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2022 Annual Groundwater Monitoring Report

THIS REPORT WAS CREATED BY THE
GBMc & ASSOCIATES TEAM FOR
EL DORADO CHEMICAL COMPANY
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2022 Annual Groundwater Monitoring Report

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Groundwater Monitoring Report Certification

I, Charles D. Campbell, have prepared this Groundwater Monitoring Report based upon an evaluation of the groundwater data and information provided to me by El Dorado Chemical Company. As required by Arkansas Regulation 22 (22.1203(k)), certification of the Groundwater Monitoring Report must be provided by a qualified groundwater scientist, as defined in 22.1201(f). The certification is contingent upon the fact that all information supplied, up to the date of this certification, is unquestionably accurate and was provided in good faith. Furthermore, the data and interpretations thereof contained in this report are based on generally recognized engineering principles related to subsurface mapping of the potentiometric surface and assessment of the movement of a fluid (shallow groundwater) through porous and permeable media (using factors developed by a Professional Geologist) that may be commonly shared between Professional Geologists and qualified groundwater scientists. Information and representations contained herein are the professional opinion of the individual certifying the report as a non-geologist and are not an infringement of the "public practice of geology" as defined in Section 3-1(5), Act 701 of 1987, as the undersigned is not claiming nor implying to be a geologist, registered under Act 701 of 1987 or otherwise.

11/17/22

Charles D. Campbell, PE Date
Arkansas No. 6857

11/17/22

1.0 INTRODUCTION

El Dorado Chemical Company (EDCC) has monitored groundwater on a routine basis since 2001 (analysis for this report included one 1996 sample). In 2006 EDCC entered into CAO LIS 06-153 which required semiannual monitoring of 22 groundwater wells located throughout the property (CAO LIS 06-153 Condition No. 3). Information collected during the groundwater monitoring has been submitted annually to Arkansas Department of Energy & Environment Division of Environmental Quality (DEQ) on or before April 1 as directed by CAO LIS 06-153 Condition No. 4. In November of 2018, EDCC entered into CAO LIS 18-085. CAO LIS 18-085 incorporates the conditions identified in CAO LIS No. 06-153 for assessing and remediating the groundwater as well as the Remedial Action Plan developed and approved pursuant to CAO LIS 06-153.

This Groundwater Monitoring Report has been written with the intent to fulfill conditions of the CAO. Condition No. 4 of CAO LIS No. 18-085 states that each annual report should include the location, potentiometric and constituent concentration maps, and trend analyses. Additionally, the CAO requires an evaluation of the effectiveness of the remedial activities in reaching the target goals and any additional information needed by DEQ to properly evaluate the groundwater. The primary remediation activities at EDCC include operation of a groundwater recovery system and monitored natural attenuation. All constituents collected at the groundwater monitoring wells evaluated statistically to assess the remediation activities.

1.1 Site Location

EDCC facility is located in Sections 6 and 7, Township 17 South, Range 15 West on the north side of El Dorado approximately 1 mile west of Highway 7 Spur in Union County, Arkansas. There are 22 groundwater monitoring wells: 3 control wells (ECMW-1 through ECMW-3), 10 production wells (ECMW-4 through ECMW-13), 3 mid-gradient wells (ECMW-14 through ECMW-16), and 6 downgradient wells (ECMW-17 through ECMW-22). Groundwater recovery wells (ECRW-1 and ECRW-2) are located near ECMW-6 and ECMW-7. A site and potentiometric surface map are provided in Appendix A.

2.0 GROUNDWATER SAMPLING

2.1 Sample Methodology

EDCC currently monitors 22 groundwater wells for the constituents presented in Table 2.1 at the indicated frequencies. DEQ provided approval of the current sampling constituents and frequency in CAO LIS No. 06-153 and subsequent correspondence. Several of the monitoring constituents originally listed in CAO LIS No. 06-153 were removed from the monitoring program through DEQ approval due to low concentrations or proving not necessary for tracking the effectiveness of the November 16, 2007 Remedial Action Plan (RAP).

Table 2.1. Groundwater Monitoring Constituents and Sampling Frequency.[1]

Well	NH_4	NO_3	SO_4	PB		CR		pH
				Dissolved	Total	Dissolved	Total	
ECMW-1	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-2	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-3	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-4	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-5	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-6	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-7	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-8	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-9	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-10	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-11	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-12	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-13	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-14	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-15	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-16	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-17	SA	SA	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-18	SA-Even	SA	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-19	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-20	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-21	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA
ECMW-22	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA-Even	SA

[1]SA: Semi-Annual and SA-Even: Semi-Annual Even Years

Sampling events for the 2022 monitoring year occurred in February for the first half and in July for the second half. Samples, field parameters, and depth to water measurements were collected by GBMc personnel. Depths to water surface were measured from the top of the well casing using an electronic water level indicator. Depth to water surface measurements were used to develop potentiometric maps for each sampling event. Prior to sampling, the respective wells were purged using either a submersible or peristaltic pump until parameter stabilization had occurred for at least 3 consecutive readings and with minimal water level drawdown to ensure samples originated from the aquifer and not influenced by the open atmosphere within the well. Samples were collected for each well in appropriately preserved containers using a low flow rate with either the submersible or peristaltic pump. Sample containers were placed on ice and delivered to a DEQ certified laboratory for analysis. Field parameters were measured at the time of sample collection with an appropriate handheld in-situ meter.

2.2 Groundwater Elevation Survey Results

Water levels for the potentiometric maps were collected during the February and July 2022 sampling events and are shown in Table 2.2. The potentiometric surface map for the 2022 annual report is included in Appendix A.

Table 2.2. Monitoring well reference point elevations.

Well	Top of casing elevation (ft above mean sea level)	February 2022		July 2022	
		Depth to water (ft from top of casing)	Ground water elevation (ft above MSL)	Depth to water (ft from top of casing)	Ground water elevation (ft above MSL)
ECMW-1	213.38	14.25	199.13	11.3	202.08
ECMW-2	196.25	1.3	194.95	0	196.25
ECMW-3	192.11	10.95	181.16	9.9	182.21
ECMW-4	194.84	9.25	185.59	9	185.84
ECMW-5	182.69	3.5	179.19	3.8	178.89
ECMW-6	191.87	4.9	186.97	3.9	187.97
ECMW-7	195.88	7.35	188.53	6.5	189.38
ECMW-8	197.34	7.25	190.09	6.3	191.04
ECMW-9	198.39	11	187.39	10.25	188.14
ECMW-10	205.75	15.12	190.63	13.1	192.65
ECMW-11	201.65	12.35	189.3	10	191.65
ECMW-12	184.97	5.8	179.17	4.9	180.07
ECMW-13	177.26	6	171.26	7	170.26
ECMW-14	178.48	10	168.48	5	173.48
ECMW-15	180.84	5.95	174.89	3.9	176.94
ECMW-16	180.14	5.82	174.32	3.2	176.94
ECMW-17	185.4	29.8	155.6	28.3	157.1
ECMW-18	155.46	5.15	150.31	5.6	149.86
ECMW-19	150.41	6.85	143.56	1.7	148.71
ECMW-20	192.77	28	164.77	27.7	165.07
ECMW-21	176.29	17.25	159.04	16.8	159.49
ECMW-22	173.55	7.25	166.3	5	168.55

The groundwater flow direction at the site was generally in a southeast direction. The hydraulic gradient was calculated between ECMW-8 and ECMW-19 using the following equation (RCRA Groundwater Monitoring: Draft Technical Guidance, EPA/530-R-93-001):

$$i = \Delta H / L$$

i = hydraulic gradient (unitless)

ΔH = difference in hydraulic head (ft)

L = distance between monitoring wells (ft)

The difference in hydraulic head between monitoring wells ECMW-8 and ECMW-19 was 46.53 ft and 42.33 ft for the first and second half of 2022, respectively. The distance between the monitoring wells is 4,267 ft. The resulting hydraulic gradients of 1.09×10^{-2} for the first half and 9.92×10^{-3} for the second half were used to calculate the average linear velocity of

groundwater flow in the following equation (RCRA Groundwater Monitoring: Draft Technical Guidance, EPA/530-R-93-001):

$$V = Ki/n_e$$

V = average linear velocity (cm/s)

K = hydraulic conductivity (cm/s)

i = hydraulic gradient (unitless)

n_e = effective porosity (unitless)

Based on slug tests performed in 1997 on ECMW-4, ECMW-13, and ECMW-18 the Cockfield Formation in the EDCC area has an average hydraulic conductivity of 6.61×10^{-4} cm/s. An effective porosity value of 0.30 was reported by Woodward-Clyde in 1997 for the EDCC area. Using these values, the equation resulted in an average linear velocity of 2.40×10^{-5} cm/s for the first half of 2022 and an average linear velocity of 2.19×10^{-5} cm/s for the second half of 2022.

2.3 Groundwater Analytical Results

Field measurements and groundwater samples were collected by GBMc personnel and delivered to a DEQ certified commercial laboratory for analysis of the parameters listed in Table 2.1. Laboratory reports and groundwater sampling field records for February and July 2022 sampling events are included in Appendix B. Constituent concentration maps are located in Appendix C. Appendix D contains tabularized parameter data for each of the wells.

Ammonia Results

Ammonia was the focus of the CAO and the RAP. The target monitoring value for ammonia is 0.55 mg/L at the property boundary or down gradient wells (ECMW 17-22). The target ammonia was determined in the 2007 Human Health Risk Assessment Report and implemented in the Remedial Action Plan. This target was set as the downgradient wells (ECMW 17-22) have the highest potential to leave the facility site. For 2022, ECMW-17 ammonia concentration was above the target monitoring value in February 2022 (2.3 mg/L), and in July 2022 (7.3 mg/L). Table 2.3 contains ammonia concentrations for all wells. Ammonia concentrations above the 0.55 mg/L in ECMW 17-22 are in red.

Table 2.3. Ammonia concentrations for all wells.

Monitoring Well	Type of Monitoring Well	Date	Ammonia-N (mg/L)[1]
ECMW-1	Control Wells	2/22/2022	0.18
		7/11/2022	0.18
ECMW-2		2/22/2022	0.46
		7/11/2022	0.22
ECMW-3		2/22/2022	0.10
		7/11/2022	0.20
ECMW-4	Production Wells	2/22/2022	0.55
		7/12/2022	0.59
ECMW-5		2/22/2022	0.34
		7/12/2022	1.10
ECMW-6		2/22/2022	130
		7/12/2022	1100
ECMW-7		2/22/2022	120
		7/12/2022	1000
ECMW-8		2/22/2022	73.0
		7/12/2022	980
ECMW-9		2/22/2022	0.32
		7/12/2022	1.40
ECMW-10		2/21/2022	0.44
		7/11/2022	0.32
ECMW-11		2/21/2022	7.30
		7/11/2022	11.0
ECMW-12		2/21/2022	2.00
		7/11/2022	3.00
ECMW-13		2/23/2022	0.10
		7/13/2022	0.17
ECMW-14	Mid-gradient Wells	2/23/2022	0.10
		7/13/2022	0.65
ECMW-15		2/23/2022	0.12
		7/13/2022	18.0
ECMW-16		2/21/2022	0.28
		7/13/2022	1.70
ECMW-17	Downgradient Wells	2/21/2022	2.30
		7/13/2022	7.30
ECMW-18		2/23/2022	0.37
		7/13/2022	0.52
ECMW-19		2/23/2022	0.12
		7/13/2022	0.21
ECMW-20		2/22/2022	0.18
		7/12/2022	0.48
ECMW-21		2/22/2022	0.10
		7/12/2022	0.24
ECMW-22		2/21/2022	0.12
		7/13/2022	0.18

[1] Based on sampling schedule in Table 2.1, Ammonia-N was sampled at all wells in 2022.

The CAO and the RAP target ammonia concentration (0.55 mg/L) was for downgradient wells only as those are the ones with the highest potential to leave the site. The ammonia concentrations were highest near the recovery wells. The recovery wells are closest to monitoring wells 6, 7 and 8. Monitoring wells 6, 7, and 8 were the only wells that had statistically significant increasing trends. There was one other statistically significant trend which was a decreasing one at ECMW-16.

Other Constituents Sampled

The nitrate concentrations from all wells during both sampling events ranged from 0.05 mg/L (ECMW-2, 3, 4, 12, 13, 14, 17, 18, 19, 22) to 15,000 mg/L (ECMW-6). The values of the control wells ranged from 0.05 mg/L (ECMW-2, 3) to 1.80 mg/L (ECMW-2). Nitrate concentrations within the production area ranged from 0.05 mg/L to 15,000 mg/L. Nitrate concentrations in the mid-gradient wells ranged from 0.05 (ECMW-14) to 25.0 mg/L (ECMW-15). Downgradient wells ranged from 0.05 mg/L (ECMW-17, 19) to 18 mg/L (ECMW-17).

The sulfate concentrations from all wells ranged from 2.5 mg/L at ECMW-19 to 910 mg/L at ECMW-4. The values of the control wells ranged from 5.6 mg/L (ECMW-2)) to 22 mg/L (ECMW-2, 3). Sulfate concentrations within the production area ranged from 4.5 mg/L (ECMW-12) to 910 mg/L (ECMW-4). Sulfate concentrations in the mid-gradient wells ranged from 17 mg/L (ECMW-15) to 160 mg/L (ECMW-14). Downgradient well sulfate concentrations ranged from 2.5 mg/L (ECMW-19) to 62 mg/L (ECMW-17).

The pH measurements from all wells ranged from 3.59 (ECMW-4, 6) to 6.16 (ECMW-7). The values of the control wells ranged from 4.18 (ECMW-1) to 6.07 (ECMW-3). The values of the production wells ranged from 3.59 (ECMW-4, 6) to 6.16 (ECMW-7). The values of the mid-gradient wells ranged from 3.88 (ECMW-16) to 5.35 (ECMW-14). The pH values of the down gradient wells ranged from 3.78 (ECMW-17) to 5.87 (ECMW-22).

The specific conductance measurements from all wells ranged from 46 µS/cm (ECMW-1) to 83,168 µS/cm (ECMW-6). The values of the control wells ranged from 46 µS/cm (ECMW-1) to 234 µS/cm (ECMW-2). The values of the production wells ranged from 494 µS/cm (ECMW-13) to 83,168 µS/cm (ECMW-6). The values of the mid-gradient wells ranged from 89 µS/cm (ECMW-15) to 540 µS/cm (ECMW-15). The specific conductance values of the down gradient wells ranged from 57 µS/cm (ECMW-21) to 412 µS/cm (ECMW-17).

3.0 STATISTICAL ANALYSIS RESULTS AND DISCUSSION

Statistical comparisons of parameter concentrations in upgradient and downgradient wells for the EDCC groundwater monitoring program were performed in 2005. Following the statistical comparison analysis and pursuant to CAO LIS No. 18-085, a trend analysis approach was implemented for evaluating the effectiveness of the groundwater remediation program. A one-way ANOVA was completed on all wells that compared the upgradient (control) wells (ECMW 1-3) to all other wells (ECMW 4-22). If statistical differences between the medians of each monitoring well compared to the upgradient wells was significant, then a linear regression was also completed. Linear regression analyses were performed for each monitoring well that was statistically different from the upgradient (control) wells. Table 3.1 summarizes the statistical results of the linear regression trend analysis. Statistical analysis result reports are presented in Appendix D.

Table 3.1 Statistical results of the linear regression trend analysis.

Monitoring Well[1]	Ammonia		Nitrate		Sulfate		pH		Specific Conductance	
	Regression significant?	Increasing or decreasing trend?	Regression significant?	Increasing or decreasing trend?	Regression significant?	Increasing or decreasing trend?	Regression significant?	Increasing or decreasing trend?	Regression significant?	Increasing or decreasing trend?
ECMW-1	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A
ECMW-2	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A
ECMW-3	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A
ECMW-4	Not significant	N/A	Not significant	N/A	Not significant	N/A	**Significant**	**Decreasing**	Not Significant	N/A
ECMW-5	Not significant	N/A	**Significant**	**Increasing**	**Significant**	**Decreasing**	Not Significant	N/A	Not Significant	N/A
ECMW-6	**Significant**	**Increasing**	**Significant**	**Increasing**	Not Significant	N/A	**Significant**	**Decreasing**	**Significant**	**Increasing**
ECMW-7	**Significant**	**Increasing**	**Significant**	**Increasing**	Not significant	N/A	**Significant**	**Increasing**	**Significant**	**Increasing**
ECMW-8	**Significant**	**Increasing**	**Significant**	**Increasing**	**Significant**	**Decreasing**	**Significant**	**Decreasing**	**Significant**	**Increasing**
ECMW-9	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A
ECMW-10	Not significant	N/A	**Significant**	**Decreasing**	Not significant	N/A	**Significant**	**Decreasing**	**Significant**	**Decreasing**
ECMW-11	Not significant	N/A	**Significant**	**Increasing**	**Significant**	**Decreasing**	**Significant**	**Decreasing**	Not Significant	N/A
ECMW-12	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	**Significant**	**Increasing**
ECMW-13	Not significant	N/A	Not significant	N/A	**Significant**	**Decreasing**	Not Significant	N/A	Not Significant	N/A
ECMW-14	Not significant	N/A	**Significant**	**Decreasing**	**Significant**	**Decreasing**	Not Significant	N/A	Not Significant	N/A
ECMW-15	Not significant	N/A	Not significant	N/A	Not significant	N/A	**Significant**	**Decreasing**	Not Significant	N/A
ECMW-16	**Significant**	**Decreasing**	**Significant**	**Decreasing**	Not significant	N/A	**Significant**	**Decreasing**	Not Significant	N/A
ECMW-17	Not significant	N/A	**Significant**	**Decreasing**	Not significant	N/A	**Significant**	**Decreasing**	Not Significant	N/A
ECMW-18	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A
ECMW-19	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A
ECMW-20	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A
ECMW-21	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A
ECMW-22	Not significant	N/A	Not significant	N/A	Not significant	N/A	Not Significant	N/A	Not Significant	N/A

[1]Black indicates the control well, red indicates production area wells; yellow indicates mid-gradient wells; blue indicates downgradient wells.

Ammonia

Statistically significant increasing trends in ammonia concentration over time were observed in ECMW-6, ECMW-7, and ECMW-8. A significant decreasing trend was observed for ECMW-16. The remaining wells did not display a statistically significant trend in ammonia over time. Significant increasing trends were expected for ECMW-6 through ECMW-8 as they are near the groundwater recovery wells. These results indicate that ammonia is being drawn to the recovery wells. The significant decreasing trend in ammonia concentration at ECMW-16, a mid-gradient well, indicates that ammonia is not migrating from the production area and natural attenuation is occurring.

Other Constituents

Statistically significant increasing trends in nitrate concentration over time were observed in ECMW-5, ECMW-6, ECMW-7, ECMW-8, and ECMW-11. Significant decreasing trends in nitrate concentrations were observed in ECMW-10, ECMW-14, ECMW-16, and ECMW-17. The remaining wells did not display a significant trend in nitrate concentrations. As with ammonia, significant increasing nitrate concentration trends at ECMW-5 through ECMW-8 indicate that nitrate is being drawn to the recovery wells. Monitoring well ECMW-10 is on the downgradient edge of the production area, ECMW-14 through ECMW-16 are mid-gradient wells, and ECMW-17 is a downgradient well. Decreasing trends at these wells indicate that nitrate is not migrating out of the production area and natural attenuation is occurring.

None of the monitoring wells showed significant increasing trends for sulfate over time. Significant decreasing trends were observed in ECMW-5, ECMW-8 ECMW-11, ECMW-13, and ECMW-14. Except for ECMW-14, a mid-gradient well, significant decreasing trends in sulfate concentrations were confined to the production area wells. Significant decreasing trends in sulfate concentration indicate that sulfate is not migrating from the production areas and that natural attenuation is occurring.

Statistically significant increasing trends in pH measurements over time were observed in ECMW-7. Significant decreasing trends were observed in ECMW-4, ECMW-6, ECMW-8, ECMW-10, ECMW-11, ECMW-15, ECMW-16, and ECMW-17. The remaining wells did not display a significant trend in pH measurements. Significant decreasing trends in pH were confined to the production area wells, two mid-gradient wells, and one down-gradient well.

Statistically significant increasing trends in specific conductance measurements over time were observed in ECMW-6, ECMW-7, ECMW-8, and ECMW-12. A significant decreasing trend in specific conductance measurements was observed in ECMW-10. The remaining wells

did not display a significant trend in specific conductance concentrations. As with ammonia and nitrate, significant increasing specific conductance concentration trends at ECMW-6 through ECMW-8 indicate that nitrate is being drawn to the recovery wells. Monitoring well ECMW-10 is decreasing and on the downgradient edge of the production area.

4.0 SUMMARY

The data reported for the EDCC groundwater wells suggest that the elevated ammonia and other constituent concentrations in the production area are being contained within the production area and not influencing downgradient groundwater offsite. This is supported by significantly increasing trends in ammonia concentrations in monitoring wells near the groundwater recovery wells. Significant decreasing or no trends in mid- and downgradient wells indicate that ammonia is not migrating from the production area and that groundwater recovery and natural attenuation are effective in reducing concentrations in these areas.

While the target ammonia concentration of 0.55 mg/L has not successfully been achieved consistently at the downgradient wells, concentrations remain relatively low in relation to concentrations in the production area. Significant decreasing trends in ammonia in ECMW-16 indicate that ammonia concentrations are decreasing in wells immediately downgradient of the production area and that natural attenuation is effective in reducing concentrations in these areas.

The recovery well system at EDCC has been successful in removing contaminants from the uppermost saturated layer of the Cockfield Formation and has proven to be a component in reducing potential exposure risk at the site. Continued operation of the recovery well system and groundwater monitoring are recommended to assess the effectiveness of the groundwater remediation activities at EDCC.

5.0 REFERENCES CITED

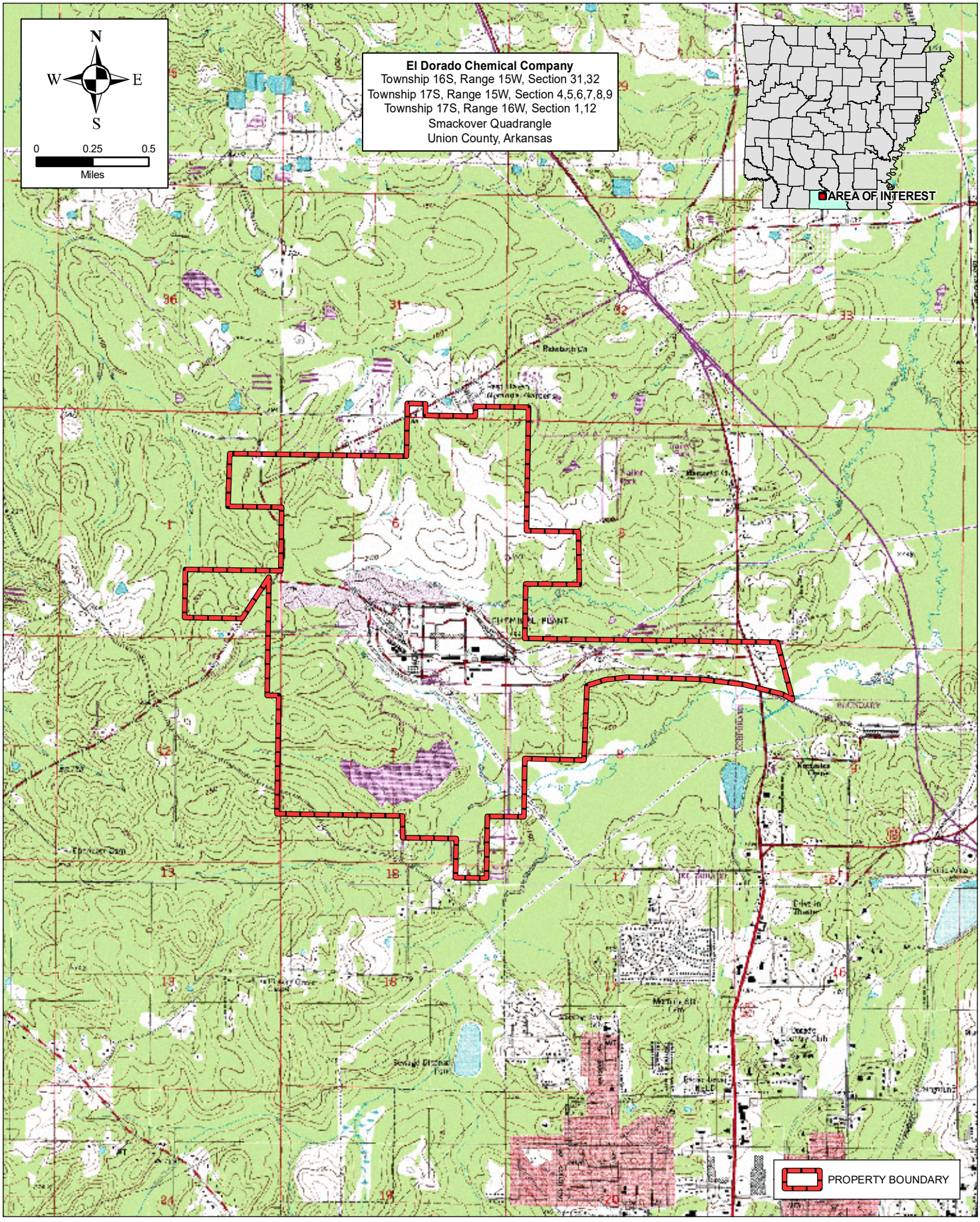
Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance. March 2009. EPA 530/R-09-007. https://www.itrcweb.org/gsmc-1/Content/Resources/Unified_Guidance_2009.pdf

RCRA Groundwater Monitoring: Draft Technical Guidance. 1992 EPA/530-R-93-001. http://archive.epa.gov/epawaste/hazard/web/pdf/rcra_gw.pdf

APPENDIX A

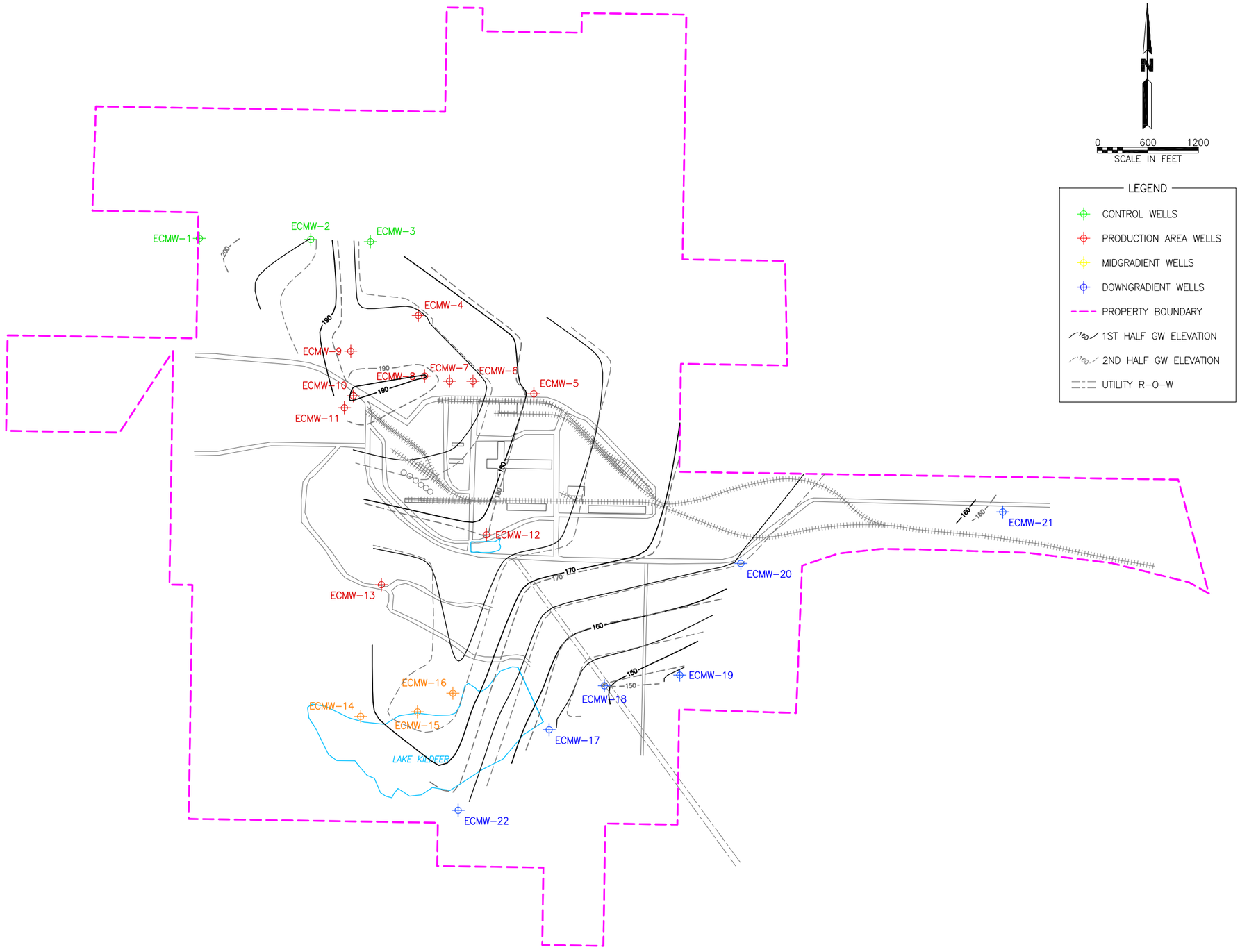
Site Maps

Location Map



DESIGNED BY DMB	GBMc & ASSOCIATES	SHEET TITLE	JOB NAME	PROJECT NO.	REV. NO.
CHECKED BY DMB		TOPOGRAPHIC LOCATION MAP	EL DORADO CHEMICAL COMPANY	2042-99-010	
APPR. BY DMB				DATE 11/1/2022	DWG. NO.
DRAWN BY IT			EL DORADO, ARKANSAS	SCALE SHOWN	

Potentiometric Surface Map



NO	DATE	REVISION	BY	CK.	APPR.

DESIGNED BY DMB
CHECKED BY DMB
APPR. BY CDC
DRAWN BY IT

GBMc & ASSOCIATES

SHEET TITLE
2022 GROUNDWATER ELEVATION

JOB NAME
2022 GROUNDWATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

PROJECT NO. 2042-99-010
DATE 11/08/2022
SCALE SHOWN
REV. NO.
DWG. NO.

APPENDIX B

Laboratory Reports and Sampling Logs

Laboratory Reports

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219 Brown Ln
Bryant, AR 72022

This report contains the analytical results and supporting information for samples received on February 24, 2022. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Chief Operating Officer or a qualified designee.

by LP
John Overbey
Chief Operating Officer

This document has been distributed to the following:

PDF cc: GBMc & Associates, Inc.
ATTN: Mr. Dani Braund
dbraund@gbmcassoc.com

GBMc & Associates, Inc.
ATTN: Mr. Will Glenn
wglenn@gbmcassoc.com

AMERICAN INTERPLEX CORPORATION LABORATORIES

GBMc & Associates, Inc.
219 Brown Ln
Bryant, AR 72022

SAMPLE INFORMATION

Project Description:
Six (6) water sample(s) received on February 24, 2022
El Dorado Chemical Company
Monitoring Well Sampling

Receipt Details:
A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
263241-1	MW-13	23-Feb-2022 1023	
263241-2	MW-14	23-Feb-2022 0906	
263241-3	MW-15	23-Feb-2022 0953	
263241-4	MW-18	23-Feb-2022 1346	
263241-5	MW-19	23-Feb-2022 1314	
263241-6	MW-19 DUP	23-Feb-2022 1314	

Qualifiers:
D Result is from a secondary dilution factor

References:
"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).
"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.
"Standard Methods for the Examination of Water and Wastewaters", (SM).
"American Society for Testing and Materials" (ASTM).
"Association of Analytical Chemists" (AOAC).

AMERICAN INTERPLEX CORPORATION LABORATORIES

GBMc & Associates, Inc.
219 Brown Ln
Bryant, AR 72022

ANALYTICAL RESULTS

AIC No. 263241-1
Sample Identification: MW-13 23-Feb-2022 1023

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**< 0.1**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1511 by 352	Analyzed: 09-Mar-2022 1208 by 347		Batch: W78748	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1529 by 328		Batch: S52259	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1608 by 313		Batch: S52259	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 01-Mar-2022 2348 by 338		Batch: C25132	
Sulfate		**190**	2	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 01-Mar-2022 2325 by 338		Batch: C25132	Dil: 10
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1606 by 313		Batch: S52259	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1526 by 328		Batch: S52259	

AIC No. 263241-2
Sample Identification: MW-14 23-Feb-2022 0906

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**< 0.1**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1511 by 352	Analyzed: 09-Mar-2022 1210 by 347		Batch: W78748	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1614 by 313		Batch: S52259	
Lead		**0.0011**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1614 by 313		Batch: S52259	
Nitrate as N		**1.3**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0011 by 338		Batch: C25132	
Sulfate		**160**	2	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 1608 by 338		Batch: C25132	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1611 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1611 by 313		Batch: S52259	

AIC No. 263241-3
Sample Identification: MW-15 23-Feb-2022 0953

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.12**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1511 by 352	Analyzed: 09-Mar-2022 1212 by 347		Batch: W78748	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1622 by 313		Batch: S52259	

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Bryant, AR 72022

ANALYTICAL RESULTS

AIC No. 263241-3 (Continued)
Sample Identification: MW-15 23-Feb-2022 0953

Analyte		Result	RL	Units	Qualifier
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1622 by 313		Batch: S52259	
Nitrate as N		**3.3**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0033 by 338		Batch: C25132	
Sulfate		**17**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0033 by 338		Batch: C25132	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1620 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1620 by 313		Batch: S52259	

AIC No. 263241-4
Sample Identification: MW-18 23-Feb-2022 1346

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.37**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1511 by 352	Analyzed: 09-Mar-2022 1219 by 347		Batch: W78748	
Chromium		**0.015**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1534 by 328		Batch: S52259	
Lead		**0.025**	0.003	**mg/l**	D
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1628 by 313		Batch: S52259	Dil: 5
Nitrate as N		**0.15**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0056 by 338		Batch: C25132	
Sulfate		**4.4**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0056 by 338		Batch: C25132	
Dissolved Lead		**0.025**	0.003	**mg/l**	D
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1625 by 313		Batch: S52259	Dil: 5
Dissolved Chromium		**0.014**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1532 by 328		Batch: S52259	

AIC No. 263241-5
Sample Identification: MW-19 23-Feb-2022 1314

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.12**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1511 by 352	Analyzed: 09-Mar-2022 1221 by 347		Batch: W78748	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1640 by 313		Batch: S52259	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1640 by 313		Batch: S52259	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0119 by 338		Batch: C25132	

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ANALYTICAL RESULTS

AIC No. 263241-5 (Continued)
Sample Identification: MW-19 23-Feb-2022 1314

Analyte		Result	RL	Units	Qualifier
Sulfate		**2.5**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0119 by 338		Batch: C25132	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1638 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1638 by 313		Batch: S52259	

AIC No. 263241-6
Sample Identification: MW-19 DUP 23-Feb-2022 1314

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**1.8**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1511 by 352	Analyzed: 09-Mar-2022 1223 by 347		Batch: W78748	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1646 by 313		Batch: S52259	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1646 by 313		Batch: S52259	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0142 by 338		Batch: C25132	
Sulfate		**2.4**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1454 by 338	Analyzed: 02-Mar-2022 0142 by 338		Batch: C25132	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1643 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1643 by 313		Batch: S52259	

AMERICAN INTERPLEX CORPORATION LABORATORIES

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Bryant, AR 72022

LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	101	80.0-120			W78748	28Feb22 1512 by 352	09Mar22 1156 by 347		
Chromium	0.02 mg/l	96.3	85.0-115			S52259	01Mar22 0911 by 313	01Mar22 1418 by 313		
Lead	0.02 mg/l	98.8	85.0-115			S52259	01Mar22 0911 by 313	01Mar22 1418 by 313		
Nitrate as N	5 mg/l	98.7	90.0-110			C25132	01Mar22 1454 by 338	01Mar22 2045 by 338		
Sulfate	25 mg/l	98.5	90.0-110			C25132	01Mar22 1454 by 338	01Mar22 2045 by 338		

MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	263248-2	1 mg/l	99.7	80.0-120	W78748	28Feb22 1512 by 352	09Mar22 1200 by 347		
	263248-2	1 mg/l	97.6	80.0-120	W78748	28Feb22 1512 by 352	09Mar22 1202 by 347		
	Relative Percent Difference:		1.17	25.0	W78748				
Chromium	263236-3	0.02 mg/l	91.0	75.0-125	S52259	01Mar22 0911 by 313	01Mar22 1421 by 313		
	263236-3	0.02 mg/l	90.2	75.0-125	S52259	01Mar22 0911 by 313	01Mar22 1423 by 313		
	Relative Percent Difference:		0.839	20.0	S52259				
Lead	263236-3	0.02 mg/l	97.2	75.0-125	S52259	01Mar22 0911 by 313	01Mar22 1421 by 313		
	263236-3	0.02 mg/l	96.2	75.0-125	S52259	01Mar22 0911 by 313	01Mar22 1423 by 313		
	Relative Percent Difference:		1.00	20.0	S52259				
Nitrate as N	263343-1	5 mg/l	94.9	80.0-120	C25132	01Mar22 1454 by 338	01Mar22 2108 by 338		
	263343-1	5 mg/l	95.2	80.0-120	C25132	01Mar22 1454 by 338	01Mar22 2131 by 338		
	Relative Percent Difference:		0.198	10.0	C25132				
Sulfate	263343-1	25 mg/l	94.8	80.0-120	C25132	01Mar22 1454 by 338	01Mar22 2108 by 338		
	263343-1	25 mg/l	95.0	80.0-120	C25132	01Mar22 1454 by 338	01Mar22 2131 by 338		
	Relative Percent Difference:		0.182	10.0	C25132				

LABORATORY BLANK RESULTS

Analyte	Result	RL	LOQ	QC Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.09 mg/l	0.09	0.1	W78748-1	28Feb22 1512 by 352	09Mar22 1154 by 347	
Chromium	< 0.005 mg/l	0.005	0.01	S52259-1	01Mar22 0911 by 313	01Mar22 1415 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52259-1	01Mar22 0911 by 313	01Mar22 1415 by 313	
Nitrate as N	< 0.03 mg/l	0.03	0.05	C25132-1	01Mar22 1454 by 338	01Mar22 2022 by 338	
Sulfate	< 0.1 mg/l	0.1	0.2	C25132-1	01Mar22 1454 by 338	01Mar22 2022 by 338	

GBM[c] & Associates
Strategic Environmental Services
219 Brown Ln.
Bryant, AR 72022
(501) 847-7077 Fax (501) 847-7943

Chain of Custody

263241

CLIENT INFORMATION		BILLING INFORMATION	
Company:	El Dorado Chemical Company	Bill To:	GBMc & Associates
Project Name/No.:	Monitoring Well Sampling	Company:	
Send Report To:	Dani Braund / Will Glenn	Address:	
Address:	219 Brown Lane		
	Bryant, AR 72022	Phone No.:	
Phone/Fax No.:	(501) 847-7077	Fax No.:	

SPECIAL INSTRUCTIONS/PRECAUTIONS:

Send a copy of report to Dani Braund / Will Glenn at emails:
dbraund@gbmcassoc.com
wglenn@gbmcassoc.com

Parameters for Analysis/Methods

	Sample ID	Sample Description	Date	Time	Matrix S=Sed/Soil W=Water	Number of Containers	Nitrate as N	Ammonia as N	Sulfate	Dissolved Lead	Total Lead	Dissolved Chromium	Total Chromium		
1	MW-13	Groundwater	2/23/22	1023	W	3	X	X	X	X	X	X	X		
2	MW-14		2/23/22	0906	W		X	X	X	X	X	X	X		
3	MW-15		2/23/22	0953	W		X	X	X	X	X	X	X		
4	MW-18		2/23/22	1346	W		X	X	X	X	X	X	X		
5	MW-19		2/23/22	1314	W		X	X	X	X	X	X	X		
6	MW-19 DUP		2/23/22	1314	W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
Preservative		(Sulfuric acid =S, Nitric acid =N, NaOH =B, Ice =I)					I, S	I	I	I	I, N	I	I, N		

Sampler(s): DMB/OEB
Shipment Method: Fed Ex Priority
Turnaround Time Required: Normal

COC Completed by: OEB Date: 2/24/22 Time: 0900
COC Checked by: DMB Date: 2/24/22 Time: 1515

Relinquished by: OEB Date: 2/24/22 Time: 1645
Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____
Received in lab by: D. Braund Date: 2-24-22 Time: 1635

LABORATORY USE ONLY:

Samples Received On Ice?: (YES) or NO

Sample Temperature: 1.9

V1.2 02/01/22

GBMc & Associates, Inc.
ATTN: Mr. Dani Braund
219 Brown Ln
Bryant, AR 72022

This report contains the analytical results and supporting information for samples received on February 23, 2022. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Chief Operating Officer or a qualified designee.

by LP
John Overbey
Chief Operating Officer

This document has been distributed to the following:

PDF cc: GBMc & Associates, Inc.
ATTN: Mr. Dani Braund
dbraund@gbmcassoc.com

GBMc & Associates, Inc.
ATTN: Mr. Will Glenn
wglenn@gbmcassoc.com

AMERICAN INTERPLEX CORPORATION LABORATORIES

GBMc & Associates, Inc.
219 Brown Ln
Bryant, AR 72022

SAMPLE INFORMATION

Project Description:
Thirteen (13) water sample(s) received on February 23, 2022
El Dorado Chemical Company
Monitoring Well Sampling

Receipt Details:
A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
263225-1	MW-1	22-Feb-2022 0816	
263225-2	MW-2	22-Feb-2022 0912	
263225-3	MW-3	22-Feb-2022 0946	
263225-4	MW-2 DUP	22-Feb-2022 0912	
263225-5	MW-4	22-Feb-2022 1021	
263225-6	MW-5	22-Feb-2022 1142	
263225-7	MW-6	22-Feb-2022 1100	
263225-8	MW-7	22-Feb-2022 1222	
263225-9	MW-8	22-Feb-2022 1306	
263225-10	MW-9	22-Feb-2022 1346	
263225-11	MW-20	22-Feb-2022 1610	
263225-12	MW-21	22-Feb-2022 1507	
263225-13	MW-20 DUP	22-Feb-2022 1610	

Qualifiers:
D Result is from a secondary dilution factor

References:
"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).
"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.
"Standard Methods for the Examination of Water and Wastewaters", (SM).
"American Society for Testing and Materials" (ASTM).
"Association of Analytical Chemists" (AOAC).

AMERICAN INTERPLEX CORPORATION LABORATORIES

GBMc & Associates, Inc.
219 Brown Ln
Bryant, AR 72022

ANALYTICAL RESULTS

AIC No. 263225-1
Sample Identification: MW-1 22-Feb-2022 0816

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.18**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0910 by 347		Batch: W78741	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1435 by 313		Batch: S52259	
Lead		**0.00053**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1435 by 313		Batch: S52259	
Nitrate as N		**0.30**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 01-Mar-2022 2211 by 338		Batch: C25131	
Sulfate		**5.7**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 01-Mar-2022 2211 by 338		Batch: C25131	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1432 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1432 by 313		Batch: S52259	

AIC No. 263225-2
Sample Identification: MW-2 22-Feb-2022 0912

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.46**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0912 by 347		Batch: W78741	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1441 by 313		Batch: S52259	
Lead		**0.0011**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1441 by 313		Batch: S52259	
Nitrate as N		**1.8**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 01-Mar-2022 2234 by 338		Batch: C25131	
Sulfate		**5.6**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 01-Mar-2022 2234 by 338		Batch: C25131	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1438 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1438 by 313		Batch: S52259	

AIC No. 263225-3
Sample Identification: MW-3 22-Feb-2022 0946

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**< 0.1**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0914 by 347		Batch: W78741	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1452 by 313		Batch: S52259	

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ANALYTICAL RESULTS

AIC No. 263225-3 (Continued)
Sample Identification: MW-3 22-Feb-2022 0946

Analyte		Result	RL	Units	Qualifier
Lead		**0.0019**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1452 by 313		Batch: S52259	
Nitrate as N		**0.060**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 01-Mar-2022 2256 by 338		Batch: C25131	
Sulfate		**22**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 01-Mar-2022 2256 by 338		Batch: C25131	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1450 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1450 by 313		Batch: S52259	

AIC No. 263225-4
Sample Identification: MW-2 DUP 22-Feb-2022 0912

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**< 0.1**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0916 by 347		Batch: W78741	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1458 by 313		Batch: S52259	
Lead		**0.0011**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1458 by 313		Batch: S52259	
Nitrate as N		**0.062**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 01-Mar-2022 2319 by 338		Batch: C25131	
Sulfate		**23**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 01-Mar-2022 2319 by 338		Batch: C25131	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1455 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1455 by 313		Batch: S52259	

AIC No. 263225-5
Sample Identification: MW-4 22-Feb-2022 1021

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.55**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0922 by 347		Batch: W78741	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1359 by 328		Batch: S52259	
Lead		**0.0079**	0.003	**mg/l**	D
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1652 by 313		Batch: S52259	Dil: 5
Nitrate as N		**0.081**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0051 by 338		Batch: C25131	

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ANALYTICAL RESULTS

AIC No. 263225-5 (Continued)
Sample Identification: MW-4 22-Feb-2022 1021

Analyte		Result	RL	Units	Qualifier
Sulfate		**670**	20	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0028 by 338		Batch: C25131	Dil: 100
Dissolved Lead		**0.0078**	0.003	**mg/l**	D
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1649 by 313		Batch: S52259	Dil: 5
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1356 by 328		Batch: S52259	

AIC No. 263225-6
Sample Identification: MW-5 22-Feb-2022 1142

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.34**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0924 by 347		Batch: W78741	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1405 by 328		Batch: S52259	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1510 by 313		Batch: S52259	
Nitrate as N		**140**	5	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0113 by 338		Batch: C25131	Dil: 100
Sulfate		**31**	2	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0136 by 338		Batch: C25131	Dil: 10
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1507 by 313		Batch: S52259	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1402 by 328		Batch: S52259	

AIC No. 263225-7
Sample Identification: MW-6 22-Feb-2022 1100

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**130**	9	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 1112 by 347		Batch: W78741	Dil: 90
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1410 by 328		Batch: S52259	
Lead		**0.089**	0.005	**mg/l**	D
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 0909 by 313		Batch: S52259	Dil: 10
Nitrate as N		**11000**	300	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0159 by 338		Batch: C25131	Dil: 5000
Sulfate		**71**	2	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0222 by 338		Batch: C25131	Dil: 10
Dissolved Lead		**0.088**	0.005	**mg/l**	D
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 0906 by 313		Batch: S52259	Dil: 10

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ANALYTICAL RESULTS

AIC No. 263225-7 (Continued)
Sample Identification: MW-6 22-Feb-2022 1100

Analyte		Result	RL	Units	Qualifier
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1407 by 328		Batch: S52259	

AIC No. 263225-8
Sample Identification: MW-7 22-Feb-2022 1222

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**120**	9	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 1113 by 347		Batch: W78741	Dil: 90
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1416 by 328		Batch: S52259	
Lead		**0.0039**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1528 by 313		Batch: S52259	
Nitrate as N		**2500**	50	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0307 by 338		Batch: C25131	Dil: 1000
Sulfate		**710**	20	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0330 by 338		Batch: C25131	Dil: 100
Dissolved Lead		**0.0039**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1525 by 313		Batch: S52259	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1413 by 328		Batch: S52259	

AIC No. 263225-9
Sample Identification: MW-8 22-Feb-2022 1306

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**73**	9	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 1115 by 347		Batch: W78741	Dil: 90
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1421 by 328		Batch: S52259	
Lead		**0.024**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1533 by 313		Batch: S52259	
Nitrate as N		**5300**	50	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0439 by 338		Batch: C25131	Dil: 1000
Sulfate		**130**	2	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0502 by 338		Batch: C25131	Dil: 10
Dissolved Lead		**0.024**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1530 by 313		Batch: S52259	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Mar-2022 0910 by 313	Analyzed: 02-Mar-2022 1419 by 328		Batch: S52259	

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ANALYTICAL RESULTS

AIC No. 263225-10
Sample Identification: MW-9 22-Feb-2022 1346

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.32**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0931 by 347		Batch: W78741	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1539 by 313		Batch: S52259	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1539 by 313		Batch: S52259	
Nitrate as N		**25**	0.5	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0547 by 338		Batch: C25131	Dil: 10
Sulfate		**470**	20	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0524 by 338		Batch: C25131	Dil: 100
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1536 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1536 by 313		Batch: S52259	

AIC No. 263225-11
Sample Identification: MW-20 22-Feb-2022 1610

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.18**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0933 by 347		Batch: W78741	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1545 by 313		Batch: S52259	
Lead		**0.0029**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1545 by 313		Batch: S52259	
Nitrate as N		**0.096**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0610 by 338		Batch: C25131	
Sulfate		**15**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0610 by 338		Batch: C25131	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1542 by 313		Batch: S52259	
Dissolved Lead		**0.00072**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1542 by 313		Batch: S52259	

AIC No. 263225-12
Sample Identification: MW-21 22-Feb-2022 1507

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**< 0.1**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1135 by 352	Analyzed: 09-Mar-2022 0935 by 347		Batch: W78741	
Chromium		**0.011**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1551 by 313		Batch: S52259	

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ANALYTICAL RESULTS

AIC No. 263225-12 (Continued)
Sample Identification: MW-21 22-Feb-2022 1507

Analyte		Result	RL	Units	Qualifier
Lead		**0.00061**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1551 by 313		Batch: S52259	
Nitrate as N		**3.6**	0.5	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0633 by 338		Batch: C25131	Dil: 10
Sulfate		**13**	2	**mg/l**	D
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0633 by 338		Batch: C25131	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1548 by 313		Batch: S52259	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1548 by 313		Batch: S52259	

AIC No. 263225-13
Sample Identification: MW-20 DUP 22-Feb-2022 1610

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**1.3**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 28-Feb-2022 1511 by 352	Analyzed: 09-Mar-2022 1204 by 347		Batch: W78748	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1603 by 313		Batch: S52259	
Lead		**0.0025**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1603 by 313		Batch: S52259	
Nitrate as N		**0.095**	0.05	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0656 by 338		Batch: C25131	
Sulfate		**16**	0.2	**mg/l**	
EPA 9056A	Prep: 01-Mar-2022 1452 by 338	Analyzed: 02-Mar-2022 0656 by 338		Batch: C25131	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1600 by 313		Batch: S52259	
Dissolved Lead		**0.00068**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Mar-2022 0910 by 313	Analyzed: 01-Mar-2022 1600 by 313		Batch: S52259	

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LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	101	80.0-120			W78741	28Feb22 1135 by 352	09Mar22 0859 by 347		
Ammonia as N with Distillation	1 mg/l	101	80.0-120			W78748	28Feb22 1512 by 352	09Mar22 1156 by 347		
Chromium	0.02 mg/l	96.3	85.0-115			S52259	01Mar22 0911 by 313	01Mar22 1418 by 313		
Lead	0.02 mg/l	98.8	85.0-115			S52259	01Mar22 0911 by 313	01Mar22 1418 by 313		
Nitrate as N	5 mg/l	96.3	90.0-110			C25131	01Mar22 1453 by 338	01Mar22 1737 by 338		
Sulfate	25 mg/l	96.9	90.0-110			C25131	01Mar22 1453 by 338	01Mar22 1737 by 338		

MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	263222-1	1 mg/l	106	80.0-120	W78741	28Feb22 1135 by 352	09Mar22 0904 by 347		
	263222-1	1 mg/l	104	80.0-120	W78741	28Feb22 1135 by 352	09Mar22 0906 by 347		
	Relative Percent Difference:		1.72	25.0	W78741				
Ammonia as N with Distillation	263248-2	1 mg/l	99.7	80.0-120	W78748	28Feb22 1512 by 352	09Mar22 1200 by 347		
	263248-2	1 mg/l	97.6	80.0-120	W78748	28Feb22 1512 by 352	09Mar22 1202 by 347		
	Relative Percent Difference:		1.17	25.0	W78748				
Chromium	263236-3	0.02 mg/l	91.0	75.0-125	S52259	01Mar22 0911 by 313	01Mar22 1421 by 313		
	263236-3	0.02 mg/l	90.2	75.0-125	S52259	01Mar22 0911 by 313	01Mar22 1423 by 313		
	Relative Percent Difference:		0.839	20.0	S52259				
Lead	263236-3	0.02 mg/l	97.2	75.0-125	S52259	01Mar22 0911 by 313	01Mar22 1421 by 313		
	263236-3	0.02 mg/l	96.2	75.0-125	S52259	01Mar22 0911 by 313	01Mar22 1423 by 313		
	Relative Percent Difference:		1.00	20.0	S52259				
Nitrate as N	263293-1	5 mg/l	97.9	80.0-120	C25131	01Mar22 1453 by 338	01Mar22 1800 by 338		
	263293-1	5 mg/l	98.4	80.0-120	C25131	01Mar22 1453 by 338	01Mar22 1823 by 338		
	Relative Percent Difference:		0.435	10.0	C25131				
Sulfate	263293-1	25 mg/l	98.5	80.0-120	C25131	01Mar22 1453 by 338	01Mar22 1800 by 338		
	263293-1	25 mg/l	98.8	80.0-120	C25131	01Mar22 1453 by 338	01Mar22 1823 by 338		
	Relative Percent Difference:		0.261	10.0	C25131				

LABORATORY BLANK RESULTS

Analyte	Result	RL	LOQ	QC Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.09 mg/l	0.09	0.1	W78741-1	28Feb22 1135 by 352	09Mar22 0857 by 347	
Ammonia as N with Distillation	< 0.09 mg/l	0.09	0.1	W78748-1	28Feb22 1512 by 352	09Mar22 1154 by 347	
Chromium	< 0.005 mg/l	0.005	0.01	S52259-1	01Mar22 0911 by 313	01Mar22 1415 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52259-1	01Mar22 0911 by 313	01Mar22 1415 by 313	
Nitrate as N	< 0.03 mg/l	0.03	0.05	C25131-1	01Mar22 1453 by 338	01Mar22 1714 by 338	
Sulfate	< 0.1 mg/l	0.1	0.2	C25131-1	01Mar22 1453 by 338	01Mar22 1714 by 338	

GBMc & Associates
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263225

Chain of Custody

CLIENT INFORMATION		BILLING INFORMATION	
Company:	El Dorado Chemical Company	Bill To:	GBMc & Associates
Project Name/No.:	Monitoring Well Sampling	Company:	
Send Report To:	Dani Braund / Will Glenn	Address:	
Address:	219 Brown Lane		
	Bryant, AR 72022	Phone No.:	
Phone/Fax No.:	(501) 847-7077	Fax No.:	

SPECIAL INSTRUCTIONS/PRECAUTIONS:

Send a copy of report to Dani Braund / Will Glenn at emails:
dbraund@gbmcassoc.com
wglenn@gbmcassoc.com

Parameters for Analysis/Methods

	Sample ID	Sample Description	Date	Time	Matrix S=Sed/Soil W=Water	Number of Containers	Nitrate as N	Ammonia as N	Sulfate	Dissolved Lead	Total Lead	Dissolved Chromium	Total Chromium		
1	MW-1	Groundwater	2/22/22	0816	W	3	X	X	X	X	X	X	X		
2	MW-2		2/22/22	0912	W		X	X	X	X	X	X	X		
3	MW-3		2/22/22	0946	W		X	X	X	X	X	X	X		
4	MW-3 DUP		2/22/22	0946	W		X	X	X	X	X	X	X SD	MW 2 Dup	0912
5	MW-4		2/22/22	1021	W		X	X	X	X	X	X	X		
6	MW-5		2/22/22	1142	W	4	X	X	X	X	X	X	X		
7	MW-6		2/22/22	1100	W	4	X	X	X	X	X	X	X		
8	MW-7		2/22/22	1222	W	4	X	X	X	X	X	X	X		
9	MW-8		2/22/22	1306	W	4	X	X	X	X	X	X	X		
10	MW-9	↓	2/22/22	1346	W	4	X	X	X	X	X	X	X		
					W	4	X	X	X	X	X	X	X		
Preservative		(Sulfuric acid =S, Nitric acid =N, NaOH =B, Ice =I)					I, S	I	I	I	I, N	I	I, N		

Sampler(s): DMB / DEB	Shipment Method: Fed Ex Priority	Turnaround Time Required: Normal
COC Completed by: DEB	Date: 2/23/22 Time: 0700	COC Checked by: DMB Date: 2/23/22 Time: 0705
Relinquished by: DMB	Date: 2/23/22 Time: 0730	Received by: [signature] Date: 2-23-22 Time: 11 15
Relinquished by: [signature]	Date: 2-23-22 Time: 200	Received in lab by: [signature] Date: 2-23-22 Time: 1410

LABORATORY USE ONLY:	Samples Received On Ice?: YES or NO	Sample Temperature: 0.1

263225

GBMc & Associates
Strategic Environmental Services
219 Brown Ln.
Bryant, AR 72022
(501) 847-7077 Fax (501) 847-7943

Chain of Custody

CLIENT INFORMATION		BILLING INFORMATION		SPECIAL INSTRUCTIONS/PRECAUTIONS:
Company:	El Dorado Chemical Company	Bill To:	GBMc & Associates	Send a copy of report to Dani Braund / Will Glenn at emails: dbraund@gbmcassoc.com wglenn@gbmcassoc.com
Project Name/No.:	Monitoring Well Sampling	Company:		
Send Report To:	Dani Braund / Will Glenn	Address:		
Address:	219 Brown Lane			
	Bryant, AR 72022	Phone No.:		
Phone/Fax No.:	(501) 847-7077	Fax No.:		

	Sample ID	Sample Description	Date	Time	Matrix S=Sed/Soil W=Water	Number of Containers	Parameters for Analysis/Methods: Nitrate as N	Ammonia as N	Sulfate	Dissolved Lead	Total Lead	Dissolved Chromium	Total Chromium		
11	MW-20	Groundwater	2/22/22	1610	W	3	X	X	X	X	X	X	X		
12	MW-21	↓	2/22/22	1507	W		X	X	X	X	X	X	X		
13	MW-20DUP	↓	2/22/22	1610	W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
					W		X	X	X	X	X	X	X		
Preservative		(Sulfuric acid =S, Nitric acid =N, NaOH =B, Ice =I)					I, S	I	I	I	I, N	I	I, N		

Sampler(s): DMB/OEB	Shipment Method: Fed Ex Priority	Turnaround Time Required: Normal
COC Completed by: OEB	Date: 2/23/22 Time: 0700	COC Checked by: DMB Date: 2/23/22 Time: 0705
Relinquished by: DMB	Date: 2/23/22 Time: 0730	Received by: [signature] Date: 2-23-22 Time: 1115
Relinquished by: [signature]	Date: 2-23-22 Time: 200	Received in lab by: [signature] Date: 2-23-22 Time: 1410

LABORATORY USE ONLY:	Samples Received On Ice?: (YES) or NO	Sample Temperature: 0.1

V1.2 02/01/22

AMERICAN INTERPLEX CORPORATION
LABORATORIES

El Dorado Chemical Company
ATTN: Mr. Eddie Pearson
4500 North West Avenue
El Dorado, AR 71730

This report contains the analytical results and supporting information for samples received on February 22, 2022. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Chief Operating Officer or a qualified designee.

Steve Bradford
Deputy Laboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company
ATTN: Mr. David Sartain
dsartain@edc-ark.com

GBMc & Associates, Inc.
ATTN: Ms. Amanda Gallagher
agallagher@gbmcassoc.com

El Dorado Chemical Company
ATTN: Mr. Eddie Pearson
epearson@edc-ark.com

GBMc & Associates, Inc.
ATTN: Ms. Danielle Braund
dbraund@gbmcassoc.com

GBMc & Associates, Inc.
ATTN: Mr. Will Glenn
wglenn@gbmcassoc.com

GBMc & Associates, Inc.
ATTN: Mr. Brad Phillips
bphillips@gbmcassoc.com

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

SAMPLE INFORMATION

Project Description:
Six (6) water sample(s) received on February 22, 2022
Monitoring Well Sampling
P.O. No. 21000186

Receipt Details:
A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
263171-1	MW10	21-Feb-2022 1200	
263171-2	MW11	21-Feb-2022 1120	
263171-3	MW12	21-Feb-2022 1037	
263171-4	MW16	21-Feb-2022 1557	
263171-5	MW17	21-Feb-2022 1510	
263171-6	MW22	21-Feb-2022 1422	

Qualifiers:
D Result is from a secondary dilution factor

References:
"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).
"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.
"Standard Methods for the Examination of Water and Wastewaters", (SM).
"American Society for Testing and Materials" (ASTM).
"Association of Analytical Chemists" (AOAC).

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 263171-1
Sample Identification: MW10 21-Feb-2022 1200

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.44**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 25-Feb-2022 1454 by 352	Analyzed: 08-Mar-2022 1449 by 347		Batch: W78728	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1426 by 313		Batch: S52239	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1426 by 313		Batch: S52239	
Nitrate as N		**69**	0.5	**mg/l**	D
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 23-Feb-2022 2231 by 338		Batch: C25112	Dil: 10
Sulfate		**84**	2	**mg/l**	D
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 23-Feb-2022 2231 by 338		Batch: C25112	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1424 by 313		Batch: S52239	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1424 by 313		Batch: S52239	

AIC No. 263171-2
Sample Identification: MW11 21-Feb-2022 1120

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**7.3**	0.5	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 25-Feb-2022 1454 by 352	Analyzed: 08-Mar-2022 1543 by 347		Batch: W78728	Dil: 5
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1437 by 313		Batch: S52239	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1437 by 313		Batch: S52239	
Nitrate as N		**35**	0.5	**mg/l**	D
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0002 by 338		Batch: C25112	Dil: 10
Sulfate		**200**	2	**mg/l**	D
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0002 by 338		Batch: C25112	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1434 by 313		Batch: S52239	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1434 by 313		Batch: S52239	

AIC No. 263171-3
Sample Identification: MW12 21-Feb-2022 1037

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**2.0**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 25-Feb-2022 1454 by 352	Analyzed: 08-Mar-2022 1453 by 347		Batch: W78728	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1442 by 313		Batch: S52239	

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 263171-3 (Continued)
Sample Identification: MW12 21-Feb-2022 1037

Analyte		Result	RL	Units	Qualifier
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1442 by 313		Batch: S52239	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0111 by 338		Batch: C25112	
Sulfate		**4.5**	0.2	**mg/l**	
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0111 by 338		Batch: C25112	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1439 by 313		Batch: S52239	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1439 by 313		Batch: S52239	

AIC No. 263171-4
Sample Identification: MW16 21-Feb-2022 1557

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.28**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 25-Feb-2022 1454 by 352	Analyzed: 08-Mar-2022 1455 by 347		Batch: W78728	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1447 by 313		Batch: S52239	
Lead		**0.00055**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1447 by 313		Batch: S52239	
Nitrate as N		**15**	0.5	**mg/l**	D
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0133 by 338		Batch: C25112	Dil: 10
Sulfate		**19**	0.2	**mg/l**	
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0156 by 338		Batch: C25112	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1445 by 313		Batch: S52239	
Dissolved Lead		**0.00054**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1445 by 313		Batch: S52239	

AIC No. 263171-5
Sample Identification: MW17 21-Feb-2022 1510

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**2.3**	0.5	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 25-Feb-2022 1454 by 352	Analyzed: 08-Mar-2022 1545 by 347		Batch: W78728	Dil: 5
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1452 by 313		Batch: S52239	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1452 by 313		Batch: S52239	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0242 by 338		Batch: C25112	

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 263171-5 (Continued)
Sample Identification: MW17 21-Feb-2022 1510

Analyte		Result	RL	Units	Qualifier
Sulfate		**6.5**	0.2	**mg/l**	
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0242 by 338		Batch: C25112	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1450 by 313		Batch: S52239	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1450 by 313		Batch: S52239	

AIC No. 263171-6
Sample Identification: MW22 21-Feb-2022 1422

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.12**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 25-Feb-2022 1454 by 352	Analyzed: 08-Mar-2022 1503 by 347		Batch: W78728	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1458 by 313		Batch: S52239	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1458 by 313		Batch: S52239	
Nitrate as N		**7.2**	0.05	**mg/l**	
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0327 by 338		Batch: C25112	
Sulfate		**19**	0.2	**mg/l**	
EPA 9056A	Prep: 23-Feb-2022 1152 by 338	Analyzed: 24-Feb-2022 0327 by 338		Batch: C25112	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1455 by 313		Batch: S52239	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 23-Feb-2022 0846 by 313	Analyzed: 23-Feb-2022 1455 by 313		Batch: S52239	

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	103	80.0-120			W78728	25Feb22 1454 by 352	08Mar22 1439 by 347		
Chromium	0.02 mg/l	104	85.0-115			S52239	23Feb22 0846 by 313	23Feb22 1254 by 313		
Lead	0.02 mg/l	95.9	85.0-115			S52239	23Feb22 0846 by 313	23Feb22 1254 by 313		
Nitrate as N	5 mg/l	96.9	90.0-110			C25112	23Feb22 1153 by 338	23Feb22 1323 by 338		
Sulfate	25 mg/l	95.9	90.0-110			C25112	23Feb22 1153 by 338	23Feb22 1323 by 338		

MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	263218-1	1 mg/l	106	80.0-120	W78728	25Feb22 1454 by 352	08Mar22 1443 by 347		
	263218-1	1 mg/l	113	80.0-120	W78728	25Feb22 1454 by 352	08Mar22 1445 by 347		
	Relative Percent Difference:		6.23	25.0	W78728				
Chromium	263115-3	0.02 mg/l	91.6	75.0-125	S52239	23Feb22 0846 by 313	23Feb22 1257 by 313		
	263115-3	0.02 mg/l	90.8	75.0-125	S52239	23Feb22 0846 by 313	23Feb22 1259 by 313		
	Relative Percent Difference:		0.910	20.0	S52239				
Lead	263115-3	0.02 mg/l	93.2	75.0-125	S52239	23Feb22 0846 by 313	23Feb22 1257 by 313		
	263115-3	0.02 mg/l	92.3	75.0-125	S52239	23Feb22 0846 by 313	23Feb22 1259 by 313		
	Relative Percent Difference:		0.968	20.0	S52239				
Nitrate as N	263169-1	5 mg/l	105	80.0-120	C25112	23Feb22 1153 by 338	23Feb22 1346 by 338		
	263169-1	5 mg/l	94.8	80.0-120	C25112	23Feb22 1153 by 338	23Feb22 1409 by 338		
	Relative Percent Difference:		7.52	10.0	C25112				
Sulfate	263169-1	25 mg/l	105	80.0-120	C25112	23Feb22 1153 by 338	23Feb22 1346 by 338		
	263169-1	25 mg/l	94.9	80.0-120	C25112	23Feb22 1153 by 338	23Feb22 1409 by 338		
	Relative Percent Difference:		7.04	10.0	C25112				

LABORATORY BLANK RESULTS

Analyte	Result	RL	LOQ	QC Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.09 mg/l	0.09	0.1	W78728-1	25Feb22 1454 by 352	08Mar22 1437 by 347	
Chromium	< 0.005 mg/l	0.005	0.01	S52239-1	23Feb22 0846 by 313	23Feb22 1251 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52239-1	23Feb22 0846 by 313	23Feb22 1251 by 313	
Nitrate as N	< 0.03 mg/l	0.03	0.05	C25112-1	23Feb22 1153 by 338	23Feb22 1301 by 338	
Sulfate	< 0.1 mg/l	0.1	0.2	C25112-1	23Feb22 1153 by 338	23Feb22 1301 by 338	

GBM & Associates
Strategic Environmental Services
219 Brown Ln.
Bryant, AR 72022
(501) 847-7077 Fax (501) 847-7943

Chain of Custody

263171

CLIENT INFORMATION		BILLING INFORMATION	
Company:	El Dorado Chemical Company	Bill To:	
Project Name/No.:	Monitoring Well Sampling	Company:	
Send Report To:	Brad Phillips/ Will Glenn	Address:	
Address:	219 Brown Lane		
	Bryant, AR 72022	Phone No.:	
Phone/Fax No.:	(501) 847-7077	Fax No.:	

SPECIAL INSTRUCTIONS/PRECAUTIONS:

Send a copy of report to Brad Phillips/ Will Glenn at emails:
bphillips@gbmcassoc.com
wglenn@gbmcassoc.com

Parameters for Analysis/Methods

	Sample ID	Sample Description	Date	Time	Matrix S=Sed/Soil W=Water	Number of Containers	NH4	NO3	SO4	Total PB	Total CR	Dissolved PB	Dissolved CR			
1	MW10	Groundwater	2/21/22	1200	W	3	X	X	X	X	X	X	X			
2	MW11		2/21/22	1120	W	3	X	X	X	X	X	X	X			
3	MW12		2/21/22	1037	W	3	X	X	X	X	X	X	X			
4	MW16		2/21/22	1557	W	3	X	X	X	X	X	X	X			
5	MW17		2/21/22	1510	W	3	X	X	X	X	X	X	X			
6	MW22		2/21/21	1422	W	3	X	X	X	X	X	X	X			
					W		X	X	X	X	X	X	X			
Preservative		(Sulfuric acid =S, Nitric acid =N, NaOH =B, Ice =I)					I, S	I	I	I, N	I,N	I	I			

Sampler(s): DMB/OEB
Shipment Method: Fed Ex Priority
Turnaround Time Required: Normal

COC Completed by: [signature] Date: 2/21/22 Time: 1730
COC Checked by: DMB Date: 2/22/22 Time: 0645

Relinquished by: DMB Date: 2/22/22 Time: 0700
Received by: [signature] Date: 2-22-22 Time: 1140

Relinquished by: [signature] Date: 2-22-22 Time: 2:20
Received in lab by: D. Brown Date: 2-22-22 Time: 2:22 PM

LABORATORY USE ONLY:
Samples Received On Ice?: YES or NO
Sample Temperature: 0.5°c

V1.2 02/05/21

AMERICAN INTERPLEX CORPORATION
LABORATORIES

El Dorado Chemical Company
ATTN: Mr. Eddie Pearson
4500 North West Avenue
El Dorado, AR 71730

This report contains the analytical results and supporting information for samples received on July 14, 2022. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Chief Operating Officer or a qualified designee.

John Overbey
Chief Operating Officer

This document has been distributed to the following:

PDF cc: GBMc & Associates, Inc.
ATTN: Ms. Amanda Gallagher
agallagher@gbmcassoc.com

El Dorado Chemical Company
ATTN: Mr. Eddie Pearson
epearson@edc-ark.com

GBMc & Associates, Inc.
ATTN: Ms. Danielle Braund
dbraund@gbmcassoc.com

El Dorado Chemical Company
ATTN: Ms. Tiffany Wooten
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GBMc & Associates, Inc.
ATTN: Ms. Olivia Blasdel
oblasdel@gbmcassoc.com

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

SAMPLE INFORMATION

Project Description:
Nine (9) water sample(s) received on July 14, 2022
Monitoring Well Sampling
P.O. No. 22120189

Receipt Details:
A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
267269-1	MW-13	13-Jul-2022 1147	
267269-2	MW-14	13-Jul-2022 1036	
267269-3	MW-15	13-Jul-2022 1010	
267269-4	MW-16	13-Jul-2022 0932	
267269-5	MW-16 DUP	13-Jul-2022 0932	
267269-6	MW-17	13-Jul-2022 0857	
267269-7	MW-18	13-Jul-2022 2013	
267269-8	MW-19	13-Jul-2022 1940	
267269-9	MW-22	13-Jul-2022 0817	

Qualifiers:
D Result is from a secondary dilution factor

References:
"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).
"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.
"Standard Methods for the Examination of Water and Wastewaters", (SM).
"American Society for Testing and Materials" (ASTM).
"Association of Analytical Chemists" (AOAC).

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267269-1
Sample Identification: MW-13 13-Jul-2022 1147

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.17**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1726 by 352		Batch: W80186	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1540 by 313		Batch: S52968	
Lead		**0.00061**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1540 by 313		Batch: S52968	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0037 by 338		Batch: C25467	
Sulfate		**210**	2	**mg/l**	D
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0015 by 338		Batch: C25467	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1715 by 313		Batch: S52978	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1715 by 313		Batch: S52978	

AIC No. 267269-2
Sample Identification: MW-14 13-Jul-2022 1036

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.65**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1728 by 352		Batch: W80186	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1543 by 313		Batch: S52968	
Lead		**0.00081**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1543 by 313		Batch: S52968	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0123 by 338		Batch: C25467	
Sulfate		**110**	2	**mg/l**	D
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0100 by 338		Batch: C25467	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1718 by 313		Batch: S52978	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1718 by 313		Batch: S52978	

AIC No. 267269-3
Sample Identification: MW-15 13-Jul-2022 1010

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**18**	3	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1837 by 352		Batch: W80186	Dil: 26
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1545 by 313		Batch: S52968	

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El Dorado Chemical Company
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El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267269-3 (Continued)
Sample Identification: MW-15 13-Jul-2022 1010

Analyte		Result	RL	Units	Qualifier
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1545 by 313		Batch: S52968	
Nitrate as N		**25**	0.5	**mg/l**	D
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0146 by 338		Batch: C25467	Dil: 10
Sulfate		**69**	2	**mg/l**	D
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0146 by 338		Batch: C25467	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1727 by 313		Batch: S52978	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1727 by 313		Batch: S52978	

AIC No. 267269-4
Sample Identification: MW-16 13-Jul-2022 0932

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**1.7**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1733 by 352		Batch: W80186	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1550 by 313		Batch: S52968	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1550 by 313		Batch: S52968	
Nitrate as N		**9.1**	0.05	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0254 by 338		Batch: C25467	
Sulfate		**17**	0.2	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0254 by 338		Batch: C25467	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1730 by 313		Batch: S52978	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1730 by 313		Batch: S52978	

AIC No. 267269-5
Sample Identification: MW-16 DUP 13-Jul-2022 0932

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**1.0**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1734 by 352		Batch: W80186	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1553 by 313		Batch: S52968	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1553 by 313		Batch: S52968	
Nitrate as N		**9.2**	0.05	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0425 by 338		Batch: C25467	

AMERICAN INTERPLEX CORPORATION LABORATORIES

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ANALYTICAL RESULTS

AIC No. 267269-5 (Continued)
Sample Identification: MW-16 DUP 13-Jul-2022 0932

Analyte		Result	RL	Units	Qualifier
Sulfate		**18**	0.2	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0425 by 338		Batch: C25467	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1733 by 313		Batch: S52978	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1733 by 313		Batch: S52978	

AIC No. 267269-6
Sample Identification: MW-17 13-Jul-2022 0857

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**7.3**	0.5	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1810 by 352		Batch: W80186	Dil: 5
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1556 by 313		Batch: S52968	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1556 by 313		Batch: S52968	
Nitrate as N		**18**	0.5	**mg/l**	D
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0448 by 338		Batch: C25467	Dil: 10
Sulfate		**62**	2	**mg/l**	D
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0448 by 338		Batch: C25467	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1736 by 313		Batch: S52978	
Dissolved Lead		**0.00051**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1736 by 313		Batch: S52978	

AIC No. 267269-7
Sample Identification: MW-18 13-Jul-2022 2013

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.52**	0.2	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1738 by 352		Batch: W80186	Dil: 2
Chromium		**0.015**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 29-Jul-2022 1317 by 313	Analyzed: 01-Aug-2022 0952 by 328		Batch: S52968	
Lead		**0.024**	0.003	**mg/l**	D
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1604 by 313		Batch: S52968	Dil: 5
Nitrate as N		**0.070**	0.05	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0557 by 338		Batch: C25467	
Sulfate		**2.6**	0.2	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0557 by 338		Batch: C25467	
Dissolved Chromium		**0.016**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1739 by 313		Batch: S52978	

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ANALYTICAL RESULTS

AIC No. 267269-7 (Continued)
Sample Identification: MW-18 13-Jul-2022 2013

Analyte		Result	RL	Units	Qualifier
Dissolved Lead		**0.023**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1739 by 313		Batch: S52978	

AIC No. 267269-8
Sample Identification: MW-19 13-Jul-2022 1940

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.21**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1740 by 352		Batch: W80186	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1607 by 313		Batch: S52968	
Lead		**0.0015**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1607 by 313		Batch: S52968	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0642 by 338		Batch: C25467	
Sulfate		**2.6**	0.2	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 0642 by 338		Batch: C25467	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1742 by 313		Batch: S52978	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1742 by 313		Batch: S52978	

AIC No. 267269-9
Sample Identification: MW-22 13-Jul-2022 0817

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.18**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 15-Jul-2022 0916 by 352	Analyzed: 18-Jul-2022 1741 by 352		Batch: W80186	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1610 by 313		Batch: S52968	
Lead		**0.0019**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1317 by 313	Analyzed: 29-Jul-2022 1610 by 313		Batch: S52968	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 1204 by 338		Batch: C25467	
Sulfate		**6.7**	0.2	**mg/l**	
EPA 9056A	Prep: 14-Jul-2022 1604 by 338	Analyzed: 15-Jul-2022 1204 by 338		Batch: C25467	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1745 by 313		Batch: S52978	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1516 by 313	Analyzed: 01-Aug-2022 1745 by 313		Batch: S52978	

AMERICAN INTERPLEX CORPORATION
LABORATORIES

El Dorado Chemical Company
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El Dorado, AR 71730

LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	98.2	80.0-120			W80186	15Jul22 0916 by 352	18Jul22 1702 by 352		
Chromium	0.02 mg/l	98.9	85.0-115			S52968	29Jul22 1316 by 313	29Jul22 1457 by 313		
Chromium	0.02 mg/l	92.1	85.0-115			S52978	01Aug22 1516 by 313	01Aug22 1655 by 313		
Lead	0.02 mg/l	103	85.0-115			S52968	29Jul22 1316 by 313	29Jul22 1457 by 313		
Lead	0.02 mg/l	99.4	85.0-115			S52978	01Aug22 1516 by 313	01Aug22 1655 by 313		
Nitrate as N	5 mg/l	97.8	90.0-110			C25467	14Jul22 1604 by 338	14Jul22 1810 by 338		
Sulfate	25 mg/l	96.8	90.0-110			C25467	14Jul22 1604 by 338	14Jul22 1810 by 338		

MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	267256-2	1 mg/l	90.7	80.0-120	W80186	15Jul22 0916 by 352	18Jul22 1706 by 352		
	267256-2	1 mg/l	97.4	80.0-120	W80186	15Jul22 0916 by 352	18Jul22 1708 by 352		
	Relative Percent Difference:		4.50	25.0	W80186				
Chromium	267211-1	0.02 mg/l	95.9	75.0-125	S52968	29Jul22 1316 by 313	29Jul22 1500 by 313		
	267211-1	0.02 mg/l	97.0	75.0-125	S52968	29Jul22 1316 by 313	29Jul22 1503 by 313		
	Relative Percent Difference:		1.10	20.0	S52968				
Chromium	267635-1	0.02 mg/l	94.6	75.0-125	S52978	01Aug22 1516 by 313	01Aug22 1658 by 313		
	267635-1	0.02 mg/l	94.9	75.0-125	S52978	01Aug22 1516 by 313	01Aug22 1701 by 313		
	Relative Percent Difference:		0.287	20.0	S52978				
Lead	267211-1	0.02 mg/l	102	75.0-125	S52968	29Jul22 1316 by 313	29Jul22 1500 by 313		
	267211-1	0.02 mg/l	104	75.0-125	S52968	29Jul22 1316 by 313	29Jul22 1503 by 313		
	Relative Percent Difference:		2.04	20.0	S52968				
Lead	267635-1	0.02 mg/l	94.7	75.0-125	S52978	01Aug22 1516 by 313	01Aug22 1658 by 313		
	267635-1	0.02 mg/l	97.5	75.0-125	S52978	01Aug22 1516 by 313	01Aug22 1701 by 313		
	Relative Percent Difference:		2.88	20.0	S52978				
Nitrate as N	267274-1	5 mg/l	97.1	80.0-120	C25467	14Jul22 1604 by 338	14Jul22 1832 by 338		
	267274-1	5 mg/l	96.2	80.0-120	C25467	14Jul22 1604 by 338	14Jul22 1855 by 338		
	Relative Percent Difference:		0.602	10.0	C25467				
Sulfate	267274-1	25 mg/l	98.1	80.0-120	C25467	14Jul22 1604 by 338	14Jul22 1832 by 338		
	267274-1	25 mg/l	97.2	80.0-120	C25467	14Jul22 1604 by 338	14Jul22 1855 by 338		
	Relative Percent Difference:		0.818	10.0	C25467				

LABORATORY BLANK RESULTS

Analyte	Result	RL	LOQ	QC Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W80186-1	15Jul22 0916 by 352	18Jul22 1700 by 352	
Chromium	< 0.005 mg/l	0.005	0.01	S52968-1	29Jul22 1316 by 313	29Jul22 1454 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52968-1	29Jul22 1316 by 313	29Jul22 1454 by 313	
Chromium	< 0.005 mg/l	0.005	0.01	S52978-1	01Aug22 1516 by 313	01Aug22 1652 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52978-1	01Aug22 1516 by 313	01Aug22 1652 by 313	
Nitrate as N	< 0.03 mg/l	0.03	0.05	C25467-1	14Jul22 1604 by 338	14Jul22 1747 by 338	
Sulfate	< 0.2 mg/l	0.2	0.2	C25467-1	14Jul22 1604 by 338	14Jul22 1747 by 338	

GBMc & Associates
Strategic Environmental Services
219 Brown Ln.
Bryant, AR 72022
(501) 847-7077 Fax (501) 847-7943

Chain of Custody

267269

CLIENT INFORMATION		BILLING INFORMATION		SPECIAL INSTRUCTIONS/PRECAUTIONS:
Company:	El Dorado Chemical Company	Bill To:	GBMc & Associates	Send a copy of report to Dani Braund / Olivia Blasdel at emails: dbraund@gbmcassoc.com oblasdel@gbmcassoc.com
Project Name/No.:	Monitoring Well Sampling	Company:		
Send Report To:	Dani Braund / Olivia Blasdel	Address:		
Address:	219 Brown Lane			Parameters for Analysis/Methods
	Bryant, AR 72022	Phone No.:		
Phone/Fax No.:	(501) 847-7077	Fax No.:		

	Sample ID	Sample Description	Date	Time	Matrix S=Sed/Soil W=Water	Number of Containers	Nitrate as N	Ammonia as N	Sulfate	Dissolved Lead	Total Lead	Dissolved Chromium	Total Chromium		
1	MW-13	Groundwater	7/13/22	1147	W	4	X	X	X	X	X	X	X		
2	MW-14		7/13/22	1036	W	4	X	X	X	X	X	X	X		
3	MW-15		7/13/22	1010	W	4	X	X	X	X	X	X	X		
4	MW-16		7/13/22	0932	W	4	X	X	X	X	X	X	X		
5	MW-16 DUP		7/13/22	0932	W	4	X	X	X	X	X	X	X		
6	MW-17		7/13/22	0857	W	4	X	X	X	X	X	X	X		
7	MW-18		7/13/22	2013	W	4	X	X	X	X	X	X	X		
8	MW-19		7/13/22	1940	W	4	X	X	X	X	X	X	X		
9	MW-22		7/13/22	0817	W	4	X	X	X	X	X	X	X		
					W	4	X	X	X	X	X	X	X		
					W	4	X	X	X	X	X	X	X		
Preservative		(Sulfuric acid =S, Nitric acid =N, NaOH =B, Ice =I)					I, S	I	I	I	I, N	I	I, N		

Sampler(s): DMB/OEB	Shipment Method: Fed Ex Priority	Turnaround Time Required: Normal
COC Completed by: OEB Date: 7/14/22 Time: 0934		COC Checked by: DMB Date: 7/14/22 Time: 1200
Relinquished by: OEB Date: 7/14/22 Time: 1302		Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____		Received in lab by: D. BROWN Date: 7.14.22 Time: 1302

LABORATORY USE ONLY:	Samples Received On Ice?: (YES) or NO	Sample Temperature: 2.4 °C

V1.2 06/27/22

AMERICAN INTERPLEX CORPORATION
LABORATORIES

El Dorado Chemical Company
ATTN: Mr. Eddie Pearson
4500 North West Avenue
El Dorado, AR 71730

This report contains the analytical results and supporting information for samples received on July 12, 2022. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Chief Operating Officer or a qualified designee.

Steve Bradford
Deputy Laboratory Director

This document has been distributed to the following:

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AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

SAMPLE INFORMATION

Project Description:
Six (6) water sample(s) received on July 12, 2022
Monitoring Well Sampling
P.O. No. 22120189

Receipt Details:
A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
267184-1	MW-1	11-Jul-2022 1220	
267184-2	MW-2	11-Jul-2022 1147	
267184-3	MW-3	11-Jul-2022 1114	
267184-4	MW-10	11-Jul-2022 1542	
267184-5	MW-11	11-Jul-2022 1612	
267184-6	MW-12	11-Jul-2022 1640	

Qualifiers:
D Result is from a secondary dilution factor

References:
"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).
"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.
"Standard Methods for the Examination of Water and Wastewaters", (SM).
"American Society for Testing and Materials" (ASTM).
"Association of Analytical Chemists" (AOAC).

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267184-1
Sample Identification: MW-1 11-Jul-2022 1220

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.18**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 13-Jul-2022 1025 by 374	Analyzed: 15-Jul-2022 0915 by 352		Batch: W80155	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1113 by 313		Batch: S52915	
Lead		**0.00096**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1113 by 313		Batch: S52915	
Nitrate as N		**1.7**	0.05	**mg/l**	
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 12-Jul-2022 2140 by 338		Batch: C25458	
Sulfate		**5.8**	0.2	**mg/l**	
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 12-Jul-2022 2140 by 338		Batch: C25458	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1235 by 313		Batch: S52976	
Dissolved Lead		**0.00087**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1235 by 313		Batch: S52976	

AIC No. 267184-2
Sample Identification: MW-2 11-Jul-2022 1147

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.22**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1325 by 352	Analyzed: 15-Jul-2022 0952 by 352		Batch: W80176	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1117 by 313		Batch: S52915	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1117 by 313		Batch: S52915	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 12-Jul-2022 2201 by 338		Batch: C25458	
Sulfate		**22**	0.2	**mg/l**	
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 12-Jul-2022 2201 by 338		Batch: C25458	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1238 by 313		Batch: S52976	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1238 by 313		Batch: S52976	

AIC No. 267184-3
Sample Identification: MW-3 11-Jul-2022 1114

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.20**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1325 by 352	Analyzed: 15-Jul-2022 0954 by 352		Batch: W80176	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1142 by 313		Batch: S52915	

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El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267184-3 (Continued)
Sample Identification: MW-3 11-Jul-2022 1114

Analyte		Result	RL	Units	Qualifier
Lead		**0.0011**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1142 by 313		Batch: S52915	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 12-Jul-2022 2222 by 338		Batch: C25458	
Sulfate		**12**	0.2	**mg/l**	
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 12-Jul-2022 2222 by 338		Batch: C25458	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1240 by 313		Batch: S52976	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1240 by 313		Batch: S52976	

AIC No. 267184-4
Sample Identification: MW-10 11-Jul-2022 1542

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.32**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1325 by 352	Analyzed: 15-Jul-2022 0956 by 352		Batch: W80176	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1146 by 313		Batch: S52915	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1146 by 313		Batch: S52915	
Nitrate as N		**61**	0.5	**mg/l**	D
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 13-Jul-2022 1056 by 338		Batch: C25458	Dil: 10
Sulfate		**97**	2	**mg/l**	D
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 13-Jul-2022 1056 by 338		Batch: C25458	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1249 by 313		Batch: S52976	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1249 by 313		Batch: S52976	

AIC No. 267184-5
Sample Identification: MW-11 11-Jul-2022 1612

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**11**	3	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1325 by 352	Analyzed: 15-Jul-2022 1046 by 352		Batch: W80176	Dil: 26
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1150 by 313		Batch: S52915	
Lead		**0.00051**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1150 by 313		Batch: S52915	
Nitrate as N		**37**	0.5	**mg/l**	D
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 13-Jul-2022 1117 by 338		Batch: C25458	Dil: 10

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El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267184-5 (Continued)
Sample Identification: MW-11 11-Jul-2022 1612

Analyte		Result	RL	Units	Qualifier
Sulfate		**150**	2	**mg/l**	D
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 13-Jul-2022 1117 by 338		Batch: C25458	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1252 by 313		Batch: S52976	
Dissolved Lead		**0.00052**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1252 by 313		Batch: S52976	

AIC No. 267184-6
Sample Identification: MW-12 11-Jul-2022 1640

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**3.0**	0.5	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1325 by 352	Analyzed: 15-Jul-2022 1000 by 352		Batch: W80176	Dil: 5
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1153 by 313		Batch: S52915	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 18-Jul-2022 1102 by 313	Analyzed: 29-Jul-2022 1153 by 313		Batch: S52915	
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 12-Jul-2022 2324 by 338		Batch: C25458	
Sulfate		**25**	0.2	**mg/l**	
EPA 9056A	Prep: 12-Jul-2022 1552 by 338	Analyzed: 12-Jul-2022 2324 by 338		Batch: C25458	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1255 by 313		Batch: S52976	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1255 by 313		Batch: S52976	

AMERICAN INTERPLEX CORPORATION
LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	109	80.0-120			W80155	13Jul22 1026 by 374	15Jul22 0834 by 352		
Ammonia as N with Distillation	1 mg/l	112	80.0-120			W80176	14Jul22 1326 by 352	15Jul22 0939 by 352		
Chromium	0.02 mg/l	108	85.0-115			S52915	18Jul22 1103 by 313	29Jul22 1045 by 313		
Chromium	0.02 mg/l	98.1	85.0-115			S52976	01Aug22 1138 by 313	01Aug22 1217 by 313		
Lead	0.02 mg/l	102	85.0-115			S52915	18Jul22 1103 by 313	29Jul22 1045 by 313		
Lead	0.02 mg/l	103	85.0-115			S52976	01Aug22 1138 by 313	01Aug22 1217 by 313		
Nitrate as N	5 mg/l	100	90.0-110			C25458	12Jul22 1552 by 338	12Jul22 1710 by 338		
Sulfate	25 mg/l	102	90.0-110			C25458	12Jul22 1552 by 338	12Jul22 1710 by 338		

MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	267048-2	1 mg/l	87.6	80.0-120	W80155	13Jul22 1026 by 374	15Jul22 0838 by 352	5	D
	267048-2	1 mg/l	98.9	80.0-120	W80155	13Jul22 1026 by 374	15Jul22 0840 by 352	5	D
	Relative Percent Difference:		4.03	25.0	W80155				D
Ammonia as N with Distillation	267186-1	1 mg/l	96.8	80.0-120	W80176	14Jul22 1326 by 352	15Jul22 0948 by 352		
	267186-1	1 mg/l	92.4	80.0-120	W80176	14Jul22 1326 by 352	15Jul22 0950 by 352		
	Relative Percent Difference:		4.07	25.0	W80176				
Chromium	267283-1	0.02 mg/l	104	75.0-125	S52915	18Jul22 1103 by 313	29Jul22 1051 by 313		
	267283-1	0.02 mg/l	107	75.0-125	S52915	18Jul22 1103 by 313	29Jul22 1055 by 313		
	Relative Percent Difference:		2.04	20.0	S52915				
Chromium	267579-1	0.02 mg/l	114	75.0-125	S52976	01Aug22 1138 by 313	01Aug22 1346 by 313	5	D
	267579-1	0.02 mg/l	117	75.0-125	S52976	01Aug22 1138 by 313	01Aug22 1349 by 313	5	D
	Relative Percent Difference:		1.45	20.0	S52976				D
Lead	267283-1	0.02 mg/l	97.6	75.0-125	S52915	18Jul22 1103 by 313	29Jul22 1051 by 313		
	267283-1	0.02 mg/l	96.8	75.0-125	S52915	18Jul22 1103 by 313	29Jul22 1055 by 313		
	Relative Percent Difference:		0.764	20.0	S52915				
Lead	267579-1	0.02 mg/l	99.5	75.0-125	S52976	01Aug22 1138 by 313	01Aug22 1220 by 313		
	267579-1	0.02 mg/l	104	75.0-125	S52976	01Aug22 1138 by 313	01Aug22 1223 by 313		
	Relative Percent Difference:		4.63	20.0	S52976				
Nitrate as N	267182-1	5 mg/l	104	80.0-120	C25458	12Jul22 1552 by 338	12Jul22 1731 by 338		
	267182-1	5 mg/l	104	80.0-120	C25458	12Jul22 1552 by 338	12Jul22 1752 by 338		
	Relative Percent Difference:		0.202	10.0	C25458				
Sulfate	267182-1	25 mg/l	105	80.0-120	C25458	12Jul22 1552 by 338	12Jul22 1731 by 338		
	267182-1	25 mg/l	104	80.0-120	C25458	12Jul22 1552 by 338	12Jul22 1752 by 338		
	Relative Percent Difference:		0.288	10.0	C25458				

AMERICAN INTERPLEX CORPORATION
LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

LABORATORY BLANK RESULTS

Analyte	Result	RL	LOQ	QC Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W80155-1	13Jul22 1026 by 374	15Jul22 0832 by 352	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W80176-1	14Jul22 1326 by 352	15Jul22 0937 by 352	
Chromium	< 0.005 mg/l	0.005	0.01	S52915-1	18Jul22 1103 by 313	29Jul22 1032 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52915-1	18Jul22 1103 by 313	29Jul22 1032 by 313	
Chromium	< 0.005 mg/l	0.005	0.01	S52976-1	01Aug22 1138 by 313	01Aug22 1214 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52976-1	01Aug22 1138 by 313	01Aug22 1214 by 313	
Nitrate as N	< 0.03 mg/l	0.03	0.05	C25458-1	12Jul22 1552 by 338	12Jul22 1650 by 338	
Sulfate	< 0.2 mg/l	0.2	0.2	C25458-1	12Jul22 1552 by 338	12Jul22 1650 by 338	

GBMc & Associates
Strategic Environmental Services
219 Brown Ln.
Bryant, AR 72022
(501) 847-7077 Fax (501) 847-7943

Chain of Custody

267184

CLIENT INFORMATION		BILLING INFORMATION		SPECIAL INSTRUCTIONS/PRECAUTIONS:
Company:	El Dorado Chemical Company	Bill To:	GBMc & Associates	Send a copy of report to Dani Braund / Olivia Blasdel at emails: dbraund@gbmcassoc.com oblasdel@gbmcassoc.com
Project Name/No.:	Monitoring Well Sampling	Company:		
Send Report To:	Dani Braund / Olivia Blasdel	Address:		
Address:	219 Brown Lane			
	Bryant, AR 72022	Phone No.:		
Phone/Fax No.:	(501) 847-7077	Fax No.:		

	Sample ID	Sample Description	Date	Time	Matrix S=Sed/Soil W=Water	Number of Containers	Parameters for Analysis/Methods: Nitrate as N	Ammonia as N	Sulfate	Dissolved Lead	Total Lead	Dissolved Chromium	Total Chromium		
1	MW-1	Groundwater	7/11/22	1220	W	4	X	X	X	X	X	X	X		
2	MW-2		7/11/22	1147	W	4	X	X	X	X	X	X	X		
3	MW-3		7/11/22	1114	W	4	X	X	X	X	X	X	X		
4	MW-10		7/11/22	1542	W	4	X	X	X	X	X	X	X		
5	MW-11		7/11/22	1612	W	4	X	X	X	X	X	X	X		
6	MW-12		7/11/22	1640	W	4	X	X	X	X	X	X	X		
					W	4	X	X	X	X	X	X	X		
					W	4	X	X	X	X	X	X	X		
					W	4	X	X	X	X	X	X	X		
					W	4	X	X	X	X	X	X	X		
					W	4	X	X	X	X	X	X	X		
Preservative		(Sulfuric acid =S, Nitric acid =N, NaOH =B, Ice =I)					I, S	I	I	I	I, N	I	I, N		

Sampler(s): DMB/OEB	Shipment Method: Fed Ex Priority	Turnaround Time Required: Normal	
COC Completed by: OEB	Date: 7/11/22 Time: 2100	COC Checked by: DMB	Date: 7/12/22 Time: 0645
Relinquished by: OEB	Date: 7/12/22 Time: 0700	Received by:	Date: Time:
Relinquished by: Janet Blasdel	Date: 7-12-22 Time: 2:34pm	Received in lab by: D. BROWN	Date: 7-12-22 Time: 1434

LABORATORY USE ONLY:	Samples Received On Ice?: (YES) or NO	Sample Temperature: 1.6°c

V1.2 06/27/22

AMERICAN INTERPLEX CORPORATION
LABORATORIES

El Dorado Chemical Company
ATTN: Mr. Eddie Pearson
4500 North West Avenue
El Dorado, AR 71730

This report contains the analytical results and supporting information for samples received on July 13, 2022. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Chief Operating Officer or a qualified designee.

Steve Bradford
Deputy Laboratory Director

This document has been distributed to the following:

PDF cc: GBMc & Associates, Inc.
ATTN: Ms. Amanda Gallagher
agallagher@gbmcassoc.com

El Dorado Chemical Company
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AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

SAMPLE INFORMATION

Project Description:
Nine (9) water sample(s) received on July 13, 2022
Monitoring Well Sampling
P.O. No. 22120189

Receipt Details:
A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
267232-1	MW-4	12-Jul-2022 1127	
267232-2	MW-5	12-Jul-2022 1050	
267232-3	MW-6	12-Jul-2022 1003	
267232-4	MW-7	12-Jul-2022 0922	
267232-5	MW-8	12-Jul-2022 0849	
267232-6	MW-9	12-Jul-2022 0754	
267232-7	MW-20	12-Jul-2022 1913	
267232-8	MW-21	12-Jul-2022 1822	
267232-9	MW-5 DUP	12-Jul-2022 1050	

Qualifiers:
D Result is from a secondary dilution factor

References:
"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).
"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.
"Standard Methods for the Examination of Water and Wastewaters", (SM).
"American Society for Testing and Materials" (ASTM).
"Association of Analytical Chemists" (AOAC).

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267232-1
Sample Identification: MW-4 12-Jul-2022 1127

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.59**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 15-Jul-2022 1518 by 352		Batch: W80181	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 29-Jul-2022 1316 by 313	Analyzed: 01-Aug-2022 0934 by 328		Batch: S52968	
Lead		**0.0066**	0.003	**mg/l**	D
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1615 by 313		Batch: S52968	Dil: 5
Nitrate as N		**< 0.05**	0.05	**mg/l**	
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 13-Jul-2022 2123 by 338		Batch: C25464	
Sulfate		**910**	20	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 19-Jul-2022 1454 by 338		Batch: C25464	Dil: 100
Dissolved Lead		**0.0067**	0.003	**mg/l**	D
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1355 by 313		Batch: S52976	Dil: 5
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1657 by 328		Batch: S52976	

AIC No. 267232-2
Sample Identification: MW-5 12-Jul-2022 1050

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**1.1**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 15-Jul-2022 1520 by 352		Batch: W80181	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 29-Jul-2022 1316 by 313	Analyzed: 01-Aug-2022 0937 by 328		Batch: S52968	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1511 by 313		Batch: S52968	
Nitrate as N		**140**	5	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1259 by 338		Batch: C25464	Dil: 100
Sulfate		**30**	0.2	**mg/l**	
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 13-Jul-2022 2204 by 338		Batch: C25464	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1307 by 313		Batch: S52976	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1307 by 313		Batch: S52976	

AIC No. 267232-3
Sample Identification: MW-6 12-Jul-2022 1003

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**1100**	90	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 18-Jul-2022 1104 by 352		Batch: W80181	Dil: 900
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 29-Jul-2022 1316 by 313	Analyzed: 01-Aug-2022 0940 by 328		Batch: S52968	

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267232-3 (Continued)
Sample Identification: MW-6 12-Jul-2022 1003

Analyte		Result	RL	Units	Qualifier
Lead		**0.033**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1514 by 313		Batch: S52968	
Nitrate as N		**15000**	500	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 19-Jul-2022 1515 by 338		Batch: C25464	Dil: 10000
Sulfate		**71**	2	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 13-Jul-2022 2225 by 338		Batch: C25464	Dil: 10
Dissolved Lead		**0.032**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1310 by 313		Batch: S52976	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1700 by 328		Batch: S52976	

AIC No. 267232-4
Sample Identification: MW-7 12-Jul-2022 0922

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**1000**	60	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 18-Jul-2022 1034 by 352		Batch: W80181	Dil: 520
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 29-Jul-2022 1316 by 313	Analyzed: 01-Aug-2022 0943 by 328		Batch: S52968	
Lead		**0.0011**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1517 by 313		Batch: S52968	
Nitrate as N		**8700**	50	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1341 by 338		Batch: C25464	Dil: 1000
Sulfate		**200**	2	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 13-Jul-2022 2306 by 338		Batch: C25464	Dil: 10
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1313 by 313		Batch: S52976	
Dissolved Lead		**0.00076**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1313 by 313		Batch: S52976	

AIC No. 267232-5
Sample Identification: MW-8 12-Jul-2022 0849

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**980**	90	**mg/l**	D
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 18-Jul-2022 1106 by 352		Batch: W80181	Dil: 900
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 29-Jul-2022 1316 by 313	Analyzed: 01-Aug-2022 0946 by 328		Batch: S52968	
Lead		**0.043**	0.03	**mg/l**	D
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1635 by 313		Batch: S52968	Dil: 50
Nitrate as N		**6400**	50	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1401 by 338		Batch: C25464	Dil: 1000

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267232-5 (Continued)
Sample Identification: MW-8 12-Jul-2022 0849

Analyte		Result	RL	Units	Qualifier
Sulfate		**110**	2	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 13-Jul-2022 2348 by 338		Batch: C25464	Dil: 10
Dissolved Lead		**0.037**	0.003	**mg/l**	D
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1358 by 313		Batch: S52976	Dil: 5
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1702 by 328		Batch: S52976	

AIC No. 267232-6
Sample Identification: MW-9 12-Jul-2022 0754

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**1.4**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 15-Jul-2022 1527 by 352		Batch: W80181	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1529 by 313		Batch: S52968	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1529 by 313		Batch: S52968	
Nitrate as N		**25**	0.5	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1422 by 338		Batch: C25464	Dil: 10
Sulfate		**610**	20	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 19-Jul-2022 1536 by 338		Batch: C25464	Dil: 100
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1324 by 313		Batch: S52976	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1324 by 313		Batch: S52976	

AIC No. 267232-7
Sample Identification: MW-20 12-Jul-2022 1913

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.48**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 15-Jul-2022 1529 by 352		Batch: W80181	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1531 by 313		Batch: S52968	
Lead		**0.0020**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1531 by 313		Batch: S52968	
Nitrate as N		**0.13**	0.05	**mg/l**	
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1443 by 338		Batch: C25464	
Sulfate		**15**	0.2	**mg/l**	
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1443 by 338		Batch: C25464	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1327 by 313		Batch: S52976	

AMERICAN INTERPLEX CORPORATION LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

ANALYTICAL RESULTS

AIC No. 267232-7 (Continued)
Sample Identification: MW-20 12-Jul-2022 1913

Analyte		Result	RL	Units	Qualifier
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1327 by 313		Batch: S52976	

AIC No. 267232-8
Sample Identification: MW-21 12-Jul-2022 1822

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.24**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 15-Jul-2022 1531 by 352		Batch: W80181	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1534 by 313		Batch: S52968	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1534 by 313		Batch: S52968	
Nitrate as N		**2.5**	0.05	**mg/l**	
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1504 by 338		Batch: C25464	
Sulfate		**4.8**	0.2	**mg/l**	
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1504 by 338		Batch: C25464	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1330 by 313		Batch: S52976	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1330 by 313		Batch: S52976	

AIC No. 267232-9
Sample Identification: MW-5 DUP 12-Jul-2022 1050

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation		**0.53**	0.1	**mg/l**	
SM 4500-NH3 B,G 2011	Prep: 14-Jul-2022 1646 by 330	Analyzed: 15-Jul-2022 1533 by 352		Batch: W80181	
Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3010A, 6010D	Prep: 29-Jul-2022 1316 by 313	Analyzed: 01-Aug-2022 0949 by 328		Batch: S52968	
Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3010A, 6020B	Prep: 29-Jul-2022 1316 by 313	Analyzed: 29-Jul-2022 1537 by 313		Batch: S52968	
Nitrate as N		**140**	5	**mg/l**	D
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 1524 by 338		Batch: C25464	Dil: 100
Sulfate		**30**	0.2	**mg/l**	
EPA 9056A	Prep: 13-Jul-2022 1637 by 338	Analyzed: 14-Jul-2022 0336 by 338		Batch: C25464	
Dissolved Chromium		**< 0.01**	0.01	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1333 by 313		Batch: S52976	
Dissolved Lead		**< 0.0005**	0.0005	**mg/l**	
EPA 3005A, 6020B	Prep: 01-Aug-2022 1138 by 313	Analyzed: 01-Aug-2022 1333 by 313		Batch: S52976	

AMERICAN INTERPLEX CORPORATION
LABORATORIES

El Dorado Chemical Company
4500 North West Avenue
El Dorado, AR 71730

LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	104	80.0-120			W80181	14Jul22 1647 by 330	15Jul22 1453 by 352		
Chromium	0.02 mg/l	98.9	85.0-115			S52968	29Jul22 1316 by 313	29Jul22 1457 by 313		
Chromium	0.02 mg/l	98.1	85.0-115			S52976	01Aug22 1138 by 313	01Aug22 1217 by 313		
Lead	0.02 mg/l	103	85.0-115			S52968	29Jul22 1316 by 313	29Jul22 1457 by 313		
Lead	0.02 mg/l	103	85.0-115			S52976	01Aug22 1138 by 313	01Aug22 1217 by 313		
Nitrate as N	5 mg/l	99.6	90.0-110			C25464	13Jul22 1638 by 338	13Jul22 1734 by 338		
Sulfate	25 mg/l	101	90.0-110			C25464	13Jul22 1638 by 338	13Jul22 1734 by 338		

MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	267225-1	1 mg/l	100	80.0-120	W80181	14Jul22 1647 by 330	15Jul22 1457 by 352		
	267225-1	1 mg/l	97.5	80.0-120	W80181	14Jul22 1647 by 330	15Jul22 1459 by 352		
	Relative Percent Difference:		2.20	25.0	W80181				
Chromium	267211-1	0.02 mg/l	95.9	75.0-125	S52968	29Jul22 1316 by 313	29Jul22 1500 by 313		
	267211-1	0.02 mg/l	97.0	75.0-125	S52968	29Jul22 1316 by 313	29Jul22 1503 by 313		
	Relative Percent Difference:		1.10	20.0	S52968				
Chromium	267579-1	0.02 mg/l	114	75.0-125	S52976	01Aug22 1138 by 313	01Aug22 1346 by 313	5	D
	267579-1	0.02 mg/l	117	75.0-125	S52976	01Aug22 1138 by 313	01Aug22 1349 by 313	5	D
	Relative Percent Difference:		1.45	20.0	S52976				D
Lead	267211-1	0.02 mg/l	102	75.0-125	S52968	29Jul22 1316 by 313	29Jul22 1500 by 313		
	267211-1	0.02 mg/l	104	75.0-125	S52968	29Jul22 1316 by 313	29Jul22 1503 by 313		
	Relative Percent Difference:		2.04	20.0	S52968				
Lead	267579-1	0.02 mg/l	99.5	75.0-125	S52976	01Aug22 1138 by 313	01Aug22 1220 by 313		
	267579-1	0.02 mg/l	104	75.0-125	S52976	01Aug22 1138 by 313	01Aug22 1223 by 313		
	Relative Percent Difference:		4.63	20.0	S52976				
Nitrate as N	267228-1	5 mg/l	101	80.0-120	C25464	13Jul22 1638 by 338	13Jul22 1755 by 338		
	267228-1	5 mg/l	101	80.0-120	C25464	13Jul22 1638 by 338	13Jul22 1816 by 338		
	Relative Percent Difference:		0.289	10.0	C25464				
Sulfate	267228-1	25 mg/l	102	80.0-120	C25464	13Jul22 1638 by 338	13Jul22 1755 by 338		
	267228-1	25 mg/l	103	80.0-120	C25464	13Jul22 1638 by 338	13Jul22 1816 by 338		
	Relative Percent Difference:		0.426	10.0	C25464				

LABORATORY BLANK RESULTS

Analyte	Result	RL	LOQ	QC Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W80181-1	14Jul22 1647 by 330	15Jul22 1451 by 352	
Chromium	< 0.005 mg/l	0.005	0.01	S52968-1	29Jul22 1316 by 313	29Jul22 1454 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52968-1	29Jul22 1316 by 313	29Jul22 1454 by 313	
Chromium	< 0.005 mg/l	0.005	0.01	S52976-1	01Aug22 1138 by 313	01Aug22 1214 by 313	
Lead	< 0.0003 mg/l	0.0003	0.0005	S52976-1	01Aug22 1138 by 313	01Aug22 1214 by 313	
Nitrate as N	< 0.03 mg/l	0.03	0.05	C25464-1	13Jul22 1638 by 338	13Jul22 1714 by 338	
Sulfate	< 0.2 mg/l	0.2	0.2	C25464-1	13Jul22 1638 by 338	13Jul22 1714 by 338	

GBMc & Associates
Strategic Environmental Services
219 Brown Ln.
Bryant, AR 72022
(501) 847-7077 Fax (501) 847-7943

267232

Chain of Custody

CLIENT INFORMATION		BILLING INFORMATION	
Company:	El Dorado Chemical Company	Bill To:	GBMc & Associates
Project Name/No.:	Monitoring Well Sampling	Company:	
Send Report To:	Dani Braund / Olivia Blasdel	Address:	
Address:	219 Brown Lane		
	Bryant, AR 72022	Phone No.:	
Phone/Fax No.:	(501) 847-7077	Fax No.:	

SPECIAL INSTRUCTIONS/PRECAUTIONS:

Send a copy of report to Dani Braund / Olivia Blasdel at emails:
dbraund@gbmcassoc.com
oblasdel@gbmcassoc.com

Parameters for Analysis/Methods

Sample ID	Sample Description	Date	Time	Matrix S=Sed/Soil W=Water	Number of Containers	Nitrate as N	Ammonia as N	Sulfate	Dissolved Lead	Total Lead	Dissolved Chromium	Total Chromium		
MW-4	Groundwater	7/12/22	1127	W	4	X	X	X	X	X	X	X		
MW-5		7/12/22	1050	W	4	X	X	X	X	X	X	X		
MW-10		7/12/22	1003	W	4	X	X	X	X	X	X	X		
MW-7		7/12/22	0922	W	4	X	X	X	X	X	X	X		
MW-8		7/12/22	0849	W	4	X	X	X	X	X	X	X		
MW-9		7/12/22	0754	W	4	X	X	X	X	X	X	X		
MW-20		7/12/22	1913	W	4	X	X	X	X	X	X	X		
MW-21		7/12/22	1822	W	4	X	X	X	X	X	X	X		
MW-5 DUP		7/12/22	1050	W	4	X	X	X	X	X	X	X		
				W	4	X	X	X	X	X	X	X		
				W	4	X	X	X	X	X	X	X		
				W	4	X	X	X	X	X	X	X		
Preservative	(Sulfuric acid =S, Nitric acid =N, NaOH =B, Ice =I)					I, S	I	I	I	I, N	I	I, N		

Sampler(s): DMB/OEB
Shipment Method: Fed Ex Priority
Turnaround Time Required: Normal

COC Completed by: OEB Date: 7/13/22 Time: 0655
COC Checked by: DMB Date: 7/13/22 Time: 0657

Relinquished by: Olivia Blasdel Date: 7/13/22 Time: 0700
Received by: Date: 7-13-22 Time: 12:00pm

Relinquished by: Date: 7-13-22 Time: 2:40pm
Received in lab by: Date: 7/13-22 Time: 1440

LABORATORY USE ONLY:

Samples Received On Ice?: YES or NO

Sample Temperature: 1.0

V1.2 06/27/22

Sampling Logs

EDCC Monitoring Well Information

Monitoring Well						Well Screened Interval		Notes
	Date	Well Diameter	Depth To Water	Depth To Well Base	Length of tubing Needed	ft from top of casing		
		(inches)	(ft)	(ft)	(ft)	top	bottom	
MW-1	2/21/22	4	~~14.25~~		32.1	12.1	22.2	
MW-2		4	~~1.3~~		30.2	10.2	20.2	~~overflowing~~
MW-3		4	10.95		37.1	17.1	27.1	
MW-4		4	9.25		32.1	12.1	22.1	
MW-5		4	3.5		27.7	7.7	17.7	
MW-6		4	4.90		32	12	22	
MW-7		4	7.35		33.9	13.9	23.9	
MW-8		4	7.25		39.9	19.9	29.9	
MW-9		4	11.00		40	20	30	
MW-10		4	15.12		32.6	12.6	22.6	
MW-11		4	12.35		29.8	9.8	19.8	
MW-12	2/21/22	4	5.8		29.9	9.9	19.9	
MW-13		4	6.0		29.8	9.8	19.8	Lake on Killdeer very low
MW-14		4	-10ft		28.2	8.2	18.2	may be affecting depth-to-water depths
MW-15		4	5.95		27	7	17	
MW-16		4	5.82		29.3	9.3	19.3	
MW-17		4	29.8		44.7	24.7	34.7	
MW-18		4	5.15		27.2	7.2	17.2	
MW-19		2	1.85		71.5	51.5	61.5	
MW-20		2	28.00		64.5	44.5	54.4	
MW-21		1	17.25		44.9	24.9	34.9	
MW-22		2	7.25		89.8	69.8	79.8	weeds cut

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-1	SAMPLE ID: MW-1	DATE: 2/21/2022

PURGING DATA

WELL DIAMETER (inches): 4	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 12.1 feet to 22.2 feet	STATIC DEPTH TO WATER (feet): 14.15	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22.2 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 22.2	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 22.2	PURGING INITIATED AT: ~~1005~~ 0758	PURGING ENDED AT: 0818	TOTAL VOLUME PURGED (gallons): 2.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0800	0.75	0.75		14.50	3.70	17.60	416	10.30	169.7	none	none
0805	0.25	1.00		14.55	3.95	17.57	416	5.64	156.8		
0810	0.60	1.60		14.60	4.12	17.53	416	5.36	148.0		
0815	0.40	2.00		14.65	4.18	17.56	416	5.06	144.7		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/OEB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0816	SAMPLING ENDED AT: 0818
PUMP OR TUBING DEPTH IN WELL (feet): 22.2	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW1					pH= 4.18	1.09	NH_4	APP	<200
							NO_3, SO_4	"	"
							Total Pb/Cr		
							Dissolved Pb/Cr	"	"

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-2	SAMPLE ID:	MW-2
DATE:	2/22/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		10.2 feet to 20.2 feet	1.3	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (20.2 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
20.2	20.2	0828	0915	3.65

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)*	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0838	1.75	1.75		3.10	4.59	14.97	220	4.30	122.5	Slight film on	
0843	0.25	2.00		3.80	4.74	14.92	220	3.70	114.8	water	
0848	0.25	2.25		4.50	4.89	14.86	220	3.35	1010.9	Slightly	
0853	0.25	2.5		4.80	4.88	15.18	218	3.02	107.4	cloudy	
0858	0.30	2.8		5.50	5.00	14.88	219	3.50	101.1		
0903	0.40	3.2		6.00	5.02	14.98	219	3.16	100.4		
0908	0.30	3.5		6.55	5.03	15.00	218	3.05	99.8		
0911	0.15	3.65		6.75	5.07	15.15	218	3.00	97.6		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		0912	0914

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
20.2	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW2					pH= 5.07	4.81	NH_4	APP	200
							NO_3, SO_4	↓	↓
							Total Pb/Cr		
							Dissolved Pb/Cr		

REMARKS: DUP *had as low flow as possible without pump turning off

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-3	SAMPLE ID:	MW-3
DATE:	2/22/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		17.1 feet to 27.1 feet	10.85	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (27.1 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
27.1	27.1	0920	0949	2.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet) *	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0930	0.5	0.5		12.0	6.15	18.39	224	6.26	42.3	slightly	none
0935	1.0	1.5		12.6	6.11	18.11	224	4.90	44.4	turbid	↓
0940	0.3	1.8		13.0	6.09	18.15	224	4.50	45.3		
0945	0.45	2.25		13.5	6.07	18.22	224	4.20	46.4		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		0946	0948

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
27.1	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: (Y) N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
~~MW3 Equip Blank~~	1	PP	150 mL				NO3; SO4	~~ESP~~	<200
~~MW3 Equip Blank~~	1	PP	300 mL	H2SO4			NH4	~~ESP~~	<200
MW3	↓	↓	150		pH= 6.07	4.31	Dissolved Pb	APP	↓
↓			150				Dissolved Cr	↓	
			150	HNO3			Total Pb/Cr		

REMARKS: * pump at lowest flow possible without pump stopping

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-4	SAMPLE ID:	MW-4
DATE:	2/22/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		12.1 feet to 22.1 feet	9.3	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22.1 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
22.1	22.1	1000	1023	2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1010	1.75	1.75		11.6	3.58	17.14	5863	4.45	176.2	none	none
1015	0.50	2.25		12.3	3.58	17.13	5861	4.54	176.0	↓	↓
1020	0.25	2.5		12.8	3.59	17.22	5856	4.53	175.3	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1021	1023

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
22.1	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW4	1	PP	150 mL				NO3; SO4	~~ESP~~	<200
MW4	1	PP	300 mL	H2SO4			NH4,	~~ESP~~	<200
↓	↓	↓	150		pH= 3.59	2.19	Dissolved Pb/Cr	APP	↓
↓	↓	↓	150	HNO3			Total Pb/Cr	↓	↓

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-5	SAMPLE ID:	MW-5
DATE:	2/22/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		7.7 feet to 17.7 feet	3.55	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (17.7 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
17.7	17.7	1110	1144	2.90

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1120	2.0	2.00		4.90	4.42	16.38	1131	1.00	132.2	none	none
1125	0.25	2.25		4.70	4.44	16.71	1126	0.72	130.8		
1130	0.15	2.40		4.70	4.44	16.62	1127	0.66	130.9		
1135	0.2	2.60		4.75	4.43	16.65	11210	0.48	131.5		
1138	0.15	2.75		4.8	4.42	16.66	1124	0.45	131.8		
1141	0.15	2.90		4.75	4.42	16.69	1122	0.47	132.1	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1142	1144

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
17.7	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW5	1	PP	150 mL			0.69	NO3; SO4	~~ESP~~ APP	<200
MW5	1	PP	300 mL	H2SO4			NH4	~~ESP~~	<200
↓	↓	↓	150		pH= 4.42		Dissolved Pb/Cr		
↓	↓	↓	150	HNO3			Total Pb/Cr	↓	↓

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-6	SAMPLE ID:	MW-6
DATE:	2/22/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		12 feet to 22 feet	5.0	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
22	22	1030	1102	2.7

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1040	1.5	1.5		5.40	3.55	17.17	74758	1.50	177.4	none	none
1045	0.3	1.8		5.40	3.58	17.69	76900	1.10	176.2		
1050	0.2	2.0		5.45	3.59	17.77	77250	0.8	175.9		
1054	0.5	2.5		5.50	3.90	17.94	78075	0.48	176.0		
1057	0.1	2.6		5.50	3.59	18.05	78640	0.41	175.9	↓	↓
1100	0.1	2.7		5.50	3.59	18.07	78725	0.38	175.9	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1100	1102

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
22	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW6	1	PP	150 mL			1.57	NO3; SO4	~~ESP~~ APP	<200
MW6	1	PP	300 mL	H2SO4			NH4	~~ESP~~ APP	<200
↓	↓	↓	150		pH= 3.59		Dissolved Pb/Cr	~~ESP~~ APP	↓
↓	↓	↓	150	HNO_3			Total Pb/Cr		↓

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-7	SAMPLE ID:	MW-7
DATE:	2/22/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		13.9 feet to 23.9 feet	7.25	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (23.9 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
23.9	23.9	1150	1224	2.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1200	1.25	1.25		7.5	5.00	18.49	18955	3.60	102.3	none	None
1205	0.75	2.00		7.55	5.01	18.50	19410	2.90	102.0		
1210	0.25	2.25		7.55	5.03	18.42	19666	2.56	101.0		
1215	0.25	2.5		7.55	5.02	18.45	19777	2.36	101.3		
1220	0.25	2.75		7.55	5.06	18.37	20343	2.20	99.4	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB	/	1222	1224

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
23.9	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW7	1	PP	150 mL				NO3; SO4	~~ESP~~	<200
MW7	1	PP	300 mL	H2SO4			NH4	~~ESP~~	<200
↓	↓	↓	150 mL		pH= 5.06	2.81	Dissolved Pb/Cr	~~ESP~~	↓
↓	↓	↓	150 mL					APP	
				HNO3			Total Pb/Cr		

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-8	SAMPLE ID:	MW-8
DATE:	2/22/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		19.9 feet to 29.9 feet	7.20	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (29.9 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
29.9	29.9	1239	1308	2.65

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1249	1.25	1.25		7.30	3.03	17.95	37860	1.50	173.8	none	none
1254	0.35	1.60		7.30	3.04	17.96	38050	1.50	173.8	↓	↓
1259	0.65	2.25		7.35	3.01	18.29	39228	0.40	175.4		
1302	0.25	2.5		7.35	3.01	18.27	39925	0.29	175.0		
1305	0.15	2.65		7.35	3.01	18.22	40178	0.27	175.0	↓	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1306	1308

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
29.9	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW8	1	PP	150 mL			2.64	NO3; SO4	~~ESP~~ APP	<200
MW8	1	PP	300 mL	H2SO4			NH4	~~ESP~~	<200
↓	↓	↓	150		pH= 3.01		Dissolved Pb/Cr	~~ESP~~	↓
↓	↓	↓	150	HNO3			Total Pb/Cr		

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-9	SAMPLE ID:	MW-9
DATE:	2/22/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		20 feet to 30 feet	10.9	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (30 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
30	30	1315	1348	2.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1325	0.75	0.75		11.60	5.52	18.73	2052	6.20	75.6	none	none
1330	0.75	1.5		11.80	5.48	18.76	2009	6.20	77.8		
1335	0.50	2.0		11.85	5.45	18.79	2010	5.44	78.9		
1340	0.25	2.25		11.75	5.44	18.76	2009	5.61	79.4		
1345		2.75		11.70	5.43	18.78	2007	5.49	80.2		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1346	1348

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
30	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW9	1	PP	150 mL			1.43	NO3; SO4	~~ESP~~ APP	<200
MW9	1	PP	300 mL	H2SO4			NH4	~~ESP~~	<200
↓	↓	↓	150		pH= 5.43		Dissolved Pb/Cu	~~ESP~~	↓
↓	↓	↓	150	HNO_3			Total Pb/Cu	↓	↓

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-10	SAMPLE ID:	MW-10
DATE:	2/21/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		12.6 feet to 22.6 feet	15.12	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22.6 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
22.6	22.6	1130	1202	2.15

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1140	1.0	1.0		15.90	3.97	19.67	694	3.81	156.8	none	none
1145	0.5	1.5		16.0	3.96	19.64	691	3.89	157.5	↓	↓
1150	0.25	1.75		16.05	3.95	19.63	692	3.33	157.9		
1155	0.15	1.90		16.20	3.95	19.63	688	3.32	158.3		
1200	0.25	2.15		16.30	3.94	19.67	689	3.20	157.8	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB / OEB		1200	1202

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
22.6	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW10	1	PP	150 mL			1.19	NO3; SO4	ESP APP	<200
MW10	1	PP	300 mL	H2SO4			NH4	ESP APP	<200
↓	↓	↓	150		pH= 3.94		Dissolved Pb/Cr	ESP APP	
↓	↓	↓	150	HNO_3			Total Pb/Cr	APP	↓
								APP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-11	SAMPLE ID:	MW-11
DATE:	2/21/2022		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		9.8 feet to 19.8 feet	12.35	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (19.8 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
19.8	19.8	1048	1121	2.6

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1058	1.25	1.25		12.8	4.07	18.11	654	2.87	150.9	none	none
1103	0.50	1.75		12.9	4.06	18.24	660	2.28	151.4	↓	↓
1108	0.50	2.25		13.0	4.04	18.29	671	2.06	152.6		
1113	0.25	2.5		13.1	4.04	18.28	673	1.89	152.5		
1118	0.10	2.6		13.1	4.05	18.29	675	1.90	152.0	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1120	1121

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
19.8	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW11	1	PP	150 mL			6.96	NO3; SO4	~~ESP~~ APP	<200
MW11	1	PP	300 mL	H2SO4			NH4	~~ESP~~ APP	<200
↓	↓	↓	150mL		pH= 4.05		Dissolved Pb/Cr	ESP APP	
↓	↓	↓	150mL	HNO3			Total Pb/Cr	APP	↓

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-12	SAMPLE ID: MW-12	DATE: 2/21/2022

PURGING DATA

WELL DIAMETER (inches): 4	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 9.9 feet to 19.9 feet	STATIC DEPTH TO WATER (feet): 5.8	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (19.9 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1005	PURGING ENDED AT: 1039	TOTAL VOLUME PURGED (gallons): 2.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1015	1.0	1.0		6.60	5.63	17.39	553	1.55	69.4	slightly	orange
1020	0.25	1.25		10.100	5.61	17.28	553	1.35	70.2		
1025	0.50	1.75		7.20	5.63	17.48	556	0.59	69.3		
1030	0.50	2.25		7.40	5.65	17.54	556	0.50	69.4		
1033	0.25	2.50		7.60	5.65	17.48	557	0.50	68.1		
1036	0.25	2.75		7.65	5.65	17.49	557	0.45	68.3		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/OEB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1037	SAMPLING ENDED AT: 1038
PUMP OR TUBING DEPTH IN WELL (feet): 15	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW12	1		150mL		pH= 7.05	62.2	NO_3, SO_4,	ESP	<200
↓	1		300mL	H_2SO_4			NH_4	APP	↓
	1		125mL				Dissolved Pb/Cr	↓	
	1		150mL	HNO_3			Total Pb/Cr		

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-13	SAMPLE ID:	MW-13
DATE:	2/23/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		9.8 feet to 19.8 feet	5.70	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (19.8 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
19.8	19.8	1002	1025	2.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1012	1.25	1.25		7.4	4.97	15.92	485	2.65	103.4	none	none
1017	0.70	1.95		8.4	4.96	16.08	490	2.69	103.7		
1022	0.35	2.25		9.5	4.93	16.17	494	2.62	105.2		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1023	1025

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
19.8	PP	N	

FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced) DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW13	1	PP	150 mL	H.	pH= 4.93	7.67	NO_3, SO_4,	ESP PP	<200
			300mL	H_2SO_4			NH_3		
			150mL				Dissolved Pb/Cr		
			150mL	HNO_3			Total Pb/Cr		

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-14	SAMPLE ID:	MW 14
DATE:	2/23/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4	3/8	8.2 feet to 18.2 feet	10ft	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
18.2	18.2	0825	0909	2.65

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or ~~µS/cm~~	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0840	0.5	0.75		10.45	4.85	16.61	484	5.85	109.6	*Slight	
0845	0.5	1.25		10.5	4.81	16.56	484	5.13	111.8	*Coloration	
0850	0.5	1.75		10.5	4.76	16.72	482	4.75	114.6	Clear	
0855	0.45	2.15		10.5	4.73	16.71	481	4.53	115.8		
0900	0.35	2.5		10.5	4.71	16.72	480	4.27	116.9		
0905	0.15	2.65		10.5	4.68	16.69	479	3.95	118.3		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB / OEB		0906	0908

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
18.2	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW14	1	PP	150mL		pH = 4.68	63.1	NO_3, SO_4	PP	< 200
↓	↓	↓	300mL				NH_4	↓	↓
			150mL				Dissolved Pb/Cr		
			150mL				Total Pb/Cr		

REMARKS: *Slight discoloration due to stirring up well with tubing. Slightly yellow

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-15	SAMPLE ID: MW-15	DATE: 2/23/22

PURGING DATA

WELL DIAMETER (inches): 4	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 7 feet to 17 feet	STATIC DEPTH TO WATER (feet): 5.2	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (17 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17	PURGING INITIATED AT: 0917	PURGING ENDED AT: 0956	TOTAL VOLUME PURGED (gallons): 3.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0927	1.5	1.5		6.10	4.23	15.82	84	2.74	141.6	none	none
0932	0.4	1.9		6.10	4.21	15.52	84	1.10	142.2	very	"
0937	0.3	2.2		10.05	4.16	15.38	84	0.82	144.9	clear	"
0942	0.3	2.5		6.00	4.14	15.41	84	0.68	146.2	"	"
0947	0.25	2.75		5.85	4.07	14.75	816	0.67	149.3	"	"
0952	0.25	3.00		6.05	4.09	15.41	89	0.60	148.5		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/OEB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0953	SAMPLING ENDED AT: 0955

PUMP OR TUBING DEPTH IN WELL (feet): 17	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME/mL	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW15	1	PP	150		pH= 4.09	10.10	NO_3, SO_4	~~ESP~~ PP	<200
↓	↓	↓	300	H_2SO_4			NH_3	↓	↓
			150				Dissolved Pb/Cr		
↓	↓	↓	150	HNO_3			Total Pb/Cr		

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-16	SAMPLE ID:	MW-16
DATE:	2/21/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		9.3 feet to 19.3 feet	5.82	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (19.3 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
14.3	14.3	1525	1559	2.90

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1535		1.25		5.75	3.160	15.91	113	3.70	174.1	none	none
1540		1.60		5.70	3.78	16.11	113	4.32	164.9	↓	↓
1545		2.00		5.80	3.83	15.84	113	0.82	162.3		
1550		2.25		5.80	3.83	15.79	114	0.49	162.0		
1553		2.75		5.84	3.87	15.73	114	0.42	160.1		
1556		2.90		5.84	3.88	15.77	114	0.46	159.8	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DM/BIOEB		1557	1559

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
14.3	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW16	1	PP	150 mL			0.51	NO3; SO4	~~ESP~~ PP	<200
MW16	1	PP	300 mL	H2SO4			NH4	~~ESP~~	<200
↓	↓	↓	150		pH= 3.88		Dissolved Pb/Cr	~~ESP~~ ↓	
↓	↓	↓	150	HNO_3			Total Pb/Cr	↓	↓

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-17	SAMPLE ID: MW-17	DATE: 2/21/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		24.7 feet to 34.7 feet	30.4	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.7 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
29.7	29.7	1432	1513	2.80

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1442		1.0		30.0	3.78	19.48	187	2.46	167.0	none	none
1447		1.5		30.1	3.74	19.74	193	1.48	169.2	"	"
1452		1.75		30.0	3.74	19.72	220	1.58	169.4	"	"
1457		2.10		30.1	3.74	19.74	236	0.90	169.2	"	"
1502		2.25		30.15	3.76	19.63	245	0.90	167.8	"	"
1507		2.65		30.20	3.78	19.73	253	0.93	167.4	"	"
1510		2.80		30.20	3.78	19.72	257	0.98	167.0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
OEB/DMB		1510	1512

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
29.7	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW17	1	PP	150 mL			1.02	NO3; SO4	~~ESP~~ PP	<200
MW17	1	PP	300 mL	H2SO4			NH4	~~ESP~~ PP	<200
MW17	1	↓	150mL		pH= 3.78		Dissolved Pb	~~ESP~~	↓
↓	1	↓	150mL	HNO3			Total Pb	↓	↓

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; ~~**T** = Teflon~~; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-18	SAMPLE ID:	MW-18
DATE:	2/23/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		7.2 feet to 17.2 feet	4.8	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (17.2 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
17.2	17.2	1325	1348	2.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1335	1.0	1.0		5.95	5.17	12.44	63	4.53	91.7	BRWN	none
1340	0.8	1.8		6.25	5.21	12.45	59	4.43	89.8	+ cloudy	
1345	0.45	2.25		6.45	5.21	12.57	69	4.38	89.6		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1346	1348

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
17.2	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW18	1	PP	300mL	H_2SO_4	pH= 5.21	443	NH_3	~~ESP~~ PP	↑
MW18	1	PP	150 mL	NA			NO_3, SO_4	ESP	<200
↓	↓	↓	150mL				Dissolved Pb/Cr	↓	↓
↓	↓	↓	150 mL	HNO_3			Total Pb/Cr		

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-19	SAMPLE ID:	MW-19
DATE:	2/23/22		

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 51.5 feet to 61.5 feet	STATIC DEPTH TO WATER (feet): 1.7	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (61.5 feet – feet) x 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 61.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 61.5	PURGING INITIATED AT: 1248	PURGING ENDED AT: 1316	TOTAL VOLUME PURGED (gallons): 2.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1258	1.5	1.5		3.5	5.78	15.76	77	1.30	101.1	none	none
1303	0.3	1.8		3.45	5.75	15.73	78	1.00	102.7		
1308	0.4	2.2		3.4	5.70	15.72	78	0.95	105.1		
1313	0.3	2.5		3.8	5.68	16.21	79	1.02	106.6		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/OEB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1314	SAMPLING ENDED AT: 1316
PUMP OR TUBING DEPTH IN WELL (feet): 61.5	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW19	1	PP	150mL		pH= 5.68	6.94	NO_3, SO_4	ESP PP	< 200
MW19	↓	↓	300 mL	H_2SO_4			NH_4		
			150mL				Dissolved Pb/Cr		
↓	↓	↓	150 mL	HNO_3			Total Pb/Cr		

REMARKS: DUP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-20	SAMPLE ID: MW-20	DATE: 2/22/22

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 44.5 feet to 54.5 feet	STATIC DEPTH TO WATER (feet): 26.4	PURGE PUMP TYPE OR BAILER: ESP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (54.5 feet – feet) x 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 54.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 54.5	PURGING INITIATED AT: 1533	PURGING ENDED AT: 1612	TOTAL VOLUME PURGED (gallons): 2.7

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1543	0.75	0.75		32	5.04	18.12	100	1.20	100.4	Slightly	none
1548	0.50	1.25		35.4	5.09	18.62	100	0.95	97.5	orange	↓
1553	0.55	1.80		38.5	5.28	18.48	101	0.75	88.0	+ cloudy	
1558	0.45	2.25		40.4	5.30	18.65	101	0.56	87.1	↓	
1603	0.25	2.5		41.0	5.32	18.59	101	0.54	85.9		
1608	0.20	2.7		41.3	5.31	18.53	102	0.60	86.1	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/OEB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1610	SAMPLING ENDED AT: 1612
PUMP OR TUBING DEPTH IN WELL (feet): 54.5	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N replaced)	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW20	1	pp	150mL		pH= 5.31	198	NO_3, SO_4	~~ESP~~ pp	<200
↓	1	↓	300 mL	H_2SO_4			NH_4	↓	↓
	1		150mL				dissolved Pb/Cr		
	1		150mL	HNO_3			total Pb/Cr		

REMARKS: DUP

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-21	SAMPLE ID: MW-21	DATE: 2/22/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
1		24.9 feet to 34.9 feet	17.3	PP

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.9 feet – feet) X 0.04 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
34.9	34.9	1425	1509	

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1440	0.05	0.05			4.89	19.82	78	9.53	108.9	none	none
1445	0.03	0.08			4.89	19.87	71	9.92	108.5		
1500	0.03	0.11			4.74	19.07	61	10.03	116.9		
1508	0.03	0.14			4.50	19.12	57	7.14	129.0		
1511	0.03	0.17			4.43	19.05	57	7.31	132.8		
1514	0.03	0.20		17.35	4.44	19.00	57	7.42	132.2		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1507*	1509

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
34.9	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW21	1	PP	150mL		pH= 4.44	1.97	NO_3, SO_4,	PP	200
MW21	1	PP	300mL				NH_4,		
↓	1	↓	150mL				dissolved Pb/Cr		
↓	1	↓	150mL				total Pb/Cr		↓

REMARKS: * Actual sample time was 15:15 Didn't want to change time on bottles

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

** Tubing + flow-through cell was very bubbly. May need to replace tubing. May have affected D.O. readings.

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-22	SAMPLE ID:	MW-22
DATE:	2/21/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2		69.8 feet to 79.8 feet	7.25	

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (79.8 feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
		1333	1423	5.7

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1343	1.0	1.0		8.00	5.33	18.71	186	4.76	85.4	none	none
1348	0.9	1.9		8.10	5.42	18.54	185	2.10	80.4		
1353	1.6	2.5		8.15	5.58	18.57	186	3.03	72.4		
1358	0.50	3.0		8.20	5.60	18.60	186	2.38	70.9		
1403	0.25	3.25		8.05	5.61	18.63	186	1.45	70.5		
1408	0.75	4.0		8.20	5.64	18.63	186	0.80	69.3		
1413	1.0	5.0		8.20	5.64	18.63	186	0.90	69.1		
1418	0.5	5.5		8.10	5.65	18.70	186	0.70	69.7		
1420	0.2	5.7		8.10	5.66	18.74	186	0.72	68.3		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1422	1423

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW22	1		150 mL		pH= 5.66	1.30	NO_3, SO_4	ESP	<200
	1		300 mL				NH_4	PP	
	1		150 mL				Dissolved Pb/Cr		
	1		150 mL				Total Pb/Cr		

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After-(Through) Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

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2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

EDCC Monitoring Well Information

Monitoring Well	Summer 2022					Well Screened Interval		All tubing replaced to 1/4" tubing
	Date	Well Diameter	Depth To Water	Depth To Well Base	Length of tubing Needed	ft from top of casing		Notes
		(inches)	(ft)	(ft)	(ft)	top	bottom	
MW-1	7/11/22	4	11.3	22.9	32.1	12.1	22.2	
MW-2	7/11/22	4	0.0	*	30.2	10.2	20.2	overflowing
MW-3	7/11/22	4	9.9	27.6	37.1	17.1	27.1	
MW-4	7/11/22	4	9.0	22.5	32.1	12.1	22.1	
MW-5	7/11/22	4	3.8	18.2	27.7	7.7	17.7	
MW-6	7/11/22	4	3.9	22.2	32	12	22	bubbling water
MW-7	7/11/22	4	6.5	25.6	33.9	13.9	23.9	
MW-8	7/11/22	4	10.3	30.9	39.9	19.9	29.9	
MW-9	7/11/22	4	10.25	31.3	40	20	30	
MW-10	7/11/22	4	13.1	22.9	32.6	12.6	22.6	
MW-11	7/11/22	4	10.0	20.3	29.8	9.8	19.8	
MW-12	7/11/22	4	4.9	20.2	29.9	9.9	19.9	
MW-13	7/11/22	4	7.0	20.3	29.8	9.8	19.8	
MW-14	7/13/22	4	5.0		28.2	8.2	18.2	
MW-15	7/11/22	4	3.9	17.4	27	7	17	
MW-16	7/11/22	4	3.2	19.6	29.3	9.3	19.3	
MW-17	7/11/22	4	28.3	36.3	44.7	24.7	34.7	
MW-18	7/11/22	4	5.6	17.3	27.2	7.2	17.2	
MW-19	7/11/22	2	1.7	59.6	71.5	51.5	61.5	2-inch well; casing oxidized very
MW-20	7/11/22	2	27.7	53.8	64.5	44.5	54.4	2-inch well
MW-21	7/11/22	1	14.8	30.1	44.9	24.9	34.9	1-inch well
MW-22	7/11/22	2	5.0	>78	89.8	69.8	79.8	2-inch well

854.2

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-1	SAMPLE ID: MW-1	DATE: 7/11/22

PURGING DATA

WELL DIAMETER (inches): 4	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 12.1 feet to 22.2 feet	STATIC DEPTH TO WATER (feet): 11.30	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22.2 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11.30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11.40	PURGING INITIATED AT: 12:00	PURGING ENDED AT: 12:22	TOTAL VOLUME PURGED (gallons): 0.80

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
12:10	0.40	0.40		11.40	4.90	19.70	49.4	1.86	-503.0	none	none
12:13	0.20	0.60		11.40	4.88	19.80	49.0	0.37	-512.7	↓	↓
12:16	0.10	0.70		11.40	4.86	19.80	49.5	0.29	-509.9	↓	↓
12:19	0.10	0.80		11.40	4.84	19.70	495	0.23	-497.8	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; (**4"** = 0.65); **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/OEB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1220	SAMPLING ENDED AT: 1222

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW1					pH=	2.02			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-2	SAMPLE ID: MW-2	DATE: 7/11/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4	1/4	10.2 feet to 20.2 feet	0.00	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (20.2 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
0.0		11:30	1155	0.80

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
11:40	0.50	0.50		0.0	5.38	20.5	264.5	0.29	-454.4	none	none
11:43	0.20	0.70		0.0	5.36	20.4	250.7	0.25	-460.0	↓	↓
11:46	0.10	0.80		0.0	5.36	20.3	234.0	0.28	-462.1		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; (**4"** = 0.65); **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; (**1/4"** = 0.0026); **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; (**PP** = Peristaltic Pump); **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1147	1155

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW2					pH= 5.31	8.54			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; (**HDPE** = High Density Polyethylene;) **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: (**APP** = After (Through) Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump;) **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-3	SAMPLE ID: MW-3	DATE: 7/11/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4	1/4	17.1 feet to 27.1 feet	10.00	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (27.1 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
10.00	10.70	10:57	11:16	1.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
11:07	0.75	0.75		10.5	6.04	20.40	195.4	0.32	-475.2	none	none
11:10	0.90	0.15		10.5	6.03	20.20	192.8	0.29	-491.9	↓	↓
11:13		1.25		10.7	6.03	20.40	192.6	0.25	-494.9	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB / OEB		11:14	11:15

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
27.1	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
Equip Blank	1	PP	150 mL			3.69	NO3; SO4	ESP	<200
Equip Blank	1	PP	300 mL	H2SO4			NH4	ESP	<200
MW3					pH= 6.03				

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-4	SAMPLE ID: MW-4	DATE: 7/12/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		12.1 feet to 22.1 feet	9.15	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22.1 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
9.15		1110	1130	1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1120	0.40	0.40		9.60	3.84	22.1	0230	0.26	-408.8	none	none
1123	0.35	0.75		10.10	3.80	22.3	0220	0.25	-464.4	1	1
1126	0.25	1.00		10.20	3.79	22.2	0222	0.23	-463.8	1	1

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1127	1129

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW4	1	PP	150 mL			1.72	NO3; SO4	ESP	<200
MW4	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 3.79				

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-5	SAMPLE ID: MW-5	DATE: 7/12/22

PURGING DATA

WELL DIAMETER (inches): 4	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: 7.7 feet to 17.7 feet	STATIC DEPTH TO WATER (feet): 3.7	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (17.7 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 3.7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 4.2	PURGING INITIATED AT: 1021	PURGING ENDED AT: 1053	TOTAL VOLUME PURGED (gallons): 1.50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1031		0.40		4.1	4.54	22.4	1165	0.18	-496.3	none	none
1036	0.20	0.60		4.1	4.52	22.3	1139	0.16	-505.0	"	"
1039	0.15	0.75		4.2	4.51	22.3	1106	0.14	-505.8	"	"
1042		1.00		4.2	4.51	22.3	1086	0.14	-507.4	"	"
1045	0.25	1.25		4.2	4.50	22.3	1079	0.15	-503.7	"	"
1048	0.25	1.50		4.2	4.50	22.3	1074	0.15	-500.4	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DMB/OEB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1050	SAMPLING ENDED AT: 1052
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
MW5	1	PP	150 mL			0.03	NO3; SO4	ESP	<200
MW5	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 4.50				

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-6	SAMPLE ID:	MW-6
DATE:	7/12/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		12 feet to 22 feet	4.3	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
4.3		0935	1006	1.50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0945	0.40	0.40		4.4	3.91	23.4	84650	0.39	-676.0	none	none
0948	0.20	0.60		4.4	3.09	23.5	84298	0.33	-591.3		
0953	0.20	0.80		4.4	3.07	23.4	84167	0.33	-535.3		
0958	0.45	1.25		4.4	3.106	23.3	83785	0.35	-532.8		
1001	0.25	1.50		4.4	3.105	23.3	83168	0.34	-522.4		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1003	1005

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
MW6	1	PP	150 mL			13.3	NO3; SO4	ESP	<200
MW6	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 3.105			ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-7	SAMPLE ID:	MW-7
DATE:	7/12/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		13.9 feet to 23.9 feet	6.4	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (23.9 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
6.4		0902	0925	1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0912	0.40	0.40		6.6	6.29	22.4	14,500	0.34	-500.0	none	none
0915	0.20	0.60		6.6	6.21	22.3	14,000	0.37	-501.0	↓	↓
0918	0.20	0.80		6.6	6.18	22.2	58,500	0.38	-506.0		
0921	0.20	1.00		6.6	6.16	22.2	57,300	0.38	-509.0		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		0922	0924

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW7	1	PP	150 mL			2.2	NO3; SO4	ESP	<200
MW7	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 6.10			ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-8	SAMPLE ID:	MW-8
DATE:	7/12/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		19.9 feet to 29.9 feet	6.4	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (29.9 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
6.4		0810	0852	2.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0820	0.50	0.5		6.40	3.71	20.16	38983	0.37	-518.2	none	none
0825	0.50	1.0		6.45	3.69	20.16	38731	0.46	-514.2		
0830	0.50	1.5		6.45	3.69	20.16	38694	0.50	-519.5		
0835	0.25	1.75		6.50	3.70	20.16	38710	0.54	-487.2		
0838	0.10	1.85		6.50	3.70	20.7	38772	0.54	-478.3		
0841	0.05	1.90		6.50	3.70	20.7	38860	0.56	-459.4		
0845	0.05	1.95		6.45	3.71	20.7	38938	0.56	-445.6		
0848	0.05	2.00		6.45	3.71	20.7	3905	0.52	-435.7		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		0849	0851

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW8	1	PP	150 mL			4.36	NO3; SO4	ESP	<200
MW8	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 3.71			ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-9	SAMPLE ID: MW-9	DATE: 7/12/22

PURGING DATA

WELL DIAMETER (inches): 4	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 10.6	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (30 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
10.3	10.3	7:26	0800	1.3

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0736	0.30	0.30		10.6	5.30	20.4	1931	1.09	-683.7	NONE	NONE
0739	0.30	0.60		10.65	5.29	20.5	1929	1.12	-636.5		
0742	0.15	0.75		10.60	5.29	20.10	1928	1.03	-606.5		
0747	0.25	1.00		10.7	5.31	20.6	1925	0.97	-585		
0750	0.15	1.15		10.7	5.30	20.6	1925	0.98	-589		
0753	0.15	1.3		10.7	5.29	20.6	1925	0.99	-581		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DM/B/OEB	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0754	SAMPLING ENDED AT: 0800
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW9	1	PP	150 mL			2.92	NO3; SO4	ESP	<200
MW9	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 5.29			ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-10	SAMPLE ID:	MW-10
DATE:	7/11/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		12.6 feet to 22.6 feet	13.1	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22.6 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
13.1		1524	1545	0.70

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1534	0.30	0.30		13.4	4.05	22.9	672	0.30	-479.7	none	none
1538	0.20	0.50		13.3	4.05	23.1	672	0.29	-488.0	↓	↓
1541	0.20	0.70		13.5	4.05	23.1	672	0.28	-484.9	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1542	1544

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW10	1	PP	150 mL			2.70	NO3; SO4	ESP	<200
MW10	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 4.05			ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-11	SAMPLE ID:	MW-11
DATE:	7/11/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		9.8 feet to 19.8 feet	10.1	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (19.8 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
10.1		1555	1615	0.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1605		0.40		10.27	4.19	22.9	(10.0	0.32	-459.2	none	none
1608		0.60		10.30	4.19	22.9	(11.0	0.32	-458.8	↓	↓
1611		0.75		10.30	4.19	22.9	(11.0	0.34	-449.2	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; (**4"** = 0.65); **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; (**1/4"** = 0.0026); **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; (**PP** = Peristaltic Pump); **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1612	1614

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW11	1	PP	150 mL			3.55	NO3; SO4	ESP	<200
MW11	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 4.19			ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; (**HDPE** = High Density Polyethylene); **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: (**APP** = After (Through) Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump;) **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-12	SAMPLE ID: MW-12	DATE: 7/11/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		9.9 feet to 19.9 feet	5.0	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (19.9 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
5.0	5.45	1623	1644	0.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1633	0.50	0.50		5.30	5.09	24.2	1075	0.39	-445	none	none
1636	0.10	0.60		5.40	5.08	24.0	1073	0.40	-451	↓	↓
1639	0.15	0.75		5.45	5.08	23.9	1072	0.40	-453	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DNB/OBG		1640	1643

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP	N	

FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced) DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW12					pH= 5.08	13.9		ESP	

REMARKS:
* initial purge water bright orange, rinsed out flow through cell

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-13	SAMPLE ID:	MW-13
DATE:	7/13/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		9.8 feet to 19.8 feet	7.4	PP

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (19.8 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
		1124	1150	1.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1134	0.25	0.25		8.00	4.97	21.9	544	0.31	-514.8	none	none
1137	0.50	0.50		8.10	4.96	21.9	544	0.28	-520.2	↓	↓
1140	0.30	0.80		8.20	4.96	22.0	544	0.27	-480.0	↓	↓
1143	0.30	1.00		8.30	4.96	22.2	543	0.26	-491.2	↓	↓
1146	0.25	1.25		8.40	4.96	22.2	545	0.26	-484.8	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/DEB		1147	1150

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW13					pH= 4.96	14.5		ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-14	SAMPLE ID:	MW-14
DATE:	7/13/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4	1/4		5.0	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1035	PURGING ENDED AT: 1040	TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1045	0.50	0.50			5.35	29.0	456.3	0.28	-467.8	none	none
1048	0.25	0.75			5.35	29.1	455.4	0.24	-467.6	↓	↓
1051	0.25	1.00			5.34	29.3	456.0	0.21	-451.2		
1054	0.25	1.25			5.36	29.1	457.3	0.19	-455.4		
1057	0.50	1.75		5.3	5.35	29.2	457.0	0.19	-441.2		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1036	1038

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
						5.62			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-15	SAMPLE ID:	MW-15
DATE:	7/13/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		7 feet to 17 feet	4.2	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (17 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
		0948	1012	1.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0958	0.50	0.50		4.4	5.36	23.1	557	0.21	-500	none	none
1002	0.25	0.75		4.4	5.35	23.0	554	0.19	-485	↓	↓
1005	0.25	1.00		4.4	5.33	23.2	546	0.18	-460		
1008	0.25	1.25		4.4	5.31	23.1	540	0.17	-453		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1010	1012

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
MW15					pH= 5.31	3.73		ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-16	SAMPLE ID: MW-16	DATE: 7/13/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		9.3 feet to 19.3 feet	3.30	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (19.3 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0912	PURGING ENDED AT: 0935	TOTAL VOLUME PURGED (gallons): 1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0922	0.40	0.40		3.5	4.910	22.10	131.5	0.24	-545	none	none
0925	0.20	0.60		3.5	4.84	22.00	130.6	0.21	-517	↓	↓
0928	0.20	0.80		3.5	4.74	22.20	131.0	0.21	-523		
0931	0.20	1.00		3.5	4.65	22.10	131.0	0.20	-515		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		0932	0934

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: (Y) N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
MW16	1	PP	150 mL			3.61	NO3; SO4	ESP	<200
MW16	1	PP	300 mL	H2SO4			NH4	ESP	<200
					pH= 4.65			ESP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-17	SAMPLE ID: MW-17	DATE: 7/13/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		24.7 feet to 34.7 feet	28.25	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.7 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0837	PURGING ENDED AT: 0900	TOTAL VOLUME PURGED (gallons): 1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0847	0.30	0.30		28.40	4.10	19.70	409.6	0.47	-491.9	none	none
0850	0.20	0.50		28.40	4.12	19.80	411.0	0.43	-473.0	↓	↓
0853	0.25	0.75		28.40	4.12	19.80	411.0	0.39	-469.0		
0856	0.25	1.00		28.45	4.12	19.80	411.7	0.35	-461.0		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0857	SAMPLING ENDED AT: 0900
DMB/OEB			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW17	1	PP	150 mL			2.82	NO3; SO4	ESP	<200
MW17	1	PP	300 mL	H2SO4			NH4	ESP	<200
MW17					pH= 4.12			ESP	

REMARKS: used peristaltic pump instead of submersible

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-18	SAMPLE ID: MW-18	DATE: 7/13/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
4		7.2 feet to 17.2 feet	6.0	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (17.2 feet – feet) X 0.65 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1955	PURGING ENDED AT: 2015	TOTAL VOLUME PURGED (gallons): 0.90

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
2005	0.40	0.40		6.5	5.54	19.9	69.1	0.66	-388.0	brown	none
2008	0.20	0.60		6.6	5.57	19.9	69.4	0.62	-395.1	none	↓
2011	0.30	0.90		6.7	5.58	20.0	69.5	0.57	-404.3	↓	↓
~~2014~~											

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 2013	SAMPLING ENDED AT: 2015
DMB 10EB			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
MW18					pH=	499		ESP	
MW18	1	PP	150 mL	NA			NO3	ESP	<200

REMARKS: initially cloudy; drained flow thru after 1 minute

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-19	SAMPLE ID: MW-19	DATE: 7/13/22

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2		51.5 feet to 61.5 feet	1.65	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (61.5 feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1922	PURGING ENDED AT: 1945	TOTAL VOLUME PURGED (gallons): 0.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1932	0.25	0.25	1.8		5.78	21.6	88.7	0.49	-384.2	none	none
1935	0.25	0.50	2.0		5.77	21.5	84.9	0.40	-391.0	↓	↓
1938	0.25	0.75	2.3		5.76	21.5	84.1	0.39	-394.1	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1940	SAMPLING ENDED AT: 1944
DMB / OEB			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW19					pH= 5.76	32.1		ESP	

REMARKS: * initially silty and murky; emptied flow through cell after 1-2 min initially

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-20	SAMPLE ID:	MW-20
DATE:	7/12/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2		44.5 feet to 54.5 feet	21.7	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (54.5 feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
		1842	1915	1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1852	0.15	0.15		30.40	5.56	19.70	84.9	2.09	-444	milky	cloudy
1857	0.25	0.40		31.15	5.55	20.20	84.0	1.92	-438	cloudy	more
1902	0.20	0.60		31.45	5.53	20.80	83.0	1.56	-436	↓	↓
1907	0.15	0.75		31.45	5.53	21.00	83.4	1.58	-429	↓	↓
1912	0.25	1.00		31.30	5.51	21.30	83.6	1.55	-434	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DNB/OEB		1913	1915

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced) DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
MW20					pH= 5.51	2605		ESP	

REMARKS:
* Used Peristaltic pump * Cloudy, brown, and turbid initially

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-21	SAMPLE ID:	MW-21
DATE:	7/12/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
1		24.9 feet to 34.9 feet		PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.9 feet – feet) X 0.04 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1800	PURGING ENDED AT: 1824	TOTAL VOLUME PURGED (gallons): 1.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
1810	0.40	0.40			4.90	19.9	72.5	2.15	-419.9	none	none
1815	0.35	0.75			4.91	20.2	62.9	2.09	-421.0	↓	↓
1820	0.50	1.25			4.91	20.0	59.2	2.10	-417.1		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0025; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
DMB/OEB		1822	1824

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
	PP		

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
MW21					pH= 4.91	10.8		PP	

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME:	El Dorado Chemical Company	SITE LOCATION:	4500 North West Avenue, El Dorado, AR
WELL NO:	MW-22	SAMPLE ID:	MW-22
DATE:	7/13/22		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2		69.8 feet to 79.8 feet	5.1	PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (79.8 feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0800	PURGING ENDED AT: 0820	TOTAL VOLUME PURGED (gallons): 0.60

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or %saturation	Redox (mV)	COLOR (describe)	ODOR (describe)
0810	0.30	0.30		5.5	5.88	21.3	187.5	0.46	-444.4	none	Sulfur-like
0813	0.20	0.50		5.5	5.87	21.3	188.7	0.37	-446.0	↓	↓
0816	0.10	0.60		5.4	5.87	21.3	187.0	0.35	-439.0		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0817	SAMPLING ENDED AT: 0819
DMB/DEB			

PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Turbidity			
MW22					pH= 5.87	4.8		ESP	

REMARKS: rusty flakes initially pumped

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

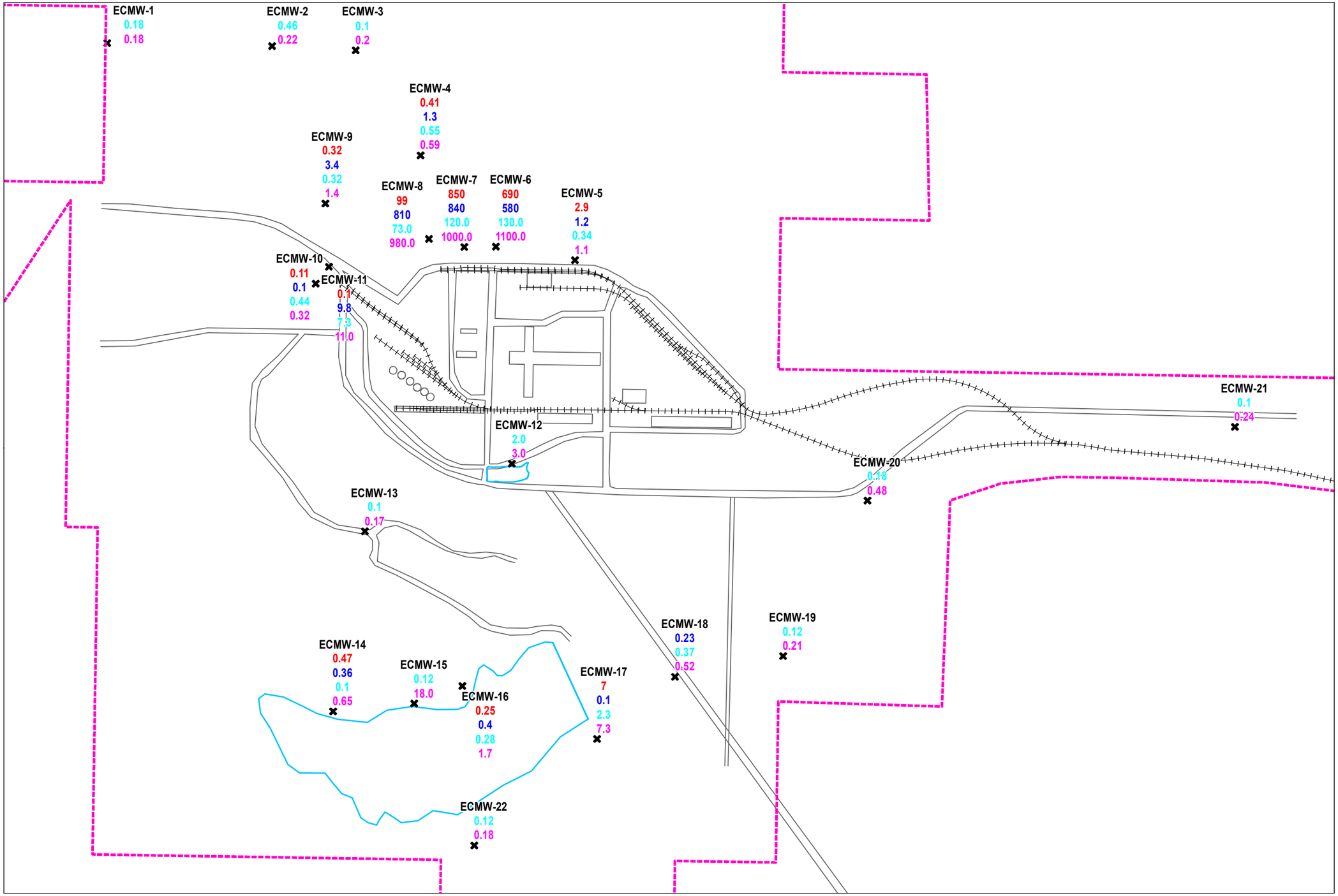
NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

APPENDIX C

Constituent Concentration Maps



NO	DATE	REVISION	BY	CK.	APPR.

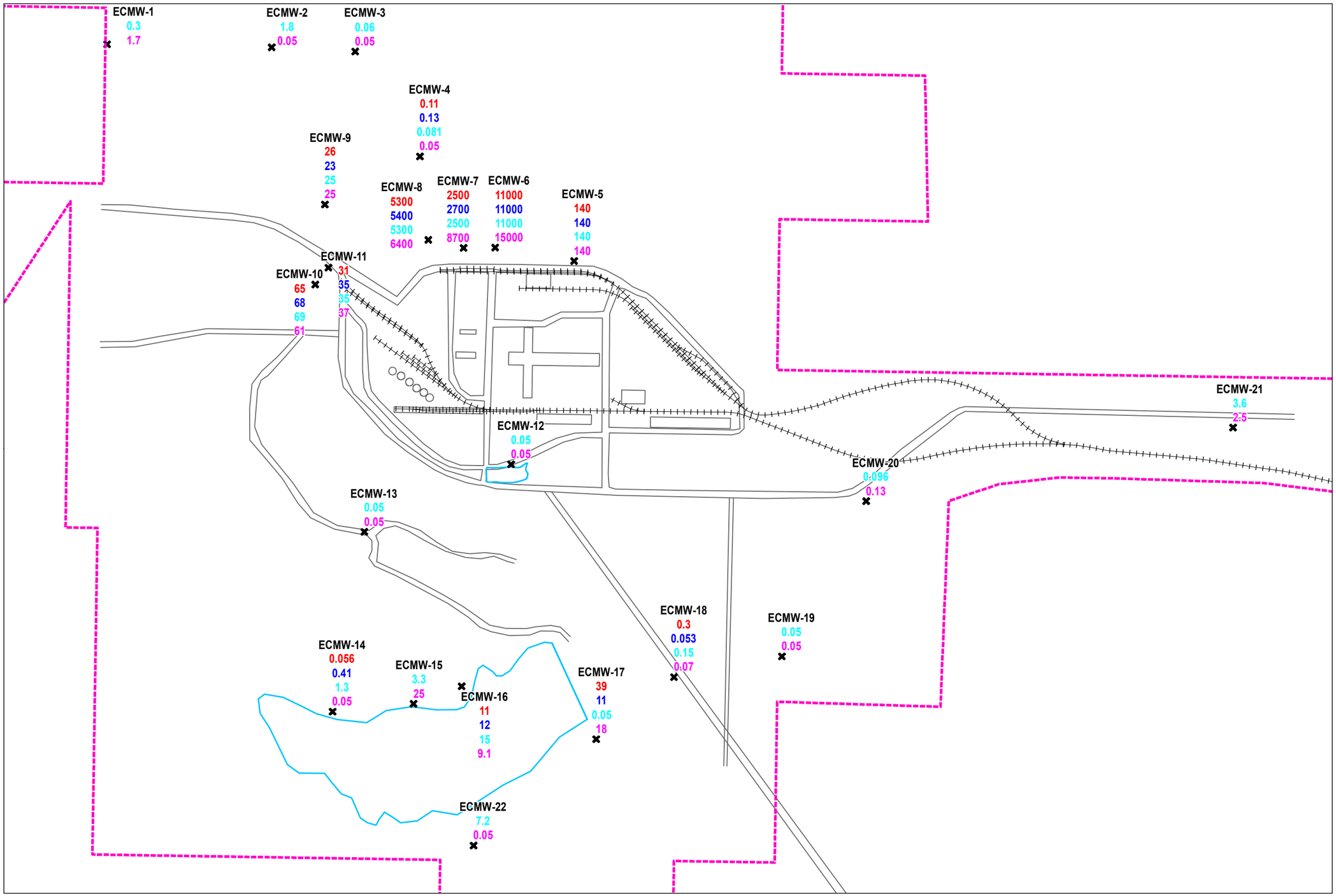
DESIGNED BY ENJ
CHECKED BY DMB
APPR. BY CDC
DRAWN BY ALB

GBMc & ASSOCIATES

SHEET TITLE
2022 GROUNDWATER WELL AMMONIA-N CONCENTRATION

JOB NAME
2022 GROUNDWATER REPORT
EL DORADO CHEMICAL COMPANY
UNION COUNTY, ARKANSAS

PROJECT NO. 2042-99-010
DATE 11/14/2022
SCALE SHOWN
REV. NO
DWG. NO.



NO	DATE	REVISION	BY	CK.	APPR.

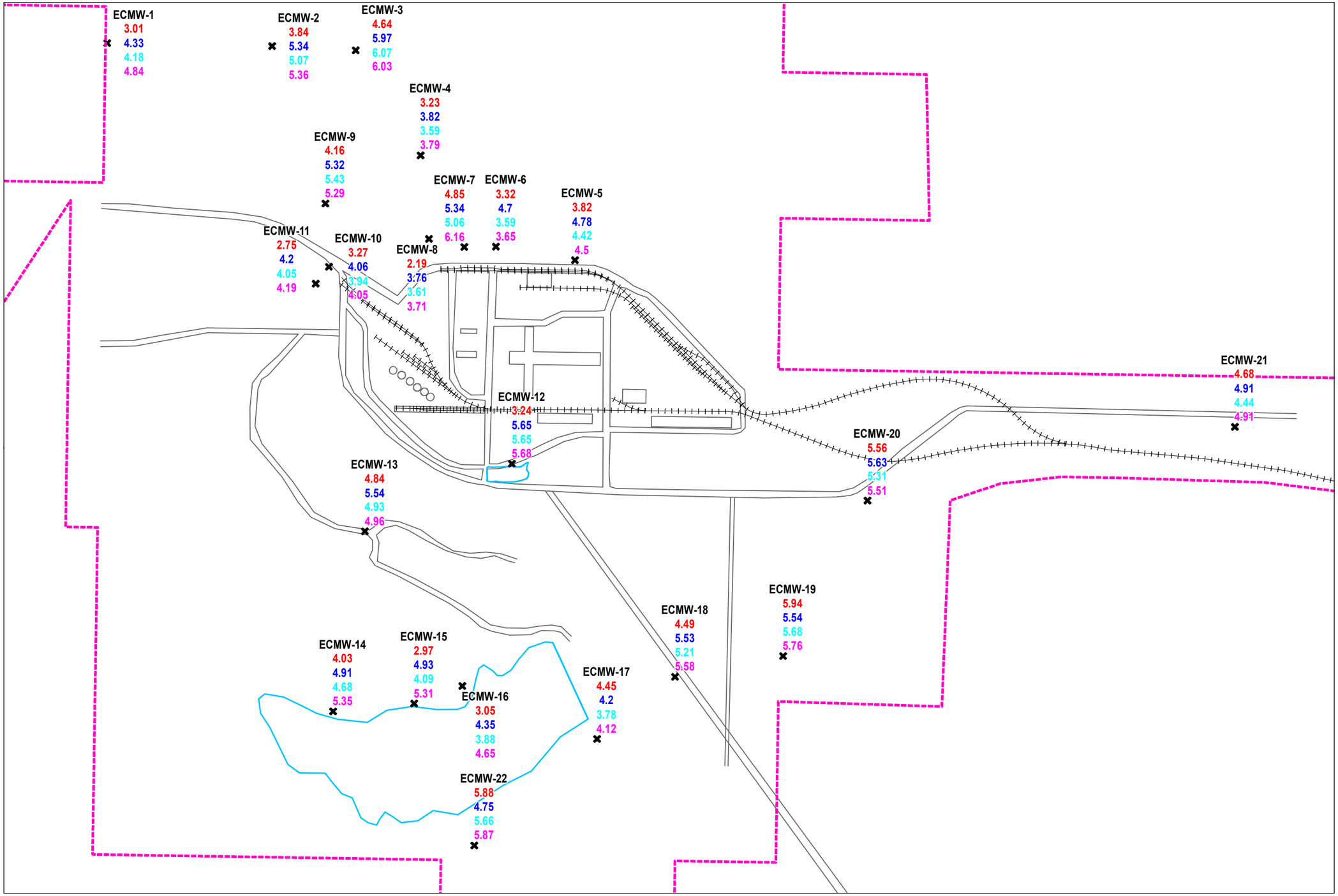
DESIGNED BY ENJ
CHECKED BY DMB
APPR. BY CDC
DRAWN BY ALB

GBMc & ASSOCIATES

SHEET TITLE
2022 GROUNDWATER WELL NITRATE-N CONCENTRATION

JOB NAME
2022 GROUNDWATER REPORT
EL DORADO CHEMICAL COMPANY
UNION COUNTY, ARKANSAS

PROJECT NO. 2042-99-010
DATE 11/14/2022
SCALE SHOWN
REV. NO
DWG. NO.



NO	DATE	REVISION	BY	CK.	APPR.

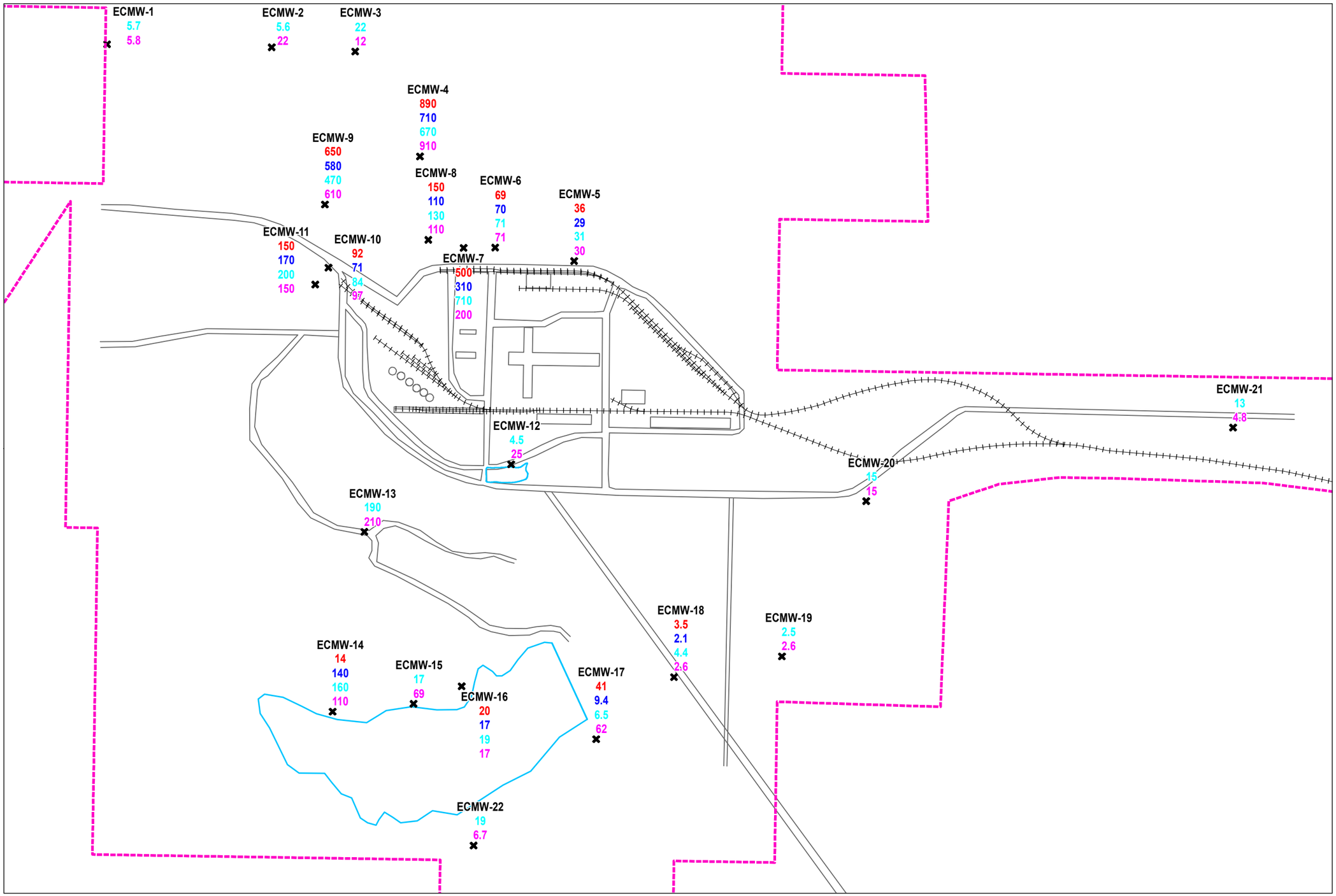
DESIGNED BY	ENJ
CHECKED BY	DMB
APPR. BY	CDC
DRAWN BY	ALB

GBMc & ASSOCIATES

SHEET TITLE
2022 GROUNDWATER WELL PH

JOB NAME
2022 GROUNDWATER REPORT
EL DORADO CHEMICAL COMPANY
UNION COUNTY, ARKANSAS

PROJECT NO.	2042-99-010
DATE	11/14/2022
SCALE	SHOWN
REV. NO	
DWG. NO.	



NO	DATE	REVISION	BY	CK.	APPR.

DESIGNED BY	ENJ
CHECKED BY	DMB
APPR. BY	CDC
DRAWN BY	ALB

GBMc & ASSOCIATES

SHEET TITLE
2022 GROUNDWATER WELL SULFATE CONCENTRATION

JOB NAME
2022
GROUNDWATER REPORT
EL DORADO CHEMICAL COMPANY
UNION COUNTY, ARKANSAS

PROJECT NO.	2042-99-010
DATE	11/14/2022
SCALE	SHOWN
REV. NO	
DWG. NO.	

APPENDIX D

Historical Data and Statistical Analysis

Historical Data

El Dorado Chemical Company
Annual Groundwater Monitoring Report
Groundwater Monitoring Well Data
CAO LIS No. 18-085

Date	Monitoring Well	Ammonia-N (mg/L)	Chromium (Dissolved) (mg/L)	Chromium (Total) (mg/L)	Lead (Dissolved) (mg/L)	Lead (Total) (mg/L)	Nitrate- N (mg/L)	pH (s.u.)	Sulfate (mg/L)
3/14/1996	ECMW-1		0.005	0.005	0.002	0.0037	1.7		4.1
5/29/2001	ECMW-1	0.5		0.02		0.04	1.83	5.1	3.67
11/1/2001	ECMW-1	0.5		0.02		0.04	2.74	4.8	3.34
6/3/2002	ECMW-1	0.5	0.02	0.02	0.02	0.02	2.01	5.5	4.66
10/30/2002	ECMW-1	0.66	0.02	0.02	0.015	0.015	1.56	5.6	4.63
12/10/2002	ECMW-1	0.5	0.02	0.02	0.015	0.015	1.8	6.1	6.73
7/24/2003	ECMW-1	0.5	0.02	0.02	0.015	0.015	2.55	7.1	5.05
11/19/2003	ECMW-1	0.5	0.02	0.02	0.015	0.015	1.47	5.11	5.85
1/28/2004	ECMW-1	0.56	0.02	0.02	0.015	0.015	1.6	5.25	6.19
3/16/2004	ECMW-1	0.5	0.02	0.02	0.015	0.015	2.73	5.59	4.22
5/18/2004	ECMW-1	0.5	0.02	0.02	0.015	0.015	4.79	5.51	6.57
7/13/2004	ECMW-1	0.5	0.02	0.02	0.015	0.015	3.68	6.16	3.88
9/14/2004	ECMW-1	0.76	0.02	0.02	0.015	0.015	4.26	5.65	3.48
11/16/2004	ECMW-1	0.5	0.02	0.02	0.015	0.015	3.81	5.11	3.9
1/25/2005	ECMW-1	0.5	0.02	0.02	0.015	0.015	2.88	5.43	6.69
5/24/2005	ECMW-1	0.55	0.02	0.02	0.015	0.015	2.45	5.73	4.39
10/18/2005	ECMW-1							3.61	
4/11/2006	ECMW-1							4.73	
11/1/2006	ECMW-1							4.98	
5/23/2007	ECMW-1							5.24	
11/6/2007	ECMW-1							4.77	
5/21/2008	ECMW-1	0.5	0.02	0.02		0.015	1.57	7.91	4.23
11/5/2008	ECMW-1	0.5		0.02		0.015	0.732	4.63	4.34
4/22/2009	ECMW-1							4.57	
10/20/2009	ECMW-1							4.68	
4/13/2010	ECMW-1	0.5		0.02		0.015	0.5	4.53	6.46
11/2/2010	ECMW-1	0.5		0.01		0.015	1.31	7.69	5.55
4/26/2011	ECMW-1							5.04	
5/2/2012	ECMW-1	0.5	0.02	0.01	0.015	0.015	2.07	5.48	3.35
11/7/2012	ECMW-1	0.5	0.02	0.01	0.015	0.015	0.866	6.43	5.94
5/15/2013	ECMW-1							5.03	
11/4/2013	ECMW-1							5.21	
6/3/2014	ECMW-1	0.5	0.021	0.0104	0.016	0.0156	0.986	4.74	3.98
11/4/2014	ECMW-1	0.5	0.02	0.0104	0.015	0.0156	0.674	3.97	6.29
5/22/2015	ECMW-1							4.83	
11/18/2015	ECMW-1							5.57	
5/24/2016	ECMW-1	0.5	0.021	0.0104	0.016	0.0156	1.79	4.46	5.56
11/10/2016	ECMW-1	0.5	0.0104	0.0104	0.0156	0.0156	0.951	6.84	5.41
3/22/2017	ECMW-1							4.05	
9/13/2017	ECMW-1							4.82	
4/11/2018	ECMW-1	0.5	0.0125	0.0125	0.0156	0.0156	1.13	4.36	5.12
9/12/2018	ECMW-1	0.5	0.0125	0.0248	0.0156	0.0713	0.45	4.47	4.65
1/23/2019	ECMW-1							4.26	
7/17/2019	ECMW-1							3.52	
2/18/2020	ECMW-1	1.2	0.01	0.01	0.0018	0.0018	0.96	3.65	7.8
7/20/2020	ECMW-1	0.1	0.01	0.01	0.00072	0.00083	1.4	3.16	5.7
3/2/2021	ECMW-1							3.01	
7/13/2021	ECMW-1							4.33	
2/22/2022	ECMW-1	0.18	0.01	0.01	0.0005	0.00053	0.3	4.18	5.7
7/11/2022	ECMW-1	0.18	0.01	0.01	0.0009	0.001	1.7	4.84	5.8

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3/14/1996	ECMW-2		0.005	0.0342	0.002	0.018	0.2		17
5/29/2001	ECMW-2	0.5		0.032		0.04	0.5	5.4	19.6
11/1/2001	ECMW-2	0.5		0.02		0.04	0.5	5.3	22.9
6/3/2002	ECMW-2	0.5	0.02	0.02	0.02	0.02	0.5	6	20
10/30/2002	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	6.1	25.7
12/10/2002	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	6.7	24
7/24/2003	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	7.26	22.9
11/19/2003	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.42	28.2
1/28/2004	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.2	25.3
3/16/2004	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.47	20.9
5/18/2004	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.4	24
7/13/2004	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.68	22.4
9/14/2004	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.44	24.3
11/16/2004	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	6.12	21.5
1/25/2005	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.38	20.8
5/24/2005	ECMW-2	0.79	0.02	0.02	0.015	0.015	0.5	5.87	22.9
10/18/2005	ECMW-2						0.5	5.15	
4/11/2006	ECMW-2						0.5	5.56	
11/1/2006	ECMW-2							5.2	
5/23/2007	ECMW-2							5.29	
11/6/2007	ECMW-2							5.17	
5/21/2008	ECMW-2	0.5		0.02		0.015	0.5	7.04	20.1
11/5/2008	ECMW-2	0.5		0.02		0.015	0.5	5.47	15.4
4/22/2009	ECMW-2							5.41	
10/20/2009	ECMW-2							5.48	
4/13/2010	ECMW-2	0.5		0.02		0.015	0.5	5.23	16.9
11/2/2010	ECMW-2	0.5		0.01		0.015	0.5	8.28	22.6
4/26/2011	ECMW-2							5.51	
5/2/2012	ECMW-2	0.5	0.02	0.01	0.015	0.015	0.5	5.76	18.7
11/7/2012	ECMW-2	0.5	0.02	0.01	0.015	0.015	0.5	6.57	22
5/15/2013	ECMW-2							5.75	
11/4/2013	ECMW-2							5.91	
6/3/2014	ECMW-2	0.5	0.021	0.0104	0.016	0.0156	3.95	5.1	30.7
11/4/2014	ECMW-2	0.5	0.02	0.0104	0.015	0.0156	0.635	4.45	21.9
5/22/2015	ECMW-2							5.43	
11/18/2015	ECMW-2							5.84	
5/24/2016	ECMW-2	1.37	0.021	0.0104	0.016	0.0156	0.645	5.15	19.8
11/10/2016	ECMW-2	0.5	0.0104	0.0212	0.0156	0.0156	0.25	6.55	22.2
3/22/2017	ECMW-2							5.45	
9/13/2017	ECMW-2							5.26	
4/11/2018	ECMW-2	0.5	0.0125	0.0125	0.0156	0.0156	0.25	5.43	19.4
9/12/2018	ECMW-2	0.5	0.0125	0.0153	0.0156	0.0347	0.25	5.35	24.4
1/23/2019	ECMW-2							5.19	
7/17/2019	ECMW-2							4.83	
2/18/2020	ECMW-2	5.9	0.01	0.01	0.0005	0.0005	0.05	4.98	23
7/20/2020	ECMW-2	0.1	0.01	0.01	0.0005	0.0005	0.05	4.5	20
3/2/2021	ECMW-2							3.84	
7/14/2021	ECMW-2							5.34	
2/22/2022	ECMW-2	0.46	0.01	0.01	0.005	0.0011	1.8	5.07	5.6
7/11/2022	ECMW-2	0.22	0.01	0.01	0.0005	0.0005	0.05	5.36	22

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3/14/1996	ECMW-3		0.005	0.005	0.002	0.0027	0.2		10
5/29/2001	ECMW-3	0.5		0.02		0.04	0.5	6.2	10.6
11/1/2001	ECMW-3	0.5		0.02		0.04	0.5	5.4	22.5
6/3/2002	ECMW-3	0.5	0.02	0.02	0.02	0.02	0.5	6.4	11.4
10/30/2002	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	6.5	21.6
12/10/2002	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	6	16.4
7/24/2003	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	6.23	11.8
11/19/2003	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.81	23.5
1/28/2004	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.59	26.9
3/16/2004	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.94	11.2
5/18/2004	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.86	9.75
7/13/2004	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.92	13
9/14/2004	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.74	18.3
11/16/2004	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.96	18.8
1/25/2005	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	6.33	15.8
5/24/2005	ECMW-3	0.98	0.02	0.02	0.015	0.015	0.5	6.05	11.8
10/18/2005	ECMW-3						0.5	6.04	
4/12/2006	ECMW-3						0.5	6.39	
11/1/2006	ECMW-3							5.37	
5/23/2007	ECMW-3							5.92	
11/6/2007	ECMW-3							4.85	
5/21/2008	ECMW-3	0.5		0.02		0.015	0.5	7.96	10.5
11/5/2008	ECMW-3	0.5		0.02		0.015	0.5	4.86	9.65
4/22/2009	ECMW-3							5.76	
10/21/2009	ECMW-3							5.83	
4/13/2010	ECMW-3	0.5		0.02		0.015	0.5	6.2	9.39
11/2/2010	ECMW-3	0.5		0.01		0.015	0.5	6.97	17.5
4/26/2011	ECMW-3							6.19	
5/3/2012	ECMW-3	0.5	0.02	0.01	0.015	0.015	0.5	6.28	8.87
11/7/2012	ECMW-3	0.5	0.02	0.01	0.015	0.0169	0.5	6.74	13.4
5/15/2013	ECMW-3							6.29	
11/4/2013	ECMW-3							5.72	
6/3/2014	ECMW-3	0.5	0.021	0.0104	0.016	0.0156	0.25	5.86	9.14
11/4/2014	ECMW-3	0.5	0.02	0.0104	0.015	0.0156	0.239	4.97	12.8
5/22/2015	ECMW-3							6.18	
11/18/2015	ECMW-3							6.11	
5/24/2016	ECMW-3	0.5	0.021	0.0104	0.016	0.0156	0.252	6.26	9.88
11/10/2016	ECMW-3	0.5	0.0104	0.0104	0.0156	0.0156	0.25	6.45	16.2
3/22/2017	ECMW-3							5.91	
9/13/2017	ECMW-3							5.66	
4/11/2018	ECMW-3	0.5	0.0125	0.0125	0.0156	0.0156	0.25	5.73	9.27
9/12/2018	ECMW-3	0.5	0.0125	0.0125	0.0156	0.0156	0.25	5.67	19.1
1/23/2019	ECMW-3							5.97	
7/17/2019	ECMW-3							5.15	
2/18/2020	ECMW-3	0.72	0.01	0.01	0.0012	0.0013	0.05	5.8	16
7/20/2020	ECMW-3	0.11	0.01	0.01	0.0005	0.00062	0.05	5.16	11
3/2/2021	ECMW-3							4.64	
7/14/2021	ECMW-3							5.97	
2/22/2022	ECMW-3	0.1	0.01	0.01	0.0005	0.0019	0.06	6.07	22
7/11/2022	ECMW-3	0.2	0.01	0.01	0.0005	0.0011	0.05	6.03	12

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3/14/1996	ECMW-4		0.005	0.005	0.002	0.0025	1.3		728
8/8/2001	ECMW-4	0.66		0.02		0.04	0.5	4.1	925
10/30/2001	ECMW-4	0.5		0.04		0.06	0.5	4.3	936
6/3/2002	ECMW-4	0.5	0.02	0.02	0.02	0.02	0.5	5.2	979
10/30/2002	ECMW-4	0.5	0.02	0.02	0.015	0.02	0.62	4.8	756
12/10/2002	ECMW-4	0.5	0.02	0.02	0.015	0.015	2.4	4.4	976
7/24/2003	ECMW-4	0.5	0.02	0.02	0.015	0.015	0.5	9.08	978
11/19/2003	ECMW-4	0.5	0.02	0.02	0.015	0.015	2.05	4.13	848
1/28/2004	ECMW-4	0.5	0.02	0.02	0.015	0.015	6.39	3.88	1040
3/16/2004	ECMW-4	0.5	0.02	0.02	0.015	0.015	0.5	4.1	919
5/19/2004	ECMW-4	0.5	0.02	0.02	0.015	0.015	1.45	4.05	1040
7/13/2004	ECMW-4	0.5	0.02	0.02	0.015	0.015	0.5	4.35	973
9/14/2004	ECMW-4	0.68	0.02	0.02	0.015	0.015	0.5	4.44	943
11/16/2004	ECMW-4	0.5	0.02	0.02	0.015	0.015	0.5	4.26	874
1/25/2005	ECMW-4	0.64	0.02	0.02	0.015	0.015	8.5	4.63	805
5/24/2005	ECMW-4	2.14	0.02	0.02	0.015	0.015	0.997	4.77	1020
10/18/2005	ECMW-4						0.517	4.06	
4/12/2006	ECMW-4						0.5	4.12	
11/1/2006	ECMW-4							3.69	
5/23/2007	ECMW-4	0.5					0.099	4.13	779
11/6/2007	ECMW-4	0.5					0.5	3.76	1020
5/21/2008	ECMW-4	0.5		0.02		0.017	0.5	3.89	896
11/5/2008	ECMW-4	0.5		0.02		0.015	0.5	3.87	758
4/22/2009	ECMW-4	0.5					0.5	4.17	68.3
10/20/2009	ECMW-4	0.5					0.5	3.62	830
4/13/2010	ECMW-4	0.5		0.02		0.029	0.5	3.75	655
11/2/2010	ECMW-4	0.5		0.01		0.015	0.5	6.57	745
4/27/2011	ECMW-4	1.02					0.5	3.91	845
11/30/2011	ECMW-4	0.5					0.5	3.72	930
5/3/2012	ECMW-4	0.5	0.02	0.01	0.015	0.015	0.5	4.12	865
11/7/2012	ECMW-4	0.5		0.01	0.015	0.015	0.5	6.17	890
5/15/2013	ECMW-4	2.12					0.37	4.03	856
11/5/2013	ECMW-4	2.03	0.02				0.752	4.63	609
6/3/2014	ECMW-4	0.5	0.021	0.0104	0.016	0.0156	0.431	4.5	737
11/4/2014	ECMW-4	1.31	0.02	0.0104	0.015	0.0156	1.29	3.01	772
5/20/2015	ECMW-4	3.5					1.6	3.29	915
11/18/2015	ECMW-4	1.13					0.332	4.04	722
5/24/2016	ECMW-4	0.5	0.021	0.0104	0.016	0.0156	0.666	3.83	843
11/10/2016	ECMW-4	0.5	0.0104	0.014	0.0156	0.0156	0.25	3.75	973
3/21/2017	ECMW-4	0.5					0.25	4.46	954
9/12/2017	ECMW-4	0.5					0.25	3.59	758
6/6/2018	ECMW-4	0.5	0.0125	0.0125	0.0156	0.0156	0.25	3.94	984
9/12/2018	ECMW-4	0.5	0.0125	0.0125	0.0156	0.016	0.25	3.84	979
1/23/2019	ECMW-4	0.27					0.15	3.82	930
7/17/2019	ECMW-4	0.5					0.17	3.73	740
2/19/2020	ECMW-4	0.18	0.011	0.01	0.0068	0.0071	0.14	3.47	181.1
7/19/2020	ECMW-4	0.62	0.01	0.01	0.0069	0.0068	0.15	3.4	171.7
3/2/2021	ECMW-4	0.41					0.11	3.23	890
7/13/2021	ECMW-4	1.3					0.13	3.82	710
2/22/2022	ECMW-4	0.55	0.01	0.01	0.0078	0.0079	0.08	3.59	670
7/12/2022	ECMW-4	0.59	0.01	0.01	0.0067	0.0066	0.05	3.79	910

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3/13/1996	ECMW-5		0.005	0.005	0.002	0.002	4.4		441
8/8/2001	ECMW-5	0.5		0.02		0.04	3.54	4.6	657
10/30/2001	ECMW-5	0.5		0.02		0.04	3.27	4.7	526
6/3/2002	ECMW-5	0.5	0.02	0.02	0.02	0.02	3.35	6.3	650
10/30/2002	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.66	5.4	582
12/10/2002	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.26	5.2	489
7/24/2003	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.47	6.85	546
11/19/2003	ECMW-5	0.5	0.02	0.02	0.015	0.015	2.4	4.79	416
1/28/2004	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.19	5.03	476
3/16/2004	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.6	5.13	472
5/19/2004	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.41	5.85	455
7/13/2004	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.75	4.96	511
9/14/2004	ECMW-5	0.59	0.02	0.02	0.015	0.015	3.75	6.7	515
11/16/2004	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.33	5.28	502
1/25/2005	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.18	6.36	461
5/24/2005	ECMW-5	3.62	0.02	0.02	0.015	0.015	3.21	6.42	547
10/19/2005	ECMW-5						3.53	4.96	
4/12/2006	ECMW-5							4.39	
11/1/2006	ECMW-5							4.42	
5/23/2007	ECMW-5	0.5					3.32	5.18	476
11/7/2007	ECMW-5	0.5					4.17	4.64	464
5/21/2008	ECMW-5	0.5		0.02		0.015	4.15	6.45	308
11/12/2008	ECMW-5	0.55		0.02		0.015	7.81	2.4	163
4/22/2009	ECMW-5	0.5					7.58	5.06	133
6/3/2009	ECMW-5							5.92	
10/20/2009	ECMW-5	0.5					8.82	4.98	93.4
4/13/2010	ECMW-5	0.5		0.02		0.015	7.96	4.75	105
11/2/2010	ECMW-5	0.5		0.01		0.015	11	5.64	94.7
4/27/2011	ECMW-5	1.08					15	5.03	92.4
11/30/2011	ECMW-5	0.5					19	4.67	94.4
5/3/2012	ECMW-5	0.5	0.02	0.01	0.015	0.015	23.5	5.13	59.6
11/7/2012	ECMW-5	0.5		0.01	0.015	0.015	26.6	6.43	74.6
5/15/2013	ECMW-5	0.5					32.8	5.07	60.7
11/5/2013	ECMW-5	0.56	0.02				34.7	7.23	66.5
6/3/2014	ECMW-5	0.5	0.021	0.0104	0.016	0.0156	38	7.26	65
11/4/2014	ECMW-5	1	0.02	0.0104	0.015	0.0156	43.4	4.13	55.6
5/20/2015	ECMW-5	1.27					44.6	5.27	54.5
11/18/2015	ECMW-5	0.73					27	5.59	61.2
5/24/2016	ECMW-5	0.5	0.021	0.0104	0.016	0.0156	41.9	5.3	49.4
11/10/2016	ECMW-5	0.5	0.0104	0.0104	0.0156	0.0156	47.2	5.6	59
3/21/2017	ECMW-5	0.5					42.9	4.55	54.8
9/12/2017	ECMW-5	9.58					56.3	4.41	43.8
4/12/2018	ECMW-5	3.28	0.0125	0.0125	0.0156	0.0156	56.5	4.68	64.9
9/13/2018	ECMW-5	0.5	0.0125	0.0125	0.0156	0.0156	74.1	4.43	53.2
1/22/2019	ECMW-5	0.12					91	4.27	45
7/17/2019	ECMW-5	0.39					110	4.22	36
2/19/2020	ECMW-5	0.26	0.01	0.01	0.0005	0.0005	140	4.22	40
7/21/2020	ECMW-5	1.5	0.01	0.01	0.0005	0.0005	120	4.2	32
3/2/2021	ECMW-5	2.9					140	3.82	36
7/13/2021	ECMW-5	1.2					140	4.78	29
2/22/2022	ECMW-5	0.34	0.01	0.01	0.0005	0.0005	140	4.42	31
7/12/2022	ECMW-5	1.1	0.01	0.01	0.0005	0.0005	140	4.5	30

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3/13/1996	ECMW-6		0.005	0.005	0.002	0.0026	51.1		24
8/8/2001	ECMW-6	0.5		0.02		0.04	298	4.3	18.3
10/30/2001	ECMW-6	0.5		0.02		0.04	326	4.3	15.7
6/3/2002	ECMW-6	0.5	0.02	0.02	0.02	0.02	459	6.1	12.1
10/30/2002	ECMW-6	0.51	0.02	0.02	0.015	0.015	661	5	8.13
12/10/2002	ECMW-6	0.5	0.02	0.02	0.015	0.015	580	4.6	7.15
7/24/2003	ECMW-6	1.09	0.02	0.02	0.015	0.015	681	7.41	15
11/19/2003	ECMW-6	5.72	0.02	0.02	0.015	0.015	865	4.53	10.7
1/28/2004	ECMW-6	12.3	0.02	0.02	0.015	0.015	835	4.36	17.2
3/16/2004	ECMW-6	13	0.02	0.02	0.015	0.015	826	4.4	17.2
5/19/2004	ECMW-6	21.4	0.02	0.02	0.015	0.015	915	5.04	13.4
7/13/2004	ECMW-6	17.9	0.02	0.02	0.015	0.015	995	4.74	11.7
9/14/2004	ECMW-6	20	0.02	0.02	0.015	0.015	1130	5.51	3.84
11/16/2004	ECMW-6	37.6	0.02	0.02	0.015	0.015	1140	4.59	4.4
1/25/2005	ECMW-6	43.1	0.02	0.02	0.015	0.015	1130	5.36	3.14
5/24/2005	ECMW-6	68.2	0.02	0.02	0.015	0.015	1410	4.57	5.19
10/18/2005	ECMW-6	110					1350	4.43	
4/11/2006	ECMW-6	154					1680	4.45	
11/1/2006	ECMW-6	170					2390	3.94	
5/23/2007	ECMW-6	63.3					3550	6.46	44.9
11/6/2007	ECMW-6	35.7					941	5.15	54.1
5/21/2008	ECMW-6	59.1		0.02		0.015	1130	4.5	23.7
11/5/2008	ECMW-6	103		0.02		0.015	1060	3.89	26.1
4/21/2009	ECMW-6	135					1070	4.47	148
10/20/2009	ECMW-6	181					1330	4.16	24.7
4/13/2010	ECMW-6	92.8		0.02		0.015	1660	4.04	29.2
7/22/2010	ECMW-6	246		0.02		0.015	1940	4.14	42.3
11/2/2010	ECMW-6	311		0.011		0.015	1460	5.71	29.6
4/27/2011	ECMW-6	371					1680	4.3	46.8
6/15/2011	ECMW-6	393					1620		207
11/30/2011	ECMW-6	445		0.01			1970	3.88	60.5
5/3/2012	ECMW-6	344	0.02	0.01	0.032	0.0312	1850	4.28	456
11/7/2012	ECMW-6	620			0.017	0.0185	2520	6.2	112
5/15/2013	ECMW-6	521					3120	4.15	37.7
11/5/2013	ECMW-6	935	0.02				3380	4.49	28.5
6/3/2014	ECMW-6	1110	0.021	0.0104	0.034	0.0339	3560	3.99	28.9
11/4/2014	ECMW-6	1110	0.02	0.0104	0.031	0.036	3550	3.29	33.7
5/20/2015	ECMW-6	2550					2960	3.91	39.8
11/18/2015	ECMW-6	2280					3930	3.96	40.2
5/24/2016	ECMW-6	1390	0.021	0.0104	0.038	0.0379	4120	3.83	30.8
11/10/2016	ECMW-6	1890	0.0104	0.0104	0.0634	0.058	5780	3.71	62.6
3/21/2017	ECMW-6	1680					5160	2.61	119
5/1/2017	ECMW-6	3500					6590	3.79	449
9/12/2017	ECMW-6	895					5710	3.42	49.2
4/12/2018	ECMW-6	1530	0.0125	0.0125	0.0655	0.065	5580	3.55	45.2
9/12/2018	ECMW-6	737	0.0125	0.0125	0.0773	0.0809	6320	3.04	60.6
1/23/2019	ECMW-6	6200					9300	3.71	57
7/17/2019	ECMW-6	6900					9700	3.77	52
2/18/2020	ECMW-6	330	0.012	0.013	0.053	0.053	11000	3.61	59
7/21/2020	ECMW-6	580	0.01	0.01	0.023	0.022	10000	3.57	56
3/2/2021	ECMW-6	690					11000	3.32	69
7/13/2021	ECMW-6	580					11000	4.7	70
2/22/2022	ECMW-6	130	0.01	0.01	0.088	0.089	11000	3.59	71
7/12/2022	ECMW-6	1100	0.01	0.01	0.032	0.033	15000	3.65	71

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3/13/1996	ECMW-7		0.005	0.0078	0.0185	0.0221	282		380
8/8/2001	ECMW-7	184		0.02		0.04	336	9.7	316
10/30/2001	ECMW-7	0.5	0.02	0.02		0.04	189	3.5	322
6/3/2002	ECMW-7	190	0.02	0.02	0.015	0.031	361	4.4	363
10/30/2002	ECMW-7	167	0.02	0.02	0.015	0.017	294	4.2	345
12/10/2002	ECMW-7	180	0.02	0.02	0.016	0.015	344	3.7	275
7/24/2003	ECMW-7	95.1	0.02	0.02	0.015	0.015	141	7.05	378
11/19/2003	ECMW-7	124	0.02	0.02	0.015	0.015	152	4.03	476
1/28/2004	ECMW-7	147	0.02	0.02	0.015	0.018	300	3.99	644
3/16/2004	ECMW-7	190	0.02	0.02	0.017	0.018	310	3.98	496
5/19/2004	ECMW-7	204	0.02	0.02	0.015	0.015	337	3.95	524
7/13/2004	ECMW-7	73.4	0.02	0.02	0.015	0.015	150	3.99	498
9/14/2004	ECMW-7	26.5	0.02	0.02	0.015	0.015	75.5	4.45	142
11/16/2004	ECMW-7	219	0.02	0.02	0.015	0.015	370	3.97	428
1/25/2005	ECMW-7	281	0.02	0.02	0.015	0.016	480	4.08	312
5/24/2005	ECMW-7	323	0.02	0.02	0.017	0.022	595	4.21	349
10/18/2005	ECMW-7	14.3			0.015	0.015	91.6	3.9	
4/11/2006	ECMW-7	267			0.015	0.017	516	4.36	
11/1/2006	ECMW-7	57.4				0.015	105	3.34	
5/23/2007	ECMW-7	96					181	4.3	798
11/6/2007	ECMW-7	49.9					85.3	3.58	906
5/21/2008	ECMW-7	55.2		0.02		0.015	153	2.81	936
11/5/2008	ECMW-7	115		0.02		0.015	237	3.4	962
4/21/2009	ECMW-7	77.8					126	4.13	895
10/20/2009	ECMW-7	51.2					49.9	3.55	1090
4/13/2010	ECMW-7	1000		0.02		0.06	1080	3.53	214
7/22/2010	ECMW-7	43.2		0.02		0.015	103	3.67	3490
11/2/2010	ECMW-7	107		0.01		0.015	155	4.92	156
4/27/2011	ECMW-7	1630					2640	4.47	248
6/15/2011	ECMW-7	56.6					227		899
11/30/2011	ECMW-7	132					192	4.18	259
5/3/2012	ECMW-7	132	0.02	0.01	0.015	0.015	161	4.82	761
11/7/2012	ECMW-7	187		0.01	0.015	0.015	153	6.31	692
5/15/2013	ECMW-7	105					141	5.09	930
11/5/2013	ECMW-7	132	0.02				156	5.81	927
6/3/2014	ECMW-7	100	0.021	0.0104	0.016	0.0156	169	5.24	858
11/4/2014	ECMW-7	77	0.02	0.0104	0.015	0.0156	99.6	4.56	816
5/20/2015	ECMW-7	61					63.6	4.06	866
11/18/2015	ECMW-7	66.2					104	5.31	758
5/24/2016	ECMW-7	91.1	0.021	0.0104	0.016	0.0156	135	5.3	740
11/10/2016	ECMW-7	1450	0.0104	0.0104	0.0156	0.0156	2300	4.92	165
3/21/2017	ECMW-7	6950					12100	5.46	134
5/1/2017	ECMW-7	947					1910	5.51	998
9/12/2017	ECMW-7	1060					10400	5.46	184
4/12/2018	ECMW-7	2310	0.0125	0.0125	0.0156	0.0156	542	5.77	983
9/13/2018	ECMW-7	231	0.0125	0.0125	0.0156	0.0156	413	6	222
1/23/2019	ECMW-7	2600					2500	5.24	370
7/17/2019	ECMW-7	3700					2500	5.02	210
2/18/2020	ECMW-7	280	0.01	0.01	0.0029	0.0029	2400	5.02	470
7/21/2020	ECMW-7	250	0.01	0.01	0.0024	0.0025	1800	5.03	390
3/2/2021	ECMW-7	850					2500	4.85	500
7/13/2021	ECMW-7	840					2700	5.34	310
2/22/2022	ECMW-7	120	0.01	0.01	0.0039	0.0039	2500	5.06	710
7/12/2022	ECMW-7	1000	0.01	0.01	0.0008	0.0011	8700	6.16	200

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3/13/1996	ECMW-8		0.005	0.005	0.0238	0.0234	1010		68.3
10/30/2001	ECMW-8	0.94		0.02		0.04	1030	3.9	81.1
6/3/2002	ECMW-8	551	0.02	0.02	0.02	0.02	1070	5.4	77.8
10/30/2002	ECMW-8	406	0.02	0.02	0.015	0.015	1330	4.4	151
12/10/2002	ECMW-8	220	0.02	0.02	0.015	0.015	1080	4	46.2
7/24/2003	ECMW-8	179	0.02	0.02	0.015	0.015	472	6.04	904
11/19/2003	ECMW-8	206	0.02	0.02	0.015	0.015	464	4.99	738
1/28/2004	ECMW-8	45.7	0.02	0.02	0.015	0.015	142	4.29	854
3/16/2004	ECMW-8	88	0.02	0.02	0.015	0.015	203	4.18	805
5/19/2004	ECMW-8	120	0.02	0.02	0.015	0.015	298	4.07	789
7/13/2004	ECMW-8	120	0.02	0.02	0.015	0.015	354	4.48	767
9/14/2004	ECMW-8	107	0.02	0.02	0.015	0.015	392	3.99	743
11/16/2004	ECMW-8	82.1	0.02	0.02	0.015	0.015	304	4.01	808
1/25/2005	ECMW-8	48.9	0.02	0.02	0.015	0.015	126	4.09	1200
5/24/2005	ECMW-8	79.6	0.02	0.02	0.015	0.015	225	6.12	1220
10/18/2005	ECMW-8	84.8					246	4.03	
4/11/2006	ECMW-8	53.5					194	3.78	
11/1/2006	ECMW-8	74.5					224	3.44	
5/23/2007	ECMW-8	122					0.5	4.11	971
11/6/2007	ECMW-8	96.2					340	3.7	816
5/21/2008	ECMW-8	56.8		0.02		0.015	171	3.42	1000
11/5/2008	ECMW-8	70		0.02		0.015	181	3.61	719
4/21/2009	ECMW-8	53.6					108	4.88	839
10/20/2009	ECMW-8	45.8					116	3.79	937
4/13/2010	ECMW-8	62.1		0.02		0.015	52.2	4.56	737
11/2/2010	ECMW-8	63.4		0.01		0.015	163	6.35	860
4/27/2011	ECMW-8	1980					3310	3.85	106
6/29/2011	ECMW-8	175					350		
11/30/2011	ECMW-8	120					401	3.44	727
5/3/2012	ECMW-8	122	0.02	0.01	0.015	0.0159	296	3.97	754
11/7/2012	ECMW-8	193	0.02	0.01	0.015	0.0166	429	5.99	814
5/15/2013	ECMW-8	172					551	3.97	614
11/5/2013	ECMW-8	150					584	4.06	642
6/3/2014	ECMW-8	157	0.021	0.0104	0.016	0.0156	712	4.33	516
11/4/2014	ECMW-8	198	0.02	0.0104	0.015	0.0156	697	3.09	466
5/20/2015	ECMW-8	158					791	4.56	470
11/18/2015	ECMW-8	143					751	3.7	431
5/24/2016	ECMW-8	2020	0.021	0.0104	0.065	0.065	4060	3.61	81
8/4/2016	ECMW-8	2270	0.021	0.0104	0.065	0.0686	4310	3.74	83.6
11/10/2016	ECMW-8	1020	0.0104	0.0104	0.0313	0.0341	1830	3.61	270
3/21/2017	ECMW-8	877					2210	3.61	157
5/1/2017	ECMW-8	1320					2430	3.7	1400
9/12/2017	ECMW-8	654					3490	3.5	83.4
4/12/2018	ECMW-8	626	0.0125	0.0125	0.0676	0.0689	2890	3.64	128
9/13/2018	ECMW-8	556	0.0125	0.0125	0.0636	0.0156	2790	3.95	145
1/24/2019	ECMW-8	4100					4800	3.85	150
7/17/2019	ECMW-8	4500					4600	3.74	110
2/18/2020	ECMW-8	2000	0.01	0.01	0.037	0.037	5400	3.62	140
7/21/2020	ECMW-8	590	0.01	0.01	0.021	0.021	4700	3.58	110
3/2/2021	ECMW-8	99					5300	2.19	150
7/13/2021	ECMW-8	810					5400	3.76	110
2/22/2022	ECMW-8	73	0.01	0.01	0.024	0.024	5300	3.61	130
7/12/2022	ECMW-8	980	0.01	0.01	0.037	0.043	6400	3.71	110

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3/14/1996	ECMW-9		0.005	0.005	0.002	0.004	37.3		621
6/27/2001	ECMW-9	0.5		0.02		0.04	28.8	5.4	520
10/30/2001	ECMW-9	0.5		0.02		0.04	26.7	5.5	514
6/3/2002	ECMW-9	0.5	0.02	0.02	0.02	0.02	24.4	6	639
10/30/2002	ECMW-9	18.8	0.02	0.02	0.015	0.015	59	6	655
12/10/2002	ECMW-9	0.7	0.02	0.02	0.015	0.015	28.1	5.2	556
7/24/2003	ECMW-9	0.5	0.02	0.02	0.015	0.015	28.4	7.05	547
11/19/2003	ECMW-9	0.5	0.02	0.02	0.015	0.015	28	5.72	532
1/28/2004	ECMW-9	0.5	0.02	0.02	0.015	0.015	29.2	5.53	575
3/16/2004	ECMW-9	0.5	0.02	0.02	0.015	0.015	30.6	5.88	528
5/19/2004	ECMW-9	0.5	0.02	0.02	0.015	0.015	27.4	5.47	517
7/13/2004	ECMW-9	0.5	0.02	0.02	0.015	0.015	24.6	6.87	588
9/14/2004	ECMW-9	1.14	0.02	0.02	0.015	0.015	25.3	5.04	548
11/16/2004	ECMW-9	0.7	0.02	0.02	0.015	0.015	24	5.67	549
1/25/2005	ECMW-9	0.5	0.02	0.02	0.015	0.015	26.3	5.57	518
5/24/2005	ECMW-9	0.5	0.02	0.02	0.015	0.018	27.4	5.77	600
10/18/2005	ECMW-9						29.9	5.64	
4/11/2006	ECMW-9						29.5	5.83	
11/1/2006	ECMW-9						40.2	5	
5/23/2007	ECMW-9	2.91					32.8	5.57	420
11/6/2007	ECMW-9	3.59					30.6	4.94	642
5/21/2008	ECMW-9	0.5		0.02		0.015	31.7	6.04	522
11/5/2008	ECMW-9	0.5		0.02		0.015	23.7	4.41	391
4/21/2009	ECMW-9	0.5					28	5.91	501
10/20/2009	ECMW-9	2.31					21	5.41	505
4/13/2010	ECMW-9	0.5		0.02		0.015	16.8	5.44	462
11/2/2010	ECMW-9	0.5		0.01		0.015	20	7.04	684
4/27/2011	ECMW-9	2.96					32.1	5.74	542
11/30/2011	ECMW-9	0.7					28.5	5.37	650
5/3/2012	ECMW-9	0.5	0.02	0.01	0.015	0.015	25.5	5.71	520
11/7/2012	ECMW-9	0.68	0.02	0.01	0.015	0.015	32.5	6.5	568
5/15/2013	ECMW-9	0.5					30.1	5.68	514
11/5/2013	ECMW-9	17					53.9	5.51	545
6/3/2014	ECMW-9	3.23	0.021	0.0104	0.016	0.0156	35.6	5.47	525
11/4/2014	ECMW-9	4.61	0.02	0.0104	0.015	0.0156	37.6	4.81	484
5/20/2015	ECMW-9	4.13					31.9	5.52	540
11/18/2015	ECMW-9	2.36					32.7	5.36	526
5/24/2016	ECMW-9	0.888	0.021	0.0104	0.016	0.0156	29.1	5.32	581
11/10/2016	ECMW-9	4.08	0.0104	0.0104	0.0156	0.0156	29.1	5.87	616
3/21/2017	ECMW-9	1.5					32	6.17	531
9/12/2017	ECMW-9	0.5					27.3	5.05	463
4/11/2018	ECMW-9	0.5	0.0125	0.0125	0.0156	0.0156	26.9	5.48	589
9/12/2018	ECMW-9	0.5	0.0125	0.0125	0.0156	0.0156	27.6	5.43	675
1/24/2019	ECMW-9	0.11					31	5.65	670
7/17/2019	ECMW-9	< 0.1					28	4.86	640
2/18/2020	ECMW-9	0.28	0.01	0.01	0.0005	0.0005	28	5.22	670
7/21/2020	ECMW-9	0.64	0.01	0.01	0.0005	0.0005	25	4.87	570
3/2/2021	ECMW-9	0.32					26	4.16	650
7/13/2021	ECMW-9	3.4					23	5.32	580
2/22/2022	ECMW-9	0.32	0.01	0.01	0.0005	0.0005	25	5.43	470
7/12/2022	ECMW-9	1.4	0.01	0.01	0.0005	0.0005	25	5.29	610

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3/13/1996	ECMW-10		0.005	0.005	0.0039	0.0052	257		89
6/27/2001	ECMW-10	0.5		0.025		0.04	156	4.4	100
10/30/2001	ECMW-10	0.5		0.04		0.04	153	3.9	134
6/3/2002	ECMW-10	0.5	0.02	0.02	0.02	0.02	138	5.3	84.9
10/30/2002	ECMW-10	1.84	0.02	0.02	0.015	0.015	137	5.6	140
12/10/2002	ECMW-10	0.5	0.02	0.02	0.015	0.015	70.4	4.5	52.2
7/24/2003	ECMW-10	0.5	0.02	0.02	0.015	0.015	118	5.56	108
11/19/2003	ECMW-10	0.5	0.02	0.02	0.015	0.015	119	4.38	104
1/28/2004	ECMW-10	0.5	0.02	0.02	0.015	0.015	126	4.6	129
3/16/2004	ECMW-10	0.5	0.02	0.02	0.015	0.015	135	5.01	128
5/18/2004	ECMW-10	0.5	0.02	0.02	0.015	0.015	123	5.07	139
7/13/2004	ECMW-10	0.5	0.02	0.02	0.015	0.015	114	4.54	112
9/14/2004	ECMW-10	0.77	0.02	0.02	0.015	0.015	123	4.7	137
11/16/2004	ECMW-10	0.5	0.02	0.02	0.015	0.015	94.4	4.79	71.1
1/25/2005	ECMW-10	0.5	0.02	0.02	0.015	0.015	115	4.63	114
5/25/2005	ECMW-10	1.45	0.02	0.02	0.015	0.015	120	4.93	142
10/18/2005	ECMW-10						97.7	4.3	
4/11/2006	ECMW-10					0.015	97.5	4.4	
11/1/2006	ECMW-10						71	3.83	
5/23/2007	ECMW-10	0.79					79.9	4.18	109
11/6/2007	ECMW-10	0.5					65.9	3.97	121
5/21/2008	ECMW-10	0.5		0.02		0.015	69.2	5.11	153
11/5/2008	ECMW-10	0.5		0.02		0.015	40.9	4.06	105
4/21/2009	ECMW-10	12.7					48.9	4.58	155
6/3/2009	ECMW-10	0.5						6.35	
10/20/2009	ECMW-10	0.5					53.5	4.57	136
4/13/2010	ECMW-10	0.8		0.02		0.015	44.7	4.08	170
11/2/2010	ECMW-10	0.5		0.01		0.015	41.9	6.42	164
4/27/2011	ECMW-10	3.18					54.1	4.3	166
11/30/2011	ECMW-10	0.5					49.2	3.97	94.8
5/3/2012	ECMW-10	0.5	0.02	0.01	0.015	0.015	38.4	4.39	158
11/7/2012	ECMW-10	0.5		0.01	0.015	0.015	44.4	6.13	152
5/15/2013	ECMW-10	0.5					42.1	4.44	163
11/5/2013	ECMW-10	0.5	0.02				47.8	4.91	153
6/3/2014	ECMW-10	2.2	0.021	0.0104	0.016	0.0156	50.6	4.93	136
11/4/2014	ECMW-10	0.5	0.02	0.0104	0.015	0.0156	39.8	3.07	172
5/20/2015	ECMW-10	1.91					50	4.65	148
11/18/2015	ECMW-10	0.5					61.2	4.22	99.9
5/25/2016	ECMW-10	0.5	0.021	0.0104	0.016	0.0156	51.2	3.99	134
11/10/2016	ECMW-10	0.5	0.0104	0.0104	0.0156	0.0156	44.1	4.25	141
3/21/2017	ECMW-10	0.5					43.5	4.65	170
9/12/2017	ECMW-10	0.601					47.2	4.26	140
4/11/2018	ECMW-10	0.5	0.0125	0.0125	0.0156	0.0156	43.3	3.88	152
9/13/2018	ECMW-10	1.15	0.0125	0.0125	0.0156	0.0654	47.4	4.45	181
1/24/2019	ECMW-10	0.21					76	4.93	98
7/16/2019	ECMW-10	< 0.1					69	3.87	71
2/17/2020	ECMW-10	0.11	0.01	0.01	0.0005	0.0005	64	5	97
7/20/2020	ECMW-10	0.11	0.01	0.01	0.0005	0.0005	63	3.73	62
3/1/2021	ECMW-10	0.11					65	3.27	92
7/14/2021	ECMW-10	0.1					68	4.06	71
2/21/2022	ECMW-10	0.44	0.01	0.01	0.0005	0.0005	69	3.94	84
7/11/2022	ECMW-10	0.32	0.01	0.01	0.0005	0.0005	61	4.05	97

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3/13/1996	ECMW-11		0.005	0.005	0.002	0.002	22.1		578
8/8/2001	ECMW-11	4.21		0.02		0.04	7.99	4.3	611
10/30/2001	ECMW-11	0.5		0.02		0.04	21.9	4	334
6/3/2002	ECMW-11	0.5	0.02	0.02	0.02	0.02	6.46	5.4	565
10/30/2002	ECMW-11	18	0.02	0.02	0.015	0.015	9.22	4.8	362
12/10/2002	ECMW-11	10.73	0.02	0.02	0.015	0.015	6.12	4.5	414
7/24/2003	ECMW-11	25.6	0.02	0.02	0.015	0.015	6.68	6.66	278
11/19/2003	ECMW-11	12	0.02	0.02	0.015	0.015	6.26	4.61	289
1/28/2004	ECMW-11	19.6	0.02	0.02	0.015	0.015	6.72	5.04	303
3/16/2004	ECMW-11	15	0.02	0.02	0.015	0.015	9.63	5	262
5/18/2004	ECMW-11	19.9	0.02	0.02	0.015	0.015	13.5	5.17	228
7/13/2004	ECMW-11	17.4	0.02	0.02	0.015	0.015	13.6	4.53	222
9/14/2004	ECMW-11	14.5	0.02	0.02	0.015	0.015	9.85	4.61	247
11/17/2004	ECMW-11	19.1	0.02	0.02	0.015	0.015	11.1	4.86	209
1/25/2005	ECMW-11							4.64	
5/25/2005	ECMW-11	20.6	0.02	0.02	0.015	0.015	1.12	5.05	3.58
10/18/2005	ECMW-11	10.6					2.02	4.42	
4/11/2006	ECMW-11	10.9					6.01	4.63	
11/1/2006	ECMW-11	4.88					1.43	4.06	
5/23/2007	ECMW-11	25.4					29.2	4.23	137
11/6/2007	ECMW-11	8.01					9.75	3.94	223
5/21/2008	ECMW-11	19.5		0.02		0.015	18.9	5.26	208
11/5/2008	ECMW-11	18.4		0.02		0.015	16.9	4.34	98.6
4/21/2009	ECMW-11	0.5					14	4.09	119
6/3/2009	ECMW-11	17.7						6.1	
10/20/2009	ECMW-11	18.2					9.44	4.28	125
4/13/2010	ECMW-11	32.6		0.02		0.015	7.78	4.32	135
11/2/2010	ECMW-11	3.17		0.01		0.015	4.52	5.67	325
4/27/2011	ECMW-11	47					15.8	4.57	146
11/30/2011	ECMW-11	2.19					3.56	4.11	318
5/3/2012	ECMW-11	14.5	0.02	0.01	0.015	0.015	29.4	4.73	95.6
11/7/2012	ECMW-11	33.2	0.02	0.01	0.015	0.015	23.8	5.92	161
5/15/2013	ECMW-11	17					45.4	4.58	98
11/5/2013	ECMW-11	0.5					30.5	4.48	125
6/3/2014	ECMW-11	26	0.021	0.0104	0.016	0.0156	30.7	4.18	105
11/4/2014	ECMW-11	13.9	0.02	0.0104	0.015	0.0156	30.5	3.08	117
5/20/2015	ECMW-11	3.12					28.8	4.19	134
11/18/2015	ECMW-11	39					35.7	4.13	93.4
5/25/2016	ECMW-11	5.86	0.021	0.0104	0.016	0.0156	19.5	4.04	233
11/10/2016	ECMW-11	3.86	0.0104	0.0104	0.0156	0.0156	18.3	4.42	245
3/21/2017	ECMW-11	5.87					16.7	4.07	268
9/12/2017	ECMW-11	4.08					16	4.03	266
4/10/2018	ECMW-11	6.15	0.0125	0.0125	0.0156	0.0156	14.7	5.37	246
9/13/2018	ECMW-11	4.76	0.0125	0.0125	0.0156	0.0156	29.9	4.34	202
1/24/2019	ECMW-11	18					36	4.3	190
7/16/2019	ECMW-11	11					31	3.93	180
2/17/2020	ECMW-11	10	0.01	0.01	0.0005	0.0005	32	4.19	160
7/20/2020	ECMW-11	9.3	0.01	0.01	0.0054	0.0005	22	3.55	170
3/1/2021	ECMW-11	0.1					31	2.75	150
7/14/2021	ECMW-11	9.8					35	4.2	170
2/21/2022	ECMW-11	7.3	0.01	0.01	0.0005	0.0005	35	4.05	200
7/11/2022	ECMW-11	11	0.01	0.01	0.00052	0.00051	37	4.19	150

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3/13/1996	ECMW-12		0.005	0.005	0.002	0.002	0.2		9.6
6/27/2001	ECMW-12	2.2		0.02		0.04	0.5	5.9	13
6/4/2002	ECMW-12	1.4	0.02	0.02	0.02	0.02	0.5	6	4.85
10/30/2002	ECMW-12	4.2	0.02	0.02	0.015	0.015	0.5	6.1	21.6
12/10/2002	ECMW-12	2.3	0.02	0.02	0.015	0.015	0.5	5.8	12.5
7/24/2003	ECMW-12	1.74	0.02	0.02	0.015	0.015	0.5	4.76	18.7
11/19/2003	ECMW-12	1.83	0.02	0.02	0.015	0.015	0.5	5.79	30.6
1/28/2004	ECMW-12	1.87	0.02	0.02	0.015	0.015	0.5	6.44	6.76
3/16/2004	ECMW-12	2.2	0.02	0.02	0.015	0.015	0.5	5.96	4.04
5/19/2004	ECMW-12	1.94	0.02	0.02	0.015	0.015	0.5	5.8	5.11
7/13/2004	ECMW-12	1.2	0.02	0.02	0.015	0.015	0.5	6.78	7.18
9/15/2004	ECMW-12	2.38	0.02	0.02	0.015	0.015	0.5	5.8	23
11/16/2004	ECMW-12	1.55	0.02	0.02	0.015	0.015	0.5	5.73	18.5
1/26/2005	ECMW-12	1.98	0.02	0.02	0.015	0.015	0.5	5.91	4.88
5/25/2005	ECMW-12	1.02	0.02	0.02	0.015	0.015	0.5	5.96	11.2
10/20/2005	ECMW-12	1.06						5.3	
4/11/2006	ECMW-12	1.58						6.12	
11/1/2006	ECMW-12	1.37						5.3	
5/23/2007	ECMW-12							5.66	
11/6/2007	ECMW-12							5.11	
5/21/2008	ECMW-12	1.67		0.02		0.015	0.5	7.53	7.14
11/7/2008	ECMW-12	1.17		0.02		0.015	0.5	5.75	8.74
4/21/2009	ECMW-12							6.52	
10/21/2009	ECMW-12							7.08	
4/13/2010	ECMW-12	5.56		0.02		0.015	0.5	5.95	2.14
11/3/2010	ECMW-12	1.44		0.01		0.015	0.5	6.64	21.5
4/27/2011	ECMW-12							5.67	
5/3/2012	ECMW-12	1.81	0.02	0.01	0.015	0.015	0.5	6.02	17
11/7/2012	ECMW-12	3.55	0.02	0.01	0.015	0.015	0.5	6.49	21.5
5/15/2013	ECMW-12							6.02	
11/4/2013	ECMW-12							5.84	
6/3/2014	ECMW-12	3.11	0.021	0.0104	0.016	0.0156	0.334	5.56	5.04
11/4/2014	ECMW-12	2.15	0.02	0.0104	0.015	0.0156	0.25	4.53	20.6
5/22/2015	ECMW-12							6.02	
11/18/2015	ECMW-12							5.73	
5/25/2016	ECMW-12	2.24	0.021	0.0104	0.016	0.0156	0.25	5.58	17
11/10/2016	ECMW-12	2.22	0.0104	0.0104	0.0156	0.0156	0.25	5.18	33
3/22/2017	ECMW-12							5.9	
9/13/2017	ECMW-12							5.97	
6/6/2018	ECMW-12	1.05	0.0125	0.0125	0.0156	0.0156	0.25	5.86	16.5
9/13/2018	ECMW-12	1.74	0.0125	0.0125	0.0156	0.0156	1.33	5.66	34.6
1/21/2019	ECMW-12							5.41	
7/16/2019	ECMW-12							5.58	
2/17/2020	ECMW-12	2.2	0.01	0.01	0.0005	0.0005	0.05	5.63	3.5
7/20/2020	ECMW-12	2.1	0.01	0.01	0.0005	0.0005	0.05	5.06	14
3/1/2021	ECMW-12							3.24	
7/14/2021	ECMW-12							5.65	
2/21/2022	ECMW-12	2	0.01	0.01	0.0005	0.0005	0.05	5.65	4.5
7/11/2022	ECMW-12	3	0.01	0.01	0.0005	0.0005	0.05	5.68	25

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3/13/1996	ECMW-13		0.005	0.005	0.002	0.002	0.2		809
6/5/2001	ECMW-13	0.5		0.02		0.04	0.5	5.6	538
10/30/2001	ECMW-13	0.5		0.02		0.04	0.5	5.3	606
6/4/2002	ECMW-13	0.5	0.02	0.02	0.02	0.02	0.5	5.7	372
10/30/2002	ECMW-13	1.28	0.02	0.02	0.015	0.015	0.5	6.1	538
12/10/2002	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.5	598
7/23/2003	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	6.05	358
11/19/2003	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.62	4.91	310
1/28/2004	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.02	565
3/16/2004	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.19	550
5/18/2004	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.27	296
7/13/2004	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	6.02	510
9/14/2004	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.03	416
11/16/2004	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	4.83	250
1/26/2005	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.72	4.86	564
5/25/2005	ECMW-13	0.54	0.02	0.02	0.015	0.015	0.5	5.07	302
10/19/2005	ECMW-13							4.19	
4/12/2006	ECMW-13							4.97	
11/2/2006	ECMW-13							4.71	
5/23/2007	ECMW-13							4.97	
11/7/2007	ECMW-13							4.64	
5/21/2008	ECMW-13	0.5		0.02		0.015	0.5	5.85	399
11/7/2008	ECMW-13	0.5		0.02		0.015	0.5	5.01	346
4/21/2009	ECMW-13							4.77	
10/21/2009	ECMW-13						0.5	4.63	
4/14/2010	ECMW-13	0.5		0.02		0.015	0.5	4.75	470
11/3/2010	ECMW-13	0.5		0.01		0.015		6.44	589
12/21/2010	ECMW-13								
4/26/2011	ECMW-13							4.68	
11/30/2011	ECMW-13								
5/2/2012	ECMW-13	0.5	0.02	0.01	0.015	0.015	0.5	5.23	505
11/6/2012	ECMW-13	0.5	0.02	0.01	0.015	0.015	0.5	6.25	593
5/15/2013	ECMW-13							5.19	
11/4/2013	ECMW-13							4.83	
6/4/2014	ECMW-13	0.5	0.021	0.0104	0.016	0.0156	0.255	5.33	374
11/5/2014	ECMW-13	0.5	0.02	0.0104	0.015	0.015	0.25	4.03	425
5/22/2015	ECMW-13							5.2	
11/18/2015	ECMW-13							4.68	
5/25/2016	ECMW-13	0.5	0.021	0.0104	0.016	0.016	0.25	4.39	529
11/9/2016	ECMW-13	0.5	0.0104	0.0104	0.0156	0.0156	0.25	5.06	439
3/22/2017	ECMW-13							4.8	
9/13/2017	ECMW-13							5.04	
4/11/2018	ECMW-13	0.5	0.0125	0.0125	0.0156	0.0156	0.25	4.57	364
9/12/2018	ECMW-13	0.5	0.0125	0.0125	0.0156	0.0156	0.25	4.56	496
1/22/2019	ECMW-13							4.54	
7/15/2019	ECMW-13							4.93	
2/17/2020	ECMW-13	0.1	0.01	0.01	0.0005	0.0005	0.05	4.49	260
7/21/2020	ECMW-13	0.27	0.01	0.01	0.0005	0.00061	0.05	4.83	180
3/2/2021	ECMW-13							4.84	
7/14/2021	ECMW-13							5.54	
2/23/2022	ECMW-13	0.1	0.01	0.01	0.0005	0.0005	0.05	4.93	190
7/13/2022	ECMW-13	0.17	0.01	0.01	0.0005	0.00061	0.05	4.96	210

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3/13/1996	ECMW-14		0.005	0.005	0.002	0.002	11.9		139
8/8/2001	ECMW-14	0.5		0.02		0.04	75	4.3	175
10/30/2001	ECMW-14	0.5		0.02		0.04	25.2	4.5	211
6/4/2002	ECMW-14	0.5	0.02	0.02	0.02	0.02	26.5	5.6	187
10/30/2002	ECMW-14	5.32	0.02	0.02	0.015	0.015	17	6.3	288
12/10/2002	ECMW-14	0.5	0.02	0.02	0.015	0.015	23.4	5.3	230
7/23/2003	ECMW-14	0.5	0.02	0.02	0.015	0.015	23.1	4.62	221
11/19/2003	ECMW-14	0.5	0.02	0.02	0.015	0.015	16.1	4.92	227
1/28/2004	ECMW-14	0.5	0.02	0.02	0.015	0.028	24.5	5.19	5.41
3/16/2004	ECMW-14	0.5	0.02	0.02	0.015	0.015	33.4	5.34	211
5/18/2004	ECMW-14	0.5	0.02	0.02	0.015	0.015	32.6	5.23	234
7/13/2004	ECMW-14	0.5	0.02	0.02	0.015	0.015	45.7	5.05	226
9/14/2004	ECMW-14	0.5	0.02	0.02	0.015	0.015	57.7	4.72	232
11/16/2004	ECMW-14	0.5	0.02	0.02	0.015	0.015	21.7	4.88	168
1/26/2005	ECMW-14	0.5	0.02	0.02	0.015	0.015	62.4	4.89	204
5/25/2005	ECMW-14	0.5	0.02	0.02	0.015	0.015	31	5.06	204
10/19/2005	ECMW-14						36	4.96	
4/12/2006	ECMW-14						48.2	4.72	
11/2/2006	ECMW-14						13.6	4.15	
5/23/2007	ECMW-14	0.5					25.5	4.6	233
11/7/2007	ECMW-14	0.5					12.6	4.24	229
5/21/2008	ECMW-14	0.5		0.02		0.015	22.5	5.69	224
11/5/2008	ECMW-14	0.5		0.02		0.015	11.1	4.35	137
4/21/2009	ECMW-14	0.72					13.2	4.36	200
12/16/2009	ECMW-14	0.5					15.7	5.53	212
4/14/2010	ECMW-14	0.5		0.02		0.015	24.3	4.54	166
12/21/2010	ECMW-14	0.5		0.01		0.015	12.7	5.68	152
4/26/2011	ECMW-14	0.5					10.7	5.04	159
11/30/2011	ECMW-14	0.5					8.09	4.5	156
5/2/2012	ECMW-14	0.5		0.01	0.015	0.015	17.4	5.2	139
11/6/2012	ECMW-14	0.5		0.01	0.015	0.015	8.03	6.25	140
5/15/2013	ECMW-14	0.5	0.02				6.17	5.2	108
11/5/2013	ECMW-14	7.52	0.02				6.92	5.46	91.6
6/4/2014	ECMW-14	0.5	0.021	0.0104	0.016	0.0156	4.31	5.73	54.2
11/5/2014	ECMW-14	0.5	0.02	0.0104	0.015	0.0156	5.12	4.09	98.3
9/8/2015	ECMW-14	0.5					9.58	4.89	77.8
11/18/2015	ECMW-14	0.63					17.2	5.15	45.6
7/6/2016	ECMW-14	0.5	0.021	0.0104	0.016	0.0156	8.76	4.93	91.2
11/9/2016	ECMW-14	0.5	0.0104	0.0104	0.0156	0.0156	4.4	5.37	116
3/21/2017	ECMW-14	0.782					5.3	5.43	102
9/12/2017	ECMW-14	0.5					2.76	4.62	123
6/6/2018	ECMW-14	0.5	0.0125	0.0125	0.0156	0.0156	5.98	4.91	136
9/12/2018	ECMW-14	0.5	0.0125	0.0125	0.0156	0.0156	4.8	4.71	143
1/21/2019	ECMW-14	Flooded							
7/16/2019	ECMW-14	0.52					4	4.19	130
2/19/2020	ECMW-14	0.4	0.01	0.01	0.0005	0.0005	5.3	4.35	180
7/22/2020	ECMW-14	0.26	0.01	0.01	0.0079	0.00051	2	4.41	140
3/3/2021	ECMW-14	0.47					0.056	4.03	14
7/15/2021	ECMW-14	0.36					0.41	4.91	140
2/23/2022	ECMW-14	0.1	0.01	0.01	0.0005	0.0011	1.3	4.68	160
7/13/2022	ECMW-14	0.65	0.01	0.01	0.0005	0.00081	0.05	5.35	110

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3/13/1996	ECMW-15		0.005	0.005	0.002	0.002	34.5		4.4
8/8/2001	ECMW-15	0.5		0.02		0.04	19.1	4.3	7.8
10/30/2001	ECMW-15	0.5		0.02		0.04	12.6	4.3	10.2
6/4/2002	ECMW-15	0.5	0.02	0.02	0.02	0.02	10.7	5.4	11.1
10/30/2002	ECMW-15	1.16	0.02	0.02	0.015	0.015	18.2	5.4	9.22
12/10/2002	ECMW-15	0.5	0.02	0.02	0.015	0.015	12.2	5.8	10.8
7/23/2003	ECMW-15	0.5	0.02	0.02	0.015	0.015	7.63	4.77	12.8
11/19/2003	ECMW-15	0.5	0.02	0.02	0.015	0.015	9.81	4.89	12.6
1/28/2004	ECMW-15	3.96	0.02	0.02	0.015	0.015	4.52	5.56	18.6
3/16/2004	ECMW-15	0.5	0.02	0.02	0.015	0.015	7.66	5.68	13.9
5/18/2004	ECMW-15	0.5	0.02	0.02	0.015	0.015	6.82	5.75	15.2
7/13/2004	ECMW-15	0.5	0.02	0.02	0.015	0.015	9.52	5.39	11
9/14/2004	ECMW-15	0.61	0.02	0.02	0.015	0.015	8.22	4.67	13.2
11/16/2004	ECMW-15	0.5	0.02	0.02	0.015	0.015	7.42	4.92	11.8
1/25/2005	ECMW-15	0.5	0.02	0.02	0.015	0.015	7.62	4.68	11.8
5/25/2005	ECMW-15	0.5	0.02	0.02	0.015	0.015	5.79	4.94	16.1
10/19/2005	ECMW-15						5.63	4.77	
4/11/2006	ECMW-15						1.6	4.95	
11/2/2006	ECMW-15						2.54	4.17	
11/2/2006	ECMW-15								
5/23/2007	ECMW-15							4.43	
11/7/2007	ECMW-15							4.06	
5/21/2008	ECMW-15	0.5		0.02		0.015	1.52	7.35	15.9
11/5/2008	ECMW-15	0.5		0.02		0.015	2.32	5.18	8.79
4/21/2009	ECMW-15							4.53	
10/20/2009	ECMW-15							4.36	
4/14/2010	ECMW-15	0.5		0.02		0.015	2.99	4.39	10.7
11/3/2010	ECMW-15	0.5		0.01		0.015	1.9	5.3	13.2
4/26/2011	ECMW-15							4.86	
5/2/2012	ECMW-15	0.5	0.02	0.01	0.015	0.015	1.08	4.88	13.9
11/6/2012	ECMW-15	0.5	0.02	0.01	0.015	0.015	1.26	6.22	13
5/15/2013	ECMW-15							6.21	
11/4/2013	ECMW-15							4.56	
6/4/2014	ECMW-15	0.5	0.021	0.0122	0.016	0.0156	1.74	5.36	12.4
11/5/2014	ECMW-15	0.5	0.02	0.0104	0.015	0.0156	3.07	2.75	9.58
5/22/2015	ECMW-15							4.68	
11/18/2015	ECMW-15							5.14	
5/25/2016	ECMW-15	0.5	0.021	0.0104	0.016	0.0156	4.52	4.29	9.67
11/9/2016	ECMW-15	0.5	0.0104	0.0104	0.0156	0.0156	4.07	5.04	9.96
3/22/2017	ECMW-15							4.67	
9/13/2017	ECMW-15							4.54	
4/10/2018	ECMW-15	0.5	0.0125	0.0125	0.0156	0.0156	1.55	5.67	12.6
9/12/2018	ECMW-15	0.5	0.0125	0.0125	0.0156	0.0156	2.21	4.87	15.6
1/21/2019	ECMW-15							4.06	
7/16/2019	ECMW-15							4.11	
2/19/2020	ECMW-15	0.38	0.01	0.01	0.0005	0.0005	3.6	3.91	15
7/22/2020	ECMW-15	0.17	0.01	0.01	0.0005	0.0005	3.1	3.87	14
3/3/2021	ECMW-15							2.97	
7/15/2021	ECMW-15							4.93	
2/23/2022	ECMW-15	0.12	0.01	0.01	0.0005	0.0005	3.3	4.09	17
7/13/2022	ECMW-15	18	0.01	0.01	0.0005	0.0005	25	5.31	69

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3/13/1996	ECMW-16		0.005	0.005	0.0034	0.0036	137		4.6
6/5/2001	ECMW-16	4.61		0.02		0.04	134	4.3	5.09
10/30/2001	ECMW-16	0.5		0.02		0.04	58.4	3.9	6.44
6/4/2002	ECMW-16	6.2	0.02	0.02	0.02	0.02	72.5	5	7.19
10/30/2002	ECMW-16	11.6	0.02	0.02	0.015	0.015	72	5	9.21
12/10/2002	ECMW-16	2.99	0.02	0.02	0.015	0.015	89.4	5.9	5.64
7/23/2003	ECMW-16	6.45	0.02	0.02	0.015	0.015	72.3	4.81	7.15
11/19/2003	ECMW-16	8.61	0.02	0.02	0.015	0.015	44.3	4.99	9.78
1/28/2004	ECMW-16	5.66	0.02	0.02	0.015	0.015	59	5.61	9.84
3/16/2004	ECMW-16	8.39	0.02	0.02	0.015	0.015	34.8	5.83	11.2
5/18/2004	ECMW-16	10.4	0.02	0.02	0.015	0.015	31.9	5.95	13.3
7/13/2004	ECMW-16	9.35	0.02	0.02	0.015	0.015	40.2	5.5	7.7
9/14/2004	ECMW-16	8.57	0.02	0.02	0.015	0.015	47.1	4.49	7.83
11/16/2004	ECMW-16	6.49	0.02	0.02	0.015	0.015	38.2	5.08	8.11
1/25/2005	ECMW-16	4.15	0.02	0.02	0.015	0.015	43.1	4.54	8.13
5/25/2005	ECMW-16	7.62	0.02	0.02	0.015	0.015	26.8	4.62	10.2
10/19/2005	ECMW-16	6.28					17	4.66	
4/11/2006	ECMW-16	2.01					17	4.79	
11/2/2006	ECMW-16	2.16					24.8	4.27	
5/23/2007	ECMW-16	2.21					12.8	4.25	14.4
11/7/2007	ECMW-16	1.77					19.6	4.3	12.6
5/21/2008	ECMW-16	3.35		0.02		0.015	14.8	6.08	15.9
11/5/2008	ECMW-16	1.92		0.02		0.015	11.4	6.5	10.4
4/21/2009	ECMW-16	3.25					8.85	4.66	14.5
10/21/2009	ECMW-16	0.88					13.1	4.38	12.1
4/14/2010	ECMW-16	2.38		0.02		0.015	4.73	4.42	15.3
11/3/2010	ECMW-16	0.96		0.01		0.015	19.2	5.98	13.4
4/26/2011	ECMW-16	3.56					7.5	4.5	15.8
11/30/2011	ECMW-16	0.84					11.6	4.12	17.9
5/2/2012	ECMW-16	0.81	0.02	0.01		0.015	10.7	4.66	15.4
11/6/2012	ECMW-16	1.19		0.01		0.015	9.94	6.09	14.6
5/15/2013	ECMW-16	3.91			0.015		12.2	4.79	13
11/5/2013	ECMW-16	1.58	0.02		0.015		10.3	4.6	13.3
6/4/2014	ECMW-16	1.8	0.021	0.0104	0.016	0.0156	10.9	5.07	10.7
11/5/2014	ECMW-16	1.27	0.02	0.0104	0.015	0.0156	9.2	2.64	11.2
5/20/2015	ECMW-16	6.2					8.65	4.54	12.9
11/18/2015	ECMW-16	0.5					8.43	4.64	15.9
5/25/2016	ECMW-16	0.5	0.021	0.0104	0.016	0.0156	10.2	4.28	15.4
11/9/2016	ECMW-16	0.5	0.0104	0.0104	0.0156	0.0156	8.86	5.3	13.6
3/21/2017	ECMW-16	0.5					7.88	4.44	15.3
9/12/2017	ECMW-16	0.5					8.74	4.13	12.1
4/10/2018	ECMW-16	0.5	0.0125	0.0125	0.0156	0.0156	8.13	5.75	15.6
9/12/2018	ECMW-16	0.5	0.0125	0.0125	0.0156	0.0156	8.46	4.22	9.85
1/22/2019	ECMW-16	0.33					12	4.09	18
7/16/2019	ECMW-16	0.33					13	3.94	16
2/17/2020	ECMW-16	0.35	0.01	0.01	0.0005	0.0005	12	4.11	18
7/22/2020	ECMW-16	0.71	0.01	0.01	0.0005	0.0005	14	3.79	20
3/2/2021	ECMW-16	0.25					11	3.05	20
7/15/2021	ECMW-16	0.4					12	4.35	17
7/13/2022	ECMW-16	0.28	0.01	0.01	0.0005	0.0006	15	3.88	19
7/13/2022	ECMW-16	1.7	0.01	0.01	0.0005	0.0005	9.1	4.65	17

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3/13/1996	ECMW-17		0.005	0.005	0.002	0.002	45		145
6/5/2001	ECMW-17	1.16		0.02		0.04	54.2	4.4	87.7
10/30/2001	ECMW-17	0.5		0.02		0.04	106	4.1	11.5
6/4/2002	ECMW-17	0.5	0.02	0.02	0.02	0.02	83.4	5.1	8.04
10/30/2002	ECMW-17	2.36	0.02	0.02	0.015	0.015	92	5.1	9.53
12/10/2002	ECMW-17	1.22	0.02	0.02	0.015	0.015	101	5.6	28.2
7/23/2003	ECMW-17	0.58	0.02	0.02	0.015	0.015	74.7	4.74	9.31
11/19/2003	ECMW-17	0.55	0.02	0.02	0.015	0.015	77.3	5.28	11.8
1/28/2004	ECMW-17	0.5	0.02	0.02	0.015	0.015	81.3	6.54	42.8
3/16/2004	ECMW-17	8.14	0.02	0.02	0.015	0.015	129	6.62	64
5/18/2004	ECMW-17	8.05	0.02	0.02	0.015	0.015	134	6.73	60.1
7/13/2004	ECMW-17	0.5	0.02	0.02	0.015	0.015	67.6	6.57	6.54
9/14/2004	ECMW-17	1.42	0.02	0.02	0.015	0.015	78.4	4.4	3.14
11/16/2004	ECMW-17	9.55	0.02	0.02	0.015	0.015	219	5.41	54.8
1/26/2005	ECMW-17	1.79	0.02	0.02	0.015	0.015	53.3	4.54	12.2
5/25/2005	ECMW-17	0.5	0.02	0.02	0.015	0.015	56.4	4.86	19.1
10/20/2005	ECMW-17	0.67					48.9	5.74	
4/11/2006	ECMW-17	1.15					66.6	3.35	
11/2/2006	ECMW-17	4.81					47.6	3.56	
5/23/2007	ECMW-17	1.49					58.5	4.19	12.7
11/7/2007	ECMW-17	0.64					83.3	3.7	1.27
5/21/2008	ECMW-17	1.63		0.02		0.015	63.1	4.84	63
11/5/2008	ECMW-17	1.31		0.02		0.015	34.6	3.85	17.5
4/21/2009	ECMW-17	12.2					27.1	4.25	99.9
6/3/2009	ECMW-17	3.04						5.84	
10/21/2009	ECMW-17	11.2					14.4	4.68	87.1
4/14/2010	ECMW-17	0.5		0.02		0.015	15.9	4.07	6.73
11/3/2010	ECMW-17	1.94		0.01		0.015	27.2	7.02	13.1
4/26/2011	ECMW-17	10.1					4.03	4.34	40.2
11/30/2011	ECMW-17	2.75					5.95	4.65	36.1
5/2/2012	ECMW-17	2.51	0.02	0.01	0.015	0.015	8.13	4.75	20.9
11/6/2012	ECMW-17	3.82		0.01	0.015	0.015	1.82	6.21	39.2
5/15/2013	ECMW-17	1.41					3.6	4.7	34.5
11/5/2013	ECMW-17	0.5	0.02				1.24	4.77	39.6
6/4/2014	ECMW-17	2.46	0.021	0.0104	0.016	0.0156	7.19	4.62	29.3
11/5/2014	ECMW-17	3.46	0.02	0.0104	0.015	0.0156	7.5	2.73	34.3
5/20/2015	ECMW-17	6.53					10.4	4.1	18.7
11/18/2015	ECMW-17	3.67					14.3	4.04	22.9
5/25/2016	ECMW-17	0.5	0.021	0.0104	0.016	0.0156	14.3	3.96	6.64
11/9/2016	ECMW-17	0.826	0.0104	0.0104	0.0156	0.0156	12.2	6.42	6.86
3/21/2017	ECMW-17	5.16					19.2	4.6	21.2
9/12/2017	ECMW-17	0.865					13.4	4.32	11.3
4/10/2018	ECMW-17	3.5	0.0125	0.0125	0.0156	0.0156	10.2	4.32	20.5
9/12/2018	ECMW-17	1.61	0.0125	0.0125	0.0156	0.0156	6.95	4.03	24.9
1/22/2019	ECMW-17	1.4					12	3.84	19
7/15/2019	ECMW-17	0.22					7.8	3.67	11
2/19/2020	ECMW-17	9.7	0.01	0.01	0.0017	0.0021	16	4.15	35
7/22/2020	ECMW-17	0.1	0.01	0.01	0.0005	0.0005	8.9	2.95	10
3/3/2021	ECMW-17	7					39	4.45	41
7/14/2021	ECMW-17	0.1					11	4.2	9.4
2/21/2022	ECMW-17	2.3	0.01	0.01	0.0005	0.0005	0.05	3.78	6.5
7/13/2022	ECMW-17	7.3	0.01	0.01	0.00051	0.0005	18	4.12	62

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3/13/1996	ECMW-18		0.005	0.0194	0.002	0.017	0.4		3.3
10/30/2001	ECMW-18	0.5		0.05		0.04	0.5	5.4	3.74
6/4/2002	ECMW-18	0.5	0.137	0.147	0.02	0.115	0.5	6.2	8.38
10/30/2002	ECMW-18	0.43	0.02	0.02	0.015	0.018	0.5	6.3	3.22
12/10/2002	ECMW-18	0.5	0.02	0.02	0.015	0.015	0.5	6.4	5.01
7/23/2003	ECMW-18	0.5	0.02	0.047	0.015	0.029	113	5.38	115
11/19/2003	ECMW-18	0.5	0.02	0.02	0.015	0.015	0.5	5.9	9.68
1/28/2004	ECMW-18							6.17	
3/16/2004	ECMW-18	0.5	0.021	0.027	0.015	0.021	0.5	6.4	7.01
5/19/2004	ECMW-18	0.5	0.02	0.088	0.015	0.063	0.5	6.43	5.63
7/13/2004	ECMW-18	0.5	0.02	0.043	0.015	0.033	0.5	6.05	5.68
9/15/2004	ECMW-18	0.56	0.05	0.12	0.038	0.109	0.5	5.89	3.88
11/17/2004	ECMW-18	0.5	0.02	0.027	0.015	0.015	0.5	5.96	4.61
1/26/2005	ECMW-18	0.5	0.022	0.055	0.015	0.056	0.5	5.9	5.13
5/25/2005	ECMW-18	0.5	0.02	0.032	0.015	0.018	0.5	6.04	5.18
10/19/2005	ECMW-18		0.052	0.02	0.015	0.015		5.82	
4/12/2006	ECMW-18		0.065	0.02	0.016	0.015		1.34	
11/2/2006	ECMW-18			0.02		0.015		5.23	
5/23/2007	ECMW-18						0.98	5.34	
11/7/2007	ECMW-18						0.5	5.03	
5/21/2008	ECMW-18	0.5		0.028		0.02	0.567	7.82	6.57
11/7/2008	ECMW-18	0.5		0.025		0.032	0.5	5.05	1.52
4/22/2009	ECMW-18						0.5	5.42	
10/21/2009	ECMW-18						0.5	7.16	
4/14/2010	ECMW-18	0.5		0.02		0.015	0.5	5.5	2.82
11/3/2010	ECMW-18	0.5		0.01		0.015	1	8.22	3.65
4/26/2011	ECMW-18							5.77	
6/30/2011	ECMW-18						0.5		
11/30/2011	ECMW-18						0.5	5.64	
5/2/2012	ECMW-18	0.5	0.02	0.01		0.015	0.5	5.89	2.17
11/6/2012	ECMW-18	0.5		0.01		0.015	0.5	6.61	2.99
5/15/2013	ECMW-18	0.5			0.015		0.328	5.96	6.25
11/5/2013	ECMW-18	9.64	0.02		0.015		0.25	6.28	6.3
6/4/2014	ECMW-18	0.5	0.021	0.0531	0.016	0.0274	0.299	5.82	7.15
11/5/2014	ECMW-18	0.5	0.02	0.0104	0.015	0.0156	0.254	4.71	2.64
5/20/2015	ECMW-18						0.295	5.64	5.63
11/18/2015	ECMW-18						0.25	5.7	
5/25/2016	ECMW-18	0.5	0.021	0.0104	0.016	0.0167	0.25	5.33	1.78
11/10/2016	ECMW-18	0.788	0.0104	0.0104	0.0156	0.0248	0.25	6.42	1.29
3/21/2017	ECMW-18						0.25	5.35	
9/12/2017	ECMW-18	0.5					0.25	5.11	1.29
4/12/2018	ECMW-18	1.38	0.0125	0.0125	0.0156	0.0156	0.25	5.28	1.58
9/13/2018	ECMW-18	0.5	0.0125	0.0125	0.0156	0.0156	0.25	4.19	1.72
1/22/2019	ECMW-18						0.56	4.39	
7/18/2019	ECMW-18						0.21	4.68	
2/19/2020	ECMW-18	0.25	0.02	0.019	0.018	0.02	0.46	4.85	3.7
7/21/2020	ECMW-18	0.33	0.019	0.02	0.018	0.02	0.19	4.06	2.5
3/3/2021	ECMW-18						0.3	4.49	3.5
7/15/2021	ECMW-18	0.23					0.053	5.53	2.1
2/23/2022	ECMW-18	0.37	0.014	0.015	0.025	0.025	0.15	5.21	4.4
7/13/2022	ECMW-18	0.52	0.016	0.015	0.023	0.024	0.07	5.58	2.6

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1/28/2004	ECMW-19	0.64	0.077	0.077	0.045	0.122	0.5	6.73	8.32
3/16/2004	ECMW-19	0.5	0.02	0.02	0.015	0.019	0.5	6.49	6.38
5/19/2004	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.19	9.05
7/13/2004	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.37	6.85
9/15/2004	ECMW-19	0.54	0.02	0.02	0.015	0.015	0.5	6.23	4.11
11/17/2004	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.02	4.63
1/26/2005	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	5.82	3.67
5/25/2005	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	5.88	4.56
10/19/2005	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.27	
4/12/2006	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.1	
11/2/2006	ECMW-19	0.5		0.02		0.015	0.5	5.51	
5/23/2007	ECMW-19							5.18	
11/7/2007	ECMW-19							8.17	
5/21/2008	ECMW-19	0.5		0.02		0.015	0.5	5.9	3.18
11/7/2008	ECMW-19	0.5		0.02		0.015	0.5	5.66	2.04
4/22/2009	ECMW-19								
10/21/2009	ECMW-19							7.82	
4/14/2010	ECMW-19	0.5		0.02		0.015	0.5	5.62	2.46
11/3/2010	ECMW-19	0.5		0.01		0.015	0.5	6.87	2.97
4/26/2011	ECMW-19							5.82	
5/2/2012	ECMW-19	0.5	0.02	0.01	0.015	0.015	0.5	5.98	2.31
11/6/2012	ECMW-19	0.5	0.02	0.01	0.015	0.015	0.5	6.68	2.88
5/14/2013	ECMW-19							6.13	
11/5/2013	ECMW-19							6.73	
6/4/2014	ECMW-19	0.5	0.021	0.0104	0.016	0.0156	0.25	5.92	2.78
11/5/2014	ECMW-19	0.5	0.02	0.0104	0.015	0.0156	0.25	5.05	2.97
5/22/2015	ECMW-19							5.95	
11/18/2015	ECMW-19							6.13	
5/25/2016	ECMW-19	0.5	0.021	0.0104	0.016	0.0156	0.25	5.06	2.26
11/9/2016	ECMW-19	0.5	0.0104	0.0104	0.0156	0.0156	0.25	6.56	2.25
3/22/2017	ECMW-19							5.52	
9/13/2017	ECMW-19							5.55	
4/12/2018	ECMW-19	0.752	0.0125	0.0125	0.0156	0.0156	0.25	5.51	3.64
9/13/2018	ECMW-19	1.21	0.0125	0.0125	0.0156	0.0156	5.27	5.07	2.79
1/22/2019	ECMW-19							5.52	
7/18/2019	ECMW-19							5.55	
2/19/2020	ECMW-19	0.17	0.01	0.01	0.0005	0.0005	0.05	5.34	2.6
7/21/2020	ECMW-19	0.34	0.01	0.01	0.0005	0.00085	0.05	4.85	2.4
3/3/2021	ECMW-19							5.94	
7/15/2021	ECMW-19							5.54	
2/23/2022	ECMW-19	0.12	0.01	0.01	0.0005	0.0005	0.05	5.68	2.5
7/13/2022	ECMW-19	0.21	0.01	0.01	0.0005	0.0015	0.05	5.76	2.6

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1/28/2004	ECMW-20	0.5	0.02	0.034	0.015	0.024	0.5	5.93	11.4
3/16/2004	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5	6.51	15.9
5/19/2004	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5	6.23	10.6
7/13/2004	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5	5.8	17.2
9/15/2004	ECMW-20	0.86	0.02	0.02	0.015	0.015	0.5	5.61	17.2
11/17/2004	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5	5.36	13.5
1/26/2005	ECMW-20	0.5	0.02	0.02	0.015	0.017	0.5	6.02	13.8
5/26/2005	ECMW-20	0.5	0.02	0.02	0.015	0.015	1.86	6.03	7.72
10/20/2005	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5		
4/12/2006	ECMW-20	3.58	0.02	0.02	0.015	0.015	6.29		
11/2/2006	ECMW-20	0.5		0.02		0.015	1.21	6.2	
5/23/2007	ECMW-20							6.06	
11/7/2007	ECMW-20							5.52	
5/21/2008	ECMW-20	0.5		0.02		0.015	0.5	8.6	8.94
11/7/2008	ECMW-20	0.5		0.02		0.016	0.5	6.36	7.94
4/22/2009	ECMW-20							6.22	
10/21/2009	ECMW-20					0.015		7.37	
4/14/2010	ECMW-20	0.5		0.02		0.015	0.5	5.64	10.1
12/21/2010	ECMW-20	0.5		0.01			0.5	5.02	8.95
4/26/2011	ECMW-20							6.03	
5/2/2012	ECMW-20	0.5	0.02	0.01	0.015	0.015	0.5	5.96	7.82
11/6/2012	ECMW-20	0.5	0.02	0.01	0.015	0.015	0.5	6.74	9.31
5/14/2013	ECMW-20							5.29	
11/5/2013	ECMW-20							6	
6/4/2014	ECMW-20	0.5	0.021	0.0104	0.016	0.0156	0.25	5.63	8.17
11/5/2014	ECMW-20	0.5	0.02	0.0104	0.015	0.0156	0.262	3.61	9.87
5/22/2015	ECMW-20							5.61	
11/18/2015	ECMW-20							6.08	
5/25/2016	ECMW-20	0.5	0.021	0.0104	0.016	0.0156	0.25	5.37	9.46
11/9/2016	ECMW-20	0.5	0.0104	0.0104	0.0156	0.0156	2.31	5.18	4.59
3/22/2017	ECMW-20							5.39	
9/13/2017	ECMW-20							5.28	
4/12/2018	ECMW-20	1.62	0.0125	0.0125	0.0156	0.0202	5.44	5.28	13.1
9/13/2018	ECMW-20	0.5	0.0125	0.0125	0.0156	0.0156	0.568	4.79	17.4
1/21/2019	ECMW-20							4.98	
7/16/2019	ECMW-20							5.15	
2/20/2020	ECMW-20	0.12	0.01	0.01	0.0005	0.0013	0.14	5.12	12
7/22/2020	ECMW-20	0.1	0.01	0.01	0.0005	0.002	0.35	3.99	15
3/3/2021	ECMW-20							5.56	
7/15/2021	ECMW-20							5.63	
2/22/2022	ECMW-20	0.18	0.01	0.01	0.0007	0.0029	0.096	5.31	15
7/12/2022	ECMW-20	0.48	0.01	0.01	0.0005	0.002	0.13	5.51	15

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1/28/2004	ECMW-21	0.5	0.02	0.837	0.015	0.169	1.63	5.56	8.17
3/16/2004	ECMW-21	0.5	0.02	0.028	0.015	0.015	0.54	6.34	3.62
5/19/2004	ECMW-21	0.5	0.02	0.07	0.015	0.029	2.15	6.75	4.59
7/13/2004	ECMW-21	0.5	0.02	0.056	0.015	0.032	2.5	6.39	3.74
9/15/2004	ECMW-21	0.81	0.02	0.029	0.015	0.015	4.65	5.47	4.15
11/17/2004	ECMW-21	0.5	0.02	0.047	0.015	0.015	2.97	5.96	3.14
1/26/2005	ECMW-21	4.06	0.02	0.044	0.015	0.02	3.23	5.37	2.88
5/26/2005	ECMW-21	0.5	0.02	0.265	0.015	0.063	3.17	5.69	3.64
10/20/2005	ECMW-21	0.5	0.02	0.02	0.015	0.015	4.16	4.17	
4/12/2006	ECMW-21	0.5	0.02	0.02	0.015	0.015	3.19	3.05	
11/2/2006	ECMW-21	0.5		0.02		0.015	2.23		
5/23/2007	ECMW-21							5.56	
11/7/2007	ECMW-21							5.07	
5/21/2008	ECMW-21	0.5		0.02		0.015	1.85	7.81	5.18
11/7/2008	ECMW-21	0.5		0.02		0.015	1.26	5.32	3
4/22/2009	ECMW-21							5.24	
10/21/2009	ECMW-21							5.91	
4/14/2010	ECMW-21	0.5		0.02		0.015	2.24	4.88	3.7
11/3/2010	ECMW-21	0.5		0.01		0.015	1.8	7.13	6.07
4/26/2011	ECMW-21							5.85	
5/2/2012	ECMW-21	0.5	0.02	0.01	0.015	0.015	1.4	5.68	3.94
11/6/2012	ECMW-21	0.5	0.02	0.01	0.015	0.015	1.1	6.48	6.28
5/15/2013	ECMW-21							6.09	
11/5/2013	ECMW-21							5.68	
6/4/2014	ECMW-21	0.5	0.021	0.0105	0.016	0.0156	1.63	5.22	4.57
11/5/2014	ECMW-21	0.5	0.02	0.0104	0.015	0.0156	1.62	3.81	5.25
5/22/2015	ECMW-21							5.37	
11/18/2015	ECMW-21							5.39	
5/25/2016	ECMW-21	0.5	0.021	0.0104	0.016	0.0156	2.25	4.88	3.62
11/9/2016	ECMW-21	0.5	0.0104	0.0104	0.0156	0.0156	0.25	6.25	21.4
3/22/2017	ECMW-21							4.72	
9/13/2017	ECMW-21							4.18	
6/6/2018	ECMW-21	0.5	0.0125	0.0125	0.0156	0.0156	2.45	4.49	3.95
9/13/2018	ECMW-21	0.5	0.0174	0.0174	0.0156	0.0156	2.51	5.76	4.85
1/21/2019	ECMW-21							4.91	
7/16/2019	ECMW-21							4.06	
2/20/2020	ECMW-21	0.1	0.01	0.01	0.0005	0.00093	2.3	3.83	3.4
7/21/2020	ECMW-21	0.1	0.01	0.01	0.0005	0.0005	2.3	3.95	11
3/3/2021	ECMW-21							4.68	
7/14/2021	ECMW-21							4.91	
2/22/2022	ECMW-21	0.1	0.01	0.011	0.0005	0.0006	3.6	4.44	13
7/12/2022	ECMW-21	0.24	0.01	0.01	0.0005	0.0005	2.5	4.91	4.8

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1/28/2004	ECMW-22	0.61	0.02	0.021	0.015	0.021	0.53	7.68	6.62
3/16/2004	ECMW-22	0.5	0.02	0.02	0.015	0.015	0.66	6.65	2.88
5/18/2004	ECMW-22	0.5	0.02	0.02	0.015	0.015	0.95	6.76	3.74
7/13/2004	ECMW-22	0.5	0.02	0.02	0.015	0.015	0.5	6.74	3.8
9/14/2004	ECMW-22	0.7	0.02	0.02	0.015	0.015	0.5	5.84	2.94
11/16/2004	ECMW-22	0.5	0.02	0.02	0.015	0.015	0.5	6.95	2.51
1/26/2005	ECMW-22	0.5	0.02	0.02	0.015	0.015	1.09	5.79	3.56
5/25/2005	ECMW-22	0.5	0.02	0.02	0.015	0.015	1.12	6.46	3.61
10/19/2005	ECMW-22	0.5	0.02	0.02	0.015	0.056	0.5	6.21	
4/11/2006	ECMW-22	0.5	0.02	0.02	0.015	0.015	2.56	6.22	
11/2/2006	ECMW-22	0.5		0.02		0.015		5.37	
5/23/2007	ECMW-22							5.67	
11/7/2007	ECMW-22							5.01	7.6
5/21/2008	ECMW-22	0.5		0.02		0.015	3.65	7.93	4.7
11/5/2008	ECMW-22	0.5		0.02		0.015	1.87	5.06	
4/22/2009	ECMW-22							5.8	
10/21/2009	ECMW-22							6.15	
4/14/2010	ECMW-22	0.5		0.02		0.015	1.13	5.84	7.73
11/3/2010	ECMW-22	0.5		0.01		0.015	1.31	8.15	6.68
4/26/2011	ECMW-22							6.05	
5/2/2012	ECMW-22	0.5	0.02	0.01	0.015	0.015	1.15	6.1	4.99
11/6/2012	ECMW-22	0.5	0.02	0.01	0.015	0.015	1.74	6.73	7.01
5/14/2013	ECMW-22							6.19	
11/4/2013	ECMW-22							5.64	
6/4/2014	ECMW-22	0.5	0.021	0.0104	0.016	0.0156	1.75	5.79	5.05
11/5/2014	ECMW-22	0.61	0.02	0.0104	0.015	0.0156	2.58	4.42	5.66
5/22/2015	ECMW-22							6.28	
11/18/2015	ECMW-22							6.07	
5/25/2016	ECMW-22	1.25	0.021	0.0104	0.016	0.0156	4.37	5.5	11.8
11/9/2016	ECMW-22	0.5	0.0104	0.0104	0.0156	0.0156	0.53	6.04	5.16
3/22/2017	ECMW-22							5.64	
9/13/2017	ECMW-22							5.71	
4/10/2018	ECMW-22	0.5	0.0125	0.0125	0.0156	0.0156	0.25	5.61	0.722
9/12/2018	ECMW-22	0.583	0.0125	0.0125	0.0156	0.0156	1.79	5.69	12.8
1/22/2019	ECMW-22							5.43	
7/15/2019	ECMW-22							5.37	
2/19/2020	ECMW-22	0.18	0.01	0.01	0.0005	0.0005	0.05	5.47	5.6
7/22/2020	ECMW-22	0.12	0.01	0.01	0.0005	0.0005	0.05	4.76	5.5
3/3/2021	ECMW-22							5.88	
7/14/2021	ECMW-22							4.75	
2/21/2022	ECMW-22	0.12	0.01	0.01	0.0005	0.0005	7.2	5.66	19
7/13/2022	ECMW-22	0.18	0.01	0.01	0.0005	0.0019	0.05	5.87	6.7

Statistical Analysis

One Way Analysis of Variance Thursday, November 03, 2022, 1:16:05 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Ammonia-N (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:16:05 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	57	0.500	0.500	0.500
ECMW10	53	4	0.500	0.500	0.500
ECMW11	52	2	11.000	4.850	18.575
ECMW12	49	16	1.940	1.495	2.230
ECMW13	52	21	0.500	0.500	0.500
ECMW14	52	5	0.500	0.500	0.500
ECMW15	51	20	0.500	0.500	0.500
ECMW16	51	1	1.860	0.500	5.795
ECMW17	52	1	1.610	0.580	3.820
ECMW18	51	18	0.500	0.500	0.500
ECMW19	42	15	0.500	0.500	0.500
ECMW20	42	15	0.500	0.500	0.500
ECMW21	42	15	0.500	0.500	0.500
ECMW22	42	15	0.500	0.500	0.500
ECMW4	52	4	0.500	0.500	0.612
ECMW5	52	5	0.500	0.500	0.590
ECMW6	54	1	246.000	36.650	915.000
ECMW7	54	1	147.000	77.400	302.000
ECMW8	53	1	153.500	80.225	617.000
ECMW9	51	4	0.500	0.500	2.310

H = 566.717 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW8 vs ECMW13	539.252	9.392	Yes
ECMW8 vs ECMW21	537.588	8.957	Yes
ECMW8 vs ECMW20	523.921	8.729	Yes
ECMW8 vs ECMW19	522.847	8.711	Yes
ECMW8 vs CNTL	518.839	11.842	Yes
ECMW8 vs ECMW22	516.236	8.601	Yes
ECMW8 vs ECMW18	514.729	9.140	Yes
ECMW8 vs ECMW14	510.014	10.015	Yes

ECMW8 vs ECMW15	503.398	8.768	Yes
ECMW8 vs ECMW10	501.590	9.957	Yes
ECMW8 vs ECMW4	463.990	9.162	Yes
ECMW8 vs ECMW5	457.429	8.982	Yes
ECMW8 vs ECMW9	405.216	7.957	Yes
ECMW8 vs ECMW16	300.015	5.986	Yes
ECMW8 vs ECMW17	278.552	5.586	Yes
ECMW8 vs ECMW12	208.593	3.704	Yes
ECMW8 vs ECMW11	148.295	2.959	No
ECMW8 vs ECMW6	41.969	0.850	Do Not Test
ECMW8 vs ECMW7	6.941	0.141	Do Not Test
ECMW7 vs ECMW13	532.312	9.304	Yes
ECMW7 vs ECMW21	530.647	8.870	Yes
ECMW7 vs ECMW20	516.980	8.641	Yes
ECMW7 vs ECMW19	515.906	8.624	Yes
ECMW7 vs CNTL	511.898	11.755	Yes
ECMW7 vs ECMW22	509.295	8.513	Yes
ECMW7 vs ECMW18	507.788	9.050	Yes
ECMW7 vs ECMW14	503.073	9.923	Yes
ECMW7 vs ECMW15	496.457	8.678	Yes
ECMW7 vs ECMW10	494.649	9.864	Yes
ECMW7 vs ECMW4	457.050	9.066	Yes
ECMW7 vs ECMW5	450.488	8.886	Yes
ECMW7 vs ECMW9	398.276	7.856	Yes
ECMW7 vs ECMW16	293.075	5.875	Yes
ECMW7 vs ECMW17	271.611	5.473	Yes
ECMW7 vs ECMW12	201.652	3.594	No
ECMW7 vs ECMW11	141.355	2.834	Do Not Test
ECMW7 vs ECMW6	35.028	0.713	Do Not Test
ECMW6 vs ECMW13	497.283	8.692	Yes
ECMW6 vs ECMW21	495.618	8.284	Yes
ECMW6 vs ECMW20	481.952	8.056	Yes
ECMW6 vs ECMW19	480.878	8.038	Yes
ECMW6 vs CNTL	476.869	10.951	Yes
ECMW6 vs ECMW22	474.267	7.927	Yes
ECMW6 vs ECMW18	472.760	8.426	Yes
ECMW6 vs ECMW14	468.045	9.232	Yes
ECMW6 vs ECMW15	461.428	8.065	Yes
ECMW6 vs ECMW10	459.621	9.166	Yes
ECMW6 vs ECMW4	422.021	8.371	Yes
ECMW6 vs ECMW5	415.460	8.195	Yes
ECMW6 vs ECMW9	363.247	7.165	Yes
ECMW6 vs ECMW16	258.046	5.173	Yes
ECMW6 vs ECMW17	236.583	4.767	Yes
ECMW6 vs ECMW12	166.623	2.970	Do Not Test
ECMW6 vs ECMW11	106.326	2.131	Do Not Test
ECMW11 vs ECMW13	390.957	6.759	Yes
ECMW11 vs ECMW21	389.292	6.442	Yes
ECMW11 vs ECMW20	375.626	6.216	Yes
ECMW11 vs ECMW19	374.551	6.198	Yes
ECMW11 vs CNTL	370.543	8.351	Yes
ECMW11 vs ECMW22	367.940	6.089	Yes
ECMW11 vs ECMW18	366.434	6.457	Yes
ECMW11 vs ECMW14	361.719	7.037	Yes
ECMW11 vs ECMW15	355.102	6.139	Yes
ECMW11 vs ECMW10	353.294	6.946	Yes

ECMW11 vs ECMW4	315.695	6.174	Yes
ECMW11 vs ECMW5	309.134	6.014	Yes
ECMW11 vs ECMW9	256.921	4.998	Yes
ECMW11 vs ECMW16	151.720	2.998	No
ECMW11 vs ECMW17	130.256	2.587	Do Not Test
ECMW11 vs ECMW12	60.297	1.063	Do Not Test
ECMW12 vs ECMW13	330.660	5.225	Yes
ECMW12 vs ECMW21	328.995	5.011	Yes
ECMW12 vs ECMW20	315.328	4.802	Yes
ECMW12 vs ECMW19	314.254	4.786	Yes
ECMW12 vs CNTL	310.246	6.051	Yes
ECMW12 vs ECMW22	307.643	4.685	Yes
ECMW12 vs ECMW18	306.136	4.915	Yes
ECMW12 vs ECMW14	301.422	5.245	Yes
ECMW12 vs ECMW15	294.805	4.658	Yes
ECMW12 vs ECMW10	292.997	5.142	Yes
ECMW12 vs ECMW4	255.398	4.464	Yes
ECMW12 vs ECMW5	248.837	4.330	Yes
ECMW12 vs ECMW9	196.624	3.422	No
ECMW12 vs ECMW16	91.423	1.611	Do Not Test
ECMW12 vs ECMW17	69.959	1.238	Do Not Test
ECMW17 vs ECMW13	260.701	4.524	Yes
ECMW17 vs ECMW21	259.036	4.301	Yes
ECMW17 vs ECMW20	245.369	4.075	Yes
ECMW17 vs ECMW19	244.295	4.057	Yes
ECMW17 vs CNTL	240.287	5.450	Yes
ECMW17 vs ECMW22	237.684	3.947	Yes
ECMW17 vs ECMW18	236.177	4.178	Yes
ECMW17 vs ECMW14	231.463	4.524	Yes
ECMW17 vs ECMW15	224.846	3.902	Yes
ECMW17 vs ECMW10	223.038	4.407	Yes
ECMW17 vs ECMW4	185.439	3.644	No
ECMW17 vs ECMW5	178.878	3.496	Do Not Test
ECMW17 vs ECMW9	126.665	2.476	Do Not Test
ECMW17 vs ECMW16	21.464	0.426	Do Not Test
ECMW16 vs ECMW13	239.237	4.136	Yes
ECMW16 vs ECMW21	237.572	3.931	Yes
ECMW16 vs ECMW20	223.906	3.705	Yes
ECMW16 vs ECMW19	222.831	3.688	Yes
ECMW16 vs CNTL	218.823	4.932	Yes
ECMW16 vs ECMW22	216.220	3.578	No
ECMW16 vs ECMW18	214.714	3.784	Do Not Test
ECMW16 vs ECMW14	209.999	4.085	Do Not Test
ECMW16 vs ECMW15	203.382	3.516	Do Not Test
ECMW16 vs ECMW10	201.574	3.963	Do Not Test
ECMW16 vs ECMW4	163.975	3.207	Do Not Test
ECMW16 vs ECMW5	157.414	3.062	Do Not Test
ECMW16 vs ECMW9	105.201	2.046	Do Not Test
ECMW9 vs ECMW13	134.036	2.290	No
ECMW9 vs ECMW21	132.371	2.166	Do Not Test
ECMW9 vs ECMW20	118.704	1.943	Do Not Test
ECMW9 vs ECMW19	117.630	1.925	Do Not Test
ECMW9 vs CNTL	113.622	2.509	Do Not Test
ECMW9 vs ECMW22	111.019	1.817	Do Not Test
ECMW9 vs ECMW18	109.513	1.906	Do Not Test
ECMW9 vs ECMW14	104.798	2.008	Do Not Test

ECMW9 vs ECMW15	98.181	1.677	Do Not Test
ECMW9 vs ECMW10	96.373	1.866	Do Not Test
ECMW9 vs ECMW4	58.774	1.132	Do Not Test
ECMW9 vs ECMW5	52.213	1.000	Do Not Test
ECMW5 vs ECMW13	81.823	1.398	Do Not Test
ECMW5 vs ECMW21	80.158	1.312	Do Not Test
ECMW5 vs ECMW20	66.492	1.088	Do Not Test
ECMW5 vs ECMW19	65.418	1.071	Do Not Test
ECMW5 vs CNTL	61.409	1.356	Do Not Test
ECMW5 vs ECMW22	58.807	0.962	Do Not Test
ECMW5 vs ECMW18	57.300	0.997	Do Not Test
ECMW5 vs ECMW14	52.585	1.007	Do Not Test
ECMW5 vs ECMW15	45.968	0.785	Do Not Test
ECMW5 vs ECMW10	44.161	0.855	Do Not Test
ECMW5 vs ECMW4	6.561	0.126	Do Not Test
ECMW4 vs ECMW13	75.262	1.291	Do Not Test
ECMW4 vs ECMW21	73.597	1.209	Do Not Test
ECMW4 vs ECMW20	59.931	0.985	Do Not Test
ECMW4 vs ECMW19	58.856	0.967	Do Not Test
ECMW4 vs CNTL	54.848	1.220	Do Not Test
ECMW4 vs ECMW22	52.245	0.858	Do Not Test
ECMW4 vs ECMW18	50.739	0.887	Do Not Test
ECMW4 vs ECMW14	46.024	0.886	Do Not Test
ECMW4 vs ECMW15	39.407	0.676	Do Not Test
ECMW4 vs ECMW10	37.599	0.732	Do Not Test
ECMW10 vs ECMW13	37.663	0.649	Do Not Test
ECMW10 vs ECMW21	35.998	0.594	Do Not Test
ECMW10 vs ECMW20	22.331	0.368	Do Not Test
ECMW10 vs ECMW19	21.257	0.351	Do Not Test
ECMW10 vs CNTL	17.249	0.386	Do Not Test
ECMW10 vs ECMW22	14.646	0.242	Do Not Test
ECMW10 vs ECMW18	13.139	0.231	Do Not Test
ECMW10 vs ECMW14	8.424	0.163	Do Not Test
ECMW10 vs ECMW15	1.808	0.0311	Do Not Test
ECMW15 vs ECMW13	35.855	0.558	Do Not Test
ECMW15 vs ECMW21	34.190	0.513	Do Not Test
ECMW15 vs ECMW20	20.523	0.308	Do Not Test
ECMW15 vs ECMW19	19.449	0.292	Do Not Test
ECMW15 vs CNTL	15.441	0.294	Do Not Test
ECMW15 vs ECMW22	12.838	0.193	Do Not Test
ECMW15 vs ECMW18	11.331	0.179	Do Not Test
ECMW15 vs ECMW14	6.617	0.113	Do Not Test
ECMW14 vs ECMW13	29.238	0.499	Do Not Test
ECMW14 vs ECMW21	27.573	0.451	Do Not Test
ECMW14 vs ECMW20	13.907	0.228	Do Not Test
ECMW14 vs ECMW19	12.833	0.210	Do Not Test
ECMW14 vs CNTL	8.824	0.195	Do Not Test
ECMW14 vs ECMW22	6.221	0.102	Do Not Test
ECMW14 vs ECMW18	4.715	0.0820	Do Not Test
ECMW18 vs ECMW13	24.523	0.387	Do Not Test
ECMW18 vs ECMW21	22.859	0.348	Do Not Test
ECMW18 vs ECMW20	9.192	0.140	Do Not Test
ECMW18 vs ECMW19	8.118	0.124	Do Not Test
ECMW18 vs CNTL	4.109	0.0802	Do Not Test
ECMW18 vs ECMW22	1.507	0.0229	Do Not Test
ECMW22 vs ECMW13	23.017	0.346	Do Not Test

ECMW22 vs ECMW21	21.352	0.310	Do Not Test
ECMW22 vs ECMW20	7.685	0.112	Do Not Test
ECMW22 vs ECMW19	6.611	0.0960	Do Not Test
ECMW22 vs CNTL	2.603	0.0471	Do Not Test
CNTL vs ECMW13	20.414	0.389	Do Not Test
CNTL vs ECMW21	18.749	0.339	Do Not Test
CNTL vs ECMW20	5.082	0.0919	Do Not Test
CNTL vs ECMW19	4.008	0.0725	Do Not Test
ECMW19 vs ECMW13	16.406	0.246	Do Not Test
ECMW19 vs ECMW21	14.741	0.214	Do Not Test
ECMW19 vs ECMW20	1.074	0.0156	Do Not Test
ECMW20 vs ECMW13	15.332	0.230	Do Not Test
ECMW20 vs ECMW21	13.667	0.198	Do Not Test
ECMW21 vs ECMW13	1.665	0.0250	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:21:17 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Chromium (Dissolved) (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:21:17 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	71	0.0200	0.0125	0.0200
ECMW10	53	27	0.0200	0.0120	0.0200
ECMW11	52	27	0.0200	0.0115	0.0200
ECMW12	49	23	0.0200	0.0120	0.0200
ECMW13	52	26	0.0200	0.0120	0.0200
ECMW14	52	26	0.0200	0.0120	0.0200
ECMW15	51	25	0.0200	0.0120	0.0200
ECMW16	51	25	0.0200	0.0120	0.0200
ECMW17	52	26	0.0200	0.0120	0.0200
ECMW18	51	24	0.0200	0.0190	0.0210
ECMW19	42	20	0.0200	0.0120	0.0200
ECMW20	42	20	0.0200	0.0120	0.0200
ECMW21	42	20	0.0200	0.0120	0.0200
ECMW22	42	20	0.0200	0.0120	0.0200
ECMW4	52	26	0.0200	0.0121	0.0200
ECMW5	52	26	0.0200	0.0120	0.0200
ECMW6	54	28	0.0200	0.0124	0.0200
ECMW7	54	27	0.0200	0.0125	0.0200
ECMW8	53	26	0.0200	0.0125	0.0200
ECMW9	51	25	0.0200	0.0120	0.0200

H = 6.556 with 19 degrees of freedom. (P = 0.996)

The differences in the median values among the treatment groups are not great enough to exclude the possibility that the difference is due to random sampling variability; there is not a statistically significant difference (P = 0.996)

One Way Analysis of Variance Thursday, November 03, 2022, 1:22:11 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Chromium (Total) (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:22:11 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	54	0.0200	0.0104	0.0200
ECMW10	53	21	0.0200	0.0101	0.0200
ECMW11	52	21	0.0200	0.01000	0.0200
ECMW12	49	18	0.0200	0.01000	0.0200
ECMW13	52	20	0.0200	0.0101	0.0200
ECMW14	52	20	0.0200	0.0101	0.0200
ECMW15	51	19	0.0200	0.0101	0.0200
ECMW16	51	19	0.0200	0.0101	0.0200
ECMW17	52	20	0.0200	0.0101	0.0200
ECMW18	51	18	0.0200	0.0138	0.0375
ECMW19	42	15	0.0200	0.01000	0.0200
ECMW20	42	15	0.0200	0.01000	0.0200
ECMW21	42	15	0.0200	0.0104	0.0290
ECMW22	42	15	0.0200	0.01000	0.0200
ECMW4	52	20	0.0200	0.0101	0.0200
ECMW5	52	20	0.0200	0.0101	0.0200
ECMW6	54	21	0.0200	0.0104	0.0200
ECMW7	54	21	0.0200	0.0102	0.0200
ECMW8	53	21	0.0200	0.0101	0.0200
ECMW9	51	19	0.0200	0.0101	0.0200

H = 17.640 with 19 degrees of freedom. (P = 0.547)

The differences in the median values among the treatment groups are not great enough to exclude the possibility that the difference is due to random sampling variability; there is not a statistically significant difference (P = 0.547)

One Way Analysis of Variance Thursday, November 03, 2022, 1:22:32 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Dissolved Oxygen (D.O.) (%)

Normality Test (Shapiro-Wilk) Passed (P = 0.364)

Equal Variance Test: Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:22:32 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	144	38.175	15.275	45.065
ECMW10	53	51	21.605	19.410	23.800
ECMW11	52	50	19.020	18.840	19.200
ECMW12	49	47	17.220	10.000	24.440
ECMW13	52	50	21.755	17.400	26.110
ECMW14	52	51	26.500	26.500	26.500
ECMW15	51	49	26.630	24.760	28.500
ECMW16	51	49	20.770	18.800	22.740
ECMW17	52	50	23.445	13.500	33.390
ECMW18	51	49	38.015	27.730	48.300
ECMW19	42	40	27.685	17.200	38.170
ECMW20	42	40	22.190	9.900	34.480
ECMW21	42	40	34.995	31.290	38.700
ECMW22	42	40	23.560	15.600	31.520
ECMW4	52	50	29.480	26.700	32.260
ECMW5	52	50	29.760	20.120	39.400
ECMW6	54	52	36.520	18.800	54.240
ECMW7	54	52	29.845	17.900	41.790
ECMW8	53	51	30.370	15.500	45.240
ECMW9	51	49	32.190	23.600	40.780

H = 9.730 with 19 degrees of freedom. (P = 0.959)

The differences in the median values among the treatment groups are not great enough to exclude the possibility that the difference is due to random sampling variability; there is not a statistically significant difference (P = 0.959)

One Way Analysis of Variance Thursday, November 03, 2022, 1:22:59 PM

Data source: Data 1 in Data for Stats

Dependent Variable: D.O. (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:22:59 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	96	3.000	0.998	4.588
ECMW10	53	33	1.975	1.568	3.987
ECMW11	52	33	1.900	1.040	3.760
ECMW12	49	31	1.100	0.615	4.188
ECMW13	52	34	1.925	1.223	3.180
ECMW14	52	33	2.100	1.230	3.820
ECMW15	51	33	1.490	0.588	3.315
ECMW16	51	32	1.500	0.410	3.140
ECMW17	52	34	2.600	0.973	3.668
ECMW18	51	32	3.410	1.830	4.680
ECMW19	42	24	1.375	0.508	3.035
ECMW20	42	26	1.980	0.750	3.442
ECMW21	42	24	4.640	3.093	6.085
ECMW22	42	24	1.165	0.455	3.255
ECMW4	52	32	3.390	2.275	4.800
ECMW5	52	33	1.940	0.460	4.630
ECMW6	54	35	1.500	0.380	4.360
ECMW7	54	35	1.400	0.380	4.310
ECMW8	53	34	1.300	0.330	4.050
ECMW9	51	32	2.960	1.380	5.290

H = 42.923 with 19 degrees of freedom. (P = 0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = 0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW21 vs ECMW16	163.756	4.232	Yes
ECMW21 vs ECMW19	151.667	3.868	Yes
ECMW21 vs ECMW8	144.124	3.725	Yes
ECMW21 vs ECMW6	144.019	3.722	Yes
ECMW21 vs ECMW22	143.667	3.664	Yes
ECMW21 vs ECMW15	141.861	3.618	No
ECMW21 vs ECMW7	140.835	3.640	Do Not Test
ECMW21 vs ECMW12	132.778	3.386	Do Not Test

ECMW21 vs ECMW11	123.361	3.188	Do Not Test
ECMW21 vs ECMW5	121.151	3.131	Do Not Test
ECMW21 vs ECMW13	120.972	3.085	Do Not Test
ECMW21 vs ECMW20	115.486	2.857	Do Not Test
ECMW21 vs ECMW14	113.835	2.942	Do Not Test
ECMW21 vs ECMW17	103.639	2.643	Do Not Test
ECMW21 vs ECMW10	95.311	2.494	Do Not Test
ECMW21 vs CNTL	94.806	2.961	Do Not Test
ECMW21 vs ECMW9	75.361	1.948	Do Not Test
ECMW21 vs ECMW18	55.651	1.438	Do Not Test
ECMW21 vs ECMW4	48.886	1.279	Do Not Test
ECMW4 vs ECMW16	114.870	3.048	No
ECMW4 vs ECMW19	102.781	2.689	Do Not Test
ECMW4 vs ECMW8	95.238	2.527	Do Not Test
ECMW4 vs ECMW6	95.133	2.524	Do Not Test
ECMW4 vs ECMW22	94.781	2.480	Do Not Test
ECMW4 vs ECMW15	92.975	2.433	Do Not Test
ECMW4 vs ECMW7	91.949	2.440	Do Not Test
ECMW4 vs ECMW12	83.892	2.195	Do Not Test
ECMW4 vs ECMW11	74.475	1.976	Do Not Test
ECMW4 vs ECMW5	72.264	1.918	Do Not Test
ECMW4 vs ECMW13	72.086	1.886	Do Not Test
ECMW4 vs ECMW20	66.600	1.688	Do Not Test
ECMW4 vs ECMW14	64.949	1.723	Do Not Test
ECMW4 vs ECMW17	54.753	1.433	Do Not Test
ECMW4 vs ECMW10	46.425	1.248	Do Not Test
ECMW4 vs CNTL	45.919	1.491	Do Not Test
ECMW4 vs ECMW9	26.475	0.703	Do Not Test
ECMW4 vs ECMW18	6.764	0.179	Do Not Test
ECMW18 vs ECMW16	108.105	2.833	Do Not Test
ECMW18 vs ECMW19	96.016	2.482	Do Not Test
ECMW18 vs ECMW8	88.474	2.318	Do Not Test
ECMW18 vs ECMW6	88.368	2.315	Do Not Test
ECMW18 vs ECMW22	88.016	2.275	Do Not Test
ECMW18 vs ECMW15	86.211	2.228	Do Not Test
ECMW18 vs ECMW7	85.184	2.232	Do Not Test
ECMW18 vs ECMW12	77.127	1.993	Do Not Test
ECMW18 vs ECMW11	67.711	1.774	Do Not Test
ECMW18 vs ECMW5	65.500	1.716	Do Not Test
ECMW18 vs ECMW13	65.322	1.688	Do Not Test
ECMW18 vs ECMW20	59.836	1.499	Do Not Test
ECMW18 vs ECMW14	58.184	1.525	Do Not Test
ECMW18 vs ECMW17	47.988	1.240	Do Not Test
ECMW18 vs ECMW10	39.661	1.052	Do Not Test
ECMW18 vs CNTL	39.155	1.248	Do Not Test
ECMW18 vs ECMW9	19.711	0.516	Do Not Test
ECMW9 vs ECMW16	88.395	2.316	Do Not Test
ECMW9 vs ECMW19	76.306	1.972	Do Not Test
ECMW9 vs ECMW8	68.763	1.802	Do Not Test
ECMW9 vs ECMW6	68.658	1.799	Do Not Test
ECMW9 vs ECMW22	68.306	1.765	Do Not Test
ECMW9 vs ECMW15	66.500	1.719	Do Not Test
ECMW9 vs ECMW7	65.474	1.716	Do Not Test
ECMW9 vs ECMW12	57.417	1.484	Do Not Test
ECMW9 vs ECMW11	48.000	1.258	Do Not Test
ECMW9 vs ECMW5	45.789	1.200	Do Not Test

ECMW9 vs ECMW13	45.611	1.179	Do Not Test
ECMW9 vs ECMW20	40.125	1.005	Do Not Test
ECMW9 vs ECMW14	38.474	1.008	Do Not Test
ECMW9 vs ECMW17	28.278	0.731	Do Not Test
ECMW9 vs ECMW10	19.950	0.529	Do Not Test
ECMW9 vs CNTL	19.444	0.620	Do Not Test
CNTL vs ECMW16	68.950	2.197	Do Not Test
CNTL vs ECMW19	56.861	1.776	Do Not Test
CNTL vs ECMW8	49.319	1.572	Do Not Test
CNTL vs ECMW6	49.213	1.568	Do Not Test
CNTL vs ECMW22	48.861	1.526	Do Not Test
CNTL vs ECMW15	47.056	1.470	Do Not Test
CNTL vs ECMW7	46.029	1.467	Do Not Test
CNTL vs ECMW12	37.972	1.186	Do Not Test
CNTL vs ECMW11	28.556	0.910	Do Not Test
CNTL vs ECMW5	26.345	0.840	Do Not Test
CNTL vs ECMW13	26.167	0.817	Do Not Test
CNTL vs ECMW20	20.681	0.618	Do Not Test
CNTL vs ECMW14	19.029	0.606	Do Not Test
CNTL vs ECMW17	8.833	0.276	Do Not Test
CNTL vs ECMW10	0.506	0.0164	Do Not Test
ECMW10 vs ECMW16	68.445	1.816	Do Not Test
ECMW10 vs ECMW19	56.356	1.475	Do Not Test
ECMW10 vs ECMW8	48.813	1.295	Do Not Test
ECMW10 vs ECMW6	48.708	1.292	Do Not Test
ECMW10 vs ECMW22	48.356	1.265	Do Not Test
ECMW10 vs ECMW15	46.550	1.218	Do Not Test
ECMW10 vs ECMW7	45.524	1.208	Do Not Test
ECMW10 vs ECMW12	37.467	0.980	Do Not Test
ECMW10 vs ECMW11	28.050	0.744	Do Not Test
ECMW10 vs ECMW5	25.839	0.686	Do Not Test
ECMW10 vs ECMW13	25.661	0.671	Do Not Test
ECMW10 vs ECMW20	20.175	0.511	Do Not Test
ECMW10 vs ECMW14	18.524	0.492	Do Not Test
ECMW10 vs ECMW17	8.328	0.218	Do Not Test
ECMW17 vs ECMW16	60.117	1.554	Do Not Test
ECMW17 vs ECMW19	48.028	1.225	Do Not Test
ECMW17 vs ECMW8	40.485	1.046	Do Not Test
ECMW17 vs ECMW6	40.380	1.044	Do Not Test
ECMW17 vs ECMW22	40.028	1.021	Do Not Test
ECMW17 vs ECMW15	38.222	0.975	Do Not Test
ECMW17 vs ECMW7	37.196	0.961	Do Not Test
ECMW17 vs ECMW12	29.139	0.743	Do Not Test
ECMW17 vs ECMW11	19.722	0.510	Do Not Test
ECMW17 vs ECMW5	17.512	0.453	Do Not Test
ECMW17 vs ECMW13	17.333	0.442	Do Not Test
ECMW17 vs ECMW20	11.847	0.293	Do Not Test
ECMW17 vs ECMW14	10.196	0.264	Do Not Test
ECMW14 vs ECMW16	49.921	1.308	Do Not Test
ECMW14 vs ECMW19	37.832	0.978	Do Not Test
ECMW14 vs ECMW8	30.289	0.794	Do Not Test
ECMW14 vs ECMW6	30.184	0.791	Do Not Test
ECMW14 vs ECMW22	29.832	0.771	Do Not Test
ECMW14 vs ECMW15	28.026	0.724	Do Not Test
ECMW14 vs ECMW7	27.000	0.707	Do Not Test
ECMW14 vs ECMW12	18.943	0.490	Do Not Test

ECMW14 vs ECMW11	9.526	0.250	Do Not Test
ECMW14 vs ECMW5	7.316	0.192	Do Not Test
ECMW14 vs ECMW13	7.137	0.184	Do Not Test
ECMW14 vs ECMW20	1.651	0.0414	Do Not Test
ECMW20 vs ECMW16	48.270	1.209	Do Not Test
ECMW20 vs ECMW19	36.181	0.895	Do Not Test
ECMW20 vs ECMW8	28.638	0.717	Do Not Test
ECMW20 vs ECMW6	28.533	0.715	Do Not Test
ECMW20 vs ECMW22	28.181	0.697	Do Not Test
ECMW20 vs ECMW15	26.375	0.653	Do Not Test
ECMW20 vs ECMW7	25.349	0.635	Do Not Test
ECMW20 vs ECMW12	17.292	0.428	Do Not Test
ECMW20 vs ECMW11	7.875	0.197	Do Not Test
ECMW20 vs ECMW5	5.664	0.142	Do Not Test
ECMW20 vs ECMW13	5.486	0.136	Do Not Test
ECMW13 vs ECMW16	42.784	1.106	Do Not Test
ECMW13 vs ECMW19	30.694	0.783	Do Not Test
ECMW13 vs ECMW8	23.152	0.598	Do Not Test
ECMW13 vs ECMW6	23.047	0.596	Do Not Test
ECMW13 vs ECMW22	22.694	0.579	Do Not Test
ECMW13 vs ECMW15	20.889	0.533	Do Not Test
ECMW13 vs ECMW7	19.863	0.513	Do Not Test
ECMW13 vs ECMW12	11.806	0.301	Do Not Test
ECMW13 vs ECMW11	2.389	0.0617	Do Not Test
ECMW13 vs ECMW5	0.178	0.00461	Do Not Test
ECMW5 vs ECMW16	42.605	1.116	Do Not Test
ECMW5 vs ECMW19	30.516	0.789	Do Not Test
ECMW5 vs ECMW8	22.974	0.602	Do Not Test
ECMW5 vs ECMW6	22.868	0.599	Do Not Test
ECMW5 vs ECMW22	22.516	0.582	Do Not Test
ECMW5 vs ECMW15	20.711	0.535	Do Not Test
ECMW5 vs ECMW7	19.684	0.516	Do Not Test
ECMW5 vs ECMW12	11.627	0.301	Do Not Test
ECMW5 vs ECMW11	2.211	0.0579	Do Not Test
ECMW11 vs ECMW16	40.395	1.058	Do Not Test
ECMW11 vs ECMW19	28.306	0.732	Do Not Test
ECMW11 vs ECMW8	20.763	0.544	Do Not Test
ECMW11 vs ECMW6	20.658	0.541	Do Not Test
ECMW11 vs ECMW22	20.306	0.525	Do Not Test
ECMW11 vs ECMW15	18.500	0.478	Do Not Test
ECMW11 vs ECMW7	17.474	0.458	Do Not Test
ECMW11 vs ECMW12	9.417	0.243	Do Not Test
ECMW12 vs ECMW16	30.978	0.801	Do Not Test
ECMW12 vs ECMW19	18.889	0.482	Do Not Test
ECMW12 vs ECMW8	11.346	0.293	Do Not Test
ECMW12 vs ECMW6	11.241	0.291	Do Not Test
ECMW12 vs ECMW22	10.889	0.278	Do Not Test
ECMW12 vs ECMW15	9.083	0.232	Do Not Test
ECMW12 vs ECMW7	8.057	0.208	Do Not Test
ECMW7 vs ECMW16	22.921	0.601	Do Not Test
ECMW7 vs ECMW19	10.832	0.280	Do Not Test
ECMW7 vs ECMW8	3.289	0.0862	Do Not Test
ECMW7 vs ECMW6	3.184	0.0834	Do Not Test
ECMW7 vs ECMW22	2.832	0.0732	Do Not Test
ECMW7 vs ECMW15	1.026	0.0265	Do Not Test
ECMW15 vs ECMW16	21.895	0.566	Do Not Test

ECMW15 vs ECMW19	9.806	0.250	Do Not Test
ECMW15 vs ECMW8	2.263	0.0585	Do Not Test
ECMW15 vs ECMW6	2.158	0.0558	Do Not Test
ECMW15 vs ECMW22	1.806	0.0460	Do Not Test
ECMW22 vs ECMW16	20.089	0.519	Do Not Test
ECMW22 vs ECMW19	8.000	0.204	Do Not Test
ECMW22 vs ECMW8	0.458	0.0118	Do Not Test
ECMW22 vs ECMW6	0.352	0.00911	Do Not Test
ECMW6 vs ECMW16	19.737	0.517	Do Not Test
ECMW6 vs ECMW19	7.648	0.198	Do Not Test
ECMW6 vs ECMW8	0.105	0.00276	Do Not Test
ECMW8 vs ECMW16	19.632	0.514	Do Not Test
ECMW8 vs ECMW19	7.542	0.195	Do Not Test
ECMW19 vs ECMW16	12.089	0.312	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:23:16 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Iron (Dissolved) (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:23:16 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	141	0.01000	0.01000	0.0175
ECMW10	53	51	0.01000	0.01000	0.01000
ECMW11	52	49	0.0160	0.01000	0.0360
ECMW12	49	46	2.160	0.01000	8.450
ECMW13	52	49	0.0320	0.0200	0.0480
ECMW14	52	49	0.01000	0.01000	0.0230
ECMW15	51	48	0.01000	0.01000	0.01000
ECMW16	51	48	0.01000	0.01000	0.0140
ECMW17	52	49	0.01000	0.01000	0.01000
ECMW18	51	48	23.800	17.300	30.200
ECMW19	42	39	0.334	0.01000	0.649
ECMW20	42	39	0.0300	0.0130	0.0340
ECMW21	42	39	0.01000	0.01000	0.0700
ECMW22	42	39	0.01000	0.01000	0.01000
ECMW4	52	49	0.665	0.535	0.920
ECMW5	52	49	0.01000	0.01000	0.01000
ECMW6	54	51	0.0110	0.01000	0.0170
ECMW7	54	51	0.0780	0.0600	0.283
ECMW8	53	50	0.01000	0.01000	0.01000
ECMW9	51	48	0.01000	0.01000	0.01000

H = 43.047 with 19 degrees of freedom. (P = 0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = 0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW18 vs ECMW22	45.500	2.947	No
ECMW18 vs ECMW10	45.500	2.636	Do Not Test
ECMW18 vs ECMW15	45.500	2.947	Do Not Test
ECMW18 vs ECMW9	45.500	2.947	Do Not Test
ECMW18 vs ECMW17	45.500	2.947	Do Not Test
ECMW18 vs ECMW8	45.500	2.947	Do Not Test
ECMW18 vs ECMW5	45.500	2.947	Do Not Test
ECMW18 vs ECMW16	38.667	2.505	Do Not Test

ECMW18 vs ECMW14	36.667	2.375	Do Not Test
ECMW18 vs CNTL	36.389	2.887	Do Not Test
ECMW18 vs ECMW21	34.333	2.224	Do Not Test
ECMW18 vs ECMW6	31.500	2.040	Do Not Test
ECMW18 vs ECMW11	27.833	1.803	Do Not Test
ECMW18 vs ECMW20	20.000	1.296	Do Not Test
ECMW18 vs ECMW19	19.833	1.285	Do Not Test
ECMW18 vs ECMW13	17.167	1.112	Do Not Test
ECMW18 vs ECMW12	16.833	1.090	Do Not Test
ECMW18 vs ECMW7	11.000	0.713	Do Not Test
ECMW18 vs ECMW4	5.333	0.345	Do Not Test
ECMW4 vs ECMW22	40.167	2.602	Do Not Test
ECMW4 vs ECMW10	40.167	2.327	Do Not Test
ECMW4 vs ECMW15	40.167	2.602	Do Not Test
ECMW4 vs ECMW9	40.167	2.602	Do Not Test
ECMW4 vs ECMW17	40.167	2.602	Do Not Test
ECMW4 vs ECMW8	40.167	2.602	Do Not Test
ECMW4 vs ECMW5	40.167	2.602	Do Not Test
ECMW4 vs ECMW16	33.333	2.159	Do Not Test
ECMW4 vs ECMW14	31.333	2.030	Do Not Test
ECMW4 vs CNTL	31.056	2.464	Do Not Test
ECMW4 vs ECMW21	29.000	1.878	Do Not Test
ECMW4 vs ECMW6	26.167	1.695	Do Not Test
ECMW4 vs ECMW11	22.500	1.457	Do Not Test
ECMW4 vs ECMW20	14.667	0.950	Do Not Test
ECMW4 vs ECMW19	14.500	0.939	Do Not Test
ECMW4 vs ECMW13	11.833	0.767	Do Not Test
ECMW4 vs ECMW12	11.500	0.745	Do Not Test
ECMW4 vs ECMW7	5.667	0.367	Do Not Test
ECMW7 vs ECMW22	34.500	2.235	Do Not Test
ECMW7 vs ECMW10	34.500	1.999	Do Not Test
ECMW7 vs ECMW15	34.500	2.235	Do Not Test
ECMW7 vs ECMW9	34.500	2.235	Do Not Test
ECMW7 vs ECMW17	34.500	2.235	Do Not Test
ECMW7 vs ECMW8	34.500	2.235	Do Not Test
ECMW7 vs ECMW5	34.500	2.235	Do Not Test
ECMW7 vs ECMW16	27.667	1.792	Do Not Test
ECMW7 vs ECMW14	25.667	1.663	Do Not Test
ECMW7 vs CNTL	25.389	2.014	Do Not Test
ECMW7 vs ECMW21	23.333	1.511	Do Not Test
ECMW7 vs ECMW6	20.500	1.328	Do Not Test
ECMW7 vs ECMW11	16.833	1.090	Do Not Test
ECMW7 vs ECMW20	9.000	0.583	Do Not Test
ECMW7 vs ECMW19	8.833	0.572	Do Not Test
ECMW7 vs ECMW13	6.167	0.399	Do Not Test
ECMW7 vs ECMW12	5.833	0.378	Do Not Test
ECMW12 vs ECMW22	28.667	1.857	Do Not Test
ECMW12 vs ECMW10	28.667	1.661	Do Not Test
ECMW12 vs ECMW15	28.667	1.857	Do Not Test
ECMW12 vs ECMW9	28.667	1.857	Do Not Test
ECMW12 vs ECMW17	28.667	1.857	Do Not Test
ECMW12 vs ECMW8	28.667	1.857	Do Not Test
ECMW12 vs ECMW5	28.667	1.857	Do Not Test
ECMW12 vs ECMW16	21.833	1.414	Do Not Test
ECMW12 vs ECMW14	19.833	1.285	Do Not Test
ECMW12 vs CNTL	19.556	1.551	Do Not Test

ECMW12 vs ECMW21	17.500	1.134	Do Not Test
ECMW12 vs ECMW6	14.667	0.950	Do Not Test
ECMW12 vs ECMW11	11.000	0.713	Do Not Test
ECMW12 vs ECMW20	3.167	0.205	Do Not Test
ECMW12 vs ECMW19	3.000	0.194	Do Not Test
ECMW12 vs ECMW13	0.333	0.0216	Do Not Test
ECMW13 vs ECMW22	28.333	1.835	Do Not Test
ECMW13 vs ECMW10	28.333	1.642	Do Not Test
ECMW13 vs ECMW15	28.333	1.835	Do Not Test
ECMW13 vs ECMW9	28.333	1.835	Do Not Test
ECMW13 vs ECMW17	28.333	1.835	Do Not Test
ECMW13 vs ECMW8	28.333	1.835	Do Not Test
ECMW13 vs ECMW5	28.333	1.835	Do Not Test
ECMW13 vs ECMW16	21.500	1.393	Do Not Test
ECMW13 vs ECMW14	19.500	1.263	Do Not Test
ECMW13 vs CNTL	19.222	1.525	Do Not Test
ECMW13 vs ECMW21	17.167	1.112	Do Not Test
ECMW13 vs ECMW6	14.333	0.928	Do Not Test
ECMW13 vs ECMW11	10.667	0.691	Do Not Test
ECMW13 vs ECMW20	2.833	0.184	Do Not Test
ECMW13 vs ECMW19	2.667	0.173	Do Not Test
ECMW19 vs ECMW22	25.667	1.663	Do Not Test
ECMW19 vs ECMW10	25.667	1.487	Do Not Test
ECMW19 vs ECMW15	25.667	1.663	Do Not Test
ECMW19 vs ECMW9	25.667	1.663	Do Not Test
ECMW19 vs ECMW17	25.667	1.663	Do Not Test
ECMW19 vs ECMW8	25.667	1.663	Do Not Test
ECMW19 vs ECMW5	25.667	1.663	Do Not Test
ECMW19 vs ECMW16	18.833	1.220	Do Not Test
ECMW19 vs ECMW14	16.833	1.090	Do Not Test
ECMW19 vs CNTL	16.556	1.313	Do Not Test
ECMW19 vs ECMW21	14.500	0.939	Do Not Test
ECMW19 vs ECMW6	11.667	0.756	Do Not Test
ECMW19 vs ECMW11	8.000	0.518	Do Not Test
ECMW19 vs ECMW20	0.167	0.0108	Do Not Test
ECMW20 vs ECMW22	25.500	1.652	Do Not Test
ECMW20 vs ECMW10	25.500	1.477	Do Not Test
ECMW20 vs ECMW15	25.500	1.652	Do Not Test
ECMW20 vs ECMW9	25.500	1.652	Do Not Test
ECMW20 vs ECMW17	25.500	1.652	Do Not Test
ECMW20 vs ECMW8	25.500	1.652	Do Not Test
ECMW20 vs ECMW5	25.500	1.652	Do Not Test
ECMW20 vs ECMW16	18.667	1.209	Do Not Test
ECMW20 vs ECMW14	16.667	1.080	Do Not Test
ECMW20 vs CNTL	16.389	1.300	Do Not Test
ECMW20 vs ECMW21	14.333	0.928	Do Not Test
ECMW20 vs ECMW6	11.500	0.745	Do Not Test
ECMW20 vs ECMW11	7.833	0.507	Do Not Test
ECMW11 vs ECMW22	17.667	1.144	Do Not Test
ECMW11 vs ECMW10	17.667	1.024	Do Not Test
ECMW11 vs ECMW15	17.667	1.144	Do Not Test
ECMW11 vs ECMW9	17.667	1.144	Do Not Test
ECMW11 vs ECMW17	17.667	1.144	Do Not Test
ECMW11 vs ECMW8	17.667	1.144	Do Not Test
ECMW11 vs ECMW5	17.667	1.144	Do Not Test
ECMW11 vs ECMW16	10.833	0.702	Do Not Test

ECMW11 vs ECMW14	8.833	0.572	Do Not Test
ECMW11 vs CNTL	8.556	0.679	Do Not Test
ECMW11 vs ECMW21	6.500	0.421	Do Not Test
ECMW11 vs ECMW6	3.667	0.238	Do Not Test
ECMW6 vs ECMW22	14.000	0.907	Do Not Test
ECMW6 vs ECMW10	14.000	0.811	Do Not Test
ECMW6 vs ECMW15	14.000	0.907	Do Not Test
ECMW6 vs ECMW9	14.000	0.907	Do Not Test
ECMW6 vs ECMW17	14.000	0.907	Do Not Test
ECMW6 vs ECMW8	14.000	0.907	Do Not Test
ECMW6 vs ECMW5	14.000	0.907	Do Not Test
ECMW6 vs ECMW16	7.167	0.464	Do Not Test
ECMW6 vs ECMW14	5.167	0.335	Do Not Test
ECMW6 vs CNTL	4.889	0.388	Do Not Test
ECMW6 vs ECMW21	2.833	0.184	Do Not Test
ECMW21 vs ECMW22	11.167	0.723	Do Not Test
ECMW21 vs ECMW10	11.167	0.647	Do Not Test
ECMW21 vs ECMW15	11.167	0.723	Do Not Test
ECMW21 vs ECMW9	11.167	0.723	Do Not Test
ECMW21 vs ECMW17	11.167	0.723	Do Not Test
ECMW21 vs ECMW8	11.167	0.723	Do Not Test
ECMW21 vs ECMW5	11.167	0.723	Do Not Test
ECMW21 vs ECMW16	4.333	0.281	Do Not Test
ECMW21 vs ECMW14	2.333	0.151	Do Not Test
ECMW21 vs CNTL	2.056	0.163	Do Not Test
CNTL vs ECMW22	9.111	0.723	Do Not Test
CNTL vs ECMW10	9.111	0.616	Do Not Test
CNTL vs ECMW15	9.111	0.723	Do Not Test
CNTL vs ECMW9	9.111	0.723	Do Not Test
CNTL vs ECMW17	9.111	0.723	Do Not Test
CNTL vs ECMW8	9.111	0.723	Do Not Test
CNTL vs ECMW5	9.111	0.723	Do Not Test
CNTL vs ECMW16	2.278	0.181	Do Not Test
CNTL vs ECMW14	0.278	0.0220	Do Not Test
ECMW14 vs ECMW22	8.833	0.572	Do Not Test
ECMW14 vs ECMW10	8.833	0.512	Do Not Test
ECMW14 vs ECMW15	8.833	0.572	Do Not Test
ECMW14 vs ECMW9	8.833	0.572	Do Not Test
ECMW14 vs ECMW17	8.833	0.572	Do Not Test
ECMW14 vs ECMW8	8.833	0.572	Do Not Test
ECMW14 vs ECMW5	8.833	0.572	Do Not Test
ECMW14 vs ECMW16	2.000	0.130	Do Not Test
ECMW16 vs ECMW22	6.833	0.443	Do Not Test
ECMW16 vs ECMW10	6.833	0.396	Do Not Test
ECMW16 vs ECMW15	6.833	0.443	Do Not Test
ECMW16 vs ECMW9	6.833	0.443	Do Not Test
ECMW16 vs ECMW17	6.833	0.443	Do Not Test
ECMW16 vs ECMW8	6.833	0.443	Do Not Test
ECMW16 vs ECMW5	6.833	0.443	Do Not Test
ECMW5 vs ECMW22	0.000	0.000	Do Not Test
ECMW5 vs ECMW10	0.000	0.000	Do Not Test
ECMW5 vs ECMW15	0.000	0.000	Do Not Test
ECMW5 vs ECMW9	0.000	0.000	Do Not Test
ECMW5 vs ECMW17	0.000	0.000	Do Not Test
ECMW5 vs ECMW8	0.000	0.000	Do Not Test
ECMW8 vs ECMW22	0.000	0.000	Do Not Test

ECMW8 vs ECMW10	0.000	0.000	Do Not Test
ECMW8 vs ECMW15	0.000	0.000	Do Not Test
ECMW8 vs ECMW9	0.000	0.000	Do Not Test
ECMW8 vs ECMW17	0.000	0.000	Do Not Test
ECMW17 vs ECMW22	0.000	0.000	Do Not Test
ECMW17 vs ECMW10	0.000	0.000	Do Not Test
ECMW17 vs ECMW15	0.000	0.000	Do Not Test
ECMW17 vs ECMW9	0.000	0.000	Do Not Test
ECMW9 vs ECMW22	0.000	0.000	Do Not Test
ECMW9 vs ECMW10	0.000	0.000	Do Not Test
ECMW9 vs ECMW15	0.000	0.000	Do Not Test
ECMW15 vs ECMW22	0.000	0.000	Do Not Test
ECMW15 vs ECMW10	0.000	0.000	Do Not Test
ECMW10 vs ECMW22	0.000	0.000	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:23:36 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Iron (Total) (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:23:36 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	132	0.158	0.0765	0.292
ECMW10	53	47	0.0285	0.0183	0.0455
ECMW11	52	46	0.0160	0.01000	0.0352
ECMW12	49	43	35.850	8.935	65.175
ECMW13	52	46	0.0800	0.0488	0.527
ECMW14	52	46	0.0300	0.01000	0.0505
ECMW15	51	45	0.0150	0.01000	0.0452
ECMW16	51	45	0.01000	0.01000	0.0178
ECMW17	52	46	0.0150	0.01000	0.0305
ECMW18	51	45	22.550	0.813	54.100
ECMW19	42	36	1.895	0.0303	2.587
ECMW20	42	36	1.080	0.243	3.023
ECMW21	42	36	0.0450	0.01000	0.875
ECMW22	42	36	0.0445	0.01000	0.196
ECMW4	52	46	5.295	2.945	5.985
ECMW5	52	46	0.01000	0.01000	0.0308
ECMW6	54	47	0.0400	0.0200	0.0630
ECMW7	54	47	0.120	0.0720	0.219
ECMW8	53	47	0.0200	0.01000	0.0393
ECMW9	51	45	0.0250	0.01000	0.0473

H = 89.468 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW12 vs ECMW16	105.833	4.721	Yes
ECMW12 vs ECMW5	99.333	4.431	Yes
ECMW12 vs ECMW17	96.500	4.305	Yes
ECMW12 vs ECMW15	94.333	4.208	Yes
ECMW12 vs ECMW11	91.917	4.100	Yes
ECMW12 vs ECMW8	90.333	4.030	Yes
ECMW12 vs ECMW9	90.000	4.015	Yes
ECMW12 vs ECMW14	84.833	3.784	Yes

ECMW12 vs ECMW10	79.333	3.539	No
ECMW12 vs ECMW6	75.214	3.482	Do Not Test
ECMW12 vs ECMW22	73.083	3.260	Do Not Test
ECMW12 vs ECMW21	70.333	3.138	Do Not Test
ECMW12 vs CNTL	48.444	2.647	Do Not Test
ECMW12 vs ECMW13	45.500	2.030	Do Not Test
ECMW12 vs ECMW7	43.071	1.994	Do Not Test
ECMW12 vs ECMW19	41.667	1.859	Do Not Test
ECMW12 vs ECMW20	21.667	0.967	Do Not Test
ECMW12 vs ECMW4	9.333	0.416	Do Not Test
ECMW12 vs ECMW18	7.333	0.327	Do Not Test
ECMW18 vs ECMW16	98.500	4.394	Yes
ECMW18 vs ECMW5	92.000	4.104	Yes
ECMW18 vs ECMW17	89.167	3.978	Yes
ECMW18 vs ECMW15	87.000	3.881	Yes
ECMW18 vs ECMW11	84.583	3.773	Yes
ECMW18 vs ECMW8	83.000	3.703	Yes
ECMW18 vs ECMW9	82.667	3.688	Yes
ECMW18 vs ECMW14	77.500	3.457	No
ECMW18 vs ECMW10	72.000	3.212	Do Not Test
ECMW18 vs ECMW6	67.881	3.142	Do Not Test
ECMW18 vs ECMW22	65.750	2.933	Do Not Test
ECMW18 vs ECMW21	63.000	2.810	Do Not Test
ECMW18 vs CNTL	41.111	2.246	Do Not Test
ECMW18 vs ECMW13	38.167	1.703	Do Not Test
ECMW18 vs ECMW7	35.738	1.654	Do Not Test
ECMW18 vs ECMW19	34.333	1.532	Do Not Test
ECMW18 vs ECMW20	14.333	0.639	Do Not Test
ECMW18 vs ECMW4	2.000	0.0892	Do Not Test
ECMW4 vs ECMW16	96.500	4.305	Yes
ECMW4 vs ECMW5	90.000	4.015	Yes
ECMW4 vs ECMW17	87.167	3.889	Yes
ECMW4 vs ECMW15	85.000	3.792	Yes
ECMW4 vs ECMW11	82.583	3.684	Yes
ECMW4 vs ECMW8	81.000	3.613	No
ECMW4 vs ECMW9	80.667	3.599	Do Not Test
ECMW4 vs ECMW14	75.500	3.368	Do Not Test
ECMW4 vs ECMW10	70.000	3.123	Do Not Test
ECMW4 vs ECMW6	65.881	3.050	Do Not Test
ECMW4 vs ECMW22	63.750	2.844	Do Not Test
ECMW4 vs ECMW21	61.000	2.721	Do Not Test
ECMW4 vs CNTL	39.111	2.137	Do Not Test
ECMW4 vs ECMW13	36.167	1.613	Do Not Test
ECMW4 vs ECMW7	33.738	1.562	Do Not Test
ECMW4 vs ECMW19	32.333	1.442	Do Not Test
ECMW4 vs ECMW20	12.333	0.550	Do Not Test
ECMW20 vs ECMW16	84.167	3.755	Yes
ECMW20 vs ECMW5	77.667	3.465	No
ECMW20 vs ECMW17	74.833	3.338	Do Not Test
ECMW20 vs ECMW15	72.667	3.242	Do Not Test
ECMW20 vs ECMW11	70.250	3.134	Do Not Test
ECMW20 vs ECMW8	68.667	3.063	Do Not Test
ECMW20 vs ECMW9	68.333	3.048	Do Not Test
ECMW20 vs ECMW14	63.167	2.818	Do Not Test
ECMW20 vs ECMW10	57.667	2.573	Do Not Test
ECMW20 vs ECMW6	53.548	2.479	Do Not Test

ECMW20 vs ECMW22	51.417	2.294	Do Not Test
ECMW20 vs ECMW21	48.667	2.171	Do Not Test
ECMW20 vs CNTL	26.778	1.463	Do Not Test
ECMW20 vs ECMW13	23.833	1.063	Do Not Test
ECMW20 vs ECMW7	21.405	0.991	Do Not Test
ECMW20 vs ECMW19	20.000	0.892	Do Not Test
ECMW19 vs ECMW16	64.167	2.862	No
ECMW19 vs ECMW5	57.667	2.573	Do Not Test
ECMW19 vs ECMW17	54.833	2.446	Do Not Test
ECMW19 vs ECMW15	52.667	2.349	Do Not Test
ECMW19 vs ECMW11	50.250	2.242	Do Not Test
ECMW19 vs ECMW8	48.667	2.171	Do Not Test
ECMW19 vs ECMW9	48.333	2.156	Do Not Test
ECMW19 vs ECMW14	43.167	1.926	Do Not Test
ECMW19 vs ECMW10	37.667	1.680	Do Not Test
ECMW19 vs ECMW6	33.548	1.553	Do Not Test
ECMW19 vs ECMW22	31.417	1.401	Do Not Test
ECMW19 vs ECMW21	28.667	1.279	Do Not Test
ECMW19 vs CNTL	6.778	0.370	Do Not Test
ECMW19 vs ECMW13	3.833	0.171	Do Not Test
ECMW19 vs ECMW7	1.405	0.0650	Do Not Test
ECMW7 vs ECMW16	62.762	2.905	Do Not Test
ECMW7 vs ECMW5	56.262	2.605	Do Not Test
ECMW7 vs ECMW17	53.429	2.473	Do Not Test
ECMW7 vs ECMW15	51.262	2.373	Do Not Test
ECMW7 vs ECMW11	48.845	2.261	Do Not Test
ECMW7 vs ECMW8	47.262	2.188	Do Not Test
ECMW7 vs ECMW9	46.929	2.173	Do Not Test
ECMW7 vs ECMW14	41.762	1.933	Do Not Test
ECMW7 vs ECMW10	36.262	1.679	Do Not Test
ECMW7 vs ECMW6	32.143	1.549	Do Not Test
ECMW7 vs ECMW22	30.012	1.389	Do Not Test
ECMW7 vs ECMW21	27.262	1.262	Do Not Test
ECMW7 vs CNTL	5.373	0.311	Do Not Test
ECMW7 vs ECMW13	2.429	0.112	Do Not Test
ECMW13 vs ECMW16	60.333	2.691	Do Not Test
ECMW13 vs ECMW5	53.833	2.402	Do Not Test
ECMW13 vs ECMW17	51.000	2.275	Do Not Test
ECMW13 vs ECMW15	48.833	2.178	Do Not Test
ECMW13 vs ECMW11	46.417	2.071	Do Not Test
ECMW13 vs ECMW8	44.833	2.000	Do Not Test
ECMW13 vs ECMW9	44.500	1.985	Do Not Test
ECMW13 vs ECMW14	39.333	1.755	Do Not Test
ECMW13 vs ECMW10	33.833	1.509	Do Not Test
ECMW13 vs ECMW6	29.714	1.376	Do Not Test
ECMW13 vs ECMW22	27.583	1.230	Do Not Test
ECMW13 vs ECMW21	24.833	1.108	Do Not Test
ECMW13 vs CNTL	2.944	0.161	Do Not Test
CNTL vs ECMW16	57.389	3.135	Do Not Test
CNTL vs ECMW5	50.889	2.780	Do Not Test
CNTL vs ECMW17	48.056	2.626	Do Not Test
CNTL vs ECMW15	45.889	2.507	Do Not Test
CNTL vs ECMW11	43.472	2.375	Do Not Test
CNTL vs ECMW8	41.889	2.289	Do Not Test
CNTL vs ECMW9	41.556	2.270	Do Not Test
CNTL vs ECMW14	36.389	1.988	Do Not Test

CNTL vs ECMW10	30.889	1.688	Do Not Test
CNTL vs ECMW6	26.770	1.548	Do Not Test
CNTL vs ECMW22	24.639	1.346	Do Not Test
CNTL vs ECMW21	21.889	1.196	Do Not Test
ECMW21 vs ECMW16	35.500	1.584	Do Not Test
ECMW21 vs ECMW5	29.000	1.294	Do Not Test
ECMW21 vs ECMW17	26.167	1.167	Do Not Test
ECMW21 vs ECMW15	24.000	1.071	Do Not Test
ECMW21 vs ECMW11	21.583	0.963	Do Not Test
ECMW21 vs ECMW8	20.000	0.892	Do Not Test
ECMW21 vs ECMW9	19.667	0.877	Do Not Test
ECMW21 vs ECMW14	14.500	0.647	Do Not Test
ECMW21 vs ECMW10	9.000	0.401	Do Not Test
ECMW21 vs ECMW6	4.881	0.226	Do Not Test
ECMW21 vs ECMW22	2.750	0.123	Do Not Test
ECMW22 vs ECMW16	32.750	1.461	Do Not Test
ECMW22 vs ECMW5	26.250	1.171	Do Not Test
ECMW22 vs ECMW17	23.417	1.045	Do Not Test
ECMW22 vs ECMW15	21.250	0.948	Do Not Test
ECMW22 vs ECMW11	18.833	0.840	Do Not Test
ECMW22 vs ECMW8	17.250	0.770	Do Not Test
ECMW22 vs ECMW9	16.917	0.755	Do Not Test
ECMW22 vs ECMW14	11.750	0.524	Do Not Test
ECMW22 vs ECMW10	6.250	0.279	Do Not Test
ECMW22 vs ECMW6	2.131	0.0987	Do Not Test
ECMW6 vs ECMW16	30.619	1.417	Do Not Test
ECMW6 vs ECMW5	24.119	1.117	Do Not Test
ECMW6 vs ECMW17	21.286	0.985	Do Not Test
ECMW6 vs ECMW15	19.119	0.885	Do Not Test
ECMW6 vs ECMW11	16.702	0.773	Do Not Test
ECMW6 vs ECMW8	15.119	0.700	Do Not Test
ECMW6 vs ECMW9	14.786	0.684	Do Not Test
ECMW6 vs ECMW14	9.619	0.445	Do Not Test
ECMW6 vs ECMW10	4.119	0.191	Do Not Test
ECMW10 vs ECMW16	26.500	1.182	Do Not Test
ECMW10 vs ECMW5	20.000	0.892	Do Not Test
ECMW10 vs ECMW17	17.167	0.766	Do Not Test
ECMW10 vs ECMW15	15.000	0.669	Do Not Test
ECMW10 vs ECMW11	12.583	0.561	Do Not Test
ECMW10 vs ECMW8	11.000	0.491	Do Not Test
ECMW10 vs ECMW9	10.667	0.476	Do Not Test
ECMW10 vs ECMW14	5.500	0.245	Do Not Test
ECMW14 vs ECMW16	21.000	0.937	Do Not Test
ECMW14 vs ECMW5	14.500	0.647	Do Not Test
ECMW14 vs ECMW17	11.667	0.520	Do Not Test
ECMW14 vs ECMW15	9.500	0.424	Do Not Test
ECMW14 vs ECMW11	7.083	0.316	Do Not Test
ECMW14 vs ECMW8	5.500	0.245	Do Not Test
ECMW14 vs ECMW9	5.167	0.230	Do Not Test
ECMW9 vs ECMW16	15.833	0.706	Do Not Test
ECMW9 vs ECMW5	9.333	0.416	Do Not Test
ECMW9 vs ECMW17	6.500	0.290	Do Not Test
ECMW9 vs ECMW15	4.333	0.193	Do Not Test
ECMW9 vs ECMW11	1.917	0.0855	Do Not Test
ECMW9 vs ECMW8	0.333	0.0149	Do Not Test
ECMW8 vs ECMW16	15.500	0.691	Do Not Test

ECMW8 vs ECMW5	9.000	0.401	Do Not Test
ECMW8 vs ECMW17	6.167	0.275	Do Not Test
ECMW8 vs ECMW15	4.000	0.178	Do Not Test
ECMW8 vs ECMW11	1.583	0.0706	Do Not Test
ECMW11 vs ECMW16	13.917	0.621	Do Not Test
ECMW11 vs ECMW5	7.417	0.331	Do Not Test
ECMW11 vs ECMW17	4.583	0.204	Do Not Test
ECMW11 vs ECMW15	2.417	0.108	Do Not Test
ECMW15 vs ECMW16	11.500	0.513	Do Not Test
ECMW15 vs ECMW5	5.000	0.223	Do Not Test
ECMW15 vs ECMW17	2.167	0.0967	Do Not Test
ECMW17 vs ECMW16	9.333	0.416	Do Not Test
ECMW17 vs ECMW5	2.833	0.126	Do Not Test
ECMW5 vs ECMW16	6.500	0.290	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:23:52 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Lead (Dissolved) (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:23:52 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	72	0.0150	0.0150	0.0150
ECMW10	53	27	0.0150	0.0150	0.0152
ECMW11	52	27	0.0150	0.0150	0.0153
ECMW12	49	23	0.0150	0.0150	0.0152
ECMW13	52	26	0.0150	0.0150	0.0152
ECMW14	52	26	0.0150	0.0150	0.0152
ECMW15	51	25	0.0150	0.0150	0.0152
ECMW16	51	25	0.0150	0.0150	0.0152
ECMW17	52	26	0.0150	0.0150	0.0152
ECMW18	51	24	0.0150	0.0150	0.0160
ECMW19	42	20	0.0150	0.0150	0.0156
ECMW20	42	20	0.0150	0.0150	0.0152
ECMW21	42	20	0.0150	0.0150	0.0152
ECMW22	42	20	0.0150	0.0150	0.0152
ECMW4	52	26	0.0150	0.0150	0.0152
ECMW5	52	26	0.0150	0.0150	0.0152
ECMW6	54	28	0.0160	0.0150	0.0350
ECMW7	54	26	0.0150	0.0150	0.0156
ECMW8	53	26	0.0150	0.0150	0.0313
ECMW9	51	25	0.0150	0.0150	0.0152

H = 41.832 with 19 degrees of freedom. (P = 0.002)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = 0.002)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW6 vs ECMW21	132.844	2.839	No
ECMW6 vs ECMW22	132.844	2.839	Do Not Test
ECMW6 vs ECMW20	131.435	2.809	Do Not Test
ECMW6 vs ECMW13	130.154	2.905	Do Not Test
ECMW6 vs ECMW15	130.154	2.905	Do Not Test
ECMW6 vs ECMW12	130.154	2.905	Do Not Test
ECMW6 vs ECMW9	130.154	2.905	Do Not Test
ECMW6 vs ECMW5	130.154	2.905	Do Not Test

ECMW6 vs ECMW16	129.788	2.897	Do Not Test
ECMW6 vs ECMW10	129.731	2.896	Do Not Test
ECMW6 vs ECMW14	127.731	2.851	Do Not Test
ECMW6 vs CNTL	127.654	3.490	Do Not Test
ECMW6 vs ECMW17	127.654	2.850	Do Not Test
ECMW6 vs ECMW11	126.241	2.790	Do Not Test
ECMW6 vs ECMW4	120.846	2.698	Do Not Test
ECMW6 vs ECMW19	119.231	2.548	Do Not Test
ECMW6 vs ECMW7	90.641	2.061	Do Not Test
ECMW6 vs ECMW18	36.851	0.830	Do Not Test
ECMW6 vs ECMW8	11.240	0.253	Do Not Test
ECMW8 vs ECMW21	121.604	2.621	Do Not Test
ECMW8 vs ECMW22	121.604	2.621	Do Not Test
ECMW8 vs ECMW20	120.195	2.591	Do Not Test
ECMW8 vs ECMW13	118.914	2.679	Do Not Test
ECMW8 vs ECMW15	118.914	2.679	Do Not Test
ECMW8 vs ECMW12	118.914	2.679	Do Not Test
ECMW8 vs ECMW9	118.914	2.679	Do Not Test
ECMW8 vs ECMW5	118.914	2.679	Do Not Test
ECMW8 vs ECMW16	118.548	2.671	Do Not Test
ECMW8 vs ECMW10	118.491	2.670	Do Not Test
ECMW8 vs ECMW14	116.491	2.625	Do Not Test
ECMW8 vs CNTL	116.414	3.228	Do Not Test
ECMW8 vs ECMW17	116.414	2.623	Do Not Test
ECMW8 vs ECMW11	115.001	2.565	Do Not Test
ECMW8 vs ECMW4	109.606	2.470	Do Not Test
ECMW8 vs ECMW19	107.991	2.328	Do Not Test
ECMW8 vs ECMW7	79.401	1.823	Do Not Test
ECMW8 vs ECMW18	25.611	0.583	Do Not Test
ECMW18 vs ECMW21	95.993	2.069	Do Not Test
ECMW18 vs ECMW22	95.993	2.069	Do Not Test
ECMW18 vs ECMW20	94.584	2.039	Do Not Test
ECMW18 vs ECMW13	93.303	2.102	Do Not Test
ECMW18 vs ECMW15	93.303	2.102	Do Not Test
ECMW18 vs ECMW12	93.303	2.102	Do Not Test
ECMW18 vs ECMW9	93.303	2.102	Do Not Test
ECMW18 vs ECMW5	93.303	2.102	Do Not Test
ECMW18 vs ECMW16	92.937	2.094	Do Not Test
ECMW18 vs ECMW10	92.880	2.093	Do Not Test
ECMW18 vs ECMW14	90.880	2.048	Do Not Test
ECMW18 vs CNTL	90.803	2.518	Do Not Test
ECMW18 vs ECMW17	90.803	2.046	Do Not Test
ECMW18 vs ECMW11	89.390	1.994	Do Not Test
ECMW18 vs ECMW4	83.995	1.893	Do Not Test
ECMW18 vs ECMW19	82.380	1.776	Do Not Test
ECMW18 vs ECMW7	53.790	1.235	Do Not Test
ECMW7 vs ECMW21	42.203	0.917	Do Not Test
ECMW7 vs ECMW22	42.203	0.917	Do Not Test
ECMW7 vs ECMW20	40.794	0.887	Do Not Test
ECMW7 vs ECMW13	39.512	0.898	Do Not Test
ECMW7 vs ECMW15	39.512	0.898	Do Not Test
ECMW7 vs ECMW12	39.512	0.898	Do Not Test
ECMW7 vs ECMW9	39.512	0.898	Do Not Test
ECMW7 vs ECMW5	39.512	0.898	Do Not Test
ECMW7 vs ECMW16	39.147	0.890	Do Not Test
ECMW7 vs ECMW10	39.089	0.889	Do Not Test

ECMW7 vs ECMW14	37.089	0.843	Do Not Test
ECMW7 vs CNTL	37.012	1.040	Do Not Test
ECMW7 vs ECMW17	37.012	0.841	Do Not Test
ECMW7 vs ECMW11	35.599	0.801	Do Not Test
ECMW7 vs ECMW4	30.205	0.687	Do Not Test
ECMW7 vs ECMW19	28.589	0.621	Do Not Test
ECMW19 vs ECMW21	13.614	0.280	Do Not Test
ECMW19 vs ECMW22	13.614	0.280	Do Not Test
ECMW19 vs ECMW20	12.205	0.251	Do Not Test
ECMW19 vs ECMW13	10.923	0.233	Do Not Test
ECMW19 vs ECMW15	10.923	0.233	Do Not Test
ECMW19 vs ECMW12	10.923	0.233	Do Not Test
ECMW19 vs ECMW9	10.923	0.233	Do Not Test
ECMW19 vs ECMW5	10.923	0.233	Do Not Test
ECMW19 vs ECMW16	10.558	0.226	Do Not Test
ECMW19 vs ECMW10	10.500	0.224	Do Not Test
ECMW19 vs ECMW14	8.500	0.182	Do Not Test
ECMW19 vs CNTL	8.423	0.216	Do Not Test
ECMW19 vs ECMW17	8.423	0.180	Do Not Test
ECMW19 vs ECMW11	7.010	0.148	Do Not Test
ECMW19 vs ECMW4	1.615	0.0345	Do Not Test
ECMW4 vs ECMW21	11.998	0.256	Do Not Test
ECMW4 vs ECMW22	11.998	0.256	Do Not Test
ECMW4 vs ECMW20	10.589	0.226	Do Not Test
ECMW4 vs ECMW13	9.308	0.208	Do Not Test
ECMW4 vs ECMW15	9.308	0.208	Do Not Test
ECMW4 vs ECMW12	9.308	0.208	Do Not Test
ECMW4 vs ECMW9	9.308	0.208	Do Not Test
ECMW4 vs ECMW5	9.308	0.208	Do Not Test
ECMW4 vs ECMW16	8.942	0.200	Do Not Test
ECMW4 vs ECMW10	8.885	0.198	Do Not Test
ECMW4 vs ECMW14	6.885	0.154	Do Not Test
ECMW4 vs CNTL	6.808	0.186	Do Not Test
ECMW4 vs ECMW17	6.808	0.152	Do Not Test
ECMW4 vs ECMW11	5.395	0.119	Do Not Test
ECMW11 vs ECMW21	6.604	0.140	Do Not Test
ECMW11 vs ECMW22	6.604	0.140	Do Not Test
ECMW11 vs ECMW20	5.195	0.110	Do Not Test
ECMW11 vs ECMW13	3.913	0.0865	Do Not Test
ECMW11 vs ECMW15	3.913	0.0865	Do Not Test
ECMW11 vs ECMW12	3.913	0.0865	Do Not Test
ECMW11 vs ECMW9	3.913	0.0865	Do Not Test
ECMW11 vs ECMW5	3.913	0.0865	Do Not Test
ECMW11 vs ECMW16	3.548	0.0784	Do Not Test
ECMW11 vs ECMW10	3.490	0.0771	Do Not Test
ECMW11 vs ECMW14	1.490	0.0329	Do Not Test
ECMW11 vs CNTL	1.413	0.0381	Do Not Test
ECMW11 vs ECMW17	1.413	0.0312	Do Not Test
ECMW17 vs ECMW21	5.191	0.111	Do Not Test
ECMW17 vs ECMW22	5.191	0.111	Do Not Test
ECMW17 vs ECMW20	3.781	0.0808	Do Not Test
ECMW17 vs ECMW13	2.500	0.0558	Do Not Test
ECMW17 vs ECMW15	2.500	0.0558	Do Not Test
ECMW17 vs ECMW12	2.500	0.0558	Do Not Test
ECMW17 vs ECMW9	2.500	0.0558	Do Not Test
ECMW17 vs ECMW5	2.500	0.0558	Do Not Test

ECMW17 vs ECMW16	2.135	0.0477	Do Not Test
ECMW17 vs ECMW10	2.077	0.0464	Do Not Test
ECMW17 vs ECMW14	0.0769	0.00172	Do Not Test
ECMW17 vs CNTL	0.000	0.000	Do Not Test
CNTL vs ECMW21	5.191	0.133	Do Not Test
CNTL vs ECMW22	5.191	0.133	Do Not Test
CNTL vs ECMW20	3.781	0.0970	Do Not Test
CNTL vs ECMW13	2.500	0.0684	Do Not Test
CNTL vs ECMW15	2.500	0.0684	Do Not Test
CNTL vs ECMW12	2.500	0.0684	Do Not Test
CNTL vs ECMW9	2.500	0.0684	Do Not Test
CNTL vs ECMW5	2.500	0.0684	Do Not Test
CNTL vs ECMW16	2.135	0.0584	Do Not Test
CNTL vs ECMW10	2.077	0.0568	Do Not Test
CNTL vs ECMW14	0.0769	0.00210	Do Not Test
ECMW14 vs ECMW21	5.114	0.109	Do Not Test
ECMW14 vs ECMW22	5.114	0.109	Do Not Test
ECMW14 vs ECMW20	3.705	0.0792	Do Not Test
ECMW14 vs ECMW13	2.423	0.0541	Do Not Test
ECMW14 vs ECMW15	2.423	0.0541	Do Not Test
ECMW14 vs ECMW12	2.423	0.0541	Do Not Test
ECMW14 vs ECMW9	2.423	0.0541	Do Not Test
ECMW14 vs ECMW5	2.423	0.0541	Do Not Test
ECMW14 vs ECMW16	2.058	0.0459	Do Not Test
ECMW14 vs ECMW10	2.000	0.0446	Do Not Test
ECMW10 vs ECMW21	3.114	0.0665	Do Not Test
ECMW10 vs ECMW22	3.114	0.0665	Do Not Test
ECMW10 vs ECMW20	1.705	0.0364	Do Not Test
ECMW10 vs ECMW13	0.423	0.00944	Do Not Test
ECMW10 vs ECMW15	0.423	0.00944	Do Not Test
ECMW10 vs ECMW12	0.423	0.00944	Do Not Test
ECMW10 vs ECMW9	0.423	0.00944	Do Not Test
ECMW10 vs ECMW5	0.423	0.00944	Do Not Test
ECMW10 vs ECMW16	0.0577	0.00129	Do Not Test
ECMW16 vs ECMW21	3.056	0.0653	Do Not Test
ECMW16 vs ECMW22	3.056	0.0653	Do Not Test
ECMW16 vs ECMW20	1.647	0.0352	Do Not Test
ECMW16 vs ECMW13	0.365	0.00816	Do Not Test
ECMW16 vs ECMW15	0.365	0.00816	Do Not Test
ECMW16 vs ECMW12	0.365	0.00816	Do Not Test
ECMW16 vs ECMW9	0.365	0.00816	Do Not Test
ECMW16 vs ECMW5	0.365	0.00816	Do Not Test
ECMW5 vs ECMW21	2.691	0.0575	Do Not Test
ECMW5 vs ECMW22	2.691	0.0575	Do Not Test
ECMW5 vs ECMW20	1.281	0.0274	Do Not Test
ECMW5 vs ECMW13	0.000	0.000	Do Not Test
ECMW5 vs ECMW15	0.000	0.000	Do Not Test
ECMW5 vs ECMW12	0.000	0.000	Do Not Test
ECMW5 vs ECMW9	0.000	0.000	Do Not Test
ECMW9 vs ECMW21	2.691	0.0575	Do Not Test
ECMW9 vs ECMW22	2.691	0.0575	Do Not Test
ECMW9 vs ECMW20	1.281	0.0274	Do Not Test
ECMW9 vs ECMW13	0.000	0.000	Do Not Test
ECMW9 vs ECMW15	0.000	0.000	Do Not Test
ECMW9 vs ECMW12	0.000	0.000	Do Not Test
ECMW12 vs ECMW21	2.691	0.0575	Do Not Test

ECMW12 vs ECMW22	2.691	0.0575	Do Not Test
ECMW12 vs ECMW20	1.281	0.0274	Do Not Test
ECMW12 vs ECMW13	0.000	0.000	Do Not Test
ECMW12 vs ECMW15	0.000	0.000	Do Not Test
ECMW15 vs ECMW21	2.691	0.0575	Do Not Test
ECMW15 vs ECMW22	2.691	0.0575	Do Not Test
ECMW15 vs ECMW20	1.281	0.0274	Do Not Test
ECMW15 vs ECMW13	0.000	0.000	Do Not Test
ECMW13 vs ECMW21	2.691	0.0575	Do Not Test
ECMW13 vs ECMW22	2.691	0.0575	Do Not Test
ECMW13 vs ECMW20	1.281	0.0274	Do Not Test
ECMW20 vs ECMW21	1.409	0.0289	Do Not Test
ECMW20 vs ECMW22	1.409	0.0289	Do Not Test
ECMW22 vs ECMW21	0.000	0.000	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:24:32 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Lead (Total) (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:24:32 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	54	0.0150	0.0150	0.0156
ECMW10	53	20	0.0150	0.0150	0.0156
ECMW11	52	21	0.0150	0.0150	0.0156
ECMW12	49	18	0.0150	0.0150	0.0156
ECMW13	52	20	0.0150	0.0150	0.0154
ECMW14	52	20	0.0150	0.0150	0.0156
ECMW15	51	19	0.0150	0.0150	0.0156
ECMW16	51	19	0.0150	0.0150	0.0156
ECMW17	52	20	0.0150	0.0150	0.0156
ECMW18	51	18	0.0180	0.0150	0.0282
ECMW19	42	15	0.0150	0.0150	0.0156
ECMW20	42	15	0.0150	0.0150	0.0156
ECMW21	42	15	0.0150	0.0150	0.0156
ECMW22	42	15	0.0150	0.0150	0.0156
ECMW4	52	20	0.0150	0.0150	0.0156
ECMW5	52	20	0.0150	0.0150	0.0156
ECMW6	54	21	0.0150	0.0150	0.0369
ECMW7	54	18	0.0150	0.0150	0.0170
ECMW8	53	21	0.0153	0.0150	0.0239
ECMW9	51	19	0.0150	0.0150	0.0156

H = 55.811 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW18 vs ECMW12	204.001	4.098	Yes
ECMW18 vs ECMW13	196.875	3.987	Yes
ECMW18 vs ECMW15	193.016	3.909	Yes
ECMW18 vs ECMW5	193.016	3.909	Yes
ECMW18 vs ECMW16	191.860	3.885	Yes
ECMW18 vs ECMW17	191.344	3.875	Yes
ECMW18 vs ECMW11	190.985	3.836	Yes
ECMW18 vs ECMW22	189.337	3.666	Yes

ECMW18 vs ECMW10	188.561	3.848	Yes
ECMW18 vs ECMW19	188.540	3.650	Yes
ECMW18 vs ECMW9	182.875	3.703	Yes
ECMW18 vs ECMW14	179.344	3.632	No
ECMW18 vs CNTL	177.964	4.431	Do Not Test
ECMW18 vs ECMW20	172.374	3.337	Do Not Test
ECMW18 vs ECMW4	151.235	3.063	Do Not Test
ECMW18 vs ECMW21	147.374	2.853	Do Not Test
ECMW18 vs ECMW7	112.790	2.351	Do Not Test
ECMW18 vs ECMW6	70.788	1.445	Do Not Test
ECMW18 vs ECMW8	65.610	1.329	Do Not Test
ECMW8 vs ECMW12	138.391	2.759	No
ECMW8 vs ECMW13	131.266	2.638	Do Not Test
ECMW8 vs ECMW15	127.406	2.560	Do Not Test
ECMW8 vs ECMW5	127.406	2.560	Do Not Test
ECMW8 vs ECMW16	126.250	2.537	Do Not Test
ECMW8 vs ECMW17	125.734	2.527	Do Not Test
ECMW8 vs ECMW11	125.375	2.499	Do Not Test
ECMW8 vs ECMW22	123.727	2.379	Do Not Test
ECMW8 vs ECMW10	122.951	2.490	Do Not Test
ECMW8 vs ECMW19	122.931	2.363	Do Not Test
ECMW8 vs ECMW9	117.266	2.357	Do Not Test
ECMW8 vs ECMW14	113.734	2.286	Do Not Test
ECMW8 vs CNTL	112.354	2.765	Do Not Test
ECMW8 vs ECMW20	106.764	2.053	Do Not Test
ECMW8 vs ECMW4	85.625	1.721	Do Not Test
ECMW8 vs ECMW21	81.764	1.572	Do Not Test
ECMW8 vs ECMW7	47.181	0.976	Do Not Test
ECMW8 vs ECMW6	5.178	0.105	Do Not Test
ECMW6 vs ECMW12	133.213	2.676	Do Not Test
ECMW6 vs ECMW13	126.088	2.553	Do Not Test
ECMW6 vs ECMW15	122.228	2.475	Do Not Test
ECMW6 vs ECMW5	122.228	2.475	Do Not Test
ECMW6 vs ECMW16	121.072	2.452	Do Not Test
ECMW6 vs ECMW17	120.556	2.441	Do Not Test
ECMW6 vs ECMW11	120.197	2.414	Do Not Test
ECMW6 vs ECMW22	118.549	2.295	Do Not Test
ECMW6 vs ECMW10	117.773	2.403	Do Not Test
ECMW6 vs ECMW19	117.753	2.280	Do Not Test
ECMW6 vs ECMW9	112.088	2.270	Do Not Test
ECMW6 vs ECMW14	108.556	2.198	Do Not Test
ECMW6 vs CNTL	107.176	2.668	Do Not Test
ECMW6 vs ECMW20	101.586	1.967	Do Not Test
ECMW6 vs ECMW4	80.447	1.629	Do Not Test
ECMW6 vs ECMW21	76.586	1.483	Do Not Test
ECMW6 vs ECMW7	42.003	0.876	Do Not Test
ECMW7 vs ECMW12	91.211	1.870	Do Not Test
ECMW7 vs ECMW13	84.085	1.739	Do Not Test
ECMW7 vs ECMW15	80.226	1.659	Do Not Test
ECMW7 vs ECMW5	80.226	1.659	Do Not Test
ECMW7 vs ECMW16	79.069	1.635	Do Not Test
ECMW7 vs ECMW17	78.554	1.624	Do Not Test
ECMW7 vs ECMW11	78.194	1.603	Do Not Test
ECMW7 vs ECMW22	76.546	1.511	Do Not Test
ECMW7 vs ECMW10	75.770	1.580	Do Not Test
ECMW7 vs ECMW19	75.750	1.495	Do Not Test

ECMW7 vs ECMW9	70.085	1.449	Do Not Test
ECMW7 vs ECMW14	66.554	1.376	Do Not Test
ECMW7 vs CNTL	65.174	1.675	Do Not Test
ECMW7 vs ECMW20	59.583	1.176	Do Not Test
ECMW7 vs ECMW4	38.444	0.795	Do Not Test
ECMW7 vs ECMW21	34.583	0.682	Do Not Test
ECMW21 vs ECMW12	56.627	1.081	Do Not Test
ECMW21 vs ECMW13	49.502	0.952	Do Not Test
ECMW21 vs ECMW15	45.642	0.878	Do Not Test
ECMW21 vs ECMW5	45.642	0.878	Do Not Test
ECMW21 vs ECMW16	44.486	0.855	Do Not Test
ECMW21 vs ECMW17	43.970	0.845	Do Not Test
ECMW21 vs ECMW11	43.611	0.832	Do Not Test
ECMW21 vs ECMW22	41.963	0.775	Do Not Test
ECMW21 vs ECMW10	41.187	0.797	Do Not Test
ECMW21 vs ECMW19	41.167	0.760	Do Not Test
ECMW21 vs ECMW9	35.502	0.683	Do Not Test
ECMW21 vs ECMW14	31.970	0.615	Do Not Test
ECMW21 vs CNTL	30.590	0.706	Do Not Test
ECMW21 vs ECMW20	25.000	0.461	Do Not Test
ECMW21 vs ECMW4	3.861	0.0742	Do Not Test
ECMW4 vs ECMW12	52.766	1.052	Do Not Test
ECMW4 vs ECMW13	45.641	0.917	Do Not Test
ECMW4 vs ECMW15	41.781	0.840	Do Not Test
ECMW4 vs ECMW5	41.781	0.840	Do Not Test
ECMW4 vs ECMW16	40.625	0.816	Do Not Test
ECMW4 vs ECMW17	40.109	0.806	Do Not Test
ECMW4 vs ECMW11	39.750	0.792	Do Not Test
ECMW4 vs ECMW22	38.102	0.733	Do Not Test
ECMW4 vs ECMW10	37.326	0.756	Do Not Test
ECMW4 vs ECMW19	37.306	0.717	Do Not Test
ECMW4 vs ECMW9	31.641	0.636	Do Not Test
ECMW4 vs ECMW14	28.109	0.565	Do Not Test
ECMW4 vs CNTL	26.729	0.658	Do Not Test
ECMW4 vs ECMW20	21.139	0.406	Do Not Test
ECMW20 vs ECMW12	31.627	0.604	Do Not Test
ECMW20 vs ECMW13	24.502	0.471	Do Not Test
ECMW20 vs ECMW15	20.642	0.397	Do Not Test
ECMW20 vs ECMW5	20.642	0.397	Do Not Test
ECMW20 vs ECMW16	19.486	0.375	Do Not Test
ECMW20 vs ECMW17	18.970	0.365	Do Not Test
ECMW20 vs ECMW11	18.611	0.355	Do Not Test
ECMW20 vs ECMW22	16.963	0.313	Do Not Test
ECMW20 vs ECMW10	16.187	0.313	Do Not Test
ECMW20 vs ECMW19	16.167	0.298	Do Not Test
ECMW20 vs ECMW9	10.502	0.202	Do Not Test
ECMW20 vs ECMW14	6.970	0.134	Do Not Test
ECMW20 vs CNTL	5.590	0.129	Do Not Test
CNTL vs ECMW12	26.037	0.633	Do Not Test
CNTL vs ECMW13	18.911	0.465	Do Not Test
CNTL vs ECMW15	15.052	0.370	Do Not Test
CNTL vs ECMW5	15.052	0.370	Do Not Test
CNTL vs ECMW16	13.896	0.342	Do Not Test
CNTL vs ECMW17	13.380	0.329	Do Not Test
CNTL vs ECMW11	13.021	0.317	Do Not Test
CNTL vs ECMW22	11.373	0.262	Do Not Test

CNTL vs ECMW10	10.597	0.264	Do Not Test
CNTL vs ECMW19	10.576	0.244	Do Not Test
CNTL vs ECMW9	4.911	0.121	Do Not Test
CNTL vs ECMW14	1.380	0.0340	Do Not Test
ECMW14 vs ECMW12	24.657	0.492	Do Not Test
ECMW14 vs ECMW13	17.531	0.352	Do Not Test
ECMW14 vs ECMW15	13.672	0.275	Do Not Test
ECMW14 vs ECMW5	13.672	0.275	Do Not Test
ECMW14 vs ECMW16	12.516	0.252	Do Not Test
ECMW14 vs ECMW17	12.000	0.241	Do Not Test
ECMW14 vs ECMW11	11.641	0.232	Do Not Test
ECMW14 vs ECMW22	9.992	0.192	Do Not Test
ECMW14 vs ECMW10	9.216	0.187	Do Not Test
ECMW14 vs ECMW19	9.196	0.177	Do Not Test
ECMW14 vs ECMW9	3.531	0.0710	Do Not Test
ECMW9 vs ECMW12	21.126	0.421	Do Not Test
ECMW9 vs ECMW13	14.000	0.281	Do Not Test
ECMW9 vs ECMW15	10.141	0.204	Do Not Test
ECMW9 vs ECMW5	10.141	0.204	Do Not Test
ECMW9 vs ECMW16	8.984	0.181	Do Not Test
ECMW9 vs ECMW17	8.469	0.170	Do Not Test
ECMW9 vs ECMW11	8.109	0.162	Do Not Test
ECMW9 vs ECMW22	6.461	0.124	Do Not Test
ECMW9 vs ECMW10	5.685	0.115	Do Not Test
ECMW9 vs ECMW19	5.665	0.109	Do Not Test
ECMW19 vs ECMW12	15.461	0.295	Do Not Test
ECMW19 vs ECMW13	8.335	0.160	Do Not Test
ECMW19 vs ECMW15	4.476	0.0860	Do Not Test
ECMW19 vs ECMW5	4.476	0.0860	Do Not Test
ECMW19 vs ECMW16	3.319	0.0638	Do Not Test
ECMW19 vs ECMW17	2.804	0.0539	Do Not Test
ECMW19 vs ECMW11	2.444	0.0467	Do Not Test
ECMW19 vs ECMW22	0.796	0.0147	Do Not Test
ECMW19 vs ECMW10	0.0202	0.000391	Do Not Test
ECMW10 vs ECMW12	15.440	0.310	Do Not Test
ECMW10 vs ECMW13	8.315	0.168	Do Not Test
ECMW10 vs ECMW15	4.455	0.0902	Do Not Test
ECMW10 vs ECMW5	4.455	0.0902	Do Not Test
ECMW10 vs ECMW16	3.299	0.0668	Do Not Test
ECMW10 vs ECMW17	2.784	0.0564	Do Not Test
ECMW10 vs ECMW11	2.424	0.0487	Do Not Test
ECMW10 vs ECMW22	0.776	0.0150	Do Not Test
ECMW22 vs ECMW12	14.664	0.280	Do Not Test
ECMW22 vs ECMW13	7.539	0.145	Do Not Test
ECMW22 vs ECMW15	3.679	0.0707	Do Not Test
ECMW22 vs ECMW5	3.679	0.0707	Do Not Test
ECMW22 vs ECMW16	2.523	0.0485	Do Not Test
ECMW22 vs ECMW17	2.008	0.0386	Do Not Test
ECMW22 vs ECMW11	1.648	0.0315	Do Not Test
ECMW11 vs ECMW12	13.016	0.257	Do Not Test
ECMW11 vs ECMW13	5.891	0.117	Do Not Test
ECMW11 vs ECMW15	2.031	0.0405	Do Not Test
ECMW11 vs ECMW5	2.031	0.0405	Do Not Test
ECMW11 vs ECMW16	0.875	0.0174	Do Not Test
ECMW11 vs ECMW17	0.359	0.00716	Do Not Test
ECMW17 vs ECMW12	12.657	0.252	Do Not Test

ECMW17 vs ECMW13	5.531	0.111	Do Not Test
ECMW17 vs ECMW15	1.672	0.0336	Do Not Test
ECMW17 vs ECMW5	1.672	0.0336	Do Not Test
ECMW17 vs ECMW16	0.516	0.0104	Do Not Test
ECMW16 vs ECMW12	12.141	0.242	Do Not Test
ECMW16 vs ECMW13	5.016	0.101	Do Not Test
ECMW16 vs ECMW15	1.156	0.0232	Do Not Test
ECMW16 vs ECMW5	1.156	0.0232	Do Not Test
ECMW5 vs ECMW12	10.985	0.219	Do Not Test
ECMW5 vs ECMW13	3.859	0.0776	Do Not Test
ECMW5 vs ECMW15	0.000	0.000	Do Not Test
ECMW15 vs ECMW12	10.985	0.219	Do Not Test
ECMW15 vs ECMW13	3.859	0.0776	Do Not Test
ECMW13 vs ECMW12	7.126	0.142	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:27:31 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Manganese Dissolved (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:27:31 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	144	0.01000	0.01000	0.0205
ECMW10	53	51	0.178	0.152	0.204
ECMW11	52	50	0.0230	0.0220	0.0240
ECMW12	49	47	0.192	0.189	0.195
ECMW13	52	50	2.795	2.780	2.810
ECMW14	52	50	0.0710	0.0710	0.0710
ECMW15	51	49	0.0215	0.0140	0.0290
ECMW16	51	49	0.122	0.104	0.140
ECMW17	52	50	0.197	0.145	0.248
ECMW18	51	49	0.0775	0.0730	0.0820
ECMW19	42	40	0.0790	0.0730	0.0850
ECMW20	42	40	0.225	0.215	0.235
ECMW21	42	40	0.0665	0.0430	0.0900
ECMW22	42	40	0.130	0.0990	0.161
ECMW4	52	50	2.045	1.660	2.430
ECMW5	52	50	2.135	2.080	2.190
ECMW6	54	52	2.925	2.880	2.970
ECMW7	54	52	0.276	0.0960	0.456
ECMW8	53	51	0.456	0.396	0.515
ECMW9	51	49	0.312	0.303	0.320

H = 41.240 with 19 degrees of freedom. (P = 0.002)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = 0.002)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW6 vs CNTL	39.167	3.734	Yes
ECMW6 vs ECMW15	36.000	2.803	No
ECMW6 vs ECMW11	36.000	2.803	Do Not Test
ECMW6 vs ECMW14	31.000	2.413	Do Not Test
ECMW6 vs ECMW21	29.500	2.297	Do Not Test
ECMW6 vs ECMW18	28.250	2.199	Do Not Test
ECMW6 vs ECMW19	27.750	2.160	Do Not Test
ECMW6 vs ECMW16	22.000	1.713	Do Not Test

ECMW6 vs ECMW22	21.000	1.635	Do Not Test
ECMW6 vs ECMW10	17.500	1.362	Do Not Test
ECMW6 vs ECMW12	17.000	1.323	Do Not Test
ECMW6 vs ECMW7	16.500	1.285	Do Not Test
ECMW6 vs ECMW17	16.500	1.285	Do Not Test
ECMW6 vs ECMW20	14.000	1.090	Do Not Test
ECMW6 vs ECMW9	11.000	0.856	Do Not Test
ECMW6 vs ECMW8	8.500	0.662	Do Not Test
ECMW6 vs ECMW4	5.000	0.389	Do Not Test
ECMW6 vs ECMW5	5.000	0.389	Do Not Test
ECMW6 vs ECMW13	2.000	0.156	Do Not Test
ECMW13 vs CNTL	37.167	3.544	No
ECMW13 vs ECMW15	34.000	2.647	Do Not Test
ECMW13 vs ECMW11	34.000	2.647	Do Not Test
ECMW13 vs ECMW14	29.000	2.258	Do Not Test
ECMW13 vs ECMW21	27.500	2.141	Do Not Test
ECMW13 vs ECMW18	26.250	2.044	Do Not Test
ECMW13 vs ECMW19	25.750	2.005	Do Not Test
ECMW13 vs ECMW16	20.000	1.557	Do Not Test
ECMW13 vs ECMW22	19.000	1.479	Do Not Test
ECMW13 vs ECMW10	15.500	1.207	Do Not Test
ECMW13 vs ECMW12	15.000	1.168	Do Not Test
ECMW13 vs ECMW7	14.500	1.129	Do Not Test
ECMW13 vs ECMW17	14.500	1.129	Do Not Test
ECMW13 vs ECMW20	12.000	0.934	Do Not Test
ECMW13 vs ECMW9	9.000	0.701	Do Not Test
ECMW13 vs ECMW8	6.500	0.506	Do Not Test
ECMW13 vs ECMW4	3.000	0.234	Do Not Test
ECMW13 vs ECMW5	3.000	0.234	Do Not Test
ECMW5 vs CNTL	34.167	3.258	Do Not Test
ECMW5 vs ECMW15	31.000	2.413	Do Not Test
ECMW5 vs ECMW11	31.000	2.413	Do Not Test
ECMW5 vs ECMW14	26.000	2.024	Do Not Test
ECMW5 vs ECMW21	24.500	1.907	Do Not Test
ECMW5 vs ECMW18	23.250	1.810	Do Not Test
ECMW5 vs ECMW19	22.750	1.771	Do Not Test
ECMW5 vs ECMW16	17.000	1.323	Do Not Test
ECMW5 vs ECMW22	16.000	1.246	Do Not Test
ECMW5 vs ECMW10	12.500	0.973	Do Not Test
ECMW5 vs ECMW12	12.000	0.934	Do Not Test
ECMW5 vs ECMW7	11.500	0.895	Do Not Test
ECMW5 vs ECMW17	11.500	0.895	Do Not Test
ECMW5 vs ECMW20	9.000	0.701	Do Not Test
ECMW5 vs ECMW9	6.000	0.467	Do Not Test
ECMW5 vs ECMW8	3.500	0.272	Do Not Test
ECMW5 vs ECMW4	0.000	0.000	Do Not Test
ECMW4 vs CNTL	34.167	3.258	Do Not Test
ECMW4 vs ECMW15	31.000	2.413	Do Not Test
ECMW4 vs ECMW11	31.000	2.413	Do Not Test
ECMW4 vs ECMW14	26.000	2.024	Do Not Test
ECMW4 vs ECMW21	24.500	1.907	Do Not Test
ECMW4 vs ECMW18	23.250	1.810	Do Not Test
ECMW4 vs ECMW19	22.750	1.771	Do Not Test
ECMW4 vs ECMW16	17.000	1.323	Do Not Test
ECMW4 vs ECMW22	16.000	1.246	Do Not Test
ECMW4 vs ECMW10	12.500	0.973	Do Not Test

ECMW4 vs ECMW12	12.000	0.934	Do Not Test
ECMW4 vs ECMW7	11.500	0.895	Do Not Test
ECMW4 vs ECMW17	11.500	0.895	Do Not Test
ECMW4 vs ECMW20	9.000	0.701	Do Not Test
ECMW4 vs ECMW9	6.000	0.467	Do Not Test
ECMW4 vs ECMW8	3.500	0.272	Do Not Test
ECMW8 vs CNTL	30.667	2.924	Do Not Test
ECMW8 vs ECMW15	27.500	2.141	Do Not Test
ECMW8 vs ECMW11	27.500	2.141	Do Not Test
ECMW8 vs ECMW14	22.500	1.752	Do Not Test
ECMW8 vs ECMW21	21.000	1.635	Do Not Test
ECMW8 vs ECMW18	19.750	1.538	Do Not Test
ECMW8 vs ECMW19	19.250	1.499	Do Not Test
ECMW8 vs ECMW16	13.500	1.051	Do Not Test
ECMW8 vs ECMW22	12.500	0.973	Do Not Test
ECMW8 vs ECMW10	9.000	0.701	Do Not Test
ECMW8 vs ECMW12	8.500	0.662	Do Not Test
ECMW8 vs ECMW7	8.000	0.623	Do Not Test
ECMW8 vs ECMW17	8.000	0.623	Do Not Test
ECMW8 vs ECMW20	5.500	0.428	Do Not Test
ECMW8 vs ECMW9	2.500	0.195	Do Not Test
ECMW9 vs CNTL	28.167	2.686	Do Not Test
ECMW9 vs ECMW15	25.000	1.946	Do Not Test
ECMW9 vs ECMW11	25.000	1.946	Do Not Test
ECMW9 vs ECMW14	20.000	1.557	Do Not Test
ECMW9 vs ECMW21	18.500	1.440	Do Not Test
ECMW9 vs ECMW18	17.250	1.343	Do Not Test
ECMW9 vs ECMW19	16.750	1.304	Do Not Test
ECMW9 vs ECMW16	11.000	0.856	Do Not Test
ECMW9 vs ECMW22	10.000	0.778	Do Not Test
ECMW9 vs ECMW10	6.500	0.506	Do Not Test
ECMW9 vs ECMW12	6.000	0.467	Do Not Test
ECMW9 vs ECMW7	5.500	0.428	Do Not Test
ECMW9 vs ECMW17	5.500	0.428	Do Not Test
ECMW9 vs ECMW20	3.000	0.234	Do Not Test
ECMW20 vs CNTL	25.167	2.400	Do Not Test
ECMW20 vs ECMW15	22.000	1.713	Do Not Test
ECMW20 vs ECMW11	22.000	1.713	Do Not Test
ECMW20 vs ECMW14	17.000	1.323	Do Not Test
ECMW20 vs ECMW21	15.500	1.207	Do Not Test
ECMW20 vs ECMW18	14.250	1.109	Do Not Test
ECMW20 vs ECMW19	13.750	1.070	Do Not Test
ECMW20 vs ECMW16	8.000	0.623	Do Not Test
ECMW20 vs ECMW22	7.000	0.545	Do Not Test
ECMW20 vs ECMW10	3.500	0.272	Do Not Test
ECMW20 vs ECMW12	3.000	0.234	Do Not Test
ECMW20 vs ECMW7	2.500	0.195	Do Not Test
ECMW20 vs ECMW17	2.500	0.195	Do Not Test
ECMW17 vs CNTL	22.667	2.161	Do Not Test
ECMW17 vs ECMW15	19.500	1.518	Do Not Test
ECMW17 vs ECMW11	19.500	1.518	Do Not Test
ECMW17 vs ECMW14	14.500	1.129	Do Not Test
ECMW17 vs ECMW21	13.000	1.012	Do Not Test
ECMW17 vs ECMW18	11.750	0.915	Do Not Test
ECMW17 vs ECMW19	11.250	0.876	Do Not Test
ECMW17 vs ECMW16	5.500	0.428	Do Not Test

ECMW17 vs ECMW22	4.500	0.350	Do Not Test
ECMW17 vs ECMW10	1.000	0.0778	Do Not Test
ECMW17 vs ECMW12	0.500	0.0389	Do Not Test
ECMW17 vs ECMW7	0.000	0.000	Do Not Test
ECMW7 vs CNTL	22.667	2.161	Do Not Test
ECMW7 vs ECMW15	19.500	1.518	Do Not Test
ECMW7 vs ECMW11	19.500	1.518	Do Not Test
ECMW7 vs ECMW14	14.500	1.129	Do Not Test
ECMW7 vs ECMW21	13.000	1.012	Do Not Test
ECMW7 vs ECMW18	11.750	0.915	Do Not Test
ECMW7 vs ECMW19	11.250	0.876	Do Not Test
ECMW7 vs ECMW16	5.500	0.428	Do Not Test
ECMW7 vs ECMW22	4.500	0.350	Do Not Test
ECMW7 vs ECMW10	1.000	0.0778	Do Not Test
ECMW7 vs ECMW12	0.500	0.0389	Do Not Test
ECMW12 vs CNTL	22.167	2.114	Do Not Test
ECMW12 vs ECMW15	19.000	1.479	Do Not Test
ECMW12 vs ECMW11	19.000	1.479	Do Not Test
ECMW12 vs ECMW14	14.000	1.090	Do Not Test
ECMW12 vs ECMW21	12.500	0.973	Do Not Test
ECMW12 vs ECMW18	11.250	0.876	Do Not Test
ECMW12 vs ECMW19	10.750	0.837	Do Not Test
ECMW12 vs ECMW16	5.000	0.389	Do Not Test
ECMW12 vs ECMW22	4.000	0.311	Do Not Test
ECMW12 vs ECMW10	0.500	0.0389	Do Not Test
ECMW10 vs CNTL	21.667	2.066	Do Not Test
ECMW10 vs ECMW15	18.500	1.440	Do Not Test
ECMW10 vs ECMW11	18.500	1.440	Do Not Test
ECMW10 vs ECMW14	13.500	1.051	Do Not Test
ECMW10 vs ECMW21	12.000	0.934	Do Not Test
ECMW10 vs ECMW18	10.750	0.837	Do Not Test
ECMW10 vs ECMW19	10.250	0.798	Do Not Test
ECMW10 vs ECMW16	4.500	0.350	Do Not Test
ECMW10 vs ECMW22	3.500	0.272	Do Not Test
ECMW22 vs CNTL	18.167	1.732	Do Not Test
ECMW22 vs ECMW15	15.000	1.168	Do Not Test
ECMW22 vs ECMW11	15.000	1.168	Do Not Test
ECMW22 vs ECMW14	10.000	0.778	Do Not Test
ECMW22 vs ECMW21	8.500	0.662	Do Not Test
ECMW22 vs ECMW18	7.250	0.564	Do Not Test
ECMW22 vs ECMW19	6.750	0.525	Do Not Test
ECMW22 vs ECMW16	1.000	0.0778	Do Not Test
ECMW16 vs CNTL	17.167	1.637	Do Not Test
ECMW16 vs ECMW15	14.000	1.090	Do Not Test
ECMW16 vs ECMW11	14.000	1.090	Do Not Test
ECMW16 vs ECMW14	9.000	0.701	Do Not Test
ECMW16 vs ECMW21	7.500	0.584	Do Not Test
ECMW16 vs ECMW18	6.250	0.487	Do Not Test
ECMW16 vs ECMW19	5.750	0.448	Do Not Test
ECMW19 vs CNTL	11.417	1.089	Do Not Test
ECMW19 vs ECMW15	8.250	0.642	Do Not Test
ECMW19 vs ECMW11	8.250	0.642	Do Not Test
ECMW19 vs ECMW14	3.250	0.253	Do Not Test
ECMW19 vs ECMW21	1.750	0.136	Do Not Test
ECMW19 vs ECMW18	0.500	0.0389	Do Not Test
ECMW18 vs CNTL	10.917	1.041	Do Not Test

ECMW18 vs ECMW15	7.750	0.603	Do Not Test
ECMW18 vs ECMW11	7.750	0.603	Do Not Test
ECMW18 vs ECMW14	2.750	0.214	Do Not Test
ECMW18 vs ECMW21	1.250	0.0973	Do Not Test
ECMW21 vs CNTL	9.667	0.922	Do Not Test
ECMW21 vs ECMW15	6.500	0.506	Do Not Test
ECMW21 vs ECMW11	6.500	0.506	Do Not Test
ECMW21 vs ECMW14	1.500	0.117	Do Not Test
ECMW14 vs CNTL	8.167	0.779	Do Not Test
ECMW14 vs ECMW15	5.000	0.389	Do Not Test
ECMW14 vs ECMW11	5.000	0.389	Do Not Test
ECMW11 vs CNTL	3.167	0.302	Do Not Test
ECMW11 vs ECMW15	0.000	0.000	Do Not Test
ECMW15 vs CNTL	3.167	0.302	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:27:55 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Manganese Total (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:27:55 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	129	0.01000	0.01000	0.0175
ECMW10	53	46	0.166	0.154	0.203
ECMW11	52	45	0.0300	0.0200	0.0300
ECMW12	49	42	0.210	0.170	0.239
ECMW13	52	45	2.710	2.410	2.870
ECMW14	52	45	0.0600	0.0470	0.0700
ECMW15	51	45	0.0200	0.01000	0.0240
ECMW16	51	44	0.110	0.105	0.170
ECMW17	52	45	0.200	0.121	0.240
ECMW18	51	45	0.0750	0.0222	0.138
ECMW19	42	36	0.0645	0.0575	0.0770
ECMW20	42	35	0.140	0.110	0.201
ECMW21	42	35	0.0270	0.0250	0.160
ECMW22	42	35	0.105	0.0900	0.152
ECMW4	52	45	2.080	1.700	2.540
ECMW5	52	45	1.630	0.717	2.160
ECMW6	54	46	2.265	1.653	3.240
ECMW7	54	46	0.195	0.103	0.247
ECMW8	53	46	0.490	0.476	0.563
ECMW9	51	44	0.321	0.297	0.340

H = 134.837 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW13 vs CNTL	125.833	6.507	Yes
ECMW13 vs ECMW15	124.929	5.068	Yes
ECMW13 vs ECMW11	113.786	4.804	Yes
ECMW13 vs ECMW14	99.714	4.210	Yes
ECMW13 vs ECMW19	95.595	3.878	Yes
ECMW13 vs ECMW21	92.714	3.914	Yes
ECMW13 vs ECMW18	91.345	3.705	Yes
ECMW13 vs ECMW22	77.143	3.257	No

ECMW13 vs ECMW16	69.929	2.952	Do Not Test
ECMW13 vs ECMW20	62.857	2.654	Do Not Test
ECMW13 vs ECMW17	59.643	2.518	Do Not Test
ECMW13 vs ECMW10	57.643	2.434	Do Not Test
ECMW13 vs ECMW7	56.741	2.474	Do Not Test
ECMW13 vs ECMW12	50.357	2.126	Do Not Test
ECMW13 vs ECMW9	33.571	1.417	Do Not Test
ECMW13 vs ECMW8	24.000	1.013	Do Not Test
ECMW13 vs ECMW5	11.857	0.501	Do Not Test
ECMW13 vs ECMW4	7.571	0.320	Do Not Test
ECMW13 vs ECMW6	2.929	0.128	Do Not Test
ECMW6 vs CNTL	122.905	6.676	Yes
ECMW6 vs ECMW15	122.000	5.098	Yes
ECMW6 vs ECMW11	110.857	4.834	Yes
ECMW6 vs ECMW14	96.786	4.220	Yes
ECMW6 vs ECMW19	92.667	3.872	Yes
ECMW6 vs ECMW21	89.786	3.915	Yes
ECMW6 vs ECMW18	88.417	3.695	Yes
ECMW6 vs ECMW22	74.214	3.236	Do Not Test
ECMW6 vs ECMW16	67.000	2.922	Do Not Test
ECMW6 vs ECMW20	59.929	2.613	Do Not Test
ECMW6 vs ECMW17	56.714	2.473	Do Not Test
ECMW6 vs ECMW10	54.714	2.386	Do Not Test
ECMW6 vs ECMW7	53.813	2.429	Do Not Test
ECMW6 vs ECMW12	47.429	2.068	Do Not Test
ECMW6 vs ECMW9	30.643	1.336	Do Not Test
ECMW6 vs ECMW8	21.071	0.919	Do Not Test
ECMW6 vs ECMW5	8.929	0.389	Do Not Test
ECMW6 vs ECMW4	4.643	0.202	Do Not Test
ECMW4 vs CNTL	118.262	6.115	Yes
ECMW4 vs ECMW15	117.357	4.760	Yes
ECMW4 vs ECMW11	106.214	4.484	Yes
ECMW4 vs ECMW14	92.143	3.890	Yes
ECMW4 vs ECMW19	88.024	3.571	No
ECMW4 vs ECMW21	85.143	3.595	Do Not Test
ECMW4 vs ECMW18	83.774	3.398	Do Not Test
ECMW4 vs ECMW22	69.571	2.937	Do Not Test
ECMW4 vs ECMW16	62.357	2.633	Do Not Test
ECMW4 vs ECMW20	55.286	2.334	Do Not Test
ECMW4 vs ECMW17	52.071	2.198	Do Not Test
ECMW4 vs ECMW10	50.071	2.114	Do Not Test
ECMW4 vs ECMW7	49.170	2.144	Do Not Test
ECMW4 vs ECMW12	42.786	1.806	Do Not Test
ECMW4 vs ECMW9	26.000	1.098	Do Not Test
ECMW4 vs ECMW8	16.429	0.694	Do Not Test
ECMW4 vs ECMW5	4.286	0.181	Do Not Test
ECMW5 vs CNTL	113.976	5.894	Yes
ECMW5 vs ECMW15	113.071	4.587	Yes
ECMW5 vs ECMW11	101.929	4.303	Yes
ECMW5 vs ECMW14	87.857	3.709	Yes
ECMW5 vs ECMW19	83.738	3.397	Do Not Test
ECMW5 vs ECMW21	80.857	3.414	Do Not Test
ECMW5 vs ECMW18	79.488	3.224	Do Not Test
ECMW5 vs ECMW22	65.286	2.756	Do Not Test
ECMW5 vs ECMW16	58.071	2.452	Do Not Test
ECMW5 vs ECMW20	51.000	2.153	Do Not Test

ECMW5 vs ECMW17	47.786	2.018	Do Not Test
ECMW5 vs ECMW10	45.786	1.933	Do Not Test
ECMW5 vs ECMW7	44.884	1.957	Do Not Test
ECMW5 vs ECMW12	38.500	1.625	Do Not Test
ECMW5 vs ECMW9	21.714	0.917	Do Not Test
ECMW5 vs ECMW8	12.143	0.513	Do Not Test
ECMW8 vs CNTL	101.833	5.266	Yes
ECMW8 vs ECMW15	100.929	4.094	Yes
ECMW8 vs ECMW11	89.786	3.791	Yes
ECMW8 vs ECMW14	75.714	3.197	No
ECMW8 vs ECMW19	71.595	2.904	Do Not Test
ECMW8 vs ECMW21	68.714	2.901	Do Not Test
ECMW8 vs ECMW18	67.345	2.732	Do Not Test
ECMW8 vs ECMW22	53.143	2.244	Do Not Test
ECMW8 vs ECMW16	45.929	1.939	Do Not Test
ECMW8 vs ECMW20	38.857	1.641	Do Not Test
ECMW8 vs ECMW17	35.643	1.505	Do Not Test
ECMW8 vs ECMW10	33.643	1.420	Do Not Test
ECMW8 vs ECMW7	32.741	1.428	Do Not Test
ECMW8 vs ECMW12	26.357	1.113	Do Not Test
ECMW8 vs ECMW9	9.571	0.404	Do Not Test
ECMW9 vs CNTL	92.262	4.771	Yes
ECMW9 vs ECMW15	91.357	3.706	Yes
ECMW9 vs ECMW11	80.214	3.387	No
ECMW9 vs ECMW14	66.143	2.793	Do Not Test
ECMW9 vs ECMW19	62.024	2.516	Do Not Test
ECMW9 vs ECMW21	59.143	2.497	Do Not Test
ECMW9 vs ECMW18	57.774	2.344	Do Not Test
ECMW9 vs ECMW22	43.571	1.840	Do Not Test
ECMW9 vs ECMW16	36.357	1.535	Do Not Test
ECMW9 vs ECMW20	29.286	1.236	Do Not Test
ECMW9 vs ECMW17	26.071	1.101	Do Not Test
ECMW9 vs ECMW10	24.071	1.016	Do Not Test
ECMW9 vs ECMW7	23.170	1.010	Do Not Test
ECMW9 vs ECMW12	16.786	0.709	Do Not Test
ECMW12 vs CNTL	75.476	3.903	Yes
ECMW12 vs ECMW15	74.571	3.025	No
ECMW12 vs ECMW11	63.429	2.678	Do Not Test
ECMW12 vs ECMW14	49.357	2.084	Do Not Test
ECMW12 vs ECMW19	45.238	1.835	Do Not Test
ECMW12 vs ECMW21	42.357	1.788	Do Not Test
ECMW12 vs ECMW18	40.988	1.663	Do Not Test
ECMW12 vs ECMW22	26.786	1.131	Do Not Test
ECMW12 vs ECMW16	19.571	0.826	Do Not Test
ECMW12 vs ECMW20	12.500	0.528	Do Not Test
ECMW12 vs ECMW17	9.286	0.392	Do Not Test
ECMW12 vs ECMW10	7.286	0.308	Do Not Test
ECMW12 vs ECMW7	6.384	0.278	Do Not Test
ECMW7 vs CNTL	69.092	3.753	Yes
ECMW7 vs ECMW15	68.188	2.849	Do Not Test
ECMW7 vs ECMW11	57.045	2.487	Do Not Test
ECMW7 vs ECMW14	42.973	1.874	Do Not Test
ECMW7 vs ECMW19	38.854	1.624	Do Not Test
ECMW7 vs ECMW21	35.973	1.569	Do Not Test
ECMW7 vs ECMW18	34.604	1.446	Do Not Test
ECMW7 vs ECMW22	20.402	0.890	Do Not Test

ECMW7 vs ECMW16	13.188	0.575	Do Not Test
ECMW7 vs ECMW20	6.116	0.267	Do Not Test
ECMW7 vs ECMW17	2.902	0.127	Do Not Test
ECMW7 vs ECMW10	0.902	0.0393	Do Not Test
ECMW10 vs CNTL	68.190	3.526	No
ECMW10 vs ECMW15	67.286	2.729	Do Not Test
ECMW10 vs ECMW11	56.143	2.370	Do Not Test
ECMW10 vs ECMW14	42.071	1.776	Do Not Test
ECMW10 vs ECMW19	37.952	1.539	Do Not Test
ECMW10 vs ECMW21	35.071	1.481	Do Not Test
ECMW10 vs ECMW18	33.702	1.367	Do Not Test
ECMW10 vs ECMW22	19.500	0.823	Do Not Test
ECMW10 vs ECMW16	12.286	0.519	Do Not Test
ECMW10 vs ECMW20	5.214	0.220	Do Not Test
ECMW10 vs ECMW17	2.000	0.0844	Do Not Test
ECMW17 vs CNTL	66.190	3.423	Do Not Test
ECMW17 vs ECMW15	65.286	2.648	Do Not Test
ECMW17 vs ECMW11	54.143	2.286	Do Not Test
ECMW17 vs ECMW14	40.071	1.692	Do Not Test
ECMW17 vs ECMW19	35.952	1.458	Do Not Test
ECMW17 vs ECMW21	33.071	1.396	Do Not Test
ECMW17 vs ECMW18	31.702	1.286	Do Not Test
ECMW17 vs ECMW22	17.500	0.739	Do Not Test
ECMW17 vs ECMW16	10.286	0.434	Do Not Test
ECMW17 vs ECMW20	3.214	0.136	Do Not Test
ECMW20 vs CNTL	62.976	3.256	Do Not Test
ECMW20 vs ECMW15	62.071	2.518	Do Not Test
ECMW20 vs ECMW11	50.929	2.150	Do Not Test
ECMW20 vs ECMW14	36.857	1.556	Do Not Test
ECMW20 vs ECMW19	32.738	1.328	Do Not Test
ECMW20 vs ECMW21	29.857	1.261	Do Not Test
ECMW20 vs ECMW18	28.488	1.156	Do Not Test
ECMW20 vs ECMW22	14.286	0.603	Do Not Test
ECMW20 vs ECMW16	7.071	0.299	Do Not Test
ECMW16 vs CNTL	55.905	2.891	Do Not Test
ECMW16 vs ECMW15	55.000	2.231	Do Not Test
ECMW16 vs ECMW11	43.857	1.852	Do Not Test
ECMW16 vs ECMW14	29.786	1.258	Do Not Test
ECMW16 vs ECMW19	25.667	1.041	Do Not Test
ECMW16 vs ECMW21	22.786	0.962	Do Not Test
ECMW16 vs ECMW18	21.417	0.869	Do Not Test
ECMW16 vs ECMW22	7.214	0.305	Do Not Test
ECMW22 vs CNTL	48.690	2.518	Do Not Test
ECMW22 vs ECMW15	47.786	1.938	Do Not Test
ECMW22 vs ECMW11	36.643	1.547	Do Not Test
ECMW22 vs ECMW14	22.571	0.953	Do Not Test
ECMW22 vs ECMW19	18.452	0.748	Do Not Test
ECMW22 vs ECMW21	15.571	0.657	Do Not Test
ECMW22 vs ECMW18	14.202	0.576	Do Not Test
ECMW18 vs CNTL	34.488	1.681	Do Not Test
ECMW18 vs ECMW15	33.583	1.313	Do Not Test
ECMW18 vs ECMW11	22.440	0.910	Do Not Test
ECMW18 vs ECMW14	8.369	0.339	Do Not Test
ECMW18 vs ECMW19	4.250	0.166	Do Not Test
ECMW18 vs ECMW21	1.369	0.0555	Do Not Test
ECMW21 vs CNTL	33.119	1.713	Do Not Test

ECMW21 vs ECMW15	32.214	1.307	Do Not Test
ECMW21 vs ECMW11	21.071	0.890	Do Not Test
ECMW21 vs ECMW14	7.000	0.296	Do Not Test
ECMW21 vs ECMW19	2.881	0.117	Do Not Test
ECMW19 vs CNTL	30.238	1.474	Do Not Test
ECMW19 vs ECMW15	29.333	1.147	Do Not Test
ECMW19 vs ECMW11	18.190	0.738	Do Not Test
ECMW19 vs ECMW14	4.119	0.167	Do Not Test
ECMW14 vs CNTL	26.119	1.351	Do Not Test
ECMW14 vs ECMW15	25.214	1.023	Do Not Test
ECMW14 vs ECMW11	14.071	0.594	Do Not Test
ECMW11 vs CNTL	12.048	0.623	Do Not Test
ECMW11 vs ECMW15	11.143	0.452	Do Not Test
ECMW15 vs CNTL	0.905	0.0441	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:28:16 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Nitrate- N (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:28:16 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	50	0.500	0.500	1.094
ECMW10	53	1	65.450	48.075	114.750
ECMW11	52	2	16.350	7.938	30.050
ECMW12	49	18	0.500	0.250	0.500
ECMW13	52	20	0.500	0.250	0.500
ECMW14	52	1	12.700	5.300	24.500
ECMW15	51	16	4.520	2.320	9.520
ECMW16	51	0	13.000	9.940	38.200
ECMW17	52	1	27.100	10.200	67.600
ECMW18	51	5	0.500	0.250	0.500
ECMW19	42	15	0.500	0.250	0.500
ECMW20	42	15	0.500	0.350	0.500
ECMW21	42	15	2.250	1.630	2.970
ECMW22	42	16	1.105	0.500	1.810
ECMW4	52	1	0.500	0.250	0.517
ECMW5	52	3	11.000	3.535	45.900
ECMW6	54	0	1765.000	1043.750	5265.000
ECMW7	54	0	288.000	147.750	1260.000
ECMW8	53	0	584.000	235.500	2840.000
ECMW9	51	0	28.100	25.500	31.700

H = 786.762 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW6 vs ECMW13	720.623	12.183	Yes
ECMW6 vs ECMW12	719.881	12.049	Yes
ECMW6 vs ECMW19	717.694	11.484	Yes
ECMW6 vs ECMW18	708.998	13.327	Yes
ECMW6 vs ECMW4	689.609	13.320	Yes
ECMW6 vs ECMW20	673.713	10.780	Yes
ECMW6 vs CNTL	657.374	14.681	Yes
ECMW6 vs ECMW22	604.697	9.554	Yes

ECMW6 vs ECMW21	525.491	8.408	Yes
ECMW6 vs ECMW15	444.596	7.727	Yes
ECMW6 vs ECMW14	384.551	7.428	Yes
ECMW6 vs ECMW11	341.699	6.566	Yes
ECMW6 vs ECMW5	329.261	6.294	Yes
ECMW6 vs ECMW16	312.541	6.037	Yes
ECMW6 vs ECMW17	287.208	5.547	Yes
ECMW6 vs ECMW9	266.492	5.147	Yes
ECMW6 vs ECMW10	157.591	3.059	No
ECMW6 vs ECMW7	60.935	1.194	Do Not Test
ECMW6 vs ECMW8	45.365	0.885	Do Not Test
ECMW8 vs ECMW13	675.258	11.376	Yes
ECMW8 vs ECMW12	674.516	11.251	Yes
ECMW8 vs ECMW19	672.329	10.724	Yes
ECMW8 vs ECMW18	663.632	12.420	Yes
ECMW8 vs ECMW4	644.244	12.387	Yes
ECMW8 vs ECMW20	628.348	10.023	Yes
ECMW8 vs CNTL	612.009	13.585	Yes
ECMW8 vs ECMW22	559.331	8.810	Yes
ECMW8 vs ECMW21	480.125	7.658	Yes
ECMW8 vs ECMW15	399.231	6.913	Yes
ECMW8 vs ECMW14	339.185	6.522	Yes
ECMW8 vs ECMW11	296.334	5.669	Yes
ECMW8 vs ECMW5	283.896	5.403	Yes
ECMW8 vs ECMW16	267.176	5.137	Yes
ECMW8 vs ECMW17	241.842	4.650	Yes
ECMW8 vs ECMW9	221.127	4.252	Yes
ECMW8 vs ECMW10	112.226	2.168	Do Not Test
ECMW8 vs ECMW7	15.570	0.304	Do Not Test
ECMW7 vs ECMW13	659.688	11.153	Yes
ECMW7 vs ECMW12	658.946	11.029	Yes
ECMW7 vs ECMW19	656.759	10.509	Yes
ECMW7 vs ECMW18	648.062	12.182	Yes
ECMW7 vs ECMW4	628.674	12.143	Yes
ECMW7 vs ECMW20	612.778	9.805	Yes
ECMW7 vs CNTL	596.439	13.320	Yes
ECMW7 vs ECMW22	543.761	8.591	Yes
ECMW7 vs ECMW21	464.556	7.433	Yes
ECMW7 vs ECMW15	383.661	6.668	Yes
ECMW7 vs ECMW14	323.615	6.251	Yes
ECMW7 vs ECMW11	280.764	5.395	Yes
ECMW7 vs ECMW5	268.326	5.129	Yes
ECMW7 vs ECMW16	251.606	4.860	Yes
ECMW7 vs ECMW17	226.272	4.370	Yes
ECMW7 vs ECMW9	205.557	3.970	Yes
ECMW7 vs ECMW10	96.656	1.876	Do Not Test
ECMW10 vs ECMW13	563.032	9.451	Yes
ECMW10 vs ECMW12	562.290	9.346	Yes
ECMW10 vs ECMW19	560.104	8.905	Yes
ECMW10 vs ECMW18	551.407	10.274	Yes
ECMW10 vs ECMW4	532.019	10.181	Yes
ECMW10 vs ECMW20	516.122	8.206	Yes
ECMW10 vs CNTL	499.783	11.025	Yes
ECMW10 vs ECMW22	447.106	7.020	Yes
ECMW10 vs ECMW21	367.900	5.849	Yes
ECMW10 vs ECMW15	287.005	4.951	Yes

ECMW10 vs ECMW14	226.960	4.343	Yes
ECMW10 vs ECMW11	184.108	3.506	No
ECMW10 vs ECMW5	171.671	3.252	Do Not Test
ECMW10 vs ECMW16	154.950	2.965	Do Not Test
ECMW10 vs ECMW17	129.617	2.481	Do Not Test
ECMW10 vs ECMW9	108.901	2.084	Do Not Test
ECMW9 vs ECMW13	454.131	7.595	Yes
ECMW9 vs ECMW12	453.389	7.508	Yes
ECMW9 vs ECMW19	451.203	7.150	Yes
ECMW9 vs ECMW18	442.506	8.207	Yes
ECMW9 vs ECMW4	423.118	8.058	Yes
ECMW9 vs ECMW20	407.221	6.453	Yes
ECMW9 vs CNTL	390.882	8.567	Yes
ECMW9 vs ECMW22	338.205	5.293	Yes
ECMW9 vs ECMW21	258.999	4.104	Yes
ECMW9 vs ECMW15	178.104	3.060	No
ECMW9 vs ECMW14	118.059	2.248	Do Not Test
ECMW9 vs ECMW11	75.207	1.425	Do Not Test
ECMW9 vs ECMW5	62.770	1.183	Do Not Test
ECMW9 vs ECMW16	46.049	0.877	Do Not Test
ECMW9 vs ECMW17	20.716	0.395	Do Not Test
ECMW17 vs ECMW13	433.416	7.248	Yes
ECMW17 vs ECMW12	432.673	7.165	Yes
ECMW17 vs ECMW19	430.487	6.822	Yes
ECMW17 vs ECMW18	421.790	7.823	Yes
ECMW17 vs ECMW4	402.402	7.664	Yes
ECMW17 vs ECMW20	386.505	6.125	Yes
ECMW17 vs CNTL	370.166	8.113	Yes
ECMW17 vs ECMW22	317.489	4.969	Yes
ECMW17 vs ECMW21	238.283	3.776	Yes
ECMW17 vs ECMW15	157.389	2.704	Do Not Test
ECMW17 vs ECMW14	97.343	1.854	Do Not Test
ECMW17 vs ECMW11	54.491	1.033	Do Not Test
ECMW17 vs ECMW5	42.054	0.793	Do Not Test
ECMW17 vs ECMW16	25.333	0.482	Do Not Test
ECMW16 vs ECMW13	408.082	6.825	Yes
ECMW16 vs ECMW12	407.340	6.746	Yes
ECMW16 vs ECMW19	405.154	6.420	Yes
ECMW16 vs ECMW18	396.457	7.353	Yes
ECMW16 vs ECMW4	377.069	7.181	Yes
ECMW16 vs ECMW20	361.172	5.723	Yes
ECMW16 vs CNTL	344.833	7.558	Yes
ECMW16 vs ECMW22	292.156	4.572	Yes
ECMW16 vs ECMW21	212.950	3.374	No
ECMW16 vs ECMW15	132.055	2.269	Do Not Test
ECMW16 vs ECMW14	72.010	1.371	Do Not Test
ECMW16 vs ECMW11	29.158	0.553	Do Not Test
ECMW16 vs ECMW5	16.720	0.315	Do Not Test
ECMW5 vs ECMW13	391.362	6.494	Yes
ECMW5 vs ECMW12	390.619	6.419	Yes
ECMW5 vs ECMW19	388.433	6.112	Yes
ECMW5 vs ECMW18	379.736	6.976	Yes
ECMW5 vs ECMW4	360.348	6.794	Yes
ECMW5 vs ECMW20	344.452	5.420	Yes
ECMW5 vs CNTL	328.113	7.096	Yes
ECMW5 vs ECMW22	275.435	4.281	Yes

ECMW5 vs ECMW21	196.229	3.088	Do Not Test
ECMW5 vs ECMW15	115.335	1.965	Do Not Test
ECMW5 vs ECMW14	55.289	1.042	Do Not Test
ECMW5 vs ECMW11	12.438	0.233	Do Not Test
ECMW11 vs ECMW13	378.924	6.313	Yes
ECMW11 vs ECMW12	378.182	6.239	Yes
ECMW11 vs ECMW19	375.996	5.938	Yes
ECMW11 vs ECMW18	367.299	6.780	Yes
ECMW11 vs ECMW4	347.911	6.593	Yes
ECMW11 vs ECMW20	332.014	5.243	Yes
ECMW11 vs CNTL	315.675	6.874	Yes
ECMW11 vs ECMW22	262.998	4.102	Yes
ECMW11 vs ECMW21	183.792	2.902	Do Not Test
ECMW11 vs ECMW15	102.897	1.761	Do Not Test
ECMW11 vs ECMW14	42.852	0.812	Do Not Test
ECMW14 vs ECMW13	336.073	5.620	Yes
ECMW14 vs ECMW12	335.330	5.553	Yes
ECMW14 vs ECMW19	333.144	5.279	Yes
ECMW14 vs ECMW18	324.447	6.018	Yes
ECMW14 vs ECMW4	305.059	5.810	Yes
ECMW14 vs ECMW20	289.162	4.582	Yes
ECMW14 vs CNTL	272.823	5.980	Yes
ECMW14 vs ECMW22	220.146	3.445	No
ECMW14 vs ECMW21	140.940	2.233	Do Not Test
ECMW14 vs ECMW15	60.045	1.032	Do Not Test
ECMW15 vs ECMW13	276.027	4.256	Yes
ECMW15 vs ECMW12	275.285	4.210	Yes
ECMW15 vs ECMW19	273.098	4.021	Yes
ECMW15 vs ECMW18	264.402	4.446	Yes
ECMW15 vs ECMW4	245.013	4.210	Yes
ECMW15 vs ECMW20	229.117	3.374	No
ECMW15 vs CNTL	212.778	4.086	Do Not Test
ECMW15 vs ECMW22	160.101	2.332	Do Not Test
ECMW15 vs ECMW21	80.895	1.191	Do Not Test
ECMW21 vs ECMW13	195.133	2.816	No
ECMW21 vs ECMW12	194.390	2.785	Do Not Test
ECMW21 vs ECMW19	192.204	2.663	Do Not Test
ECMW21 vs ECMW18	183.507	2.855	Do Not Test
ECMW21 vs ECMW4	164.119	2.601	Do Not Test
ECMW21 vs ECMW20	148.222	2.054	Do Not Test
ECMW21 vs CNTL	131.883	2.293	Do Not Test
ECMW21 vs ECMW22	79.206	1.087	Do Not Test
ECMW22 vs ECMW13	115.927	1.656	Do Not Test
ECMW22 vs ECMW12	115.184	1.634	Do Not Test
ECMW22 vs ECMW19	112.998	1.551	Do Not Test
ECMW22 vs ECMW18	104.301	1.603	Do Not Test
ECMW22 vs ECMW4	84.913	1.329	Do Not Test
ECMW22 vs ECMW20	69.016	0.947	Do Not Test
ECMW22 vs CNTL	52.677	0.902	Do Not Test
CNTL vs ECMW13	63.249	1.175	Do Not Test
CNTL vs ECMW12	62.507	1.147	Do Not Test
CNTL vs ECMW19	60.321	1.049	Do Not Test
CNTL vs ECMW18	51.624	1.093	Do Not Test
CNTL vs ECMW4	32.236	0.707	Do Not Test
CNTL vs ECMW20	16.339	0.284	Do Not Test
ECMW20 vs ECMW13	46.910	0.677	Do Not Test

ECMW20 vs ECMW12	46.168	0.661	Do Not Test
ECMW20 vs ECMW19	43.981	0.609	Do Not Test
ECMW20 vs ECMW18	35.285	0.549	Do Not Test
ECMW20 vs ECMW4	15.897	0.252	Do Not Test
ECMW4 vs ECMW13	31.014	0.519	Do Not Test
ECMW4 vs ECMW12	30.271	0.501	Do Not Test
ECMW4 vs ECMW19	28.085	0.445	Do Not Test
ECMW4 vs ECMW18	19.388	0.360	Do Not Test
ECMW18 vs ECMW13	11.626	0.190	Do Not Test
ECMW18 vs ECMW12	10.883	0.177	Do Not Test
ECMW18 vs ECMW19	8.697	0.135	Do Not Test
ECMW19 vs ECMW13	2.929	0.0423	Do Not Test
ECMW19 vs ECMW12	2.186	0.0313	Do Not Test
ECMW12 vs ECMW13	0.742	0.0111	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:30:45 PM

Data source: Data 1 in Data for Stats

Dependent Variable: pH (s.u.)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:30:45 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	3	5.480	5.070	6.000
ECMW10	53	1	4.420	4.060	4.925
ECMW11	52	1	4.340	4.110	4.800
ECMW12	49	1	5.800	5.593	6.015
ECMW13	52	3	4.970	4.730	5.285
ECMW14	52	2	4.910	4.500	5.310
ECMW15	51	2	4.860	4.330	5.335
ECMW16	51	1	4.610	4.265	5.072
ECMW17	52	1	4.450	4.070	5.100
ECMW18	51	2	5.640	5.220	6.110
ECMW19	42	1	5.900	5.515	6.250
ECMW20	42	2	5.620	5.282	6.053
ECMW21	42	1	5.370	4.700	5.880
ECMW22	42	0	5.840	5.583	6.235
ECMW4	52	1	4.030	3.750	4.350
ECMW5	52	1	5.030	4.500	5.600
ECMW6	54	2	4.290	3.775	4.597
ECMW7	54	2	4.460	3.982	5.285
ECMW8	53	2	3.900	3.620	4.290
ECMW9	51	1	5.505	5.313	5.785

H = 410.148 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW19 vs ECMW8	613.417	9.490	Yes
ECMW19 vs ECMW4	606.446	9.382	Yes
ECMW19 vs ECMW6	527.293	8.193	Yes
ECMW19 vs ECMW11	479.250	7.414	Yes
ECMW19 vs ECMW10	477.812	7.424	Yes
ECMW19 vs ECMW7	426.389	6.625	Yes
ECMW19 vs ECMW17	420.132	6.500	Yes
ECMW19 vs ECMW16	402.996	6.207	Yes

ECMW19 vs ECMW15	362.629	5.560	Yes
ECMW19 vs ECMW14	335.366	5.165	Yes
ECMW19 vs ECMW13	283.486	4.346	Yes
ECMW19 vs ECMW5	271.583	4.202	Yes
ECMW19 vs ECMW21	213.854	3.142	No
ECMW19 vs CNTL	137.377	2.524	Do Not Test
ECMW19 vs ECMW9	110.806	1.707	Do Not Test
ECMW19 vs ECMW18	97.639	1.497	Do Not Test
ECMW19 vs ECMW20	79.163	1.156	Do Not Test
ECMW19 vs ECMW12	30.340	0.463	Do Not Test
ECMW19 vs ECMW22	0.309	0.00457	Do Not Test
ECMW22 vs ECMW8	613.108	9.548	Yes
ECMW22 vs ECMW4	606.137	9.440	Yes
ECMW22 vs ECMW6	526.984	8.243	Yes
ECMW22 vs ECMW11	478.941	7.459	Yes
ECMW22 vs ECMW10	477.503	7.469	Yes
ECMW22 vs ECMW7	426.080	6.665	Yes
ECMW22 vs ECMW17	419.824	6.538	Yes
ECMW22 vs ECMW16	402.687	6.243	Yes
ECMW22 vs ECMW15	362.320	5.591	Yes
ECMW22 vs ECMW14	335.057	5.195	Yes
ECMW22 vs ECMW13	283.177	4.370	Yes
ECMW22 vs ECMW5	271.275	4.225	Yes
ECMW22 vs ECMW21	213.545	3.156	Do Not Test
ECMW22 vs CNTL	137.068	2.542	Do Not Test
ECMW22 vs ECMW9	110.497	1.713	Do Not Test
ECMW22 vs ECMW18	97.330	1.502	Do Not Test
ECMW22 vs ECMW20	78.854	1.158	Do Not Test
ECMW22 vs ECMW12	30.031	0.461	Do Not Test
ECMW12 vs ECMW8	583.077	9.409	Yes
ECMW12 vs ECMW4	576.106	9.296	Yes
ECMW12 vs ECMW6	496.953	8.057	Yes
ECMW12 vs ECMW11	448.910	7.244	Yes
ECMW12 vs ECMW10	447.472	7.255	Yes
ECMW12 vs ECMW7	396.049	6.421	Yes
ECMW12 vs ECMW17	389.792	6.290	Yes
ECMW12 vs ECMW16	372.655	5.984	Yes
ECMW12 vs ECMW15	332.288	5.310	Yes
ECMW12 vs ECMW14	305.025	4.898	Yes
ECMW12 vs ECMW13	253.146	4.045	Yes
ECMW12 vs ECMW5	241.243	3.893	Yes
ECMW12 vs ECMW21	183.513	2.800	Do Not Test
ECMW12 vs CNTL	107.037	2.089	Do Not Test
ECMW12 vs ECMW9	80.465	1.292	Do Not Test
ECMW12 vs ECMW18	67.299	1.075	Do Not Test
ECMW12 vs ECMW20	48.823	0.740	Do Not Test
ECMW20 vs ECMW8	534.254	8.209	Yes
ECMW20 vs ECMW4	527.283	8.101	Yes
ECMW20 vs ECMW6	448.130	6.915	Yes
ECMW20 vs ECMW11	400.087	6.147	Yes
ECMW20 vs ECMW10	398.649	6.151	Yes
ECMW20 vs ECMW7	347.226	5.358	Yes
ECMW20 vs ECMW17	340.969	5.239	Yes
ECMW20 vs ECMW16	323.832	4.954	Yes
ECMW20 vs ECMW15	283.466	4.317	Yes
ECMW20 vs ECMW14	256.202	3.919	Yes

ECMW20 vs ECMW13	204.323	3.112	No
ECMW20 vs ECMW5	192.420	2.956	Do Not Test
ECMW20 vs ECMW21	134.691	1.967	Do Not Test
ECMW20 vs CNTL	58.214	1.059	Do Not Test
ECMW20 vs ECMW9	31.643	0.484	Do Not Test
ECMW20 vs ECMW18	18.476	0.281	Do Not Test
ECMW18 vs ECMW8	515.778	8.367	Yes
ECMW18 vs ECMW4	508.807	8.254	Yes
ECMW18 vs ECMW6	429.654	7.003	Yes
ECMW18 vs ECMW11	381.611	6.191	Yes
ECMW18 vs ECMW10	380.173	6.196	Yes
ECMW18 vs ECMW7	328.750	5.358	Yes
ECMW18 vs ECMW17	322.494	5.232	Yes
ECMW18 vs ECMW16	305.357	4.929	Yes
ECMW18 vs ECMW15	264.990	4.256	Yes
ECMW18 vs ECMW14	237.727	3.838	Yes
ECMW18 vs ECMW13	185.847	2.985	Do Not Test
ECMW18 vs ECMW5	173.945	2.822	Do Not Test
ECMW18 vs ECMW21	116.215	1.782	Do Not Test
ECMW18 vs CNTL	39.738	0.782	Do Not Test
ECMW18 vs ECMW9	13.167	0.213	Do Not Test
ECMW9 vs ECMW8	502.611	8.195	Yes
ECMW9 vs ECMW4	495.641	8.082	Yes
ECMW9 vs ECMW6	416.487	6.824	Yes
ECMW9 vs ECMW11	368.445	6.008	Yes
ECMW9 vs ECMW10	367.007	6.013	Yes
ECMW9 vs ECMW7	315.583	5.170	Yes
ECMW9 vs ECMW17	309.327	5.044	Yes
ECMW9 vs ECMW16	292.190	4.741	Yes
ECMW9 vs ECMW15	251.823	4.065	Yes
ECMW9 vs ECMW14	224.560	3.644	No
ECMW9 vs ECMW13	172.680	2.788	Do Not Test
ECMW9 vs ECMW5	160.778	2.622	Do Not Test
ECMW9 vs ECMW21	103.048	1.587	Do Not Test
ECMW9 vs CNTL	26.571	0.527	Do Not Test
CNTL vs ECMW8	476.040	9.506	Yes
CNTL vs ECMW4	469.069	9.366	Yes
CNTL vs ECMW6	389.916	7.842	Yes
CNTL vs ECMW11	341.873	6.827	Yes
CNTL vs ECMW10	340.435	6.847	Yes
CNTL vs ECMW7	289.012	5.813	Yes
CNTL vs ECMW17	282.756	5.646	Yes
CNTL vs ECMW16	265.619	5.265	Yes
CNTL vs ECMW15	225.252	4.431	Yes
CNTL vs ECMW14	197.989	3.924	Do Not Test
CNTL vs ECMW13	146.109	2.874	Do Not Test
CNTL vs ECMW5	134.206	2.680	Do Not Test
CNTL vs ECMW21	76.477	1.405	Do Not Test
ECMW21 vs ECMW8	399.563	6.181	Yes
ECMW21 vs ECMW4	392.593	6.074	Yes
ECMW21 vs ECMW6	313.439	4.870	Yes
ECMW21 vs ECMW11	265.396	4.106	Yes
ECMW21 vs ECMW10	263.958	4.101	Yes
ECMW21 vs ECMW7	212.535	3.302	No
ECMW21 vs ECMW17	206.279	3.191	Do Not Test
ECMW21 vs ECMW16	189.142	2.913	Do Not Test

ECMW21 vs ECMW15	148.775	2.281	Do Not Test
ECMW21 vs ECMW14	121.512	1.872	Do Not Test
ECMW21 vs ECMW13	69.632	1.068	Do Not Test
ECMW21 vs ECMW5	57.730	0.893	Do Not Test
ECMW5 vs ECMW8	341.833	5.602	Yes
ECMW5 vs ECMW4	334.863	5.487	Yes
ECMW5 vs ECMW6	255.709	4.211	Yes
ECMW5 vs ECMW11	207.667	3.403	No
ECMW5 vs ECMW10	206.229	3.396	Do Not Test
ECMW5 vs ECMW7	154.806	2.549	Do Not Test
ECMW5 vs ECMW17	148.549	2.434	Do Not Test
ECMW5 vs ECMW16	131.412	2.143	Do Not Test
ECMW5 vs ECMW15	91.045	1.477	Do Not Test
ECMW5 vs ECMW14	63.782	1.040	Do Not Test
ECMW5 vs ECMW13	11.902	0.193	Do Not Test
ECMW13 vs ECMW8	329.931	5.352	Yes
ECMW13 vs ECMW4	322.960	5.239	Yes
ECMW13 vs ECMW6	243.807	3.974	Yes
ECMW13 vs ECMW11	195.764	3.176	Do Not Test
ECMW13 vs ECMW10	194.326	3.167	Do Not Test
ECMW13 vs ECMW7	142.903	2.329	Do Not Test
ECMW13 vs ECMW17	136.647	2.217	Do Not Test
ECMW13 vs ECMW16	119.510	1.929	Do Not Test
ECMW13 vs ECMW15	79.143	1.271	Do Not Test
ECMW13 vs ECMW14	51.880	0.838	Do Not Test
ECMW14 vs ECMW8	278.051	4.534	Yes
ECMW14 vs ECMW4	271.081	4.420	Yes
ECMW14 vs ECMW6	191.927	3.144	No
ECMW14 vs ECMW11	143.885	2.346	Do Not Test
ECMW14 vs ECMW10	142.447	2.334	Do Not Test
ECMW14 vs ECMW7	91.023	1.491	Do Not Test
ECMW14 vs ECMW17	84.767	1.382	Do Not Test
ECMW14 vs ECMW16	67.630	1.097	Do Not Test
ECMW14 vs ECMW15	27.263	0.440	Do Not Test
ECMW15 vs ECMW8	250.788	4.068	Yes
ECMW15 vs ECMW4	243.818	3.955	Yes
ECMW15 vs ECMW6	164.664	2.684	Do Not Test
ECMW15 vs ECMW11	116.621	1.892	Do Not Test
ECMW15 vs ECMW10	115.183	1.877	Do Not Test
ECMW15 vs ECMW7	63.760	1.039	Do Not Test
ECMW15 vs ECMW17	57.504	0.933	Do Not Test
ECMW15 vs ECMW16	40.367	0.652	Do Not Test
ECMW16 vs ECMW8	210.421	3.431	No
ECMW16 vs ECMW4	203.451	3.317	Do Not Test
ECMW16 vs ECMW6	124.297	2.036	Do Not Test
ECMW16 vs ECMW11	76.255	1.243	Do Not Test
ECMW16 vs ECMW10	74.817	1.226	Do Not Test
ECMW16 vs ECMW7	23.393	0.383	Do Not Test
ECMW16 vs ECMW17	17.137	0.279	Do Not Test
ECMW17 vs ECMW8	193.284	3.167	Do Not Test
ECMW17 vs ECMW4	186.314	3.053	Do Not Test
ECMW17 vs ECMW6	107.160	1.765	Do Not Test
ECMW17 vs ECMW11	59.118	0.969	Do Not Test
ECMW17 vs ECMW10	57.680	0.950	Do Not Test
ECMW17 vs ECMW7	6.257	0.103	Do Not Test
ECMW7 vs ECMW8	187.028	3.080	Do Not Test

ECMW7 vs ECMW4	180.057	2.965	Do Not Test
ECMW7 vs ECMW6	100.904	1.670	Do Not Test
ECMW7 vs ECMW11	52.861	0.870	Do Not Test
ECMW7 vs ECMW10	51.423	0.851	Do Not Test
ECMW10 vs ECMW8	135.605	2.233	Do Not Test
ECMW10 vs ECMW4	128.634	2.118	Do Not Test
ECMW10 vs ECMW6	49.481	0.819	Do Not Test
ECMW10 vs ECMW11	1.438	0.0237	Do Not Test
ECMW11 vs ECMW8	134.167	2.199	Do Not Test
ECMW11 vs ECMW4	127.196	2.084	Do Not Test
ECMW11 vs ECMW6	48.043	0.791	Do Not Test
ECMW6 vs ECMW8	86.124	1.418	Do Not Test
ECMW6 vs ECMW4	79.153	1.303	Do Not Test
ECMW4 vs ECMW8	6.971	0.114	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:31:02 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Phosphorus (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:31:02 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	129	0.0600	0.0245	0.193
ECMW10	53	46	0.0200	0.0200	0.0300
ECMW11	52	45	0.0200	0.0200	0.0440
ECMW12	49	42	0.145	0.0890	0.307
ECMW13	52	45	0.0210	0.0200	0.0610
ECMW14	52	45	0.0200	0.0200	0.0200
ECMW15	51	44	0.0200	0.0200	0.0210
ECMW16	51	44	0.0200	0.0200	0.0200
ECMW17	52	45	0.0200	0.0200	0.0850
ECMW18	51	45	0.410	0.177	0.728
ECMW19	42	36	0.0835	0.0645	0.130
ECMW20	42	36	0.0380	0.0200	0.108
ECMW21	42	36	0.0210	0.0200	0.0505
ECMW22	42	36	0.0345	0.0200	0.104
ECMW4	52	45	0.0200	0.0200	0.0200
ECMW5	52	45	0.0200	0.0200	0.0200
ECMW6	54	47	0.0200	0.0200	0.0270
ECMW7	54	48	0.0675	0.0200	0.112
ECMW8	53	46	0.0200	0.0200	0.0310
ECMW9	51	44	0.248	0.230	0.307

H = 82.597 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW18 vs ECMW14	103.083	4.322	Yes
ECMW18 vs ECMW5	103.083	4.322	Yes
ECMW18 vs ECMW16	96.155	4.032	Yes
ECMW18 vs ECMW4	95.798	4.017	Yes
ECMW18 vs ECMW15	92.369	3.873	Yes
ECMW18 vs ECMW10	88.512	3.711	Yes
ECMW18 vs ECMW11	82.869	3.475	No
ECMW18 vs ECMW8	80.940	3.394	Do Not Test

ECMW18 vs ECMW6	78.583	3.295	Do Not Test
ECMW18 vs ECMW17	76.298	3.199	Do Not Test
ECMW18 vs ECMW21	74.917	3.027	Do Not Test
ECMW18 vs ECMW13	70.655	2.963	Do Not Test
ECMW18 vs ECMW22	60.417	2.441	Do Not Test
ECMW18 vs ECMW20	58.000	2.343	Do Not Test
ECMW18 vs ECMW7	53.250	2.152	Do Not Test
ECMW18 vs CNTL	43.060	2.170	Do Not Test
ECMW18 vs ECMW19	28.750	1.162	Do Not Test
ECMW18 vs ECMW12	13.298	0.558	Do Not Test
ECMW18 vs ECMW9	8.083	0.339	Do Not Test
ECMW9 vs ECMW14	95.000	4.146	Yes
ECMW9 vs ECMW5	95.000	4.146	Yes
ECMW9 vs ECMW16	88.071	3.844	Yes
ECMW9 vs ECMW4	87.714	3.828	Yes
ECMW9 vs ECMW15	84.286	3.678	Yes
ECMW9 vs ECMW10	80.429	3.510	No
ECMW9 vs ECMW11	74.786	3.264	Do Not Test
ECMW9 vs ECMW8	72.857	3.180	Do Not Test
ECMW9 vs ECMW6	70.500	3.077	Do Not Test
ECMW9 vs ECMW17	68.214	2.977	Do Not Test
ECMW9 vs ECMW21	66.833	2.802	Do Not Test
ECMW9 vs ECMW13	62.571	2.731	Do Not Test
ECMW9 vs ECMW22	52.333	2.194	Do Not Test
ECMW9 vs ECMW20	49.917	2.093	Do Not Test
ECMW9 vs ECMW7	45.167	1.894	Do Not Test
ECMW9 vs CNTL	34.976	1.869	Do Not Test
ECMW9 vs ECMW19	20.667	0.867	Do Not Test
ECMW9 vs ECMW12	5.214	0.228	Do Not Test
ECMW12 vs ECMW14	89.786	3.918	Yes
ECMW12 vs ECMW5	89.786	3.918	Yes
ECMW12 vs ECMW16	82.857	3.616	No
ECMW12 vs ECMW4	82.500	3.600	Do Not Test
ECMW12 vs ECMW15	79.071	3.451	Do Not Test
ECMW12 vs ECMW10	75.214	3.282	Do Not Test
ECMW12 vs ECMW11	69.571	3.036	Do Not Test
ECMW12 vs ECMW8	67.643	2.952	Do Not Test
ECMW12 vs ECMW6	65.286	2.849	Do Not Test
ECMW12 vs ECMW17	63.000	2.749	Do Not Test
ECMW12 vs ECMW21	61.619	2.584	Do Not Test
ECMW12 vs ECMW13	57.357	2.503	Do Not Test
ECMW12 vs ECMW22	47.119	1.976	Do Not Test
ECMW12 vs ECMW20	44.702	1.874	Do Not Test
ECMW12 vs ECMW7	39.952	1.675	Do Not Test
ECMW12 vs CNTL	29.762	1.591	Do Not Test
ECMW12 vs ECMW19	15.452	0.648	Do Not Test
ECMW19 vs ECMW14	74.333	3.117	No
ECMW19 vs ECMW5	74.333	3.117	Do Not Test
ECMW19 vs ECMW16	67.405	2.826	Do Not Test
ECMW19 vs ECMW4	67.048	2.811	Do Not Test
ECMW19 vs ECMW15	63.619	2.668	Do Not Test
ECMW19 vs ECMW10	59.762	2.506	Do Not Test
ECMW19 vs ECMW11	54.119	2.269	Do Not Test
ECMW19 vs ECMW8	52.190	2.188	Do Not Test
ECMW19 vs ECMW6	49.833	2.089	Do Not Test
ECMW19 vs ECMW17	47.548	1.994	Do Not Test

ECMW19 vs ECMW21	46.167	1.865	Do Not Test
ECMW19 vs ECMW13	41.905	1.757	Do Not Test
ECMW19 vs ECMW22	31.667	1.279	Do Not Test
ECMW19 vs ECMW20	29.250	1.182	Do Not Test
ECMW19 vs ECMW7	24.500	0.990	Do Not Test
ECMW19 vs CNTL	14.310	0.721	Do Not Test
CNTL vs ECMW14	60.024	3.208	Do Not Test
CNTL vs ECMW5	60.024	3.208	Do Not Test
CNTL vs ECMW16	53.095	2.838	Do Not Test
CNTL vs ECMW4	52.738	2.819	Do Not Test
CNTL vs ECMW15	49.310	2.636	Do Not Test
CNTL vs ECMW10	45.452	2.429	Do Not Test
CNTL vs ECMW11	39.810	2.128	Do Not Test
CNTL vs ECMW8	37.881	2.025	Do Not Test
CNTL vs ECMW6	35.524	1.899	Do Not Test
CNTL vs ECMW17	33.238	1.777	Do Not Test
CNTL vs ECMW21	31.857	1.605	Do Not Test
CNTL vs ECMW13	27.595	1.475	Do Not Test
CNTL vs ECMW22	17.357	0.875	Do Not Test
CNTL vs ECMW20	14.940	0.753	Do Not Test
CNTL vs ECMW7	10.190	0.514	Do Not Test
ECMW7 vs ECMW14	49.833	2.089	Do Not Test
ECMW7 vs ECMW5	49.833	2.089	Do Not Test
ECMW7 vs ECMW16	42.905	1.799	Do Not Test
ECMW7 vs ECMW4	42.548	1.784	Do Not Test
ECMW7 vs ECMW15	39.119	1.640	Do Not Test
ECMW7 vs ECMW10	35.262	1.479	Do Not Test
ECMW7 vs ECMW11	29.619	1.242	Do Not Test
ECMW7 vs ECMW8	27.690	1.161	Do Not Test
ECMW7 vs ECMW6	25.333	1.062	Do Not Test
ECMW7 vs ECMW17	23.048	0.966	Do Not Test
ECMW7 vs ECMW21	21.667	0.875	Do Not Test
ECMW7 vs ECMW13	17.405	0.730	Do Not Test
ECMW7 vs ECMW22	7.167	0.290	Do Not Test
ECMW7 vs ECMW20	4.750	0.192	Do Not Test
ECMW20 vs ECMW14	45.083	1.890	Do Not Test
ECMW20 vs ECMW5	45.083	1.890	Do Not Test
ECMW20 vs ECMW16	38.155	1.600	Do Not Test
ECMW20 vs ECMW4	37.798	1.585	Do Not Test
ECMW20 vs ECMW15	34.369	1.441	Do Not Test
ECMW20 vs ECMW10	30.512	1.279	Do Not Test
ECMW20 vs ECMW11	24.869	1.043	Do Not Test
ECMW20 vs ECMW8	22.940	0.962	Do Not Test
ECMW20 vs ECMW6	20.583	0.863	Do Not Test
ECMW20 vs ECMW17	18.298	0.767	Do Not Test
ECMW20 vs ECMW21	16.917	0.684	Do Not Test
ECMW20 vs ECMW13	12.655	0.531	Do Not Test
ECMW20 vs ECMW22	2.417	0.0976	Do Not Test
ECMW22 vs ECMW14	42.667	1.789	Do Not Test
ECMW22 vs ECMW5	42.667	1.789	Do Not Test
ECMW22 vs ECMW16	35.738	1.498	Do Not Test
ECMW22 vs ECMW4	35.381	1.484	Do Not Test
ECMW22 vs ECMW15	31.952	1.340	Do Not Test
ECMW22 vs ECMW10	28.095	1.178	Do Not Test
ECMW22 vs ECMW11	22.452	0.941	Do Not Test
ECMW22 vs ECMW8	20.524	0.861	Do Not Test

ECMW22 vs ECMW6	18.167	0.762	Do Not Test
ECMW22 vs ECMW17	15.881	0.666	Do Not Test
ECMW22 vs ECMW21	14.500	0.586	Do Not Test
ECMW22 vs ECMW13	10.238	0.429	Do Not Test
ECMW13 vs ECMW14	32.429	1.415	Do Not Test
ECMW13 vs ECMW5	32.429	1.415	Do Not Test
ECMW13 vs ECMW16	25.500	1.113	Do Not Test
ECMW13 vs ECMW4	25.143	1.097	Do Not Test
ECMW13 vs ECMW15	21.714	0.948	Do Not Test
ECMW13 vs ECMW10	17.857	0.779	Do Not Test
ECMW13 vs ECMW11	12.214	0.533	Do Not Test
ECMW13 vs ECMW8	10.286	0.449	Do Not Test
ECMW13 vs ECMW6	7.929	0.346	Do Not Test
ECMW13 vs ECMW17	5.643	0.246	Do Not Test
ECMW13 vs ECMW21	4.262	0.179	Do Not Test
ECMW21 vs ECMW14	28.167	1.181	Do Not Test
ECMW21 vs ECMW5	28.167	1.181	Do Not Test
ECMW21 vs ECMW16	21.238	0.891	Do Not Test
ECMW21 vs ECMW4	20.881	0.876	Do Not Test
ECMW21 vs ECMW15	17.452	0.732	Do Not Test
ECMW21 vs ECMW10	13.595	0.570	Do Not Test
ECMW21 vs ECMW11	7.952	0.333	Do Not Test
ECMW21 vs ECMW8	6.024	0.253	Do Not Test
ECMW21 vs ECMW6	3.667	0.154	Do Not Test
ECMW21 vs ECMW17	1.381	0.0579	Do Not Test
ECMW17 vs ECMW14	26.786	1.169	Do Not Test
ECMW17 vs ECMW5	26.786	1.169	Do Not Test
ECMW17 vs ECMW16	19.857	0.867	Do Not Test
ECMW17 vs ECMW4	19.500	0.851	Do Not Test
ECMW17 vs ECMW15	16.071	0.701	Do Not Test
ECMW17 vs ECMW10	12.214	0.533	Do Not Test
ECMW17 vs ECMW11	6.571	0.287	Do Not Test
ECMW17 vs ECMW8	4.643	0.203	Do Not Test
ECMW17 vs ECMW6	2.286	0.0998	Do Not Test
ECMW6 vs ECMW14	24.500	1.069	Do Not Test
ECMW6 vs ECMW5	24.500	1.069	Do Not Test
ECMW6 vs ECMW16	17.571	0.767	Do Not Test
ECMW6 vs ECMW4	17.214	0.751	Do Not Test
ECMW6 vs ECMW15	13.786	0.602	Do Not Test
ECMW6 vs ECMW10	9.929	0.433	Do Not Test
ECMW6 vs ECMW11	4.286	0.187	Do Not Test
ECMW6 vs ECMW8	2.357	0.103	Do Not Test
ECMW8 vs ECMW14	22.143	0.966	Do Not Test
ECMW8 vs ECMW5	22.143	0.966	Do Not Test
ECMW8 vs ECMW16	15.214	0.664	Do Not Test
ECMW8 vs ECMW4	14.857	0.648	Do Not Test
ECMW8 vs ECMW15	11.429	0.499	Do Not Test
ECMW8 vs ECMW10	7.571	0.330	Do Not Test
ECMW8 vs ECMW11	1.929	0.0842	Do Not Test
ECMW11 vs ECMW14	20.214	0.882	Do Not Test
ECMW11 vs ECMW5	20.214	0.882	Do Not Test
ECMW11 vs ECMW16	13.286	0.580	Do Not Test
ECMW11 vs ECMW4	12.929	0.564	Do Not Test
ECMW11 vs ECMW15	9.500	0.415	Do Not Test
ECMW11 vs ECMW10	5.643	0.246	Do Not Test
ECMW10 vs ECMW14	14.571	0.636	Do Not Test

ECMW10 vs ECMW5	14.571	0.636	Do Not Test
ECMW10 vs ECMW16	7.643	0.334	Do Not Test
ECMW10 vs ECMW4	7.286	0.318	Do Not Test
ECMW10 vs ECMW15	3.857	0.168	Do Not Test
ECMW15 vs ECMW14	10.714	0.468	Do Not Test
ECMW15 vs ECMW5	10.714	0.468	Do Not Test
ECMW15 vs ECMW16	3.786	0.165	Do Not Test
ECMW15 vs ECMW4	3.429	0.150	Do Not Test
ECMW4 vs ECMW14	7.286	0.318	Do Not Test
ECMW4 vs ECMW5	7.286	0.318	Do Not Test
ECMW4 vs ECMW16	0.357	0.0156	Do Not Test
ECMW16 vs ECMW14	6.929	0.302	Do Not Test
ECMW16 vs ECMW5	6.929	0.302	Do Not Test
ECMW5 vs ECMW14	0.000	0.000	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:31:34 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Total Phosphorus (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:31:34 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	135	0.161	0.0200	0.236
ECMW10	53	48	0.0200	0.0200	0.0285
ECMW11	52	47	0.0200	0.0200	0.0305
ECMW12	49	44	0.0570	0.0380	0.271
ECMW13	52	47	0.0200	0.0200	0.0405
ECMW14	52	47	0.0200	0.0200	0.0895
ECMW15	51	46	0.0200	0.0200	0.0215
ECMW16	51	46	0.0200	0.0200	0.0200
ECMW17	52	47	0.0200	0.0200	0.0200
ECMW18	51	45	0.344	0.181	0.665
ECMW19	42	37	0.132	0.0485	0.230
ECMW20	42	37	0.0870	0.0370	0.184
ECMW21	42	37	0.0200	0.0200	0.0225
ECMW22	42	37	0.0610	0.0400	0.122
ECMW4	52	47	0.0200	0.0200	0.0200
ECMW5	52	47	0.0200	0.0200	0.0200
ECMW6	54	47	0.0200	0.0200	0.0200
ECMW7	54	47	0.0200	0.0200	0.0910
ECMW8	53	48	0.0200	0.0200	0.0200
ECMW9	51	46	0.133	0.0905	0.262

H = 71.153 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW18 vs ECMW6	69.155	3.728	Yes
ECMW18 vs ECMW5	64.583	3.199	No
ECMW18 vs ECMW8	64.583	3.199	Do Not Test
ECMW18 vs ECMW17	64.583	3.199	Do Not Test
ECMW18 vs ECMW16	64.583	3.199	Do Not Test
ECMW18 vs ECMW4	64.583	3.199	Do Not Test
ECMW18 vs ECMW15	58.183	2.882	Do Not Test
ECMW18 vs ECMW21	57.983	2.872	Do Not Test

ECMW18 vs ECMW10	56.683	2.808	Do Not Test
ECMW18 vs ECMW14	51.783	2.565	Do Not Test
ECMW18 vs ECMW11	50.383	2.496	Do Not Test
ECMW18 vs ECMW13	48.983	2.426	Do Not Test
ECMW18 vs ECMW7	41.440	2.234	Do Not Test
ECMW18 vs ECMW12	18.483	0.915	Do Not Test
ECMW18 vs CNTL	17.583	1.092	Do Not Test
ECMW18 vs ECMW22	15.883	0.787	Do Not Test
ECMW18 vs ECMW20	11.783	0.584	Do Not Test
ECMW18 vs ECMW19	7.483	0.371	Do Not Test
ECMW18 vs ECMW9	2.283	0.113	Do Not Test
ECMW9 vs ECMW6	66.871	3.425	No
ECMW9 vs ECMW5	62.300	2.954	Do Not Test
ECMW9 vs ECMW8	62.300	2.954	Do Not Test
ECMW9 vs ECMW17	62.300	2.954	Do Not Test
ECMW9 vs ECMW16	62.300	2.954	Do Not Test
ECMW9 vs ECMW4	62.300	2.954	Do Not Test
ECMW9 vs ECMW15	55.900	2.651	Do Not Test
ECMW9 vs ECMW21	55.700	2.641	Do Not Test
ECMW9 vs ECMW10	54.400	2.580	Do Not Test
ECMW9 vs ECMW14	49.500	2.347	Do Not Test
ECMW9 vs ECMW11	48.100	2.281	Do Not Test
ECMW9 vs ECMW13	46.700	2.215	Do Not Test
ECMW9 vs ECMW7	39.157	2.006	Do Not Test
ECMW9 vs ECMW12	16.200	0.768	Do Not Test
ECMW9 vs CNTL	15.300	0.889	Do Not Test
ECMW9 vs ECMW22	13.600	0.645	Do Not Test
ECMW9 vs ECMW20	9.500	0.451	Do Not Test
ECMW9 vs ECMW19	5.200	0.247	Do Not Test
ECMW19 vs ECMW6	61.671	3.159	Do Not Test
ECMW19 vs ECMW5	57.100	2.708	Do Not Test
ECMW19 vs ECMW8	57.100	2.708	Do Not Test
ECMW19 vs ECMW17	57.100	2.708	Do Not Test
ECMW19 vs ECMW16	57.100	2.708	Do Not Test
ECMW19 vs ECMW4	57.100	2.708	Do Not Test
ECMW19 vs ECMW15	50.700	2.404	Do Not Test
ECMW19 vs ECMW21	50.500	2.395	Do Not Test
ECMW19 vs ECMW10	49.200	2.333	Do Not Test
ECMW19 vs ECMW14	44.300	2.101	Do Not Test
ECMW19 vs ECMW11	42.900	2.034	Do Not Test
ECMW19 vs ECMW13	41.500	1.968	Do Not Test
ECMW19 vs ECMW7	33.957	1.739	Do Not Test
ECMW19 vs ECMW12	11.000	0.522	Do Not Test
ECMW19 vs CNTL	10.100	0.587	Do Not Test
ECMW19 vs ECMW22	8.400	0.398	Do Not Test
ECMW19 vs ECMW20	4.300	0.204	Do Not Test
ECMW20 vs ECMW6	57.371	2.939	Do Not Test
ECMW20 vs ECMW5	52.800	2.504	Do Not Test
ECMW20 vs ECMW8	52.800	2.504	Do Not Test
ECMW20 vs ECMW17	52.800	2.504	Do Not Test
ECMW20 vs ECMW16	52.800	2.504	Do Not Test
ECMW20 vs ECMW4	52.800	2.504	Do Not Test
ECMW20 vs ECMW15	46.400	2.200	Do Not Test
ECMW20 vs ECMW21	46.200	2.191	Do Not Test
ECMW20 vs ECMW10	44.900	2.129	Do Not Test
ECMW20 vs ECMW14	40.000	1.897	Do Not Test

ECMW20 vs ECMW11	38.600	1.831	Do Not Test
ECMW20 vs ECMW13	37.200	1.764	Do Not Test
ECMW20 vs ECMW7	29.657	1.519	Do Not Test
ECMW20 vs ECMW12	6.700	0.318	Do Not Test
ECMW20 vs CNTL	5.800	0.337	Do Not Test
ECMW20 vs ECMW22	4.100	0.194	Do Not Test
ECMW22 vs ECMW6	53.271	2.729	Do Not Test
ECMW22 vs ECMW5	48.700	2.309	Do Not Test
ECMW22 vs ECMW8	48.700	2.309	Do Not Test
ECMW22 vs ECMW17	48.700	2.309	Do Not Test
ECMW22 vs ECMW16	48.700	2.309	Do Not Test
ECMW22 vs ECMW4	48.700	2.309	Do Not Test
ECMW22 vs ECMW15	42.300	2.006	Do Not Test
ECMW22 vs ECMW21	42.100	1.996	Do Not Test
ECMW22 vs ECMW10	40.800	1.935	Do Not Test
ECMW22 vs ECMW14	35.900	1.702	Do Not Test
ECMW22 vs ECMW11	34.500	1.636	Do Not Test
ECMW22 vs ECMW13	33.100	1.570	Do Not Test
ECMW22 vs ECMW7	25.557	1.309	Do Not Test
ECMW22 vs ECMW12	2.600	0.123	Do Not Test
ECMW22 vs CNTL	1.700	0.0987	Do Not Test
CNTL vs ECMW6	51.571	3.379	Do Not Test
CNTL vs ECMW5	47.000	2.730	Do Not Test
CNTL vs ECMW8	47.000	2.730	Do Not Test
CNTL vs ECMW17	47.000	2.730	Do Not Test
CNTL vs ECMW16	47.000	2.730	Do Not Test
CNTL vs ECMW4	47.000	2.730	Do Not Test
CNTL vs ECMW15	40.600	2.358	Do Not Test
CNTL vs ECMW21	40.400	2.346	Do Not Test
CNTL vs ECMW10	39.100	2.271	Do Not Test
CNTL vs ECMW14	34.200	1.986	Do Not Test
CNTL vs ECMW11	32.800	1.905	Do Not Test
CNTL vs ECMW13	31.400	1.824	Do Not Test
CNTL vs ECMW7	23.857	1.563	Do Not Test
CNTL vs ECMW12	0.900	0.0523	Do Not Test
ECMW12 vs ECMW6	50.671	2.595	Do Not Test
ECMW12 vs ECMW5	46.100	2.186	Do Not Test
ECMW12 vs ECMW8	46.100	2.186	Do Not Test
ECMW12 vs ECMW17	46.100	2.186	Do Not Test
ECMW12 vs ECMW16	46.100	2.186	Do Not Test
ECMW12 vs ECMW4	46.100	2.186	Do Not Test
ECMW12 vs ECMW15	39.700	1.883	Do Not Test
ECMW12 vs ECMW21	39.500	1.873	Do Not Test
ECMW12 vs ECMW10	38.200	1.812	Do Not Test
ECMW12 vs ECMW14	33.300	1.579	Do Not Test
ECMW12 vs ECMW11	31.900	1.513	Do Not Test
ECMW12 vs ECMW13	30.500	1.446	Do Not Test
ECMW12 vs ECMW7	22.957	1.176	Do Not Test
ECMW7 vs ECMW6	27.714	1.555	Do Not Test
ECMW7 vs ECMW5	23.143	1.185	Do Not Test
ECMW7 vs ECMW8	23.143	1.185	Do Not Test
ECMW7 vs ECMW17	23.143	1.185	Do Not Test
ECMW7 vs ECMW16	23.143	1.185	Do Not Test
ECMW7 vs ECMW4	23.143	1.185	Do Not Test
ECMW7 vs ECMW15	16.743	0.858	Do Not Test
ECMW7 vs ECMW21	16.543	0.847	Do Not Test

ECMW7 vs ECMW10	15.243	0.781	Do Not Test
ECMW7 vs ECMW14	10.343	0.530	Do Not Test
ECMW7 vs ECMW11	8.943	0.458	Do Not Test
ECMW7 vs ECMW13	7.543	0.386	Do Not Test
ECMW13 vs ECMW6	20.171	1.033	Do Not Test
ECMW13 vs ECMW5	15.600	0.740	Do Not Test
ECMW13 vs ECMW8	15.600	0.740	Do Not Test
ECMW13 vs ECMW17	15.600	0.740	Do Not Test
ECMW13 vs ECMW16	15.600	0.740	Do Not Test
ECMW13 vs ECMW4	15.600	0.740	Do Not Test
ECMW13 vs ECMW15	9.200	0.436	Do Not Test
ECMW13 vs ECMW21	9.000	0.427	Do Not Test
ECMW13 vs ECMW10	7.700	0.365	Do Not Test
ECMW13 vs ECMW14	2.800	0.133	Do Not Test
ECMW13 vs ECMW11	1.400	0.0664	Do Not Test
ECMW11 vs ECMW6	18.771	0.962	Do Not Test
ECMW11 vs ECMW5	14.200	0.673	Do Not Test
ECMW11 vs ECMW8	14.200	0.673	Do Not Test
ECMW11 vs ECMW17	14.200	0.673	Do Not Test
ECMW11 vs ECMW16	14.200	0.673	Do Not Test
ECMW11 vs ECMW4	14.200	0.673	Do Not Test
ECMW11 vs ECMW15	7.800	0.370	Do Not Test
ECMW11 vs ECMW21	7.600	0.360	Do Not Test
ECMW11 vs ECMW10	6.300	0.299	Do Not Test
ECMW11 vs ECMW14	1.400	0.0664	Do Not Test
ECMW14 vs ECMW6	17.371	0.890	Do Not Test
ECMW14 vs ECMW5	12.800	0.607	Do Not Test
ECMW14 vs ECMW8	12.800	0.607	Do Not Test
ECMW14 vs ECMW17	12.800	0.607	Do Not Test
ECMW14 vs ECMW16	12.800	0.607	Do Not Test
ECMW14 vs ECMW4	12.800	0.607	Do Not Test
ECMW14 vs ECMW15	6.400	0.304	Do Not Test
ECMW14 vs ECMW21	6.200	0.294	Do Not Test
ECMW14 vs ECMW10	4.900	0.232	Do Not Test
ECMW10 vs ECMW6	12.471	0.639	Do Not Test
ECMW10 vs ECMW5	7.900	0.375	Do Not Test
ECMW10 vs ECMW8	7.900	0.375	Do Not Test
ECMW10 vs ECMW17	7.900	0.375	Do Not Test
ECMW10 vs ECMW16	7.900	0.375	Do Not Test
ECMW10 vs ECMW4	7.900	0.375	Do Not Test
ECMW10 vs ECMW15	1.500	0.0711	Do Not Test
ECMW10 vs ECMW21	1.300	0.0616	Do Not Test
ECMW21 vs ECMW6	11.171	0.572	Do Not Test
ECMW21 vs ECMW5	6.600	0.313	Do Not Test
ECMW21 vs ECMW8	6.600	0.313	Do Not Test
ECMW21 vs ECMW17	6.600	0.313	Do Not Test
ECMW21 vs ECMW16	6.600	0.313	Do Not Test
ECMW21 vs ECMW4	6.600	0.313	Do Not Test
ECMW21 vs ECMW15	0.200	0.00948	Do Not Test
ECMW15 vs ECMW6	10.971	0.562	Do Not Test
ECMW15 vs ECMW5	6.400	0.304	Do Not Test
ECMW15 vs ECMW8	6.400	0.304	Do Not Test
ECMW15 vs ECMW17	6.400	0.304	Do Not Test
ECMW15 vs ECMW16	6.400	0.304	Do Not Test
ECMW15 vs ECMW4	6.400	0.304	Do Not Test
ECMW4 vs ECMW6	4.571	0.234	Do Not Test

ECMW4 vs ECMW5	0.000	0.000	Do Not Test
ECMW4 vs ECMW8	0.000	0.000	Do Not Test
ECMW4 vs ECMW17	0.000	0.000	Do Not Test
ECMW4 vs ECMW16	0.000	0.000	Do Not Test
ECMW16 vs ECMW6	4.571	0.234	Do Not Test
ECMW16 vs ECMW5	0.000	0.000	Do Not Test
ECMW16 vs ECMW8	0.000	0.000	Do Not Test
ECMW16 vs ECMW17	0.000	0.000	Do Not Test
ECMW17 vs ECMW6	4.571	0.234	Do Not Test
ECMW17 vs ECMW5	0.000	0.000	Do Not Test
ECMW17 vs ECMW8	0.000	0.000	Do Not Test
ECMW8 vs ECMW6	4.571	0.234	Do Not Test
ECMW8 vs ECMW5	0.000	0.000	Do Not Test
ECMW5 vs ECMW6	4.571	0.234	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:31:57 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Specific Conductance (uS)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:31:57 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	30	230.000	66.975	327.000
ECMW1053		10	900.000	733.000	1145.000
ECMW1152		10	741.500	663.000	896.000
ECMW1249		10	614.000	557.000	683.000
ECMW1352		12	852.000	613.750	1209.750
ECMW1452		12	657.000	461.500	913.250
ECMW1551		11	107.000	74.225	146.500
ECMW1651		10	285.000	161.000	521.000
ECMW1752		10	448.000	250.125	713.250
ECMW1851		11	85.650	75.000	97.500
ECMW1942		10	93.500	82.850	139.425
ECMW2042		11	106.000	85.000	168.800
ECMW2142		10	63.000	56.550	90.800
ECMW2242		9	147.400	127.050	186.000
ECMW4	52	10	6540.000	5209.500	7478.750
ECMW5	52	10	835.500	468.500	992.750
ECMW6	54	13	7939.000	4325.000	21575.000
ECMW7	54	13	6331.000	4305.000	19552.500
ECMW8	53	14	10910.000	6250.000	20790.000
ECMW9	51	10	1969.000	1725.500	2215.000

H = 703.152 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW8 vs ECMW21	694.007	11.700	Yes
ECMW8 vs ECMW18	645.301	11.530	Yes
ECMW8 vs ECMW19	628.523	10.596	Yes
ECMW8 vs ECMW15	612.701	10.948	Yes
ECMW8 vs ECMW20	600.958	10.043	Yes
ECMW8 vs ECMW22	555.781	9.448	Yes
ECMW8 vs CNTL	548.922	11.975	Yes
ECMW8 vs ECMW16	457.941	8.232	Yes

ECMW8 vs ECMW17	377.027	6.817	Yes
ECMW8 vs ECMW12	308.705	5.481	Yes
ECMW8 vs ECMW14	307.713	5.498	Yes
ECMW8 vs ECMW5	273.610	4.947	Yes
ECMW8 vs ECMW11	252.336	4.563	Yes
ECMW8 vs ECMW13	238.376	4.259	Yes
ECMW8 vs ECMW10	210.725	3.832	Yes
ECMW8 vs ECMW9	103.709	1.864	No
ECMW8 vs ECMW4	37.336	0.675	Do Not Test
ECMW8 vs ECMW7	30.795	0.554	Do Not Test
ECMW8 vs ECMW6	11.343	0.204	Do Not Test
ECMW6 vs ECMW21	682.664	11.637	Yes
ECMW6 vs ECMW18	633.958	11.470	Yes
ECMW6 vs ECMW19	617.179	10.521	Yes
ECMW6 vs ECMW15	601.358	10.880	Yes
ECMW6 vs ECMW20	589.614	9.961	Yes
ECMW6 vs ECMW22	544.438	9.361	Yes
ECMW6 vs CNTL	537.578	11.949	Yes
ECMW6 vs ECMW16	446.598	8.131	Yes
ECMW6 vs ECMW17	365.683	6.698	Yes
ECMW6 vs ECMW12	297.362	5.346	Yes
ECMW6 vs ECMW14	296.370	5.362	Yes
ECMW6 vs ECMW5	262.267	4.803	Yes
ECMW6 vs ECMW11	240.993	4.414	Yes
ECMW6 vs ECMW13	227.033	4.108	Yes
ECMW6 vs ECMW10	199.381	3.673	Yes
ECMW6 vs ECMW9	92.366	1.682	Do Not Test
ECMW6 vs ECMW4	25.993	0.476	Do Not Test
ECMW6 vs ECMW7	19.451	0.354	Do Not Test
ECMW7 vs ECMW21	663.213	11.306	Yes
ECMW7 vs ECMW18	614.506	11.118	Yes
ECMW7 vs ECMW19	597.728	10.189	Yes
ECMW7 vs ECMW15	581.906	10.529	Yes
ECMW7 vs ECMW20	570.163	9.633	Yes
ECMW7 vs ECMW22	524.986	9.026	Yes
ECMW7 vs CNTL	518.127	11.517	Yes
ECMW7 vs ECMW16	427.146	7.777	Yes
ECMW7 vs ECMW17	346.232	6.341	Yes
ECMW7 vs ECMW12	277.911	4.996	Yes
ECMW7 vs ECMW14	276.919	5.010	Yes
ECMW7 vs ECMW5	242.815	4.447	Yes
ECMW7 vs ECMW11	221.542	4.058	Yes
ECMW7 vs ECMW13	207.581	3.756	Yes
ECMW7 vs ECMW10	179.930	3.315	No
ECMW7 vs ECMW9	72.915	1.327	Do Not Test
ECMW7 vs ECMW4	6.542	0.120	Do Not Test
ECMW4 vs ECMW21	656.671	11.253	Yes
ECMW4 vs ECMW18	607.965	11.065	Yes
ECMW4 vs ECMW19	591.187	10.131	Yes
ECMW4 vs ECMW15	575.365	10.472	Yes
ECMW4 vs ECMW20	563.622	9.571	Yes
ECMW4 vs ECMW22	518.445	8.962	Yes
ECMW4 vs CNTL	511.586	11.474	Yes
ECMW4 vs ECMW16	420.605	7.703	Yes
ECMW4 vs ECMW17	339.690	6.259	Yes
ECMW4 vs ECMW12	271.369	4.907	Yes

ECMW4 vs ECMW14	270.377	4.921	Yes
ECMW4 vs ECMW5	236.274	4.354	Yes
ECMW4 vs ECMW11	215.000	3.962	Yes
ECMW4 vs ECMW13	201.040	3.659	Yes
ECMW4 vs ECMW10	173.388	3.214	Do Not Test
ECMW4 vs ECMW9	66.373	1.216	Do Not Test
ECMW9 vs ECMW21	590.298	10.063	Yes
ECMW9 vs ECMW18	541.592	9.799	Yes
ECMW9 vs ECMW19	524.814	8.946	Yes
ECMW9 vs ECMW15	508.992	9.209	Yes
ECMW9 vs ECMW20	497.249	8.401	Yes
ECMW9 vs ECMW22	452.072	7.773	Yes
ECMW9 vs CNTL	445.213	9.896	Yes
ECMW9 vs ECMW16	354.232	6.449	Yes
ECMW9 vs ECMW17	273.317	5.006	Yes
ECMW9 vs ECMW12	204.996	3.685	Yes
ECMW9 vs ECMW14	204.004	3.691	Yes
ECMW9 vs ECMW5	169.901	3.112	No
ECMW9 vs ECMW11	148.627	2.722	Do Not Test
ECMW9 vs ECMW13	134.667	2.437	Do Not Test
ECMW9 vs ECMW10	107.015	1.971	Do Not Test
ECMW10 vs ECMW21	483.283	8.324	Yes
ECMW10 vs ECMW18	434.576	7.955	Yes
ECMW10 vs ECMW19	417.798	7.196	Yes
ECMW10 vs ECMW15	401.976	7.358	Yes
ECMW10 vs ECMW20	390.233	6.660	Yes
ECMW10 vs ECMW22	345.056	5.995	Yes
ECMW10 vs CNTL	338.197	7.651	Yes
ECMW10 vs ECMW16	247.216	4.554	Yes
ECMW10 vs ECMW17	166.302	3.082	No
ECMW10 vs ECMW12	97.981	1.782	Do Not Test
ECMW10 vs ECMW14	96.989	1.775	Do Not Test
ECMW10 vs ECMW5	62.885	1.166	Do Not Test
ECMW10 vs ECMW11	41.612	0.771	Do Not Test
ECMW10 vs ECMW13	27.651	0.506	Do Not Test
ECMW13 vs ECMW21	455.631	7.725	Yes
ECMW13 vs ECMW18	406.925	7.318	Yes
ECMW13 vs ECMW19	390.147	6.615	Yes
ECMW13 vs ECMW15	374.325	6.731	Yes
ECMW13 vs ECMW20	362.582	6.093	Yes
ECMW13 vs ECMW22	317.405	5.427	Yes
ECMW13 vs CNTL	310.546	6.839	Yes
ECMW13 vs ECMW16	219.565	3.973	Yes
ECMW13 vs ECMW17	138.651	2.524	Do Not Test
ECMW13 vs ECMW12	70.329	1.257	Do Not Test
ECMW13 vs ECMW14	69.338	1.247	Do Not Test
ECMW13 vs ECMW5	35.234	0.641	Do Not Test
ECMW13 vs ECMW11	13.960	0.254	Do Not Test
ECMW11 vs ECMW21	441.671	7.569	Yes
ECMW11 vs ECMW18	392.965	7.152	Yes
ECMW11 vs ECMW19	376.187	6.446	Yes
ECMW11 vs ECMW15	360.365	6.559	Yes
ECMW11 vs ECMW20	348.622	5.920	Yes
ECMW11 vs ECMW22	303.445	5.245	Yes
ECMW11 vs CNTL	296.586	6.652	Yes
ECMW11 vs ECMW16	205.605	3.766	Yes

ECMW11 vs ECMW17	124.690	2.298	Do Not Test
ECMW11 vs ECMW12	56.369	1.019	Do Not Test
ECMW11 vs ECMW14	55.377	1.008	Do Not Test
ECMW11 vs ECMW5	21.274	0.392	Do Not Test
ECMW5 vs ECMW21	420.397	7.204	Yes
ECMW5 vs ECMW18	371.691	6.765	Yes
ECMW5 vs ECMW19	354.913	6.082	Yes
ECMW5 vs ECMW15	339.091	6.172	Yes
ECMW5 vs ECMW20	327.348	5.559	Yes
ECMW5 vs ECMW22	282.171	4.878	Yes
ECMW5 vs CNTL	275.312	6.175	Yes
ECMW5 vs ECMW16	184.331	3.376	No
ECMW5 vs ECMW17	103.417	1.906	Do Not Test
ECMW5 vs ECMW12	35.095	0.635	Do Not Test
ECMW5 vs ECMW14	34.104	0.621	Do Not Test
ECMW14 vs ECMW21	386.294	6.549	Yes
ECMW14 vs ECMW18	337.587	6.071	Yes
ECMW14 vs ECMW19	320.809	5.439	Yes
ECMW14 vs ECMW15	304.987	5.484	Yes
ECMW14 vs ECMW20	293.244	4.928	Yes
ECMW14 vs ECMW22	248.067	4.242	Yes
ECMW14 vs CNTL	241.208	5.312	Yes
ECMW14 vs ECMW16	150.227	2.718	Do Not Test
ECMW14 vs ECMW17	69.313	1.262	Do Not Test
ECMW14 vs ECMW12	0.992	0.0177	Do Not Test
ECMW12 vs ECMW21	385.302	6.496	Yes
ECMW12 vs ECMW18	336.596	6.014	Yes
ECMW12 vs ECMW19	319.818	5.392	Yes
ECMW12 vs ECMW15	303.996	5.432	Yes
ECMW12 vs ECMW20	292.253	4.884	Yes
ECMW12 vs ECMW22	247.076	4.200	Yes
ECMW12 vs CNTL	240.217	5.240	Yes
ECMW12 vs ECMW16	149.236	2.683	Do Not Test
ECMW12 vs ECMW17	68.321	1.235	Do Not Test
ECMW17 vs ECMW21	316.981	5.432	Yes
ECMW17 vs ECMW18	268.274	4.883	Yes
ECMW17 vs ECMW19	251.496	4.310	Yes
ECMW17 vs ECMW15	235.674	4.289	Yes
ECMW17 vs ECMW20	223.931	3.803	Yes
ECMW17 vs ECMW22	178.754	3.090	No
ECMW17 vs CNTL	171.895	3.855	Do Not Test
ECMW17 vs ECMW16	80.914	1.482	Do Not Test
ECMW16 vs ECMW21	236.066	4.024	Yes
ECMW16 vs ECMW18	187.360	3.390	No
ECMW16 vs ECMW19	170.582	2.908	Do Not Test
ECMW16 vs ECMW15	154.760	2.800	Do Not Test
ECMW16 vs ECMW20	143.017	2.416	Do Not Test
ECMW16 vs ECMW22	97.840	1.682	Do Not Test
ECMW16 vs CNTL	90.981	2.022	Do Not Test
CNTL vs ECMW21	145.085	2.932	No
CNTL vs ECMW18	96.379	2.123	Do Not Test
CNTL vs ECMW19	79.601	1.609	Do Not Test
CNTL vs ECMW15	63.779	1.405	Do Not Test
CNTL vs ECMW20	52.036	1.039	Do Not Test
CNTL vs ECMW22	6.859	0.140	Do Not Test
ECMW22 vs ECMW21	138.226	2.240	Do Not Test

ECMW22 vs ECMW18	89.520	1.531	Do Not Test
ECMW22 vs ECMW19	72.742	1.179	Do Not Test
ECMW22 vs ECMW15	56.920	0.973	Do Not Test
ECMW22 vs ECMW20	45.177	0.726	Do Not Test
ECMW20 vs ECMW21	93.049	1.485	Do Not Test
ECMW20 vs ECMW18	44.343	0.745	Do Not Test
ECMW20 vs ECMW19	27.565	0.440	Do Not Test
ECMW20 vs ECMW15	11.743	0.197	Do Not Test
ECMW15 vs ECMW21	81.306	1.378	Do Not Test
ECMW15 vs ECMW18	32.600	0.586	Do Not Test
ECMW15 vs ECMW19	15.822	0.268	Do Not Test
ECMW19 vs ECMW21	65.484	1.053	Do Not Test
ECMW19 vs ECMW18	16.778	0.284	Do Not Test
ECMW18 vs ECMW21	48.706	0.826	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:32:16 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Sulfate (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:32:16 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	54	11.900	5.813	21.350
ECMW10	53	4	129.000	97.000	152.000
ECMW11	52	5	202.000	135.000	268.000
ECMW12	49	18	13.000	5.110	21.500
ECMW13	52	20	432.000	319.000	547.000
ECMW14	52	4	154.000	111.500	211.000
ECMW15	51	19	12.600	10.325	14.750
ECMW16	51	3	13.150	9.795	15.750
ECMW17	52	4	20.700	10.250	40.050
ECMW18	51	15	3.720	2.525	5.667
ECMW19	42	18	2.925	2.470	4.447
ECMW20	42	18	11.000	8.942	15.000
ECMW21	42	18	4.360	3.625	5.865
ECMW22	42	18	5.330	3.643	6.933
ECMW4	52	3	874.000	757.000	962.000
ECMW5	52	4	93.900	54.575	475.000
ECMW6	54	3	37.700	17.200	60.500
ECMW7	54	3	476.000	310.000	858.000
ECMW8	53	4	516.000	119.000	811.000
ECMW9	51	3	547.500	518.500	614.500

H = 726.603 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW4 vs ECMW19	751.228	12.152	Yes
ECMW4 vs ECMW18	723.492	13.284	Yes
ECMW4 vs ECMW21	703.624	11.382	Yes
ECMW4 vs ECMW22	690.686	11.173	Yes
ECMW4 vs ECMW20	578.645	9.360	Yes
ECMW4 vs CNTL	569.520	13.074	Yes
ECMW4 vs ECMW12	569.142	9.995	Yes
ECMW4 vs ECMW16	563.655	11.186	Yes

ECMW4 vs ECMW15	560.124	9.933	Yes
ECMW4 vs ECMW17	491.749	9.759	Yes
ECMW4 vs ECMW6	431.238	8.688	Yes
ECMW4 vs ECMW10	285.694	5.699	Yes
ECMW4 vs ECMW14	268.342	5.326	Yes
ECMW4 vs ECMW5	260.384	5.168	Yes
ECMW4 vs ECMW11	223.934	4.421	Yes
ECMW4 vs ECMW8	136.173	2.717	No
ECMW4 vs ECMW13	123.108	2.183	Do Not Test
ECMW4 vs ECMW7	95.061	1.915	Do Not Test
ECMW4 vs ECMW9	78.822	1.564	Do Not Test
ECMW9 vs ECMW19	672.406	10.840	Yes
ECMW9 vs ECMW18	644.670	11.785	Yes
ECMW9 vs ECMW21	624.802	10.073	Yes
ECMW9 vs ECMW22	611.865	9.864	Yes
ECMW9 vs ECMW20	499.823	8.058	Yes
ECMW9 vs CNTL	490.698	11.188	Yes
ECMW9 vs ECMW12	490.320	8.577	Yes
ECMW9 vs ECMW16	484.833	9.573	Yes
ECMW9 vs ECMW15	481.302	8.500	Yes
ECMW9 vs ECMW17	412.927	8.153	Yes
ECMW9 vs ECMW6	352.416	7.063	Yes
ECMW9 vs ECMW10	206.872	4.106	Yes
ECMW9 vs ECMW14	189.521	3.742	Yes
ECMW9 vs ECMW5	181.563	3.585	No
ECMW9 vs ECMW11	145.112	2.850	Do Not Test
ECMW9 vs ECMW8	57.352	1.138	Do Not Test
ECMW9 vs ECMW13	44.286	0.782	Do Not Test
ECMW9 vs ECMW7	16.240	0.325	Do Not Test
ECMW7 vs ECMW19	656.167	10.684	Yes
ECMW7 vs ECMW18	628.431	11.635	Yes
ECMW7 vs ECMW21	608.563	9.909	Yes
ECMW7 vs ECMW22	595.625	9.698	Yes
ECMW7 vs ECMW20	483.583	7.874	Yes
ECMW7 vs CNTL	474.458	11.036	Yes
ECMW7 vs ECMW12	474.081	8.390	Yes
ECMW7 vs ECMW16	468.594	9.391	Yes
ECMW7 vs ECMW15	465.063	8.311	Yes
ECMW7 vs ECMW17	396.688	7.950	Yes
ECMW7 vs ECMW6	336.176	6.842	Yes
ECMW7 vs ECMW10	190.633	3.841	Yes
ECMW7 vs ECMW14	173.281	3.473	No
ECMW7 vs ECMW5	165.323	3.313	Do Not Test
ECMW7 vs ECMW11	128.872	2.569	Do Not Test
ECMW7 vs ECMW8	41.112	0.828	Do Not Test
ECMW7 vs ECMW13	28.047	0.501	Do Not Test
ECMW13 vs ECMW19	628.120	9.375	Yes
ECMW13 vs ECMW18	600.384	9.960	Yes
ECMW13 vs ECMW21	580.516	8.665	Yes
ECMW13 vs ECMW22	567.578	8.471	Yes
ECMW13 vs ECMW20	455.536	6.799	Yes
ECMW13 vs CNTL	446.411	8.814	Yes
ECMW13 vs ECMW12	446.034	7.133	Yes
ECMW13 vs ECMW16	440.547	7.780	Yes
ECMW13 vs ECMW15	437.016	7.045	Yes
ECMW13 vs ECMW17	368.641	6.510	Yes

ECMW13 vs ECMW6	308.130	5.507	Yes
ECMW13 vs ECMW10	162.586	2.883	No
ECMW13 vs ECMW14	145.234	2.565	Do Not Test
ECMW13 vs ECMW5	137.276	2.424	Do Not Test
ECMW13 vs ECMW11	100.825	1.773	Do Not Test
ECMW13 vs ECMW8	13.065	0.232	Do Not Test
ECMW8 vs ECMW19	615.054	9.949	Yes
ECMW8 vs ECMW18	587.318	10.783	Yes
ECMW8 vs ECMW21	567.450	9.179	Yes
ECMW8 vs ECMW22	554.513	8.970	Yes
ECMW8 vs ECMW20	442.471	7.158	Yes
ECMW8 vs CNTL	433.346	9.948	Yes
ECMW8 vs ECMW12	432.968	7.604	Yes
ECMW8 vs ECMW16	427.482	8.484	Yes
ECMW8 vs ECMW15	423.950	7.518	Yes
ECMW8 vs ECMW17	355.575	7.057	Yes
ECMW8 vs ECMW6	295.064	5.945	Yes
ECMW8 vs ECMW10	149.520	2.983	Do Not Test
ECMW8 vs ECMW14	132.169	2.623	Do Not Test
ECMW8 vs ECMW5	124.211	2.465	Do Not Test
ECMW8 vs ECMW11	87.760	1.732	Do Not Test
ECMW11 vs ECMW19	527.294	8.471	Yes
ECMW11 vs ECMW18	499.558	9.091	Yes
ECMW11 vs ECMW21	479.690	7.706	Yes
ECMW11 vs ECMW22	466.753	7.498	Yes
ECMW11 vs ECMW20	354.711	5.698	Yes
ECMW11 vs CNTL	345.586	7.824	Yes
ECMW11 vs ECMW12	345.208	6.013	Yes
ECMW11 vs ECMW16	339.721	6.672	Yes
ECMW11 vs ECMW15	336.190	5.912	Yes
ECMW11 vs ECMW17	267.815	5.260	Yes
ECMW11 vs ECMW6	207.304	4.132	Yes
ECMW11 vs ECMW10	61.760	1.219	Do Not Test
ECMW11 vs ECMW14	44.409	0.872	Do Not Test
ECMW11 vs ECMW5	36.451	0.716	Do Not Test
ECMW5 vs ECMW19	490.844	7.913	Yes
ECMW5 vs ECMW18	463.108	8.466	Yes
ECMW5 vs ECMW21	443.240	7.146	Yes
ECMW5 vs ECMW22	430.302	6.937	Yes
ECMW5 vs ECMW20	318.260	5.131	Yes
ECMW5 vs CNTL	309.135	7.048	Yes
ECMW5 vs ECMW12	308.758	5.401	Yes
ECMW5 vs ECMW16	303.271	5.988	Yes
ECMW5 vs ECMW15	299.740	5.293	Yes
ECMW5 vs ECMW17	231.365	4.568	Yes
ECMW5 vs ECMW6	170.854	3.424	No
ECMW5 vs ECMW10	25.310	0.502	Do Not Test
ECMW5 vs ECMW14	7.958	0.157	Do Not Test
ECMW14 vs ECMW19	482.885	7.785	Yes
ECMW14 vs ECMW18	455.149	8.320	Yes
ECMW14 vs ECMW21	435.281	7.017	Yes
ECMW14 vs ECMW22	422.344	6.809	Yes
ECMW14 vs ECMW20	310.302	5.003	Yes
ECMW14 vs CNTL	301.177	6.867	Yes
ECMW14 vs ECMW12	300.799	5.262	Yes
ECMW14 vs ECMW16	295.313	5.831	Yes

ECMW14 vs ECMW15	291.781	5.153	Yes
ECMW14 vs ECMW17	223.406	4.411	Yes
ECMW14 vs ECMW6	162.895	3.265	Do Not Test
ECMW14 vs ECMW10	17.351	0.344	Do Not Test
ECMW10 vs ECMW19	465.534	7.531	Yes
ECMW10 vs ECMW18	437.798	8.038	Yes
ECMW10 vs ECMW21	417.930	6.761	Yes
ECMW10 vs ECMW22	404.992	6.551	Yes
ECMW10 vs ECMW20	292.951	4.739	Yes
ECMW10 vs CNTL	283.826	6.515	Yes
ECMW10 vs ECMW12	283.448	4.978	Yes
ECMW10 vs ECMW16	277.961	5.516	Yes
ECMW10 vs ECMW15	274.430	4.866	Yes
ECMW10 vs ECMW17	206.055	4.089	Yes
ECMW10 vs ECMW6	145.544	2.932	Do Not Test
ECMW6 vs ECMW19	319.990	5.210	Yes
ECMW6 vs ECMW18	292.254	5.411	Yes
ECMW6 vs ECMW21	272.386	4.435	Yes
ECMW6 vs ECMW22	259.449	4.224	Yes
ECMW6 vs ECMW20	147.407	2.400	No
ECMW6 vs CNTL	138.282	3.216	Do Not Test
ECMW6 vs ECMW12	137.904	2.441	Do Not Test
ECMW6 vs ECMW16	132.417	2.654	Do Not Test
ECMW6 vs ECMW15	128.886	2.303	Do Not Test
ECMW6 vs ECMW17	60.511	1.213	Do Not Test
ECMW17 vs ECMW19	259.479	4.183	Yes
ECMW17 vs ECMW18	231.743	4.236	Yes
ECMW17 vs ECMW21	211.875	3.416	No
ECMW17 vs ECMW22	198.938	3.207	Do Not Test
ECMW17 vs ECMW20	86.896	1.401	Do Not Test
ECMW17 vs CNTL	77.771	1.773	Do Not Test
ECMW17 vs ECMW12	77.393	1.354	Do Not Test
ECMW17 vs ECMW16	71.906	1.420	Do Not Test
ECMW17 vs ECMW15	68.375	1.208	Do Not Test
ECMW15 vs ECMW19	191.104	2.852	No
ECMW15 vs ECMW18	163.368	2.710	Do Not Test
ECMW15 vs ECMW21	143.500	2.142	Do Not Test
ECMW15 vs ECMW22	130.563	1.949	Do Not Test
ECMW15 vs ECMW20	18.521	0.276	Do Not Test
ECMW15 vs CNTL	9.396	0.186	Do Not Test
ECMW15 vs ECMW12	9.018	0.144	Do Not Test
ECMW15 vs ECMW16	3.531	0.0624	Do Not Test
ECMW16 vs ECMW19	187.573	3.024	Do Not Test
ECMW16 vs ECMW18	159.837	2.922	Do Not Test
ECMW16 vs ECMW21	139.969	2.257	Do Not Test
ECMW16 vs ECMW22	127.031	2.048	Do Not Test
ECMW16 vs ECMW20	14.990	0.242	Do Not Test
ECMW16 vs CNTL	5.865	0.134	Do Not Test
ECMW16 vs ECMW12	5.487	0.0960	Do Not Test
ECMW12 vs ECMW19	182.086	2.699	Do Not Test
ECMW12 vs ECMW18	154.350	2.539	Do Not Test
ECMW12 vs ECMW21	134.482	1.993	Do Not Test
ECMW12 vs ECMW22	121.544	1.802	Do Not Test
ECMW12 vs ECMW20	9.503	0.141	Do Not Test
ECMW12 vs CNTL	0.378	0.00737	Do Not Test
CNTL vs ECMW19	181.708	3.209	Do Not Test

CNTL vs ECMW18	153.972	3.175	Do Not Test
CNTL vs ECMW21	134.104	2.368	Do Not Test
CNTL vs ECMW22	121.167	2.140	Do Not Test
CNTL vs ECMW20	9.125	0.161	Do Not Test
ECMW20 vs ECMW19	172.583	2.410	Do Not Test
ECMW20 vs ECMW18	144.847	2.215	Do Not Test
ECMW20 vs ECMW21	124.979	1.745	Do Not Test
ECMW20 vs ECMW22	112.042	1.564	Do Not Test
ECMW22 vs ECMW19	60.542	0.845	Do Not Test
ECMW22 vs ECMW18	32.806	0.502	Do Not Test
ECMW22 vs ECMW21	12.938	0.181	Do Not Test
ECMW21 vs ECMW19	47.604	0.665	Do Not Test
ECMW21 vs ECMW18	19.868	0.304	Do Not Test
ECMW18 vs ECMW19	27.736	0.424	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:32:37 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Temperature (°C)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:32:37 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	51	18.500	16.800	19.410
ECMW10	53	17	21.060	19.510	21.935
ECMW11	52	19	20.100	18.220	22.145
ECMW12	49	16	21.200	18.430	23.035
ECMW13	52	19	19.160	16.645	20.740
ECMW14	52	18	19.600	16.643	21.700
ECMW15	51	18	20.160	15.920	22.785
ECMW16	51	17	20.500	16.265	22.485
ECMW17	52	17	19.020	18.200	20.300
ECMW18	51	17	18.450	15.258	19.832
ECMW19	42	10	17.900	17.028	18.375
ECMW20	42	11	18.900	17.900	20.400
ECMW21	42	10	18.950	17.648	19.575
ECMW22	42	10	19.000	18.313	20.650
ECMW4	52	17	19.400	16.910	21.120
ECMW5	52	17	19.400	16.710	21.490
ECMW6	54	19	19.970	18.070	20.700
ECMW7	54	19	20.300	18.700	20.800
ECMW8	53	19	19.250	18.430	20.400
ECMW9	51	17	19.465	18.340	20.250

H = 79.703 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW10 vs ECMW19	270.964	5.224	Yes
ECMW10 vs ECMW18	231.284	4.530	Yes
ECMW10 vs CNTL	222.126	5.346	Yes
ECMW10 vs ECMW21	172.214	3.320	No
ECMW10 vs ECMW13	150.788	2.931	Do Not Test
ECMW10 vs ECMW20	132.634	2.536	Do Not Test
ECMW10 vs ECMW4	131.167	2.588	Do Not Test
ECMW10 vs ECMW22	127.104	2.451	Do Not Test

ECMW10 vs ECMW17	125.838	2.483	Do Not Test
ECMW10 vs ECMW8	123.770	2.424	Do Not Test
ECMW10 vs ECMW9	120.049	2.352	Do Not Test
ECMW10 vs ECMW14	114.225	2.237	Do Not Test
ECMW10 vs ECMW5	114.024	2.250	Do Not Test
ECMW10 vs ECMW6	92.138	1.818	Do Not Test
ECMW10 vs ECMW15	86.939	1.690	Do Not Test
ECMW10 vs ECMW16	85.475	1.674	Do Not Test
ECMW10 vs ECMW7	55.595	1.097	Do Not Test
ECMW10 vs ECMW11	49.833	0.969	Do Not Test
ECMW10 vs ECMW12	4.364	0.0848	Do Not Test
ECMW12 vs ECMW19	266.600	5.034	Yes
ECMW12 vs ECMW18	226.921	4.350	Yes
ECMW12 vs CNTL	217.763	5.075	Yes
ECMW12 vs ECMW21	167.850	3.169	Do Not Test
ECMW12 vs ECMW13	146.424	2.786	Do Not Test
ECMW12 vs ECMW20	128.271	2.402	Do Not Test
ECMW12 vs ECMW4	126.803	2.448	Do Not Test
ECMW12 vs ECMW22	122.741	2.317	Do Not Test
ECMW12 vs ECMW17	121.474	2.345	Do Not Test
ECMW12 vs ECMW8	119.406	2.289	Do Not Test
ECMW12 vs ECMW9	115.685	2.218	Do Not Test
ECMW12 vs ECMW14	109.862	2.106	Do Not Test
ECMW12 vs ECMW5	109.660	2.117	Do Not Test
ECMW12 vs ECMW6	87.774	1.695	Do Not Test
ECMW12 vs ECMW15	82.576	1.571	Do Not Test
ECMW12 vs ECMW16	81.112	1.555	Do Not Test
ECMW12 vs ECMW7	51.232	0.989	Do Not Test
ECMW12 vs ECMW11	45.470	0.865	Do Not Test
ECMW11 vs ECMW19	221.130	4.175	Yes
ECMW11 vs ECMW18	181.451	3.478	No
ECMW11 vs CNTL	172.293	4.015	Do Not Test
ECMW11 vs ECMW21	122.380	2.311	Do Not Test
ECMW11 vs ECMW13	100.955	1.921	Do Not Test
ECMW11 vs ECMW20	82.801	1.551	Do Not Test
ECMW11 vs ECMW4	81.333	1.570	Do Not Test
ECMW11 vs ECMW22	77.271	1.459	Do Not Test
ECMW11 vs ECMW17	76.005	1.467	Do Not Test
ECMW11 vs ECMW8	73.936	1.417	Do Not Test
ECMW11 vs ECMW9	70.216	1.346	Do Not Test
ECMW11 vs ECMW14	64.392	1.234	Do Not Test
ECMW11 vs ECMW5	64.190	1.239	Do Not Test
ECMW11 vs ECMW6	42.305	0.817	Do Not Test
ECMW11 vs ECMW15	37.106	0.706	Do Not Test
ECMW11 vs ECMW16	35.642	0.683	Do Not Test
ECMW11 vs ECMW7	5.762	0.111	Do Not Test
ECMW7 vs ECMW19	215.368	4.125	Yes
ECMW7 vs ECMW18	175.689	3.418	Do Not Test
ECMW7 vs CNTL	166.531	3.967	Do Not Test
ECMW7 vs ECMW21	116.618	2.234	Do Not Test
ECMW7 vs ECMW13	95.193	1.838	Do Not Test
ECMW7 vs ECMW20	77.039	1.463	Do Not Test
ECMW7 vs ECMW4	75.571	1.481	Do Not Test
ECMW7 vs ECMW22	71.509	1.370	Do Not Test
ECMW7 vs ECMW17	70.243	1.376	Do Not Test
ECMW7 vs ECMW8	68.174	1.326	Do Not Test

ECMW7 vs ECMW9	64.454	1.254	Do Not Test
ECMW7 vs ECMW14	58.630	1.141	Do Not Test
ECMW7 vs ECMW5	58.429	1.145	Do Not Test
ECMW7 vs ECMW6	36.543	0.716	Do Not Test
ECMW7 vs ECMW15	31.344	0.605	Do Not Test
ECMW7 vs ECMW16	29.880	0.581	Do Not Test
ECMW16 vs ECMW19	185.488	3.528	No
ECMW16 vs ECMW18	145.809	2.816	Do Not Test
ECMW16 vs CNTL	136.651	3.220	Do Not Test
ECMW16 vs ECMW21	86.738	1.650	Do Not Test
ECMW16 vs ECMW13	65.312	1.252	Do Not Test
ECMW16 vs ECMW20	47.159	0.890	Do Not Test
ECMW16 vs ECMW4	45.691	0.889	Do Not Test
ECMW16 vs ECMW22	41.629	0.792	Do Not Test
ECMW16 vs ECMW17	40.363	0.785	Do Not Test
ECMW16 vs ECMW8	38.294	0.740	Do Not Test
ECMW16 vs ECMW9	34.574	0.668	Do Not Test
ECMW16 vs ECMW14	28.750	0.555	Do Not Test
ECMW16 vs ECMW5	28.548	0.555	Do Not Test
ECMW16 vs ECMW6	6.663	0.130	Do Not Test
ECMW16 vs ECMW15	1.464	0.0281	Do Not Test
ECMW15 vs ECMW19	184.024	3.475	Do Not Test
ECMW15 vs ECMW18	144.345	2.767	Do Not Test
ECMW15 vs CNTL	135.187	3.150	Do Not Test
ECMW15 vs ECMW21	85.274	1.610	Do Not Test
ECMW15 vs ECMW13	63.848	1.215	Do Not Test
ECMW15 vs ECMW20	45.695	0.856	Do Not Test
ECMW15 vs ECMW4	44.227	0.854	Do Not Test
ECMW15 vs ECMW22	40.165	0.758	Do Not Test
ECMW15 vs ECMW17	38.899	0.751	Do Not Test
ECMW15 vs ECMW8	36.830	0.706	Do Not Test
ECMW15 vs ECMW9	33.110	0.635	Do Not Test
ECMW15 vs ECMW14	27.286	0.523	Do Not Test
ECMW15 vs ECMW5	27.084	0.523	Do Not Test
ECMW15 vs ECMW6	5.199	0.100	Do Not Test
ECMW6 vs ECMW19	178.825	3.425	Do Not Test
ECMW6 vs ECMW18	139.146	2.707	Do Not Test
ECMW6 vs CNTL	129.988	3.096	Do Not Test
ECMW6 vs ECMW21	80.075	1.534	Do Not Test
ECMW6 vs ECMW13	58.650	1.132	Do Not Test
ECMW6 vs ECMW20	40.496	0.769	Do Not Test
ECMW6 vs ECMW4	39.029	0.765	Do Not Test
ECMW6 vs ECMW22	34.966	0.670	Do Not Test
ECMW6 vs ECMW17	33.700	0.660	Do Not Test
ECMW6 vs ECMW8	31.632	0.615	Do Not Test
ECMW6 vs ECMW9	27.911	0.543	Do Not Test
ECMW6 vs ECMW14	22.087	0.430	Do Not Test
ECMW6 vs ECMW5	21.886	0.429	Do Not Test
ECMW5 vs ECMW19	156.940	3.006	Do Not Test
ECMW5 vs ECMW18	117.261	2.281	Do Not Test
ECMW5 vs CNTL	108.102	2.575	Do Not Test
ECMW5 vs ECMW21	58.190	1.114	Do Not Test
ECMW5 vs ECMW13	36.764	0.710	Do Not Test
ECMW5 vs ECMW20	18.611	0.353	Do Not Test
ECMW5 vs ECMW4	17.143	0.336	Do Not Test
ECMW5 vs ECMW22	13.080	0.251	Do Not Test

ECMW5 vs ECMW17	11.814	0.232	Do Not Test
ECMW5 vs ECMW8	9.746	0.190	Do Not Test
ECMW5 vs ECMW9	6.025	0.117	Do Not Test
ECMW5 vs ECMW14	0.202	0.00392	Do Not Test
ECMW14 vs ECMW19	156.738	2.981	Do Not Test
ECMW14 vs ECMW18	117.059	2.261	Do Not Test
ECMW14 vs CNTL	107.901	2.543	Do Not Test
ECMW14 vs ECMW21	57.988	1.103	Do Not Test
ECMW14 vs ECMW13	36.562	0.701	Do Not Test
ECMW14 vs ECMW20	18.409	0.347	Do Not Test
ECMW14 vs ECMW4	16.941	0.330	Do Not Test
ECMW14 vs ECMW22	12.879	0.245	Do Not Test
ECMW14 vs ECMW17	11.613	0.226	Do Not Test
ECMW14 vs ECMW8	9.544	0.184	Do Not Test
ECMW14 vs ECMW9	5.824	0.112	Do Not Test
ECMW9 vs ECMW19	150.915	2.870	Do Not Test
ECMW9 vs ECMW18	111.235	2.148	Do Not Test
ECMW9 vs CNTL	102.077	2.406	Do Not Test
ECMW9 vs ECMW21	52.165	0.992	Do Not Test
ECMW9 vs ECMW13	30.739	0.589	Do Not Test
ECMW9 vs ECMW20	12.585	0.237	Do Not Test
ECMW9 vs ECMW4	11.118	0.216	Do Not Test
ECMW9 vs ECMW22	7.055	0.134	Do Not Test
ECMW9 vs ECMW17	5.789	0.113	Do Not Test
ECMW9 vs ECMW8	3.721	0.0719	Do Not Test
ECMW8 vs ECMW19	147.194	2.800	Do Not Test
ECMW8 vs ECMW18	107.515	2.077	Do Not Test
ECMW8 vs CNTL	98.357	2.318	Do Not Test
ECMW8 vs ECMW21	48.444	0.921	Do Not Test
ECMW8 vs ECMW13	27.018	0.518	Do Not Test
ECMW8 vs ECMW20	8.865	0.167	Do Not Test
ECMW8 vs ECMW4	7.397	0.144	Do Not Test
ECMW8 vs ECMW22	3.335	0.0634	Do Not Test
ECMW8 vs ECMW17	2.068	0.0402	Do Not Test
ECMW17 vs ECMW19	145.125	2.780	Do Not Test
ECMW17 vs ECMW18	105.446	2.051	Do Not Test
ECMW17 vs CNTL	96.288	2.294	Do Not Test
ECMW17 vs ECMW21	46.375	0.888	Do Not Test
ECMW17 vs ECMW13	24.950	0.482	Do Not Test
ECMW17 vs ECMW20	6.796	0.129	Do Not Test
ECMW17 vs ECMW4	5.329	0.104	Do Not Test
ECMW17 vs ECMW22	1.266	0.0242	Do Not Test
ECMW22 vs ECMW19	143.859	2.696	Do Not Test
ECMW22 vs ECMW18	104.180	1.981	Do Not Test
ECMW22 vs CNTL	95.022	2.189	Do Not Test
ECMW22 vs ECMW21	45.109	0.845	Do Not Test
ECMW22 vs ECMW13	23.684	0.447	Do Not Test
ECMW22 vs ECMW20	5.530	0.103	Do Not Test
ECMW22 vs ECMW4	4.063	0.0778	Do Not Test
ECMW4 vs ECMW19	139.797	2.677	Do Not Test
ECMW4 vs ECMW18	100.118	1.948	Do Not Test
ECMW4 vs CNTL	90.960	2.167	Do Not Test
ECMW4 vs ECMW21	41.047	0.786	Do Not Test
ECMW4 vs ECMW13	19.621	0.379	Do Not Test
ECMW4 vs ECMW20	1.468	0.0279	Do Not Test
ECMW20 vs ECMW19	138.329	2.571	Do Not Test

ECMW20 vs ECMW18	98.650	1.861	Do Not Test
ECMW20 vs CNTL	89.492	2.037	Do Not Test
ECMW20 vs ECMW21	39.579	0.736	Do Not Test
ECMW20 vs ECMW13	18.153	0.340	Do Not Test
ECMW13 vs ECMW19	120.176	2.269	Do Not Test
ECMW13 vs ECMW18	80.496	1.543	Do Not Test
ECMW13 vs CNTL	71.338	1.663	Do Not Test
ECMW13 vs ECMW21	21.426	0.405	Do Not Test
ECMW21 vs ECMW19	98.750	1.850	Do Not Test
ECMW21 vs ECMW18	59.071	1.123	Do Not Test
ECMW21 vs CNTL	49.913	1.150	Do Not Test
CNTL vs ECMW19	48.837	1.125	Do Not Test
CNTL vs ECMW18	9.158	0.216	Do Not Test
ECMW18 vs ECMW19	39.679	0.755	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:32:57 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Total Dissolved Solids (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:32:57 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	105	228.000	72.000	302.500
ECMW10	53	38	1000.000	970.000	1120.000
ECMW11	52	38	530.000	473.000	671.000
ECMW12	49	35	365.000	327.500	428.000
ECMW13	52	37	1100.000	718.000	1300.000
ECMW14	52	37	750.000	700.000	820.000
ECMW15	51	36	100.000	97.000	110.000
ECMW16	51	36	280.000	180.000	396.000
ECMW17	52	37	570.000	530.000	760.000
ECMW18	51	38	720.000	445.000	1050.000
ECMW19	42	34	155.000	120.000	233.500
ECMW20	42	34	150.000	122.500	179.500
ECMW21	42	34	106.500	78.250	125.000
ECMW22	42	34	140.000	131.500	177.500
ECMW4	52	37	5200.000	4700.000	5300.000
ECMW5	52	37	870.000	780.000	934.000
ECMW6	54	39	5106.000	3360.000	6300.000
ECMW7	54	39	1324.000	1280.000	1500.000
ECMW8	53	39	2750.000	2475.000	4324.500
ECMW9	51	36	1600.000	1500.000	1600.000

H = 256.734 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW4 vs ECMW15	252.067	8.038	Yes
ECMW4 vs ECMW21	251.854	6.699	Yes
ECMW4 vs ECMW22	226.417	6.022	Yes
ECMW4 vs ECMW20	220.917	5.876	Yes
ECMW4 vs CNTL	219.833	8.586	Yes
ECMW4 vs ECMW19	208.479	5.545	Yes
ECMW4 vs ECMW16	189.367	6.039	Yes
ECMW4 vs ECMW12	176.024	5.516	Yes

ECMW4 vs ECMW11	139.310	4.365	Yes
ECMW4 vs ECMW17	130.400	4.158	Yes
ECMW4 vs ECMW18	124.051	3.812	Yes
ECMW4 vs ECMW14	115.333	3.678	Yes
ECMW4 vs ECMW5	102.467	3.268	No
ECMW4 vs ECMW13	85.200	2.717	Do Not Test
ECMW4 vs ECMW10	78.833	2.514	Do Not Test
ECMW4 vs ECMW7	53.567	1.708	Do Not Test
ECMW4 vs ECMW9	44.433	1.417	Do Not Test
ECMW4 vs ECMW8	17.095	0.536	Do Not Test
ECMW4 vs ECMW6	13.767	0.439	Do Not Test
ECMW6 vs ECMW15	238.300	7.599	Yes
ECMW6 vs ECMW21	238.087	6.332	Yes
ECMW6 vs ECMW22	212.650	5.656	Yes
ECMW6 vs ECMW20	207.150	5.510	Yes
ECMW6 vs CNTL	206.067	8.048	Yes
ECMW6 vs ECMW19	194.712	5.179	Yes
ECMW6 vs ECMW16	175.600	5.600	Yes
ECMW6 vs ECMW12	162.257	5.084	Yes
ECMW6 vs ECMW11	125.543	3.934	Yes
ECMW6 vs ECMW17	116.633	3.719	Yes
ECMW6 vs ECMW18	110.285	3.389	No
ECMW6 vs ECMW14	101.567	3.239	Do Not Test
ECMW6 vs ECMW5	88.700	2.829	Do Not Test
ECMW6 vs ECMW13	71.433	2.278	Do Not Test
ECMW6 vs ECMW10	65.067	2.075	Do Not Test
ECMW6 vs ECMW7	39.800	1.269	Do Not Test
ECMW6 vs ECMW9	30.667	0.978	Do Not Test
ECMW6 vs ECMW8	3.329	0.104	Do Not Test
ECMW8 vs ECMW15	234.971	7.363	Yes
ECMW8 vs ECMW21	234.759	6.168	Yes
ECMW8 vs ECMW22	209.321	5.499	Yes
ECMW8 vs ECMW20	203.821	5.355	Yes
ECMW8 vs CNTL	202.738	7.714	Yes
ECMW8 vs ECMW19	191.384	5.028	Yes
ECMW8 vs ECMW16	172.271	5.398	Yes
ECMW8 vs ECMW12	158.929	4.896	Yes
ECMW8 vs ECMW11	122.214	3.765	Yes
ECMW8 vs ECMW17	113.305	3.550	No
ECMW8 vs ECMW18	106.956	3.233	Do Not Test
ECMW8 vs ECMW14	98.238	3.078	Do Not Test
ECMW8 vs ECMW5	85.371	2.675	Do Not Test
ECMW8 vs ECMW13	68.105	2.134	Do Not Test
ECMW8 vs ECMW10	61.738	1.934	Do Not Test
ECMW8 vs ECMW7	36.471	1.143	Do Not Test
ECMW8 vs ECMW9	27.338	0.857	Do Not Test
ECMW9 vs ECMW15	207.633	6.621	Yes
ECMW9 vs ECMW21	207.421	5.517	Yes
ECMW9 vs ECMW22	181.983	4.840	Yes
ECMW9 vs ECMW20	176.483	4.694	Yes
ECMW9 vs CNTL	175.400	6.850	Yes
ECMW9 vs ECMW19	164.046	4.363	Yes
ECMW9 vs ECMW16	144.933	4.622	Yes
ECMW9 vs ECMW12	131.590	4.123	Yes
ECMW9 vs ECMW11	94.876	2.973	No
ECMW9 vs ECMW17	85.967	2.741	Do Not Test

ECMW9 vs ECMW18	79.618	2.447	Do Not Test
ECMW9 vs ECMW14	70.900	2.261	Do Not Test
ECMW9 vs ECMW5	58.033	1.851	Do Not Test
ECMW9 vs ECMW13	40.767	1.300	Do Not Test
ECMW9 vs ECMW10	34.400	1.097	Do Not Test
ECMW9 vs ECMW7	9.133	0.291	Do Not Test
ECMW7 vs ECMW15	198.500	6.330	Yes
ECMW7 vs ECMW21	198.287	5.274	Yes
ECMW7 vs ECMW22	172.850	4.597	Yes
ECMW7 vs ECMW20	167.350	4.451	Yes
ECMW7 vs CNTL	166.267	6.494	Yes
ECMW7 vs ECMW19	154.912	4.120	Yes
ECMW7 vs ECMW16	135.800	4.330	Yes
ECMW7 vs ECMW12	122.457	3.837	Yes
ECMW7 vs ECMW11	85.743	2.687	Do Not Test
ECMW7 vs ECMW17	76.833	2.450	Do Not Test
ECMW7 vs ECMW18	70.485	2.166	Do Not Test
ECMW7 vs ECMW14	61.767	1.970	Do Not Test
ECMW7 vs ECMW5	48.900	1.559	Do Not Test
ECMW7 vs ECMW13	31.633	1.009	Do Not Test
ECMW7 vs ECMW10	25.267	0.806	Do Not Test
ECMW10 vs ECMW15	173.233	5.524	Yes
ECMW10 vs ECMW21	173.021	4.602	Yes
ECMW10 vs ECMW22	147.583	3.925	Yes
ECMW10 vs ECMW20	142.083	3.779	Yes
ECMW10 vs CNTL	141.000	5.507	Yes
ECMW10 vs ECMW19	129.646	3.448	No
ECMW10 vs ECMW16	110.533	3.525	Do Not Test
ECMW10 vs ECMW12	97.190	3.045	Do Not Test
ECMW10 vs ECMW11	60.476	1.895	Do Not Test
ECMW10 vs ECMW17	51.567	1.644	Do Not Test
ECMW10 vs ECMW18	45.218	1.389	Do Not Test
ECMW10 vs ECMW14	36.500	1.164	Do Not Test
ECMW10 vs ECMW5	23.633	0.754	Do Not Test
ECMW10 vs ECMW13	6.367	0.203	Do Not Test
ECMW13 vs ECMW15	166.867	5.321	Yes
ECMW13 vs ECMW21	166.654	4.432	Yes
ECMW13 vs ECMW22	141.217	3.756	Yes
ECMW13 vs ECMW20	135.717	3.610	No
ECMW13 vs CNTL	134.633	5.258	Do Not Test
ECMW13 vs ECMW19	123.279	3.279	Do Not Test
ECMW13 vs ECMW16	104.167	3.322	Do Not Test
ECMW13 vs ECMW12	90.824	2.846	Do Not Test
ECMW13 vs ECMW11	54.110	1.695	Do Not Test
ECMW13 vs ECMW17	45.200	1.441	Do Not Test
ECMW13 vs ECMW18	38.851	1.194	Do Not Test
ECMW13 vs ECMW14	30.133	0.961	Do Not Test
ECMW13 vs ECMW5	17.267	0.551	Do Not Test
ECMW5 vs ECMW15	149.600	4.771	Yes
ECMW5 vs ECMW21	149.387	3.973	Yes
ECMW5 vs ECMW22	123.950	3.297	No
ECMW5 vs ECMW20	118.450	3.150	Do Not Test
ECMW5 vs CNTL	117.367	4.584	Do Not Test
ECMW5 vs ECMW19	106.012	2.820	Do Not Test
ECMW5 vs ECMW16	86.900	2.771	Do Not Test
ECMW5 vs ECMW12	73.557	2.305	Do Not Test

ECMW5 vs ECMW11	36.843	1.154	Do Not Test
ECMW5 vs ECMW17	27.933	0.891	Do Not Test
ECMW5 vs ECMW18	21.585	0.663	Do Not Test
ECMW5 vs ECMW14	12.867	0.410	Do Not Test
ECMW14 vs ECMW15	136.733	4.360	Yes
ECMW14 vs ECMW21	136.521	3.631	No
ECMW14 vs ECMW22	111.083	2.954	Do Not Test
ECMW14 vs ECMW20	105.583	2.808	Do Not Test
ECMW14 vs CNTL	104.500	4.081	Do Not Test
ECMW14 vs ECMW19	93.146	2.477	Do Not Test
ECMW14 vs ECMW16	74.033	2.361	Do Not Test
ECMW14 vs ECMW12	60.690	1.902	Do Not Test
ECMW14 vs ECMW11	23.976	0.751	Do Not Test
ECMW14 vs ECMW17	15.067	0.480	Do Not Test
ECMW14 vs ECMW18	8.718	0.268	Do Not Test
ECMW18 vs ECMW15	128.015	3.934	Yes
ECMW18 vs ECMW21	127.803	3.312	Do Not Test
ECMW18 vs ECMW22	102.365	2.653	Do Not Test
ECMW18 vs ECMW20	96.865	2.510	Do Not Test
ECMW18 vs CNTL	95.782	3.542	Do Not Test
ECMW18 vs ECMW19	84.428	2.188	Do Not Test
ECMW18 vs ECMW16	65.315	2.007	Do Not Test
ECMW18 vs ECMW12	51.973	1.571	Do Not Test
ECMW18 vs ECMW11	15.258	0.461	Do Not Test
ECMW18 vs ECMW17	6.349	0.195	Do Not Test
ECMW17 vs ECMW15	121.667	3.880	Yes
ECMW17 vs ECMW21	121.454	3.230	Do Not Test
ECMW17 vs ECMW22	96.017	2.554	Do Not Test
ECMW17 vs ECMW20	90.517	2.407	Do Not Test
ECMW17 vs CNTL	89.433	3.493	Do Not Test
ECMW17 vs ECMW19	78.079	2.077	Do Not Test
ECMW17 vs ECMW16	58.967	1.880	Do Not Test
ECMW17 vs ECMW12	45.624	1.430	Do Not Test
ECMW17 vs ECMW11	8.910	0.279	Do Not Test
ECMW11 vs ECMW15	112.757	3.533	No
ECMW11 vs ECMW21	112.545	2.957	Do Not Test
ECMW11 vs ECMW22	87.107	2.289	Do Not Test
ECMW11 vs ECMW20	81.607	2.144	Do Not Test
ECMW11 vs CNTL	80.524	3.064	Do Not Test
ECMW11 vs ECMW19	69.170	1.817	Do Not Test
ECMW11 vs ECMW16	50.057	1.568	Do Not Test
ECMW11 vs ECMW12	36.714	1.131	Do Not Test
ECMW12 vs ECMW15	76.043	2.383	Do Not Test
ECMW12 vs ECMW21	75.830	1.992	Do Not Test
ECMW12 vs ECMW22	50.393	1.324	Do Not Test
ECMW12 vs ECMW20	44.893	1.179	Do Not Test
ECMW12 vs CNTL	43.810	1.667	Do Not Test
ECMW12 vs ECMW19	32.455	0.853	Do Not Test
ECMW12 vs ECMW16	13.343	0.418	Do Not Test
ECMW16 vs ECMW15	62.700	1.999	Do Not Test
ECMW16 vs ECMW21	62.487	1.662	Do Not Test
ECMW16 vs ECMW22	37.050	0.985	Do Not Test
ECMW16 vs ECMW20	31.550	0.839	Do Not Test
ECMW16 vs CNTL	30.467	1.190	Do Not Test
ECMW16 vs ECMW19	19.112	0.508	Do Not Test
ECMW19 vs ECMW15	43.587	1.159	Do Not Test

ECMW19 vs ECMW21	43.375	1.010	Do Not Test
ECMW19 vs ECMW22	17.938	0.418	Do Not Test
ECMW19 vs ECMW20	12.438	0.290	Do Not Test
ECMW19 vs CNTL	11.354	0.345	Do Not Test
CNTL vs ECMW15	32.233	1.259	Do Not Test
CNTL vs ECMW21	32.021	0.972	Do Not Test
CNTL vs ECMW22	6.583	0.200	Do Not Test
CNTL vs ECMW20	1.083	0.0329	Do Not Test
ECMW20 vs ECMW15	31.150	0.828	Do Not Test
ECMW20 vs ECMW21	30.938	0.720	Do Not Test
ECMW20 vs ECMW22	5.500	0.128	Do Not Test
ECMW22 vs ECMW15	25.650	0.682	Do Not Test
ECMW22 vs ECMW21	25.438	0.592	Do Not Test
ECMW21 vs ECMW15	0.212	0.00565	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:33:21 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Total Organic Carbon (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:33:21 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	114	2.545	1.055	3.270
ECMW10	53	41	6.865	6.005	7.393
ECMW11	52	40	10.450	9.275	13.375
ECMW12	49	37	19.250	16.150	20.700
ECMW13	52	40	7.300	6.255	7.985
ECMW14	52	40	13.400	12.050	16.800
ECMW15	51	39	1.560	1.403	2.162
ECMW16	51	39	2.730	2.240	3.045
ECMW17	52	40	1.790	1.420	2.630
ECMW18	51	38	1.390	1.000	1.630
ECMW19	42	31	1.000	1.000	2.820
ECMW20	42	30	1.000	1.000	1.458
ECMW21	42	31	1.300	1.000	1.650
ECMW22	42	30	1.180	1.000	1.622
ECMW4	52	40	24.650	23.050	25.375
ECMW5	52	40	1.490	1.263	2.583
ECMW6	54	40	1.705	1.627	2.748
ECMW7	54	40	15.700	12.313	16.500
ECMW8	53	41	10.950	10.250	12.250
ECMW9	51	39	21.250	19.925	22.975

H = 210.279 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW4 vs ECMW20	216.458	6.866	Yes
ECMW4 vs ECMW22	199.708	6.335	Yes
ECMW4 vs ECMW21	198.420	6.156	Yes
ECMW4 vs ECMW19	198.148	6.147	Yes
ECMW4 vs ECMW18	193.490	6.259	Yes
ECMW4 vs ECMW15	175.208	5.558	Yes
ECMW4 vs ECMW5	173.833	5.514	Yes
ECMW4 vs ECMW17	163.208	5.177	Yes

ECMW4 vs CNTL	157.264	6.110	Yes
ECMW4 vs ECMW6	151.375	4.983	Yes
ECMW4 vs ECMW16	130.250	4.132	Yes
ECMW4 vs ECMW10	89.292	2.832	No
ECMW4 vs ECMW13	85.292	2.706	Do Not Test
ECMW4 vs ECMW8	58.750	1.864	Do Not Test
ECMW4 vs ECMW11	56.458	1.791	Do Not Test
ECMW4 vs ECMW7	46.875	1.543	Do Not Test
ECMW4 vs ECMW14	46.625	1.479	Do Not Test
ECMW4 vs ECMW12	23.042	0.731	Do Not Test
ECMW4 vs ECMW9	6.250	0.198	Do Not Test
ECMW9 vs ECMW20	210.208	6.668	Yes
ECMW9 vs ECMW22	193.458	6.137	Yes
ECMW9 vs ECMW21	192.170	5.962	Yes
ECMW9 vs ECMW19	191.898	5.953	Yes
ECMW9 vs ECMW18	187.240	6.057	Yes
ECMW9 vs ECMW15	168.958	5.359	Yes
ECMW9 vs ECMW5	167.583	5.316	Yes
ECMW9 vs ECMW17	156.958	4.979	Yes
ECMW9 vs CNTL	151.014	5.867	Yes
ECMW9 vs ECMW6	145.125	4.777	Yes
ECMW9 vs ECMW16	124.000	3.933	Yes
ECMW9 vs ECMW10	83.042	2.634	Do Not Test
ECMW9 vs ECMW13	79.042	2.507	Do Not Test
ECMW9 vs ECMW8	52.500	1.665	Do Not Test
ECMW9 vs ECMW11	50.208	1.593	Do Not Test
ECMW9 vs ECMW7	40.625	1.337	Do Not Test
ECMW9 vs ECMW14	40.375	1.281	Do Not Test
ECMW9 vs ECMW12	16.792	0.533	Do Not Test
ECMW12 vs ECMW20	193.417	6.135	Yes
ECMW12 vs ECMW22	176.667	5.604	Yes
ECMW12 vs ECMW21	175.379	5.441	Yes
ECMW12 vs ECMW19	175.106	5.432	Yes
ECMW12 vs ECMW18	170.449	5.514	Yes
ECMW12 vs ECMW15	152.167	4.827	Yes
ECMW12 vs ECMW5	150.792	4.783	Yes
ECMW12 vs ECMW17	140.167	4.446	Yes
ECMW12 vs CNTL	134.222	5.215	Yes
ECMW12 vs ECMW6	128.333	4.224	Yes
ECMW12 vs ECMW16	107.208	3.401	No
ECMW12 vs ECMW10	66.250	2.101	Do Not Test
ECMW12 vs ECMW13	62.250	1.975	Do Not Test
ECMW12 vs ECMW8	35.708	1.133	Do Not Test
ECMW12 vs ECMW11	33.417	1.060	Do Not Test
ECMW12 vs ECMW7	23.833	0.785	Do Not Test
ECMW12 vs ECMW14	23.583	0.748	Do Not Test
ECMW14 vs ECMW20	169.833	5.387	Yes
ECMW14 vs ECMW22	153.083	4.856	Yes
ECMW14 vs ECMW21	151.795	4.709	Yes
ECMW14 vs ECMW19	151.523	4.701	Yes
ECMW14 vs ECMW18	146.865	4.751	Yes
ECMW14 vs ECMW15	128.583	4.079	Yes
ECMW14 vs ECMW5	127.208	4.035	Yes
ECMW14 vs ECMW17	116.583	3.698	Yes
ECMW14 vs CNTL	110.639	4.298	Yes
ECMW14 vs ECMW6	104.750	3.448	No

ECMW14 vs ECMW16	83.625	2.653	Do Not Test
ECMW14 vs ECMW10	42.667	1.353	Do Not Test
ECMW14 vs ECMW13	38.667	1.227	Do Not Test
ECMW14 vs ECMW8	12.125	0.385	Do Not Test
ECMW14 vs ECMW11	9.833	0.312	Do Not Test
ECMW14 vs ECMW7	0.250	0.00823	Do Not Test
ECMW7 vs ECMW20	169.583	5.582	Yes
ECMW7 vs ECMW22	152.833	5.031	Yes
ECMW7 vs ECMW21	151.545	4.871	Yes
ECMW7 vs ECMW19	151.273	4.862	Yes
ECMW7 vs ECMW18	146.615	4.929	Yes
ECMW7 vs ECMW15	128.333	4.224	Yes
ECMW7 vs ECMW5	126.958	4.179	Yes
ECMW7 vs ECMW17	116.333	3.829	Yes
ECMW7 vs CNTL	110.389	4.539	Yes
ECMW7 vs ECMW6	104.500	3.580	Do Not Test
ECMW7 vs ECMW16	83.375	2.745	Do Not Test
ECMW7 vs ECMW10	42.417	1.396	Do Not Test
ECMW7 vs ECMW13	38.417	1.265	Do Not Test
ECMW7 vs ECMW8	11.875	0.391	Do Not Test
ECMW7 vs ECMW11	9.583	0.315	Do Not Test
ECMW11 vs ECMW20	160.000	5.075	Yes
ECMW11 vs ECMW22	143.250	4.544	Yes
ECMW11 vs ECMW21	141.962	4.404	Yes
ECMW11 vs ECMW19	141.689	4.396	Yes
ECMW11 vs ECMW18	137.032	4.433	Yes
ECMW11 vs ECMW15	118.750	3.767	Yes
ECMW11 vs ECMW5	117.375	3.723	Yes
ECMW11 vs ECMW17	106.750	3.386	No
ECMW11 vs CNTL	100.806	3.916	Do Not Test
ECMW11 vs ECMW6	94.917	3.124	Do Not Test
ECMW11 vs ECMW16	73.792	2.341	Do Not Test
ECMW11 vs ECMW10	32.833	1.041	Do Not Test
ECMW11 vs ECMW13	28.833	0.915	Do Not Test
ECMW11 vs ECMW8	2.292	0.0727	Do Not Test
ECMW8 vs ECMW20	157.708	5.003	Yes
ECMW8 vs ECMW22	140.958	4.471	Yes
ECMW8 vs ECMW21	139.670	4.333	Yes
ECMW8 vs ECMW19	139.398	4.325	Yes
ECMW8 vs ECMW18	134.740	4.359	Yes
ECMW8 vs ECMW15	116.458	3.694	Yes
ECMW8 vs ECMW5	115.083	3.651	Yes
ECMW8 vs ECMW17	104.458	3.313	Do Not Test
ECMW8 vs CNTL	98.514	3.827	Do Not Test
ECMW8 vs ECMW6	92.625	3.049	Do Not Test
ECMW8 vs ECMW16	71.500	2.268	Do Not Test
ECMW8 vs ECMW10	30.542	0.969	Do Not Test
ECMW8 vs ECMW13	26.542	0.842	Do Not Test
ECMW13 vs ECMW20	131.167	4.161	Yes
ECMW13 vs ECMW22	114.417	3.629	No
ECMW13 vs ECMW21	113.129	3.510	Do Not Test
ECMW13 vs ECMW19	112.856	3.501	Do Not Test
ECMW13 vs ECMW18	108.199	3.500	Do Not Test
ECMW13 vs ECMW15	89.917	2.852	Do Not Test
ECMW13 vs ECMW5	88.542	2.809	Do Not Test
ECMW13 vs ECMW17	77.917	2.472	Do Not Test

ECMW13 vs CNTL	71.972	2.796	Do Not Test
ECMW13 vs ECMW6	66.083	2.175	Do Not Test
ECMW13 vs ECMW16	44.958	1.426	Do Not Test
ECMW13 vs ECMW10	4.000	0.127	Do Not Test
ECMW10 vs ECMW20	127.167	4.034	Yes
ECMW10 vs ECMW22	110.417	3.502	Do Not Test
ECMW10 vs ECMW21	109.129	3.386	Do Not Test
ECMW10 vs ECMW19	108.856	3.377	Do Not Test
ECMW10 vs ECMW18	104.199	3.371	Do Not Test
ECMW10 vs ECMW15	85.917	2.725	Do Not Test
ECMW10 vs ECMW5	84.542	2.682	Do Not Test
ECMW10 vs ECMW17	73.917	2.345	Do Not Test
ECMW10 vs CNTL	67.972	2.641	Do Not Test
ECMW10 vs ECMW6	62.083	2.044	Do Not Test
ECMW10 vs ECMW16	40.958	1.299	Do Not Test
ECMW16 vs ECMW20	86.208	2.735	No
ECMW16 vs ECMW22	69.458	2.203	Do Not Test
ECMW16 vs ECMW21	68.170	2.115	Do Not Test
ECMW16 vs ECMW19	67.898	2.106	Do Not Test
ECMW16 vs ECMW18	63.240	2.046	Do Not Test
ECMW16 vs ECMW15	44.958	1.426	Do Not Test
ECMW16 vs ECMW5	43.583	1.382	Do Not Test
ECMW16 vs ECMW17	32.958	1.045	Do Not Test
ECMW16 vs CNTL	27.014	1.049	Do Not Test
ECMW16 vs ECMW6	21.125	0.695	Do Not Test
ECMW6 vs ECMW20	65.083	2.142	Do Not Test
ECMW6 vs ECMW22	48.333	1.591	Do Not Test
ECMW6 vs ECMW21	47.045	1.512	Do Not Test
ECMW6 vs ECMW19	46.773	1.503	Do Not Test
ECMW6 vs ECMW18	42.115	1.416	Do Not Test
ECMW6 vs ECMW15	23.833	0.785	Do Not Test
ECMW6 vs ECMW5	22.458	0.739	Do Not Test
ECMW6 vs ECMW17	11.833	0.390	Do Not Test
ECMW6 vs CNTL	5.889	0.242	Do Not Test
CNTL vs ECMW20	59.194	2.300	Do Not Test
CNTL vs ECMW22	42.444	1.649	Do Not Test
CNTL vs ECMW21	41.157	1.547	Do Not Test
CNTL vs ECMW19	40.884	1.537	Do Not Test
CNTL vs ECMW18	36.226	1.450	Do Not Test
CNTL vs ECMW15	17.944	0.697	Do Not Test
CNTL vs ECMW5	16.569	0.644	Do Not Test
CNTL vs ECMW17	5.944	0.231	Do Not Test
ECMW17 vs ECMW20	53.250	1.689	Do Not Test
ECMW17 vs ECMW22	36.500	1.158	Do Not Test
ECMW17 vs ECMW21	35.212	1.092	Do Not Test
ECMW17 vs ECMW19	34.939	1.084	Do Not Test
ECMW17 vs ECMW18	30.282	0.980	Do Not Test
ECMW17 vs ECMW15	12.000	0.381	Do Not Test
ECMW17 vs ECMW5	10.625	0.337	Do Not Test
ECMW5 vs ECMW20	42.625	1.352	Do Not Test
ECMW5 vs ECMW22	25.875	0.821	Do Not Test
ECMW5 vs ECMW21	24.587	0.763	Do Not Test
ECMW5 vs ECMW19	24.314	0.754	Do Not Test
ECMW5 vs ECMW18	19.657	0.636	Do Not Test
ECMW5 vs ECMW15	1.375	0.0436	Do Not Test
ECMW15 vs ECMW20	41.250	1.308	Do Not Test

ECMW15 vs ECMW22	24.500	0.777	Do Not Test
ECMW15 vs ECMW21	23.212	0.720	Do Not Test
ECMW15 vs ECMW19	22.939	0.712	Do Not Test
ECMW15 vs ECMW18	18.282	0.591	Do Not Test
ECMW18 vs ECMW20	22.968	0.743	Do Not Test
ECMW18 vs ECMW22	6.218	0.201	Do Not Test
ECMW18 vs ECMW21	4.930	0.156	Do Not Test
ECMW18 vs ECMW19	4.657	0.147	Do Not Test
ECMW19 vs ECMW20	18.311	0.568	Do Not Test
ECMW19 vs ECMW22	1.561	0.0484	Do Not Test
ECMW19 vs ECMW21	0.273	0.00828	Do Not Test
ECMW21 vs ECMW20	18.038	0.560	Do Not Test
ECMW21 vs ECMW22	1.288	0.0400	Do Not Test
ECMW22 vs ECMW20	16.750	0.531	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:33:40 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Total Alkalinity (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:33:40 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	114	16.000	5.000	57.000
ECMW10	53	41	5.000	5.000	5.000
ECMW11	52	40	5.000	5.000	5.000
ECMW12	49	37	167.000	147.250	235.750
ECMW13	52	40	5.000	5.000	15.000
ECMW14	52	40	6.500	5.000	13.000
ECMW15	51	39	5.000	5.000	5.000
ECMW16	51	39	5.000	5.000	5.000
ECMW17	52	40	5.000	5.000	5.000
ECMW18	51	38	15.000	13.500	19.500
ECMW19	42	31	32.000	28.000	34.000
ECMW20	42	30	37.000	30.750	42.750
ECMW21	42	31	5.000	5.000	6.000
ECMW22	42	30	47.000	42.750	49.750
ECMW4	52	40	5.000	5.000	5.000
ECMW5	52	40	7.500	5.250	8.750
ECMW6	54	40	5.000	5.000	5.000
ECMW7	54	40	5.000	5.000	5.000
ECMW8	53	41	71.500	14.250	139.750
ECMW9	51	39	26.000	23.500	30.000

H = 200.213 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW12 vs ECMW7	194.185	6.392	Yes
ECMW12 vs ECMW6	194.185	6.392	Yes
ECMW12 vs ECMW16	189.292	6.004	Yes
ECMW12 vs ECMW4	189.292	6.004	Yes
ECMW12 vs ECMW11	189.292	6.004	Yes
ECMW12 vs ECMW15	189.292	6.004	Yes
ECMW12 vs ECMW17	189.292	6.004	Yes
ECMW12 vs ECMW10	182.458	5.788	Yes

ECMW12 vs ECMW21	169.064	5.245	Yes
ECMW12 vs ECMW13	150.917	4.787	Yes
ECMW12 vs ECMW14	144.750	4.592	Yes
ECMW12 vs ECMW5	131.833	4.182	Yes
ECMW12 vs CNTL	95.500	3.710	Yes
ECMW12 vs ECMW18	89.061	2.881	No
ECMW12 vs ECMW9	61.458	1.950	Do Not Test
ECMW12 vs ECMW19	53.883	1.672	Do Not Test
ECMW12 vs ECMW8	52.792	1.675	Do Not Test
ECMW12 vs ECMW20	43.000	1.364	Do Not Test
ECMW12 vs ECMW22	33.625	1.067	Do Not Test
ECMW22 vs ECMW7	160.560	5.285	Yes
ECMW22 vs ECMW6	160.560	5.285	Yes
ECMW22 vs ECMW16	155.667	4.938	Yes
ECMW22 vs ECMW4	155.667	4.938	Yes
ECMW22 vs ECMW11	155.667	4.938	Yes
ECMW22 vs ECMW15	155.667	4.938	Yes
ECMW22 vs ECMW17	155.667	4.938	Yes
ECMW22 vs ECMW10	148.833	4.721	Yes
ECMW22 vs ECMW21	135.439	4.202	Yes
ECMW22 vs ECMW13	117.292	3.721	Yes
ECMW22 vs ECMW14	111.125	3.525	No
ECMW22 vs ECMW5	98.208	3.115	Do Not Test
ECMW22 vs CNTL	61.875	2.404	Do Not Test
ECMW22 vs ECMW18	55.436	1.793	Do Not Test
ECMW22 vs ECMW9	27.833	0.883	Do Not Test
ECMW22 vs ECMW19	20.258	0.628	Do Not Test
ECMW22 vs ECMW8	19.167	0.608	Do Not Test
ECMW22 vs ECMW20	9.375	0.297	Do Not Test
ECMW20 vs ECMW7	151.185	4.977	Yes
ECMW20 vs ECMW6	151.185	4.977	Yes
ECMW20 vs ECMW16	146.292	4.640	Yes
ECMW20 vs ECMW4	146.292	4.640	Yes
ECMW20 vs ECMW11	146.292	4.640	Yes
ECMW20 vs ECMW15	146.292	4.640	Yes
ECMW20 vs ECMW17	146.292	4.640	Yes
ECMW20 vs ECMW10	139.458	4.424	Yes
ECMW20 vs ECMW21	126.064	3.911	Yes
ECMW20 vs ECMW13	107.917	3.423	No
ECMW20 vs ECMW14	101.750	3.228	Do Not Test
ECMW20 vs ECMW5	88.833	2.818	Do Not Test
ECMW20 vs CNTL	52.500	2.040	Do Not Test
ECMW20 vs ECMW18	46.061	1.490	Do Not Test
ECMW20 vs ECMW9	18.458	0.586	Do Not Test
ECMW20 vs ECMW19	10.883	0.338	Do Not Test
ECMW20 vs ECMW8	9.792	0.311	Do Not Test
ECMW8 vs ECMW7	141.393	4.654	Yes
ECMW8 vs ECMW6	141.393	4.654	Yes
ECMW8 vs ECMW16	136.500	4.330	Yes
ECMW8 vs ECMW4	136.500	4.330	Yes
ECMW8 vs ECMW11	136.500	4.330	Yes
ECMW8 vs ECMW15	136.500	4.330	Yes
ECMW8 vs ECMW17	136.500	4.330	Yes
ECMW8 vs ECMW10	129.667	4.113	Yes
ECMW8 vs ECMW21	116.273	3.607	No
ECMW8 vs ECMW13	98.125	3.113	Do Not Test

ECMW8 vs ECMW14	91.958	2.917	Do Not Test
ECMW8 vs ECMW5	79.042	2.507	Do Not Test
ECMW8 vs CNTL	42.708	1.659	Do Not Test
ECMW8 vs ECMW18	36.269	1.173	Do Not Test
ECMW8 vs ECMW9	8.667	0.275	Do Not Test
ECMW8 vs ECMW19	1.091	0.0338	Do Not Test
ECMW19 vs ECMW7	140.302	4.509	Yes
ECMW19 vs ECMW6	140.302	4.509	Yes
ECMW19 vs ECMW16	135.409	4.201	Yes
ECMW19 vs ECMW4	135.409	4.201	Yes
ECMW19 vs ECMW11	135.409	4.201	Yes
ECMW19 vs ECMW15	135.409	4.201	Yes
ECMW19 vs ECMW17	135.409	4.201	Yes
ECMW19 vs ECMW10	128.576	3.989	Yes
ECMW19 vs ECMW21	115.182	3.498	Do Not Test
ECMW19 vs ECMW13	97.034	3.010	Do Not Test
ECMW19 vs ECMW14	90.867	2.819	Do Not Test
ECMW19 vs ECMW5	77.951	2.418	Do Not Test
ECMW19 vs CNTL	41.617	1.564	Do Not Test
ECMW19 vs ECMW18	35.178	1.112	Do Not Test
ECMW19 vs ECMW9	7.576	0.235	Do Not Test
ECMW9 vs ECMW7	132.726	4.369	Yes
ECMW9 vs ECMW6	132.726	4.369	Yes
ECMW9 vs ECMW16	127.833	4.055	Yes
ECMW9 vs ECMW4	127.833	4.055	Yes
ECMW9 vs ECMW11	127.833	4.055	Yes
ECMW9 vs ECMW15	127.833	4.055	Yes
ECMW9 vs ECMW17	127.833	4.055	Yes
ECMW9 vs ECMW10	121.000	3.838	Yes
ECMW9 vs ECMW21	107.606	3.338	Do Not Test
ECMW9 vs ECMW13	89.458	2.838	Do Not Test
ECMW9 vs ECMW14	83.292	2.642	Do Not Test
ECMW9 vs ECMW5	70.375	2.232	Do Not Test
ECMW9 vs CNTL	34.042	1.323	Do Not Test
ECMW9 vs ECMW18	27.603	0.893	Do Not Test
ECMW18 vs ECMW7	105.124	3.534	No
ECMW18 vs ECMW6	105.124	3.534	Do Not Test
ECMW18 vs ECMW16	100.231	3.242	Do Not Test
ECMW18 vs ECMW4	100.231	3.242	Do Not Test
ECMW18 vs ECMW11	100.231	3.242	Do Not Test
ECMW18 vs ECMW15	100.231	3.242	Do Not Test
ECMW18 vs ECMW17	100.231	3.242	Do Not Test
ECMW18 vs ECMW10	93.397	3.021	Do Not Test
ECMW18 vs ECMW21	80.003	2.529	Do Not Test
ECMW18 vs ECMW13	61.856	2.001	Do Not Test
ECMW18 vs ECMW14	55.689	1.801	Do Not Test
ECMW18 vs ECMW5	42.772	1.384	Do Not Test
ECMW18 vs CNTL	6.439	0.258	Do Not Test
CNTL vs ECMW7	98.685	4.057	Do Not Test
CNTL vs ECMW6	98.685	4.057	Do Not Test
CNTL vs ECMW16	93.792	3.644	Do Not Test
CNTL vs ECMW4	93.792	3.644	Do Not Test
CNTL vs ECMW11	93.792	3.644	Do Not Test
CNTL vs ECMW15	93.792	3.644	Do Not Test
CNTL vs ECMW17	93.792	3.644	Do Not Test
CNTL vs ECMW10	86.958	3.378	Do Not Test

CNTL vs ECMW21	73.564	2.765	Do Not Test
CNTL vs ECMW13	55.417	2.153	Do Not Test
CNTL vs ECMW14	49.250	1.913	Do Not Test
CNTL vs ECMW5	36.333	1.412	Do Not Test
ECMW5 vs ECMW7	62.351	2.052	Do Not Test
ECMW5 vs ECMW6	62.351	2.052	Do Not Test
ECMW5 vs ECMW16	57.458	1.823	Do Not Test
ECMW5 vs ECMW4	57.458	1.823	Do Not Test
ECMW5 vs ECMW11	57.458	1.823	Do Not Test
ECMW5 vs ECMW15	57.458	1.823	Do Not Test
ECMW5 vs ECMW17	57.458	1.823	Do Not Test
ECMW5 vs ECMW10	50.625	1.606	Do Not Test
ECMW5 vs ECMW21	37.231	1.155	Do Not Test
ECMW5 vs ECMW13	19.083	0.605	Do Not Test
ECMW5 vs ECMW14	12.917	0.410	Do Not Test
ECMW14 vs ECMW7	49.435	1.627	Do Not Test
ECMW14 vs ECMW6	49.435	1.627	Do Not Test
ECMW14 vs ECMW16	44.542	1.413	Do Not Test
ECMW14 vs ECMW4	44.542	1.413	Do Not Test
ECMW14 vs ECMW11	44.542	1.413	Do Not Test
ECMW14 vs ECMW15	44.542	1.413	Do Not Test
ECMW14 vs ECMW17	44.542	1.413	Do Not Test
ECMW14 vs ECMW10	37.708	1.196	Do Not Test
ECMW14 vs ECMW21	24.314	0.754	Do Not Test
ECMW14 vs ECMW13	6.167	0.196	Do Not Test
ECMW13 vs ECMW7	43.268	1.424	Do Not Test
ECMW13 vs ECMW6	43.268	1.424	Do Not Test
ECMW13 vs ECMW16	38.375	1.217	Do Not Test
ECMW13 vs ECMW4	38.375	1.217	Do Not Test
ECMW13 vs ECMW11	38.375	1.217	Do Not Test
ECMW13 vs ECMW15	38.375	1.217	Do Not Test
ECMW13 vs ECMW17	38.375	1.217	Do Not Test
ECMW13 vs ECMW10	31.542	1.001	Do Not Test
ECMW13 vs ECMW21	18.148	0.563	Do Not Test
ECMW21 vs ECMW7	25.120	0.807	Do Not Test
ECMW21 vs ECMW6	25.120	0.807	Do Not Test
ECMW21 vs ECMW16	20.227	0.628	Do Not Test
ECMW21 vs ECMW4	20.227	0.628	Do Not Test
ECMW21 vs ECMW11	20.227	0.628	Do Not Test
ECMW21 vs ECMW15	20.227	0.628	Do Not Test
ECMW21 vs ECMW17	20.227	0.628	Do Not Test
ECMW21 vs ECMW10	13.394	0.416	Do Not Test
ECMW10 vs ECMW7	11.726	0.386	Do Not Test
ECMW10 vs ECMW6	11.726	0.386	Do Not Test
ECMW10 vs ECMW16	6.833	0.217	Do Not Test
ECMW10 vs ECMW4	6.833	0.217	Do Not Test
ECMW10 vs ECMW11	6.833	0.217	Do Not Test
ECMW10 vs ECMW15	6.833	0.217	Do Not Test
ECMW10 vs ECMW17	6.833	0.217	Do Not Test
ECMW17 vs ECMW7	4.893	0.161	Do Not Test
ECMW17 vs ECMW6	4.893	0.161	Do Not Test
ECMW17 vs ECMW16	0.000	0.000	Do Not Test
ECMW17 vs ECMW4	0.000	0.000	Do Not Test
ECMW17 vs ECMW11	0.000	0.000	Do Not Test
ECMW17 vs ECMW15	0.000	0.000	Do Not Test
ECMW15 vs ECMW7	4.893	0.161	Do Not Test

ECMW15 vs ECMW6	4.893	0.161	Do Not Test
ECMW15 vs ECMW16	0.000	0.000	Do Not Test
ECMW15 vs ECMW4	0.000	0.000	Do Not Test
ECMW15 vs ECMW11	0.000	0.000	Do Not Test
ECMW11 vs ECMW7	4.893	0.161	Do Not Test
ECMW11 vs ECMW6	4.893	0.161	Do Not Test
ECMW11 vs ECMW16	0.000	0.000	Do Not Test
ECMW11 vs ECMW4	0.000	0.000	Do Not Test
ECMW4 vs ECMW7	4.893	0.161	Do Not Test
ECMW4 vs ECMW6	4.893	0.161	Do Not Test
ECMW4 vs ECMW16	0.000	0.000	Do Not Test
ECMW16 vs ECMW7	4.893	0.161	Do Not Test
ECMW16 vs ECMW6	4.893	0.161	Do Not Test
ECMW6 vs ECMW7	0.000	0.000	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:34:27 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Vanadium (Total) (mg/L)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:34:27 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	114	0.0200	0.0200	0.0200
ECMW10	53	41	0.0200	0.0200	0.0200
ECMW11	52	40	0.0200	0.0200	0.0200
ECMW12	49	37	0.0200	0.0200	0.0200
ECMW13	52	40	0.0200	0.0200	0.0200
ECMW14	52	40	0.0200	0.0200	0.0200
ECMW15	51	38	0.0200	0.0200	0.0200
ECMW16	51	39	0.0200	0.0200	0.0200
ECMW17	52	40	0.0200	0.0200	0.0200
ECMW18	51	39	0.0425	0.0200	0.0500
ECMW19	42	30	0.0200	0.0200	0.0200
ECMW20	42	30	0.0200	0.0200	0.0200
ECMW21	42	30	0.0200	0.0200	0.0200
ECMW22	42	30	0.0200	0.0200	0.0200
ECMW4	52	40	0.0200	0.0200	0.0200
ECMW5	52	40	0.0200	0.0200	0.0200
ECMW6	54	42	0.0200	0.0200	0.0200
ECMW7	54	42	0.0200	0.0200	0.0200
ECMW8	53	41	0.0200	0.0200	0.0200
ECMW9	51	39	0.0200	0.0200	0.0200

H = 154.600 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW18 vs CNTL	88.167	3.451	No
ECMW18 vs ECMW17	88.167	2.818	Do Not Test
ECMW18 vs ECMW16	88.167	2.818	Do Not Test
ECMW18 vs ECMW10	88.167	2.818	Do Not Test
ECMW18 vs ECMW11	88.167	2.818	Do Not Test
ECMW18 vs ECMW14	88.167	2.818	Do Not Test
ECMW18 vs ECMW13	88.167	2.818	Do Not Test
ECMW18 vs ECMW12	88.167	2.818	Do Not Test

ECMW18 vs ECMW15	88.167	2.874	Do Not Test
ECMW18 vs ECMW9	88.167	2.818	Do Not Test
ECMW18 vs ECMW8	88.167	2.818	Do Not Test
ECMW18 vs ECMW7	88.167	2.818	Do Not Test
ECMW18 vs ECMW6	88.167	2.818	Do Not Test
ECMW18 vs ECMW19	88.167	2.818	Do Not Test
ECMW18 vs ECMW20	88.167	2.818	Do Not Test
ECMW18 vs ECMW4	88.167	2.818	Do Not Test
ECMW18 vs ECMW22	88.167	2.818	Do Not Test
ECMW18 vs ECMW5	88.167	2.818	Do Not Test
ECMW18 vs ECMW21	76.958	2.460	Do Not Test
ECMW21 vs CNTL	11.208	0.439	Do Not Test
ECMW21 vs ECMW17	11.208	0.358	Do Not Test
ECMW21 vs ECMW16	11.208	0.358	Do Not Test
ECMW21 vs ECMW10	11.208	0.358	Do Not Test
ECMW21 vs ECMW11	11.208	0.358	Do Not Test
ECMW21 vs ECMW14	11.208	0.358	Do Not Test
ECMW21 vs ECMW13	11.208	0.358	Do Not Test
ECMW21 vs ECMW12	11.208	0.358	Do Not Test
ECMW21 vs ECMW15	11.208	0.365	Do Not Test
ECMW21 vs ECMW9	11.208	0.358	Do Not Test
ECMW21 vs ECMW8	11.208	0.358	Do Not Test
ECMW21 vs ECMW7	11.208	0.358	Do Not Test
ECMW21 vs ECMW6	11.208	0.358	Do Not Test
ECMW21 vs ECMW19	11.208	0.358	Do Not Test
ECMW21 vs ECMW20	11.208	0.358	Do Not Test
ECMW21 vs ECMW4	11.208	0.358	Do Not Test
ECMW21 vs ECMW22	11.208	0.358	Do Not Test
ECMW21 vs ECMW5	11.208	0.358	Do Not Test
ECMW5 vs CNTL	0.000	0.000	Do Not Test
ECMW5 vs ECMW17	0.000	0.000	Do Not Test
ECMW5 vs ECMW16	0.000	0.000	Do Not Test
ECMW5 vs ECMW10	0.000	0.000	Do Not Test
ECMW5 vs ECMW11	0.000	0.000	Do Not Test
ECMW5 vs ECMW14	0.000	0.000	Do Not Test
ECMW5 vs ECMW13	0.000	0.000	Do Not Test
ECMW5 vs ECMW12	0.000	0.000	Do Not Test
ECMW5 vs ECMW15	0.000	0.000	Do Not Test
ECMW5 vs ECMW9	0.000	0.000	Do Not Test
ECMW5 vs ECMW8	0.000	0.000	Do Not Test
ECMW5 vs ECMW7	0.000	0.000	Do Not Test
ECMW5 vs ECMW6	0.000	0.000	Do Not Test
ECMW5 vs ECMW19	0.000	0.000	Do Not Test
ECMW5 vs ECMW20	0.000	0.000	Do Not Test
ECMW5 vs ECMW4	0.000	0.000	Do Not Test
ECMW5 vs ECMW22	0.000	0.000	Do Not Test
ECMW22 vs CNTL	0.000	0.000	Do Not Test
ECMW22 vs ECMW17	0.000	0.000	Do Not Test
ECMW22 vs ECMW16	0.000	0.000	Do Not Test
ECMW22 vs ECMW10	0.000	0.000	Do Not Test
ECMW22 vs ECMW11	0.000	0.000	Do Not Test
ECMW22 vs ECMW14	0.000	0.000	Do Not Test
ECMW22 vs ECMW13	0.000	0.000	Do Not Test
ECMW22 vs ECMW12	0.000	0.000	Do Not Test
ECMW22 vs ECMW15	0.000	0.000	Do Not Test
ECMW22 vs ECMW9	0.000	0.000	Do Not Test

ECMW22 vs ECMW8	0.000	0.000	Do Not Test
ECMW22 vs ECMW7	0.000	0.000	Do Not Test
ECMW22 vs ECMW6	0.000	0.000	Do Not Test
ECMW22 vs ECMW19	0.000	0.000	Do Not Test
ECMW22 vs ECMW20	0.000	0.000	Do Not Test
ECMW22 vs ECMW4	0.000	0.000	Do Not Test
ECMW4 vs CNTL	0.000	0.000	Do Not Test
ECMW4 vs ECMW17	0.000	0.000	Do Not Test
ECMW4 vs ECMW16	0.000	0.000	Do Not Test
ECMW4 vs ECMW10	0.000	0.000	Do Not Test
ECMW4 vs ECMW11	0.000	0.000	Do Not Test
ECMW4 vs ECMW14	0.000	0.000	Do Not Test
ECMW4 vs ECMW13	0.000	0.000	Do Not Test
ECMW4 vs ECMW12	0.000	0.000	Do Not Test
ECMW4 vs ECMW15	0.000	0.000	Do Not Test
ECMW4 vs ECMW9	0.000	0.000	Do Not Test
ECMW4 vs ECMW8	0.000	0.000	Do Not Test
ECMW4 vs ECMW7	0.000	0.000	Do Not Test
ECMW4 vs ECMW6	0.000	0.000	Do Not Test
ECMW4 vs ECMW19	0.000	0.000	Do Not Test
ECMW4 vs ECMW20	0.000	0.000	Do Not Test
ECMW20 vs CNTL	0.000	0.000	Do Not Test
ECMW20 vs ECMW17	0.000	0.000	Do Not Test
ECMW20 vs ECMW16	0.000	0.000	Do Not Test
ECMW20 vs ECMW10	0.000	0.000	Do Not Test
ECMW20 vs ECMW11	0.000	0.000	Do Not Test
ECMW20 vs ECMW14	0.000	0.000	Do Not Test
ECMW20 vs ECMW13	0.000	0.000	Do Not Test
ECMW20 vs ECMW12	0.000	0.000	Do Not Test
ECMW20 vs ECMW15	0.000	0.000	Do Not Test
ECMW20 vs ECMW9	0.000	0.000	Do Not Test
ECMW20 vs ECMW8	0.000	0.000	Do Not Test
ECMW20 vs ECMW7	0.000	0.000	Do Not Test
ECMW20 vs ECMW6	0.000	0.000	Do Not Test
ECMW20 vs ECMW19	0.000	0.000	Do Not Test
ECMW19 vs CNTL	0.000	0.000	Do Not Test
ECMW19 vs ECMW17	0.000	0.000	Do Not Test
ECMW19 vs ECMW16	0.000	0.000	Do Not Test
ECMW19 vs ECMW10	0.000	0.000	Do Not Test
ECMW19 vs ECMW11	0.000	0.000	Do Not Test
ECMW19 vs ECMW14	0.000	0.000	Do Not Test
ECMW19 vs ECMW13	0.000	0.000	Do Not Test
ECMW19 vs ECMW12	0.000	0.000	Do Not Test
ECMW19 vs ECMW15	0.000	0.000	Do Not Test
ECMW19 vs ECMW9	0.000	0.000	Do Not Test
ECMW19 vs ECMW8	0.000	0.000	Do Not Test
ECMW19 vs ECMW7	0.000	0.000	Do Not Test
ECMW19 vs ECMW6	0.000	0.000	Do Not Test
ECMW6 vs CNTL	0.000	0.000	Do Not Test
ECMW6 vs ECMW17	0.000	0.000	Do Not Test
ECMW6 vs ECMW16	0.000	0.000	Do Not Test
ECMW6 vs ECMW10	0.000	0.000	Do Not Test
ECMW6 vs ECMW11	0.000	0.000	Do Not Test
ECMW6 vs ECMW14	0.000	0.000	Do Not Test
ECMW6 vs ECMW13	0.000	0.000	Do Not Test
ECMW6 vs ECMW12	0.000	0.000	Do Not Test

ECMW6 vs ECMW15	0.000	0.000	Do Not Test
ECMW6 vs ECMW9	0.000	0.000	Do Not Test
ECMW6 vs ECMW8	0.000	0.000	Do Not Test
ECMW6 vs ECMW7	0.000	0.000	Do Not Test
ECMW7 vs CNTL	0.000	0.000	Do Not Test
ECMW7 vs ECMW17	0.000	0.000	Do Not Test
ECMW7 vs ECMW16	0.000	0.000	Do Not Test
ECMW7 vs ECMW10	0.000	0.000	Do Not Test
ECMW7 vs ECMW11	0.000	0.000	Do Not Test
ECMW7 vs ECMW14	0.000	0.000	Do Not Test
ECMW7 vs ECMW13	0.000	0.000	Do Not Test
ECMW7 vs ECMW12	0.000	0.000	Do Not Test
ECMW7 vs ECMW15	0.000	0.000	Do Not Test
ECMW7 vs ECMW9	0.000	0.000	Do Not Test
ECMW7 vs ECMW8	0.000	0.000	Do Not Test
ECMW8 vs CNTL	0.000	0.000	Do Not Test
ECMW8 vs ECMW17	0.000	0.000	Do Not Test
ECMW8 vs ECMW16	0.000	0.000	Do Not Test
ECMW8 vs ECMW10	0.000	0.000	Do Not Test
ECMW8 vs ECMW11	0.000	0.000	Do Not Test
ECMW8 vs ECMW14	0.000	0.000	Do Not Test
ECMW8 vs ECMW13	0.000	0.000	Do Not Test
ECMW8 vs ECMW12	0.000	0.000	Do Not Test
ECMW8 vs ECMW15	0.000	0.000	Do Not Test
ECMW8 vs ECMW9	0.000	0.000	Do Not Test
ECMW9 vs CNTL	0.000	0.000	Do Not Test
ECMW9 vs ECMW17	0.000	0.000	Do Not Test
ECMW9 vs ECMW16	0.000	0.000	Do Not Test
ECMW9 vs ECMW10	0.000	0.000	Do Not Test
ECMW9 vs ECMW11	0.000	0.000	Do Not Test
ECMW9 vs ECMW14	0.000	0.000	Do Not Test
ECMW9 vs ECMW13	0.000	0.000	Do Not Test
ECMW9 vs ECMW12	0.000	0.000	Do Not Test
ECMW9 vs ECMW15	0.000	0.000	Do Not Test
ECMW15 vs CNTL	0.000	0.000	Do Not Test
ECMW15 vs ECMW17	0.000	0.000	Do Not Test
ECMW15 vs ECMW16	0.000	0.000	Do Not Test
ECMW15 vs ECMW10	0.000	0.000	Do Not Test
ECMW15 vs ECMW11	0.000	0.000	Do Not Test
ECMW15 vs ECMW14	0.000	0.000	Do Not Test
ECMW15 vs ECMW13	0.000	0.000	Do Not Test
ECMW15 vs ECMW12	0.000	0.000	Do Not Test
ECMW12 vs CNTL	0.000	0.000	Do Not Test
ECMW12 vs ECMW17	0.000	0.000	Do Not Test
ECMW12 vs ECMW16	0.000	0.000	Do Not Test
ECMW12 vs ECMW10	0.000	0.000	Do Not Test
ECMW12 vs ECMW11	0.000	0.000	Do Not Test
ECMW12 vs ECMW14	0.000	0.000	Do Not Test
ECMW12 vs ECMW13	0.000	0.000	Do Not Test
ECMW13 vs CNTL	0.000	0.000	Do Not Test
ECMW13 vs ECMW17	0.000	0.000	Do Not Test
ECMW13 vs ECMW16	0.000	0.000	Do Not Test
ECMW13 vs ECMW10	0.000	0.000	Do Not Test
ECMW13 vs ECMW11	0.000	0.000	Do Not Test
ECMW13 vs ECMW14	0.000	0.000	Do Not Test
ECMW14 vs CNTL	0.000	0.000	Do Not Test

ECMW14 vs ECMW17	0.000	0.000	Do Not Test
ECMW14 vs ECMW16	0.000	0.000	Do Not Test
ECMW14 vs ECMW10	0.000	0.000	Do Not Test
ECMW14 vs ECMW11	0.000	0.000	Do Not Test
ECMW11 vs CNTL	0.000	0.000	Do Not Test
ECMW11 vs ECMW17	0.000	0.000	Do Not Test
ECMW11 vs ECMW16	0.000	0.000	Do Not Test
ECMW11 vs ECMW10	0.000	0.000	Do Not Test
ECMW10 vs CNTL	0.000	0.000	Do Not Test
ECMW10 vs ECMW17	0.000	0.000	Do Not Test
ECMW10 vs ECMW16	0.000	0.000	Do Not Test
ECMW16 vs CNTL	0.000	0.000	Do Not Test
ECMW16 vs ECMW17	0.000	0.000	Do Not Test
ECMW17 vs CNTL	0.000	0.000	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

One Way Analysis of Variance Thursday, November 03, 2022, 1:34:53 PM

Data source: Data 1 in Data for Stats

Dependent Variable: Turbidity (ntu)

Normality Test (Shapiro-Wilk) Failed (P < 0.050)

Test execution ended by user request, ANOVA on Ranks begun

Kruskal-Wallis One Way Analysis of Variance on Ranks Thursday, November 03, 2022, 1:34:53 PM

Data source: Data 1 in Data for Stats

Group	N	Missing	Median	25%	75%
CNTL	150	126	3.430	1.922	5.350
ECMW10	53	44	1.080	0.780	1.945
ECMW11	52	45	1.930	0.940	3.550
ECMW12	49	41	14.200	3.567	57.050
ECMW13	52	44	4.895	2.870	7.300
ECMW14	52	44	1.010	0.495	4.550
ECMW15	51	43	1.435	0.610	3.317
ECMW16	51	43	1.480	1.288	2.492
ECMW17	52	44	1.925	1.125	2.662
ECMW18	51	43	356.500	321.000	423.500
ECMW19	42	34	6.980	2.170	18.165
ECMW20	42	34	84.100	58.525	176.750
ECMW21	42	34	6.640	2.943	16.275
ECMW22	42	34	3.095	1.510	5.400
ECMW4	52	44	1.380	0.893	1.717
ECMW5	52	44	1.440	0.458	8.295
ECMW6	54	46	1.855	1.375	7.412
ECMW7	54	46	2.170	0.957	3.185
ECMW8	53	45	2.025	0.690	3.992
ECMW9	51	43	2.295	1.507	2.905

H = 81.281 with 19 degrees of freedom. (P = <0.001)

The differences in the median values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001)

To isolate the group or groups that differ from the others use a multiple comparison procedure.

All Pairwise Multiple Comparison Procedures (Dunn's Method) :

Comparison	Diff of Ranks	Q	P<0.05
ECMW18 vs ECMW10	126.611	5.114	Yes
ECMW18 vs ECMW4	125.688	4.934	Yes
ECMW18 vs ECMW14	122.125	4.794	Yes
ECMW18 vs ECMW16	115.625	4.539	Yes
ECMW18 vs ECMW15	114.250	4.485	Yes
ECMW18 vs ECMW17	107.813	4.232	Yes
ECMW18 vs ECMW5	106.750	4.190	Yes
ECMW18 vs ECMW8	105.563	4.144	Yes

ECMW18 vs ECMW7	102.375	4.019	Yes
ECMW18 vs ECMW11	101.000	3.830	Yes
ECMW18 vs ECMW6	94.438	3.707	Yes
ECMW18 vs ECMW9	92.813	3.643	No
ECMW18 vs ECMW22	83.125	3.263	Do Not Test
ECMW18 vs CNTL	75.563	3.633	Do Not Test
ECMW18 vs ECMW19	59.625	2.340	Do Not Test
ECMW18 vs ECMW13	59.375	2.331	Do Not Test
ECMW18 vs ECMW21	49.313	1.936	Do Not Test
ECMW18 vs ECMW12	40.875	1.604	Do Not Test
ECMW18 vs ECMW20	10.750	0.422	Do Not Test
ECMW20 vs ECMW10	115.861	4.680	Yes
ECMW20 vs ECMW4	114.938	4.512	Yes
ECMW20 vs ECMW14	111.375	4.372	Yes
ECMW20 vs ECMW16	104.875	4.117	Yes
ECMW20 vs ECMW15	103.500	4.063	Yes
ECMW20 vs ECMW17	97.063	3.810	Yes
ECMW20 vs ECMW5	96.000	3.768	Yes
ECMW20 vs ECMW8	94.813	3.722	Yes
ECMW20 vs ECMW7	91.625	3.597	No
ECMW20 vs ECMW11	90.250	3.422	Do Not Test
ECMW20 vs ECMW6	83.688	3.285	Do Not Test
ECMW20 vs ECMW9	82.063	3.221	Do Not Test
ECMW20 vs ECMW22	72.375	2.841	Do Not Test
ECMW20 vs CNTL	64.813	3.116	Do Not Test
ECMW20 vs ECMW19	48.875	1.919	Do Not Test
ECMW20 vs ECMW13	48.625	1.909	Do Not Test
ECMW20 vs ECMW21	38.563	1.514	Do Not Test
ECMW20 vs ECMW12	30.125	1.183	Do Not Test
ECMW12 vs ECMW10	85.736	3.463	No
ECMW12 vs ECMW4	84.813	3.329	Do Not Test
ECMW12 vs ECMW14	81.250	3.189	Do Not Test
ECMW12 vs ECMW16	74.750	2.934	Do Not Test
ECMW12 vs ECMW15	73.375	2.880	Do Not Test
ECMW12 vs ECMW17	66.938	2.628	Do Not Test
ECMW12 vs ECMW5	65.875	2.586	Do Not Test
ECMW12 vs ECMW8	64.688	2.539	Do Not Test
ECMW12 vs ECMW7	61.500	2.414	Do Not Test
ECMW12 vs ECMW11	60.125	2.280	Do Not Test
ECMW12 vs ECMW6	53.563	2.103	Do Not Test
ECMW12 vs ECMW9	51.938	2.039	Do Not Test
ECMW12 vs ECMW22	42.250	1.658	Do Not Test
ECMW12 vs CNTL	34.688	1.668	Do Not Test
ECMW12 vs ECMW19	18.750	0.736	Do Not Test
ECMW12 vs ECMW13	18.500	0.726	Do Not Test
ECMW12 vs ECMW21	8.438	0.331	Do Not Test
ECMW21 vs ECMW10	77.299	3.122	Do Not Test
ECMW21 vs ECMW4	76.375	2.998	Do Not Test
ECMW21 vs ECMW14	72.813	2.858	Do Not Test
ECMW21 vs ECMW16	66.313	2.603	Do Not Test
ECMW21 vs ECMW15	64.938	2.549	Do Not Test
ECMW21 vs ECMW17	58.500	2.296	Do Not Test
ECMW21 vs ECMW5	57.438	2.255	Do Not Test
ECMW21 vs ECMW8	56.250	2.208	Do Not Test
ECMW21 vs ECMW7	53.063	2.083	Do Not Test
ECMW21 vs ECMW11	51.688	1.960	Do Not Test

ECMW21 vs ECMW6	45.125	1.771	Do Not Test
ECMW21 vs ECMW9	43.500	1.708	Do Not Test
ECMW21 vs ECMW22	33.813	1.327	Do Not Test
ECMW21 vs CNTL	26.250	1.262	Do Not Test
ECMW21 vs ECMW19	10.313	0.405	Do Not Test
ECMW21 vs ECMW13	10.063	0.395	Do Not Test
ECMW13 vs ECMW10	67.236	2.716	Do Not Test
ECMW13 vs ECMW4	66.313	2.603	Do Not Test
ECMW13 vs ECMW14	62.750	2.463	Do Not Test
ECMW13 vs ECMW16	56.250	2.208	Do Not Test
ECMW13 vs ECMW15	54.875	2.154	Do Not Test
ECMW13 vs ECMW17	48.438	1.901	Do Not Test
ECMW13 vs ECMW5	47.375	1.860	Do Not Test
ECMW13 vs ECMW8	46.188	1.813	Do Not Test
ECMW13 vs ECMW7	43.000	1.688	Do Not Test
ECMW13 vs ECMW11	41.625	1.579	Do Not Test
ECMW13 vs ECMW6	35.063	1.376	Do Not Test
ECMW13 vs ECMW9	33.438	1.313	Do Not Test
ECMW13 vs ECMW22	23.750	0.932	Do Not Test
ECMW13 vs CNTL	16.188	0.778	Do Not Test
ECMW13 vs ECMW19	0.250	0.00981	Do Not Test
ECMW19 vs ECMW10	66.986	2.706	Do Not Test
ECMW19 vs ECMW4	66.063	2.593	Do Not Test
ECMW19 vs ECMW14	62.500	2.453	Do Not Test
ECMW19 vs ECMW16	56.000	2.198	Do Not Test
ECMW19 vs ECMW15	54.625	2.144	Do Not Test
ECMW19 vs ECMW17	48.188	1.892	Do Not Test
ECMW19 vs ECMW5	47.125	1.850	Do Not Test
ECMW19 vs ECMW8	45.938	1.803	Do Not Test
ECMW19 vs ECMW7	42.750	1.678	Do Not Test
ECMW19 vs ECMW11	41.375	1.569	Do Not Test
ECMW19 vs ECMW6	34.813	1.367	Do Not Test
ECMW19 vs ECMW9	33.188	1.303	Do Not Test
ECMW19 vs ECMW22	23.500	0.922	Do Not Test
ECMW19 vs CNTL	15.938	0.766	Do Not Test
CNTL vs ECMW10	51.049	2.563	Do Not Test
CNTL vs ECMW4	50.125	2.410	Do Not Test
CNTL vs ECMW14	46.563	2.239	Do Not Test
CNTL vs ECMW16	40.063	1.926	Do Not Test
CNTL vs ECMW15	38.688	1.860	Do Not Test
CNTL vs ECMW17	32.250	1.550	Do Not Test
CNTL vs ECMW5	31.188	1.499	Do Not Test
CNTL vs ECMW8	30.000	1.442	Do Not Test
CNTL vs ECMW7	26.813	1.289	Do Not Test
CNTL vs ECMW11	25.438	1.162	Do Not Test
CNTL vs ECMW6	18.875	0.907	Do Not Test
CNTL vs ECMW9	17.250	0.829	Do Not Test
CNTL vs ECMW22	7.563	0.364	Do Not Test
ECMW22 vs ECMW10	43.486	1.756	Do Not Test
ECMW22 vs ECMW4	42.563	1.671	Do Not Test
ECMW22 vs ECMW14	39.000	1.531	Do Not Test
ECMW22 vs ECMW16	32.500	1.276	Do Not Test
ECMW22 vs ECMW15	31.125	1.222	Do Not Test
ECMW22 vs ECMW17	24.688	0.969	Do Not Test
ECMW22 vs ECMW5	23.625	0.927	Do Not Test
ECMW22 vs ECMW8	22.438	0.881	Do Not Test

ECMW22 vs ECMW7	19.250	0.756	Do Not Test
ECMW22 vs ECMW11	17.875	0.678	Do Not Test
ECMW22 vs ECMW6	11.313	0.444	Do Not Test
ECMW22 vs ECMW9	9.688	0.380	Do Not Test
ECMW9 vs ECMW10	33.799	1.365	Do Not Test
ECMW9 vs ECMW4	32.875	1.290	Do Not Test
ECMW9 vs ECMW14	29.313	1.151	Do Not Test
ECMW9 vs ECMW16	22.813	0.895	Do Not Test
ECMW9 vs ECMW15	21.438	0.841	Do Not Test
ECMW9 vs ECMW17	15.000	0.589	Do Not Test
ECMW9 vs ECMW5	13.938	0.547	Do Not Test
ECMW9 vs ECMW8	12.750	0.500	Do Not Test
ECMW9 vs ECMW7	9.563	0.375	Do Not Test
ECMW9 vs ECMW11	8.188	0.310	Do Not Test
ECMW9 vs ECMW6	1.625	0.0638	Do Not Test
ECMW6 vs ECMW10	32.174	1.300	Do Not Test
ECMW6 vs ECMW4	31.250	1.227	Do Not Test
ECMW6 vs ECMW14	27.688	1.087	Do Not Test
ECMW6 vs ECMW16	21.188	0.832	Do Not Test
ECMW6 vs ECMW15	19.813	0.778	Do Not Test
ECMW6 vs ECMW17	13.375	0.525	Do Not Test
ECMW6 vs ECMW5	12.313	0.483	Do Not Test
ECMW6 vs ECMW8	11.125	0.437	Do Not Test
ECMW6 vs ECMW7	7.938	0.312	Do Not Test
ECMW6 vs ECMW11	6.563	0.249	Do Not Test
ECMW11 vs ECMW10	25.611	0.997	Do Not Test
ECMW11 vs ECMW4	24.688	0.936	Do Not Test
ECMW11 vs ECMW14	21.125	0.801	Do Not Test
ECMW11 vs ECMW16	14.625	0.555	Do Not Test
ECMW11 vs ECMW15	13.250	0.502	Do Not Test
ECMW11 vs ECMW17	6.813	0.258	Do Not Test
ECMW11 vs ECMW5	5.750	0.218	Do Not Test
ECMW11 vs ECMW8	4.563	0.173	Do Not Test
ECMW11 vs ECMW7	1.375	0.0521	Do Not Test
ECMW7 vs ECMW10	24.236	0.979	Do Not Test
ECMW7 vs ECMW4	23.313	0.915	Do Not Test
ECMW7 vs ECMW14	19.750	0.775	Do Not Test
ECMW7 vs ECMW16	13.250	0.520	Do Not Test
ECMW7 vs ECMW15	11.875	0.466	Do Not Test
ECMW7 vs ECMW17	5.438	0.213	Do Not Test
ECMW7 vs ECMW5	4.375	0.172	Do Not Test
ECMW7 vs ECMW8	3.188	0.125	Do Not Test
ECMW8 vs ECMW10	21.049	0.850	Do Not Test
ECMW8 vs ECMW4	20.125	0.790	Do Not Test
ECMW8 vs ECMW14	16.563	0.650	Do Not Test
ECMW8 vs ECMW16	10.063	0.395	Do Not Test
ECMW8 vs ECMW15	8.688	0.341	Do Not Test
ECMW8 vs ECMW17	2.250	0.0883	Do Not Test
ECMW8 vs ECMW5	1.188	0.0466	Do Not Test
ECMW5 vs ECMW10	19.861	0.802	Do Not Test
ECMW5 vs ECMW4	18.938	0.743	Do Not Test
ECMW5 vs ECMW14	15.375	0.604	Do Not Test
ECMW5 vs ECMW16	8.875	0.348	Do Not Test
ECMW5 vs ECMW15	7.500	0.294	Do Not Test
ECMW5 vs ECMW17	1.063	0.0417	Do Not Test
ECMW17 vs ECMW10	18.799	0.759	Do Not Test

ECMW17 vs ECMW4	17.875	0.702	Do Not Test
ECMW17 vs ECMW14	14.313	0.562	Do Not Test
ECMW17 vs ECMW16	7.813	0.307	Do Not Test
ECMW17 vs ECMW15	6.438	0.253	Do Not Test
ECMW15 vs ECMW10	12.361	0.499	Do Not Test
ECMW15 vs ECMW4	11.438	0.449	Do Not Test
ECMW15 vs ECMW14	7.875	0.309	Do Not Test
ECMW15 vs ECMW16	1.375	0.0540	Do Not Test
ECMW16 vs ECMW10	10.986	0.444	Do Not Test
ECMW16 vs ECMW4	10.063	0.395	Do Not Test
ECMW16 vs ECMW14	6.500	0.255	Do Not Test
ECMW14 vs ECMW10	4.486	0.181	Do Not Test
ECMW14 vs ECMW4	3.563	0.140	Do Not Test
ECMW4 vs ECMW10	0.924	0.0373	Do Not Test

Note: The multiple comparisons on ranks do not include an adjustment for ties.

Linear Regression Thursday, November 03, 2022, 2:42:12 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39938.604 + (0.897 * 6 Ammonia-N (mg/L))

N = 53 Missing Observations = 68

R = 0.533 Rsqr = 0.284 Adj Rsqr = 0.270

Standard Error of Estimate = 1975.307

	Coefficient	Std. Error	t	P
Constant	39938.604	311.583	128.180	<0.001
6 Ammonia-N (mg/L)	0.897	0.199	4.498	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	78958291.098	78958291.098	20.236	<0.001
Residual	51	198993686.450	3901836.989		
Total	52	277951977.547	5345230.337		

Normality Test (Shapiro-Wilk) Failed (P = 0.008)

Constant Variance Test: Passed (P = 0.151)

Power of performed test with alpha = 0.050: 0.988

Linear Regression Thursday, November 03, 2022, 2:44:04 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40187.326 + (0.786 * 7 Ammonia-N (mg/L))

N = 53 Missing Observations = 68

R = 0.390 Rsqr = 0.152 Adj Rsqr = 0.136

Standard Error of Estimate = 2149.203

	Coefficient	Std. Error	t	P
Constant	40187.326	329.069	122.124	<0.001
7 Ammonia-N (mg/L)	0.786	0.259	3.029	0.004

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	42384573.642	42384573.642	9.176	0.004
Residual	51	235572859.528	4619075.677		
Total	52	277957433.170	5345335.253		

Normality Test (Shapiro-Wilk) Failed (P = 0.023)

Constant Variance Test: Passed (P = 0.063)

Power of performed test with alpha = 0.050: 0.830

Linear Regression Thursday, November 03, 2022, 2:44:47 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40093.190 + (1.152 * 8 Ammonia-N (mg/L))

N = 52 Missing Observations = 69

R = 0.474 Rsqr = 0.225 Adj Rsqr = 0.210

Standard Error of Estimate = 2040.788

	Coefficient	Std. Error	t	P
Constant	40093.190	329.723	121.597	<0.001
8 Ammonia-N (mg/L)	1.152	0.302	3.811	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	60498936.990	60498936.990	14.526	<0.001
Residual	50	208240731.991	4164814.640		
Total	51	268739668.981	5269405.274		

Normality Test (Shapiro-Wilk) Passed (P = 0.098)

Constant Variance Test: Passed (P = 0.247)

Power of performed test with alpha = 0.050: 0.951

Linear Regression Thursday, November 03, 2022, 2:45:06 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 41079.149 - (34.351 * 11 Ammonia-N (mg/L))

N = 50 Missing Observations = 71

R = 0.152 Rsqr = 0.0230 Adj Rsqr = 0.00269

Standard Error of Estimate = 2336.618

	Coefficient	Std. Error	t	P
Constant	41079.149	544.885	75.391	<0.001
11 Ammonia-N (mg/L)	-34.351	32.284	-1.064	0.293

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	6181361.828	6181361.828	1.132	0.293
Residual	48	262069570.892	5459782.727		
Total	49	268250932.720	5474508.831		

Normality Test (Shapiro-Wilk) Failed (P = 0.029)

Constant Variance Test: Passed (P = 0.175)

Power of performed test with alpha = 0.050: 0.181

The power of the performed test (0.181) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:45:19 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39410.939 + (324.524 * 12 Ammonia-N (mg/L))

N = 33 Missing Observations = 88

R = 0.127 Rsqr = 0.0160 Adj Rsqr = 0.000

Standard Error of Estimate = 2429.316

	Coefficient	Std. Error	t	P
Constant	39410.939	1042.857	37.791	<0.001
12 Ammonia-N (mg/L)	324.524	457.036	0.710	0.483

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	2975516.955	2975516.955	0.504	0.483
Residual	31	182948859.954	5901576.128		
Total	32	185924376.909	5810136.778		

Normality Test (Shapiro-Wilk) Failed (P = 0.005)

Constant Variance Test: Passed (P = 0.075)

Power of performed test with alpha = 0.050: 0.103

The power of the performed test (0.103) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:45:41 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 42252.325 - (528.340 * 16 Ammonia-N (mg/L))

N = 50 Missing Observations = 71

R = 0.701 Rsqr = 0.492 Adj Rsqr = 0.481

Standard Error of Estimate = 1700.826

	Coefficient	Std. Error	t	P
Constant	42252.325	343.033	123.173	<0.001
16 Ammonia-N (mg/L)	-528.340	77.509	-6.816	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	134412725.688	134412725.688	46.464	<0.001
Residual	48	138854764.312	2892807.590		
Total	49	273267490.000	5576887.551		

Normality Test (Shapiro-Wilk) Passed (P = 0.864)

Constant Variance Test: Passed (P = 0.064)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:45:58 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40348.059 + (73.729 * 17 Ammonia-N (mg/L))

N = 51 Missing Observations = 70

R = 0.103 Rsqr = 0.0106 Adj Rsqr = 0.000

Standard Error of Estimate = 2350.550

	Coefficient	Std. Error	t	P
Constant	40348.059	452.181	89.230	<0.001
17 Ammonia-N (mg/L)	73.729	101.565	0.726	0.471

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	2911615.207	2911615.207	0.527	0.471
Residual	49	270729082.832	5525083.323		
Total	50	273640698.039	5472813.961		

Normality Test (Shapiro-Wilk) Failed (P = 0.005)

Constant Variance Test: Passed (P = 0.179)

Power of performed test with alpha = 0.050: 0.107

The power of the performed test (0.107) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:46:34 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38853.361 + (47.118 * 5 Nitrate-N (mg/L))

N = 49 Missing Observations = 72

R = 0.857 Rsqr = 0.735 Adj Rsqr = 0.729

Standard Error of Estimate = 1294.939

	Coefficient	Std. Error	t	P
Constant	38853.361	237.043	163.909	<0.001
5 Nitrate-N (mg/L)	47.118	4.132	11.403	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	218039395.498	218039395.498	130.028	<0.001
Residual	47	78812730.625	1676866.609		
Total	48	296852126.122	6184419.294		

Normality Test (Shapiro-Wilk) Failed (P = 0.015)

Constant Variance Test: Passed (P = 0.367)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:46:46 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38496.865 + (0.579 * 6 Nitrate-N (mg/L))

N = 54 Missing Observations = 67

R = 0.867 Rsqr = 0.751 Adj Rsqr = 0.747

Standard Error of Estimate = 1212.793

	Coefficient	Std. Error	t	P
Constant	38496.865	231.190	166.516	<0.001
6 Nitrate-N (mg/L)	0.579	0.0462	12.533	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	231056224.601	231056224.601	157.089	<0.001
Residual	52	76485023.399	1470865.835		
Total	53	307541248.000	5802665.057		

Normality Test (Shapiro-Wilk) Failed (P = 0.002)

Constant Variance Test: Passed (P = 0.271)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:47:05 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39954.541 + (0.474 * 7 Nitrate-N (mg/L))

N = 54 Missing Observations = 67

R = 0.478 Rsqr = 0.229 Adj Rsqr = 0.214

Standard Error of Estimate = 2135.925

	Coefficient	Std. Error	t	P
Constant	39954.541	325.076	122.908	<0.001
7 Nitrate-N (mg/L)	0.474	0.121	3.926	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	70313826.515	70313826.515	15.412	<0.001
Residual	52	237233080.467	4562174.624		
Total	53	307546906.981	5802771.830		

Normality Test (Shapiro-Wilk) Failed (P = 0.029)

Constant Variance Test: Failed (P = 0.003)

Power of performed test with alpha = 0.050: 0.961

Linear Regression Thursday, November 03, 2022, 2:47:20 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39087.096 + (0.963 * 8 Nitrate-N (mg/L))

N = 53 Missing Observations = 68

R = 0.756 Rsqr = 0.571 Adj Rsqr = 0.563

Standard Error of Estimate = 1587.084

	Coefficient	Std. Error	t	P
Constant	39087.096	287.550	135.931	<0.001
8 Nitrate-N (mg/L)	0.963	0.117	8.241	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	171058578.939	171058578.939	67.912	<0.001
Residual	51	128460592.948	2518835.156		
Total	52	299519171.887	5759984.075		

Normality Test (Shapiro-Wilk) Passed (P = 0.069)

Constant Variance Test: Passed (P = 0.988)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:47:35 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 41812.187 - (45.243 * 9 Nitrate-N (mg/L))

N = 51 Missing Observations = 70

R = 0.129 Rsqr = 0.0166 Adj Rsqr = 0.000

Standard Error of Estimate = 2462.854

	Coefficient	Std. Error	t	P
Constant	41812.187	1507.812	27.730	<0.001
9 Nitrate-N (mg/L)	-45.243	49.804	-0.908	0.368

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	5005570.186	5005570.186	0.825	0.368
Residual	49	297216894.990	6065650.918		
Total	50	302222465.176	6044449.304		

Normality Test (Shapiro-Wilk) Failed (P = 0.014)

Constant Variance Test: Passed (P = 0.097)

Power of performed test with alpha = 0.050: 0.144

The power of the performed test (0.144) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:48:13 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 43860.327 - (42.093 * 10 Nitrate-N (mg/L))

N = 51 Missing Observations = 70

R = 0.732 Rsqr = 0.536 Adj Rsqr = 0.526

Standard Error of Estimate = 1692.070

	Coefficient	Std. Error	t	P
Constant	43860.327	508.282	86.291	<0.001
10 Nitrate-N (mg/L)	-42.093	5.597	-7.520	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	161914956.061	161914956.061	56.552	<0.001
Residual	49	140291932.920	2863100.672		
Total	50	302206888.980	6044137.780		

Normality Test (Shapiro-Wilk) Failed (P = 0.002)

Constant Variance Test: Passed (P = 0.171)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:51:26 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 37912.809 + (141.709 * 11 Nitrate-N (mg/L))

N = 50 Missing Observations = 71

R = 0.669 Rsqr = 0.447 Adj Rsqr = 0.436

Standard Error of Estimate = 1850.281

	Coefficient	Std. Error	t	P
Constant	37912.809	493.514	76.822	<0.001
11 Nitrate-N (mg/L)	141.709	22.729	6.235	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	133073588.378	133073588.378	38.870	<0.001
Residual	48	164329871.942	3423538.999		
Total	49	297403460.320	6069458.374		

Normality Test (Shapiro-Wilk) Passed (P = 0.155)

Constant Variance Test: Passed (P = 0.308)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:51:54 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 42237.375 - (100.499 * 14 Nitrate-N (mg/L))

N = 50 Missing Observations = 71

R = 0.687 Rsqr = 0.472 Adj Rsqr = 0.461

Standard Error of Estimate = 1796.480

	Coefficient	Std. Error	t	P
Constant	42237.375	375.372	112.521	<0.001
14 Nitrate-N (mg/L)	-100.499	15.330	-6.556	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	138694477.749	138694477.749	42.975	<0.001
Residual	48	154912360.751	3227340.849		
Total	49	293606838.500	5991976.296		

Normality Test (Shapiro-Wilk) Failed (P = 0.026)

Constant Variance Test: Passed (P = 0.866)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:52:21 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 42113.533 - (58.974 * 16 Nitrate-N (mg/L))

N = 51 Missing Observations = 70

R = 0.724 Rsqr = 0.524 Adj Rsqr = 0.514

Standard Error of Estimate = 1713.916

	Coefficient	Std. Error	t	P
Constant	42113.533	327.373	128.641	<0.001
16 Nitrate-N (mg/L)	-58.974	8.030	-7.344	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	158430545.174	158430545.174	53.934	<0.001
Residual	49	143937810.747	2937506.342		
Total	50	302368355.922	6047367.118		

Normality Test (Shapiro-Wilk) Failed (P = 0.006)

Constant Variance Test: Passed (P = 0.845)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:52:36 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 42143.154 - (38.715 * 17 Nitrate-N (mg/L))

N = 51 Missing Observations = 70

R = 0.689 Rsqr = 0.474 Adj Rsqr = 0.464

Standard Error of Estimate = 1801.214

	Coefficient	Std. Error	t	P
Constant	42143.154	355.412	118.575	<0.001
17 Nitrate-N (mg/L)	-38.715	5.823	-6.648	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	143393158.562	143393158.562	44.197	<0.001
Residual	49	158974295.948	3244373.387		
Total	50	302367454.510	6047349.090		

Normality Test (Shapiro-Wilk) Failed (P = 0.019)

Constant Variance Test: Passed (P = 0.908)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:52:49 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 44233.663 - (882.434 * 4 pH (s.u.))

N = 49 Missing Observations = 72

R = 0.359 Rsqr = 0.129 Adj Rsqr = 0.110

Standard Error of Estimate = 2199.730

	Coefficient	Std. Error	t	P
Constant	44233.663	1445.146	30.608	<0.001
4 pH (s.u.)	-882.434	334.930	-2.635	0.011

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	33588944.581	33588944.581	6.942	0.011
Residual	47	227424254.970	4838813.936		
Total	48	261013199.551	5437774.991		

Normality Test (Shapiro-Wilk) Failed (P = 0.004)

Constant Variance Test: Passed (P = 0.849)

Power of performed test with alpha = 0.050: 0.721

Linear Regression Thursday, November 03, 2022, 2:53:05 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 47518.983 - (1582.678 * 6 pH (s.u.))

N = 52 Missing Observations = 69

R = 0.603 Rsqr = 0.363 Adj Rsqr = 0.350

Standard Error of Estimate = 1881.415

	Coefficient	Std. Error	t	P
Constant	47518.983	1316.767	36.088	<0.001
6 pH (s.u.)	-1582.678	296.350	-5.341	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	100959045.911	100959045.911	28.522	<0.001
Residual	50	176986191.396	3539723.828		
Total	51	277945237.308	5449906.614		

Normality Test (Shapiro-Wilk) Passed (P = 0.576)

Constant Variance Test: Passed (P = 0.486)

Power of performed test with alpha = 0.050: 0.998

Linear Regression Thursday, November 03, 2022, 2:53:22 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 37595.886 + (643.996 * 7 pH (s.u.))

N = 52 Missing Observations = 69

R = 0.310 Rsqr = 0.0958 Adj Rsqr = 0.0777

Standard Error of Estimate = 2241.937

	Coefficient	Std. Error	t	P
Constant	37595.886	1352.539	27.797	<0.001
7 pH (s.u.)	643.996	279.748	2.302	0.026

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	26636620.767	26636620.767	5.299	0.026
Residual	50	251314075.291	5026281.506		
Total	51	277950696.058	5450013.648		

Normality Test (Shapiro-Wilk) Passed (P = 0.143)

Constant Variance Test: Failed (P = 0.027)

Power of performed test with alpha = 0.050: 0.610

Linear Regression Thursday, November 03, 2022, 2:53:40 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 46099.128 - (1314.367 * 8 pH (s.u.))

N = 51 Missing Observations = 70

R = 0.439 Rsqr = 0.193 Adj Rsqr = 0.177

Standard Error of Estimate = 2103.675

	Coefficient	Std. Error	t	P
Constant	46099.128	1592.988	28.939	<0.001
8 pH (s.u.)	-1314.367	383.834	-3.424	0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	51892490.639	51892490.639	11.726	0.001
Residual	49	216846948.341	4425447.925		
Total	50	268739438.980	5374788.780		

Normality Test (Shapiro-Wilk) Failed (P = 0.011)

Constant Variance Test: Passed (P = 0.856)

Power of performed test with alpha = 0.050: 0.904

Linear Regression Thursday, November 03, 2022, 2:54:03 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 45781.318 - (1149.304 * 10 pH (s.u.))

N = 51 Missing Observations = 70

R = 0.333 Rsqr = 0.111 Adj Rsqr = 0.0925

Standard Error of Estimate = 2227.948

	Coefficient	Std. Error	t	P
Constant	45781.318	2132.442	21.469	<0.001
10 pH (s.u.)	-1149.304	465.532	-2.469	0.017

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	30253901.040	30253901.040	6.095	0.017
Residual	49	243223769.117	4963750.390		
Total	50	273477670.157	5469553.403		

Normality Test (Shapiro-Wilk) Failed (P = 0.008)

Constant Variance Test: Passed (P = 0.696)

Power of performed test with alpha = 0.050: 0.668

Linear Regression Thursday, November 03, 2022, 2:54:53 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 47342.568 - (1501.396 * 11 pH (s.u.))

N = 51 Missing Observations = 70

R = 0.440 Rsqr = 0.194 Adj Rsqr = 0.178

Standard Error of Estimate = 2119.779

	Coefficient	Std. Error	t	P
Constant	47342.568	1993.078	23.753	<0.001
11 pH (s.u.)	-1501.396	437.186	-3.434	0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	52995572.295	52995572.295	11.794	0.001
Residual	49	220179672.333	4493462.701		
Total	50	273175244.627	5463504.893		

Normality Test (Shapiro-Wilk) Passed (P = 0.090)

Constant Variance Test: Passed (P = 0.763)

Power of performed test with alpha = 0.050: 0.906

Linear Regression Thursday, November 03, 2022, 2:55:08 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 45054.121 - (925.163 * 15 pH (s.u.))

N = 49 Missing Observations = 72

R = 0.307 Rsqr = 0.0940 Adj Rsqr = 0.0747

Standard Error of Estimate = 2293.051

	Coefficient	Std. Error	t	P
Constant	45054.121	2051.810	21.958	<0.001
15 pH (s.u.)	-925.163	418.896	-2.209	0.032

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	25647870.150	25647870.150	4.878	0.032
Residual	47	247129980.625	5258084.694		
Total	48	272777850.776	5682871.891		

Normality Test (Shapiro-Wilk) Failed (P = 0.009)

Constant Variance Test: Passed (P = 0.654)

Power of performed test with alpha = 0.050: 0.575

Linear Regression Thursday, November 03, 2022, 2:55:24 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 46343.104 - (1222.797 * 16 pH (s.u.))

N = 50 Missing Observations = 71

R = 0.400 Rsqr = 0.160 Adj Rsqr = 0.142

Standard Error of Estimate = 2187.057

	Coefficient	Std. Error	t	P
Constant	46343.104	1930.481	24.006	<0.001
16 pH (s.u.)	-1222.797	404.677	-3.022	0.004

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	43672909.832	43672909.832	9.130	0.004
Residual	48	229594580.168	4783220.420		
Total	49	273267490.000	5576887.551		

Normality Test (Shapiro-Wilk) Passed (P = 0.073)

Constant Variance Test: Passed (P = 0.256)

Power of performed test with alpha = 0.050: 0.827

Linear Regression Thursday, November 03, 2022, 2:55:38 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 45150.153 - (977.503 * 17 pH (s.u.))

N = 51 Missing Observations = 70

R = 0.413 Rsqr = 0.170 Adj Rsqr = 0.153

Standard Error of Estimate = 2152.678

	Coefficient	Std. Error	t	P
Constant	45150.153	1474.882	30.613	<0.001
17 pH (s.u.)	-977.503	308.339	-3.170	0.003

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	46573523.602	46573523.602	10.050	0.003
Residual	49	227067174.437	4634023.968		
Total	50	273640698.039	5472813.961		

Normality Test (Shapiro-Wilk) Passed (P = 0.086)

Constant Variance Test: Passed (P = 0.074)

Power of performed test with alpha = 0.050: 0.860

Linear Regression Thursday, November 03, 2022, 2:55:57 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39471.654 + (0.0578 * 4 Specific Conductance (uS))

N = 38 Missing Observations = 83

R = 0.0644 Rsqr = 0.00415 Adj Rsqr = 0.000

Standard Error of Estimate = 2163.857

	Coefficient	Std. Error	t	P
Constant	39471.654	934.411	42.242	<0.001
4 Specific Conductance (uS)	0.0578	0.149	0.387	0.701

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	702271.395	702271.395	0.150	0.701
Residual	36	168562037.578	4682278.822		
Total	37	169264308.974	4574711.053		

Normality Test (Shapiro-Wilk) Failed (P = 0.004)

Constant Variance Test: Passed (P = 0.340)

Power of performed test with alpha = 0.050: 0.057

The power of the performed test (0.057) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:56:13 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39504.047 + (0.560 * 5 Specific Conductance (uS))

N = 40 Missing Observations = 81

R = 0.0796 Rsqr = 0.00634 Adj Rsqr = 0.000

Standard Error of Estimate = 2209.264

	Coefficient	Std. Error	t	P
Constant	39504.047	908.483	43.484	<0.001
5 Specific Conductance (uS)	0.560	1.137	0.492	0.625

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	1182716.913	1182716.913	0.242	0.625
Residual	38	185472199.462	4880847.354		
Total	39	186654916.375	4786023.497		

Normality Test (Shapiro-Wilk) Failed (P = 0.009)

Constant Variance Test: Failed (P = <0.001)

Power of performed test with alpha = 0.050: 0.070

The power of the performed test (0.070) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:56:39 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38618.002 + (0.0649 * 6 Specific Conductance (uS))

N = 39 Missing Observations = 82

R = 0.844 Rsqr = 0.712 Adj Rsqr = 0.704

Standard Error of Estimate = 1198.256

	Coefficient	Std. Error	t	P
Constant	38618.002	233.185	165.611	<0.001
6 Specific Conductance (uS)	0.0649	0.00679	9.559	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	131188379.199	131188379.199	91.368	<0.001
Residual	37	53125281.775	1435818.426		
Total	38	184313660.974	4850359.499		

Normality Test (Shapiro-Wilk) Passed (P = 0.110)

Constant Variance Test: Passed (P = 0.679)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:57:02 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38202.675 + (0.145 * 7 Specific Conductance (uS))

N = 39 Missing Observations = 82

R = 0.761 Rsqr = 0.580 Adj Rsqr = 0.568

Standard Error of Estimate = 1448.084

	Coefficient	Std. Error	t	P
Constant	38202.675	330.875	115.460	<0.001
7 Specific Conductance (uS)	0.145	0.0204	7.144	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	107031087.458	107031087.458	51.041	<0.001
Residual	37	77587058.439	2096947.525		
Total	38	184618145.897	4858372.260		

Normality Test (Shapiro-Wilk) Failed (P = <0.001)

Constant Variance Test: Passed (P = 0.393)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:57:20 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 37977.702 + (0.128 * 8 Specific Conductance (uS))

N = 37 Missing Observations = 84

R = 0.838 Rsqr = 0.703 Adj Rsqr = 0.694

Standard Error of Estimate = 1224.282

	Coefficient	Std. Error	t	P
Constant	37977.702	295.875	128.357	<0.001
8 Specific Conductance (uS)	0.128	0.0140	9.098	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	124064570.988	124064570.988	82.772	<0.001
Residual	35	52460311.822	1498866.052		
Total	36	176524882.811	4903468.967		

Normality Test (Shapiro-Wilk) Passed (P = 0.371)

Constant Variance Test: Passed (P = 0.522)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:57:34 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40052.765 - (0.0464 * 9 Specific Conductance (uS))

N = 39 Missing Observations = 82

R = 0.143 Rsqr = 0.0206 Adj Rsqr = 0.000

Standard Error of Estimate = 2224.310

	Coefficient	Std. Error	t	P
Constant	40052.765	389.294	102.886	<0.001
9 Specific Conductance (uS)	-0.0464	0.0527	-0.881	0.384

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	3844429.709	3844429.709	0.777	0.384
Residual	37	183059489.727	4947553.776		
Total	38	186903919.436	4918524.196		

Normality Test (Shapiro-Wilk) Failed (P = 0.004)

Constant Variance Test: Passed (P = 0.581)

Power of performed test with alpha = 0.050: 0.137

The power of the performed test (0.137) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:57:51 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 43157.283 - (3.272 * 10 Specific Conductance (uS))

N = 42 Missing Observations = 79

R = 0.379 Rsqr = 0.143 Adj Rsqr = 0.122

Standard Error of Estimate = 2189.597

	Coefficient	Std. Error	t	P
Constant	43157.283	1219.273	35.396	<0.001
10 Specific Conductance (uS)	-3.272	1.264	-2.588	0.013

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	32111562.621	32111562.621	6.698	0.013
Residual	40	191773445.022	4794336.126		
Total	41	223885007.643	5460609.943		

Normality Test (Shapiro-Wilk) Failed (P = <0.001)

Constant Variance Test: Passed (P = 0.918)

Power of performed test with alpha = 0.050: 0.702

Linear Regression Thursday, November 03, 2022, 2:58:04 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40949.581 - (1.047 * 11 Specific Conductance (uS))

N = 42 Missing Observations = 79

R = 0.0970 Rsqr = 0.00942 Adj Rsqr = 0.000

Standard Error of Estimate = 2353.299

	Coefficient	Std. Error	t	P
Constant	40949.581	1383.481	29.599	<0.001
11 Specific Conductance (uS)	-1.047	1.697	-0.617	0.541

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	2105804.280	2105804.280	0.380	0.541
Residual	40	221520553.624	5538013.841		
Total	41	223626357.905	5454301.412		

Normality Test (Shapiro-Wilk) Failed (P = <0.001)

Constant Variance Test: Passed (P = 0.397)

Power of performed test with alpha = 0.050: 0.088

The power of the performed test (0.088) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:58:27 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 37106.573 + (4.806 * 12 Specific Conductance (uS))

N = 39 Missing Observations = 82

R = 0.345 Rsqr = 0.119 Adj Rsqr = 0.0950

Standard Error of Estimate = 2260.309

	Coefficient	Std. Error	t	P
Constant	37106.573	1425.345	26.033	<0.001
12 Specific Conductance (uS)	4.806	2.152	2.233	0.032

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	25481852.256	25481852.256	4.988	0.032
Residual	37	189032879.436	5108996.742		
Total	38	214514731.692	5645124.518		

Normality Test (Shapiro-Wilk) Failed (P = 0.018)

Constant Variance Test: Passed (P = 0.525)

Power of performed test with alpha = 0.050: 0.578

Linear Regression Thursday, November 03, 2022, 2:58:43 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40873.726 - (0.819 * 13 Specific Conductance (uS))

N = 40 Missing Observations = 81

R = 0.140 Rsqr = 0.0196 Adj Rsqr = 0.000

Standard Error of Estimate = 2400.986

	Coefficient	Std. Error	t	P
Constant	40873.726	955.177	42.792	<0.001
13 Specific Conductance (uS)	-0.819	0.941	-0.871	0.389

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	4374208.099	4374208.099	0.759	0.389
Residual	38	219059884.876	5764733.813		
Total	39	223434092.975	5729079.307		

Normality Test (Shapiro-Wilk) Failed (P = 0.001)

Constant Variance Test: Passed (P = 0.189)

Power of performed test with alpha = 0.050: 0.135

The power of the performed test (0.135) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:59:00 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 41345.713 - (1.872 * 14 Specific Conductance (uS))

N = 39 Missing Observations = 82

R = 0.217 Rsqr = 0.0469 Adj Rsqr = 0.0212

Standard Error of Estimate = 2314.273

	Coefficient	Std. Error	t	P
Constant	41345.713	993.417	41.620	<0.001
14 Specific Conductance (uS)	-1.872	1.387	-1.350	0.185

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	9759788.486	9759788.486	1.822	0.185
Residual	37	198166797.258	5355859.385		
Total	38	207926585.744	5471752.256		

Normality Test (Shapiro-Wilk) Failed (P = 0.015)

Constant Variance Test: Passed (P = 0.249)

Power of performed test with alpha = 0.050: 0.261

The power of the performed test (0.261) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:59:17 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 42541.700 - (2.399 * 4 Sulfate (mg/L))

N = 47 Missing Observations = 74

R = 0.155 Rsqr = 0.0240 Adj Rsqr = 0.00228

Standard Error of Estimate = 2470.138

	Coefficient	Std. Error	t	P
Constant	42541.700	1965.279	21.647	<0.001
4 Sulfate (mg/L)	-2.399	2.282	-1.051	0.299

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	6743561.515	6743561.515	1.105	0.299
Residual	45	274571275.336	6101583.896		
Total	46	281314836.851	6115539.932		

Normality Test (Shapiro-Wilk) Passed (P = 0.064)

Constant Variance Test: Passed (P = 0.512)

Power of performed test with alpha = 0.050: 0.178

The power of the performed test (0.178) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 2:59:30 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 42950.310 - (9.992 * 5 Sulfate (mg/L))

N = 48 Missing Observations = 73

R = 0.888 Rsqr = 0.788 Adj Rsqr = 0.783

Standard Error of Estimate = 1163.088

	Coefficient	Std. Error	t	P
Constant	42950.310	247.001	173.887	<0.001
5 Sulfate (mg/L)	-9.992	0.765	-13.066	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	230941517.483	230941517.483	170.717	<0.001
Residual	46	62227537.496	1352772.554		
Total	47	293169054.979	6237639.468		

Normality Test (Shapiro-Wilk) Passed (P = 0.470)

Constant Variance Test: Failed (P = 0.025)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 2:59:45 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40529.872 + (0.162 * 7 Sulfate (mg/L))

N = 51 Missing Observations = 70

R = 0.0333 Rsqr = 0.00111 Adj Rsqr = 0.000

Standard Error of Estimate = 2466.019

	Coefficient	Std. Error	t	P
Constant	40529.872	537.090	75.462	<0.001
7 Sulfate (mg/L)	0.162	0.693	0.233	0.816

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	331528.639	331528.639	0.0545	0.816
Residual	49	297981209.048	6081249.164		
Total	50	298312737.686	5966254.754		

Normality Test (Shapiro-Wilk) Passed (P = 0.083)

Constant Variance Test: Failed (P = 0.011)

Power of performed test with alpha = 0.050: 0.042

The power of the performed test (0.042) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:00:02 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 42045.165 - (2.553 * 8 Sulfate (mg/L))

N = 49 Missing Observations = 72

R = 0.398 Rsqr = 0.158 Adj Rsqr = 0.141

Standard Error of Estimate = 2275.154

	Coefficient	Std. Error	t	P
Constant	42045.165	545.769	77.038	<0.001
8 Sulfate (mg/L)	-2.553	0.858	-2.975	0.005

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	45802806.536	45802806.536	8.849	0.005
Residual	47	243287322.443	5176326.009		
Total	48	289090128.980	6022711.020		

Normality Test (Shapiro-Wilk) Failed (P = 0.012)

Constant Variance Test: Failed (P = <0.001)

Power of performed test with alpha = 0.050: 0.815

Linear Regression Thursday, November 03, 2022, 3:00:16 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 37403.668 + (5.679 * 9 Sulfate (mg/L))

N = 48 Missing Observations = 73

R = 0.155 Rsqr = 0.0239 Adj Rsqr = 0.00270

Standard Error of Estimate = 2495.390

	Coefficient	Std. Error	t	P
Constant	37403.668	3014.900	12.406	<0.001
9 Sulfate (mg/L)	5.679	5.349	1.062	0.294

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	7020386.008	7020386.008	1.127	0.294
Residual	46	286440595.909	6226969.476		
Total	47	293460981.917	6243850.679		

Normality Test (Shapiro-Wilk) Passed (P = 0.131)

Constant Variance Test: Failed (P = 0.024)

Power of performed test with alpha = 0.050: 0.180

The power of the performed test (0.180) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:00:30 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40355.958 + (1.829 * 10 Sulfate (mg/L))

N = 48 Missing Observations = 73

R = 0.0241 Rsqr = 0.000583 Adj Rsqr = 0.000

Standard Error of Estimate = 2524.985

	Coefficient	Std. Error	t	P
Constant	40355.958	1426.662	28.287	<0.001
10 Sulfate (mg/L)	1.829	11.166	0.164	0.871

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	171033.971	171033.971	0.0268	0.871
Residual	46	293275197.279	6375547.767		
Total	47	293446231.250	6243536.835		

Normality Test (Shapiro-Wilk) Passed (P = 0.065)

Constant Variance Test: Failed (P = <0.001)

Power of performed test with alpha = 0.050: 0.036

The power of the performed test (0.036) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:00:49 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 43000.850 - (10.615 * 11 Sulfate (mg/L))

N = 47 Missing Observations = 74

R = 0.533 Rsqr = 0.284 Adj Rsqr = 0.268

Standard Error of Estimate = 2141.036

	Coefficient	Std. Error	t	P
Constant	43000.850	642.071	66.972	<0.001
11 Sulfate (mg/L)	-10.615	2.511	-4.227	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	81892609.553	81892609.553	17.865	<0.001
Residual	45	206281630.660	4584036.237		
Total	46	288174240.213	6264657.396		

Normality Test (Shapiro-Wilk) Failed (P = 0.005)

Constant Variance Test: Passed (P = 0.641)

Power of performed test with alpha = 0.050: 0.976

Linear Regression Thursday, November 03, 2022, 3:01:02 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 44000.818 - (9.272 * 13 Sulfate (mg/L))

N = 32 Missing Observations = 89

R = 0.515 Rsqr = 0.265 Adj Rsqr = 0.241

Standard Error of Estimate = 2285.369

	Coefficient	Std. Error	t	P
Constant	44000.818	1292.894	34.033	<0.001
13 Sulfate (mg/L)	-9.272	2.817	-3.292	0.003

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	56585182.567	56585182.567	10.834	0.003
Residual	30	156687346.652	5222911.555		
Total	31	213272529.219	6879759.007		

Normality Test (Shapiro-Wilk) Failed (P = 0.031)

Constant Variance Test: Failed (P = 0.018)

Power of performed test with alpha = 0.050: 0.866

Linear Regression Thursday, November 03, 2022, 3:01:15 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 44058.476 - (22.515 * 14 Sulfate (mg/L))

N = 47 Missing Observations = 74

R = 0.564 Rsqr = 0.318 Adj Rsqr = 0.303

Standard Error of Estimate = 2080.211

	Coefficient	Std. Error	t	P
Constant	44058.476	828.863	53.155	<0.001
14 Sulfate (mg/L)	-22.515	4.919	-4.577	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	90665430.466	90665430.466	20.952	<0.001
Residual	45	194727465.492	4327277.011		
Total	46	285392895.957	6204193.390		

Normality Test (Shapiro-Wilk) Failed (P = 0.017)

Constant Variance Test: Passed (P = 0.670)

Power of performed test with alpha = 0.050: 0.988

Linear Regression Thursday, November 03, 2022, 3:01:30 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40630.030 + (0.851 * 10 Temperature (°C))

N = 35 Missing Observations = 86

R = 0.000772 Rsqr = 0.000000595 Adj Rsqr = 0.000

Standard Error of Estimate = 2243.009

	Coefficient	Std. Error	t	P
Constant	40630.030	3962.904	10.253	<0.001
10 Temperature (°C)	0.851	191.960	0.00443	0.996

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	98.835	98.835	0.0000196	0.996
Residual	33	166025907.908	5031088.118		
Total	34	166026006.743	4883117.845		

Normality Test (Shapiro-Wilk) Failed (P = 0.002)

Constant Variance Test: Passed (P = 0.741)

Power of performed test with alpha = 0.050: 0.025

The power of the performed test (0.025) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:01:44 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 43471.944 - (135.487 * 12 Temperature (°C))

N = 33 Missing Observations = 88

R = 0.161 Rsqr = 0.0260 Adj Rsqr = 0.000

Standard Error of Estimate = 2280.016

	Coefficient	Std. Error	t	P
Constant	43471.944	3113.951	13.960	<0.001
12 Temperature (°C)	-135.487	148.885	-0.910	0.370

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	4304940.492	4304940.492	0.828	0.370
Residual	31	161152720.841	5198474.866		
Total	32	165457661.333	5170551.917		

Normality Test (Shapiro-Wilk) Failed (P = 0.044)

Constant Variance Test: Passed (P = 0.336)

Power of performed test with alpha = 0.050: 0.143

The power of the performed test (0.143) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:01:57 PM

Data source: Data 1 in Sigma Plot Data 2022

The regression produces a perfect fit

Date = 33043.000 + (1944.444 * 6 Manganese Dissolved (mg/L))

Linear Regression Thursday, November 03, 2022, 3:02:22 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38865.183 + (406.985 * 4 Manganese Total (mg/L))

N = 7 Missing Observations = 114

R = 0.430 Rsqr = 0.185 Adj Rsqr = 0.0222

Standard Error of Estimate = 533.243

	Coefficient	Std. Error	t	P
Constant	38865.183	789.329	49.238	<0.001
4 Manganese Total (mg/L)	406.985	381.855	1.066	0.335

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	323006.003	323006.003	1.136	0.335
Residual	5	1421739.711	284347.942		
Total	6	1744745.714	290790.952		

Normality Test (Shapiro-Wilk) Passed (P = 0.089)

Constant Variance Test: Passed (P = 0.968)

Power of performed test with alpha = 0.050: 0.149

The power of the performed test (0.149) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:02:35 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40877.102 - (765.453 * 5 Manganese Total (mg/L))

N = 7 Missing Observations = 114

R = 0.976 Rsqr = 0.952 Adj Rsqr = 0.942

Standard Error of Estimate = 129.699

	Coefficient	Std. Error	t	P
Constant	40877.102	130.083	314.239	<0.001
5 Manganese Total (mg/L)	-765.453	77.027	-9.937	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	1661202.400	1661202.400	98.753	<0.001
Residual	5	84109.028	16821.806		
Total	6	1745311.429	290885.238		

Normality Test (Shapiro-Wilk) Passed (P = 0.158)

Constant Variance Test: Passed (P = 0.781)

Power of performed test with alpha = 0.050: 0.993

Linear Regression Thursday, November 03, 2022, 3:02:50 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39565.228 + (54.137 * 6 Manganese Total (mg/L))

N = 8 Missing Observations = 113

R = 0.105 Rsqr = 0.0111 Adj Rsqr = 0.000

Standard Error of Estimate = 521.025

	Coefficient	Std. Error	t	P
Constant	39565.228	537.257	73.643	<0.001
6 Manganese Total (mg/L)	54.137	208.334	0.260	0.804

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	18330.920	18330.920	0.0675	0.804
Residual	6	1628804.955	271467.493		
Total	7	1647135.875	235305.125		

Normality Test (Shapiro-Wilk) Passed (P = 0.978)

Constant Variance Test: Passed (P = 0.662)

Power of performed test with alpha = 0.050: 0.042

The power of the performed test (0.042) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:03:05 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39878.070 - (924.070 * 7 Manganese Total (mg/L))

N = 8 Missing Observations = 113

R = 0.181 Rsqr = 0.0328 Adj Rsqr = 0.000

Standard Error of Estimate = 515.287

	Coefficient	Std. Error	t	P
Constant	39878.070	442.124	90.197	<0.001
7 Manganese Total (mg/L)	-924.070	2048.794	-0.451	0.668

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	54014.565	54014.565	0.203	0.668
Residual	6	1593121.310	265520.218		
Total	7	1647135.875	235305.125		

Normality Test (Shapiro-Wilk) Passed (P = 0.697)

Constant Variance Test: Failed (P = 0.021)

Power of performed test with alpha = 0.050: 0.061

The power of the performed test (0.061) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:03:24 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38232.080 + (2658.992 * 8 Manganese Total (mg/L))

N = 7 Missing Observations = 114

R = 0.660 Rsqr = 0.435 Adj Rsqr = 0.322

Standard Error of Estimate = 443.915

	Coefficient	Std. Error	t	P
Constant	38232.080	755.693	50.592	<0.001
8 Manganese Total (mg/L)	2658.992	1354.470	1.963	0.107

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	759442.771	759442.771	3.854	0.107
Residual	5	985302.944	197060.589		
Total	6	1744745.714	290790.952		

Normality Test (Shapiro-Wilk) Passed (P = 0.509)

Constant Variance Test: Passed (P = 0.602)

Power of performed test with alpha = 0.050: 0.354

The power of the performed test (0.354) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:03:38 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 42342.594 - (8302.831 * 9 Manganese Total (mg/L))

N = 7 Missing Observations = 114

R = 0.353 Rsqr = 0.124 Adj Rsqr = 0.000

Standard Error of Estimate = 552.752

	Coefficient	Std. Error	t	P
Constant	42342.594	3167.468	13.368	<0.001
9 Manganese Total (mg/L)	-8302.831	9850.397	-0.843	0.438

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	217072.771	217072.771	0.710	0.438
Residual	5	1527672.943	305534.589		
Total	6	1744745.714	290790.952		

Normality Test (Shapiro-Wilk) Passed (P = 0.588)

Constant Variance Test: Passed (P = 0.491)

Power of performed test with alpha = 0.050: 0.111

The power of the performed test (0.111) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:03:51 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38669.948 + (4775.769 * 12 Manganese Total (mg/L))

N = 7 Missing Observations = 114

R = 0.460 Rsqr = 0.212 Adj Rsqr = 0.0543

Standard Error of Estimate = 524.693

	Coefficient	Std. Error	t	P
Constant	38669.948	892.521	43.327	<0.001
12 Manganese Total (mg/L)	4775.769	4118.638	1.160	0.299

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	370160.295	370160.295	1.345	0.299
Residual	5	1376513.705	275302.741		
Total	6	1746674.000	291112.333		

Normality Test (Shapiro-Wilk) Passed (P = 0.389)

Constant Variance Test: Passed (P = 0.297)

Power of performed test with alpha = 0.050: 0.167

The power of the performed test (0.167) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:04:07 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38446.983 + (485.761 * 13 Manganese Total (mg/L))

N = 7 Missing Observations = 114

R = 0.687 Rsqr = 0.472 Adj Rsqr = 0.367

Standard Error of Estimate = 429.225

	Coefficient	Std. Error	t	P
Constant	38446.983	604.639	63.587	<0.001
13 Manganese Total (mg/L)	485.761	229.577	2.116	0.088

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	824821.570	824821.570	4.477	0.088
Residual	5	921170.144	184234.029		
Total	6	1745991.714	290998.619		

Normality Test (Shapiro-Wilk) Passed (P = 0.544)

Constant Variance Test: Passed (P = 0.545)

Power of performed test with alpha = 0.050: 0.392

The power of the performed test (0.392) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:04:23 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38365.679 - (0.0928 * 4 Total Dissolved Solids (mg/L)

N = 15 Missing Observations = 106

R = 0.0753 Rsqr = 0.00567 Adj Rsqr = 0.000

Standard Error of Estimate = 446.851

	Coefficient	Std. Error	t	P
Constant	38365.679	1725.493	22.235	<0.001
4 Total Dissolved Solids (mg/L	-0.0928	0.341	-0.272	0.790

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	14814.606	14814.606	0.0742	0.790
Residual	13	2595782.327	199675.564		
Total	14	2610596.933	186471.210		

Normality Test (Shapiro-Wilk) Passed (P = 0.187)

Constant Variance Test: Failed (P = 0.012)

Power of performed test with alpha = 0.050: 0.045

The power of the performed test (0.045) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:04:37 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 36932.680 + (0.205 * 6 Total Dissolved Solids (mg/L)

N = 15 Missing Observations = 106

R = 0.918 Rsqr = 0.842 Adj Rsqr = 0.830

Standard Error of Estimate = 178.216

	Coefficient	Std. Error	t	P
Constant	36932.680	124.696	296.183	<0.001
6 Total Dissolved Solids (mg/L	0.205	0.0246	8.318	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	2197703.713	2197703.713	69.195	<0.001
Residual	13	412893.221	31761.017		
Total	14	2610596.933	186471.210		

Normality Test (Shapiro-Wilk) Passed (P = 0.378)

Constant Variance Test: Passed (P = 0.104)

Power of performed test with alpha = 0.050: 1.000

Linear Regression Thursday, November 03, 2022, 3:04:51 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 36484.050 + (1.036 * 7 Total Dissolved Solids (mg/L)

N = 15 Missing Observations = 106

R = 0.516 Rsqr = 0.266 Adj Rsqr = 0.210

Standard Error of Estimate = 383.806

	Coefficient	Std. Error	t	P
Constant	36484.050	657.599	55.481	<0.001
7 Total Dissolved Solids (mg/L	1.036	0.477	2.173	0.049

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	695610.119	695610.119	4.722	0.049
Residual	13	1914986.814	147306.678		
Total	14	2610596.933	186471.210		

Normality Test (Shapiro-Wilk) Passed (P = 0.962)

Constant Variance Test: Failed (P = 0.033)

Power of performed test with alpha = 0.050: 0.507

Linear Regression Thursday, November 03, 2022, 3:05:18 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38923.382 - (0.298 * 8 Total Dissolved Solids (mg/L)

N = 14 Missing Observations = 107

R = 0.832 Rsqr = 0.692 Adj Rsqr = 0.666

Standard Error of Estimate = 223.795

	Coefficient	Std. Error	t	P
Constant	38923.382	196.395	198.189	<0.001
8 Total Dissolved Solids (mg/L	-0.298	0.0575	-5.188	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	1348109.459	1348109.459	26.917	<0.001
Residual	12	601012.255	50084.355		
Total	13	1949121.714	149932.440		

Normality Test (Shapiro-Wilk) Passed (P = 0.827)

Constant Variance Test: Passed (P = 0.552)

Power of performed test with alpha = 0.050: 0.977

Linear Regression Thursday, November 03, 2022, 3:05:38 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 38811.651 - (0.581 * 9 Total Dissolved Solids (mg/L)

N = 15 Missing Observations = 106

R = 0.511 Rsqr = 0.262 Adj Rsqr = 0.205

Standard Error of Estimate = 390.056

	Coefficient	Std. Error	t	P
Constant	38811.651	439.429	88.323	<0.001
9 Total Dissolved Solids (mg/L	-0.581	0.271	-2.146	0.051

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	700373.116	700373.116	4.603	0.051
Residual	13	1977871.818	152143.986		
Total	14	2678244.933	191303.210		

Normality Test (Shapiro-Wilk) Passed (P = 0.978)

Constant Variance Test: Passed (P = 0.629)

Power of performed test with alpha = 0.050: 0.498

The power of the performed test (0.498) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:06:02 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40318.031 - (2.313 * 10 Total Dissolved Solids (mg/)

N = 15 Missing Observations = 106

R = 0.776 Rsqr = 0.603 Adj Rsqr = 0.572

Standard Error of Estimate = 286.086

	Coefficient	Std. Error	t	P
Constant	40318.031	550.683	73.215	<0.001
10 Total Dissolved Solids (mg/	-2.313	0.521	-4.442	<0.001

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	1615003.003	1615003.003	19.732	<0.001
Residual	13	1063983.930	81844.918		
Total	14	2678986.933	191356.210		

Normality Test (Shapiro-Wilk) Passed (P = 0.904)

Constant Variance Test: Passed (P = 0.944)

Power of performed test with alpha = 0.050: 0.948

Linear Regression Thursday, November 03, 2022, 3:06:30 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40847.472 - (48.576 * 4 Total Organic Carbon (mg/L))

N = 12 Missing Observations = 109

R = 0.300 Rsqr = 0.0899 Adj Rsqr = 0.000

Standard Error of Estimate = 658.024

	Coefficient	Std. Error	t	P
Constant	40847.472	1210.945	33.732	<0.001
4 Total Organic Carbon (mg/L)	-48.576	48.864	-0.994	0.344

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	427894.166	427894.166	0.988	0.344
Residual	10	4329952.750	432995.275		
Total	11	4757846.917	432531.538		

Normality Test (Shapiro-Wilk) Passed (P = 0.385)

Constant Variance Test: Passed (P = 0.377)

Power of performed test with alpha = 0.050: 0.151

The power of the performed test (0.151) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:06:45 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39750.102 + (2.558 * 7 Total Organic Carbon (mg/L))

N = 14 Missing Observations = 107

R = 0.0166 Rsqr = 0.000275 Adj Rsqr = 0.000

Standard Error of Estimate = 716.390

	Coefficient	Std. Error	t	P
Constant	39750.102	637.717	62.332	<0.001
7 Total Organic Carbon (mg/L)	2.558	44.501	0.0575	0.955

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	1696.062	1696.062	0.00330	0.955
Residual	12	6158570.867	513214.239		
Total	13	6160266.929	473866.687		

Normality Test (Shapiro-Wilk) Passed (P = 0.506)

Constant Variance Test: Passed (P = 0.785)

Power of performed test with alpha = 0.050: 0.028

The power of the performed test (0.028) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:07:01 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 41524.010 - (82.977 * 9 Total Organic Carbon (mg/L))

N = 12 Missing Observations = 109

R = 0.500 Rsqr = 0.250 Adj Rsqr = 0.176

Standard Error of Estimate = 597.237

	Coefficient	Std. Error	t	P
Constant	41524.010	1034.961	40.121	<0.001
9 Total Organic Carbon (mg/L)	-82.977	45.389	-1.828	0.097

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	1192070.164	1192070.164	3.342	0.097
Residual	10	3566924.753	356692.475		
Total	11	4758994.917	432635.902		

Normality Test (Shapiro-Wilk) Passed (P = 0.751)

Constant Variance Test: Passed (P = 0.683)

Power of performed test with alpha = 0.050: 0.378

The power of the performed test (0.378) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:07:18 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 39317.772 + (18.815 * 12 Total Organic Carbon (mg/L))

N = 12 Missing Observations = 109

R = 0.104 Rsqr = 0.0108 Adj Rsqr = 0.000

Standard Error of Estimate = 686.025

	Coefficient	Std. Error	t	P
Constant	39317.772	1049.411	37.467	<0.001
12 Total Organic Carbon (mg/L)	18.815	56.837	0.331	0.747

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	51572.140	51572.140	0.110	0.747
Residual	10	4706308.776	470630.878		
Total	11	4757880.917	432534.629		

Normality Test (Shapiro-Wilk) Passed (P = 0.664)

Constant Variance Test: Passed (P = 0.415)

Power of performed test with alpha = 0.050: 0.050

The power of the performed test (0.050) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

Linear Regression Thursday, November 03, 2022, 3:07:35 PM

Data source: Data 1 in Sigma Plot Data 2022

Date = 40247.184 - (38.804 * 14 Total Organic Carbon (mg/L))

N = 12 Missing Observations = 109

R = 0.418 Rsqr = 0.175 Adj Rsqr = 0.0920

Standard Error of Estimate = 635.281

	Coefficient	Std. Error	t	P
Constant	40247.184	438.731	91.735	<0.001
14 Total Organic Carbon (mg/L)	-38.804	26.684	-1.454	0.177

Analysis of Variance:

	DF	SS	MS	F	P
Regression	1	853480.335	853480.335	2.115	0.177
Residual	10	4035818.582	403581.858		
Total	11	4889298.917	444481.720		

Normality Test (Shapiro-Wilk) Passed (P = 0.760)

Constant Variance Test: Passed (P = 0.402)

Power of performed test with alpha = 0.050: 0.266

The power of the performed test (0.266) is below the desired power of 0.800.
Less than desired power indicates you are less likely to detect a difference when one actually exists.
Negative results should be interpreted cautiously.

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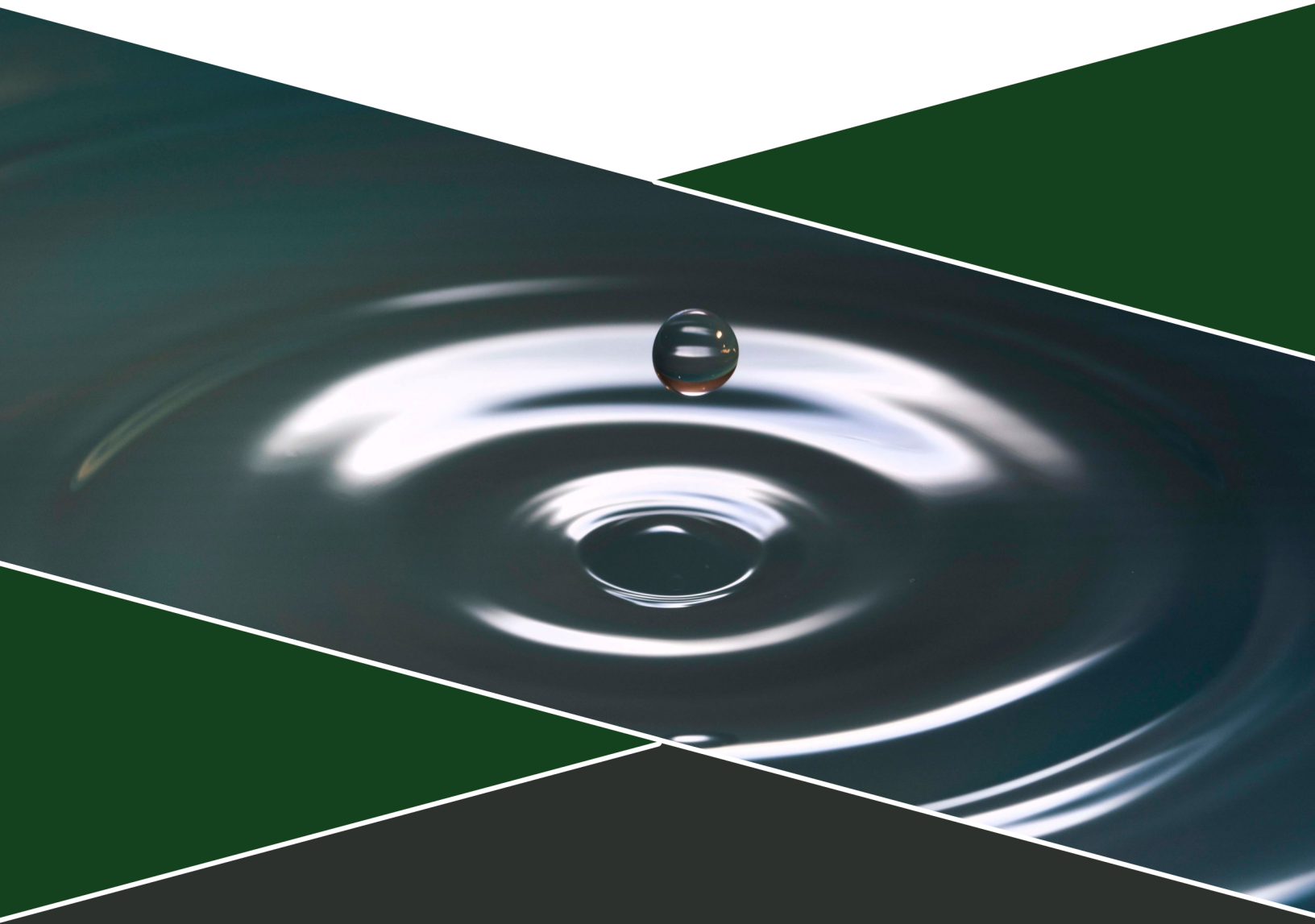

Date	Monitoring Well	Ammonia-N (mg/L)	Chromium (Dissolved) (mg/L)	Chromium (Total) (mg/L)	Lead (Dissolved) (mg/L)	Lead (Total) (mg/L)	Nitrate- N (mg/L)	pH (s.u.)	Sulfate (mg/L)
Limits		500 mg/L					0.55 mg/L		10 mg/L
13-Jul-22	ECMW-13	0.17	0.01	0.01	0.0005	0.00061	0.05	4.96	210
13-Jul-22	ECMW-14	0.65	0.01	0.01	0.0005	0.00081	0.05	5.35	110
13-Jul-22	ECMW-15	18	0.01	0.01	0.0005	0.0005	25	5.31	69
13-Jul-22	ECMW-16	0.28	0.01	0.01	0.0005	0.0006	15	3.88	19
13-Jul-22	ECMW-16	1.7	0.01	0.01	0.0005	0.0005	9.1	4.65	17
13-Jul-22	ECMW-17	7.3	0.01	0.01	0.00051	0.0005	18	4.12	62
13-Jul-22	ECMW-18	0.52	0.016	0.015	0.023	0.024	0.07	5.58	2.6
13-Jul-22	ECMW-19	0.21	0.01	0.01	0.0005	0.0015	0.05	5.76	2.6
13-Jul-22	ECMW-22	0.18	0.01	0.01	0.0005	0.0019	0.05	5.87	6.7
12-Jul-22	ECMW-4	0.59	0.01	0.01	0.0067	0.0066	0.05	3.79	910
12-Jul-22	ECMW-5	1.1	0.01	0.01	0.0005	0.0005	140	4.5	30
12-Jul-22	ECMW-6	1100	0.01	0.01	0.032	0.033	15000	3.65	71
12-Jul-22	ECMW-7	1000	0.01	0.01	0.0008	0.0011	8700	6.16	200
12-Jul-22	ECMW-8	980	0.01	0.01	0.037	0.043	6400	3.71	110
12-Jul-22	ECMW-9	1.4	0.01	0.01	0.0005	0.0005	25	5.29	610
12-Jul-22	ECMW-20	0.48	0.01	0.01	0.0005	0.002	0.13	5.51	15
12-Jul-22	ECMW-21	0.24	0.01	0.01	0.0005	0.0005	2.5	4.91	4.8
11-Jul-22	ECMW-1	0.18	0.01	0.01	0.0009	0.001	1.7	4.84	5.8
11-Jul-22	ECMW-2	0.22	0.01	0.01	0.0005	0.0005	0.05	5.36	22
11-Jul-22	ECMW-3	0.2	0.01	0.01	0.0005	0.0011	0.05	6.03	12
11-Jul-22	ECMW-10	0.32	0.01	0.01	0.0005	0.0005	61	4.05	97
11-Jul-22	ECMW-11	11	0.01	0.01	0.00052	0.00051	37	4.19	150
11-Jul-22	ECMW-12	3	0.01	0.01	0.0005	0.0005	0.05	5.68	25
23-Feb-22	ECMW-13	0.1	0.01	0.01	0.0005	0.0005	0.05	4.93	190
23-Feb-22	ECMW-14	0.1	0.01	0.01	0.0005	0.0011	1.3	4.68	160
23-Feb-22	ECMW-15	0.12	0.01	0.01	0.0005	0.0005	3.3	4.09	17
23-Feb-22	ECMW-18	0.37	0.014	0.015	0.025	0.025	0.15	5.21	4.4
23-Feb-22	ECMW-19	0.12	0.01	0.01	0.0005	0.0005	0.05	5.68	2.5
22-Feb-22	ECMW-1	0.18	0.01	0.01	0.0005	0.00053	0.3	4.18	5.7
22-Feb-22	ECMW-2	0.46	0.01	0.01	0.005	0.0011	1.8	5.07	5.6
22-Feb-22	ECMW-3	0.1	0.01	0.01	0.0005	0.0019	0.06	6.07	22
22-Feb-22	ECMW-4	0.55	0.01	0.01	0.0078	0.0079	0.08	3.59	670
22-Feb-22	ECMW-5	0.34	0.01	0.01	0.0005	0.0005	140	4.42	31
22-Feb-22	ECMW-6	130	0.01	0.01	0.088	0.089	11000	3.59	71
22-Feb-22	ECMW-7	120	0.01	0.01	0.0039	0.0039	2500	5.06	710
22-Feb-22	ECMW-8	73	0.01	0.01	0.024	0.024	5300	3.61	130
22-Feb-22	ECMW-9	0.32	0.01	0.01	0.0005	0.0005	25	5.43	470
22-Feb-22	ECMW-20	0.18	0.01	0.01	0.0007	0.0029	0.096	5.31	15
22-Feb-22	ECMW-21	0.1	0.01	0.011	0.0005	0.0006	3.6	4.44	13
21-Feb-22	ECMW-10	0.44	0.01	0.01	0.0005	0.0005	69	3.94	84
21-Feb-22	ECMW-11	7.3	0.01	0.01	0.0005	0.0005	35	4.05	200
21-Feb-22	ECMW-12	2	0.01	0.01	0.0005	0.0005	0.05	5.65	4.5
21-Feb-22	ECMW-17	2.3	0.01	0.01	0.0005	0.0005	0.05	3.78	6.5
21-Feb-22	ECMW-22	0.12	0.01	0.01	0.0005	0.0005	7.2	5.66	19

15-Jul-21	ECMW-14	0.36					0.41	4.91	140
15-Jul-21	ECMW-15							4.93	
15-Jul-21	ECMW-16	0.4					12	4.35	17
15-Jul-21	ECMW-18	0.23					0.053	5.53	2.1
15-Jul-21	ECMW-19							5.54	
15-Jul-21	ECMW-20							5.63	
14-Jul-21	ECMW-2							5.34	
14-Jul-21	ECMW-3							5.97	
14-Jul-21	ECMW-10	0.1					68	4.06	71
14-Jul-21	ECMW-11	9.8					35	4.2	170
14-Jul-21	ECMW-12							5.65	
14-Jul-21	ECMW-13							5.54	
14-Jul-21	ECMW-17	0.1					11	4.2	9.4
14-Jul-21	ECMW-21							4.91	
14-Jul-21	ECMW-22							4.75	
13-Jul-21	ECMW-1							4.33	
13-Jul-21	ECMW-4	1.3					0.13	3.82	710
13-Jul-21	ECMW-5	1.2					140	4.78	29
13-Jul-21	ECMW-6	580					11000	4.7	70
13-Jul-21	ECMW-7	840					2700	5.34	310
13-Jul-21	ECMW-8	810					5400	3.76	110
13-Jul-21	ECMW-9	3.4					23	5.32	580
3-Mar-21	ECMW-14	0.47					0.056	4.03	14
3-Mar-21	ECMW-15							2.97	
3-Mar-21	ECMW-17	7					39	4.45	41
3-Mar-21	ECMW-18						0.3	4.49	3.5
3-Mar-21	ECMW-19							5.94	
3-Mar-21	ECMW-20							5.56	
3-Mar-21	ECMW-21							4.68	
3-Mar-21	ECMW-22							5.88	
2-Mar-21	ECMW-1							3.01	
2-Mar-21	ECMW-2							3.84	
2-Mar-21	ECMW-3							4.64	
2-Mar-21	ECMW-4	0.41					0.11	3.23	890
2-Mar-21	ECMW-5	2.9					140	3.82	36
2-Mar-21	ECMW-6	690					11000	3.32	69
2-Mar-21	ECMW-7	850					2500	4.85	500
2-Mar-21	ECMW-8	99					5300	2.19	150
2-Mar-21	ECMW-9	0.32					26	4.16	650
2-Mar-21	ECMW-13							4.84	
2-Mar-21	ECMW-16	0.25					11	3.05	20
1-Mar-21	ECMW-10	0.11					65	3.27	92
1-Mar-21	ECMW-11	0.1					31	2.75	150
1-Mar-21	ECMW-12							3.24	
22-Jul-20	ECMW-14	0.26	0.01	0.01	0.0079	0.00051	2	4.41	140
22-Jul-20	ECMW-15	0.17	0.01	0.01	0.0005	0.0005	3.1	3.87	14
22-Jul-20	ECMW-16	0.71	0.01	0.01	0.0005	0.0005	14	3.79	20
22-Jul-20	ECMW-17	0.1	0.01	0.01	0.0005	0.0005	8.9	2.95	10

22-Jul-20	ECMW-20	0.1	0.01	0.01	0.0005	0.002	0.35	3.99	15
22-Jul-20	ECMW-22	0.12	0.01	0.01	0.0005	0.0005	0.05	4.76	5.5
21-Jul-20	ECMW-5	1.5	0.01	0.01	0.0005	0.0005	120	4.2	32
21-Jul-20	ECMW-6	580	0.01	0.01	0.023	0.022	10000	3.57	56
21-Jul-20	ECMW-7	250	0.01	0.01	0.0024	0.0025	1800	5.03	390
21-Jul-20	ECMW-8	590	0.01	0.01	0.021	0.021	4700	3.58	110
21-Jul-20	ECMW-9	0.64	0.01	0.01	0.0005	0.0005	25	4.87	570
21-Jul-20	ECMW-13	0.27	0.01	0.01	0.0005	0.00061	0.05	4.83	180
21-Jul-20	ECMW-18	0.33	0.019	0.02	0.018	0.02	0.19	4.06	2.5
21-Jul-20	ECMW-19	0.34	0.01	0.01	0.0005	0.00085	0.05	4.85	2.4
21-Jul-20	ECMW-21	0.1	0.01	0.01	0.0005	0.0005	2.3	3.95	11
20-Jul-20	ECMW-1	0.1	0.01	0.01	0.00072	0.00083	1.4	3.16	5.7
20-Jul-20	ECMW-2	0.1	0.01	0.01	0.0005	0.0005	0.05	4.5	20
20-Jul-20	ECMW-3	0.11	0.01	0.01	0.0005	0.00062	0.05	5.16	11
20-Jul-20	ECMW-10	0.11	0.01	0.01	0.0005	0.0005	63	3.73	62
20-Jul-20	ECMW-11	9.3	0.01	0.01	0.0054	0.0005	22	3.55	170
20-Jul-20	ECMW-12	2.1	0.01	0.01	0.0005	0.0005	0.05	5.06	14
19-Jul-20	ECMW-4	0.62	0.01	0.01	0.0069	0.0068	0.15	3.4	171.7
20-Feb-20	ECMW-20	0.12	0.01	0.01	0.0005	0.0013	0.14	5.12	12
20-Feb-20	ECMW-21	0.1	0.01	0.01	0.0005	0.00093	2.3	3.83	3.4
19-Feb-20	ECMW-4	0.18	0.011	0.01	0.0068	0.0071	0.14	3.47	181.1
19-Feb-20	ECMW-5	0.26	0.01	0.01	0.0005	0.0005	140	4.22	40
19-Feb-20	ECMW-14	0.4	0.01	0.01	0.0005	0.0005	5.3	4.35	180
19-Feb-20	ECMW-15	0.38	0.01	0.01	0.0005	0.0005	3.6	3.91	15
19-Feb-20	ECMW-17	9.7	0.01	0.01	0.0017	0.0021	16	4.15	35
19-Feb-20	ECMW-18	0.25	0.02	0.019	0.018	0.02	0.46	4.85	3.7
19-Feb-20	ECMW-19	0.17	0.01	0.01	0.0005	0.0005	0.05	5.34	2.6
19-Feb-20	ECMW-22	0.18	0.01	0.01	0.0005	0.0005	0.05	5.47	5.6
18-Feb-20	ECMW-1	1.2	0.01	0.01	0.0018	0.0018	0.96	3.65	7.8
18-Feb-20	ECMW-2	5.9	0.01	0.01	0.0005	0.0005	0.05	4.98	23
18-Feb-20	ECMW-3	0.72	0.01	0.01	0.0012	0.0013	0.05	5.8	16
18-Feb-20	ECMW-6	330	0.012	0.013	0.053	0.053	11000	3.61	59
18-Feb-20	ECMW-7	280	0.01	0.01	0.0029	0.0029	2400	5.02	470
18-Feb-20	ECMW-8	2000	0.01	0.01	0.037	0.037	5400	3.62	140
18-Feb-20	ECMW-9	0.28	0.01	0.01	0.0005	0.0005	28	5.22	670
17-Feb-20	ECMW-10	0.11	0.01	0.01	0.0005	0.0005	64	5	97
17-Feb-20	ECMW-11	10	0.01	0.01	0.0005	0.0005	32	4.19	160
17-Feb-20	ECMW-12	2.2	0.01	0.01	0.0005	0.0005	0.05	5.63	3.5
17-Feb-20	ECMW-13	0.1	0.01	0.01	0.0005	0.0005	0.05	4.49	260
17-Feb-20	ECMW-16	0.35	0.01	0.01	0.0005	0.0005	12	4.11	18
18-Jul-19	ECMW-18						0.21	4.68	
18-Jul-19	ECMW-19							5.55	
17-Jul-19	ECMW-1							3.52	
17-Jul-19	ECMW-2							4.83	
17-Jul-19	ECMW-3							5.15	
17-Jul-19	ECMW-4	0.5					0.17	3.73	740
17-Jul-19	ECMW-5	0.39					110	4.22	36
17-Jul-19	ECMW-6	6900					9700	3.77	52

17-Jul-19	ECMW-7	3700					2500	5.02	210
17-Jul-19	ECMW-8	4500					4600	3.74	110
17-Jul-19	ECMW-9	< 0.1					28	4.86	640
16-Jul-19	ECMW-10	< 0.1					69	3.87	71
16-Jul-19	ECMW-11	11					31	3.93	180
16-Jul-19	ECMW-12							5.58	
16-Jul-19	ECMW-14	0.52					4	4.19	130
16-Jul-19	ECMW-15							4.11	
16-Jul-19	ECMW-16	0.33					13	3.94	16
16-Jul-19	ECMW-20							5.15	
16-Jul-19	ECMW-21							4.06	
15-Jul-19	ECMW-13							4.93	
15-Jul-19	ECMW-17	0.22					7.8	3.67	11
15-Jul-19	ECMW-22							5.37	
24-Jan-19	ECMW-8	4100					4800	3.85	150
24-Jan-19	ECMW-9	0.11					31	5.65	670
24-Jan-19	ECMW-10	0.21					76	4.93	98
24-Jan-19	ECMW-11	18					36	4.3	190
23-Jan-19	ECMW-1							4.26	
23-Jan-19	ECMW-2							5.19	
23-Jan-19	ECMW-3							5.97	
23-Jan-19	ECMW-4	0.27					0.15	3.82	930
23-Jan-19	ECMW-6	6200					9300	3.71	57
23-Jan-19	ECMW-7	2600					2500	5.24	370
22-Jan-19	ECMW-5	0.12					91	4.27	45
22-Jan-19	ECMW-13							4.54	
22-Jan-19	ECMW-16	0.33					12	4.09	18
22-Jan-19	ECMW-17	1.4					12	3.84	19
22-Jan-19	ECMW-18						0.56	4.39	
22-Jan-19	ECMW-19							5.52	
22-Jan-19	ECMW-22							5.43	
21-Jan-19	ECMW-12							5.41	
21-Jan-19	ECMW-14	Flooded							
21-Jan-19	ECMW-15							4.06	
21-Jan-19	ECMW-20							4.98	
21-Jan-19	ECMW-21							4.91	
13-Sep-18	ECMW-5	0.5	0.0125	0.0125	0.0156	0.0156	74.1	4.43	53.2
13-Sep-18	ECMW-7	231	0.0125	0.0125	0.0156	0.0156	413	6	222
13-Sep-18	ECMW-8	556	0.0125	0.0125	0.0636	0.0156	2790	3.95	145
13-Sep-18	ECMW-10	1.15	0.0125	0.0125	0.0156	0.0654	47.4	4.45	181
13-Sep-18	ECMW-11	4.76	0.0125	0.0125	0.0156	0.0156	29.9	4.34	202
13-Sep-18	ECMW-12	1.74	0.0125	0.0125	0.0156	0.0156	1.33	5.66	34.6
13-Sep-18	ECMW-18	0.5	0.0125	0.0125	0.0156	0.0156	0.25	4.19	1.72
13-Sep-18	ECMW-19	1.21	0.0125	0.0125	0.0156	0.0156	5.27	5.07	2.79
13-Sep-18	ECMW-20	0.5	0.0125	0.0125	0.0156	0.0156	0.568	4.79	17.4
13-Sep-18	ECMW-21	0.5	0.0174	0.0174	0.0156	0.0156	2.51	5.76	4.85
12-Sep-18	ECMW-1	0.5	0.0125	0.0248	0.0156	0.0713	0.45	4.47	4.65
12-Sep-18	ECMW-2	0.5	0.0125	0.0153	0.0156	0.0347	0.25	5.35	24.4

12-Sep-18	ECMW-3	0.5	0.0125	0.0125	0.0156	0.0156	0.25	5.67	19.1
12-Sep-18	ECMW-4	0.5	0.0125	0.0125	0.0156	0.016	0.25	3.84	979
12-Sep-18	ECMW-6	737	0.0125	0.0125	0.0773	0.0809	6320	3.04	60.6
12-Sep-18	ECMW-9	0.5	0.0125	0.0125	0.0156	0.0156	27.6	5.43	675
12-Sep-18	ECMW-13	0.5	0.0125	0.0125	0.0156	0.0156	0.25	4.56	496
12-Sep-18	ECMW-14	0.5	0.0125	0.0125	0.0156	0.0156	4.8	4.71	143
12-Sep-18	ECMW-15	0.5	0.0125	0.0125	0.0156	0.0156	2.21	4.87	15.6
12-Sep-18	ECMW-16	0.5	0.0125	0.0125	0.0156	0.0156	8.46	4.22	9.85
12-Sep-18	ECMW-17	1.61	0.0125	0.0125	0.0156	0.0156	6.95	4.03	24.9
12-Sep-18	ECMW-22	0.583	0.0125	0.0125	0.0156	0.0156	1.79	5.69	12.8
6-Jun-18	ECMW-4	0.5	0.0125	0.0125	0.0156	0.0156	0.25	3.94	984
6-Jun-18	ECMW-12	1.05	0.0125	0.0125	0.0156	0.0156	0.25	5.86	16.5
6-Jun-18	ECMW-14	0.5	0.0125	0.0125	0.0156	0.0156	5.98	4.91	136
6-Jun-18	ECMW-21	0.5	0.0125	0.0125	0.0156	0.0156	2.45	4.49	3.95
12-Apr-18	ECMW-5	3.28	0.0125	0.0125	0.0156	0.0156	56.5	4.68	64.9
12-Apr-18	ECMW-6	1530	0.0125	0.0125	0.0655	0.065	5580	3.55	45.2
12-Apr-18	ECMW-7	2310	0.0125	0.0125	0.0156	0.0156	542	5.77	983
12-Apr-18	ECMW-8	626	0.0125	0.0125	0.0676	0.0689	2890	3.64	128
12-Apr-18	ECMW-18	1.38	0.0125	0.0125	0.0156	0.0156	0.25	5.28	1.58
12-Apr-18	ECMW-19	0.752	0.0125	0.0125	0.0156	0.0156	0.25	5.51	3.64
12-Apr-18	ECMW-20	1.62	0.0125	0.0125	0.0156	0.0202	5.44	5.28	13.1
11-Apr-18	ECMW-1	0.5	0.0125	0.0125	0.0156	0.0156	1.13	4.36	5.12
11-Apr-18	ECMW-2	0.5	0.0125	0.0125	0.0156	0.0156	0.25	5.43	19.4
11-Apr-18	ECMW-3	0.5	0.0125	0.0125	0.0156	0.0156	0.25	5.73	9.27
11-Apr-18	ECMW-9	0.5	0.0125	0.0125	0.0156	0.0156	26.9	5.48	589
11-Apr-18	ECMW-10	0.5	0.0125	0.0125	0.0156	0.0156	43.3	3.88	152
11-Apr-18	ECMW-13	0.5	0.0125	0.0125	0.0156	0.0156	0.25	4.57	364
10-Apr-18	ECMW-11	6.15	0.0125	0.0125	0.0156	0.0156	14.7	5.37	246
10-Apr-18	ECMW-15	0.5	0.0125	0.0125	0.0156	0.0156	1.55	5.67	12.6
10-Apr-18	ECMW-16	0.5	0.0125	0.0125	0.0156	0.0156	8.13	5.75	15.6
10-Apr-18	ECMW-17	3.5	0.0125	0.0125	0.0156	0.0156	10.2	4.32	20.5
10-Apr-18	ECMW-22	0.5	0.0125	0.0125	0.0156	0.0156	0.25	5.61	0.722
13-Sep-17	ECMW-1							4.82	
13-Sep-17	ECMW-2							5.26	
13-Sep-17	ECMW-3							5.66	
13-Sep-17	ECMW-12							5.97	
13-Sep-17	ECMW-13							5.04	
13-Sep-17	ECMW-15							4.54	
13-Sep-17	ECMW-19							5.55	
13-Sep-17	ECMW-20							5.28	
13-Sep-17	ECMW-21							4.18	
13-Sep-17	ECMW-22							5.71	
12-Sep-17	ECMW-4	0.5					0.25	3.59	758
12-Sep-17	ECMW-5	9.58					56.3	4.41	43.8
12-Sep-17	ECMW-6	895					5710	3.42	49.2
12-Sep-17	ECMW-7	1060					10400	5.46	184
12-Sep-17	ECMW-8	654					3490	3.5	83.4
12-Sep-17	ECMW-9	0.5					27.3	5.05	463

12-Sep-17	ECMW-10	0.601					47.2	4.26	140
12-Sep-17	ECMW-11	4.08					16	4.03	266
12-Sep-17	ECMW-14	0.5					2.76	4.62	123
12-Sep-17	ECMW-16	0.5					8.74	4.13	12.1
12-Sep-17	ECMW-17	0.865					13.4	4.32	11.3
12-Sep-17	ECMW-18	0.5					0.25	5.11	1.29
1-May-17	ECMW-6	3500					6590	3.79	449
1-May-17	ECMW-7	947					1910	5.51	998
1-May-17	ECMW-8	1320					2430	3.7	1400
22-Mar-17	ECMW-1							4.05	
22-Mar-17	ECMW-2							5.45	
22-Mar-17	ECMW-3							5.91	
22-Mar-17	ECMW-12							5.9	
22-Mar-17	ECMW-13							4.8	
22-Mar-17	ECMW-15							4.67	
22-Mar-17	ECMW-19							5.52	
22-Mar-17	ECMW-20							5.39	
22-Mar-17	ECMW-21							4.72	
22-Mar-17	ECMW-22							5.64	
21-Mar-17	ECMW-4	0.5					0.25	4.46	954
21-Mar-17	ECMW-5	0.5					42.9	4.55	54.8
21-Mar-17	ECMW-6	1680					5160	2.61	119
21-Mar-17	ECMW-7	6950					12100	5.46	134
21-Mar-17	ECMW-8	877					2210	3.61	157
21-Mar-17	ECMW-9	1.5					32	6.17	531
21-Mar-17	ECMW-10	0.5					43.5	4.65	170
21-Mar-17	ECMW-11	5.87					16.7	4.07	268
21-Mar-17	ECMW-14	0.782					5.3	5.43	102
21-Mar-17	ECMW-16	0.5					7.88	4.44	15.3
21-Mar-17	ECMW-17	5.16					19.2	4.6	21.2
21-Mar-17	ECMW-18						0.25	5.35	
10-Nov-16	ECMW-1	0.5	0.0104	0.0104	0.0156	0.0156	0.951	6.84	5.41
10-Nov-16	ECMW-2	0.5	0.0104	0.0212	0.0156	0.0156	0.25	6.55	22.2
10-Nov-16	ECMW-3	0.5	0.0104	0.0104	0.0156	0.0156	0.25	6.45	16.2
10-Nov-16	ECMW-4	0.5	0.0104	0.014	0.0156	0.0156	0.25	3.75	973
10-Nov-16	ECMW-5	0.5	0.0104	0.0104	0.0156	0.0156	47.2	5.6	59
10-Nov-16	ECMW-6	1890	0.0104	0.0104	0.0634	0.058	5780	3.71	62.6
10-Nov-16	ECMW-7	1450	0.0104	0.0104	0.0156	0.0156	2300	4.92	165
10-Nov-16	ECMW-8	1020	0.0104	0.0104	0.0313	0.0341	1830	3.61	270
10-Nov-16	ECMW-9	4.08	0.0104	0.0104	0.0156	0.0156	29.1	5.87	616
10-Nov-16	ECMW-10	0.5	0.0104	0.0104	0.0156	0.0156	44.1	4.25	141
10-Nov-16	ECMW-11	3.86	0.0104	0.0104	0.0156	0.0156	18.3	4.42	245
10-Nov-16	ECMW-12	2.22	0.0104	0.0104	0.0156	0.0156	0.25	5.18	33
10-Nov-16	ECMW-18	0.788	0.0104	0.0104	0.0156	0.0248	0.25	6.42	1.29
9-Nov-16	ECMW-13	0.5	0.0104	0.0104	0.0156	0.0156	0.25	5.06	439
9-Nov-16	ECMW-14	0.5	0.0104	0.0104	0.0156	0.0156	4.4	5.37	116
9-Nov-16	ECMW-15	0.5	0.0104	0.0104	0.0156	0.0156	4.07	5.04	9.96
9-Nov-16	ECMW-16	0.5	0.0104	0.0104	0.0156	0.0156	8.86	5.3	13.6

9-Nov-16	ECMW-17	0.826	0.0104	0.0104	0.0156	0.0156	12.2	6.42	6.86
9-Nov-16	ECMW-19	0.5	0.0104	0.0104	0.0156	0.0156	0.25	6.56	2.25
9-Nov-16	ECMW-20	0.5	0.0104	0.0104	0.0156	0.0156	2.31	5.18	4.59
9-Nov-16	ECMW-21	0.5	0.0104	0.0104	0.0156	0.0156	0.25	6.25	21.4
9-Nov-16	ECMW-22	0.5	0.0104	0.0104	0.0156	0.0156	0.53	6.04	5.16
4-Aug-16	ECMW-8	2270	0.021	0.0104	0.065	0.0686	4310	3.74	83.6
6-Jul-16	ECMW-14	0.5	0.021	0.0104	0.016	0.0156	8.76	4.93	91.2
25-May-16	ECMW-10	0.5	0.021	0.0104	0.016	0.0156	51.2	3.99	134
25-May-16	ECMW-11	5.86	0.021	0.0104	0.016	0.0156	19.5	4.04	233
25-May-16	ECMW-12	2.24	0.021	0.0104	0.016	0.0156	0.25	5.58	17
25-May-16	ECMW-13	0.5	0.021	0.0104	0.016	0.016	0.25	4.39	529
25-May-16	ECMW-15	0.5	0.021	0.0104	0.016	0.0156	4.52	4.29	9.67
25-May-16	ECMW-16	0.5	0.021	0.0104	0.016	0.0156	10.2	4.28	15.4
25-May-16	ECMW-17	0.5	0.021	0.0104	0.016	0.0156	14.3	3.96	6.64
25-May-16	ECMW-18	0.5	0.021	0.0104	0.016	0.0167	0.25	5.33	1.78
25-May-16	ECMW-19	0.5	0.021	0.0104	0.016	0.0156	0.25	5.06	2.26
25-May-16	ECMW-20	0.5	0.021	0.0104	0.016	0.0156	0.25	5.37	9.46
25-May-16	ECMW-21	0.5	0.021	0.0104	0.016	0.0156	2.25	4.88	3.62
25-May-16	ECMW-22	1.25	0.021	0.0104	0.016	0.0156	4.37	5.5	11.8
24-May-16	ECMW-1	0.5	0.021	0.0104	0.016	0.0156	1.79	4.46	5.56
24-May-16	ECMW-2	1.37	0.021	0.0104	0.016	0.0156	0.645	5.15	19.8
24-May-16	ECMW-3	0.5	0.021	0.0104	0.016	0.0156	0.252	6.26	9.88
24-May-16	ECMW-4	0.5	0.021	0.0104	0.016	0.0156	0.666	3.83	843
24-May-16	ECMW-5	0.5	0.021	0.0104	0.016	0.0156	41.9	5.3	49.4
24-May-16	ECMW-6	1390	0.021	0.0104	0.038	0.0379	4120	3.83	30.8
24-May-16	ECMW-7	91.1	0.021	0.0104	0.016	0.0156	135	5.3	740
24-May-16	ECMW-8	2020	0.021	0.0104	0.065	0.065	4060	3.61	81
24-May-16	ECMW-9	0.888	0.021	0.0104	0.016	0.0156	29.1	5.32	581
18-Nov-15	ECMW-1							5.57	
18-Nov-15	ECMW-2							5.84	
18-Nov-15	ECMW-3							6.11	
18-Nov-15	ECMW-4	1.13					0.332	4.04	722
18-Nov-15	ECMW-5	0.73					27	5.59	61.2
18-Nov-15	ECMW-6	2280					3930	3.96	40.2
18-Nov-15	ECMW-7	66.2					104	5.31	758
18-Nov-15	ECMW-8	143					751	3.7	431
18-Nov-15	ECMW-9	2.36					32.7	5.36	526
18-Nov-15	ECMW-10	0.5					61.2	4.22	99.9
18-Nov-15	ECMW-11	39					35.7	4.13	93.4
18-Nov-15	ECMW-12							5.73	
18-Nov-15	ECMW-13							4.68	
18-Nov-15	ECMW-14	0.63					17.2	5.15	45.6
18-Nov-15	ECMW-15							5.14	
18-Nov-15	ECMW-16	0.5					8.43	4.64	15.9
18-Nov-15	ECMW-17	3.67					14.3	4.04	22.9
18-Nov-15	ECMW-18						0.25	5.7	
18-Nov-15	ECMW-19							6.13	
18-Nov-15	ECMW-20							6.08	

18-Nov-15	ECMW-21							5.39	
18-Nov-15	ECMW-22							6.07	
8-Sep-15	ECMW-14	0.5					9.58	4.89	77.8
22-May-15	ECMW-1							4.83	
22-May-15	ECMW-2							5.43	
22-May-15	ECMW-3							6.18	
22-May-15	ECMW-12							6.02	
22-May-15	ECMW-13							5.2	
22-May-15	ECMW-15							4.68	
22-May-15	ECMW-19							5.95	
22-May-15	ECMW-20							5.61	
22-May-15	ECMW-21							5.37	
22-May-15	ECMW-22							6.28	
20-May-15	ECMW-4	3.5					1.6	3.29	915
20-May-15	ECMW-5	1.27					44.6	5.27	54.5
20-May-15	ECMW-6	2550					2960	3.91	39.8
20-May-15	ECMW-7	61					63.6	4.06	866
20-May-15	ECMW-8	158					791	4.56	470
20-May-15	ECMW-9	4.13					31.9	5.52	540
20-May-15	ECMW-10	1.91					50	4.65	148
20-May-15	ECMW-11	3.12					28.8	4.19	134
20-May-15	ECMW-16	6.2					8.65	4.54	12.9
20-May-15	ECMW-17	6.53					10.4	4.1	18.7
20-May-15	ECMW-18						0.295	5.64	5.63
5-Nov-14	ECMW-13	0.5	0.02	0.0104	0.015	0.015	0.25	4.03	425
5-Nov-14	ECMW-14	0.5	0.02	0.0104	0.015	0.0156	5.12	4.09	98.3
5-Nov-14	ECMW-15	0.5	0.02	0.0104	0.015	0.0156	3.07	2.75	9.58
5-Nov-14	ECMW-16	1.27	0.02	0.0104	0.015	0.0156	9.2	2.64	11.2
5-Nov-14	ECMW-17	3.46	0.02	0.0104	0.015	0.0156	7.5	2.73	34.3
5-Nov-14	ECMW-18	0.5	0.02	0.0104	0.015	0.0156	0.254	4.71	2.64
5-Nov-14	ECMW-19	0.5	0.02	0.0104	0.015	0.0156	0.25	5.05	2.97
5-Nov-14	ECMW-20	0.5	0.02	0.0104	0.015	0.0156	0.262	3.61	9.87
5-Nov-14	ECMW-21	0.5	0.02	0.0104	0.015	0.0156	1.62	3.81	5.25
5-Nov-14	ECMW-22	0.61	0.02	0.0104	0.015	0.0156	2.58	4.42	5.66
4-Nov-14	ECMW-1	0.5	0.02	0.0104	0.015	0.0156	0.674	3.97	6.29
4-Nov-14	ECMW-2	0.5	0.02	0.0104	0.015	0.0156	0.635	4.45	21.9
4-Nov-14	ECMW-3	0.5	0.02	0.0104	0.015	0.0156	0.239	4.97	12.8
4-Nov-14	ECMW-4	1.31	0.02	0.0104	0.015	0.0156	1.29	3.01	772
4-Nov-14	ECMW-5	1	0.02	0.0104	0.015	0.0156	43.4	4.13	55.6
4-Nov-14	ECMW-6	1110	0.02	0.0104	0.031	0.036	3550	3.29	33.7
4-Nov-14	ECMW-7	77	0.02	0.0104	0.015	0.0156	99.6	4.56	816
4-Nov-14	ECMW-8	198	0.02	0.0104	0.015	0.0156	697	3.09	466
4-Nov-14	ECMW-9	4.61	0.02	0.0104	0.015	0.0156	37.6	4.81	484
4-Nov-14	ECMW-10	0.5	0.02	0.0104	0.015	0.0156	39.8	3.07	172
4-Nov-14	ECMW-11	13.9	0.02	0.0104	0.015	0.0156	30.5	3.08	117
4-Nov-14	ECMW-12	2.15	0.02	0.0104	0.015	0.0156	0.25	4.53	20.6
4-Jun-14	ECMW-13	0.5	0.021	0.0104	0.016	0.0156	0.255	5.33	374
4-Jun-14	ECMW-14	0.5	0.021	0.0104	0.016	0.0156	4.31	5.73	54.2

4-Jun-14	ECMW-15	0.5	0.021	0.0122	0.016	0.0156	1.74	5.36	12.4
4-Jun-14	ECMW-16	1.8	0.021	0.0104	0.016	0.0156	10.9	5.07	10.7
4-Jun-14	ECMW-17	2.46	0.021	0.0104	0.016	0.0156	7.19	4.62	29.3
4-Jun-14	ECMW-18	0.5	0.021	0.0531	0.016	0.0274	0.299	5.82	7.15
4-Jun-14	ECMW-19	0.5	0.021	0.0104	0.016	0.0156	0.25	5.92	2.78
4-Jun-14	ECMW-20	0.5	0.021	0.0104	0.016	0.0156	0.25	5.63	8.17
4-Jun-14	ECMW-21	0.5	0.021	0.0105	0.016	0.0156	1.63	5.22	4.57
4-Jun-14	ECMW-22	0.5	0.021	0.0104	0.016	0.0156	1.75	5.79	5.05
3-Jun-14	ECMW-1	0.5	0.021	0.0104	0.016	0.0156	0.986	4.74	3.98
3-Jun-14	ECMW-2	0.5	0.021	0.0104	0.016	0.0156	3.95	5.1	30.7
3-Jun-14	ECMW-3	0.5	0.021	0.0104	0.016	0.0156	0.25	5.86	9.14
3-Jun-14	ECMW-4	0.5	0.021	0.0104	0.016	0.0156	0.431	4.5	737
3-Jun-14	ECMW-5	0.5	0.021	0.0104	0.016	0.0156	38	7.26	65
3-Jun-14	ECMW-6	1110	0.021	0.0104	0.034	0.0339	3560	3.99	28.9
3-Jun-14	ECMW-7	100	0.021	0.0104	0.016	0.0156	169	5.24	858
3-Jun-14	ECMW-8	157	0.021	0.0104	0.016	0.0156	712	4.33	516
3-Jun-14	ECMW-9	3.23	0.021	0.0104	0.016	0.0156	35.6	5.47	525
3-Jun-14	ECMW-10	2.2	0.021	0.0104	0.016	0.0156	50.6	4.93	136
3-Jun-14	ECMW-11	26	0.021	0.0104	0.016	0.0156	30.7	4.18	105
3-Jun-14	ECMW-12	3.11	0.021	0.0104	0.016	0.0156	0.334	5.56	5.04
5-Nov-13	ECMW-4	2.03	0.02				0.752	4.63	609
5-Nov-13	ECMW-5	0.56	0.02				34.7	7.23	66.5
5-Nov-13	ECMW-6	935	0.02				3380	4.49	28.5
5-Nov-13	ECMW-7	132	0.02				156	5.81	927
5-Nov-13	ECMW-8	150					584	4.06	642
5-Nov-13	ECMW-9	17					53.9	5.51	545
5-Nov-13	ECMW-10	0.5	0.02				47.8	4.91	153
5-Nov-13	ECMW-11	0.5					30.5	4.48	125
5-Nov-13	ECMW-14	7.52	0.02				6.92	5.46	91.6
5-Nov-13	ECMW-16	1.58	0.02		0.015		10.3	4.6	13.3
5-Nov-13	ECMW-17	0.5	0.02				1.24	4.77	39.6
5-Nov-13	ECMW-18	9.64	0.02		0.015		0.25	6.28	6.3
5-Nov-13	ECMW-19							6.73	
5-Nov-13	ECMW-20							6	
5-Nov-13	ECMW-21							5.68	
4-Nov-13	ECMW-1							5.21	
4-Nov-13	ECMW-2							5.91	
4-Nov-13	ECMW-3							5.72	
4-Nov-13	ECMW-12							5.84	
4-Nov-13	ECMW-13							4.83	
4-Nov-13	ECMW-15							4.56	
4-Nov-13	ECMW-22							5.64	
15-May-13	ECMW-1							5.03	
15-May-13	ECMW-2							5.75	
15-May-13	ECMW-3							6.29	
15-May-13	ECMW-4	2.12					0.37	4.03	856
15-May-13	ECMW-5	0.5					32.8	5.07	60.7
15-May-13	ECMW-6	521					3120	4.15	37.7

15-May-13	ECMW-7	105					141	5.09	930
15-May-13	ECMW-8	172					551	3.97	614
15-May-13	ECMW-9	0.5					30.1	5.68	514
15-May-13	ECMW-10	0.5					42.1	4.44	163
15-May-13	ECMW-11	17					45.4	4.58	98
15-May-13	ECMW-12							6.02	
15-May-13	ECMW-13							5.19	
15-May-13	ECMW-14	0.5	0.02				6.17	5.2	108
15-May-13	ECMW-15							6.21	
15-May-13	ECMW-16	3.91			0.015		12.2	4.79	13
15-May-13	ECMW-17	1.41					3.6	4.7	34.5
15-May-13	ECMW-18	0.5			0.015		0.328	5.96	6.25
15-May-13	ECMW-21							6.09	
14-May-13	ECMW-19							6.13	
14-May-13	ECMW-20							5.29	
14-May-13	ECMW-22							6.19	
7-Nov-12	ECMW-1	0.5	0.02	0.01	0.015	0.015	0.866	6.43	5.94
7-Nov-12	ECMW-2	0.5	0.02	0.01	0.015	0.015	0.5	6.57	22
7-Nov-12	ECMW-3	0.5	0.02	0.01	0.015	0.0169	0.5	6.74	13.4
7-Nov-12	ECMW-4	0.5		0.01	0.015	0.015	0.5	6.17	890
7-Nov-12	ECMW-5	0.5		0.01	0.015	0.015	26.6	6.43	74.6
7-Nov-12	ECMW-6	620			0.017	0.0185	2520	6.2	112
7-Nov-12	ECMW-7	187		0.01	0.015	0.015	153	6.31	692
7-Nov-12	ECMW-8	193	0.02	0.01	0.015	0.0166	429	5.99	814
7-Nov-12	ECMW-9	0.68	0.02	0.01	0.015	0.015	32.5	6.5	568
7-Nov-12	ECMW-10	0.5		0.01	0.015	0.015	44.4	6.13	152
7-Nov-12	ECMW-11	33.2	0.02	0.01	0.015	0.015	23.8	5.92	161
7-Nov-12	ECMW-12	3.55	0.02	0.01	0.015	0.015	0.5	6.49	21.5
6-Nov-12	ECMW-13	0.5	0.02	0.01	0.015	0.015	0.5	6.25	593
6-Nov-12	ECMW-14	0.5		0.01	0.015	0.015	8.03	6.25	140
6-Nov-12	ECMW-15	0.5	0.02	0.01	0.015	0.015	1.26	6.22	13
6-Nov-12	ECMW-16	1.19		0.01		0.015	9.94	6.09	14.6
6-Nov-12	ECMW-17	3.82		0.01	0.015	0.015	1.82	6.21	39.2
6-Nov-12	ECMW-18	0.5		0.01		0.015	0.5	6.61	2.99
6-Nov-12	ECMW-19	0.5	0.02	0.01	0.015	0.015	0.5	6.68	2.88
6-Nov-12	ECMW-20	0.5	0.02	0.01	0.015	0.015	0.5	6.74	9.31
6-Nov-12	ECMW-21	0.5	0.02	0.01	0.015	0.015	1.1	6.48	6.28
6-Nov-12	ECMW-22	0.5	0.02	0.01	0.015	0.015	1.74	6.73	7.01
3-May-12	ECMW-3	0.5	0.02	0.01	0.015	0.015	0.5	6.28	8.87
3-May-12	ECMW-4	0.5	0.02	0.01	0.015	0.015	0.5	4.12	865
3-May-12	ECMW-5	0.5	0.02	0.01	0.015	0.015	23.5	5.13	59.6
3-May-12	ECMW-6	344	0.02	0.01	0.032	0.0312	1850	4.28	456
3-May-12	ECMW-7	132	0.02	0.01	0.015	0.015	161	4.82	761
3-May-12	ECMW-8	122	0.02	0.01	0.015	0.0159	296	3.97	754
3-May-12	ECMW-9	0.5	0.02	0.01	0.015	0.015	25.5	5.71	520
3-May-12	ECMW-10	0.5	0.02	0.01	0.015	0.015	38.4	4.39	158
3-May-12	ECMW-11	14.5	0.02	0.01	0.015	0.015	29.4	4.73	95.6
3-May-12	ECMW-12	1.81	0.02	0.01	0.015	0.015	0.5	6.02	17

2-May-12	ECMW-1	0.5	0.02	0.01	0.015	0.015	2.07	5.48	3.35
2-May-12	ECMW-2	0.5	0.02	0.01	0.015	0.015	0.5	5.76	18.7
2-May-12	ECMW-13	0.5	0.02	0.01	0.015	0.015	0.5	5.23	505
2-May-12	ECMW-14	0.5		0.01	0.015	0.015	17.4	5.2	139
2-May-12	ECMW-15	0.5	0.02	0.01	0.015	0.015	1.08	4.88	13.9
2-May-12	ECMW-16	0.81	0.02	0.01		0.015	10.7	4.66	15.4
2-May-12	ECMW-17	2.51	0.02	0.01	0.015	0.015	8.13	4.75	20.9
2-May-12	ECMW-18	0.5	0.02	0.01		0.015	0.5	5.89	2.17
2-May-12	ECMW-19	0.5	0.02	0.01	0.015	0.015	0.5	5.98	2.31
2-May-12	ECMW-20	0.5	0.02	0.01	0.015	0.015	0.5	5.96	7.82
2-May-12	ECMW-21	0.5	0.02	0.01	0.015	0.015	1.4	5.68	3.94
2-May-12	ECMW-22	0.5	0.02	0.01	0.015	0.015	1.15	6.1	4.99
30-Nov-11	ECMW-4	0.5					0.5	3.72	930
30-Nov-11	ECMW-5	0.5					19	4.67	94.4
30-Nov-11	ECMW-6	445		0.01			1970	3.88	60.5
30-Nov-11	ECMW-7	132					192	4.18	259
30-Nov-11	ECMW-8	120					401	3.44	727
30-Nov-11	ECMW-9	0.7					28.5	5.37	650
30-Nov-11	ECMW-10	0.5					49.2	3.97	94.8
30-Nov-11	ECMW-11	2.19					3.56	4.11	318
30-Nov-11	ECMW-13								
30-Nov-11	ECMW-14	0.5					8.09	4.5	156
30-Nov-11	ECMW-16	0.84					11.6	4.12	17.9
30-Nov-11	ECMW-17	2.75					5.95	4.65	36.1
30-Nov-11	ECMW-18						0.5	5.64	
30-Jun-11	ECMW-18						0.5		
29-Jun-11	ECMW-8	175					350		
15-Jun-11	ECMW-6	393					1620		207
15-Jun-11	ECMW-7	56.6					227		899
27-Apr-11	ECMW-4	1.02					0.5	3.91	845
27-Apr-11	ECMW-5	1.08					15	5.03	92.4
27-Apr-11	ECMW-6	371					1680	4.3	46.8
27-Apr-11	ECMW-7	1630					2640	4.47	248
27-Apr-11	ECMW-8	1980					3310	3.85	106
27-Apr-11	ECMW-9	2.96					32.1	5.74	542
27-Apr-11	ECMW-10	3.18					54.1	4.3	166
27-Apr-11	ECMW-11	47					15.8	4.57	146
27-Apr-11	ECMW-12							5.67	
26-Apr-11	ECMW-1							5.04	
26-Apr-11	ECMW-2							5.51	
26-Apr-11	ECMW-3							6.19	
26-Apr-11	ECMW-13							4.68	
26-Apr-11	ECMW-14	0.5					10.7	5.04	159
26-Apr-11	ECMW-15							4.86	
26-Apr-11	ECMW-16	3.56					7.5	4.5	15.8
26-Apr-11	ECMW-17	10.1					4.03	4.34	40.2
26-Apr-11	ECMW-18							5.77	
26-Apr-11	ECMW-19							5.82	

26-Apr-11	ECMW-20							6.03	
26-Apr-11	ECMW-21							5.85	
26-Apr-11	ECMW-22							6.05	
21-Dec-10	ECMW-13								
21-Dec-10	ECMW-14	0.5		0.01		0.015	12.7	5.68	152
21-Dec-10	ECMW-20	0.5		0.01			0.5	5.02	8.95
3-Nov-10	ECMW-12	1.44		0.01		0.015	0.5	6.64	21.5
3-Nov-10	ECMW-13	0.5		0.01		0.015		6.44	589
3-Nov-10	ECMW-15	0.5		0.01		0.015	1.9	5.3	13.2
3-Nov-10	ECMW-16	0.96		0.01		0.015	19.2	5.98	13.4
3-Nov-10	ECMW-17	1.94		0.01		0.015	27.2	7.02	13.1
3-Nov-10	ECMW-18	0.5		0.01		0.015	1	8.22	3.65
3-Nov-10	ECMW-19	0.5		0.01		0.015	0.5	6.87	2.97
3-Nov-10	ECMW-21	0.5		0.01		0.015	1.8	7.13	6.07
3-Nov-10	ECMW-22	0.5		0.01		0.015	1.31	8.15	6.68
2-Nov-10	ECMW-1	0.5		0.01		0.015	1.31	7.69	5.55
2-Nov-10	ECMW-2	0.5		0.01		0.015	0.5	8.28	22.6
2-Nov-10	ECMW-3	0.5		0.01		0.015	0.5	6.97	17.5
2-Nov-10	ECMW-4	0.5		0.01		0.015	0.5	6.57	745
2-Nov-10	ECMW-5	0.5		0.01		0.015	11	5.64	94.7
2-Nov-10	ECMW-6	311		0.011		0.015	1460	5.71	29.6
2-Nov-10	ECMW-7	107		0.01		0.015	155	4.92	156
2-Nov-10	ECMW-8	63.4		0.01		0.015	163	6.35	860
2-Nov-10	ECMW-9	0.5		0.01		0.015	20	7.04	684
2-Nov-10	ECMW-10	0.5		0.01		0.015	41.9	6.42	164
2-Nov-10	ECMW-11	3.17		0.01		0.015	4.52	5.67	325
22-Jul-10	ECMW-6	246		0.02		0.015	1940	4.14	42.3
22-Jul-10	ECMW-7	43.2		0.02		0.015	103	3.67	3490
14-Apr-10	ECMW-13	0.5		0.02		0.015	0.5	4.75	470
14-Apr-10	ECMW-14	0.5		0.02		0.015	24.3	4.54	166
14-Apr-10	ECMW-15	0.5		0.02		0.015	2.99	4.39	10.7
14-Apr-10	ECMW-16	2.38		0.02		0.015	4.73	4.42	15.3
14-Apr-10	ECMW-17	0.5		0.02		0.015	15.9	4.07	6.73
14-Apr-10	ECMW-18	0.5		0.02		0.015	0.5	5.5	2.82
14-Apr-10	ECMW-19	0.5		0.02		0.015	0.5	5.62	2.46
14-Apr-10	ECMW-20	0.5		0.02		0.015	0.5	5.64	10.1
14-Apr-10	ECMW-21	0.5		0.02		0.015	2.24	4.88	3.7
14-Apr-10	ECMW-22	0.5		0.02		0.015	1.13	5.84	7.73
13-Apr-10	ECMW-1	0.5		0.02		0.015	0.5	4.53	6.46
13-Apr-10	ECMW-2	0.5		0.02		0.015	0.5	5.23	16.9
13-Apr-10	ECMW-3	0.5		0.02		0.015	0.5	6.2	9.39
13-Apr-10	ECMW-4	0.5		0.02		0.029	0.5	3.75	655
13-Apr-10	ECMW-5	0.5		0.02		0.015	7.96	4.75	105
13-Apr-10	ECMW-6	92.8		0.02		0.015	1660	4.04	29.2
13-Apr-10	ECMW-7	1000		0.02		0.06	1080	3.53	214
13-Apr-10	ECMW-8	62.1		0.02		0.015	52.2	4.56	737
13-Apr-10	ECMW-9	0.5		0.02		0.015	16.8	5.44	462
13-Apr-10	ECMW-10	0.8		0.02		0.015	44.7	4.08	170

13-Apr-10	ECMW-11	32.6		0.02		0.015	7.78	4.32	135
13-Apr-10	ECMW-12	5.56		0.02		0.015	0.5	5.95	2.14
16-Dec-09	ECMW-14	0.5					15.7	5.53	212
21-Oct-09	ECMW-3							5.83	
21-Oct-09	ECMW-12							7.08	
21-Oct-09	ECMW-13						0.5	4.63	
21-Oct-09	ECMW-16	0.88					13.1	4.38	12.1
21-Oct-09	ECMW-17	11.2					14.4	4.68	87.1
21-Oct-09	ECMW-18						0.5	7.16	
21-Oct-09	ECMW-19							7.82	
21-Oct-09	ECMW-20					0.015		7.37	
21-Oct-09	ECMW-21							5.91	
21-Oct-09	ECMW-22							6.15	
20-Oct-09	ECMW-1							4.68	
20-Oct-09	ECMW-2							5.48	
20-Oct-09	ECMW-4	0.5					0.5	3.62	830
20-Oct-09	ECMW-5	0.5					8.82	4.98	93.4
20-Oct-09	ECMW-6	181					1330	4.16	24.7
20-Oct-09	ECMW-7	51.2					49.9	3.55	1090
20-Oct-09	ECMW-8	45.8					116	3.79	937
20-Oct-09	ECMW-9	2.31					21	5.41	505
20-Oct-09	ECMW-10	0.5					53.5	4.57	136
20-Oct-09	ECMW-11	18.2					9.44	4.28	125
20-Oct-09	ECMW-15							4.36	
3-Jun-09	ECMW-5							5.92	
3-Jun-09	ECMW-10	0.5						6.35	
3-Jun-09	ECMW-11	17.7						6.1	
3-Jun-09	ECMW-17	3.04						5.84	
22-Apr-09	ECMW-1							4.57	
22-Apr-09	ECMW-2							5.41	
22-Apr-09	ECMW-3							5.76	
22-Apr-09	ECMW-4	0.5					0.5	4.17	68.3
22-Apr-09	ECMW-5	0.5					7.58	5.06	133
22-Apr-09	ECMW-18						0.5	5.42	
22-Apr-09	ECMW-19								
22-Apr-09	ECMW-20							6.22	
22-Apr-09	ECMW-21							5.24	
22-Apr-09	ECMW-22							5.8	
21-Apr-09	ECMW-6	135					1070	4.47	148
21-Apr-09	ECMW-7	77.8					126	4.13	895
21-Apr-09	ECMW-8	53.6					108	4.88	839
21-Apr-09	ECMW-9	0.5					28	5.91	501
21-Apr-09	ECMW-10	12.7					48.9	4.58	155
21-Apr-09	ECMW-11	0.5					14	4.09	119
21-Apr-09	ECMW-12							6.52	
21-Apr-09	ECMW-13							4.77	
21-Apr-09	ECMW-14	0.72					13.2	4.36	200
21-Apr-09	ECMW-15							4.53	

21-Apr-09	ECMW-16	3.25					8.85	4.66	14.5
21-Apr-09	ECMW-17	12.2					27.1	4.25	99.9
12-Nov-08	ECMW-5	0.55		0.02		0.015	7.81	2.4	163
7-Nov-08	ECMW-12	1.17		0.02		0.015	0.5	5.75	8.74
7-Nov-08	ECMW-13	0.5		0.02		0.015	0.5	5.01	346
7-Nov-08	ECMW-18	0.5		0.025		0.032	0.5	5.05	1.52
7-Nov-08	ECMW-19	0.5		0.02		0.015	0.5	5.66	2.04
7-Nov-08	ECMW-20	0.5		0.02		0.016	0.5	6.36	7.94
7-Nov-08	ECMW-21	0.5		0.02		0.015	1.26	5.32	3
5-Nov-08	ECMW-1	0.5		0.02		0.015	0.732	4.63	4.34
5-Nov-08	ECMW-2	0.5		0.02		0.015	0.5	5.47	15.4
5-Nov-08	ECMW-3	0.5		0.02		0.015	0.5	4.86	9.65
5-Nov-08	ECMW-4	0.5		0.02		0.015	0.5	3.87	758
5-Nov-08	ECMW-6	103		0.02		0.015	1060	3.89	26.1
5-Nov-08	ECMW-7	115		0.02		0.015	237	3.4	962
5-Nov-08	ECMW-8	70		0.02		0.015	181	3.61	719
5-Nov-08	ECMW-9	0.5		0.02		0.015	23.7	4.41	391
5-Nov-08	ECMW-10	0.5		0.02		0.015	40.9	4.06	105
5-Nov-08	ECMW-11	18.4		0.02		0.015	16.9	4.34	98.6
5-Nov-08	ECMW-14	0.5		0.02		0.015	11.1	4.35	137
5-Nov-08	ECMW-15	0.5		0.02		0.015	2.32	5.18	8.79
5-Nov-08	ECMW-16	1.92		0.02		0.015	11.4	6.5	10.4
5-Nov-08	ECMW-17	1.31		0.02		0.015	34.6	3.85	17.5
5-Nov-08	ECMW-22	0.5		0.02		0.015	1.87	5.06	
21-May-08	ECMW-1	0.5	0.02	0.02		0.015	1.57	7.91	4.23
21-May-08	ECMW-2	0.5		0.02		0.015	0.5	7.04	20.1
21-May-08	ECMW-3	0.5		0.02		0.015	0.5	7.96	10.5
21-May-08	ECMW-4	0.5		0.02		0.017	0.5	3.89	896
21-May-08	ECMW-5	0.5		0.02		0.015	4.15	6.45	308
21-May-08	ECMW-6	59.1		0.02		0.015	1130	4.5	23.7
21-May-08	ECMW-7	55.2		0.02		0.015	153	2.81	936
21-May-08	ECMW-8	56.8		0.02		0.015	171	3.42	1000
21-May-08	ECMW-9	0.5		0.02		0.015	31.7	6.04	522
21-May-08	ECMW-10	0.5		0.02		0.015	69.2	5.11	153
21-May-08	ECMW-11	19.5		0.02		0.015	18.9	5.26	208
21-May-08	ECMW-12	1.67		0.02		0.015	0.5	7.53	7.14
21-May-08	ECMW-13	0.5		0.02		0.015	0.5	5.85	399
21-May-08	ECMW-14	0.5		0.02		0.015	22.5	5.69	224
21-May-08	ECMW-15	0.5		0.02		0.015	1.52	7.35	15.9
21-May-08	ECMW-16	3.35		0.02		0.015	14.8	6.08	15.9
21-May-08	ECMW-17	1.63		0.02		0.015	63.1	4.84	63
21-May-08	ECMW-18	0.5		0.028		0.02	0.567	7.82	6.57
21-May-08	ECMW-19	0.5		0.02		0.015	0.5	5.9	3.18
21-May-08	ECMW-20	0.5		0.02		0.015	0.5	8.6	8.94
21-May-08	ECMW-21	0.5		0.02		0.015	1.85	7.81	5.18
21-May-08	ECMW-22	0.5		0.02		0.015	3.65	7.93	4.7
7-Nov-07	ECMW-5	0.5					4.17	4.64	464
7-Nov-07	ECMW-13							4.64	

7-Nov-07	ECMW-14	0.5					12.6	4.24	229
7-Nov-07	ECMW-15							4.06	
7-Nov-07	ECMW-16	1.77					19.6	4.3	12.6
7-Nov-07	ECMW-17	0.64					83.3	3.7	1.27
7-Nov-07	ECMW-18						0.5	5.03	
7-Nov-07	ECMW-19							8.17	
7-Nov-07	ECMW-20							5.52	
7-Nov-07	ECMW-21							5.07	
7-Nov-07	ECMW-22							5.01	7.6
6-Nov-07	ECMW-1							4.77	
6-Nov-07	ECMW-2							5.17	
6-Nov-07	ECMW-3							4.85	
6-Nov-07	ECMW-4	0.5					0.5	3.76	1020
6-Nov-07	ECMW-6	35.7					941	5.15	54.1
6-Nov-07	ECMW-7	49.9					85.3	3.58	906
6-Nov-07	ECMW-8	96.2					340	3.7	816
6-Nov-07	ECMW-9	3.59					30.6	4.94	642
6-Nov-07	ECMW-10	0.5					65.9	3.97	121
6-Nov-07	ECMW-11	8.01					9.75	3.94	223
6-Nov-07	ECMW-12							5.11	
23-May-07	ECMW-1							5.24	
23-May-07	ECMW-2							5.29	
23-May-07	ECMW-3							5.92	
23-May-07	ECMW-4	0.5					0.099	4.13	779
23-May-07	ECMW-5	0.5					3.32	5.18	476
23-May-07	ECMW-6	63.3					3550	6.46	44.9
23-May-07	ECMW-7	96					181	4.3	798
23-May-07	ECMW-8	122					0.5	4.11	971
23-May-07	ECMW-9	2.91					32.8	5.57	420
23-May-07	ECMW-10	0.79					79.9	4.18	109
23-May-07	ECMW-11	25.4					29.2	4.23	137
23-May-07	ECMW-12							5.66	
23-May-07	ECMW-13							4.97	
23-May-07	ECMW-14	0.5					25.5	4.6	233
23-May-07	ECMW-15							4.43	
23-May-07	ECMW-16	2.21					12.8	4.25	14.4
23-May-07	ECMW-17	1.49					58.5	4.19	12.7
23-May-07	ECMW-18						0.98	5.34	
23-May-07	ECMW-19							5.18	
23-May-07	ECMW-20							6.06	
23-May-07	ECMW-21							5.56	
23-May-07	ECMW-22							5.67	
2-Nov-06	ECMW-13							4.71	
2-Nov-06	ECMW-14						13.6	4.15	
2-Nov-06	ECMW-15						2.54	4.17	
2-Nov-06	ECMW-15								
2-Nov-06	ECMW-16	2.16					24.8	4.27	
2-Nov-06	ECMW-17	4.81					47.6	3.56	

2-Nov-06	ECMW-18			0.02		0.015		5.23	
2-Nov-06	ECMW-19	0.5		0.02		0.015	0.5	5.51	
2-Nov-06	ECMW-20	0.5		0.02		0.015	1.21	6.2	
2-Nov-06	ECMW-21	0.5		0.02		0.015	2.23		
2-Nov-06	ECMW-22	0.5		0.02		0.015		5.37	
1-Nov-06	ECMW-1							4.98	
1-Nov-06	ECMW-2							5.2	
1-Nov-06	ECMW-3							5.37	
1-Nov-06	ECMW-4							3.69	
1-Nov-06	ECMW-5							4.42	
1-Nov-06	ECMW-6	170					2390	3.94	
1-Nov-06	ECMW-7	57.4				0.015	105	3.34	
1-Nov-06	ECMW-8	74.5					224	3.44	
1-Nov-06	ECMW-9						40.2	5	
1-Nov-06	ECMW-10						71	3.83	
1-Nov-06	ECMW-11	4.88					1.43	4.06	
1-Nov-06	ECMW-12	1.37						5.3	
12-Apr-06	ECMW-3						0.5	6.39	
12-Apr-06	ECMW-4						0.5	4.12	
12-Apr-06	ECMW-5							4.39	
12-Apr-06	ECMW-13							4.97	
12-Apr-06	ECMW-14						48.2	4.72	
12-Apr-06	ECMW-18		0.065	0.02	0.016	0.015		1.34	
12-Apr-06	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.1	
12-Apr-06	ECMW-20	3.58	0.02	0.02	0.015	0.015	6.29		
12-Apr-06	ECMW-21	0.5	0.02	0.02	0.015	0.015	3.19	3.05	
11-Apr-06	ECMW-1							4.73	
11-Apr-06	ECMW-2						0.5	5.56	
11-Apr-06	ECMW-6	154					1680	4.45	
11-Apr-06	ECMW-7	267			0.015	0.017	516	4.36	
11-Apr-06	ECMW-8	53.5					194	3.78	
11-Apr-06	ECMW-9						29.5	5.83	
11-Apr-06	ECMW-10					0.015	97.5	4.4	
11-Apr-06	ECMW-11	10.9					6.01	4.63	
11-Apr-06	ECMW-12	1.58						6.12	
11-Apr-06	ECMW-15						1.6	4.95	
11-Apr-06	ECMW-16	2.01					17	4.79	
11-Apr-06	ECMW-17	1.15					66.6	3.35	
11-Apr-06	ECMW-22	0.5	0.02	0.02	0.015	0.015	2.56	6.22	
20-Oct-05	ECMW-12	1.06						5.3	
20-Oct-05	ECMW-17	0.67					48.9	5.74	
20-Oct-05	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5		
20-Oct-05	ECMW-21	0.5	0.02	0.02	0.015	0.015	4.16	4.17	
19-Oct-05	ECMW-5						3.53	4.96	
19-Oct-05	ECMW-13							4.19	
19-Oct-05	ECMW-14						36	4.96	
19-Oct-05	ECMW-15						5.63	4.77	
19-Oct-05	ECMW-16	6.28					17	4.66	

19-Oct-05	ECMW-18		0.052	0.02	0.015	0.015		5.82	
19-Oct-05	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.27	
19-Oct-05	ECMW-22	0.5	0.02	0.02	0.015	0.056	0.5	6.21	
18-Oct-05	ECMW-1							3.61	
18-Oct-05	ECMW-2						0.5	5.15	
18-Oct-05	ECMW-3						0.5	6.04	
18-Oct-05	ECMW-4						0.517	4.06	
18-Oct-05	ECMW-6	110					1350	4.43	
18-Oct-05	ECMW-7	14.3			0.015	0.015	91.6	3.9	
18-Oct-05	ECMW-8	84.8					246	4.03	
18-Oct-05	ECMW-9						29.9	5.64	
18-Oct-05	ECMW-10						97.7	4.3	
18-Oct-05	ECMW-11	10.6					2.02	4.42	
26-May-05	ECMW-20	0.5	0.02	0.02	0.015	0.015	1.86	6.03	7.72
26-May-05	ECMW-21	0.5	0.02	0.265	0.015	0.063	3.17	5.69	3.64
25-May-05	ECMW-10	1.45	0.02	0.02	0.015	0.015	120	4.93	142
25-May-05	ECMW-11	20.6	0.02	0.02	0.015	0.015	1.12	5.05	3.58
25-May-05	ECMW-12	1.02	0.02	0.02	0.015	0.015	0.5	5.96	11.2
25-May-05	ECMW-13	0.54	0.02	0.02	0.015	0.015	0.5	5.07	302
25-May-05	ECMW-14	0.5	0.02	0.02	0.015	0.015	31	5.06	204
25-May-05	ECMW-15	0.5	0.02	0.02	0.015	0.015	5.79	4.94	16.1
25-May-05	ECMW-16	7.62	0.02	0.02	0.015	0.015	26.8	4.62	10.2
25-May-05	ECMW-17	0.5	0.02	0.02	0.015	0.015	56.4	4.86	19.1
25-May-05	ECMW-18	0.5	0.02	0.032	0.015	0.018	0.5	6.04	5.18
25-May-05	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	5.88	4.56
25-May-05	ECMW-22	0.5	0.02	0.02	0.015	0.015	1.12	6.46	3.61
24-May-05	ECMW-1	0.55	0.02	0.02	0.015	0.015	2.45	5.73	4.39
24-May-05	ECMW-2	0.79	0.02	0.02	0.015	0.015	0.5	5.87	22.9
24-May-05	ECMW-3	0.98	0.02	0.02	0.015	0.015	0.5	6.05	11.8
24-May-05	ECMW-4	2.14	0.02	0.02	0.015	0.015	0.997	4.77	1020
24-May-05	ECMW-5	3.62	0.02	0.02	0.015	0.015	3.21	6.42	547
24-May-05	ECMW-6	68.2	0.02	0.02	0.015	0.015	1410	4.57	5.19
24-May-05	ECMW-7	323	0.02	0.02	0.017	0.022	595	4.21	349
24-May-05	ECMW-8	79.6	0.02	0.02	0.015	0.015	225	6.12	1220
24-May-05	ECMW-9	0.5	0.02	0.02	0.015	0.018	27.4	5.77	600
26-Jan-05	ECMW-12	1.98	0.02	0.02	0.015	0.015	0.5	5.91	4.88
26-Jan-05	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.72	4.86	564
26-Jan-05	ECMW-14	0.5	0.02	0.02	0.015	0.015	62.4	4.89	204
26-Jan-05	ECMW-17	1.79	0.02	0.02	0.015	0.015	53.3	4.54	12.2
26-Jan-05	ECMW-18	0.5	0.022	0.055	0.015	0.056	0.5	5.9	5.13
26-Jan-05	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	5.82	3.67
26-Jan-05	ECMW-20	0.5	0.02	0.02	0.015	0.017	0.5	6.02	13.8
26-Jan-05	ECMW-21	4.06	0.02	0.044	0.015	0.02	3.23	5.37	2.88
26-Jan-05	ECMW-22	0.5	0.02	0.02	0.015	0.015	1.09	5.79	3.56
25-Jan-05	ECMW-1	0.5	0.02	0.02	0.015	0.015	2.88	5.43	6.69
25-Jan-05	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.38	20.8
25-Jan-05	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	6.33	15.8
25-Jan-05	ECMW-4	0.64	0.02	0.02	0.015	0.015	8.5	4.63	805

25-Jan-05	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.18	6.36	461
25-Jan-05	ECMW-6	43.1	0.02	0.02	0.015	0.015	1130	5.36	3.14
25-Jan-05	ECMW-7	281	0.02	0.02	0.015	0.016	480	4.08	312
25-Jan-05	ECMW-8	48.9	0.02	0.02	0.015	0.015	126	4.09	1200
25-Jan-05	ECMW-9	0.5	0.02	0.02	0.015	0.015	26.3	5.57	518
25-Jan-05	ECMW-10	0.5	0.02	0.02	0.015	0.015	115	4.63	114
25-Jan-05	ECMW-11							4.64	
25-Jan-05	ECMW-15	0.5	0.02	0.02	0.015	0.015	7.62	4.68	11.8
25-Jan-05	ECMW-16	4.15	0.02	0.02	0.015	0.015	43.1	4.54	8.13
17-Nov-04	ECMW-11	19.1	0.02	0.02	0.015	0.015	11.1	4.86	209
17-Nov-04	ECMW-18	0.5	0.02	0.027	0.015	0.015	0.5	5.96	4.61
17-Nov-04	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.02	4.63
17-Nov-04	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5	5.36	13.5
17-Nov-04	ECMW-21	0.5	0.02	0.047	0.015	0.015	2.97	5.96	3.14
16-Nov-04	ECMW-1	0.5	0.02	0.02	0.015	0.015	3.81	5.11	3.9
16-Nov-04	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	6.12	21.5
16-Nov-04	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.96	18.8
16-Nov-04	ECMW-4	0.5	0.02	0.02	0.015	0.015	0.5	4.26	874
16-Nov-04	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.33	5.28	502
16-Nov-04	ECMW-6	37.6	0.02	0.02	0.015	0.015	1140	4.59	4.4
16-Nov-04	ECMW-7	219	0.02	0.02	0.015	0.015	370	3.97	428
16-Nov-04	ECMW-8	82.1	0.02	0.02	0.015	0.015	304	4.01	808
16-Nov-04	ECMW-9	0.7	0.02	0.02	0.015	0.015	24	5.67	549
16-Nov-04	ECMW-10	0.5	0.02	0.02	0.015	0.015	94.4	4.79	71.1
16-Nov-04	ECMW-12	1.55	0.02	0.02	0.015	0.015	0.5	5.73	18.5
16-Nov-04	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	4.83	250
16-Nov-04	ECMW-14	0.5	0.02	0.02	0.015	0.015	21.7	4.88	168
16-Nov-04	ECMW-15	0.5	0.02	0.02	0.015	0.015	7.42	4.92	11.8
16-Nov-04	ECMW-16	6.49	0.02	0.02	0.015	0.015	38.2	5.08	8.11
16-Nov-04	ECMW-17	9.55	0.02	0.02	0.015	0.015	219	5.41	54.8
16-Nov-04	ECMW-22	0.5	0.02	0.02	0.015	0.015	0.5	6.95	2.51
15-Sep-04	ECMW-12	2.38	0.02	0.02	0.015	0.015	0.5	5.8	23
15-Sep-04	ECMW-18	0.56	0.05	0.12	0.038	0.109	0.5	5.89	3.88
15-Sep-04	ECMW-19	0.54	0.02	0.02	0.015	0.015	0.5	6.23	4.11
15-Sep-04	ECMW-20	0.86	0.02	0.02	0.015	0.015	0.5	5.61	17.2
15-Sep-04	ECMW-21	0.81	0.02	0.029	0.015	0.015	4.65	5.47	4.15
14-Sep-04	ECMW-1	0.76	0.02	0.02	0.015	0.015	4.26	5.65	3.48
14-Sep-04	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.44	24.3
14-Sep-04	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.74	18.3
14-Sep-04	ECMW-4	0.68	0.02	0.02	0.015	0.015	0.5	4.44	943
14-Sep-04	ECMW-5	0.59	0.02	0.02	0.015	0.015	3.75	6.7	515
14-Sep-04	ECMW-6	20	0.02	0.02	0.015	0.015	1130	5.51	3.84
14-Sep-04	ECMW-7	26.5	0.02	0.02	0.015	0.015	75.5	4.45	142
14-Sep-04	ECMW-8	107	0.02	0.02	0.015	0.015	392	3.99	743
14-Sep-04	ECMW-9	1.14	0.02	0.02	0.015	0.015	25.3	5.04	548
14-Sep-04	ECMW-10	0.77	0.02	0.02	0.015	0.015	123	4.7	137
14-Sep-04	ECMW-11	14.5	0.02	0.02	0.015	0.015	9.85	4.61	247
14-Sep-04	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.03	416

14-Sep-04	ECMW-14	0.5	0.02	0.02	0.015	0.015	57.7	4.72	232
14-Sep-04	ECMW-15	0.61	0.02	0.02	0.015	0.015	8.22	4.67	13.2
14-Sep-04	ECMW-16	8.57	0.02	0.02	0.015	0.015	47.1	4.49	7.83
14-Sep-04	ECMW-17	1.42	0.02	0.02	0.015	0.015	78.4	4.4	3.14
14-Sep-04	ECMW-22	0.7	0.02	0.02	0.015	0.015	0.5	5.84	2.94
13-Jul-04	ECMW-1	0.5	0.02	0.02	0.015	0.015	3.68	6.16	3.88
13-Jul-04	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.68	22.4
13-Jul-04	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.92	13
13-Jul-04	ECMW-4	0.5	0.02	0.02	0.015	0.015	0.5	4.35	973
13-Jul-04	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.75	4.96	511
13-Jul-04	ECMW-6	17.9	0.02	0.02	0.015	0.015	995	4.74	11.7
13-Jul-04	ECMW-7	73.4	0.02	0.02	0.015	0.015	150	3.99	498
13-Jul-04	ECMW-8	120	0.02	0.02	0.015	0.015	354	4.48	767
13-Jul-04	ECMW-9	0.5	0.02	0.02	0.015	0.015	24.6	6.87	588
13-Jul-04	ECMW-10	0.5	0.02	0.02	0.015	0.015	114	4.54	112
13-Jul-04	ECMW-11	17.4	0.02	0.02	0.015	0.015	13.6	4.53	222
13-Jul-04	ECMW-12	1.2	0.02	0.02	0.015	0.015	0.5	6.78	7.18
13-Jul-04	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	6.02	510
13-Jul-04	ECMW-14	0.5	0.02	0.02	0.015	0.015	45.7	5.05	226
13-Jul-04	ECMW-15	0.5	0.02	0.02	0.015	0.015	9.52	5.39	11
13-Jul-04	ECMW-16	9.35	0.02	0.02	0.015	0.015	40.2	5.5	7.7
13-Jul-04	ECMW-17	0.5	0.02	0.02	0.015	0.015	67.6	6.57	6.54
13-Jul-04	ECMW-18	0.5	0.02	0.043	0.015	0.033	0.5	6.05	5.68
13-Jul-04	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.37	6.85
13-Jul-04	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5	5.8	17.2
13-Jul-04	ECMW-21	0.5	0.02	0.056	0.015	0.032	2.5	6.39	3.74
13-Jul-04	ECMW-22	0.5	0.02	0.02	0.015	0.015	0.5	6.74	3.8
19-May-04	ECMW-4	0.5	0.02	0.02	0.015	0.015	1.45	4.05	1040
19-May-04	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.41	5.85	455
19-May-04	ECMW-6	21.4	0.02	0.02	0.015	0.015	915	5.04	13.4
19-May-04	ECMW-7	204	0.02	0.02	0.015	0.015	337	3.95	524
19-May-04	ECMW-8	120	0.02	0.02	0.015	0.015	298	4.07	789
19-May-04	ECMW-9	0.5	0.02	0.02	0.015	0.015	27.4	5.47	517
19-May-04	ECMW-12	1.94	0.02	0.02	0.015	0.015	0.5	5.8	5.11
19-May-04	ECMW-18	0.5	0.02	0.088	0.015	0.063	0.5	6.43	5.63
19-May-04	ECMW-19	0.5	0.02	0.02	0.015	0.015	0.5	6.19	9.05
19-May-04	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5	6.23	10.6
19-May-04	ECMW-21	0.5	0.02	0.07	0.015	0.029	2.15	6.75	4.59
18-May-04	ECMW-1	0.5	0.02	0.02	0.015	0.015	4.79	5.51	6.57
18-May-04	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.4	24
18-May-04	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.86	9.75
18-May-04	ECMW-10	0.5	0.02	0.02	0.015	0.015	123	5.07	139
18-May-04	ECMW-11	19.9	0.02	0.02	0.015	0.015	13.5	5.17	228
18-May-04	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.27	296
18-May-04	ECMW-14	0.5	0.02	0.02	0.015	0.015	32.6	5.23	234
18-May-04	ECMW-15	0.5	0.02	0.02	0.015	0.015	6.82	5.75	15.2
18-May-04	ECMW-16	10.4	0.02	0.02	0.015	0.015	31.9	5.95	13.3
18-May-04	ECMW-17	8.05	0.02	0.02	0.015	0.015	134	6.73	60.1

18-May-04	ECMW-22	0.5	0.02	0.02	0.015	0.015	0.95	6.76	3.74
16-Mar-04	ECMW-1	0.5	0.02	0.02	0.015	0.015	2.73	5.59	4.22
16-Mar-04	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.47	20.9
16-Mar-04	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.94	11.2
16-Mar-04	ECMW-4	0.5	0.02	0.02	0.015	0.015	0.5	4.1	919
16-Mar-04	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.6	5.13	472
16-Mar-04	ECMW-6	13	0.02	0.02	0.015	0.015	826	4.4	17.2
16-Mar-04	ECMW-7	190	0.02	0.02	0.017	0.018	310	3.98	496
16-Mar-04	ECMW-8	88	0.02	0.02	0.015	0.015	203	4.18	805
16-Mar-04	ECMW-9	0.5	0.02	0.02	0.015	0.015	30.6	5.88	528
16-Mar-04	ECMW-10	0.5	0.02	0.02	0.015	0.015	135	5.01	128
16-Mar-04	ECMW-11	15	0.02	0.02	0.015	0.015	9.63	5	262
16-Mar-04	ECMW-12	2.2	0.02	0.02	0.015	0.015	0.5	5.96	4.04
16-Mar-04	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.19	550
16-Mar-04	ECMW-14	0.5	0.02	0.02	0.015	0.015	33.4	5.34	211
16-Mar-04	ECMW-15	0.5	0.02	0.02	0.015	0.015	7.66	5.68	13.9
16-Mar-04	ECMW-16	8.39	0.02	0.02	0.015	0.015	34.8	5.83	11.2
16-Mar-04	ECMW-17	8.14	0.02	0.02	0.015	0.015	129	6.62	64
16-Mar-04	ECMW-18	0.5	0.021	0.027	0.015	0.021	0.5	6.4	7.01
16-Mar-04	ECMW-19	0.5	0.02	0.02	0.015	0.019	0.5	6.49	6.38
16-Mar-04	ECMW-20	0.5	0.02	0.02	0.015	0.015	0.5	6.51	15.9
16-Mar-04	ECMW-21	0.5	0.02	0.028	0.015	0.015	0.54	6.34	3.62
16-Mar-04	ECMW-22	0.5	0.02	0.02	0.015	0.015	0.66	6.65	2.88
28-Jan-04	ECMW-1	0.56	0.02	0.02	0.015	0.015	1.6	5.25	6.19
28-Jan-04	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.2	25.3
28-Jan-04	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.59	26.9
28-Jan-04	ECMW-4	0.5	0.02	0.02	0.015	0.015	6.39	3.88	1040
28-Jan-04	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.19	5.03	476
28-Jan-04	ECMW-6	12.3	0.02	0.02	0.015	0.015	835	4.36	17.2
28-Jan-04	ECMW-7	147	0.02	0.02	0.015	0.018	300	3.99	644
28-Jan-04	ECMW-8	45.7	0.02	0.02	0.015	0.015	142	4.29	854
28-Jan-04	ECMW-9	0.5	0.02	0.02	0.015	0.015	29.2	5.53	575
28-Jan-04	ECMW-10	0.5	0.02	0.02	0.015	0.015	126	4.6	129
28-Jan-04	ECMW-11	19.6	0.02	0.02	0.015	0.015	6.72	5.04	303
28-Jan-04	ECMW-12	1.87	0.02	0.02	0.015	0.015	0.5	6.44	6.76
28-Jan-04	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.02	565
28-Jan-04	ECMW-14	0.5	0.02	0.02	0.015	0.028	24.5	5.19	5.41
28-Jan-04	ECMW-15	3.96	0.02	0.02	0.015	0.015	4.52	5.56	18.6
28-Jan-04	ECMW-16	5.66	0.02	0.02	0.015	0.015	59	5.61	9.84
28-Jan-04	ECMW-17	0.5	0.02	0.02	0.015	0.015	81.3	6.54	42.8
28-Jan-04	ECMW-18							6.17	
28-Jan-04	ECMW-19	0.64	0.077	0.077	0.045	0.122	0.5	6.73	8.32
28-Jan-04	ECMW-20	0.5	0.02	0.034	0.015	0.024	0.5	5.93	11.4
28-Jan-04	ECMW-21	0.5	0.02	0.837	0.015	0.169	1.63	5.56	8.17
28-Jan-04	ECMW-22	0.61	0.02	0.021	0.015	0.021	0.53	7.68	6.62
19-Nov-03	ECMW-1	0.5	0.02	0.02	0.015	0.015	1.47	5.11	5.85
19-Nov-03	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	5.42	28.2
19-Nov-03	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	5.81	23.5

19-Nov-03	ECMW-4	0.5	0.02	0.02	0.015	0.015	2.05	4.13	848
19-Nov-03	ECMW-5	0.5	0.02	0.02	0.015	0.015	2.4	4.79	416
19-Nov-03	ECMW-6	5.72	0.02	0.02	0.015	0.015	865	4.53	10.7
19-Nov-03	ECMW-7	124	0.02	0.02	0.015	0.015	152	4.03	476
19-Nov-03	ECMW-8	206	0.02	0.02	0.015	0.015	464	4.99	738
19-Nov-03	ECMW-9	0.5	0.02	0.02	0.015	0.015	28	5.72	532
19-Nov-03	ECMW-10	0.5	0.02	0.02	0.015	0.015	119	4.38	104
19-Nov-03	ECMW-11	12	0.02	0.02	0.015	0.015	6.26	4.61	289
19-Nov-03	ECMW-12	1.83	0.02	0.02	0.015	0.015	0.5	5.79	30.6
19-Nov-03	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.62	4.91	310
19-Nov-03	ECMW-14	0.5	0.02	0.02	0.015	0.015	16.1	4.92	227
19-Nov-03	ECMW-15	0.5	0.02	0.02	0.015	0.015	9.81	4.89	12.6
19-Nov-03	ECMW-16	8.61	0.02	0.02	0.015	0.015	44.3	4.99	9.78
19-Nov-03	ECMW-17	0.55	0.02	0.02	0.015	0.015	77.3	5.28	11.8
19-Nov-03	ECMW-18	0.5	0.02	0.02	0.015	0.015	0.5	5.9	9.68
24-Jul-03	ECMW-1	0.5	0.02	0.02	0.015	0.015	2.55	7.1	5.05
24-Jul-03	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	7.26	22.9
24-Jul-03	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	6.23	11.8
24-Jul-03	ECMW-4	0.5	0.02	0.02	0.015	0.015	0.5	9.08	978
24-Jul-03	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.47	6.85	546
24-Jul-03	ECMW-6	1.09	0.02	0.02	0.015	0.015	681	7.41	15
24-Jul-03	ECMW-7	95.1	0.02	0.02	0.015	0.015	141	7.05	378
24-Jul-03	ECMW-8	179	0.02	0.02	0.015	0.015	472	6.04	904
24-Jul-03	ECMW-9	0.5	0.02	0.02	0.015	0.015	28.4	7.05	547
24-Jul-03	ECMW-10	0.5	0.02	0.02	0.015	0.015	118	5.56	108
24-Jul-03	ECMW-11	25.6	0.02	0.02	0.015	0.015	6.68	6.66	278
24-Jul-03	ECMW-12	1.74	0.02	0.02	0.015	0.015	0.5	4.76	18.7
23-Jul-03	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	6.05	358
23-Jul-03	ECMW-14	0.5	0.02	0.02	0.015	0.015	23.1	4.62	221
23-Jul-03	ECMW-15	0.5	0.02	0.02	0.015	0.015	7.63	4.77	12.8
23-Jul-03	ECMW-16	6.45	0.02	0.02	0.015	0.015	72.3	4.81	7.15
23-Jul-03	ECMW-17	0.58	0.02	0.02	0.015	0.015	74.7	4.74	9.31
23-Jul-03	ECMW-18	0.5	0.02	0.047	0.015	0.029	113	5.38	115
10-Dec-02	ECMW-1	0.5	0.02	0.02	0.015	0.015	1.8	6.1	6.73
10-Dec-02	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	6.7	24
10-Dec-02	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	6	16.4
10-Dec-02	ECMW-4	0.5	0.02	0.02	0.015	0.015	2.4	4.4	976
10-Dec-02	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.26	5.2	489
10-Dec-02	ECMW-6	0.5	0.02	0.02	0.015	0.015	580	4.6	7.15
10-Dec-02	ECMW-7	180	0.02	0.02	0.016	0.015	344	3.7	275
10-Dec-02	ECMW-8	220	0.02	0.02	0.015	0.015	1080	4	46.2
10-Dec-02	ECMW-9	0.7	0.02	0.02	0.015	0.015	28.1	5.2	556
10-Dec-02	ECMW-10	0.5	0.02	0.02	0.015	0.015	70.4	4.5	52.2
10-Dec-02	ECMW-11	10.73	0.02	0.02	0.015	0.015	6.12	4.5	414
10-Dec-02	ECMW-12	2.3	0.02	0.02	0.015	0.015	0.5	5.8	12.5
10-Dec-02	ECMW-13	0.5	0.02	0.02	0.015	0.015	0.5	5.5	598
10-Dec-02	ECMW-14	0.5	0.02	0.02	0.015	0.015	23.4	5.3	230
10-Dec-02	ECMW-15	0.5	0.02	0.02	0.015	0.015	12.2	5.8	10.8

10-Dec-02	ECMW-16	2.99	0.02	0.02	0.015	0.015	89.4	5.9	5.64
10-Dec-02	ECMW-17	1.22	0.02	0.02	0.015	0.015	101	5.6	28.2
10-Dec-02	ECMW-18	0.5	0.02	0.02	0.015	0.015	0.5	6.4	5.01
30-Oct-02	ECMW-1	0.66	0.02	0.02	0.015	0.015	1.56	5.6	4.63
30-Oct-02	ECMW-2	0.5	0.02	0.02	0.015	0.015	0.5	6.1	25.7
30-Oct-02	ECMW-3	0.5	0.02	0.02	0.015	0.015	0.5	6.5	21.6
30-Oct-02	ECMW-4	0.5	0.02	0.02	0.015	0.02	0.62	4.8	756
30-Oct-02	ECMW-5	0.5	0.02	0.02	0.015	0.015	3.66	5.4	582
30-Oct-02	ECMW-6	0.51	0.02	0.02	0.015	0.015	661	5	8.13
30-Oct-02	ECMW-7	167	0.02	0.02	0.015	0.017	294	4.2	345
30-Oct-02	ECMW-8	406	0.02	0.02	0.015	0.015	1330	4.4	151
30-Oct-02	ECMW-9	18.8	0.02	0.02	0.015	0.015	59	6	655
30-Oct-02	ECMW-10	1.84	0.02	0.02	0.015	0.015	137	5.6	140
30-Oct-02	ECMW-11	18	0.02	0.02	0.015	0.015	9.22	4.8	362
30-Oct-02	ECMW-12	4.2	0.02	0.02	0.015	0.015	0.5	6.1	21.6
30-Oct-02	ECMW-13	1.28	0.02	0.02	0.015	0.015	0.5	6.1	538
30-Oct-02	ECMW-14	5.32	0.02	0.02	0.015	0.015	17	6.3	288
30-Oct-02	ECMW-15	1.16	0.02	0.02	0.015	0.015	18.2	5.4	9.22
30-Oct-02	ECMW-16	11.6	0.02	0.02	0.015	0.015	72	5	9.21
30-Oct-02	ECMW-17	2.36	0.02	0.02	0.015	0.015	92	5.1	9.53
30-Oct-02	ECMW-18	0.43	0.02	0.02	0.015	0.018	0.5	6.3	3.22
4-Jun-02	ECMW-12	1.4	0.02	0.02	0.02	0.02	0.5	6	4.85
4-Jun-02	ECMW-13	0.5	0.02	0.02	0.02	0.02	0.5	5.7	372
4-Jun-02	ECMW-14	0.5	0.02	0.02	0.02	0.02	26.5	5.6	187
4-Jun-02	ECMW-15	0.5	0.02	0.02	0.02	0.02	10.7	5.4	11.1
4-Jun-02	ECMW-16	6.2	0.02	0.02	0.02	0.02	72.5	5	7.19
4-Jun-02	ECMW-17	0.5	0.02	0.02	0.02	0.02	83.4	5.1	8.04
4-Jun-02	ECMW-18	0.5	0.137	0.147	0.02	0.115	0.5	6.2	8.38
3-Jun-02	ECMW-1	0.5	0.02	0.02	0.02	0.02	2.01	5.5	4.66
3-Jun-02	ECMW-2	0.5	0.02	0.02	0.02	0.02	0.5	6	20
3-Jun-02	ECMW-3	0.5	0.02	0.02	0.02	0.02	0.5	6.4	11.4
3-Jun-02	ECMW-4	0.5	0.02	0.02	0.02	0.02	0.5	5.2	979
3-Jun-02	ECMW-5	0.5	0.02	0.02	0.02	0.02	3.35	6.3	650
3-Jun-02	ECMW-6	0.5	0.02	0.02	0.02	0.02	459	6.1	12.1
3-Jun-02	ECMW-7	190	0.02	0.02	0.015	0.031	361	4.4	363
3-Jun-02	ECMW-8	551	0.02	0.02	0.02	0.02	1070	5.4	77.8
3-Jun-02	ECMW-9	0.5	0.02	0.02	0.02	0.02	24.4	6	639
3-Jun-02	ECMW-10	0.5	0.02	0.02	0.02	0.02	138	5.3	84.9
3-Jun-02	ECMW-11	0.5	0.02	0.02	0.02	0.02	6.46	5.4	565
1-Nov-01	ECMW-1	0.5		0.02		0.04	2.74	4.8	3.34
1-Nov-01	ECMW-2	0.5		0.02		0.04	0.5	5.3	22.9
1-Nov-01	ECMW-3	0.5		0.02		0.04	0.5	5.4	22.5
30-Oct-01	ECMW-4	0.5		0.04		0.06	0.5	4.3	936
30-Oct-01	ECMW-5	0.5		0.02		0.04	3.27	4.7	526
30-Oct-01	ECMW-6	0.5		0.02		0.04	326	4.3	15.7
30-Oct-01	ECMW-7	0.5	0.02	0.02		0.04	189	3.5	322
30-Oct-01	ECMW-8	0.94		0.02		0.04	1030	3.9	81.1
30-Oct-01	ECMW-9	0.5		0.02		0.04	26.7	5.5	514

30-Oct-01	ECMW-10	0.5		0.04		0.04	153	3.9	134
30-Oct-01	ECMW-11	0.5		0.02		0.04	21.9	4	334
30-Oct-01	ECMW-13	0.5		0.02		0.04	0.5	5.3	606
30-Oct-01	ECMW-14	0.5		0.02		0.04	25.2	4.5	211
30-Oct-01	ECMW-15	0.5		0.02		0.04	12.6	4.3	10.2
30-Oct-01	ECMW-16	0.5		0.02		0.04	58.4	3.9	6.44
30-Oct-01	ECMW-17	0.5		0.02		0.04	106	4.1	11.5
30-Oct-01	ECMW-18	0.5		0.05		0.04	0.5	5.4	3.74
8-Aug-01	ECMW-4	0.66		0.02		0.04	0.5	4.1	925
8-Aug-01	ECMW-5	0.5		0.02		0.04	3.54	4.6	657
8-Aug-01	ECMW-6	0.5		0.02		0.04	298	4.3	18.3
8-Aug-01	ECMW-7	184		0.02		0.04	336	9.7	316
8-Aug-01	ECMW-11	4.21		0.02		0.04	7.99	4.3	611
8-Aug-01	ECMW-14	0.5		0.02		0.04	75	4.3	175
8-Aug-01	ECMW-15	0.5		0.02		0.04	19.1	4.3	7.8
27-Jun-01	ECMW-9	0.5		0.02		0.04	28.8	5.4	520
27-Jun-01	ECMW-10	0.5		0.025		0.04	156	4.4	100
27-Jun-01	ECMW-12	2.2		0.02		0.04	0.5	5.9	13
5-Jun-01	ECMW-13	0.5		0.02		0.04	0.5	5.6	538
5-Jun-01	ECMW-16	4.61		0.02		0.04	134	4.3	5.09
5-Jun-01	ECMW-17	1.16		0.02		0.04	54.2	4.4	87.7
29-May-01	ECMW-1	0.5		0.02		0.04	1.83	5.1	3.67
29-May-01	ECMW-2	0.5		0.032		0.04	0.5	5.4	19.6
29-May-01	ECMW-3	0.5		0.02		0.04	0.5	6.2	10.6
14-Mar-96	ECMW-1		0.005	0.005	0.002	0.0037	1.7		4.1
14-Mar-96	ECMW-2		0.005	0.0342	0.002	0.018	0.2		17
14-Mar-96	ECMW-3		0.005	0.005	0.002	0.0027	0.2		10
14-Mar-96	ECMW-4		0.005	0.005	0.002	0.0025	1.3		728
14-Mar-96	ECMW-9		0.005	0.005	0.002	0.004	37.3		621
13-Mar-96	ECMW-5		0.005	0.005	0.002	0.002	4.4		441
13-Mar-96	ECMW-6		0.005	0.005	0.002	0.0026	51.1		24
13-Mar-96	ECMW-7		0.005	0.0078	0.0185	0.0221	282		380
13-Mar-96	ECMW-8		0.005	0.005	0.0238	0.0234	1010		68.3
13-Mar-96	ECMW-10		0.005	0.005	0.0039	0.0052	257		89
13-Mar-96	ECMW-11		0.005	0.005	0.002	0.002	22.1		578
13-Mar-96	ECMW-12		0.005	0.005	0.002	0.002	0.2		9.6
13-Mar-96	ECMW-13		0.005	0.005	0.002	0.002	0.2		809
13-Mar-96	ECMW-14		0.005	0.005	0.002	0.002	11.9		139
13-Mar-96	ECMW-15		0.005	0.005	0.002	0.002	34.5		4.4
13-Mar-96	ECMW-16		0.005	0.005	0.0034	0.0036	137		4.6
13-Mar-96	ECMW-17		0.005	0.005	0.002	0.002	45		145
13-Mar-96	ECMW-18		0.005	0.0194	0.002	0.017	0.4		3.3