2017	01/18/2018	02/09/2018	06/15/2022	09/15/2022
			Sample Type	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.19	0.21	0.16	0.16	0.16	0.17	0.17	0.16	0.17	0.15
Radium-226	NA	pCi/L	NS	0.4 ± 0.14 U	0.19 ± 0.11 U	0.774 ± 0.430	0.16 ± 0.11 U	0.18 ± 0.16 U	0.23 ± 0.1 U	0.29 ± 0.12 U	0.24 ± 0.13 U	0.778 ± 0.324	0.3 ± 0.1 U
Radium-228	NA	pCi/L	NS	0.38 ± 0.47 U	0.98 ± 0.7 J	0.856 ± 0.391	0.71 ± 0.33 J	0.66 ± 0.57 U	0.56 ± 0.43 U	2.71 ± 0.78	0.93 ± 0.52 J	0.475 ± 0.268 J	2.52 ± 0.91
Sulfate	NA	mg/L	400	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	21 S
CALC													
Radium-226/228	NA	pCi/L	5									1.25 ± 0.42	2.82 ± 1.01
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									61.5	34.3
GEN CHEM													
Chloride	NA	mg/L	200	10	7	6	6	6	6	6	6	12	15
Dissolved Solids, Total	NA	mg/L	1200	708	720	678	708	734	770	680 R	762	735	770 H
pH, Lab	NA	pH units	6.22-9.0[2]	6.99	6.96	6.95	6.98	6.97	6.98	7.06	6.91	7.09	7.2
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.152	0.0612
Arsenic	T	mg/L	0.01	0.186	0.189	0.18	0.209	0.183	0.193	0.23	0.198	0.185	0.187
Barium	D	mg/L	2									0.423	0.292
Barium	T	mg/L	2	0.613	0.634	0.543	0.668	0.565	0.598	0.703	0.585	0.575	0.612
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.57	0.541
Boron	T	mg/L	2	0.525	0.544	0.536	0.595	0.545	0.573	0.645	0.582	0.683	0.565
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									169	156
Calcium	T	mg/L	103.2[1]	136	144	135	152	150	145	140	140	161	171 S
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0091	0.0019	0.001	0.0016	0.001 U	0.0016	0.0019	0.001 U	0.0015 J	0.015
Cobalt	D	mg/L	0.006									0.0001 J	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.0021
Iron	T	mg/L	NS									19.6	
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0007 J	0.0043
Lithium	D	mg/L	0.04									0.0266	0.0286
Lithium	T	mg/L	0.04	0.0263	0.0278	0.0272	0.0289	0.0293	0.0308	0.0316	0.0297	0.0353	0.033
Manganese	T	mg/L	NS									0.243	
Mercury	D	mg/L	0.002										0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.0017	0.0016	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.001 U	
Nickel	T	mg/L	NS	0.0051	0.0012	0.001 U	0.0015	0.001 U	0.001 U	0.0014	0.001 U	0.0014	
Selenium	D	mg/L	0.05									0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

Table 2
Mann-Kendall Analysis Results Summary for Parameters Exceeding Title 35 Section 845.600 Groundwater Protection Standards
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

Site Monitoring Well ID	Parameters	Number of Samples	Number of Detects	Percent Detects	Meet Data Reqs?	p-value	tau^2	tau	Trend
APW-02	Arsenic	10	10	100.00%	Yes	0.727	0.0123	0.111	Not Significant
APW-02	Boron	10	10	100.00%	Yes	1	0.000494	-0.0222	Not Significant
APW-02	Calcium	10	10	100.00%	Yes	0.156	0.143	0.378	Not Significant
APW-02	Chromium	10	10	100.00%	Yes	1	0.000494	0.0222	Not Significant
APW-02	Cobalt	10	10	100.00%	Yes	0.601	0.0242	-0.156	Not Significant
APW-02	Lead	10	10	100.00%	Yes	0.601	0.0242	-0.156	Not Significant
APW-02	Lithium	10	10	100.00%	Yes	0.727	0.0123	0.111	Not Significant
APW-02	Molybdenum	10	10	100.00%	Yes	0.862	0.00444	-0.0667	Not Significant
APW-02	Sulfate	10	10	100.00%	Yes	0.719	0.00808	0.0899	Not Significant
APW-03	Boron	10	10	100.00%	Yes	0.727	0.0123	-0.111	Not Significant
APW-03	Calcium	10	10	100.00%	Yes	0.216	0.111	0.333	Not Significant
APW-04	Boron	10	10	100.00%	Yes	<0.001	0.605	-0.778	Decreasing
APW-04	Calcium	10	10	100.00%	Yes	0.0867	0.187	0.432	Not Significant
APW-04	Lithium	10	10	100.00%	Yes	0.216	0.111	-0.333	Not Significant
APW-05	Boron	10	10	100.00%	Yes	0.0286	0.309	-0.556	Decreasing
APW-05	Calcium	10	10	100.00%	Yes	0.59	0.0182	-0.135	Not Significant
APW-05	Lithium	10	10	100.00%	Yes	0.862	0.00444	-0.0667	Not Significant
APW-05	Molybdenum	10	10	100.00%	Yes	0.0726	0.218	0.467	Not Significant
APW-05	Sulfate	10	10	100.00%	Yes	0.0466	0.261	-0.511	Decreasing
APW-06D	Arsenic	9	9	100.00%	Yes	0.0446	0.309	0.556	Increasing
APW-06D	Boron	9	9	100.00%	Yes	0.919	0.00309	-0.0556	Not Significant
APW-06D	Calcium	9	9	100.00%	Yes	0.206	0.118	0.343	Not Significant
APW-06S	Boron	10	10	100.00%	Yes	0.381	0.0598	0.244	Not Significant
APW-06S	Calcium	10	10	100.00%	Yes	0.216	0.111	0.333	Not Significant
APW-06S	Lithium	10	10	100.00%	Yes	0.484	0.04	0.2	Not Significant
APW-06S	Molybdenum	10	10	100.00%	Yes	0.727	0.0123	0.111	Not Significant
APW-07	Calcium	10	10	100.00%	Yes	0.484	0.04	0.2	Not Significant
APW-08	Calcium	10	10	100.00%	Yes	0.108	0.178	-0.422	Not Significant
APW-09	Calcium	10	10	100.00%	Yes	0.381	0.0598	0.244	Not Significant
APW-09	Chloride	10	10	100.00%	Yes	0.698	0.0118	-0.108	Not Significant
APW-09	Dissolved Solids, Total	10	10	100.00%	Yes	0.291	0.0835	0.289	Not Significant
APW-10D	Calcium	10	10	100.00%	Yes	0.0286	0.309	0.556	Increasing
APW-10S	Arsenic	10	10	100.00%	Yes	0.601	0.0242	0.156	Not Significant
APW-10S	Calcium	10	10	100.00%	Yes	0.106	0.164	0.405	Not Significant

Notes
Data file input: GTEC_ARII_20221201AT.xlsx
Data date range: 2017-09-05 to 2022-09-16
Non-detects were substituted with the lowest value of half the reporting limit value for trend analysis
N: number of data points
Meet Data Reqs?: Trend tests were performed only if the dataset had ≥8 detected values and ≥50 percent detects.
tau^2: measure of linear model fit
tau: Kendall's tau statistic
p-value: A two-sided p-value describing the probability of the H0 being true (a=0.05)
= Statistically significant decreasing trend
= Statistically significant increasing trend

APPENDIX A THIRD QUARTER 2022 CCR IMPOUNDMENT INSPECTION REPORTS

Grand Tower Energy Center
Closed CCR Impoundment
Quarterly Inspection Form

Date 9/13/22

Time 1100-1400

Name Matt Halley
(Inspector)

Weather:

Temperature:
80 deg. F

☒ Sunny
☐ Cloudy
☐ Raining
☐ Other

Observations:

☒ Erosion / Gullies
☐ Cracking / Sloughing
☒ Ponding / Damp Areas
☐ No Problems Identified
☒ Woody Vegetation Growth
☐ Other

Conditions Limiting Visibility:

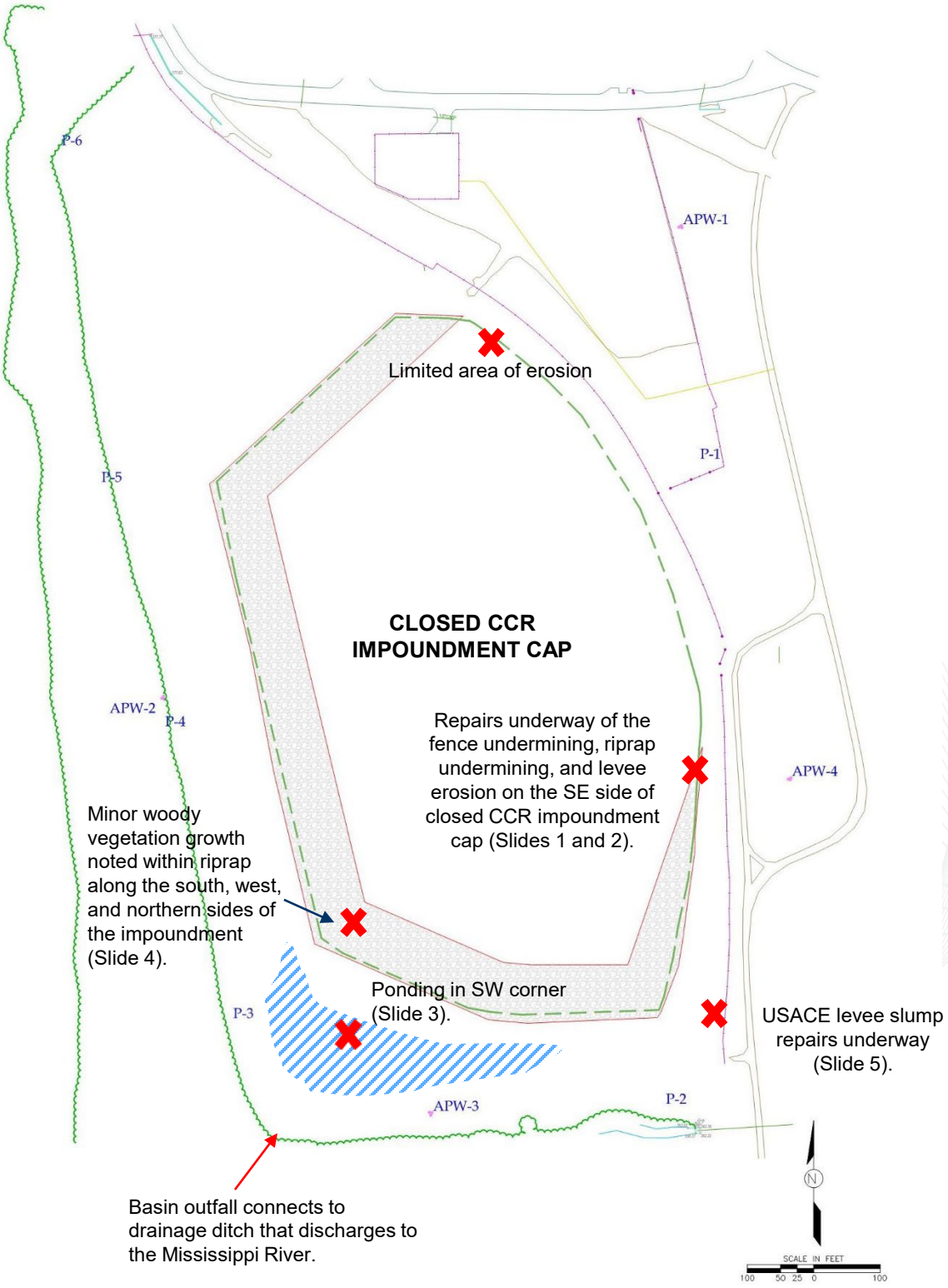
☐ Snow Cover
☐ Vegetation
☒ None
☐ Other

Observations in Detail Below:

- ERM onsite for the Q3 impoundment inspection and ground water sampling event.
- Repair of the U.S. Army Corps of Engineers (USACE) Levee to address slumping of the levee face noted in the Q1 and Q2 2022 inspection reports was underway as of 9/13/22 (see figure and photos).
- Repairs of the erosion and fence undermining on the east/SE side of site noted in the Q1 and Q2 2022 inspection reports was underway as of 9/13/22 (see figure and photos).
- Minor erosion noted across north, west, and southern CCR impoundment cap faces up to 6” deep.
- Growth of a limited amount of woody vegetation (under 1”diameter) within the riprap on the north, west, and southern impoundment cap faces was observed.
- Ponding noted in SW corner of the basin. Limited area of erosion at northern end of impoundment.
- Impoundment cap was mowed during Q3 of 2022 and found to be in generally good condition.
- Inspector recommends removal of woody vegetation growth and followup monitoring of repaired areas.

Please see observation locations on figure on the following page.

Observation Locations Map



Grand Tower Energy Center Q3 2022 Closed CCR Impoundment Cap Inspection

Repairs underway of the Fence Undermining, Riprap Undermining, and Levee Erosion on the SE Side of Closed CCR Impoundment Cap

Facing south along recently repaired fenceline area.

Repairs underway of the Fence Undermining, Riprap Undermining, and Levee Erosion on the SE Side of Closed CCR Impoundment Cap

Facing north towards impoundment cap – repairs of fence undermining and riprap visible.

Facing southwest towards impoundment cap – repairs of fence undermining, levee, and riprap visible.

Ponding in the SW Corner of Site

Facing east from southwest corner of site across ponded area.

Note: Mississippi River backwater enters the GTEC CCR Impoundment Basin when the river level gage operated by the U.S. Army Corps of Engineers gage at Grand Tower, IL reaches a stage of approximately 27 ft.

Closed CCR Impoundment Cap

Southwest corner of the impoundment cap with limited woody growth (under 1” diameter) within riprap. Minor woody growth found within riprap along south, west, and northern sides of the impoundment.

Recently mowed impoundment cap top surface facing south.

U.S. Army Corps of Engineers (USACE) Levee Slump Repair

Repair of levee (both USACE and GTEC sections) underway as of 9/13/22 (facing east).

Facing north along levee.

APPENDIX B THIRD QUARTER 2022 GROUNDWATER MONITORING WELL INSPECTION FORMS

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-01R Date: 9/13/2022

Total Depth (Record):	58.30'
Total Depth (Measured):	58.23'
Depth to Water (Measured):	34.15'

Note: All wells are measured from top of casing.

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches	
Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-02 Date: 9/13/2022

Total Depth (Record):	58.30'
Total Depth (Measured):	58.54'
Depth to Water (Measured):	32.42'

Note: All wells are measured from top of casing.

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	NO
Water present in protector:	YES
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Wrote on well ID with sharpie. Standing water 2 inches below top of PVC in protector.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-03 Date: 9/13/2022

Total Depth (Record):	59.90'
Total Depth (Measured):	59.39'
Depth to Water (Measured):	33.25'

Note: All wells are measured from top of casing.

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	NO
Water present in protector:	YES
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches	
Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Standing water 2 inches below PVC in protector.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-04 Date: 9/13/2022

Total Depth (Record):	60.27'
Total Depth (Measured):	60.18'
Depth to Water (Measured):	34.79'

Note: All wells are measured from top of casing.

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches	
Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Wrote well ID on with sharpie.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-05	Date:	9/13/2022
Total Depth (Record):	62.88'		
Total Depth (Measured):	57.42'		
Depth to Water (Measured):	32.73'		

Note: All wells are measured from top of casing.

Is well screen occluded more than 10%? YES

If Yes, list steps for redevelopment: Well screen occluded by 54.6%

Will replace monitoring well during Q1 2023, attempts to redevelop unsuccessful

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches	
Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

See notes on well screen occlusion above.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-06S Date: 9/13/2022

Total Depth (Record):	63.88'
Total Depth (Measured):	63.86'
Depth to Water (Measured):	31.76'

Note: All wells are measured from top of casing.

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches	
Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Sand surrounding the marking points and well.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-06D Date: 9/13/2022

Total Depth (Record): 155.10'
Total Depth (Measured): 155.05'
Depth to Water (Measured): 32.12'
Note: All wells are measured from top of casing.
Is well screen occluded more than 10%? NO
If Yes, list steps for redevelopment:

LNAPL Present: NO
If Yes, measured thickness =
DNAPL Present: NO
If Yes, measured thickness =

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	YES
If yes, are current well "markers" adequate around well:	

Comments: One well marker has fallen over.

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	YES
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES

Comments:

General Comments:

Sand surrounding the marking points and well.
Hinged well protector lid repaired to allow locking of lid.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-07 Date: 9/13/2022

Total Depth (Record): 62.39'
Total Depth (Measured): 63.17'
Depth to Water (Measured): 28.68'
Note: All wells are measured from top of casing.
Is well screen occluded more than 10%? NO
If Yes, list steps for redevelopment:

LNAPL Present: NO
If Yes, measured thickness =
DNAPL Present: NO
If Yes, measured thickness =

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-08 Date: 9/13/2022

Total Depth (Record):	62.36'
Total Depth (Measured):	61.75'
Depth to Water (Measured):	29.78'

Note: All wells are measured from top of casing.

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches	
Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-09 Date: 9/13/2022

Total Depth (Record): 63.18'
Total Depth (Measured): 63.19'
Depth to Water (Measured): 33.76'
Note: All wells are measured from top of casing.
Is well screen occluded more than 10%? NO
If Yes, list steps for redevelopment:

LNAPL Present: NO
If Yes, measured thickness =
DNAPL Present: NO
If Yes, measured thickness =

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-10S Date: 9/13/2022

Total Depth (Record): 62.55'
Total Depth (Measured): 62.80'
Depth to Water (Measured): 27.44'
Note: All wells are measured from top of casing.
Is well screen occluded more than 10%? NO
If Yes, list steps for redevelopment:

LNAPL Present: NO
If Yes, measured thickness =
DNAPL Present: NO
If Yes, measured thickness =

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-10D Date: 9/13/2022

Total Depth (Record):	98.09'
Total Depth (Measured):	98.14'
Depth to Water (Measured):	25.97'

Note: All wells are measured from top of casing.

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present:	NO
If Yes, measured thickness =	
DNAPL Present:	NO
If Yes, measured thickness =	

Well Completion Type:

Condition of protector:	INTACT
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	NO
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	NO
Any observed ponding:	NO
Is surface run-off flow evident around well:	NO

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches	
Marking point present:	YES
Well cap in place:	YES
Comments:	

General Comments:

APPENDIX C THIRD QUARTER 2022 FIELD DATA FORMS

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-01R
Well Permit No:

Date: 2022/09/15
Sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 53.38 (ft)	**Reference Elevation** 366.82 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 33.57 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 58.23 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 0 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 48.30 - 58.30 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 4.02 (gal) / 4 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:45	33.57	600	0	15.8	6.83	383.7	NM	4.16	22.9	1000	NM	Dark grey/ slight organic odor
07:50	33.57	400	0.5	18	6.53	399.6	NM	3.54	46.2	751	NM	
07:55	33.57	600	0.75	18.3	6.41	417	NM	3.89	57.6	368	NM	
08:00	33.57	200	1.25	19.2	6.34	443.8	NM	1.72	59.8	230	NM	light grey, slightly turbid
08:05	33.57	400	1.75	18.6	6.3	466	NM	1.66	64.2	156	NM	
08:10	33.57	380	2.25	18.7	6.3	478.8	NM	1.57	65	128	NM	Odor no longer present
08:15	33.57	380	2.5	18.6	6.32	500.2	NM	1.62	65	92.9	NM	
08:20	33.57	380	2.75	19	6.36	519.6	NM	1.58	63.9	64.9	NM	
08:25	33.57	380	3.25	19	6.39	531.9	NM	1.52	63.7	47.1	NM	Transparent
08:30	33.57	380	3.5	19.1	6.41	541.1	NM	1.52	65.1	32.6	NM	Transparent
08:35	33.57	380	3.75	19.2	6.44	553.6	NM	1.45	68.2	33.1	NM	
08:40	33.57	380	4	19.1	6.47	555.1	NM	1.47	69.4	31.7	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-01R-WG-20220915		Marshall Arendell 	10/27/2022 22:47
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-02
Well Permit No:

Date: 2022/09/14
Sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 53.54 (ft)	**Reference Elevation** 364.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 32.78 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 58.54 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 47.20 - 57.20 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 4.12 (gal) / 4.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:45	35.67	500	0	17.2	7.17	1134	NM	0.36	-83.9	446	NM	Cloudy, no odor
09:50	39.07	400	1	17.8	7.05	1066	NM	2.19	-70.3	310	NM	
09:55	40.97	400	1.5	18.3	7.01	1060	NM	2.31	-54	269	NM	
10:00	42.97	400	2	18.7	6.99	1070	NM	1.97	-59.9	222	NM	
10:05	43.51	400	2.25	19.2	7	1078	NM	1.58	-69.6	210	NM	
10:10	44.67	450	2.75	18.2	7	1095	NM	1.41	-78.9	168	NM	
10:15	45.9	400	3	18.4	7	1085	NM	1.77	-75.7	102	NM	
10:20	46.77	400	3.25	18.2	7	1086	NM	1.81	-73.4	56.7	NM	
10:25	46.77	400	3.5	18.2	6.97	1085	NM	1.7	-74.1	20.2	NM	
10:30	46.77	400	4	18.2	6.99	1090	NM	1.6	-77	20.1	NM	
10:35	46.77	400	4.5	18.2	6.99	1092	NM	1.61	-78.2	19.2	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-02-WG-20220914,DUP-002-WG-20220914			
Analysis: IAC Title 34 Section 845.600 groundwater parameters		Marshall Arendell 	10/27/2022 22:48

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-03
Well Permit No:

Date: 2022/09/15
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 54.65 (ft)	**Reference Elevation** 365.79 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 32.89 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 59.39 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 380 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.70 - 55.70 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 4.32 (gal) / 3.45 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:00	32.89	400	0	22.1	7.74	736	NM	5.98	52.9	47.5	NM	Black & turbid, sediment suspected
12:05	32.89	400	0.5	18.2	6.99	835	NM	0.49	-37.7	1000	NM	
12:10	32.89	400	1	20.1	7.11	853	NM	0.12	-71.7	488	NM	Organic odor
12:15	32.89	400	1.5	19.9	7.04	854	NM	0.11	-82.4	358	NM	
12:20	32.89	360	1.75	19.7	7.06	853	NM	0.11	-82.8	214	NM	Light grey color, slightly turbid, organic odor
12:25	32.89	360	2	19.8	7.06	851	NM	0.12	-93.3	143	NM	
12:30	32.89	360	2.5	19.6	7.04	849	NM	0.13	-44	81.6	NM	
12:35	32.89	360	2.75	20	7.05	847	NM	0.12	-95.8	60.8	NM	Clear, no odor
12:40	32.89	360	3.25	19.9	7.04	846	NM	0.1	-96.2	59.3	NM	
12:45	32.89	360	3.45	19.9	7.04	845	NM	0.09	-97.4	56.1	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-03-WG-20220915		Marshall Arendell 	10/27/2022 22:50
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-04
Well Permit No:

Date: 2022/09/15
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.4 (ft)	**Reference Elevation** 367.44 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 34.25 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 60.18 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 300 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.70 - 55.70 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 4.23 (gal) / 3 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:40	34.25	150	0	19.2	7.37	552.3	NM	5.8	73.7	589	NM	Turbid, no odor
09:45	34.25	200	0.1	19.8	7	566	NM	5.48	78.2	349	NM	
09:50	34.25	375	0.5	19.8	6.95	642	NM	3.17	74.8	152	NM	Slightly turbid, no odor
09:55	34.25	400	0.75	21.2	7.08	649	NM	2.31	66.3	60.4	NM	Clear, no odor
10:00	34.25	350	1.5	20.6	7.09	645	NM	0.4	57.1	56	NM	
10:05	34.25	300	1.75	19.8	7.01	647	NM	0.39	52.8	28.7	NM	
10:10	34.25	300	2	20.9	7.07	647	NM	0.43	50.9	19.7	NM	
10:15	34.25	200	2.5	21.3	7.09	646	NM	0.4	53	18.8	NM	
10:20	34.25	200	3	21.2	7.09	646	NM	0.42	53.2	18.3	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-04-WG-20220915		Marshall Arendell 	10/27/2022 22:51
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-05
Well Permit No:

Date: 2022/09/14
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 51.9 (ft)	**Reference Elevation** 363.8 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 32.8 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 57.42 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 348.2 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 4.02 (gal) / 5.75 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:38	32.78	400	0	15.2	7.81	868	NM	4.94	-11.5	172	NM	Opaque, light brown, no odor
07:44	32.78	400	0.5	16.1	7.19	909	NM	3.43	-26.8	63.7	NM	Light brown, no odor
07:49	32.78	325	1	16.4	7.19	931	NM	2.6	-37.3	56.3	NM	Clear, no odor
07:54	32.78	300	1.25	16.5	7.2	938	NM	2.18	-45.3	40.2	NM	
07:59	32.78	300	1.75	16.6	7.21	943	NM	1.9	-49	33.5	NM	
08:04	32.78	350	2.25	16.6	7.19	943	NM	1.5	-52.9	22	NM	
08:09	32.78	350	2.75	16.6	7.18	944	NM	1.13	-56.8	20.7	NM	
08:14	32.78	350	3.25	16.6	7.18	946	NM	1.03	-60.1	19.4	NM	
08:19	32.78	350	3.5	16.6	7.17	945	NM	0.86	-62.9	9.21	NM	
08:24	32.78	350	4	16.6	7.17	945	NM	0.71	-64.1	7.39	NM	
08:29	32.78	350	4.5	16.6	7.17	946	NM	0.58	-66.5	9.24	NM	
08:34	32.78	350	4.75	16.5	7.17	958	NM	0.46	-68.6	9.32	NM	
08:39	32.78	350	5.25	16.5	7.16	959	NM	0.4	-70.1	7.4	NM	Clear, no odor
08:44	32.78	350	5.75	16.4	7.16	959	NM	0.37	-71.6	9.19	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-05-WG-20220914,DUP-001-WG-20220914			
Analysis: IAC Title 34 Section 845.600 groundwater parameters		Marshall Arendell 	10/27/2022 22:52

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06S
Well Permit No:

Date: 2022/09/13
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.98 (ft)	**Reference Elevation** 363.51 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 31.76 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 63.98 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 309.1 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 5.26 (gal) / 4.25 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:35	31.8	425	0	18.8	7.34	835	NM	6.74	-74.3	305	NM	Slightly turbid, no odor
11:40	31.81	425	0.5	17.2	6.93	870	NM	3.11	-88.5	350	NM	Turbid, dark grey, no odor
11:45	31.81	450	1.25	17.2	6.96	874	NM	1.94	-99.8	245	NM	Organic odor
11:50	31.81	350	1.75	17.7	6.95	871	NM	1.96	-97.2	111	NM	
11:55	31.81	250	2.25	18.1	6.99	869	NM	0.55	-111.4	65.1	NM	Light grey
12:00	31.81	250	2.5	17.9	7.04	868	NM	0.5	-117.2	34.8	NM	
12:05	31.81	250	2.75	18.2	7.02	869	NM	0.49	-117.6	30.3	NM	
12:10	31.81	250	3	18.2	7.03	867	NM	0.49	-117.3	20.6	NM	Clear, slight organic odor
12:15	31.81	250	3.25	18.3	7.03	869	NM	0.36	-118.4	16.8	NM	
12:20	31.81	250	3.75	18.4	7.03	867	NM	0.3	-120.7	14	NM	
12:25	31.81	250	4.25	18.4	7.03	868	NM	0.27	-121.1	15.1	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-06S-WG-20220913		Marshall Arendell 	10/27/2022 22:54
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-07
Well Permit No:

Date: 2022/09/14
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.35 (ft)	**Reference Elevation** 360.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 28.62 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 63.35 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 5.67 (gal) / 3 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:20	28.57	100	0	23	6.6	1076	NM	4.68	9.1	60.5	NM	Clear, no odor
14:25	28.6	350	0.5	18.1	6.44	1208	NM	2.34	-42.7	139	NM	
14:30	28.6	275	0.75	18.8	6.46	1222	NM	1.82	-52.9	91.9	NM	
14:35	28.6	200	1	18.6	6.51	1221	NM	1.43	-57.6	80.7	NM	
14:40	28.6	200	1.25	18.9	6.58	1228	NM	1.5	-63.8	129	NM	
14:45	28.6	200	1.5	19.3	6.55	1221	NM	1.27	-62.7	76.3	NM	
14:50	28.6	200	1.75	20.4	6.63	1235	NM	1.39	-67.6	54.9	NM	
14:55	28.6	200	2	19.2	6.68	1234	NM	1.35	-68.9	62.5	NM	
15:00	28.6	200	2.25	19.5	6.6	1232	NM	1.2	-64.5	36.6	NM	
15:05	28.6	200	2.5	19.6	6.63	1230	NM	1.08	-66.7	34.7	NM	
15:10	28.6	200	2.75	19.8	6.64	1230	NM	1.1	-67.3	36.3	NM	
15:15	28.6	200	3	19.9	6.64	1228	NM	1.11	-67.5	34.8	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-07-WG-20220914		Marshall Arendell 	10/27/2022 22:55
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-08
Well Permit No:

Date: 2022/09/15
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 56.89 (ft)	**Reference Elevation** 362.71 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 29.35 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 61.89 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 395 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 5.31 (gal) / 4.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:21	29.35	375	0	19.1	7.28	558	NM	0.1	-43.8	1000	NM	Very turbid, dark brown
13:26	29.35	375	0.5	18.8	7.12	554.7	NM	0.11	-52.9	1000	NM	Turbid, light grey, no odor
13:31	29.35	400	1	18.8	6.95	551.9	NM	0.11	-35.8	907	NM	
13:36	29.35	400	1.5	18.9	6.94	547.9	NM	0.1	-34.7	598	NM	
13:41	29.35	400	2	18.7	6.91	543.3	NM	0.12	-28.8	383	NM	
13:46	29.35	400	2.5	18.8	6.87	543.1	NM	0.11	-26.6	291	NM	Cloudy, no odor
13:51	29.35	400	3	18.7	6.92	542.1	NM	0.08	-28.6	181	NM	
13:56	29.35	400	3.5	18.7	6.9	541.7	NM	0.08	-27	144	NM	
14:01	29.35	400	4	18.8	6.89	540	NM	0.07	-24.9	142	NM	Clear, no odor
14:06	29.35	400	4.5	18.8	6.87	538.4	NM	0.07	-24.2	139	NM	

Sample ID(s): APW-08-WG-20220914	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis: IAC Title 34 Section 845.600 groundwater parameters		Marshall Arendell 	11/02/2022 21:28

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-09
Well Permit No:

Date: 2022/09/13
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.4 (ft)	**Reference Elevation** 366.84 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 33.76 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 63.4 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 393.3 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 4.84 (gal) / 3.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:10	33.76	380	0	21.6	7.42	400	NM	4.74	66.5	2.54	NM	Slightly turbid, no odor
14:15	33.76	200	0.25	21.5	6.96	353.7	NM	4.34	78.1	139	NM	
14:20	33.76	340	0.5	20.5	7.01	380.6	NM	4.51	77.1	78.1	NM	
14:25	33.76	200	0.6	22.3	7.22	354.1	NM	4.13	63.8	64.1	NM	
14:30	33.76	700	0.8	19.8	7.24	237.6	NM	2.62	65.7	41.6	NM	
14:35	33.76	500	1.5	21.6	7.11	226.3	NM	1.9	62.6	22.1	NM	
14:40	33.76	400	1.75	19.9	7.14	234.1	NM	2.42	56.1	28	NM	
14:45	33.76	400	2	20.3	7.19	232.7	NM	1.42	43	11.52	NM	Clear, no odor
14:50	33.76	400	2.5	20.3	7.17	231.9	NM	1.35	37	14.4	NM	
14:55	33.76	400	3	20.6	7.18	230.1	NM	1.25	32.5	6.72	NM	
15:00	33.76	400	3.25	20.6	7.19	230.9	NM	1.22	30.7	7.4	NM	
15:05	33.76	400	3.5	20.7	7.19	230.3	NM	1.21	30.1	7.3	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-09-WG-20220913		Marshall Arendell 	10/27/2022 22:57
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10S
Well Permit No:

Date: 2022/09/15
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.84 (ft)	**Reference Elevation** 359.47 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 27.67 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 62.84 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 250 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 5.74 (gal) / 3.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:37	27.77	200	0	19.2	6.59	1250	NM	1.26	-89.5	1000	NM	Turbid, dark grey, organic odor
14:42	27.77	350	0.25	19.3	6.57	1245	NM	0.92	-96.7	1000	NM	
14:47	27.79	375	0.5	21.3	6.54	1252	NM	1.16	-96.2	1000	NM	
14:52	27.79	300	0.75	20.3	6.5	1244	NM	0.15	-107.1	674	NM	
14:57	27.79	350	1	19.3	6.49	1244	NM	0.17	-111.8	345	NM	Turbid, light gray, organic odor
15:02	27.79	300	1.5	19.5	6.46	1237	NM	0.13	-113.4	177	NM	Cloudy, organic odor
15:07	27.79	200	1.75	19.5	6.46	1231	NM	0.08	-114.9	136	NM	
15:12	27.79	250	2.25	19.3	6.43	1226	NM	0.05	-116.3	84.4	NM	Clear, organic odor
15:17	27.79	300	2.5	19.4	6.42	1223	NM	0.04	-117.3	50.3	NM	
15:22	27.79	300	3	19.6	6.41	1219	NM	0.04	-117.9	42	NM	
15:27	27.79	300	3.25	19.8	6.39	1213	NM	0.04	-118.3	37.2	NM	
15:32	27.79	300	3.5	19.9	6.36	1208	NM	0.03	-118.3	34.3	NM	

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-10S-WG-20220915		Marshall Arendell	10/27/2022 22:59
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10D
Well Permit No:

Date: 2022/09/16
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 93.19 (ft)	**Reference Elevation** 359.41 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 25.95 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 98.19 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 355.9 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 86 - 96 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 11.56 (gal) / 5.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:26	25.95	450	0	16.4	7.52	667	NM	5.14	-65.2	118	NM	Clear, no odor
09:31	26	350	0.75	16.5	6.99	657	NM	0.46	-28.6	1000	NM	Cloudy, no odor
09:36	26	350	1.25	16.6	7	660	NM	0.24	-25.3	1000	NM	Turbid, no odor
09:41	26	350	1.75	16.9	6.98	664	NM	0.2	-23.1	744	NM	
09:46	26	350	2	16.9	6.96	664	NM	0.17	-22.5	487	NM	
09:51	26	350	2.5	17	6.94	667	NM	0.13	-22.8	324	NM	Slightly turbid, no odor
09:56	26	350	2.75	17	6.94	669	NM	0.12	-23.6	253	NM	
10:01	26	350	3.25	17	6.91	671	NM	0.1	-23.6	184	NM	Cloudy, no odor
10:06	26	350	3.5	17	6.92	672	NM	0.09	-24.4	136	NM	
10:11	26	350	3.75	17	6.92	672	NM	0.08	-24.6	83.8	NM	Clear, no odor
10:16	26	350	4	17	6.9	673	NM	0.09	-23.5	59.4	NM	
10:21	26	350	4.25	17.1	6.9	675	NM	0.08	-22.7	67	NM	
10:26	26	350	4.5	17.1	6.91	674	NM	0.08	-22.4	48.3	NM	Clear, no odor
10:31	26	350	4.75	17.1	6.9	674	NM	0.08	-20.7	29.4	NM	
10:36	26	350	5	17.3	6.9	674	NM	0.07	-19.5	23.9	NM	
10:41	26	350	5.25	17.3	6.91	675	NM	0.07	-19.1	21.4	NM	
10:46	26	350	5.5	17.3	6.9	674	NM	0.07	-18.5	21.9	NM	

Sample ID(s): APW-10D-WG-20220916	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis: IAC Title 34 Section 845.600 groundwater parameters		Marshall Arendell 	10/27/2022 22:58

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06D
Well Permit No:

Date: 2022/09/13
sunny

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 150.59 (ft)	**Reference Elevation** 363.69 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** Submersible pump	**Depth to Water / Free Product** 31.87 (ft) / None
Project Number 0599247	**Sample Equipment** Submersible pump	**Total Well Depth** 155.59 (ft)
Project Name 20220912-GWMonitor	**Average Purge Rate** 386.1 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 140 - 150 (ft)
Sampler Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 20.19 (gal) / 3.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:40	31.9	450	0	15.3	7.25	830	NM	0.66	-18.6	9.59	NM	Clear, no odor
09:45	31.9	425	1	15.9	6.9	827	NM	0.22	-83.1	11	NM	Paused due to pump problems
09:55	31.9	425	1.5	15.8	7.03	824	NM	1.07	-68.4	10.3	NM	
10:00	31.9	425	2	16.4	7.02	821	NM	1.18	-79.5	13.3	NM	
10:05	31.9	150	2.1	17.1	7.09	819	NM	0.85	-87	15.8	NM	
10:10	31.9	400	2.5	16.4	7.09	820	NM	0.71	-89.1	18.7	NM	
10:15	31.9	400	2.75	16.9	7.01	816	NM	0.49	-89.3	19.3	NM	
10:20	31.9	400	3.25	17	7.07	813	NM	0.39	-96.3	18.9	NM	
10:25	31.9	400	3.5	17	7.08	810	NM	0.31	-98.9	18.5	NM	

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-06D-WG-20220913	Paused at 9:45 due to pump problem. Restarted at 9:55.	Marshall Arendell	10/27/2022 22:53
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

APPENDIX D THIRD QUARTER 2022 LABORATORY ANALYTICAL REPORT

October 26, 2022

Matt Halley
ERM
68 Villa Grove
Springfield, IL 62712
TEL: (217) 529-0914
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: GTEC **WorkOrder:** 22091073

Dear Matt Halley:

TEKLAB, INC received 15 samples on 9/16/2022 1:45:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley

Elizabeth A. Hurley
Director of Customer Service
(618)344-1004 ex 33
ehurley@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: ERM
Client Project: GTEC

Work Order: 22091073
Report Date: 26-Oct-22

This reporting package includes the following:

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: ERM
Client Project: GTEC

Work Order: 22091073
Report Date: 26-Oct-22

Cooler Receipt Temp: 2.2 °C

Radium-226 and Radium-228 analysis was performed by Summit Environmental Technologies, Inc. See attached report for results.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2023	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2023	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2023	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-001 **Client Sample ID:** APW-1R-WG-20220915

Matrix: GROUNDWATER **Collection Date:** 09/15/2022 8:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**420**	mg/L	1	09/27/2022 11:00	R318696
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20	S	**73**	mg/L	2	09/28/2022 9:07	R318683
Matrix spike did not recover within control limits. Results verified by dilution.								
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**6.91**		1	09/23/2022 12:58	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.15**	mg/L	1	09/23/2022 9:35	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**7**	mg/L	1	09/26/2022 13:47	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2022 21:57	197756
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2022 10:00	197756
Barium	NELAP	0.0010		**0.153**	mg/L	5	09/23/2022 10:00	197756
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2022 10:00	197756
Boron	NELAP	0.0250		**0.244**	mg/L	5	09/26/2022 16:23	197756
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2022 10:00	197756
Calcium	NELAP	0.125	S	**83.8**	mg/L	5	09/28/2022 14:12	197756
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/23/2022 21:57	197756
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2022 10:00	197756
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/23/2022 10:00	197756
Lithium	*	0.0030		**0.0156**	mg/L	5	09/28/2022 14:12	197756
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/28/2022 14:12	197756
Selenium	NELAP	0.0010		**0.0032**	mg/L	5	09/23/2022 10:00	197756
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/23/2022 10:00	197756
Matrix spike control limits for Ca are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:17	197762
Arsenic	NELAP	0.0010		**0.0019**	mg/L	5	09/22/2022 13:17	197762
Barium	NELAP	0.0010		**0.185**	mg/L	5	09/22/2022 13:17	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:17	197762
Boron	NELAP	0.0250		**0.242**	mg/L	5	09/22/2022 13:17	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:17	197762
Calcium	NELAP	0.125		**91.4**	mg/L	5	09/22/2022 13:17	197762
Chromium	NELAP	0.0015		**0.0034**	mg/L	5	09/22/2022 13:17	197762
Cobalt	NELAP	0.0010		**0.0017**	mg/L	5	09/22/2022 13:17	197762
Lead	NELAP	0.0010		**0.0062**	mg/L	5	09/22/2022 13:17	197762
Lithium	*	0.0030		**0.0169**	mg/L	5	09/22/2022 13:17	197762
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 13:17	197762
Selenium	NELAP	0.0010		**0.0038**	mg/L	5	09/22/2022 13:17	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 13:17	197762
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 14:38	197769
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 14:36	197769

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-001
Client Sample ID: APW-1R-WG-20220915
Matrix: GROUNDWATER
Collection Date: 09/15/2022 8:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-002 **Client Sample ID:** APW-2-WG-20220914

Matrix: GROUNDWATER **Collection Date:** 09/14/2022 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50	H	**890**	mg/L	2.5	09/27/2022 11:00	R318696
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**491**	mg/L	10	09/26/2022 14:27	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.32**		1	09/23/2022 13:00	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.22**	mg/L	1	09/23/2022 9:37	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**11**	mg/L	1	09/26/2022 14:21	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:28	197795
Arsenic	NELAP	0.0010		**0.0048**	mg/L	5	09/22/2022 16:28	197795
Barium	NELAP	0.0010		**0.123**	mg/L	5	09/22/2022 16:28	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:28	197795
Boron	NELAP	0.0250	S	**7.49**	mg/L	5	09/26/2022 11:13	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:28	197795
Calcium	NELAP	0.125	S	**136**	mg/L	5	09/22/2022 16:28	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 16:28	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:28	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:28	197795
Lithium	*	0.0030		**0.0374**	mg/L	5	09/22/2022 16:28	197795
Molybdenum	NELAP	0.0015		**0.139**	mg/L	5	09/22/2022 16:28	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:28	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 16:28	197795
Matrix spike control limits for B are not applicable due to high sample/spike ratio.								
Matrix spike control limits for Ca are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:23	197762
Arsenic	NELAP	0.0010		**0.0260**	mg/L	5	09/22/2022 13:23	197762
Barium	NELAP	0.0010		**0.408**	mg/L	5	09/22/2022 13:23	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:23	197762
Boron	NELAP	0.0250		**9.43**	mg/L	5	09/22/2022 13:23	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:23	197762
Calcium	NELAP	0.125		**198**	mg/L	5	09/22/2022 13:23	197762
Chromium	NELAP	0.0015		**0.0148**	mg/L	5	09/22/2022 13:23	197762
Cobalt	NELAP	0.0010		**0.0044**	mg/L	5	09/22/2022 13:23	197762
Lead	NELAP	0.0010		**0.0119**	mg/L	5	09/22/2022 13:23	197762
Lithium	*	0.0030		**0.0559**	mg/L	5	09/22/2022 13:23	197762
Molybdenum	NELAP	0.0015		**0.174**	mg/L	5	09/22/2022 13:23	197762
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:23	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 13:23	197762
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 14:42	197769
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**0.00043**	mg/L	1	09/20/2022 14:40	197769

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-002
Client Sample ID: APW-2-WG-20220914
Matrix: GROUNDWATER
Collection Date: 09/14/2022 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-003 **Client Sample ID:** APW-3-WG-2022915

Matrix: GROUNDWATER **Collection Date:** 09/15/2022 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**602**	mg/L	1	09/27/2022 11:01	R318696
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**150**	mg/L	10	09/26/2022 14:35	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.46**		1	09/23/2022 13:02	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.20**	mg/L	1	09/23/2022 9:39	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**16**	mg/L	1	09/26/2022 14:29	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:52	197795
Arsenic	NELAP	0.0010		**0.0014**	mg/L	5	09/22/2022 14:52	197795
Barium	NELAP	0.0010		**0.124**	mg/L	5	09/22/2022 14:52	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:52	197795
Boron	NELAP	0.0250		**1.49**	mg/L	5	09/22/2022 14:52	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:52	197795
Calcium	NELAP	0.125		**125**	mg/L	5	09/22/2022 14:52	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 14:52	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:52	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:52	197795
Lithium	*	0.0030		**0.0288**	mg/L	5	09/22/2022 14:52	197795
Molybdenum	NELAP	0.0015		**0.0342**	mg/L	5	09/22/2022 14:52	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:52	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 14:52	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:29	197762
Arsenic	NELAP	0.0010		**0.0046**	mg/L	5	09/22/2022 13:29	197762
Barium	NELAP	0.0010		**0.181**	mg/L	5	09/22/2022 13:29	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:29	197762
Boron	NELAP	0.0250		**1.84**	mg/L	5	09/22/2022 13:29	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:29	197762
Calcium	NELAP	0.125		**143**	mg/L	5	09/22/2022 13:29	197762
Chromium	NELAP	0.0015		**0.0083**	mg/L	5	09/22/2022 13:29	197762
Cobalt	NELAP	0.0010		**0.0014**	mg/L	5	09/22/2022 13:29	197762
Lead	NELAP	0.0010		**0.0023**	mg/L	5	09/22/2022 13:29	197762
Lithium	*	0.0030		**0.0329**	mg/L	5	09/22/2022 13:29	197762
Molybdenum	NELAP	0.0015		**0.0413**	mg/L	5	09/22/2022 13:29	197762
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 13:29	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 13:29	197762
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 14:47	197769
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 14:45	197769
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-003
Client Sample ID: APW-3-WG-2022915
Matrix: GROUNDWATER
Collection Date: 09/15/2022 12:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-004 **Client Sample ID:** APW-4-WG-2022915

Matrix: GROUNDWATER **Collection Date:** 09/15/2022 10:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**436**	mg/L	1	09/27/2022 11:01	R318696
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**83**	mg/L	2	09/28/2022 9:17	R318683
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.51**		1	09/23/2022 13:04	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.17**	mg/L	1	09/23/2022 9:40	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**10**	mg/L	1	09/26/2022 14:37	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:44	197795
Arsenic	NELAP	0.0010		**0.0013**	mg/L	5	09/22/2022 15:44	197795
Barium	NELAP	0.0010		**0.132**	mg/L	5	09/22/2022 15:44	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:44	197795
Boron	NELAP	0.0250		**0.875**	mg/L	5	09/22/2022 15:44	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:44	197795
Calcium	NELAP	0.125		**93.7**	mg/L	5	09/22/2022 15:44	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 15:44	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:44	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:44	197795
Lithium	*	0.0030		**0.0283**	mg/L	5	09/22/2022 15:44	197795
Molybdenum	NELAP	0.0015		**0.0445**	mg/L	5	09/22/2022 15:44	197795
Selenium	NELAP	0.0010		**0.0101**	mg/L	5	09/22/2022 15:44	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 15:44	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:59	197762
Arsenic	NELAP	0.0010		**0.0029**	mg/L	5	09/22/2022 14:59	197762
Barium	NELAP	0.0010		**0.165**	mg/L	5	09/22/2022 14:59	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:59	197762
Boron	NELAP	0.0250		**0.973**	mg/L	5	09/22/2022 14:59	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:59	197762
Calcium	NELAP	0.125	S	**108**	mg/L	5	09/22/2022 14:59	197762
Chromium	NELAP	0.0015		**0.0251**	mg/L	5	09/22/2022 14:59	197762
Cobalt	NELAP	0.0010		**0.0025**	mg/L	5	09/22/2022 14:59	197762
Lead	NELAP	0.0010		**0.0016**	mg/L	5	09/22/2022 14:59	197762
Lithium	*	0.0030		**0.0322**	mg/L	5	09/22/2022 14:59	197762
Molybdenum	NELAP	0.0015		**0.0494**	mg/L	5	09/22/2022 14:59	197762
Selenium	NELAP	0.0010		**0.0111**	mg/L	5	09/22/2022 14:59	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 14:59	197762
Matrix spike control limits for Ca are not applicable due to high sample/spike ratio.								
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 14:56	197769
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 14:49	197769

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-004
Client Sample ID: APW-4-WG-2022915
Matrix: GROUNDWATER
Collection Date: 09/15/2022 10:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-005 **Client Sample ID:** APW-5-WG-20220914

Matrix: GROUNDWATER **Collection Date:** 09/14/2022 8:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**750**	mg/L	1	09/27/2022 11:01	R318696
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**379**	mg/L	10	09/26/2022 14:51	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.55**		1	09/23/2022 13:06	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.33**	mg/L	1	09/23/2022 9:42	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**15**	mg/L	1	09/26/2022 14:45	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:50	197795
Arsenic	NELAP	0.0010		**0.0010**	mg/L	5	09/22/2022 15:50	197795
Barium	NELAP	0.0010		**0.130**	mg/L	5	09/22/2022 15:50	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:50	197795
Boron	NELAP	0.0250		**7.42**	mg/L	5	09/22/2022 15:50	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:50	197795
Calcium	NELAP	0.125		**119**	mg/L	5	09/22/2022 15:50	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 15:50	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:50	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:50	197795
Lithium	*	0.0030		**0.0381**	mg/L	5	09/22/2022 15:50	197795
Molybdenum	NELAP	0.0015		**0.213**	mg/L	5	09/22/2022 15:50	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:50	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 15:50	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**0.0011**	mg/L	5	09/22/2022 14:21	197762
Arsenic	NELAP	0.0010		**0.0025**	mg/L	5	09/22/2022 14:21	197762
Barium	NELAP	0.0010		**0.154**	mg/L	5	09/22/2022 14:21	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:21	197762
Boron	NELAP	0.0250		**7.76**	mg/L	5	09/22/2022 14:21	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:21	197762
Calcium	NELAP	0.125		**127**	mg/L	5	09/22/2022 14:21	197762
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 14:21	197762
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:21	197762
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:21	197762
Lithium	*	0.0030		**0.0408**	mg/L	5	09/22/2022 14:21	197762
Molybdenum	NELAP	0.0015		**0.235**	mg/L	5	09/22/2022 14:21	197762
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:21	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 14:21	197762
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:01	197769
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 14:58	197769
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-005
Client Sample ID: APW-5-WG-20220914
Matrix: GROUNDWATER
Collection Date: 09/14/2022 8:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-006 **Client Sample ID:** APW-6S-WG-20220913

Matrix: GROUNDWATER **Collection Date:** 09/13/2022 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50	H	**630**	mg/L	2.5	09/27/2022 11:01	R318696
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**227**	mg/L	10	09/26/2022 14:59	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.38**		1	09/23/2022 13:07	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.28**	mg/L	1	09/23/2022 9:44	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**25**	mg/L	1	09/26/2022 14:53	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:56	197795
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:56	197795
Barium	NELAP	0.0010		**0.146**	mg/L	5	09/22/2022 15:56	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:56	197795
Boron	NELAP	0.0250		**5.95**	mg/L	5	09/22/2022 15:56	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:56	197795
Calcium	NELAP	0.125		**93.7**	mg/L	5	09/22/2022 15:56	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 15:56	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:56	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:56	197795
Lithium	*	0.0030		**0.0384**	mg/L	5	09/22/2022 15:56	197795
Molybdenum	NELAP	0.0015		**0.235**	mg/L	5	09/22/2022 15:56	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 15:56	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 15:56	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:27	197762
Arsenic	NELAP	0.0010		**0.0012**	mg/L	5	09/22/2022 14:27	197762
Barium	NELAP	0.0010		**0.221**	mg/L	5	09/22/2022 14:27	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:27	197762
Boron	NELAP	0.0250		**6.61**	mg/L	5	09/22/2022 14:27	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:27	197762
Calcium	NELAP	0.125		**105**	mg/L	5	09/22/2022 14:27	197762
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 14:27	197762
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:27	197762
Lead	NELAP	0.0010		**0.0028**	mg/L	5	09/22/2022 14:27	197762
Lithium	*	0.0030		**0.0410**	mg/L	5	09/22/2022 14:27	197762
Molybdenum	NELAP	0.0015		**0.271**	mg/L	5	09/22/2022 14:27	197762
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:27	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 14:27	197762
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:05	197769
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:03	197769
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-006
Client Sample ID: APW-6S-WG-20220913
Matrix: GROUNDWATER
Collection Date: 09/13/2022 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-007 **Client Sample ID:** APW-6D-WG-20220913

Matrix: GROUNDWATER **Collection Date:** 09/13/2022 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**670**	mg/L	1	09/29/2022 9:34	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**272**	mg/L	10	09/26/2022 15:23	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.42**		1	09/23/2022 13:10	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.20**	mg/L	1	09/23/2022 9:46	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**14**	mg/L	1	09/26/2022 15:17	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:03	197795
Arsenic	NELAP	0.0010		**0.0040**	mg/L	5	09/22/2022 16:03	197795
Barium	NELAP	0.0010		**0.129**	mg/L	5	09/22/2022 16:03	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:03	197795
Boron	NELAP	0.0250		**5.32**	mg/L	5	09/22/2022 16:03	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:03	197795
Calcium	NELAP	0.125		**118**	mg/L	5	09/22/2022 16:03	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 16:03	197795
Cobalt	NELAP	0.0010		**0.0013**	mg/L	5	09/22/2022 16:03	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:03	197795
Lithium	*	0.0030		**0.0179**	mg/L	5	09/22/2022 16:03	197795
Molybdenum	NELAP	0.0015		**0.0669**	mg/L	5	09/22/2022 16:03	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:03	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 16:03	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:33	197762
Arsenic	NELAP	0.0010		**0.0104**	mg/L	5	09/22/2022 14:33	197762
Barium	NELAP	0.0010		**0.143**	mg/L	5	09/22/2022 14:33	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:33	197762
Boron	NELAP	0.0250		**5.51**	mg/L	5	09/22/2022 14:33	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:33	197762
Calcium	NELAP	0.125		**123**	mg/L	5	09/22/2022 14:33	197762
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 14:33	197762
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:33	197762
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:33	197762
Lithium	*	0.0030		**0.0185**	mg/L	5	09/22/2022 14:33	197762
Molybdenum	NELAP	0.0015		**0.0719**	mg/L	5	09/22/2022 14:33	197762
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:33	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 14:33	197762
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:15	197769
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:12	197769
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-007
Client Sample ID: APW-6D-WG-20220913
Matrix: GROUNDWATER
Collection Date: 09/13/2022 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-008 **Client Sample ID:** APW-7-WG-20220914

Matrix: GROUNDWATER **Collection Date:** 09/14/2022 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50	H	**815**	mg/L	2.5	09/29/2022 9:35	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**78**	mg/L	2	09/28/2022 9:28	R318683
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.02**		1	09/23/2022 13:11	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.17**	mg/L	1	09/23/2022 9:47	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**12**	mg/L	1	09/26/2022 15:25	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:09	197795
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:09	197795
Barium	NELAP	0.0010		**0.255**	mg/L	5	09/22/2022 16:09	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:09	197795
Boron	NELAP	0.0250		**0.193**	mg/L	5	09/22/2022 16:09	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:09	197795
Calcium	NELAP	0.125		**199**	mg/L	5	09/22/2022 16:09	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 16:09	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:09	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:09	197795
Lithium	*	0.0030		**0.0148**	mg/L	5	09/22/2022 16:09	197795
Molybdenum	NELAP	0.0015		**0.0026**	mg/L	5	09/22/2022 16:09	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:09	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 16:09	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:40	197762
Arsenic	NELAP	0.0010		**0.0016**	mg/L	5	09/22/2022 14:40	197762
Barium	NELAP	0.0010		**0.382**	mg/L	5	09/22/2022 14:40	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:40	197762
Boron	NELAP	0.0250		**0.208**	mg/L	5	09/22/2022 14:40	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:40	197762
Calcium	NELAP	0.125		**210**	mg/L	5	09/22/2022 14:40	197762
Chromium	NELAP	0.0015		**0.0021**	mg/L	5	09/22/2022 14:40	197762
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:40	197762
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:40	197762
Lithium	*	0.0030		**0.0161**	mg/L	5	09/22/2022 14:40	197762
Molybdenum	NELAP	0.0015		**0.0030**	mg/L	5	09/22/2022 14:40	197762
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:40	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 14:40	197762
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:24	197769
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:17	197769
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-008
Client Sample ID: APW-7-WG-20220914
Matrix: GROUNDWATER
Collection Date: 09/14/2022 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-009 **Client Sample ID:** APW-8-WG-20220915

Matrix: GROUNDWATER **Collection Date:** 09/15/2022 14:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**372**	mg/L	1	09/29/2022 9:35	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**39**	mg/L	1	09/26/2022 15:33	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.47**		1	09/23/2022 13:14	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.26**	mg/L	1	09/23/2022 9:57	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**11**	mg/L	1	09/26/2022 15:33	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:15	197795
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:15	197795
Barium	NELAP	0.0010		**0.163**	mg/L	5	09/22/2022 16:15	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:15	197795
Boron	NELAP	0.0250		**0.0993**	mg/L	5	09/22/2022 16:15	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:15	197795
Calcium	NELAP	0.125		**79.7**	mg/L	5	09/22/2022 16:15	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 16:15	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:15	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:15	197795
Lithium	*	0.0030		**0.0142**	mg/L	5	09/22/2022 16:15	197795
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 16:15	197795
Selenium	NELAP	0.0010		**0.0068**	mg/L	5	09/22/2022 16:15	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 16:15	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:46	197762
Arsenic	NELAP	0.0010		**0.0015**	mg/L	5	09/22/2022 14:46	197762
Barium	NELAP	0.0010		**0.190**	mg/L	5	09/22/2022 14:46	197762
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:46	197762
Boron	NELAP	0.0250		**0.110**	mg/L	5	09/22/2022 14:46	197762
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:46	197762
Calcium	NELAP	0.125		**85.1**	mg/L	5	09/22/2022 14:46	197762
Chromium	NELAP	0.0015		**0.0016**	mg/L	5	09/22/2022 14:46	197762
Cobalt	NELAP	0.0010		**0.0013**	mg/L	5	09/22/2022 14:46	197762
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 14:46	197762
Lithium	*	0.0030		**0.0160**	mg/L	5	09/22/2022 14:46	197762
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 14:46	197762
Selenium	NELAP	0.0010		**0.0077**	mg/L	5	09/22/2022 14:46	197762
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 14:46	197762
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:33	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:31	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-009
Client Sample ID: APW-8-WG-20220915
Matrix: GROUNDWATER
Collection Date: 09/15/2022 14:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-010 **Client Sample ID:** APW-9-WG-20220913

Matrix: GROUNDWATER **Collection Date:** 09/13/2022 15:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**380**	mg/L	1	09/29/2022 9:35	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**39**	mg/L	1	09/26/2022 15:41	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.59**		1	09/23/2022 13:16	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.19**	mg/L	1	09/23/2022 9:59	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**12**	mg/L	1	09/26/2022 15:41	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:22	197795
Arsenic	NELAP	0.0010		**0.0021**	mg/L	5	09/22/2022 16:22	197795
Barium	NELAP	0.0010		**0.111**	mg/L	5	09/22/2022 16:22	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:22	197795
Boron	NELAP	0.0250		**0.327**	mg/L	5	09/22/2022 16:22	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:22	197795
Calcium	NELAP	0.125		**76.5**	mg/L	5	09/22/2022 16:22	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 16:22	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:22	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 16:22	197795
Lithium	*	0.0030		**0.0137**	mg/L	5	09/22/2022 16:22	197795
Molybdenum	NELAP	0.0015		**0.0182**	mg/L	5	09/22/2022 16:22	197795
Selenium	NELAP	0.0010		**0.0142**	mg/L	5	09/22/2022 16:22	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 16:22	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 19:08	197763
Arsenic	NELAP	0.0010		**0.0025**	mg/L	5	09/22/2022 19:08	197763
Barium	NELAP	0.0010		**0.134**	mg/L	5	09/22/2022 19:08	197763
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 19:08	197763
Boron	NELAP	0.0250		**0.329**	mg/L	5	09/22/2022 19:08	197763
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 19:08	197763
Calcium	NELAP	0.125		**89.5**	mg/L	5	09/23/2022 13:14	197763
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 19:08	197763
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 19:08	197763
Lead	NELAP	0.0010		**0.0039**	mg/L	5	09/22/2022 19:08	197763
Lithium	*	0.0030		**0.0143**	mg/L	5	09/22/2022 19:08	197763
Molybdenum	NELAP	0.0015		**0.0194**	mg/L	5	09/22/2022 19:08	197763
Selenium	NELAP	0.0010		**0.0151**	mg/L	5	09/22/2022 19:08	197763
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 19:08	197763
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:42	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:35	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-010
Client Sample ID: APW-9-WG-20220913
Matrix: GROUNDWATER
Collection Date: 09/13/2022 15:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-011 **Client Sample ID:** APW-10S-WG-20220915

Matrix: GROUNDWATER **Collection Date:** 09/15/2022 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50	H	**770**	mg/L	2.5	09/29/2022 9:36	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20	S	**21**	mg/L	2	09/28/2022 9:47	R318683
Matrix spike did not recover within control limits due to matrix interference.								
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.20**		1	09/23/2022 13:32	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.15**	mg/L	1	09/23/2022 10:00	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**15**	mg/L	1	09/26/2022 15:52	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:32	197795
Arsenic	NELAP	0.0010		**0.0612**	mg/L	5	09/22/2022 17:32	197795
Barium	NELAP	0.0010		**0.292**	mg/L	5	09/22/2022 17:32	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:32	197795
Boron	NELAP	0.0250		**0.541**	mg/L	5	09/22/2022 17:32	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:32	197795
Calcium	NELAP	0.125		**156**	mg/L	5	09/23/2022 12:14	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 17:32	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:32	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:32	197795
Lithium	*	0.0030		**0.0286**	mg/L	5	09/22/2022 17:32	197795
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 17:32	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:32	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 17:32	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 19:40	197763
Arsenic	NELAP	0.0010		**0.187**	mg/L	5	09/22/2022 19:40	197763
Barium	NELAP	0.0010		**0.612**	mg/L	5	09/22/2022 19:40	197763
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 19:40	197763
Boron	NELAP	0.0250		**0.565**	mg/L	5	09/22/2022 19:40	197763
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 19:40	197763
Calcium	NELAP	0.125	S	**171**	mg/L	5	09/23/2022 13:39	197763
Chromium	NELAP	0.0015		**0.0150**	mg/L	5	09/22/2022 19:40	197763
Cobalt	NELAP	0.0010		**0.0021**	mg/L	5	09/22/2022 19:40	197763
Lead	NELAP	0.0010		**0.0043**	mg/L	5	09/22/2022 19:40	197763
Lithium	*	0.0030		**0.0330**	mg/L	5	09/22/2022 19:40	197763
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 19:40	197763
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 19:40	197763
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 19:40	197763
Matrix spike control limits for for Ca are not applicable due to high sample/spike ratio.								
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:51	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-011
Client Sample ID: APW-10S-WG-20220915
Matrix: GROUNDWATER
Collection Date: 09/15/2022 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:45	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-012 **Client Sample ID:** APW-10D-WG-20220916

Matrix: GROUNDWATER **Collection Date:** 09/16/2022 10:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**460**	mg/L	1	09/29/2022 9:36	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**43**	mg/L	1	09/26/2022 16:29	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.29**		1	09/23/2022 13:36	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.10**	mg/L	1	09/23/2022 10:02	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**18**	mg/L	1	09/26/2022 16:29	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:39	197795
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:39	197795
Barium	NELAP	0.0010		**0.321**	mg/L	5	09/22/2022 17:39	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:39	197795
Boron	NELAP	0.0250		**0.0711**	mg/L	5	09/22/2022 17:39	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:39	197795
Calcium	NELAP	0.125		**124**	mg/L	5	09/23/2022 12:19	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 17:39	197795
Cobalt	NELAP	0.0010		**0.0021**	mg/L	5	09/22/2022 17:39	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:39	197795
Lithium	*	0.0030		**0.0135**	mg/L	5	09/22/2022 17:39	197795
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 17:39	197795
Selenium	NELAP	0.0010		**0.0016**	mg/L	5	09/22/2022 17:39	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 17:39	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:44	197763
Arsenic	NELAP	0.0010		**0.0057**	mg/L	5	09/22/2022 20:44	197763
Barium	NELAP	0.0010		**0.418**	mg/L	5	09/22/2022 20:44	197763
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:44	197763
Boron	NELAP	0.0250		**0.0731**	mg/L	5	09/22/2022 20:44	197763
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:44	197763
Calcium	NELAP	0.125		**374**	mg/L	5	09/23/2022 13:19	197763
Chromium	NELAP	0.0015		**0.0148**	mg/L	5	09/22/2022 20:44	197763
Cobalt	NELAP	0.0010		**0.0049**	mg/L	5	09/22/2022 20:44	197763
Lead	NELAP	0.0010		**0.0020**	mg/L	5	09/22/2022 20:44	197763
Lithium	*	0.0030		**0.0156**	mg/L	5	09/22/2022 20:44	197763
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 20:44	197763
Selenium	NELAP	0.0010		**0.0021**	mg/L	5	09/22/2022 20:44	197763
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 20:44	197763
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:56	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:54	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-012
Client Sample ID: APW-10D-WG-20220916
Matrix: GROUNDWATER
Collection Date: 09/16/2022 10:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-013 **Client Sample ID:** EB-01-WG-20220913

Matrix: GROUNDWATER **Collection Date:** 09/13/2022 6:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**< 20**	mg/L	1	09/29/2022 9:36	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	09/26/2022 16:37	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**6.42**		1	09/23/2022 13:39	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**< 0.10**	mg/L	1	09/23/2022 10:03	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**< 4**	mg/L	1	09/26/2022 16:37	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:45	197795
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:45	197795
Barium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:45	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:45	197795
Boron	NELAP	0.0250		**< 0.0250**	mg/L	5	09/22/2022 17:45	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:45	197795
Calcium	NELAP	0.125		**0.264**	mg/L	5	09/23/2022 12:24	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 17:45	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:45	197795
Lead	NELAP	0.0010		**0.0026**	mg/L	5	09/22/2022 17:45	197795
Lithium	*	0.0030		**< 0.0030**	mg/L	5	09/22/2022 17:45	197795
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 17:45	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:45	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 17:45	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:50	197763
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:50	197763
Barium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:50	197763
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:50	197763
Boron	NELAP	0.0250		**< 0.0250**	mg/L	5	09/22/2022 20:50	197763
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:50	197763
Calcium	NELAP	0.125		**< 0.125**	mg/L	5	09/28/2022 13:36	197763
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 20:50	197763
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:50	197763
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:50	197763
Lithium	*	0.0030		**< 0.0030**	mg/L	5	09/22/2022 20:50	197763
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 20:50	197763
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:50	197763
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 20:50	197763
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 16:01	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 15:58	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-013
Client Sample ID: EB-01-WG-20220913
Matrix: GROUNDWATER
Collection Date: 09/13/2022 6:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-014 **Client Sample ID:** DUP-001-WG-20220914

Matrix: GROUNDWATER **Collection Date:** 09/14/2022 0:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**774**	mg/L	1	09/29/2022 9:37	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**403**	mg/L	10	09/26/2022 16:51	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.57**		1	09/23/2022 13:41	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.31**	mg/L	1	09/23/2022 10:07	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**15**	mg/L	1	09/26/2022 16:45	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:51	197795
Arsenic	NELAP	0.0010		**0.0010**	mg/L	5	09/22/2022 17:51	197795
Barium	NELAP	0.0010		**0.128**	mg/L	5	09/22/2022 17:51	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:51	197795
Boron	NELAP	0.0250		**7.09**	mg/L	5	09/22/2022 17:51	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:51	197795
Calcium	NELAP	0.125		**131**	mg/L	5	09/23/2022 12:29	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 17:51	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:51	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:51	197795
Lithium	*	0.0030		**0.0373**	mg/L	5	09/22/2022 17:51	197795
Molybdenum	NELAP	0.0015		**0.206**	mg/L	5	09/22/2022 17:51	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:51	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 17:51	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:57	197763
Arsenic	NELAP	0.0010		**0.0023**	mg/L	5	09/22/2022 20:57	197763
Barium	NELAP	0.0010		**0.152**	mg/L	5	09/22/2022 20:57	197763
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:57	197763
Boron	NELAP	0.0250		**7.62**	mg/L	5	09/22/2022 20:57	197763
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:57	197763
Calcium	NELAP	0.125		**137**	mg/L	5	09/28/2022 13:42	197763
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 20:57	197763
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:57	197763
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:57	197763
Lithium	*	0.0030		**0.0397**	mg/L	5	09/22/2022 20:57	197763
Molybdenum	NELAP	0.0015		**0.224**	mg/L	5	09/22/2022 20:57	197763
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 20:57	197763
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 20:57	197763
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 16:05	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 16:03	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-014
Client Sample ID: DUP-001-WG-20220914
Matrix: GROUNDWATER
Collection Date: 09/14/2022 0:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Lab ID: 22091073-015 **Client Sample ID:** DUP-002-WG-20220914

Matrix: GROUNDWATER **Collection Date:** 09/14/2022 0:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50	H	**905**	mg/L	2.5	09/29/2022 9:37	R318833
Sample analysis did not meet hold time requirements.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**490**	mg/L	10	09/26/2022 17:15	R318590
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.25**		1	09/23/2022 13:43	R318433
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.22**	mg/L	1	09/23/2022 10:08	R318437
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**10**	mg/L	1	09/26/2022 17:09	R318607
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:58	197795
Arsenic	NELAP	0.0010		**0.0049**	mg/L	5	09/22/2022 17:58	197795
Barium	NELAP	0.0010		**0.135**	mg/L	5	09/22/2022 17:58	197795
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:58	197795
Boron	NELAP	0.0250		**7.90**	mg/L	5	09/22/2022 17:58	197795
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:58	197795
Calcium	NELAP	0.125		**165**	mg/L	5	09/23/2022 12:34	197795
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	09/22/2022 17:58	197795
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:58	197795
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:58	197795
Lithium	*	0.0030		**0.0404**	mg/L	5	09/22/2022 17:58	197795
Molybdenum	NELAP	0.0015		**0.156**	mg/L	5	09/22/2022 17:58	197795
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 17:58	197795
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 17:58	197795
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 21:03	197763
Arsenic	NELAP	0.0010		**0.0176**	mg/L	5	09/22/2022 21:03	197763
Barium	NELAP	0.0010		**0.238**	mg/L	5	09/22/2022 21:03	197763
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 21:03	197763
Boron	NELAP	0.0250		**8.72**	mg/L	5	09/22/2022 21:03	197763
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 21:03	197763
Calcium	NELAP	0.125		**178**	mg/L	5	09/28/2022 15:21	197763
Chromium	NELAP	0.0015		**0.0066**	mg/L	5	09/22/2022 21:03	197763
Cobalt	NELAP	0.0010		**0.0011**	mg/L	5	09/22/2022 21:03	197763
Lead	NELAP	0.0010		**0.0033**	mg/L	5	09/22/2022 21:03	197763
Lithium	*	0.0030		**0.0456**	mg/L	5	09/22/2022 21:03	197763
Molybdenum	NELAP	0.0015		**0.174**	mg/L	5	09/22/2022 21:03	197763
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	09/22/2022 21:03	197763
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	09/22/2022 21:03	197763
SW-846 7470A (DISSOLVED)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 16:19	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	09/20/2022 16:07	197776
LCS recovered outside upper control limits Hg. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								

Client: ERM
Work Order: 22091073
Client Project: GTEC
Report Date: 26-Oct-22
Lab ID: 22091073-015
Client Sample ID: DUP-002-WG-20220914
Matrix: GROUNDWATER
Collection Date: 09/14/2022 0:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015
Radium-228	*	0		**See Attached**	pci/L	1	10/17/2022 0:00	R320015

Client: ERM
Client Project: GTEC

Work Order: 22091073
Report Date: 26-Oct-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22091073-001	APW-1R-WG-20220915	Groundwater	4	09/15/2022 8:45
22091073-002	APW-2-WG-20220914	Groundwater	4	09/14/2022 10:40
22091073-003	APW-3-WG-2022915	Groundwater	4	09/15/2022 12:50
22091073-004	APW-4-WG-2022915	Groundwater	4	09/15/2022 10:25
22091073-005	APW-5-WG-20220914	Groundwater	4	09/14/2022 8:55
22091073-006	APW-6S-WG-20220913	Groundwater	4	09/13/2022 12:30
22091073-007	APW-6D-WG-20220913	Groundwater	4	09/13/2022 10:30
22091073-008	APW-7-WG-20220914	Groundwater	4	09/14/2022 15:20
22091073-009	APW-8-WG-20220915	Groundwater	4	09/15/2022 14:10
22091073-010	APW-9-WG-20220913	Groundwater	4	09/13/2022 15:10
22091073-011	APW-10S-WG-20220915	Groundwater	4	09/15/2022 15:40
22091073-012	APW-10D-WG-20220916	Groundwater	4	09/16/2022 10:50
22091073-013	EB-01-WG-20220913	Groundwater	4	09/13/2022 6:45
22091073-014	DUP-001-WG-20220914	Groundwater	4	09/14/2022 0:00
22091073-015	DUP-002-WG-20220914	Groundwater	4	09/14/2022 0:00

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
22091073-001A	APW-1R-WG-20220915	09/15/2022 8:45	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/27/2022 11:00
	SW-846 9036 (Total)				09/28/2022 9:07
	SW-846 9040B, Laboratory Analyzed				09/23/2022 12:58
	SW-846 9214 (Total)				09/23/2022 9:35
	SW-846 9251 (Total)				09/26/2022 13:47
22091073-001B	APW-1R-WG-20220915	09/15/2022 8:45	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-001C	APW-1R-WG-20220915	09/15/2022 8:45	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 13:17
	SW-846 7470A (Total)			09/19/2022 15:28	09/20/2022 14:36
22091073-001D	APW-1R-WG-20220915	09/15/2022 8:45	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/23/2022 10:00
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/23/2022 21:57
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/26/2022 16:23
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/19/2022 12:16	09/28/2022 14:12
	SW-846 7470A (Dissolved)			09/19/2022 15:28	09/20/2022 14:38
22091073-002A	APW-2-WG-20220914	09/14/2022 10:40	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/27/2022 11:00
	SW-846 9036 (Total)				09/26/2022 14:27
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:00
	SW-846 9214 (Total)				09/23/2022 9:37
	SW-846 9251 (Total)				09/26/2022 14:21
22091073-002B	APW-2-WG-20220914	09/14/2022 10:40	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-002C	APW-2-WG-20220914	09/14/2022 10:40	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 13:23
	SW-846 7470A (Total)			09/19/2022 15:28	09/20/2022 14:40
22091073-002D	APW-2-WG-20220914	09/14/2022 10:40	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 16:28
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/26/2022 11:13
	SW-846 7470A (Dissolved)			09/19/2022 15:28	09/20/2022 14:42
22091073-003A	APW-3-WG-2022915	09/15/2022 12:50	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/27/2022 11:01
	SW-846 9036 (Total)				09/26/2022 14:35
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:02

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9214 (Total)				09/23/2022 9:39
	SW-846 9251 (Total)				09/26/2022 14:29
22091073-003B	APW-3-WG-2022915	09/15/2022 12:50	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-003C	APW-3-WG-2022915	09/15/2022 12:50	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 13:29
	SW-846 7470A (Total)			09/19/2022 15:28	09/20/2022 14:45
22091073-003D	APW-3-WG-2022915	09/15/2022 12:50	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 14:52
	SW-846 7470A (Dissolved)			09/19/2022 15:28	09/20/2022 14:47
22091073-004A	APW-4-WG-2022915	09/15/2022 10:25	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/27/2022 11:01
	SW-846 9036 (Total)				09/28/2022 9:17
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:04
	SW-846 9214 (Total)				09/23/2022 9:40
	SW-846 9251 (Total)				09/26/2022 14:37
22091073-004B	APW-4-WG-2022915	09/15/2022 10:25	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-004C	APW-4-WG-2022915	09/15/2022 10:25	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 14:59
	SW-846 7470A (Total)			09/19/2022 15:28	09/20/2022 14:49
22091073-004D	APW-4-WG-2022915	09/15/2022 10:25	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 15:44
	SW-846 7470A (Dissolved)			09/19/2022 15:28	09/20/2022 14:56
22091073-005A	APW-5-WG-20220914	09/14/2022 8:55	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/27/2022 11:01
	SW-846 9036 (Total)				09/26/2022 14:51
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:06
	SW-846 9214 (Total)				09/23/2022 9:42
	SW-846 9251 (Total)				09/26/2022 14:45
22091073-005B	APW-5-WG-20220914	09/14/2022 8:55	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-005C	APW-5-WG-20220914	09/14/2022 8:55	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 14:21
	SW-846 7470A (Total)			09/19/2022 15:28	09/20/2022 14:58
22091073-005D	APW-5-WG-20220914	09/14/2022 8:55	09/16/2022 13:45		

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 15:50
	SW-846 7470A (Dissolved)			09/19/2022 15:28	09/20/2022 15:01
22091073-006A	APW-6S-WG-20220913	09/13/2022 12:30	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/27/2022 11:01
	SW-846 9036 (Total)				09/26/2022 14:59
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:07
	SW-846 9214 (Total)				09/23/2022 9:44
	SW-846 9251 (Total)				09/26/2022 14:53
22091073-006B	APW-6S-WG-20220913	09/13/2022 12:30	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-006C	APW-6S-WG-20220913	09/13/2022 12:30	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 14:27
	SW-846 7470A (Total)			09/19/2022 15:28	09/20/2022 15:03
22091073-006D	APW-6S-WG-20220913	09/13/2022 12:30	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 15:56
	SW-846 7470A (Dissolved)			09/19/2022 15:28	09/20/2022 15:05
22091073-007A	APW-6D-WG-20220913	09/13/2022 10:30	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:34
	SW-846 9036 (Total)				09/26/2022 15:23
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:10
	SW-846 9214 (Total)				09/23/2022 9:46
	SW-846 9251 (Total)				09/26/2022 15:17
22091073-007B	APW-6D-WG-20220913	09/13/2022 10:30	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-007C	APW-6D-WG-20220913	09/13/2022 10:30	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 14:33
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	10/13/2022 5:17
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	10/13/2022 6:20
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			10/13/2022 12:28	10/14/2022 13:14
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			10/13/2022 12:28	10/17/2022 15:33
	SW-846 7470A (Total)			09/19/2022 15:28	09/20/2022 15:12
22091073-007D	APW-6D-WG-20220913	09/13/2022 10:30	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 16:03
	SW-846 7470A (Dissolved)			09/19/2022 15:28	09/20/2022 15:15
22091073-008A	APW-7-WG-20220914	09/14/2022 15:20	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:35

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9036 (Total)				09/28/2022 9:28
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:11
	SW-846 9214 (Total)				09/23/2022 9:47
	SW-846 9251 (Total)				09/26/2022 15:25
22091073-008B	APW-7-WG-20220914	09/14/2022 15:20	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-008C	APW-7-WG-20220914	09/14/2022 15:20	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 14:40
	SW-846 7470A (Total)			09/19/2022 15:28	09/20/2022 15:17
22091073-008D	APW-7-WG-20220914	09/14/2022 15:20	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 16:09
	SW-846 7470A (Dissolved)			09/19/2022 15:28	09/20/2022 15:24
22091073-009A	APW-8-WG-20220915	09/15/2022 14:10	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:35
	SW-846 9036 (Total)				09/26/2022 15:33
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:14
	SW-846 9214 (Total)				09/23/2022 9:57
	SW-846 9251 (Total)				09/26/2022 15:33
22091073-009B	APW-8-WG-20220915	09/15/2022 14:10	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-009C	APW-8-WG-20220915	09/15/2022 14:10	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:50	09/22/2022 14:46
	SW-846 7470A (Total)			09/19/2022 18:11	09/20/2022 15:31
22091073-009D	APW-8-WG-20220915	09/15/2022 14:10	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 16:15
	SW-846 7470A (Dissolved)			09/19/2022 18:11	09/20/2022 15:33
22091073-010A	APW-9-WG-20220913	09/13/2022 15:10	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:35
	SW-846 9036 (Total)				09/26/2022 15:41
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:16
	SW-846 9214 (Total)				09/23/2022 9:59
	SW-846 9251 (Total)				09/26/2022 15:41
22091073-010B	APW-9-WG-20220913	09/13/2022 15:10	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-010C	APW-9-WG-20220913	09/13/2022 15:10	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/22/2022 19:08

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/23/2022 13:14
	SW-846 7470A (Total)			09/19/2022 18:11	09/20/2022 15:35
22091073-010D	APW-9-WG-20220913	09/13/2022 15:10	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 16:22
	SW-846 7470A (Dissolved)			09/19/2022 18:11	09/20/2022 15:42
22091073-011A	APW-10S-WG-20220915	09/15/2022 15:40	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:36
	SW-846 9036 (Total)				09/28/2022 9:47
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:32
	SW-846 9214 (Total)				09/23/2022 10:00
	SW-846 9251 (Total)				09/26/2022 15:52
22091073-011B	APW-10S-WG-20220915	09/15/2022 15:40	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-011C	APW-10S-WG-20220915	09/15/2022 15:40	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/22/2022 19:40
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/23/2022 13:39
	SW-846 7470A (Total)			09/19/2022 18:11	09/20/2022 15:45
22091073-011D	APW-10S-WG-20220915	09/15/2022 15:40	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 17:32
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/23/2022 12:14
	SW-846 7470A (Dissolved)			09/19/2022 18:11	09/20/2022 15:51
22091073-012A	APW-10D-WG-20220916	09/16/2022 10:50	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:36
	SW-846 9036 (Total)				09/26/2022 16:29
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:36
	SW-846 9214 (Total)				09/23/2022 10:02
	SW-846 9251 (Total)				09/26/2022 16:29
22091073-012B	APW-10D-WG-20220916	09/16/2022 10:50	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-012C	APW-10D-WG-20220916	09/16/2022 10:50	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/22/2022 20:44
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/23/2022 13:19
	SW-846 7470A (Total)			09/19/2022 18:11	09/20/2022 15:54
22091073-012D	APW-10D-WG-20220916	09/16/2022 10:50	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 17:39
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/23/2022 12:19

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 7470A (Dissolved)			09/19/2022 18:11	09/20/2022 15:56
22091073-013A	EB-01-WG-20220913	09/13/2022 6:45	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:36
	SW-846 9036 (Total)				09/26/2022 16:37
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:39
	SW-846 9214 (Total)				09/23/2022 10:03
	SW-846 9251 (Total)				09/26/2022 16:37
22091073-013B	EB-01-WG-20220913	09/13/2022 6:45	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-013C	EB-01-WG-20220913	09/13/2022 6:45	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/22/2022 20:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/26/2022 16:11
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/28/2022 13:36
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	10/13/2022 5:23
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	10/13/2022 6:26
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			10/13/2022 12:28	10/14/2022 13:18
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			10/13/2022 12:28	10/17/2022 15:40
	SW-846 7470A (Total)			09/19/2022 18:11	09/20/2022 15:58
22091073-013D	EB-01-WG-20220913	09/13/2022 6:45	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 17:45
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/23/2022 12:24
	SW-846 7470A (Dissolved)			09/19/2022 18:11	09/20/2022 16:01
22091073-014A	DUP-001-WG-20220914	09/14/2022 0:00	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:37
	SW-846 9036 (Total)				09/26/2022 16:51
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:41
	SW-846 9214 (Total)				09/23/2022 10:07
	SW-846 9251 (Total)				09/26/2022 16:45
22091073-014B	DUP-001-WG-20220914	09/14/2022 0:00	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-014C	DUP-001-WG-20220914	09/14/2022 0:00	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/22/2022 20:57
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/26/2022 16:17
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/28/2022 13:42
	SW-846 7470A (Total)			09/19/2022 18:11	09/20/2022 16:03
22091073-014D	DUP-001-WG-20220914	09/14/2022 0:00	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 17:51

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/23/2022 12:29
	SW-846 7470A (Dissolved)			09/19/2022 18:11	09/20/2022 16:05
22091073-015A	DUP-002-WG-20220914	09/14/2022 0:00	09/16/2022 13:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/29/2022 9:37
	SW-846 9036 (Total)				09/26/2022 17:15
	SW-846 9040B, Laboratory Analyzed				09/23/2022 13:43
	SW-846 9214 (Total)				09/23/2022 10:08
	SW-846 9251 (Total)				09/26/2022 17:09
22091073-015B	DUP-002-WG-20220914	09/14/2022 0:00	09/16/2022 13:45		
	EPA 903.0/904.0, Radium 226/228				10/17/2022 0:00
22091073-015C	DUP-002-WG-20220914	09/14/2022 0:00	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/22/2022 21:03
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/26/2022 16:24
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/19/2022 13:54	09/28/2022 15:21
	SW-846 7470A (Total)			09/19/2022 18:11	09/20/2022 16:07
22091073-015D	DUP-002-WG-20220914	09/14/2022 0:00	09/16/2022 13:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/22/2022 17:58
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			09/20/2022 9:03	09/23/2022 12:34
	SW-846 7470A (Dissolved)			09/19/2022 18:11	09/20/2022 16:19

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R318696 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/27/2022
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/27/2022

Batch R318696 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**948**	1000	0	94.8	90	110	09/27/2022
Total Dissolved Solids		20		**956**	1000	0	95.6	90	110	09/27/2022

Batch R318696 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 22091073-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20	H	**418**				420.0	0.48	09/27/2022

Batch R318833 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/29/2022
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/29/2022

Batch R318833 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**984**	1000	0	98.4	90	110	09/29/2022
Total Dissolved Solids		20		**982**	1000	0	98.2	90	110	09/29/2022

Batch R318833 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 22091073-010ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20	H	**378**				380.0	0.53	09/29/2022

SW-846 9036 (TOTAL)

Batch R318590 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/26/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 9036 (TOTAL)

Batch R318590 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**18**	20.00	0	92.1	90	110	09/26/2022

Batch R318683 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/28/2022

Batch R318683 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**20**	20.00	0	98.4	90	110	09/28/2022

Batch R318683 **SampType:** MS Units **mg/L**
SampID: 22091073-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		20	SE	**106**	40.00	72.84	82.6	85	115	09/28/2022

Batch R318683 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 22091073-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		20	E	**112**	40.00	72.84	97.7	105.9	5.53	09/28/2022

Batch R318683 **SampType:** MS Units **mg/L**
SampID: 22091073-011AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		20	S	**54**	40.00	21.33	82.9	85	115	09/28/2022

Batch R318683 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 22091073-011AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		20	S	**52**	40.00	21.33	77.9	54.48	3.70	09/28/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 9040B, LABORATORY ANALYZED

Batch R318433 **SampType:** LCS Units

SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lab pH		1.00		**6.96**	7.000	0	99.4	99.1	100.8	09/22/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**6.93**				6.910	0.29	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-002ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.32**				7.320	0.00	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-003ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.46**				7.460	0.00	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-004ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.53**				7.510	0.27	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-005ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.56**				7.550	0.13	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-006ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.38**				7.380	0.00	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-007ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.41**				7.420	0.13	09/23/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 9040B, LABORATORY ANALYZED

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-008ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.02**				7.020	0.00	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-009ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.45**				7.470	0.27	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-010ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.65**				7.590	0.79	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-011ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.22**				7.200	0.28	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-012ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.28**				7.290	0.14	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-013ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**6.43**				6.420	0.16	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-014ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.57**				7.570	0.00	09/23/2022

Batch R318433 **SampType:** DUP Units RPD Limit: **10**

SampID: 22091073-015ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.27**				7.250	0.28	09/23/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 9214 (TOTAL)

Batch R318437 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**< 0.10**	0.0370	0	0	-100	100	09/22/2022

Batch R318437 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**0.93**	1.000	0	93.3	90	110	09/22/2022

Batch R318437 **SampType:** MS Units **mg/L**
SampID: 22091073-008AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.29**	2.000	0.1680	106.0	75	125	09/23/2022

Batch R318437 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22091073-008AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.27**	2.000	0.1680	105.3	2.287	0.57	09/23/2022

Batch R318437 **SampType:** MS Units **mg/L**
SampID: 22091073-015AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.30**	2.000	0.2170	104.1	75	125	09/23/2022

Batch R318437 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22091073-015AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.24**	2.000	0.2170	101.4	2.299	2.42	09/23/2022

SW-846 9251 (TOTAL)

Batch R318607 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	09/26/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 9251 (TOTAL)

Batch R318607 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**19**	20.00	0	97.0	90	110	09/26/2022

Batch R318607 **SampType:** MS Units **mg/L**
SampID: 22091073-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**26**	20.00	6.570	96.9	85	115	09/26/2022

Batch R318607 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22091073-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**26**	20.00	6.570	96.8	25.95	0.08	09/26/2022

Batch R318607 **SampType:** MS Units **mg/L**
SampID: 22091073-011AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**34**	20.00	15.33	95.5	85	115	09/26/2022

Batch R318607 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22091073-011AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**34**	20.00	15.33	93.8	34.43	1.02	09/26/2022

Batch R318718 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	09/28/2022

Batch R318718 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**20**	20.00	0	97.6	90	110	09/28/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch **197756** **SampType:** **MBLK** Units **mg/L**

SampID: MBLK-197756

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/23/2022
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/21/2022
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/21/2022
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	09/21/2022
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	09/21/2022
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	09/23/2022
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	09/23/2022
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/21/2022
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	09/28/2022
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	09/23/2022
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/21/2022
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/21/2022
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	09/23/2022
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	09/23/2022
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	09/21/2022
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/21/2022
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	09/21/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 197756 **SampType:** LCS Units **mg/L**

SampID: LCS-197756

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.499**	0.5000	0	99.7	80	120	09/21/2022
Antimony		0.0010		**0.502**	0.5000	0	100.4	80	120	09/23/2022
Arsenic		0.0010		**0.472**	0.5000	0	94.4	80	120	09/21/2022
Barium		0.0010		**1.86**	2.000	0	93.0	80	120	09/21/2022
Beryllium		0.0010		**0.0484**	0.0500	0	96.8	80	120	09/23/2022
Beryllium		0.0010		**0.0474**	0.0500	0	94.8	80	120	09/23/2022
Boron		0.0250		**0.516**	0.5000	0	103.2	80	120	09/23/2022
Cadmium		0.0010		**0.0440**	0.0500	0	88.0	80	120	09/21/2022
Calcium		0.125		**2.35**	2.500	0	94.0	80	120	09/28/2022
Chromium		0.0015		**0.189**	0.2000	0	94.4	80	120	09/23/2022
Cobalt		0.0010		**0.458**	0.5000	0	91.6	80	120	09/21/2022
Lead		0.0010		**0.469**	0.5000	0	93.8	80	120	09/21/2022
Lithium	*	0.0030		**0.480**	0.5000	0	95.9	80	120	09/28/2022
Molybdenum		0.0015		**0.443**	0.5000	0	88.5	80	120	09/21/2022
Selenium		0.0010		**0.438**	0.5000	0	87.6	80	120	09/21/2022
Thallium		0.0020		**0.226**	0.2500	0	90.3	80	120	09/21/2022

Batch 197756 **SampType:** MS Units **mg/L**

SampID: 22091073-001DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.504**	0.5000	0	100.8	75	125	09/23/2022
Arsenic		0.0010		**0.514**	0.5000	0.0008307	102.7	75	125	09/23/2022
Barium		0.0010		**2.18**	2.000	0.1526	101.5	75	125	09/23/2022
Beryllium		0.0010		**0.0501**	0.0500	0	100.2	75	125	09/23/2022
Boron		0.0250		**0.701**	0.5000	0.2441	91.3	75	125	09/26/2022
Cadmium		0.0010		**0.0498**	0.0500	0	99.7	75	125	09/23/2022
Calcium		0.125		**86.6**	2.500	83.76	113.1	75	125	09/28/2022
Chromium		0.0015		**0.192**	0.2000	0	95.8	75	125	09/23/2022
Cobalt		0.0010		**0.499**	0.5000	0.0003479	99.7	75	125	09/23/2022
Lead		0.0010		**0.514**	0.5000	0	102.7	75	125	09/23/2022
Lithium	*	0.0030		**0.536**	0.5000	0.01562	104.1	75	125	09/28/2022
Molybdenum		0.0015		**0.486**	0.5000	0	97.2	75	125	09/28/2022
Selenium		0.0010		**0.473**	0.5000	0.003247	94.0	75	125	09/23/2022
Thallium		0.0020		**0.258**	0.2500	0	103.2	75	125	09/23/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 197756 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 22091073-001DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.510**	0.5000	0	102.0	0.5042	1.14	09/23/2022
Arsenic		0.0010		**0.520**	0.5000	0.0008307	103.7	0.5142	1.05	09/23/2022
Barium		0.0010		**2.19**	2.000	0.1526	101.7	2.183	0.14	09/23/2022
Beryllium		0.0010		**0.0506**	0.0500	0	101.3	0.05011	1.04	09/23/2022
Boron		0.0250		**0.726**	0.5000	0.2441	96.4	0.7006	3.61	09/26/2022
Cadmium		0.0010		**0.0500**	0.0500	0	100.0	0.04983	0.34	09/23/2022
Calcium		0.125	S	**91.9**	2.500	83.76	324.0	86.58	5.91	09/28/2022
Chromium		0.0015		**0.193**	0.2000	0	96.7	0.1916	0.99	09/23/2022
Cobalt		0.0010		**0.480**	0.5000	0.0003479	96.0	0.4990	3.84	09/23/2022
Lead		0.0010		**0.512**	0.5000	0	102.3	0.5135	0.39	09/23/2022
Lithium	*	0.0030		**0.571**	0.5000	0.01562	111.0	0.5361	6.24	09/28/2022
Molybdenum		0.0015		**0.549**	0.5000	0	109.9	0.4861	12.21	09/28/2022
Selenium		0.0010		**0.476**	0.5000	0.003247	94.6	0.4734	0.60	09/23/2022
Thallium		0.0020		**0.256**	0.2500	0	102.3	0.2581	0.96	09/23/2022

Batch 197795 **SampType:** MBLK Units **mg/L**

SampID: MBLK-197795

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/22/2022
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/22/2022
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	09/22/2022
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	09/22/2022
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	09/22/2022
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/22/2022
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	09/22/2022
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	09/22/2022
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/22/2022
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/22/2022
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	09/22/2022
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	09/22/2022
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/22/2022
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	09/22/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 197795 **SampType:** LCS Units **mg/L**

SampID: LCS-197795

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.496**	0.5000	0	99.2	80	120	09/22/2022
Arsenic		0.0010		**0.506**	0.5000	0	101.3	80	120	09/22/2022
Barium		0.0010		**2.02**	2.000	0	100.8	80	120	09/22/2022
Beryllium		0.0010		**0.0460**	0.0500	0	91.9	80	120	09/22/2022
Boron		0.0250		**0.473**	0.5000	0	94.7	80	120	09/22/2022
Cadmium		0.0010		**0.0474**	0.0500	0	94.7	80	120	09/22/2022
Calcium		0.125		**2.40**	2.500	0	96.0	80	120	09/22/2022
Chromium		0.0015		**0.193**	0.2000	0	96.4	80	120	09/22/2022
Cobalt		0.0010		**0.481**	0.5000	0	96.2	80	120	09/22/2022
Lead		0.0010		**0.484**	0.5000	0	96.8	80	120	09/22/2022
Lithium	*	0.0030		**0.478**	0.5000	0	95.6	80	120	09/22/2022
Molybdenum		0.0015		**0.478**	0.5000	0	95.5	80	120	09/22/2022
Selenium		0.0010		**0.474**	0.5000	0	94.8	80	120	09/22/2022
Thallium		0.0020		**0.235**	0.2500	0	94.1	80	120	09/22/2022

Batch 197795 **SampType:** MS Units **mg/L**

SampID: 22091073-002DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**1.00**	1.000	0.0006649	100.2	75	125	09/22/2022
Arsenic		0.0010		**0.915**	1.000	0.004827	91.0	75	125	09/22/2022
Barium		0.0010		**4.09**	4.000	0.1231	99.2	75	125	09/22/2022
Beryllium		0.0010		**0.0885**	0.1000	0	88.5	75	125	09/22/2022
Boron		0.0250	S	**7.63**	1.000	7.494	13.6	75	125	09/26/2022
Cadmium		0.0010		**0.0917**	0.1000	0	91.7	75	125	09/22/2022
Calcium		0.125	S	**139**	5.000	135.8	57.5	75	125	09/22/2022
Chromium		0.0015		**0.356**	0.4000	0	89.0	75	125	09/22/2022
Cobalt		0.0010		**0.928**	1.000	0.0001239	92.8	75	125	09/22/2022
Lead		0.0010		**0.905**	1.000	0	90.5	75	125	09/22/2022
Lithium	*	0.0030		**0.951**	1.000	0.03736	91.4	75	125	09/22/2022
Molybdenum		0.0015		**1.08**	1.000	0.1389	94.4	75	125	09/22/2022
Selenium		0.0010		**0.839**	1.000	0	83.9	75	125	09/22/2022
Thallium		0.0020		**0.435**	0.5000	0	87.0	75	125	09/22/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 197795 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 22091073-002DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.970**	1.000	0.0006649	96.9	1.003	3.31	09/22/2022
Arsenic		0.0010		**0.899**	1.000	0.004827	89.4	0.9152	1.78	09/22/2022
Barium		0.0010		**4.03**	4.000	0.1231	97.7	4.090	1.45	09/22/2022
Beryllium		0.0010		**0.0858**	0.1000	0	85.8	0.08852	3.07	09/22/2022
Boron		0.0250	S	**7.79**	1.000	7.494	29.6	7.630	2.07	09/26/2022
Cadmium		0.0010		**0.0885**	0.1000	0	88.5	0.09169	3.52	09/22/2022
Calcium		0.125	S	**126**	5.000	135.8	-195.9	138.7	9.57	09/22/2022
Chromium		0.0015		**0.344**	0.4000	0	86.0	0.3560	3.43	09/22/2022
Cobalt		0.0010		**0.880**	1.000	0.0001239	88.0	0.9280	5.35	09/22/2022
Lead		0.0010		**0.875**	1.000	0	87.5	0.9052	3.45	09/22/2022
Lithium	*	0.0030		**0.910**	1.000	0.03736	87.3	0.9511	4.42	09/22/2022
Molybdenum		0.0015		**0.925**	1.000	0.1389	78.6	1.082	15.69	09/22/2022
Selenium		0.0010		**0.822**	1.000	0	82.2	0.8389	2.01	09/22/2022
Thallium		0.0020		**0.422**	0.5000	0	84.5	0.4352	2.97	09/22/2022

Batch 198747 **SampType:** MBLK Units **mg/L**

SampID: MBLK-198747

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	10/14/2022

Batch 198747 **SampType:** LCS Units **mg/L**

SampID: LCS-198747

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cobalt		0.0010		**0.459**	0.5000	0	91.8	80	120	10/17/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 197762 **SampType:** MBLK Units **mg/L**

SampID: MBLK-197762

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/22/2022
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/22/2022
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	09/22/2022
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	09/22/2022
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	09/22/2022
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/22/2022
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	09/22/2022
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	09/22/2022
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/22/2022
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/22/2022
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	09/22/2022
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	09/22/2022
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/22/2022
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	09/22/2022

Batch 197762 **SampType:** LCS Units **mg/L**

SampID: LCS-197762

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.538**	0.5000	0	107.5	80	120	09/22/2022
Arsenic		0.0010		**0.551**	0.5000	0	110.1	80	120	09/22/2022
Barium		0.0010		**2.19**	2.000	0	109.6	80	120	09/22/2022
Beryllium		0.0010		**0.0506**	0.0500	0	101.2	80	120	09/22/2022
Boron		0.0250		**0.507**	0.5000	0	101.5	80	120	09/22/2022
Cadmium		0.0010		**0.0502**	0.0500	0	100.4	80	120	09/22/2022
Calcium		0.125		**2.55**	2.500	0	102.0	80	120	09/22/2022
Chromium		0.0015		**0.211**	0.2000	0	105.4	80	120	09/22/2022
Cobalt		0.0010		**0.525**	0.5000	0	105.0	80	120	09/22/2022
Lead		0.0010		**0.527**	0.5000	0	105.4	80	120	09/22/2022
Lithium	*	0.0030		**0.510**	0.5000	0	102.0	80	120	09/22/2022
Molybdenum		0.0015		**0.513**	0.5000	0	102.7	80	120	09/22/2022
Selenium		0.0010		**0.510**	0.5000	0	102.1	80	120	09/22/2022
Thallium		0.0020		**0.249**	0.2500	0	99.6	80	120	09/22/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 197762 **SampType:** MS Units **mg/L**

SampID: 22091073-004CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.547**	0.5000	0	109.4	75	125	09/22/2022
Arsenic		0.0010		**0.547**	0.5000	0.002855	108.8	75	125	09/22/2022
Barium		0.0010		**2.35**	2.000	0.1645	109.4	75	125	09/22/2022
Beryllium		0.0010		**0.0529**	0.0500	0	105.9	75	125	09/22/2022
Boron		0.0250		**1.50**	0.5000	0.9734	105.1	75	125	09/22/2022
Cadmium		0.0010		**0.0511**	0.0500	0.0001741	101.9	75	125	09/22/2022
Calcium		0.125	S	**114**	2.500	108.5	209.2	75	125	09/22/2022
Chromium		0.0015		**0.233**	0.2000	0.02512	104.1	75	125	09/22/2022
Cobalt		0.0010		**0.508**	0.5000	0.002470	101.1	75	125	09/22/2022
Lead		0.0010		**0.525**	0.5000	0.001592	104.6	75	125	09/22/2022
Lithium	*	0.0030		**0.558**	0.5000	0.03224	105.2	75	125	09/22/2022
Molybdenum		0.0015		**0.568**	0.5000	0.04938	103.6	75	125	09/22/2022
Selenium		0.0010		**0.520**	0.5000	0.01112	101.8	75	125	09/22/2022
Thallium		0.0020		**0.250**	0.2500	0	100.0	75	125	09/22/2022

Batch 197762 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 22091073-004CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.521**	0.5000	0	104.2	0.5470	4.89	09/22/2022
Arsenic		0.0010		**0.529**	0.5000	0.002855	105.2	0.5468	3.36	09/22/2022
Barium		0.0010		**2.24**	2.000	0.1645	103.8	2.352	4.83	09/22/2022
Beryllium		0.0010		**0.0502**	0.0500	0	100.3	0.05293	5.39	09/22/2022
Boron		0.0250		**1.46**	0.5000	0.9734	96.5	1.499	2.90	09/22/2022
Cadmium		0.0010		**0.0486**	0.0500	0.0001741	96.9	0.05110	5.01	09/22/2022
Calcium		0.125	S	**110**	2.500	108.5	69.8	113.7	3.11	09/22/2022
Chromium		0.0015		**0.226**	0.2000	0.02512	100.5	0.2334	3.14	09/22/2022
Cobalt		0.0010		**0.488**	0.5000	0.002470	97.2	0.5077	3.90	09/22/2022
Lead		0.0010		**0.510**	0.5000	0.001592	101.6	0.5247	2.87	09/22/2022
Lithium	*	0.0030		**0.536**	0.5000	0.03224	100.8	0.5584	4.01	09/22/2022
Molybdenum		0.0015		**0.551**	0.5000	0.04938	100.3	0.5676	2.97	09/22/2022
Selenium		0.0010		**0.505**	0.5000	0.01112	98.8	0.5200	2.94	09/22/2022
Thallium		0.0020		**0.245**	0.2500	0	97.8	0.2500	2.18	09/22/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 197763 **SampType:** MBLK Units **mg/L**

SampID: MBLK-197763

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/22/2022
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	09/22/2022
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	09/22/2022
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	09/22/2022
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	09/22/2022
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/22/2022
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	09/23/2022
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	09/22/2022
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	09/22/2022
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/22/2022
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	09/22/2022
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	09/22/2022
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	09/22/2022
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	09/22/2022

Batch 197763 **SampType:** LCS Units **mg/L**

SampID: LCS-197763

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.534**	0.5000	0	106.8	80	120	09/22/2022
Arsenic		0.0010		**0.534**	0.5000	0	106.7	80	120	09/22/2022
Barium		0.0010		**2.14**	2.000	0	106.9	80	120	09/22/2022
Beryllium		0.0010		**0.0519**	0.0500	0	103.9	80	120	09/22/2022
Boron		0.0250		**0.525**	0.5000	0	105.1	80	120	09/22/2022
Cadmium		0.0010		**0.0494**	0.0500	0	98.8	80	120	09/22/2022
Calcium		0.125		**2.78**	2.500	0	111.2	80	120	09/23/2022
Chromium		0.0015		**0.212**	0.2000	0	106.1	80	120	09/22/2022
Cobalt		0.0010		**0.504**	0.5000	0	100.9	80	120	09/22/2022
Lead		0.0010		**0.518**	0.5000	0	103.5	80	120	09/22/2022
Lithium	*	0.0030		**0.536**	0.5000	0	107.2	80	120	09/22/2022
Molybdenum		0.0015		**0.500**	0.5000	0	99.9	80	120	09/22/2022
Selenium		0.0010		**0.508**	0.5000	0	101.7	80	120	09/22/2022
Thallium		0.0020		**0.245**	0.2500	0	97.9	80	120	09/22/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 197763 **SampType:** MS Units **mg/L**

SampID: 22091073-011CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.514**	0.5000	0	102.8	75	125	09/22/2022
Arsenic		0.0010		**0.739**	0.5000	0.1870	110.4	75	125	09/22/2022
Barium		0.0010		**2.93**	2.000	0.6119	116.1	75	125	09/22/2022
Beryllium		0.0010		**0.0499**	0.0500	0	99.8	75	125	09/22/2022
Boron		0.0250		**1.07**	0.5000	0.5648	100.7	75	125	09/22/2022
Cadmium		0.0010		**0.0508**	0.0500	0	101.6	75	125	09/22/2022
Calcium		0.125	S	**171**	2.500	171.1	-9.1	75	125	09/23/2022
Chromium		0.0015		**0.222**	0.2000	0.01498	103.6	75	125	09/22/2022
Cobalt		0.0010		**0.501**	0.5000	0.002107	99.8	75	125	09/22/2022
Lead		0.0010		**0.527**	0.5000	0.004258	104.6	75	125	09/22/2022
Lithium	*	0.0030		**0.532**	0.5000	0.03304	99.9	75	125	09/22/2022
Molybdenum		0.0015		**0.520**	0.5000	0.001319	103.8	75	125	09/22/2022
Selenium		0.0010		**0.515**	0.5000	0	103.0	75	125	09/22/2022
Thallium		0.0020		**0.250**	0.2500	0	100.1	75	125	09/22/2022

Batch 197763 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 22091073-011CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.506**	0.5000	0	101.2	0.5139	1.57	09/22/2022
Arsenic		0.0010		**0.736**	0.5000	0.1870	109.8	0.7393	0.44	09/22/2022
Barium		0.0010		**2.88**	2.000	0.6119	113.4	2.935	1.89	09/22/2022
Beryllium		0.0010		**0.0502**	0.0500	0	100.4	0.04992	0.52	09/22/2022
Boron		0.0250		**1.04**	0.5000	0.5648	95.7	1.068	2.34	09/22/2022
Cadmium		0.0010		**0.0495**	0.0500	0	98.9	0.05080	2.67	09/22/2022
Calcium		0.125	S	**168**	2.500	171.1	-129.0	170.9	1.77	09/23/2022
Chromium		0.0015		**0.218**	0.2000	0.01498	101.7	0.2221	1.75	09/22/2022
Cobalt		0.0010		**0.495**	0.5000	0.002107	98.5	0.5013	1.32	09/22/2022
Lead		0.0010		**0.523**	0.5000	0.004258	103.7	0.5274	0.93	09/22/2022
Lithium	*	0.0030		**0.524**	0.5000	0.03304	98.2	0.5324	1.60	09/22/2022
Molybdenum		0.0015		**0.511**	0.5000	0.001319	101.9	0.5201	1.76	09/22/2022
Selenium		0.0010		**0.513**	0.5000	0	102.6	0.5152	0.47	09/22/2022
Thallium		0.0020		**0.252**	0.2500	0	100.9	0.2503	0.75	09/22/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 198728 **SampType:** MBLK Units **mg/L**

SampID: MBLK-198728

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	10/17/2022
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	10/17/2022
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	10/14/2022
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	10/17/2022
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	10/14/2022
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	10/17/2022
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	10/14/2022
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	10/14/2022
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	10/14/2022
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	10/17/2022
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	10/17/2022
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	10/17/2022
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	10/17/2022

Batch 198728 **SampType:** LCS Units **mg/L**

SampID: LCS-198728

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.515**	0.5000	0	103.1	85	115	10/17/2022
Arsenic		0.0010		**0.524**	0.5000	0	104.8	85	115	10/17/2022
Barium		0.0010		**2.01**	2.000	0	100.5	85	115	10/17/2022
Beryllium		0.0010		**0.0465**	0.0500	0	93.0	85	115	10/17/2022
Boron		0.0250		**0.456**	0.5000	0	91.2	85	115	10/14/2022
Cadmium		0.0010		**0.0496**	0.0500	0	99.2	85	115	10/17/2022
Cobalt		0.0010		**0.525**	0.5000	0	104.9	85	115	10/17/2022
Lead		0.0010		**0.509**	0.5000	0	101.9	85	115	10/17/2022
Lithium	*	0.0030		**0.490**	0.5000	0	98.0	85	115	10/17/2022
Molybdenum		0.0015		**0.492**	0.5000	0	98.4	85	115	10/17/2022
Selenium		0.0010		**0.480**	0.5000	0	96.0	85	115	10/17/2022
Thallium		0.0020		**0.244**	0.2500	0	97.7	85	115	10/17/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 198728 **SampType:** LCSD Units **mg/L** RPD Limit: **20**

SampID: LCSD-198728

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.511**	0.5000	0	102.1	0.5155	0.93	10/17/2022
Arsenic		0.0010		**0.535**	0.5000	0	106.9	0.5242	1.95	10/17/2022
Barium		0.0010		**2.03**	2.000	0	101.6	2.009	1.10	10/17/2022
Beryllium		0.0010		**0.0487**	0.0500	0	97.3	0.04648	4.61	10/17/2022
Boron		0.0250		**0.493**	0.5000	0	98.5	0.4558	7.77	10/14/2022
Cadmium		0.0010		**0.0499**	0.0500	0	99.8	0.04959	0.65	10/17/2022
Cobalt		0.0010		**0.520**	0.5000	0	104.0	0.5246	0.84	10/17/2022
Lead		0.0010		**0.511**	0.5000	0	102.1	0.5093	0.27	10/17/2022
Lithium	*	0.0030		**0.514**	0.5000	0	102.7	0.4901	4.69	10/17/2022
Molybdenum		0.0015		**0.478**	0.5000	0	95.6	0.4921	2.87	10/17/2022
Selenium		0.0010		**0.490**	0.5000	0	98.0	0.4798	2.10	10/17/2022
Thallium		0.0020		**0.253**	0.2500	0	101.3	0.2444	3.57	10/17/2022

SW-846 7470A (DISSOLVED)

Batch 197769 **SampType:** MS Units **mg/L**

SampID: 22091073-006DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00549**	0.0050	0	109.7	75	125	09/20/2022

Batch 197769 **SampType:** MSD Units **mg/L** RPD Limit: **15**

SampID: 22091073-006DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00548**	0.0050	0	109.5	0.005486	0.20	09/20/2022

SW-846 7470A (TOTAL)

Batch 197769 **SampType:** MBLK Units **mg/L**

SampID: MBLK-197769

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**< 0.00020**	0.0001	0	0	-100	100	09/20/2022

Batch 197769 **SampType:** LCS Units **mg/L**

SampID: LCS-197769

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00554**	0.0050	0	110.9	85	115	09/20/2022

Client: ERM **Work Order:** 22091073

Client Project: GTEC **Report Date:** 26-Oct-22

SW-846 7470A (TOTAL)

Batch 197776 **SampType:** MBLK Units **mg/L**
SampID: MBLK-197776

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**< 0.00020**	0.0001	0	0	-100	100	09/20/2022

Batch 197776 **SampType:** LCS Units **mg/L**
SampID: LCS-197776

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020	S	**0.00594**	0.0050	0	118.8	85	115	09/20/2022

Batch 197776 **SampType:** MS Units **mg/L**
SampID: 22091073-010CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00523**	0.0050	0	104.6	75	125	09/20/2022

Batch 197776 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22091073-010CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00542**	0.0050	0	108.3	0.005230	3.50	09/20/2022

Batch 197776 **SampType:** MS Units **mg/L**
SampID: 22091073-015CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00549**	0.0050	0	109.9	75	125	09/20/2022

Batch 197776 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22091073-015CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00559**	0.0050	0	111.8	0.005493	1.72	09/20/2022

Receiving Check List

Teklab, Inc. Environmental Laboratory

http://www.teklabinc.com/

Client: ERM

Client Project: GTEC

Work Order: 22091073

Report Date: 26-Oct-22

Carrier: Marshall Arendell

Received By: CET

Completed by: Timothy W. Mathis
On: 16-Sep-22

Reviewed by: Elizabeth A. Hurley
On: 19-Sep-22

Pages to follow: Chain of custody 1 Extra pages included 31

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 2.2
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☐	No ☑		
Reported field parameters measured:	Field ☐	Lab ☑	NA ☐	

Sample analyses to be measured in the field and/or within 15 minutes of collection were analyzed in the lab as soon as practicable. These analyses include Chlorine (demand, free and/or residual), Carbon Dioxide, Dissolved Oxygen, Ferrous Iron, pH, and Sulfite.

Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Any No responses must be detailed below or on the COC.

Samples were split, filtered and preserved with nitric acid (84325) for the dissolved parameters upon arrival at the laboratory. - TMathis - 9/16/2022 3:52:35 PM - ehurley - 9/19/2022 8:00:12 AM

pH strip #83484. - CET/ehurley - 9/19/2022 8:10:46 AM

CHAIN OF CUSTODY

pg. 1 of 2 Work order # 22091073

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	ERM
Address:	68 Villa Grove
City / State / Zip	Springfield, IL 62712
Contact:	Brett Carney
Phone:	(217) 529-0914
E-Mail:	brett.carney@erm.com
Fax:	

Samples on: ~~ICE~~ BLUE ICE NO ICE 2.2 °C LTG# 3

Preserved in: LAB FIELD

FOR LAB USE ONLY

Lab Notes Phr834841. CET/GAH 9/16/22

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☑ No

Are these samples known to be hazardous? ☐ Yes ☑ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☑ No

Client Comments:

Total Metals: Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Lead, Lithium, Molybdenum, Selenium, Thallium, and Mercury

Project Name/Number: GTEC

Sample Collector's Name: L. Sansoucie, M. Arendell

Results Requested: ☑ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ☐ 3 Day (50% Surcharge)

Billing Instructions:

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Chloride	Fluoride	pH	Radium 226/228	Sulfate	TDS	Total Metals	Dissolved metals
22091073 001	APW-1R-W6-20220915	9/15/22; 0845	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
002	APW-2-W6-20220914	9/14/22; 1040	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
003	APW-3-W6-20220915	9/15/22; 1250	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
004	APW-4-W6-20220915	9/15/22; 1035	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
005	APW-5-W6-20220914	9/14/22; 0855	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
006	APW-60S-W6-20220913	9/13/22; 1230	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
007	APW-60-W6-20220913	9/13/22; 1030	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
008	APW-7-W6-20220914	9/14/22; 1520	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
009	APW-8-W6-20220915	9/15/22; 1410	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
010	APW-9-W6-20220913	9/13/22; 1510	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
Matt Call	9/16/22 1345	[illegible]	9-16-22 1345

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 74892

CHAIN OF CUSTODY

pg. 2 of 2 Work order # 22091073

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client: ERM
Address: 68 Villa Grove
City / State / Zip: Springfield, IL 62712
Contact: Brett Carney Phone: (217) 529-0914
E-Mail: brett.carney@erm.com Fax:

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 2.2 °C LTG# 5
Preserved in: ☐ LAB ☐ FIELD **FOR LAB USE ONLY**
Lab Notes

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☑ No

Client Comments:
Total Metals: Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Lead, Lithium, Molybdenum, Selenium, Thallium, and Mercury

Project Name/Number: GTEC

Sample Collector's Name: C. Sansoucie, M. Arendell

Results Requested: ☑ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ___ ☐ 3 Day (50% Surcharge)

Billing Instructions

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	Chloride	Fluoride	pH	Radium 226/228	Sulfate	TDS	Total Metals	Dissolved metals
22091073-011	APW-10S-WG-20220915	9/15/22; 1540	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
012	APW-10D-WG-20220916	9/16/22; 1050	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
013	EB-01-WQ-20220913	9/13/22; 0645	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
014	DUP-001-WG-20220914	9/14/22; X	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓
015	DUP-002-WG-20220914	9/14/22; X	1	3												✓	✓	✓	✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
Matt Gill	9/16/22 1345	Chris Sansoucie	9-16-22 1345

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 74892

Summit Environmental Technologies, Inc.
3310 Win St.
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Website: http://www.settek.com

October 24, 2022

Elizabeth Hurley
TEKLAB Inc,
5445 Horseshoe lake Road
Collinsville, IL 62234
TEL:
FAX:

RE: 22091073 - REVISED

Dear Elizabeth Hurley:

Order No.: 22091365

Summit Environmental Technologies, Inc. received 15 sample(s) on 9/21/2022 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Jennifer Woolf

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Summit Environmental Technologies, Inc.
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Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Case Narrative

WO#: **22091365**
Date: **10/24/2022**

CLIENT: TEKLAB Inc,
Project: 22091073 - REVISED

WorkOrder Narrative:
22091365: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

 The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Analytical Sequence Sample Notes:
22091365-001A Radium-228_NPW(904.0): Corresponding MS exhibited low recovery for Radium-228, indicating matrix interference. LCS-60168 demonstrates control.

22091365-002A Radium-228_NPW(904.0): Sample and Sample Duplicate exhibited high RPD for Radium-228. Both samples exhibit detections < PQL.
22091365-002A Radium-226_NPW(903.0): Sample and Sample Duplicate exhibited high RPD for Radium-226. Both samples exhibit detections < PQL.

22091365-003A Radium-228_NPW(904.0): Sample and Sample Duplicate exhibited high RPD due to suspected sample matrix.

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Case Narrative

WO#: **22091365**
Date: **10/24/2022**

CLIENT: TEKLAB Inc,
Project: 22091073 - REVISED

Analytical Sequence QC Notes:
22091365-001AMS Radium-228_NPW(904.0): Spike recovery indicates matrix interference. The method is in control as indicated by the laboratory control sample (LCS).
22091365-002ADUP Radium-228_NPW(904.0): Sample and Sample Duplicate exhibited high RPD for Radium-228. Both samples exhibit detections < PQL.
22091365-003ADUP Radium-228_NPW(904.0): Sample and Sample Duplicate exhibited high RPD due to suspected sample matrix.
22091365-002ADUP Radium-226_NPW(903.0): Sample and Sample Duplicate exhibited high RPD for Radium-226. Both samples exhibit detections < PQL.

REVISED REPORT 10/24/22: Corrected Matrix

Summit Environmental Technologies, In
3310 Win S
Cuyahoga Falls, Ohio 4422
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Website: http://www.settek.co

Qualifiers and Acronyms

WO#: **22091365**
Date: **10/24/2022**

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*****	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	**RL**	Reporting Limit
QC	Quality Control	**MDL**	Method Detection Limit
MB	Method Blank	**LOD**	Level of Detection
LCS	Laboratory Control Sample	**LOQ**	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	**PQL**	Practical Quantitation Limit
QCS	Quality Control Sample	**CRQL**	Contract Required Quantitation Limit
DUP	Duplicate	**PL**	Permit Limit
MS	Matrix Spike	**RegLvl**	Regulatory Limit
MSD	Matrix Spike Duplicate	**MCL**	Maximum Contamination Limit
RPD	Relative Percent Different	**MinCL**	Minimum Compound Limit
ICV	Initial Calibration Verification	**RA**	Reanalysis
ICB	Initial Calibration Blank	**RE**	Reextraction
CCV	Continuing Calibration Verification	**TIC**	Tentatively Identified Compound
CCB	Continuing Calibration Blank	**RT**	Retention Time
RLC	Reporting Limit Check	**CF**	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

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Workorder Sample Summary

WO#: **22091365**
24-Oct-22

CLIENT: TEKLAB Inc,
Project: 22091073 - REVISED

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
22091365-001	22091073-001		9/15/2022 8:45:00 AM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-002	22091073-002		9/14/2022 10:40:00 AM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-003	22091073-003		9/15/2022 12:50:00 PM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-004	22091073-004		9/15/2022 10:25:00 AM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-005	22091073-005		9/14/2022 8:55:00 AM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-006	22091073-006		9/13/2022 12:30:00 PM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-007	22091073-007		9/13/2022 10:30:00 AM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-008	22091073-008		9/14/2022 3:20:00 PM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-009	22091073-009		9/15/2022 2:10:00 PM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-010	22091073-010		9/13/2022 3:10:00 PM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-011	22091073-011		9/15/2022 3:40:00 PM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-012	22091073-012		9/16/2022 10:50:00 AM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-013	22091073-013		9/13/2022 6:45:00 AM	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-014	22091073-014		9/14/2022	9/21/2022 12:00:00 PM	Non-Potable Water
22091365-015	22091073-015		9/14/2022	9/21/2022 12:00:00 PM	Non-Potable Water

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DATES REPORT

WO#: **22091365**

24-Oct-22

Client: TEKLAB Inc,

Project: 22091073 - REVISED

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
22091365-001A	22091073-001	9/15/2022 8:45:00 AM	Non-Potable Water	Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-002A	22091073-002	9/14/2022 10:40:00 AM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-003A	22091073-003	9/15/2022 12:50:00 PM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-004A	22091073-004	9/15/2022 10:25:00 AM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-005A	22091073-005	9/14/2022 8:55:00 AM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-006A	22091073-006	9/13/2022 12:30:00 PM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-007A	22091073-007	9/13/2022 10:30:00 AM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-008A	22091073-008	9/14/2022 3:20:00 PM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM

Revision v1

Summit Environmental Technologies, Inc.
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TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

DATES REPORT

WO#: **22091365**

24-Oct-22

Client: TEKLAB Inc,

Project: 22091073 - REVISED

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
22091365-008A	22091073-008	9/14/2022 3:20:00 PM	Non-Potable Water	Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-009A	22091073-009	9/15/2022 2:10:00 PM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-010A	22091073-010	9/13/2022 3:10:00 PM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-011A	22091073-011	9/15/2022 3:40:00 PM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-012A	22091073-012	9/16/2022 10:50:00 AM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-013A	22091073-013	9/13/2022 6:45:00 AM		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-014A	22091073-014	9/14/2022		Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM
22091365-015A	22091073-015			Combined Radium (EPA903+904)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-226 (EPA 903.0)		10/11/2022 10:43:00 AM	10/19/2022 3:17:00 PM
				Radium-228 (EPA 904.0)		10/11/2022 10:43:00 AM	10/17/2022 3:44:00 PM

Revision v1

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/15/2022 8:45:00 AM

Project: 22091073 - REVISED

Lab ID: 22091365-001

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-001

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.67	2.00	U	pCi/L	± 0.59	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.24	1.00	U	pCi/L	± 0.1	1	10/19/2022 3:17:00 PM
Yield	0.99					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.43	1.00	UQM-	pCi/L	± 0.49	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,
Collection Date: 9/14/2022 10:40:00 AM

Project: 22091073 - REVISED

Lab ID: 22091365-002
Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-002

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.67	2.00	U	pCi/L	± 0.58	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.27	1.00	UQDR	pCi/L	± 0.1	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.4	1.00	UQDR	pCi/L	± 0.48	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/15/2022 12:50:00 PM

Project: 22091073 - REVISED

Lab ID: 22091365-003

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-003

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.96	2.00	U	pCi/L	± 0.63	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.56	1.00	U	pCi/L	± 0.13	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.4	1.00	UQDR	pCi/L	± 0.5	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/15/2022 10:25:00 AM

Project: 22091073 - REVISED

Lab ID: 22091365-004

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-004

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	2.65	2.00		pCi/L	± 0.91	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.5	1.00	U	pCi/L	± 0.13	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	2.15	1.00		pCi/L	± 0.78	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,
Collection Date: 9/14/2022 8:55:00 AM

Project: 22091073 - REVISED

Lab ID: 22091365-005
Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-005

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.99	2.00	U	pCi/L	± 0.96	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.17	1.00	U	pCi/L	± 0.08	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.82	1.00	J	pCi/L	± 0.88	1	10/17/2022 3:44:00 PM
Yield	0.72					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,
Collection Date: 9/13/2022 12:30:00 PM

Project: 22091073 - REVISED

Lab ID: 22091365-006
Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-006

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	2.93	2.00		pCi/L	± 0.98	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.2	1.00	U	pCi/L	± 0.08	1	10/19/2022 3:17:00 PM
Yield	0.97					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	2.73	1.00		pCi/L	± 0.9	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,
Collection Date: 9/13/2022 10:30:00 AM
Project: 22091073 - REVISED
Lab ID: 22091365-007
Matrix: NON-POTABLE WATER
Client Sample ID: 22091073-007

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	1.77	2.00	U	pCi/L	± 0.81	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.31	1.00	U	pCi/L	± 0.1	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	1.46	1.00		pCi/L	± 0.71	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

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WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/14/2022 3:20:00 PM

Project: 22091073 - REVISED

Lab ID: 22091365-008

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-008

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	1.63	2.00	U	pCi/L	± 0.81	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.18	1.00	U	pCi/L	± 0.09	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	1.45	1.00		pCi/L	± 0.72	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/15/2022 2:10:00 PM

Project: 22091073 - REVISED

Lab ID: 22091365-009

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-009

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	1.13	2.00	U	pCi/L	± 0.72	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.27	1.00	U	pCi/L	± 0.1	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.86	1.00	J	pCi/L	± 0.62	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/13/2022 3:10:00 PM

Project: 22091073 - REVISED

Lab ID: 22091365-010

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-010

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.46	2.00	U	pCi/L	± 0.58	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.24	1.00	U	pCi/L	± 0.09	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.22	1.00	U	pCi/L	± 0.49	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/15/2022 3:40:00 PM

Project: 22091073 - REVISED

Lab ID: 22091365-011

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-011

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	2.82	2.00		pCi/L	± 1.01	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.3	1.00	U	pCi/L	± 0.1	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	2.52	1.00		pCi/L	± 0.91	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/16/2022 10:50:00 AM

Project: 22091073 - REVISED

Lab ID: 22091365-012

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-012

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.78	2.00	U	pCi/L	± 0.67	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.22	1.00	U	pCi/L	± 0.09	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.56	1.00	U	pCi/L	± 0.58	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,

Collection Date: 9/13/2022 6:45:00 AM

Project: 22091073 - REVISED

Lab ID: 22091365-013

Matrix: NON-POTABLE WATER

Client Sample ID: 22091073-013

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.13	2.00	U	pCi/L	± 0.62	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.08	1.00	U	pCi/L	± 0.08	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.05	1.00	U	pCi/L	± 0.54	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc,
Collection Date: 9/14/2022
Project: 22091073 - REVISED
Lab ID: 22091365-014
Matrix: NON-POTABLE WATER
Client Sample ID: 22091073-014

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.38	2.00	U	pCi/L	± 0.62	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.11	1.00	U	pCi/L	± 0.07	1	10/19/2022 3:17:00 PM
Yield	0.96					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.27	1.00	U	pCi/L	± 0.55	1	10/17/2022 3:44:00 PM
Yield	1					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

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Analytical Report

(consolidated)

WO#: **22091365**

Date Reported: **10/24/2022**

CLIENT: TEKLAB Inc, **Collection Date:** 9/14/2022

Project: 22091073 - REVISED

Lab ID: 22091365-015 **Matrix:** NON-POTABLE WATER

Client Sample ID: 22091073-015

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**	**E903-904**	Analyst: **HDJ**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	2.95	2.00		pCi/L	± 1.1	1	10/19/2022 3:17:00 PM
RAD226/228					**E903.0**	**E903-904**	Analyst: **HDJ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.14	1.00	U	pCi/L	± 0.07	1	10/19/2022 3:17:00 PM
Yield	1					1	10/19/2022 3:17:00 PM
RAD226/228					**E904.0**	**E903-904**	Analyst: **HDJ**
RADIUM-228 (EPA 904.0)							
Radium-228	2.81	1.00		pCi/L	± 1.03	1	10/17/2022 3:44:00 PM
Yield	0.92					1	10/17/2022 3:44:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit

Summit Environmental Technologies, Inc.
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QC SUMMARY REPORT

WO#: **22091365**

24-Oct-22

Client: TEKLAB Inc,
Project: 22091073 - REVISED **BatchID:** **60186**

Sample ID: **22091365-001AMS** SampType: **MS** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152155**
Client ID: **22091073-001** Batch ID: **60186** TestNo: **E904.0** **E903-904** Analysis Date: **10/17/2022** SeqNo: **4050824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	1.96	1.00	5.000	0	39.2	70	130				S
Yield	1			1.000	0						

Sample ID: **22091365-002ADUP** SampType: **DUP** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152155**
Client ID: **22091073-002** Batch ID: **60186** TestNo: **E904.0** **E903-904** Analysis Date: **10/17/2022** SeqNo: **4050827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.87	1.00		0	0			0	200	30	JR
Yield	1			0	0			1.000	0		

Sample ID: **22091365-003ADUP** SampType: **DUP** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152155**
Client ID: **22091073-003** Batch ID: **60186** TestNo: **E904.0** **E903-904** Analysis Date: **10/17/2022** SeqNo: **4050829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	1.2	1.00		0	0			0	200	30	R
Yield	1			0	0			1.000	0		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1

Summit Environmental Technologies, Inc.
3310 Win St.
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QC SUMMARY REPORT

WO#: **22091365**

24-Oct-22

Client: TEKLAB Inc,
Project: 22091073 - REVISED **BatchID:** **60186**

Sample ID: **MB-60186** SampType: **MBLK** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152155**
Client ID: **PBW** Batch ID: **60186** TestNo: **E904.0** **E903-904** Analysis Date: **10/17/2022** SeqNo: **4050818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.840	1.00		0	0						J
Yield	0.790			0	0						

Sample ID: **LCS-60186** SampType: **LCS** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152155**
Client ID: **LCSW** Batch ID: **60186** TestNo: **E904.0** **E903-904** Analysis Date: **10/17/2022** SeqNo: **4050819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	4.73	1.00	5.000	0	94.6	70	130				
Yield	0.960			0	0						

Sample ID: **RLC-60186** SampType: **RLC** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152155**
Client ID: **BatchQC** Batch ID: **60186** TestNo: **E904.0** **E903-904** Analysis Date: **10/17/2022** SeqNo: **4050822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.870	1.00	1.000	0	87.0	50	150				J
Yield	1.00			0	0						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **22091365**

24-Oct-22

Client: TEKLAB Inc,
Project: 22091073 - REVISED **BatchID:** **60186**

Sample ID: **22091365-001AMS** SampType: **MS** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152171**
Client ID: **22091073-001** Batch ID: **60186** TestNo: **E903.0** **E903-904** Analysis Date: **10/19/2022** SeqNo: **4051071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	5.63	1.00	5.000	0	113	70	130				

Sample ID: **22091365-002ADUP** SampType: **DUP** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152171**
Client ID: **22091073-002** Batch ID: **60186** TestNo: **E903.0** **E903-904** Analysis Date: **10/19/2022** SeqNo: **4051074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	0.67	1.00						0	200	30	JR
Yield	1							1.000	0	0	

Sample ID: **22091365-003ADUP** SampType: **DUP** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152171**
Client ID: **22091073-003** Batch ID: **60186** TestNo: **E903.0** **E903-904** Analysis Date: **10/19/2022** SeqNo: **4051076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	0.31	1.00						0	0	30	U
Yield	1							1.000	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1

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QC SUMMARY REPORT

WO#: **22091365**

24-Oct-22

Client: TEKLAB Inc,
Project: 22091073 - REVISED **BatchID:** **60186**

Sample ID: **MB-60186** SampType: **MBLK** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152171**
Client ID: **PBW** Batch ID: **60186** TestNo: **E903.0** **E903-904** Analysis Date: **10/19/2022** SeqNo: **4051065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	ND	1.00									U
Yield	1.00										

Sample ID: **LCS-60186** SampType: **LCS** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152171**
Client ID: **LCSW** Batch ID: **60186** TestNo: **E903.0** **E903-904** Analysis Date: **10/19/2022** SeqNo: **4051066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	4.65	1.00	5.000	0	93.0	70	130				

Sample ID: **LCSD-60186** SampType: **LCSD** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152171**
Client ID: **LCSS02** Batch ID: **60186** TestNo: **E903.0** **E903-904** Analysis Date: **10/19/2022** SeqNo: **4051067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	4.60	1.00	5.000	0	92.0	70	130	4.650	1.08	20	

Sample ID: **RLC-60186** SampType: **RLC** TestCode: **Radium-226_** Units: **pCi/L** Prep Date: **10/11/2022** RunNo: **152171**
Client ID: **BatchQC** Batch ID: **60186** TestNo: **E903.0** **E903-904** Analysis Date: **10/19/2022** SeqNo: **4051069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **22091365**

24-Oct-22

Client: TEKLAB Inc,

Project: 22091073 - REVISED **BatchID:** **60186**

Sample ID: **RLC-60186**	SampType: **RLC**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **10/11/2022**	RunNo: **152171**
Client ID: **BatchQC**	Batch ID: **60186**	TestNo: **E903.0**	**E903-904**	Analysis Date: **10/19/2022**	SeqNo: **4051069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	1.00	1.00	1.000	0	100	50	150				

Sample ID: **RLCD-60186**	SampType: **RLC**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **10/11/2022**	RunNo: **152171**
Client ID: **BatchQC**	Batch ID: **60186**	TestNo: **E903.0**	**E903-904**	Analysis Date: **10/19/2022**	SeqNo: **4051070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	1.18	1.00	1.000	0	118	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1

Pg 1 of 2

TEKLAB, INC. Chain of Custody

22091365

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

With: ☐ Ice ☐ Blue Ice

Preserved in: ☐ Lab ☑ Field

Cooler Temp: ____ Sampler: Client QC Level: 3

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Comments: Please issue reports and invoices via email only

Please analyze Radium (226, 228) by method EPA901.1 on your standard TAT.

Batch QC is required for all analyses requested. Sample collected in (state):

Project#: WO #22091073

Contact: Liz Hurley

Requested Due Date: NTAT

Email: ehurley@teklabinc.com

Billing/PO: 33356

Phone: (618)344-1004

PLEASE NOTE:

NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.

Any changes to analysis/methods must be approved by Teklab, Inc.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Isotopic Radium	pH		CPM
	22091073-001	9/15/22 0845	HNO3	Aqueous	✔	<1, 1		33, 37
	22091073-002	9/14/22 1040	HNO3	Aqueous	✔	1, 1		54, 42
	22091073-003	9/15/22 1250	HNO3	Aqueous	✔	1, 1		20, 27
	22091073-004	9/15/22 1025	HNO3	Aqueous	✔	1, 1		16, 23
	22091073-005	9/14/22 0855	HNO3	Aqueous	✔	1, 1		32, 29
	22091073-006	9/13/22 1230	HNO3	Aqueous	✔	1, 1		33, 31
	22091073-007	9/13/22 1030	HNO3	Aqueous	✔	1, 1		27, 25
	22091073-008	9/14/22 1520	HNO3	Aqueous	✔	1, 1		30, 23
	22091073-009	9/15/22 1410	HNO3	Aqueous	✔	1, 1		50, 42
	22091073-010	9/13/22 1510	HNO3	Aqueous	✔	1, 1		22, 22
	22091073-011	9/15/22 1540	HNO3	Aqueous	✔	1, 1		23, 25

*Relinquished By	Date/Time	Received By	Date/Time
[signature]	9/19/22	[signature]	09/21/22 1200

Fedex cooler 21.3+1.0=22.3

SubCocRevA 3/2/2016

TEKLAB, INC. Chain of Custody

5445 Horseshoe Lake Road Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Wet Ice ☐ Blue Ice Preserved in: ☐ Lab ☑ Field

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Cooler Temp: Sampler: Client QC Level: 3

Comments: Please Issue reports and invoices via email only
Please analyze Radium (226, 228) by method EPA901.1 on your standard TAT.
Batch QC is required for all analyses requested. Sample collected in (state):

Project# WO #22091073

Contact: Liz Hurley Email: ehurley@teklabinc.com
Requested Due Date: NTAT Billing/PO: 33356 Phone: (618)344-1004

PLEASE NOTE:
NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.
Any changes to analysis/methods must be approved by Teklab, Inc.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Isotopic Radium
	22091073-012	9/16/22 1050	HNO3	Aqueous	✓
	22091073-013	9/13/22 0645	HNO3	Aqueous	✓
	22091073-014	9/14/22	HNO3	Aqueous	✓
	22091073-015	9/14/22	HNO3	Aqueous	✓
			HNO3	Aqueous	✓
			HNO3	Aqueous	✓
			HNO3	Aqueous	✓
			HNO3	Aqueous	✓
			HNO3	Aqueous	✓
			HNO3	Aqueous	✓
			HNO3	Aqueous	✓

*Relinquished By	Date/Time	Received By	Date/Time
	9.19.22		

Teklab maintains a strict policy of client confidentiality and as such does not provide client/sampler information without proper authorization. and proprietary rights,

SubCocRevA
3/2/2016

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Sample Log-In Check List

Client Name: **TEK-IL-62234-A** Work Order Number: **22091365** RcptNo: **1**

Logged by:	**Anthony W. Britton**	**9/21/2022 12:00:00 PM**	Anthony Britton
Completed By:	**Anthony W. Britton**	**9/21/2022 5:16:44 PM**	Anthony Britton
Reviewed By:	**Jennifer Woolf**	**9/22/2022 6:23:30 PM**	Jennifer Woolf

Chain of Custody

1.	Were seals intact?	Yes ☑	No ☐	Not Present ☐
2.	Is Chain of Custody complete?	Yes ☐	No ☑	Not Present ☐
3.	How was the sample delivered?	FedEx		

Log In

4.	Coolers are present?	Yes ☐	No ☑	NA ☐
5.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
6.	Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
7.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
8.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
9.	Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
10.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
11.	Is the headspace in the VOA vials less than 1/4 inch or 6 mm?	Yes ☐	No ☐	No VOA Vials ☑
12.	Were any sample containers received broken?	Yes ☐	No ☑	
13.	Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
14.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
15.	Is it clear what analyses were requested?	Yes ☐	No ☑	
16.	Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

18. Additional remarks:

IL per email
yes per email

state not included
226, 228 +combined?

Cooler Information

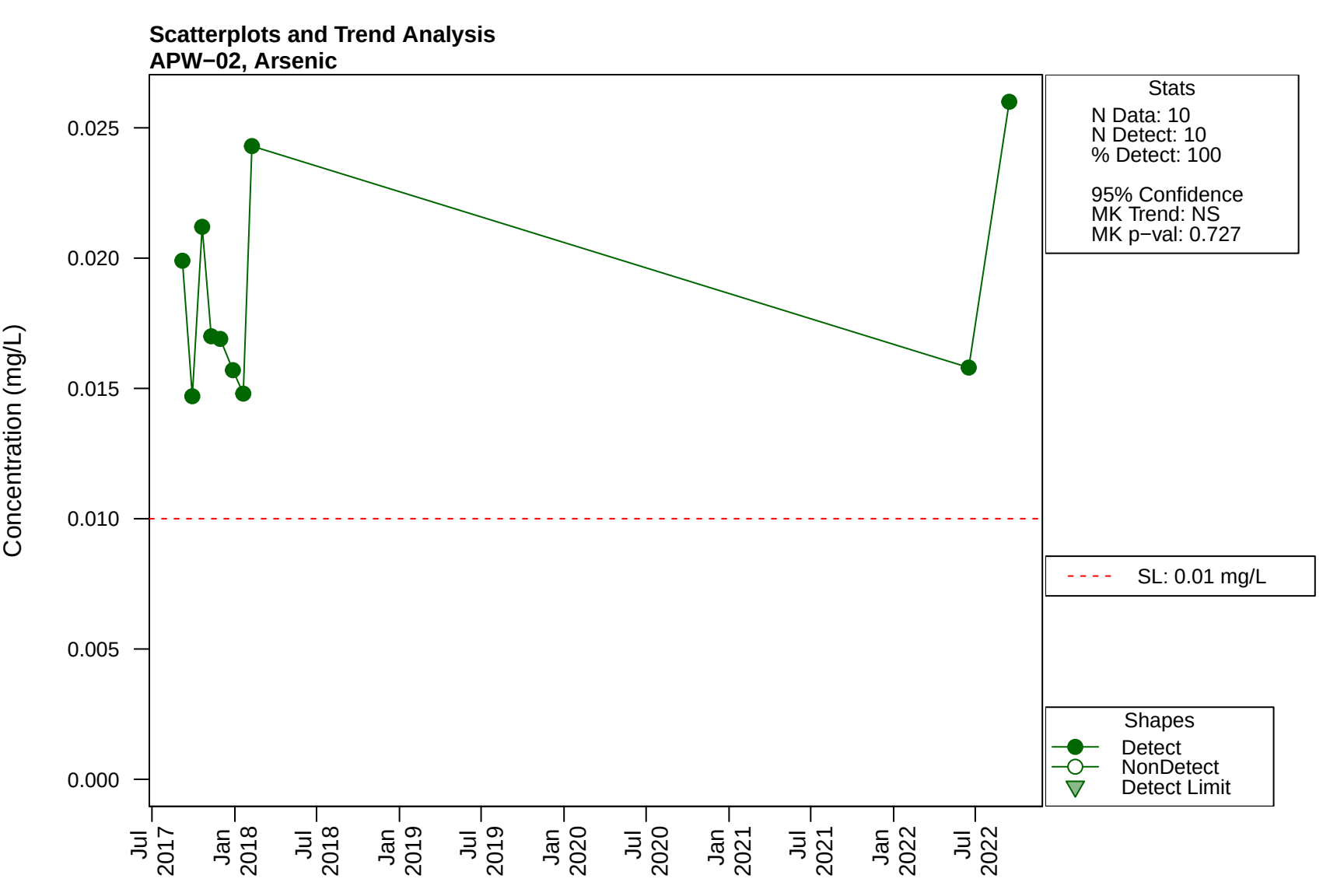
Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

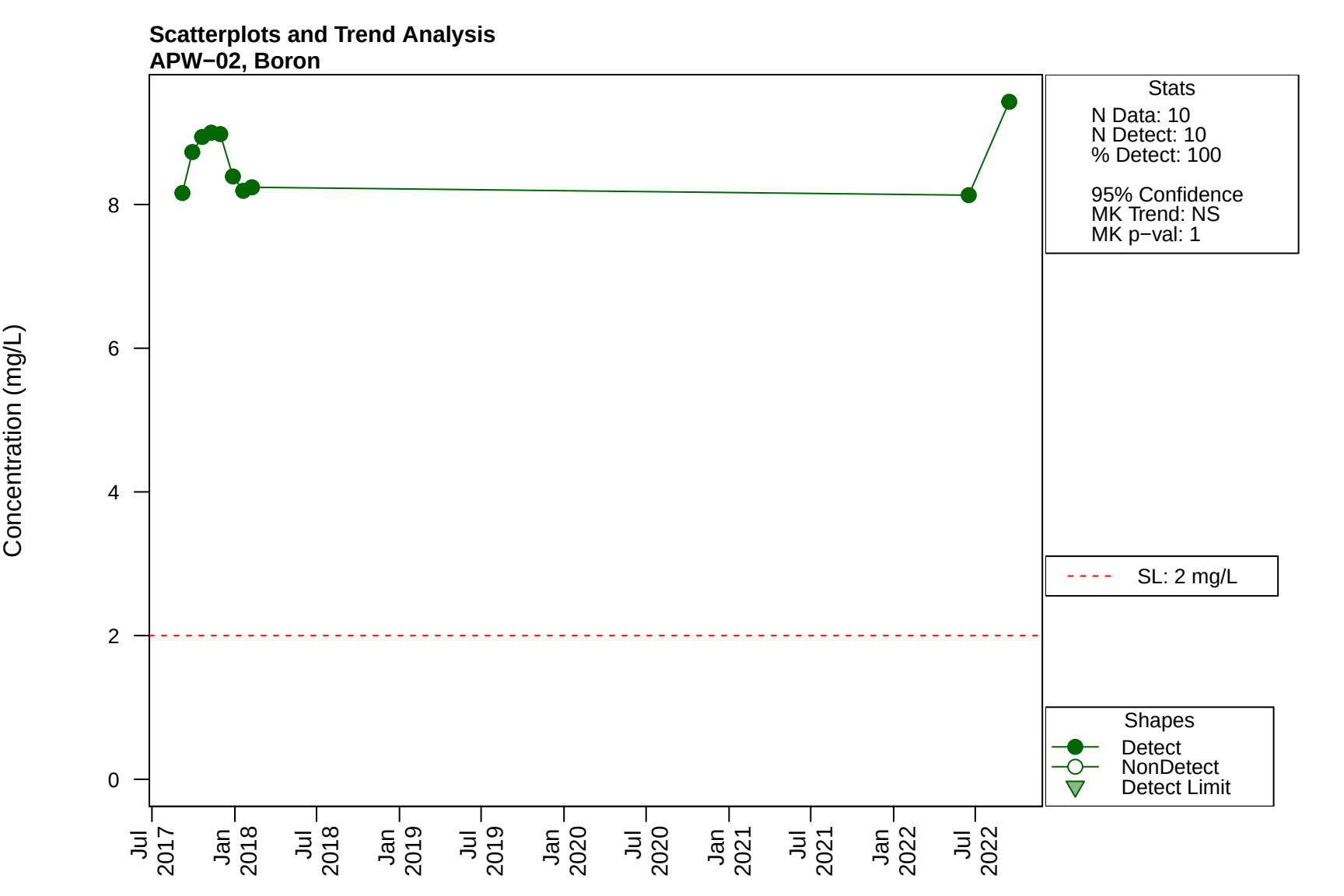
Sample Log-In Check List

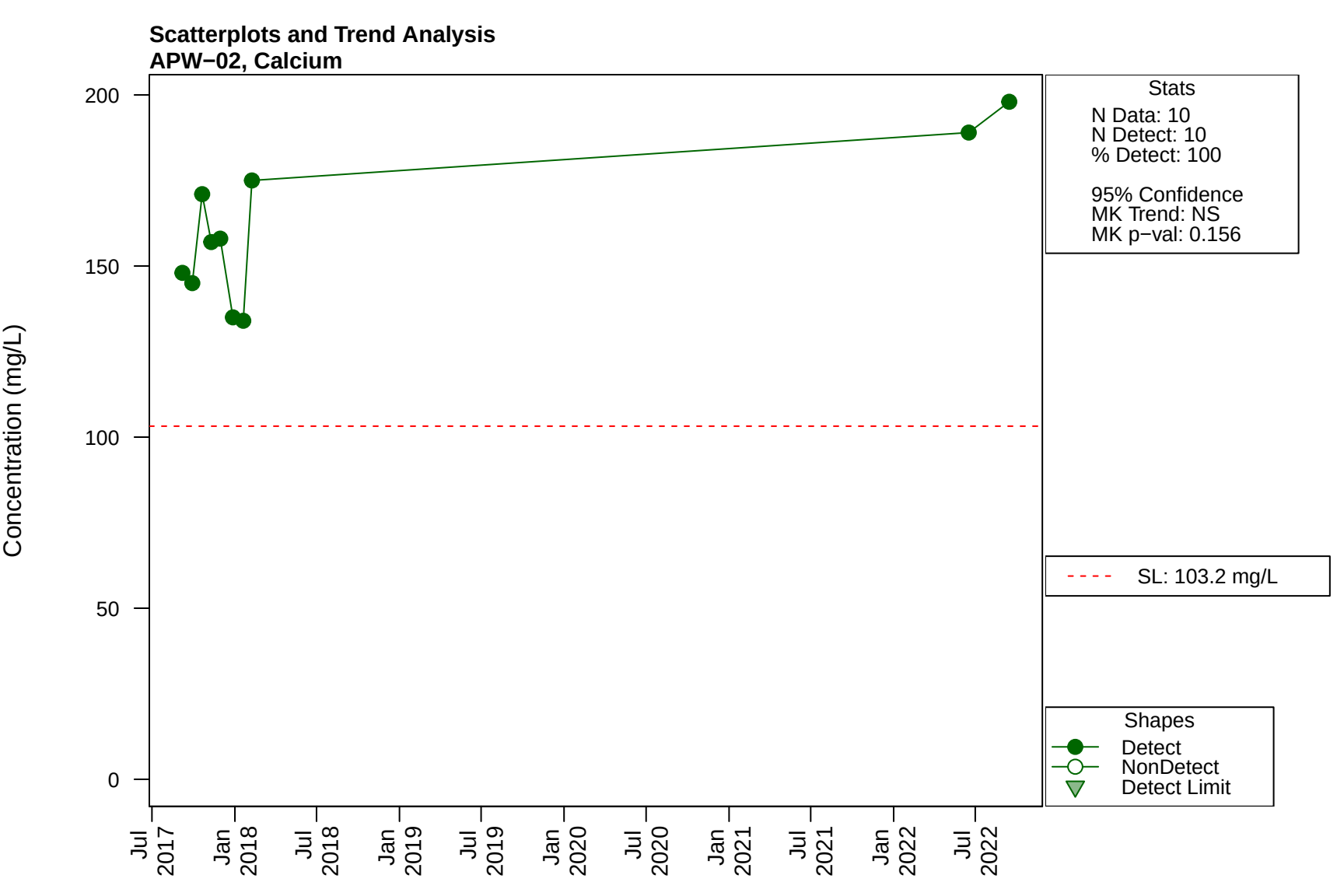
Client Name: **TEK-IL-62234-A** Work Order Number: **22091365** RcptNo: **1**

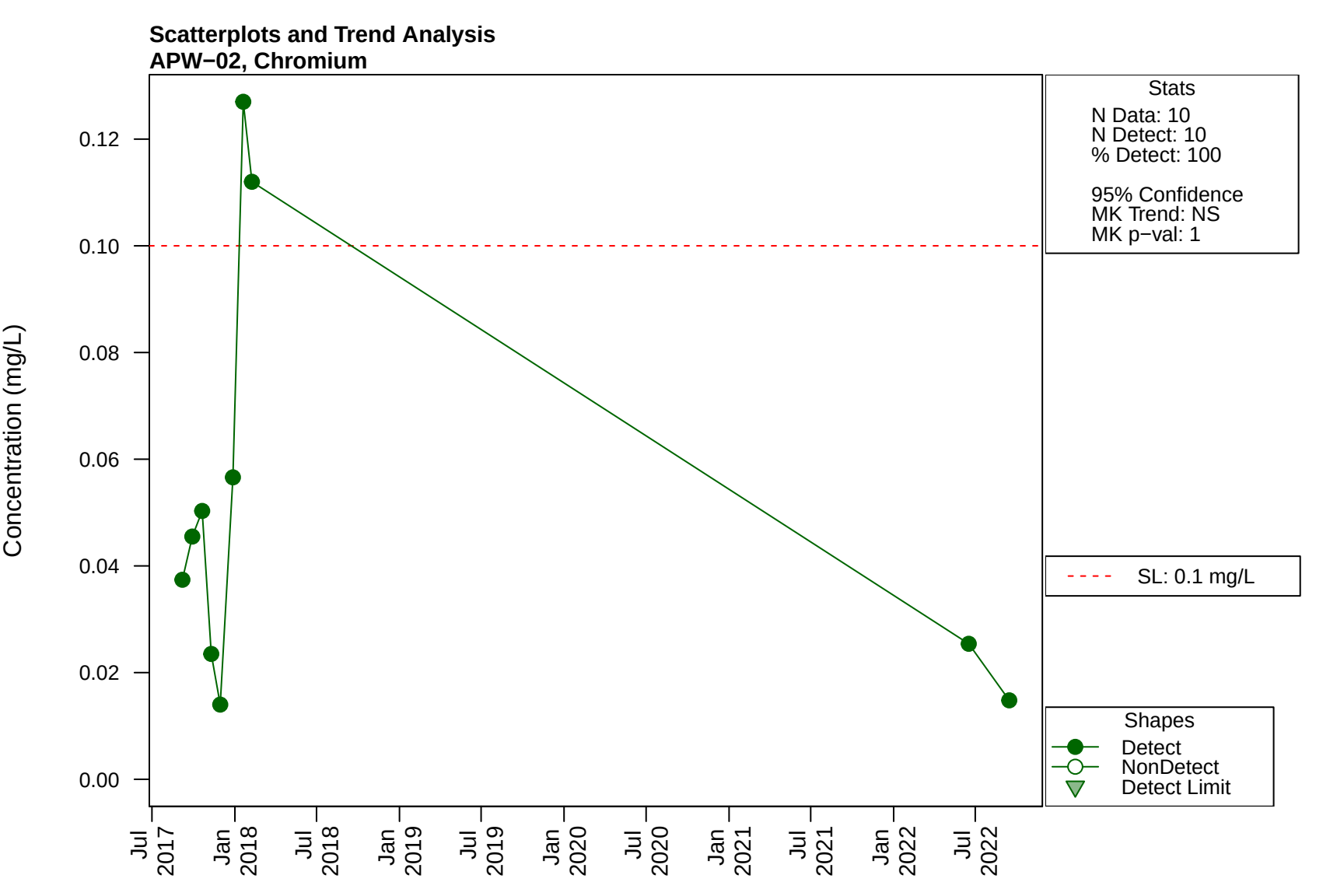
Cooler No	Temp ºC	Condition	Seal Intact	Seal No	Seal Date	Signed By
box	22.3	Good	Not Present			

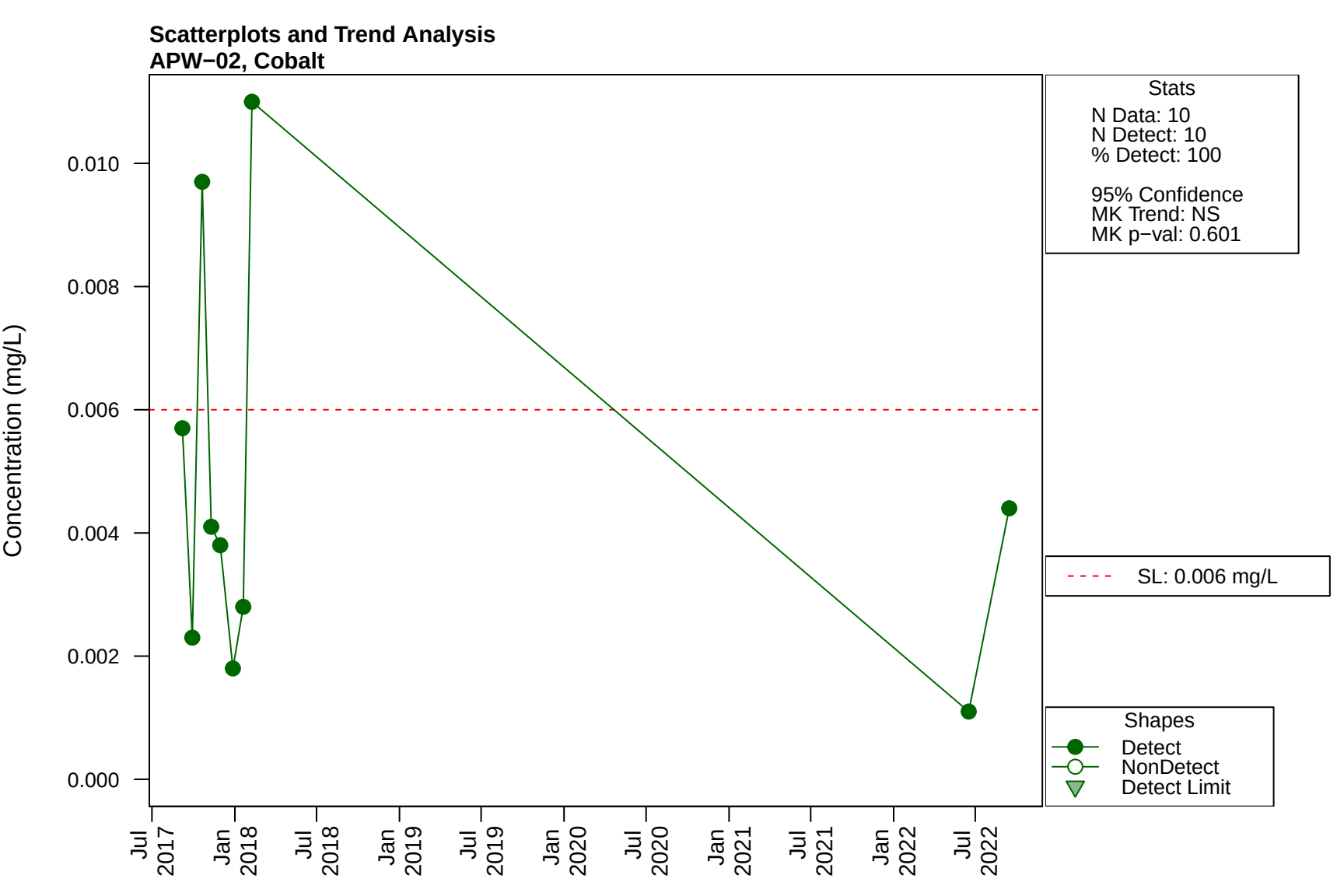
APPENDIX E MANN-KENDALL ANALYSIS GRAPHS

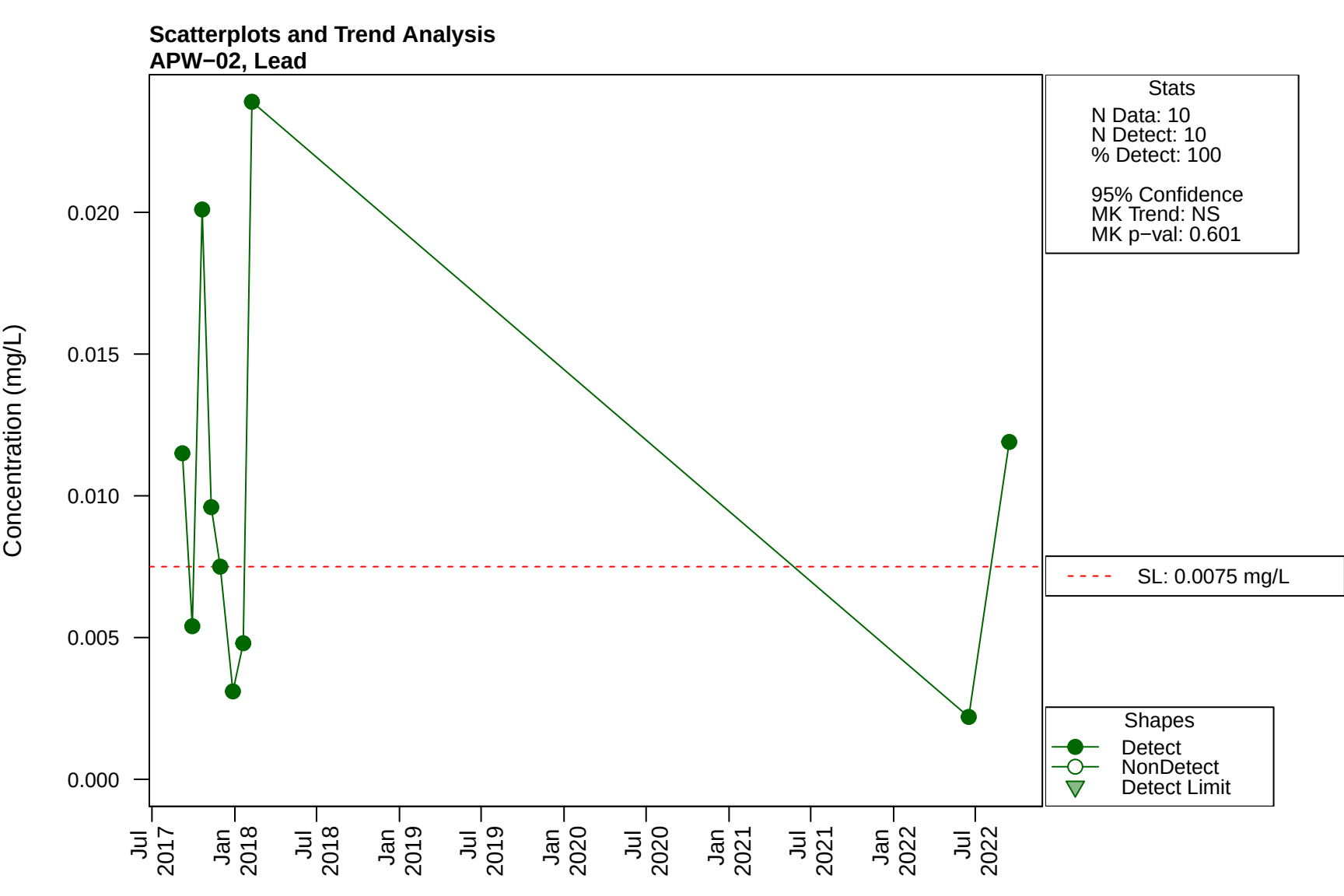

Scatterplots and Trend Analysis
APW−02, Arsenic
Concentration (mg/L)
0.025
0.020
0.015
0.010
0.005
0.000
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.727
SL: 0.01 mg/L
Shapes
Detect
NonDetect
Detect Limit

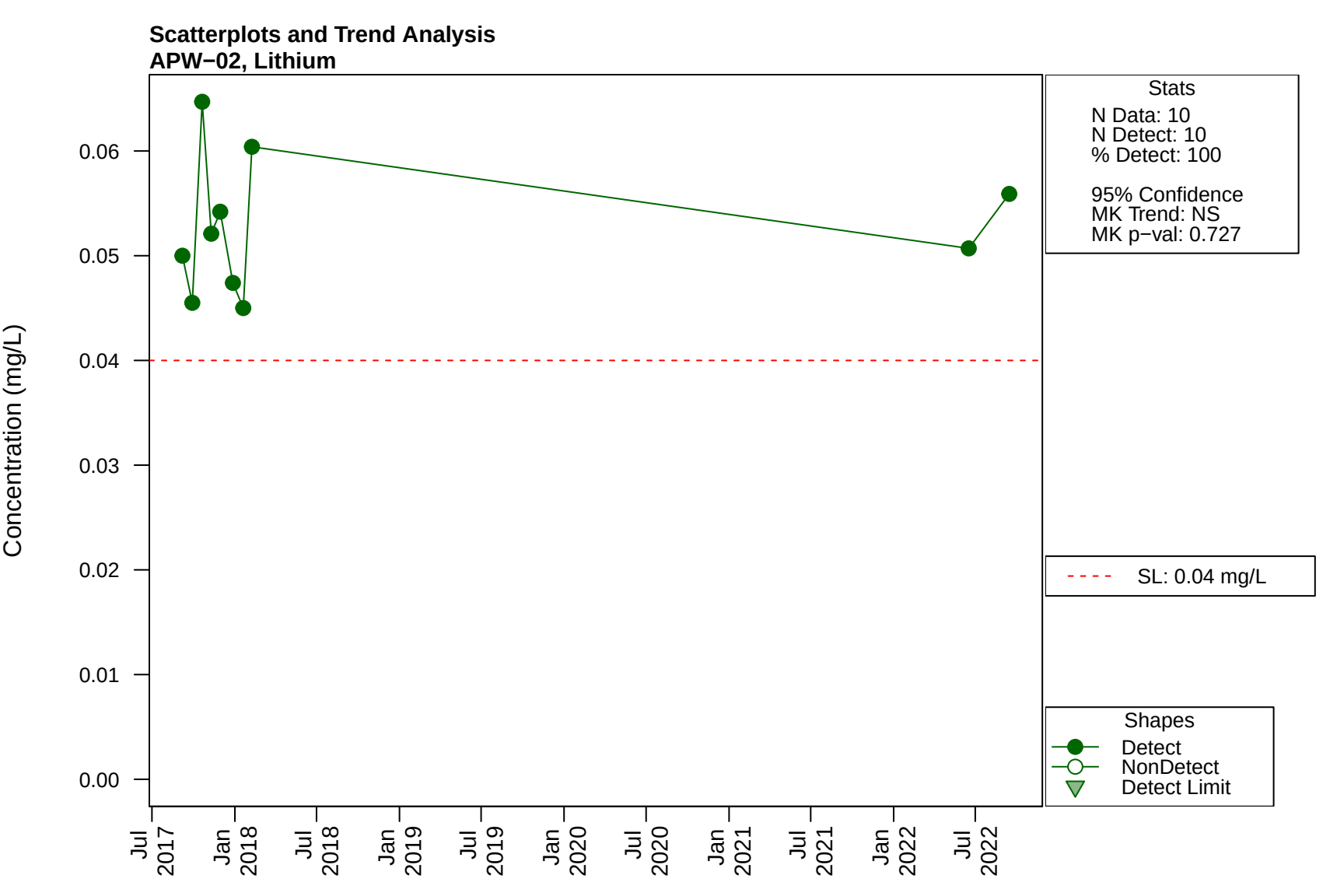

Scatterplots and Trend Analysis
APW−02, Boron
Concentration (mg/L)
0
2
4
6
8
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 1
SL: 2 mg/L
Shapes
Detect
NonDetect
Detect Limit

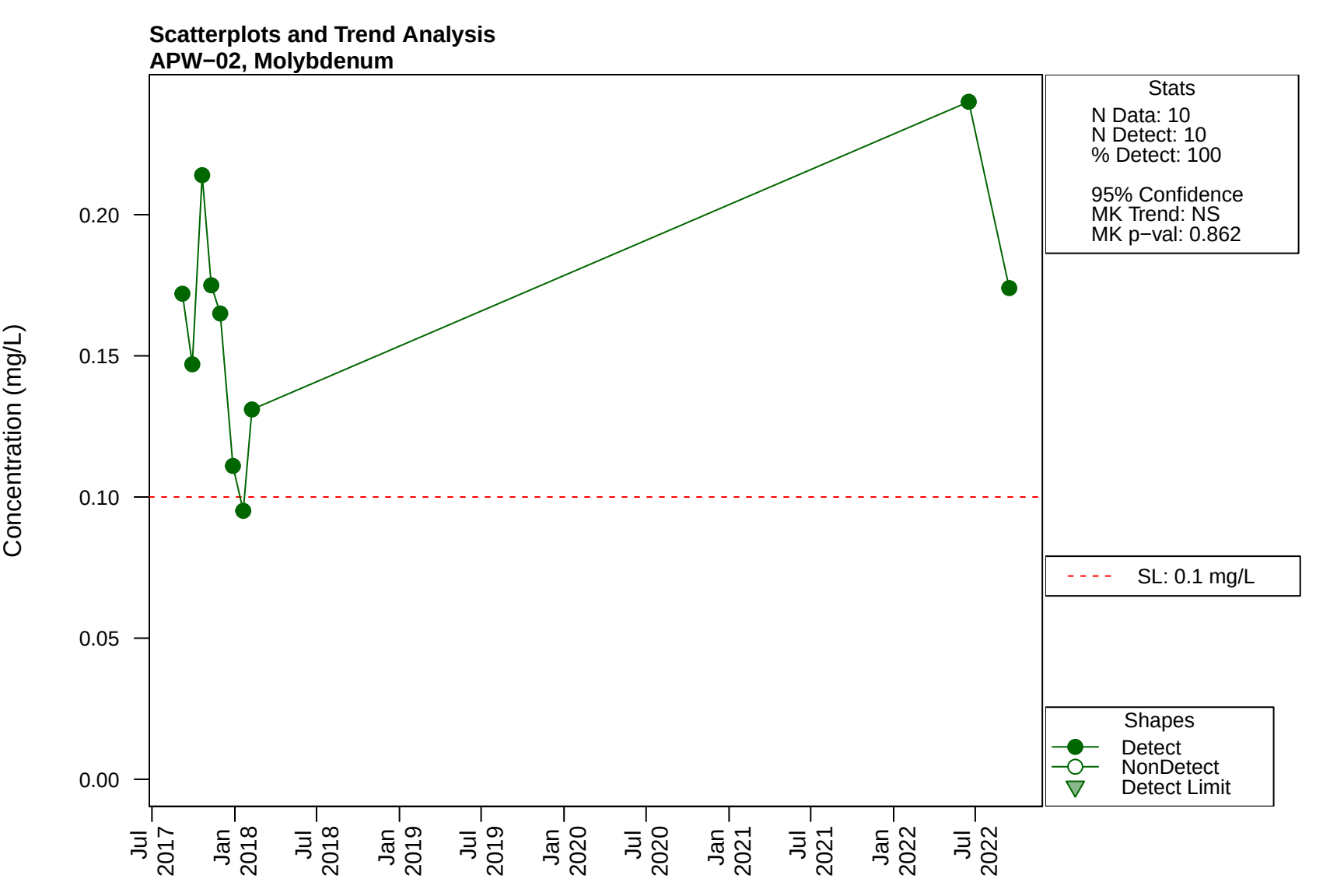

Scatterplots and Trend Analysis
APW−02, Calcium
Concentration (mg/L)
200
150
100
50
0
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.156
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit

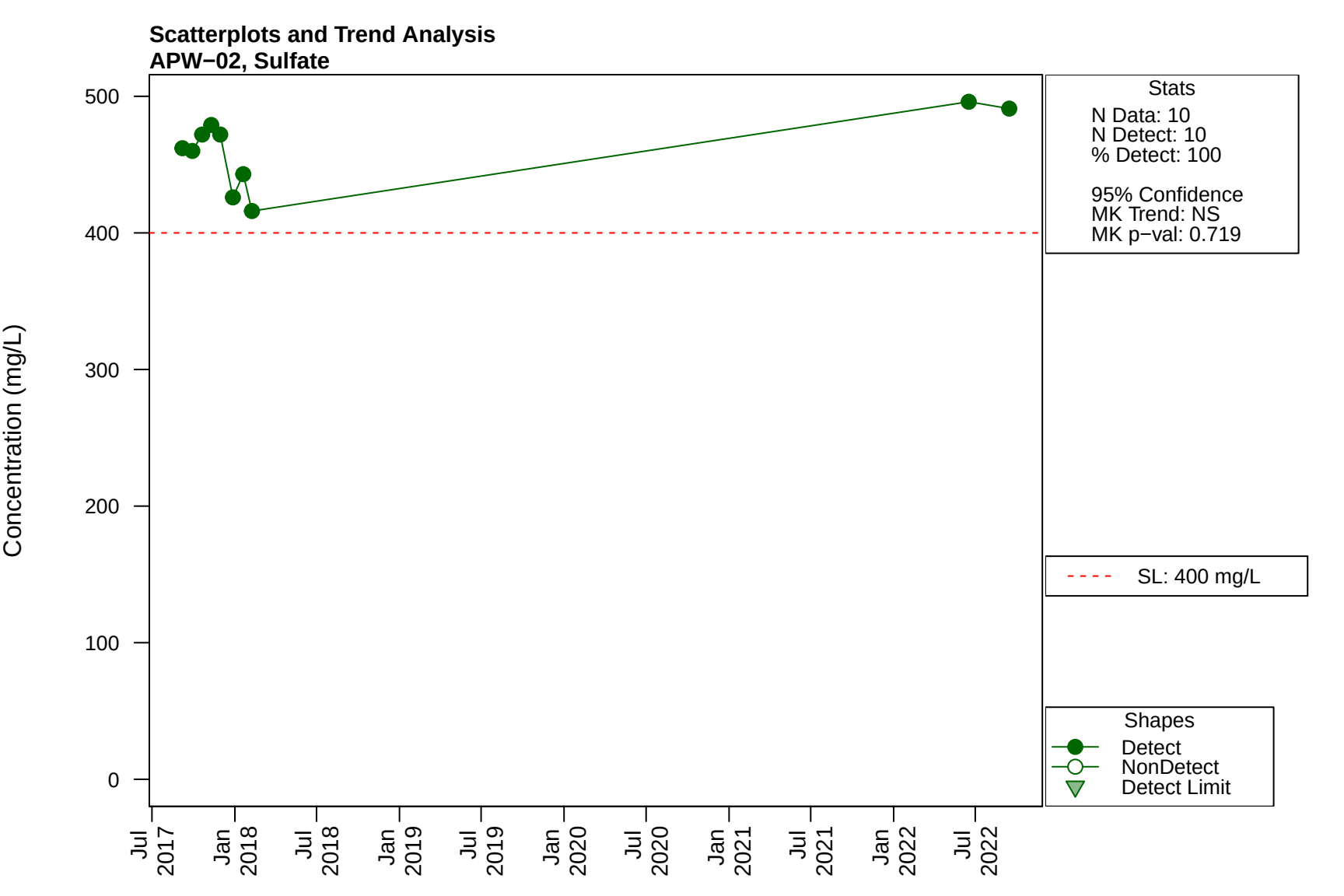

Scatterplots and Trend Analysis
APW−02, Chromium
Concentration (mg/L)
0.00
0.02
0.04
0.06
0.08
0.10
0.12
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 1
SL: 0.1 mg/L
Shapes
Detect
NonDetect
Detect Limit

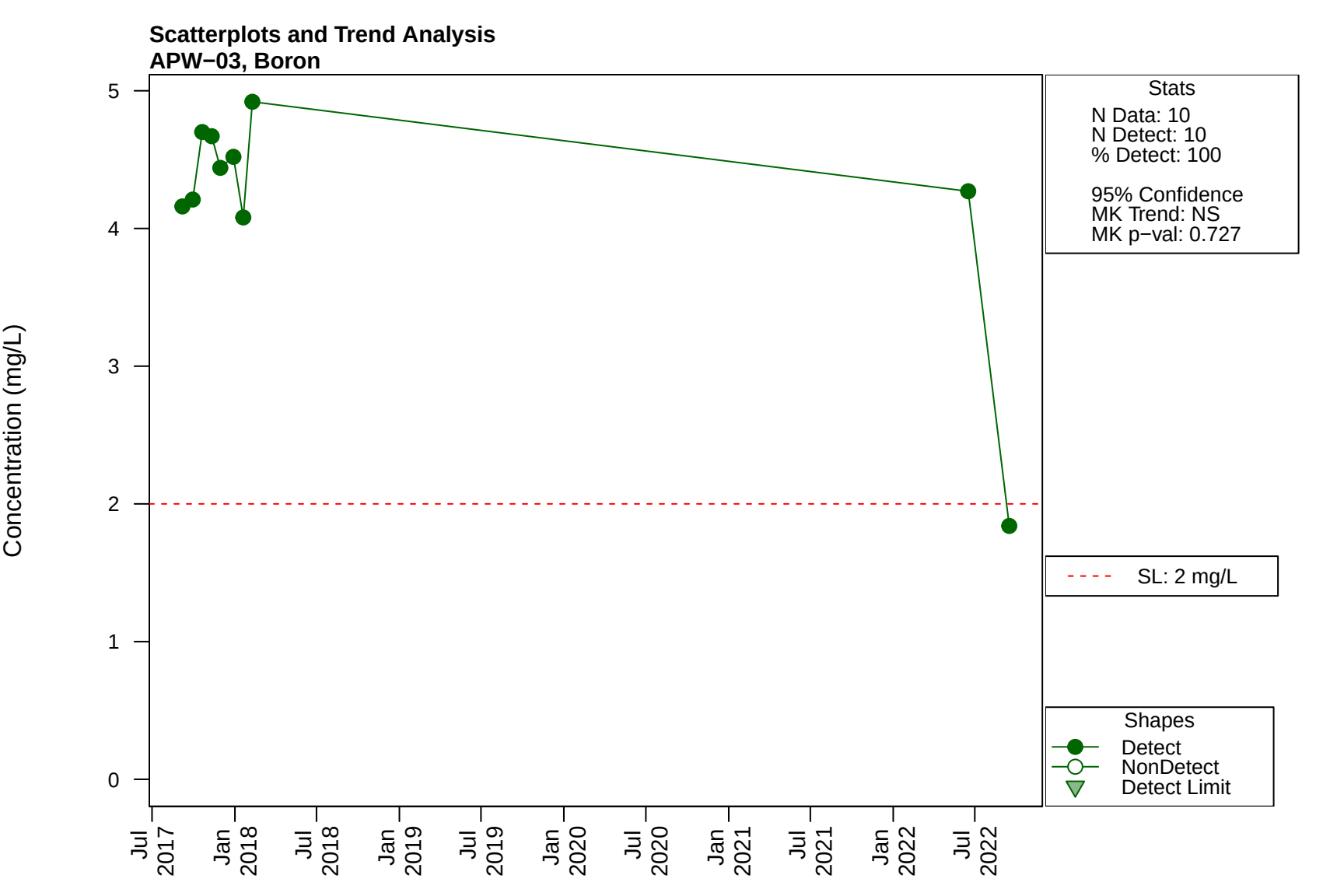

Scatterplots and Trend Analysis
APW−02, Cobalt
Concentration (mg/L)
0.000
0.002
0.004
0.006
0.008
0.010
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.601
SL: 0.006 mg/L
Shapes
Detect
NonDetect
Detect Limit

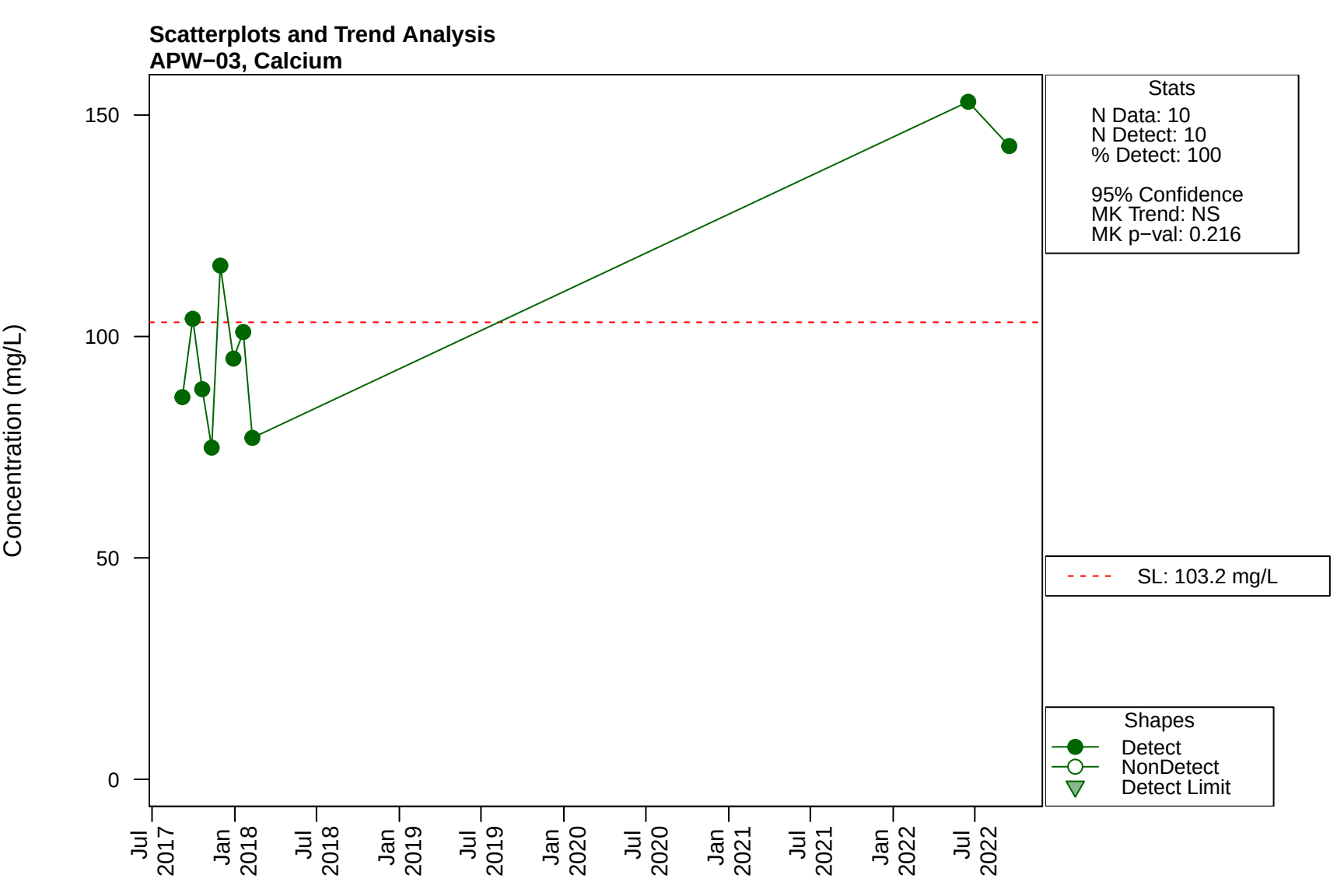

Scatterplots and Trend Analysis
APW−02, Lead
Concentration (mg/L)
0.000
0.005
0.010
0.015
0.020
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.601
SL: 0.0075 mg/L
Shapes
Detect
NonDetect
Detect Limit

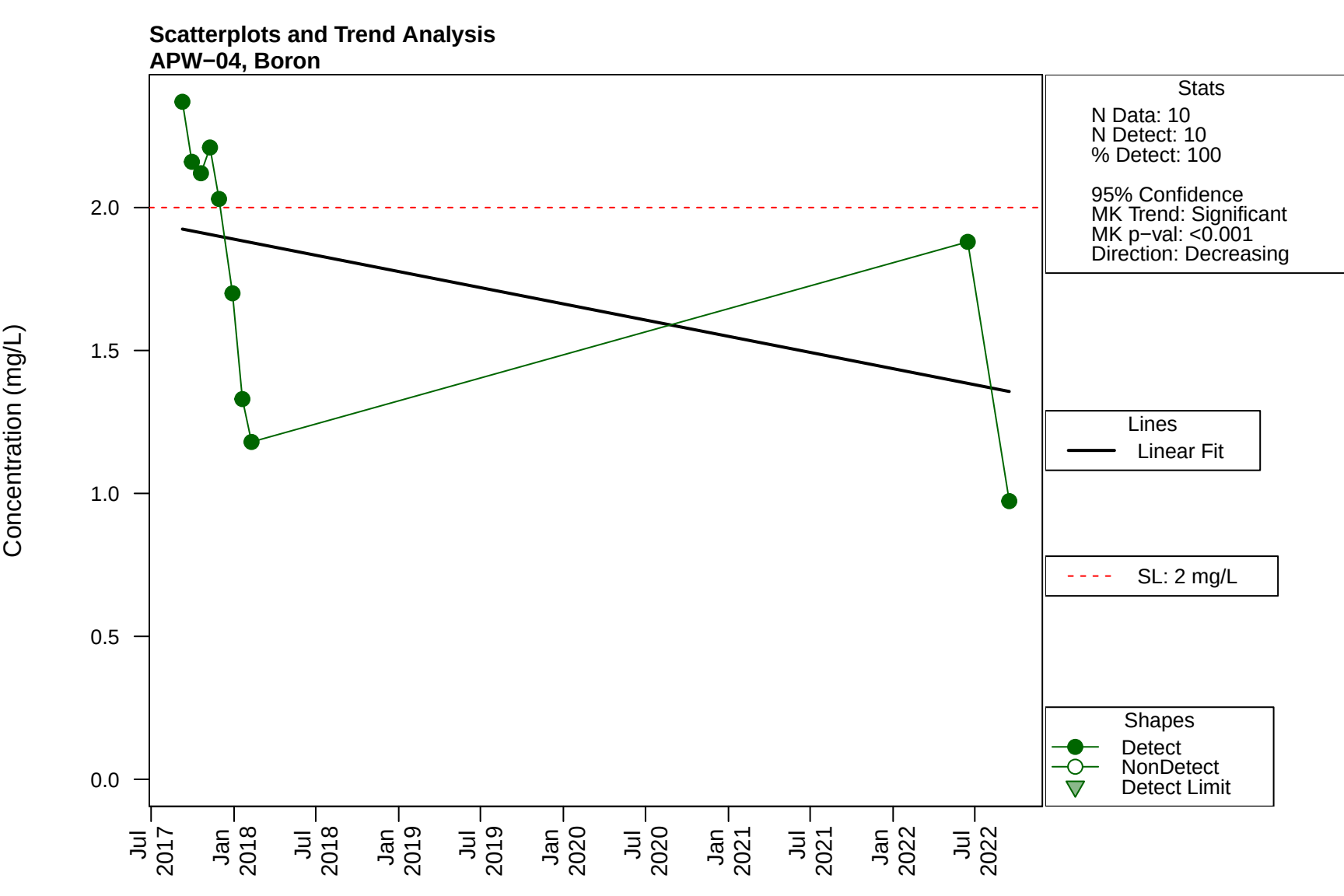

Scatterplots and Trend Analysis
APW−02, Lithium
Concentration (mg/L)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.727
SL: 0.04 mg/L
Shapes
Detect
NonDetect
Detect Limit

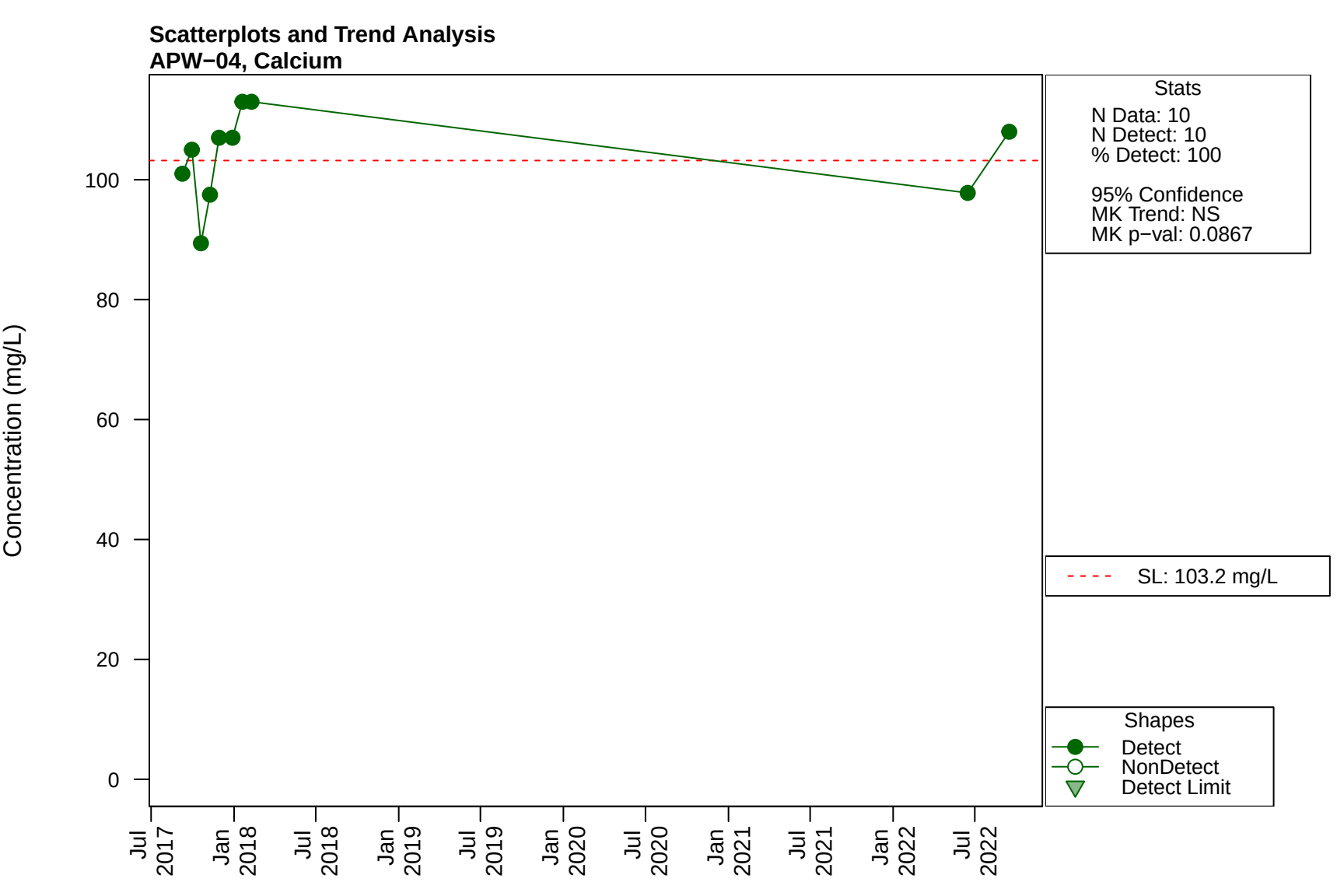

Scatterplots and Trend Analysis
APW−02, Molybdenum
Concentration (mg/L)
0.00
0.05
0.10
0.15
0.20
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.862
SL: 0.1 mg/L
Shapes
Detect
NonDetect
Detect Limit

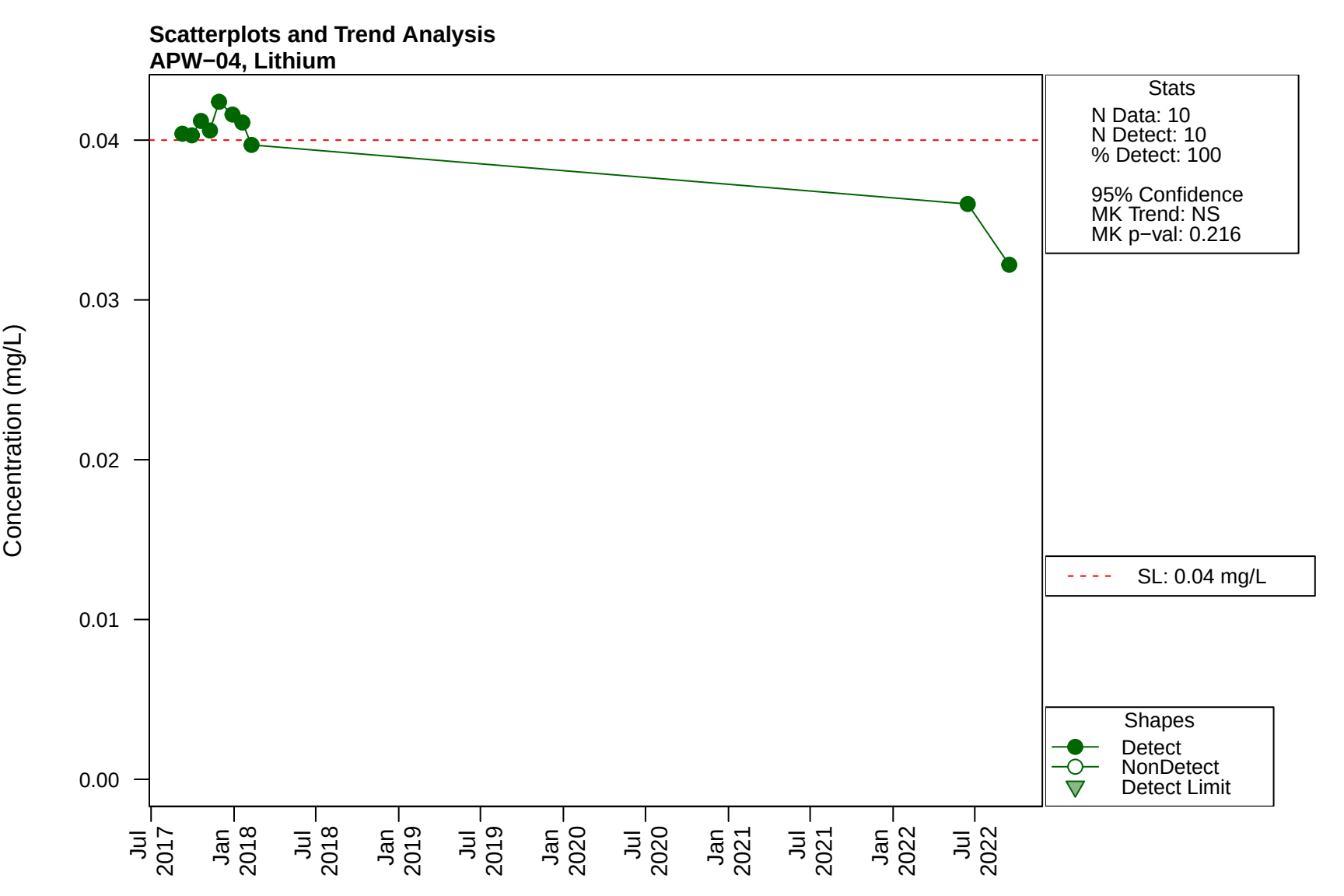

Scatterplots and Trend Analysis
APW−02, Sulfate
Concentration (mg/L)
500
400
300
200
100
0
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.719
SL: 400 mg/L
Shapes
Detect
NonDetect
Detect Limit

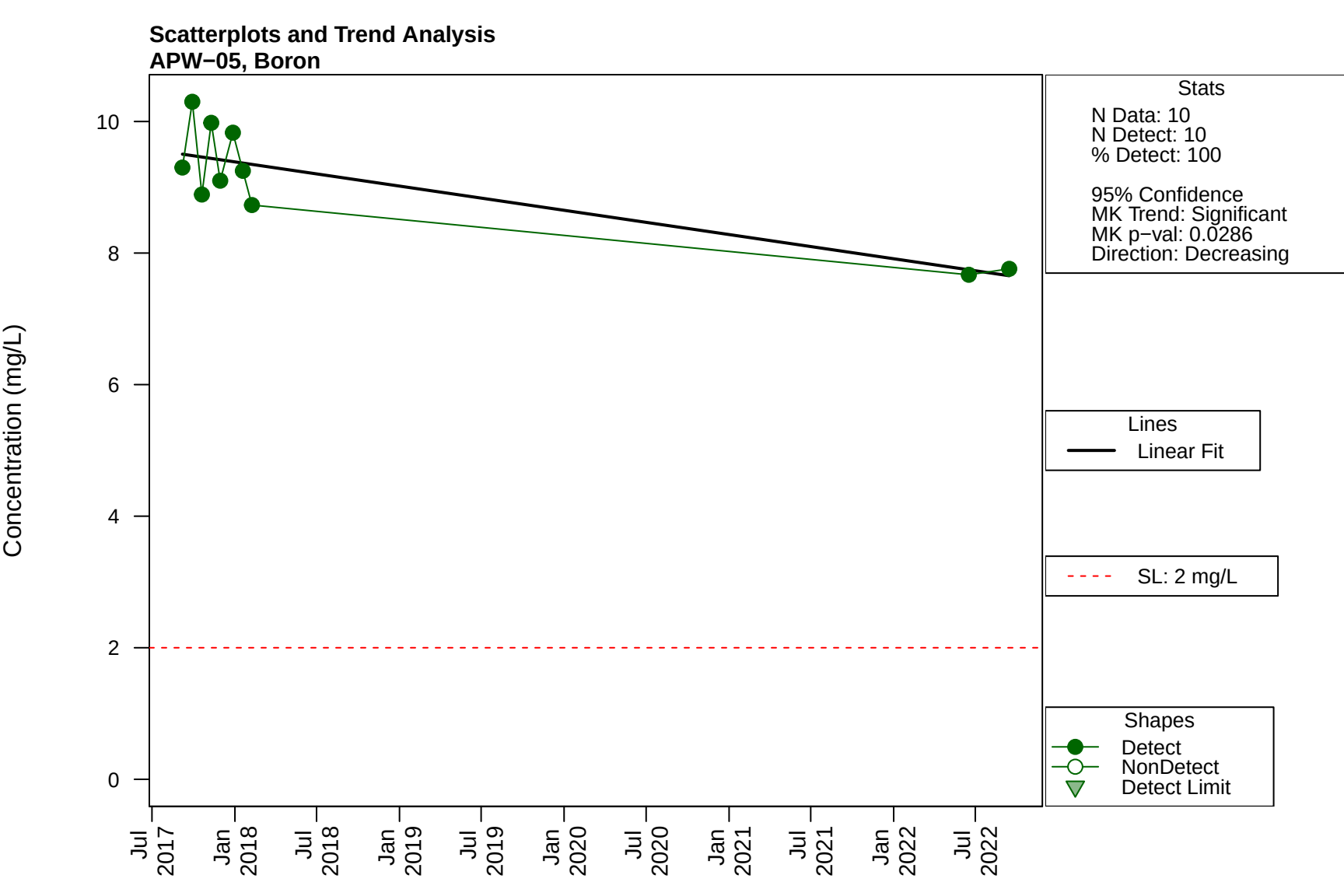

Scatterplots and Trend Analysis
APW−03, Boron
Concentration (mg/L)
0
1
2
3
4
5
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.727
SL: 2 mg/L
Shapes
Detect
NonDetect
Detect Limit

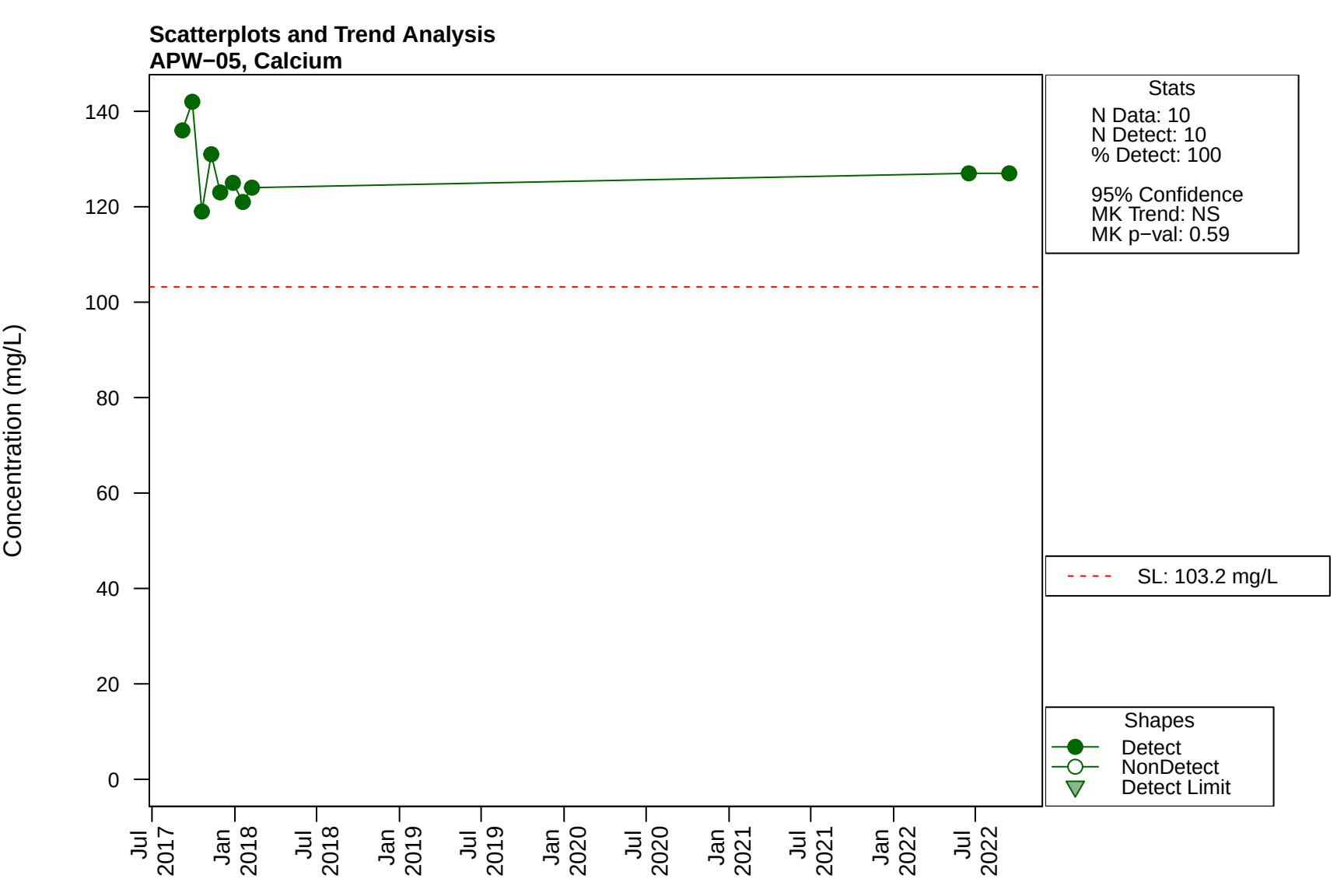

Scatterplots and Trend Analysis
APW−03, Calcium
Concentration (mg/L)
150
100
50
0
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.216
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit

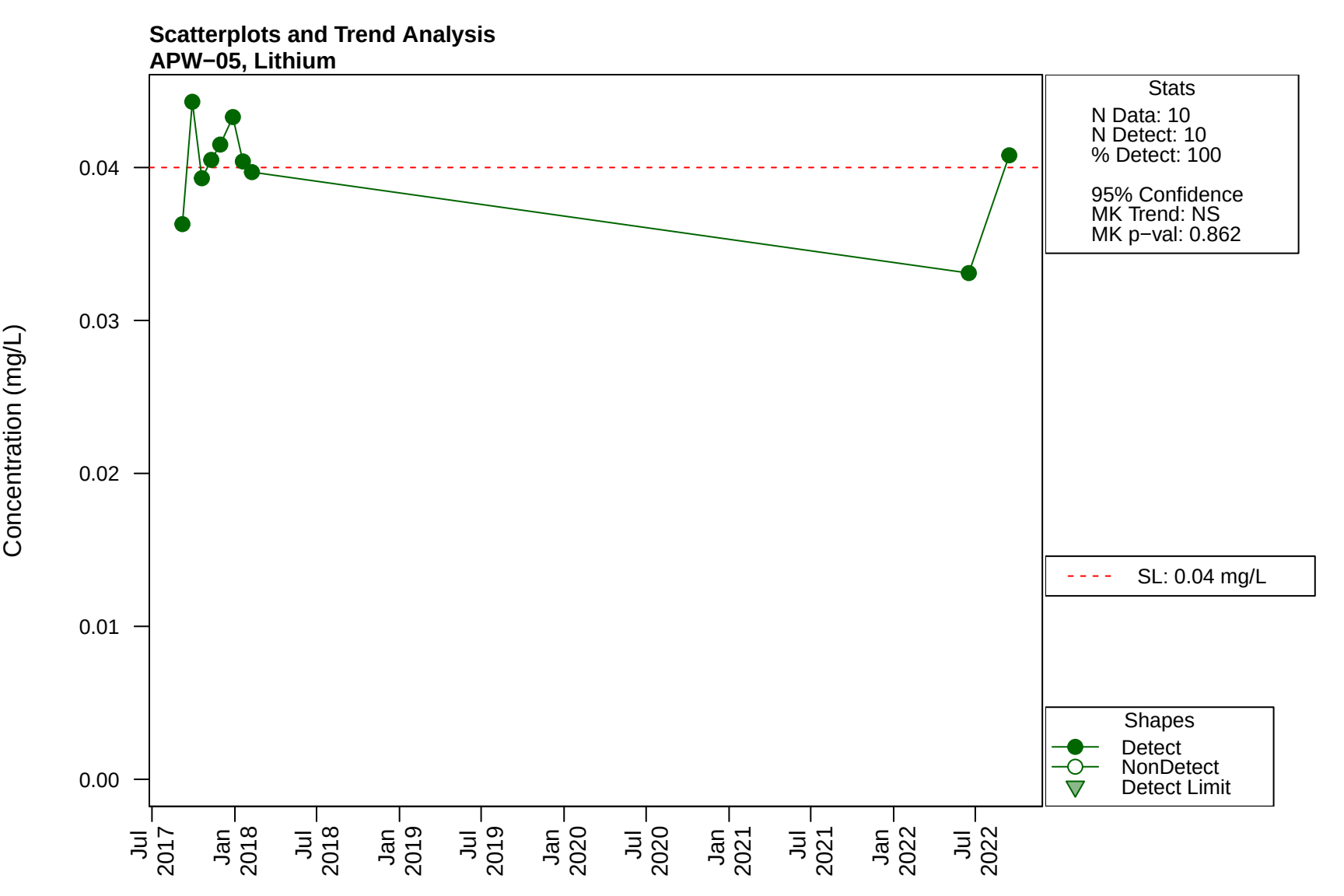

Scatterplots and Trend Analysis
APW−04, Boron
Concentration (mg/L)
0.0
0.5
1.0
1.5
2.0
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: Significant
MK p−val: <0.001
Direction: Decreasing
Lines
Linear Fit
SL: 2 mg/L
Shapes
Detect
NonDetect
Detect Limit

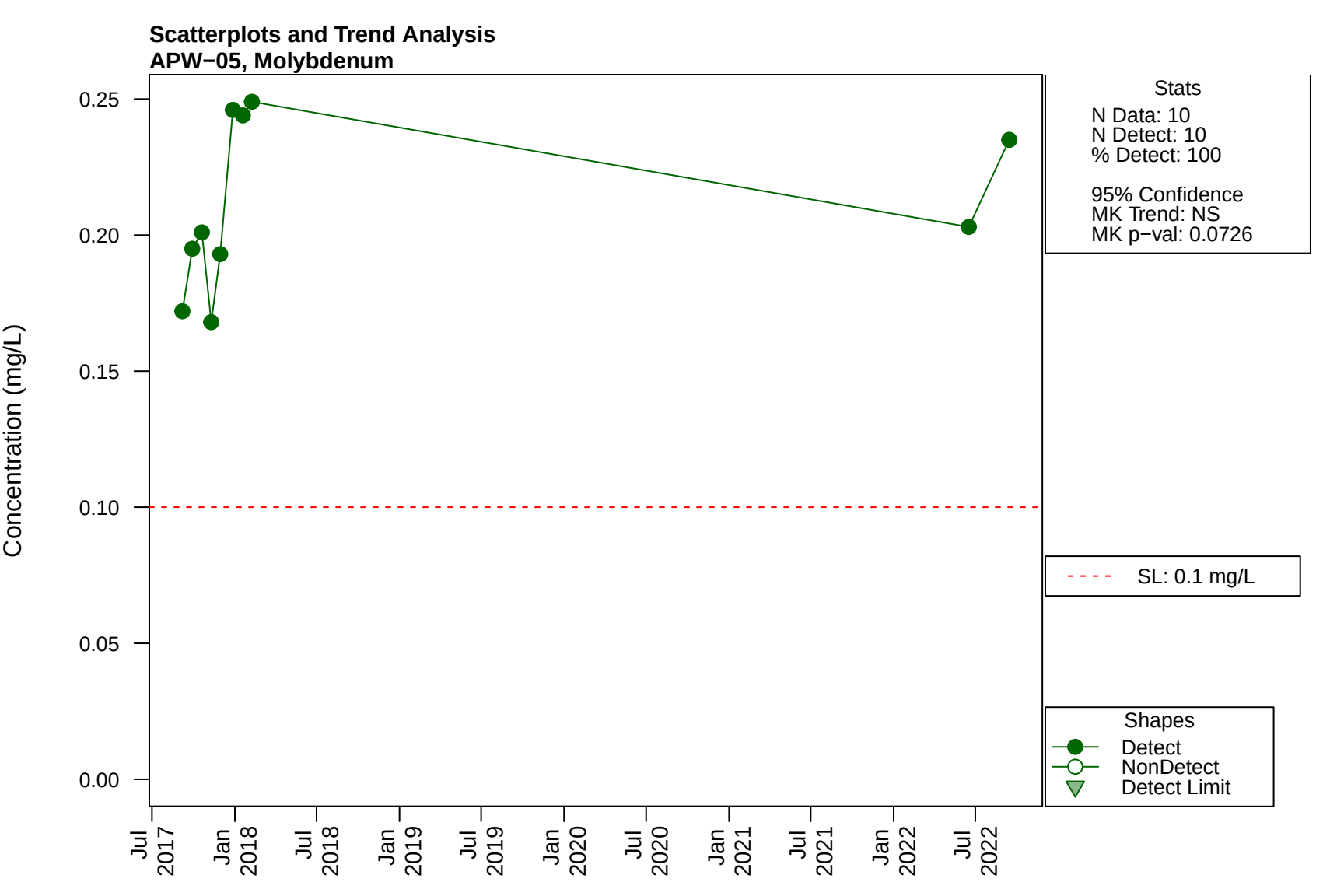

Scatterplots and Trend Analysis
APW−04, Calcium
Concentration (mg/L)
0
20
40
60
80
100
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.0867
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit

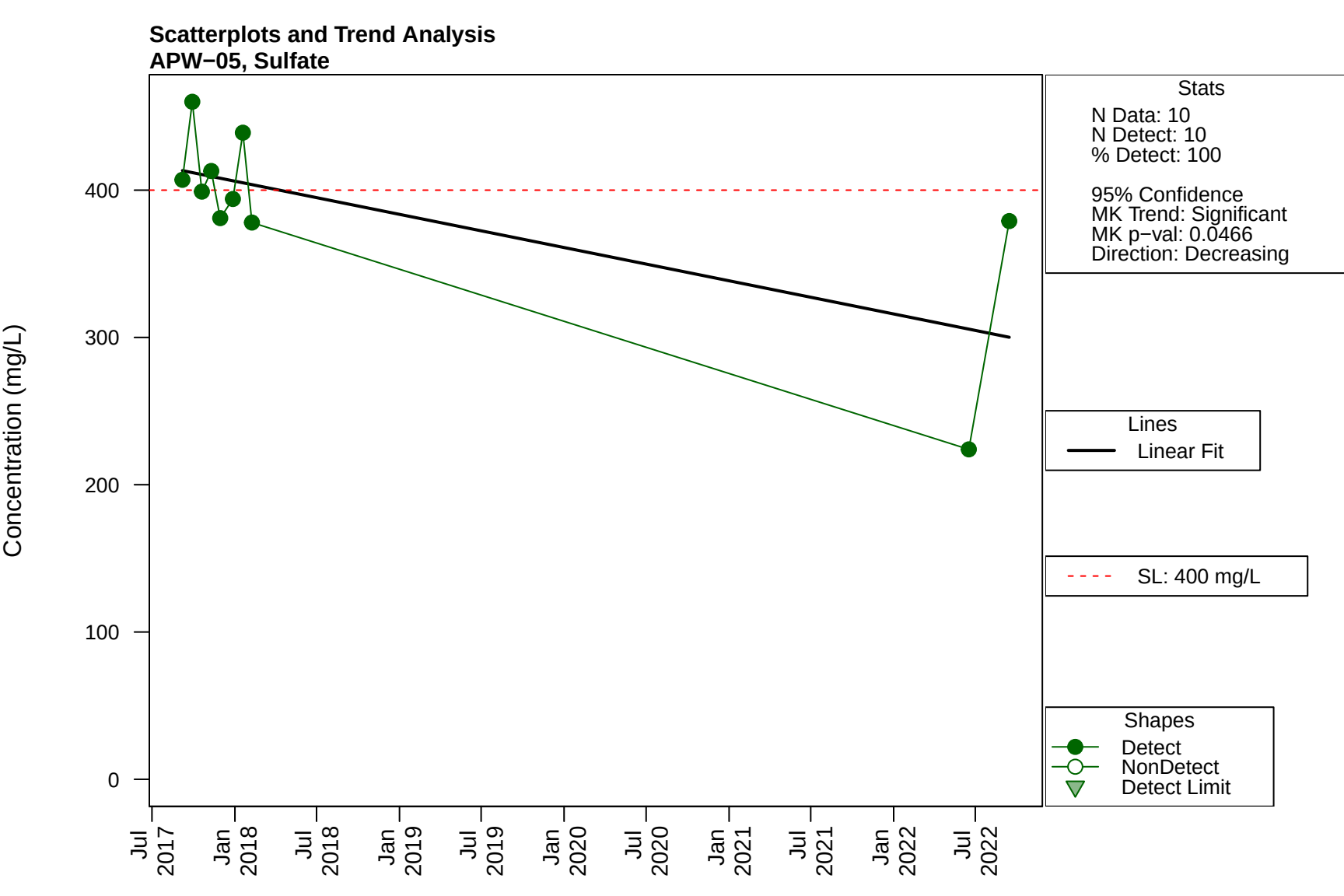

Scatterplots and Trend Analysis
APW−04, Lithium
Concentration (mg/L)
0.00
0.01
0.02
0.03
0.04
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.216
SL: 0.04 mg/L
Shapes
Detect
NonDetect
Detect Limit

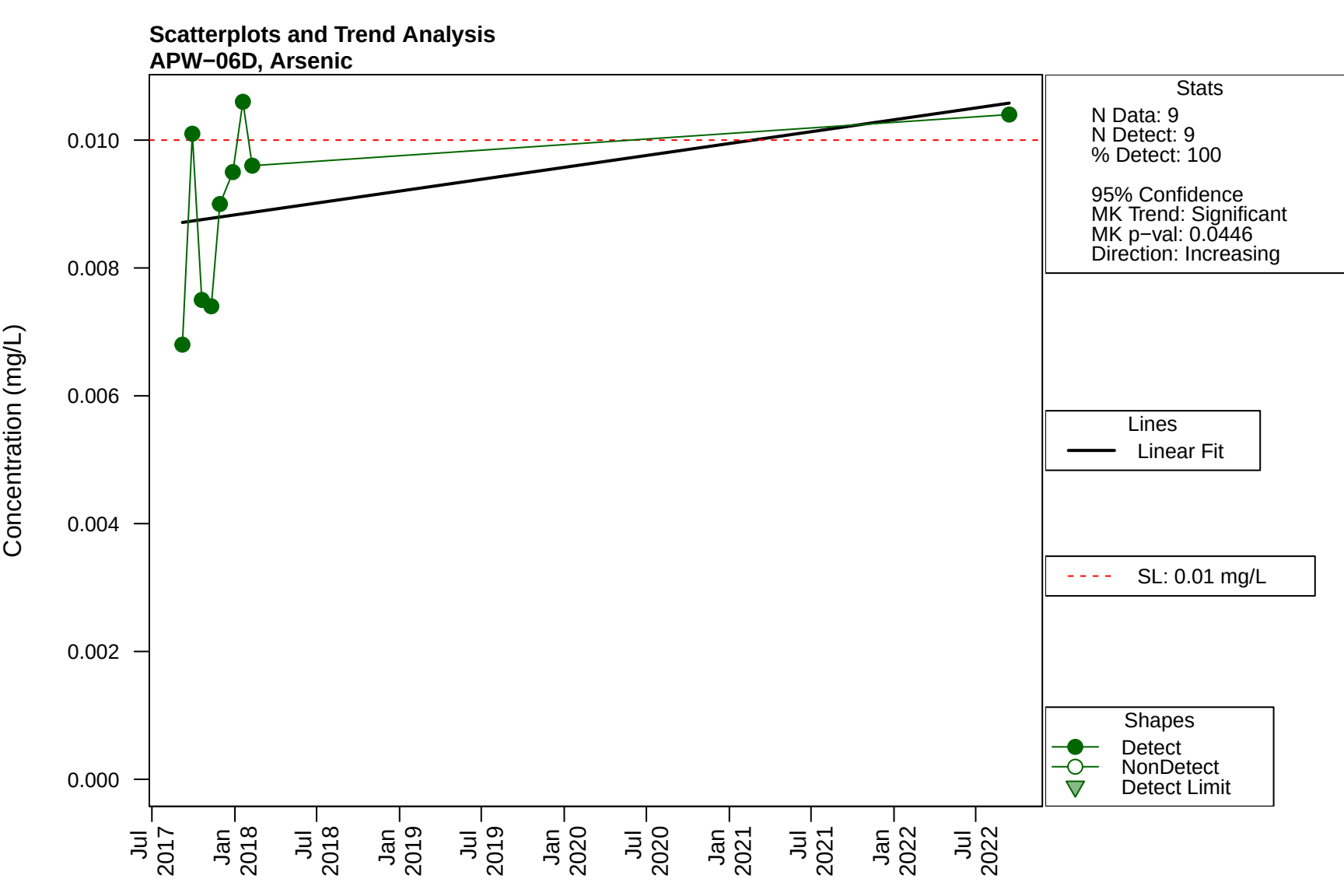

Scatterplots and Trend Analysis
APW−05, Boron
Concentration (mg/L)
0
2
4
6
8
10
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: Significant
MK p−val: 0.0286
Direction: Decreasing
Lines
Linear Fit
SL: 2 mg/L
Shapes
Detect
NonDetect
Detect Limit

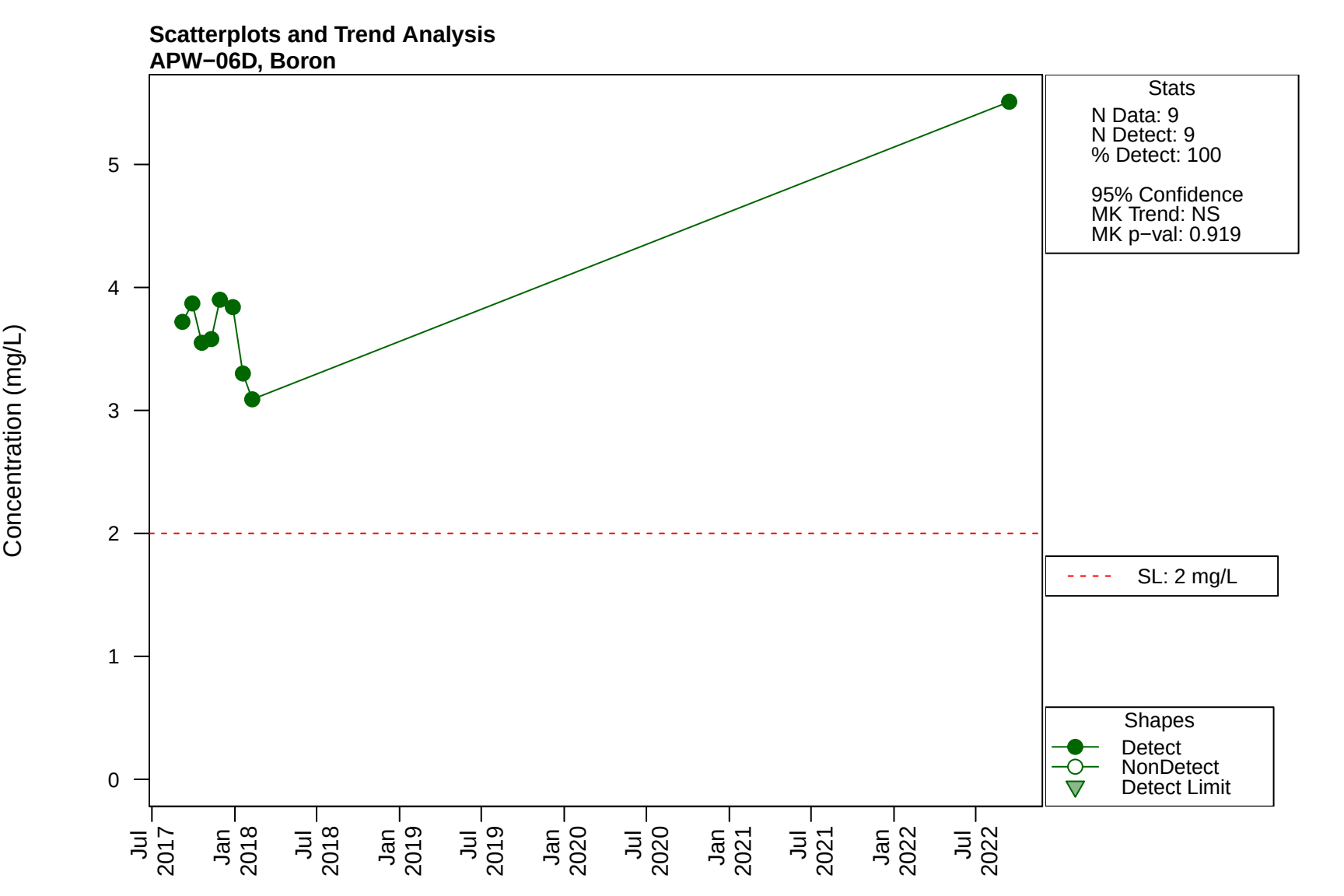

Scatterplots and Trend Analysis
APW−05, Calcium
Concentration (mg/L)
0
20
40
60
80
100
120
140
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.59
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit

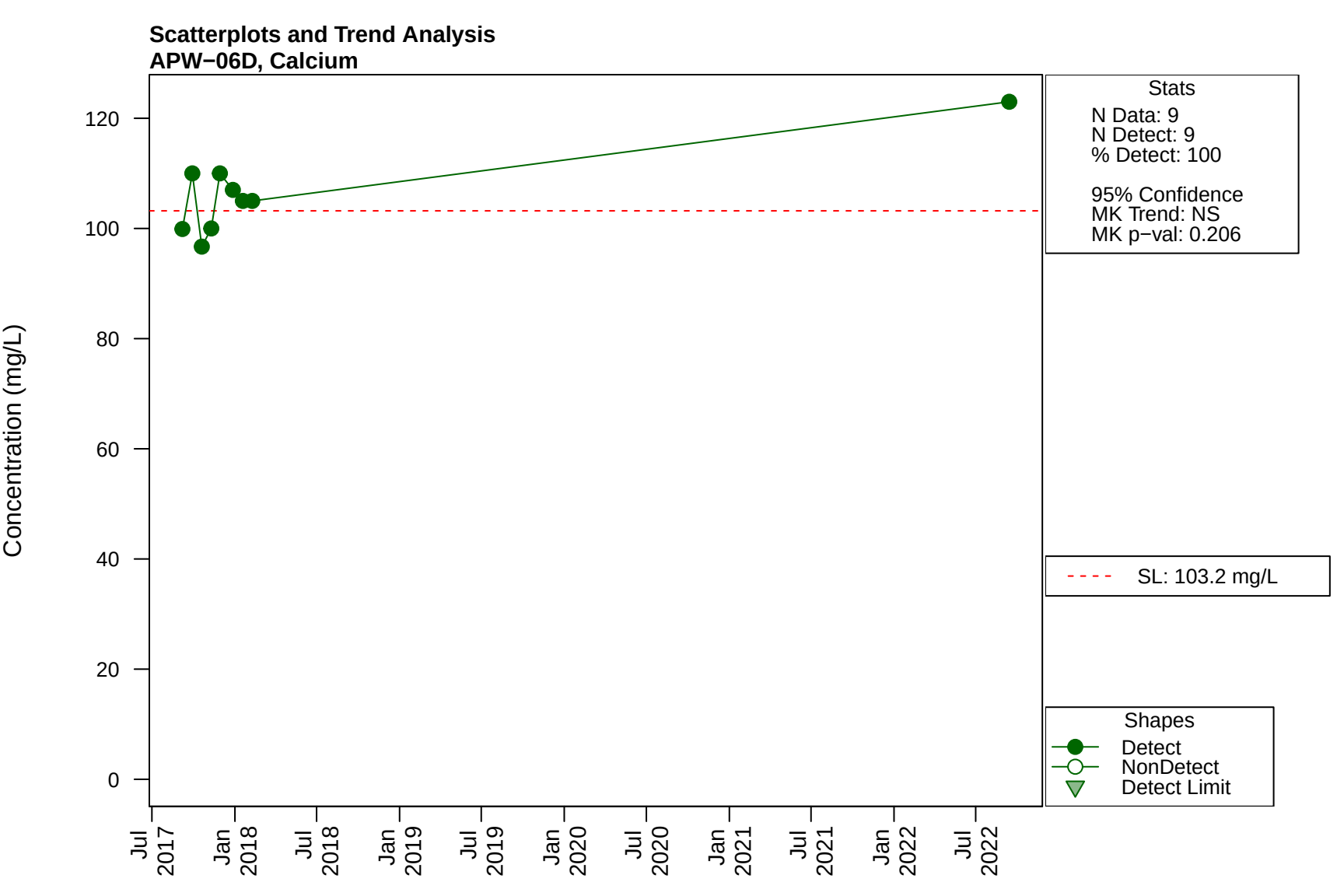

Scatterplots and Trend Analysis
APW−05, Lithium
Concentration (mg/L)
0.00
0.01
0.02
0.03
0.04
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.862
SL: 0.04 mg/L
Shapes
Detect
NonDetect
Detect Limit

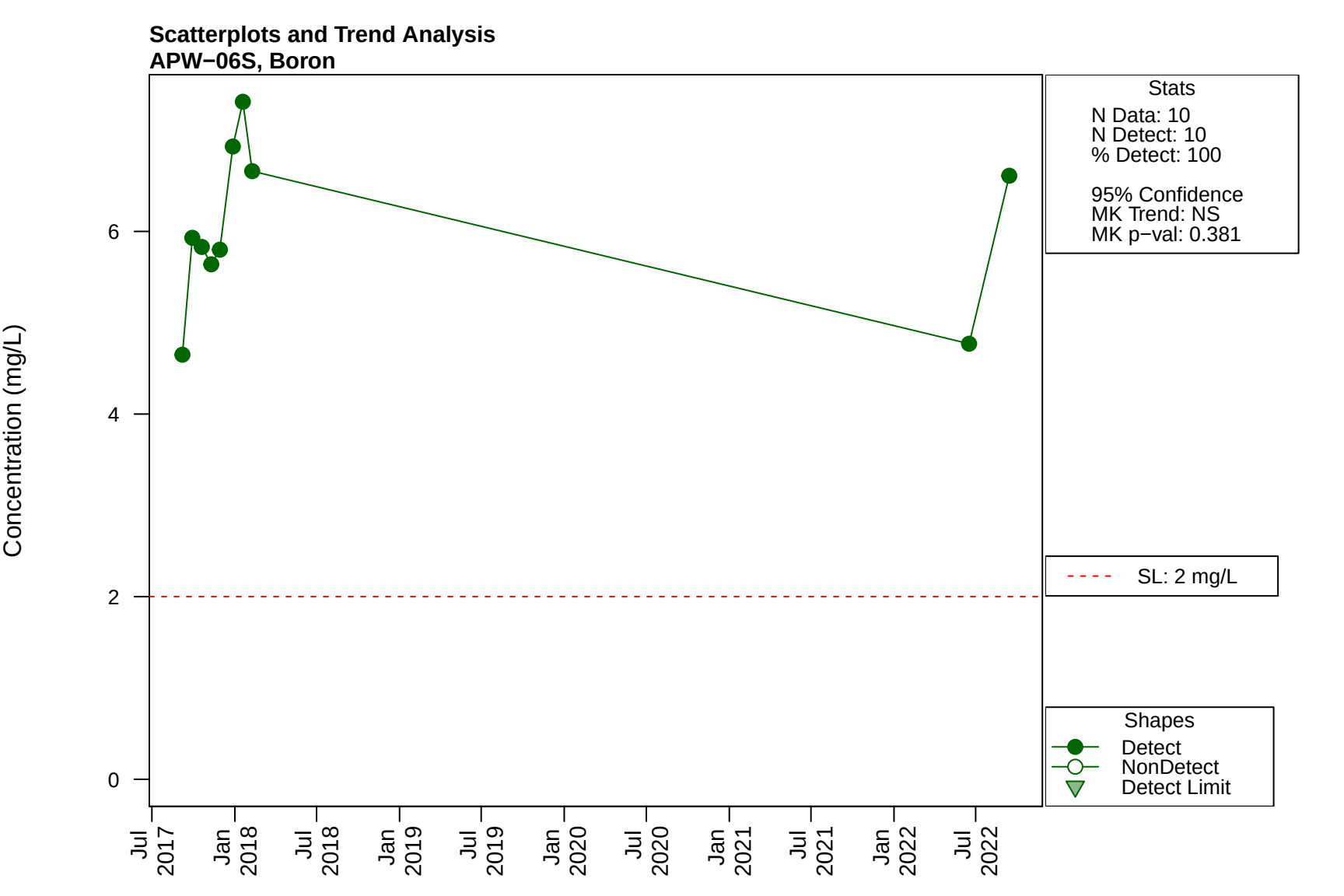

Scatterplots and Trend Analysis
APW−05, Molybdenum
Concentration (mg/L)
0.25
0.20
0.15
0.10
0.05
0.00
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.0726
SL: 0.1 mg/L
Shapes
Detect
NonDetect
Detect Limit

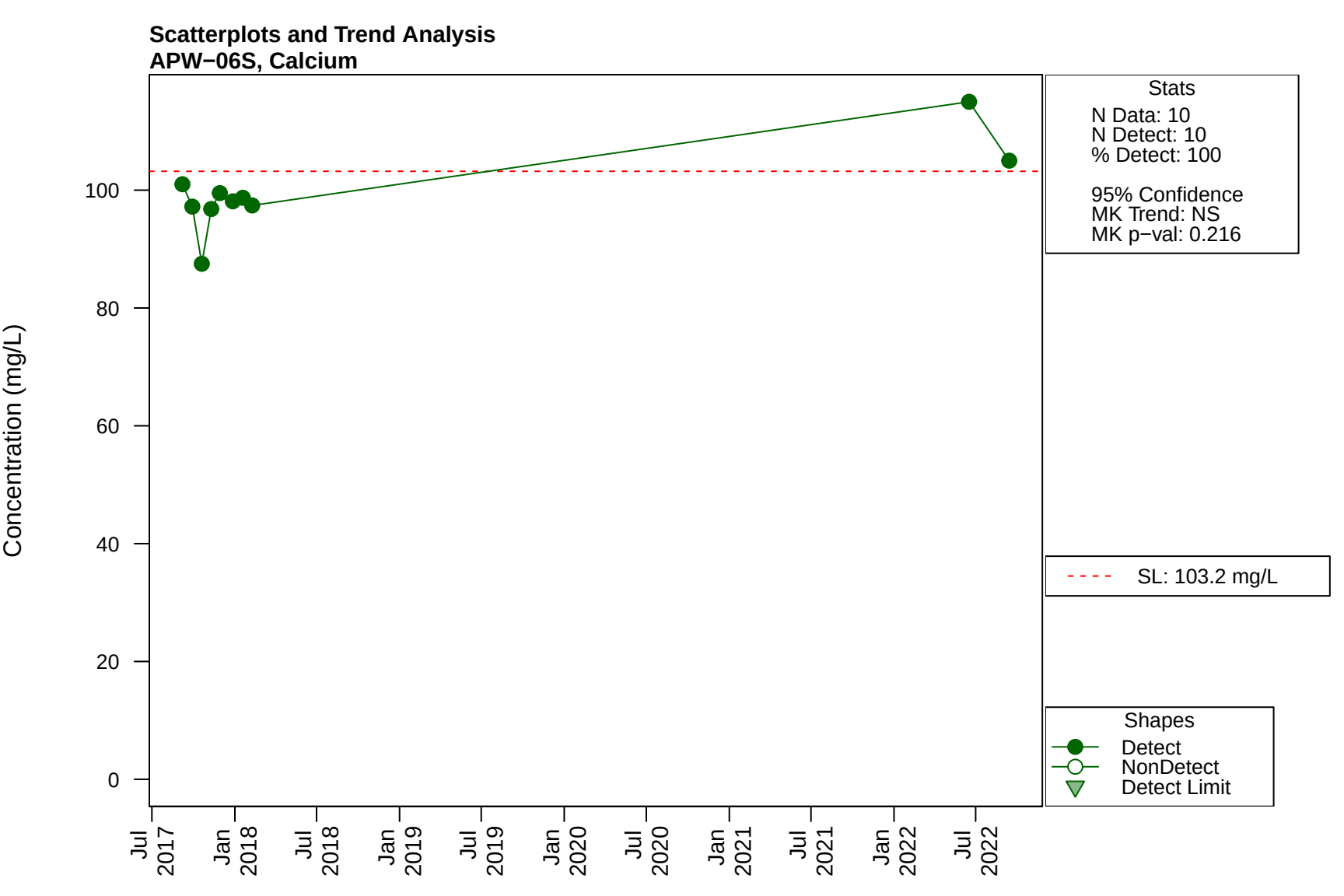

Scatterplots and Trend Analysis
APW−05, Sulfate
Concentration (mg/L)
0
100
200
300
400
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: Significant
MK p−val: 0.0466
Direction: Decreasing
Lines
Linear Fit
SL: 400 mg/L
Shapes
Detect
NonDetect
Detect Limit

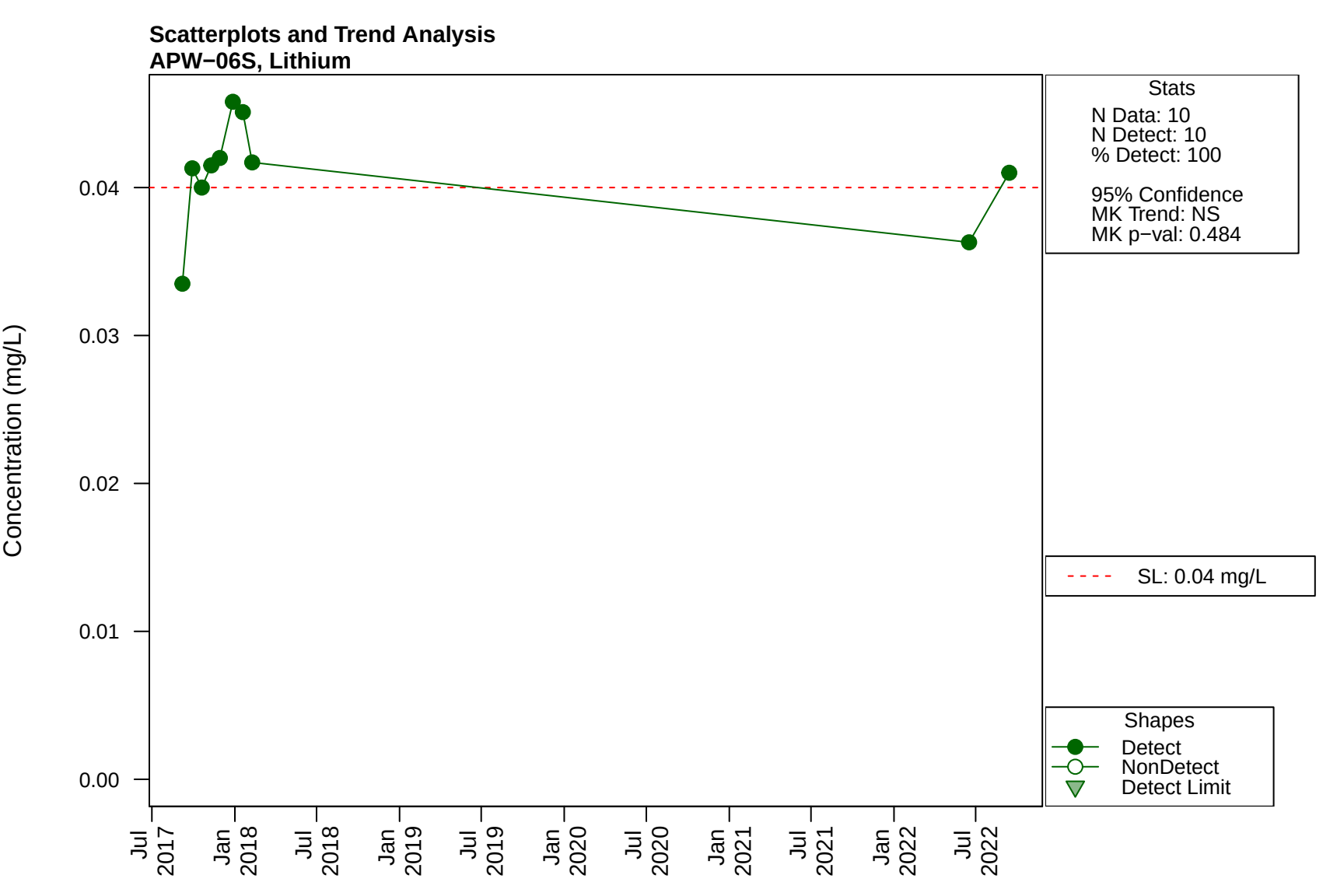

Scatterplots and Trend Analysis
APW−06D, Arsenic
Concentration (mg/L)
0.000
0.002
0.004
0.006
0.008
0.010
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 9
N Detect: 9
% Detect: 100
95% Confidence
MK Trend: Significant
MK p−val: 0.0446
Direction: Increasing
Lines
Linear Fit
SL: 0.01 mg/L
Shapes
Detect
NonDetect
Detect Limit

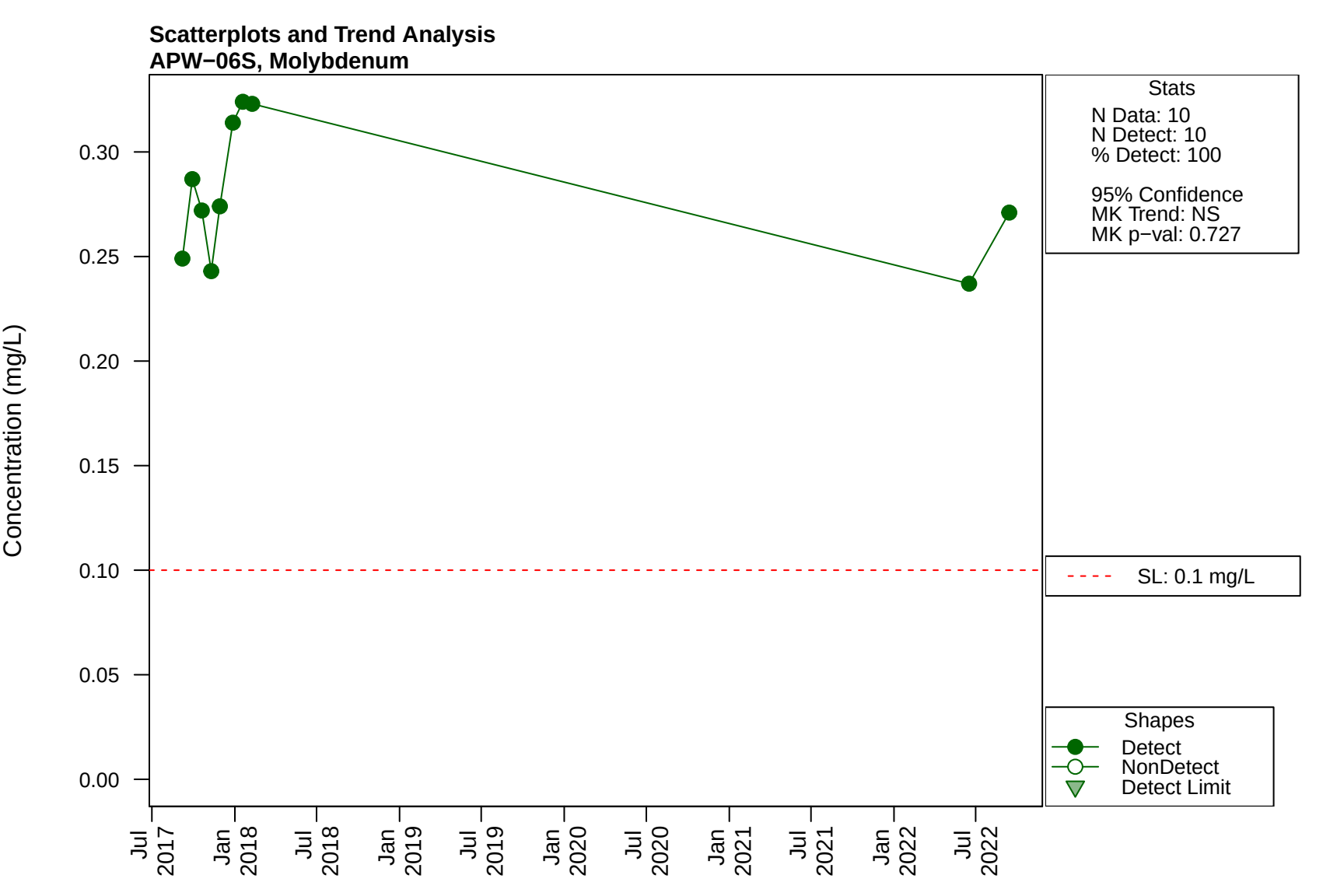

Scatterplots and Trend Analysis
APW−06D, Boron
Concentration (mg/L)
0
1
2
3
4
5
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 9
N Detect: 9
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.919
SL: 2 mg/L
Shapes
Detect
NonDetect
Detect Limit

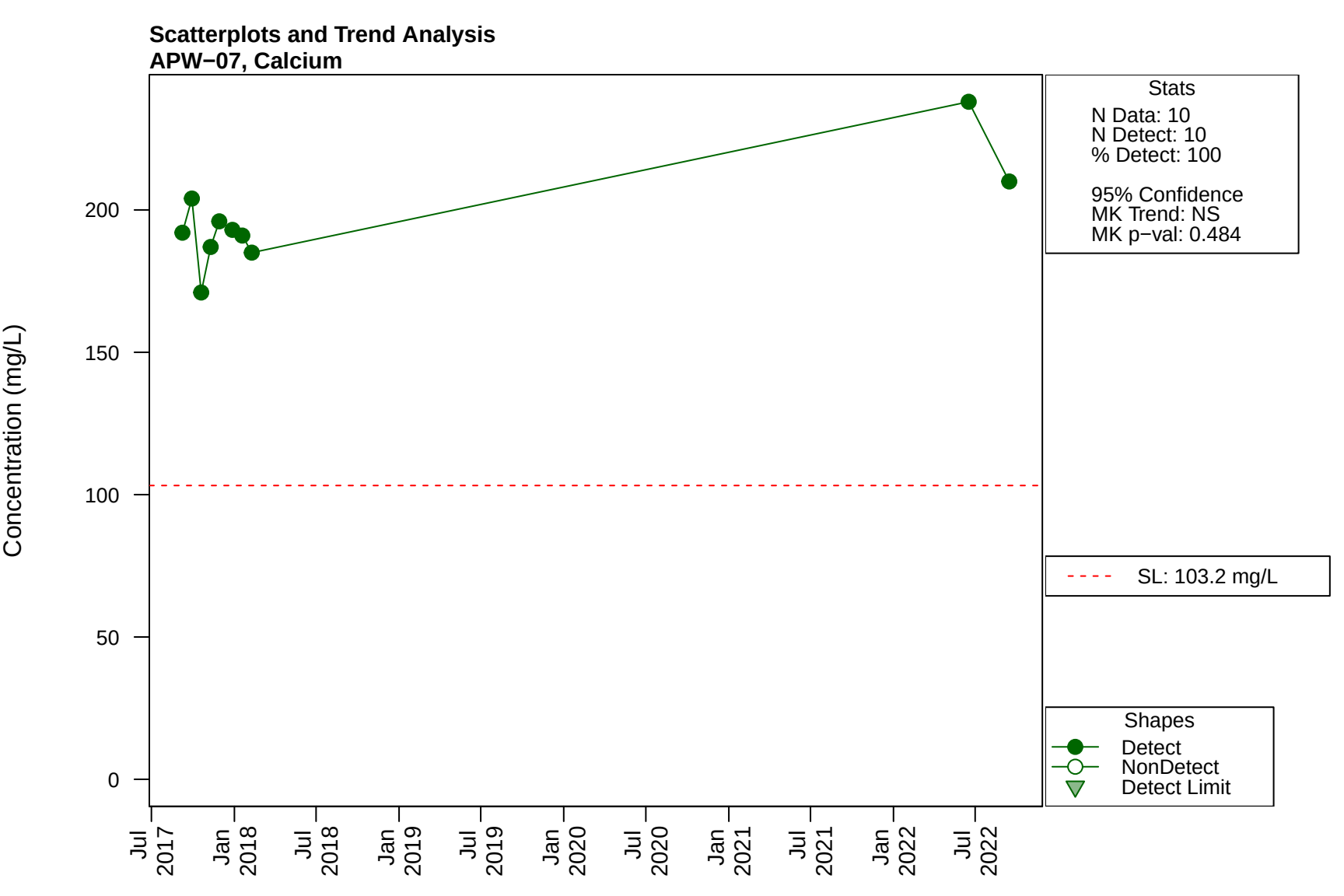

Scatterplots and Trend Analysis
APW−06D, Calcium
Concentration (mg/L)
0
20
40
60
80
100
120
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 9
N Detect: 9
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.206
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit

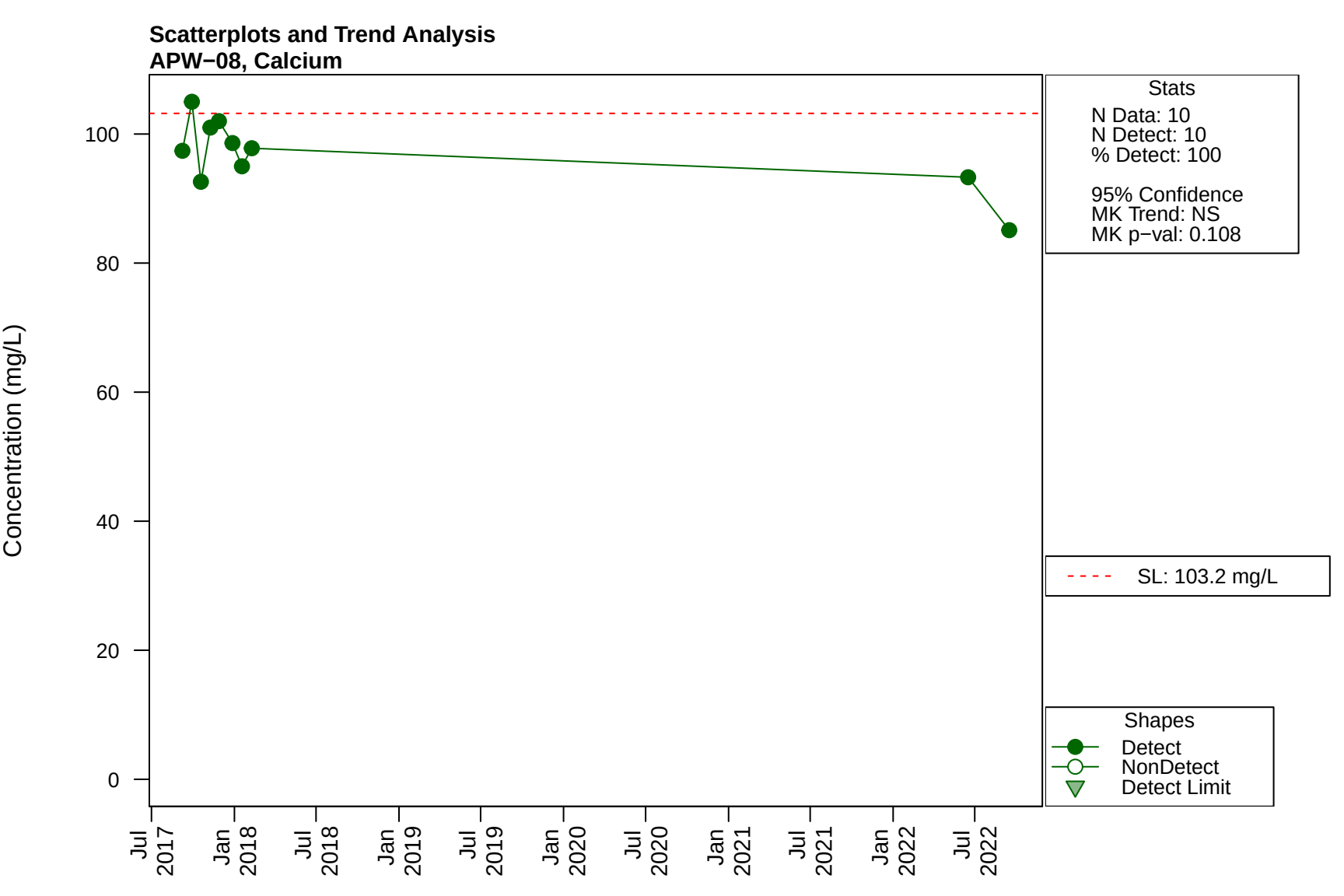

Scatterplots and Trend Analysis
APW−06S, Boron
Concentration (mg/L)
0
2
4
6
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.381
SL: 2 mg/L
Shapes
Detect
NonDetect
Detect Limit

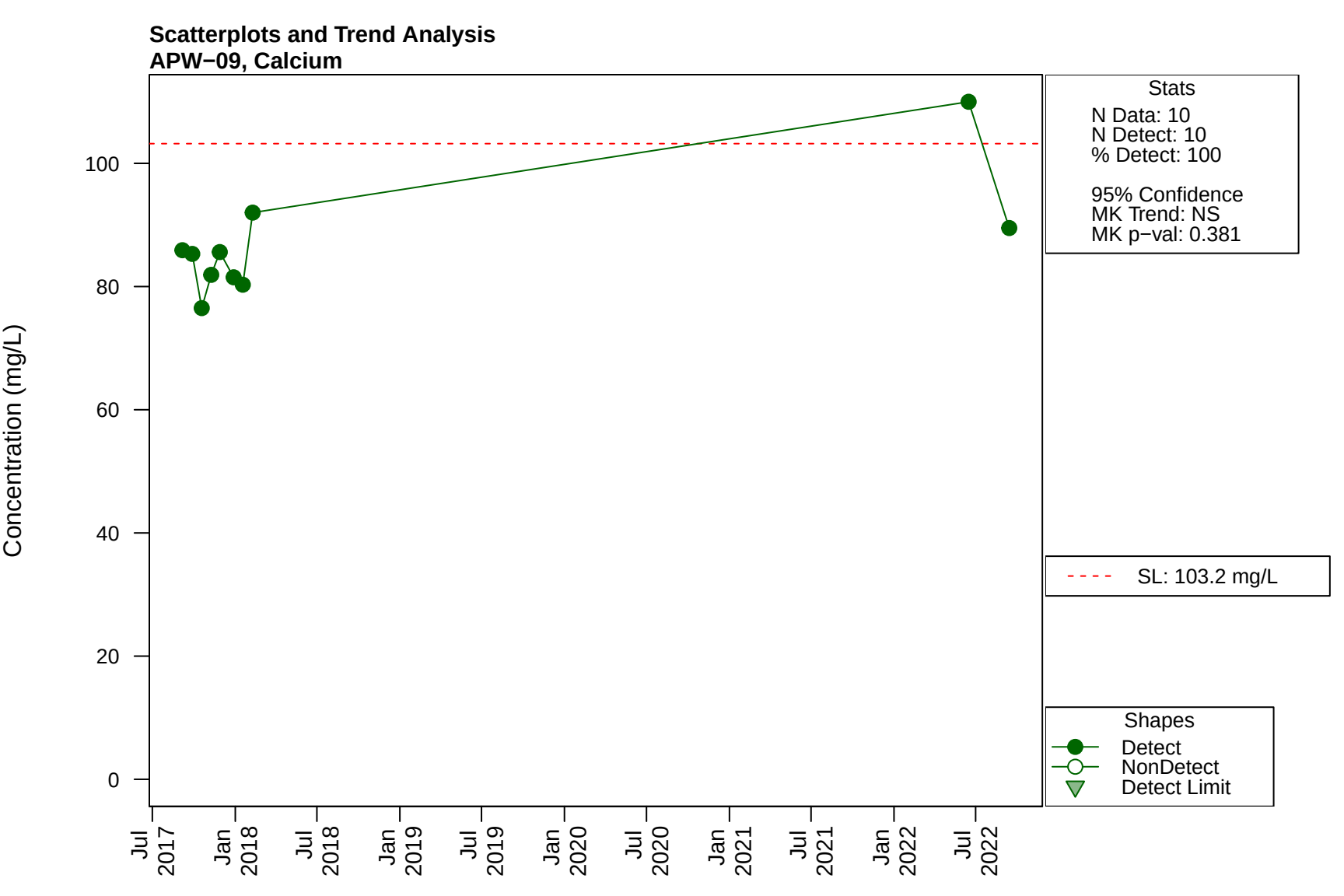

Scatterplots and Trend Analysis
APW−06S, Calcium
Concentration (mg/L)
0
20
40
60
80
100
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.216
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit

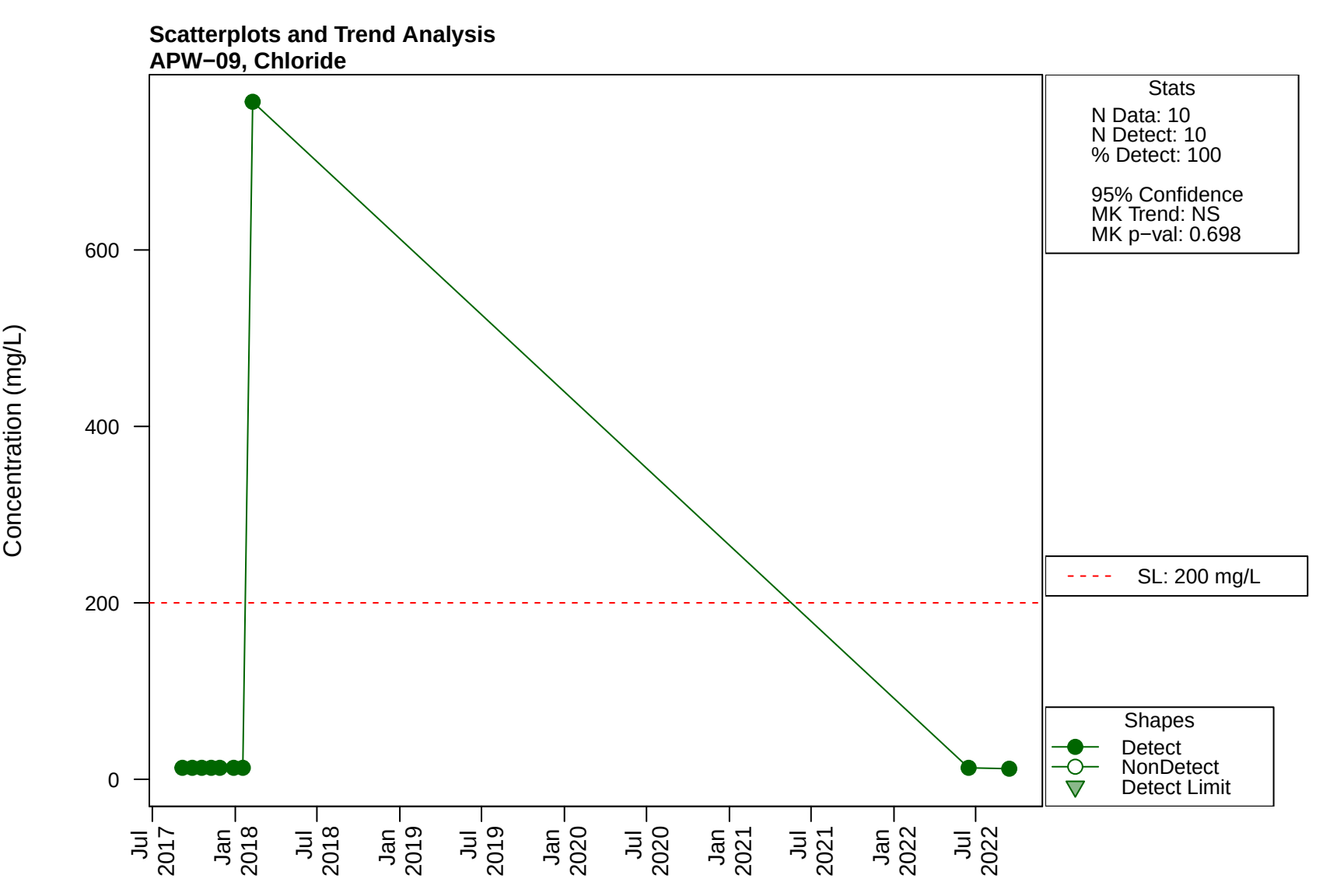

Scatterplots and Trend Analysis
APW−06S, Lithium
Concentration (mg/L)
0.00
0.01
0.02
0.03
0.04
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.484
SL: 0.04 mg/L
Shapes
Detect
NonDetect
Detect Limit

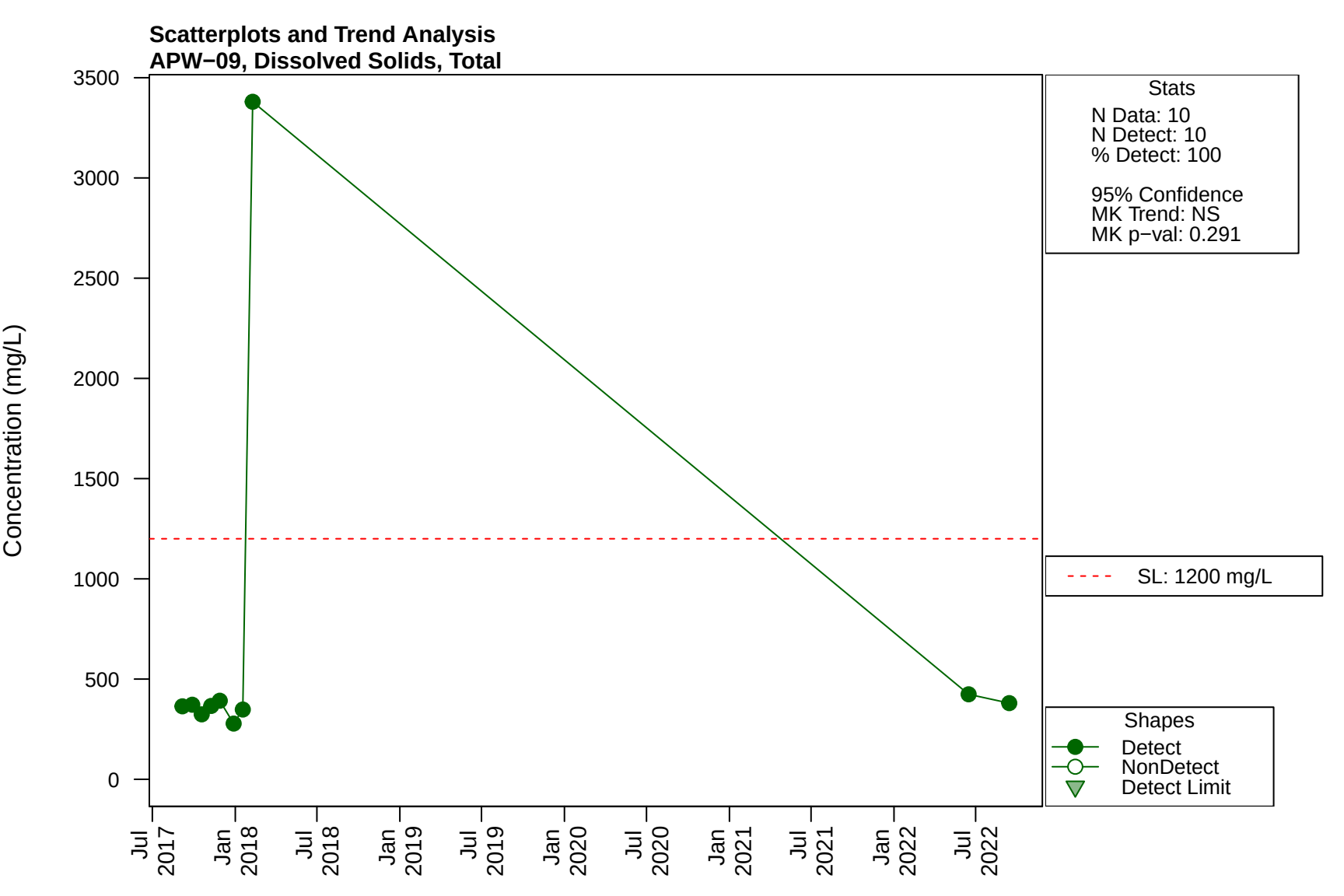

Scatterplots and Trend Analysis
APW−06S, Molybdenum
Concentration (mg/L)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.727
SL: 0.1 mg/L
Shapes
Detect
NonDetect
Detect Limit

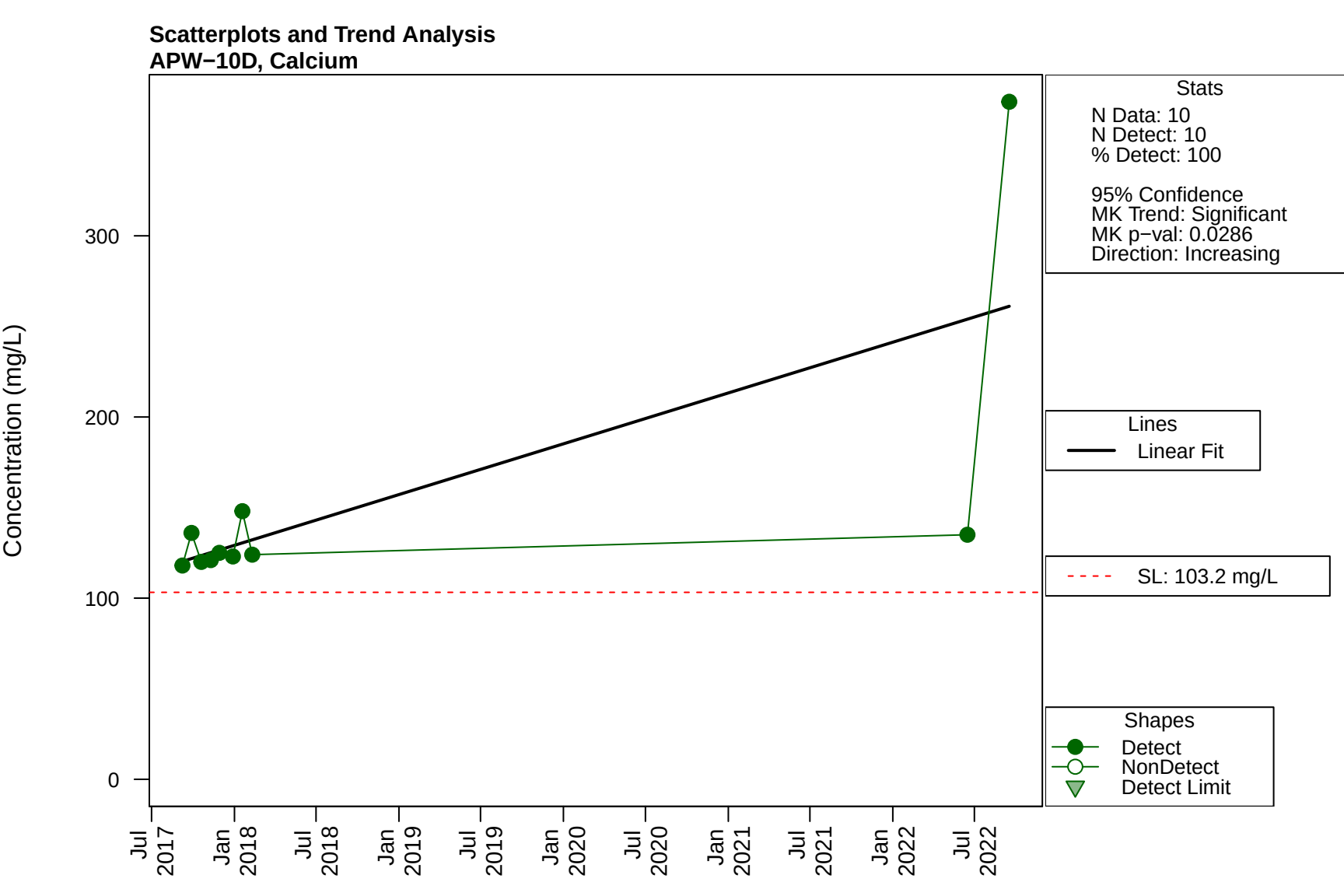

Scatterplots and Trend Analysis
APW−07, Calcium
Concentration (mg/L)
0
50
100
150
200
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.484
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit

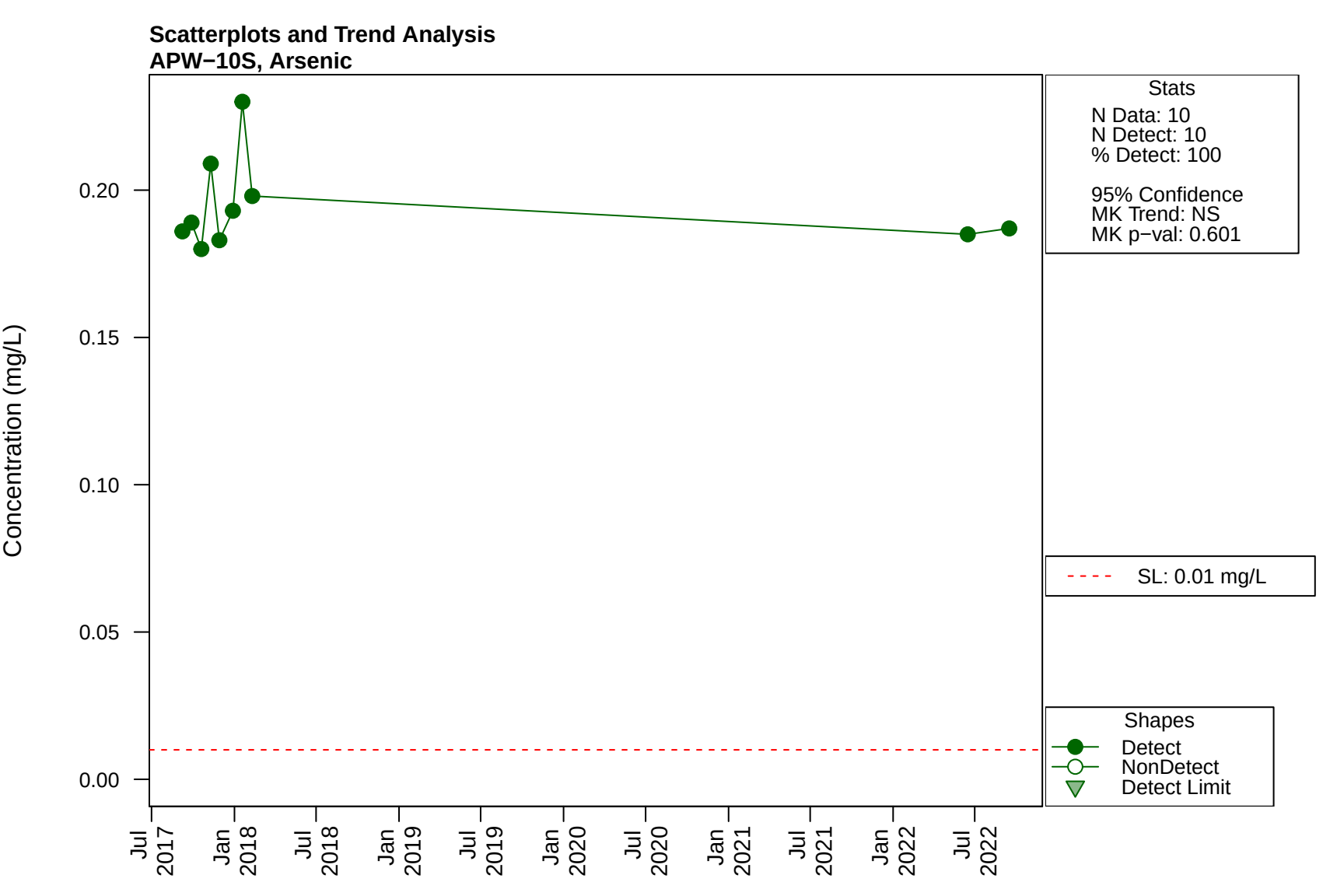

Scatterplots and Trend Analysis
APW−08, Calcium
Concentration (mg/L)
0
20
40
60
80
100
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.108
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit

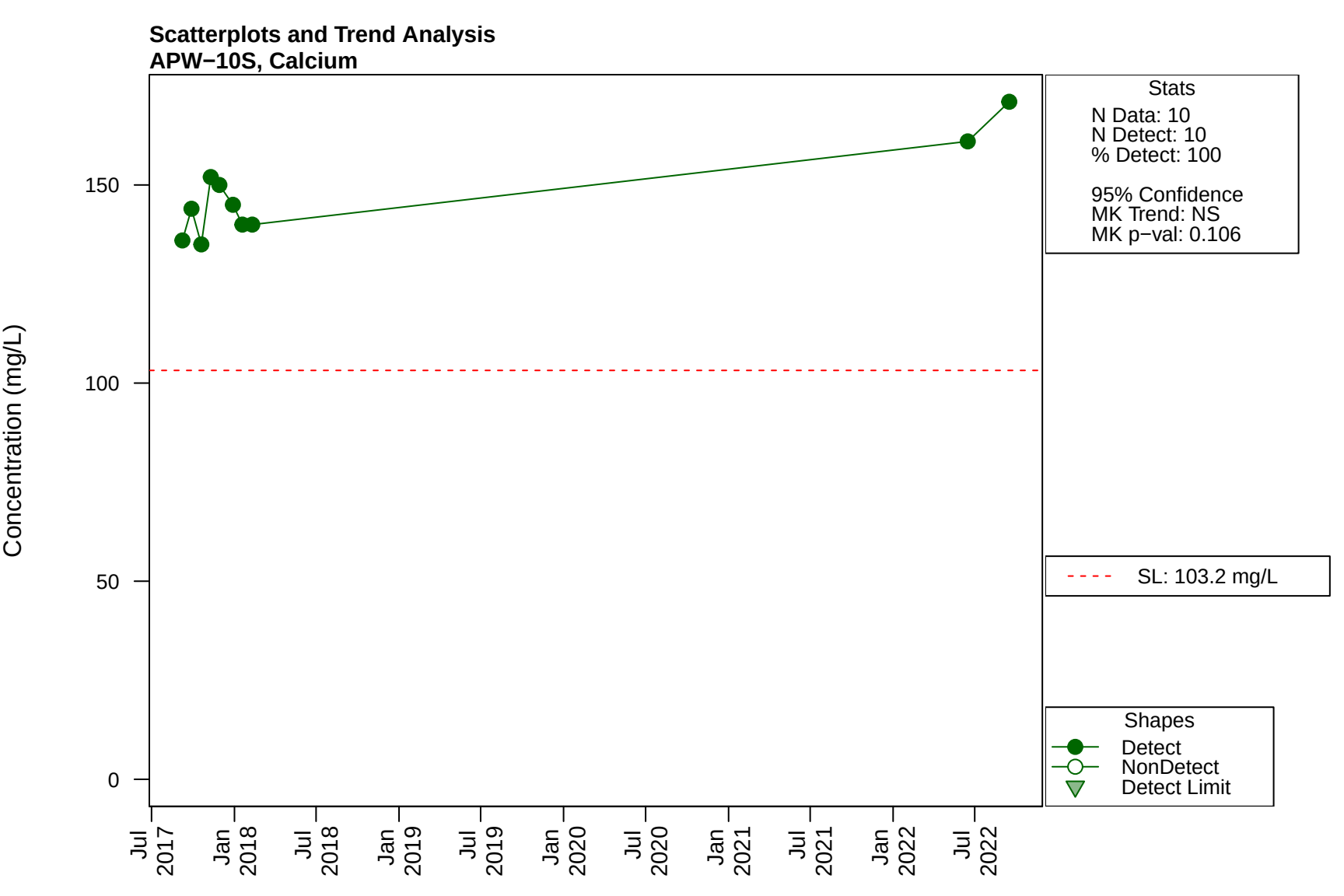

Scatterplots and Trend Analysis
APW−09, Calcium
Concentration (mg/L)
0
20
40
60
80
100
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.381
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit


Scatterplots and Trend Analysis
APW−09, Chloride
Concentration (mg/L)
0
200
400
600
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.698
SL: 200 mg/L
Shapes
Detect
NonDetect
Detect Limit


Scatterplots and Trend Analysis
APW−09, Dissolved Solids, Total
Concentration (mg/L)
3500
3000
2500
2000
1500
1000
500
0
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.291
SL: 1200 mg/L
Shapes
Detect
NonDetect
Detect Limit


Scatterplots and Trend Analysis
APW−10D, Calcium
Concentration (mg/L)
0
100
200
300
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: Significant
MK p−val: 0.0286
Direction: Increasing
Lines
Linear Fit
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit


Scatterplots and Trend Analysis
APW−10S, Arsenic
Concentration (mg/L)
0.00
0.05
0.10
0.15
0.20
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.601
SL: 0.01 mg/L
Shapes
Detect
NonDetect
Detect Limit


Scatterplots and Trend Analysis
APW−10S, Calcium
Concentration (mg/L)
150
100
50
0
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Stats
N Data: 10
N Detect: 10
% Detect: 100
95% Confidence
MK Trend: NS
MK p−val: 0.106
SL: 103.2 mg/L
Shapes
Detect
NonDetect
Detect Limit