4500 NORTH WEST AVE. • P.O. BOX 231 • EL DORADO, AR. 71731 • (870) 863-1400

EL DORADO
CHEMICAL COMPANY

March 27, 2017

Mr. Jerry Neill
Senior Geologist
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Mr. Neill:

Please find the enclosed El Dorado Chemical Company 2016 Groundwater Monitoring Report. This report is being submitted in accordance with CAO LIS Number 06-0153. If you have any questions, please contact Edward L Pearson at (870) 863-1400.

Sincerely,

Greg Withrow

Greg Withrow

General Manager

2016 ANNUAL GROUND WATER REPORT

Prepared For:

El Dorado Chemical Company

Prepared By:

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

12232 Industriplex Blvd, Suite 27
Baton Rouge, Louisiana
(225) 751-5386

March 24, 2017

2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

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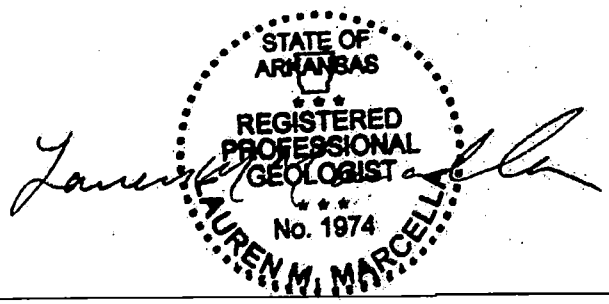
Prepared By:



Date: March 24, 2017

Lauren M. Marcella, P.G.
Project Geologist
AR Professional Geologist No. 1974

2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

1.0 INTRODUCTION

This report presents the results of ground water sampling activities conducted at the El Dorado Chemical Company (EDCC) facility during 2016. Field sampling techniques, ground water flow, ground water quality and data analysis are discussed. A site map is provided as Figure 1.

2.0 SITE GEOLOGY

The EDCC facility is located west of the Mississippi Embayment in the Gulf Coastal Plain Geostratigraphic Region. Sediments within the region are characterized as a thick sequence of unconsolidated sediments, fluvial-deltaic in origin, and Tertiary in age. In some areas of Union County, unconsolidated alluvial deposits, Quaternary in age, overlay the Tertiary sediments.

Within the Claiborne Group, two units crop out in Union County, the Cook Mountain Formation and the Cockfield Formation. The deeper Cook Mountain is overlain by the Cockfield Formation and uniformly underlain by the Sparta Formation. The Cook Mountain is 50 to 200 feet thick and is composed of clay and silty clay containing minor amounts of localized very fine to silty sand. These clays serve as a confining unit between the more permeable overlying Cockfield Formation and the underlying Sparta aquifer. The Cockfield Formation, locally referred to as the "lignite sand", is generally characterized by fine sand, interbedded silty clay and lignite becoming more massive and containing less silt and clay with depth. The local shallow subsurface consists of interbedded sand, silty sand, silt and clay, with more clay in the northern area of the property and more sand to the south.

3.0 GROUND WATER MONITORING PROGRAM

The ground water monitoring program including parameters, sampling methodology and laboratory analyses is described in the following sections.

3.1 MONITORING PARAMETERS

In September 2005 statistical analyses were performed on ground water data to compare downgradient well data to upgradient (background) data and determine if the site constituents of concern are present at statistically significant levels. As a result of the statistical analyses, the monitoring program was revised in 2005 and implemented in 2006. The list was changed to

allow EDCC to continue to collect data to evaluate the potential risk associated with the current ground water conditions, but eliminate parameters for which there is sufficient data.

Further revisions to the monitoring program were proposed in a letter dated April 25, 2007 and approved by the Arkansas Department of Environmental Quality (ADEQ) on June 8, 2007. The changes to the monitoring program that were implemented in 2007-2008 are as follows:

- ***Lead and chromium:*** These parameters were removed from the monitoring program during 2005; in 2007 ADEQ requested these parameters be sampled semiannually every two years (even numbered years) to verify concentrations remain at the previously documented background levels.

- ***Background Wells***: In 2004, data were used to establish the background levels of ammonia, nitrate, lead and chromium in the three upgradient wells ECMW-1, ECMW-2 and ECMW-3. These four parameters were dropped from the annual sampling list but are sampled semiannually every two years to verify concentrations remain at the previously documented background levels.

- ***Nitrate***: The statistical evaluation indicates that wells ECMW-12, ECMW-13, ECMW-15 and ECMW-19 through ECMW-22 have concentrations of nitrate comparable to the background level. Nitrate was dropped from the annual parameter list for these wells, but is sampled semiannually every two years. Nitrate will continue to be analyzed semiannually in monitor wells ECMW-4 through ECMW-11, ECMW-14, ECMW-16, ECMW-17 and ECMW-18.

- ***Ammonia***: The statistical evaluation indicates that wells ECMW-12, ECMW-13, ECMW-15 and ECMW-18 through ECMW-22 have concentrations of ammonia comparable to the background level. Ammonia was dropped from the annual parameter list for these wells, but is sampled semiannually every two years. Ammonia will continue to be analyzed semiannually in monitor wells ECMW-4 through ECMW-11, ECMW-14, ECMW-16 and ECMW-17.

- ***Sulfate***: The statistical evaluation indicates that wells ECMW-12, ECMW-13, ECMW-15 and ECMW-18 through ECMW-22 have concentrations of sulfate comparable to the background level. Sulfate was dropped from the annual parameter list for these wells, but is sampled semiannually every two years. Sulfate will continue to be analyzed semiannually in monitor wells ECMW-4 through ECMW-11, ECMW-14, ECMW-16 and ECMW-17.

- ***Total Dissolved Solids***: There is sufficient ground water data for TDS. This parameter was dropped from the list of all monitoring wells at this time. TDS can be added back to the list if the information becomes necessary.

- ***Vanadium***: Vanadium was added to the list of parameters in 2004. ADEQ recommended that vanadium remain on the list in order to obtain enough data for statistical comparison.

In a letter dated June 30, 2009, EDCC proposed a modification to the monitoring program requesting the elimination of vanadium from the list of sampling parameters. ADEQ responded in a September 1, 2009 letter, approving the request, stating that historical vanadium data have been non-detect or at low concentrations in the 22 monitor wells at the facility. The removal of vanadium from the sampling program became effective during the second half of 2009 sampling event.

Collection began for several new parameters for the evaluation of in situ remediation from all wells during the October 2005 sampling event. Field testing was conducted to collect measurements for dissolved oxygen, and redox. In addition, samples were shipped to the laboratory and analyzed for alkalinity, nitrite, dissolved manganese, dissolved iron, total phosphorus and Total Organic Carbon. In a letter to ADEQ dated June 3, 2011, EDCC requested additional changes to the monitoring program which included removal of these parameters from the list of constituents. The request was approved August 9, 2011 and was effective for the second half of 2011 sampling event.

3.2 FIELD SAMPLING

Ground water sampling events were conducted in May and November of 2016. Well ECMW-14 was sampled in July 2016 because the area was inaccessible during the May 2016 event. A confirmation sample was collected from ECMW-8 to verify analytical results in August. Depth-to-water measurements were collected from each well using an electronic water level indicator. The device was decontaminated between each well to minimize cross-contamination. Depth-to-water measurements were subtracted from their respective top-of-casing elevations to calculate ground water elevations referenced to Mean Sea Level (MSL) at each well. Monitoring well construction details are provided on Table 1. Ground water elevations for the 2016 sampling events are summarized on Table 2.

The depth-to-water measurements were used to calculate the volume of water within each well and determine the amount to be purged prior to sampling. Three well volumes were removed from each well or until the well became dry using a Redi-Flo electric pump. Dedicated polyethylene tubing was used for each well to minimize the potential for cross-contamination. The field parameters were recorded on the sampling forms during the 2016 sampling events (see Appendix A) to demonstrate when aquifer parameters have stabilized sufficiently prior to sampling. Meters used to measure field data were calibrated each day during sampling. Ground water indicator parameter data (final readings only) are summarized on Table 3. Purge water was containerized for proper disposal.

Ground water samples were collected using new, clean, dedicated, disposable polyethylene bailers. Ground water samples were placed into laboratory-provided containers with the

appropriate preservatives. The containers were packed in ice-chests and shipped to the laboratory under chain-of-custody.

Field quality assurance/quality control samples collected consisted of blind duplicates. Four duplicates were collected in 2016 (two per period). Duplicate samples were tested for all parameters (ammonia, nitrate, sulfate, lead and chromium). The duplicate analyses are evaluated in Section 4.2.3.

3.3 LABORATORY ANALYSIS

Ground water samples were analyzed by Arkansas Analytical, Inc. in Little Rock, Arkansas. Arkansas Analytical is certified by the Arkansas Department of Environmental Quality. The analytical reports are provided in Appendix A.

Ground water samples were analyzed in 2016 for the following constituents:

PARAMETER	ANALYTICAL METHODS
Ammonia-N	4500-NH3
Nitrate-N	EPA 300.0
Sulfate	EPA 300.0
Total and Dissolved Lead	EPA 200.7
Total and Dissolved Chromium	EPA 200.7
pH, Temperature, Specific Conductance	Field

4.0 SAMPLING RESULTS

The following sections present ground water flow and analytical data collected in 2016.

4.1 GROUND WATER FLOW

Ground water elevations from May and November 2016 were used to construct the potentiometric maps included as Figures 2 and 3. The average ground water elevation was approximately 2.7 feet higher in May than in November. The general ground water flow direction is from northwest to southeast for both sampling events and is consistent with previous measurements.

4.2 GROUND WATER QUALITY

4.2.1 Field Parameters

Indicator parameter data collected during well purging are summarized on Table 3. In 2016, pH values ranged from 3.61 standard units in ECMW-8 to 6.84 standard units (s.u.) in ECMW-1,

with an average of 5.05 s.u. The average of pH readings for 2016 (5.05 s.u.) was very similar to 2015 (5.06 s.u.). Specific conductance values ranged from 43.2 (ECMW-1) to 42,770 (ECMW-6) micro-Siemens/cm (µS/cm) in 2016. The average of specific conductance readings for 2016 (5893 µS/cm) is slightly higher than 2015 (3999 µS/cm) with the highest readings in Wells ECMW-6, ECMW-7 and ECMW-8.

4.2.2 Analytical Results

The 2016 well sampling analytical results are summarized in Tables 4 through 25 and the laboratory reports are provided in Appendix A. A discussion of each constituent is provided below:

Ammonia

During the year 2016, ammonia concentrations ranged from below the detection limit (0.5 mg/L) to 2270 mg/L (ECMW-8). As with previous years, results from ECMW-6, ECMW-7 and ECMW-8 exhibited the highest concentrations. Figures 4 and 5 were prepared to show the distribution of ammonia in ground water at the facility. As shown on Figures 4 and 5, the highest ammonia concentrations continue to be located north of the acid and nitrate process areas known as the Production Area.

Trend graphs of ammonia concentrations through 2016 are provided in Appendix B. Wells ECMW-4 and ECMW-6 show an increasing trend. Well ECMW-16 shows a decreasing trend. Wells ECMW-5, ECMW-7, ECMW-8, ECMW-9 and ECMW-22 show generally steady trends, but with recent increases in concentrations. Ammonia concentration trends in all other wells are relatively constant.

Nitrate

For the year 2016, nitrate concentrations ranged from below the detection limit (0.25 mg/L) to 5780 mg/L (ECMW-6). ECMW-6, ECMW-7 and ECMW-8 exhibited the highest concentrations throughout the year. Figures 6 and 7 were prepared to show the distribution of nitrate in ground water at the facility. As shown on Figures 6 and 7, the highest nitrate concentrations continue to be located north of the acid and nitrate process areas known as the Production Area.

Trends graphs for nitrate are provided in Appendix B. Nitrate concentrations in ECMW-5, ECMW-6 and ECMW-11 show increasing trends. Wells ECMW-2, ECMW-4 and ECMW-8 show an overall steady or decreasing trend, but with recent increases in concentration.

Wells ECMW-1, ECMW-10, ECMW-14, ECMW-15, ECMW-16 and ECMW-17 show decreasing trends. Nitrate concentration trends in the remaining wells are relatively constant.

Sulfate

For the year 2016, sulfate concentrations ranged from 1.29 mg/L in ECMW-18 to 973 mg/L in ECMW-4. ECMW-4, ECMW-7, ECMW-8, ECMW-9, ECMW-11 and ECMW-13 exhibited the highest concentrations throughout the year.

Figures 8 and 9 were prepared to show the distribution of sulfate in ground water at the facility. As shown on Figures 8 and 9, the highest sulfate concentrations are located north of the acid and nitrate process areas known as the Production Area.

Trends graphs for sulfate are provided in Appendix B. Sulfate concentrations in Wells ECMW-6, ECMW-7 and ECMW-12 show increasing trends. Wells ECMW-5, ECMW-8, ECMW-11, ECMW-14, ECMW-18 and ECMW-19 show decreasing trends. Sulfate concentration trends in the remaining wells are relatively constant.

Chromium

The monitoring program requires results for total and dissolved chromium for all wells in even numbered years. All total and dissolved chromium analyses were non-detect in the first half of 2016. ECMW-2 had 0.0212 mg/L in November 2016 with the remaining wells non-detect.

Lead

Total and dissolved lead were detected in wells ECMW-6, ECMW-8, ECMW-13 and ECMW-18 at concentrations ranging between 0.0167 mg/L (ECMW-18) and 0.0693 mg/L (ECMW-8), respectively. The concentration in the well nearest to the property line (0.0167 mg/L in ECMW-18) is only slightly above the EPA's Maximum Contaminant Level of 0.015 mg/L. The remaining wells in which lead was detected are located in the middle of the property concentrations do not pose any risk to human health or the environment.

4.2.3 Quality Assurance/Quality Control Results

Precision is the degree of agreement among repeated measurements of the same characteristic on samples collected as close as possible in time and place. It indicates how consistent and reproducible field and analytical methods are by showing how close the measurements are to each other. Precision is determined by analyzing blind duplicate samples. The Relative Percent Difference (RPD) is calculated to determine the precision of duplicate analyses as follows:

$$RPD = \frac{(X_1 - X_2)}{(X_1 + X_2)/2} \times 100\%$$

A smaller RPD indicates a more precise analysis. EPA and state guidelines generally consider RPD values below 20-30% to be within acceptable limits.

Well and Duplicate	Date	Ammonia	Nitrate	Sulfate	Lead
		RPD (%)			
ECMW-14	7/6/2016	ND	1.8	15.0	ND
ECMW-8	8/4/2016	10.7	0.2	1.0	1.6
ECMW-5	11/10/2016	ND	11.4	29.6	ND
ECMW-10	11/10/2016	ND	3.5	3.6	ND

The four duplicate samples collected in 2016 and analyzed for ammonia, nitrate, sulfate and lead had RPD values shown on the above table. Chromium was non-detect in all sample pairs.

5.0 GROUND WATER REMEDIATION

Recovery Wells ECRW #1 and ECRW #2 (see Figure 1) operated consistently throughout 2016, with average pumping rates of 0.5 and 0.4 gallons per minute, respectively. A total of 466,560 gallons of ground water were recovered; 259,200 gallons from ECRW #1 and 207,360 gallons from ECRW #2.

TABLES

TABLE 1
MONITORING WELL CONSTRUCTION DETAILS
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Monitoring Well ID	Completion Date	Well Depth (ft below top of casing)	Screened Interval (ft from top of casing)	Top of Casing Elevation (ft above MSL)
ECMW-1	2/14/1996	22.1	12.1 to 22.2	213.28
ECMW-2	2/14/1996	20.2	10.2 to 20.2	196.25
ECMW-3	2/15/1996	27.1	17.1 to 27.1	192.11
ECMW-4	2/15/1996	22.1	12.1 to 22.1	194.84
ECMW-5	2/21/1996	17.7	7.7 to 17.7	182.69
ECMW-6	2/21/1996	22.0	12 to 22	191.87
ECMW-7	2/20/1996	23.9	13.9 to 23.9	195.88
ECMW-8	2/20/1996	29.9	19.9 to 29.9	197.34
ECMW-9	2/15/1996	30.0	20 to 30	198.39
ECMW-10	2/19/1996	22.6	12.6 to 22.6	205.75
ECMW-11	2/19/1996	19.8	9.8 to 19.8	201.65
ECMW-12	2/19/1996	19.9	9.9 to 19.9	184.97
ECMW-13	2/14/1996	19.8	9.8 to 19.8	177.26
ECMW-14	2/13/1996	18.2	8.2 to 18.2	178.48
ECMW-15	2/13/1996	17.0	7 to 17	180.84
ECMW-16	2/12/1996	19.3	9.3 to 19.3	180.14
ECMW-17	2/13/1996	34.7	24.7 to 34.7	185.40
ECMW-18	2/22/1996	17.2	7.2 to 17.2	155.46
ECMW-19	1/11/2004	61.5	51.5 to 61.5	150.41
ECMW-20	1/7/2004	54.4	44.5 to 54.4	192.77
ECMW-21	1/6/2004	34.9	24.9 to 34.9	176.29
ECMW-22	1/21/2004	79.8	69.8 to 79.8	173.55

Notes:

1. ECMW-1 through ECMW-18 constructed of 4-inch Sch. 40 PVC flush threaded pipe with 4-inch diamater screens, 10-foot length and 0.01-inch openings, casing risers are approximately 3 feet above ground surface, drilled with hollow-stem auger (Data from Woodward-Clyde June 1996 Report)
2. ECMW-19, ECMW-20 and ECMW-22 constructed of 2-inch Sch. 40 PVC flush threaded pipe with 2-inch diamater screens, 10-foot length and 0.01-inch openings, casing risers are approximately 2.5 to 3 feet above ground surface, drilled with rotary wash procedures
2. ECMW-20 constructed of 1-inch Sch. 40 PVC flush threaded pipe with 1-inch diameter screen, 10-foot length and 0.01-inch opening, casing riser approximately 2.5 feet above ground surface, drilled with Geoprobe

TABLE 2
GROUNDWATER ELEVATION DATA
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Monitor Well	Top of Casing Elevation (ft above Mean Sea Level)	Measurement Date			
		May 23-25, 2016		Novvember 8-10, 2016	
		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	213.28	11.78	201.50	15.60	197.68
ECMW-2	196.25	0.00	196.25	2.10	194.15
ECMW-3	192.11	9.27	182.84	12.50	179.61
ECMW-4	194.84	9.12	185.72	11.60	183.24
ECMW-5	182.69	4.66	178.03	4.90	177.79
ECMW-6	191.87	4.46	187.41	5.00	186.87
ECMW-7	195.88	7.16	188.72	7.70	188.18
ECMW-8	197.34	7.00	190.34	8.80	188.54
ECMW-8[(1)]	197.34	7.42	189.92	-	-
ECMW-9	198.39	9.66	188.73	13.70	184.69
ECMW-10	205.75	13.19	192.56	15.80	189.95
ECMW-11	201.65	10.86	190.79	13.10	188.55
ECMW-12	184.97	6.16	178.81	6.60	178.37
ECMW-13	177.26	7.41	169.85	9.90	167.36
ECMW-14[(2)]	178.48	6.56	171.92	8.60	169.88
ECMW-15	180.84	5.09	175.75	6.90	173.94
ECMW-16	180.14	4.10	176.04	6.65	173.49
ECMW-17	185.40	27.00	158.40	29.40	156.00
ECMW-18	155.46	7.01	148.45	8.50	146.96
ECMW-19	150.41	2.49	147.92	4.25	146.16
ECMW-20	192.77	27.02	165.75	28.80	163.97
ECMW-21	176.29	15.26	161.03	17.60	158.69
ECMW-22	173.55	4.91	168.64	7.60	165.95

(1) ECMW-8 was resampled August 4, 2016 to verify anomolous results.

(2) ECMW-14 was inaccessible during the May 2016 sampling event, measurement taken July 6, 2016.

TABLE 3
GROUNDWATER INDICATOR PARAMETER DATA
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

WELL	TEMPERATURE (C)		pH (s.u.)		CONDUCTIVITY (uS)	
	Date		Date		Date	
	5/23-25/2016	11/8-10/2016	5/23-25/2016	11/8-10/2016	5/23-25/2016	11/8-10/2016
ECMW-1	17.5	18.4	4.46	6.84	50	43.2
ECMW-2	20.0	19.0	5.15	6.55	340	280.7
ECMW-3	24.3	18.2	6.26	6.45	220	257.2
ECMW-4	22.6	20.9	3.83	3.75	6710	7650
ECMW-5	19.5	21.9	5.30	5.60	552	643
ECMW-6	20.0	21.2	3.83	3.71	39930	42770
ECMW-7	20.1	21.2	5.30	4.92	30140	24240
ECMW-8	21.1	19.7	3.61	3.61	33810	31950
ECMW-8(1)	21.8	-	3.74	-	31070	-
ECMW-9	22.5	19.9	5.32	5.87	2248	2500
ECMW-10	22.8	21.8	3.99	4.25	810	770
ECMW-11	21.7	22.9	4.04	4.42	900	909
ECMW-12	21.0	22.9	5.58	5.18	580	696
ECMW-13	19.8	21.2	4.39	5.06	1260	1053
ECMW-14(2)	24.1	22.9	4.93	5.37	546	472
ECMW-15	20.0	23.1	4.29	5.04	80	82.9
ECMW-16	20.7	23.4	4.28	5.30	160	136
ECMW-17	19.8	19.1	3.86	6.42	230	184.9
ECMW-18	18.1	20.4	5.33	6.42	70	75
ECMW-19	18.1	17.8	5.06	6.56	80	83.9
ECMW-20	19.6	18.6	5.37	5.18	70	140.4
ECMW-21	20.3	19.8	4.88	6.25	50	61.6
ECMW-22	20.6	18.9	5.50	6.04	150	144.5

(1) ECMW-8 was resampled August 4, 2016 to verify anomolous results.

(2) ECMW-14 was inaccessible during the May 2016 sampling event, measurement taken July 6, 2016.

TABLE 4
ECMW-1 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/14/1996	9.70	–	1.7	4.1	–	0.0037	< 0.002	< 0.005	< 0.005	–	–
5/29/2001	5.10	< 0.5	1.83	3.67	42	< 0.04	–	< 0.02	–	–	–
11/1/2001	4.80	< 0.5	2.74	3.34	43	< 0.04	–	< 0.02	–	–	–
6/3/2002	5.50	< 0.5	2.01	4.66	83	< 0.02	< 0.02	< 0.02	< 0.02	–	–
10/30/2002	5.60	0.66	1.56	4.63	44	< 0.015	< 0.015	< 0.02	< 0.02	–	–
12/10/2002	6.10	< 0.5	1.8	6.73	108	< 0.015	< 0.015	< 0.02	< 0.02	–	–
5/20/2003	4.77	< 0.5	2.40	3.79	46	< 0.015	< 0.015	< 0.02	< 0.02	–	–
7/24/2003	7.10	< 0.5	2.55	5.05	59	< 0.015	< 0.015	< 0.02	< 0.02	–	–
9/24/2003	5.26	< 0.5	3.18	6.52	68	< 0.015	< 0.015	< 0.02	< 0.02	–	–
11/19/2003	5.11	< 0.5	1.47	5.85	64	< 0.015	< 0.015	< 0.02	< 0.02	–	–
1/28/2004	5.25	0.56	1.6	6.19	53	<0.015	<0.015	<0.02	<0.02	–	–
3/16/2004	5.59	<0.5	2.73	4.22	56	<0.015	<0.015	<0.02	<0.02	–	–
5/18/2004	5.51	<0.5	4.79	6.57	35	<0.015	<0.015	<0.02	<0.02	–	–
7/13/2004	6.16	<0.5	3.68	3.88	80	<0.015	<0.015	<0.02	<0.02	–	–
9/14/2004	5.65	0.76	4.26	3.48	53	<0.015	<0.015	<0.02	<0.02	<0.02	–
11/16/2004	5.11	<0.5	3.81	3.9	58	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	5.43	<0.5	2.88	6.69	86	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	5.73	0.55	2.45	4.39	52	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	–	<0.5	2.39	4.43	52	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	3.61	–	–	–	–	–	–	–	–	<0.02	<0.02
10/18/2005	–	–	–	–	–	–	–	–	–	<0.02	<0.02
4/11/2006	4.73	–	–	–	–	–	–	–	–	<0.02	<0.02
11/1/2006	4.98	–	–	–	–	–	–	–	–	<0.02	–
5/23/2007	5.24	–	–	–	–	–	–	–	–	<0.02	–
11/6/2007	4.77	–	–	–	–	–	–	–	–	<0.02	–
5/21/2008	7.91	<0.5	1.57	4.23	–	<0.015	–	<0.02	–	<0.02	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 4
ECMW-1 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
11/5/2008	4.63	<0.5	0.732	4.34	–	<0.015	–	<0.02	–	<0.02	–
4/22/2009	4.57	–	–	–	–	–	–	–	–	<0.02	–
10/20/2009	4.68	–	–	–	–	–	–	–	–	–	–
4/13/2010	4.53	<0.5	<0.5	6.46	–	<0.015	–	<0.02	–	–	–
11/2/2010	7.69	<0.5	1.31	5.55	–	<0.015	–	<0.01	–	–	–
4/26/2011	5.04	–	–	–	–	–	–	–	–	–	–
5/2/2012	5.48	<0.5	2.07	3.35	–	<0.015 E3	<0.015	<0.01 E3	<0.02	–	–
11/7/2012	6.43	<0.5	0.866	5.94	–	<0.015	<0.015	<0.01	<0.02	–	–
5/15/2013	5.03	–	–	–	–	–	–	–	–	–	–
11/4/2013	5.21	–	–	–	–	–	–	–	–	–	–
6/3/2014	4.74	<0.5	0.986	3.98	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/4/2014	3.97	<0.5	0.674	6.29	–	<0.0156	<0.015	<0.0104	<0.02	–	–
5/22/2015	4.83	–	–	–	–	–	–	–	–	–	–
11/18/2015	5.57	–	–	–	–	–	–	–	–	–	–
5/24/2016	4.46	<0.5	1.79	5.56	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/10/2016	6.84	<0.5	0.951	5.41	–	<0.0156	<0.0156	<0.0104	<0.0104	–	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 5
ECMW-2 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/14/1996	9.70	–	< 0.2	17	–	0.018	< 0.002	0.0342	< 0.005	–	–
5/29/2001	5.40	< 0.5	< 0.5	19.6	340	< 0.04	–	0.032	–	–	–
11/1/2001	5.30	< 0.5	< 0.5	22.9	300	< 0.04	–	< 0.02	–	–	–
6/3/2002	6.00	< 0.5	< 0.5	20	396	< 0.02	< 0.02	< 0.02	< 0.02	–	–
10/30/2002	6.10	< 0.5	< 0.5	25.7	517	< 0.015	< 0.015	< 0.02	< 0.02	–	–
12/10/2002	6.70	< 0.5	< 0.5	24	305	< 0.015	< 0.015	< 0.02	< 0.02	–	–
5/20/2003	5.31	< 0.5	< 0.5	22.1	309	< 0.015	< 0.015	< 0.02	< 0.02	–	–
7/24/2003	7.26	< 0.5	< 0.5	22.9	370	< 0.015	< 0.015	< 0.02	< 0.02	–	–
9/24/2003	5.50	< 0.5	< 0.5	24.9	380	< 0.015	< 0.015	< 0.02	< 0.02	–	–
11/19/2003	5.42	< 0.5	< 0.5	28.2	360	< 0.015	< 0.015	< 0.02	< 0.02	–	–
1/28/2004	5.20	<0.5	<0.5	25.3	490	<0.015	<0.015	<0.02	<0.02	–	–
3/16/2004	5.47	<0.5	<0.5	20.9	311	<0.015	<0.015	<0.02	<0.02	–	–
5/18/2004	5.40	<0.5	<0.5	24	298	<0.015	<0.015	<0.02	<0.02	–	–
7/13/2004	5.68	<0.5	<0.5	22.4	330	<0.015	<0.015	<0.02	<0.02	–	–
9/14/2004	5.44	<0.5	<0.5	24.3	340	<0.015	<0.015	<0.02	<0.02	<0.02	–
11/16/2004	6.12	<0.5	<0.5	21.5	320	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	5.38	<0.5	<0.5	20.8	300	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	–	<0.5	<0.5	20.5	300	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	5.87	0.79	<0.5	22.9	290	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	5.15	–	<0.5	–	–	–	–	–	–	<0.02	<0.02
4/11/2006	5.56	–	<0.5	–	–	–	–	–	–	<0.02	<0.02
11/1/2006	5.20	–	–	–	–	–	–	–	–	<0.02	–
5/23/2007	5.29	–	–	–	–	–	–	–	–	<0.02	–
11/6/2007	5.17	–	–	–	–	–	–	–	–	<0.02	–
5/21/2008	7.04	<0.5	<0.5	20.1	–	<0.015	–	<0.02	–	<0.02	–
11/5/2008	5.47	<0.5	<0.5	15.4	–	<0.015	–	<0.02	–	0.02	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 5
ECMW-2 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
4/22/2009	5.41	--	--	--	--	--	--	--	--	<0.02	--
10/20/2009	5.48	--	--	--	--	--	--	--	--	--	--
4/13/2010	5.23	<0.5	<0.5	16.9	--	<0.015	--	<0.02	--	--	--
11/2/2010	8.28	<0.5	<0.5	22.6	--	<0.015	--	<0.01	--	--	--
4/26/2011	5.51	--	--	--	--	--	--	--	--	--	--
5/2/2012	5.76	<0.5	<0.5	18.7	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/7/2012	6.57	<0.5	<0.5	22	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	5.75	--	--	--	--	--	--	--	--	--	--
11/4/2013	5.91	--	--	--	--	--	--	--	--	--	--
6/3/2014	5.10	<0.5	3.95	30.7	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/4/2014	4.45	<0.5	0.635	21.9	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/22/2015	5.43	--	--	--	--	--	--	--	--	--	--
11/18/2015	5.84	--	--	--	--	--	--	--	--	--	--
5/24/2016	5.15	1.37	0.645	19.8	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/10/2016	6.55	<0.5	<0.25	22.2	--	<0.0156	<0.0156	0.0212	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 6
ECMW-3 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/14/1996	8.00	–	< 0.2	10	–	0.0027	< 0.002	< 0.005	< 0.005	–	–
5/29/2001	6.20	< 0.5	< 0.5	10.6	180	< 0.04	–	< 0.02	–	–	–
11/1/2001	5.40	< 0.5	< 0.5	22.5	240	< 0.04	–	< 0.02	–	–	–
6/3/2002	6.40	< 0.5	< 0.5	11.4	228	< 0.02	< 0.02	< 0.02	< 0.02	–	–
10/30/2002	6.50	< 0.5	< 0.5	21.6	295	< 0.015	< 0.015	< 0.02	< 0.02	–	–
12/10/2002	6.00	< 0.5	< 0.5	16.4	242	< 0.015	< 0.015	< 0.02	< 0.02	–	–
5/20/2003	6.05	< 0.5	< 0.5	12.5	207	< 0.015	< 0.015	< 0.02	< 0.02	–	–
7/24/2003	6.23	< 0.5	< 0.5	11.8	210	< 0.015	< 0.015	< 0.02	< 0.02	–	–
9/24/2003	5.97	< 0.5	< 0.5	27.7	250	< 0.015	< 0.015	< 0.02	< 0.02	–	–
11/19/2003	5.81	< 0.5	< 0.5	23.5	220	< 0.015	< 0.015	< 0.02	< 0.02	–	–
1/28/2004	5.59	<0.5	<0.5	26.9	270	<0.015	<0.015	<0.02	<0.02	–	–
3/16/2004	5.94	<0.5	<0.5	11.2	188	<0.015	<0.015	<0.02	<0.02	–	–
5/18/2004	5.86	<0.5	<0.5	9.75	176	<0.015	<0.015	<0.02	<0.02	–	–
7/13/2004	5.92	<0.5	<0.5	13	260	<0.015	<0.015	<0.02	<0.02	–	–
9/14/2004	5.74	<0.5	<0.5	18.3	220	<0.015	<0.015	<0.02	<0.02	<0.02	–
11/16/2004	5.96	<0.5	<0.5	18.8	260	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	6.33	<0.5	<0.5	15.8	240	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	6.05	0.98	<0.5	11.8	200	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	6.04	–	<0.5	–	–	–	–	–	–	<0.02	<0.02
4/12/2006	6.39	–	<0.5	–	–	–	–	–	–	<0.02	<0.02
11/1/2006	5.37	–	–	–	–	–	–	–	–	<0.02	–
5/23/2007	5.92	–	–	–	–	–	–	–	–	<0.02	–
11/6/2007	4.85	–	–	–	–	–	–	–	–	<0.02	–
5/21/2008	7.96	<0.5	<0.5	10.5	–	<0.015	–	<0.02	–	<0.02	–
11/5/2008	4.86	<0.5	<0.5	9.65	–	<0.015	–	<0.02	–	<0.02	–
4/22/2009	5.76	–	–	–	–	–	–	–	–	<0.02	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 6
ECMW-3 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
4/22/2009	–	<0.5	<0.5	10.5	–	–	–	–	–	<0.02	–
10/20/2009	5.83	–	–	–	–	–	–	–	–	–	–
4/13/2010	6.20	<0.5	<0.5	9.39	–	<0.015	–	<0.02	–	–	–
11/2/2010	6.97	<0.5	<0.5	17.5	–	<0.015	–	<0.01	–	–	–
4/27/2011	6.19	–	–	–	–	–	–	–	–	–	–
5/3/2012	6.28	<0.5	<0.5	8.87	–	<0.015 E3	<0.015	<0.01 E3	<0.02	–	–
11/7/2012	6.74	<0.5	<0.5	13.4	–	0.0169	<0.015	<0.01	<0.02	–	–
5/15/2013	6.29	–	–	–	–	–	–	–	–	–	–
11/4/2013	5.72	–	–	–	–	–	–	–	–	–	–
6/3/2014	5.86	<0.5	<0.25	9.14	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/4/2014	4.97	<0.5	0.239	12.8	–	<0.0156	<0.015	<0.0104	<0.02	–	–
5/22/2015	6.18	–	–	–	–	–	–	–	–	–	–
11/18/2015	6.11	–	–	–	–	–	–	–	–	–	–
5/24/2016	6.26	<0.5	0.252	9.88	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/10/2016	6.45	<0.5	<0.25	16.2	–	<0.0156	<0.0156	<0.0104	<0.0104	–	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 7
ECMW-4 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/14/1996	8.10	--	1.3	728	--	0.0025	< 0.002	< 0.005	< 0.005	--	--
8/8/2001	4.10	0.66	< 0.5	925	5100	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.30	< 0.5	< 0.5	936	5200	0.06	--	0.04	--	--	--
6/3/2002	5.20	< 0.5	< 0.5	979	4862	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	4.80	< 0.5	0.62	756	4240	0.02	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	4.40	< 0.5	2.4	976	5360	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/20/2003	4.33	< 0.5	< 0.5	936	4800	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/20/2003	--	< 0.5	< 0.5	1000	5150	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/24/2003	9.08	< 0.5	< 0.5	978	5300	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/24/2003	--	< 0.5	< 0.5	958	5400	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/24/2003	4.78	< 0.5	2.42	989	5200	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/24/2003	--	< 0.5	2.31	952	5200	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	4.13	< 0.5	2.05	848	5300	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	3.88	<0.5	6.39	1040	5200	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	4.10	<0.5	<0.5	919	5204	<0.015	<0.015	<0.02	<0.02	--	--
5/19/2004	4.05	<0.5	1.45	1040	5300	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	4.35	<0.5	<0.5	973	5500	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	4.44	0.68	<0.5	943	5200	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	4.26	<0.5	<0.5	874	4600	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	4.63	0.64	8.5	805	4700	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	4.77	2.14	0.997	1020	4700	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	4.06	--	0.517	--	--	--	--	--	--	<0.02	<0.02
4/12/2006	4.12	--	<0.5	--	--	--	--	--	--	<0.02	<0.02
11/1/2006	3.69	<0.5	<0.5	--	--	<0.015	--	<0.02	--	<0.02	--
5/23/2007	4.13	<0.5	0.099	779	--	--	--	--	--	<0.02	--
11/6/2007	3.76	<0.5	<0.5	1020	--	--	--	--	--	<0.02	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 7
ECMW-4 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
5/21/2008	3.89	<0.5	<0.5	896	--	0.017	--	<0.02	--	<0.02	--
11/5/2008	3.87	<0.5	<0.5	758	--	<0.015	--	<0.02	--	<0.02	--
4/22/2009	4.17	<0.5	<0.5	68.3	--	--	--	--	--	<0.02	--
10/20/2009	3.62	<0.5	<0.5	830	--	--	--	--	--	--	--
10/20/2009	--	<0.5	<0.5	906	--	--	--	--	--	--	--
4/13/2010	3.75	<0.5	<0.5	655	--	0.029	--	<0.02	--	--	--
11/2/2010	6.57	<0.5	<0.5	745	--	<0.015	--	<0.01	--	--	--
11/2/2010	--	<0.5	<0.5	1000	--	<0.015	--	<0.01	--	--	--
4/27/2011	3.91	1.02	<0.5	845	--	--	--	--	--	--	--
11/30/2011	3.72	<0.5	<0.5	930	--	--	--	--	--	--	--
5/3/2012	4.12	<0.5	<0.5	865	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/7/2012	6.17	<0.5	<0.5	890	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	4.03	2.12	0.37	856	--	--	--	--	--	--	--
11/5/2013	4.63	2.03	0.752	609	--	--	--	--	--	--	--
6/3/2014	4.50	<0.5	0.431	737	--	<0.0156	<0.016	<0.0104	<0.021	--	--
6/3/2014	--	0.69	0.383	707	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/4/2014	3.01	1.31	1.29	772	--	<0.0156	<0.015	<0.0104	<0.02	--	--
11/4/2014	--	1.31	4.24	762	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/20/2015	3.29	3.5	1.6	915	--	--	--	--	--	--	--
11/18/2015	4.04	0.53	0.332	722	--	--	--	--	--	--	--
5/24/2016	3.83	1.13	0.666	843	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/10/2016	3.75	<0.5	<0.25	973	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 8
ECMW-5 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	5.80	--	4.4	441	--	< 0.002	< 0.002	< 0.005	< 0.005	--	--
8/8/2001	4.60	< 0.5	3.54	657	1000	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.70	< 0.5	3.27	526	980	< 0.04	--	< 0.02	--	--	--
6/3/2002	6.30	< 0.5	3.35	650	934	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.40	< 0.5	3.66	582	929	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.20	< 0.5	3.26	489	901	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/20/2003	4.75	< 0.5	3.60	654	845	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/24/2003	6.85	< 0.5	3.47	546	950	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/24/2003	4.82	< 0.5	3.53	560	950	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	4.79	< 0.5	2.40	416	780	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	5.03	<0.5	3.19	476	740	<0.015	<0.015	<0.02	<0.02	--	--
1/28/2004	--	<0.5	3.07	482	730	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	5.13	<0.5	3.6	472	780	<0.015	<0.015	<0.02	<0.02	--	--
5/19/2004	5.85	<0.5	3.41	455	860	<0.015	<0.015	<0.02	<0.02	--	--
5/19/2004	--	<0.5	3.3	494	900	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	4.96	<0.5	3.75	511	910	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	6.70	0.59	3.75	515	700	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	5.28	<0.5	3.33	502	850	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	6.36	<0.5	3.18	461	870	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	6.42	3.62	3.21	547	820	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/19/2005	4.96	--	--	--	--	--	--	--	--	<0.02	<0.02
10/19/2005	--	--	--	--	--	--	--	--	--	<0.02	<0.02
4/12/2006	4.39	--	--	--	--	--	--	--	--	<0.02	<0.02
11/1/2006	4.42	--	--	--	--	--	--	--	--	<0.02	--
5/23/2007	5.18	<0.5	3.53	476	--	--	--	--	--	<0.02	--
11/7/2007	4.64	<0.5	3.32	464	--	--	--	--	--	<0.02	--
5/21/2008	6.45	<0.5	4.17	308	--	<0.015	--	<0.02	--	<0.02	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 8
ECMW-5 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
11/12/2008	2.40	0.55	4.15	163	--	<0.015	--	<0.02	--	<0.02	--
4/22/2009	5.06	<0.5	7.81	133	--	--	--	--	--	<0.02	--
6/3/2009	5.92	--	7.58	--	--	--	--	--	--	--	--
10/20/2009	4.98	<0.5	8.82	93.4	--	--	--	--	--	--	--
4/13/2010	4.75	<0.5	7.96	105	--	<0.015	--	<0.02	--	--	--
11/2/2010	5.64	<0.5	11	94.7	--	<0.015	--	<0.01	--	--	--
4/27/2011	5.03	1.08	15	92.4	--	--	--	--	--	--	--
11/30/2011	4.67	<0.5	19	94.4	--	--	--	--	--	--	--
5/3/2012	5.13	<0.5	23.5	59.6	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/7/2012	6.43	<0.5	26.6	74.6	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	5.07	<0.5	32.8	60.7	--	--	--	--	--	--	--
11/5/2013	7.23	0.56	34.7	66.5	--	--	--	--	--	--	--
11/5/2013	--	<0.5	35.5	62.8	--	--	--	--	--	--	--
6/3/2014	7.26	<0.5	38	65	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/4/2014	4.13	1	43.4	55.6	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/20/2015	5.27	1.27	44.6	54.5	--	--	--	--	--	--	--
11/18/2015	5.59	0.73	27	61.2	--	--	--	--	--	--	--
5/24/2016	5.30	<0.5	41.9	49.4	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/10/2016	5.6	<0.5	47.2	59	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--
11/10/2016	--	<0.5	42.1	43.8	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 9
ECMW-6 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	7.70	--	51.1	24	--	0.0026	< 0.002	< 0.005	< 0.005	--	--
8/8/2001	4.30	0.5	298	18.3	2100	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.30	< 0.5	326	15.7	2700	< 0.04	--	< 0.02	--	--	--
6/3/2002	6.10	< 0.5	459	12.1	290	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.00	0.51	661	8.13	3840	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	4.60	< 0.5	580	7.15	3360	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	--	< 0.5	588	6.45	3280	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/21/2003	4.30	0.5	608	17.0	4020	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/24/2003	7.41	1.09	681	15.0	4600	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/24/2003	4.28	4.88	857	9.35	5100	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	4.53	5.72	865	10.7	4700	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	--	5.60	866	9.21	4900	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	4.36	12.3	835	17.2	5300	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	4.40	13	826	17.2	5106	<0.015	<0.015	<0.02	<0.02	--	--
5/19/2004	5.04	21.4	915	13.4	5800	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	4.74	17.9	995	11.7	6100	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	--	17.5	868	11.7	6200	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	5.51	20	1130	3.84	6300	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	4.59	37.6	1140	4.4	7100	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	5.36	43.1	1130	3.14	6600	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	4.57	68.2	1410	5.19	6700	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	4.43	110	1350	--	--	--	--	--	--	<0.02	<0.02
4/11/2006	4.45	154	1680	--	--	--	--	--	--	<0.02	<0.02
11/1/2006	3.94	170	2390	--	--	--	--	--	--	<0.02	--
5/23/2007	6.46	63.3	3550	44.9	--	--	--	--	--	<0.02	--
11/6/2007	5.15	35.7	941	54.1	--	--	--	--	--	<0.02	--
5/21/2008	4.50	59.1	1130	23.7	--	<0.015	--	<0.02	--	<0.02	--
5/21/2008	--	72.5	256	28.3	--	<0.015	--	<0.02	--	<0.02	--
11/5/2008	3.89	103	1060	26.1	--	<0.015	--	<0.02	--	<0.02	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 9
ECMW-6 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
4/21/2009	4.47	135	1070	148	--	--	--	--	--	<0.02	--
10/20/2009	4.16	181	1330	24.7	--	--	--	--	--	--	--
4/13/2010	4.04	92.8	1660	29.2	--	<0.015	--	<0.02	--	--	--
4/13/2010	--	566	1640	25.7	--	0.023	--	<0.02	--	--	--
7/22/2010	--	246	1940	42.3	--	<0.015	--	<0.02	--	--	--
11/2/2010	5.71	311	1460	29.6	--	<0.015	--	0.011	--	--	--
4/27/2011	4.30	371	1680	46.8	--	--	--	--	--	--	--
6/16/2011	4.01	393	1620	207	--	--	--	--	--	--	--
11/30/2011	3.88	445	1970	60.5	--	--	--	--	--	--	--
11/30/2011	--	455	2060	63.8	--	--	--	--	--	--	--
5/3/2012	4.28	344	1850	456	--	0.0312 E3	0.032	<0.01	<0.02	--	--
5/3/2012	--	407	1740	36.5	--	0.0298 E3	0.028	<0.01 E3	<0.02	--	--
11/7/2012	6.20	620	2520	112	--	0.0185	0.017	<0.01	<0.02	--	--
11/7/2012	--	655	2430	113	--	0.0211	0.016	<0.01	<0.02	--	--
5/15/2013	4.15	521	3120	37.7	--	--	--	--	--	--	--
11/5/2013	4.49	935	3380	28.5	--	--	--	--	--	--	--
6/3/2014	3.99	1110	3560	28.9	--	0.0339	0.034	<0.0104	<0.021	--	--
11/4/2014	3.29	1110	3550	33.7	--	0.036	0.031	<0.0104	<0.02	--	--
5/20/2015	3.91	2550	2960	39.8	--	--	--	--	--	--	--
11/18/2015	3.96	2280	3930	40.2	--	--	--	--	--	--	--
5/24/2016	3.83	1390	4120	30.8	--	0.0379	0.038	<0.0104	<0.021	--	--
11/10/2016	3.71	1890	5780	62.6	--	0.058	0.0634	<0.0104	<0.0104	--	--

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 10
ECMW-7 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	8.10	–	282	380	–	0.0221	0.0185	0.0078	< 0.005	–	–
8/8/2001	9.70	184	336	316	1300	< 0.04	–	< 0.02	–	–	–
10/30/2001	3.50	< 0.5	189	322	1056	< 0.04	–	< 0.02	–	–	–
10/30/2001	–	< 0.5	186	325	1100	< 0.04	–	< 0.02	< 0.02	–	–
6/3/2002	4.40	190	361	363	1324	0.031	< 0.015	< 0.02	< 0.02	–	–
6/3/2002	–	205	358	360	1386	0.027	< 0.02	< 0.02	< 0.02	–	–
10/30/2002	4.20	167	294	345	1080	0.017	< 0.015	< 0.02	< 0.02	–	–
12/10/2002	3.70	180	344	275	1316	< 0.015	0.016	< 0.02	< 0.02	–	–
12/10/2002	–	149	349	276	1350	< 0.015	< 0.015	< 0.02	< 0.02	–	–
5/21/2003	3.66	244	563	298	1850	0.02	0.017	< 0.02	< 0.02	–	–
7/24/2003	7.05	95.1	141	378	1400	< 0.015	< 0.015	< 0.02	< 0.02	–	–
9/24/2003	3.84	116	953	341	1700	0.02	0.018	< 0.02	< 0.02	–	–
11/19/2003	4.03	124	152	476	1500	< 0.015	< 0.015	< 0.02	< 0.02	–	–
1/28/2004	3.99	147	300	644	1300	0.018	<0.015	<0.02	<0.02	–	–
3/16/2004	3.98	190	310	496	1280	0.018	0.017	<0.02	<0.02	–	–
5/19/2004	3.95	204	337	524	1500	<0.015	<0.015	<0.02	<0.02	–	–
7/13/2004	3.99	73.4	150	498	1600	<0.015	<0.015	<0.02	<0.02	–	–
9/14/2004	4.45	26.5	75.5	142	1000	<0.015	<0.015	<0.02	<0.02	<0.02	–
9/14/2004	–	25.9	76	143	990	<0.015	<0.015	<0.02	<0.02	<0.02	–
11/16/2004	3.97	219	370	428	1700	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	4.08	281	480	312	1700	0.016	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	4.21	323	595	349	1400	0.022	0.017	<0.02	<0.02	<0.02	<0.02
10/18/2005	3.90	14.3	91.6	–	–	<0.015	<0.015	–	–	<0.02	<0.02
4/11/2006	4.36	267	516	–	–	0.017	<0.015	–	–	<0.02	<0.02
11/1/2006	3.34	57.4	105	–	–	<0.015	–	–	–	<0.02	–
5/23/2007	4.30	96	181	798	–	–	–	–	–	<0.02	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 10
ECMW-7 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
11/6/2007	3.58	49.9	85.3	906	–	–	–	–	–	<0.02	–
5/21/2008	2.81	55.2	153	936	–	<0.015	–	<0.02	–	<0.02	–
11/5/2008	3.40	115	237	962	–	<0.015		<0.02	–	<0.02	–
4/21/2009	4.13	77.8	126	895	–	–	–	–	–	<0.02	–
10/20/2009	3.55	51.2	49.9	1090	–	–	–	–	–	–	–
4/13/2010	3.53	1000	1080	214	–	0.06	–	<0.02	–	–	–
7/22/2010	–	43.2	103	3490	–	<0.015	–	<0.02	–	–	–
11/2/2010	4.92	107	155	156	–	<0.015	–	<0.01	–	–	–
4/27/2011	4.47	1630	2640	248	–	–	–	–	–	–	–
6/16/2011	4.17	56.6	227	899	–	–	–	–	–	–	–
11/30/2011	4.18	132	192	259	–	–	–	–	–	–	–
5/3/2012	4.82	132	161	761	–	<0.015 E3	<0.015	<0.01 E3	<0.02	–	–
11/7/2012	6.31	187	153	692	–	<0.015	<0.015	<0.01	<0.02	–	–
5/15/2013	5.09	105	141	930	–	–	–	–	–	–	–
5/15/2013	–	110	145	921	–	–	–	–	–	–	–
11/5/2013	5.81	132	156	927	–	–	–	–	–	–	–
6/3/2014	5.24	100	169	858	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/4/2014	4.56	77	99.6	816	–	<0.0156	<0.015	<0.0104	<0.02	–	–
5/20/2015	4.06	61	63.6	866	–	–	–	–	–	–	–
11/18/2015	5.31	66.2	104	758	–	–	–	–	–	–	–
5/24/2016	5.30	91.1	135	740	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/10/2016	4.92	1450	2300	165	–	<0.0156	<0.0156	<0.0104	<0.0104	–	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 11
ECMW-8 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	7.90	--	1010	68.3	--	0.0234	0.0238	< 0.005	< 0.005	--	--
10/30/2001	3.90	0.94	1030	81.1	5000	< 0.04	--	< 0.02	--	--	--
6/3/2002	5.40	551	1070	77.8	4246	< 0.02	< 0.02	< 0.02	< 0.02	--	--
6/3/2002	--	551	1200	70.4	4378	0.031	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	4.40	406	1330	151	4560	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	4.00	220	1080	46.2	5120	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	--	261	1030	47.6	5140	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/21/2003	3.99	214	1250	209	4200	0.019	0.019	< 0.02	< 0.02	--	--
5/21/2003	--	167	1270	162	4010	0.019	0.019	< 0.02	< 0.02	--	--
7/24/2003	6.04	179	472	904	3700	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/24/2003	--	177	478	913	3700	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/23/2003	3.93	157.5	524	870	3400	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/23/2003	--	153	539	899	3400	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	4.99	206	464	738	3200	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	4.29	45.7	142	854	1800	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	4.18	88	203	805	2221	<0.015	<0.015	<0.02	<0.02	--	--
5/19/2004	4.07	120	298	789	2500	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	4.48	120	354	767	2600	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	3.99	107	392	743	2400	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	4.01	82.1	304	808	2800	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	4.09	48.9	126	1200	2700	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	6.12	79.6	225	1220	2700	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	4.03	84.8	246	--	--	--	--	--	--	<0.02	<0.02
4/11/2006	3.78	53.5	194	--	--	--	--	--	--	<0.02	<0.02
11/1/2006	3.44	74.5	224	--	--	--	--	--	--	<0.02	--
5/23/2007	4.11	122	<0.5	971	--	--	--	--	--	<0.02	--
11/6/2007	3.70	96.2	340	816	--	--	--	--	--	<0.02	--
5/21/2008	3.42	56.8	171	1000	--	<0.015	--	<0.02	--	<0.02	--
11/5/2008	3.61	70	181	719	--	<0.015	--	<0.02	--	<0.02	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 11
ECMW-8 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
4/21/2009	4.88	53.6	108	839	--	--	--	--	--	<0.02	--
10/20/2009	3.79	45.8	116	937	--	--	--	--	--	--	--
4/13/2010	4.56	62.1	52.2	737	--	<0.015	--	<0.02	--	--	--
11/2/2010	6.35	63.4	163	860	--	<0.015	--	<0.01	--	--	--
4/27/2011	3.85	1980	3310	106	--	--	--	--	--	--	--
6/29/2011	4.10	175	350	--	--	--	--	--	--	--	--
6/29/2011	--	168	352	--	--	--	--	--	--	--	--
11/30/2011	3.44	120	401	727	--	--	--	--	--	--	--
11/30/2011	--	101	361	637	--	--	--	--	--	--	--
5/3/2012	3.97	122	296	754	--	0.0159 E3	0.015	<0.01	<0.02	--	--
5/3/2012	--	111	287	762	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/7/2012	5.99	193	429	814	--	0.0166	<0.015	<0.01	<0.02	--	--
5/15/2013	3.97	172	551	614	--	--	--	--	--	--	--
11/5/2013	4.06	150	584	642	--	--	--	--	--	--	--
6/3/2014	4.33	157	712	516	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/4/2014	3.09	198	697	466	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/20/2015	4.56	158	791	470	--	--	--	--	--	--	--
11/18/2015	3.7	143	751	431	--	--	--	--	--	--	--
11/18/2015	--	139	654	385	--	--	--	--	--	--	--
5/24/2016	3.61	2020	4060	81	--	0.065	0.065	<0.0104	<0.021	--	--
8/4/2016	3.74	2270	4310	83.6	--	0.0686	0.065	<0.0104	<0.021	--	--
8/4/2016	--	2040	4300	82.9	--	0.0693	0.064	<0.0104	<0.021	--	--
11/10/2016	3.61	1020	1830	270	--	0.0341	0.0313	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 12
ECMW-9 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/14/1996	9.00	--	37.3	621	--	0.004	< 0.002	< 0.005	< 0.005	--	--
6/27/2001	5.40	< 0.5	28.8	520	1600	< 0.04	--	< 0.02	--	--	--
10/30/2001	5.50	< 0.5	26.7	514	2600	< 0.04	--	< 0.02	--	--	--
6/3/2002	6.00	< 0.5	24.4	639	1597	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	6.00	18.8	59	655	1630	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.20	0.7	28.1	556	1680	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	--	< 0.5	31.5	555	1640	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/21/2003	5.33	< 0.5	26.3	568	1600	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/24/2003	7.05	< 0.5	28.4	547	1500	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/23/2003	5.24	< 0.5	146	531	1500	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	5.72	< 0.5	28.0	532	1600	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	5.53	<0.5	29.2	575	1500	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	5.88	<0.5	30.6	528	1524	<0.015	<0.015	<0.02	<0.02	--	--
5/19/2004	5.47	<0.5	27.4	517	1600	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	6.87	<0.5	24.6	588	1600	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	5.04	1.14	25.3	548	1500	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	5.67	0.7	24	549	580	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	5.57	<0.5	26.3	518	1600	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/24/2005	5.77	<0.5	27.4	600	1600	0.018	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	5.64	--	29.9	--	--	--	--	--	--	<0.02	<0.02
4/11/2006	5.83	--	29.5	--	--	--	--	--	--	<0.02	<0.02
11/1/2006	5.00	--	40.2	--	--	--	--	--	--	<0.02	--
5/23/2007	5.57	2.91	32.8	420	--	--	--	--	--	<0.02	--
5/23/2007	--	1.48	31.2	502	--	--	--	--	--	<0.02	--
11/6/2007	4.94	3.59	30.6	642	--	--	--	--	--	<0.02	--
5/21/2008	6.04	<0.5	31.7	522	--	<0.015	--	<0.02	--	<0.02	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 12
ECMW-9 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
11/5/2008	4.41	<0.5	23.7	391	–	<0.015	–	<0.02	–	<0.02	–
4/21/2009	5.91	<0.5	28	501	–	–	–	–	–	<0.02	–
10/20/2009	5.41	2.31	21	505	–	–	–	–	–	–	–
4/13/2010	5.44	<0.5	16.8	462	–	<0.015	–	<0.02	–	–	–
11/2/2010	7.04	<0.5	20	684	–	<0.015	–	<0.01	–	–	–
4/27/2011	5.74	2.96	32.1	542	–	–	–	–	–	–	–
11/30/2011	5.37	0.7	28.5	650	–	–	–	–	–	–	–
5/3/2012	5.71	<0.5	25.5	520	–	<0.015 E3	<0.015	<0.01 E3	<0.02	–	–
11/7/2012	6.50	0.68	32.5	568	–	<0.015	<0.015	<0.01	<0.02	–	–
5/15/2013	5.68	<0.5	30.1	514	–	–	–	–	–	–	–
11/5/2013	5.51	17	53.9	545	–	–	–	–	–	–	–
6/3/2014	5.47	3.23	35.6	525	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/4/2014	4.81	4.61	37.6	484	–	<0.0156	<0.015	<0.0104	<0.02	–	–
5/20/2015	5.52	4.13	31.9	540	–	–	–	–	–	–	–
11/18/2015	5.36	2.36	32.7	526	–	–	–	–	–	–	–
5/24/2016	5.32	0.888	29.1	581	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/10/2016	5.87	4.08	29.1	616	–	<0.0156	<0.0156	<0.0104	<0.0104	–	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 13
ECMW-10 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	7.70	--	257	89	--	0.0052	0.0039	< 0.005	< 0.005	--	--
6/27/2001	4.40	< 0.5	156	100	1300	< 0.04	--	0.025	--	--	--
10/30/2001	3.90	< 0.5	153	134	1400	< 0.04	--	0.04	--	--	--
6/3/2002	5.30	< 0.5	138	84.9	1122	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.60	1.84	137	140	968	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	4.50	< 0.5	70.4	52.2	1120	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/21/2003	4.08	< 0.5	148	96.0	1140	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/24/2003	5.56	< 0.5	118	108	1000	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/23/2003	4.18	< 0.5	147	127	1000	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	4.38	< 0.5	119	104	970	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	4.60	<0.5	126	129	1000	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	5.01	<0.5	135	128	1078	<0.015	<0.015	<0.02	<0.02	--	--
5/18/2004	5.07	<0.5	123	139	1055	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	4.54	<0.5	114	112	920	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	4.70	0.77	123	137	1000	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	4.79	<0.5	94.4	71.1	800	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	4.63	<0.5	115	114	1000	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	4.93	1.45	120	142	990	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	4.30	--	97.7	--	--	--	--	--	--	<0.02	<0.02
4/11/2006	4.40	--	97.5	--	--	--	--	--	--	<0.02	<0.02
4/11/2006	--	--	95.5	--	--	--				<0.02	<0.02
11/1/2006	3.83	--	71	--	--	<0.015	--	--	--	<0.02	--
5/23/2007	4.18	0.79	79.9	109	--	--	--	--	--	<0.02	--
11/6/2007	3.97	<0.5	65.9	121	--	--	--	--	--	<0.02	--
5/21/2008	5.11	<0.5	69.2	153	--	<0.015	--	<0.02	--	<0.02	--
11/5/2008	4.06	<0.5	40.9	105	--	<0.015	--	<0.02	--	<0.02	--
4/21/2009	4.58	12.7 outlier	48.9	155	--	--	--	--	--	<0.02	--

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E3 - Incorrect preservation, results qualified as "estimated".

TABLE 13
ECMW-10 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
6/3/2009	6.35	<0.5	--	--	--	--	--	--	--	--	--
10/20/2009	4.57	<0.5	53.5	136	--	--	--	--	--	--	--
4/13/2010	4.08	0.8	44.7	170	--	<0.015	--	<0.02	--	--	--
11/2/2010	6.42	<0.5	41.9	164	--	<0.015	--	<0.01	--	--	--
4/27/2011	4.30	3.18	54.1	166	--	--	--	--	--	--	--
11/30/2011	3.97	<0.5	49.2	94.8	--	--	--	--	--	--	--
5/3/2012	4.39	<0.5	38.4	158	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/7/2012	6.13	<0.5	44.4	152	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	4.44	<0.5	42.1	163	--	--	--	--	--	--	--
11/5/2013	4.91	<0.5	47.8	153	--	--	--	--	--	--	--
6/3/2014	4.93	2.2	50.6	136	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/4/2014	3.07	<0.5	39.8	172	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/20/2015	4.65	1.91	50	148	--	--	--	--	--	--	--
5/20/2015	--	1.33	49.1	149	--	--	--	--	--	--	--
11/18/2015	4.22	<0.5	61.2	99.9	--	--	--	--	--	--	--
5/25/2016	3.99	<0.5	51.2	134	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/10/2016	4.25	<0.5	44.1	141	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--
11/10/2016	--	<0.5	42.6	136	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 14
ECMW-11 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	11.10	–	22.1	578	–	< 0.002	< 0.002	< 0.005	< 0.005	–	–
8/8/2001	4.30	4.21	7.99	611	1100	< 0.04	–	< 0.02	–	–	–
10/30/2001	4.00	< 0.5	21.9	334	610	< 0.04	–	< 0.02	–	–	–
6/3/2002	5.40	< 0.5	6.46	565	897	< 0.02	< 0.02	< 0.02	< 0.02	–	–
6/3/2002	–	3.9	5.81	586	968	< 0.02	< 0.015	< 0.02	< 0.02	–	–
10/30/2002	4.80	18	9.22	362	625	< 0.015	< 0.015	< 0.02	< 0.02	–	–
12/10/2002	4.50	10.73	6.12	414	809	< 0.015	< 0.015	< 0.02	< 0.02	–	–
5/21/2003	4.45	7.84	6.02	333	576	< 0.015	< 0.015	< 0.02	< 0.02	–	–
7/24/2003	6.66	25.6	6.68	278	540	< 0.015	< 0.015	< 0.02	< 0.02	–	–
9/23/2003	4.29	5.25	4.24	397	660	< 0.015	< 0.015	< 0.02	< 0.02	–	–
11/19/2003	4.61	12.0	6.26	289	570	< 0.015	< 0.015	< 0.02	< 0.02	–	–
11/19/2003	–	14.3	6.85	276	340	< 0.015	< 0.015	< 0.02	< 0.02	–	–
1/28/2004	5.04	19.6	6.72	303	520	<0.015	<0.015	<0.02	<0.02	–	–
3/16/2004	5.00	15	9.63	262	511	<0.015	<0.015	<0.02	<0.02	–	–
3/16/2004	–	18	8.79	278	535	<0.015	<0.015	<0.02	<0.02	–	–
5/18/2004	5.17	19.9	13.5	228	452	<0.015	<0.015	<0.02	<0.02	–	–
7/13/2004	4.53	17.4	13.6	222	480	<0.015	<0.015	<0.02	<0.02	–	–
9/14/2004	4.61	14.5	9.85	247	480	<0.015	<0.015	<0.02	<0.02	<0.02	–
11/17/2004	4.86	19.1	11.1	209	450	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	4.64	–	–	–	–	–	–	–	–	–	–
5/25/2005	5.05	20.6	1.12	3.58	410	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/18/2005	4.42	10.6	2.02	–	–	–	–	–	–	<0.02	<0.02
4/11/2006	4.63	10.9	6.01	–	–	–	–	–	–	<0.02	<0.02
11/1/2006	4.06	4.88	1.43	–	–	–	–	–	–	<0.02	–
5/23/2007	4.23	25.4	29.2	137	–	–	–	–	–	<0.02	–
5/23/2007	–	17.4	26.4	242	–	–	–	–	–	<0.02	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 14
ECMW-11 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
11/6/2007	3.94	8.01	9.75	223	--	--	--	--	--	<0.02	--
5/21/2008	5.26	19.5	18.9	208	--	<0.015	--	<0.02	--	<0.02	--
11/5/2008	4.34	18.4	16.9	98.6	--	<0.015	--	<0.02	--	<0.02	--
4/21/2009	4.09	<0.5 outlier	14	119	--	--	--	--	--	<0.02	--
6/3/2009	6.10	17.7	--	--	--	--	--	--	--	--	--
10/20/2009	4.28	18.2	9.44	125	--	--	--	--	--	--	--
4/13/2010	4.32	32.6	7.78	135	--	<0.015	--	<0.02	--	--	--
11/2/2010	5.67	3.17	4.52	325	--	<0.015	--	<0.01	--	--	--
4/27/2011	4.57	47	15.8	146	--	--	--	--	--	--	--
11/30/2011	4.11	2.19	3.56	318	--	--	--	--	--	--	--
5/3/2012	4.73	14.5	29.4	95.6	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/7/2012	5.92	33.2	23.8	161	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	4.58	17	45.4	98	--	--	--	--	--	--	--
5/15/2013	--	15.7	40.7	102	--	--	--	--	--	--	--
11/5/2013	4.48	<0.5	30.5	125	--	--	--	--	--	--	--
6/3/2014	4.18	26	30.7	105	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/4/2014	3.08	13.9	30.5	117	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/20/2015	4.19	3.12	28.8	134	--	--	--	--	--	--	--
11/18/2015	4.13	39	35.7	93.4	--	--	--	--	--	--	--
5/25/2016	4.04	5.86	19.5	233	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/10/2016	4.42	3.86	18.3	245	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 15
ECMW-12 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	6.10	–	<0.2	9.6	–	<0.002	<0.002	<0.005	<0.005	–	–
6/27/2001	5.90	2.2	<0.5	13	330	<0.04	–	<0.02	–	–	–
6/4/2002	6.00	0.9	<0.5	4.85	510	<0.02	<0.02	<0.02	<0.02	–	–
6/4/2002	–	1.4	<0.5	6.01	500	<0.02	<0.02	<0.02	<0.02	–	–
10/30/2002	6.10	4.2	<0.5	21.6	382	<0.015	<0.015	<0.02	<0.02	–	–
12/10/2002	5.80	2.3	<0.5	12.5	424	<0.015	<0.015	<0.02	<0.02	–	–
5/21/2003	5.71	1.89	<0.5	5.31	307	<0.015	<0.015	<0.02	<0.02	–	–
7/24/2003	4.76	1.74	<0.5	18.7	380	<0.015	<0.015	<0.02	<0.02	–	–
9/24/2003	5.45	1.43	<0.5	26	440	<0.015	<0.015	<0.02	<0.02	–	–
11/19/2003	5.79	1.83	<0.5	30.6	460	<0.015	<0.015	<0.02	<0.02	–	–
1/28/2004	6.44	1.87	<0.5	6.76	320	<0.015	<0.015	<0.02	<0.02	–	–
3/16/2004	5.96	2.2	<0.5	4.04	252	<0.015	<0.015	<0.02	<0.02	–	–
5/19/2004	5.80	1.94	<0.5	5.11	360	<0.015	<0.015	<0.02	<0.02	–	–
7/13/2004	6.78	1.2	<0.5	7.18	220	<0.015	<0.015	<0.02	<0.02	–	–
9/15/2004	5.80	2.38	<0.5	23	440	<0.015	<0.015	<0.02	<0.02	<0.02	–
11/16/2004	5.73	1.55	<0.5	18.5	340	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/26/2005	5.91	1.98	<0.5	4.88	360	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	5.96	1.02	<0.5	11.2	370	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/20/2005	5.30	1.06	–	–	–	–	–	–	–	<0.02	<0.02
4/11/2006	6.12	1.58	–	–	–	–	–	–	–	<0.02	<0.02
11/1/2006	5.30	1.37	–	–	–	–	–	–	–	<0.02	–
5/23/2007	5.66	–	–	–	–	–	–	–	–	<0.02	–
11/6/2007	5.11	–	–	–	–	–	–	–	–	<0.02	–
5/21/2008	7.53	1.67	<0.5	7.14	–	<0.015	–	<0.02	–	<0.02	–
11/7/2008	5.75	1.17	<0.5	8.74	–	<0.015	–	<0.02	–	<0.02	–
4/21/2009	6.52	–	–	–	–	–	–	–	–	<0.02	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 15
ECMW-12 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
10/21/2009	7.08	--	--	--	--	--	--	--	--	--	--
4/13/2010	5.95	5.56	<0.5	2.14	--	<0.015	--	<0.02	--	--	--
11/3/2010	6.64	1.44	<0.5	21.5	--	<0.015	--	<0.01	--	--	--
11/3/2010	--	1.34	<0.5	20.5	--	<0.015	--	<0.01	--	--	--
4/27/2011	5.67	--	--	--	--	--	--	--	--	--	--
5/3/2012	6.02	1.81	<0.5	17	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/7/2012	6.49	3.55	<0.5	21.5	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	6.02	--	--	--	--	--	--	--	--	--	--
11/4/2013	5.84	--	--	--	--	--	--	--	--	--	--
6/3/2014	5.56	3.11	0.334	5.04	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/4/2014	4.53	2.15	<0.25	20.6	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/22/2015	6.02	--	--	--	--	--	--	--	--	--	--
11/18/2015	5.73	--	--	--	--	--	--	--	--	--	--
5/25/2016	5.58	2.24	<0.25	17	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/10/2016	5.18	2.22	<0.25	33	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 16
ECMW-13 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	5.60	--	0.2	809	--	< 0.002	< 0.002	< 0.005	< 0.005	--	--
6/5/2001	5.60	< 0.5	< 0.5	538	1400	< 0.04	--	< 0.02	--	--	--
10/30/2001	5.30	< 0.5	< 0.5	606	1300	< 0.04	--	< 0.02	--	--	--
6/4/2002	5.70	< 0.5	< 0.5	372	718	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	6.10	1.28	< 0.5	538	1030	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.50	< 0.5	< 0.5	598	1320	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/20/2003	5.51	< 0.5	< 0.5	697	1330	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/23/2003	6.05	< 0.5	< 0.5	358	820	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/24/2003	4.70	0.71	< 0.5	458	920	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	4.91	< 0.5	0.62	310	680	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	5.02	<0.5	<0.5	565	1100	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	5.19	<0.5	<0.5	550	1175	<0.015	<0.015	<0.02	<0.02	--	--
5/18/2004	5.27	<0.5	<0.5	296	647	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	6.02	<0.5	<0.5	510	1100	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	5.03	0.5	<0.5	416	940	<0.015	<0.015	<0.02	<0.02	<0.02	--
9/14/2004	--	0.51	<0.5	425	960	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	4.83	<0.5	<0.5	250	1500	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/26/2005	4.86	<0.5	0.72	564	1200	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	5.07	0.54	<0.5	302	580	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/19/2005	4.19	--	--	--	--	--	--	--	--	<0.02	<0.02
4/12/2006	4.97	--	--	--	--	--	--	--	--	<0.02	<0.02
11/2/2006	4.71	<0.5	<0.5	--	--	--	<0.015	<0.02	--	<0.02	--
5/23/2007	4.97	--	--	--	--	--	--	--	--	<0.02	--
11/7/2007	4.64	--	--	--	--	--	--	--	--	<0.02	--
5/21/2008	5.85	<0.5	<0.5	399	--	<0.015	--	<0.02	--	<0.02	--
5/21/2008	--	<0.5	<0.5	409	--	<0.015	--	<0.02	--	<0.02	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 16
ECMW-13 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
11/7/2008	5.01	<0.5	<0.5	346	--	<0.015	--	<0.02	--	<0.02	--
4/21/2009	4.77	--	--	--	--	--	--	--	--	<0.02	--
10/21/2009	4.63	--	--	--	--	--	--	--	--	--	--
4/14/2010	4.75	<0.5	<0.5	470	--	<0.015	--	<0.02	--	--	--
11/3/2010	6.44	<0.5	<0.5	589	--	<0.015	--	<0.01	--	--	--
4/26/2011	4.68	--	--	--	--	--	--	--	--	--	--
5/2/2012	5.23	<0.5	<0.5	505	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/6/2012	6.25	<0.5	<0.5	593	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	5.19	--	--	--	--	--	--	--	--	--	--
11/4/2013	4.83	--	--	--	--	--	--	--	--	--	--
6/4/2014	5.33	<0.5	0.255	374	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/5/2014	4.03	<0.5	<0.25	425	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/22/2015	5.20	--	--	--	--	--	--	--	--	--	--
11/18/2015	4.68	--	--	--	--	--	--	--	--	--	--
5/25/2016	4.39	<0.5	<0.25	529	--	0.0183	<0.016	<0.0104	<0.021	--	--
11/9/2016	5.06	<0.5	<0.25	439	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 17
ECMW-14 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	4.60	--	11.9	139	--	< 0.002	< 0.002	< 0.005	< 0.005	--	--
8/8/2001	4.30	< 0.5	75	175	1000	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.50	< 0.5	25.2	211	790	< 0.04	--	< 0.02	--	--	--
6/4/2002	5.60	< 0.5	26.5	187	675	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	6.30	5.32	17	288	669	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.30	< 0.5	23.4	230	709	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/20/2003	4.85	< 0.5	44.9	227	865	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/23/2003	4.62	< 0.5	23.1	221	750	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/23/2003	5.00	< 0.5	20.3	275	700	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	4.92	< 0.5	16.1	227	740	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	5.19	<0.5	24.5	262	710	0.028	<0.015	0.022	<0.02	--	--
3/16/2004	5.34	<0.5	33.4	211	792	<0.015	<0.015	<0.02	<0.02	--	--
5/18/2004	5.23	<0.5	32.6	234	784	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	5.05	<0.5	45.7	226	820	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	--	<0.5	47.3	234	840	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	4.72	<0.5	57.7	232	900	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	4.88	<0.5	21.7	168	660	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/26/2005	4.89	<0.5	62.4	204	930	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	5.06	<0.5	31	204	700	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/19/2005	4.96	--	36	--	--	--	--	--	--	<0.02	<0.02
4/12/2006	4.72	--	48.2	--	--	--	--	--	--	<0.02	<0.02
4/12/2006	--	--	48.5	--	--	--	--	--	--	<0.02	<0.02
11/2/2006	4.15	--	13.6	--	--	--	--	--	--	<0.02	--
5/23/2007	4.60	<0.5	25.5	233	--	--	--	--	--	<0.02	--
11/7/2007	4.24	<0.5	12.6	229	--	--	--	--	--	<0.02	--
5/21/2008	5.69	<0.5	22.5	224	--	<0.015	--	<0.02	--	<0.02	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 17
ECMW-14 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
11/5/2008	4.35	<0.5	11.1	137	–	<0.015	–	<0.02	–	<0.02	–
4/21/2009	4.36	0.72	13.2	200	–	–	–	–	–	<0.02	–
12/16/2009	5.53	<0.5	15.7	212	–	–	–	–	–	–	–
4/14/2010	4.54	0.5	24.3	166	–	<0.015	–	<0.02	–	–	–
12/21/2010	5.68	<0.5	12.7	152	–	<0.015	–	<0.01	–	–	–
4/26/2011	5.04	<0.5	10.7	159	–	–	–	–	–	–	–
11/30/2011	4.50	<0.5	8.09	156	–	–	–	–	–	–	–
5/2/2012	5.20	<0.5	17.4	139	–	<0.015 E3	<0.015	<0.01 E3	<0.02	–	–
11/6/2012	6.25	<0.5	8.03	140	–	<0.015	<0.015	<0.01	<0.02	–	–
5/15/2013	5.20	<0.5	6.17	108	–	–	–	–	–	–	–
11/5/2013	5.46	7.52	6.92	91.6	–	–	–	–	–	–	–
6/4/2014	5.73	<0.5	4.31	54.2	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/5/2014	4.09	<0.5	5.12	98.3	–	<0.0156	<0.015	<0.0104	<0.02	–	–
9/8/2015	4.89	<0.5	9.58	77.8	–	–	–	–	–	–	–
11/18/2015	5.15	0.63	17.2	45.6	–	–	–	–	–	–	–
7/6/2016	4.93	<0.5	8.76	91.2	–	<0.0156	<0.016	<0.0104	<0.021	–	–
7/6/2016	–	<0.5	8.92	106	–	<0.0156	<0.016	<0.0104	<0.021	–	–
11/9/2016	5.37	<0.5	4.4	116	–	<0.0156	<0.0156	<0.0104	<0.0104	–	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 18
ECMW-15 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	6.40	--	34.5	4.4	--	< 0.002	< 0.002	< 0.005	< 0.005	--	--
8/8/2001	4.30	< 0.5	19.1	7.8	140	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.30	< 0.5	12.6	10.2	110	< 0.04	--	< 0.02	--	--	--
6/4/2002	5.40	< 0.5	10.7	11.1	100	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.40	1.16	18.2	9.22	120	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.80	0.5	12.2	10.8	120	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/20/2003	4.75	< 0.5	9.45	13	66	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/23/2003	4.77	< 0.5	7.63	12.8	100	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/23/2003	4.49	< 0.5	9.62	11.8	180	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	4.89	< 0.5	9.81	12.6	100	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	5.56	3.96	4.52	18.6	81	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	5.68	<0.5	7.66	13.9	97	<0.015	<0.015	<0.02	<0.02	--	--
5/18/2004	5.75	<0.5	6.82	15.2	83	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	5.39	<0.5	9.52	11	110	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	4.67	0.61	8.22	13.2	100	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	4.92	<0.5	7.42	11.8	110	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	4.68	<0.5	7.62	11.8	110	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	4.94	<0.5	5.79	16.1	79	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/19/2005	4.77	--	5.63	--	--	--	--	--	--	<0.02	<0.02
4/11/2006	4.95	--	1.6	--	--	--	--	--	--	<0.02	<0.02
11/2/2006	4.17	--	2.54	--	--	--	--	--	--	<0.02	--
5/23/2007	4.43	--	--	--	--	--	--	--	--	<0.02	--
11/7/2007	4.06	--	--	--	--	--	--	--	--	<0.02	--
5/21/2008	7.35	<0.5	1.52	15.9	--	<0.015	--	<0.02	--	<0.02	--
11/5/2008	5.18	<0.5	2.32	8.79	--	<0.015	--	<0.02	--	<0.02	--
4/21/2009	4.53	--	--	--	--	--	--	--	--	<0.02	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 18
ECMW-15 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
10/20/2009	4.36	--	--	--	--	--	--	--	--	--	--
4/14/2010	4.39	<0.5	2.99	10.7	--	<0.015	--	<0.02	--	--	--
11/3/2010	5.30	<0.5	1.9	13.2	--	<0.015	--	<0.01	--	--	--
4/26/2011	4.86	--	--	--	--	--	--	--	--	--	--
5/2/2012	4.88	<0.5	1.08	13.9	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/6/2012	6.22	<0.5	1.26	13	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	6.21	--	--	--	--	--	--	--	--	--	--
11/4/2013	4.56	--	--	--	--	--	--	--	--	--	--
6/4/2014	5.36	<0.5	1.74	12.4	--	<0.0156	<0.016	0.0122	<0.021	--	--
11/5/2014	2.75	<0.5	3.07	9.58	--	<0.0156	<0.015	<0.0104	<0.02	--	--
11/5/2014	--	<0.5	2.92	9.66	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/22/2015	4.68	--	--	--	--	--	--	--	--	--	--
11/18/2015	5.14	--	--	--	--	--	--	--	--	--	--
5/25/2016	4.29	<0.5	4.52	9.67	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/9/2016	5.04	<0.5	4.07	9.96	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 19
ECMW-16 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	5.70	–	137	4.6	–	0.0036	0.0034	< 0.005	< 0.005	–	–
6/5/2001	4.30	4.61	134	5.09	1100	< 0.04	–	< 0.02	–	–	–
10/30/2001	3.90	< 0.5	58.4	6.44	330	< 0.04	–	< 0.02	–	–	–
6/4/2002	5.00	6.2	72.5	7.19	396	< 0.02	< 0.02	< 0.02	< 0.02	–	–
6/4/2002	–	5.0	72.6	6.82	404	< 0.02	< 0.015	< 0.02	< 0.02	–	–
10/30/2002	5.00	11.6	72	9.21	263	< 0.015	< 0.015	< 0.02	< 0.02	–	–
12/10/2002	5.90	2.99	89.4	5.64	595	< 0.015	< 0.015	< 0.02	< 0.02	–	–
5/20/2003	4.42	3.69	90.8	6.55	555	< 0.015	< 0.015	< 0.02	< 0.02	–	–
7/23/2003	4.81	6.45	72.3	7.15	430	< 0.015	< 0.015	< 0.02	< 0.02	–	–
9/23/2003	4.31	5.97	72.8	7.09	400	< 0.015	< 0.015	< 0.02	< 0.02	–	–
11/19/2003	4.99	8.61	44.3	9.78	230	< 0.015	< 0.015	< 0.02	< 0.02	–	–
1/28/2004	5.61	5.66	59	9.84	280	<0.015	<0.015	<0.02	<0.02	–	–
3/16/2004	5.83	8.39	34.8	11.2	180	<0.015	<0.015	<0.02	<0.02	–	–
5/18/2004	5.95	10.4	31.9	13.3	167	<0.015	<0.015	<0.02	<0.02	–	–
5/18/2004	–	11.5	31.5	13.8	135	<0.015	<0.015	<0.02	<0.02	–	–
7/13/2004	5.50	9.35	40.2	7.7	160	<0.015	<0.015	<0.02	<0.02	–	–
9/14/2004	4.49	8.57	47.1	7.83	190	<0.015	<0.015	<0.02	<0.02	<0.02	–
11/16/2004	5.08	6.49	38.2	8.11	310	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
11/16/2004	–	6.87	38.3	8.02	270	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/25/2005	4.54	4.15	43.1	8.13	310	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	4.62	7.62	26.8	10.2	110	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/19/2005	4.66	6.28	17	–	–	–	–	–	–	<0.02	<0.02
4/11/2006	4.79	2.01	17	–	–	–	–	–	–	<0.02	<0.02
11/2/2006	4.27	2.16	24.8	–	–	–	–	–	–	<0.02	–
5/23/2007	4.25	2.21	12.8	14.4	–	–	–	–	–	<0.02	–
11/7/2007	4.30	1.77	19.6	12.6	–	–	–	–	–	<0.02	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 19
ECMW-16 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
5/21/2008	6.08	3.35	14.8	15.9	--	<0.015	--	<0.02	--	<0.02	--
11/5/2008	6.50	1.92	11.4	10.4	--	<0.015	--	<0.02	--	<0.02	--
4/21/2009	4.66	3.25	8.85	14.5	--	--	--	--	--	<0.02	--
10/21/2009	4.38	0.88	13.1	12.1	--	--	--	--	--	--	--
10/21/2009	--	0.94	13.2	13	--	--	--	--	--	--	--
4/14/2010	4.42	2.38	4.73	15.3	--	<0.015	--	<0.02	--	--	--
11/3/2010	5.98	0.96	19.2	13.4	--	<0.015	--	<0.01	--	--	--
4/26/2011	4.50	3.56	7.5	15.8	--	--	--	--	--	--	--
11/30/2011	4.12	0.84	11.6	17.9	--	--	--	--	--	--	--
5/2/2012	4.66	0.81	10.7	15.4	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/6/2012	6.09	1.19	9.94	14.6	--	<0.015	<0.015	<0.01	<0.02	--	--
5/15/2013	4.79	3.91	12.2	13	--	--	--	--	--	--	--
11/5/2013	4.60	1.58	10.3	13.3	--	--	--	--	--	--	--
6/4/2014	5.07	1.8	10.9	10.7	--	<0.0156	<0.016	<0.0104	<0.021	--	--
6/4/2014	--	1.18	10.4	11.4	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/5/2014	2.64	1.27	9.2	11.2	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/20/2015	4.54	6.2	8.65	12.9	--	--	--	--	--	--	--
11/18/2015	4.64	0.5	8.43	15.9	--	--	--	--	--	--	--
5/25/2016	4.28	<0.5	10.2	15.4	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/9/2016	5.3	<0.5	8.86	13.6	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 20
ECMW-17 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/13/1996	4.90	--	45	145	--	< 0.002	< 0.002	< 0.005	< 0.005	--	--
6/5/2001	4.40	1.16	54.2	87.7	600	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.10	< 0.5	106	11.5	760	< 0.04	--	< 0.02	--	--	--
6/4/2002	5.10	< 0.5	83.4	8.04	603	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.10	2.36	92	9.53	540	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.60	1.22	101	28.2	751	< 0.015	< 0.015	< 0.02	< 0.02	--	--
5/20/2003	4.54	< 0.5	83.6	17.1	603	< 0.015	< 0.015	< 0.02	< 0.02	--	--
7/23/2003	4.74	0.58	74.7	9.31	548	< 0.015	< 0.015	< 0.02	< 0.02	--	--
9/23/2003	5.25	< 0.5	64.3	6.98	400	< 0.015	< 0.015	< 0.02	< 0.02	--	--
11/19/2003	5.28	0.55	77.3	11.8	530	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	6.54	<0.5	81.3	42.8	560	<0.015	<0.015	<0.02	<0.02	--	--
3/16/2004	6.62	8.14	129	64	983	<0.015	<0.015	<0.02	<0.02	--	--
5/18/2004	6.73	8.05	134	60.1	944	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	6.57	<0.5	67.6	6.54	460	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	4.40	1.42	78.4	3.14	570	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	5.41	9.55	219	54.8	1800	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/26/2005	4.54	1.79	53.3	12.2	360	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	4.86	<0.5	56.4	19.1	390	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	--	<0.5	58.4	4.27	440	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/20/2005	5.74	0.67	48.9	--	--	--	--	--	--	<0.02	<0.02
4/11/2006	3.35	1.15	66.6	--	--	--	--	--	--	<0.02	<0.02
11/2/2006	3.56	4.81	47.6	--	--	--	--	--	--	<0.02	--
5/23/2007	4.19	1.49	58.5	12.7	--	--	--	--	--	<0.02	--
11/7/2007	3.70	0.64	83.3	51.7	--	--	--	--	--	<0.02	--
5/21/2008	4.84	1.63	63.1	63	--	<0.015	--	<0.02	--	<0.02	--
11/5/2008	3.85	1.31	34.6	17.5	--	<0.015	--	<0.02	--	<0.02	--

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TABLE 20
ECMW-17 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
4/21/2009	4.25	12.2 outlier	27.1	99.9	--	--	--	--	--	<0.02	--
6/3/2009	5.84	3.04	--	--	--	--	--	--	--	--	--
10/21/2009	4.68	11.2	14.4	87.1	--	--	--	--	--	--	--
4/14/2010	4.07	<0.5	15.9	6.73	--	<0.015	--	<0.02	--	--	--
11/3/2010	7.02	1.94	27.2	13.1	--	<0.015	--	<0.01	--	--	--
4/26/2011	4.34	10.1	4.03	40.2	--	--	--	--	--	--	--
11/30/2011	4.65	2.75	5.95	36.1	--	--	--	--	--	--	--
5/2/2012	4.75	2.51	8.13	20.9	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/6/2012	6.21	3.82	1.82	39.2	--	<0.015	<0.015	<0.01	<0.02	--	--
11/6/2012	--	5.67	1.51	37.3	--	<0.015	<0.015	0.0174	<0.02	--	--
5/15/2013	4.70	1.41	3.6	34.5	--	--	--	--	--	--	--
11/5/2013	4.77	<0.5	1.24	39.6	--	--	--	--	--	--	--
6/4/2014	4.62	2.46	7.19	29.3	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/5/2014	2.73	3.46	7.5	34.3	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/20/2015	4.10	6.53	10.4	18.7	--	--	--	--	--	--	--
11/18/2015	4.04	3.67	14.3	22.9	--	--	--	--	--	--	--
5/25/2016	3.86	<0.5	14.3	6.64	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/9/2016	6.42	0.826	12.2	6.86	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 21
ECMW-18 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
3/14/1996	6.60	--	0.4	3.3	--	0.017	< 0.002	0.0194	< 0.005	--	--
10/30/2001	5.40	< 0.5	< 0.5	3.74	300	< 0.04	--	0.05	--	--	--
6/4/2002	6.20	< 0.5	< 0.5	8.38	796	0.115	< 0.02	0.147	0.137	--	--
10/30/2002	6.30	0.43	< 0.5	3.22	258	0.018	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	6.40	< 0.5	< 0.5	5.01	495	< 0.015	< 0.015	0.02	< 0.02	--	--
5/21/2003	6.01	0.59	< 0.5	7.08	786	0.029	< 0.015	0.02	< 0.02	--	--
7/23/2003	5.38	< 0.5	113	115	2000	0.029	< 0.015	0.047	< 0.02	--	--
9/24/2003	5.54	5.79	< 0.5	3.81	590	0.025	< 0.015	0.036	0.026	--	--
11/19/2003	5.90	< 0.5	< 0.5	9.68	300	< 0.015	< 0.015	< 0.02	< 0.02	--	--
1/28/2004	6.17	--	--	--	--	--	--	--	--	--	--
3/16/2004	6.40	<0.5	<0.5	7.01	666	0.021	<0.015	0.027	0.021	--	--
5/19/2004	6.43	<0.5	<0.5	5.63	720	0.063	<0.015	0.088	<0.02	--	--
7/13/2004	6.05	<0.5	<0.5	5.68	1100	0.033	<0.015	0.043	<0.02	--	--
9/15/2004	5.89	0.56	<0.5	3.88	1200	0.109	0.038	0.12	0.05	0.213	--
11/17/2004	5.96	<0.5	<0.5	4.61	1100	<0.015	<0.015	0.027	<0.02	0.045	<0.02
11/17/2004	--	<0.5	<0.5	4.85	1100	0.03	<0.015	0.043	<0.02	0.079	<0.02
1/26/2005	5.90	<0.5	<0.5	5.13	1000	0.056	<0.015	0.055	0.022	0.099	0.031
5/25/2005	6.04	<0.5	<0.5	5.18	700	0.018	<0.015	0.032	<0.02	0.048	0.03
10/19/2005	5.82	--	--	--	--	<0.015	<0.015	<0.02	0.052	<0.02	0.081
4/12/2006	1.34	--	--	--	--	<0.015	0.016	<0.02	0.065	<0.02	<0.02
11/2/2006	5.23	--	--	--	--	<0.015	--	<0.02	--	0.02	--
5/23/2007	5.34	--	0.98	--	--	--	--	--	--	<0.02	--
11/7/2007	5.03	--	<0.5	--	--	--	--	--	--	0.05	--
5/21/2008	7.82	<0.5	0.567	6.57	--	0.02	--	0.028	--	0.04	--
11/7/2008	5.05	<0.5	<0.5	1.52	--	0.032	--	0.025	--	0.05	--
4/22/2009	5.42	--	<0.5	--	--	--	--	--	--	0.03	--

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TABLE 21
ECMW-18 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
10/21/2009	7.16	–	<0.5	–	–	–	–	–	–	–	–
4/14/2010	5.50	<0.5	<0.5	2.82	–	<0.015	–	<0.02	–	–	–
11/3/2010	8.22	<0.5	<1	3.65	–	<0.015	–	<0.01	–	–	–
4/26/2011	5.77	–	–	–	–	–	–	–	–	–	–
6/30/2011	5.71	–	<0.5	–	–	–	–	–	–	–	–
11/30/2011	5.64	–	<0.5	–	–	–	–	–	–	–	–
5/2/2012	5.89	<0.5	<0.5	2.17	–	<0.015 E3	<0.015	<0.01 E3	<0.02	–	–
11/6/2012	6.61	<0.5	<0.5	2.99	–	<0.015	<0.015	<0.01	<0.02	–	–
5/15/2013	5.96	<0.5	0.328	6.25	–	–	–	–	–	–	–
11/5/2013	6.28	9.64	<0.25	6.3	–	–	–	–	–	–	–
6/4/2014	5.82	<0.5	0.299	7.15	–	0.0274	<0.016	0.0531	<0.021	–	–
11/5/2014	4.71	<0.5	0.254	2.64	–	<0.0156	<0.015	<0.0104	<0.02	–	–
5/20/2015	5.64	–	0.295	5.63	–	–	–	–	–	–	–
11/18/2015	5.70	–	<0.25	–	–	–	–	–	–	–	–
5/25/2016	5.33	<0.5	<0.25	1.78	–	0.0167	<0.016	<0.0104	<0.021	–	–
11/10/2016	6.42	0.788	<0.25	1.29	–	0.0248	<0.0156	<0.0104	<0.0104	–	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 22
ECMW-19 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
1/28/2004	6.73	0.64	<0.5	8.32	1400	0.122	0.045	0.077	0.077	--	--
3/16/2004	6.49	<0.5	<0.5	6.38	238	0.019	<0.015	<0.02	<0.02	--	--
3/16/2004	--	<0.5	<0.5	7.63	164	0.021	<0.015	<0.02	<0.02	--	--
5/19/2004	6.19	<0.5	<0.5	9.05	220	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	6.37	<0.5	<0.5	6.85	180	<0.015	<0.015	<0.02	<0.02	--	--
9/15/2004	6.23	0.54	<0.5	4.11	120	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/17/2004	6.02	<0.5	<0.5	4.63	130	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/26/2005	5.82	<0.5	<0.5	3.67	100	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	5.88	<0.5	<0.5	4.56	120	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/19/2005	6.27	<0.5	<0.5	--	--	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
4/12/2006	6.10	<0.5	<0.5	--	--	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
11/2/2006	5.51	<0.5	<0.5	--	--	<0.015	--	<0.02	--	<0.02	--
5/23/2007	5.80	--	--	--	--	--	--	--	--	<0.02	--
11/7/2007	5.18	--	--	--	--	--	--	--	--	<0.02	--
5/21/2008	8.17	<0.5	<0.5	3.18	--	<0.015	--	<0.02	--	<0.02	--
11/7/2008	5.90	<0.5	<0.5	2.04	--	<0.015	--	<0.02	--	<0.02	--
4/22/2009	5.66	--	--	--	--	--	--	--	--	<0.02	--
10/21/2009	7.82	--	--	--	--	--	--	--	--	--	--
4/14/2010	5.62	<0.5	<0.5	2.46	--	<0.015	--	<0.02	--	--	--
4/14/2010	--	<0.5	<0.5	2.43	--	<0.015	--	<0.02	--	--	--
11/3/2010	6.87	<0.5	<0.5	2.97	--	<0.015	--	<0.01	--	--	--
4/26/2011	5.82	--	--	--	--	--	--	--	--	--	--
5/2/2012	5.98	<0.5	<0.5	2.31	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/6/2012	6.68	<0.5	<0.5	2.88	--	<0.015	<0.015	<0.01	<0.02	--	--
5/14/2013	6.13	--	--	--	--	--	--	--	--	--	--
11/5/2013	6.73	--	--	--	--	--	--	--	--	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 22
ECMW-19 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
6/4/2014	5.92	<0.5	<0.25	2.78	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/5/2014	5.05	<0.5	<0.25	2.97	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/22/2015	5.95	--	--	--	--	--	--	--	--	--	--
11/18/2015	6.13	--	--	--	--	--	--	--	--	--	--
5/25/2016	5.06	<0.5	<0.25	2.26	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/9/2016	6.56	<0.5	<0.25	2.25	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 23
ECMW-20 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
1/28/2004	5.93	<0.5	<0.5	11.4	730	0.024	<0.015	0.034	<0.02	--	--
3/16/2004	6.51	<0.5	<0.5	15.9	186	<0.015	<0.015	<0.02	<0.02	--	--
5/19/2004	6.23	<0.5	<0.5	10.6	140	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	5.80	<0.5	<0.5	17.2	130	<0.015	<0.015	<0.02	<0.02	--	--
9/15/2004	5.61	0.86	<0.5	17.2	120	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/17/2004	5.36	<0.5	<0.5	13.5	160	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/26/2005	6.02	<0.5	<0.5	13.8	160	0.017	<0.015	<0.02	<0.02	<0.02	<0.02
5/26/2005	6.03	<0.5	1.86	7.72	85	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/20/2005	--	<0.5	<0.5	--	--	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
4/12/2006	--	3.58	6.29	--	--	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
11/2/2006	6.20	<0.5	1.21	--	--	<0.015	--	<0.02	--	<0.02	--
5/23/2007	6.06	--	--	--	--	--	--	--	--	<0.02	--
11/7/2007	5.52	--	--	--	--	--	--	--	--	<0.02	--
5/21/2008	8.60	<0.5	<0.5	8.94	--	<0.015	--	<0.02	--	<0.02	--
11/7/2008	6.36	<0.5	<0.5	7.94	--	0.016	--	<0.02	--	<0.02	--
4/22/2009	6.22	--	--	--	--	--	--	--	--	<0.02	--
10/21/2009	7.37	--	--	--	--	--	--	--	--	--	--
4/14/2010	5.64	<0.5	<0.5	10.1	--	<0.015	--	<0.02	--	--	--
12/21/2010	5.02	<0.5	<0.5	8.95	--	<0.015	--	<0.01	--	--	--
4/26/2011	6.03	--	--	--	--	--	--	--	--	--	--
5/2/2012	5.96	<0.5	<0.5	7.82	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/6/2012	6.74	<0.5	<0.5	9.31	--	<0.015	<0.015	<0.01	<0.02	--	--
5/14/2013	5.29	--	--	--	--	--	--	--	--	--	--
11/5/2013	6.00	--	--	--	--	--	--	--	--	--	--
6/4/2014	5.63	<0.5	<0.25	8.17	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/5/2014	3.61	<0.5	0.262	9.87	--	<0.0156	<0.015	<0.0104	<0.02	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 23
ECMW-20 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
5/22/2015	5.61	--	--	--	--	--	--	--	--	--	--
11/18/2015	6.08	--	--	--	--	--	--	--	--	--	--
5/25/2016	5.37	<0.5	<0.25	9.46	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/9/2016	5.18	<0.5	2.31	4.59	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 24
ECMW-21 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
1/28/2004	5.56	<0.5	1.63	8.17	82	0.169	<0.015	0.837	<0.02	–	–
3/16/2004	6.34	<0.5	0.54	3.62	130	<0.015	<0.015	0.028	<0.02	–	–
5/19/2004	6.75	<0.5	2.15	4.59	110	0.029	<0.015	0.07	<0.02	–	–
7/13/2004	6.39	<0.5	2.5	3.74	103	0.032	<0.015	0.056	<0.02	–	–
9/15/2004	5.47	0.81	4.65	4.15	150	<0.015	<0.015	0.029	<0.02	<0.02	–
11/17/2004	5.96	<0.5	2.97	3.14	110	<0.015	<0.015	0.047	<0.02	<0.02	<0.02
1/26/2005	5.37	4.06	3.23	2.88	77	0.02	<0.015	0.044	<0.02	<0.02	<0.02
5/26/2005	5.69	<0.5	3.17	3.64	76	0.063	<0.015	0.265	<0.02	0.092	<0.02
10/20/2005	4.17	<0.5	4.16	–	–	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
4/12/2006	–	<0.5	3.19	–	–	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
11/2/2006	–	<0.5	2.23	–	–	<0.015	–	<0.02	–	<0.02	–
5/23/2007	5.56	–	–	–	–	–	–	–	–	<0.02	–
11/7/2007	5.07	–	–	–	–	–	–	–	–	<0.02	–
5/21/2008	7.81	<0.5	1.85	5.18	–	<0.015	–	<0.02	–	<0.02	–
11/7/2008	5.32	<0.5	1.26	3	–	<0.015	–	<0.02	–	<0.02	–
4/22/2009	5.24	–	–	–	–	–	–	–	–	<0.02	–
10/21/2009	5.91	–	–	–	–	–	–	–	–	–	–
4/14/2010	4.88	<0.5	2.24	3.7	–	<0.015	–	<0.02	–	–	–
11/3/2010	7.13	<0.5	1.8	6.07	–	<0.015	–	<0.01	–	–	–
4/26/2011	5.85	–	–	–	–	–	–	–	–	–	–
5/2/2012	5.68	<0.5	1.4	3.94	–	<0.015 E3	<0.015	<0.01 E3	<0.02	–	–
11/6/2012	6.48	<0.5	1.1	6.28	–	<0.015	<0.015	<0.01	<0.02	–	–
5/15/2013	6.09	–	–	–	–	–	–	–	–	–	–
11/5/2013	5.68	–	–	–	–	–	–	–	–	–	–
6/4/2014	5.22	<0.5	1.63	4.57	–	<0.0156	<0.016	0.0105	<0.021	–	–
11/5/2014	3.81	<0.5	1.62	5.25	–	<0.0156	<0.015	<0.0104	<0.02	–	–

"–" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 24
ECMW-21 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
5/22/2015	5.37	--	--	--	--	--	--	--	--	--	--
11/18/2015	5.39	--	--	--	--	--	--	--	--	--	--
5/25/2016	4.88	<0.5	2.25	3.62	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/9/2016	6.25	<0.5	<0.25	21.4	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

TABLE 25
ECMW-22 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
1/28/2004	7.68	0.61	0.53	6.62	540	0.021	<0.015	0.021	<0.02	--	--
1/28/2004	--	<0.5	0.52	6.62	610	0.021	<0.015	0.023	<0.02	--	--
3/16/2004	6.65	<0.5	0.66	2.88	<1	<0.015	<0.015	<0.02	<0.02	--	--
5/18/2004	6.76	<0.5	0.95	3.74	136	<0.015	<0.015	<0.02	<0.02	--	--
7/13/2004	6.74	<0.5	<0.5	3.8	140	<0.015	<0.015	<0.02	<0.02	--	--
9/14/2004	5.84	0.7	<0.5	2.94	170	<0.015	<0.015	<0.02	<0.02	<0.02	--
11/16/2004	6.95	<0.5	<0.5	2.51	180	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
1/26/2005	5.79	<0.5	1.09	3.56	140	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
5/25/2005	6.46	<0.5	1.12	3.61	130	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
10/19/2005	6.21	<0.5	<0.5	--	--	0.056	<0.015	<0.02	<0.02	<0.02	<0.02
4/11/2006	6.22	<0.5	2.56	--	--	<0.015	<0.015	<0.02	<0.02	<0.02	<0.02
11/2/2006	5.37	<0.5	1.07	--	--	<0.015	--	<0.02	--	<0.02	--
5/23/2007	5.67	--	--	--	--	--	--	--	--	<0.02	--
11/7/2007	5.01	--	--	--	--	--	--	--	--	<0.02	--
5/21/2008	7.93	<0.5	3.65	7.6	--	<0.015	--	<0.02	--	<0.02	--
11/5/2008	5.06	<0.5	1.87	4.7	--	<0.015	--	<0.02	--	<0.02	--
4/21/2009	5.80	--	--	--	--	--	--	--	--	<0.02	--
4/21/2009	--	<0.5	0.991	3.67	--	--	--	--	--	<0.02	--
10/21/2009	6.15	--	--	--	--	--	--	--	--	--	--
4/14/2010	5.84	<0.5	1.13	7.73	--	<0.015	--	<0.02	--	--	--
11/3/2010	8.15	<0.5	1.31	6.68	--	<0.015	--	<0.01	--	--	--
4/26/2011	6.05	--	--	--	--	--	--	--	--	--	--
5/2/2012	6.10	<0.5	1.15	4.99	--	<0.015 E3	<0.015	<0.01 E3	<0.02	--	--
11/6/2012	6.73	<0.5	1.74	7.01	--	<0.015	<0.015	<0.01	<0.02	--	--
5/14/2013	6.19	--	--	--	--	--	--	--	--	--	--
11/4/2013	5.64	--	--	--	--	--	--	--	--	--	--

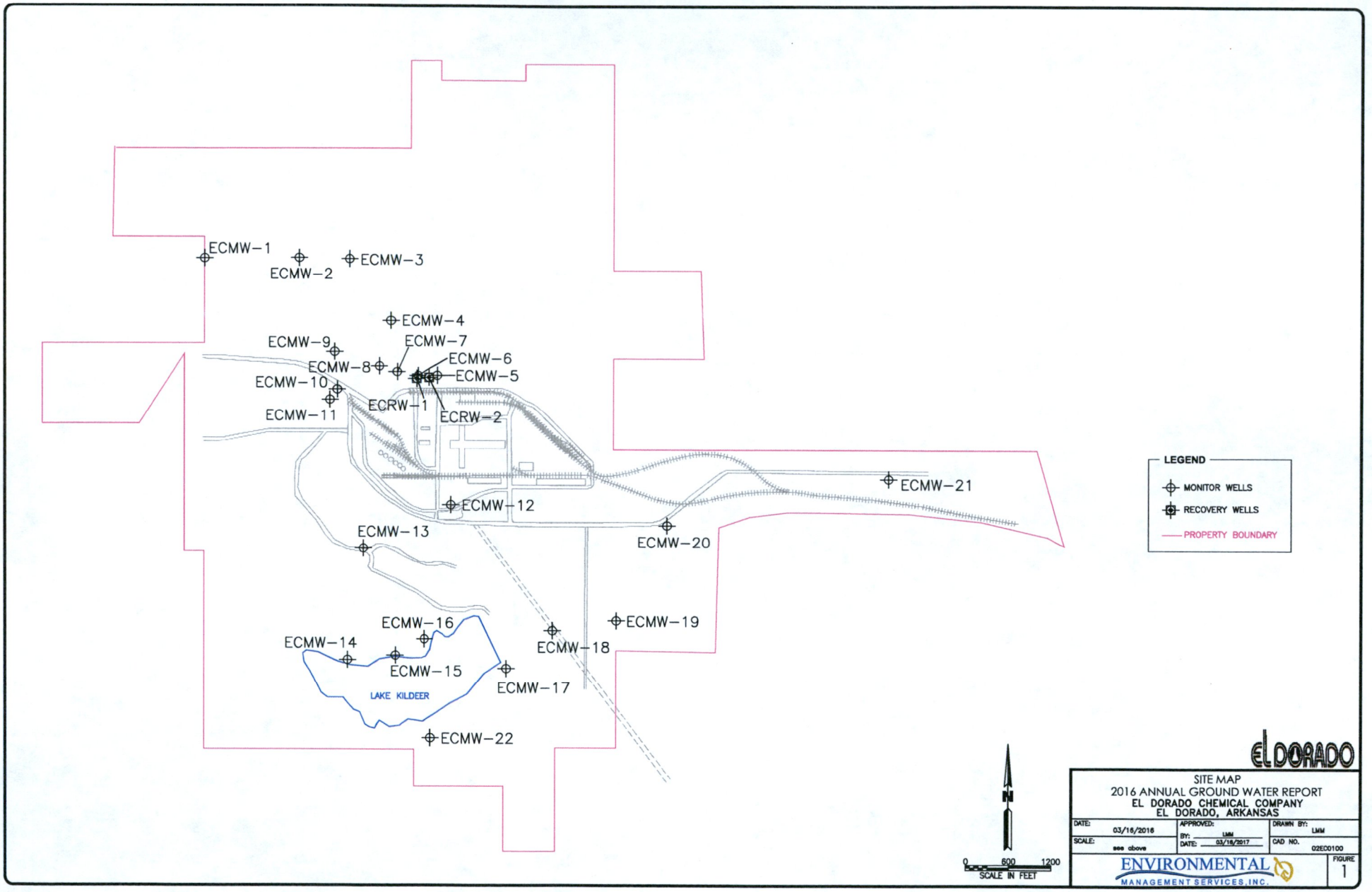
"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

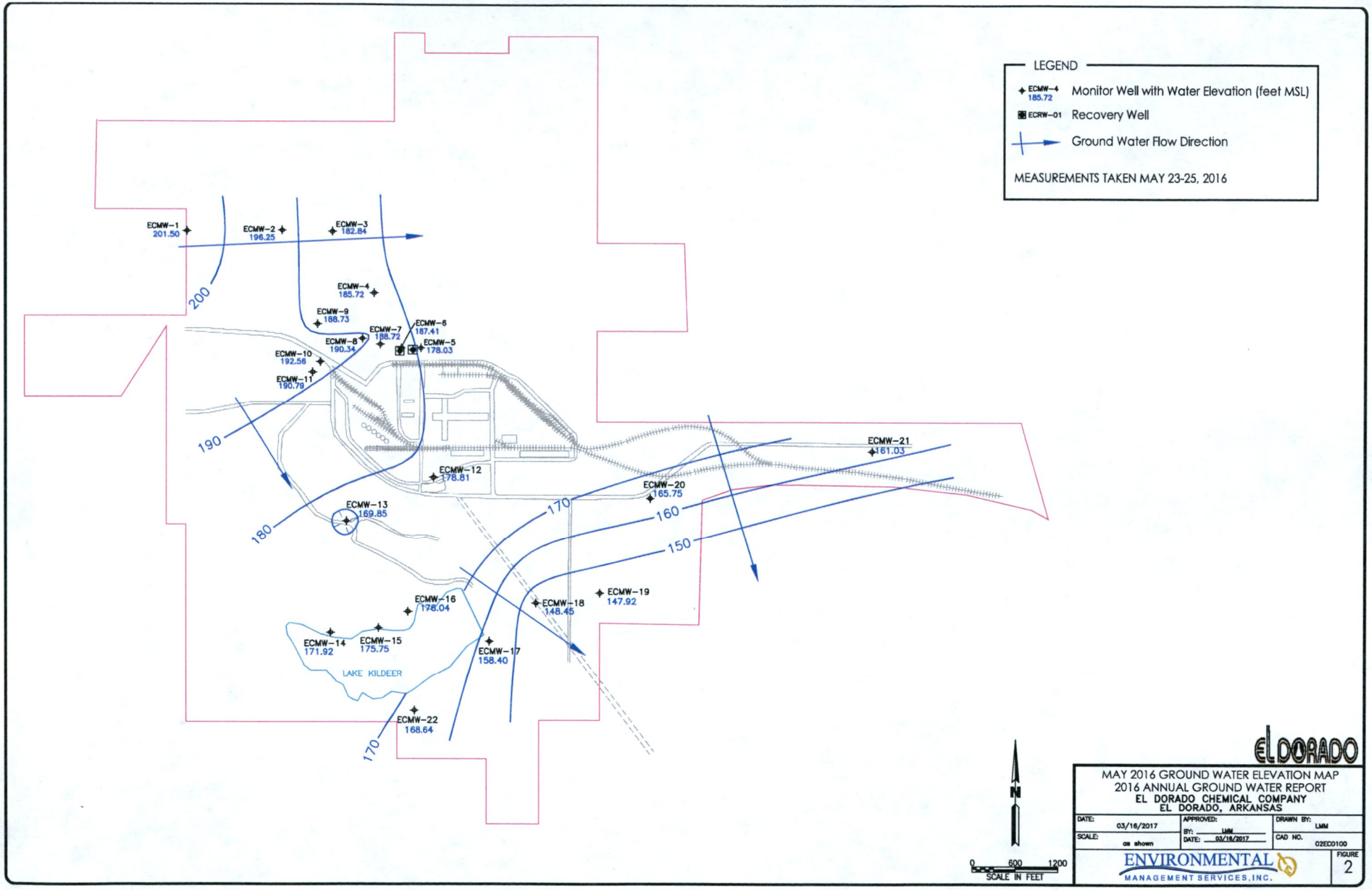
TABLE 25
ECMW-22 ANALYTICAL SUMMARY
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

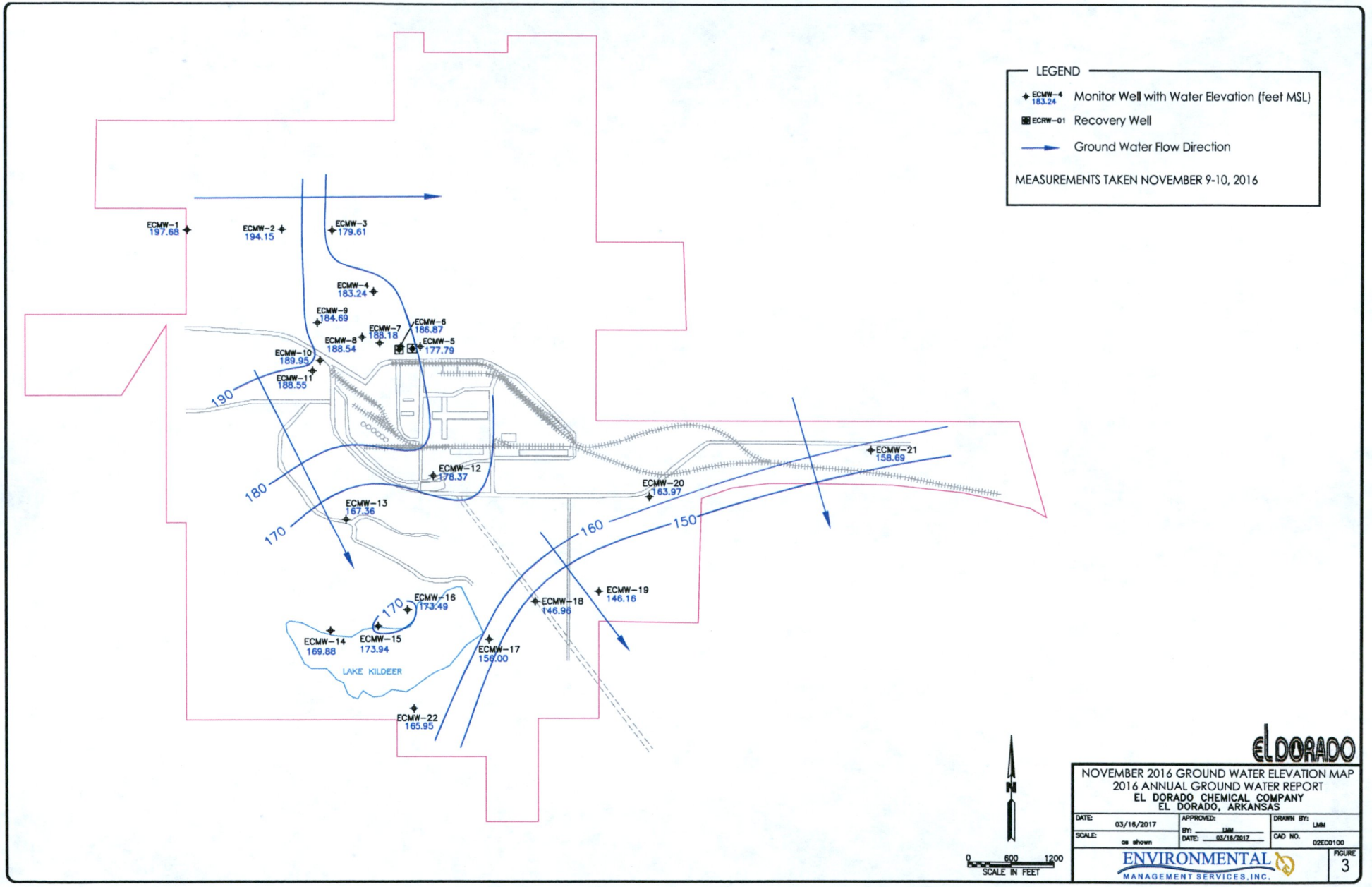
Sample Date	pH	Ammonia-N	Nitrate-N	Sulfate	Total Dissolved Solids	Lead (Total)	Lead (Dissolved)	Chromium (Total)	Chromium (Dissolved)	Vanadium (Total)	Vanadium (Dissolved)
	s.u.	mg/L									
6/4/2014	5.79	<0.5	1.75	5.05	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/5/2014	4.42	0.61	2.58	5.66	--	<0.0156	<0.015	<0.0104	<0.02	--	--
5/22/2015	6.28	--	--	--	--	--	--	--	--	--	--
11/18/2015	6.07	--	--	--	--	--	--	--	--	--	--
5/25/2016	5.50	1.25	4.37	11.8	--	<0.0156	<0.016	<0.0104	<0.021	--	--
11/9/2016	6.04	<0.5	0.53	5.16	--	<0.0156	<0.0156	<0.0104	<0.0104	--	--

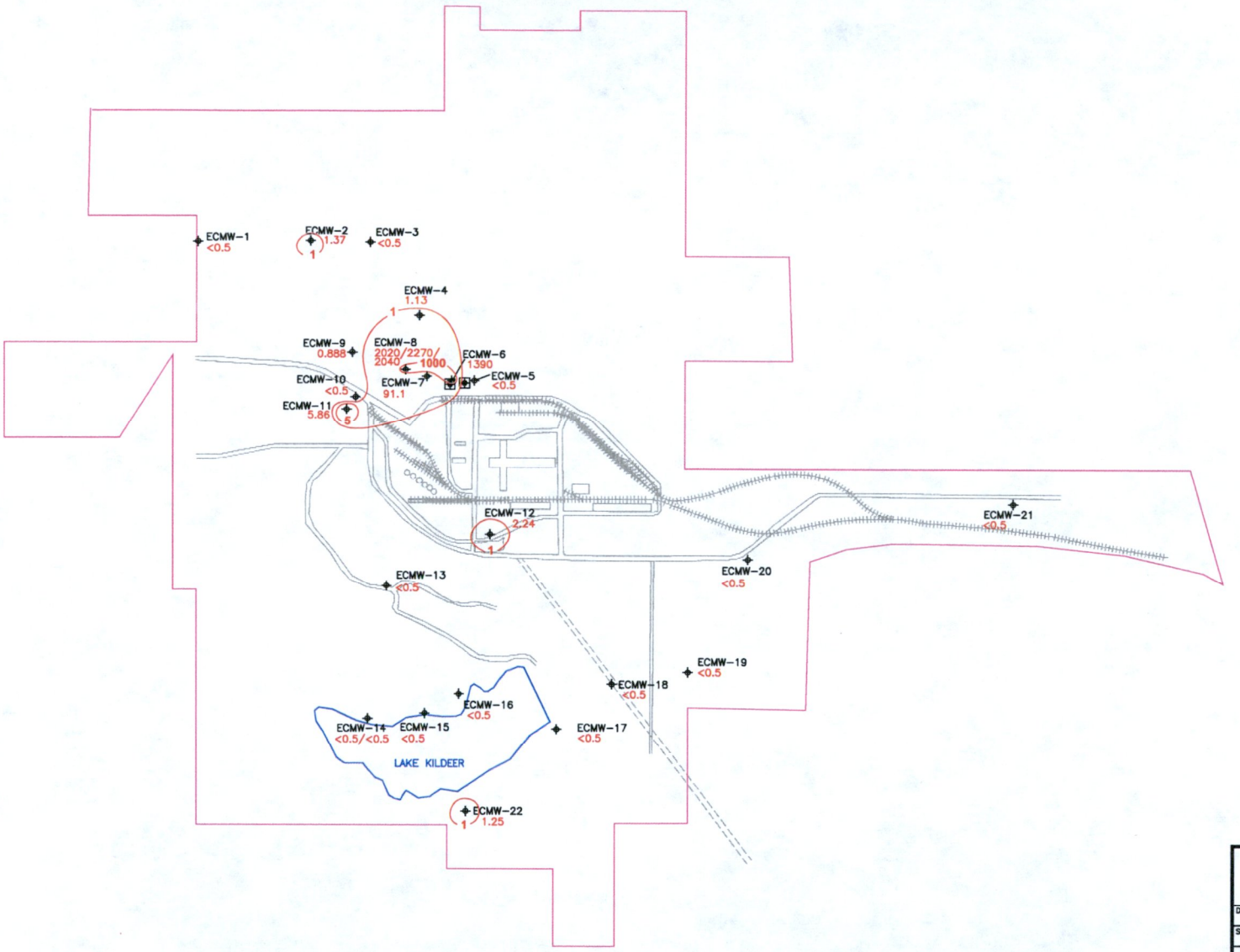
"--" - Parameter not analyzed
E3 - Incorrect preservation, results qualified as "estimated".

FIGURES


ECMW-1
ECMW-2
ECMW-3
ECMW-4
ECMW-9
ECMW-7
ECMW-8
ECMW-6
ECMW-5
ECMW-10
ECMW-11
ECRW-1
ECRW-2
ECMW-21
ECMW-12
ECMW-13
ECMW-20
ECMW-16
ECMW-19
ECMW-14
ECMW-18
ECMW-15
ECMW-17
LAKE KILDEER
ECMW-22
LEGEND
MONITOR WELLS
RECOVERY WELLS
PROPERTY BOUNDARY
N
0
600
1200
SCALE IN FEET
EL DORADO
SITE MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS
DATE: 03/15/2016
APPROVED:
BY: LMM
DATE: 03/15/2017
DRAWN BY: LMM
SCALE: see above
CAD NO. 02EC0100
ENVIRONMENTAL MANAGEMENT SERVICES, INC.
FIGURE 1


LEGEND
ECMW-4 185.72 Monitor Well with Water Elevation (feet MSL)
ECRW-01 Recovery Well
Ground Water Flow Direction
MEASUREMENTS TAKEN MAY 23-25, 2016
ECMW-1 201.50
ECMW-2 196.25
ECMW-3 182.84
ECMW-4 185.72
ECMW-9 188.73
ECMW-7 188.72
ECMW-6 187.41
ECMW-8 190.34
ECMW-5 178.03
ECMW-10 192.56
ECMW-11 190.79
ECMW-12 178.81
ECMW-13 169.85
ECMW-21 161.03
ECMW-20 165.75
ECMW-16 178.04
ECMW-18 148.45
ECMW-19 147.92
ECMW-14 171.92
ECMW-15 175.75
ECMW-17 158.40
LAKE KILDEER
ECMW-22 168.64
200
190
180
170
160
150
170
N
0 600 1200
SCALE IN FEET
EL DORADO
MAY 2016 GROUND WATER ELEVATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS
DATE: 03/16/2017
APPROVED: BY: LMM DATE: 03/16/2017
DRAWN BY: LMM
SCALE: as shown
CAD NO. 02EC0100
ENVIRONMENTAL MANAGEMENT SERVICES, INC.
FIGURE 2


LEGEND
ECMW-4 183.24 Monitor Well with Water Elevation (feet MSL)
ECRW-01 Recovery Well
Ground Water Flow Direction
MEASUREMENTS TAKEN NOVEMBER 9-10, 2016
ECMW-1 197.68
ECMW-2 194.15
ECMW-3 179.61
ECMW-4 183.24
ECMW-9 184.69
ECMW-7 188.18
ECMW-6 186.87
ECMW-8 188.54
ECMW-5 177.79
ECMW-10 189.95
ECMW-11 188.55
190
180
170
ECMW-12 178.37
ECMW-13 167.36
ECMW-20 163.97
ECMW-21 158.69
160
150
ECMW-16 173.49
170
ECMW-14 169.88
ECMW-15 173.94
LAKE KILDEER
ECMW-17 156.00
ECMW-18 146.96
ECMW-19 146.18
ECMW-22 165.95
N
0 600 1200
SCALE IN FEET
EL DORADO
NOVEMBER 2016 GROUND WATER ELEVATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS
DATE: 03/16/2017
APPROVED: BY: LMM DATE: 03/16/2017
DRAWN BY: LMM
SCALE: as shown
CAD NO. 02EC0100
ENVIRONMENTAL MANAGEMENT SERVICES, INC.
FIGURE 3



LEGEND

- PROPERTY BOUNDARY
- ECMW-9 0.888 MONITOR WELL WITH AMMONIA CONCENTRATION (mg/L)
- RECOVERY WELLS
- ISOCONCENTRATION CONTOURS (mg/L)

Notes:
Wells sampled May 23–25, 2016
ECMW-14 sampled on July 6, 2016
ECMW-8 was resampled to verify result.

N

0 600 1200
SCALE IN FEET

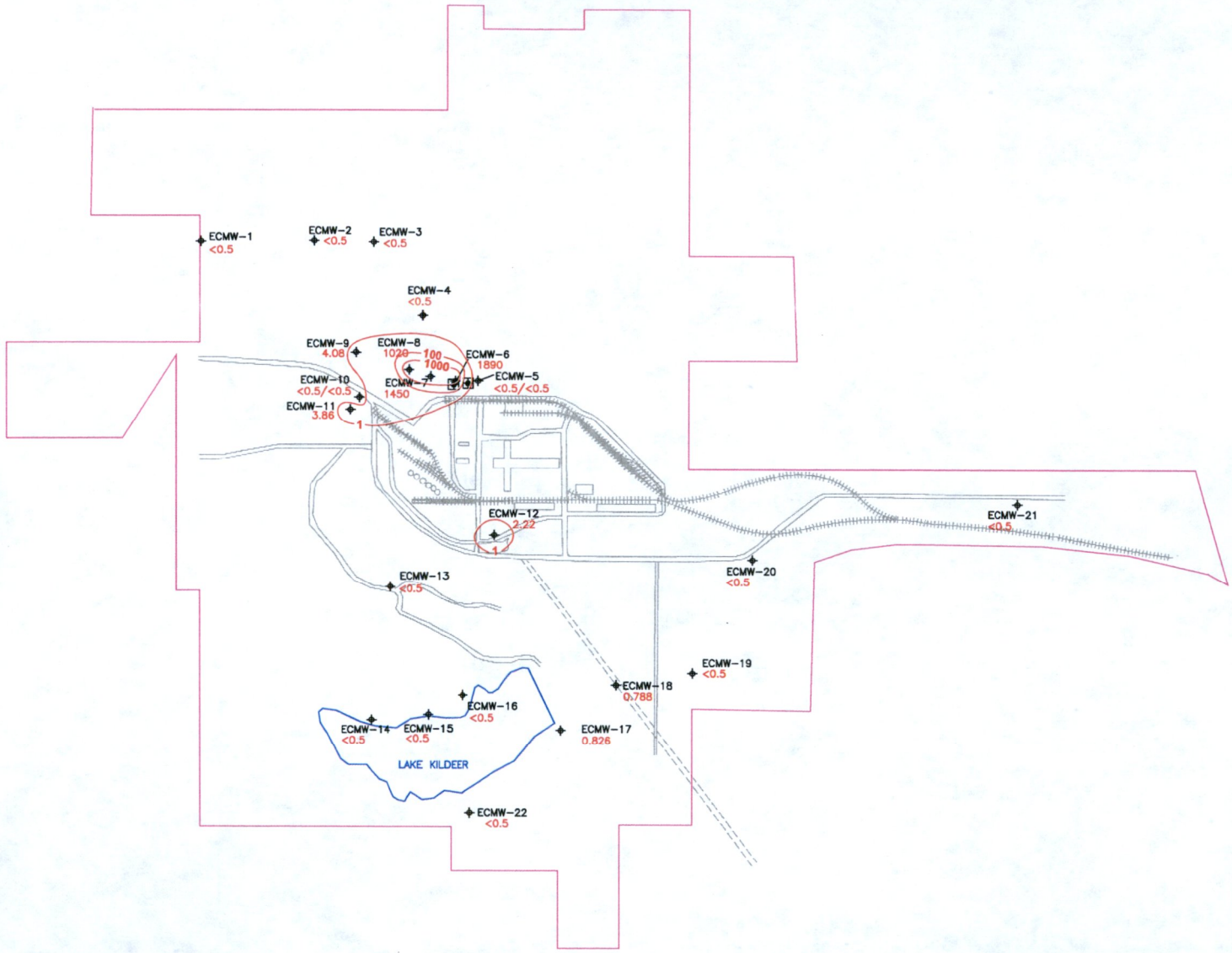
EL DORADO

MAY 2016 AMMONIA CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

DATE:	APPROVED:	DRAWN BY:
03/20/2017	BY: LMM	LMM
SCALE: as shown	DATE: 03/16/2017	CAD NO. 02EC0100

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 4



LEGEND

- PROPERTY BOUNDARY
- ECMW-9 4.08 MONITOR WELL WITH AMMONIA CONCENTRATION (mg/L)
- RECOVERY WELLS
- ISOCONCENTRATION CONTOURS (mg/L)

Notes:
Wells sampled November 9–10, 2016

N

0 600 1200
SCALE IN FEET

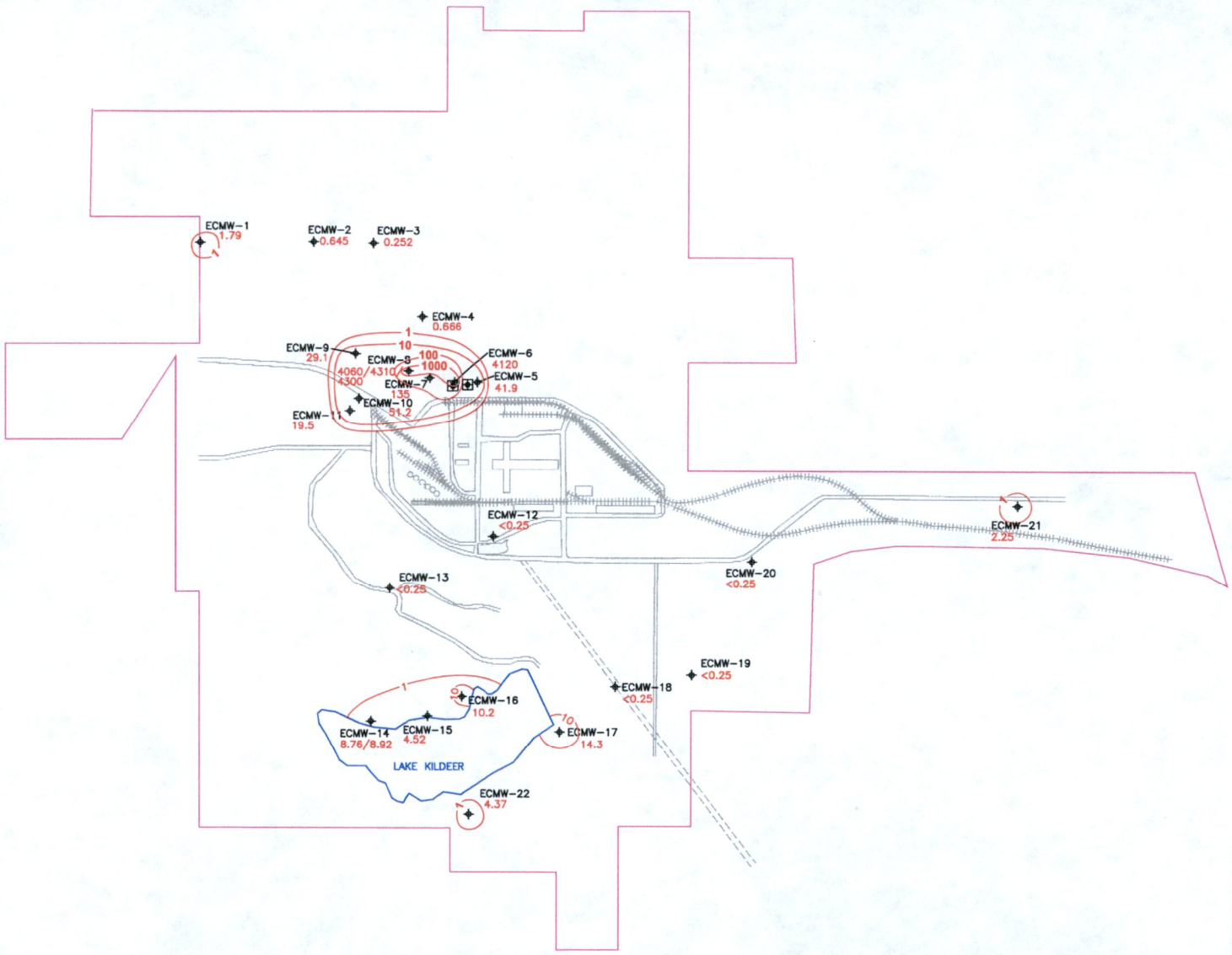
EL DORADO

NOVEMBER 2016 AMMONIA CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

DATE: 03/20/2017	APPROVED: BY: LMM DATE: 03/16/2017	DRAWN BY: LMM
SCALE: as shown		CAD NO. 02EC0100

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 5



LEGEND

- PROPERTY BOUNDARY
- ECMW-9 29.1 MONITOR WELL WITH NITRATE CONCENTRATION (mg/L)
- RECOVERY WELLS
- ISOCONCENTRATION CONTOURS (mg/L)

Notes:
Wells sampled May 23–25, 2016
ECMW-14 sampled on July 6, 2016
ECMW-8 was resampled to verify result.

0 600 1200
SCALE IN FEET

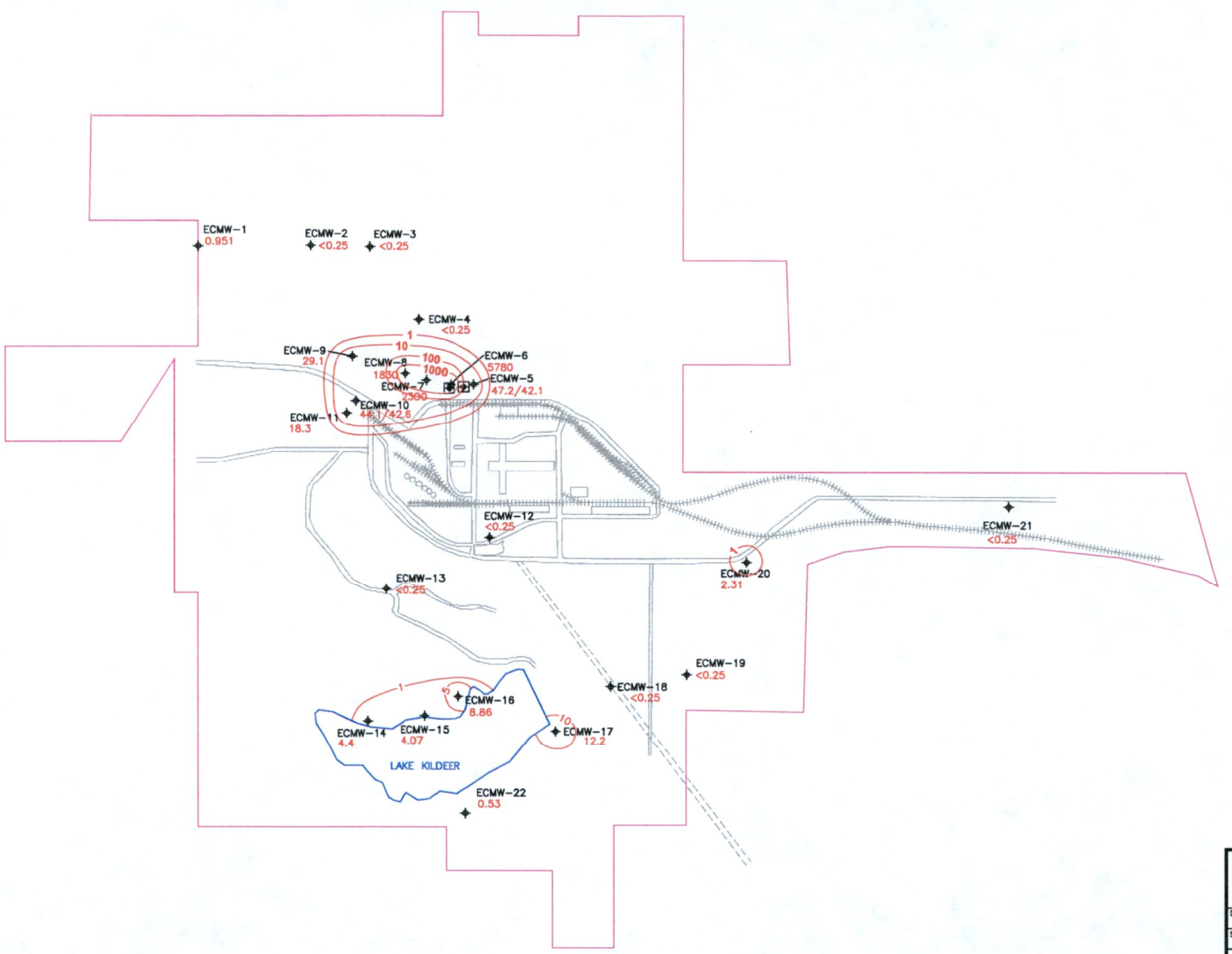
EL DORADO

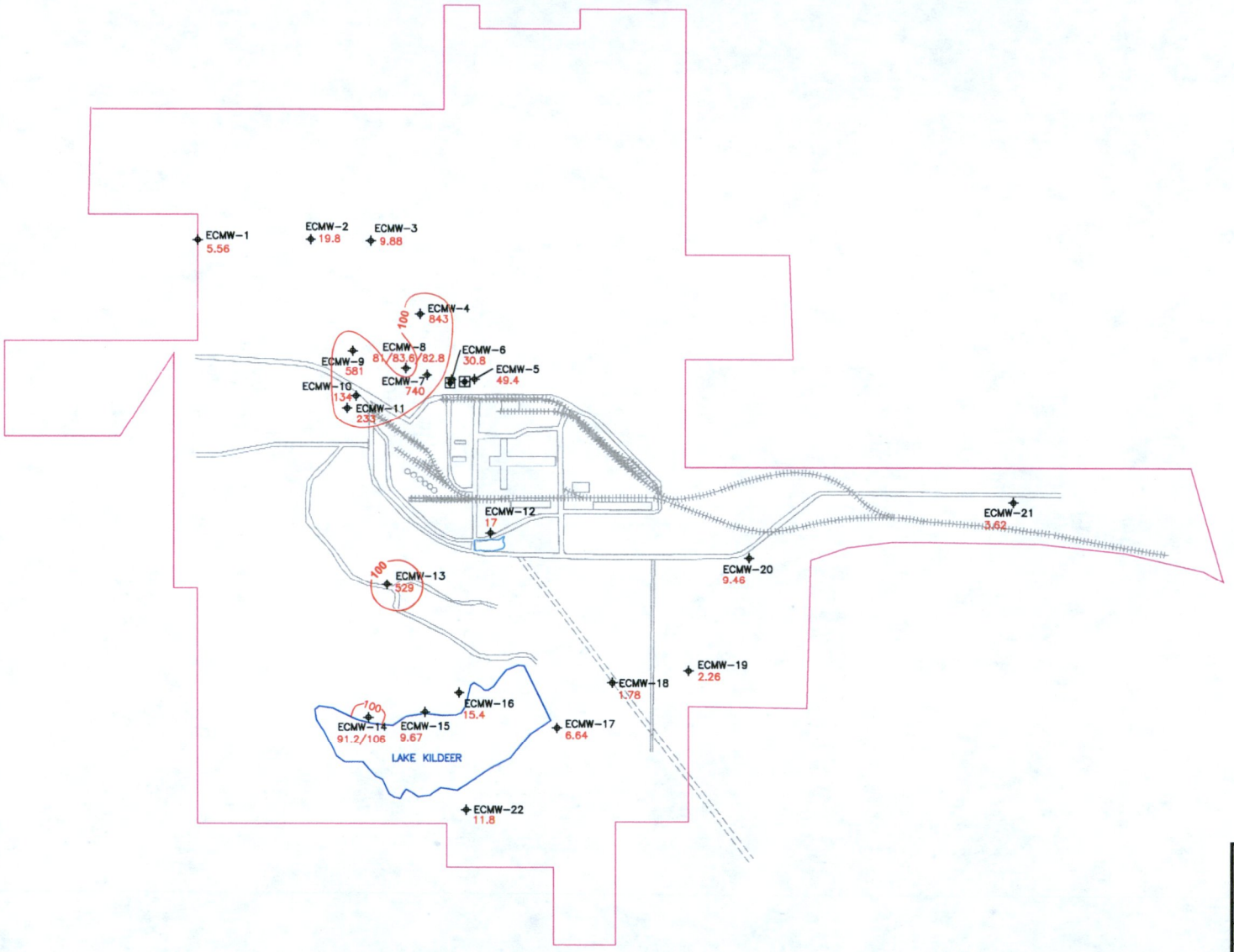
MAY 2016 NITRATE CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

DATE: 03/20/2017	APPROVED: BY: LMM DATE: 03/16/2017	DRAWN BY: LMM
SCALE: as shown		CAD NO. 02EC0100

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 6


ECMW-1
0.951
ECMW-2
<0.25
ECMW-3
<0.25
ECMW-4
<0.25
1
10
100
1000
ECMW-9
29.1
ECMW-8
1850
ECMW-7
2360
ECMW-6
5780
ECMW-5
47.2/42.1
ECMW-10
48.1/42.8
ECMW-11
18.3
ECMW-12
<0.25
ECMW-13
<0.25
ECMW-20
2.31
ECMW-21
<0.25
ECMW-18
<0.25
ECMW-19
<0.25
ECMW-16
8.86
ECMW-14
4.4
ECMW-15
4.07
ECMW-17
12.2
LAKE KILDEER
ECMW-22
0.53
LEGEND
PROPERTY BOUNDARY
ECMW-9 29.1 MONITOR WELL WITH NITRATE CONCENTRATION (mg/L)
RECOVERY WELLS
ISOCONCENTRATION CONTOURS (mg/L)
Notes:
Wells sampled November 9–10, 2016
N
0
600
1200
SCALE IN FEET
EL DORADO
NOVEMBER 2016 NITRATE CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS
DATE: 03/20/2017
APPROVED:
BY: LMM
DATE: 03/18/2017
DRAWN BY: LMM
SCALE: as shown
CAD NO. 02EC0100
ENVIRONMENTAL MANAGEMENT SERVICES, INC.
FIGURE 7



LEGEND

- PROPERTY BOUNDARY
- ECMW-9 581 MONITOR WELL WITH SULFATE CONCENTRATION (mg/L)
- RECOVERY WELLS

Notes:
Wells sampled May 23–25, 2016
ECMW-14 sampled on July 6, 2016
ECMW-8 was resampled to verify result.

N

0 600 1200
SCALE IN FEET

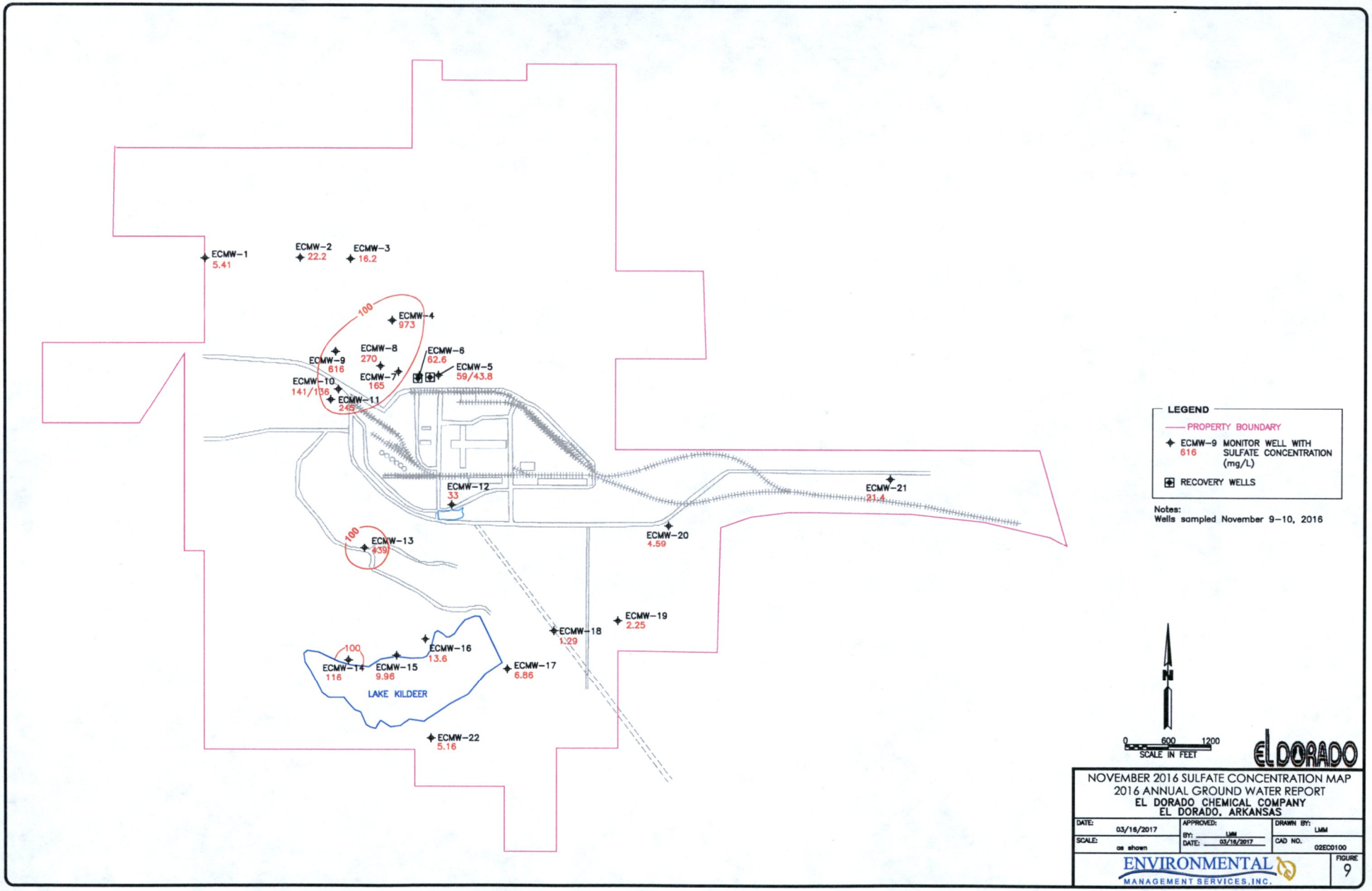
EL DORADO

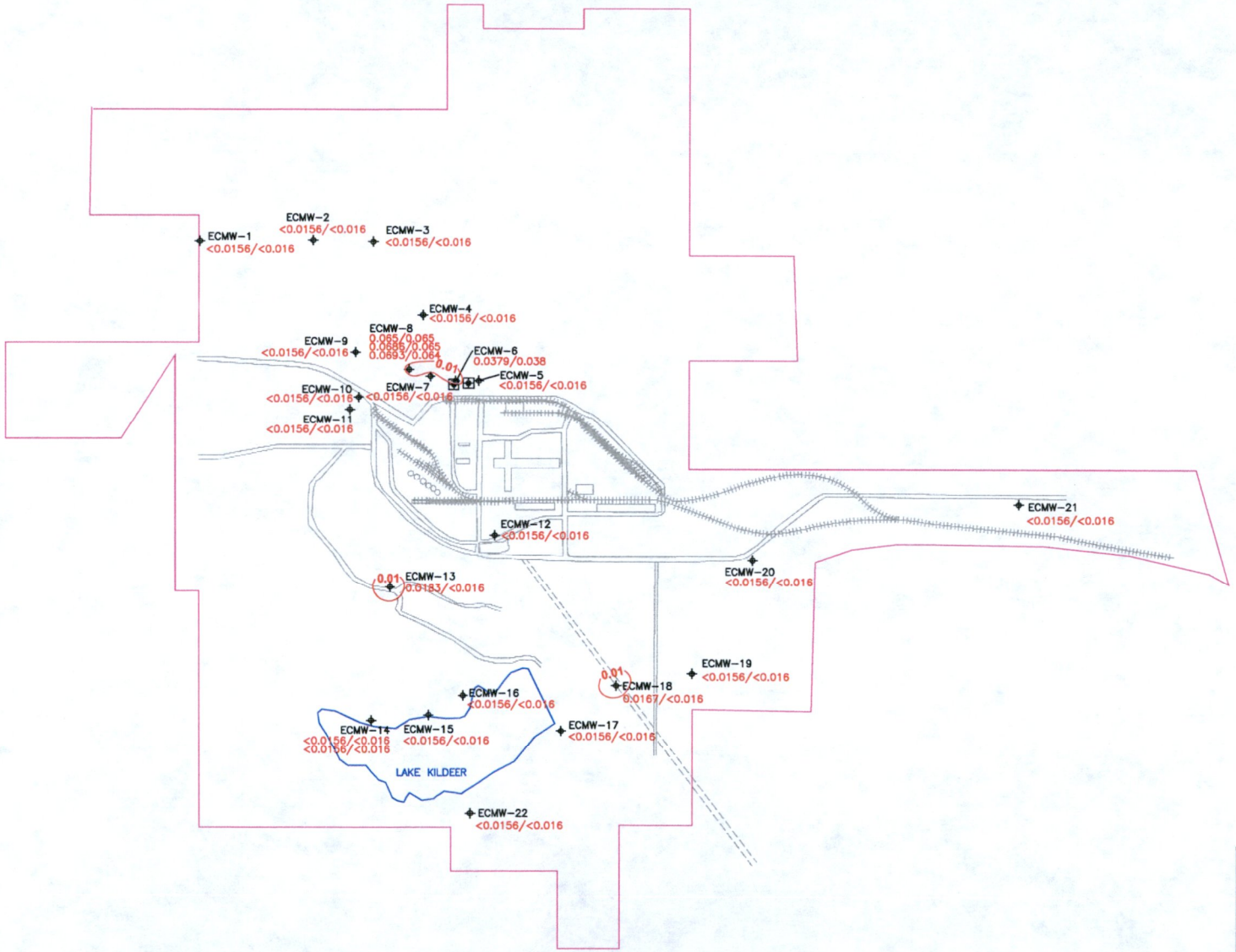
MAY 2016 SULFATE CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

DATE: 03/09/2017	APPROVED: BY: LMM DATE: 03/16/2017	DRAWN BY: LMM
SCALE: as shown		CAD NO. 02EC0100

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 8


ECMW-1
5.41
ECMW-2
22.2
ECMW-3
16.2
100
ECMW-4
973
ECMW-8
270
ECMW-6
62.6
ECMW-9
616
ECMW-5
59/43.8
ECMW-7
165
ECMW-10
141/136
ECMW-11
245
ECMW-12
33
ECMW-21
21.4
ECMW-20
4.59
100
ECMW-13
439
ECMW-19
2.25
ECMW-18
1.29
100
ECMW-16
13.6
ECMW-14
116
ECMW-15
9.96
ECMW-17
6.86
LAKE KILDEER
ECMW-22
5.16
LEGEND
PROPERTY BOUNDARY
ECMW-9 616 MONITOR WELL WITH SULFATE CONCENTRATION (mg/L)
RECOVERY WELLS
Notes:
Wells sampled November 9-10, 2016
N
0
600
1200
SCALE IN FEET
EL DORADO
NOVEMBER 2016 SULFATE CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS
DATE: 03/16/2017
APPROVED:
BY: LMM
DATE: 03/16/2017
DRAWN BY: LMM
SCALE: as shown
CAD NO. 02EC0100
ENVIRONMENTAL MANAGEMENT SERVICES, INC.
FIGURE 9



LEGEND

- PROPERTY BOUNDARY
- ECMW-5 <0.0156/<0.016 — MONITOR WELL WITH LEAD CONCENTRATION TOTAL/DISSOLVED (mg/L)
- RECOVERY WELLS
- ISOCONCENTRATION CONTOURS (mg/L)

Notes:
Wells sampled May 23–25, 2016
ECMW-14 sampled on July 6, 2016
ECMW-8 was resampled to verify result.

N

0 600 1200
SCALE IN FEET

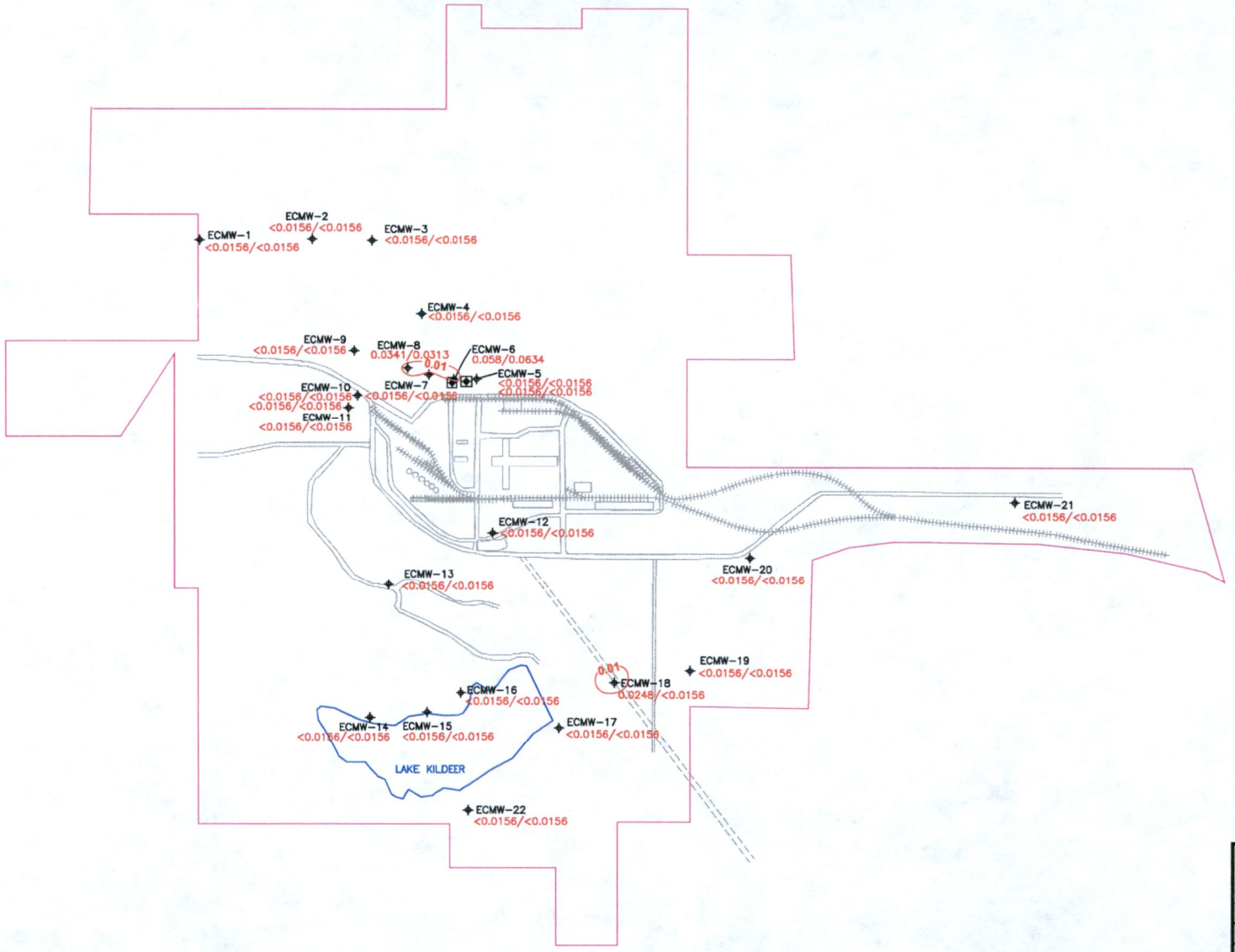
EL DORADO

MAY 2016 LEAD CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

DATE: 03/16/2017	APPROVED: BY: LMM DATE: 03/16/2017	DRAWN BY: LMM
SCALE: as shown		CAD NO. 02EC0100

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 10



LEGEND

- PROPERTY BOUNDARY
- ECMW-5 <0.0156/<0.0156 — MONITOR WELL WITH LEAD CONCENTRATION TOTAL/DISSOLVED (mg/L)
- RECOVERY WELLS
- ISOCONCENTRATION CONTOURS (mg/L)

Notes:
Wells sampled November 9–10, 2016

N

0 600 1200
SCALE IN FEET

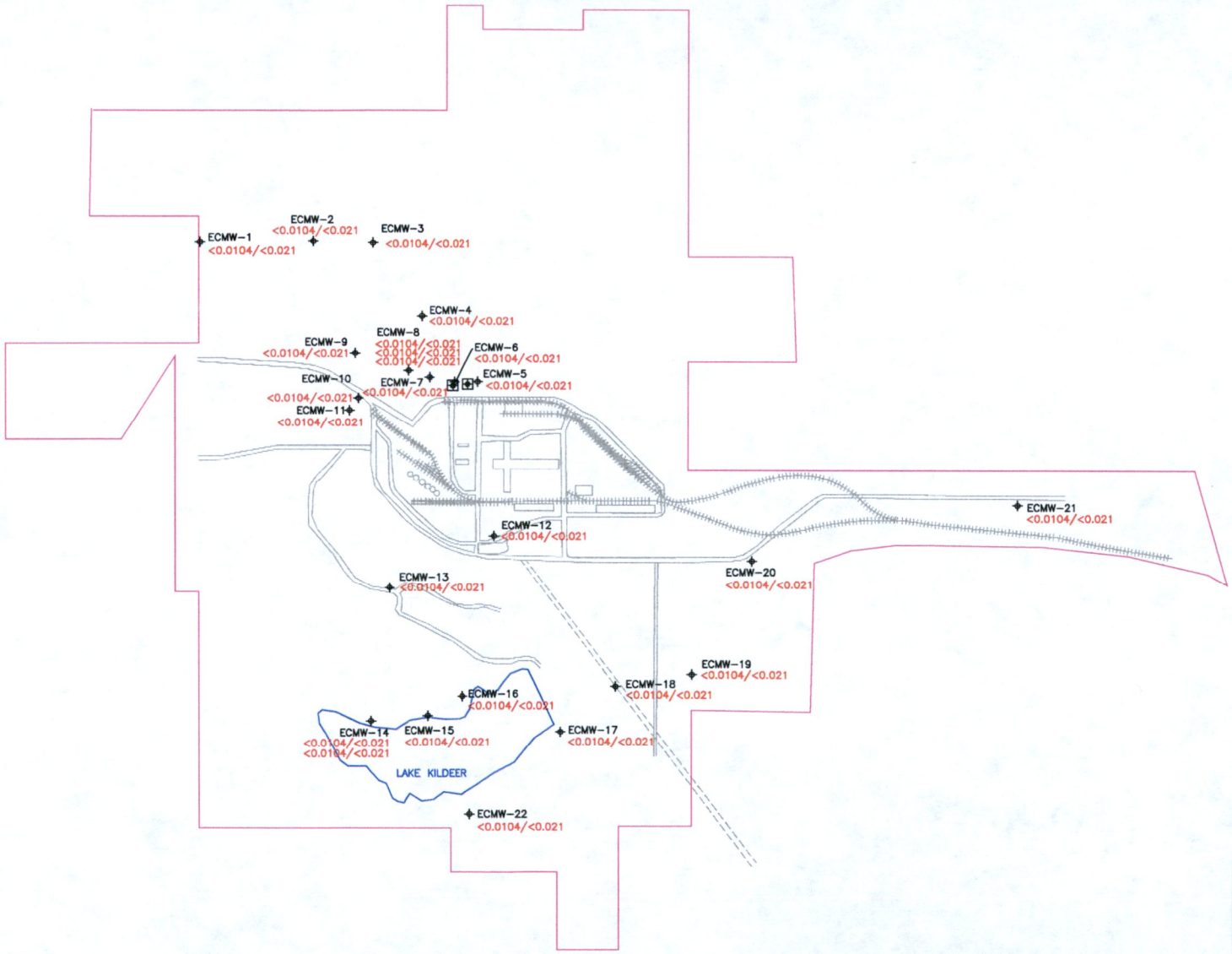
EL DORADO

NOVEMBER 2016 LEAD CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

DATE: 03/16/2017	APPROVED: BY: LMM DATE: 03/16/2017	DRAWN BY: LMM
SCALE: as shown		CAD NO. 02EC0100

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 11



LEGEND

- PROPERTY BOUNDARY
- ECMW-6 <0.0104/<0.021 — MONITOR WELL WITH CHROMIUM CONCENTRATION TOTAL/DISSOLVED (mg/L)
- RECOVERY WELLS
- ISOCONCENTRATION CONTOURS (mg/L)

Notes:
Wells sampled May 23–25, 2016
ECMW-14 sampled on July 6, 2016

N

0 600 1200
SCALE IN FEET

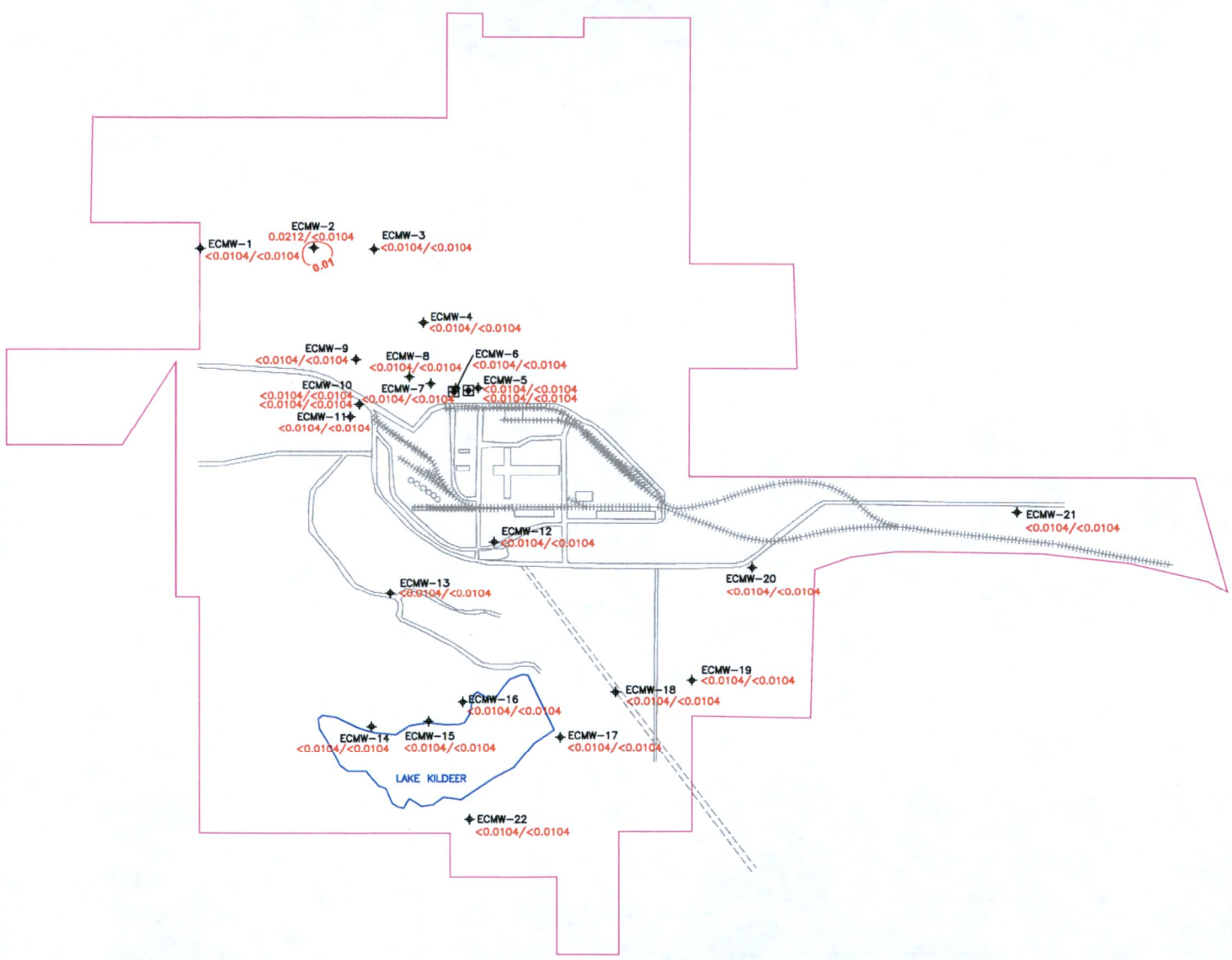
EL DORADO

MAY 2016 CHROMIUM CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

DATE: 03/16/2017	APPROVED: BY: LMM DATE: 03/16/2017	DRAWN BY: LMM
SCALE: as shown		CAD NO. 02EC0100

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 12



LEGEND

- PROPERTY BOUNDARY
- ECMW-6 <0.0104/<0.0104 — MONITOR WELL WITH CHROMIUM CONCENTRATION TOTAL/DISSOLVED (mg/L)
- RECOVERY WELLS
- ISOCONCENTRATION CONTOURS (mg/L)

Notes:
Wells sampled November 9–10, 2016

N

0 600 1200
SCALE IN FEET

EL DORADO

NOVEMBER 2016 CHROMIUM CONCENTRATION MAP
2016 ANNUAL GROUND WATER REPORT
EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

DATE: 03/16/2017	APPROVED: BY: LMM DATE: 03/16/2017	DRAWN BY: LMM
SCALE: as shown		CAD NO. 02ECC100

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 13

APPENDIX A

SAMPLING FORMS AND LABORATORY ANALYTICAL REPORTS

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 1D
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16 13:16	Method of Evacuation	MINI MONSOON
Top of casing to water level	13.19 ft	Gallons per well volume	6.24 gal
Top of casing to bottom	22.79 ft	Total gallons evacuated	7 gal
Water level after evacuation	ft	Elevation. Top of casing	ft
Sampling: Date/Time	5/25/16 0715	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	24.3	4.67	0.80 mS		
1	22.8	3.99	0.81 mS		
2	DRY @ 7 GAL				
3					

GENERAL INFORMATION

Weather conditions at time of sampling: Bright, sunny, light BREEZE, DRY
Sample characteristics: Brown, cloudy, cleared during purging
Containers and preservatives: 2x _ml (H2SO4 & HNO3) 1x_ml H/P, 1x_ml H/P
Comments and observations:
Recommendations:

Certification:

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 11

Collector/Operato CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16	Method of Evacuation	MINI MONSOON
Top of casing to water level	10.86 ft	Gallons per well volume	12.51 gal
Top of casing to bottom	20.11 ft	Total gallons evacuated	37.5 gal
Water level after evacuation	ft	Elevation Top of casing	ft
Sampling: Date/Time	5/25/16 0720	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	22.4°C	4.08	0.74mS		
1	21.0	4.02	0.77mS		
2	21.6	4.08	0.92mS		
3	21.7	4.04	0.90mS		

GENERAL INFORMATION

Weather conditions at time of sampling: WARM, SUNNY; LT BREEZE, DRY

Sample characteristics: CLEAR

Containers and preservatives: 2x ml (H2SO4 + HNO3) 1x ml 1/4 P 1x ml 1/4 P

Comments and observations:

Recommendations:

Certification:

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

9
49

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

1.5 gal/well
43

FIELD LOG

Site EDCC Facility EDCC Well No. 28
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16 14:31	Method of Evacuation	MINI MONSOON
Top of casing to water level	4.91 ft	Gallons per well volume	gal
Top of casing to bottom	ft	Total gallons evacuated	gal
Water level after evacuation	ft	Elevation, Top of casing	ft
Sampling: Date/Time	5/25/16 0800	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	22.2	5.54	0.17 mS		
1	23.4	5.52	0.16 mS		
2	21.1	5.55	0.15 mS		
3	20.6	5.50	0.15 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: SUNNY, WARM, BREEZY, DRY
Sample characteristics: CLEAR BUT SLIGHTLY BROWN; CLEARED AFTER PURGE
Containers and preservatives: (2x_ml H_2SO_4 + HNO_3) 2x_ml 4/D
Comments and observations:
Recommendations: WEEDEAT AROUND WELL
Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

8/9

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 2F17
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/11 1511	Method of Evacuation	MINI MONSOON
Top of casing to water level	27.00 ft	Gallons per well volume	5.21 gal
Top of casing to bottom	35.01 ft	Total gallons evacuated	15.625 gal
Water level after evacuation	ft	Elevation. Top of casing	ft
Sampling: Date/Time	5/25/11 0810	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	22.5°C	4.75	0.22mS		
1	20.5°C	4.33	0.21 mS		
2	20.0°C	4.06	0.19 mS		
3	19.8°C	3.86	0.23 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: WARM, DRY, SLT BREEZE, SUNNY
Sample characteristics: CLEAR

Containers and preservatives: 2X_ml H2SO4 HNO3 (2X_ml 4/D

Comments and observations:

Recommendations: INSTALL PROPER BOLLARDS

Certification: CMS

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 15
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16 15:38	Method of Evacuation	MINI MORRISON
Top of casing to water level	5.09 ft	Gallons per well volume	7.88 gal
Top of casing to bottom	17.22 ft	Total gallons evacuated	gal
Water level after evacuation	ft	Elevation. Top of casing	ft
Sampling: Date/Time	5/25/16 0822	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	21.3	4.81	0.09 mS		
1	20.5	4.60	0.08 mS		
2	21.7	4.48	0.08 mS		
3	20.0	4.29	0.08 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: WARM, SUNNY, SL BREEZE, DRY
Sample characteristics: CLEAR
Containers and preservatives (2x-ml H_2SO_4 & HNO_3) (2x-ml 4/p)
Comments and observations:
Recommendations: WEED EAT AROUND WELL.

Certification:

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 16
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16 15:57	Method of Evacuation	MINI MONSOON
Top of casing to water level	4.10 ft	Gallons per well volume	10 GAL gal
Top of casing to bottom	19.55 ft	Total gallons evacuated	gal
Water level after evacuation	ft	Elevation, Top of casing	ft
Sampling: Date/Time	5/25/16 0840	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	20.9	4.73	0.17mS		
1	20.6	4.52	0.17mS		
2	20.5	4.42	0.15mS		
3	20.7	4.28	0.16mS		

GENERAL INFORMATION

Weather conditions at time of sampling: WARM, SUNNY, DRY, SL BREEZE
Sample characteristics: CLEAR

Containers and preservatives: (2x_ml H_2SO_4 & HNO_3) 2x_ml H/P

Comments and observations:

Recommendations: WEED EAT AROUND WELL

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. ECMW-13
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16	Method of Evacuation	MINI MONSOON
Top of casing to water level	7.41 ft	Gallons per well volume	8 gal
Top of casing to bottom	19.97 ft	Total gallons evacuated	25gal gal
Water level after evacuation	ft	Elevation. Top of casing	ft
Sampling: Date/Time	5/25/16 0930	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
WU/C	21.0	4.86	.09mS		
1	19.4	4.73	.08mS		
2	18.7	4.42	1.12mS		
3	19.8	4.39	1.26mS		

GENERAL INFORMATION

Weather conditions at time of sampling: WARM, SUNNY, DRY, SL BREEZY
Sample characteristics:

Containers and preservatives:

Comments and observations: Start purge 0910

Recommendations:

Certification: Chris Soon

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC
Facility EDCC
Well No. ECMW18
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/25/16 0940		Method of Evacuation		
Top of casing to water level	7.01	ft	Gallons per well volume	6	gal
Top of casing to bottom	17.29	ft	Total gallons evacuated	20	gal
Water level after evacuation		ft	Elevation. Top of casing		ft
Sampling: Date/Time	5/25/16 1000		Elevation of well water		ft
Top of casing to water level		ft	Method of Sampling		

SAMPLE DATA

	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
B	19.6	5.42	.11mS		
1	19.1	5.47	.07mS		
2	18.1	5.33	.07mS		
3					
2					

GENERAL INFORMATION

Weather conditions at time of sampling: Partly Cloudy, Humid
Sample characteristics: Water very turbid water did not clear w/ purging (muddy)
Containers and preservatives: 2x_ml H2SO4 + HNO3) 2x_ml u/p
Comments and observations: weedeat around well location
Recommendations:

Certification: Jean Thor

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

Site EDCC
Collector/Operator CSS/ST

FIELD LOG
Facility EDCC

Well No. 19

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/25/06 1205	Method of Evacuation		
Top of casing to water level	2.49 ft	Gallons per well volume	9	gal
Top of casing to bottom	59.10 ft	Total gallons evacuated	28	gal
Water level after evacuation	ft	Elevation, Top of casing		ft
Sampling: Date/Time	5/25/06 1030	Elevation of well water		ft
Top of casing to water level	ft	Method of Sampling	Bailer	

SAMPLE DATA

	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
B	19.5°	5.44	.08mS		
1	18.6°	5.44	.08mS		
2	18.2°	5.09	.08mS		
3	18.1°	5.06	.08mS		

GENERAL INFORMATION

Weather conditions at time of sampling: Cloudy Humid
Sample characteristics: Clear but Cloudy

Containers and preservatives: (2x-ml H_2SO_4 + HNO_3) (2x-ml 4/p)

Comments and observations:

Recommendations: Clear road to well

Certification: Sean Thomas

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 2D

Collector/Operator CSS/SF

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/25/16 1045	Method of Evacuation	
Top of casing to water level	27.02 ft	Gallons per well volume	4 gal
Top of casing to bottom	52.30 ft	Total gallons evacuated	13 gal
Water level after evacuation	ft	Elevation, Top of casing	ft
Sampling: Date/Time	5/25/16 1100	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	

SAMPLE DATA

	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
B	21.5	5.48	.09mS		
1	19.3	5.41	.03mS		
2	19.7	5.35	.06mS		
3	19.6	5.37	.07mS		

GENERAL INFORMATION

Weather conditions at time of sampling: Brownish, Cloudy

Sample characteristics:

Containers and preservatives: (2x_ml H2SO4 HNO3) 2x ml 4/5

Comments and observations:

Recommendations:

Certification: Sean Thomas

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 31
Collector/Operator CSS/SF

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/25/10 1110		Method of Evacuation		
Top of casing to water level	15.26	ft	Gallons per well volume	.60	gal
Top of casing to bottom	30.12	ft	Total gallons evacuated	2	gal
Water level after evacuation		ft	Elevation. Top of casing		ft
Sampling: Date/Time	5/25/10 1120		Elevation of well water		ft
Top of casing to water level		ft	Method of Sampling	peristaltic	

SAMPLE DATA

	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
B	20.7	5.13	.06mS		
1	20.8	4.99	.05mS		
2	19.9	4.89	.06mS		
3	20.3	4.88	.05mS		

GENERAL INFORMATION

Weather conditions at time of sampling: Partly Cloudy, Humid
Sample characteristics: Clear w/Some Turbidity

Containers and preservatives:

Comments and observations:

Recommendations: Traffic Guards needed

Certification: S. Finn

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EOCC Facility EOCC Well No. 12

Collector/Operator CSS/SF

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/25/16 1200		Method of Evacuation		
Top of casing to water level	6.14	ft	Gallons per well volume	9	gal
Top of casing to bottom	20.15	ft	Total gallons evacuated	27.5	gal
Water level after evacuation		ft	Elevation, Top of casing		ft
Sampling: Date/Time	5/25/16		Elevation of well water	-	ft
Top of casing to water level		ft	Method of Sampling	Bailer	

SAMPLE DATA

Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
B 22.8°	5.47	.68 mS		
1 21.8°	5.49	.61 mS		
2 21.2°	5.62	.52 mS		
3 21.0°	5.58	.58 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: Sunny, Breezy, Humid

Sample characteristics: Muddy Brown, Cleared with purging

Containers and preservatives:

Comments and observations:

Recommendations:

Certification: S. Thomas

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 5

Collector/Operator C SELLERS, S THOMAS

BEGIN:

MONITORING WELL INFORMATION MW: MONSOON

Evacuation: Date/Time	5/23/16 13:22	Method of Evacuation	~~BAILER~~ PUMP
Top of casing to water level	4.66 ft	Gallons per well volume	8.55 gal
Top of casing to bottom	17.61 ft	Total gallons evacuated	25.7 gal
Water level after evacuation	ft	Elevation, Top of casing	ft
Sampling: Date/Time	5/24/16 0745	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	22.03 °C	5.98	585 ~~µS~~		
1	20.9 °C	5.72	551 ~~µ~~S		
2	19.2°C	5.45	539 ~~µ~~S		
3	19.5°C	5.30	552 ~~µ~~S		

GENERAL INFORMATION

Weather conditions at time of sampling: WARM, ~75°, CLOUDY, POSSIBLE RAIN SOON

Sample characteristics: CLEAR, NO VISUAL TURBIDITY

Containers and preservatives: 3x mL (H_2SO_4 & HNO_3) 1x — mL U/P, 1x mL U/P

Comments and observations: ORGANICS/SOLIDS @ BOTTOM OF WELL

Recommendations: ~~WELL DRY AROUND WELL~~

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No: 4
Collector/Operator C SELLERS/ S THOMAS

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/23/16 14:27	Method of Evacuation	MINI MONSOON
Top of casing to water level	9.12 ft	Gallons per well volume	8.53 gal
Top of casing to bottom	22.25 ft	Total gallons evacuated	18 gal
Water level after evacuation	ft	Elevation. Top of casing	ft
Sampling: Date/Time	5/24/16 0801	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	20.9	4.59	7.31 mS		
1	30.2	4.04	6.68 mS		
2	29.6	3.83	6.71 mS		
3					

GENERAL INFORMATION

Weather conditions at time of sampling: WARM, PARTLY CLOUDY, SLIGHT BREEZE
Sample characteristics: CLEAR

Containers and preservatives:

Comments and observations: PURGE 2 WV (~~0.5 GAL INTO 2ND WV~~) CSS

Recommendations: WEED EAT AROUND WELL

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 6

Collector/Operator C SELLERS/S THOMAS

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/23/16 13:54	Method of Evacuation	MINI MONSOON PUMP
Top of casing to water level	4.46 ft	Gallons per well volume	11.52 gal
Top of casing to bottom	22.19 ft	Total gallons evacuated	34.56 gal
Water level after evacuation	ft	Elevation: Top of casing	ft
Sampling: Date/Time	5/24/16 07:55	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	21	4.38	42.31 mS		
1	20.7	4.09	39.26 mS		
2	20.3	3.93	39.51 mS		
3	20.0	3.83	39.93 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: WARM, PARTLY CLOUDY, SLIGHT BREEZE

Sample characteristics:

Containers and preservatives:

Comments and observations: CLEAR

Recommendations: WEED EAT AROUND WELL

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 7

Collector/Operator C SELLERS / S THOMAS

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/23/16 14:49		Method of Evacuation	MINI MONSOON	
Top of casing to water level	7.16	ft	Gallons per well volume	11.54	gal
Top of casing to bottom	24.92	ft	Total gallons evacuated	34.5	gal
Water level after evacuation		ft	Elevation. Top of casing		ft
Sampling: Date/Time	5/24/16 0812		Elevation of well water		ft
Top of casing to water level		ft	Method of Sampling	BAILER	

SAMPLE DATA

WU	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	21.5	5.6	52.8 mS		
1	20.6	5.49	29.01 mS		
2	20.5	5.39	29.71 mS		
3	20.1	5.30	30.14 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: Breezy, warm, sunny, dry

Sample characteristics: Clear

Containers and preservatives:

Comments and observations:

Recommendations:

Certification: [signature]

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 8
Collector/Operator C SELLERS / S THOMAS

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16 08:21		Method of Evacuation	MINI MONSOON	
Top of casing to water level	7.00	ft	Gallons per well volume	14.94	gal
Top of casing to bottom	29.99	ft	Total gallons evacuated	45	gal
Water level after evacuation		ft	Elevation, Top of casing		ft
Sampling: Date/Time	5/24/16 0900		Elevation of well water		ft
Top of casing to water level		ft	Method of Sampling	BAILER	

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	21.5	3.70	31.00mS		
1	20.4	3.62	32.97mS		
2	21.2	3.63	33.28mS		
3	21.1	3.61	33.81mS		

GENERAL INFORMATION

Weather conditions at time of sampling: BREEZY, WARM, SUNNY, DRY
Sample characteristics: CLEAR

Containers and preservatives:

Comments and observations:

Recommendations: CUT AROUND WELL

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC
Facility EDCC
Well No. 9
Collector/Operator C SELLERS, S THOMAS

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/11 0941	Method of Evacuation	MINI MONSOON
Top of casing to water level	9.66 ft	Gallons per well volume	13.38 gal
Top of casing to bottom	30.25 ft	Total gallons evacuated	40.5 gal
Water level after evacuation	ft	Elevation. Top of casing	ft
Sampling: Date/Time	5/24/11 0956	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	21.3	5.27	24,558 µS		
1	21.9	5.30	2.365 mS		
2	22.0	5.28	2.344 mS		
3	22.5	5.32	2.248 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: BREEZY, WARM, SUNNY, DRY
Sample characteristics:

Containers and preservatives:

Comments and observations:

Recommendations: CUT AROUND WELL

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

D1 Smart 864-0333
D1 Harper 863-5136

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC Facility EDCC Well No. 3
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16 1008	Method of Evacuation	MINI MONSOON
Top of casing to water level	9.27 ft	Gallons per well volume	11.69 gal
Top of casing to bottom	27.25 ft	Total gallons evacuated	23.2 gal
Water level after evacuation	ft	Elevation, Top of casing	ft
Sampling: Date/Time		Elevation of well water	ft
Top of casing to water level	5/24/16 11:05 ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	22.6	6.10	0.21 mS		
1	24.3	6.26	0.22 mS		
2	WELL DRY@23.2 gal				
3					

GENERAL INFORMATION

Weather conditions at time of sampling: BREEZY, WARM, SUNNY, DRY
Sample characteristics: ~~CLEAR~~ CLOUDY BROWN

Containers and preservatives:

Comments and observations: ~~CLOUDY BROWN~~ HAD TO "MINE" WELL TOGET 1 WV 1

Recommendations: CUT AROUND WELL

Certification:

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC
Facility EDCC
Well No. 1
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	5/24/16 11:57	Method of Evacuation	
Top of casing to water level	11.78 ft	Gallons per well volume	10.89 gal
Top of casing to bottom	22.39 ft	Total gallons evacuated	21 gal
Water level after evacuation	ft	Elevation. Top of casing	ft
Sampling: Date/Time	5/24/16 12:32	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
C	21.5	5.66	0.05 mS		
1	18.6	4.75	0.09 mS		
2	18.1	4.59	0.05 mS		
3	17.5	4.46	0.05 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: CLOUDY, WARM, DRY & BREEZY
Sample characteristics: CLOUDY BROWN, CLEARED UP AFTER PURGING, SAMPLE CLEAR
Containers and preservatives:

Comments and observations:

Recommendations:

Certification:

Well Casing Volumes [gal/ft]

1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

GROUND WATER SAMPLING DATA FORM
ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIELD LOG

Site EDCC
Facility EDCC
Well No. 2
Collector/Operator CSS/ST

MONITORING WELL INFORMATION

Evacuation: Date/Time	11:18 3/24/16	Method of Evacuation	MINI MORRISON
Top of casing to water level	0 ft	Gallons per well volume	13.25 gal
Top of casing to bottom	20.40 ft	Total gallons evacuated	25 gal
Water level after evacuation	ft	Elevation, Top of casing	ft
Sampling: Date/Time	3/24/16 11:46	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	BAILER

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]	Dissolved Oxygen[mg/l]	Turbidity [NTU]
0	20.1	5.53	0.27 mS		
1	19.3	5.22	0.28 mS		
2	DRY @ 25 gals		0.34 mS		
3	20.0		0.34 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: SUNNY, WARM, BREEZY, DRY
Sample characteristics: CLOUDY GREYISH BROWN

Containers and preservatives:

Comments and observations:

Recommendations: CUT AROUND WELL

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Comp. Facility El Dorado AR Well No. ECMW-38

Collector/Operator SEAN THOMAS (Duplicate of ECMW-14)

MONITORING WELL INFORMATION

Evacuation: Date/Time	7/6/16 1245		Method of Evacuation	pump	
Top of casing to water level	6.56	ft	Gallons per well volume	7	gal
Top of casing to bottom	18.2	ft	Total gallons evacuated	23	gal
Water level after evacuation		ft	Elevation, Top of casing		ft
Sampling: Date/Time	7/6/16 1310		Elevation of well water		ft
Top of casing to water level		ft	Method of Sampling		MINI MONSOON

SAMPLE DATA

Temperature[°C]	pH	Conductivity[µS]		
25.6	5.95	302.4uS		
24.5	5.16	241.6uS		

GENERAL INFORMATION

Weather conditions at time of sampling: Sunny, Humid Clear skies, Hot

Sample characteristics:

Containers and preservatives:

Comments and observations:

Recommendations:

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Comp. Facility El Dorado AR Well No. ECMW-14
Collector/Operator SEAN THOMAS

MONITORING WELL INFORMATION

Evacuation: Date/Time	7/6/16 1210	Method of Evacuation	pump
Top of casing to water level	6.56 ft	Gallons per well volume	7 gal
Top of casing to bottom	18.2 ft	Total gallons evacuated	23 gal
Water level after evacuation	ft	Elevation, Top of casing	ft
Sampling: Date/Time	7/6/16 1240	Elevation of well water	ft
Top of casing to water level	ft	Method of Sampling	MINI MONSOON

SAMPLE DATA

Temperature[°C]	pH	Conductivity[µS]		
25.6	5.95	302.4uS		
24.5	5.16	241.6uS		
24.1	4.93	546uS		

GENERAL INFORMATION

Weather conditions at time of sampling: Sunny, Humid, Clear Skies, Hot
Sample characteristics:

Containers and preservatives:

Comments and observations:

Recommendations:

Certification:

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site EL DORADO CHEMICAL Facility ARKANSAS Well No. ECMW-8

Collector/Operator SEAN THOMAS

MONITORING WELL INFORMATION

Evacuation: Date/Time	8/4/11@1400		Method of Evacuation	pump	
Top of casing to water level	7.42	ft	Gallons per well volume	1 gal	gal
Top of casing to bottom	29.9	ft	Total gallons evacuated	4 gal	gal
Water level after evacuation		ft	Elevation. Top of casing		ft
Sampling: Date/Time	8/4/11@ 1500		Elevation of well water		ft
Top of casing to water level		ft	Method of Sampling	Mini-Monsoon	

SAMPLE DATA

Temperature[°C]	pH	Conductivity[uS]		
24.8°	4.02	27.34mS		
22.9°	3.79	31.98mS		
21.8°	3.74	31.07mS		

GENERAL INFORMATION

Weather conditions at time of sampling: Sunny, Humid, Slight Breeze from E

Sample characteristics:

Containers and preservatives: 1xCr, Pb; 1x dCr, d Pb; 1x Ammonia, 1x Nitrate Sulfate

Comments and observations: Grass is High Needs Mowing

Recommendations: Cut Grass

Certification: Sean Thomas

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site EL DORADO CHEMICAL Facility ARKANSAS Well No. ECMW-39
Collector/Operator SEAN THOMAS (Duplicate of ECMW-8)

MONITORING WELL INFORMATION

Evacuation: Date/Time	8/4/16 1510		Method of Evacuation	Pump	
Top of casing to water level	7.42	ft	Gallons per well volume	14 gal	gal
Top of casing to bottom	29.9	ft	Total gallons evacuated	44 gal	gal
Water level after evacuation		ft	Elevation, Top of casing		ft
Sampling: Date/Time	8/4/16 1600		Elevation of well water		ft
Top of casing to water level		ft	Method of Sampling	Pump	

SAMPLE DATA

Temperature[°C]	pH	Conductivity[uS]		
24.8°	4.03	27.34 mS		
22.9°	3.79	31.98 mS		
21.8°	3.74	31.07 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: Sunny, Humid, Slight Breeze from E
Sample characteristics: Clear
Containers and preservatives: 1x Cr, Pb; 1x d Cr, d Pb; 1x Ammonia; 1x Nit, Sul
Comments and observations: Grass is High Needs Mowing
Recommendations: Cut Grass

Certification: Sean Thomas

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW- 1

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date 11/10/16 | Method of Evacuation Mini Monsoon Pump

Evacuation Time 8:35 AM

Top of casing to water level ft 15.6 | Gallons per well volume gal 2.52

Top of casing to bottom ft 22.4 | Total gallons evacuated gal 7.5 ~ 3WV

Sampling Date/Time 11/10/16 10:05 | Method of Sampling Bailer (dcd)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]		
0	17.2	8.11	45.7		
1	18.2	7.45	43.8		
2	18.6	7.11	43.6		
3	18.4	6.84	43.2		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, Sunny, Cool

Sample characteristics: Clear, no noticable SS

Containers and preservatives: 1x10oz Plastic w/HNO_3, 1x10oz Plastic w/ H_2SO_4, 1x10oz Plastic w/no pres, 1x5oz plastic w/no pres

Comments and observations:

Certification: [signature] QC/QA

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37 (circled)	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-2

Sampling Personnel Tyler Collis, Benny Westall

MONITORING WELL INFORMATION

Evacuation Date	11/10/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	9:05 AM		
Top of casing to water level	ft 2.1	Gallons per well volume	gal 6.73
Top of casing to bottom	ft 16.3	Total gallons evacuated	gal 3 WV
Sampling Date/Time	11/10/16 0955	Method of Sampling	Bailer (Acid)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	15.6	7.70	251.4		
1	18.3	7.15	263.6		
2	18.8	7.17	153.4		
3	19.0	6.55	280.7		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, Sunny, Cool

Sample characteristics: Clear, no noticable SS

Containers and preservatives: 1x100z Plastic w/HNO3, 1x100z Plastic w/H2SO4, 1x100z Plastic w/no prts, 1x500z Plastic w/no prts

Comments and observations:

Certification: Christian Son QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-3

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/10/16	Method of Evacuation	Mini Monsoon Pump
Evacuation Time	7:35 AM		
Top of casing to water level ft	12.5	Gallons per well volume gal	5.5
Top of casing to bottom ft	27.4	Total gallons evacuated gal	16.5 - 3 WV
Sampling Date/Time	11/10/16 0945	Method of Sampling	Bailer (ded)

SAMPLE DATA

	Temperature[°C]	pH	Conductivity[uS]		
WV 0	16.1	7.10	221.5		
1	18.5	6.86	240.5		
2	17.9	6.83	260.7		
3	18.1	6.45	257.2		

GENERAL INFORMATION

Weather conditions at time of sampling: Very cool early morning

Sample characteristics: Clear, no noticable SS

Containers and preservatives: 1x10oz Plastic w/HNO3, 1x10oz Plastic w/H2SO4, 1x10oz plastic w/no prs, 1x10(SS) 5oz plastic w/no prs

Comments and observations:

Certification: Christopher Sim QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-4

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	4:45 PM		
Top of casing to water level ft	11.10	Gallons per well volume gal	3.95
Top of casing to bottom ft	23.3	Total gallons evacuated gal	1L ~ 3WV
Sampling Date/Time	11/10/16 0940	Method of Sampling	Bailer (old)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[mS]
0	20.7	6.50	5.48 mS
1	21.5	5.45	6.37 mS
2	21.5	4.02	6.82 mS
3	20.9	3.75	7.65 mS

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, sunny, cool

Sample characteristics: Clear, no visibles

Containers and preservatives: 1x100z Plastic w/HNO3, 1x100z Plastic w/ H_2SO_4, 1x100z Plastic w/ no pres, 1x500z Plastic w/ no pres

Comments and observations:

Certification: QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-5

Sampling Personnel Tyler Lollis, Beany Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	8:20 PM		
Top of casing to water level ft	4.9	Gallons per well volume gal	4.83
Top of casing to bottom ft	17.95	Total gallons evacuated gal	14.5 ~ 3 WV
Sampling Date/Time	11/10/16 0855	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]		
0	22.1	7.47	427.3		
1	22.4	6.47	598		
2	22.1	5.88	599		
3	21.9	5.60	643		

GENERAL INFORMATION

Weather conditions at time of sampling: clear, sunny, cool

Sample characteristics: clear, no visible SS

Containers and preservatives: 1x1Oz Plastic w/ HNO_3, 1x1Oz Plastic w/ H_2SO_4, 1x1Oz Plastic w/ no prs, 1x5Oz plastic w/ no prs

Comments and observations: BD-1 collected @ this well

Certification: Christian Sm QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site: El Dorado Chemical Company — Well No.: ECMW-6

Sampling Personnel: Tyler Collis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Whale Monsoon Pump
Evacuation Time	2:10 PM		
Top of casing to water level	ft 5.0	Gallons per well volume	gal 6.4
Top of casing to bottom	ft 23.3	Total gallons evacuated	gal 19.2 ~ 3 WV
Sampling Date/Time	11/10/16 09:15	Method of Sampling	Bailer (oiled)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]
0	22.8	5.40	19.23 mS
1	22.4	4.04	38.95 mS
2	21.7	3.79	41.74 mS
3	21.2	3.71	42.77 mS

GENERAL INFORMATION

Weather conditions at time of sampling: clear, sunny, cool

Sample characteristics: clear, no noticable SS

Containers and preservatives: 1x100z Plastic w/HNO3, 1x100z Plastic w/H2SO4, 1x100z Plastic w/no prts, 1x500z Plastic w/no prts

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW- 7

Sampling Personnel Tyler Lollis, Remy Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	2:31 PM		
Top of casing to water level ft	7.7	Gallons per well volume gal	6.44
Top of casing to bottom ft	25.1	Total gallons evacuated gal	19.3 ~ 3WV
Sampling Date/Time	11/10/16 0920	Method of Sampling	Bailer (Ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	23.1	6.63	1877		
1	22.5	5.02	3114		
2	21.6	4.55	18.07 mS		
3	21.2	4.92	24.24 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, Sunny, cool

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x100g Plastic w/ HNO_3, 1x100g Plastic w/ H_2SO_4, 1x100g Plastic w/ no pres, 1x500g Plastic w/ no pres

Comments and observations:

Certification: Christopher Bonn QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW- 8

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	3:45 PM		
Top of casing to water level	ft 8.8	Gallons per well volume	gal 7.96
Top of casing to bottom	ft 30.3	Total gallons evacuated	gal 24 ~ 3WV
Sampling Date/Time	11/10/16 0925	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]		
0	22.3	5.61	4498		
1	21.1	4.09	12.94 mS		
2	19.9	3.73	29.78 mS		
3	19.7	3.61	31.95 mS		

GENERAL INFORMATION

Weather conditions at time of sampling: clear, sunny, cool

Sample characteristics: clear, no visibles

Containers and preservatives: 1x10oz Plastic w/ HNO_3, 1x10oz Plastic w/ H_2SO_4, 1x10oz Plastic w/ no pres, 1x10oz Plastic w/ no pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-9

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	4:16 PM		
Top of casing to water level ft	13.7	Gallons per well volume gal	6.18
Top of casing to bottom ft	30.4	Total gallons evacuated gal	~18.5
Sampling Date/Time	11/10/16 0930	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]
0	21.0	7.87	DB/NA 2546
1	20.5	6.35	2296
2	19.9	6.16	2268
3	19.9	5.87	2500

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, Sunny

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x100g Plastic w/HNO3, 1x100g Plastic w/H2SO4, 1x100g Plastic w/no pres, 1x500g Plastic w/no pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site: El Dorado Chemical Company Well No. ECMW- 10

Sampling Personnel: Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date: 11/9/16 Method of Evacuation: Mini Monsoon Pump

Evacuation Time: 1:50 PM

Top of casing to water level ft: 15.8 Gallons per well volume gal: 2.66

Top of casing to bottom ft: 23.0 Total gallons evacuated gal: 7.9 ~3 wv

Sampling Date/Time: 11/10/16 10:15 Method of Sampling: Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	21.9	6.30	446.1		
1	22.2	5.1	758		
2	22.1	4.52	764		
3	21.8	4.25	770		

GENERAL INFORMATION

Weather conditions at time of sampling: clear, cool, sunny

Sample characteristics: Clear, no visible ss

Containers and preservatives: 1x10oz Plastic w/HNO_3, 1x10oz Plastic w/H_2SO_4, 1x10oz Plastic w/no pres, 1x50oz plastic w/no pres

Comments and observations: BD-2 collected @ this well

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-11

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Mini Monsoon Pump
Evacuation Time	1:30 PM		
Top of casing to water level	ft 18.1	Gallons per well volume	gal 2.63
Top of casing to bottom	ft 20.2	Total gallons evacuated	gal 7.8 ~ 3wv
Sampling Date/Time	11/10/16 1030	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	21.8	6.15	777		
1	22.9	5.50	745		
2	23.0	4.67	824		
3	22.9	4.43	909		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, sunny

Sample characteristics: clear, no visible SS

Containers and preservatives: 1x100z Plastic w/HNO3, 1x100z Plastic w/H2SO4, 1x100z Plastic w/ no pres, 1x50z Plastic w/no pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	~~3"=0.37~~	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-12

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	12:54 p.m		
Top of casing to water level ft	6.6	Gallons per well volume gal	5.03
Top of casing to bottom ft	20.2	Total gallons evacuated gal	15 w 3 WV
Sampling Date/Time	11/10/16 1035	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	23.7	5.78	274.1		
1	23.4	5.41	518		
2	23.3	5.16	695		
3	22.9	5.18	696		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, sunny

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x100z Plastic w/HNO3, 1x100z Plastic w/H2SO4, 1x100z Plastic w/ NO pres, 1x50z Plastic w/no pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-13

Sampling Personnel Tyler Lollis, Penny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/8/16	Method of Evacuation	Mini-Monsoon
Evacuation Time	1:32 PM		Pump
Top of casing to water level ft	9.9	Gallons per well volume gal	3.774
Top of casing to bottom ft	20.1	Total gallons evacuated gal	11.25 = 3WV
Sampling Date/Time	11/9/16 0810	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	21.7	5.18	845		
1	21.7	5.66	999		
2	21.4	5.24	1086		
3	21.2	5.06	1053		

GENERAL INFORMATION

Weather conditions at time of sampling: Cloudy cool

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x100z Plastic w/HNO_3, 1x100z Plastic w/H_2SO_4, 1x100z Plastic w/no pres, 1x50z Plastic w/no pres.

Comments and observations:

Certification: DAQC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site **El Dorado Chemical Company** Well No. **ECMW-14**

Sampling Personnel Tyler Lollis, Benny Yestal

MONITORING WELL INFORMATION

Evacuation Date	11/8/16	Method of Evacuation	Mini Monsoon
Evacuation Time	3:00 PM		Pump
Top of casing to water level	ft 8.6	Gallons per well volume	gal 3.7
Top of casing to bottom	ft 18.6	Total gallons evacuated	gal 11 ~ 3 WV
Sampling Date/Time	11/9/16 0830	Method of Sampling	Bailer (old)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	22.1	6.96	383.7		
1	23.0	6.15	384.8		
2	23.0	5.65	425.8		
3	22.9	5.37	472.0		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, sunny, cool

Sample characteristics: Clear; no visible SS

Containers and preservatives: 1x10oz Plastic w/HNO3, 1x10oz Plastic w/H2SO4, 1x10oz Plastic w/no pres, 1x5oz Plastic w/no pres

Comments and observations:

Certification: Christopher Jon QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-15

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/8/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	3:24 PM		
Top of casing to water level ft	6.9	Gallons per well volume gal	3.885
Top of casing to bottom ft	17.4	Total gallons evacuated gal	11.5 ~ 3 WV
Sampling Date/Time	11/9/16 0885	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	22.5	6.15	933		
1	22.8	5.55	87.6		
2	23.9	5.13	858		
3	23.1	5.04	82.9		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, Sunny

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x1 Oz Plastic w/ HNO_3, 1x1 Oz Plastic w/ H_2SO_4, 1x1 Oz Plastic w/no pres, 1x5 Oz Plastic w/no pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site **El Dorado Chemical Company** Well No. **ECMW-** 16

Sampling Personnel Tyler Lollis, Benny Vester

MONITORING WELL INFORMATION

Evacuation Date	11/8/16	Method of Evacuation	Mini Monsoon Pump
Evacuation Time	2:00 PM		
Top of casing to water level	ft 6.65	Gallons per well volume	gal 4.79
Top of casing to bottom	ft 19.6	Total gallons evacuated	gal 14.4 ~ 3 WV
Sampling Date/Time	11/9/16 0820	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[μS]		
0	22.7	6.78	134.5		
1	23.4	5.85	134.2		
2	23.5	5.20	137.0		
3	23.4	5.30	136.0		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, sunny

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x10oz Plastic w/ HNO_3, 1x10oz Plastic w/ H_2SO_4, 1x10oz Plastic w/ no pres, 1x5oz Plastic w/ no pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-17

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/8/18	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	4:05 PM		
Top of casing to water level	ft 29.4	Gallons per well volume	gal 2.3
Top of casing to bottom	ft 35.7	Total gallons evacuated	gal ~7
Sampling Date/Time	11/9/18 0840	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	19.9	7.29	311.1		
1	19.1	6.46	187.7		
2	18.9	6.09	180.8		
3	19.1	6.42	184.9		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, sunny

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x100z Plastic w/HNO3, 1x100z Plastic w/H2SO4, 1x100z Plastic w/no pres, 1x500z Plastic w/no pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-18

Sampling Personnel Tyler Collis, Benny Vestel

MONITORING WELL INFORMATION

Evacuation Date	11/9/16	Method of Evacuation	Mini Marson Pump
Evacuation Time	1240 PM		
Top of casing to water level ft	8.5	Gallons per well volume gal	3.29
Top of casing to bottom ft	17.4	Total gallons evacuated gal	10 x 3 WV
Sampling Date/Time	11/10/16 1055	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	22.5	6.60	3.4		
1	21.6	7.34	83.0		
2	20.6	6.81	76.7		
3	20.4	6.42	75.0		

GENERAL INFORMATION

Weather conditions at time of sampling: 70°, slightly cloudy w/ Sun, ~5mph wind

Sample characteristics: clear, no visible SS

Containers and preservatives: 1x100z Plastic w/HNO3, 1x100z Plastic w/H2SO4, 1x100z Plastic w/no pres, 1x500z plastic w/no pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-19

Sampling Personnel Tyler Lollis, Benny Vestal, Christina Sellers

MONITORING WELL INFORMATION

Evacuation Date	11/8/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	9:20 a.m		
Top of casing to water level ft	4.75 ft	Gallons per well volume gal	8.776
Top of casing to bottom ft	59.1 ft	Total gallons evacuated gal	27 ~ 3WV
Sampling Date/Time	11/9/16 0915	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	19.7	6.55	166.9		
1	17.9	6.70	81.5		
2	17.8	6.40	85.3		
3	17.8	6.56	83.9		

GENERAL INFORMATION

Weather conditions at time of sampling: Cloudy, cool, damp

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x100z Plastic w/HNO3, 1x100z Plastic w/H2SO4, 1x100z Plastic w/NO pres, 1x500z Plastic w/NO pres

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-20

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/8/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	10:29 am		
Top of casing to water level ft	8.8	Gallons per well volume gal	3.92
Top of casing to bottom ft	53.3	Total gallons evacuated gal	5 ~ 1.25 WV
Sampling Date/Time	11/9/16 0925	Method of Sampling	Bailer (ded)

Only made it to 1 gal before well ran dry

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[uS]		
0	18.3	6.62	81.8		
1	18.4	6.09	75.4		
2	18.6	5.18	140.4		
3	Dry	Dry	Dry		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, sunny

Sample characteristics: clear, no visible SS

Containers and preservatives: 1x100z Plastic w/HNO3, 1x Plastic 100z w/ H2SO4, 1x100z Plastic w/no pres, 1x50z Plastic w/no pres

Comments and observations:

Certification: [signature] DA/OC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-21

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/8/16	Method of Evacuation	Bailer
Evacuation Time	1:11 AM		
Top of casing to water level ft	17.6	Gallons per well volume gal	0.616
Top of casing to bottom ft	30.1	Total gallons evacuated gal	.3
Sampling Date/Time	11/9/16 0940	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	19.8	6.25	61.6		
		Just reading	barely got enough water out for an initial		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, sunny

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x100z Plastic w/ HNO_3, 1x100z Plastic w/ H_2SO_4, 1x100z Plastic w/no prcs, 1x50z Plastic w/no prcs

Comments and observations:

Certification: [signature] QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

GROUNDWATER SAMPLING DATA FORM

FIELD LOG

Site El Dorado Chemical Company Well No. ECMW-22

Sampling Personnel Tyler Lollis, Benny Vestal

MONITORING WELL INFORMATION

Evacuation Date	11/8/16	Method of Evacuation	Mini-Monsoon Pump
Evacuation Time	3:23 PM		
Top of casing to water level	ft 7.6	Gallons per well volume	gal 11.6
Top of casing to bottom	ft 80.1	Total gallons evacuated	gal 34.8 ≈ 3 WV
Sampling Date/Time	11/9/16 0850	Method of Sampling	Bailer (ded)

SAMPLE DATA

WV	Temperature[°C]	pH	Conductivity[µS]		
0	21.4	6.65	236.1		
1	19.1	6.30	149.6		
2	18.9	6.07	144.2		
3	18.9	6.04	144.5		

GENERAL INFORMATION

Weather conditions at time of sampling: Clear, cool, sunny

Sample characteristics: Clear, no visible SS

Containers and preservatives: 1x10oz Plastic w/HNO3, 1x10oz Plastic w/H2SO4, 1x10oz Plastic w/no pres, 1x50oz Plastic w/no pres

Comments and observations:

Certification: QA/QC

Well Casing Volumes [gal/ft]			
1 1/4"=0.077	2"=0.16	3"=0.37	4"=0.65
1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	6"=1.46

Arkansas Analytical Inc.

8100 National Dr. - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

07 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731

Project: Groundwater Sample(s)

Project Number: May 2016

SDG Number: 1605402

Enclosed are the results of analyses for samples received by the laboratory on 24-May-16 16:18. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✔
Containers Correct	✔
COC/Labels Agree	✔
Received On Ice	✔
Temperature on Receipt	13.0°C

Sincerely,

Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

07 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 24-May-16 16:18

ANALYTICAL RESULTS

Lab Number: 1605402-01
Sample Name: ECMW #5
Date/Time Collected: 5/24/16 7:45
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**49.4**		5/25/16 17:35	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**41.9**		5/25/16 17:35	B605377	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/25/16 18:23	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/25/16 18:23	B605364	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/25/16 18:23	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/25/16 18:23	B605368	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605402-02
Sample Name: ECMW #6
Date/Time Collected: 5/24/16 7:55
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**30.8**		5/26/16 3:21	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**4120**		5/25/16 17:57	B605377	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/25/16 18:27	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	**0.038**		5/25/16 18:27	B605364	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/25/16 18:27	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0379**		5/25/16 18:27	B605368	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**1390**		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

07 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 24-May-16 16:18

ANALYTICAL RESULTS

Lab Number: 1605402-03
Sample Name: ECMW #4
Date/Time Collected: 5/24/16 8:01
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**843**		5/31/16 10:25	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**0.666**		5/25/16 13:26	B605377	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/25/16 18:31	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/25/16 18:31	B605364	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/25/16 18:31	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/25/16 18:31	B605368	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**1.13**		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605402-04
Sample Name: ECMW #7
Date/Time Collected: 5/24/16 8:12
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**740**		5/25/16 18:20	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**135**		5/25/16 18:20	B605377	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/25/16 18:35	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/25/16 18:35	B605364	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/25/16 18:35	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/25/16 18:35	B605368	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**91.1**		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

07 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 24-May-16 16:18

ANALYTICAL RESULTS

Lab Number: 1605402-05
Sample Name: ECMW #8
Date/Time Collected: 5/24/16 9:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**81.0**		5/25/16 18:42	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**4060**		5/25/16 19:05	B605377	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/25/16 18:39	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	**0.065**		5/25/16 18:39	B605364	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/25/16 18:39	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0650**		5/25/16 18:39	B605368	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**2020**		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605402-06
Sample Name: ECMW #9
Date/Time Collected: 5/24/16 9:56
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**581**		5/31/16 10:47	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**29.1**		5/25/16 19:28	B605377	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/25/16 18:43	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/25/16 18:43	B605364	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/25/16 18:43	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/25/16 18:43	B605368	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**0.888**		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

07 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 24-May-16 16:18

ANALYTICAL RESULTS

Lab Number: 1605402-07
Sample Name: ECMW #3
Date/Time Collected: 5/24/16 11:03
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**9.88**		5/25/16 14:56	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**0.252**		5/25/16 14:56	B605377	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/25/16 19:02	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/25/16 19:02	B605364	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/25/16 19:02	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/25/16 19:02	B605368	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605402-08
Sample Name: ECMW #2
Date/Time Collected: 5/24/16 11:46
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**19.8**		5/25/16 19:50	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**0.645**		5/25/16 19:50	B605377	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/25/16 19:06	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/25/16 19:06	B605364	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/25/16 19:06	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/25/16 19:06	B605368	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**1.37**		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

07 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 24-May-16 16:18

ANALYTICAL RESULTS

Lab Number:	**1605402-09**
Sample Name:	**ECMW #1**
Date/Time Collected:	**5/24/16 12:22**
Sample Matrix:	**Water**

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**5.56**		5/25/16 20:13	B605377	300.0, 2.1-1993
Nitrate as N	mg/L	**1.79**		5/25/16 20:13	B605377	300.0, 2.1-1993

Dissolved Metals	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Chromium	mg/L	< 0.021		5/25/16 19:09	B605364	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/25/16 19:09	B605364	200.7, Rev. 4.4 (1994)

Total Metals	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Chromium	mg/L	< 0.0104		5/25/16 19:09	B605368	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/25/16 19:09	B605368	200.7, Rev 4.4 (1994)

Wet Chemistry	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Ammonia as N	mg/L	< 0.500		5/25/16 10:34	B605362	4500-NH3 B,D,C-1997

07 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 24-May-16 16:18

QUALITY CONTROL RESULTS

Wet Chemistry -- Batch: B605362 (Water)
Prepared: 25-May-16 10:34 By: ZR -- Analyzed: 25-May-16 10:34 By: ZR

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	100% / NA	101% / 100%		0.622%	

Dissolved Metals -- Batch: B605364 (Water)
Prepared: 25-May-16 14:45 By: HF -- Analyzed: 25-May-16 18:20 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.021 mg/L	106% / NA	101% / 103%		1.82%	
Lead	<0.016 mg/L	109% / NA	100% / 101%		0.974%	

Total Metals -- Batch: B605368 (Water)
Prepared: 25-May-16 16:25 By: HF -- Analyzed: 25-May-16 20:14 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.0104 mg/L	101% / NA	98.6% / 99.3%		0.419%	
Lead	<0.0156 mg/L	102% / NA	94.9% / 94.9%		0.00771%	

Anions -- Batch: B605377 (Water)
Prepared: 25-May-16 10:23 By: TB -- Analyzed: 26-May-16 00:43 By: Mel

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.250 mg/L	102% / NA	108% / 110%		0.749%	
Sulfate as SO4	<0.500 mg/L	92.3% / NA	94.2% / 96.9%		1.72%	

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

Arkansas Analytical Inc.
8100 National Dr.
Little Rock, AR 72209
PHONE: 501-455-3233
FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	BILLING INFORMATION	Project Description	Turnaround Time
El Dorado Chemical Inc.	El Dorado Chemical Inc.	Groundwater Samples	1 Day (100%)
4500 Northwest Ave.	P.O. Box 231		2 Day (50%)
El Dorado, AR 71731	El Dorado, AR 71731	Reporting Information	3 Day (25%)
		Telephone: 870-863-1484	5 Day (Routine)
Attn: David Sartain		Fax: 870-863-1499	Preservative Code:
		Email: dsartain@ede-ark.com; epearson@ede-ark.com; lmarcella@env-mgt.com	Bottle Type:

Preservation Codes:
1. Cool, 4 Degrees Centigrade
2. Sulfuric Acid (H_2SO_4), pH < 2
3. Nitric Acid (HNO_3), pH < 2
4. Thiosulfate for Dechlorination
5. Hydrochloric Acid(HCl)
6. Sodium Hydroxide (NaOH), pH > 12

Sampler(s) Signature:

Sampler(s) Printed:

Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION	TEST PARAMETERS: Nitrate, Sulfate	Ammonia	d Cr, d Pb	Cr, Pb						Arkansas Analytical Work Order Number: 1605402
							Bottle Type Code: G = Glass; P = Plastic; V = Septum; A = Amber										
							Preservative Code:	1	1,2	1	1,3						
							Bottle Type:	P	P	P	P						
WELL 5	5/24/16	0745	X		4	Water	ECMW- WELL 5	X	X	X	X						01
WELL 6	5/24/16	0755	X		4	Water	ECMW- WELL 6	X	X	X	X						02
WELL 4	5/24/16	0801	X		4	Water	ECMW- WELL 4	X	X	X	X						03
WELL 7	5/24/16	0812	X		4	Water	ECMW- WELL 7	X	X	X	X						04
WELL 8	5/24/16	0900	X		4	Water	ECMW- WELL 8	X	X	X	X						05
WELL 9	5/24/16	0956	X		4	Water	ECMW- WELL 9	X	X	X	X						06
	5/24/16	11:03	X		4	Water	ECMW- WELL 3	X	X	X	X						07
	5/24/16	11:46	X		4	Water	ECMW- WELL 3 DUP 2	X	X	X	X						08
	5/24/16	12:22	X		4	Water	ECMW- WELL 1	X	X	X	X						09
			X		4	Water	ECMW-	X	X	X	X						TR ~~TB~~

1. Relinquished by: (Signature)	Date/Time	2. Received by: (Signature)
	5/24/16 13:00	
3. Relinquished by: (Signature)	Date/Time	4. Received by lab: (Signature)
	1616 5-24-16	Jannay Riddle

SAMPLE CONDITION UPON RECEIPT IN LAB

1. CUSTODY SEALS:	✓ Yes	No
2. CONTAINERS CORRECT:	Yes	No
3. COC/LABELS AGREE:	Yes	No
4. RECEIVED ON ICE:	Yes	No
5. TEMPERATURE ON RECEIPT:	13 °C	
6. TEMPERATURE GUN ID:	HHT# 2	

FOR COMPLETION BY LAB ONLY

REMARKS / SAMPLE COMMENTS

Arkansas Analytical Inc.

8100 National Dr. - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

03 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731

Project: Groundwater Sample(s)

Project Number: May 2016

SDG Number: 1605426

Enclosed are the results of analyses for samples received by the laboratory on 25-May-16 15:30. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✔
Containers Correct	✔
COC/Labels Agree	✔
Received On Ice	✔
Temperature on Receipt	11.0°C

Sincerely,

Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

03 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 25-May-16 15:30

CASE NARRATIVE

Sample Delivery Group – 1605426

One *OR* more of the qualifiers described below may appear in this report.

SAMPLE RECEIPT QUALIFIERS:

Qualifier	Description
ET	Samples received above required temperature.
ET	Samples received above required temperature. Although collected and received the same day, no ice was present to indicate the cooling preservation was attempted.
E2	Result qualified as it was received and analyzed outside of holding time. Analysis is considered a "Field" analysis.
E2	Result qualified as it was received and/or analyzed outside of holding time.
E3	Result qualified as it was received in the incorrect container and/or preservation.

QUALITY CONTROL QUALIFIERS:

Qualifier	Description
E20	Sample used as "parent" for the associated analytical batch.
%D3/S-01 / E1	Surrogate failed to recover within acceptance criteria (%D3/S-01). Results associated with this surrogate were qualified as "estimated" (E1).
B	Present in the Associated Blank
B1	Present in Blank, but Not In the Sample.
%D2 / E5	Laboratory Control Spike (LCS) and/or Laboratory Control Spike Duplicate (LCSD) failed to recover with acceptance criteria (%D2). Associated results were qualified as "estimated" (E5).
%D1	Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) failed acceptance criteria.
MBA	Failed criteria due the high concentration of analyte in the parent sample.
MBI	Failed criteria due an interference in the parent sample.
%D3	Quality Control Surrogate failed acceptance criteria.
NREC	Quality Control Surrogate failed.

03 June 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 25-May-16 15:30

ANALYTICAL RESULTS

Lab Number: 1605426-01
Sample Name: ECMW #10
Date/Time Collected: 5/25/16 7:15
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**134**	E20	5/26/16 9:17	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	**51.2**	E20	5/26/16 9:17	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 17:19	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 17:19	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 15:36	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 15:36	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605426-02
Sample Name: ECMW #11
Date/Time Collected: 5/25/16 7:20
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**233**		5/31/16 14:40	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	**19.5**		5/26/16 9:40	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 17:23	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 17:23	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 15:40	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 15:40	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**5.86**		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

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ANALYTICAL RESULTS

Lab Number: 1605426-03
Sample Name: ECMW #22
Date/Time Collected: 5/25/16 8:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**11.8**		5/31/16 15:18	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	**4.37**		5/26/16 10:02	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 17:27	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 17:27	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 15:59	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 15:59	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**1.25**		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605426-04
Sample Name: ECMW #17
Date/Time Collected: 5/25/16 8:10
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**6.64**		5/26/16 10:25	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	**14.3**		5/26/16 10:25	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 17:46	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 17:46	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:03	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:03	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

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Project: Groundwater Sample(s)
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ANALYTICAL RESULTS

Lab Number: 1605426-05
Sample Name: ECMW #15
Date/Time Collected: 5/25/16 8:22
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**9.67**		5/26/16 10:47	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	**4.52**		5/26/16 10:47	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 17:50	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 17:50	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:06	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:06	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605426-06
Sample Name: ECMW #16
Date/Time Collected: 5/25/16 8:40
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**15.4**		5/26/16 11:10	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	**10.2**		5/26/16 11:10	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 17:54	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 17:54	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:10	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:10	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

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El Dorado, AR 71731
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ANALYTICAL RESULTS

Lab Number: 1605426-07
Sample Name: ECMW #13
Date/Time Collected: 5/25/16 9:30
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**529**		5/31/16 15:41	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		5/26/16 11:33	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 17:58	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 17:58	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:14	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0183**		5/26/16 16:14	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605426-08
Sample Name: ECMW #18
Date/Time Collected: 5/25/16 10:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**1.78**		5/26/16 11:55	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		5/26/16 11:55	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 18:01	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 18:01	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:18	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0167**		5/26/16 16:18	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

03 June 2016

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El Dorado, AR 71731
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ANALYTICAL RESULTS

Lab Number: 1605426-09
Sample Name: ECMW #19
Date/Time Collected: 5/25/16 10:30
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**2.26**		5/26/16 12:18	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		5/26/16 12:18	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 18:05	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 18:05	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:22	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:22	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605426-10
Sample Name: ECMW #20
Date/Time Collected: 5/25/16 11:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**9.46**		5/26/16 13:25	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		5/26/16 13:25	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 18:09	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 18:09	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:26	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:26	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

03 June 2016

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ANALYTICAL RESULTS

Lab Number: 1605426-11
Sample Name: ECMW #21
Date/Time Collected: 5/25/16 11:20
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**3.62**		5/26/16 14:09	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	**2.25**		5/26/16 14:09	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 18:13	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 18:13	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:29	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:29	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605426-12
Sample Name: ECMW #12
Date/Time Collected: 5/25/16 12:30
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**17.0**		5/31/16 16:03	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		5/26/16 14:31	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 18:17	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 18:17	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:33	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:33	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**2.24**		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

03 June 2016

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Project: Groundwater Sample(s)
Project Number: May 2016
Date Received: 25-May-16 15:30

ANALYTICAL RESULTS

Lab Number: 1605426-13
Sample Name: ECMW - Field Blank
Date/Time Collected: 5/25/16 12:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	< 0.500		5/26/16 14:54	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		5/26/16 14:54	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 18:21	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 18:21	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:52	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:52	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1605426-14
Sample Name: ECMW - Field Blank
Date/Time Collected: 5/24/16 12:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	< 0.500		5/26/16 15:16	B605388	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250	E2	5/26/16 15:16	B605388	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		5/26/16 18:40	B605417	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		5/26/16 18:40	B605417	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		5/26/16 16:56	B605405	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		5/26/16 16:56	B605405	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		5/26/16 10:59	B605409	4500-NH3 B,D,C-1997

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QUALITY CONTROL RESULTS

Anions -- Batch: B605388 (Water)
Prepared: 26-May-16 09:07 By: MB -- Analyzed: 26-May-16 16:47 By: Mel

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.250 mg/L	102% / 102%	MBA / NA		0.196%	MBA
Sulfate as SO4	<0.500 mg/L	109% / 103%	MBA / NA		5.49%	MBA

Total Metals -- Batch: B605405 (Water)
Prepared: 26-May-16 10:15 By: ST -- Analyzed: 26-May-16 15:28 By: ST

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.0104 mg/L	102% / NA	105% / 102%		2.71%	
Lead	<0.0156 mg/L	103% / NA	103% / 101%		2.54%	

Wet Chemistry -- Batch: B605409 (Water)
Prepared: 26-May-16 10:59 By: ZR -- Analyzed: 26-May-16 10:59 By: ZR

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	105% / NA	104% / 104%		0.0235%	

Dissolved Metals -- Batch: B605417 (Water)
Prepared: 26-May-16 12:10 By: HF -- Analyzed: 26-May-16 17:15 By: ST

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.021 mg/L	103% / NA	102% / 101%		1.70%	
Lead	<0.016 mg/L	104% / NA	100% / 98.3%		1.83%	

QUALIFIER(S)

*E2: Estimated Result; Analyzed Outside of Holding Time
*E20: Estimated Result Due to Matrix Spike and/or Matrix Spike Duplicate Failure; This sample was used as the "parent sample" in MS/MSD prep.
*MBA: Masked By Analyte

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

Arkansas Analytical Inc.

8100 National Dr.
Little Rock, AR 72209
PHONE: 501-455-3233
FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	BILLING INFORMATION	Project Description	Turnaround Time
El Dorado Chemical Inc.	El Dorado Chemical Inc.	Groundwater Samples	1 Day (100%)
4500 Northwest Ave.	P.O. Box 231		2 Day (50%)
El Dorado, AR 71731	El Dorado, AR 71731	Reporting Information	3 Day (25%)
		Telephone: 870-863-1484	5 Day (Routine)
Attn: David Sartain		Fax: 870-863-1499	Preservative Code:
		Email: dsartain@edc-ark.com; cpearson@edc-ark.com; lmarcella@env-mgt.com	Bottle Type:

Preservation Codes:

1. Cool, 4 Degrees Centigrade
2. Sulfuric Acid (H_2SO_4), pH < 2
3. Nitric Acid (HNO_3), pH < 2
4. Thiosulfate for Dechlorination
5. Hydrochloric Acid(HCl)
6. Sodium Hydroxide (NaOH), pH > 12

Sampler(s) Signature	Sampler(s) Printed

Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION	TEST PARAMETERS: Nitrate, Sulfate	Ammonia	d Cr, d Pb	Cr, Pb						Arkansas Analytical Work Order Number: 1605426
							Preservative Code:	1	1,2	1	1,3						Bottle Type Code: G = Glass; P = Plastic; V = Septum; A = Amber
							Bottle Type:	P	P	P	P						
	5/25/16	0715	X		4	Water	ECMW-10	X	X	X	X						01
	5/25/16	0720	X		4	Water	ECMW-11	X	X	X	X						02
	5/25/16	0800	X		4	Water	ECMW-22	X	X	X	X						03
	5/25/16	0810	X		4	Water	ECMW-17	X	X	X	X						04
	5/25/16	0822	X		4	Water	ECMW-15	X	X	X	X						05
	5/25/16	0840	X		4	Water	ECMW-16	X	X	X	X						06
	5/25/16	0930	X		4	Water	ECMW-13	X	X	X	X						07
	5/25/16	1000	X		4	Water	ECMW-18	X	X	X	X						08
	5/25/16	1030	X		4	Water	ECMW-19	X	X	X	X						09
	5/25/16	1150	X		4	Water	ECMW-20	X	X	X	X						10

1. Relinquished by: (Signature)	Date/Time	2. Received by: (Signature)
	5/25/16 1230	5/25/16 1250
3. Relinquished by: (Signature)	Date/Time	4. Received by lab: (Signature)
5/25/16 330	5/25/16 330	

SAMPLE CONDITION UPON RECEIPT IN LAB		
1. CUSTODY SEALS:	✓ Yes	No
2. CONTAINERS CORRECT:	Yes	No
3. COC/LABELS AGREE:	Yes	No
4. RECEIVED ON ICE:	Yes	No
5. TEMPERATURE ON RECEIPT:	11 °C	
6. TEMPERATURE GUN ID:	HHT# 2	
FOR COMPLETION BY LAB ONLY		

REMARKS / SAMPLE COMMENTS

Arkansas Analytical Inc.

8100 National Dr.
Little Rock, AR 72209
PHONE: 501-455-3233
FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	BILLING INFORMATION	Project Description	Turnaround Time
El Dorado Chemical Inc.	El Dorado Chemical Inc.	Groundwater Samples	1 Day (100%)
4500 Northwest Ave.	P.O. Box 231		2 Day (50%)
El Dorado, AR 71731	El Dorado, AR 71731	Reporting Information	3 Day (25%)
		Telephone: 870-863-1484	5 Day (Routine)
Attn: David Sartain		Fax: 870-863-1499	Preservative Code:
		Email: dsartain@edc-ark.com; epearson@edc-ark.com; lmarcella@env-mgt.com	Bottle Type:

Preservation Codes:

1. Cool, 4 Degrees Centigrade
2. Sulfuric Acid (H_2SO_4), pH < 2
3. Nitric Acid (HNO_3), pH < 2
4. Thiosulfate for Dechlorination
5. Hydrochloric Acid(HCl)
6. Sodium Hydroxide (NaOH), pH > 12

Sampler(s) Signature:

Sampler(s) Printed:

Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION	TEST PARAMETERS: Nitrate, Sulfate	Ammonia	d Cr, d Pb	Cr, Pb						Bottle Type Code	Arkansas Analytical Work Order Number: 16054126
								1	1,2	1	1,3						G = Glass; P = Plastic; V = Septum; A = Amber	
								P	P	P	P							
	5/25/16	1120	X		4	Water	ECMW-21	X	X	X	X							11
	5/25/16	1230	X		4	Water	ECMW-12	X	X	X	X							12
	5/25/16	1200	X		4	Water	ECMW-Field Blank	X	X	X	X							13
	5/24/16	1200	X		4	Water	ECMW-Field Blank	X	X	X	X							14
			X		4	Water	ECMW-	X	X	X	X							
			X		4	Water	ECMW-	X	X	X	X							
			X		4	Water	ECMW-	X	X	X	X							
			X		4	Water	ECMW-	X	X	X	X							
			X		4	Water	ECMW-	X	X	X	X							
			X		4	Water	ECMW-	X	X	X	X							

1. Relinquished by: (Signature)	Date/Time	2. Received by: (Signature)
	5/25/16 1230	5/25/16 1230
3. Relinquished by: (Signature)	Date/Time	4. Received by lab: (Signature)
	5/25/16 330	

SAMPLE CONDITION UPON RECEIPT IN LAB

1. CUSTODY SEALS: ✓ Yes ___ No
2. CONTAINERS CORRECT: ✓ Yes ___ No
3. COC/LABELS AGREE: ✓ Yes ___ No
4. RECEIVED ON ICE: ___ Yes ___ No
5. TEMPERATURE ON RECEIPT: 11 °C
6. TEMPERATURE GUN ID: HHT# 2

FOR COMPLETION BY LAB ONLY

REMARKS / SAMPLE COMMENTS

Revision 3
1/4/16

Arkansas Analytical Inc.

8100 National Dr. - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

14 July 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731

Project: Groundwater Sample(s)

Project Number: July 2016

SDG Number: 1607084

Enclosed are the results of analyses for samples received by the laboratory on 07-Jul-16 14:30. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✔
Containers Correct	✔
COC/Labels Agree	✔
Received On Ice	✔
Temperature on Receipt	5.0°C

Sincerely,

Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

14 July 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: July 2016
Date Received: 07-Jul-16 14:30

ANALYTICAL RESULTS

Lab Number: 1607084-01
Sample Name: ECMW #14
Date/Time Collected: 7/6/16 12:40
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**91.2**		7/11/16 13:43	B607104	300.0, 2.1-1993
Nitrate as N	mg/L	**8.76**		7/7/16 14:41	B607050	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		7/14/16 12:02	B607187	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		7/14/16 12:02	B607187	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		7/12/16 18:54	B607131	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		7/12/16 18:54	B607131	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		7/12/16 15:33	B607102	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1607084-02
Sample Name: ECMW #38
Date/Time Collected: 7/6/16 13:10
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**106**		7/11/16 14:06	B607104	300.0, 2.1-1993
Nitrate as N	mg/L	**8.92**		7/7/16 15:05	B607050	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		7/14/16 12:06	B607187	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.016		7/14/16 12:06	B607187	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		7/12/16 18:58	B607131	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		7/12/16 18:58	B607131	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		7/12/16 15:33	B607102	4500-NH3 B,D,C-1997

14 July 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: July 2016
Date Received: 07-Jul-16 14:30

QUALITY CONTROL RESULTS

Anions -- Batch: B607050 (Water)
Prepared: 06-Jul-16 14:53 By: MB -- Analyzed: 06-Jul-16 21:11 By: Melis

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.250 mg/L	95.8% / 95.6%	93.8% / NA		0.157%	

Wet Chemistry -- Batch: B607102 (Water)
Prepared: 11-Jul-16 08:30 By: SC -- Analyzed: 12-Jul-16 15:33 By: SC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	98.6% / NA	103% / 104%		0.451%	

Anions -- Batch: B607104 (Water)
Prepared: 11-Jul-16 10:40 By: MB -- Analyzed: 11-Jul-16 12:56 By: MB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Sulfate as SO4	<0.500 mg/L	108% / NA	103% / 107%		2.19%	

Total Metals -- Batch: B607131 (Water)
Prepared: 12-Jul-16 14:25 By: HF -- Analyzed: 12-Jul-16 17:53 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.0104 mg/L	100% / NA	98.1% / 98.2%		0.0955%	
Lead	<0.0156 mg/L	102% / NA	96.6% / 96.4%		0.189%	

Dissolved Metals -- Batch: B607187 (Water)
Prepared: 14-Jul-16 09:35 By: HF -- Analyzed: 14-Jul-16 11:59 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.021 mg/L	109% / NA	98.0% / 95.8%		2.27%	
Lead	<0.016 mg/L	108% / NA	93.0% / 90.5%		2.66%	

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	Billing	Project Description	Turnaround Time
El Dorado Chemical Inc.	El Dorado Chemical Inc.	Groundwater	(CIRCLE ONE)
4500 Northwest Ave.	P.O. Box 231	Reporting Information	24 hour
El Dorado, AR. 71731	El Dorado, AR. 71731	Telephone: 1-870-863-1484	48 hour
		FAX: 1-870-863-1499	routine
Attn: ~~Wes Morgan~~ David Sartain		Bill to/P.O.	Preservative Code:
			Bottle Type

Preservation Codes:

1. Cool, 4 degrees Centigrade
2. Sulfuric Acid, pH <2
3. Nitric Acid, pH <2
4. Thiosulfate for dechlorination
5. Hydrochloric Acid for VOA
6. Sodium Hydroxide, pH >12

TEST PARAMETERS										Bottle type code G=glass;P=HDPE V=septum;A=amber
1	1	1	1,2							
P	P	P	P							
DCI-dPb	Nitrate-N, Sulfate	Sulfate	Ammonia-N	Cr, Pb						1607084

Samplers:(Signature/s)

Samplers:(Printed)

Field Number	Sample Collection Date/s	Sample Collection Time/s	Grab	Comp	# of Containers	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION										Arkansas Analytical Lab #
ECMW-14	7/6/16	1240	✓		4	H2O	ECMW-14	X	X		X	X					01
ECMW-38	7/6/16	1310	✓		4	H2O	ECMW-38	X	X		X	X					02

1 Relinquished by:(Signature)	Date/Time	1.Received by:(Signature)
Sean Thomas	7/6/16	
2.Relinquished by:(Signature)	Date/Time	2.Received by laboratory :(Signature)
	7/7/16 2 30 hr	Amanda Johnson

For completion by laboratory

Condition of samples:	yes	no
A. Containers Correct:?	✓	
B. Preservation Correct:?	✓	
C. Seals Intact:?	✓	
rec'd on ice	5°C	HHTHR

REMARKS

ARKANSAS ANALYTICAL, INC. ** 11701 I-30, Bldg 1, Suite 115**Little Rock, Arkansas 72209**phone(501)455-3233**Fax(501)455-6118

Arkansas Analytical Inc.

8100 National Dr. - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

11 August 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731

Project: Groundwater Sample(s)

Project Number: August 2016

SDG Number: 1608093

Enclosed are the results of analyses for samples received by the laboratory on 05-Aug-16 08:00. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✔
Containers Correct	✔
COC/Labels Agree	✔
Received On Ice	✔
Temperature on Receipt	4.0°C

Sincerely,

Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

11 August 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: August 2016
Date Received: 05-Aug-16 08:00

ANALYTICAL RESULTS

Lab Number: 1608093-01
Sample Name: ECMW #8
Date/Time Collected: 8/4/16 15:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**83.6**		8/5/16 12:59	B608081	300.0, 2.1-1993
Nitrate as N	mg/L	**4310**		8/5/16 12:02	B608081	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		8/5/16 12:50	B608069	200.7, Rev. 4.4 (1994)
Lead	mg/L	**0.065**		8/5/16 12:50	B608069	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		8/9/16 13:53	B608131	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0686**		8/9/16 13:53	B608131	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**2270**		8/9/16 10:21	B608113	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1608093-02
Sample Name: ECMW #39
Date/Time Collected: 8/4/16 16:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**82.8**		8/5/16 13:23	B608081	300.0, 2.1-1993
Nitrate as N	mg/L	**4300**		8/5/16 12:26	B608081	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.021		8/5/16 12:54	B608069	200.7, Rev. 4.4 (1994)
Lead	mg/L	**0.064**		8/5/16 12:54	B608069	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		8/9/16 13:56	B608131	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0693**		8/9/16 13:56	B608131	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**2040**		8/9/16 10:21	B608113	4500-NH3 B,D,C-1997

11 August 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: August 2016
Date Received: 05-Aug-16 08:00

QUALITY CONTROL RESULTS

Dissolved Metals -- Batch: B608069 (Water)
Prepared: 05-Aug-16 10:30 By: HF -- Analyzed: 05-Aug-16 12:39 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.021 mg/L	103% / NA	102% / 96.1%		5.88%	
Lead	<0.016 mg/L	104% / NA	101% / 95.3%		5.70%	

Anions -- Batch: B608081 (Water)
Prepared: 05-Aug-16 14:02 By: MB -- Analyzed: 05-Aug-16 15:44 By: MB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.250 mg/L	93.7% / 95.3%	94.1% / NA		1.80%	
Sulfate as SO4	<0.500 mg/L	101% / 106%	96.4% / NA		4.75%	

Wet Chemistry -- Batch: B608113 (Water)
Prepared: 08-Aug-16 08:05 By: SP -- Analyzed: 09-Aug-16 10:21 By: SP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	98.7% / NA	95.9% / 97.7%		1.31%	

Total Metals -- Batch: B608131 (Water)
Prepared: 09-Aug-16 09:30 By: HF -- Analyzed: 09-Aug-16 12:58 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.0104 mg/L	100% / NA	97.5% / 103%		5.84%	
Lead	<0.0156 mg/L	101% / NA	95.1% / 100%		5.23%	

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

Arkansas Analytical Inc.
8100 National Dr.
Little Rock, AR 72209
PHONE: 501-455-3233
FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	BILLING INFORMATION	Project Description	Turnaround Time
El Dorado Chemical Inc.	El Dorado Chemical Inc.	Groundwater Samples	1 Day (100%)
4500 Northwest Ave.	P.O. Box 231		2 Day (50%)
El Dorado, AR 71731	El Dorado, AR 71731	Reporting Information	3 Day (25%)
		Telephone: 870-863-1484	5 Day (Routine)
Attn: David Sartain		Fax: 870-863-1499	Preservative Code:
		Email: dsartain@edc-ark.com; epearson@edc-ark.com; lmarcella@env-mgt.com	Bottle Type:

Preservation Codes:

1. Cool, 4 Degrees Centigrade
2. Sulfuric Acid (H_2SO_4), pH < 2
3. Nitric Acid (HNO_3), pH < 2
4. Thiosulfate for Dechlorination
5. Hydrochloric Acid(HCl)
6. Sodium Hydroxide (NaOH), pH > 12

Sampler(s) Signature:

Sampler(s) Printed:

Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION	TEST PARAMETERS: Nitrate, Sulfate	Ammonia	d Cr, d Pb	Cr, Pb	Bottle Type Code	Arkansas Analytical Work Order Number:
								1	1,2	1	1,3	G = Glass; P = Plastic; V = Septum; A = Amber	1608093
ECMW-8	8/4/16	1500	X		4	Water	ECMW-8	X	X	X	X		01
ECMW-39	8/4/16	1600	X		4	Water	ECMW-39	X	X	X	X		02
			X		4	Water	ECMW-	X	X	X	X		
			X		4	Water	ECMW-	X	X	X	X		

1. Relinquished by: (Signature)	Date/Time	2. Received by: (Signature)
	8/4/16 1600	
3. Relinquished by: (Signature)	Date/Time	4. Received by lab: (Signature)
	8/5/16 0800	Sydney James

SAMPLE CONDITION UPON RECEIPT IN LAB

1. CUSTODY SEALS:	✓ Yes	No
2. CONTAINERS CORRECT:	Yes	No
3. COC/LABELS AGREE:	Yes	No
4. RECEIVED ON ICE:	Yes	No
5. TEMPERATURE ON RECEIPT:	4 °C	
6. TEMPERATURE GUN ID:	IHT# 2	

FOR COMPLETION BY LAB ONLY

REMARKS / SAMPLE COMMENTS

Arkansas Analytical Inc.

8100 National Dr. - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

16 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731

Project: Groundwater Sample(s)

Project Number: Nov 2016

SDG Number: 1611140

Enclosed are the results of analyses for samples received by the laboratory on 09-Nov-16 13:20. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✔
Containers Correct	✔
COC/Labels Agree	✔
Received On Ice	✔
Temperature on Receipt	9.0°C

Sincerely,

Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

16 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: Nov 2016
Date Received: 09-Nov-16 13:20

ANALYTICAL RESULTS

Lab Number: 1611140-01
Sample Name: ECMW #13
Date/Time Collected: 11/9/16 8:10
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**439**		11/10/16 10:50	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		11/9/16 21:05	B611173	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 13:44	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 13:44	B611267	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 17:06	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 17:06	B611269	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611140-02
Sample Name: ECMW #14
Date/Time Collected: 11/9/16 8:30
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**116**		11/10/16 11:13	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	**4.40**		11/9/16 21:28	B611173	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 13:40	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 13:40	B611267	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 18:00	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 18:00	B611269	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

16 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: Nov 2016
Date Received: 09-Nov-16 13:20

ANALYTICAL RESULTS

Lab Number: **1611140-03**
Sample Name: **ECMW #15**
Date/Time Collected: **11/9/16 8:25**
Sample Matrix: **Water**

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**9.96**		11/9/16 21:52	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	**4.07**		11/9/16 21:52	B611173	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 13:47	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 13:47	B611267	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 18:04	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 18:04	B611269	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: **1611140-04**
Sample Name: **ECMW #16**
Date/Time Collected: **11/9/16 8:20**
Sample Matrix: **Water**

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**13.6**		11/9/16 22:15	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	**8.86**		11/9/16 22:15	B611173	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 13:51	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 13:51	B611267	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 18:08	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 18:08	B611269	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

16 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
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ANALYTICAL RESULTS

Lab Number: 1611140-05
Sample Name: ECMW #17
Date/Time Collected: 11/9/16 8:40
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**6.86**		11/9/16 22:39	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	**12.2**		11/9/16 22:39	B611173	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 14:10	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 14:10	B611267	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 18:12	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 18:12	B611269	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**0.826**		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611140-06
Sample Name: ECMW #19
Date/Time Collected: 11/9/16 9:15
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**2.25**		11/9/16 23:02	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		11/9/16 23:02	B611173	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 14:14	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 14:14	B611267	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 18:16	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 18:16	B611269	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

16 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
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ANALYTICAL RESULTS

Lab Number: 1611140-07
Sample Name: ECMW #20
Date/Time Collected: 11/9/16 9:25
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**4.59**		11/9/16 23:26	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	**2.31**		11/9/16 23:26	B611173	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 14:18	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 14:18	B611267	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 18:19	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 18:19	B611269	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611140-08
Sample Name: ECMW #21
Date/Time Collected: 11/9/16 9:40
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**21.4**		11/10/16 11:37	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		11/10/16 0:37	B611173	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 14:22	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 14:22	B611267	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 18:23	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 18:23	B611269	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

16 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: Nov 2016
Date Received: 09-Nov-16 13:20

ANALYTICAL RESULTS

Lab Number:	**1611140-09**
Sample Name:	**ECMW #22**
Date/Time Collected:	**11/9/16 8:50**
Sample Matrix:	**Water**

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**5.16**		11/10/16 1:00	B611173	300.0, 2.1-1993
Nitrate as N	mg/L	**0.530**		11/10/16 1:00	B611173	300.0, 2.1-1993

Dissolved Metals	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Chromium	mg/L	< 0.0104		11/15/16 14:26	B611267	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 14:26	B611267	200.7, Rev. 4.4 (1994)

Total Metals	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Chromium	mg/L	< 0.0104		11/15/16 18:27	B611269	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 18:27	B611269	200.7, Rev 4.4 (1994)

Wet Chemistry	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

16 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: Nov 2016
Date Received: 09-Nov-16 13:20

QUALITY CONTROL RESULTS

Anions -- Batch: B611173 (Water)
Prepared: 09-Nov-16 14:33 By: MB -- Analyzed: 09-Nov-16 20:41 By: MB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.250 mg/L	102% / NA	104% / 103%		1.01%	
Sulfate as SO4	<0.500 mg/L	94.0% / NA	103% / 102%		0.209%	

Wet Chemistry -- Batch: B611252 (Water)
Prepared: 14-Nov-16 09:30 By: SC -- Analyzed: 15-Nov-16 09:45 By: SC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	101% / NA	99.2% / 99.0%		0.120%	

Dissolved Metals -- Batch: B611267 (Water)
Prepared: 14-Nov-16 15:30 By: HF -- Analyzed: 15-Nov-16 13:36 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.0104 mg/L	101% / NA	94.8% / 101%		5.87%	
Lead	<0.0156 mg/L	99.9% / NA	90.0% / 95.3%		5.69%	

Total Metals -- Batch: B611269 (Water)
Prepared: 14-Nov-16 17:00 By: HF -- Analyzed: 15-Nov-16 16:46 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.0104 mg/L	100% / NA	102% / 97.3%		4.63%	
Lead	<0.0156 mg/L	99.5% / NA	97.6% / 93.0%		4.83%	

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

Arkansas Analytical Inc.
8100 National Dr.
Little Rock, AR 72209
PHONE: 501-455-3233
FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	Project Description	Turnaround Time	Preservation Codes:
El Dorado Chemical Corporation	El Dorado Chemical Corp GW Samp	1 Day (100%)	1. Cool, 4 Degrees Centigrade — 4. Thiosulfate for Dechlorination
4500 N West Ave		2 Day (50%)	2. Sulfuric Acid (H_2SO_4), pH < 2 — 5. Hydrochloric Acid(HCl)
El Dorado, AR 71730	Reporting Information	3 Day (25%)	3. Nitric Acid (HNO_3), pH < 2 — 6. Sodium Hydroxide (NaOH), pH > 12
	Telephone: 225-753-3631	5 Day (Routine)	TEST PARAMETERS
	Fax:	Preservative Code:	2 / 1 / 3
	Email: lmarcella@env-mgt.com	Bottle Type:	P / P / P

Bottle Type Code: G = Glass; P = Plastic; V = Septum; A = Amber

Sampler(s) Signature: Tyler Lollis

Sampler(s) Printed: Tyler Lollis

Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION	Ammonia & Nitrate *	Sulfate * Nitrate	Chromium & Lead	4-Cr 4-Pb *						Arkansas Analytical Work Order Number: 1611140
1	11/9/2016	0810	X		4	GW	ECMW-13	X	X	X	X						01
2	11/9/2016	0830	X		4	GW	ECMW-14	X	X	X	X						02
3	11/9/2016	0825	X		4	GW	ECMW-15	X	X	X	X						03
4	11/9/2016	0820	X		4	GW	ECMW-16	X	X	X	X						04
5	11/9/2016	0840	X		4	GW	ECMW-17	X	X	X	X						05
6	11/9/2016	0915	X		4	GW	ECMW-19	X	X	X	X						06
7	11/9/2016	0935	X		4	GW	ECMW-20	X	X	X	X						07
8	11/9/2016	0940	X		4	GW	ECMW-21	X	X	X	X						08
9	11/9/2016	0850	X		4	GW	ECMW-22	X	X	X	X						09

1. Relinquished by: (Signature)	Date/Time	2. Received by: (Signature)
Tyler Lollis	11/9/16 1005	10005 11/9/16
3. Relinquished by: (Signature)	Date/Time	4. Received by lab: (Signature)
Edward Kan	11/9/16 1200 Pm	Jimmy Riddle

SAMPLE CONDITION UPON RECEIPT IN LAB		
1 CUSTODY SEALS:	✓ Yes	No
2 CONTAINERS CORRECT:	Yes	No
3 COC/LABELS AGREE:	Yes	No
4 RECEIVED ON ICE:	Yes	No
5 TEMPERATURE ON RECEIPT:	9 °C	
6 TEMPERATURE GUN ID:	HHT# 2	
FOR COMPLETION BY LAB ONLY		

REMARKS / SAMPLE COMMENTS

*Changes made per containers received - TR 11/9/16

Revision 3
1/4/16

Arkansas Analytical Inc.

8100 National Dr. - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

18 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731

Project: Groundwater Sample(s)

Project Number: Nov 2016

SDG Number: 1611163

Enclosed are the results of analyses for samples received by the laboratory on 10-Nov-16 13:40. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✔
Containers Correct	✔
COC/Labels Agree	✔
Received On Ice	✔
Temperature on Receipt	8.0°C

Sincerely,

Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

18 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: Nov 2016
Date Received: 10-Nov-16 13:40

CASE NARRATIVE

Sample Delivery Group – 1611163

One *OR* more of the qualifiers described below may appear in this report.

SAMPLE RECEIPT QUALIFIERS:

Qualifier	Description
ET	Samples received above required temperature.
ET	Samples received above required temperature. Although collected and received the same day, no ice was present to indicate the cooling preservation was attempted.
E2	Result qualified as it was received and analyzed outside of holding time. Analysis is considered a "Field" analysis.
E2	Result qualified as it was received and/or analyzed outside of holding time.
E3	Result qualified as it was received in the incorrect container and/or preservation.

18 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: Nov 2016
Date Received: 10-Nov-16 13:40

ANALYTICAL RESULTS

Lab Number: 1611163-01
Sample Name: ECMW #1
Date/Time Collected: 11/10/16 10:05
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**5.41**		11/11/16 11:43	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**0.951**		11/11/16 11:43	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:10	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 15:10	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 17:11	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 17:11	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611163-02
Sample Name: ECMW #2
Date/Time Collected: 11/10/16 9:55
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**22.2**		11/16/16 10:31	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		11/11/16 12:06	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:14	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 15:14	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	**0.0212**		11/16/16 17:22	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 17:22	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

18 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
Project Number: Nov 2016
Date Received: 10-Nov-16 13:40

ANALYTICAL RESULTS

Lab Number: 1611163-03
Sample Name: ECMW #3
Date/Time Collected: 11/10/16 9:45
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**16.2**		11/16/16 10:55	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		11/11/16 12:30	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:18	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 15:18	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 17:26	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 17:26	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611163-04
Sample Name: ECMW #4
Date/Time Collected: 11/10/16 9:40
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	< 0.500		11/11/16 12:53	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		11/11/16 12:53	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:22	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 15:22	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 17:30	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 17:30	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/15/16 9:45	B611252	4500-NH3 B,D,C-1997

18 November 2016

David Sartain
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)
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Date Received: 10-Nov-16 13:40

ANALYTICAL RESULTS

Lab Number: 1611163-05
Sample Name: ECMW #5
Date/Time Collected: 11/10/16 8:55
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**59.0**		11/11/16 13:17	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**47.2**		11/11/16 13:17	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:25	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 15:25	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 17:34	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 17:34	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611163-06
Sample Name: ECMW #6
Date/Time Collected: 11/10/16 9:15
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**62.6**		11/16/16 11:19	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**5780**		11/11/16 13:40	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:29	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	**0.0634**		11/15/16 15:29	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 17:53	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0580**		11/16/16 17:53	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**1890**		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

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ANALYTICAL RESULTS

Lab Number: 1611163-07
Sample Name: ECMW #7
Date/Time Collected: 11/10/16 9:20
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**165**		11/11/16 16:46	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**2300**	E2	11/14/16 11:02	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:33	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 15:33	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 17:57	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 17:57	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**1450**		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611163-08
Sample Name: ECMW #8
Date/Time Collected: 11/10/16 9:25
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**270**		11/11/16 17:09	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**1830**		11/11/16 17:09	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:37	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	**0.0313**		11/15/16 15:37	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 18:01	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0341**		11/16/16 18:01	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**1020**		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

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ANALYTICAL RESULTS

Lab Number: 1611163-09
Sample Name: ECMW #9
Date/Time Collected: 11/10/16 9:30
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**616**		11/14/16 9:44	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**29.1**		11/11/16 17:33	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 15:41	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 15:41	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 18:04	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 18:04	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**4.08**		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611163-10
Sample Name: ECMW #10
Date/Time Collected: 11/10/16 10:15
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**141**		11/14/16 10:08	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**44.1**		11/11/16 17:56	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 16:07	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 16:07	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 18:08	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 18:08	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

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ANALYTICAL RESULTS

Lab Number: 1611163-11
Sample Name: ECMW #11
Date/Time Collected: 11/10/16 10:30
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**245**		11/14/16 10:31	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**18.3**		11/11/16 18:20	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 16:11	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 16:11	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 18:12	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 18:12	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**3.86**		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611163-12
Sample Name: ECMW #12
Date/Time Collected: 11/10/16 10:35
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**33.0**		11/14/16 10:55	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		11/11/16 18:43	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 16:15	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 16:15	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 18:16	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 18:16	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**2.22**		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

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ANALYTICAL RESULTS

Lab Number: 1611163-13
Sample Name: ECMW #18
Date/Time Collected: 11/10/16 10:55
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**1.29**		11/11/16 19:07	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	< 0.250		11/11/16 19:07	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 16:23	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 16:23	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 18:20	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	**0.0248**		11/16/16 18:20	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	**0.788**		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

ANALYTICAL RESULTS

Lab Number: 1611163-14
Sample Name: BD-1
Date/Time Collected: 11/10/16 0:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**43.8**		11/11/16 15:59	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**42.1**		11/11/16 15:59	B611195	300.0, 2.1-1993
Dissolved Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/15/16 16:27	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 16:27	B611268	200.7, Rev. 4.4 (1994)
Total Metals	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Chromium	mg/L	< 0.0104		11/16/16 18:23	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 18:23	B611294	200.7, Rev 4.4 (1994)
Wet Chemistry	**Units**	**Result**	**Qualifier(s)**	**Date/Time Analyzed**	**Batch**	**Method**
Ammonia as N	mg/L	< 0.500		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

18 November 2016

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ANALYTICAL RESULTS

Lab Number: 1611163-15
Sample Name: BD-2
Date/Time Collected: 11/10/16 0:00
Sample Matrix: Water

Anions	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Sulfate as SO4	mg/L	**136**		11/11/16 16:22	B611195	300.0, 2.1-1993
Nitrate as N	mg/L	**42.6**		11/11/16 16:22	B611195	300.0, 2.1-1993

Dissolved Metals	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Chromium	mg/L	< 0.0104		11/15/16 16:30	B611268	200.7, Rev. 4.4 (1994)
Lead	mg/L	< 0.0156		11/15/16 16:30	B611268	200.7, Rev. 4.4 (1994)

Total Metals	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Chromium	mg/L	< 0.0104		11/16/16 18:27	B611294	200.7, Rev 4.4 (1994)
Lead	mg/L	< 0.0156		11/16/16 18:27	B611294	200.7, Rev 4.4 (1994)

Wet Chemistry	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Ammonia as N	mg/L	< 0.500		11/16/16 14:45	B611284	4500-NH3 B,D,C-1997

18 November 2016

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QUALITY CONTROL RESULTS

Anions -- Batch: B611195 (Water)
Prepared: 11-Nov-16 09:06 By: MB -- Analyzed: 11-Nov-16 21:28 By: MB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.250 mg/L	106% / NA	106% / 105%		0.673%	
Sulfate as SO4	<0.500 mg/L	108% / NA	109% / 109%		0.0987%	

Wet Chemistry -- Batch: B611252 (Water)
Prepared: 14-Nov-16 09:30 By: SC -- Analyzed: 15-Nov-16 09:45 By: SC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	101% / NA	99.2% / 99.0%		0.120%	

Dissolved Metals -- Batch: B611268 (Water)
Prepared: 14-Nov-16 16:00 By: HF -- Analyzed: 15-Nov-16 15:06 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.0104 mg/L	98.7% / NA	101% / 97.3%		4.09%	
Lead	<0.0156 mg/L	97.3% / NA	98.6% / 94.7%		4.08%	

Wet Chemistry -- Batch: B611284 (Water)
Prepared: 16-Nov-16 09:30 By: SC -- Analyzed: 16-Nov-16 14:45 By: SC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.500 mg/L	97.0% / NA	88.3% / 98.3%		10.7%	

Total Metals -- Batch: B611294 (Water)
Prepared: 16-Nov-16 15:50 By: HF -- Analyzed: 16-Nov-16 17:07 By: HF

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.0104 mg/L	97.9% / NA	98.7% / 96.8%		1.94%	
Lead	<0.0156 mg/L	98.1% / NA	97.7% / 96.0%		1.79%	

QUALIFIER(S)

*E2: Estimated Result; Analyzed Outside of Holding Time

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: Norma James / Teresa Coins

Norma James and/or Teresa Coins
Technical Director and/or QA Officer

Arkansas Analytical Inc.

8100 National Dr.
Little Rock, AR 72209
PHONE: 501-455-3233
FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	Project Description	Turnaround Time	Preservation Codes:	
El Dorado Chemical Corporation	El Dorado Chemical Corp GW Samp	1 Day (100%)	1. Cool, 4 Degrees Centigrade	4. Thiosulfate for Dechlorination
4500 N West Ave		2 Day (50%)	2. Sulfuric Acid (H_2SO_4), pH < 2	5. Hydrochloric Acid(HCl)
El Dorado, AR 71730	Reporting Information	3 Day (25%)	3. Nitric Acid (HNO_3), pH < 2	6. Sodium Hydroxide (NaOH), pH > 12
	Telephone: 225-753-3631	5 Day (Routine)	TEST PARAMETERS	Bottle Type Code
	Fax:	Preservative Code:	2 | 1 | 3	G = Glass; P = Plastic
	Email: lmarcella@env-mgt.com	Bottle Type:	P | P | P	V = Septum; A = Amber

Sampler(s) Signature: Tyler Lollis

Sampler(s) Printed: Tyler Lollis

Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION	Ammonia & Nitrate	Sulfate, Nitrate *	Chromium & Lead	d-Cr, d-Pb *						Arkansas Analytical Work Order Number: 1611163
1	11/10/2016	1005	X		4	GW	ECMW-1	X	X	X	X						01
2	11/10/2016	0955	X		4	GW	ECMW-2	X	X	X	X						02
3	11/10/2016	0945	X		4	GW	ECMW-3	X	X	X	X						03
4	11/10/2016	0940	X		4	GW	ECMW-4	X	X	X	X						04
5	11/10/2016	0855	X		4	GW	ECMW-5	X	X	X	X						05
6	11/10/2016	0915	X		4	GW	ECMW-6	X	X	X	X						06
7	11/10/2016	0920	X		4	GW	ECMW-7	X	X	X	X						07
8	11/10/2016	0925	X		4	GW	ECMW-8	X	X	X	X						08

1. Relinquished By: (Signature)	Date/Time	2. Received by: (Signature)	SAMPLE CONDITION UPON RECEIPT IN LAB	REMARKS / SAMPLE COMMENTS
Tyler Lollis	11/10/16 1:10pm	11/10/16 11:40am	1. CUSTODY SEALS: ✓ Yes ___ No	* changes made per containers received - TR 11/10/16
3. Relinquished by: (Signature)	Date/Time	4. Received by lab: (Signature)	2. CONTAINERS CORRECT: ✓ Yes ___ No	
11/10/16 1:40pm	11-10-16 1340		3. COC/LABELS AGREE: ✓ Yes ___ No	
			4. RECEIVED ON ICE: ✓ Yes ___ No	
			5. TEMPERATURE ON RECEIPT: 8 °C	
			6. TEMPERATURE GUN ID: IHT# 2	
			FOR COMPLETION BY LAB ONLY	

Arkansas Analytical Inc.

8100 National Dr.
Little Rock, AR 72209
PHONE: 501-455-3233
FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	Project Description	Turnaround Time	Preservation Codes:
El Dorado Chemical Corporation	El Dorado Chemical Corp GW Samp	1 Day (100%)	1. Cool, 4 Degrees Centigrade / 4. Thiosulfate for Dechlorination
4500 N West Ave		2 Day (50%)	2. Sulfuric Acid (H_2SO_4), pH < 2 / 5. Hydrochloric Acid(HCl)
El Dorado, AR 71730	Reporting Information	3 Day (25%)	3. Nitric Acid (HNO_3), pH < 2 / 6. Sodium Hydroxide (NaOH), pH > 12
	Telephone: 225-753-3631	5 Day (Routine)	TEST PARAMETERS
	Fax:	Preservative Code:	2 / 1 / 3
	Email: lmarcella@env-mgt.com	Bottle Type:	P / P / P

Bottle Type Code: G = Glass; P = Plastic; V = Septum; A = Amber

Sampler(s) Signature: Tyler Lollis

Sampler(s) Printed: Tyler Lollis

Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION	Ammonia & Nitrate	Sulfate, Nitrate	Chromium & Lead	8015; 8260 *						Arkansas Analytical Work Order Number: 1611163
9	11/10/2016	0930	X		4	GW	ECMW-9	X	X	X	X						09
10	11/10/2016	1015	X		4	GW	ECMW-10	X	X	X	X						10
11	11/10/2016	1030	X		4	GW	ECMW-11	X	X	X	X						11
12	11/10/2016	1035	X		4	GW	ECMW-12	X	X	X	X						12
13	11/10/2016	1055	X		4	GW	ECMW-18	X	X	X	X						13
14	11/10/2016	—	X		4	GW	BD-1	X	X	X	X						14
15	11/10/2016	—	X		4	GW	BD-2	X	X	X	X (VZ)						15
—	~~11/10/2016~~	—	~~X~~	—	~~4~~	GW	EQUIP BLANK	X	X	X	—						—

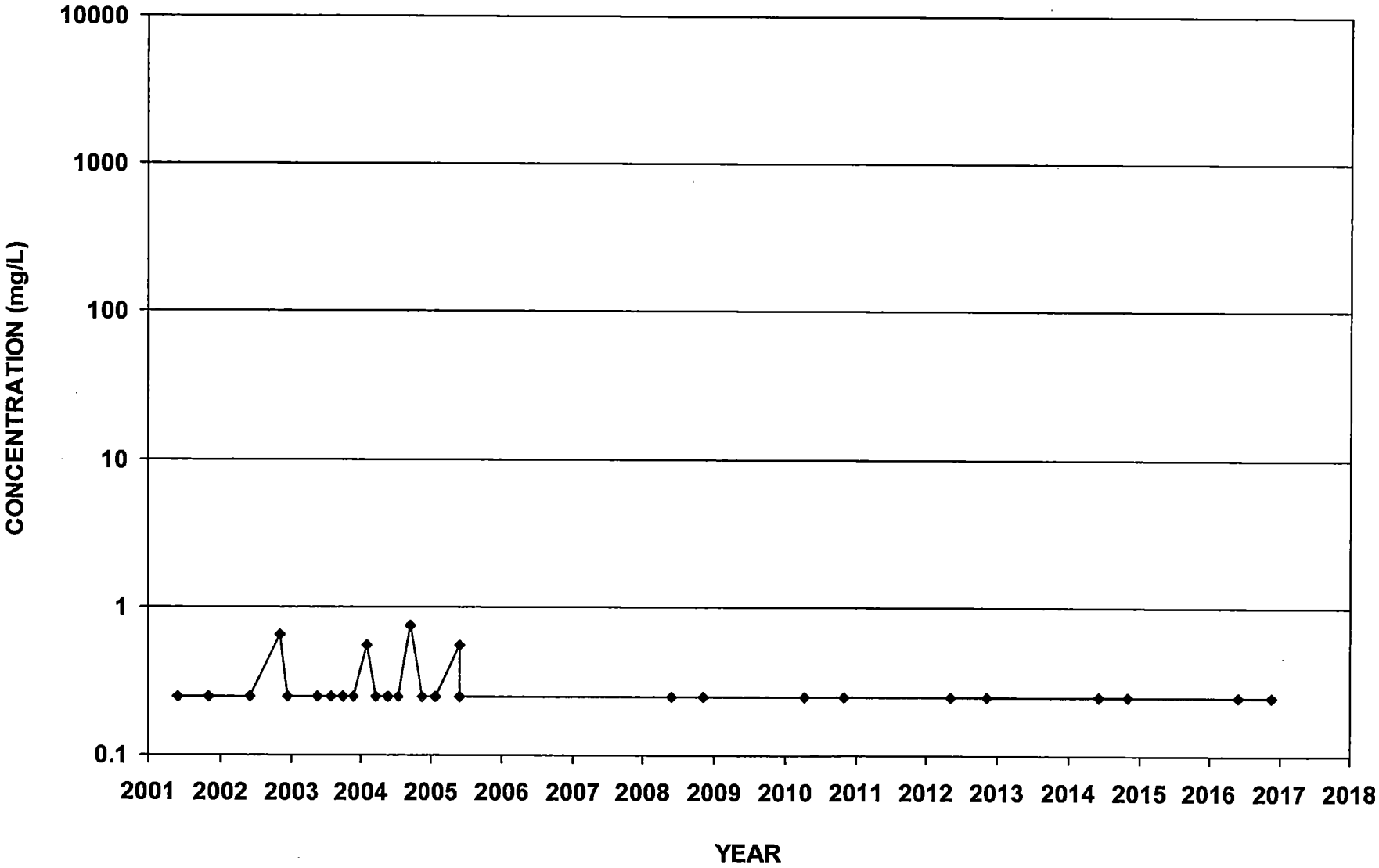
1. Relinquished by: (Signature)	Date/Time	2. Received by: (Signature)	SAMPLE CONDITION UPON RECEIPT IN LAB	REMARKS / SAMPLE COMMENTS
Tyler Lollis	11:10 am 11/10/16	11/10/16 11:40 am	1. CUSTODY SEALS: ✓Yes ___No	* Changes made per containers received TR 11/16/16
3. Relinquished by: (Signature)	Date/Time	4. Received by lab: (Signature)	2. CONTAINERS CORRECT: ✓Yes ___No	
11/10/16 1405	11-10-16 1340		3. COC/LABELS AGREE: ✓Yes ___No	
			4. RECEIVED ON ICE: ✓Yes ___No	
			5. TEMPERATURE ON RECEIPT: 8 °C	
			6. TEMPERATURE GUN ID: IR#2	
			FOR COMPLETION BY LAB ONLY	

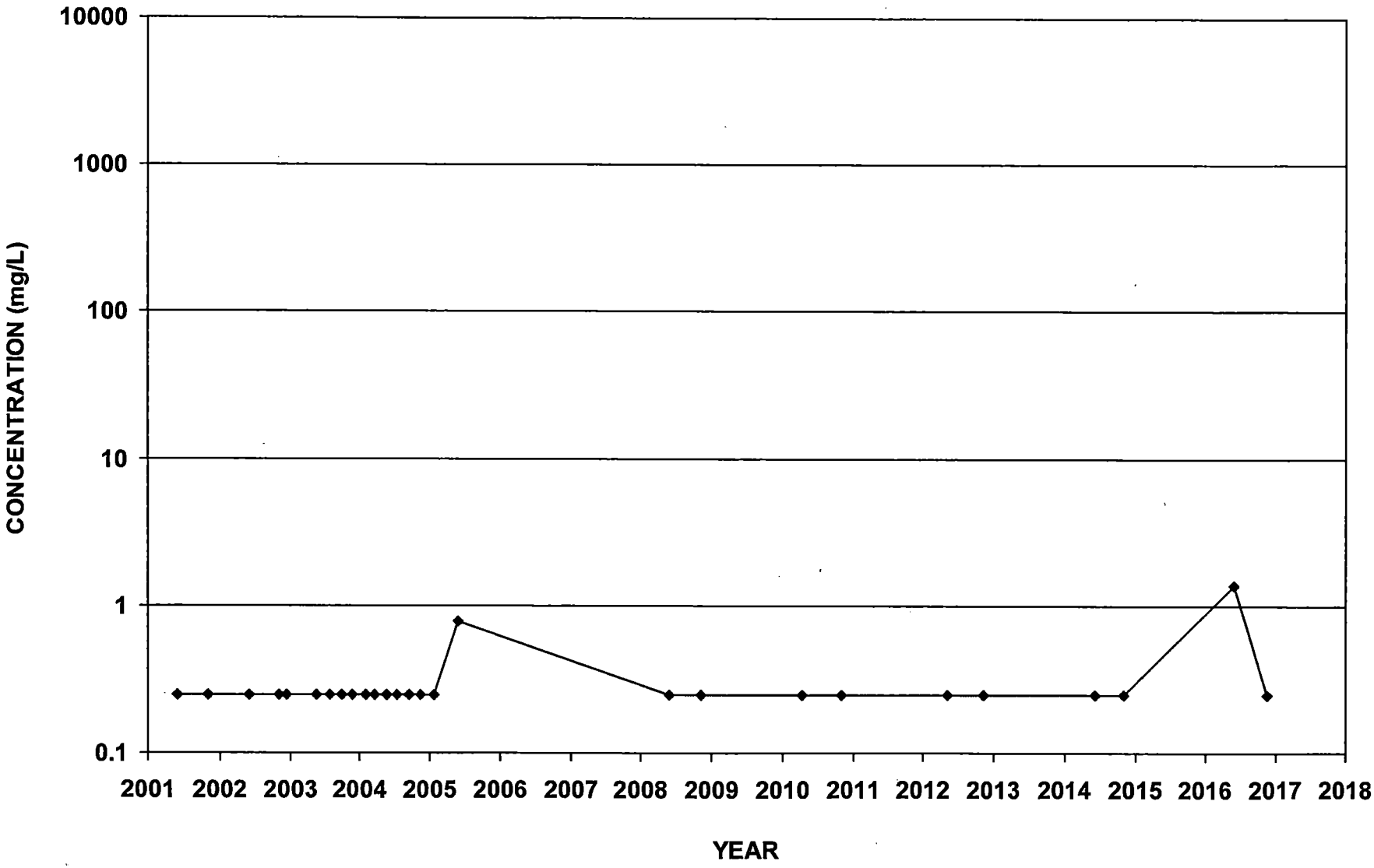
Revision 3
1/4/16

APPENDIX B

TREND GRAPHS

ECMW-1
Ammonia-N




ECMW-2
Ammonia-N
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1000
100
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1
0.1
CONCENTRATION (mg/L)
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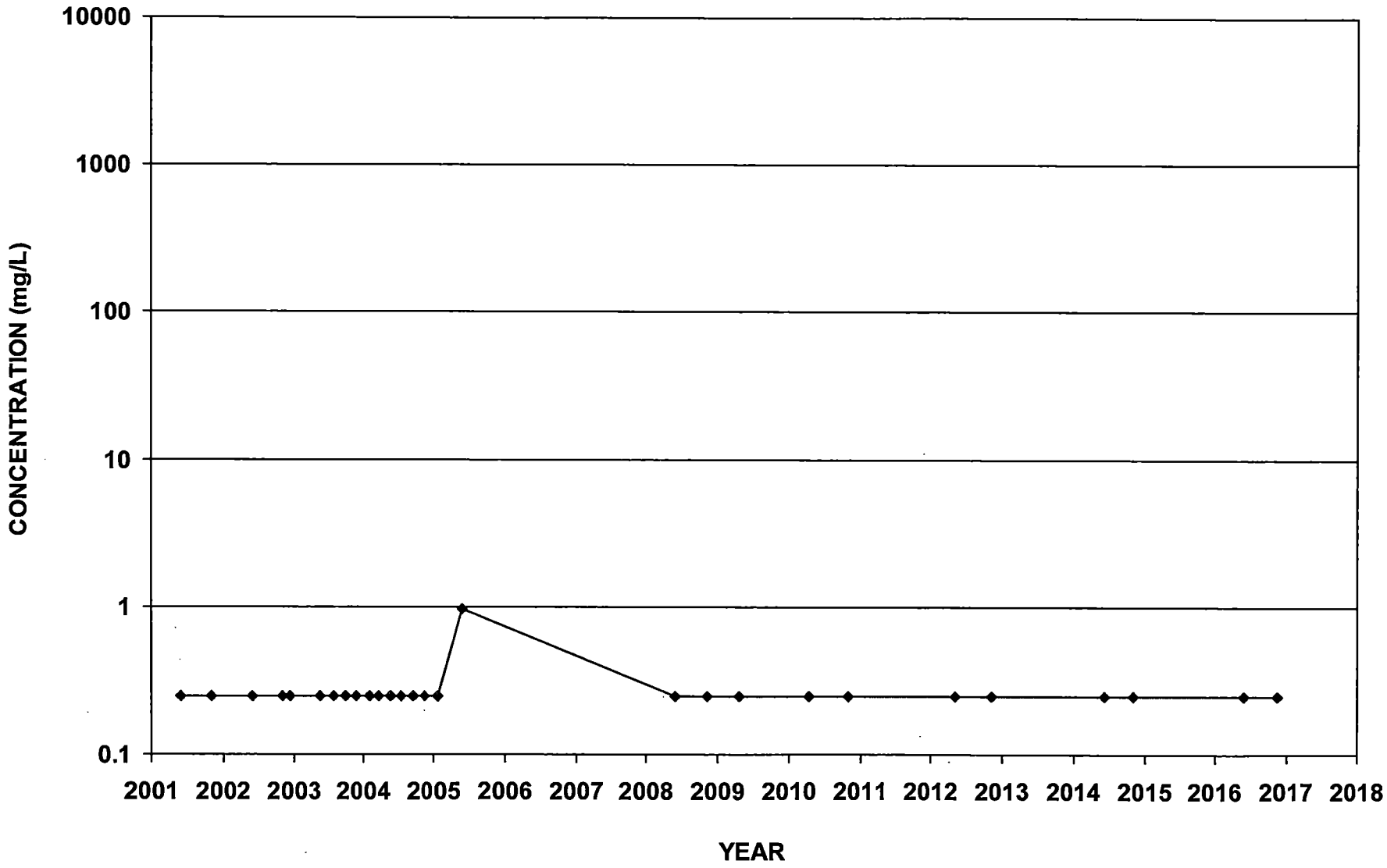
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Ammonia-N
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0.1
CONCENTRATION (mg/L)
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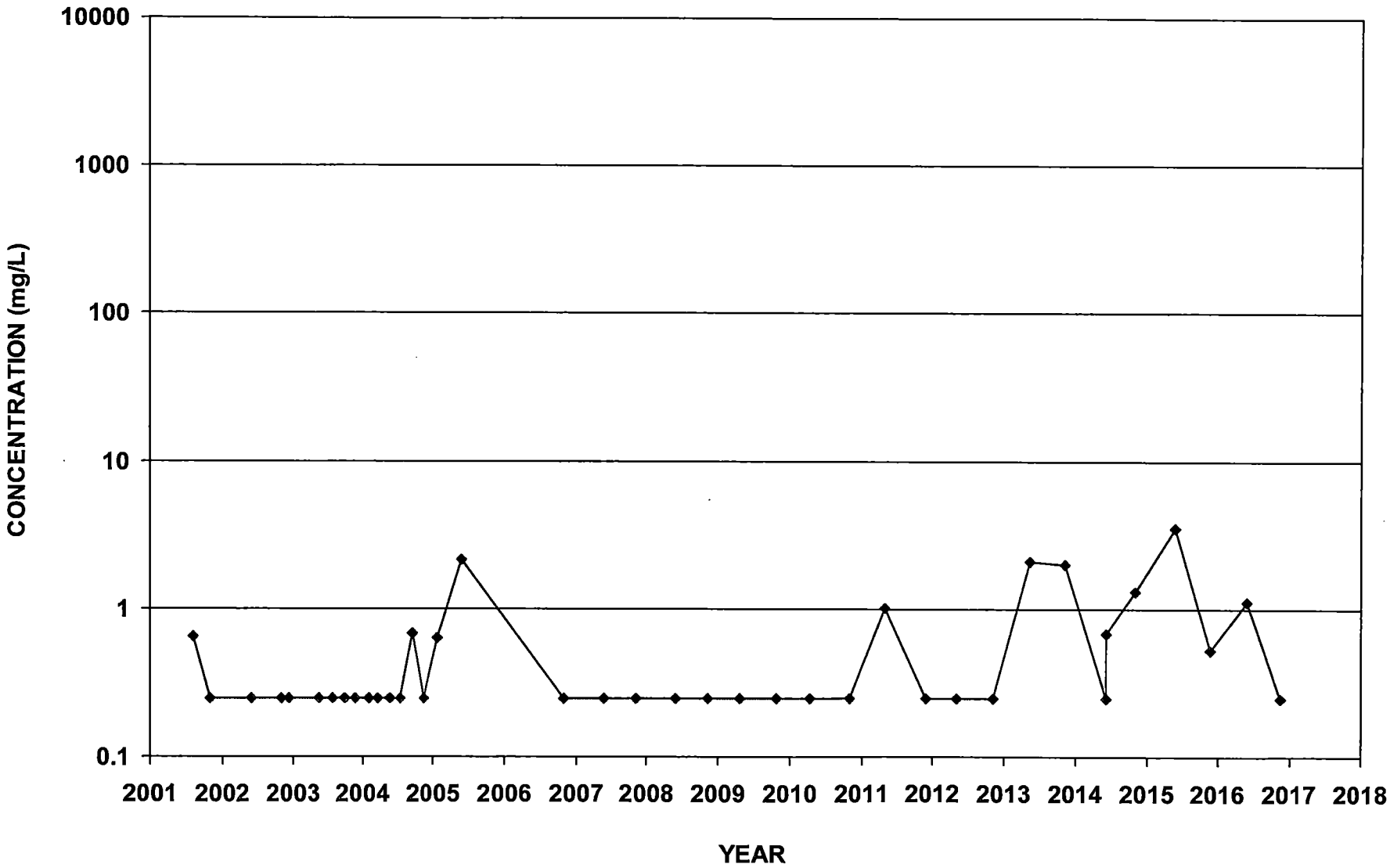
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Ammonia-N
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CONCENTRATION (mg/L)
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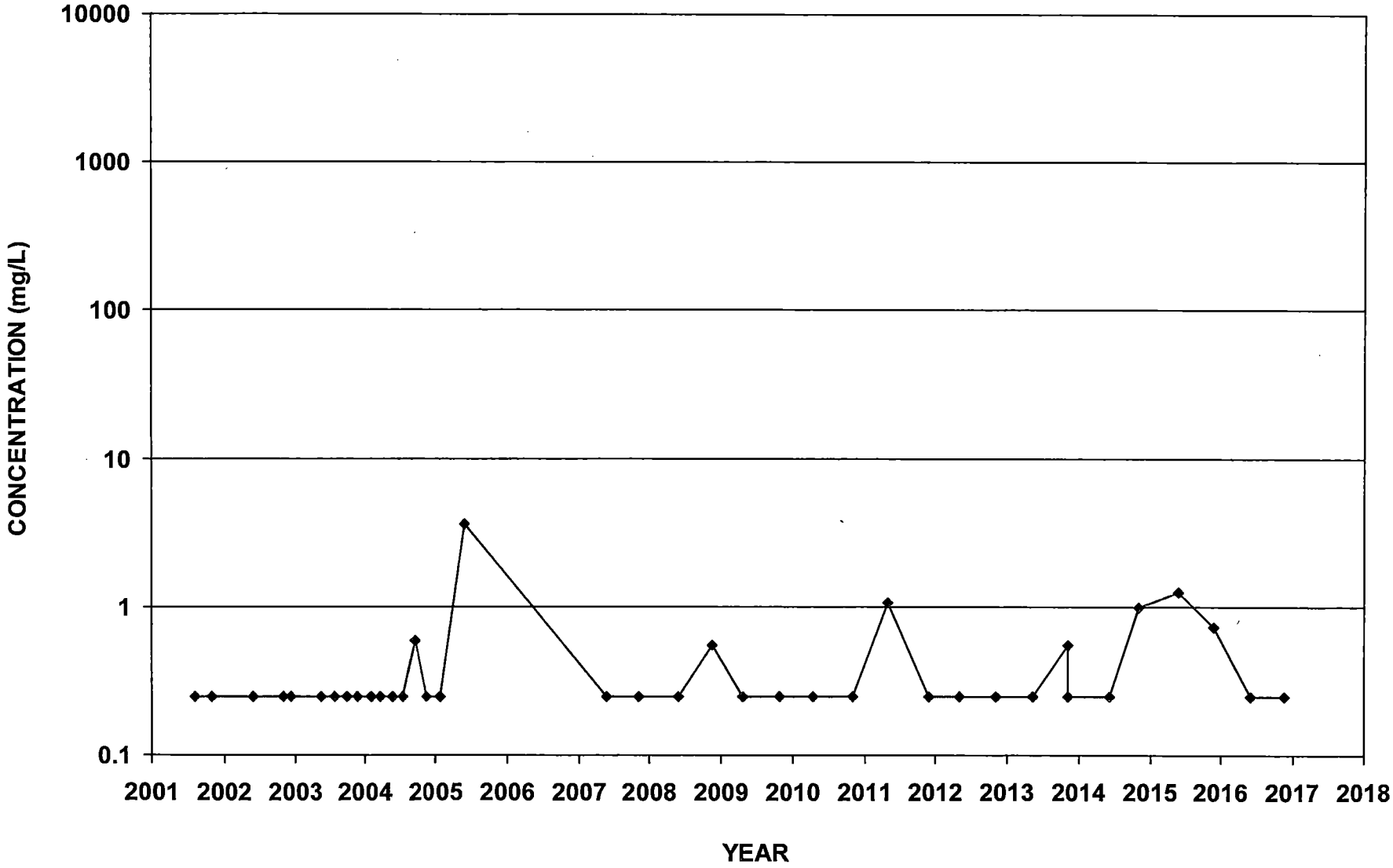
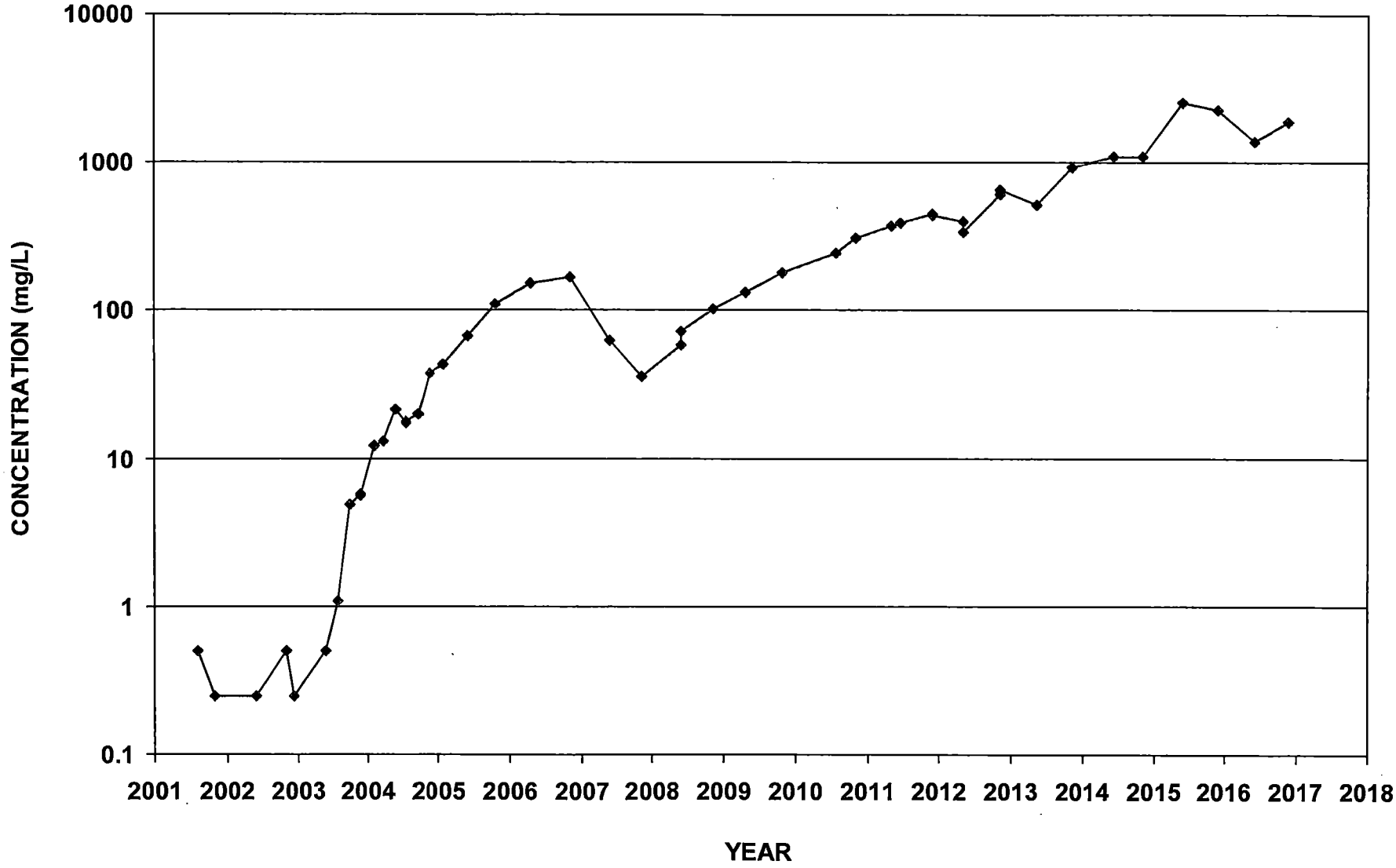
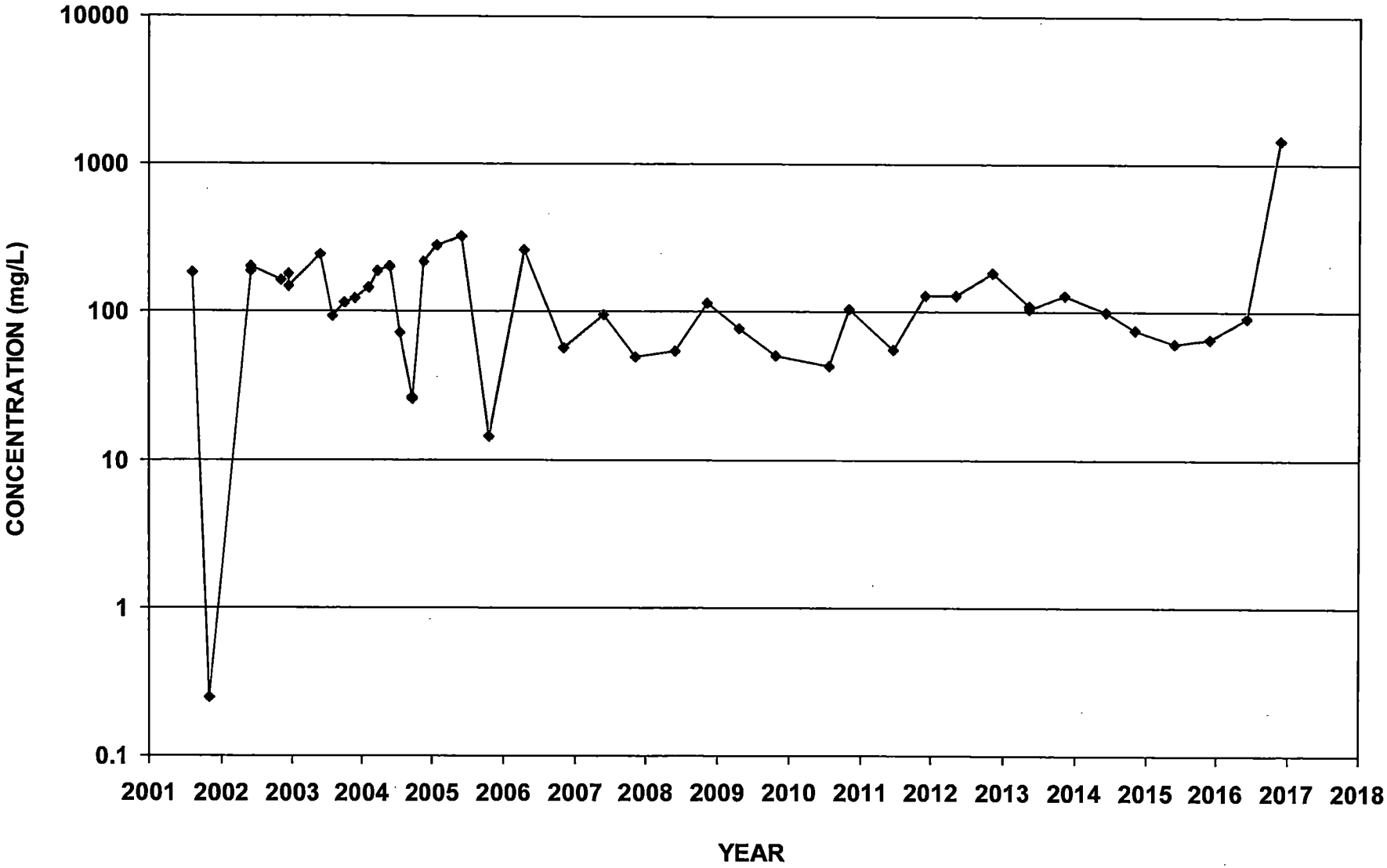
YEAR

ECMW-5
Ammonia-N



ECMW-6
Ammonia-N

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Ammonia-N
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CONCENTRATION (mg/L)
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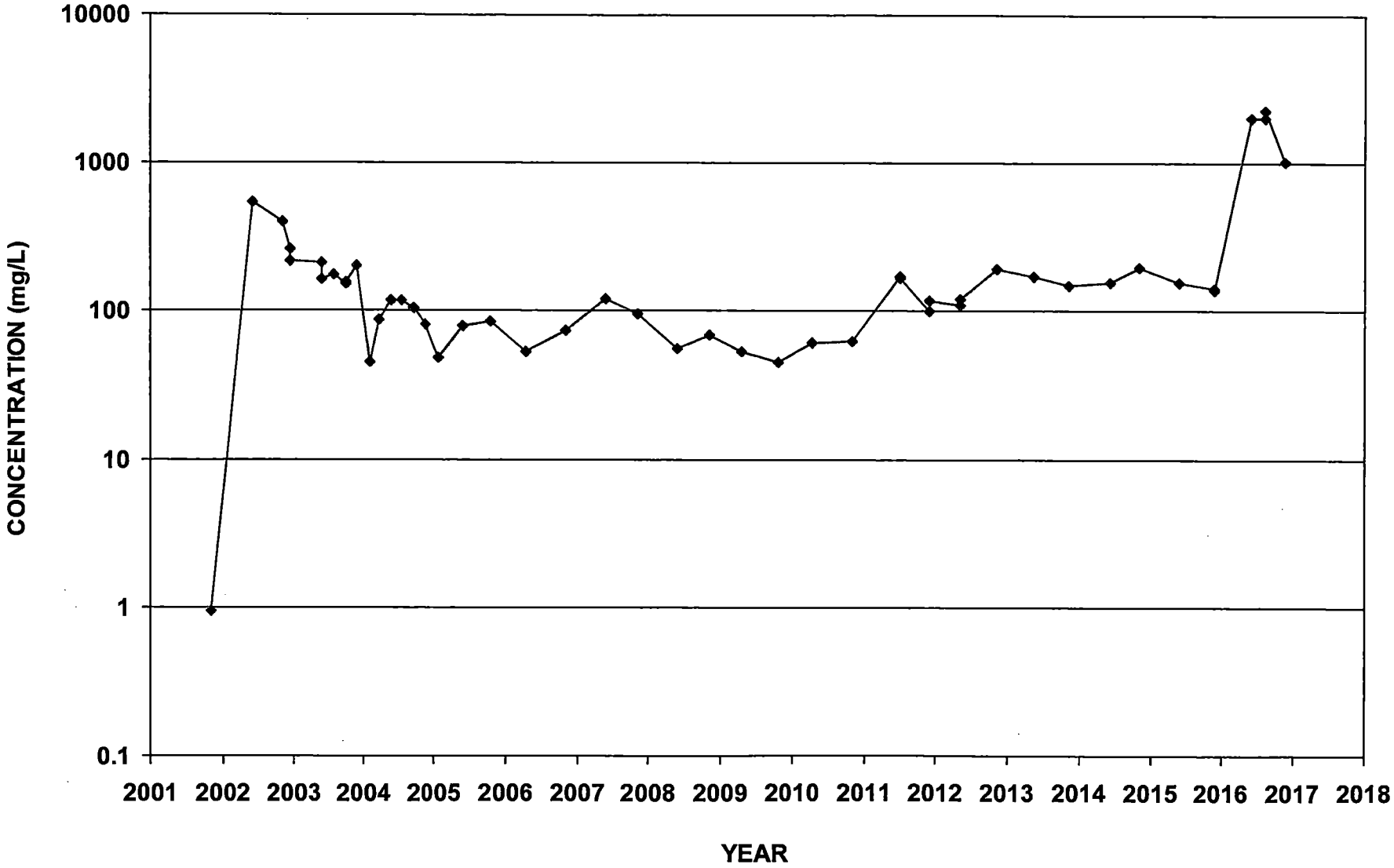
2018
YEAR

ECMW-8
Ammonia-N



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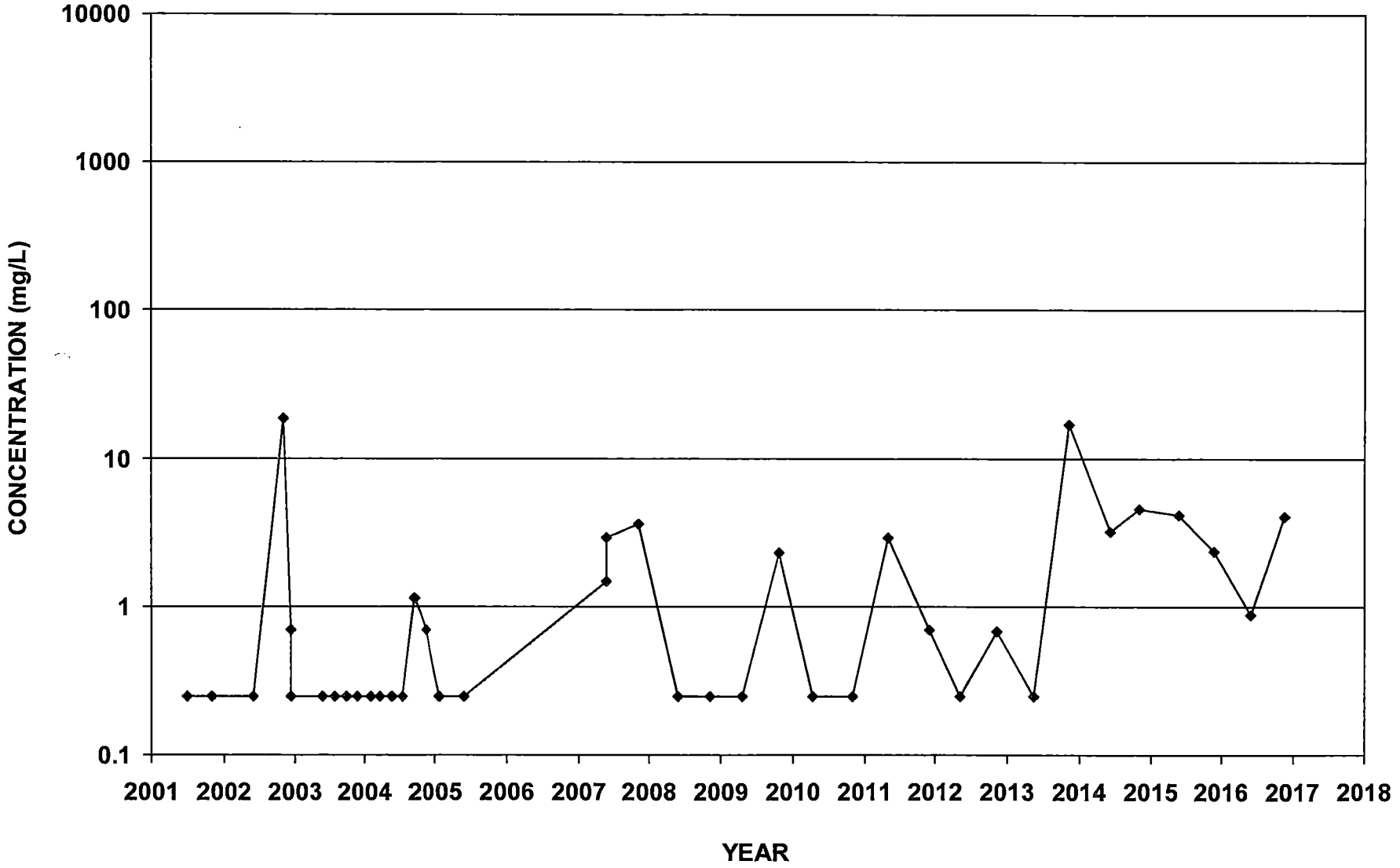
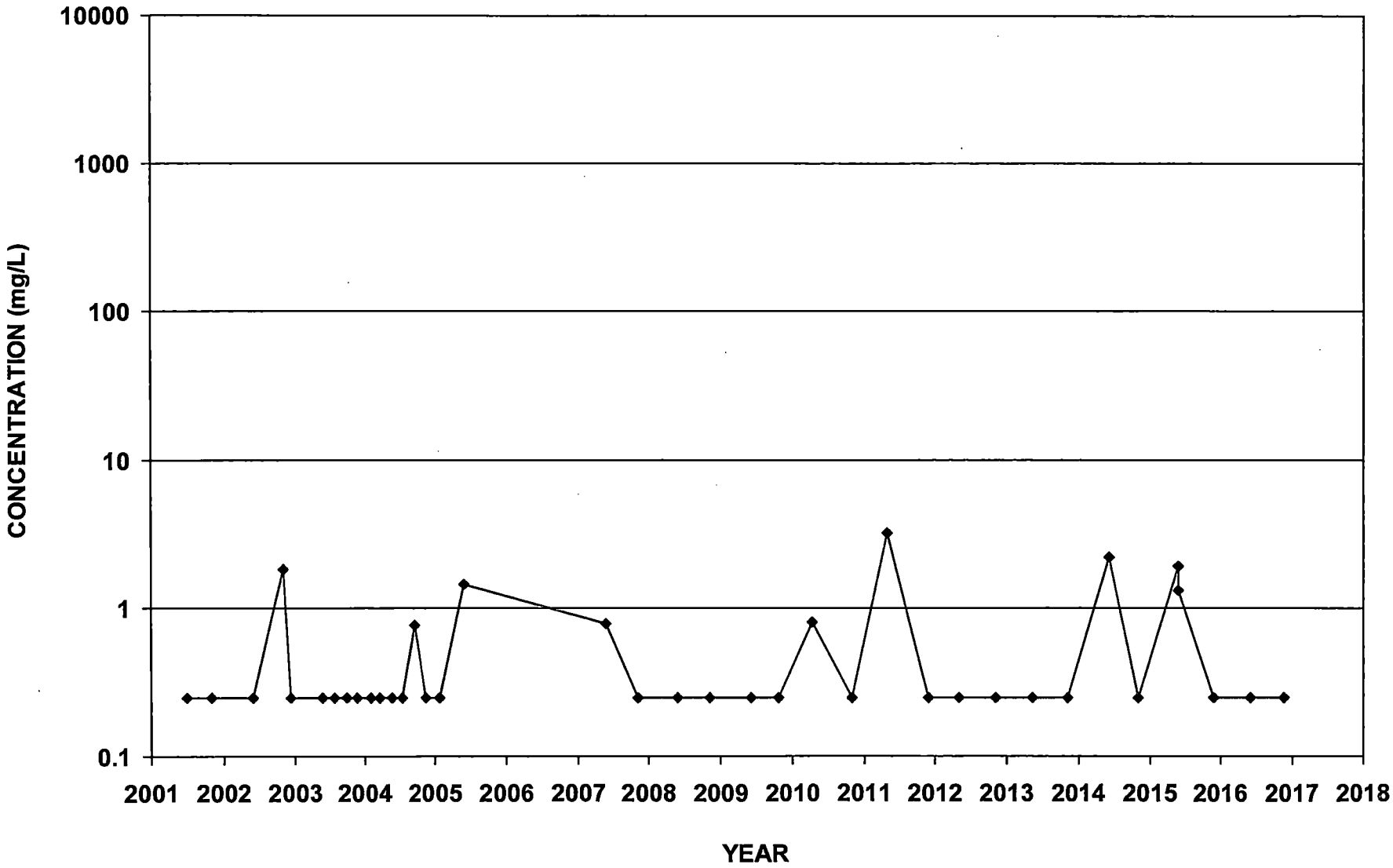
Ammonia-N

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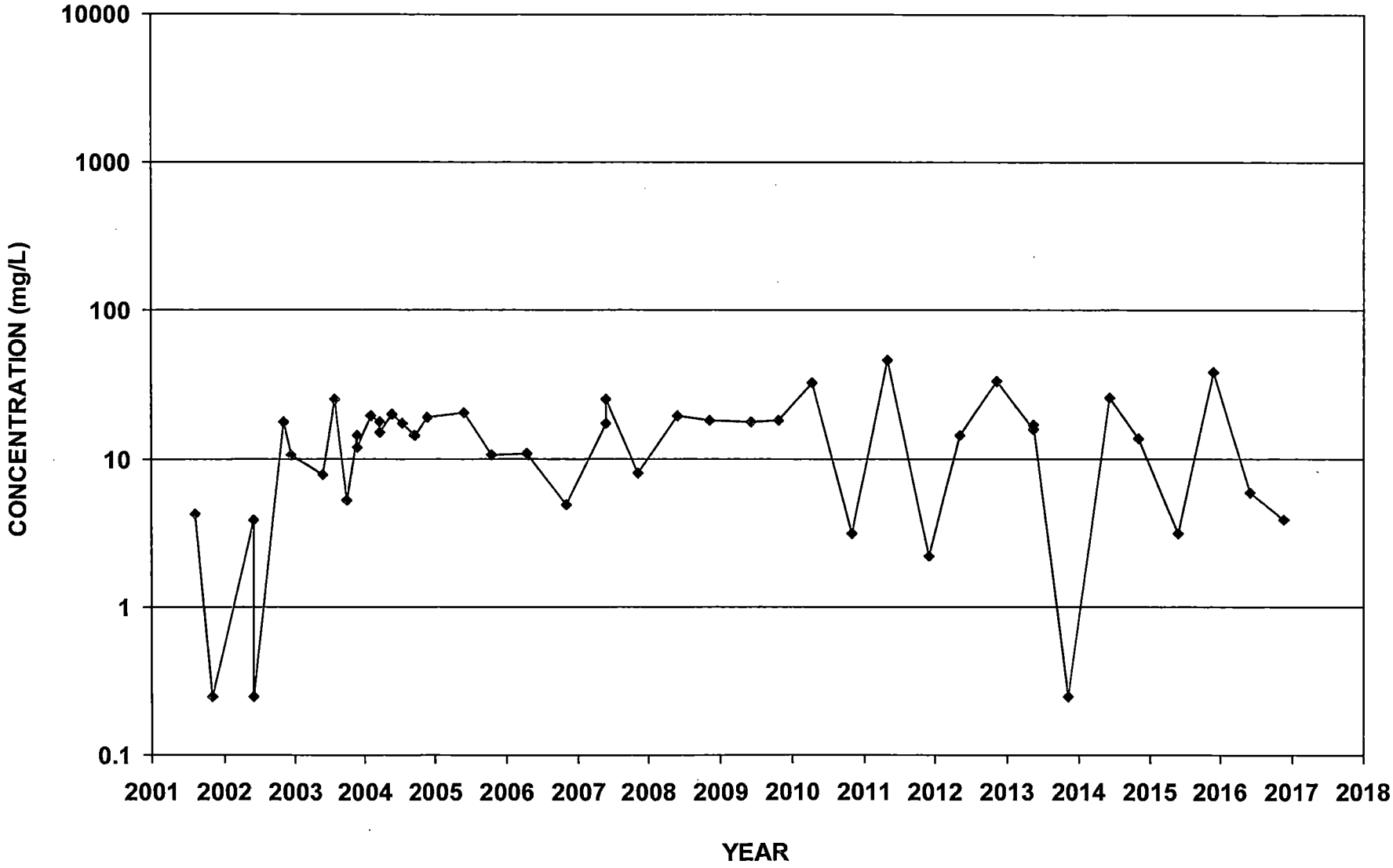
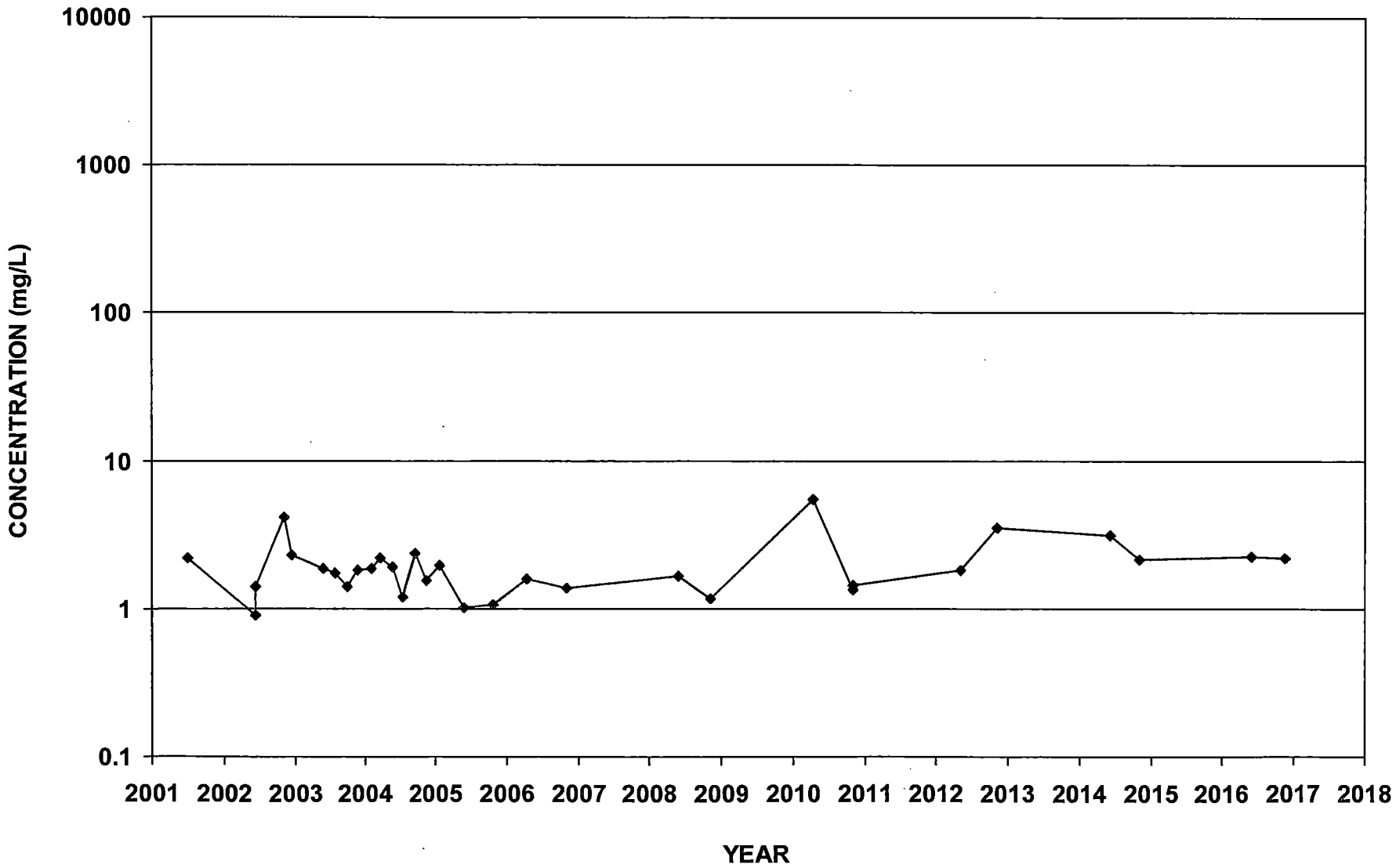
YEAR

ECMW-11
Ammonia-N

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CONCENTRATION (mg/L)
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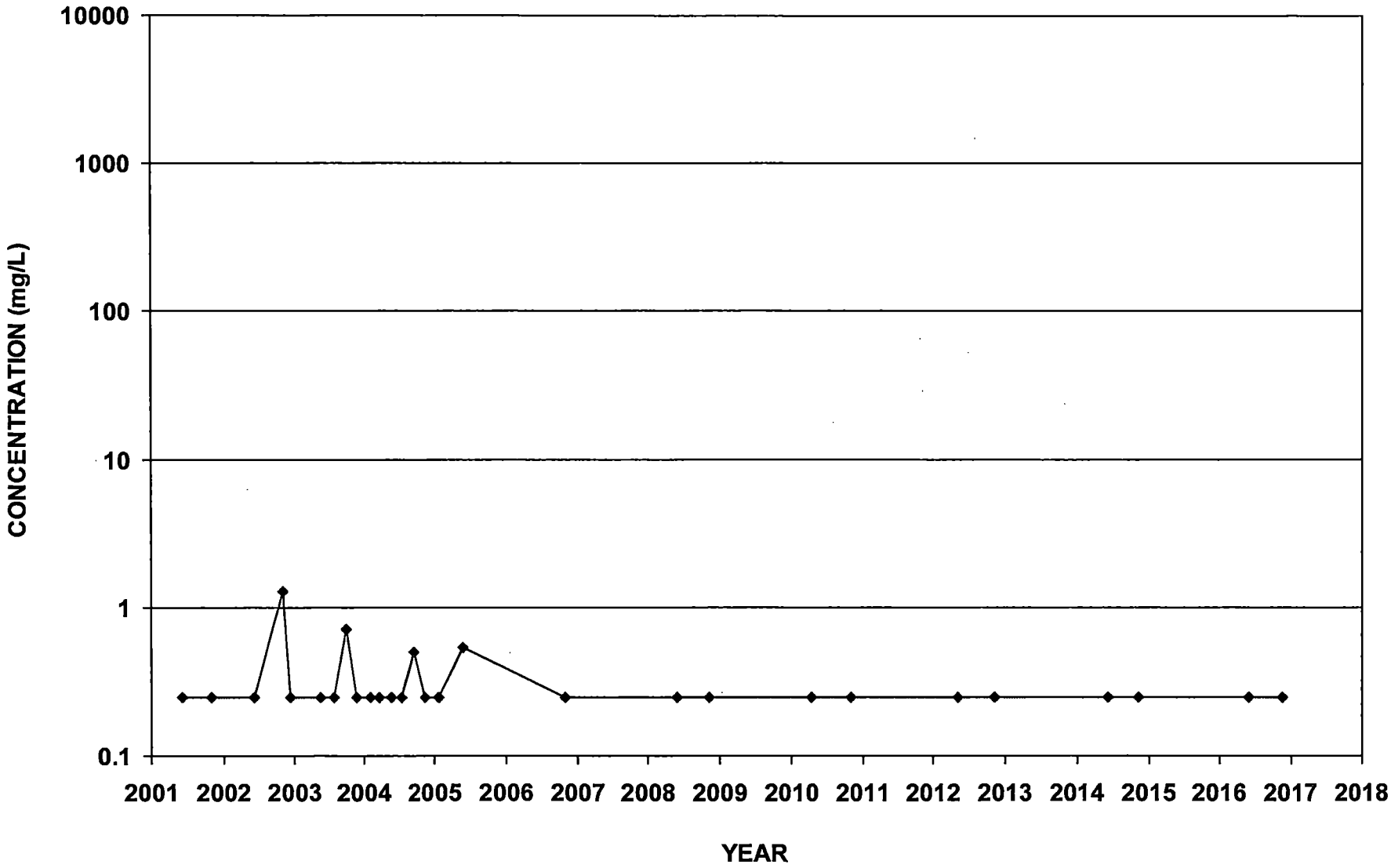
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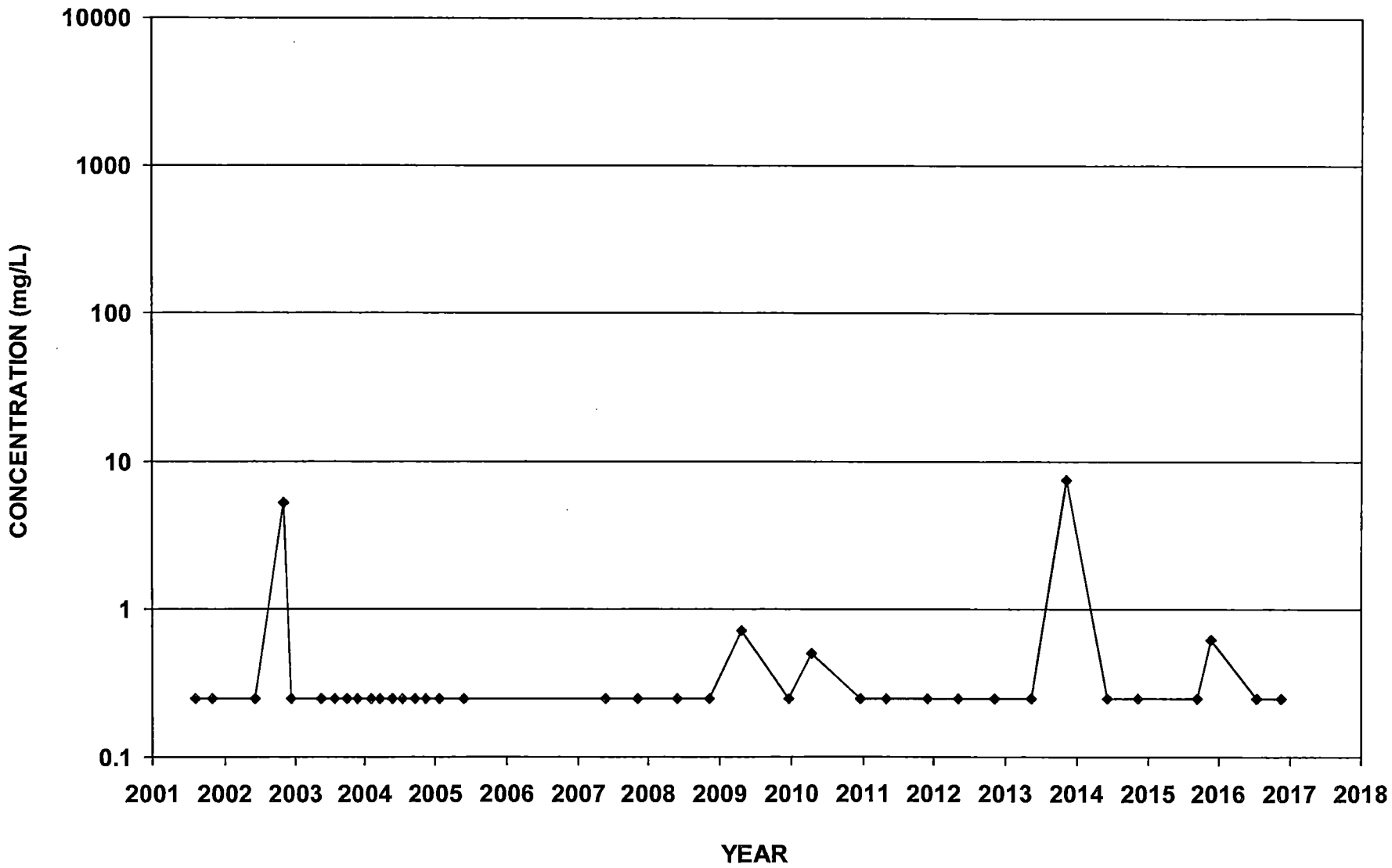
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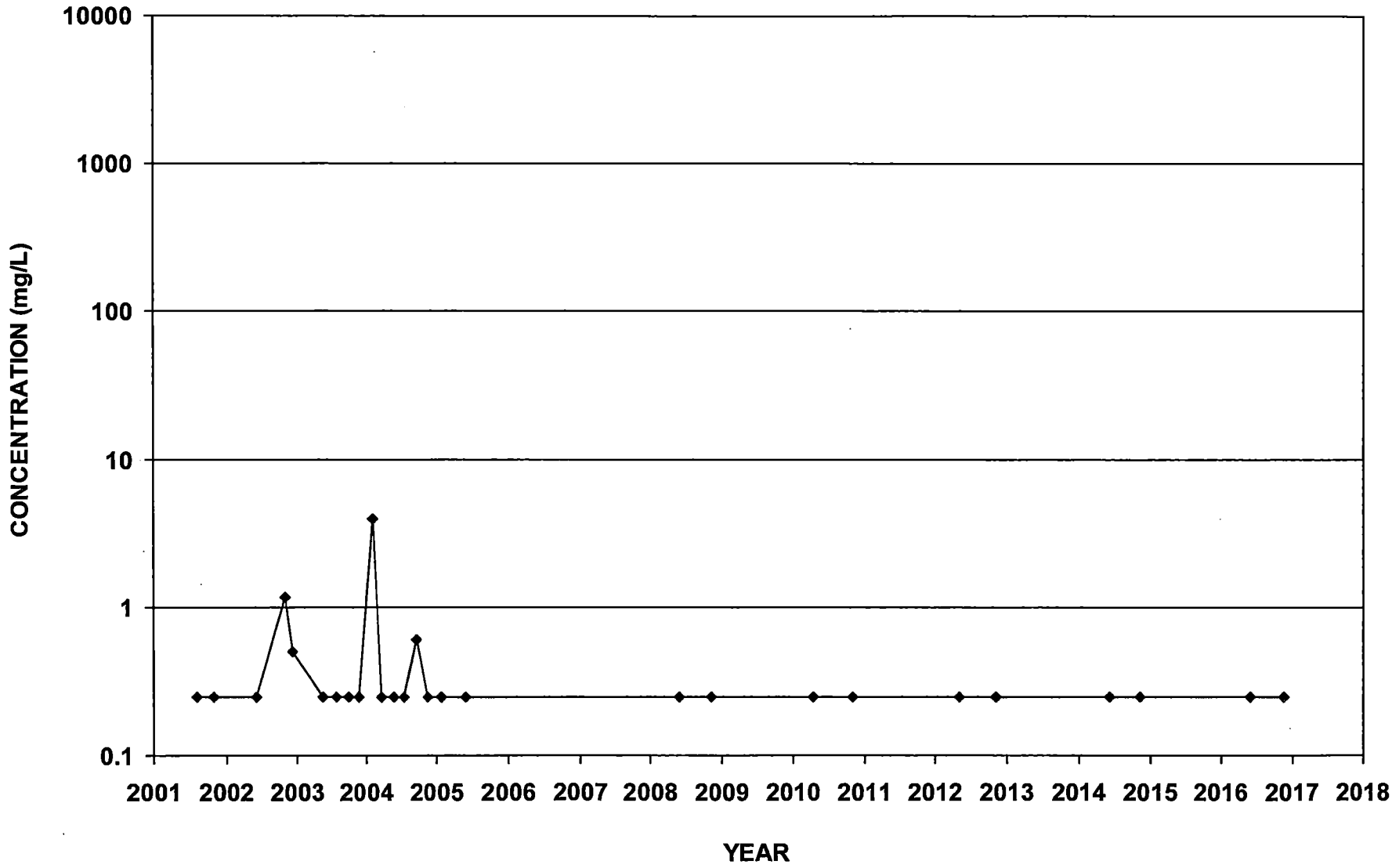
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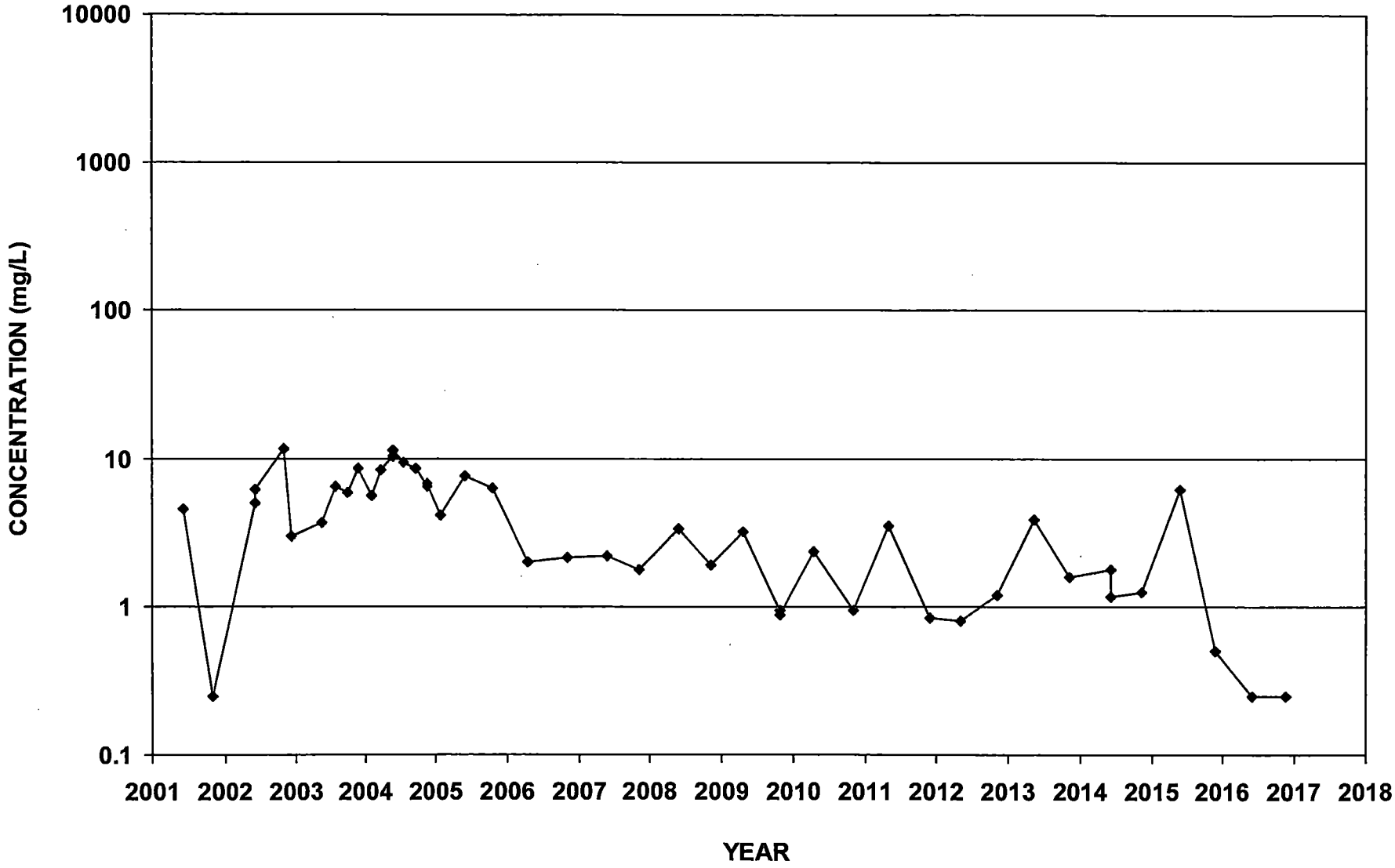
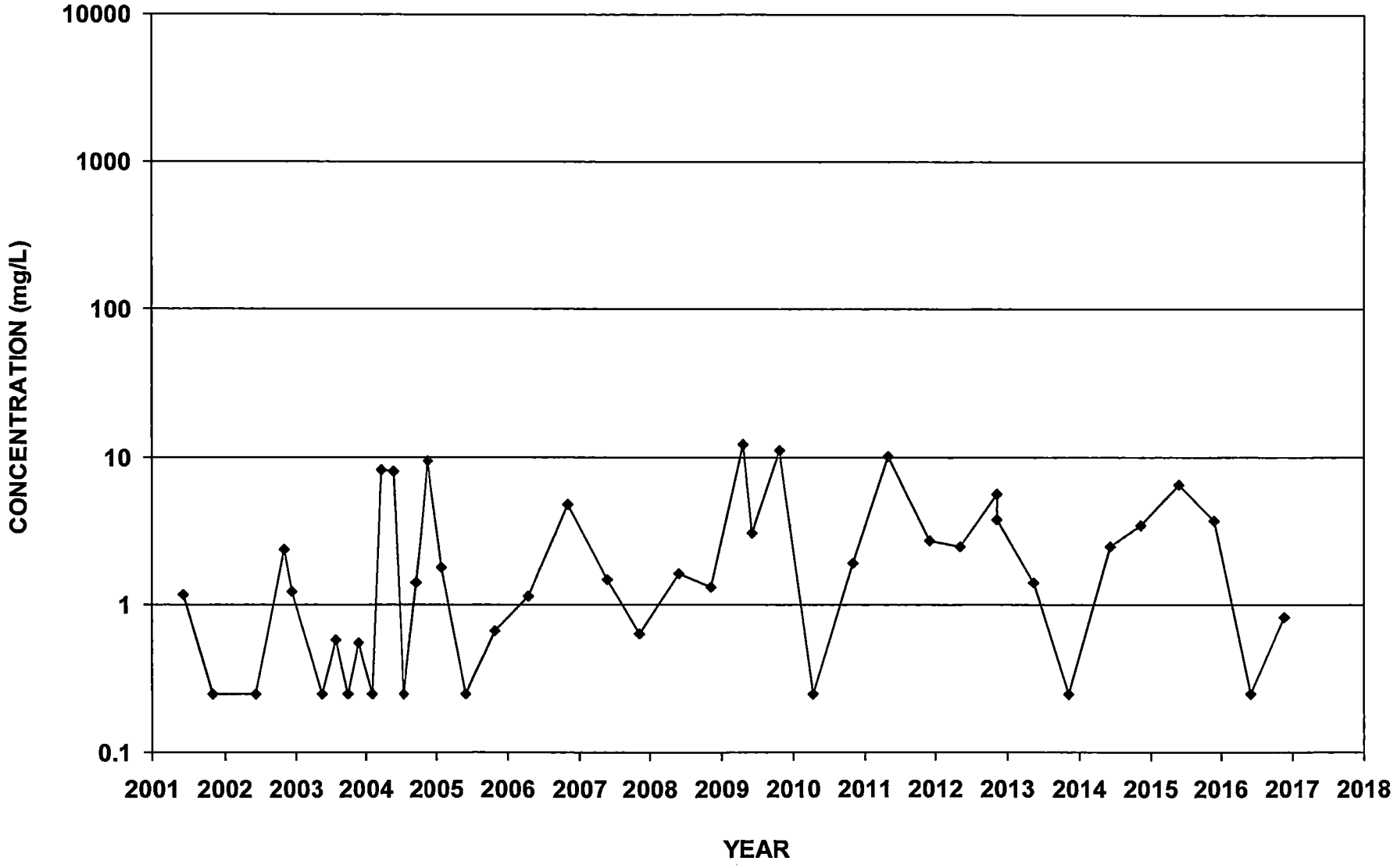
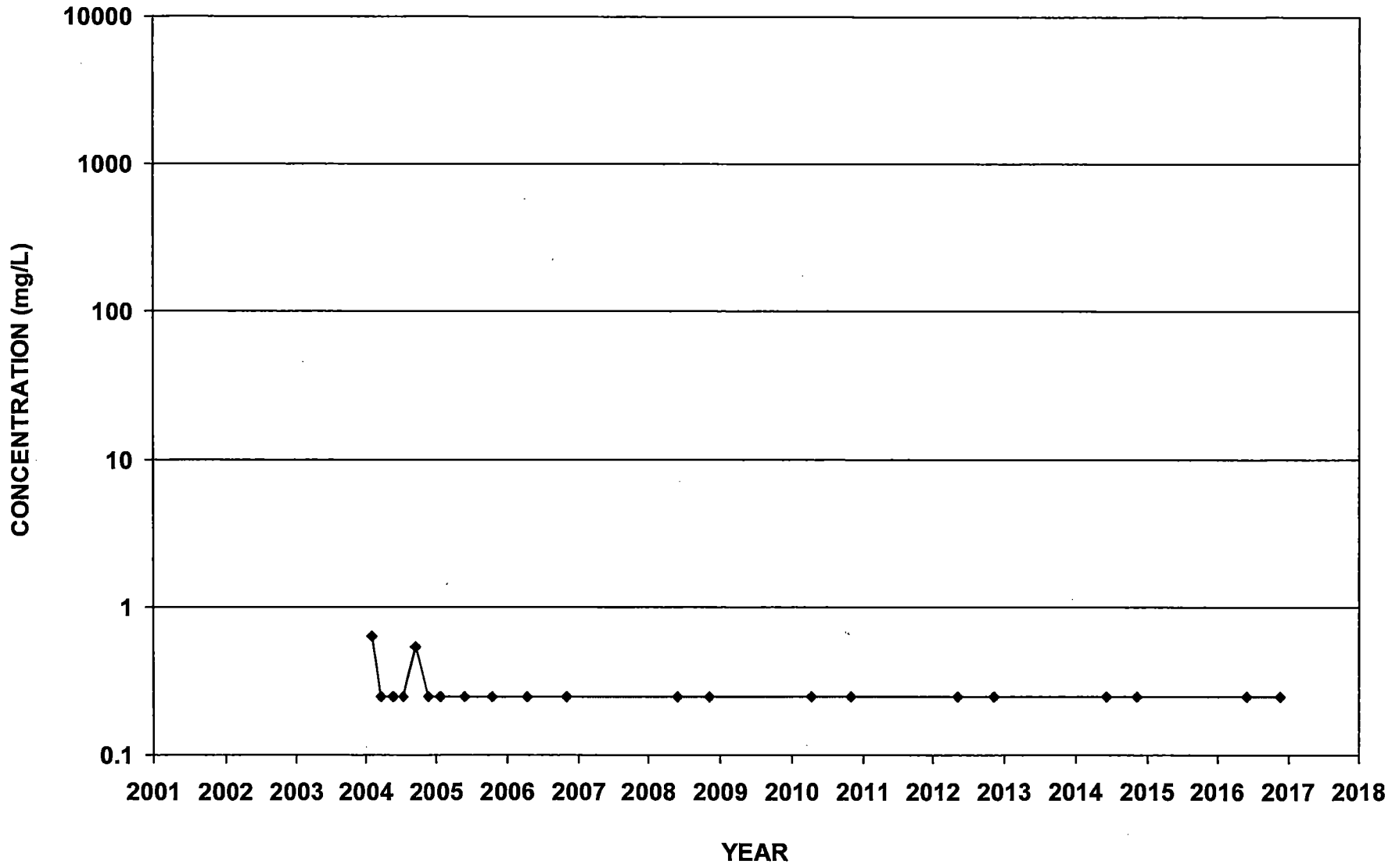
YEAR

ECMW-16
Ammonia-N



ECMW-17
Ammonia-N

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Ammonia-N
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CONCENTRATION (mg/L)
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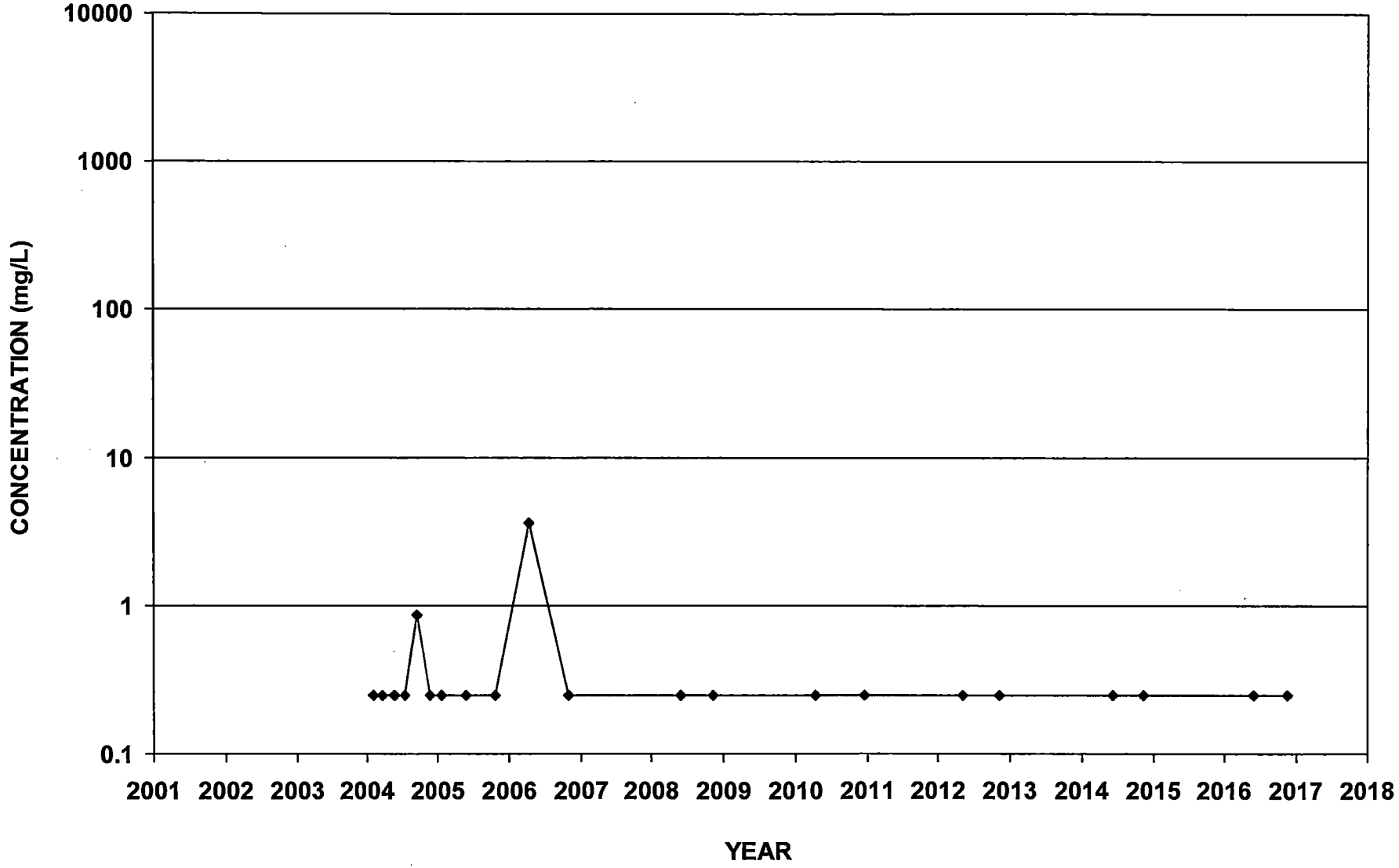
YEAR

ECMW-20
Ammonia-N



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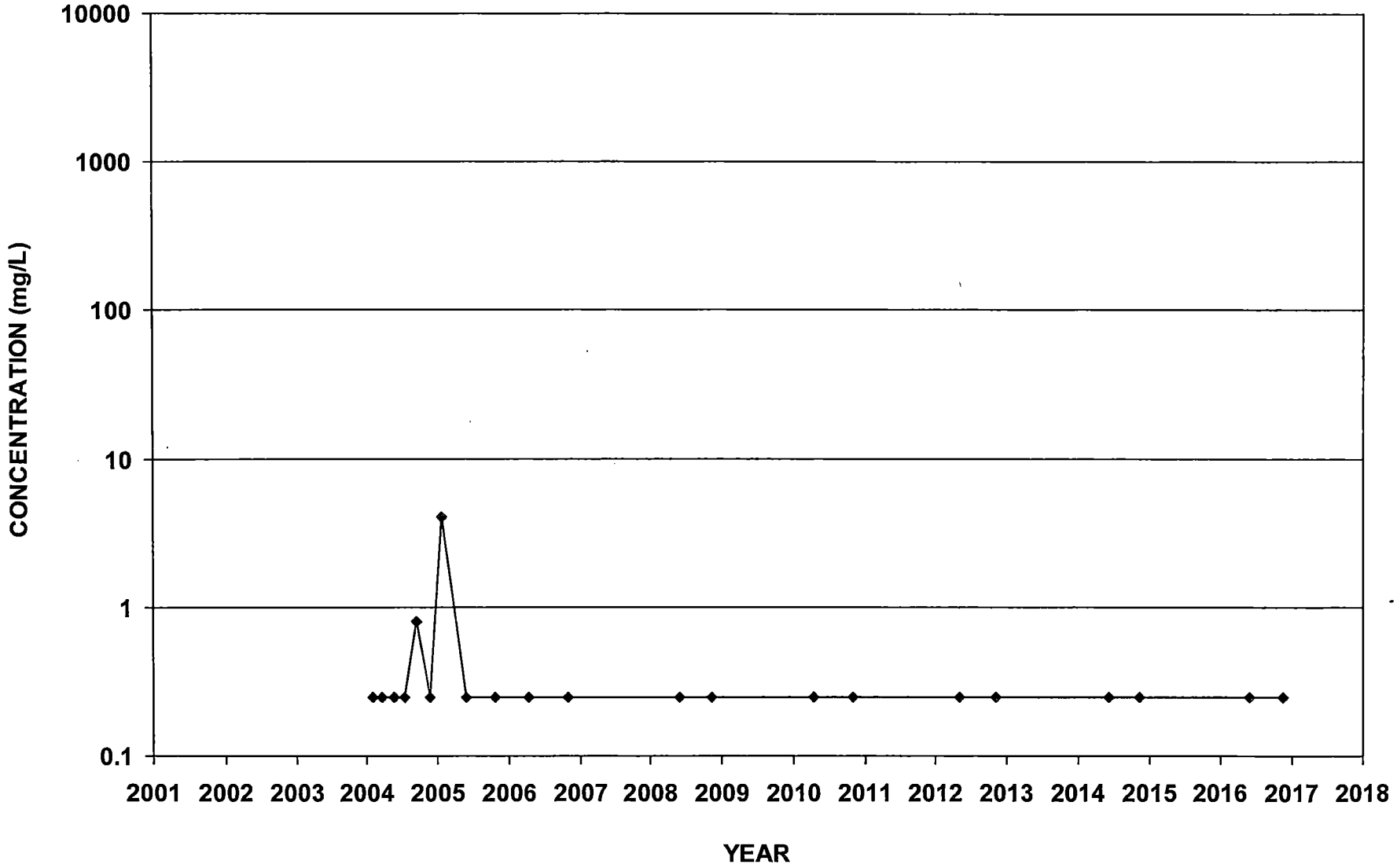
Ammonia-N



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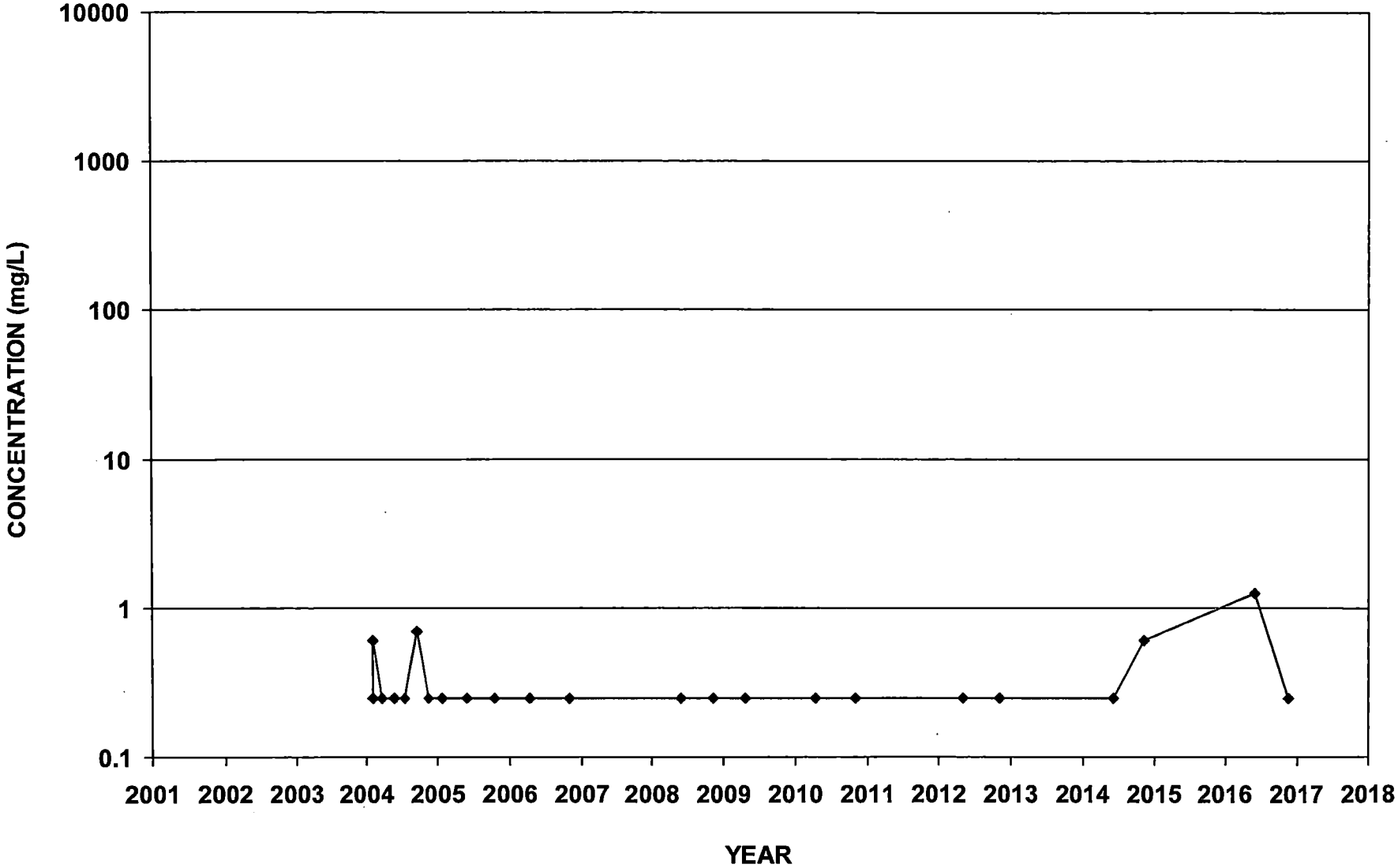

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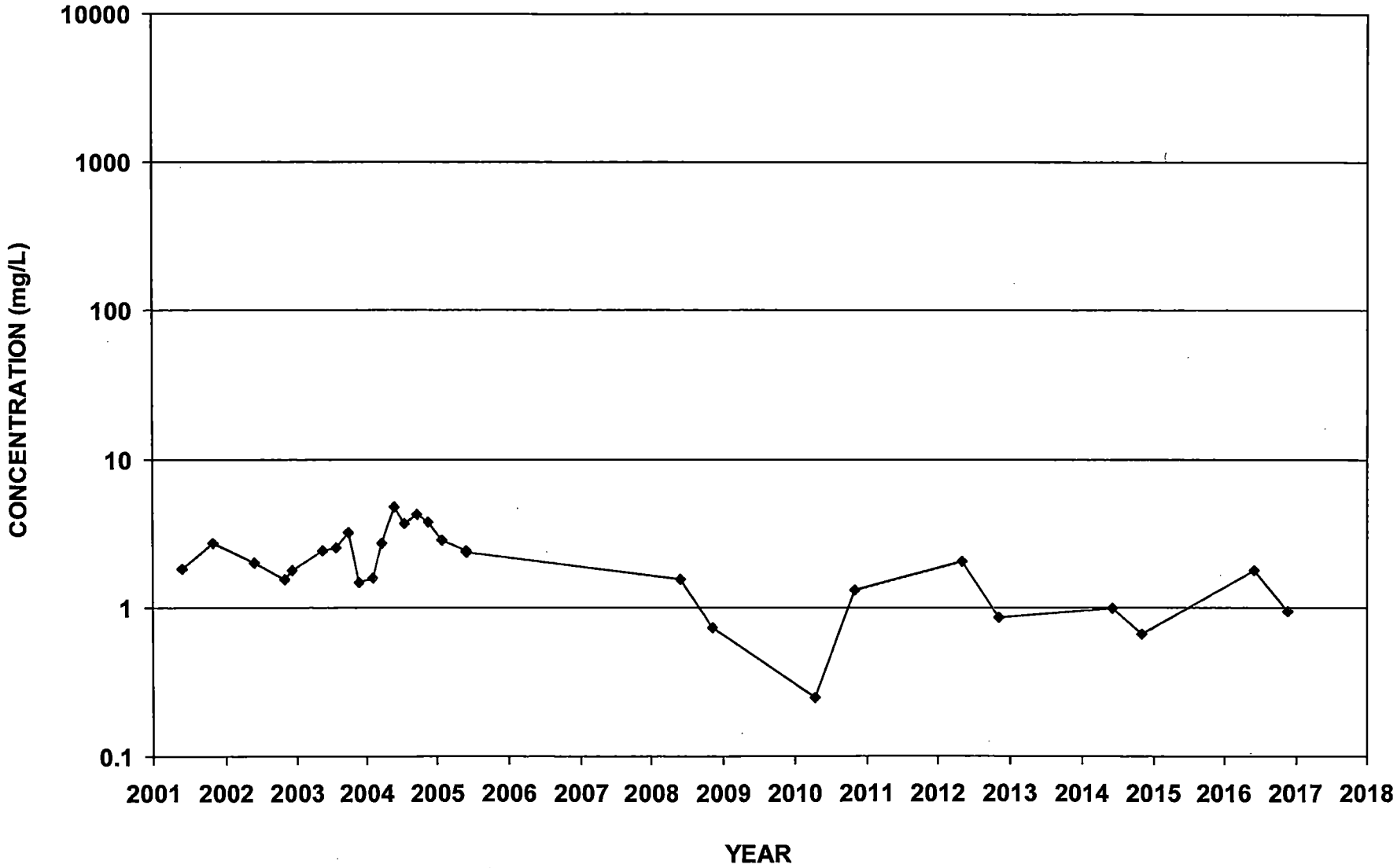
Nitrate-N



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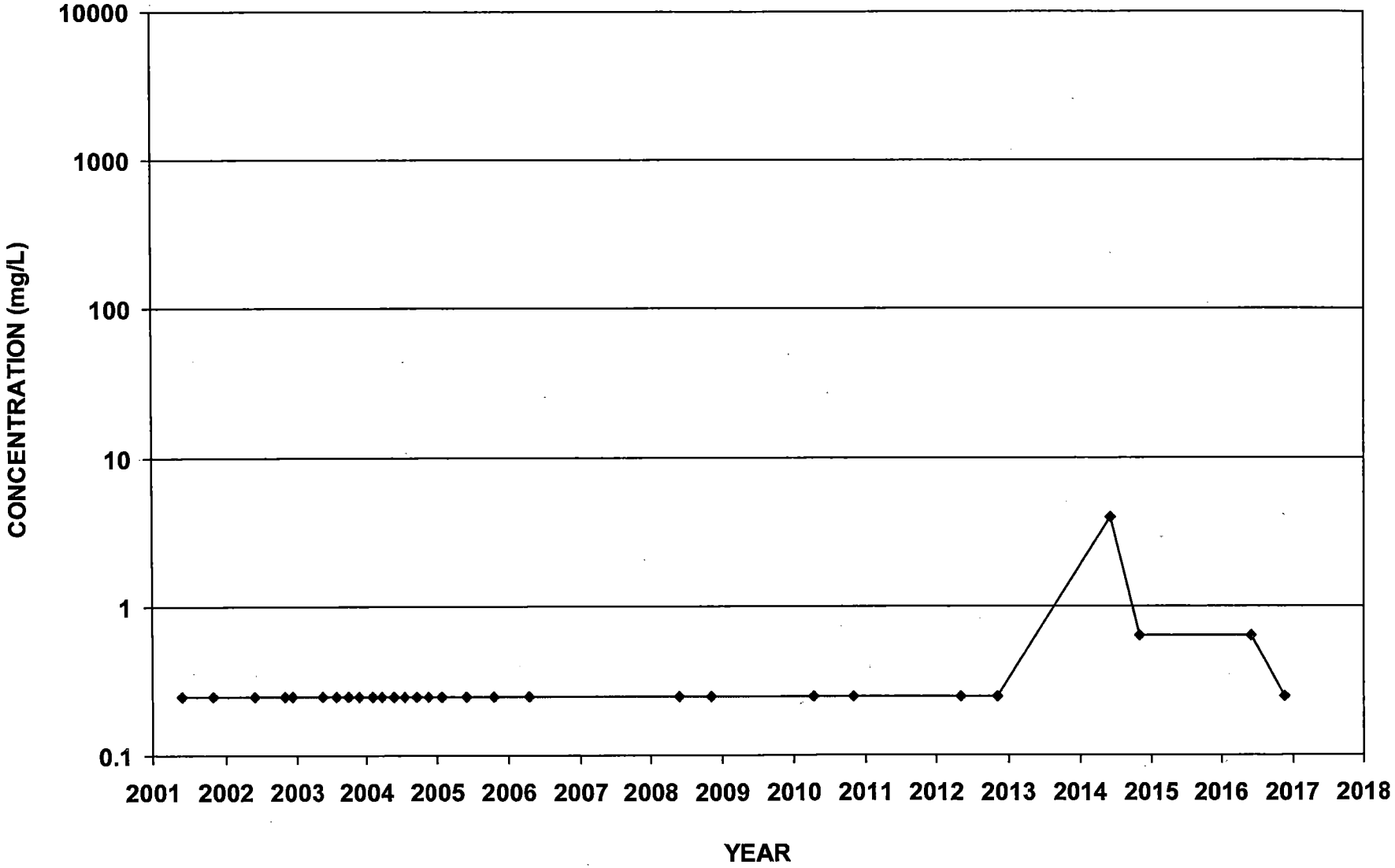
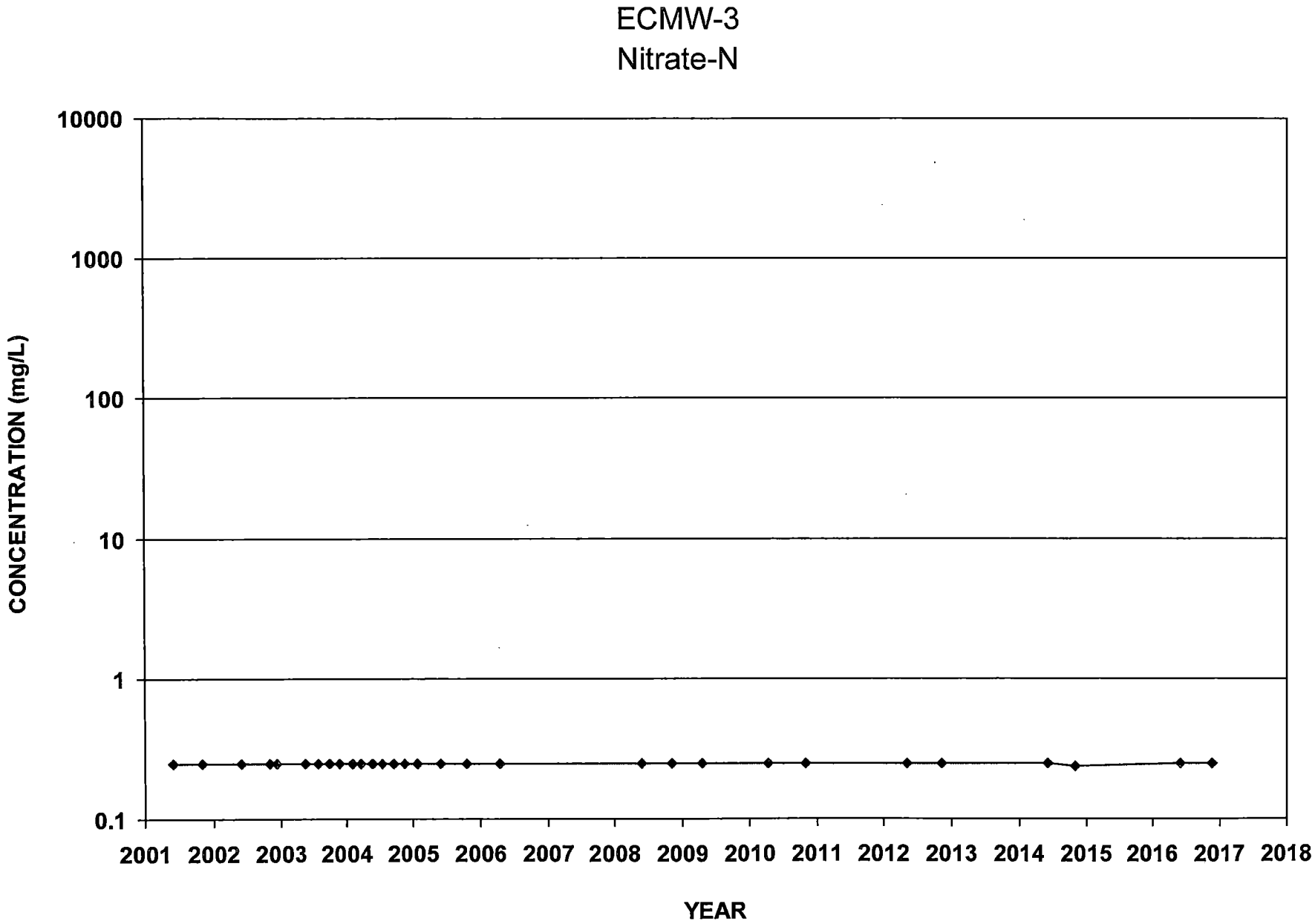
Nitrate-N

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Nitrate-N
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CONCENTRATION (mg/L)
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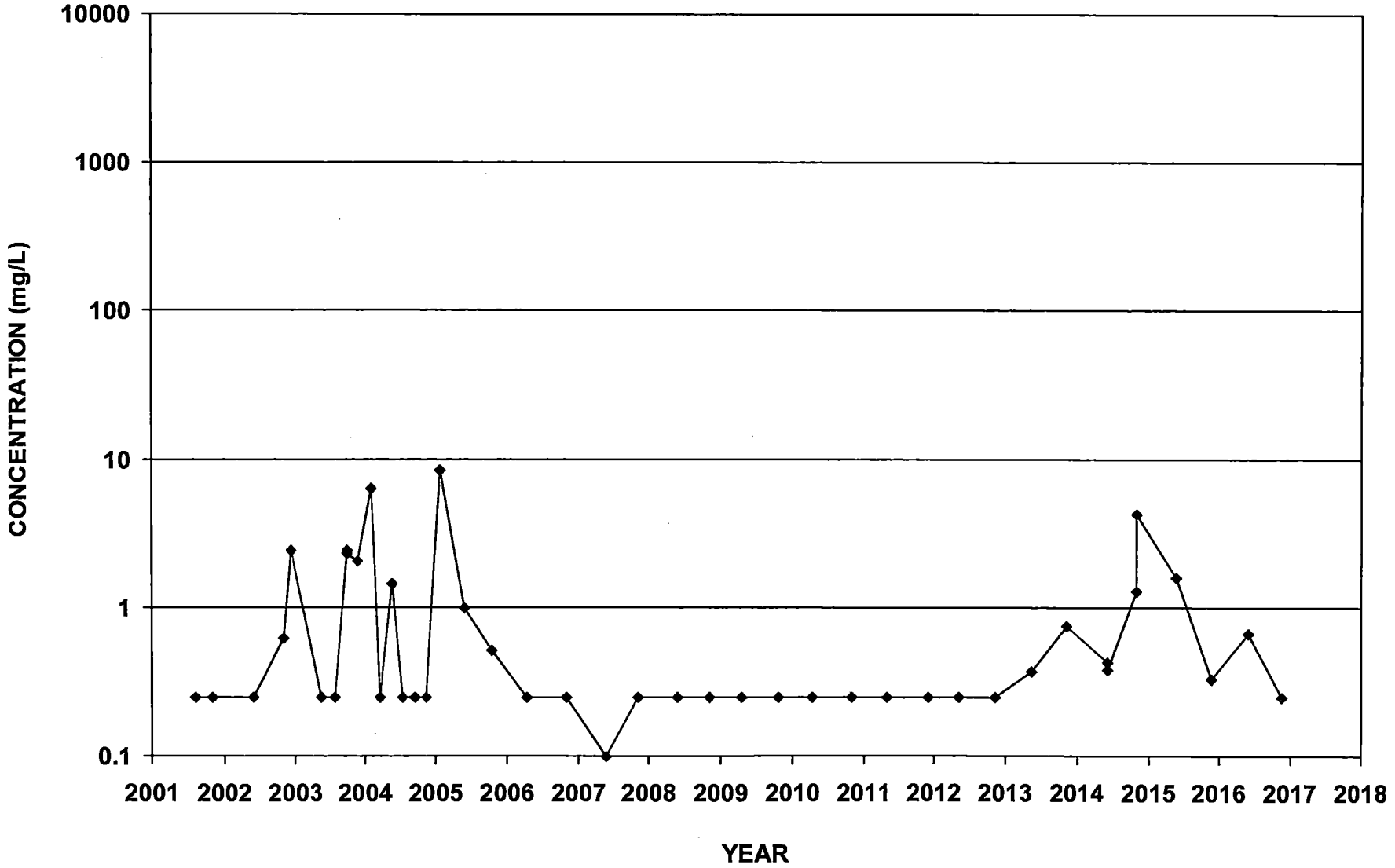
ECMW-4
Nitrate-N



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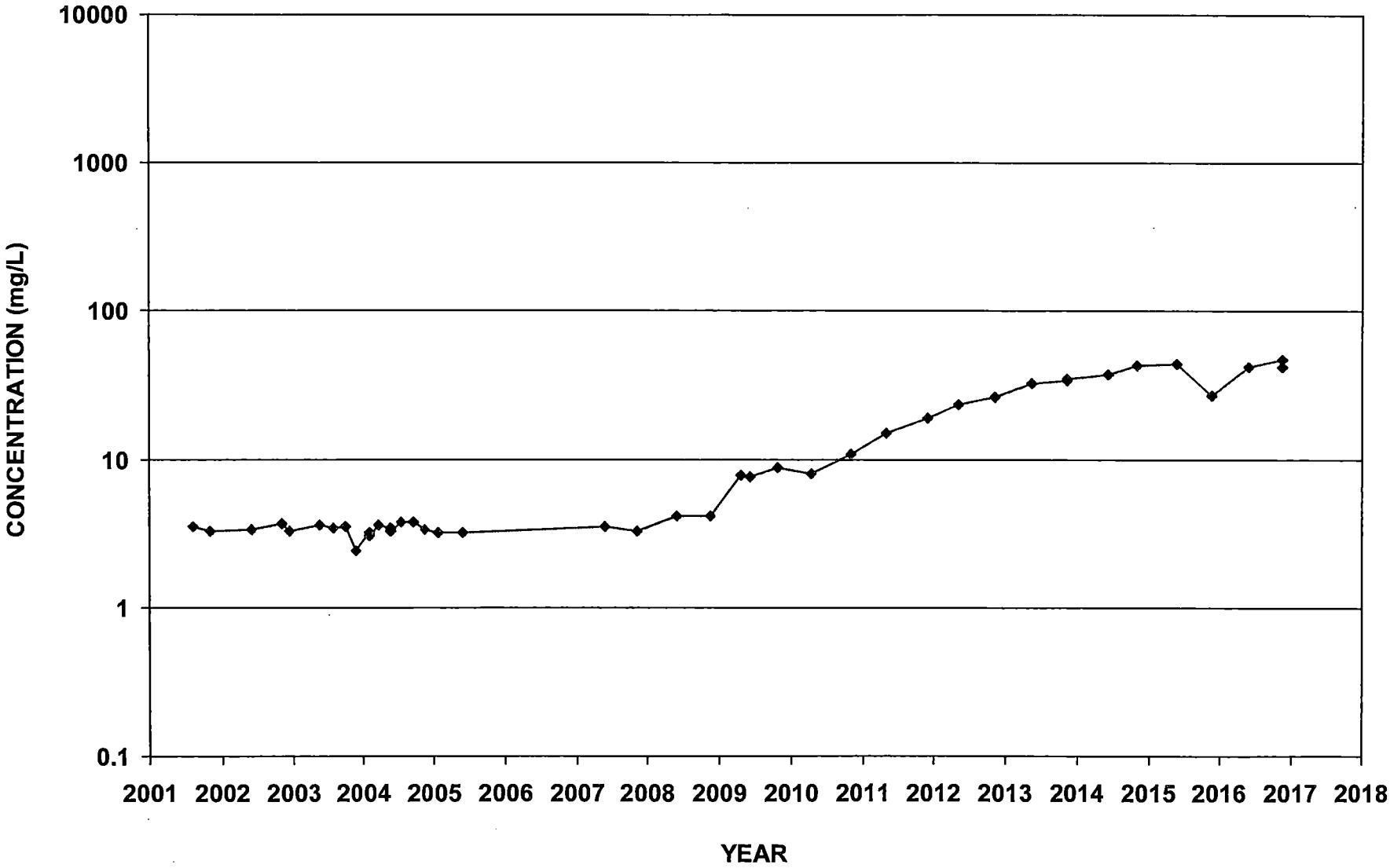
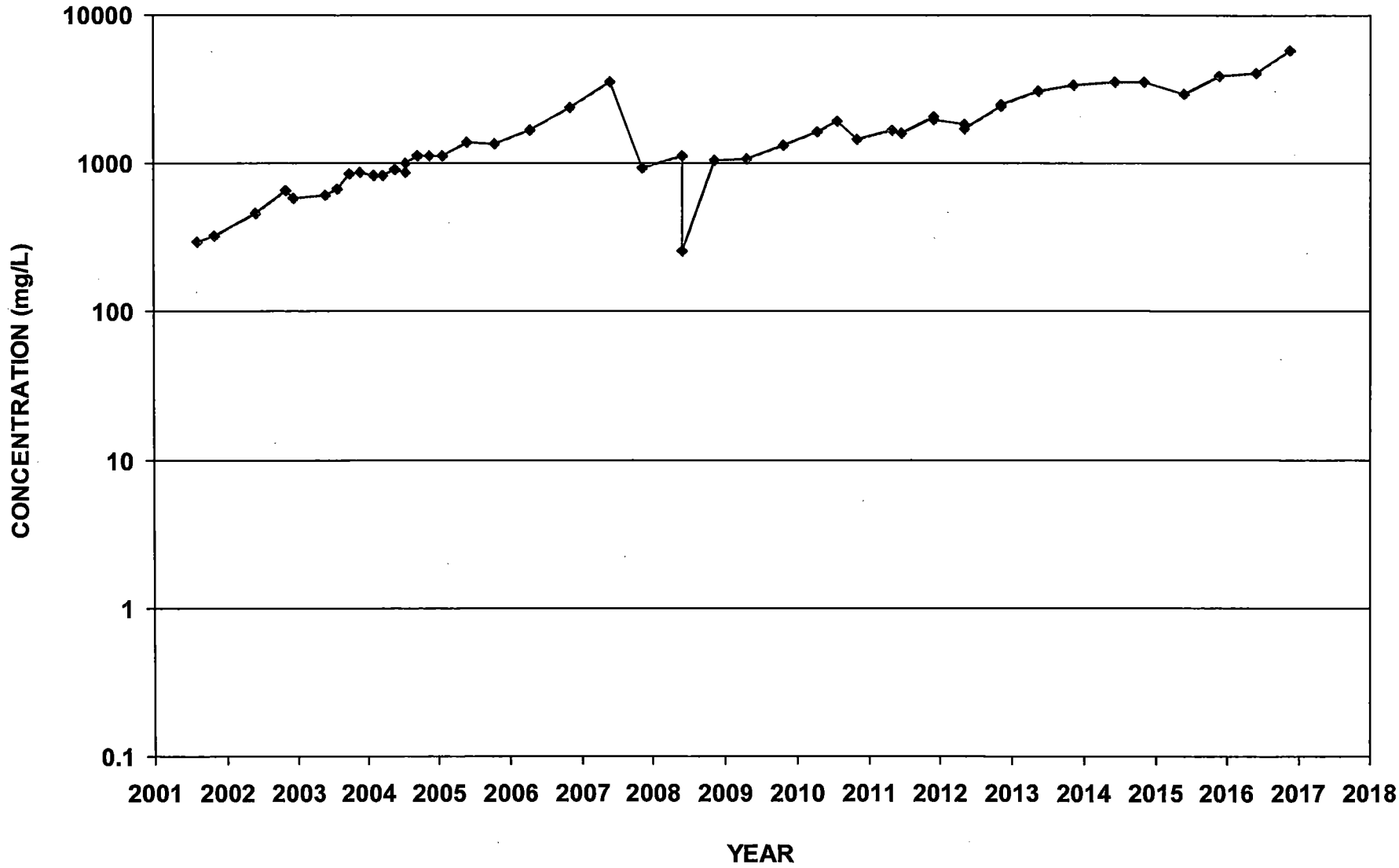
Nitrate-N

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CONCENTRATION (mg/L)
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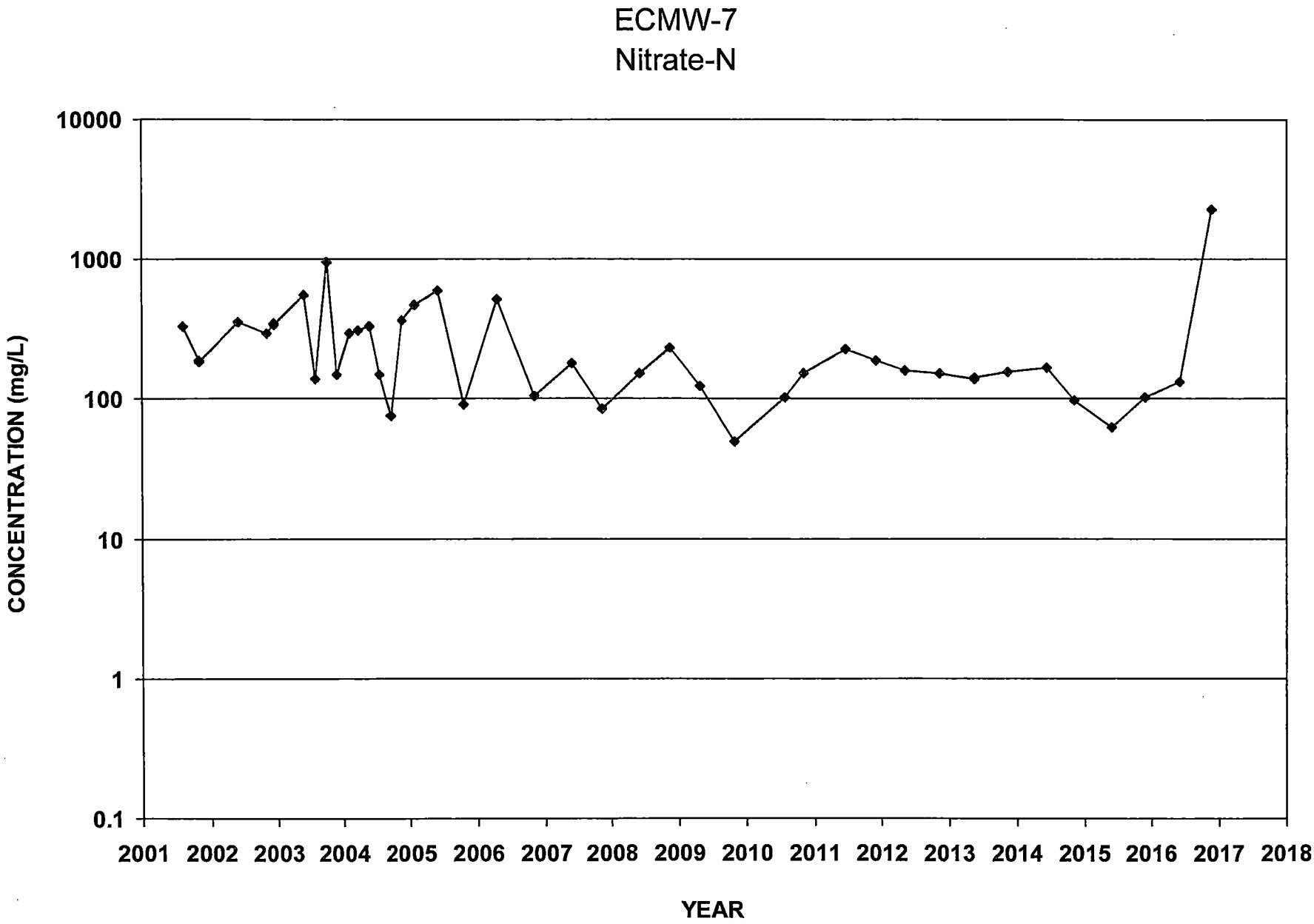
YEAR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Nitrate-N
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CONCENTRATION (mg/L)
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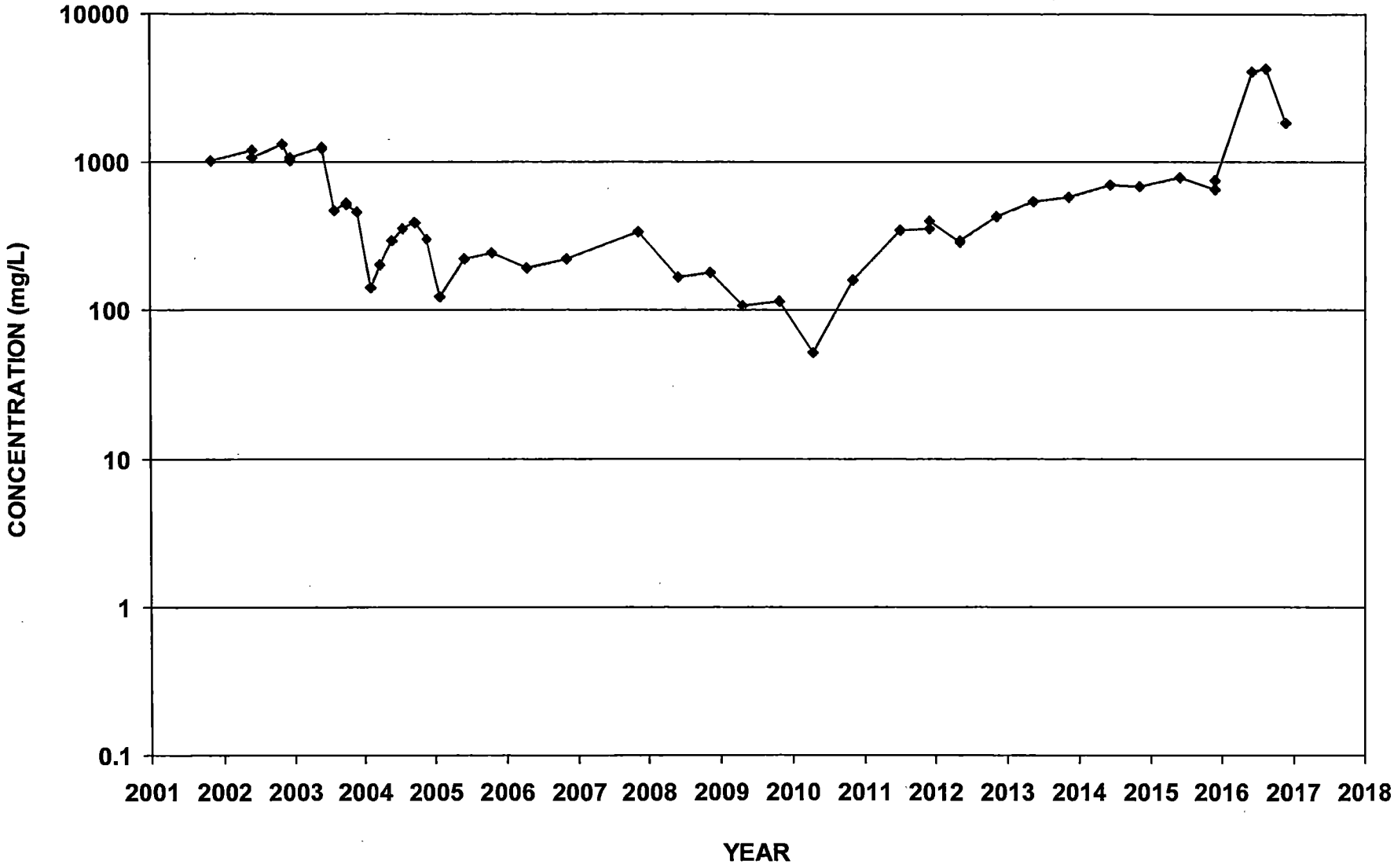
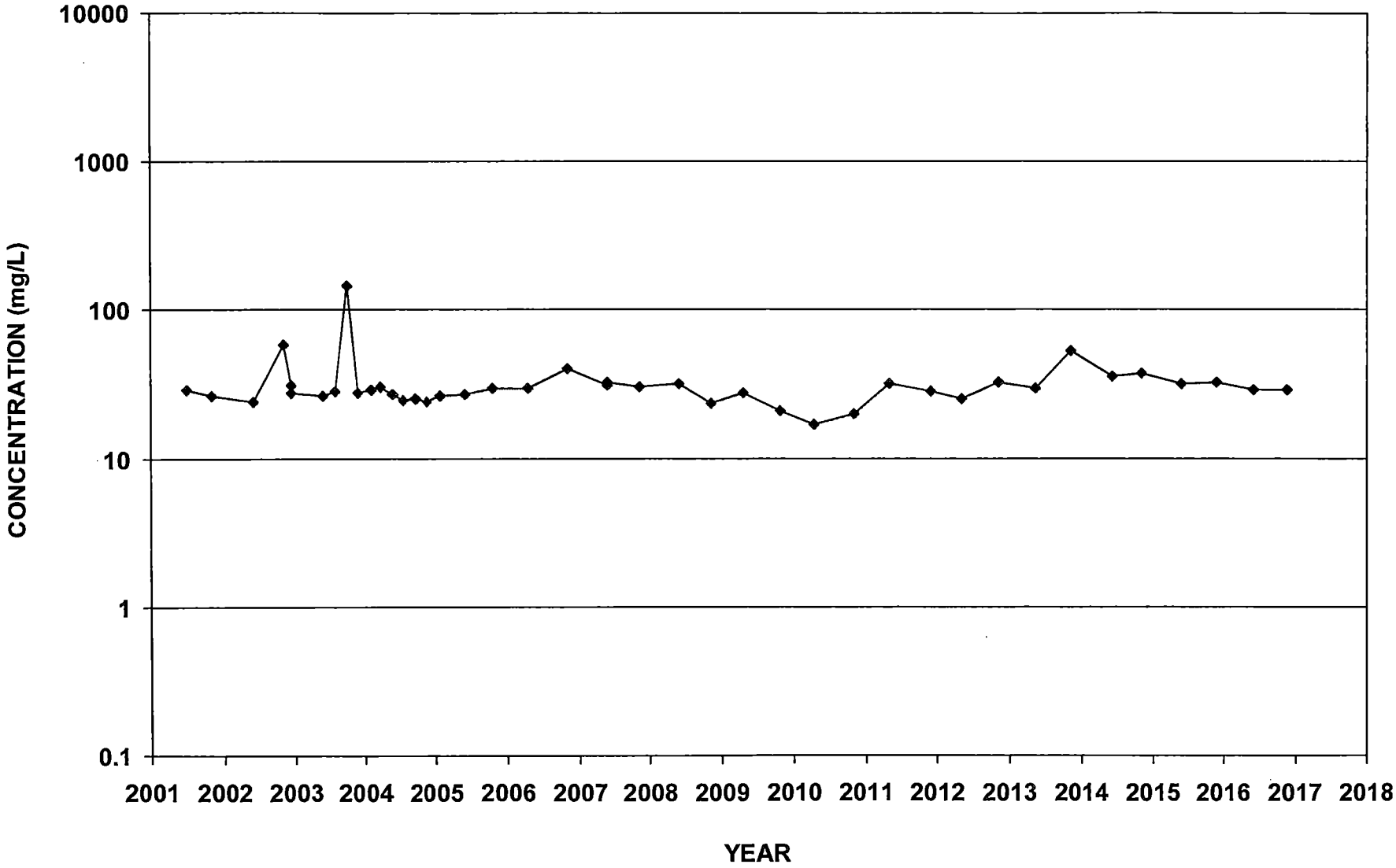
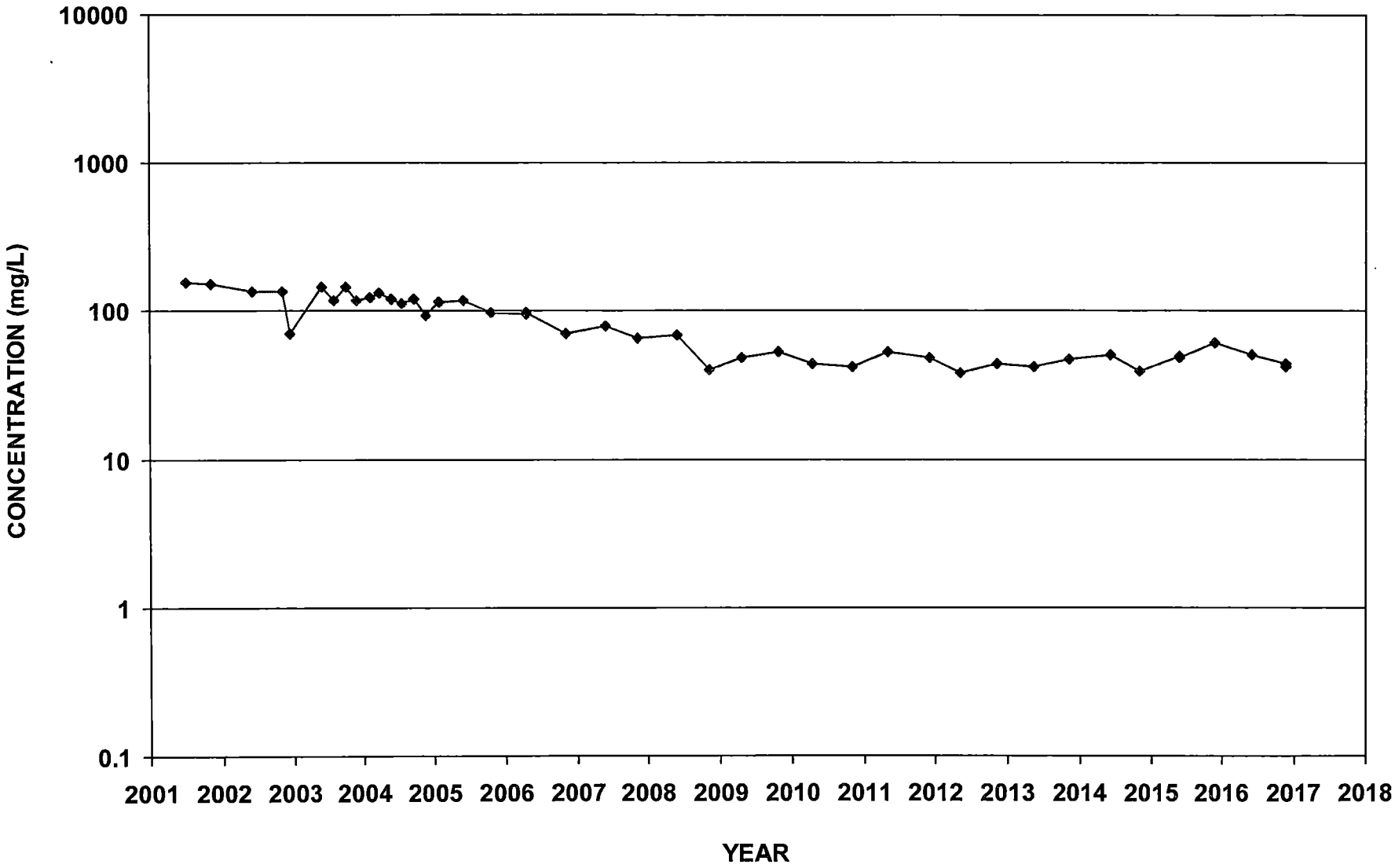
YEAR

ECMW-8
Nitrate-N



ECMW-9
Nitrate-N

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Nitrate-N
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CONCENTRATION (mg/L)
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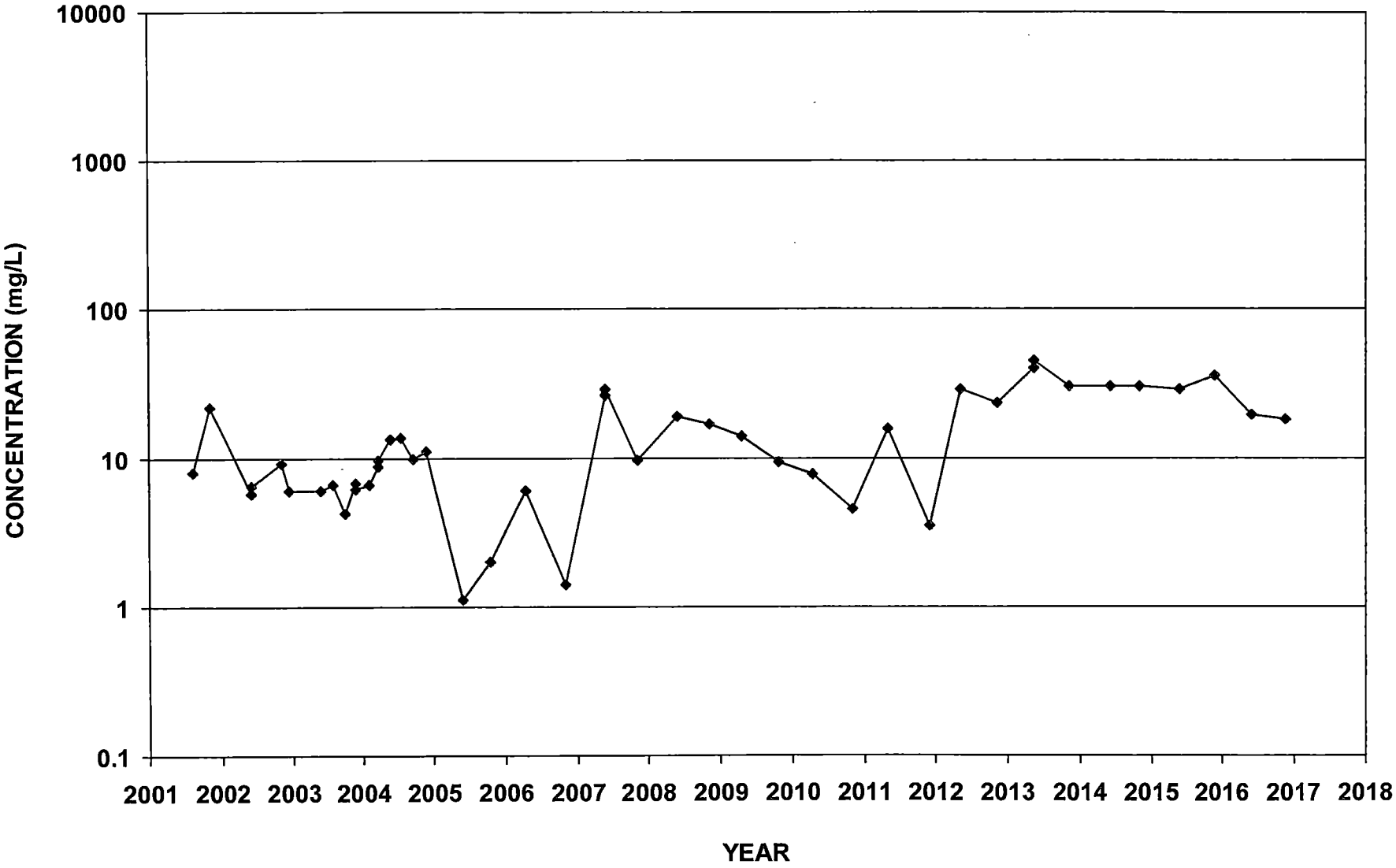
YEAR

ECMW-11
Nitrate-N



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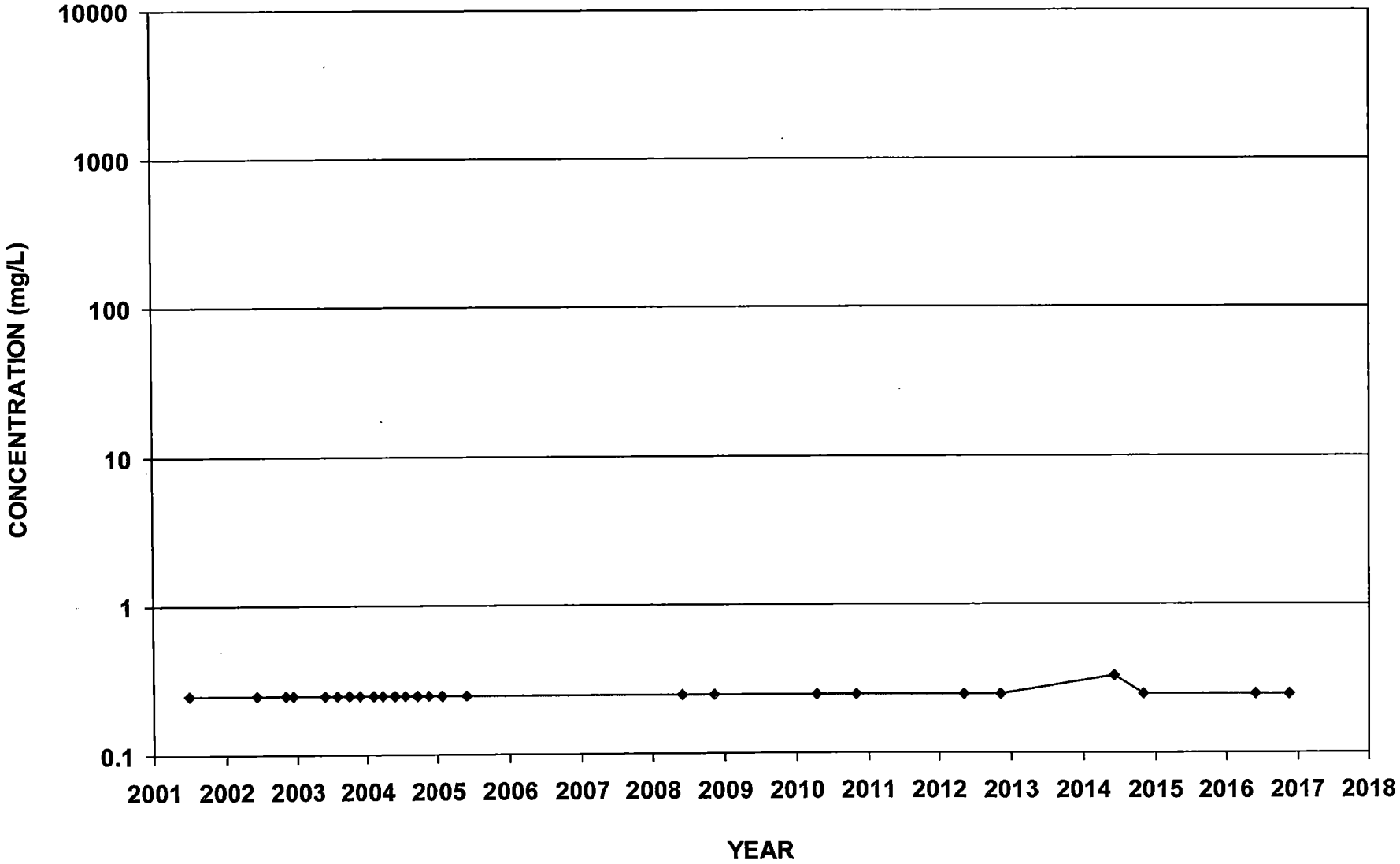

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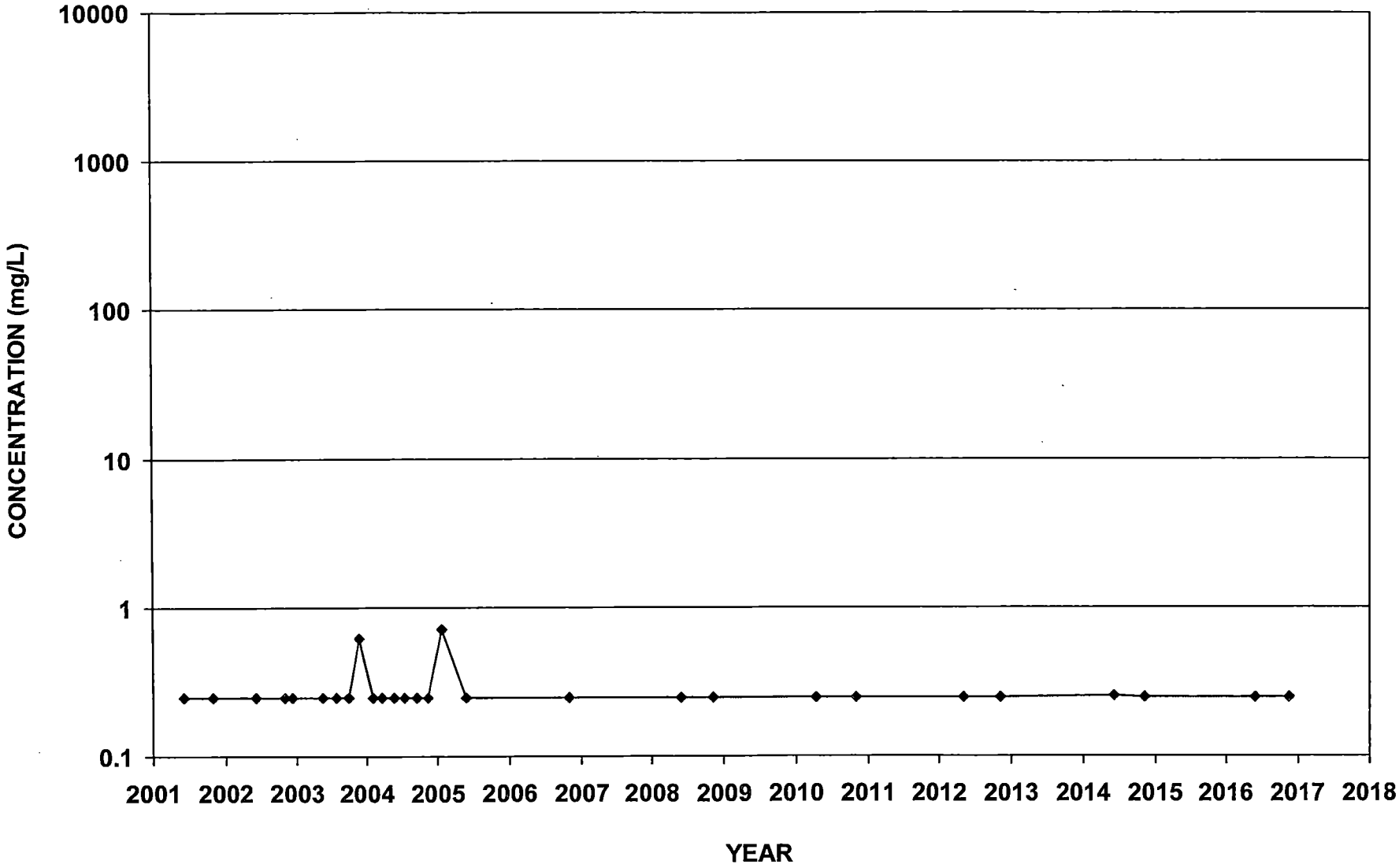

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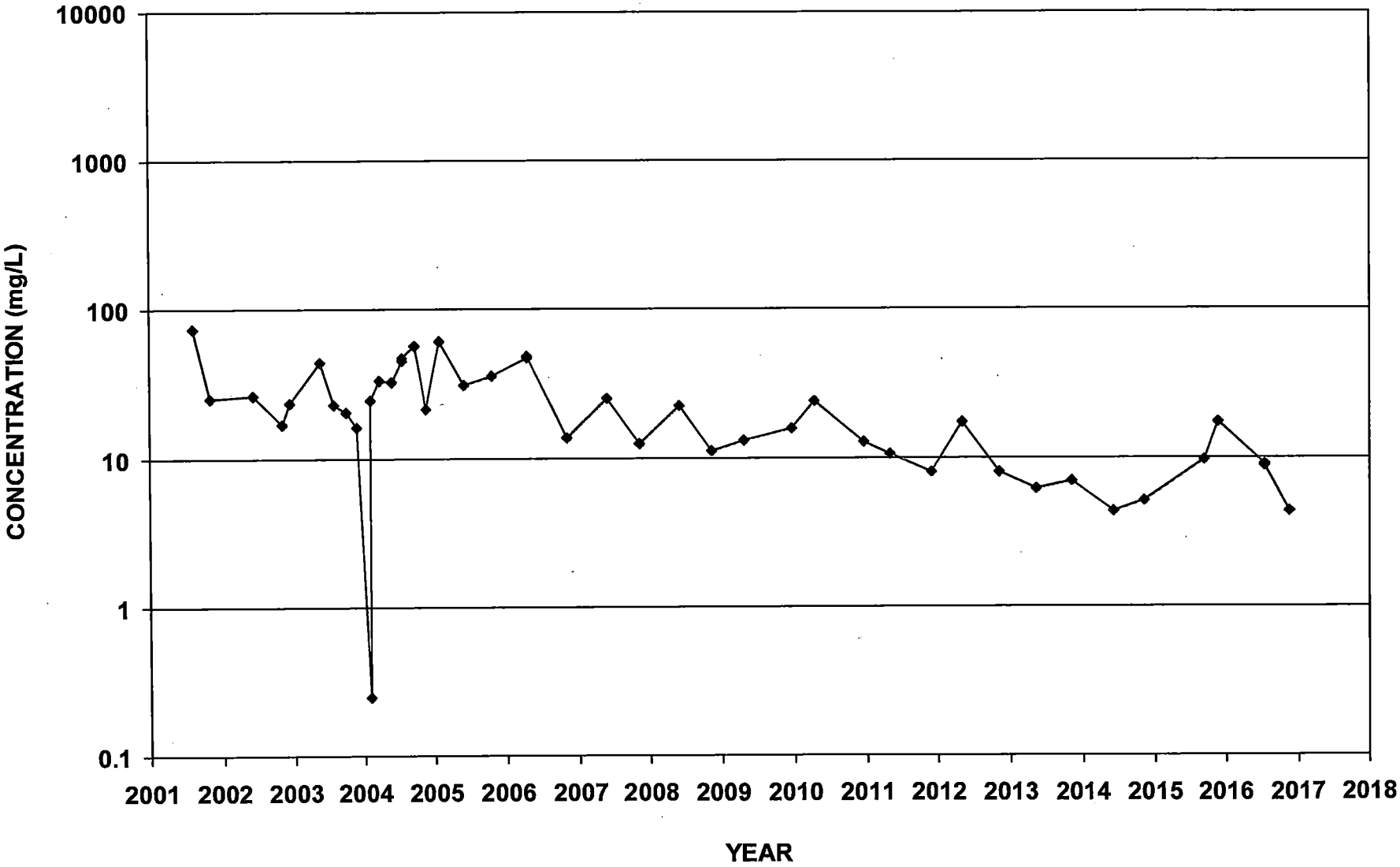

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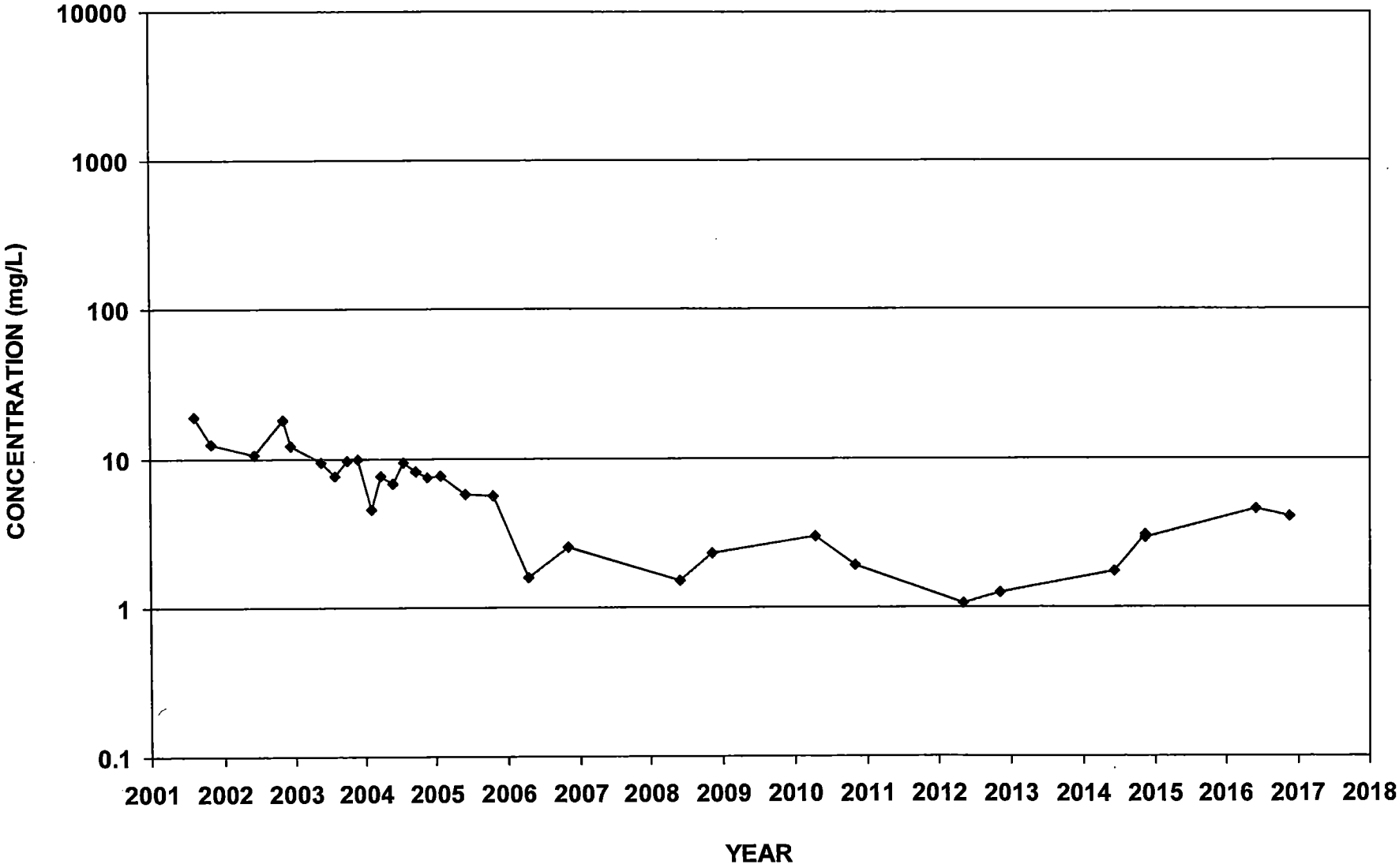

ECMW-16
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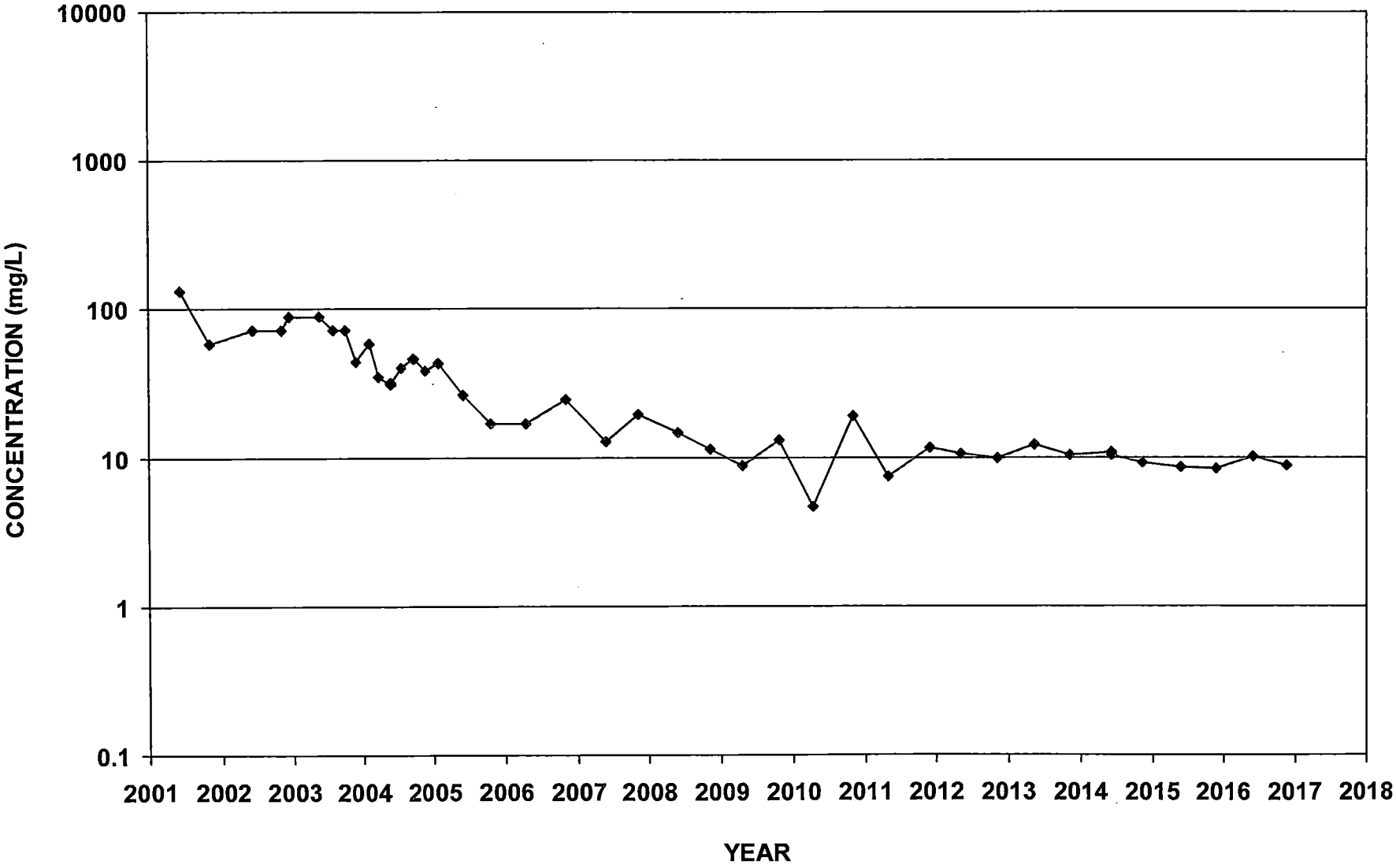
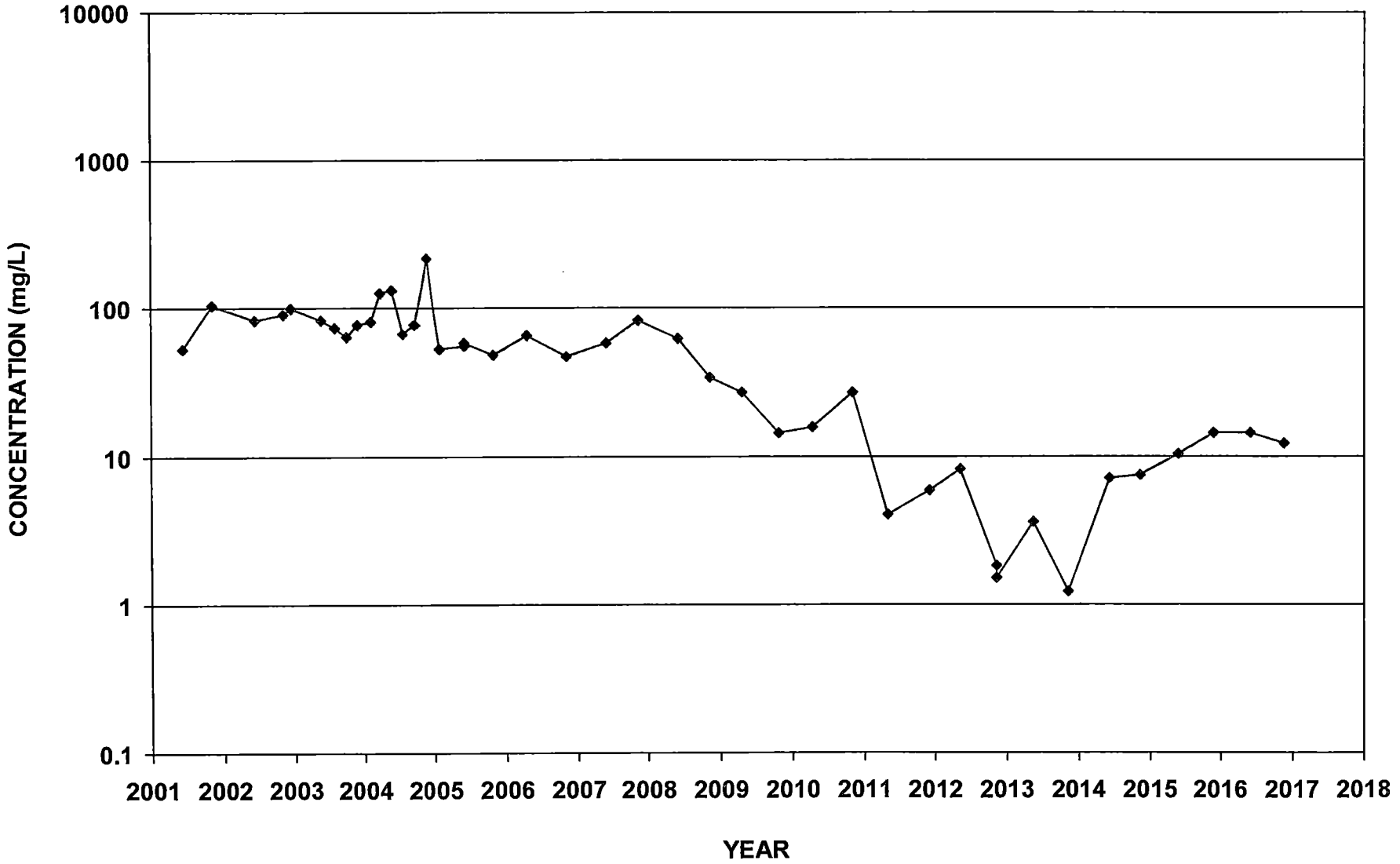


ECMW-17
Nitrate-N



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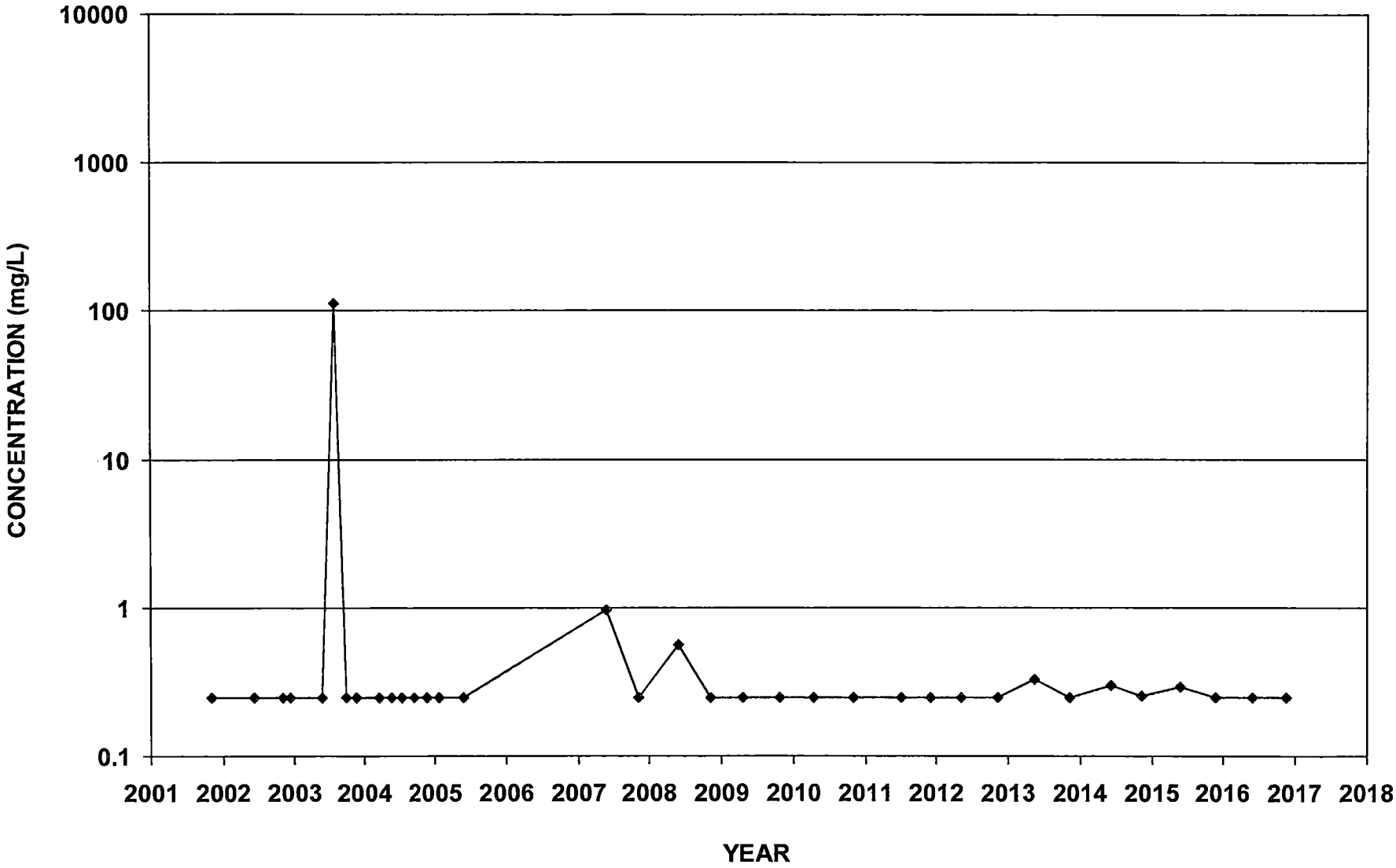

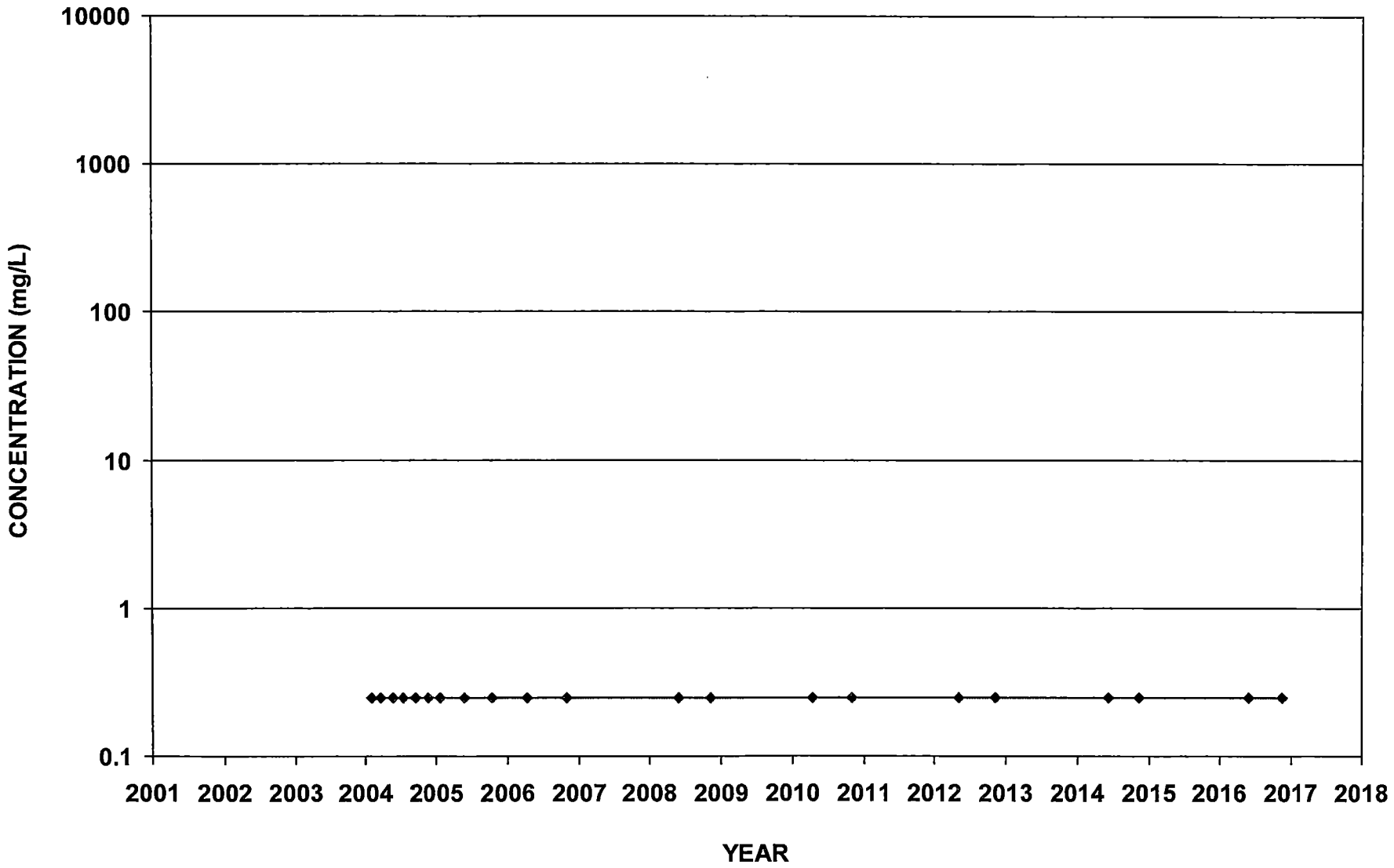
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Nitrate-N
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0.1
CONCENTRATION (mg/L)
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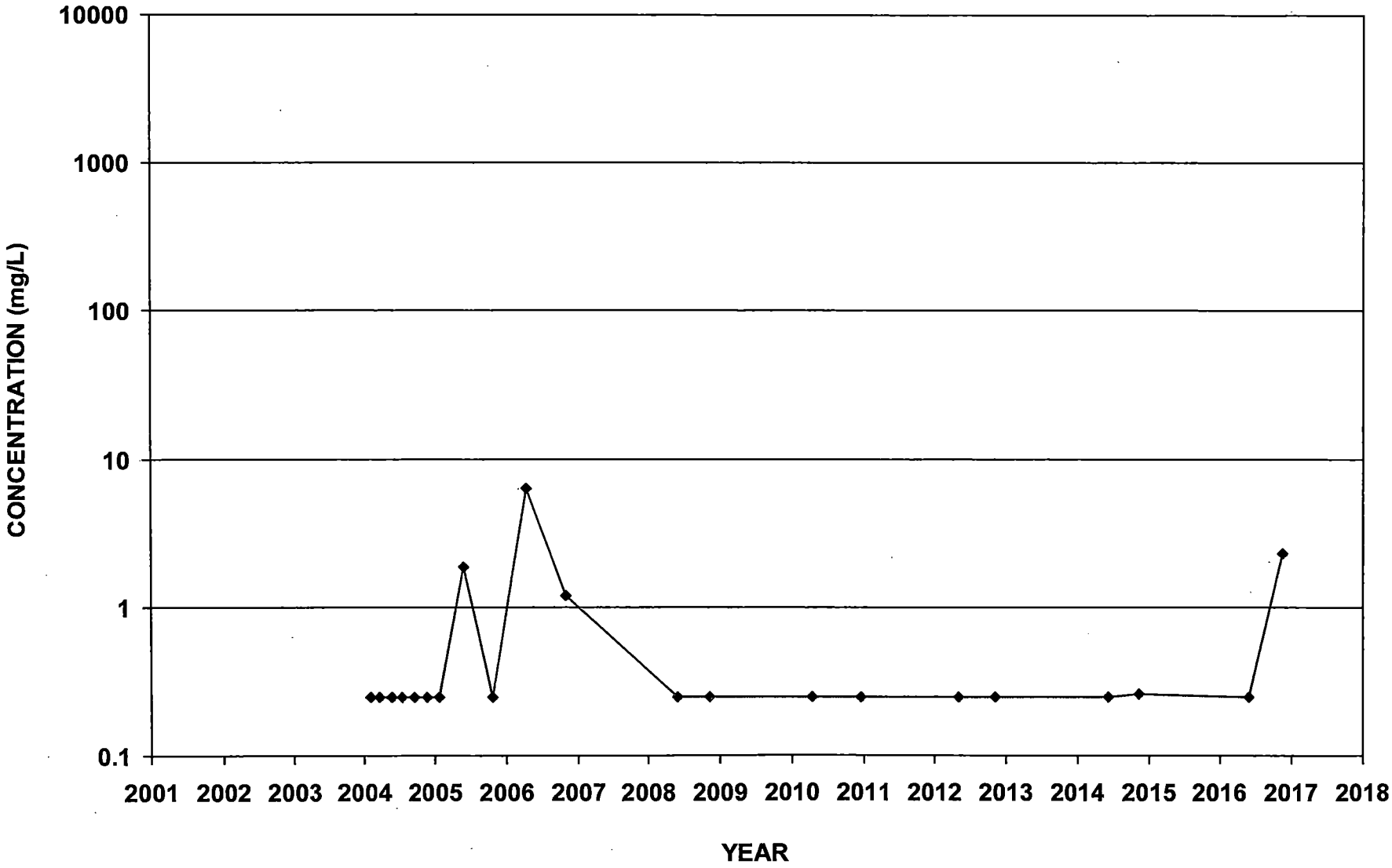
YEAR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CONCENTRATION (mg/L)
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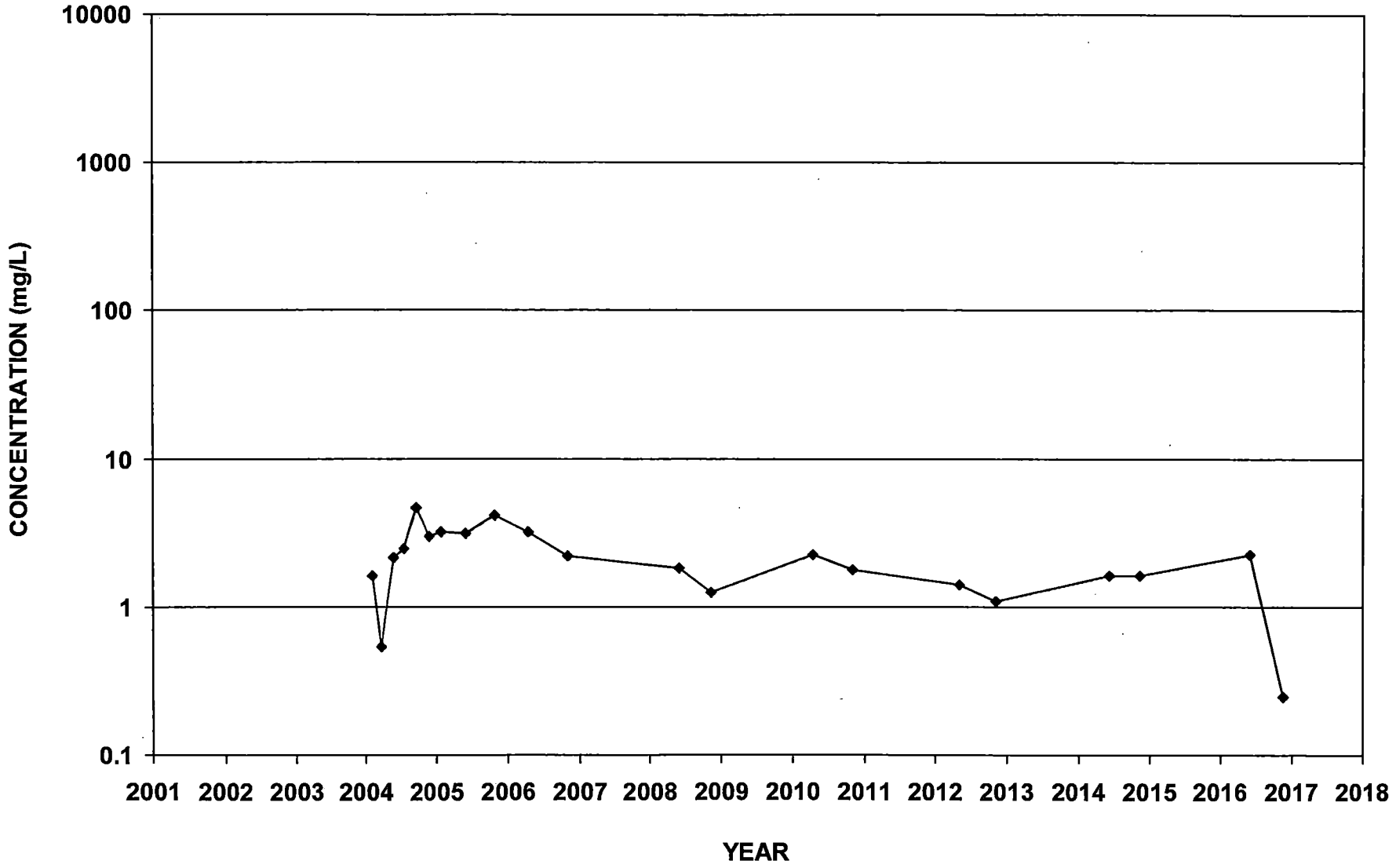
2018
YEAR

ECMW-21
Nitrate-N



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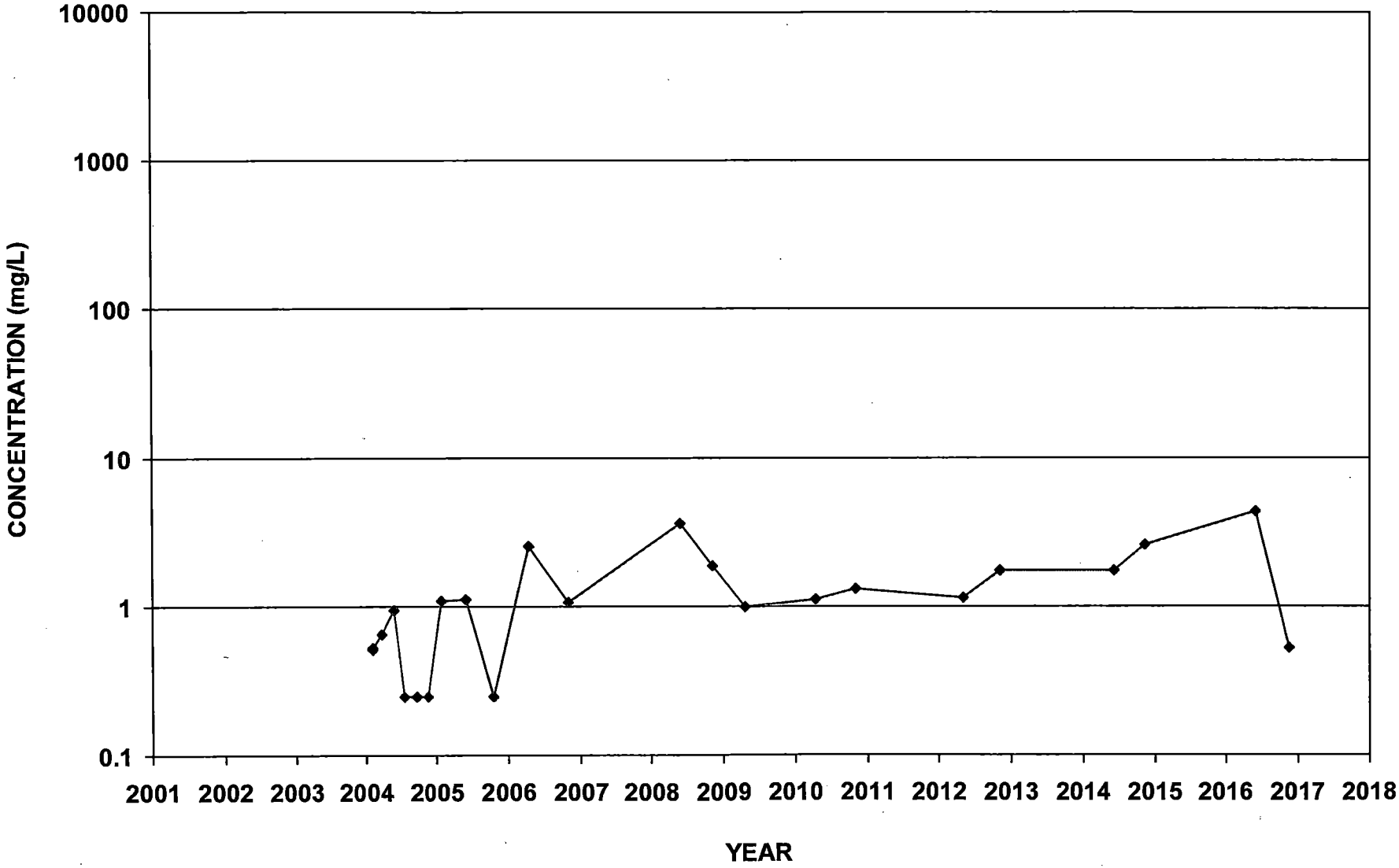
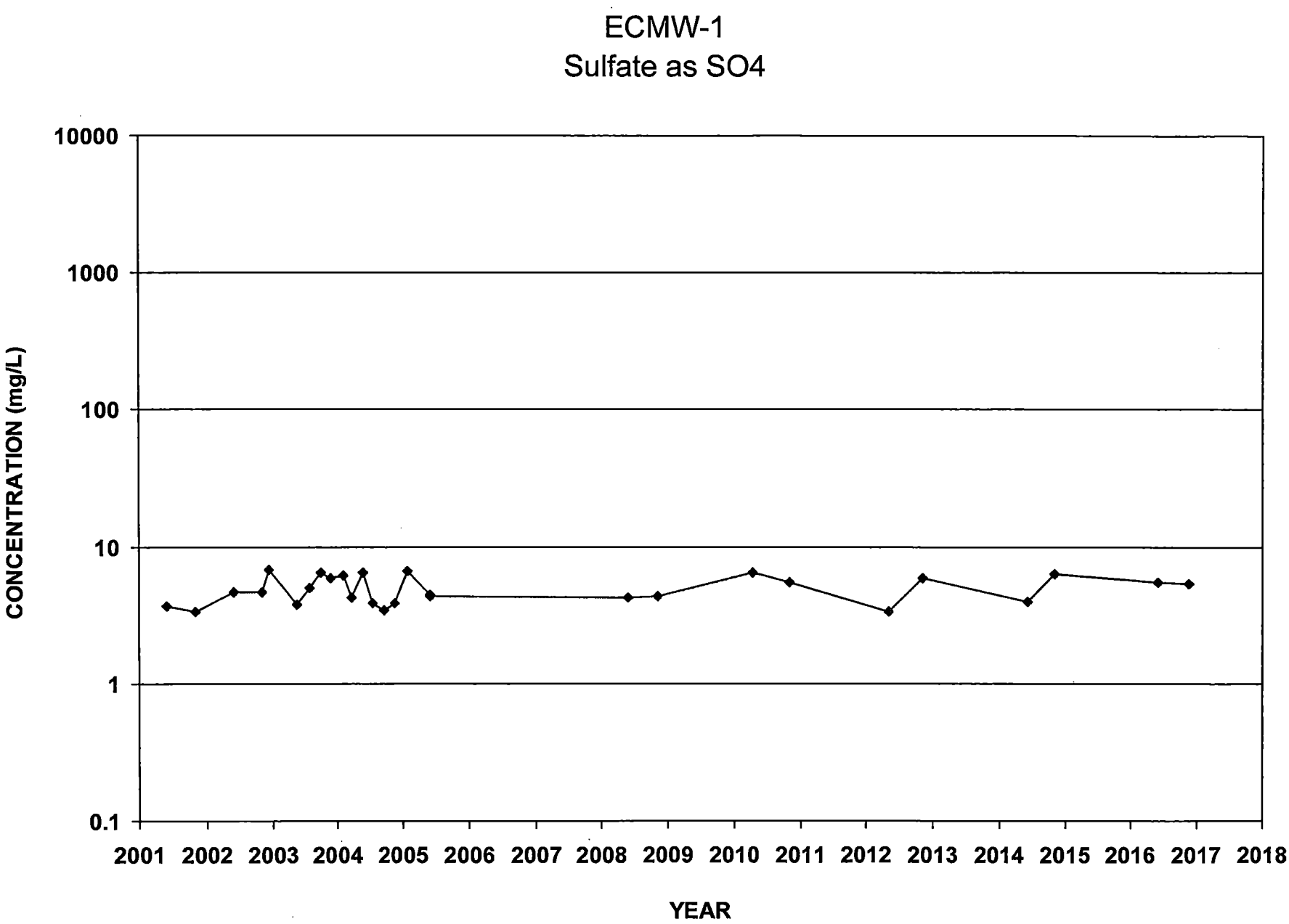
Nitrate-N




ECMW-1
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
2002
2003
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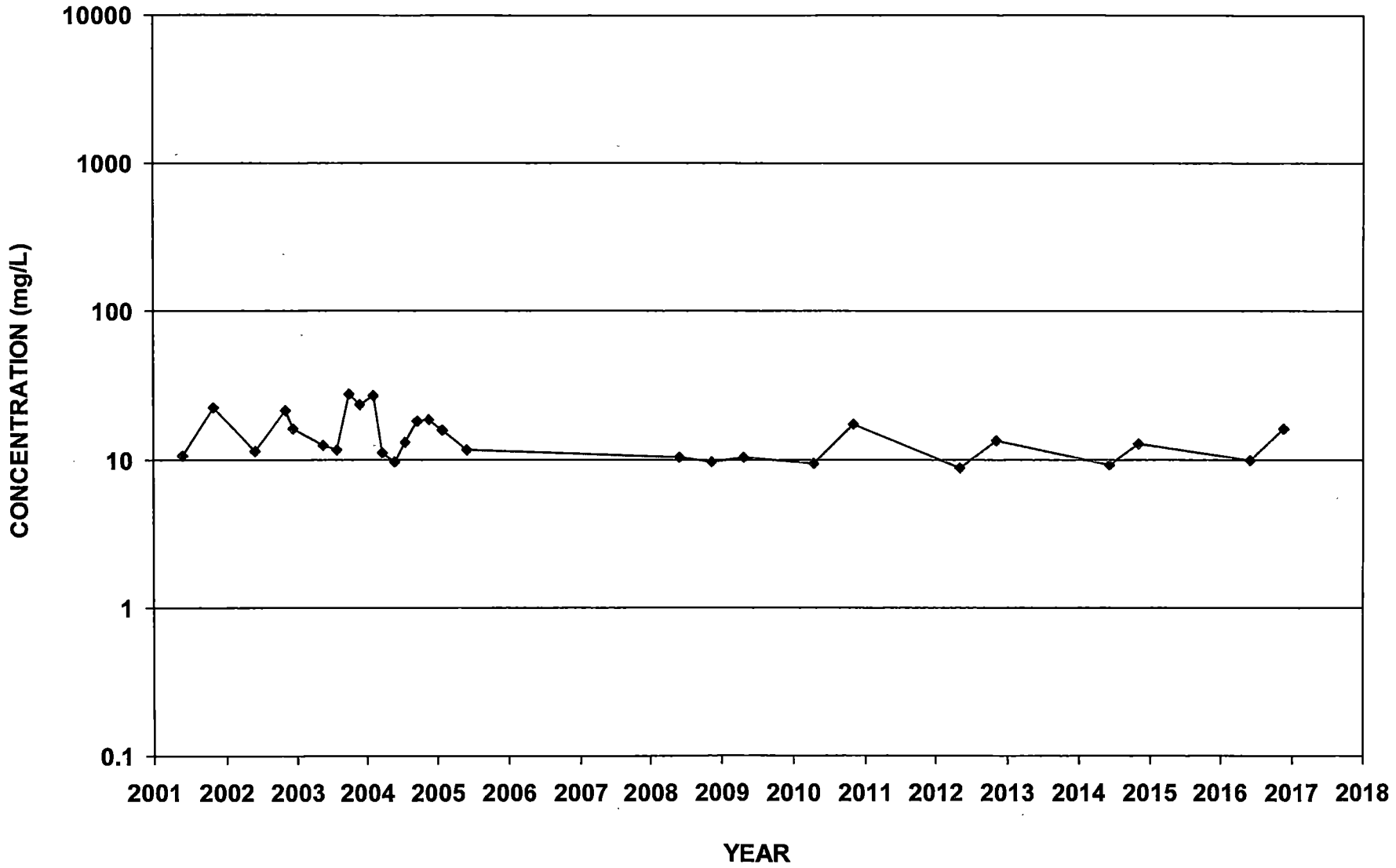
2017
2018
YEAR


ECMW-3
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
2002
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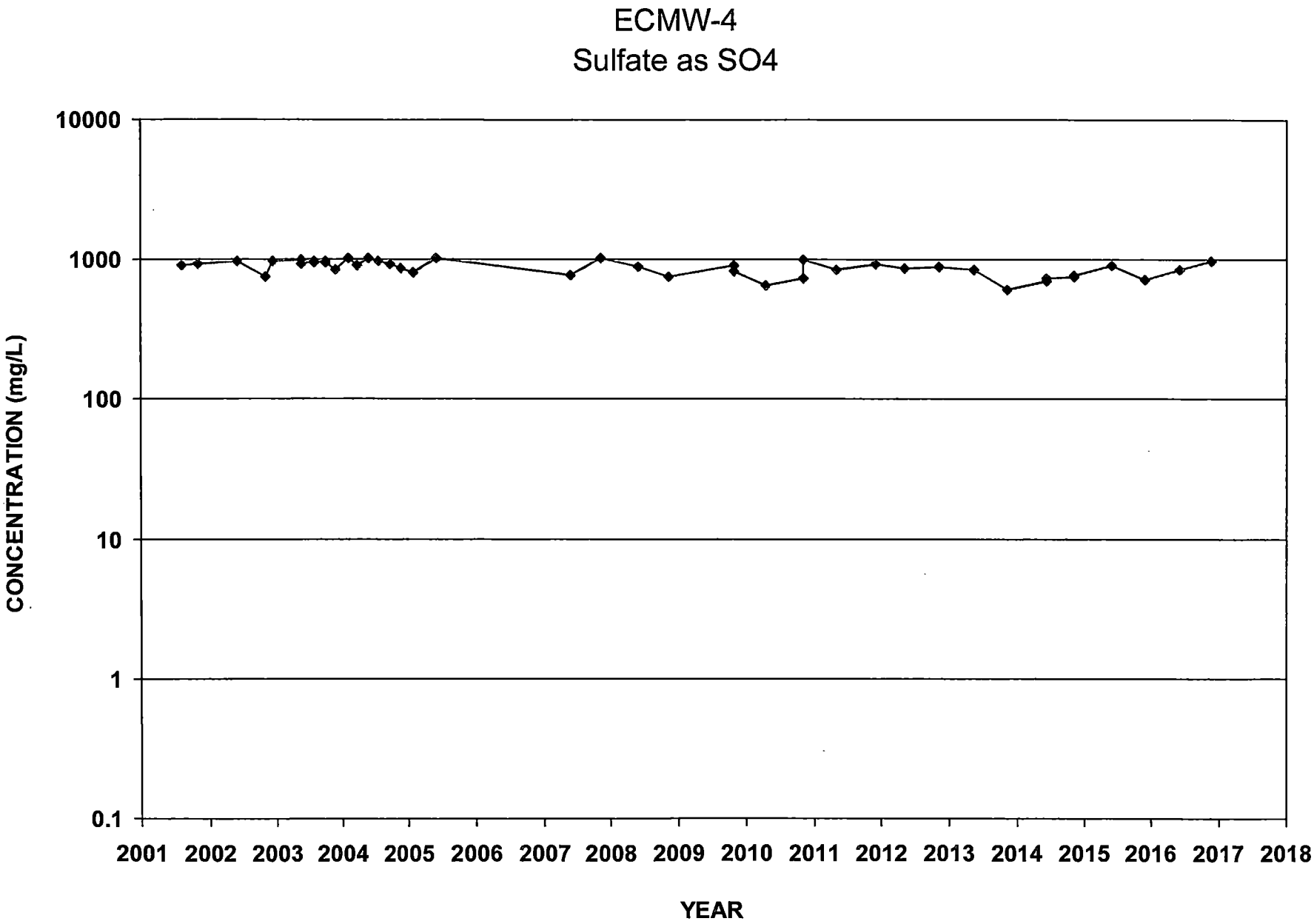
2017
2018
YEAR


ECMW-4
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
2002
2003
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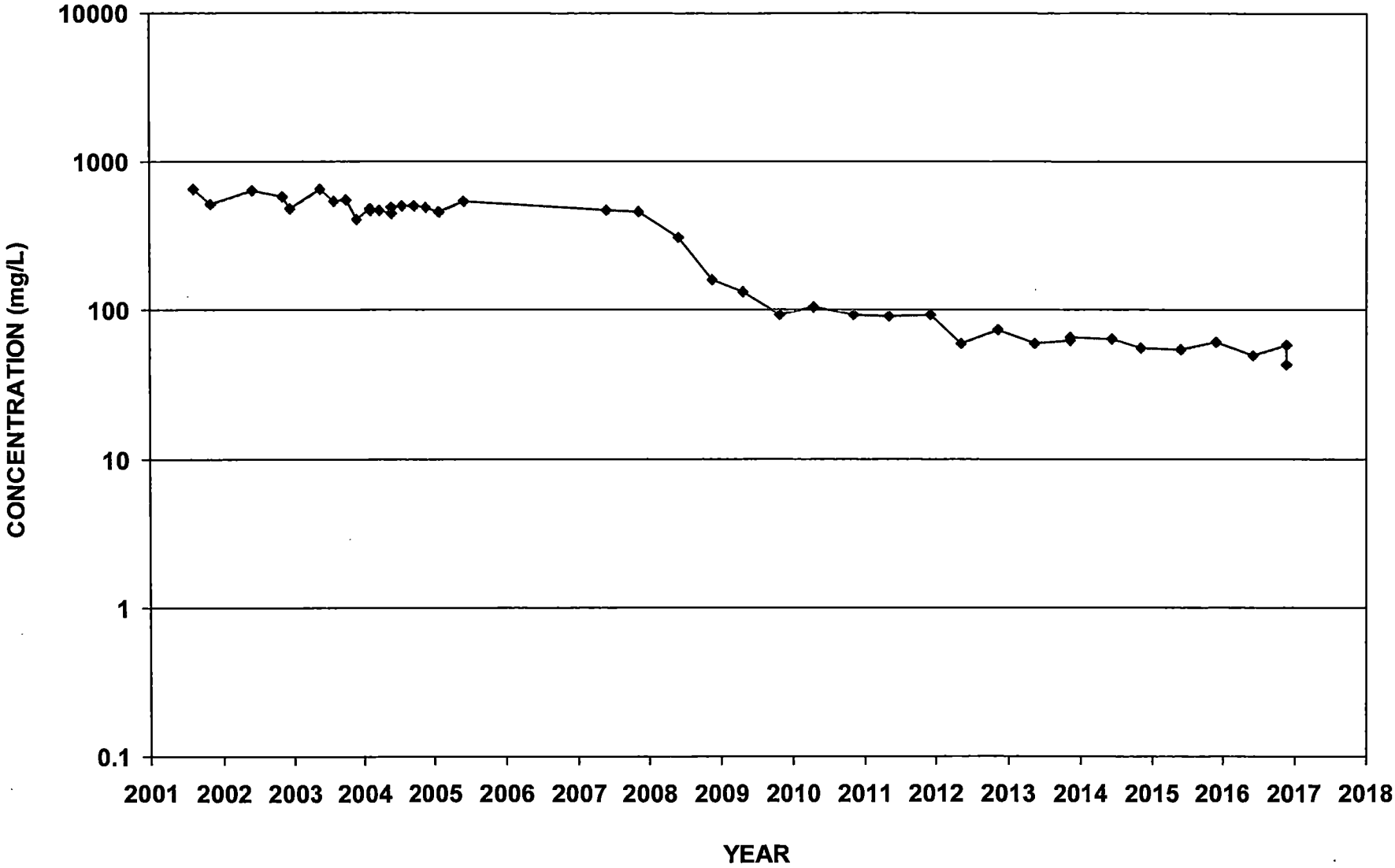
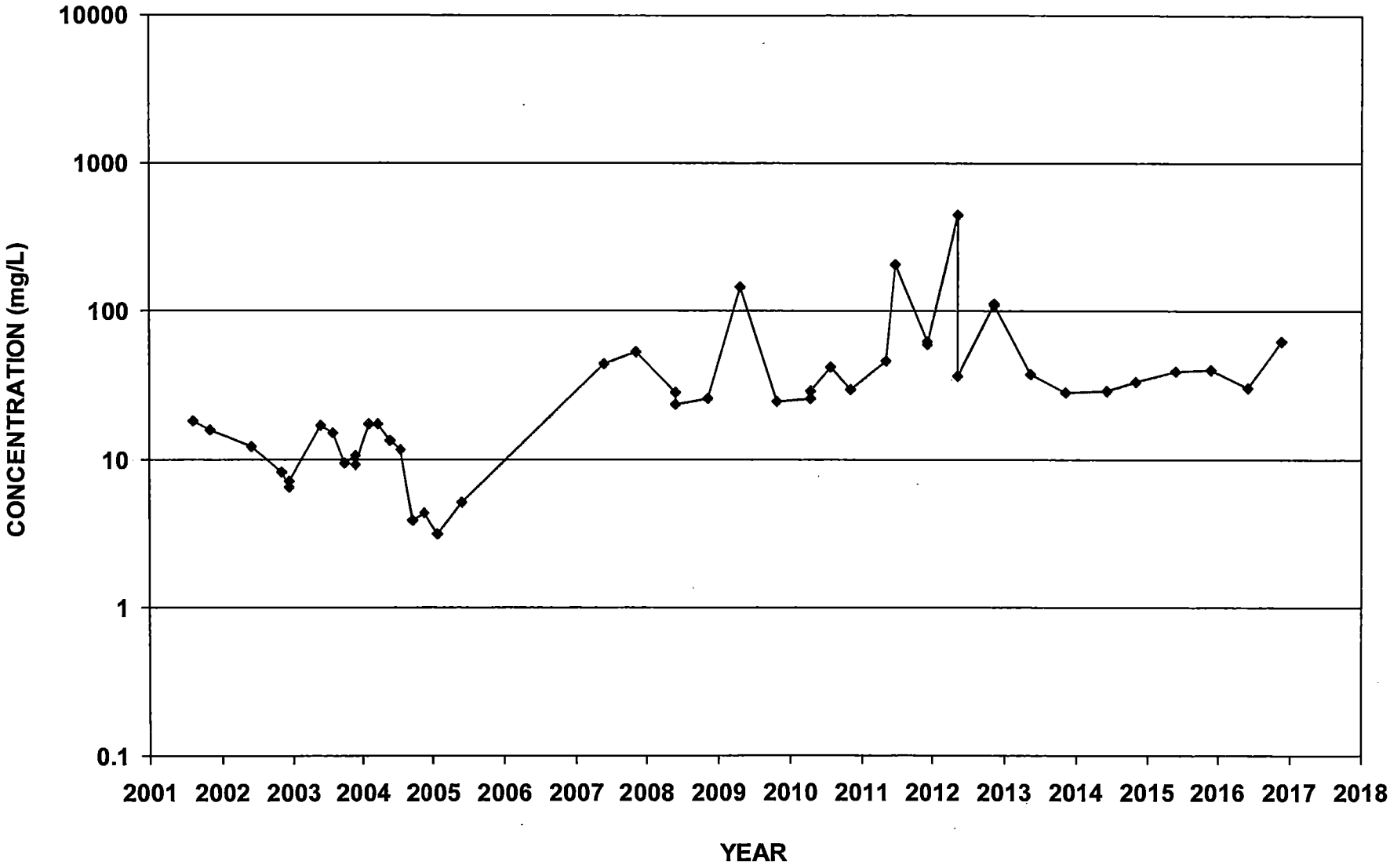
2017
2018
YEAR

ECMW-5
Sulfate as SO4




ECMW-6
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
2002
2003
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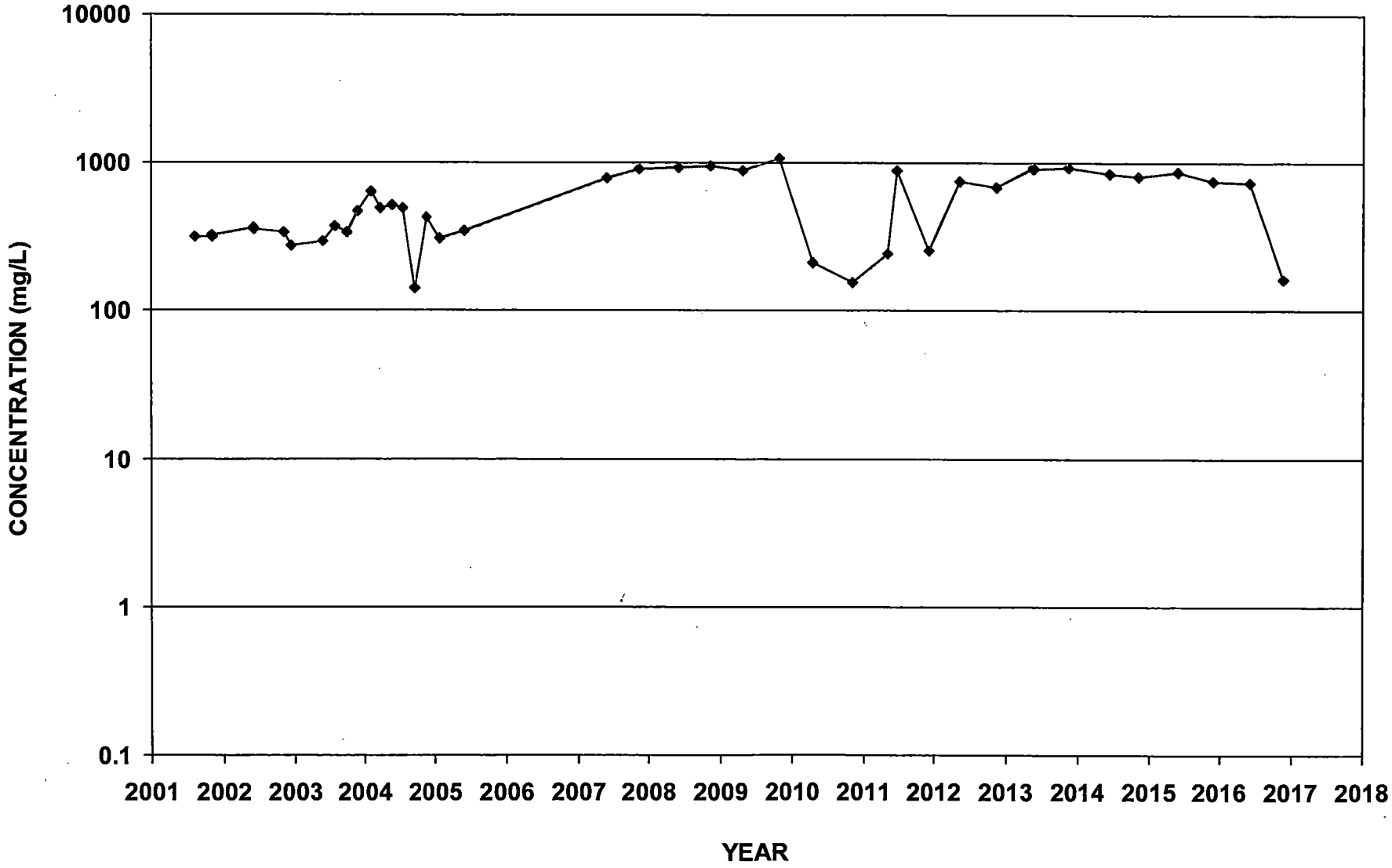
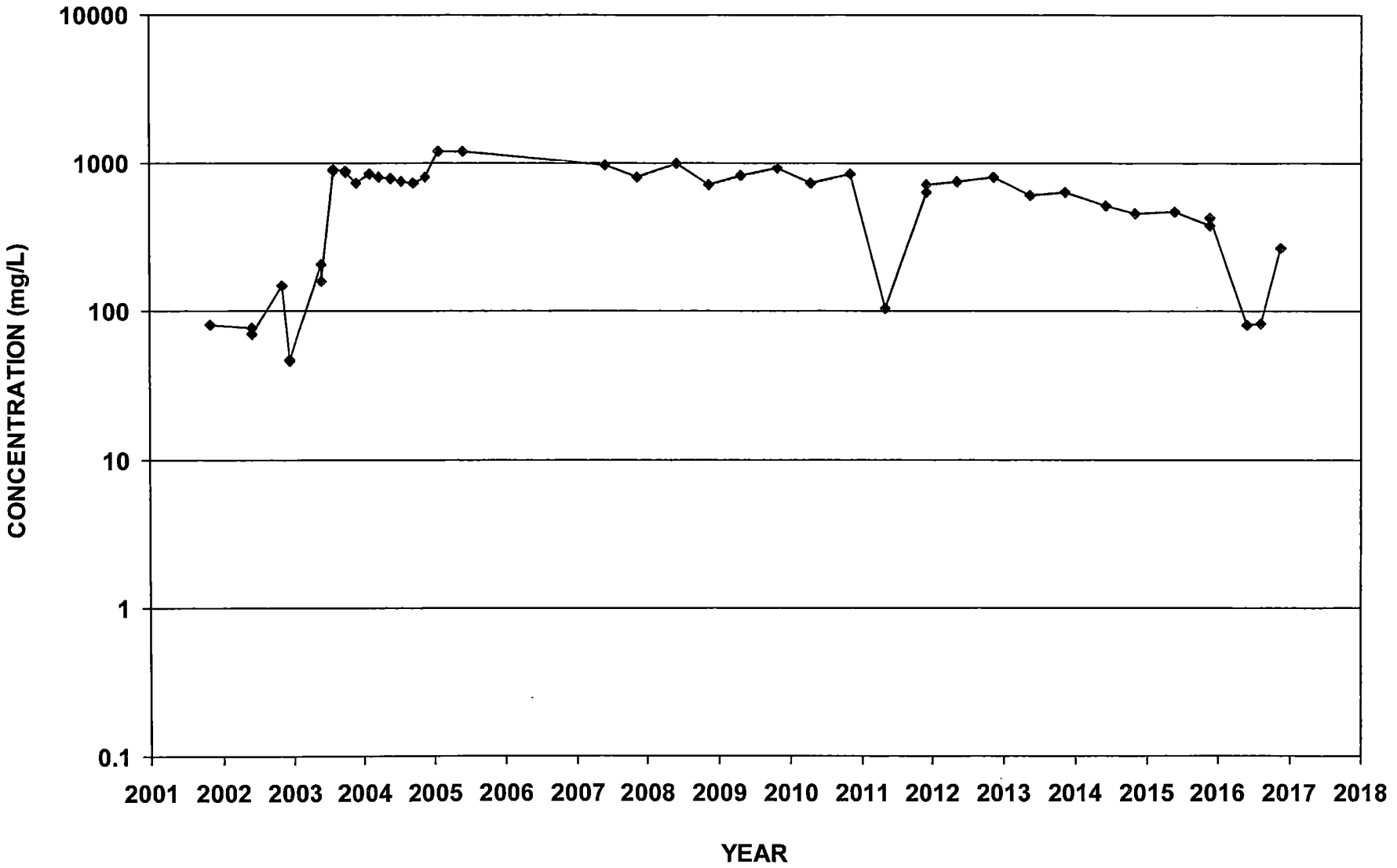
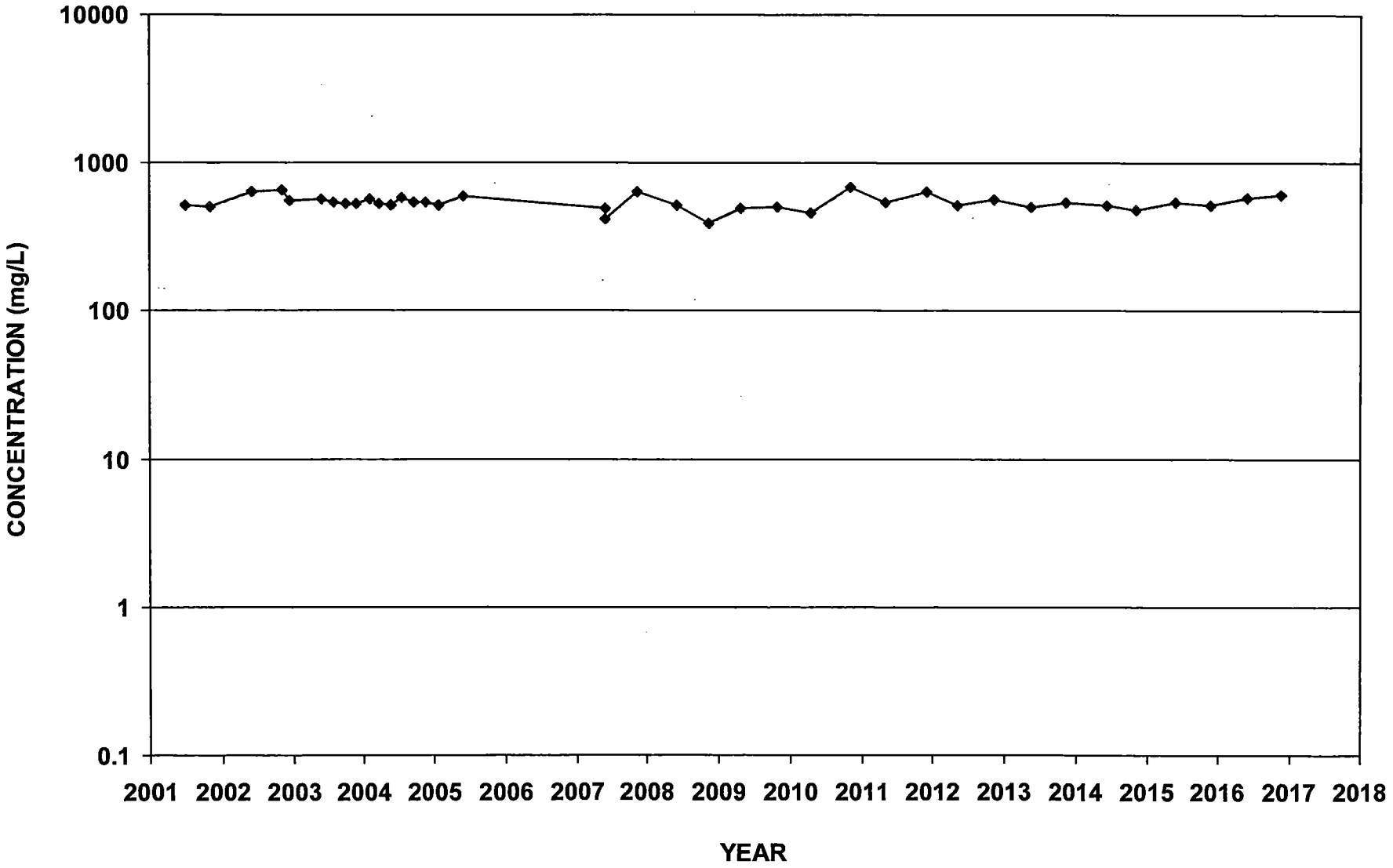
2017
2018
YEAR

ECMW-7
Sulfate as SO4



ECMW-8
Sulfate as SO4




ECMW-9
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
2002
2003
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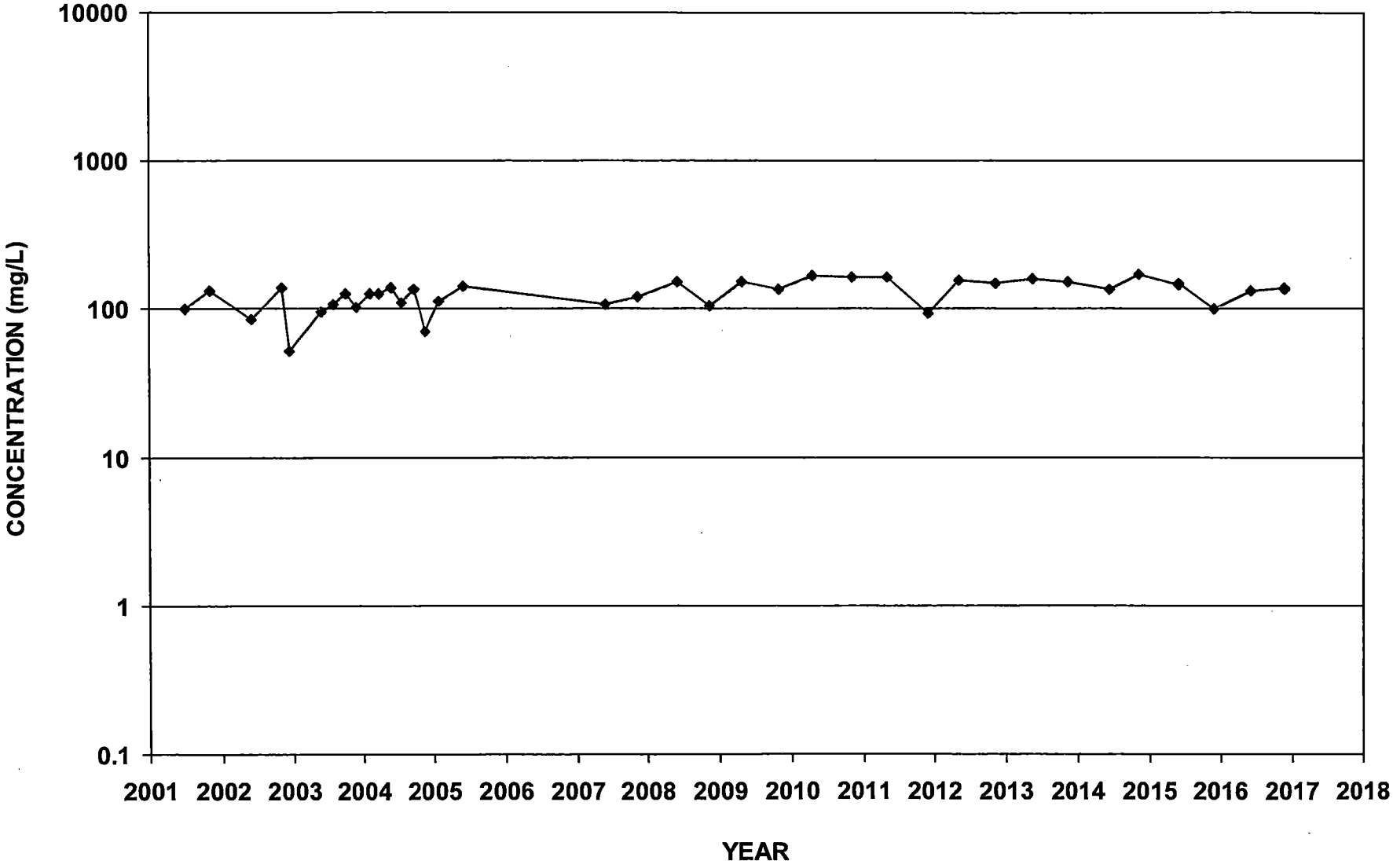
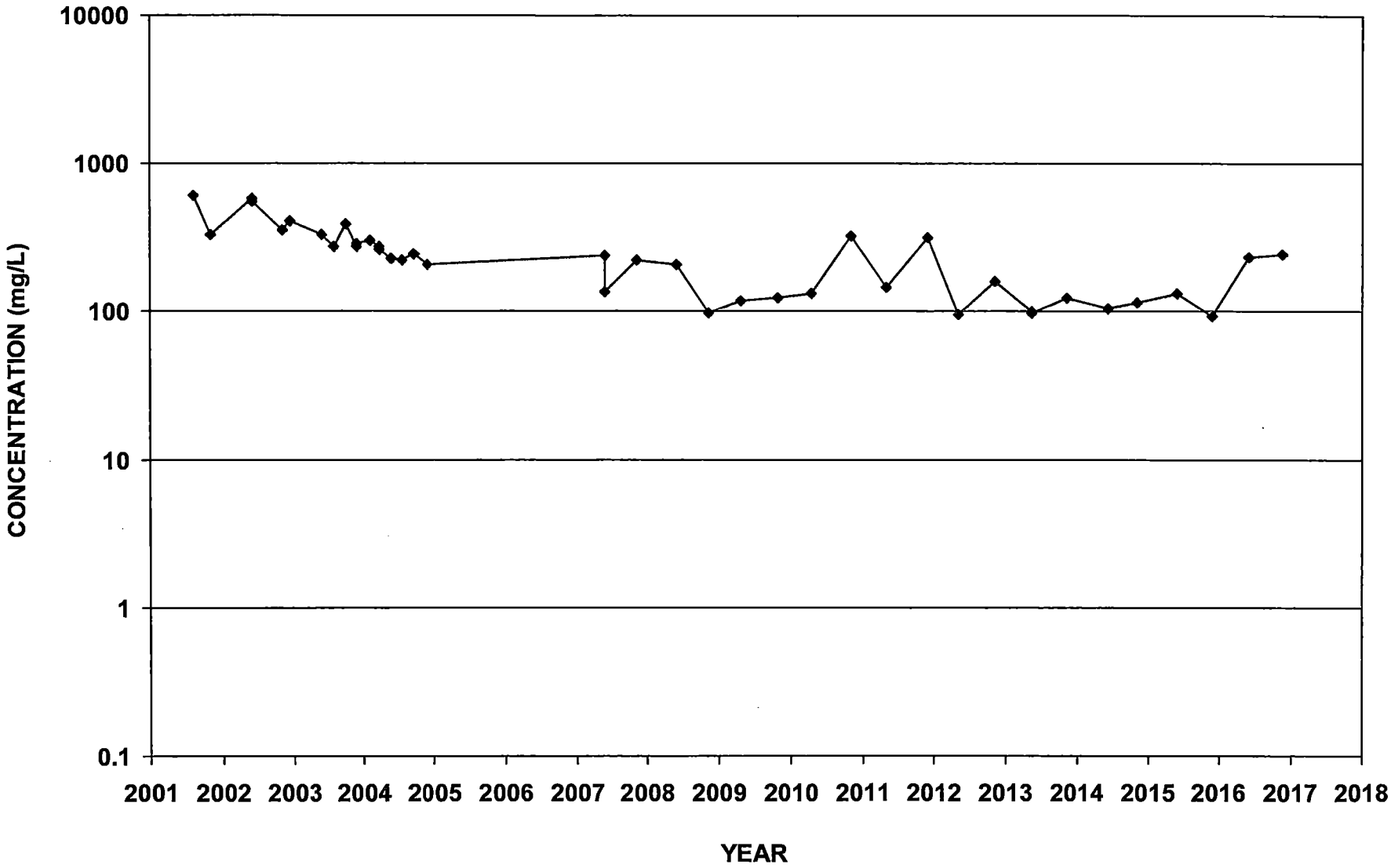
2018
YEAR

ECMW-10
Sulfate as SO4




ECMW-11
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
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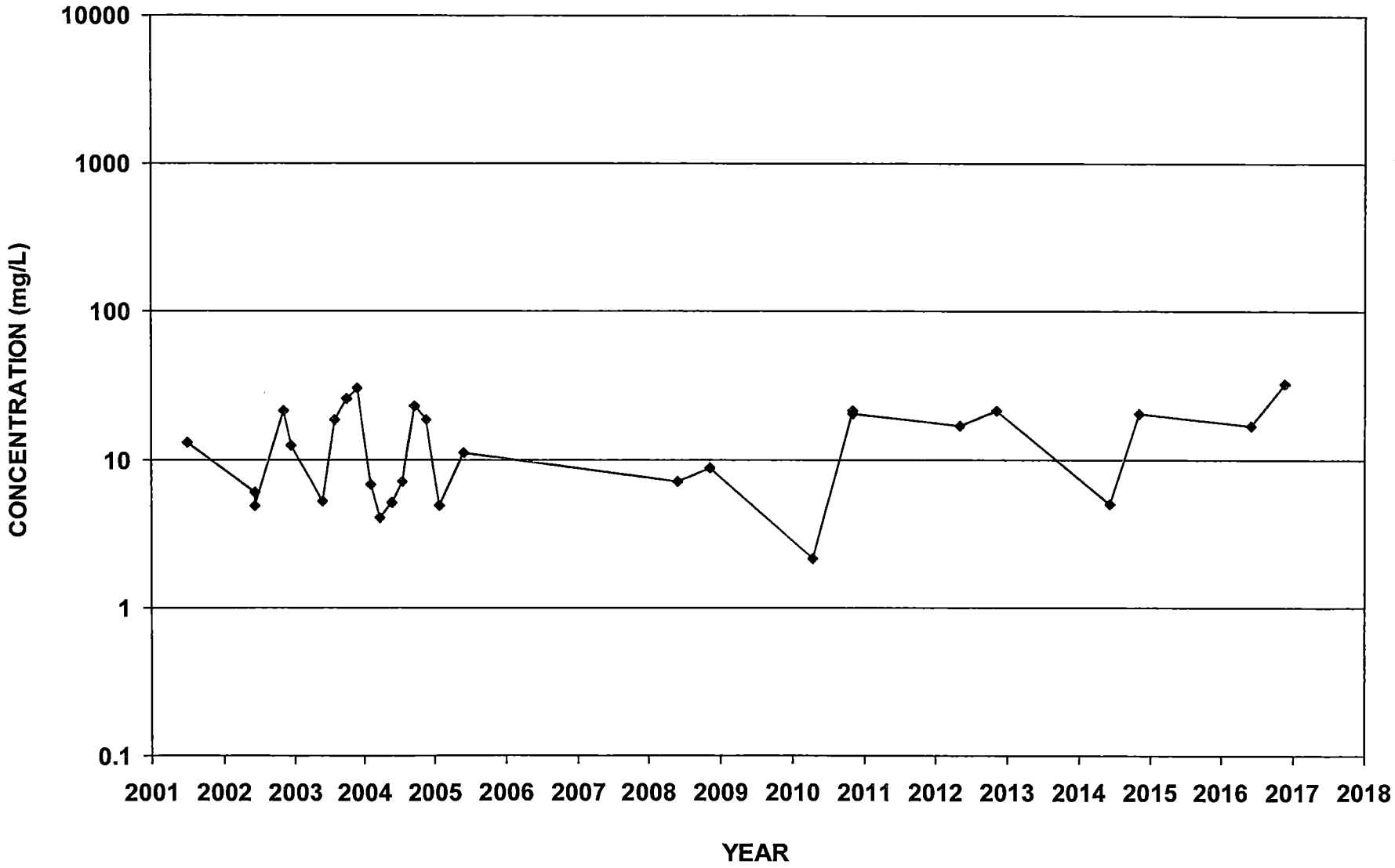
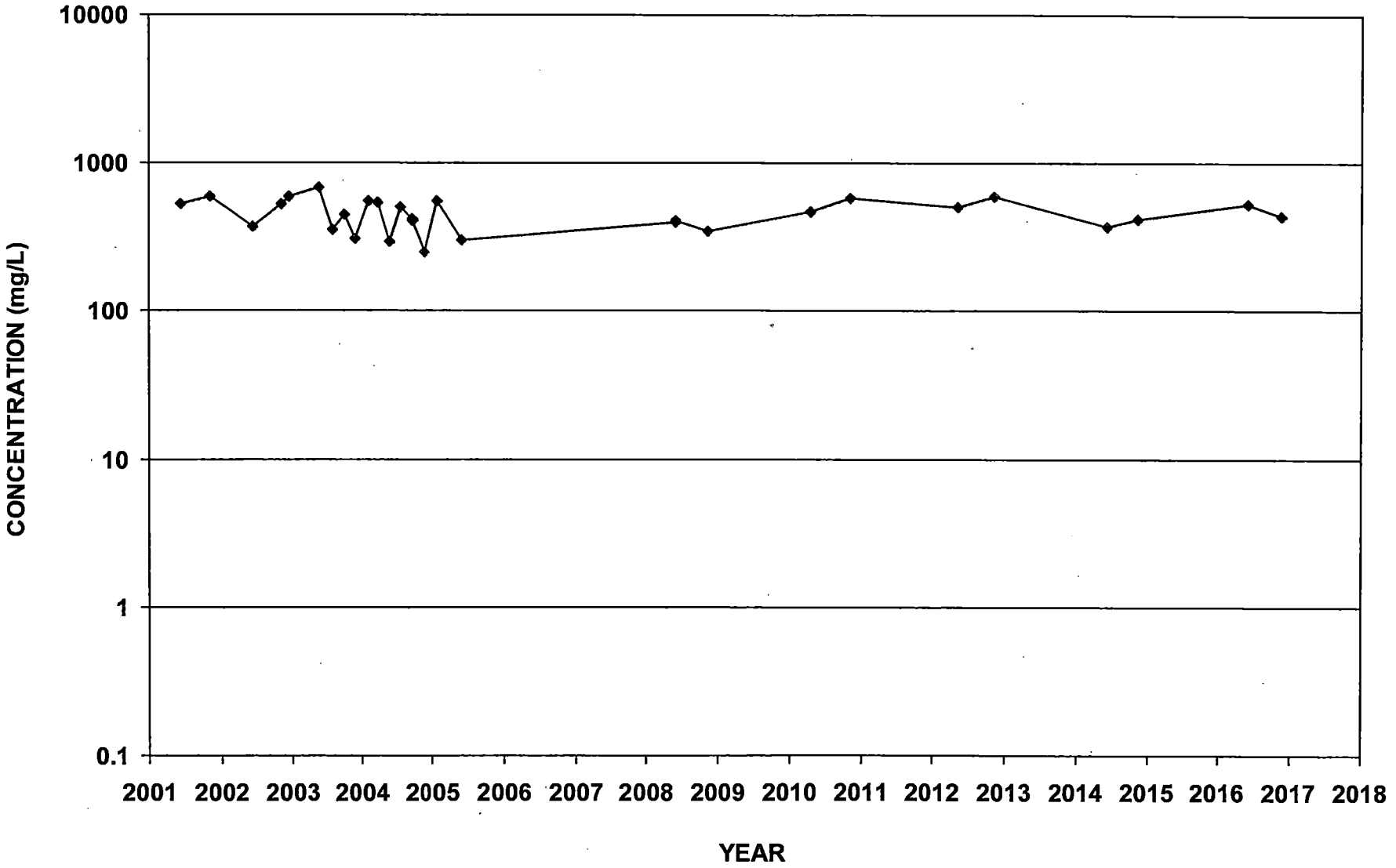
YEAR

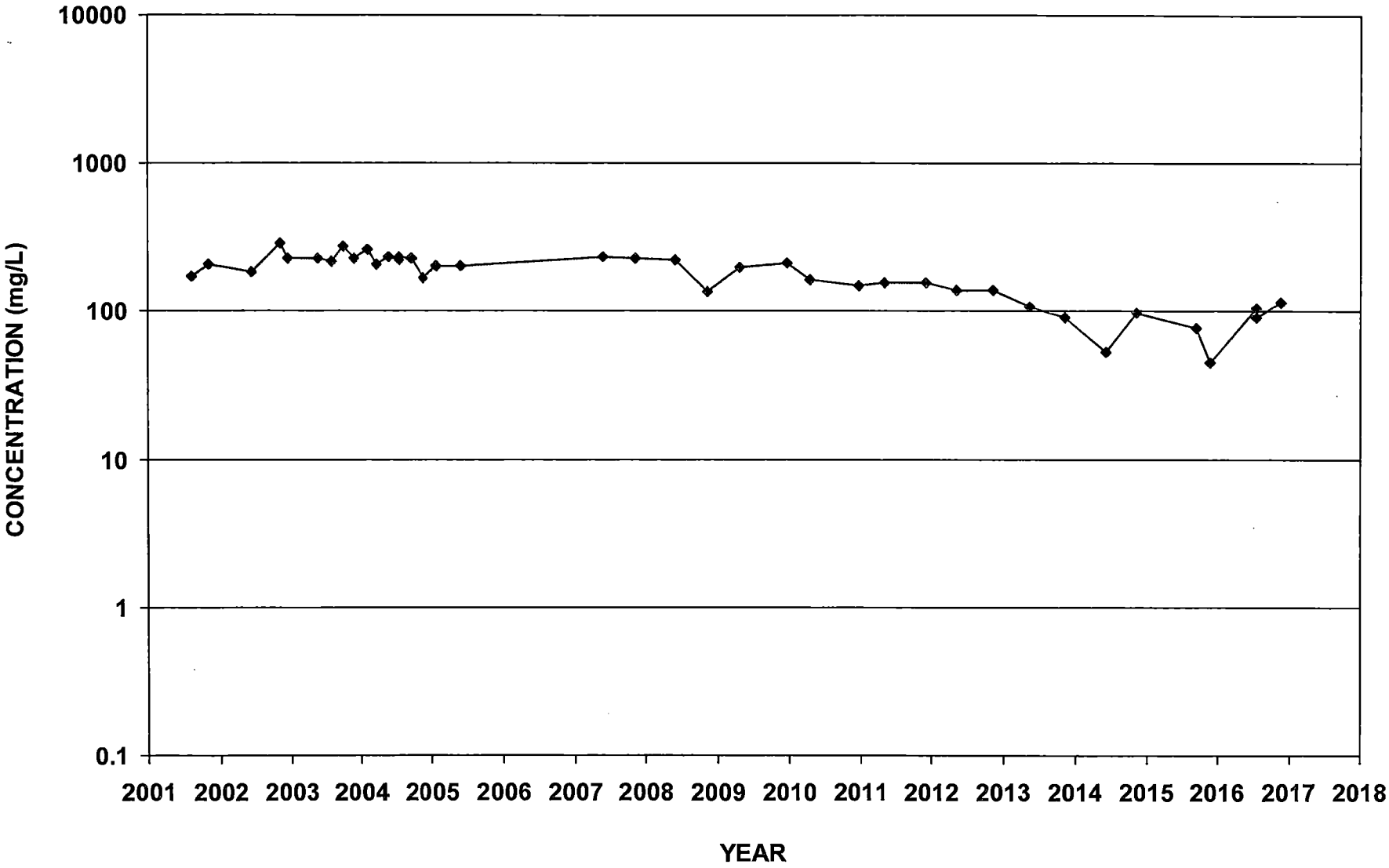
ECMW-12
Sulfate as SO4



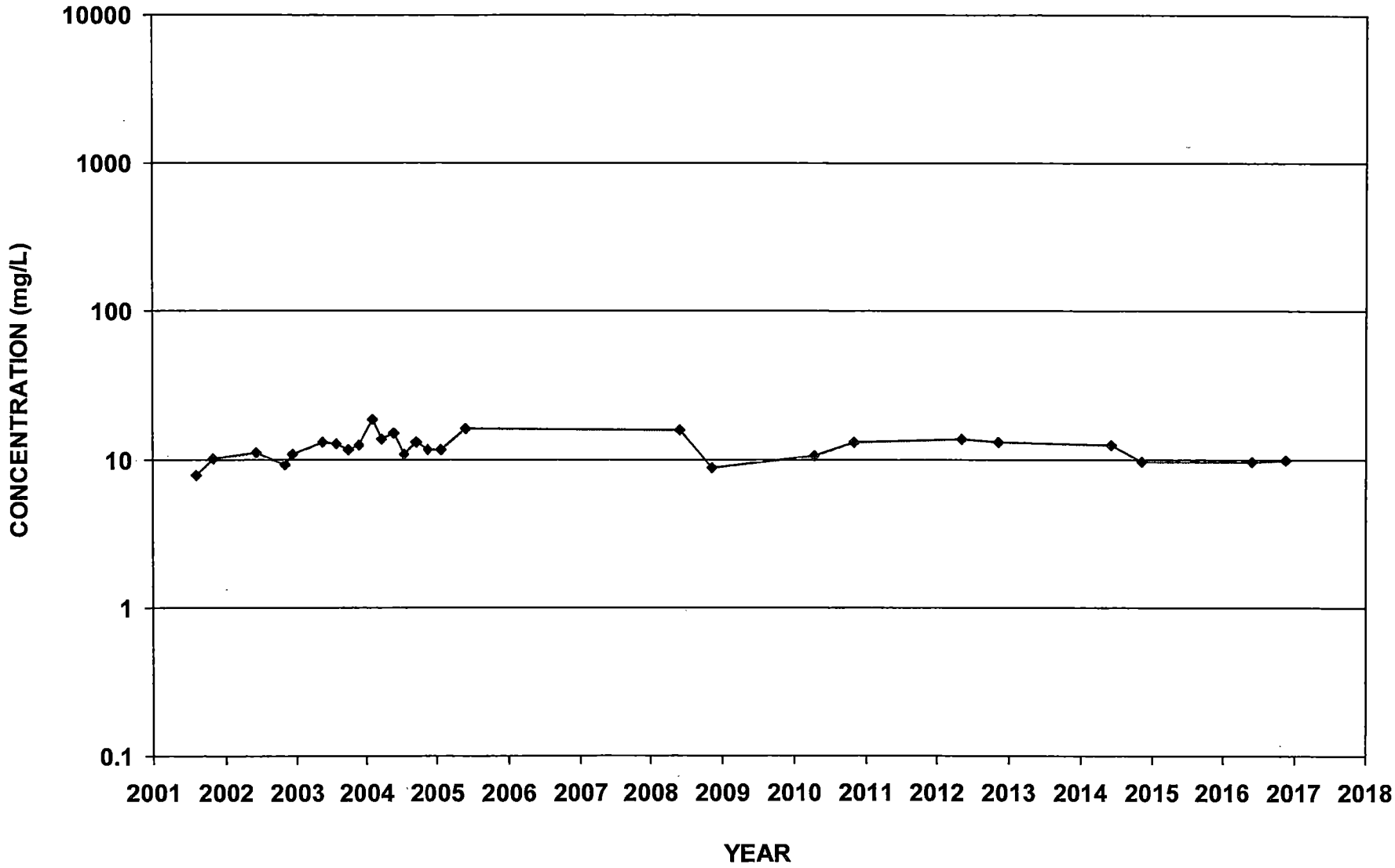
ECMW-13
Sulfate as SO4

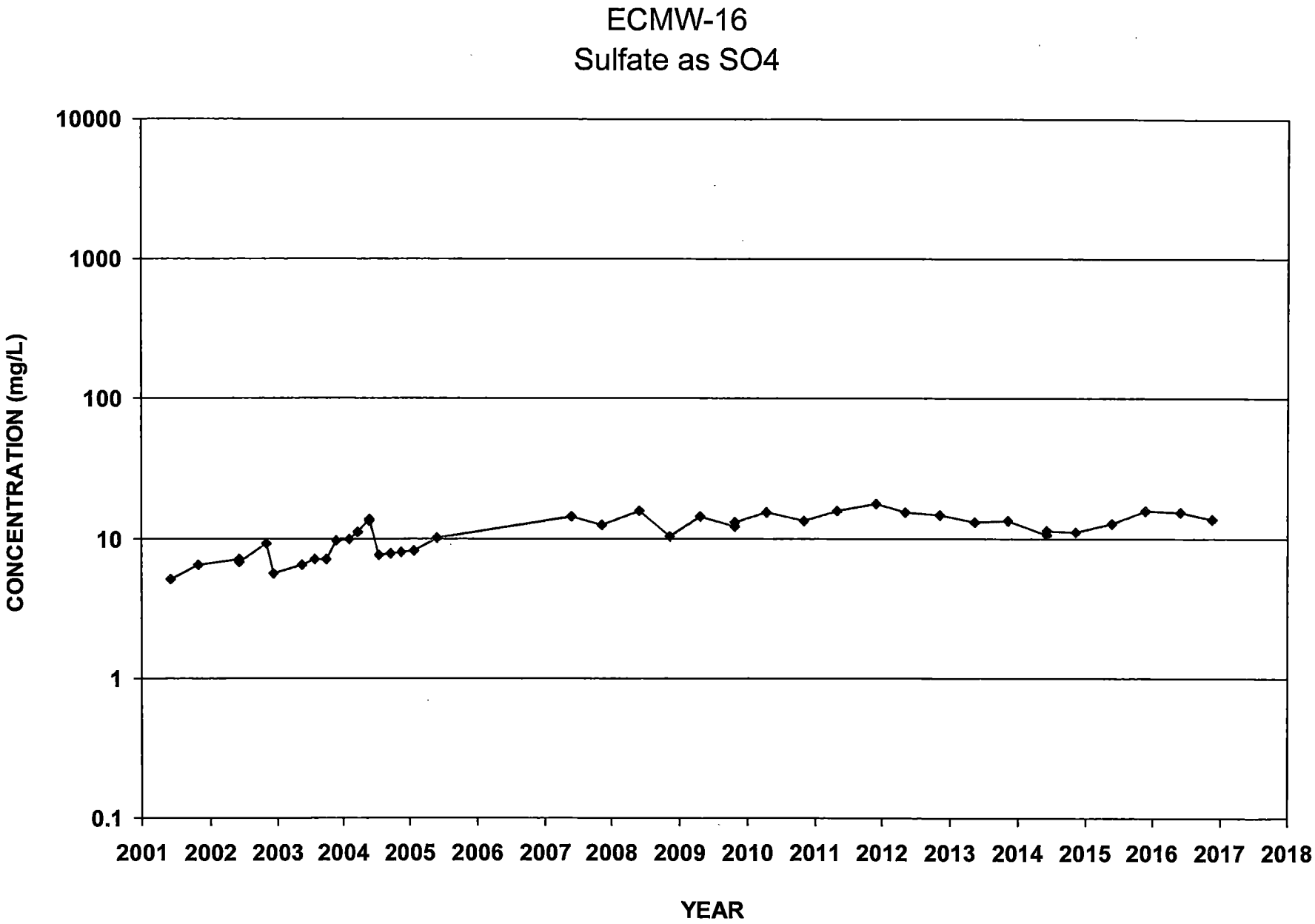


ECMW-14
Sulfate as SO4



ECMW-15
Sulfate as SO4




ECMW-16
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
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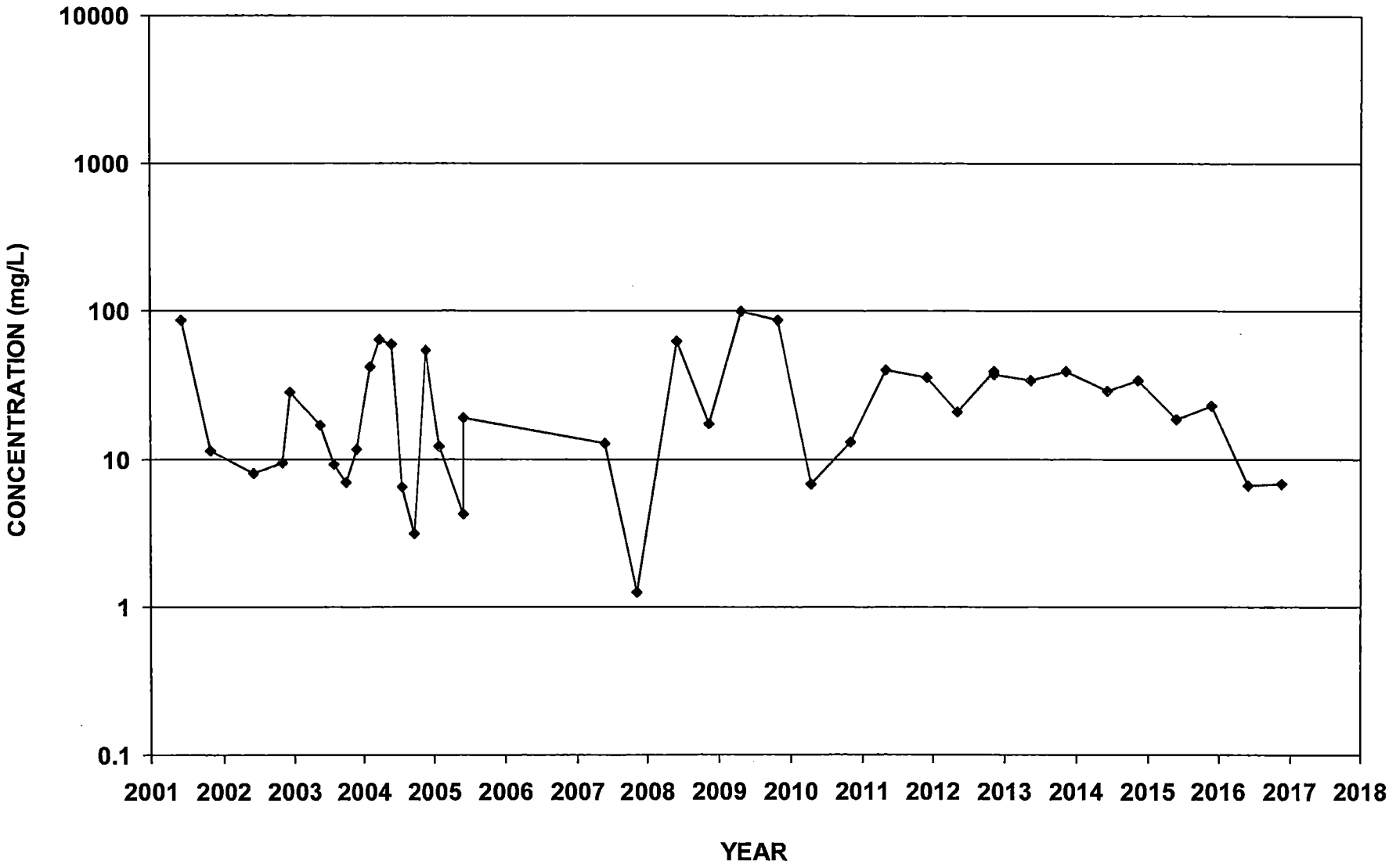
YEAR


ECMW-17
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
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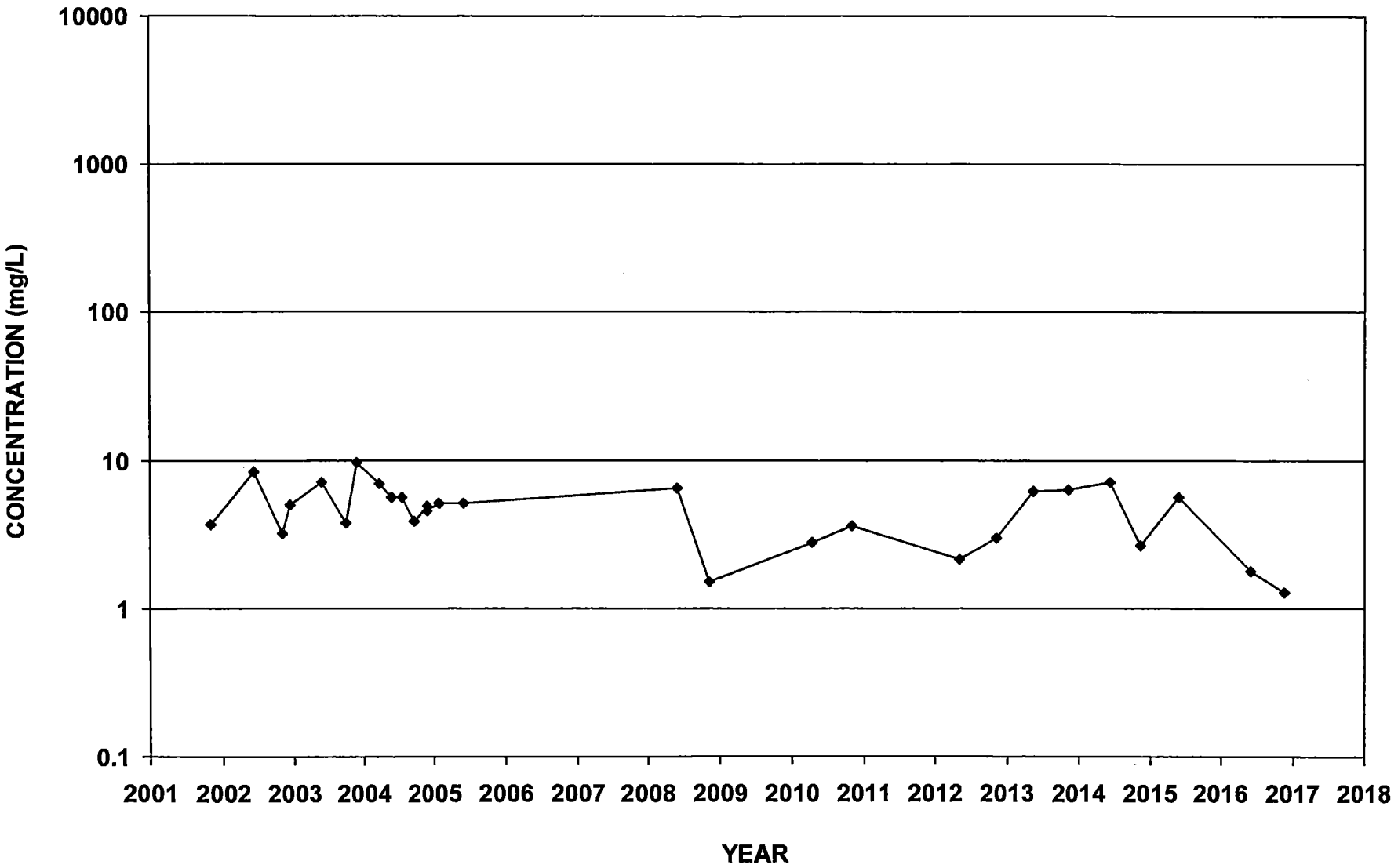
YEAR


ECMW-18
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
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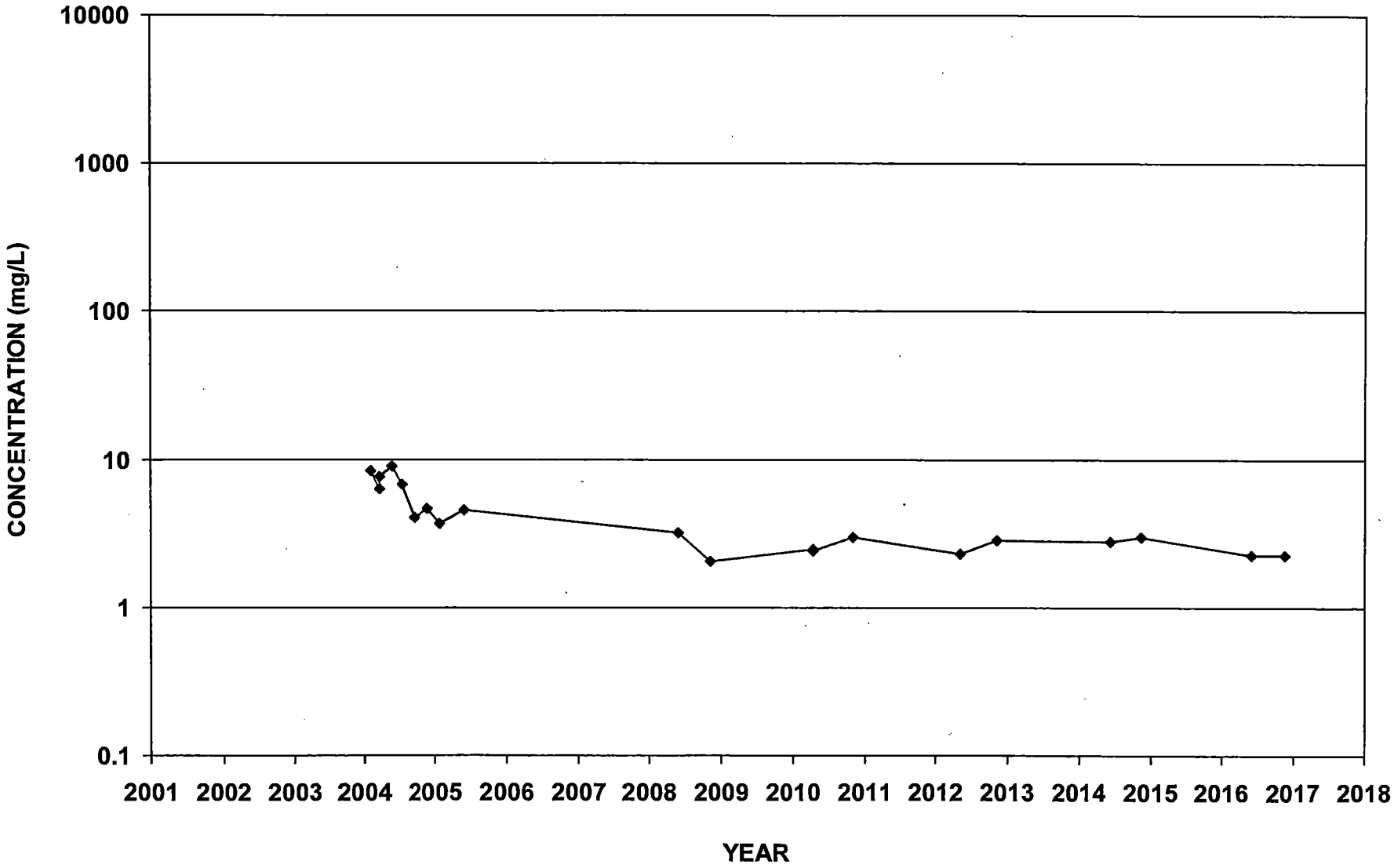
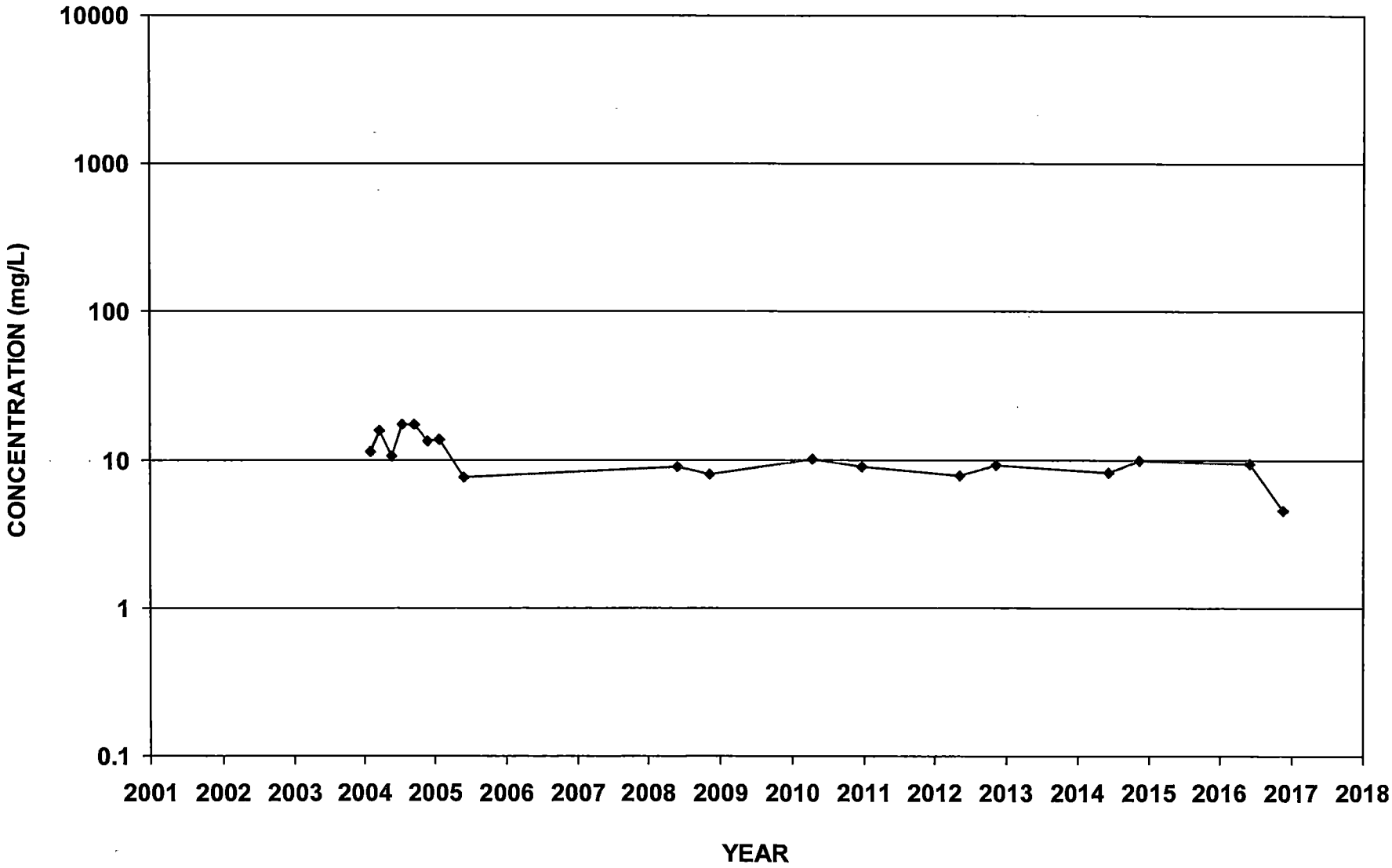
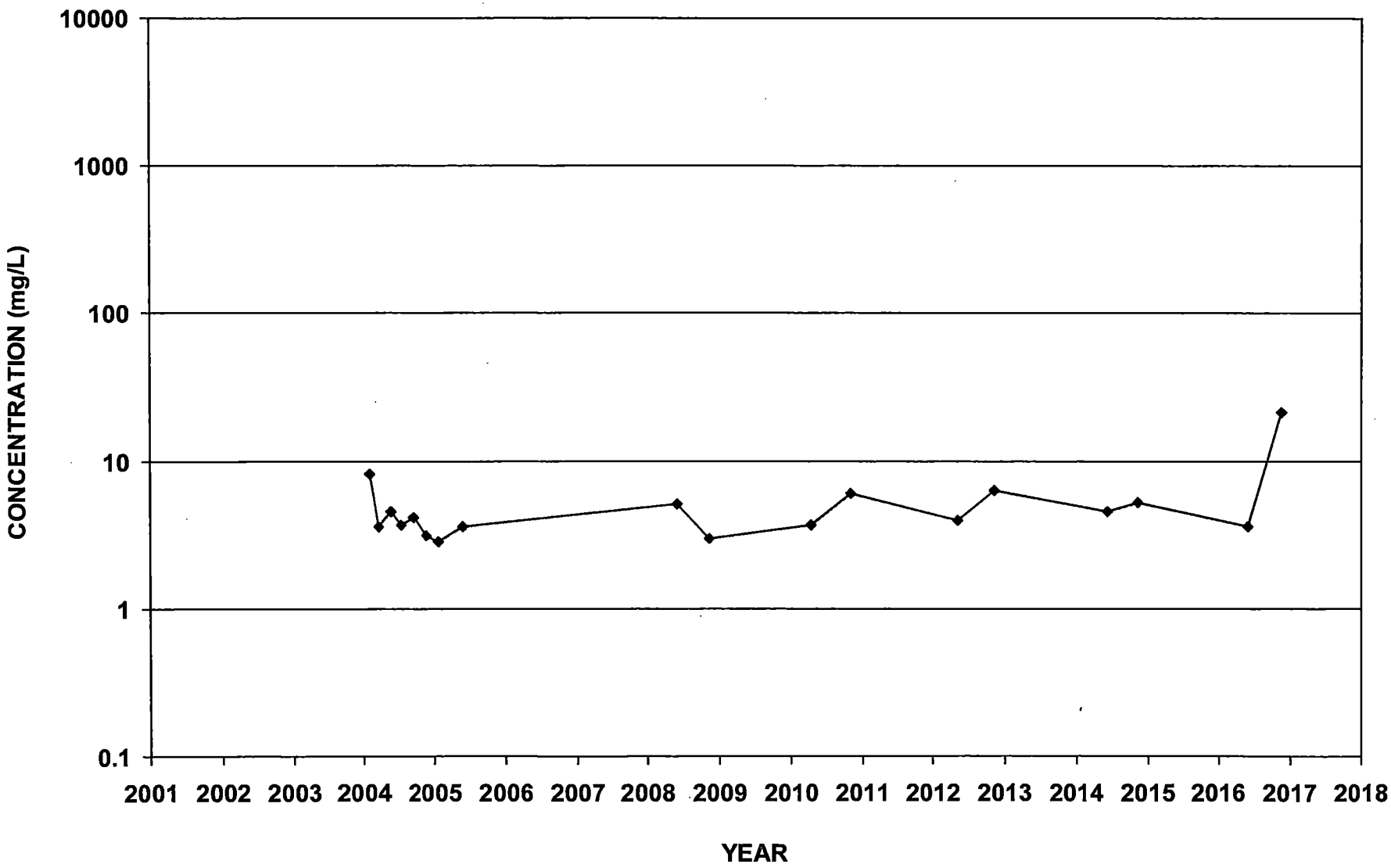
ECMW-19
Sulfate as SO4



ECMW-20
Sulfate as SO4




ECMW-21
Sulfate as SO4
10000
1000
100
10
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0.1
CONCENTRATION (mg/L)
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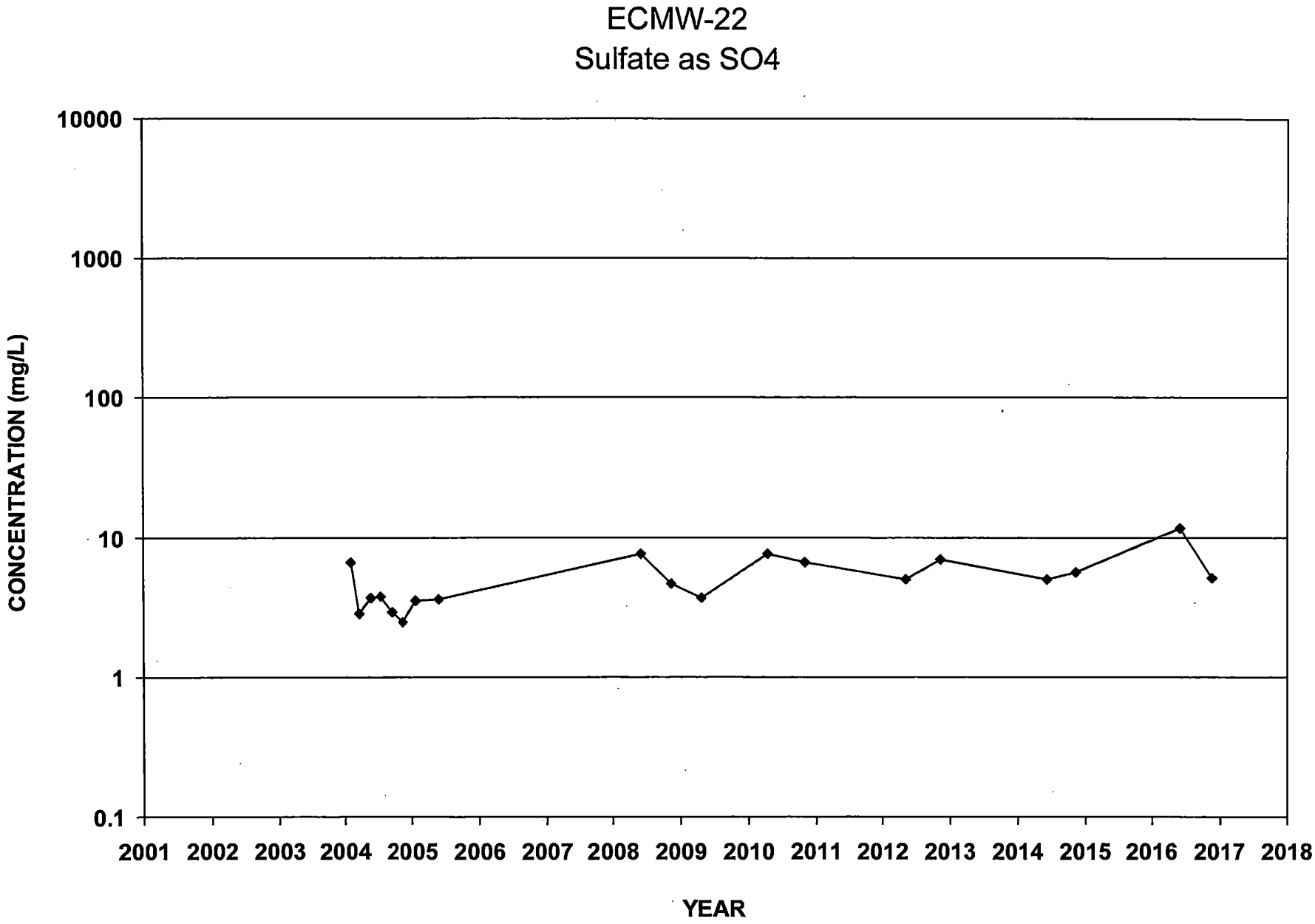
YEAR


ECMW-22
Sulfate as SO4
10000
1000
100
10
1
0.1
CONCENTRATION (mg/L)
2001
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YEAR

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