

Comments on El Dorado Chemical Company letter to John M. Carver

1. The original CAO did not require monitoring for alkalinity, phosphorus, total organic carbon, redox, dissolved iron, or dissolved manganese. The CAO did get the Department authority to modify the constituents based on the review of the annual ground water reports. I am assuming that the constituents I listed above were added. If not, then El Dorado Chemical does not need authority from the Department under the CAO to quit monitoring for these constituents.




Ben Jones

8/8/2011

# ADEQ

ARKANSAS  
Department of Environmental Quality

AFIN: _____	Permit No.: _____
Date: _____	By: _____
Project: _____	
Sheet _____ of _____	

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Lead	April 2010	0.029	<sup>well</sup> 4
	May 2008	0.017	4
Lead	" "	0.06	7
Lead	May+Nov 2008	0.02	18
		0.032	
Chrom	" " 2008	0.028	18
		0.025	

Total P for wells 2, 3, 7, 9, 11, 12, 14, 18, 19, 20, 21, 22

*Apr. only*

*Calculated*

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

IN THE MATTER OF:

EL DORADO CHEMICAL COMPANY  
P.O. BOX 231  
EL DORADO, ARKANSAS 71731-0231  
EPA ID No. ARD001700657

LIS NO. 06-153  
AFIN 7000040

CONSENT ADMINISTRATIVE ORDER

This Consent Administrative Order ("CAO") is issued pursuant to the authority of the Arkansas Water and Air Pollution Control Act, A.C.A. § 8-4-101 et seq., and the regulations promulgated thereunder. The issues herein having been settled by agreement of EL DORADO CHEMICAL COMPANY ("EDCC") and the Director of the Arkansas Department of Environmental Quality ("ADEQ"), without EDCC either admitting or denying any of the statements contained in the FINDINGS OF FACT, it is hereby agreed and stipulated that the following FINDINGS OF FACT and ORDER AND AGREEMENT be entered herein.

FINDINGS OF FACT

1. EDCC is a corporation which manufactures sulfuric acid, nitric acid, ammonium nitrate fertilizers, and industrial grade ammonium nitrate products at its chemical manufacturing facility in El Dorado, Union County, Arkansas (hereinafter the "facility").
2. EDCC previously operated a wastewater treatment system pursuant to Arkansas NPDES Permit Number AR0000752, issued effective July 1, 1990 (hereinafter the "1990 Permit").
3. In August 1998, ADEQ and EDCC entered into Consent Administrative Order LIS No. 98-119, which addressed various compliance issues at the facility.

7. Pursuant to Paragraph 1(b) of the Order and Agreement Section of PAR LIS No. 03-067, EDCC and ADEQ agreed to enter into a consent administrative order which requires EDCC to evaluate the presence of nitrates in the upper aquifer, to conduct a risk assessment, and to implement such remedial action as may be appropriate to address such risks as may be identified in the risk assessment.

8. By letter dated July 8, 2003, ADEQ memorialized EDCC's agreement to commit to the following tasks: ~~(1)~~ A site characterization to install new monitoring wells, including perimeter monitoring down gradient from the plant and Lake Kildeer; ~~(2)~~ completion of a workplan for the site characterization; (3) the execution of a CAO between EDCC and ADEQ which includes time frames for groundwater monitoring and a plan for remediation; and ~~(4)~~ EDCC' s intention to implement a bioremediation test at monitoring wells MW-8 and MW-17 with "microbes/bacteria".

9. Tasks 1 and 2 outlined in paragraph 8 above have been completed by EDCC as of the date of this Order. On April 7, 2004, ADEQ received EDCC's 2003 Annual Report on Groundwater monitoring. On June 24, 2004, ADEQ received EDCC's Geologic Investigation Report, otherwise known as the site characterization. On July 7, 2005, the ADEQ received the 2004 Annual Ground Water Report. On October 14, 2005, the ADEQ received proposed modifications to the parameters in the ground water sampling program, which was approved on October 24, 2005. The 2005 Ground Water Report as submitted on March 27, 2006. Task 4 outlined in paragraph 8 has been eliminated due to the unfeasibility

2. All previous CAOs referenced herein are hereby incorporated by reference, to the extent that such CAOs have not been terminated.

3. EDCC shall continue to conduct semi-annual groundwater monitoring on the twenty-two (22) existing groundwater monitoring wells which shall be performed during May and October of each year. The constituents for analysis, at a minimum, shall include the following: nitrates, sulfates, ammonia, TDS, pH, temperature, conductivity, total and dissolved lead, and total and dissolved chromium. The constituents may be modified based upon the ADEQ review of the annual groundwater reports. Should old wells be discovered or additional monitoring wells become necessary, these wells will be included in the monitoring program. Based on the ADEQ review of the annual groundwater reports, individual wells and/or individual parameters may be removed from the monitoring network.

4. EDCC shall continue to submit annual groundwater monitoring reports to ADEQ by April 1 of each year. These reports shall include the semi-annual data on the laboratory analysis for the constituents noted in Paragraph 3 of this Order and Agreement, and shall include location, potentiometric, water level, and constituent concentration maps, or any additional information as needed by ADEQ to properly evaluate the groundwater data.

5. A report detailing the construction and operation of the ground water recovery system shall be submitted to ADEQ within ninety (90) days after the system is installed. Such report shall include, but not limited to, the following: location and construction specifications of each well, logs performed during well

9. Failure to meet the requirements or deadlines of this Order or the approved schedules provided for herein constitutes a violation of said Order. If EDCC should fail to meet any such requirement or deadline, the EDCC consents and agrees to pay to ADEQ civil penalties according to the following schedule:

- (a) First day through the tenth day: \$500.00 per day
- (b) Eleventh day through twentieth day: \$1,000.00 per day
- (c) Twenty-first day through thirtieth day: \$1,500.00 per day
- (d) Each day beyond the thirtieth day: \$2,000.00 per day.

These stipulated penalties may be imposed for delay in performance and shall be in addition to any other remedies or sanctions which may be available to ADEQ by reason of EDCC's failure to comply with the requirements of this Order. ADEQ reserves the right to collect other penalties and fines pursuant to its enforcement authority in lieu of the stipulated penalties set forth above.

10. If any event occurs which causes or may cause delay in the achievement of compliance by EDCC with the requirements or deadlines of this Order, EDCC shall so notify ADEQ, in writing, as soon as reasonably possible after it is apparent that delay will result, but in no case after the due dates specified in the schedules above. The notification shall describe in detail the anticipated length of the delay, the precise cause of the delay, the measures being taken and to be taken to minimize the delay, and the timetable by which those measures will be implemented.

conduct which is not expressly addressed herein, nor does it relieve EDCC of the responsibilities for obtaining any necessary permits.

SO ORDERED THIS 16<sup>th</sup> DAY OF November, 2006.



Marcus C. Devine, Director

**APPROVED AS TO FORM AND CONTENT:**

El Dorado Chemical Company

BY: Gregory Lucian Withrow

TITLE: General Manager


DATE: 11/16/06

# ADEQ

ARKANSAS  
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John Carver

EDCC

modified in 07 + 09

jeanner@LSB-OKC.COM

(ph) 405-235-1347





CHEMICAL COMPANY

June 3, 2011

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

Dear Mr. Neill:

El Dorado Chemical Company (EDCC) has performed a review of the historical and recent semi-annual analytical data for our monitor wells. The purpose of the review was to determine if any modifications to the groundwater monitoring program are appropriate. As specified in Consent Administrative Order LIS 06-153, Order and Agreement Condition 3, modifications can be made to the semi-annual ground water monitoring program based upon data collected at the site. Analysis of Total Dissolved Solids (TDS) was eliminated in 2005, the frequency of monitoring other parameters was modified June 2007 (letter attached), and analysis of Vanadium eliminated in September 2009 (letter attached).

EDCC would like to request additional modifications to the facility groundwater monitoring program as follows:

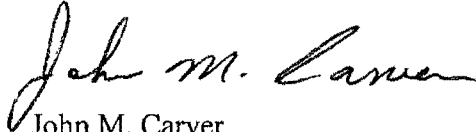
- **Elimination of the in-situ remediation parameters.** Data for alkalinity, nitrite, phosphorus, total organic carbon, dissolved oxygen, redox, dissolved iron and dissolved manganese have been collected since May 2005, providing sufficient historical data should in-situ remediation be re-evaluated.
- **Elimination of chromium from monitoring program.** Chromium data were evaluated and indicate concentrations range from <0.02 to 0.837 mg/L. Only 5 analyses out of a total of 932 (both total and dissolved) exceeded the EPA Maximum Contaminant Level (MCL) of 0.1 mg/L, with the last instance occurring in 2004. Concentrations in wells which consistently have chromium detections are declining and there is no indication of a source area or migration of this constituent. A search of nearby wells (<https://arkweb.er.usgs.gov/>) indicates the presence of two (2) non-facility wells within a one-mile radius. Both wells are 200 or more feet deep and are unlikely to be impacted by any constituents in the shallow groundwater at the EDCC site.
- **Elimination of lead from monitoring program.** Lead concentrations exceeded the MCL (0.015 mg/L) on 44 of 911 analyses, with concentrations ranging from 0.0025 mg/L to 0.169 mg/L. The most recent maximum concentration was 0.06 mg/L, detected in ECMW-7 in April 2010. As with chromium, concentrations are generally steady or declining, with no

Mr. Jerry Neill  
Senior Geologist  
Arkansas Department of Environmental Quality  
June 3, 2011  
Page 2

indication of a continuing source. As stated previously for chromium, there is no risk to human health via drinking water due to lead concentrations in the shallow groundwater beneath the facility.

The annual groundwater report will continue to be provided by April 1 of each year. If you would like to discuss the proposed modifications to the monitoring program, please give me a call at (405) 235-4546. EDCC would like to implement the requested changes for the upcoming November 2011 sampling event so a response at your earliest convenience would certainly be appreciated.

Sincerely,

A handwritten signature in cursive script that reads "John M. Carver". The signature is written in black ink and is positioned above the printed name.

John M. Carver  
Vice President Safety & Environmental Compliance  
El Dorado Chemical Company



A R K A N S A S  
Department of Environmental Quality

June 8, 2007

Mr. John Carver  
Vice President Safety & Environmental Compliance  
El Dorado Chemical Company  
P. O. Box 1373  
Oklahoma City, OK 73101

RE: El Dorado Chemical Company  
AFIN-70-00040  
Ground Water Monitoring Program – Sampling Modification Request  
2006 Annual Ground Water Report

Dear Mr. Carver:

The Department has reviewed both the Ground Water Monitoring Program Modification request and the 2006 Annual Ground Water Report. Comments regarding both documents are described in the paragraphs below.

Ground Water Monitoring Program – Sampling Modification Request

The Department received your request dated April 25, 2007 to modify the sampling frequency of parameters during the ground water monitoring events at the El Dorado Chemical Company (EDCC). In accordance with condition no. 3 of the Order and Agreement in the CAO LIS 06-153, modifications can be made to the semi-annual ground water monitoring program based upon data collected at the site. Although we discussed the modifications by phone and e-mail on May 18, 2007 prior to the next scheduled sampling event for the week of May 21<sup>st</sup>, this letter serves as the formal communication for these modifications.

After a review of your request, the 2006 Annual Ground Water Report and the October 2005 sampling program changes, these modifications to the ground water sampling program are indicated in the table below. This sampling schedule was selected based on background well data, wells with historically low levels since monitoring began in 2001, wells with historically higher levels of nitrates, ammonia, sulfates and/or TDS, and the two recovery wells installed in June 2006. Ground Water monitor wells MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10 and MW-11 are located in the vicinity of the recovery wells and data from the ground water monitoring wells will provide data to determine the effectiveness and operation of the recovery system. Lead and chromium were removed from analysis in 2005 and I recommend that they be added to the 2008 event for confirmation that the levels remain at the previously documented background levels. Vanadium was added in 2004 and I recommend that it remain on the list through semi-annual event in 2007 and 2008 in order to obtain enough data for statistical comparison. At that time, we can re-evaluate and determine whether this parameter should be continued or suspended. Analysis for the remediation parameters, as indicated on Table 26 in the 2006 Annual Ground Water Report, should also be continued according to the schedule listed in the table below.

WATER DIVISION

: Parameters for Semi-Annual (May & October) Sampling Frequency each year

■ Parameters for Semi-Annual (May & October) Sampling Frequency every other year (2008, 2010, etc.)

Monitor Well ID	Water level measurements	Temperature	Conductivity	pH	Remediation Parameters (Alkalinity, Nitrite, Phosphorus, TOC)	Remediation Parameters (DO, redox, dissolved Fe, dissolved Mn)	Nitrate	Ammonia	Sulfate	Lead	Chromium	Vanadium
MW-1	:	:	:	:	:	■	■	■	■	■	■	:
MW-2	:	:	:	:	:	■	■	■	■	■	■	:
MW-3	:	:	:	:	:	■	■	■	■	■	■	:
MW-4	:	:	:	:	:	■	:	:	:	■	■	:
MW-5	:	:	:	:	:	■	:	:	:	■	■	:
MW-6	:	:	:	:	:	■	:	:	:	■	■	:
MW-7	:	:	:	:	:	■	:	:	:	■	■	:
MW-8	:	:	:	:	:	■	:	:	:	■	■	:
MW-9	:	:	:	:	:	■	:	:	:	■	■	:
MW-10	:	:	:	:	:	■	:	:	:	■	■	:
MW-11	:	:	:	:	:	■	:	:	:	■	■	:
MW-12	:	:	:	:	:	■	■	■	■	■	■	:
MW-13	:	:	:	:	:	■	■	■	■	■	■	:
MW-14	:	:	:	:	:	■	:	:	:	■	■	:
MW-15	:	:	:	:	:	■	■	■	■	■	■	:
MW-16	:	:	:	:	:	■	:	:	:	■	■	:
MW-17	:	:	:	:	:	■	:	:	:	■	■	:
MW-18	:	:	:	:	:	■	:	■	■	■	■	:
MW-19	:	:	:	:	:	■	■	■	■	■	■	:
MW-20	:	:	:	:	:	■	■	■	■	■	■	:
MW-21	:	:	:	:	:	■	■	■	■	■	■	:
MW-22	:	:	:	:	:	■	■	■	■	■	■	:

Analysis of Total Dissolved Solids (TDS) was suspended in 2005 and conductivity was added. I recommend that we remain with conductivity instead of TDS. Conductivity is a good indicator of TDS and vice versa, so there is a need to duplicate efforts. If the conductivity measurements

indicate something other than background or do not remain historically consistent, TDS may be added.

Should new data become available, we may need to modify this list again and re-evaluate the parameters if site conditions or data suggest changes are necessary.

2006 Annual Ground Water Report

The 2006 Annual Ground Water Report was submitted by e-mail on March 29, 2007. Based upon the review of the annual report, please submit the following items for the 2007 report and included in subsequent reports:

- 1) Indicate recovery wells locations on the site map;
- 2) Include data from the operation of the recovery wells, (i.e., volume, treatment and disposal methods, operational and maintenance (O&M) information, such as replacement of filters, pumps, etc., and any other per);
- 3) Include water level measurements of the recovery wells;
- 4) Provide data on the determination of the statistical trends from Appendix A; and
- 5) Plume maps of nitrate, ammonia and sulfate for the 2008 report.

Thank you for your cooperation with this project. Please do not hesitate to contact me with any questions by phone at (501) 682-0642 or by e-mail at [stuart@adeq.state.ar.us](mailto:stuart@adeq.state.ar.us).

Sincerely,

Laura Stuart, P.G.  
Geologist  
Water Division

cc: Brent Parker, EDCC  
Mary Leath, Chief Deputy Director, ADEQ  
Steve Drown, Assistant Chief, Water Division  
Mo Shafii, Manager, Permits, Water Division  
Dennis Benson, Manager, Enforcement, Water Division  
File

# ADEQ

ARKANSAS  
Department of Environmental Quality

September 1, 2009

John M. Carver  
Vice President Safety & Environmental Compliance  
El Dorado Chemical Company  
P.O. Box 1373  
Oklahoma City, Oklahoma 73101

RE: Modification to Groundwater Monitoring Program  
CAO LIS 06-153; AFIN: 70-00040

Dear Mr. Carver:

This letter is in response to the El Dorado Chemical Company (EDCC) letter dated June 30, 2009 in which you proposed to modify the groundwater sampling program in accordance with Consent Administrative Order (CAO) LIS 06-153, Order and Agreement Condition 3. According to the letter, EDCC is requesting the elimination of the analysis for vanadium in all 22 groundwater monitoring wells.

Based on a review of the data, the concentrations of vanadium have been below the detection limit or very low in all of the 22 groundwater monitoring wells. Therefore, the request to eliminate the analysis for vanadium from all 22 groundwater monitoring wells is approved. EDCC must continue to analyze for nitrate, ammonia, total dissolved solids (TDS), sulfate, total and dissolved lead, total and dissolved chromium, pH, temperature, and specific conductance in accordance with the conditions and requirements of Consent Administrative Order (CAO) LIS 06-153.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Jerry Neill, P.G. at (501) 682-0642 or by e-mail at [neill@adeq.state.ar.us](mailto:neill@adeq.state.ar.us).

Sincerely,



Mo Shafii  
Assistant Chief  
Water Division

MS:jn

cc: Eric Fleming, Inspection Branch Manager  
Cindy Garner, Enforcement Branch Manager  
David Ramsey, Administrative Analyst  
Jamie Ewing, Attorney Specialist  
File (AFIN: 73-01055; Permit No.: 5040-W)

**Hanson, Linda**

---

**From:** John Carver <JCarver@lsb-okc.com>  
**Sent:** Wednesday, June 22, 2011 8:46 AM  
**To:** Shafii, Mo  
**Cc:** Greg Withrow; Brent Parker; laurie marcella; Kyle Wimsett  
**Subject:** EDCC-Semi-Annual Groundwater Sampling; Request for Modification  
**Attachments:** EDCC\_ADEQ request\_monitor well sampling.pdf

Mo, the attached letter was originally sent the first part of June to Jerry Neill who I now learn is no longer with the water division. Since I don't know the fate of the original letter that was mailed to ADEQ, I wanted to ensure that it got into the right hands. Could you please review this request or forward to the appropriate member of your staff for review. As always, thanks for your assistance.

**John Carver**  
**V-P Safety & Environmental Compliance**  
**El Dorado Chemical Company**

discussed w/ Rick 7/18/2011  
called Mr. Carver left msg. 8:25 am 7/18/11  
Mr. Carver called back @ 8:30 am 7/18/11

210444

**ENVIRONMENTAL**   
MANAGEMENT SERVICES, INC.

March 31, 2011


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

Dear Mr. Neill:

On behalf of El Dorado Chemical Company, Environmental Management Services, Inc., has prepared the attached 2010 Annual Ground Water Report. This report is being submitted in accordance with CAO LIS Number 06-0153.

Should you have any questions concerning this report please contact me at (225) 751-5386 or Brent Parker at (870) 863-1400.

Sincerely,



Lauren M. Marcella, P.G.  
Project Geologist  
Environmental Management Services, Inc.

**RECEIVED**  
MAR 31 2011



# 2010 ANNUAL GROUND WATER REPORT

Prepared For:

The logo for El Dorado features the word "ELDORADO" in a stylized, outlined font. The letter "O" in the middle is replaced by a triangle with a circle inside it, resembling a mountain peak or a chemical symbol.

**El Dorado Chemical Company**

Prepared By:

The logo for Environmental Management Services, Inc. features the word "ENVIRONMENTAL" in a serif font, with "MANAGEMENT SERVICES, INC." in a smaller font below it. A stylized graphic of a mountain peak or chemical symbol is positioned to the right of the text.

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

April 1, 2011

RECEIVED  
MAR 31 2011

**2010 ANNUAL GROUND WATER REPORT  
EL DORADO CHEMICAL COMPANY  
EL DORADO, ARKANSAS**

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**2010 ANNUAL GROUND WATER REPORT  
EL DORADO CHEMICAL COMPANY  
EL DORADO, ARKANSAS**

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**2010 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 2010. Field sampling techniques, ground water flow and ground water quality 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 Geostatigraphic 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 Cook Mountain is overlain by the Cockfield Formation. The Cook Mountain is 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 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**

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

### 3.1 MONITORING PARAMETERS

Statistical analyses were performed on ground water data to compare downgradient well data to upgradient (background) data to determine if the site constituents of concern are present at statistically significant levels. As a result of the statistical analyses, the monitoring program has been revised. 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. The monitoring program was revised in 2005, 2006, 2007 and again in 2009.

Revisions 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 are as follows:

- **Lead and chromium:** These parameters were removed from the monitoring program during 2007; these parameters will be sampled semiannually every two years starting in 2008.
- **Background Wells:** There is sufficient data to establish the background levels of ammonia, nitrate, lead and chromium in the three background wells ECMW-1, ECMW-2 and ECMW-3. These four parameters were dropped from the annual parameter list but will be sampled semiannually every two years starting in 2008 to verify the current data set.
- **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 will be sampled semiannually every two years starting in 2008. Nitrate will continue to be analyzed 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 will be sampled semiannually every two years starting in 2008. 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

will be sampled semiannually every two years starting in 2008. 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. All monitor wells will continue to be analyzed for vanadium until a sufficient amount of data is collected to statistically evaluate this parameter.

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 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. These parameters were analyzed again during the 2010 sampling events.

### **3.2 FIELD SAMPLING**

Ground water sampling events were conducted in April and November of 2010. Wells ECMW-6 and ECMW-7 were resampled and analyzed for ammonia and nitrate due to anomalous results for the April analyses. In the second half of 2010, ECMW-14 was sampled in December 2010 due to flooding in the area of the well during the November 2010 sampling period. ECMW-20 was sampled in December 2010 because the well was dry during November. The results of the sampling are discussed in detail in Section 4.2.2.

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 2010 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 2010 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 four (4) blind duplicates.

### **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 for the following constituents:

	PARAMETER	ANALYTICAL METHODS
✓	Ammonia-N	4500-NH3 D
✓	Nitrate-N	EPA 300.0/9056A
	Nitrite	EPA 300.0/9056A
✓	Sulfate	EPA 300.0/9056A
	Chromium (total)	EPA 200.7
	Iron (total)	EPA 200.7
	Lead (total)	EPA 200.7
	Manganese (Dissolved)	EPA 200.7
	Total Phosphorus	EPA 4500-P B5,E
	Alkalinity	2320 B
	Total Organic Carbon	5310/9060A

#### 4.0 SAMPLING RESULTS

The following sections present ground water flow and analytical data collected in 2010.

##### 4.1 GROUND WATER FLOW

Ground water elevations from April and October were used to construct the maps on Figures 2 and 3. The average of the April ground water elevations (177.82 feet MSL) was almost 4 feet higher than the average of the November measurements (173.98 feet) due to very low rainfall amounts at the site during the second half of 2010. The November 2010 readings had elevations ranging from 144.38 feet MSL (compared to 150.41 feet in October 2009) in ECMW-19 to 197.37 feet (compared to 206.15 feet in October 2009) in ECMW-1. Although the November elevations were markedly lower than usual, the general ground water flow direction from northwest to southeast is consistent with previous measurements.

##### 4.2 GROUND WATER QUALITY

###### 4.2.1 Field Parameters

Indicator parameter data are summarized on Table 3. In the first half of 2010, pH values ranged from 3.53 in ECMW-7 to 6.20 in ECMW-3 with an average of 4.82, which is consistent with previous readings. However, the pH readings during the second half of 2010 were higher, ranging from 4.92 to 8.28, with an average of 6.53. Specific conductance values ranged from 26



(ECMW-15) to 22,270 (ECMW-7) microSiemens/cm ( $\mu\text{S}/\text{cm}$ ) in 2010 and were consistent between both 2010 sampling events and previous readings.

#### **4.2.2 Analytical Results**

The analytical results are summarized in Tables 4 through 26 and the laboratory reports are provided in Appendix A. Isoconcentration maps of ammonia and nitrate results are presented on Figures 5 through 8. A discussion of each constituent is provided below:

##### Ammonia

Wells ECMW-6 and ECMW-7 were resampled in July 2010 because the April ammonia results were not consistent with previous data. As shown on Tables 9 and 10, the resample analytical data indicate the April 2010 results for ECMW-6 and ECMW-7 are likely outliers and are not included in the following discussion.

During the year 2010, ammonia concentrations ranged from below the detection limit (0.5 mg/L) to 311 mg/L (ECMW-6). As with previous years, results from ECMW-6, ECMW-7 and ECMW-8 exhibited the highest concentrations. As shown on Figures 4 and 5, the highest ammonia concentrations are located north of the acid and nitrate process areas known as the Production Area.

Trend graphs of ammonia concentrations through 2010 are provided in Appendix B. ECMW-6 shows a clear increasing trend. Wells ECMW-7, ECMW-8 and ECMW-16 show a slight decreasing trend. Ammonia concentration trends in all other wells are fairly constant.

##### Nitrate

Well ECMW-7 was resampled in July 2010 because the April nitrate results were not consistent with previous data. As shown on Table 10, the resample analytical data indicate the April 2010 result ECMW-7 is likely an outlier and is not included in the following discussion.

For the year 2010, nitrate concentrations ranged from below the detection limit (0.5 mg/L) to 1940 mg/L (ECMW-6). ECMW-6, ECMW-7 and ECMW-8 exhibited the highest concentrations

throughout the year. As shown on Figures 6 and 7, the highest nitrate concentrations are located north of the Production Area.

Trends graphs for nitrate are provided in Appendix B. Although nitrate concentrations in ECMW-6 show an overall increasing trend, the more recent data indicate a decreasing and more constant trend. The trend for well ECMW-5 shows an increase in concentration over the last two years.

Wells ECMW-7, ECMW-8, ECMW-10, ECMW-15, ECMW-16 and ECMW-17 nitrate data show decreasing trends. Nitrate concentration trends in the remaining wells are fairly constant.

#### Sulfate

For the year 2010, sulfate concentrations ranged from 2.14 mg/L in ECMW-12 to 3490 mg/L (ECMW-7, 7/22/2010). However, the 3490 mg/L is not consistent with previous readings and may be an outlier. The April and November 2010 results in ECMW-7 were 214 and 156 mg/L, respectively. The second highest sulfate value analyzed in 2010 was 1000 mg/L, from well ECMW-4. ECMW-4, ECMW-8, ECMW-9 and ECMW-13 exhibited the highest concentrations throughout the year.

#### Chromium

Chromium was detected in ECMW-6 at a concentration of 0.011 mg/L. Historically, the highest chromium concentration detected on site was 0.837 mg/L, below the EPA chromium III ground water screening standard of 55 mg/L.

#### Lead

Lead was detected in ECMW-4, ECMW-6 and ECMW-7 at concentrations ranging from 0.023 and 0.06 mg/L.

#### In Situ Remediation Parameters

Samples were analyzed for alkalinity, nitrite, manganese, iron, phosphorus and total organic carbon in 2010. The analytical results of these parameters are summarized on Table 26.

## 5.0 GROUND WATER REMEDIATION

Approximately 533,952 gallons of ground water were recovered from ECRW #2 in 2010. The well operated 7416 hours during 2010 at a rate of about 1.2 gallons per minute. Recovery well ECRW #1 was not used during 2010. Operating both wells simultaneously caused the wells to quickly become dry resulting in frequent damage to the pump and motor assemblies. Well ECRW #2 has operated efficiently since ECRW #1 was taken out of service.

## **TABLES**

**TABLE 1**  
**MONITORING WELL CONSTRUCTION DETAILS**  
**2010 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. EDC-MW-1 through EDC-MW-18 constructed of 4-inch Sch. 40 PVC flush threaded pipe with 4-inch diameter 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. EDC-MW-19, EDC-MW-20 and EDC-MW-22 constructed of 2-inch Sch. 40 PVC flush threaded pipe with 2-inch diameter 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. EDC-MW-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**  
**2010 ANNUAL GROUND WATER REPORT**  
**EL DORADO CHEMICAL COMPANY**  
**EL DORADO, ARKANSAS**

Monitor Well	Top of Casing Elevation (ft above Mean Sea Level)	Measurement Date					
		4/12/2010 - 4/13/2010		7/22/2010		11/01/2010 - 11/02/2010	
		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)	Depth to Water (ft from top of casing)	Ground Water Elevation (ft above MSL)
ECMW-1	213.28	8.62	204.66			15.91	197.37
ECMW-2	196.25	0.00	196.25			2.51	193.74
ECMW-3	192.11	8.75	183.36			15.16	176.95
ECMW-4	194.84	8.83	186.01			13.13	181.71
ECMW-5	182.69	4.29	178.40			4.95	177.74
ECMW-6	191.87	5.16	186.71	4.86	187.01	7.96	183.91
ECMW-7	195.88	7.69	188.19	7.60	188.28	10.18	185.70
ECMW-8	197.34	7.61	189.73			9.57	187.77
ECMW-9	198.39	8.76	189.63			14.96	183.43
ECMW-10	205.75	12.26	193.49			16.61	189.14
ECMW-11	201.65	10.43	191.22			14.08	187.57
ECMW-12	184.97	7.01	177.96			7.72	177.25
ECMW-13	177.26	6.18	171.08			13.55	163.71
ECMW-14	178.48	6.93	171.55			5.72*	172.76
ECMW-15	180.84	5.11	175.73			5.11	175.73
ECMW-16	180.14	4.88	175.26			4.14	176.00
ECMW-17	185.40	27.46	157.94			28.51	156.89
ECMW-18	155.46	5.69	149.77			10.13	145.33
ECMW-19	150.41	0.00	150.41			6.03	144.38
ECMW-20	192.77	27.46	165.31			44.68*	148.09
ECMW-21	176.29	15.24	161.05			19.16	157.13
ECMW-22	173.55	5.24	168.31			8.32	165.23

\* Sampled December 21, 2010

**TABLE 3**  
**GROUNDWATER INDICATOR PARAMETER DATA**  
**2010 ANNUAL GROUND WATER REPORT**  
**EL DORADO CHEMICAL COMPANY**  
**EL DORADO, ARKANSAS**

WELL	TEMPERATURE (C)		pH (s.u.)		CONDUCTIVITY (uS)	
	Date		Date		Date	
	4/12-13/2010	11/01-02/2010 *12/21/2010	4/12-13/2010	11/01-02/2010 *12/21/2010	4/12-13/2010	11/01-02/2010 *12/21/2010
ECMW-1	14.9	19.0	4.53	7.69	42	55
ECMW-2	15.8	19.1	5.23	8.28	326	341
ECMW-3	16.9	18.5	6.20	6.97	232	300
ECMW-4	16.1	20.6	3.75	6.57	8116	7565
ECMW-5	16.4	21.8	4.75	5.64	480	434
ECMW-6	16.9	20.7	4.04	5.71	16210	15390
ECMW-7	17.7	20.5	3.53	4.92	19910	22270
ECMW-8	18.2	18.8	4.56	6.35	17430	18980
ECMW-9	17.9	19.3	5.44	7.04	2440	2240
ECMW-10	18.0	21.4	4.08	6.42	1021	747
ECMW-11	16.0	21.9	4.32	5.67	619	1025
ECMW-12	17.6	22.8	5.95	6.64	725	678
ECMW-13	15.5	20.6	4.75	6.44	1550	45
ECMW-14	16.8	19.42*	4.54	5.68*	1008	744*
ECMW-15	16.8	22.5	4.39	5.30	100	26
ECMW-16	15.7	22.5	4.42	5.98	182	59
ECMW-17	18.2	18.4	4.07	7.02	253	397
ECMW-18	15.4	19.9	5.50	8.22	84	88
ECMW-19	16.89	17.6	5.62	6.87	94	84
ECMW-20	18.33	17.92*	5.64	5.02*	92	94*
ECMW-21	19.41	17.6	4.88	7.13	70	61
ECMW-22	18.35	18.6	5.84	8.15	159	150

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

ECMW-1

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	9.7	--	1.7	4.1	--	0.0037	< 0.002	< 0.005	< 0.005	--	--
5/29/2001	5.1	< 0.5	1.83	3.67	42	< 0.04	--	< 0.02	--	--	--
11/1/2001	4.8	< 0.5	2.74	3.34	43	< 0.04	--	< 0.02	--	--	--
6/3/2002	5.5	< 0.5	2.01	4.66	83	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.6	0.66	1.56	4.63	44	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	6.1	< 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	--
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	--	--	--

"--" - Parameter not analyzed



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

ECMW-2

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	9.7	--	< 0.2	17	--	0.018	< 0.002	0.0342	< 0.005	--	--
5/29/2001	5.4	< 0.5	< 0.5	19.6	340	< 0.04	--	0.032	--	--	--
11/1/2001	5.3	< 0.5	< 0.5	22.9	300	< 0.04	--	< 0.02	--	--	--
6/3/2002	6.0	< 0.5	< 0.5	20	396	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	6.1	< 0.5	< 0.5	25.7	517	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	6.7	< 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	5.2	< 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	5.4	< 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	5.2	--	--	--	--	--	--	--	--	< 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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-3

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	8.0	--	< 0.2	10	--	0.0027	< 0.002	< 0.005	< 0.005	--	--
5/29/2001	6.2	< 0.5	< 0.5	10.6	180	< 0.04	--	< 0.02	--	--	--
11/1/2001	5.4	< 0.5	< 0.5	22.5	240	< 0.04	--	< 0.02	--	--	--
6/3/2002	6.4	< 0.5	< 0.5	11.4	228	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	6.5	< 0.5	< 0.5	21.6	295	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	6.0	< 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	--
4/22/2009		< 0.5	< 0.5	10.5	--	--	--	--	--	< 0.02	--
10/20/2009	5.83	--	--	--	--	--	--	--	--	--	--
4/13/2010	6.2	< 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	--	--	--

"--" - Parameter not analyzed

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

ECMW-4

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	8.1	--	1.3	728	--	0.0025	< 0.002	< 0.005	< 0.005	--	--
8/8/2001	4.1	0.66	< 0.5	925	5100	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.3	< 0.5	< 0.5	936	5200	0.06	--	0.04	--	--	--
6/3/2002	5.2	< 0.5	< 0.5	979	4862	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	4.8	< 0.5	0.62	756	4240	0.02	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	4.4	< 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	4.1	< 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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-5

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	5.8	--	4.4	441	--	<0.002	<0.002	<0.005	<0.005	--	--
8/8/2001	4.6	<0.5	3.54	657	1000	<0.04	--	<0.02	--	--	--
10/30/2001	4.7	<0.5	3.27	526	980	<0.04	--	<0.02	--	--	--
6/3/2002	6.3	<0.5	3.35	650	934	<0.02	<0.02	<0.02	<0.02	--	--
10/30/2002	5.4	<0.5	3.66	582	929	<0.015	<0.015	<0.02	<0.02	--	--
12/10/2002	5.2	<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	6.7	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	--
11/12/2008	2.4	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	--	--	--

"--" - Parameter not analyzed

ECMW-6

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	7.7	--	51.1	24	--	0.0026	<0.002	<0.005	<0.005	--	--
8/8/2001	4.3	0.5	298	18.3	2100	<0.04	--	<0.02	--	--	--
10/30/2001	4.3	<0.5	326	15.7	2700	<0.04	--	<0.02	--	--	--
6/3/2002	6.1	<0.5	459	12.1	290	<0.02	<0.02	<0.02	<0.02	--	--
10/30/2002	5.0	0.51	661	8.13	3840	<0.015	<0.015	<0.02	<0.02	--	--
12/10/2002	4.6	<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	4.4	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	4.5	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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-7

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	8.1	--	282	380	--	0.0221	0.0185	0.0078	< 0.005	--	--
8/8/2001	9.7	184	336	316	1300	< 0.04	--	< 0.02	--	--	--
10/30/2001	3.5	< 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	4.4	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	4.2	167	294	345	1080	0.017	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	3.7	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	3.9	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	4.3	96	181	798	--	--	--	--	--	< 0.02	--
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	3.4	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	--	--	--

"--" - Parameter not analyzed

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

ECMW-8

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	7.9	--	1010	68.3	--	0.0234	0.0238	< 0.005	< 0.005	--	--
10/30/2001	3.9	0.94	1030	81.1	5000	< 0.04	--	< 0.02	--	--	--
6/3/2002	5.4	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	4.4	406	1330	151	4560	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	4.0	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	3.7	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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-9

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	--	37.3	621	--	0.004	< 0.002	< 0.005	< 0.005	--	--
6/27/2001	5.4	< 0.5	28.8	520	1600	< 0.04	--	< 0.02	--	--	--
10/30/2001	5.5	< 0.5	26.7	514	2600	< 0.04	--	< 0.02	--	--	--
6/3/2002	6	< 0.5	24.4	639	1597	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	6	18.8	59	655	1630	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.2	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	--	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	--
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	--	--	--

"--" - Parameter not analyzed



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

ECMW-10

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	7.7	--	257	89	--	0.0052	0.0039	< 0.005	< 0.005	--	--
6/27/2001	4.4	< 0.5	156	100	1300	< 0.04	--	0.025	--	--	--
10/30/2001	3.9	< 0.5	153	134	1400	< 0.04	--	0.04	--	--	--
6/3/2002	5.3	< 0.5	138	84.9	1122	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.6	1.84	137	140	968	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	4.5	< 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	4.6	< 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	4.7	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	4.3	--	97.7	--	--	--	--	--	--	< 0.02	< 0.02
4/11/2006	4.4	--	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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-11

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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-12

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	6.1	--	<0.2	9.6	--	<0.002	<0.002	<0.005	<0.005	--	--
6/27/2001	5.9	2.2	<0.5	13	330	<0.04	--	<0.02	--	--	--
6/4/2002	6	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	6.1	4.2	<0.5	21.6	382	<0.015	<0.015	<0.02	<0.02	--	--
12/10/2002	5.8	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	5.8	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	5.8	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	5.3	1.06	--	--	--	--	--	--	--	<0.02	<0.02
4/11/2006	6.12	1.58	--	--	--	--	--	--	--	<0.02	<0.02
11/1/2006	5.3	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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-13

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	5.6	--	0.2	809	--	<0.002	<0.002	<0.005	<0.005	--	--
6/5/2001	5.6	<0.5	<0.5	538	1400	<0.04	--	<0.02	--	--	--
10/30/2001	5.3	<0.5	<0.5	606	1300	<0.04	--	<0.02	--	--	--
6/4/2002	5.7	<0.5	<0.5	372	718	<0.02	<0.02	<0.02	<0.02	--	--
10/30/2002	6.1	1.28	<0.5	538	1030	<0.015	<0.015	<0.02	<0.02	--	--
12/10/2002	5.5	<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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-14

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	4.6	--	11.9	139	--	< 0.002	< 0.002	< 0.005	< 0.005	--	--
8/8/2001	4.3	< 0.5	75	175	1000	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.5	< 0.5	25.2	211	790	< 0.04	--	< 0.02	--	--	--
6/4/2002	5.6	< 0.5	26.5	187	675	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	6.3	5.32	17	288	669	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.3	< 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	4.6	< 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	--
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	--	--	--

"--" - Parameter not analyzed

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

ECMW-15

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	6.4	--	34.5	4.4	--	< 0.002	< 0.002	< 0.005	< 0.005	--	--
8/8/2001	4.3	< 0.5	19.1	7.8	140	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.3	< 0.5	12.6	10.2	110	< 0.04	--	< 0.02	--	--	--
6/4/2002	5.4	< 0.5	10.7	11.1	100	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.4	1.16	18.2	9.22	120	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.8	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	--
10/20/2009	4.36	--	--	--	--	--	--	--	--	--	--
4/14/2010	4.39	< 0.5	2.99	10.7	--	< 0.015	--	< 0.02	--	--	--
11/3/2010	5.3	< 0.5	1.9	13.2	--	< 0.015	--	< 0.01	--	--	--

"--" - Parameter not analyzed

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

ECMW-16

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	5.7	--	137	4.6	--	0.0036	0.0034	< 0.005	< 0.005	--	--
6/5/2001	4.3	4.61	134	5.09	1100	< 0.04	--	< 0.02	--	--	--
10/30/2001	3.9	< 0.5	58.4	6.44	330	< 0.04	--	< 0.02	--	--	--
6/4/2002	5.0	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	5.0	11.6	72	9.21	263	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.9	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	5.5	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	4.3	1.77	19.6	12.6	--	--	--	--	--	< 0.02	--
5/21/2008	6.08	3.35	14.8	15.9	--	< 0.015	--	< 0.02	--	< 0.02	--
11/5/2008	6.5	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	--	--	--

"--" - Parameter not analyzed

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

ECMW-17

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	4.9	--	45	145	--	< 0.002	< 0.002	< 0.005	< 0.005	--	--
6/5/2001	4.4	1.16	54.2	87.7	600	< 0.04	--	< 0.02	--	--	--
10/30/2001	4.1	< 0.5	106	11.5	760	< 0.04	--	< 0.02	--	--	--
6/4/2002	5.1	< 0.5	83.4	8.04	603	< 0.02	< 0.02	< 0.02	< 0.02	--	--
10/30/2002	5.1	2.36	92	9.53	540	< 0.015	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	5.6	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	4.4	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	3.7	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	--
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	--	--	--

"--" - Parameter not analyzed



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

ECMW-18

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	6.6	--	0.4	3.3	--	0.017	< 0.002	0.0194	< 0.005	--	--
10/30/2001	5.4	< 0.5	< 0.5	3.74	300	< 0.04	--	0.05	--	--	--
6/4/2002	6.2	< 0.5	< 0.5	8.38	796	0.115	< 0.02	0.147	0.137	--	--
10/30/2002	6.3	0.43	< 0.5	3.22	258	0.018	< 0.015	< 0.02	< 0.02	--	--
12/10/2002	6.4	< 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	6.4	< 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	5.9	< 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	--
10/21/2009	7.16	--	< 0.5	--	--	--	--	--	--	--	--
4/14/2010	5.5	< 0.5	< 0.5	2.82	--	< 0.015	--	< 0.02	--	--	--
11/3/2010	8.22	< 0.5	< 1	3.65	--	< 0.015	--	< 0.01	--	--	--

"--" - Parameter not analyzed

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

ECMW-19

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	6.1	<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	5.8	--	--	--	--	--	--	--	--	<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	5.9	<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	--	--	--

"--" - Parameter not analyzed

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

**ECMW-20**

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	5.8	<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	6.2	<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	8.6	<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	--	--	--

"--" - Parameter not analyzed

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

ECMW-21

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	--	--	--

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

ECMW-22

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	5.8	--	--	--	--	--	--	--	--	<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	--	--	--

**TABLE 26**  
**IN SITU REMEDIATION PARAMETERS SUMMARY**  
**EL DORADO CHEMICAL COMPANY**  
**EL DORADO, ARKANSAS**

Well	Sample Date	Dissolved Oxygen (mg/L)	REDOX (mV)	Total Alkalinity (mg/L)	Total Organic Carbon (mg/L)	Nitrite (mg/L)	Total Phosphorus (mg/L)	Iron (mg/L)	Manganese (mg/L)
ECMW-1	4/13/2010	6.75	316.2	<5	<1	<0.5	0.02	0.084	0.011
ECMW-1	11/2/2010	6.05	-169.3	9	1.16	<0.5	<0.02	0.131	<0.01
ECMW-2	4/13/2010	5.11	205.5	22	2.3	<0.5	0.077	0.175	<0.01
ECMW-2	11/2/2010	7.79	-64.3	16	2.83	<0.5	0.185	0.178	0.01
ECMW-3	4/13/2010	4.89	307.3	55	2.7	<0.5	0.236	0.054	0.025
ECMW-3	11/2/2010	5.71	-215.4	59	5.62	<0.5	0.181	0.406	0.084
ECMW-4	4/13/2010	5.96	483	<5	25.1	<0.5	<0.02	5.31	1.96
ECMW-4	11/2/2010	7.99	-111.4	<5	25.2	<0.5	<0.02	5.93	2.12
ECMW-4 D	11/2/2010	--	--	<5	25.4	<0.5	<0.02	5.77	2.11
ECMW-5	4/13/2010	4.63	289.9	15	1.3	<0.5	<0.02	0.024	0.693
ECMW-5	11/2/2010	5.73	-151.8	6	1.11	<0.5	<0.02	<0.01	0.717
ECMW-6	4/13/2010	4.36	385	<5	1.56	<0.5	<0.02	<0.01	2.33
ECMW-6	7/22/2010	--	--	<5	1.38	<0.5	<0.02	0.065	3.31
ECMW-6	11/2/2010	8.92	-37.6	<5	1.69	<0.5	<0.02	0.026	2.14
ECMW-6 D	4/13/2010	--	--	<5	1.58	<0.5	<0.02	0.029	2.41
ECMW-7	4/13/2010	4.31	427.4	<5	5.08	<0.5	<0.02	0.22	0.376
ECMW-7	7/22/2010	--	--	5	15.7	<0.5	0.071	0.058	0.087
ECMW-7	11/2/2010	5.17	60.5	<5	17.3	<0.5	0.091	0.072	0.091
ECMW-8	4/13/2010	6.16	315.3	250	10.4	<0.5	<0.02	<0.01	0.839
ECMW-8	11/2/2010	10.04	-45.3	115	9.72	<0.5	<0.02	0.035	0.563
ECMW-9	4/13/2010	6.22	273.8	30	18.6	<0.5	0.133	<0.01	0.297
ECMW-9	11/2/2010	5.29	-91.9	25	20.5	<0.5	0.144	0.046	0.321
ECMW-10	4/13/2010	5.21	335.9	<5	7.2	<0.5	<0.02	0.013	0.154
ECMW-10	11/2/2010	4.03	-78.6	<5	7.34	<0.5	<0.02	0.027	0.166
ECMW-11	4/13/2010	3.91	335.4	<5	9.25	<0.5	0.035	<0.01	0.017
ECMW-11	11/2/2010	4.7	-60.7	<5	15.3	<0.5	<0.02	0.012	0.032
ECMW-12	4/13/2010	2.97	-30	310	15.3	<0.5	0.426	63.3	0.239
ECMW-12	11/3/2010	5.32	-155.7	160	21	<0.5	0.057	39.4	0.21

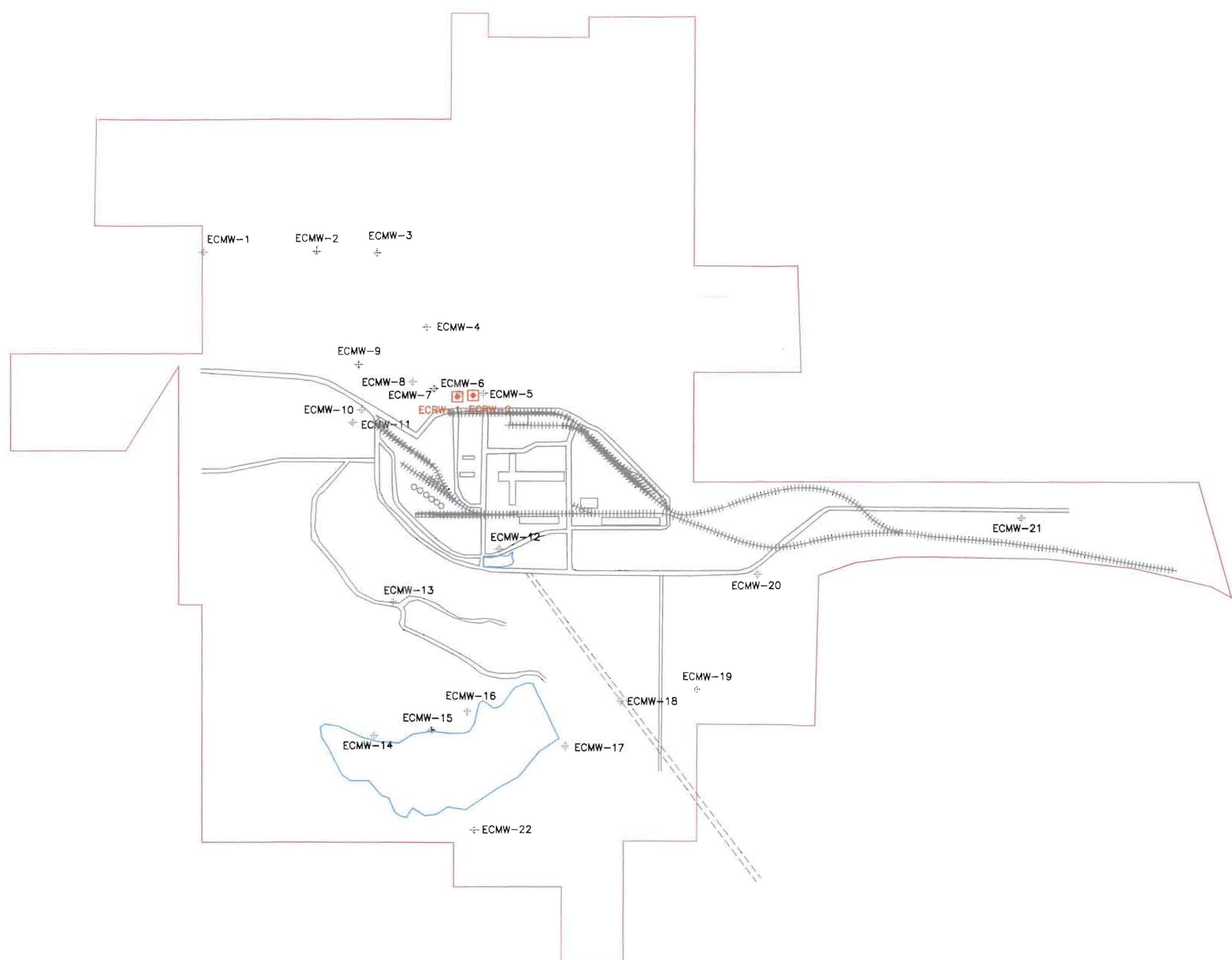
**TABLE 26**  
**IN SITU REMEDIATION PARAMETERS SUMMARY**  
**EL DORADO CHEMICAL COMPANY**  
**EL DORADO, ARKANSAS**

Well	Sample Date	Dissolved Oxygen (mg/L)	REDOX (mV)	Total Alkalinity (mg/L)	Total Organic Carbon (mg/L)	Nitrite (mg/L)	Total Phosphorus (mg/L)	Iron (mg/L)	Manganese (mg/L)
ECMW-12 D	11/3/2010	--	--	168	21.7	<0.5	0.221	41.4	0.214
ECMW-13	4/14/2010	6.02	330.9	20	6.6	<0.5	<0.02	0.941	2.87
ECMW-13	11/3/2010	7.62	-133.4	49	6.68	<0.5	<0.02	0.045	3.54
ECMW-14	4/14/2010	4.86	383.7	15	16.2	<0.5	0.159	0.035	0.048
ECMW-14	12/21/2010	3.42	91.5	24	12.6	<0.5	<0.02	0.025	0.07
ECMW-15	4/14/2010	4.38	322.4	<5	1.53	<0.5	<0.02	0.045	0.02
ECMW-15	11/3/2010	7.21	-19	<5	1.59	<0.5	0.023	<0.01	0.024
ECMW-16	4/14/2010	4.06	266.2	<5	2.91	<0.5	<0.02	<0.01	0.105
ECMW-16	11/3/2010	5.7	-154.4	<5	1.75	<0.5	<0.02	<0.01	0.111
ECMW-17	4/14/2010	6.66	259.7	<5	<1	<0.5	<0.02	<0.01	0.048
ECMW-17	11/3/2010	9.91	-125.3	<5	1.48	<0.5	<0.02	0.025	0.121
ECMW-18	4/14/2010	6.66	179.9	15	<1	<0.5	0.379	0.505	0.024
ECMW-18	11/3/2010	3.41	130.1	21	1.51	<1	0.613	0.915	0.017
ECMW-19	4/14/2010	4.89	88.1	32	<1	<0.5	0.307	4.5	0.075
ECMW-19	11/3/2010	2.5	-205.5	28	<1	<0.5	0.154	0.037	0.069
ECMW-19 D	4/14/2010	--	--	30	<1	<0.5	0.281	5.17	0.074
ECMW-20	4/14/2010	5.36	112.3	30	<1	<0.5	0.129	2.07	0.187
ECMW-20	12/21/2010	3.18	74.2	26	<1	<0.5	0.238	5.88	0.254
ECMW-21	4/14/2010	4.73	292.6	5	<1	<0.5	<0.02	<0.01	0.027
ECMW-21	11/3/2010	5.16	-47.1	<5	<1	<0.5	0.025	<0.01	0.025
ECMW-22	4/14/2010	5.04	118.3	30	1.45	<0.5	0.046	0.603	0.168
ECMW-22	11/3/2010	9.87	-189.7	42	<1	<0.5	0.063	0.042	0.152

"--" - Parameter not analyzed

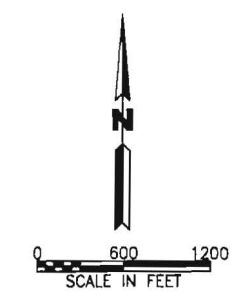
## FIGURES





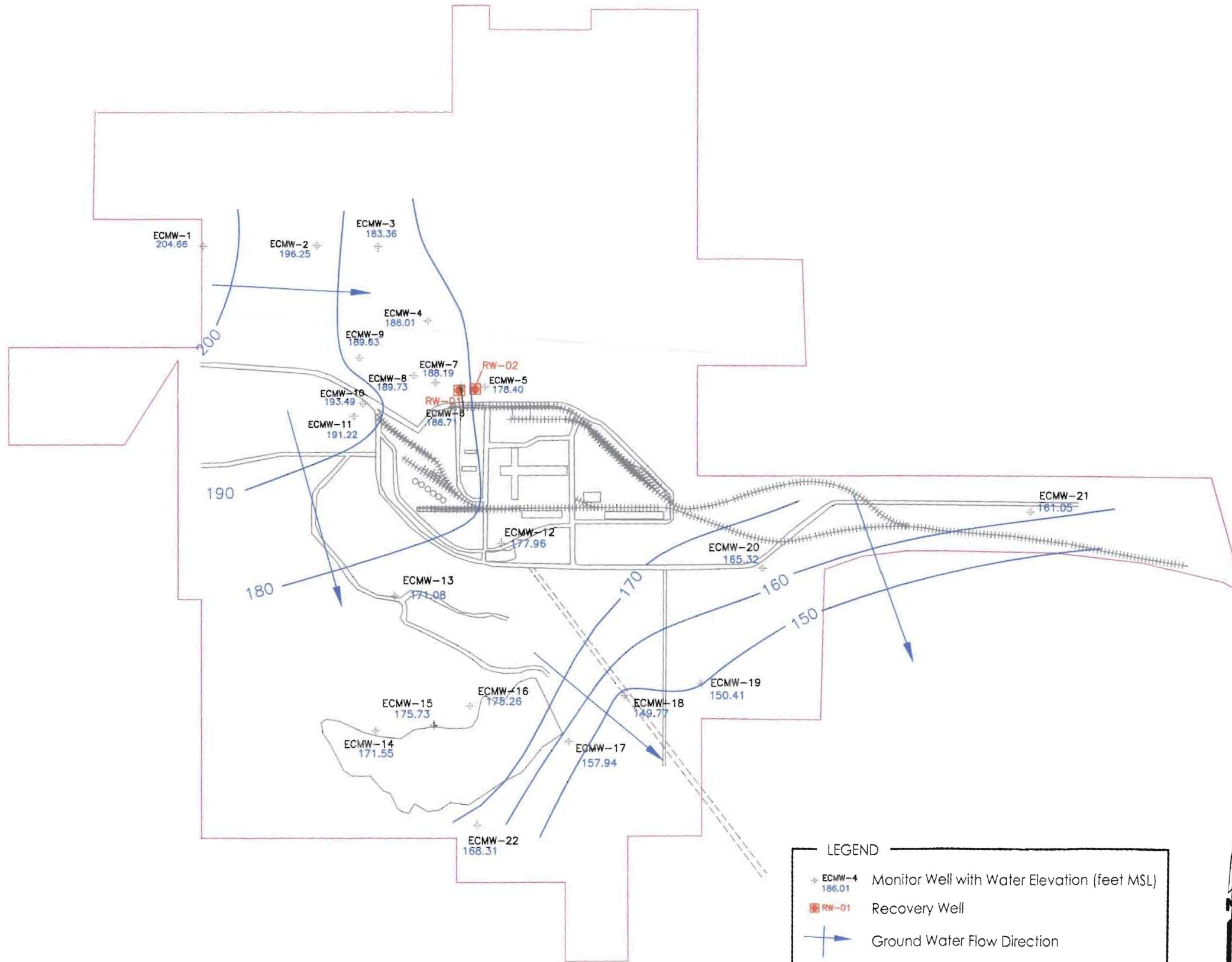
**LEGEND**

- ⊕ MONITOR WELLS
- ⊕ RECOVERY WELLS
- PROPERTY BOUNDARY



**EL DORADO**

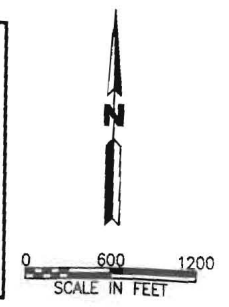
SITE MAP 2010 ANNUAL GROUND WATER REPORT EL DORADO CHEMICAL COMPANY EL DORADO, ARKANSAS			
DATE: 03/19/2010	APPROVED: BY: <i>[Signature]</i> DATE: <i>[Signature]</i>	DRAWN BY: LMM	
SCALE: see above		CAD NO. 02EC0100	FIGURE 1
 ENVIRONMENTAL MANAGEMENT SERVICES, INC.			



**LEGEND**

- ⊕ ECMW-4 186.01 Monitor Well with Water Elevation (feet MSL)
- ▣ RW-01 Recovery Well
- ➔ Ground Water Flow Direction

MEASUREMENTS TAKEN APRIL 12-13, 2010



**EL DORADO**

GROUND WATER ELEVATION MAP  
APRIL 2010  
2010 ANNUAL GROUND WATER REPORT  
EL DORADO CHEMICAL COMPANY  
EL DORADO, ARKANSAS

DATE: 12/29/2010	APPROVED: <i>SR</i>	DRAWN BY: LMM	
SCALE: see above	BY: <i>S/AVI</i>	CAD NO. 02EC0100	FIGURE 2

**ENVIRONMENTAL**  
MANAGEMENT SERVICES, INC.

**EL DORADO**

GROUND WATER ELEVATION MAP  
 NOVEMBER/DECEMBER 2010  
 2010 ANNUAL GROUND WATER REPORT  
 EL DORADO CHEMICAL COMPANY  
 EL DORADO, ARKANSAS

DATE: 12/29/2010	APPROVED: <i>SR</i>	DRAWN BY: LMM
SCALE: 1 in = 1200 ft	BY: <i>SR</i>	CAD NO. 02ECO100

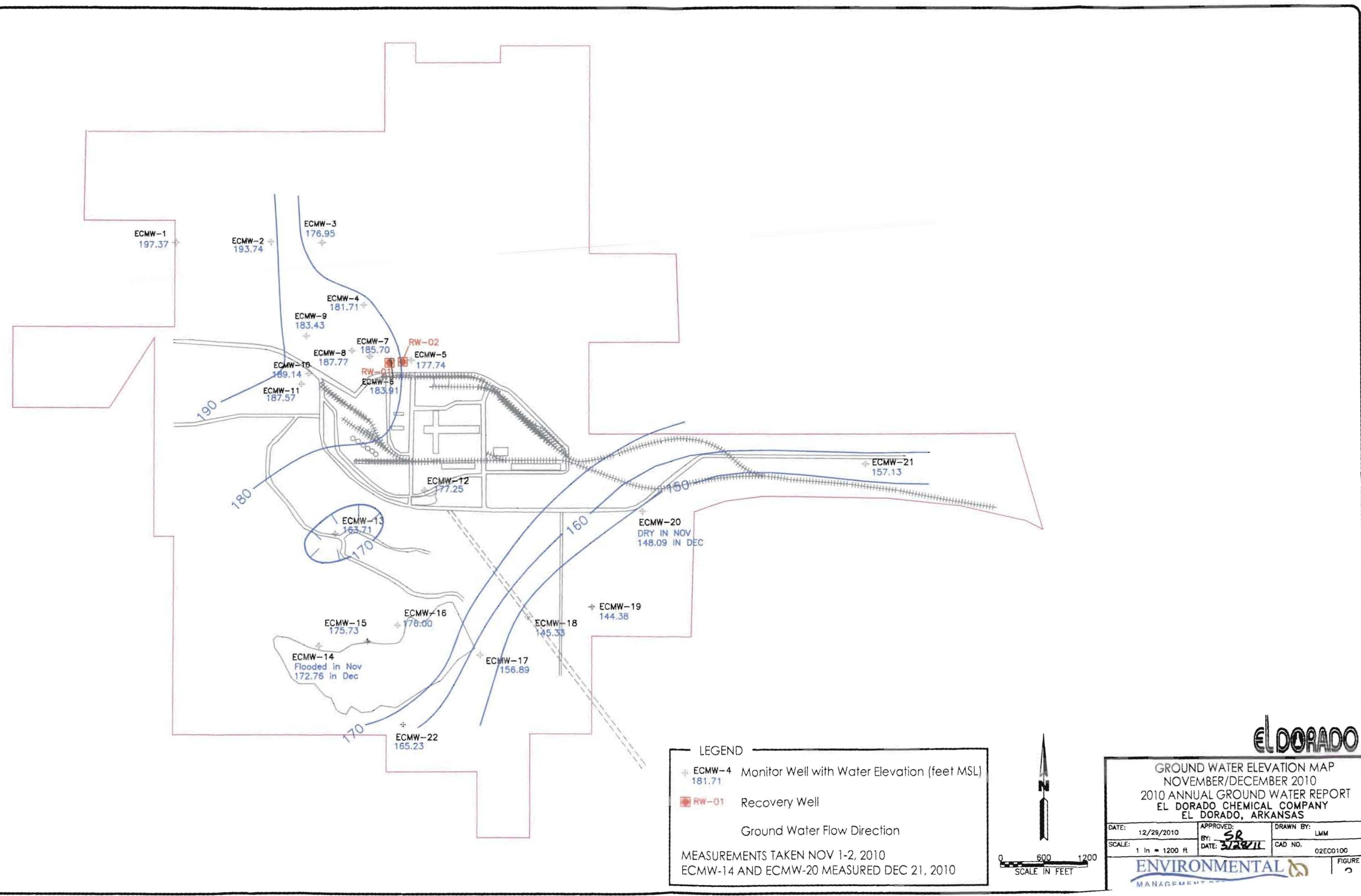
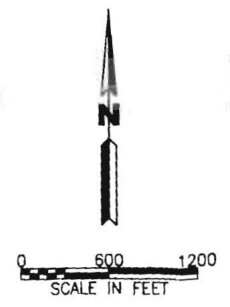
**ENVIRONMENTAL**  
 MANAGEMENT

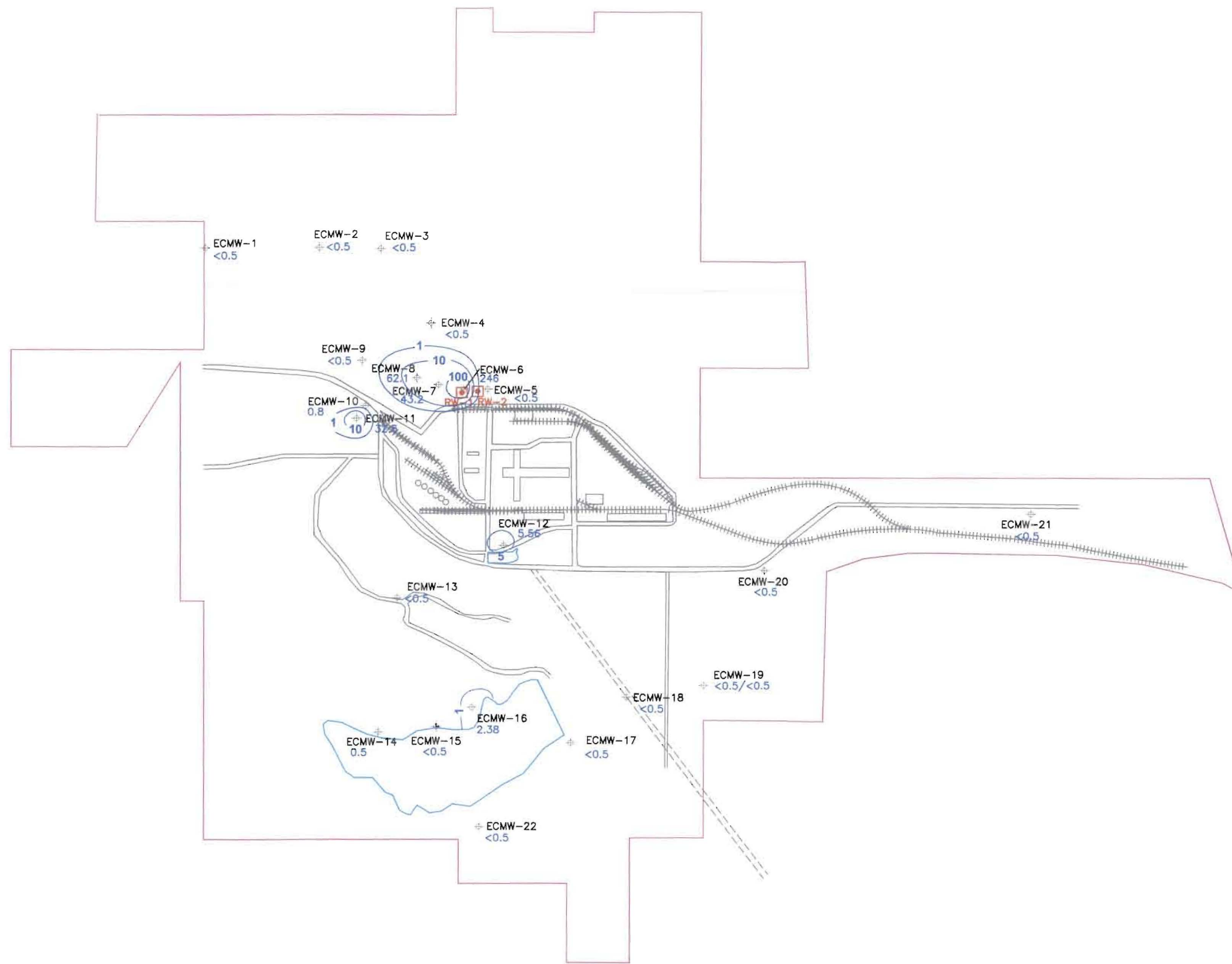
FIGURE 2

**LEGEND**

- ⊕ ECMW-4 181.71 Monitor Well with Water Elevation (feet MSL)
- ⊕ RW-01 Recovery Well
- Ground Water Flow Direction

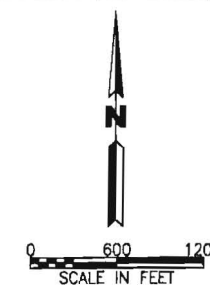
MEASUREMENTS TAKEN NOV 1-2, 2010  
 ECMW-14 AND ECMW-20 MEASURED DEC 21, 2010





**LEGEND**

- PROPERTY BOUNDARY
- ⊕ ECMW-5 MONITOR WELL WITH AMMONIA CONCENTRATION (<0.5 mg/L)
- ◻ RECOVERY WELLS
- APRIL 2010 AMMONIA ISOCONCENTRATION CONTOURS (mg/L)



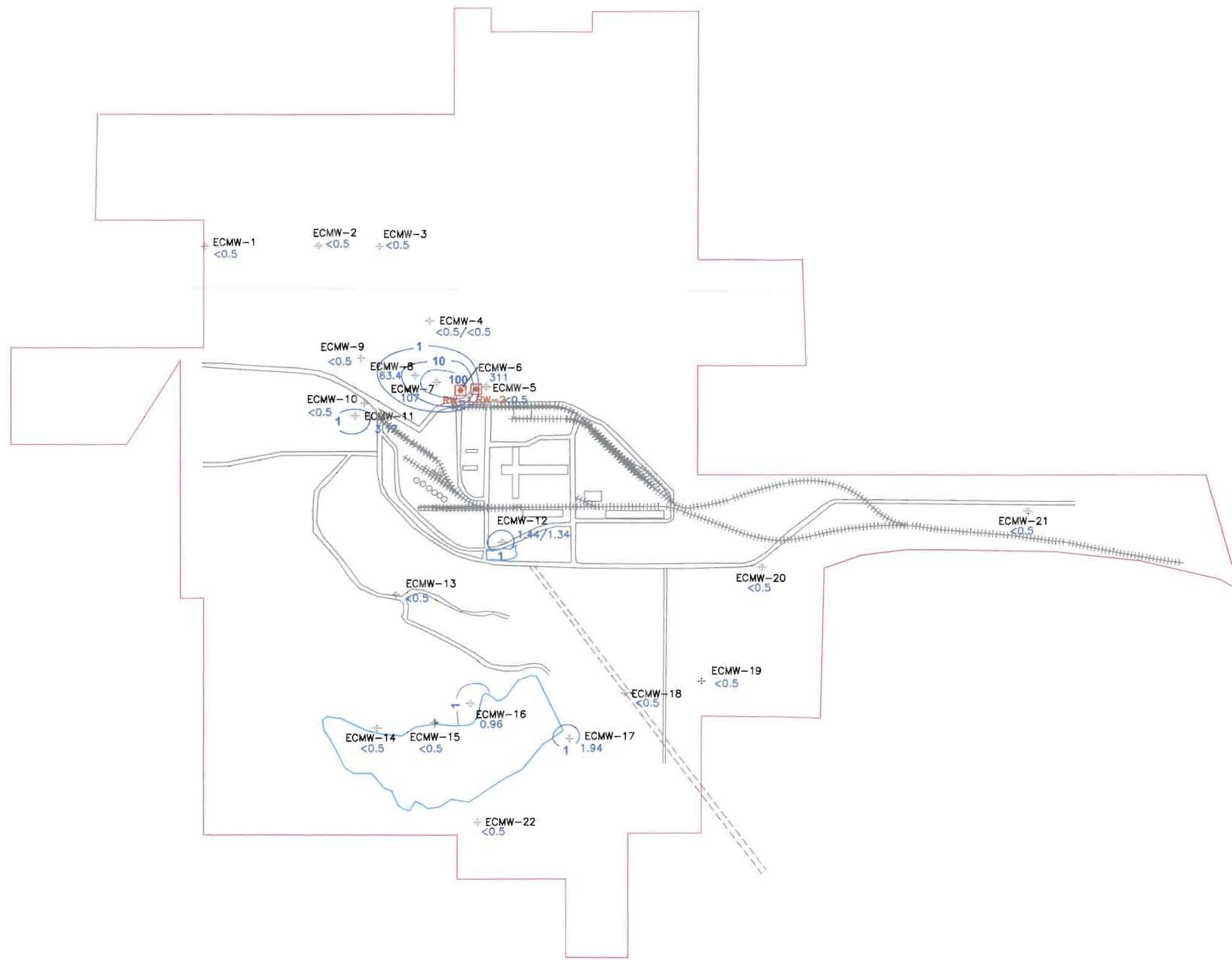
**ELDORADO**

APRIL 2010 AMMONIA ISOCONCENTRATION MAP  
 2010 ANNUAL GROUND WATER REPORT  
 EL DORADO CHEMICAL COMPANY  
 EL DORADO, ARKANSAS

DATE: 08/09/2010	APPROVED: <i>SR</i>	DRAWN BY: LMM
SCALE: see above	DATE: <i>08/09/10</i>	CAD NO. 02ECD100

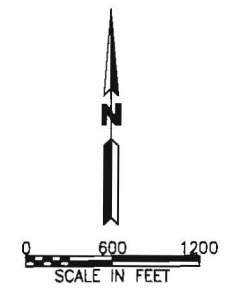
**ENVIRONMENTAL**  
 MANAGEMENT SERVICES, INC.

FIGURE  
 4



**LEGEND**

- PROPERTY BOUNDARY
- ⊕ ECMW-5 MONITOR WELL WITH AMMONIA CONCENTRATION (mg/L)
- ⊕ RECOVERY WELLS
- NOV/DEC 2010 AMMONIA ISOCONCENTRATION CONTOURS (mg/L)

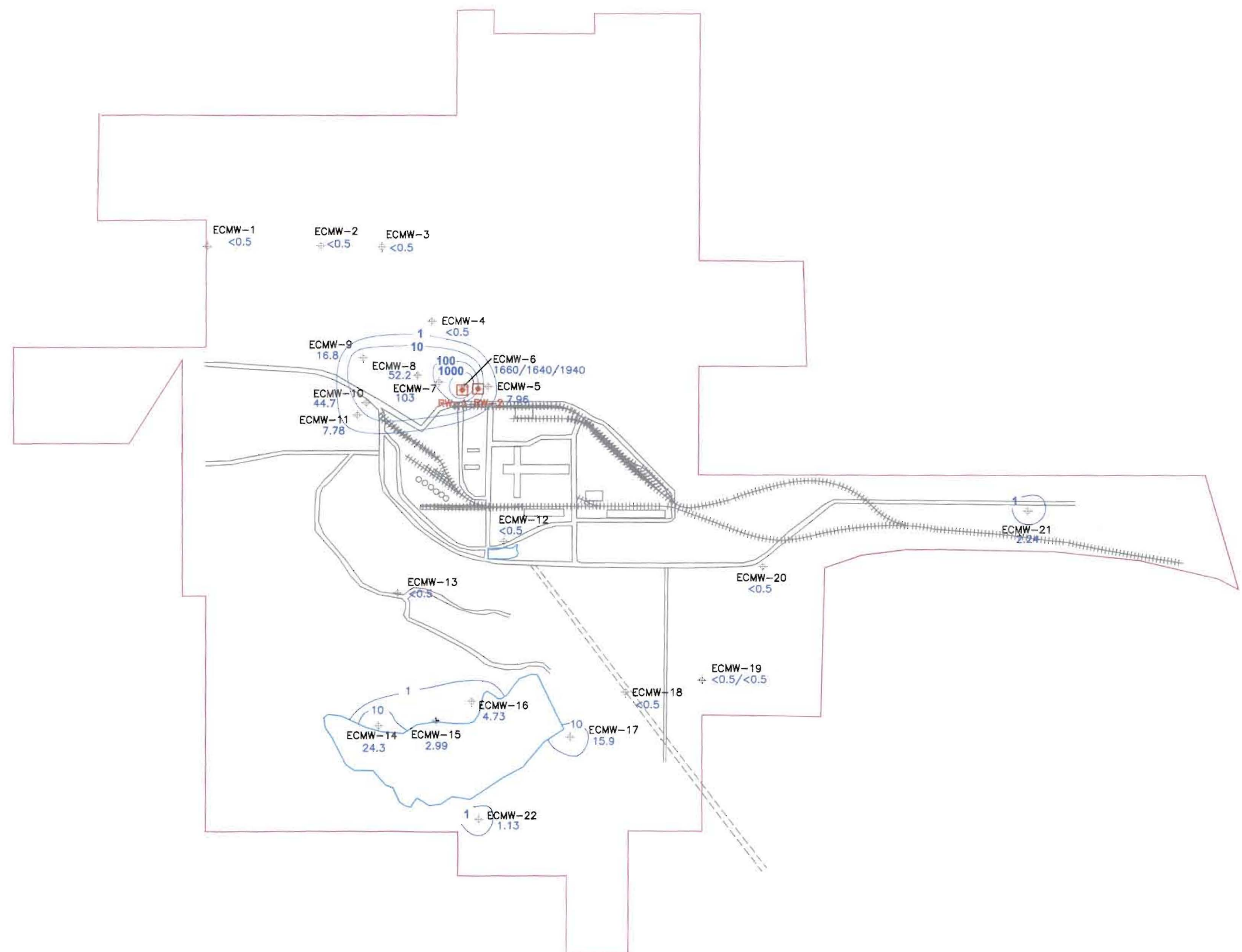


**EL DORADO**

NOVEMBER/DECEMBER 2010 AMMONIA ISOCONCENTRATION MAP  
2010 ANNUAL GROUND WATER REPORT  
EL DORADO CHEMICAL COMPANY  
EL DORADO, ARKANSAS

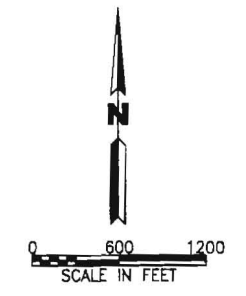
DATE: 12/29/2010	APPROVED: By: <i>SR</i> DATE: <i>12/29/10</i>	DRAWN BY: LMM
SCALE: see above	CAD NO. 02ECO100	FIGURE 5

**ENVIRONMENTAL**  
MANAGEMENT SERVICES, INC.



**LEGEND**

- PROPERTY BOUNDARY
- ⊕ ECMW-1 MONITOR WELL WITH <0.5 NITRATE CONCENTRATION (mg/L)
- ⊠ RECOVERY WELLS
- APRIL 2010 NITRATE ISOCONCENTRATION CONTOURS (mg/L)

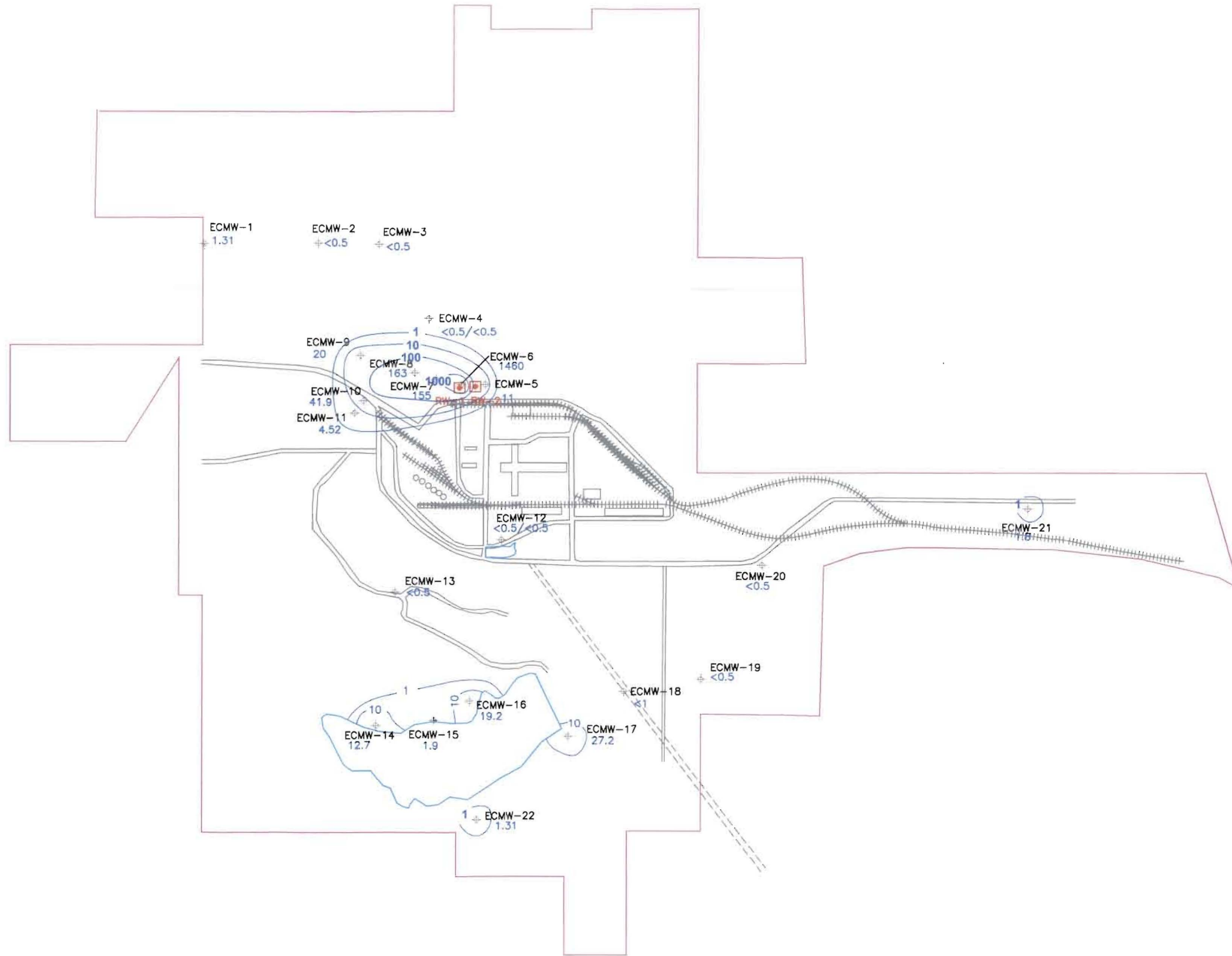


**EL DORADO**

APRIL 2010 NITRATE ISOCONCENTRATION MAP  
 2010 ANNUAL GROUND WATER REPORT  
 EL DORADO CHEMICAL COMPANY  
 EL DORADO, ARKANSAS

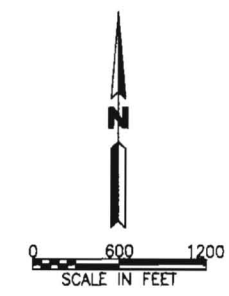
DATE: 06/09/2010	APPROVED BY: <i>SR</i>	DRAWN BY: LMM
SCALE: see above	DATE: 5/28/11	CAD NO. 02EC0100

**ENVIRONMENTAL**  
 MANAGEMENT SERVICES, INC.



**LEGEND**

- PROPERTY BOUNDARY
- ⊕ ECMW-1 MONITOR WELL WITH NITRATE CONCENTRATION (mg/L)
- ⊕ RECOVERY WELLS
- NOV/DEC 2010 NITRATE ISOCONCENTRATION CONTOURS (mg/L)



**EL DORADO**

NOVEMBER/DECEMBER 2010 NITRATE ISOCONCENTRATION MAP  
 2010 ANNUAL GROUND WATER REPORT  
 EL DORADO CHEMICAL COMPANY  
 EL DORADO, ARKANSAS

DATE: 12/29/2010	APPROVED: <i>SR</i>	DRAWN BY: LMM
SCALE: see above	DATE: 1/28/11	CAD NO. 02EC0100

**ENVIRONMENTAL MANAGEMENT SERVICES, INC.**

FIGURE 7

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-1  
 Collector R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 4-12-10 1:10 Method of Evacuation ELEC PUMP  
 Top of casing to water level 8.62 ft Gallons per well volume 8.8  
 Top of casing to bottom 22.1 ft Total gallons evacuated 26.4  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-15-10 7:45 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

SAMPLE D.

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NTU]
<u>16.67</u>	<u>4.80</u>	<u>.055 MS</u>	<u>13.84</u>	<u>285.5</u>
<u>15.28</u>	<u>4.54</u>	<u>.041</u>	<u>8.47</u>	<u>308.3</u>
<u>14.91</u>	<u>4.53</u>	<u>.042</u>	<u>6.75</u>	<u>316.2</u>

GENERAL INFORMATION

Weather conditions at time of sampling Clear/ sunny  
 Sample characteristics: Clean  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE



**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-2  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 12:45 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 0.00 ft Gallons per well volume 17.0  
 Top of casing to bottom 26.2 ft Total gallons evacuated 41.0  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 8:00 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature (°C)	pH	Conductivity (µS)	Diss. Oxygen (mg/l)	Turbidity (NTU)
<u>12.68</u>	<u>5.51</u>	<u>.344 MS</u>	<u>9.90</u>	<u>189.1</u>
<u>15.79</u>	<u>5.29</u>	<u>.330 MS</u>	<u>4.34</u>	<u>202.1</u>
<u>15.78</u>	<u>5.23</u>	<u>.326</u>	<u>5.11</u>	<u>205.5</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
El Dorado Chemical Company

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMWS-3  
Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 12:20 Method of Evacuation ELEC. PUMP  
Top of casing to water level 8.75 ft Gallons per well volume 11.9  
Top of casing to bottom 27.1 ft Total gallons evacuated 35.7  
Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
Sampling: Date/Time 4-13-10 8:15 Elevation of well water \_\_\_\_\_  
Top of casing to water level \_\_\_\_\_ ft Method of Sampling PYC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NTU]
<u>18.73</u>	<u>6.34</u>	<u>0.280 mS</u>	<u>13.35</u>	<u>324.1</u>
<u>17.37</u>	<u>6.21</u>	<u>.236</u>	<u>8.83</u>	<u>323.1</u>
<u>16.92</u>	<u>6.20</u>	<u>.232</u>	<u>4.89</u>	<u>307.3</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
Sample characteristics: Clear  
Containers and preservatives: \_\_\_\_\_  
Comments and observations: \_\_\_\_\_  
Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMS-4  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 11:55 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 8.83 ft Gallons per well volume 8.6  
 Top of casing to bottom 22.1 ft Total gallons evacuated 25.8  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 8:30 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [%]	Turbidity [NT]
<u>18.58</u>	<u>3.93</u>	<u>8.117 µS</u>	<u>13.05</u>	<u>448.6</u>
<u>16.69</u>	<u>3.78</u>	<u>8.135</u>	<u>7.86</u>	<u>475.3</u>
<u>16.12</u>	<u>3.75</u>	<u>8.116</u>	<u>5.96</u>	<u>483.0</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clean  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-5  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 1:45 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 4.29 ft Gallons per well volume 8.7  
 Top of casing to bottom 17.7 ft Total gallons evacuated 26.1  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 8:50 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature[°C]	pH	Conductivity[µS]	Diss. Oxygen[‰]	Turbidity [NT]
<u>18.62</u>	<u>4.96</u>	<u>0.585 ms</u>	<u>3.92</u>	<u>281.0</u>
<u>16.79</u>	<u>4.82</u>	<u>.481</u>	<u>4.08</u>	<u>289.5</u>
<u>16.38</u>	<u>4.75</u>	<u>.480</u>	<u>4.63</u>	<u>289.9</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/ sunny  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
 El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-6 + DUP  
 Collector R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 4-12-10 11:35 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 5.16 ft Gallons per well volume 10.9  
 Top of casing to bottom 22.0 ft Total gallons evacuated 32.7  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 9:10 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

SAMPLE D.

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>19.51</u>	<u>4.24</u>	<u>18.37 mS</u>	<u>11.15</u>	<u>390.7</u>
<u>18.08</u>	<u>4.07</u>	<u>17.48</u>	<u>4.98</u>	<u>390.3</u>
<u>16.85</u>	<u>4.04</u>	<u>16.21</u>	<u>4.36</u>	<u>385.0</u>

GENERAL INFORMATION

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

Site ELCC Well Number 6  
Collector/Operator Joe Thompson

**Monitoring Well Information**

Evacuation date/time 7/22/10 7:55 Sampling date/time 7/22/10 09:56  
Method of evacuation 12V pump Method of sampling Doc PVC Boiler  
Top of casing to water 4.86 Gallons per well volume 11.20  
Top of casing to bottom 22.10 Total gallons evacuated 3361  
Water level after evacuation 8.90

**Sample Data**

Well Volume	NTU's	Temp [°C]	Conductivity [µs/cm]	DO [mg/l]	pH	ORP	Appearance
0		23.3	2200		5.51		
1		20.6	3600		4.31		
2		19.7	3600		4.17		
3		19.6	4000		4.14		

**General Information**

Weather Condition: clear 81°

Sample Characteristics: \_\_\_\_\_

Containers/Amounts \_\_\_\_\_

Recommend/Observations pH meter standard with 7.00 and 4.01  
conductivity red line

Sampler/Collector Joe Thompson

Stabilization recommendations: Three successive readings within +/- 0.1 for pH, +/- 3% for conductivity, +/- 10 mV for ORP, and +/- 10% for turbidity and DO. \*these are rough estimates\*

Well Casing Volumes[gal/ft]				
1/2"=0.0205	1"=0.041	2"=0.16	3"=0.37	4"=0.65
3/4"=0.3075	1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	4 1/2"=1.46

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-7  
 Collected by R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 11:10 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 7.69 ft Gallons per well volume 10.5  
 Top of casing to bottom 27.9 ft Total gallons evacuated 31.5  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 9:30 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [%]	Turbidity [NT]
<u>26.25</u>	<u>3.72</u>	<u>68.08 mS</u>	<u>7.11</u>	<u>411.6</u>
<u>17.93</u>	<u>3.57</u>	<u>21.04</u>	<u>5.45</u>	<u>424.8</u>
<u>17.72</u>	<u>3.53</u>	<u>19.91</u>	<u>4.31</u>	<u>427.4</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

Site FICC Well Number 7  
Collector/Operator Joe Thompson

**Monitoring Well Information**

Evacuation date/time 7-22-10 09:20 Sampling date/time 7-22-10  
Method of evacuation 121 pump Method of sampling Red  
Top of casing to water 760 Gallons per well volume 11.37 gal  
Top of casing to bottom 2510 Total gallons evacuated 34.12 gal  
Water level after evacuation 846

**Sample Data**

Well Volume	NTU's	Temp [°C]	Conductivity [µs/cm]	DO [mg/l]	pH	ORP	Appearance
0		21.7	3000		383		
1		20.2	2500		371		
2		19.8	2600		368		
3		19.8	3000		367		

**General Information**

Weather Condition: Clear 95°  
Sample Characteristics: \_\_\_\_\_  
Containers/Amounts \_\_\_\_\_  
Recommend/Observations \_\_\_\_\_

Sampler/Collector Joe Thompson  
Stabilization recommendations: Three successive readings within +/- 0.1 for pH, +/- 3% for conductivity, +/- 10 mV for ORP, and +/- 10% for turbidity and DO. \*these are rough estimates\*

Well Casing Volumes[gal/ft]				
1/2"=0.0205	1"=0.041	2"=0.16	3"=0.37	4"=0.65
3/4"=0.3075	1 1/2"=0.10	2 1/2"=0.24	3 1/2"=0.50	4 1/2"=1.46



# GROUNDWATER SAMPLING DATA FORM

## El Dorado Chemical Company

### FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-8  
 Collector R. DURHAM

### MONITORING WELL INFORMATION

Evacuation: Date/Time 4-12-10 10:50 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 7.61 ft Gallons per well volume 14.5  
 Top of casing to bottom 29.9 ft Total gallons evacuated 46.5  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 9:45 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

### SAMPLE D.

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>19.37</u>	<u>3.93</u>	<u>17.63</u>	<u>5.71</u>	<u>328.8</u>
<u>18.19</u>	<u>4.61</u>	<u>16.49</u>	<u>4.24</u>	<u>315.4</u>
<u>18.16</u>	<u>4.56</u>	<u>17.43</u>	<u>6.16</u>	<u>315.3</u>

### GENERAL INFORMATION

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clean  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. Fcmw-9  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 10:25 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 8.76 ft Gallons per well volume 13.8  
 Top of casing to bottom 30.0 ft Total gallons evacuated 41.4  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 10:05 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NTU]
<u>19.70</u>	<u>5.72</u>	<u>2.441 mS</u>	<u>14.55</u>	<u>279.8</u>
<u>18.31</u>	<u>5.46</u>	<u>2.439</u>	<u>8.07</u>	<u>281.3</u>
<u>17.91</u>	<u>5.44</u>	<u>2.440</u>	<u>6.22</u>	<u>273.8</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clean/Warm  
 Sample characteristics: Clean  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECTMW-10  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 2:10 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 12.26 ft Gallons per well volume 6.7  
 Top of casing to bottom 22.6 ft Total gallons evacuated 20.1  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 10:30 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [‰]	Turbidity [NT]
<u>19.90</u>	<u>4.28</u>	<u>1.022 MS</u>	<u>10.60</u>	<u>314.1</u>
<u>18.52</u>	<u>4.10</u>	<u>1.024</u>	<u>5.47</u>	<u>327.5</u>
<u>18.02</u>	<u>4.08</u>	<u>1.021</u>	<u>5.21</u>	<u>335.9</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-11  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 2:45 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 10.43 ft Gallons per well volume 6.1  
 Top of casing to bottom 19.8 ft Total gallons evacuated 18.3  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 10:50 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>17.46</u>	<u>4.38</u>	<u>.816 MS</u>	<u>7.21</u>	<u>343.9</u>
<u>16.42</u>	<u>4.44</u>	<u>.754</u>	<u>5.07</u>	<u>328.7</u>
<u>16.04</u>	<u>4.32</u>	<u>.619</u>	<u>3.91</u>	<u>335.4</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear / Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-12  
 Collected by R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 3:15 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 7.01 ft Gallons per well volume 8.4  
 Top of casing to bottom 19.9 ft Total gallons evacuated 25.2  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-13-10 11:15 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. [Oxygen] [%]	Turbidity [NT]
<u>18.98</u>	<u>5.95</u>	<u>.738 ms</u>	<u>8.54</u>	<u>5.2</u>
<u>18.12</u>	<u>5.96</u>	<u>.728</u>	<u>4.32</u>	<u>-11.8</u>
<u>17.55</u>	<u>6.45</u>	<u>.725</u>	<u>2.97</u>	<u>-30.0</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clean  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-13  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>4-12-10</u>	<u>10:00</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>6.18</u>	ft	Gallons per well volume	<u>8.9</u>
Top of casing to bottom	<u>19.8</u>	ft	Total gallons evacuated	<u>26.7</u>
Water level after evacuation		ft	Elevation, Top of casing	
Sampling: Date/Time	<u>4-14-10</u>	<u>8:10</u>	Elevation of well water	
Top of casing to water level		ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [%]	Turbidity [NT]
<u>17.54</u>	<u>4.95</u>	<u>1.962 mg</u>	<u>14.48</u>	<u>300.9</u>
<u>16.32</u>	<u>4.86</u>	<u>1.873</u>	<u>7.20</u>	<u>306.4</u>
<u>15.51</u>	<u>4.75</u>	<u>1.550</u>	<u>6.02</u>	<u>330.9</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clean/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-14  
 Collected by R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 9:40 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 6.93 ft Gallons per well volume 7.3  
 Top of casing to bottom 18.2 ft Total gallons evacuated 21.9  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-14-10 8:30 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature(°C)	pH	Conductivity[µS]	Diss. [Oxygen](%)	Turbidity [NT]
<u>17.64</u>	<u>4.75</u>	<u>1.006 mS</u>	<u>7.72</u>	<u>301.7</u>
<u>16.95</u>	<u>4.54</u>	<u>1.004</u>	<u>4.42</u>	<u>331.9</u>
<u>16.77</u>	<u>4.54</u>	<u>1.008</u>	<u>4.86</u>	<u>383.7</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clean/Warm  
 Sample characteristics: Clean  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. EC MW-15  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 9:15 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 5.11 ft Gallons per well volume 7.7  
 Top of casing to bottom 17.0 ft Total gallons evacuated 23.1  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-14-10 8:50 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>18.19</u>	<u>4.49</u>	<u>167</u>	<u>9.28</u>	<u>320.4</u>
<u>16.27</u>	<u>4.37</u>	<u>104</u>	<u>3.51</u>	<u>327.9</u>
<u>16.83</u>	<u>4.39</u>	<u>100</u>	<u>4.38</u>	<u>322.4</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Cloudy/Warm  
 Sample characteristics: Clean  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE



**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-16  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-12-10 8:55 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 4.88 ft Gallons per well volume 9.4  
 Top of casing to bottom 19.3 ft Total gallons evacuated 29.2  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-14-10 9:10 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>17.37</u>	<u>4.46</u>	<u>.190</u>	<u>6.73</u>	<u>236.1</u>
<u>15.84</u>	<u>4.48</u>	<u>.178</u>	<u>3.22</u>	<u>254.2</u>
<u>15.20</u>	<u>4.42</u>	<u>.182</u>	<u>4.06</u>	<u>266.2</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clean  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-17  
 Collector R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 4-12-10 7:45 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 27.46 ft Gallons per well volume 4.7  
 Top of casing to bottom 34.7 ft Total gallons evacuated 14.1  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-14-10 9:30 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILEY

SAMPLE D.

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [mg/L]	Turbidity [NT]
<u>18.73</u>	<u>4.15</u>	<u>6.322 uS</u>	<u>10.50</u>	<u>242.6</u>
<u>18.29</u>	<u>4.02</u>	<u>294</u>	<u>7.15</u>	<u>253.8</u>
<u>18.15</u>	<u>4.07</u>	<u>253</u>	<u>6.66</u>	<u>259.7</u>

GENERAL INFORMATION

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Family EL DORADO, AR Well No. EGM D-18  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-17-10 2:25 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 5.69 ft Gallons per well volume 7.5  
 Top of casing to bottom 17.2 ft Total gallons evacuated 22.5  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-14-10 10:30 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>18.78</u>	<u>5.79</u>	<u>.090 MS</u>	<u>5.14</u>	<u>164.2</u>
<u>15.60</u>	<u>5.55</u>	<u>.083</u>	<u>7.90</u>	<u>179.8</u>
<u>15.41</u>	<u>5.50</u>	<u>.084</u>	<u>6.66</u>	<u>179.9</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Cloudy  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECWUJ-19 + DUP  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-13-10 2:50 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 2.00 ft Gallons per well volume 9.8  
 Top of casing to bottom 61.5 ft Total gallons evacuated 29.4  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-14-10 11:05 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature(°C)	pH	Conductivity(µS)	Diss. Oxygen(%)	Turbidity (NT)
<u>18.56</u>	<u>5.83</u>	<u>.097 MS</u>	<u>8.14</u>	<u>103.1</u>
<u>17.30</u>	<u>5.68</u>	<u>.095</u>	<u>3.79</u>	<u>89.9</u>
<u>16.89</u>	<u>5.62</u>	<u>.094</u>	<u>4.89</u>	<u>88.1</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-20  
 Collected by R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>4-13-10</u> <u>1:20</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>27.46</u> ft	Gallons per well volume	<u>4.3</u>
Top of casing to bottom	<u>54.4</u> ft	Total gallons evacuated	<u>12.9</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	_____
Sampling: Date/Time	<u>4-14-10</u> <u>7:50</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>20.27</u>	<u>5.62</u>	<u>.099 ms</u>	<u>6.06</u>	<u>110.2</u>
<u>18.52</u>	<u>5.70</u>	<u>.091</u>	<u>6.03</u>	<u>107.1</u>
<u>18.33</u>	<u>5.64</u>	<u>.092</u>	<u>5.56</u>	<u>112.2</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clean/Warm

Sample characteristics: Cloudy

Containers and preservatives: \_\_\_\_\_

Comments and observations: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
El Dorado Chemical Company

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-2A  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 4-13-10 12:20 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 15.24 ft Gallons per well volume 3.1  
 Top of casing to bottom 34.9 ft Total gallons evacuated 9.3  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 4-14-10 7:30 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NTU]
<u>19.06</u>	<u>5.08</u>	<u>.080 MS</u>	<u>10.11</u>	<u>228.4</u>
<u>19.69</u>	<u>5.04</u>	<u>.070</u>	<u>5.92</u>	<u>276.1</u>
<u>19.41</u>	<u>4.88</u>	<u>.070</u>	<u>4.73</u>	<u>292.6</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling Clear/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-22  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>4-12-10 8:20</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>5.24</u> ft	Gallons per well volume	<u>11.9</u>
Top of casing to bottom	<u>79.8</u> ft	Total gallons evacuated	<u>35.7</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	_____
Sampling: Date/Time	<u>4-14-10 10:00</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>18.52</u>	<u>6.14</u>	<u>.170 ms</u>	<u>7.80</u>	<u>274.7</u>
<u>18.39</u>	<u>5.96</u>	<u>.163</u>	<u>4.22</u>	<u>270.6</u>
<u>18.35</u>	<u>5.84</u>	<u>.159</u>	<u>5.04</u>	<u>118.3</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling: Clear/Warm  
 Sample characteristics: Clear  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. EC MW-1  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>11-1-10 12:40</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>15.91</u> ft	Gallons per well volume	<u>4.0</u>
Top of casing to bottom	<u>22.1</u> ft	Total gallons evacuated	<u>12.0</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	<u>PUMPED DRY</u>
Sampling: Date/Time	<u>11-2-10 0930</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [mg/l]	ORP Turbidity [NTU]
<u>19.39</u>	<u>8.01</u>	<u>.064 ms</u>	<u>7.59</u>	<u>-22.1</u>
<u>18.92</u>	<u>6.97</u>	<u>.056</u>	<u>7.22</u>	<u>-89.2</u>
<u>19.99</u>	<u>7.69</u>	<u>.055</u>	<u>6.05</u>	<u>-149.3</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR

Containers and preservatives: \_\_\_\_\_

Comments and observations: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Certification: R. Durham

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



# GROUNDWATER SAMPLING DATA FORM

## El Dorado Chemical Company

### FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. E-CRW-2  
 Colle R. DURHAM

#### MONITORING WELL INFORMATION

Evacuation: Date/Time	<u>11-1-10</u>	<u>1210</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>2.51</u>	ft	Gallons per well volume	<u>11.5</u>
Top of casing to bottom	<u>20.2</u>	ft	Total gallons evacuated	<u>34.5</u>
Water level after evacuation		ft	Elevation, Top of casing	
Sampling: Date/Time	<u>11-2-10</u>	<u>0945</u>	Elevation of well water	
Top of casing to water level		ft	Method of Sampling	<u>PVC BAILER</u>

#### SAMPLE D.

Temperature[°C]	pH	Conductivity[µS]	Diss. Oxygen[°/°]	Turbidity[NT]
<u>19.82</u>	<u>9.70</u>	<u>.345 ms</u>	<u>8.28</u>	<u>-103.6</u>
<u>19.30</u>	<u>9.12</u>	<u>.340</u>	<u>8.15</u>	<u>-106.3</u>
<u>19.13</u>	<u>8.28</u>	<u>.341</u>	<u>7.79</u>	<u>-64.3</u>

#### GENERAL INFORMATION

Weather conditions at time of sampling COOL/RAINY

Sample characteristics: CLEAR

Containers and preservatives: \_\_\_\_\_

Comments and observations: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-3  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>11-1-10 1145</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>15.16</u> ft	Gallons per well volume	<u>7.8</u>
Top of casing to bottom	<u>27.1</u> ft	Total gallons evacuated	<u>28.4</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	<u>PUMPED DRY</u>
Sampling: Date/Time	<u>11-2-10 1000</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. : Oxygen [mg/l]	ORP Turbidity [NT]
<u>20.05</u>	<u>7.55</u>	<u>515 mg/l</u>	<u>6.80</u>	<u>-226.9</u>
<u>18.60</u>	<u>7.39</u>	<u>307</u>	<u>4.84</u>	<u>-236.8</u>
<u>18.52</u>	<u>6.97</u>	<u>300</u>	<u>5.71</u>	<u>-215.4</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL / RAINY

Sample characteristics: CLEAR

Containers and preservatives: \_\_\_\_\_

Comments and observations: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECM0-4 + DUP  
 Colle R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-1-10 1120 Method of Evacuation ELEC PUMP  
 Top of casing to water level 13.13 ft Gallons per well volume 5.7  
 Top of casing to bottom 22.1 ft Total gallons evacuated 17.1  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing PUMPED DRY  
 Sampling: Date/Time 11-2-10 1015 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

SAMPLE D.

Temperature[°C]	pH	Conductivity[ $\mu$ S]	Diss. [Oxygen] <sup>[mg/l]</sup>	<sup>ORP</sup> Turbidity [NTU]
<u>20.81</u>	<u>7.10</u>	<u>7.924 MS</u>	<u>8.43</u>	<u>-80.6</u>
<u>20.28</u>	<u>6.83</u>	<u>7.851</u>	<u>8.77</u>	<u>-119.7</u>
<u>20.59</u>	<u>4.57</u>	<u>7.565</u>	<u>7.99</u>	<u>-111.4</u>

GENERAL INFORMATION

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-5  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>11-1-10 1535</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>4.95</u> ft	Gallons per well volume	<u>8.3</u>
Top of casing to bottom	<u>17.7</u> ft	Total gallons evacuated	<u>24.9</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	_____
Sampling: Date/Time	<u>11-2-10 1130</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [mg/l]	ORP Turbidity [NT]
<u>21.66</u>	<u>6.04</u>	<u>521 mS</u>	<u>11.34</u>	<u>-130.7</u>
<u>21.75</u>	<u>5.88</u>	<u>439</u>	<u>7.98</u>	<u>-150.6</u>
<u>21.80</u>	<u>5.64</u>	<u>434</u>	<u>5.73</u>	<u>-151.8</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-6  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 11-1-10 0835 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 7.96 ft Gallons per well volume 9.1  
 Top of casing to bottom 22.0 ft Total gallons evacuated 27.3  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 11-2-10 1115 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [%]	<del>Turbidity [NT]</del>
<u>19.44</u>	<u>6.29</u>	<u>16.82 us</u>	<u>15.31</u>	<u>-92.5</u>
<u>20.11</u>	<u>5.95</u>	<u>15.87</u>	<u>12.26</u>	<u>-56.7</u>
<u>20.68</u>	<u>5.71</u>	<u>15.39</u>	<u>8.92</u>	<u>-37.6</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

# GROUNDWATER SAMPLING DATA FORM

## El Dorado Chemical Company

### FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMD-7  
 Colle R. DURHAM

#### MONITORING WELL INFORMATION

Evacuation: Date/Time	<u>11-1-10 0855</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>10.18</u> ft	Gallons per well volume	<u>8.9</u>
Top of casing to bottom	<u>23.9</u> ft	Total gallons evacuated	<u>24.7</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	_____
Sampling: Date/Time	<u>11-2-10 1100</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

#### SAMPLE D.

Temperature(°C)	pH	Conductivity(µS)	Diss. : Oxygen(%)	DRP Turbidity(NTU)
<u>19.91</u>	<u>6.15</u>	<u>73.76</u>	<u>5.18</u>	<u>-19.2</u>
<u>20.22</u>	<u>5.29</u>	<u>24.92</u>	<u>5.21</u>	<u>27.3</u>
<u>20.49</u>	<u>4.92</u>	<u>22.27</u>	<u>5.17</u>	<u>60.5</u>

#### GENERAL INFORMATION

Weather conditions at time of sampling COOL/RAINY

Sample characteristics: CLEAR

Containers and preservatives: \_\_\_\_\_

Comments and observations: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
El Dorado Chemical Company

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECM-8  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>11-1-10 0920</u>	Method of Evacuation	<u>ELEC PUMP</u>
Top of casing to water level	<u>9.57</u> ft	Gallons per well volume	<u>13.2</u>
Top of casing to bottom	<u>29.9</u> ft	Total gallons evacuated	<u>39.6</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	_____
Sampling: Date/Time	<u>11-2-10 1045</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature[°C]	pH	Conductivity[ $\mu$ S]	Diss. Oxygen[ $\text{mg/l}$ ]	ORP Turbidity[NT]
<u>18.95</u>	<u>6.40</u>	<u>20.45</u>	<u>18.19</u>	<u>-63.6</u>
<u>18.84</u>	<u>6.35</u>	<u>19.35</u>	<u>12.48</u>	<u>-65.9</u>
<u>18.82</u>	<u>6.35</u>	<u>18.98</u>	<u>10.04</u>	<u>-45.3</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECM01-9  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>11-1-10 094</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>14.96</u> ft	Gallons per well volume	<u>9.8</u>
Top of casing to bottom	<u>30.0</u> ft	Total gallons evacuated	<u>29.4</u>
Water level after evacuation		Elevation, Top of casing	<u>POOLED DRY</u>
Sampling: Date/Time	<u>11-2-10 1030</u>	Elevation of well water	
Top of casing to water level		Method of Sampling	<u>PYC BAILER</u>

**SAMPLE D.**

Temperature[°C]	pH	Conductivity[µS]	Diss. : Oxygen[ $mg/l$ ]	ORP Turbidity[NT]
<u>18.11</u>	<u>7.69</u>	<u>2.615 MS</u>	<u>2.02</u>	<u>-104.0</u>
<u>18.12</u>	<u>7.10</u>	<u>2.257</u>	<u>4.94</u>	<u>-103.9</u>
<u>19.26</u>	<u>7.04</u>	<u>2.240</u>	<u>5.29</u>	<u>-91.9</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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



# GROUNDWATER SAMPLING DATA FORM

## El Dorado Chemical Company

### FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMV-10  
 Colle R. DURHAM

#### MONITORING WELL INFORMATION

Evacuation: Date/Time	<u>11-1-10 1205</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>16.61</u> ft	Gallons per well volume	<u>39</u>
Top of casing to bottom	<u>22.6</u> ft	Total gallons evacuated	<u>2711.7</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	<u>PUMPED DRY</u>
Sampling: Date/Time	<u>11-2-10 1145</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

#### SAMPLE D.

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [mg/l]	Turbidity [NT]
<u>20.76</u>	<u>6.81</u>	<u>937 mg</u>	<u>4.83</u>	<u>-120.1</u>
<u>21.24</u>	<u>6.46</u>	<u>751</u>	<u>3.73</u>	<u>-60.9</u>
<u>21.78</u>	<u>6.42</u>	<u>727</u>	<u>4.03</u>	<u>-29.6</u>

#### GENERAL INFORMATION

Weather conditions at time of sampling COOL/RAINY

Sample characteristics: SHEAR

Containers and preservatives: \_\_\_\_\_

Comments and observations: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-11  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>11-1-10 1035</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>14.08</u> ft	Gallons per well volume	<u>3.7</u>
Top of casing to bottom	<u>19.8</u> ft	Total gallons evacuated	<u>4.1</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	<u>PUMPED DRY</u>
Sampling: Date/Time	<u>11-2-10 1200</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	DRP Turbidity [NT]
<u>21.82</u>	<u>6.24</u>	<u>1.067 MS</u>	<u>8.66</u>	<u>-92.3</u>
<u>21.67</u>	<u>5.72</u>	<u>.985</u>	<u>5.37</u>	<u>-55.2</u>
<u>21.91</u>	<u>5.67</u>	<u>1.025</u>	<u>4.70</u>	<u>-60.70</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL / RAINY

Sample characteristics: CLEAR

Containers and preservatives: \_\_\_\_\_

Comments and observations: \_\_\_\_\_

Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-12 + DUP  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 11-1-10 1050 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 7.72 ft Gallons per well volume 7.9  
 Top of casing to bottom 19.9 ft Total gallons evacuated 23.7  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 11-3-10 0900 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAULER

**SAMPLE D.**

Temperature[°C]	pH	Conductivity[µS]	Diss. Oxygen[ $\% \text{O}_2$ ]	DRP Turbidity[NTU]
<u>22.58</u>	<u>7.09</u>	<u>.971 mS</u>	<u>6.54</u>	<u>-181.2</u>
<u>22.47</u>	<u>6.71</u>	<u>.692</u>	<u>5.96</u>	<u>-149.7</u>
<u>22.75</u>	<u>6.64</u>	<u>.678</u>	<u>5.32</u>	<u>-155.7</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL / RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-13  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 11-1-10 1515 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 13.55 ft Gallons per well volume 4.1  
 Top of casing to bottom 19.8 ft Total gallons evacuated 12.3  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing PUMPED DRY  
 Sampling: Date/Time 11-3-10 1045 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. : Oxygen [°il]	ORP	Turbidity [NT]
<u>20.29</u>	<u>6.71</u>	<u>1047.015</u>	<u>20.90</u>	<u>-80.7</u>	<u>-140.6</u>
<u>20.25</u>	<u>6.61</u>	<u>1044</u>	<u>10.24</u>		
<u>20.61</u>	<u>6.44</u>	<u>1045</u>	<u>7.62</u>	<u>-1334</u>	

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-14  
 Colle R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time	<u>11-1-10</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	_____ ft	Gallons per well volume	_____
Top of casing to bottom	_____ ft	Total gallons evacuated	_____
Water level after evacuation	_____ ft	Elevation, Top of casing	_____
Sampling: Date/Time	_____	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

SAMPLE D.

<u>Temperature [°C]</u>	<u>pH</u>	<u>Conductivity [µS]</u>	<u>Diss. Oxygen [mg/l]</u>	<u>Turbidity [NT]</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

GENERAL INFORMATION

Weather conditions at time of sampling \_\_\_\_\_  
 Sample characteristics: \_\_\_\_\_  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: COULD NOT SAMPLE DUE TO HIGH WATER  
IN LAKE KILLDEER (HIGH PH CANNOT DISCHARGE)  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
 El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. EC MW-14  
 Collector R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 12-21-10 0915 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 5.72 ft Gallons per well volume 8.1  
 Top of casing to bottom 18.2 ft Total gallons evacuated 24.3  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 12-21-10 0945 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

SAMPLE DATA

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [mg/l]	Turbidity [NTU]
<u>19.42</u>	<u>6.02</u>	<u>853 MS</u>	<u>4.66</u>	<u>38.2</u>
<u>19.36</u>	<u>5.72</u>	<u>749</u>	<u>5.67</u>	<u>72.7</u>
<u>19.42</u>	<u>5.68</u>	<u>744</u>	<u>3.42</u>	<u>91.5</u>

GENERAL INFORMATION

Weather conditions at time of sampling CLEAR/WARM  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-15  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>11-1-10 1445</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>5.11</u> ft	Gallons per well volume	<u>7.7</u>
Top of casing to bottom	<u>17.0</u> ft	Total gallons evacuated	<u>23.1</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	_____
Sampling: Date/Time	<u>11-3-10 1030</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [ % ]	ORP Turbidity [NT]
<u>21.96</u>	<u>6.09</u>	<u>.027 MS</u>	<u>15.64</u>	<u>-130.5</u>
<u>22.13</u>	<u>5.53</u>	<u>.028</u>	<u>7.42</u>	<u>-97.5</u>
<u>22.47</u>	<u>5.30</u>	<u>.026</u>	<u>7.21</u>	<u>-12.0</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-16  
 Collector R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 11-1-10 1420 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 4.14 ft Gallons per well volume 9.8  
 Top of casing to bottom 19.3 ft Total gallons evacuated 29.4  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 11-3-10 1015 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. Oxygen [mg/l]	<sup>67P</sup> Turbidity [NT]
<u>21.71</u>	<u>6.90</u>	<u>.060 MS</u>	<u>7.72</u>	<u>-164.4</u>
<u>22.29</u>	<u>6.24</u>	<u>.058</u>	<u>6.01</u>	<u>-182.1</u>
<u>22.52</u>	<u>5.98</u>	<u>.059</u>	<u>5.70</u>	<u>-154.4</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL / RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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



**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-17  
 Collected by R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 11-1-10 1355 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 28.51 ft Gallons per well volume 4.0  
 Top of casing to bottom 34.7 ft Total gallons evacuated 12.0  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 11-3-10 1000 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	ORP Turbidity [NTU]
<u>19.40</u>	<u>6.72</u>	<u>.418 mg</u>	<u>21.26</u>	<u>-163.7</u>
<u>18.42</u>	<u>7.11</u>	<u>.404</u>	<u>13.76</u>	<u>-157.1</u>
<u>18.40</u>	<u>7.02</u>	<u>.397</u>	<u>9.91</u>	<u>-125.3</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling: COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-18  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 11-2-10 1345 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 10.13 ft Gallons per well volume 4.6  
 Top of casing to bottom 17.2 ft Total gallons evacuated 13.8  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 11-3-10 1100 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature[°C]	pH	Conductivity[uS]	Diss. [Oxygen[°B]]	<sup>ORP</sup> Turbidity [NT]
<u>19.10</u>	<u>8.69</u>	<u>091.025</u>	<u>14.16</u>	<u>-142.4</u>
<u>19.66</u>	<u>7.89</u>	<u>090</u>	<u>4.95</u>	<u>83.8</u>
<u>19.90</u>	<u>8.22</u>	<u>088</u>	<u>3.41</u>	<u>130.1</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: VERY CLOUDY  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification:

R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
El Dorado Chemical Company

FIELD LOG

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMWS-19  
 Colle R. DURHAM

MONITORING WELL INFORMATION

Evacuation: Date/Time 11-2-10 1415 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 6.03 ft Gallons per well volume 8.9  
 Top of casing to bottom 61.5 ft Total gallons evacuated 26.7  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 11-3-10 1115 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

SAMPLE DATA

DRP

Temperature (°C)	pH	Conductivity (µS)	Diss. Oxygen (mg/l)	Turbidity (NT)
<u>17.07</u>	<u>7.02</u>	<u>.101 MS</u>	<u>4.24</u>	<u>-196.3</u>
<u>17.39</u>	<u>7.11</u>	<u>.092</u>	<u>3.36</u>	<u>-203.2</u>
<u>17.56</u>	<u>6.87</u>	<u>.084</u>	<u>2.50</u>	<u>-205.5</u>

GENERAL INFORMATION

Weather conditions at time of sampling \_\_\_\_\_  
 Sample characteristics: \_\_\_\_\_  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ELMW-20  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 11-2-10 1450 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 47.02 ft Gallons per well volume \_\_\_\_\_  
 Top of casing to bottom 54.4 ft Total gallons evacuated \_\_\_\_\_  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time \_\_\_\_\_ Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	Turbidity [NT]
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**GENERAL INFORMATION**

Weather conditions at time of sampling \_\_\_\_\_  
 Sample characteristics: \_\_\_\_\_  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: WELL HAD NO WATER, ONLY A SLURRY SURPHY  
MUD. DID NOT SAMPLE  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-20  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 12-21-10 10:30 Method of Evacuation ELEC. PUMP  
 Top of casing to water level 44.68 ft Gallons per well volume 1.56  
 Top of casing to bottom 54.4 ft Total gallons evacuated 4.68  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing PUMPED DRY  
 Sampling: Date/Time 12-21-10 10:50 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [uS]	Diss. (Oxygen) [%]	Turbidity [NT]
<u>18.10</u>	<u>5.48</u>	<u>.095 ms</u>	<u>3.44</u>	<u>43.4</u>
<u>17.92</u>	<u>5.02</u>	<u>.094</u>	<u>3.18</u>	<u>24.2</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling CLEAR/WARM  
 Sample characteristics: CLOUDY  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

**GROUNDWATER SAMPLING DATA FORM**  
El Dorado Chemical Company

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-21  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time 11-2-10 1315 Method of Evacuation ELEC PUMP  
 Top of casing to water level 19.16 ft Gallons per well volume 1.1  
 Top of casing to bottom 34.9 ft Total gallons evacuated 3.3  
 Water level after evacuation \_\_\_\_\_ ft Elevation, Top of casing \_\_\_\_\_  
 Sampling: Date/Time 11-3-10 0845 Elevation of well water \_\_\_\_\_  
 Top of casing to water level \_\_\_\_\_ ft Method of Sampling PVC BAILER

**SAMPLE D.**

Temperature[°C]	pH	Conductivity[µS]	Diss. Oxygen[°/o]	Turbidity [NT]
<u>17.11</u>	<u>8.07</u>	<u>.077 MS</u>	<u>7.08</u>	<u>-25.1</u>
<u>17.35</u>	<u>8.07</u>	<u>.055</u>	<u>6.92</u>	<u>-23.2</u>
<u>17.56</u>	<u>7.13</u>	<u>.061</u>	<u>5.16</u>	<u>-47.1</u>

**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

FIGURE

**GROUNDWATER SAMPLING DATA FORM**  
**El Dorado Chemical Company**

**FIELD LOG**

Site EL DORADO CHEMICAL Facility EL DORADO, AR Well No. ECMW-22  
 Colle R. DURHAM

**MONITORING WELL INFORMATION**

Evacuation: Date/Time	<u>11-1-10 1320</u>	Method of Evacuation	<u>ELEC. PUMP</u>
Top of casing to water level	<u>8.32</u> ft	Gallons per well volume	<u>11.4</u>
Top of casing to bottom	<u>79.8</u> ft	Total gallons evacuated	<u>34.2</u>
Water level after evacuation	_____ ft	Elevation, Top of casing	_____
Sampling: Date/Time	<u>11-3-10 0915</u>	Elevation of well water	_____
Top of casing to water level	_____ ft	Method of Sampling	<u>PVC BAILER</u>

**SAMPLE D.**

Temperature [°C]	pH	Conductivity [µS]	Diss. Oxygen [mg/l]	ORP	Turbidity [NT]
<u>19.40</u>	<u>8.21</u>	<u>.152 MS</u>	<u>21.54</u>	<u>-208.0</u>	<u>-198.1</u>
<u>18.74</u>	<u>7.96</u>	<u>.150</u>	<u>12.50</u>		
<u>18.59</u>	<u>8.15</u>	<u>.150</u>	<u>9.87</u>	<u>-289.7</u>	

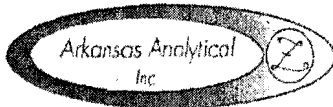
**GENERAL INFORMATION**

Weather conditions at time of sampling COOL/RAINY  
 Sample characteristics: CLEAR  
 Containers and preservatives: \_\_\_\_\_  
 Comments and observations: \_\_\_\_\_  
 Recommendations: \_\_\_\_\_

Certification: R. Durham

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

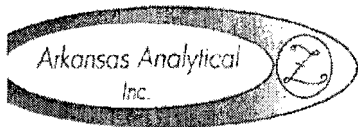
FIGURE



11701 Inter...  
 Little Rock, AR 72209  
 PHONE: 601-455-3233  
 FAX: 601-455-6118

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time	Preservation Codes:							
El Dorado Chemical Inc. 4500 Northwest Ave. El Dorado, AR 71731		El Dorado Chemical Inc. P.O. Box 231 El Dorado, AR 71731		Groundwaters		24 Hour 48 Hour 72 Hour	1. Cool, 4 Degrees Centigrade 2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ), pH < 2 3. Nitric Acid (HNO <sub>3</sub> ), pH < 2			4. Thiosulfate for Dechlorination 5. Hydrochloric Acid(HCl) 6. Sodium Hydroxide (NaOH), pH > 12				
Attn: Brent Parker		Telephone: 870-883-1484 Fax: 870-883-1498 Email: BParker@elcok.com, BRaskin@elcok.com		Reporting Information		Routine (5 Day) Preservative Code: Bottle Type:	TEST PARAMETERS						Bottle Type Code G = Glass, P = Plastic V = Septum, A = Amber	
R. Durham		R. DURHAM ENV & INC.		Sampler(s) Signature		Sampler(s) Printed		TEST PARAMETERS						Arkansas Analytical Wo Order Number
Field Number	SAMPLE COLLECTION		Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION		NO <sub>3</sub> , NO <sub>2</sub> , SO <sub>4</sub> Alkalinity, d Fe, d Min	Ammonia, T. Phosphorus	TOC	Cr, Pb		
1	11-3-10	0845	L		3		ECMW-21							
2		0900	L		3		ECMW-12							
3		0915	L		3		ECMW-22							
4		1000	L		3		ECMW-17							
5		1015	L		3		ECMW-16							
6		1030	L		3		ECMW-15							
7		1045	L		3		ECMW-13							
8		1100	L		3		ECMW-18							
9		1115	L		3		ECMW-19							
10			L		3		DUP							
1. Relinquished by: (Signature) R. Durham		Date/Time 11-3-10 1205		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB				REMARKS / SAMPLE COMMENT:				
3. Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		1. CUSTODY SEALS: Yes No				P.O. Number:				
						2. CONTAINERS CORRECT: Yes No								
						3. COC/LABELS AGREE: Yes No								
						4. PRESERVATION CONFIRMED: Yes No								
						5. RECEIVED ON ICE: Yes No								
						6. TEMPERATURE ON RECEIPT:								
FOR COMPLETION BY LAB ONLY														

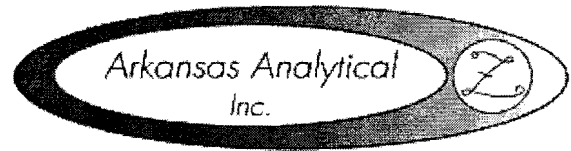




11701 Interstate 30, Bldg. 1, Ste. 115  
 Little Rock, AR 72209  
 PHONE: 501-455-3233  
 FAX: 501-455-6118

# CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:											
Dorado Chemical Inc.		El Dorado Chemical Inc.		Groundwaters		24 Hour		1. Cool, 4 Degrees Centigrade					4. Thiosulfate for Dechlorination						
10 Northwest Ave.		P.O. Box 231				48 Hour		2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ), pH < 2					5. Hydrochloric Acid(HCl)						
Dorado, AR 71731		El Dorado, AR 71731		Reporting Information		72 Hour		3. Nitric Acid (HNO <sub>3</sub> ), pH < 2					6. Sodium Hydroxide (NaOH), pH > 12						
n: Brent Parker				Telephone: 870-863-1484		Routine (5 Day)		TEST PARAMETERS										Battle Type Code	
				Fax: 870-863-1499		Preservative Code:		1	1,2	1,5	1,3							G = Glass, P = Plastic	
				Email: BParker@edc-ar.com; DSartin@edc-ar.com		Bottle Type:		P	P	GV	P							Y = Septum, A = Amber	
S. Durham EMS Inc		R. DURHAM EMS Inc																	
Sampler(s) Signature		Sampler(s) Printed																	
Field Number	SAMPLE COLLECTION		Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION										NO <sub>3</sub> , NO <sub>2</sub> , SO <sub>4</sub> , Alkalinity, d Fe, d Min Ammonia, T. Phosphorus TOC Cr, Pb	Arkansas Analytical Work Order Number:	
1	1-2-10	0930	✓		3		ECMW #1												
2		0945	✓		3		ECMW #2												
3		1000	✓		3		ECMW #3												
4		1015	✓		3		ECMW #4												
5		1030	✓		3		ECMW #9												
6		1045	✓		3		ECMW #8												
7		1100	✓		3		ECMW #7												
8		1115	✓		3		ECMW #6												
9		1130	✓		3		ECMW #5												
10		1145	✓		3		ECMW #10												
11		1200	✓		3		ECMW #11												
12			✓		3		DUP												
Relinquished by: (Signature)		Date/Time		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB						REMARKS / SAMPLE COMMENTS							
S. Durham		11-2-10 1225				1. CUSTODY SEALS: Yes No						P.O. Number:							
						2. CONTAINERS CORRECT: Yes No													
						3. COC/LABELS AGREE: Yes No													
Relinquished by: (Signature)		Date/Time		4. Received by lab: (Signature)		4. PRESERVATION CONFIRMED: Yes No													
						5. RECEIVED ON ICE: Yes No													
						6. TEMPERATURE ON RECEIPT:													
FOR COMPLETION BY LAB ONLY																			



11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209  
501-455-3233 Fax 501-455-6118

23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731

RE: Groundwaters

SDG Number: 1004142

Enclosed are the results of analyses for samples received by the laboratory on 13-Apr-10 14:55. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✓
Containers Intact	✓
COC/Labels Agree	✓
Preservation Confirmed	✓
Received On Ice	✓
Temperature on Receipt	16.0°C

Sincerely,

A handwritten signature in cursive script that reads "Norma James".

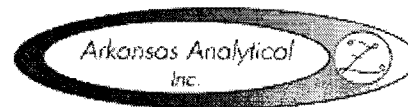
---

Norma James  
President

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23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 13-Apr-10 14:55

**ANALYTICAL RESULTS**

Lab Number: 1004142-01  
Sample Name: MW-1  
Date/Time Collected: 4/13/10 7:45  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	6.46		4/13/10 16:49	A004123	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/13/10 16:49	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 16:49	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.084		4/22/10 16:53	A004160	200.7
Manganese	mg/L	0.011		4/19/10 19:53	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 18:19	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 18:19	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	1.00		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	0.020		4/19/10 16:14	A004196	4500-P B5,E

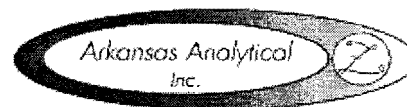
**ANALYTICAL RESULTS**

Lab Number: 1004142-02  
Sample Name: MW-2  
Date/Time Collected: 4/13/10 8:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	16.9		4/14/10 9:22	A004123	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/13/10 17:11	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 17:11	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.175		4/22/10 16:53	A004160	200.7
Manganese	mg/L	0.010		4/19/10 19:46	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 18:34	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 18:34	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	2.30		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	22.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	0.077		4/19/10 16:14	A004196	4500-P B5,E

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**ANALYTICAL RESULTS**

<b>Lab Number:</b>	<b>1004142-03</b>					
<b>Sample Name:</b>	<b>MW-3</b>					
<b>Date/Time Collected:</b>	<b>4/13/10 8:15</b>					
<b>Sample Matrix:</b>	<b>Water</b>					
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	9.39		4/13/10 17:33	A004123	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/13/10 17:33	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 17:33	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.054		4/22/10 16:53	A004160	200.7
Manganese	mg/L	0.025		4/19/10 19:56	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 18:37	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 18:37	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	2.70		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	55.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	0.236		4/19/10 16:14	A004196	4500-P B5.E

**ANALYTICAL RESULTS**

<b>Lab Number:</b>	<b>1004142-04</b>					
<b>Sample Name:</b>	<b>MW-4</b>					
<b>Date/Time Collected:</b>	<b>4/13/10 8:30</b>					
<b>Sample Matrix:</b>	<b>Water</b>					
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	655		4/14/10 9:44	A004123	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/13/10 17:55	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 17:55	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	5.31		4/22/10 16:53	A004160	200.7
Manganese	mg/L	1.96		4/19/10 20:02	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 18:56	A004146	200.7
Lead	mg/L	0.029		4/19/10 18:56	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	25.1		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:14	A004196	4500-P B5.E

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**ANALYTICAL RESULTS**

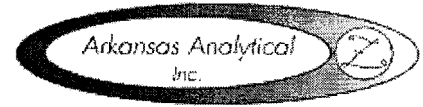
<b>Lab Number:</b>	<b>1004142-05</b>					
<b>Sample Name:</b>	<b>MW-5</b>					
<b>Date/Time Collected:</b>	<b>4/13/10 8:50</b>					
<b>Sample Matrix:</b>	<b>Water</b>					
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	<b>105</b>		4/14/10 10:07	A004123	300.0/9056A
Nitrate as N	mg/L	<b>7.96</b>		4/14/10 10:07	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 18:17	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	<b>0.024</b>		4/22/10 16:53	A004160	200.7
Manganese	mg/L	<b>0.693</b>		4/19/10 20:04	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 18:59	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 18:59	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	<b>1.30</b>		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	<b>15.0</b>		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:14	A004196	4500-P B5,E

**ANALYTICAL RESULTS**

<b>Lab Number:</b>	<b>1004142-06</b>					
<b>Sample Name:</b>	<b>MW-6</b>					
<b>Date/Time Collected:</b>	<b>4/13/10 9:10</b>					
<b>Sample Matrix:</b>	<b>Water</b>					
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	<b>29.2</b>		4/14/10 10:29	A004123	300.0/9056A
Nitrate as N	mg/L	<b>1660</b>		4/14/10 11:13	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 18:40	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		4/22/10 16:53	A004160	200.7
Manganese	mg/L	<b>2.33</b>		4/19/10 20:10	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 19:02	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 19:02	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	<b>92.8</b>		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	<b>1.56</b>		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:14	A004196	4500-P B5,E

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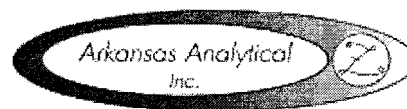
Date Received: 13-Apr-10 14:55

**ANALYTICAL RESULTS**

<b>Lab Number:</b>	<b>1004142-07</b>					
<b>Sample Name:</b>	<b>MW-7</b>					
<b>Date/Time Collected:</b>	<b>4/13/10 9:30</b>					
<b>Sample Matrix:</b>	<b>Water</b>					
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	<b>214</b>		4/14/10 10:51	A004123	300.0/9056A
Nitrate as N	mg/L	<b>1080</b>		4/14/10 11:35	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 19:02	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	<b>0.220</b>		4/22/10 16:53	A004160	200.7
Manganese	mg/L	<b>0.376</b>		4/19/10 20:28	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 19:05	A004146	200.7
Lead	mg/L	<b>0.060</b>		4/19/10 19:05	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	<b>1000</b>		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	<b>5.08</b>		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:14	A004196	4500-P B5,E

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**ANALYTICAL RESULTS**

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**Lab Number:** 1004142-08  
**Sample Name:** MW-8  
**Date/Time Collected:** 4/13/10 9:45  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	737		4/14/10 11:57	A004123	300.0/9056A
Nitrate as N	mg/L	52.2		4/14/10 11:57	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 20:08	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		4/22/10 16:53	A004160	200.7
Manganese	mg/L	0.839		4/19/10 20:30	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 19:08	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 19:08	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	62.1		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	10.4		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	250		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:14	A004196	4500-P B5,E

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**ANALYTICAL RESULTS**

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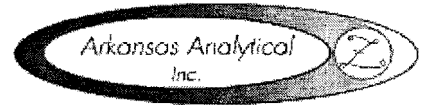
**Lab Number:** 1004142-09  
**Sample Name:** MW-9  
**Date/Time Collected:** 4/13/10 10:05  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	462		4/14/10 12:19	A004123	300.0/9056A
Nitrate as N	mg/L	16.8		4/14/10 12:19	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 20:30	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		4/22/10 16:53	A004160	200.7
Manganese	mg/L	0.297		4/19/10 20:33	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 19:11	A004146	200.7
Lead	mg/L	0.015		4/19/10 19:11	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	18.6		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	30.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	0.133		4/19/10 16:14	A004196	4500-P B5,E



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**ANALYTICAL RESULTS**

**Lab Number:** 1004142-10  
**Sample Name:** MW-10  
**Date/Time Collected:** 4/13/10 10:30  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	170		4/14/10 12:42	A004123	300.0/9056A
Nitrate as N	mg/L	44.7		4/14/10 12:42	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 20:52	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.013		4/22/10 16:53	A004160	200.7
Manganese	mg/L	0.154		4/19/10 20:35	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 19:14	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 19:15	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	0.80		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	7.20		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:14	A004196	4500-P B5,E

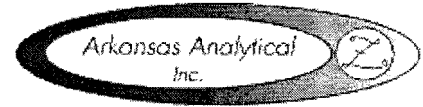
**ANALYTICAL RESULTS**

**Lab Number:** 1004142-11  
**Sample Name:** MW-11  
**Date/Time Collected:** 4/13/10 10:50  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	135		4/14/10 13:48	A004123	300.0/9056A
Nitrate as N	mg/L	7.78		4/13/10 21:15	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 21:15	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		4/22/10 16:53	A004160	200.7
Manganese	mg/L	0.017		4/19/10 20:37	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 19:17	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 19:18	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	32.6		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	9.25		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	0.035		4/19/10 16:14	A004196	4500-P B5,E

23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 13-Apr-10 14:55

**ANALYTICAL RESULTS**

---

**Lab Number:** 1004142-12  
**Sample Name:** MW-12  
**Date/Time Collected:** 4/13/10 11:15  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	2.14		4/13/10 21:37	A004123	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/13/10 21:37	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 21:37	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	63.3		4/22/10 16:53	A004160	200.7
Manganese	mg/L	0.239		4/19/10 20:40	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 19:20	A004146	200.7
Lead	mg/L	< 0.015		4/19/10 19:21	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	5.56		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	15.3		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	310		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	0.426		4/19/10 16:14	A004196	4500-P B5,E

23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 13-Apr-10 14:55

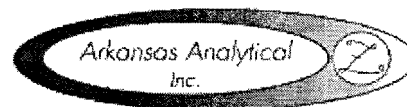
**ANALYTICAL RESULTS**

---

Lab Number: 1004142-13  
Sample Name: Duplicate  
Date/Time Collected: 4/13/10 0:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	25.7		4/14/10 15:12	A004123	300.0/9056A
Nitrate as N	mg/L	1640		4/14/10 15:34	A004123	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/13/10 21:59	A004123	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.029		4/22/10 16:53	A004160	200.7
Manganese	mg/L	2.41		4/19/10 20:46	A004160	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/19/10 19:24	A004146	200.7
Lead	mg/L	0.023		4/19/10 19:24	A004146	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	566		4/15/10 10:05	A004133	4500-NH3D
TOC	mg/L	1.58		4/15/10 13:30	A004135	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/16/10 13:19	A004171	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:14	A004196	4500-P B5,E

23 April 2010



**Brent Parker**  
**EI Dorado Chemical Inc.**  
**4500 North West Ave.**  
**EI Dorado, AR 71731**  
**Project: Groundwaters**

Date Received: 13-Apr-10 14:55

**QUALITY CONTROL RESULTS**

**Anions -- Batch: A004123 (Water)**

Prepared: 13-Apr-10 12:00 By: MG -- Analyzed: 13-Apr-10 14:14 By: MEL

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.500 mg/L	97.8% / NA	99.6% / 99.9%		0.341%	
Nitrite as N	<0.500 mg/L	91.6% / NA	87.0% / 85.6%		1.62%	
Sulfate as SO4	<0.500 mg/L	93.2% / NA	90.7% / 91.2%		0.525%	

**Wet Chemistry -- Batch: A004133 (Water)**

Prepared: 14-Apr-10 08:46 By: SB -- Analyzed: 15-Apr-10 10:05 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.50 mg/L	95.6% / NA	107% / 112%		3.50%	

**Wet Chemistry -- Batch: A004135 (Water)**

Prepared: 14-Apr-10 10:52 By: SB -- Analyzed: 15-Apr-10 13:30 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TOC	<1.00 mg/L	99.9% / NA	105% / 108%		2.53%	

**Total Metals -- Batch: A004146 (Water)**

Prepared: 14-Apr-10 11:55 By: RH -- Analyzed: 20-Apr-10 09:13 By: TT

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.020 mg/L	87.0% / NA	88.6% / 87.1%		1.68%	
Lead	<0.015 mg/L	106% / NA	83.6% / 81.7%		2.18%	

**Dissolved Metals -- Batch: A004160 (Water)**

Prepared: 14-Apr-10 15:08 By: RH -- Analyzed: 22-Apr-10 16:53 By: TT

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Iron	<0.010 mg/L	95.0% / NA	124% / 116%		4.92%	
Manganese	<0.010 mg/L	90.5% / NA	91.6% / 90.1%		1.57%	

**Wet Chemistry -- Batch: A004171 (Water)**

Prepared: 16-Apr-10 13:19 By: SB -- Analyzed: 16-Apr-10 13:19 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Alkalinity	<5.0 mg/L	102% / 100%	NA / NA		1.98%	

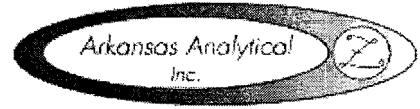
**Wet Chemistry -- Batch: A004196 (Water)**

Prepared: 19-Apr-10 08:00 By: KP -- Analyzed: 19-Apr-10 16:14 By: KP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Phosphorus	<0.020 mg/L	101% / NA	135% / 133%		0.803%	%D1

23 April 2010

**Brent Parker**  
**El Dorado Chemical Inc.**  
**4500 North West Ave.**  
**El Dorado, AR 71731**  
**Project: Groundwaters**



**Date Received: 13-Apr-10 14:55**

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**QUALIFIER(S)**

\*%D1: Matrix Spike and/or Matrix Spike Duplicate Percent Recovery Does Not Meet Laboratory Acceptance Criteria

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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, 20th Edition.

Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

A handwritten signature in cursive script that reads "Norma James".

Reviewed by: \_\_\_\_\_

Norma James  
President

23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 13-Apr-10 14:55

CHAIN OF CUSTODY FORM(S)



11701 Interstate 30, Bldg 1, Ste. 115  
Little Rock, AR 72209  
PHONE: 501-455-3233  
FAX: 501-455-5118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preparation (see:)	
El Dorado Chemical Inc. 4500 Northwest Ave. El Dorado, AR 71731	El Dorado Chemical Inc. P.O. Box 231 El Dorado, AR 71731	Groundwaters	Reporting Information Telephone: 870-683-1484 Fax: 870-683-1489	24 Hour	48 Hour	72 Hour	15 Days (with sample preservation)	1. Cool & Degass Temperature	4. Thermostat for Stabilization
Attn: Brent Parker		R. Durham		Recovery (Day)	Recovery (Day)	Recovery (Day)	Recovery (Day)	2. Saline Acid (0.1M) pH < 2	5. Hydrophobic Volume %
El Dorado Chemical Inc. Signature		Sampler(s) Printed		SAMPLE IDENTIFICATION DESCRIPTION		TEST PARAMETERS		6. Sodium Hydroxide (NaOH), pH > 15	
Field Number	SAMPLE COLLECTION Date/Time	Sampler(s) Printed	Sampler(s) Signature	NO <sub>3</sub> - Nitrate	NO <sub>2</sub> - Nitrite	SO <sub>4</sub> - Sulfate	Alkalinity	d	d Mn
1	4-13-10 7:45	R. Durham	R. Durham	Ammonia	Phosphorus	TOC	Cr, Pb		
2	8:00								
3	8:15								
4	8:30								
5	8:45								
6	9:10								
7	9:30								
8	9:45								
9	10:05								
10	10:30								
11	10:50								
12	11:15								

REMARKS / SAMPLE COMMENTS: PER A STREET

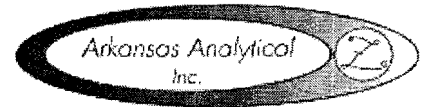
1. Requested by (Signature): R. Durham  
2. Received by (Signature): Brent Parker  
3. Requested by (Signature): Brent Parker  
4. Received by (Signature): Brent Parker

1. CUSTODY SEALS: Yes/No  
2. CONTAINERS CORRECT: Yes/No  
3. COOL/UBELTS ADDED: Yes/No  
4. PHEI SERVICIAN COMPLETED: Yes/No  
5. RECEIVED ON ICE: Yes/No  
6. TEMPERATURE ON RECEIPT: 17°C

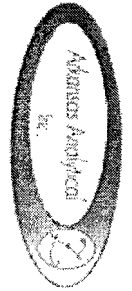
FOR COMPLETION BY LAB ONLY

23 April 2010

Brent Parker  
 El Dorado Chemical Inc.  
 4500 North West Ave.  
 El Dorado, AR 71731  
 Project: Groundwaters



Date Received: 13-Apr-10 14:55



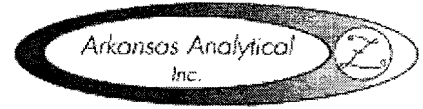
11701 Interstate 30, Bldg. 1, Ste. 115  
 Little Rock, AR 72209  
 PHONE: 501-455-3233  
 FAX: 501-455-6118

# CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes	
El Dorado Chemical Inc. 4500 Northwest Ave. El Dorado, AR 71731		El Dorado Chemical Inc. P.O. Box 231 El Dorado, AR 71731		Groundwaters		24 hour 48 hour 72 hour		1. Cool + Refrigerate 2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ) pH < 2 3. Nitric Acid (HNO <sub>3</sub> ) pH < 2 4. Inert for distribution 5. Identification vial/kit # 6. Median Hydrochloric (HCl) pH < 11	
Attn: Brent Parker		Reporting Information Telephone: 501-455-1424 Fax: 501-455-1499		Residue Date Preservation Code		TEST PARAMETERS 1. E2 15 13 2. GV P		Arkansas Analytical Vials Order Number	
Sample(s) Signature <i>Brent Parker</i>		Sample(s) Printed Brent Parker		FIELD NUMBER 13		SAMPLE COLLECTION Date: 4-13-10 Time: 11:45		IDENTIFICATION/DESCRIPTION W MW DUP	
1. Prepared by (Signature) <i>Brent Parker</i>		2. Received by (Signature) <i>Brent Parker</i>		3. Received by Lab (Signature) <i>Speckle E Know</i>		4. CUSTOM SEALS Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		5. CONTAINERS CORRECT Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
5. Date/Time of Collection 4-13-10 8:55 PM		6. Date/Time 4/13/10 11:55		7. Date/Time 4-13-10 11:45 AM		8. PRESERVATION CONTAINER Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		9. RECEIVED PACKAGE Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
10. Remarks / Sample Comments P.O. Number: 160442 13 2 per SHEET 3 per SHEET		11. Laboratory Use Only		12. Laboratory Use Only		13. Laboratory Use Only		14. Laboratory Use Only	

23 April 2010

Brent Parker  
 El Dorado Chemical Inc.  
 4500 North West Ave.  
 El Dorado, AR 71731  
 Project: Groundwaters

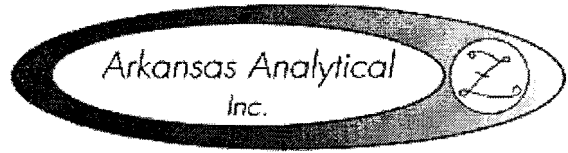


Date Received: 13-Apr-10 14:55

EDCC - 2006 Annual Ground Water Report & Modification Request  
 May 31, 2007

Monitor Well ID	Water level measurements	Temperature	Conductivity	pH	Remediation Parameters (Alkalinity, Nitrate, Phosphorus, TOC)		Nitrate	Ammonia	Sulfate	Lead	Chromium
					Remediation Parameters (DO, redox, dissolved Fe, dissolved Mn)						
ECMW-1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ECMW-22	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>





11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209  
501-455-3233 Fax 501-455-6118

23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731

RE: Groundwaters

SDG Number: 1004163

Enclosed are the results of analyses for samples received by the laboratory on 14-Apr-10 14:06. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✓
Containers Intact	✓
COC/Labels Agree	✓
Preservation Confirmed	✓
Received On Ice	✓
Temperature on Receipt	4.0°C

Sincerely,

A handwritten signature in cursive script that reads "Norma James".

---

Norma James  
President

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23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 14-Apr-10 14:06

**ANALYTICAL RESULTS**

Lab Number: 1004163-01  
Sample Name: MW-20  
Date/Time Collected: 4/14/10 7:50  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	10.1		4/14/10 17:03	A004147	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/14/10 17:03	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 17:03	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	2.07		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.187		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	< 1.00		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	30.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	0.129	E20	4/19/10 16:23	A004197	4500-P B5,E

**ANALYTICAL RESULTS**

Lab Number: 1004163-02  
Sample Name: MW-21  
Date/Time Collected: 4/14/10 7:30  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	3.70		4/14/10 17:25	A004147	300.0/9056A
Nitrate as N	mg/L	2.24		4/14/10 17:25	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 17:25	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.027		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	< 1.00		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	5.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:23	A004197	4500-P B5,E

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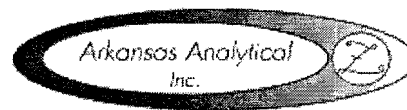
**ANALYTICAL RESULTS**

Lab Number: 1004163-03  
Sample Name: MW-13  
Date/Time Collected: 4/14/10 8:10  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	470		4/15/10 11:18	A004147	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/14/10 18:31	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 18:31	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.941		4/22/10 16:44	A004162	200.7
Manganese	mg/L	2.87		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	6.60		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	20.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:23	A004197	4500-P B5.E

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## ANALYTICAL RESULTS

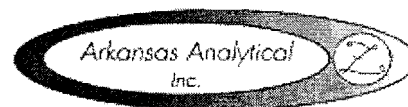
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Lab Number: 1004163-04  
Sample Name: MW-14  
Date/Time Collected: 4/14/10 8:30  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	166		4/15/10 11:40	A004147	300.0/9056A
Nitrate as N	mg/L	24.3		4/15/10 11:40	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 18:54	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.035		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.048		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	16.2		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	15.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	0.159		4/19/10 16:23	A004197	4500-P B5.E

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**ANALYTICAL RESULTS**

**Lab Number:** 1004163-05  
**Sample Name:** MW-15  
**Date/Time Collected:** 4/14/10 8:55  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	10.7		4/15/10 12:02	A004147	300.0/9056A
Nitrate as N	mg/L	2.99		4/14/10 19:16	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 19:16	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.045		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.020		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	1.53		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:23	A004197	4500-P B5,E

**ANALYTICAL RESULTS**

**Lab Number:** 1004163-06  
**Sample Name:** MW-16  
**Date/Time Collected:** 4/14/10 9:10  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	15.3		4/15/10 12:24	A004147	300.0/9056A
Nitrate as N	mg/L	4.73		4/14/10 19:38	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 19:38	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.105		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	2.38		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	2.91		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:23	A004197	4500-P B5,E

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**ANALYTICAL RESULTS**

**Lab Number:** 1004163-07  
**Sample Name:** MW-17  
**Date/Time Collected:** 4/14/10 9:30  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	6.73		4/14/10 20:00	A004147	300.0/9056A
Nitrate as N	mg/L	15.9		4/15/10 12:46	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 20:00	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.048		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	< 1.00		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	< 5.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	< 0.020		4/19/10 16:23	A004197	4500-P B5,E

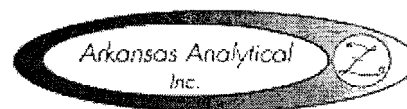
**ANALYTICAL RESULTS**

**Lab Number:** 1004163-08  
**Sample Name:** MW-22  
**Date/Time Collected:** 4/14/10 10:00  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	7.73		4/14/10 20:22	A004147	300.0/9056A
Nitrate as N	mg/L	1.13		4/14/10 20:22	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 20:22	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.603		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.168		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	1.45		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	30.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	0.046		4/19/10 16:23	A004197	4500-P B5,E

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### ANALYTICAL RESULTS

**Lab Number:** 1004163-09  
**Sample Name:** MW-18  
**Date/Time Collected:** 4/14/10 10:30  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	2.82		4/14/10 20:44	A004147	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/14/10 20:44	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 20:44	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.505		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.024		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	< 1.00		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	15.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	0.379		4/19/10 16:23	A004197	4500-P B5,E

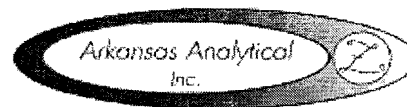
### ANALYTICAL RESULTS

**Lab Number:** 1004163-10  
**Sample Name:** MW-19  
**Date/Time Collected:** 4/14/10 11:05  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	2.46		4/14/10 21:06	A004147	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/14/10 21:06	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 21:06	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	4.50		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.075		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	< 1.00		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	32.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	0.307		4/19/10 16:23	A004197	4500-P B5,E

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**ANALYTICAL RESULTS**

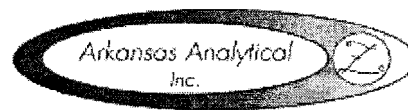
**Lab Number:** 1004163-11  
**Sample Name:** Duplicate  
**Date/Time Collected:** 4/14/10 0:00  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	2.43		4/14/10 21:29	A004147	300.0/9056A
Nitrate as N	mg/L	< 0.500		4/14/10 21:29	A004147	300.0/9056A
Nitrite as N	mg/L	< 0.500		4/14/10 21:29	A004147	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	5.17		4/22/10 16:44	A004162	200.7
Manganese	mg/L	0.074		4/22/10 16:48	A004162	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		4/22/10 16:37	A004161	200.7
Lead	mg/L	< 0.015		4/23/10 9:13	A004161	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		4/21/10 10:12	A004227	4500-NH3D
TOC	mg/L	< 1.00		4/19/10 9:19	A004167	5310/9060A
Total Alkalinity	mg/L	30.0		4/19/10 13:05	A004188	2320 B
Total Phosphorus	mg/L	0.281		4/19/10 16:23	A004197	4500-P B5.E



23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 14-Apr-10 14:06

**QUALITY CONTROL RESULTS**

**Anions -- Batch: A004147 (Water)**

Prepared: 15-Apr-10 10:11 By: MG -- Analyzed: 15-Apr-10 14:15 By: MEL

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.500 mg/L	108% / NA	96.2% / 96.3%		0.101%	
Nitrite as N	<0.500 mg/L	90.2% / NA	83.0% / 82.5%		0.604%	
Sulfate as SO4	<0.500 mg/L	99.4% / NA	86.5% / 87.2%		0.769%	

**Total Metals -- Batch: A004161 (Water)**

Prepared: 15-Apr-10 11:50 By: RH -- Analyzed: 22-Apr-10 16:37 By: TT

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.020 mg/L	92.9% / NA	89.8% / 90.4%		0.674%	
Lead	<0.015 mg/L	103% / NA	98.7% / 97.2%		1.45%	

**Dissolved Metals -- Batch: A004162 (Water)**

Prepared: 15-Apr-10 15:42 By: RH -- Analyzed: 22-Apr-10 16:44 By: TT

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Iron	<0.010 mg/L	93.4% / NA	87.7% / 91.5%		4.25%	
Manganese	<0.010 mg/L	90.3% / NA	84.2% / 86.9%		2.99%	

**Wet Chemistry -- Batch: A004167 (Water)**

Prepared: 16-Apr-10 10:19 By: SB -- Analyzed: 19-Apr-10 09:19 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TOC	<1.00 mg/L	101% / NA	106% / 106%		0.645%	

**Wet Chemistry -- Batch: A004188 (Water)**

Prepared: 19-Apr-10 13:05 By: SB -- Analyzed: 19-Apr-10 13:05 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Alkalinity	<5.0 mg/L	104% / 100%	NA / NA		3.92%	

**Wet Chemistry -- Batch: A004197 (Water)**

Prepared: 19-Apr-10 08:00 By: KP -- Analyzed: 19-Apr-10 16:23 By: KP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Phosphorus	<0.020 mg/L	102% / NA	91.6% / 73.2%		13.7%	%D1

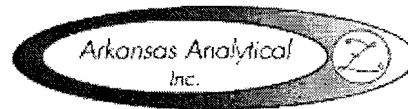
**Wet Chemistry -- Batch: A004227 (Water)**

Prepared: 21-Apr-10 10:11 By: SB -- Analyzed: 21-Apr-10 10:12 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.50 mg/L	105% / NA	92.7% / 90.8%		1.90%	

23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 14-Apr-10 14:06

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**QUALIFIER(S)**

\*%D1: Matrix Spike and/or Matrix Spike Duplicate Percent Recovery Does Not Meet Laboratory Acceptance Criteria  
\*E20: Estimated result due to matrix spike and or matrix spike duplicate failure; this sample was used as "parent sample" in MS/MSD prep.

---

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, 20th Edition.  
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

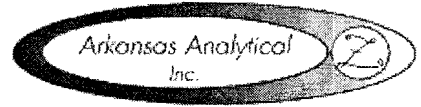
A handwritten signature in cursive script that reads "Norma James".

Reviewed by: \_\_\_\_\_

Norma James  
President

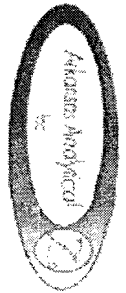
23 April 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 14-Apr-10 14:06

CHAIN OF CUSTODY FORM(S)



11701 Interstate 30, Bldg. 1, Ste. 115  
Little Rock, AR 72209  
PHONE: 501-455-3233  
FAX: 501-455-6118

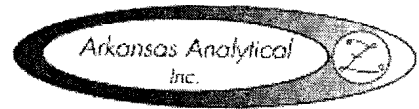
CHAIN OF CUSTODY RECORD

CLIENT INFORMATION		BILLING INFORMATION		PROJECT DESCRIPTION		TEMPERATURE		PRESERVATION NOTES	
El Dorado Chemical Inc. 4500 Northwest Ave. El Dorado, AR 71731		El Dorado Chemical Inc. P.O. Box 231 El Dorado, AR 71731		Groundwaters		24 Hour 48 Hour 72 Hour		1. Vol. % Acetone 2. Sulfide and H <sub>2</sub> S 3. Nitrate and Nitrite 4. Dissolved Solids 5. Hydrocarbon Analysis 6. Sulfide Hydroxide, Volatile, pH = 12	
Attn: Brent Parker		Reporting Information Telephone: 501-455-1484 Fax: 501-455-6693		Retention & Disposal Retention Day: _____ Date Used: _____		TEST PARAMETERS 1. pH 2. Alkalinity, d 3. Ammonia, T 4. TOC 5. Cr, Pb		Arkansas Analytical Wash Order Number: 12041163	
Sampler(s) Signature: <i>R. Durham</i>		Sampler(s) Printed: R. DURHAM EMS		SAMPLE COLLECTION		IDENTIFICATION/DESCRIPTION		SAMPLE CONDITION (UPON RECEIPT IN LAB)	
Field Number	Date/s	Time/s	Flow	Depth	Depth	Flow	Depth	1. CUSTODY SEALS	REMARKS / SAMPLE COMMENTS P.O. Number: 414116 per attached sheet - 414116-8
1	4-14-10	7:50	X	2.0	W	WW-21	W	Yes	
2		7:50	X		W	WW-13	W	No	
3		8:10	X		W	WW-14	W	No	
4		8:30	X		W	WW-15	W	No	
5		8:50	X		W	WW-16	W	No	
6		9:10	X		W	WW-17	W	No	
7		9:30	X		W	WW-22	W	No	
8		10:00	X		W	WW-18	W	No	
9		10:30	X		W	WW-19	W	No	
10		11:05	X		W	WW-DUP	W	No	
11			X		W	WW-	W	No	
1. Requisitioned by: (S) Signature: <i>Brent Parker</i>		Date/Time: 4-14-10 11:10 AM		2. Received by: (S) Signature: <i>Brent Parker</i>		Date/Time: 4-14-10 12:00 PM		3. CONTAINERS CORRECT	
3. Requisitioned by: (S) Signature: <i>Brent Parker</i>		Date/Time: 4/14/10 4:14 PM		4. Received by: (S) Signature: <i>Sarah E. Rouse</i>		Date/Time: 4/14/10 14:06		4. DOCUMENTS ASSEMBLED	
								5. RECEIVED ON SITE	
								6. REPACKAGED ON RECEIPT	
								7. REPACKAGED ON RECEIPT	
								8. REPACKAGED ON RECEIPT	
								9. REPACKAGED ON RECEIPT	
								10. REPACKAGED ON RECEIPT	

PER ATTACHED SHEET

23 April 2010

Brent Parker  
 El Dorado Chemical Inc.  
 4500 North West Ave.  
 El Dorado, AR 71731  
 Project: Groundwaters



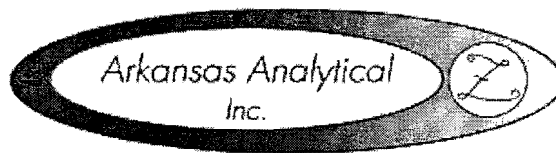
Date Received: 14-Apr-10 14:06

EDCC - 2006 Annual Ground Water Report & Modification Request  
 May 31, 2007

☒ Parameters for Semi-Annual (May & October) Sampling Frequency each year

■ Parameters for Semi-Annual (May & October) Sampling Frequency every other year (2008, 2010, etc.)

Monitor Well ID	Water level measurements	Temperature	Conductivity	pH	Remediation Parameters (Alkalinity, Nitrite, Phosphorus, TOC)	Remediation Parameters (DO, redox, dissolved Fe, dissolved Mn)	Nitrate	Ammonia	Sulfate	Lead	Chromium
ECMW-1	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-2	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-3	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-4	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-5	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-6	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-7	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-8	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-9	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-10	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-11	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-12	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-13	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-14	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-15	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-16	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-17	☒	☒	☒	☒	☒	■	☒	☒	☒	■	■
ECMW-18	☒	☒	☒	☒	☒	■	☒	■	■	■	■
ECMW-19	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-20	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-21	☒	☒	☒	☒	☒	■	■	■	■	■	■
ECMW-22	☒	☒	☒	☒	☒	■	■	■	■	■	■



11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209  
501-455-3233 Fax 501-455-6118

29 July 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731

RE: Groundwaters

SDG Number: 1007258

Enclosed are the results of analyses for samples received by the laboratory on 22-Jul-10 15:19. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✓
Containers Intact	✓
COC/Labels Agree	✓
Preservation Confirmed	✓
Received On Ice	✓
Temperature on Receipt	4.0°C

Sincerely,

A handwritten signature in cursive script that reads "Norma James".

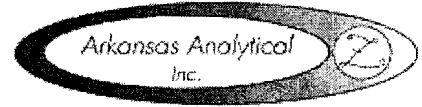
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Norma James  
President

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29 July 2010

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El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



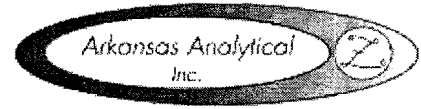
Date Received: 22-Jul-10 15:19

**ANALYTICAL RESULTS**

<b>Lab Number:</b>	<b>1007258-01</b>					
<b>Sample Name:</b>	<b>MW-6 (Resample)</b>					
<b>Date/Time Collected:</b>	<b>7/22/10 9:56</b>					
<b>Sample Matrix:</b>	<b>Water</b>					
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	<b>42.3</b>		7/22/10 16:55	A007278	300.0/9056A
Nitrate as N	mg/L	<b>1940</b>		7/23/10 9:14	A007278	300.0/9056A
Nitrite as N	mg/L	< 0.500		7/22/10 16:30	A007278	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	<b>0.065</b>	E20	7/27/10 16:30	A007303	200.7
Manganese	mg/L	<b>3.31</b>	E20	7/27/10 10:34	A007303	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		7/27/10 10:34	A007300	200.7
Lead	mg/L	< 0.015		7/27/10 10:34	A007300	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	<b>246</b>		7/28/10 9:34	A007346	4500-NH3D
TOC	mg/L	<b>1.38</b>		7/28/10 9:22	A007338	5310/9060A
Total Alkalinity	mg/L	< 5.0		7/29/10 9:25	A007360	2320 B
Total Phosphorus	mg/L	< 0.020	E20	7/23/10 14:05	A007297	4500-P B5.E

29 July 2010

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El Dorado Chemical Inc.  
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El Dorado, AR 71731  
Project: Groundwaters



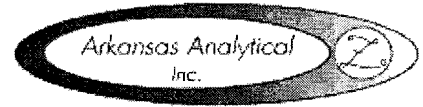
Date Received: 22-Jul-10 15:19

**ANALYTICAL RESULTS**

<b>Lab Number:</b>	<b>1007258-02</b>					
<b>Sample Name:</b>	<b>MW-7 (Resample)</b>					
<b>Date/Time Collected:</b>	<b>7/22/10 10:10</b>					
<b>Sample Matrix:</b>	<b>Water</b>					
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	<b>3490</b>		7/23/10 9:38	A007278	300.0/9056A
Nitrate as N	mg/L	<b>103</b>		7/22/10 17:43	A007278	300.0/9056A
Nitrite as N	mg/L	< 0.500		7/22/10 17:19	A007278	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	<b>0.058</b>		7/27/10 16:41	A007303	200.7
Manganese	mg/L	<b>0.087</b>		7/27/10 10:38	A007303	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.020		7/27/10 10:38	A007300	200.7
Lead	mg/L	< 0.015		7/27/10 10:38	A007300	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	<b>43.2</b>		7/28/10 9:34	A007346	4500-NH3D
TOC	mg/L	<b>15.7</b>		7/28/10 9:22	A007338	5310/9060A
Total Alkalinity	mg/L	<b>5.0</b>		7/29/10 9:25	A007360	2320 B
Total Phosphorus	mg/L	<b>0.071</b>		7/23/10 14:05	A007297	4500-P B5,E

29 July 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 22-Jul-10 15:19

**QUALITY CONTROL RESULTS**

**Anions -- Batch: A007278 (Water)**

Prepared: 22-Jul-10 10:25 By: MG -- Analyzed: 22-Jul-10 13:17 By: MEL

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.500 mg/L	97.0% / NA	92.6% / 92.9%		0.312%	
Nitrite as N	<0.500 mg/L	103% / NA	68.9% / 68.6%		0.480%	%D1
Sulfate as SO4	<0.500 mg/L	95.4% / NA	MBA / MBA		0.0348%	MBA

**Wet Chemistry -- Batch: A007297 (Water)**

Prepared: 23-Jul-10 09:50 By: KP -- Analyzed: 23-Jul-10 14:05 By: KP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Phosphorus	<0.020 mg/L	104% / NA	76.8% / 33.6%		78.3%	%D1, D

**Total Metals -- Batch: A007300 (Water)**

Prepared: 23-Jul-10 13:45 By: TC -- Analyzed: 27-Jul-10 14:28 By: TC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.020 mg/L	96.4% / NA	93.1% / 95.8%		2.89%	
Lead	<0.015 mg/L	97.8% / NA	92.3% / 94.8%		2.67%	

**Dissolved Metals -- Batch: A007303 (Water)**

Prepared: 23-Jul-10 14:19 By: TC -- Analyzed: 27-Jul-10 16:38 By: TC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Iron	<0.010 mg/L	102% / NA	59.1% / 59.5%		0.574%	%D1
Manganese	<0.010 mg/L	109% / NA	5.07% / 9.58%		0.673%	%D1

**Wet Chemistry -- Batch: A007338 (Water)**

Prepared: 27-Jul-10 13:52 By: SB -- Analyzed: 28-Jul-10 09:22 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TOC	<1.00 mg/L	94.0% / NA	97.9% / 103%		3.92%	

**Wet Chemistry -- Batch: A007346 (Water)**

Prepared: 28-Jul-10 09:34 By: SB -- Analyzed: 28-Jul-10 09:34 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.50 mg/L	104% / NA	70.5% / 70.9%		0.381%	

**Wet Chemistry -- Batch: A007360 (Water)**

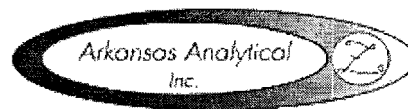
Prepared: 29-Jul-10 09:25 By: SB -- Analyzed: 29-Jul-10 09:25 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Alkalinity	<5.0 mg/L	102% / 102%	NA / NA		0.00%	



29 July 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 22-Jul-10 15:19

---

**QUALIFIER(S)**

\*%D1: Matrix Spike and/or Matrix Spike Duplicate Percent Recovery Does Not Meet Laboratory Acceptance Criteria  
\*D: RPD Value Does Not Meet Laboratory Acceptance Criteria  
\*E20: Estimated Result Due to Matrix Spike and/or Matrix Spike Duplicate Failure; This sample was used as "parent sample" in MS/MSD prep.  
\*MBA: Masked By Analyte

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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, 20th Edition.  
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

A handwritten signature in cursive script that reads "Norma James".

Reviewed by: \_\_\_\_\_

Norma James  
President

29 July 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwaters



Date Received: 22-Jul-10 15:19

CHAIN OF CUSTODY FORM(S)

CHAIN OF CUSTODY RECORD

11701 Interstate 30, Bldg. 1, Ste. 115  
Little Rock, AR 72209  
PHONE: 501-455-3233  
FAX: 501-455-6118



CLIENT INFORMATION		BILLING INFORMATION		Project Description		Preservation Codes:	
El Dorado Chemical Inc. 4500 Northwest Ave. El Dorado, AR 71731		El Dorado Chemical Inc. P.O. Box 231 El Dorado, AR 71731		Groundwaters		1. Cool, 4 Degrees Centigrade 2. Sulfuric Acid H2SO4, pH < 2 3. Nitric Acid HNO3, pH < 2 4. Disinfectant for Bacteriostats 5. Hydrochloric Acid(HCl) 6. Sodium Hydroxide NaOH, pH > 12	
Attn: Brent Parker		Telephone: 870-983-1484 Fax: 870-983-1489		Reporting Information		1. Cool, 4 Degrees Centigrade 2. Sulfuric Acid H2SO4, pH < 2 3. Nitric Acid HNO3, pH < 2 4. Disinfectant for Bacteriostats 5. Hydrochloric Acid(HCl) 6. Sodium Hydroxide NaOH, pH > 12	
Joe Thompson		Joe Thompson		Reporting Information		1. Cool, 4 Degrees Centigrade 2. Sulfuric Acid H2SO4, pH < 2 3. Nitric Acid HNO3, pH < 2 4. Disinfectant for Bacteriostats 5. Hydrochloric Acid(HCl) 6. Sodium Hydroxide NaOH, pH > 12	
Sampler(s) Signature		Sampler(s) Printed		SAMPLE		TEST PARAMETERS	
Field	Date(s)	Time(s)	Sampler(s) Printed	IDENTIFICATION/DESCRIPTION	NO <sub>3</sub> -NO <sub>2</sub> -SO <sub>4</sub> ALKALINITY & Fe, Mn	Artenoids & Phosphorus	TOC
Number	7/23/10	09:56	X	Vials: MW-5 (Resample)	X	X	X
	7/24/10	10:10	X	Vials: MW-7 (Resample)	X	X	X
1. Retrieved by: (Signature)		Date/Time	2. Received by: (Signature)	SAMPLE CONDITION UPON RECEIPT IN LAB		REMARKS / SAMPLE COMMENTS	
Brent Parker		7/23/10 10:20	Walter Faltete	1. CUSTODY SEALS <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2. CONTAINERS CORRECT <input type="checkbox"/> Yes <input type="checkbox"/> No 3. COCKTAILS AGREE <input type="checkbox"/> Yes <input type="checkbox"/> No 4. PRESERVATION CONTAINED <input type="checkbox"/> Yes <input type="checkbox"/> No 5. RECEIVED ONICE <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 6. TEMPERATURE ON RECEIPT <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		P.O. Number:  Arkansas Analytical Work Order Number: 1007258 -01 -02	
3. Retrieved by: (Signature)		Date/Time	4. Received by: (Signature)	FOR COMPLETION BY LAB ONLY			
Walter Faltete		7-22-10 3:19	Joe Thompson				



11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209  
501-455-3233 Fax 501-455-6118

10 November 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731

RE: Groundwater Sample(s)

SDG Number: 1011020

Enclosed are the results of analyses for samples received by the laboratory on 02-Nov-10 15:00. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✓
Containers Intact	✓
COC/Labels Agree	✓
Preservation Confirmed	✓
Received On Ice	✓
Temperature on Receipt	9.0°C

Sincerely,

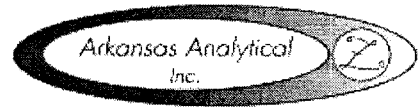
A handwritten signature in cursive script that reads "Norma James".

---

Norma James  
President

*This document is intended only for the use of the person(s) to whom it is expressly addressed. This document may contain information that is confidential and legally privileged. If you are not the intended recipient, you are notified that any disclosure, distribution, or copying of this document is strictly prohibited. If you have received this document in error, please destroy.*

10 November 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 02-Nov-10 15:00

**ANALYTICAL RESULTS**

**Lab Number:** 1011020-01  
**Sample Name:** ECMW#1  
**Date/Time Collected:** 11/2/10 9:30  
**Sample Matrix:** Water

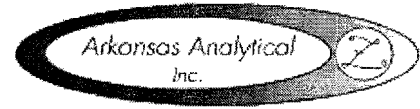
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	5.55		11/3/10 9:48	A011034	300.0/9056A
Nitrate as N	mg/L	1.31		11/3/10 9:48	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 9:48	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.131	E20	11/8/10 11:36	A011075	200.7
Manganese	mg/L	< 0.010		11/8/10 11:36	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 17:42	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 17:42	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	1.16		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	9.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 13:57	A011083	4500-P B5,E

**ANALYTICAL RESULTS**

**Lab Number:** 1011020-02  
**Sample Name:** ECMW#2  
**Date/Time Collected:** 11/2/10 9:45  
**Sample Matrix:** Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	22.6		11/3/10 17:51	A011034	300.0/9056A
Nitrate as N	mg/L	< 0.500		11/3/10 10:13	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 10:13	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.178		11/8/10 11:48	A011075	200.7
Manganese	mg/L	0.010		11/8/10 11:48	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 17:54	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 17:54	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	2.83		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	16.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	0.185		11/8/10 13:57	A011083	4500-P B5,E

10 November 2010



Brent Parker
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)

Date Received: 02-Nov-10 15:00

ANALYTICAL RESULTS

Lab Number: 1011020-03
Sample Name: ECMW#3
Date/Time Collected: 11/2/10 10:00
Sample Matrix: Water

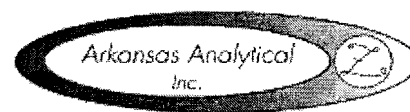
Table with 7 columns: Anions, Units, Result, Qualifier(s), Date/Time Analyzed, Batch, Method. Rows include Sulfate as SO4, Nitrate as N, Nitrite as N, Dissolved Metals (Iron, Manganese), Total Metals (Chromium, Lead), Wet Chemistry (Ammonia as N, TOC, Total Alkalinity, Total Phosphorus).

ANALYTICAL RESULTS

Lab Number: 1011020-04
Sample Name: ECMW#4
Date/Time Collected: 11/2/10 10:15
Sample Matrix: Water

Table with 7 columns: Anions, Units, Result, Qualifier(s), Date/Time Analyzed, Batch, Method. Rows include Sulfate as SO4, Nitrate as N, Nitrite as N, Dissolved Metals (Iron, Manganese), Total Metals (Chromium, Lead), Wet Chemistry (Ammonia as N, TOC, Total Alkalinity, Total Phosphorus).

10 November 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 02-Nov-10 15:00

### ANALYTICAL RESULTS

Lab Number: 1011020-05  
Sample Name: ECMW#9  
Date/Time Collected: 11/2/10 10:30  
Sample Matrix: Water

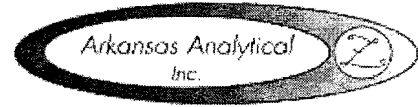
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	684		11/3/10 15:26	A011034	300.0/9056A
Nitrate as N	mg/L	20.0		11/3/10 15:26	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 11:25	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.046		11/8/10 12:00	A011075	200.7
Manganese	mg/L	0.321		11/8/10 12:00	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 18:06	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 18:06	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	20.5		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	25.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	0.144		11/8/10 13:57	A011083	4500-P B5,E

### ANALYTICAL RESULTS

Lab Number: 1011020-06  
Sample Name: ECMW#8  
Date/Time Collected: 11/2/10 10:45  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	860		11/3/10 15:50	A011034	300.0/9056A
Nitrate as N	mg/L	163		11/3/10 15:50	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 11:49	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.035		11/8/10 12:15	A011075	200.7
Manganese	mg/L	0.563		11/8/10 12:15	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 18:21	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 18:21	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	63.4		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	9.72		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	115		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 13:57	A011083	4500-P B5,E

10 November 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 02-Nov-10 15:00

**ANALYTICAL RESULTS**

Lab Number: 1011020-07  
Sample Name: ECMW#7  
Date/Time Collected: 11/2/10 11:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	156		11/3/10 16:15	A011034	300.0/9056A
Nitrate as N	mg/L	155		11/3/10 16:15	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 12:13	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.072		11/8/10 12:19	A011075	200.7
Manganese	mg/L	0.091		11/8/10 12:19	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 18:25	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 18:25	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	107		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	17.3		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	< 5.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	0.091		11/8/10 13:57	A011083	4500-P B5.E

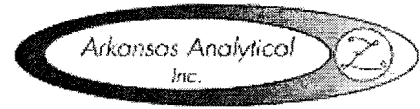
**ANALYTICAL RESULTS**

Lab Number: 1011020-08  
Sample Name: ECMW#6  
Date/Time Collected: 11/2/10 11:15  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	29.6		11/3/10 19:28	A011034	300.0/9056A
Nitrate as N	mg/L	1460		11/3/10 16:39	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 12:37	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.026		11/8/10 12:23	A011075	200.7
Manganese	mg/L	2.14		11/8/10 12:23	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	0.011		11/8/10 18:29	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 18:29	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	311		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	1.69		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	< 5.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 13:57	A011083	4500-P B5.E

10 November 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)



Date Received: 02-Nov-10 15:00

**ANALYTICAL RESULTS**

Lab Number: 1011020-09  
Sample Name: ECMW#5  
Date/Time Collected: 11/2/10 11:30  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	94.7		11/3/10 17:03	A011034	300.0/9056A
Nitrate as N	mg/L	11.0		11/3/10 17:03	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 13:02	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		11/8/10 12:27	A011075	200.7
Manganese	mg/L	0.717		11/8/10 12:27	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 18:33	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 18:33	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	1.11		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	6.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 13:57	A011083	4500-P B5,E

**ANALYTICAL RESULTS**

Lab Number: 1011020-10  
Sample Name: ECMW#10  
Date/Time Collected: 11/2/10 11:45  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	164		11/3/10 17:27	A011034	300.0/9056A
Nitrate as N	mg/L	41.9		11/3/10 17:27	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 13:26	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.027		11/8/10 12:31	A011075	200.7
Manganese	mg/L	0.166		11/8/10 12:31	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 18:37	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 18:37	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	7.34		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	< 5.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 13:57	A011083	4500-P B5,E



10 November 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 02-Nov-10 15:00

**ANALYTICAL RESULTS**

Lab Number: 1011020-11  
Sample Name: ECMW#11  
Date/Time Collected: 11/2/10 12:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	325		11/3/10 20:16	A011034	300.0/9056A
Nitrate as N	mg/L	4.52		11/3/10 14:38	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 14:38	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.012		11/8/10 12:34	A011075	200.7
Manganese	mg/L	0.032		11/8/10 12:34	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 18:41	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 18:41	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	3.17		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	15.3		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	< 5.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 13:57	A011083	4500-P B5,E

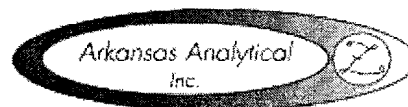
**ANALYTICAL RESULTS**

Lab Number: 1011020-12  
Sample Name: Dup  
Date/Time Collected: 11/2/10 0:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	1000		11/3/10 20:40	A011034	300.0/9056A
Nitrate as N	mg/L	< 0.500		11/3/10 15:02	A011034	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/3/10 15:02	A011034	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	5.77		11/8/10 12:38	A011075	200.7
Manganese	mg/L	2.11		11/8/10 12:38	A011075	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/8/10 18:45	A011063	200.7
Lead	mg/L	< 0.015		11/8/10 18:45	A011063	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/3/10 15:55	A011041	4500-NH3D
TOC	mg/L	25.4		11/8/10 8:14	A011072	5310/9060A
Total Alkalinity	mg/L	< 5.0		11/4/10 14:30	A011081	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 13:57	A011083	4500-P B5,E

10 November 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)



Date Received: 02-Nov-10 15:00

**QUALITY CONTROL RESULTS**

**Anions -- Batch: A011034 (Water)**  
**Prepared: 04-Nov-10 08:40 By: MG -- Analyzed: 04-Nov-10 12:21 By: MEL**

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.500 mg/L	90.1% / NA	92.5% / 93.3%		0.732%	
Nitrite as N	<0.500 mg/L	101% / NA	97.9% / 98.8%		0.914%	
Sulfate as SO4	<0.500 mg/L	92.3% / NA	97.2% / 97.8%		0.454%	

**Wet Chemistry -- Batch: A011041 (Water)**  
**Prepared: 03-Nov-10 13:00 By: SB -- Analyzed: 03-Nov-10 15:55 By: SB**

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.50 mg/L	99.8% / NA	100% / 103%		2.67%	

**Total Metals -- Batch: A011063 (Water)**  
**Prepared: 04-Nov-10 10:25 By: RH -- Analyzed: 08-Nov-10 17:50 By: TC**

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.010 mg/L	101% / NA	99.1% / 98.1%		1.01%	
Lead	<0.015 mg/L	103% / NA	99.8% / 98.9%		0.873%	

**Wet Chemistry -- Batch: A011072 (Water)**  
**Prepared: 08-Nov-10 08:14 By: SB -- Analyzed: 08-Nov-10 08:14 By: SB**

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TOC	<1.00 mg/L	103% / NA	97.5% / 98.7%		1.09%	

**Dissolved Metals -- Batch: A011075 (Water)**  
**Prepared: 08-Nov-10 10:55 By: TC -- Analyzed: 08-Nov-10 11:44 By: TC**

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Iron	<0.010 mg/L	96.5% / NA	74.8% / 68.2%		6.81%	%D1
Manganese	<0.010 mg/L	97.0% / NA	94.3% / 89.6%		4.94%	

**Wet Chemistry -- Batch: A011081 (Water)**  
**Prepared: 04-Nov-10 14:30 By: AP -- Analyzed: 04-Nov-10 14:30 By: AP**

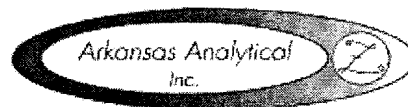
Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Alkalinity	<5.0 mg/L	98.0% / 100%	NA / NA		2.02%	

**Wet Chemistry -- Batch: A011083 (Water)**  
**Prepared: 08-Nov-10 08:15 By: KP -- Analyzed: 08-Nov-10 13:57 By: KP**

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Phosphorus	<0.020 mg/L	98.0% / NA	97.2% / 95.2%		1.14%	

10 November 2010

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



Date Received: 02-Nov-10 15:00

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**QUALIFIER(S)**

- \*%D1: Matrix Spike and/or Matrix Spike Duplicate Percent Recovery Does Not Meet Laboratory Acceptance Criteria
  - \*E20: Estimated Result Due to Matrix Spike and/or Matrix Spike Duplicate Failure; This sample was used as "parent sample" in MS/MSD prep.
- 

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, 20th Edition.  
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

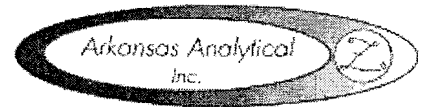
A handwritten signature in cursive script that reads "Norma James".

Reviewed by: \_\_\_\_\_

Norma James  
President

10 November 2010

Brent Parker  
 El Dorado Chemical Inc.  
 4500 North West Ave.  
 El Dorado, AR 71731  
 Project: Groundwater Sample(s)



Date Received: 02-Nov-10 15:00

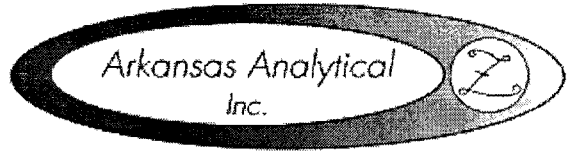
CHAIN OF CUSTODY FORM(S)

CHAIN OF CUSTODY RECORD

11701 Interstate 30, Bldg. 1, Ste. 115  
 Little Rock, AR 72209  
 PHONE: 501-455-3233  
 FAX: 501-455-6118



CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:	
El Dorado Chemical Inc. 4500 Northwest Ave. El Dorado, AR 71731		El Dorado Chemical Inc. P.O. Box 231 El Dorado, AR 71731		Groundwaters		24 Hour 48 Hour 72 Hour		1. Cool, 4 Refrigerate 2. Sulfuric Acid (H2SO4), pH < 2 3. Nitric Acid (HNO3), pH < 2	
Attn: Brent Parker		Telephone: 810-862-1484 Fax: 810-862-1488		Reporting Information		No. Days (0-30)		4. Thionats for Dithionates 5. Hydrochloric Acid (HCl) 6. Sodium Hydroxide (NaOH), pH > 12	
E-mail: bpk@elc.com		E-mail: bpk@elc.com		Telephone: 810-862-1484 Fax: 810-862-1488		Preservative Code		TEST PARAMETERS	
E-mail: bpk@elc.com		E-mail: bpk@elc.com		E-mail: bpk@elc.com		Bottle Type		1. NO <sub>3</sub> -N, SO <sub>4</sub> <sup>2-</sup> Alkalinity, d Fe, d Mn P Ammonia, T, Phosphorus	
E-mail: bpk@elc.com		E-mail: bpk@elc.com		E-mail: bpk@elc.com		Bottle Type		2. TOC 3. Arsenic 4. Barium 5. Cadmium 6. Chromium 7. Copper 8. Lead 9. Manganese 10. Mercury 11. Nickel 12. Selenium 13. Silver 14. Vanadium 15. Zinc	
Sampler(s) Signature		Sampler(s) Printed		SAMPLE IDENTIFICATION/ DESCRIPTION		Arkansas Analytical Work Order Number		1011 0210	
R. Durham		R. Durham		ECMW #1		1011 0210		-01	
R. Durham		R. Durham		ECMW #2		1011 0210		-02	
R. Durham		R. Durham		ECMW #3		1011 0210		-03	
R. Durham		R. Durham		ECMW #4		1011 0210		-04	
R. Durham		R. Durham		ECMW #5		1011 0210		-05	
R. Durham		R. Durham		ECMW #6		1011 0210		-06	
R. Durham		R. Durham		ECMW #7		1011 0210		-07	
R. Durham		R. Durham		ECMW #8		1011 0210		-08	
R. Durham		R. Durham		ECMW #9		1011 0210		-09	
R. Durham		R. Durham		ECMW #10		1011 0210		-10	
R. Durham		R. Durham		ECMW #11		1011 0210		-11	
R. Durham		R. Durham		DUP		1011 0210		-12	
3. Requisitioned by: (Signature)		3. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB		REMARKS / SAMPLE COMMENTS			
R. Durham		Brent Parker		1. CUSTODY SEALS 2. CONTAINERS CORRECT 3. DO LABELS AGREE 4. PRESERVATION CONFIRMED 5. RECEIVED ON ICE 6. TEMPERATURE ON RECEIPT		P.O. Number.			
11-2-10		12-25		FOR COMPLETION BY LAB ONLY					
3. Requisitioned by: (Signature)		3. Received by: (Signature)		Date/Time					
R. Durham		Brent Parker		11-2-10					
Date/Time		Date/Time							
11-2-10		1500							



11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209  
501-455-3233 Fax 501-455-6118

10 November 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731

RE: Groundwater Sample(s)  
SDG Number: 1011032

Enclosed are the results of analyses for samples received by the laboratory on 03-Nov-10 15:24. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✓
Containers Intact	✓
COC/Labels Agree	✓
Preservation Confirmed	✓
Received On Ice	✓
Temperature on Receipt	14.0°C

Sincerely,

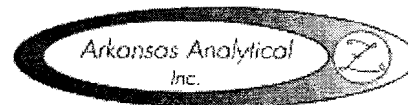
A handwritten signature in cursive script that reads "Norma James".

---

Norma James  
President

*This document is intended only for the use of the person(s) to whom it is expressly addressed. This document may contain information that is confidential and legally privileged. If you are not the intended recipient, you are notified that any disclosure, distribution, or copying of this document is strictly prohibited. If you have received this document in error, please destroy.*

10 November 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 03-Nov-10 15:24

**ANALYTICAL RESULTS**

Lab Number: 1011032-01  
Sample Name: ECMW-21  
Date/Time Collected: 11/3/10 8:45  
Sample Matrix: Water

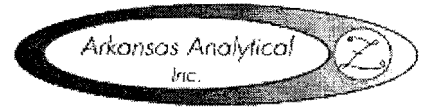
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	6.07		11/4/10 13:35	A011048	300.0/9056A
Nitrate as N	mg/L	1.80		11/4/10 13:35	A011048	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/4/10 13:35	A011048	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	< 0.010		11/8/10 12:50	A011076	200.7
Manganese	mg/L	0.025		11/8/10 12:50	A011076	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	0.010		11/4/10 21:04	A011057	200.7
Lead	mg/L	< 0.015		11/4/10 21:04	A011057	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/9/10 11:47	A011096	4500-NH3D
TOC	mg/L	< 1.00		11/10/10 8:38	A011090	5310/9060A
Total Alkalinity	mg/L	< 5.0		11/5/10 13:45	A011082	2320 B
Total Phosphorus	mg/L	0.025		11/8/10 14:13	A011084	4500-P B5,E

**ANALYTICAL RESULTS**

Lab Number: 1011032-02  
Sample Name: ECMW-12  
Date/Time Collected: 11/3/10 9:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	21.5		11/4/10 18:24	A011048	300.0/9056A
Nitrate as N	mg/L	< 0.500		11/4/10 13:59	A011048	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/4/10 13:59	A011048	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	39.4		11/8/10 15:14	A011076	200.7
Manganese	mg/L	0.210		11/8/10 15:14	A011076	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/4/10 21:34	A011057	200.7
Lead	mg/L	< 0.015		11/4/10 21:34	A011057	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	1.44		11/9/10 11:47	A011096	4500-NH3D
TOC	mg/L	21.0		11/10/10 8:38	A011090	5310/9060A
Total Alkalinity	mg/L	160		11/5/10 13:45	A011082	2320 B
Total Phosphorus	mg/L	0.057		11/8/10 14:13	A011084	4500-P B5,E

10 November 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 03-Nov-10 15:24

**ANALYTICAL RESULTS**

Lab Number: 1011032-03  
Sample Name: ECMW-22  
Date/Time Collected: 11/3/10 9:15  
Sample Matrix: Water

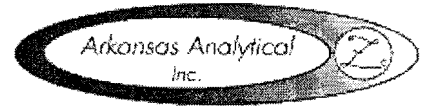
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	6.68		11/4/10 14:23	A011048	300.0/9056A
Nitrate as N	mg/L	1.31		11/4/10 14:23	A011048	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/4/10 14:23	A011048	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.042		11/8/10 13:23	A011076	200.7
Manganese	mg/L	0.152		11/8/10 13:23	A011076	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/4/10 21:44	A011057	200.7
Lead	mg/L	< 0.015		11/4/10 21:44	A011057	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/9/10 11:47	A011096	4500-NH3D
TOC	mg/L	< 1.00		11/10/10 8:38	A011090	5310/9060A
Total Alkalinity	mg/L	42.0		11/5/10 13:45	A011082	2320 B
Total Phosphorus	mg/L	0.063		11/8/10 14:13	A011084	4500-P B5,E

**ANALYTICAL RESULTS**

Lab Number: 1011032-04  
Sample Name: ECMW-17  
Date/Time Collected: 11/3/10 10:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	13.1		11/4/10 18:48	A011048	300.0/9056A
Nitrate as N	mg/L	27.2		11/4/10 18:48	A011048	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/4/10 14:47	A011048	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.025		11/8/10 13:27	A011076	200.7
Manganese	mg/L	0.121		11/8/10 13:27	A011076	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/4/10 21:54	A011057	200.7
Lead	mg/L	< 0.015		11/4/10 21:54	A011057	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	1.94		11/9/10 11:47	A011096	4500-NH3D
TOC	mg/L	1.48		11/10/10 8:38	A011090	5310/9060A
Total Alkalinity	mg/L	< 5.0		11/5/10 13:45	A011082	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 14:13	A011084	4500-P B5,E

10 November 2010



Brent Parker
El Dorado Chemical Inc.
4500 North West Ave.
El Dorado, AR 71731
Project: Groundwater Sample(s)

Date Received: 03-Nov-10 15:24

ANALYTICAL RESULTS

Lab Number: 1011032-05
Sample Name: ECMW-16
Date/Time Collected: 11/3/10 10:15
Sample Matrix: Water

Table with 7 columns: Anions, Units, Result, Qualifier(s), Date/Time Analyzed, Batch, Method. Rows include Sulfate as SO4, Nitrate as N, Nitrite as N, Dissolved Metals (Iron, Manganese), Total Metals (Chromium, Lead), and Wet Chemistry (Ammonia as N, TOC, Total Alkalinity, Total Phosphorus).

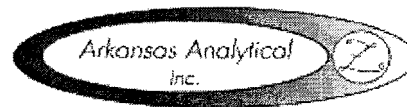
ANALYTICAL RESULTS

Lab Number: 1011032-06
Sample Name: ECMW-15
Date/Time Collected: 11/3/10 10:30
Sample Matrix: Water

Table with 7 columns: Anions, Units, Result, Qualifier(s), Date/Time Analyzed, Batch, Method. Rows include Sulfate as SO4, Nitrate as N, Nitrite as N, Dissolved Metals (Iron, Manganese), Total Metals (Chromium, Lead), and Wet Chemistry (Ammonia as N, TOC, Total Alkalinity, Total Phosphorus).



10 November 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 03-Nov-10 15:24

### ANALYTICAL RESULTS

Lab Number: 1011032-07  
Sample Name: ECMW-13  
Date/Time Collected: 11/3/10 10:45  
Sample Matrix: Water

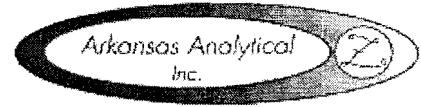
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	589		11/5/10 10:05	A011048	300.0/9056A
Nitrate as N	mg/L	< 0.500		11/4/10 15:59	A011048	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/4/10 15:59	A011048	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.045		11/8/10 13:39	A011076	200.7
Manganese	mg/L	3.54		11/8/10 13:39	A011076	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/4/10 22:19	A011057	200.7
Lead	mg/L	< 0.015		11/4/10 22:19	A011057	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/9/10 11:47	A011096	4500-NH3D
TOC	mg/L	6.68		11/10/10 8:38	A011090	5310/9060A
Total Alkalinity	mg/L	49.0		11/5/10 13:45	A011082	2320 B
Total Phosphorus	mg/L	< 0.020		11/8/10 14:13	A011084	4500-P B5,E

### ANALYTICAL RESULTS

Lab Number: 1011032-08  
Sample Name: ECMW-18  
Date/Time Collected: 11/3/10 11:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	3.65		11/4/10 16:23	A011048	300.0/9056A
Nitrate as N	mg/L	< 1.00	EDL	11/4/10 16:23	A011048	300.0/9056A
Nitrite as N	mg/L	< 1.00	EDL	11/4/10 16:23	A011048	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.915		11/8/10 13:43	A011076	200.7
Manganese	mg/L	0.017		11/8/10 13:43	A011076	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/4/10 22:29	A011057	200.7
Lead	mg/L	< 0.015		11/4/10 22:29	A011057	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/9/10 11:47	A011096	4500-NH3D
TOC	mg/L	1.51		11/10/10 8:38	A011090	5310/9060A
Total Alkalinity	mg/L	21.0		11/5/10 13:45	A011082	2320 B
Total Phosphorus	mg/L	0.613		11/8/10 14:13	A011084	4500-P B5,E

10 November 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 03-Nov-10 15:24

**ANALYTICAL RESULTS**

Lab Number: 1011032-09  
Sample Name: ECMW-19  
Date/Time Collected: 11/3/10 11:15  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	2.97		11/4/10 16:48	A011048	300.0/9056A
Nitrate as N	mg/L	< 0.500		11/4/10 16:48	A011048	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/4/10 16:48	A011048	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.037		11/8/10 13:47	A011076	200.7
Manganese	mg/L	0.069		11/8/10 13:47	A011076	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/4/10 22:33	A011057	200.7
Lead	mg/L	< 0.015		11/4/10 22:33	A011057	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		11/9/10 11:47	A011096	4500-NH3D
TOC	mg/L	< 1.00		11/10/10 8:38	A011090	5310/9060A
Total Alkalinity	mg/L	28.0		11/5/10 13:45	A011082	2320 B
Total Phosphorus	mg/L	0.154		11/8/10 14:13	A011084	4500-P B5,E

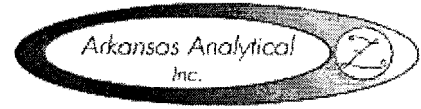
**ANALYTICAL RESULTS**

Lab Number: 1011032-10  
Sample Name: Dup  
Date/Time Collected: 11/3/10 0:00  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	20.5		11/5/10 10:29	A011048	300.0/9056A
Nitrate as N	mg/L	< 0.500		11/4/10 17:12	A011048	300.0/9056A
Nitrite as N	mg/L	< 0.500		11/4/10 17:12	A011048	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	41.4		11/8/10 15:18	A011076	200.7
Manganese	mg/L	0.214		11/8/10 15:18	A011076	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		11/4/10 22:43	A011057	200.7
Lead	mg/L	< 0.015		11/4/10 22:43	A011057	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	1.34		11/9/10 11:47	A011096	4500-NH3D
TOC	mg/L	21.7		11/10/10 8:38	A011090	5310/9060A
Total Alkalinity	mg/L	168		11/5/10 13:45	A011082	2320 B
Total Phosphorus	mg/L	0.221		11/8/10 14:13	A011084	4500-P B5,E

10 November 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)



Date Received: 03-Nov-10 15:24

**QUALITY CONTROL RESULTS**

**Anions -- Batch: A011048 (Water)**

Prepared: 04-Nov-10 12:16 By: MG -- Analyzed: 05-Nov-10 13:59 By: MEL

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.500 mg/L	90.2% / NA	96.0% / 95.8%		0.142%	
Nitrite as N	<0.500 mg/L	90.5% / NA	90.4% / 90.6%		0.165%	
Sulfate as SO4	<0.500 mg/L	90.6% / NA	97.7% / 97.0%		0.390%	

**Total Metals -- Batch: A011057 (Water)**

Prepared: 04-Nov-10 10:45 By: RH -- Analyzed: 04-Nov-10 21:12 By: TC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.010 mg/L	98.6% / NA	101% / 93.3%		7.63%	
Lead	<0.015 mg/L	100% / NA	102% / 94.9%		6.90%	

**Dissolved Metals -- Batch: A011076 (Water)**

Prepared: 08-Nov-10 10:55 By: TC -- Analyzed: 08-Nov-10 13:05 By: TC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Iron	<0.010 mg/L	94.8% / NA	99.7% / NA		NA	
Manganese	<0.010 mg/L	94.8% / NA	98.3% / NA		NA	

**Wet Chemistry -- Batch: A011082 (Water)**

Prepared: 05-Nov-10 13:45 By: AP -- Analyzed: 05-Nov-10 13:45 By: AP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Alkalinity	<5.0 mg/L	99.0% / 100%	NA / NA		1.01%	

**Wet Chemistry -- Batch: A011084 (Water)**

Prepared: 08-Nov-10 08:15 By: KP -- Analyzed: 08-Nov-10 14:13 By: KP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Phosphorus	<0.020 mg/L	99.2% / NA	94.8% / 110%		9.36%	

**Wet Chemistry -- Batch: A011090 (Water)**

Prepared: 09-Nov-10 08:51 By: SB -- Analyzed: 10-Nov-10 08:38 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TOC	<1.00 mg/L	99.8% / NA	99.0% / 99.4%		0.283%	

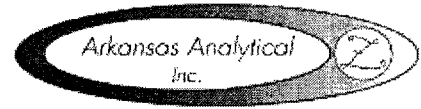
**Wet Chemistry -- Batch: A011096 (Water)**

Prepared: 09-Nov-10 11:47 By: SB -- Analyzed: 09-Nov-10 11:47 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.50 mg/L	98.2% / NA	99.0% / 105%		5.95%	

10 November 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)



Date Received: 03-Nov-10 15:24

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**QUALIFIER(S)**

\*EDL: Elevated Detection Limit Due to Necessary Sample Dilution

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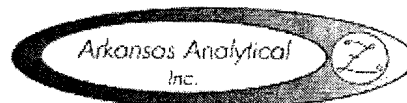
All Analysis performed according to EPA approved methodology when available:  
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods, 20th Edition.  
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

A handwritten signature in cursive script that reads "Norma James".

Reviewed by: \_\_\_\_\_  
Norma James  
President

10 November 2010

Brent Parker  
 El Dorado Chemical Inc.  
 4500 North West Ave.  
 El Dorado, AR 71731  
 Project: Groundwater Sample(s)



Date Received: 03-Nov-10 15:24

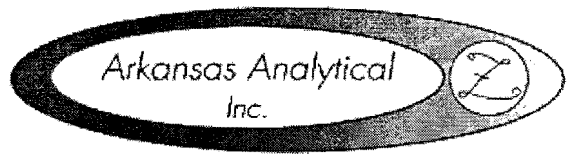
CHAIN OF CUSTODY FORM(S)

CHAIN OF CUSTODY RECORD

11701 Interstate 30, Bldg. 1, Ste. 115  
 Little Rock, AR 72209  
 PHONE: 501-455-3233  
 FAX: 501-455-6118



CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes:		
El Dorado Chemical Inc. 4500 Northwest Ave. El Dorado, AR 71731		El Dorado Chemical Inc. P.O. Box 231 El Dorado, AR 71731		Groundwaters		24 Hour 48 Hour 72 Hour		1. Cool, 4 Degree C or greater 2. Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ), pH < 2 3. Nitric Acid (HNO <sub>3</sub> ), pH < 2		
Attn: Brent Parker		Telephone: 870-857-1484 Fax: 870-857-1489		Reporting Information		Residual (g Dry) Preservative Code		4. Thionylate for Boron/bromide 5. Hydrochloric Acid (HCl) 6. Sodium Hydroxide (NaOH), pH > 12		
R. Parker		Email: rparker@arkanalytical.com		R. Parker EMS Inc.		Bottle Type		Bottle Type Code 0 - Glass, P - Plastic V - System, A - Aqueous		
Sampler(s) Signature		Sampler(s) Printed		SAMPLE		NO. NO. SO. d Fe. d Mn		TEST PARAMETERS		
Field Number	Sample Collection Date	Time	Site	Sample ID	Identification Description	Alkalinity	Ammonia, T	Phosphorus	TOC	Arkasas Analytical Work Order Number
1	11-3-10	0845	L	3	ECMW-21					1011032
2		0900	L	3	ECMW-12					-01
3		0915	L	3	ECMW-22					-02
4		1000	L	3	ECMW-17					-03
5		1015	L	3	ECMW-16					-04
6		1030	L	3	ECMW-15					-05
7		1045	L	3	ECMW-13					-06
8		1100	L	3	ECMW-18					-07
9		1115	L	3	ECMW-19					-08
10			L	3	DUP					-09
										-10
1. Requested by: (Signature) R. Parker		Date/Time 11-3-10 1205		2. Received by: (Signature) Brent Parker		SAMPLE CONDITION UPON RECEIPT IN LAB		REMARKS / SAMPLE COMMENTS		P.O. Number.
3. Requested by: (Signature) Brent Parker		Date/Time 11/3/10 1524		4. Requested by: (Signature) Brent Parker		1. CUSTODY SEALS Yes No 2. CONTAINERS CORRECT Yes No 3. COC LABELS AGREE Yes No 4. PRESERVATION CONFIRMED Yes No 5. RECEIVED ON ICE Yes No 6. TEMPERATURE ON RECEIPT 4°C				



11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209  
501-455-3233 Fax 501-455-6118

28 December 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731

RE: Groundwater Sample(s)

SDG Number: 1012221

Enclosed are the results of analyses for samples received by the laboratory on 21-Dec-10 14:15. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✓
Containers Intact	✓
COC/Labels Agree	✓
Preservation Confirmed	✓
Received On Ice	✓
Temperature on Receipt	16.0°C

Sincerely,

A handwritten signature in cursive script that reads "Norma James".

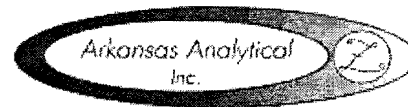
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Norma James  
President

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28 December 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)



Date Received: 21-Dec-10 14:15

**ANALYTICAL RESULTS**

Lab Number: 1012221-01  
Sample Name: MW-14  
Date/Time Collected: 12/21/10 9:45  
Sample Matrix: Water

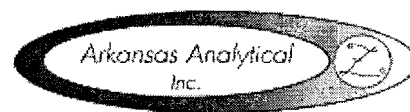
<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	152		12/22/10 14:54	A012292	300.0/9056A
Nitrate as N	mg/L	12.7		12/22/10 12:54	A012292	300.0/9056A
Nitrite as N	mg/L	< 0.500		12/22/10 12:05	A012292	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	0.025		12/22/10 1:22	A012286	200.7
Manganese	mg/L	0.070		12/22/10 1:22	A012286	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	< 0.010		12/22/10 1:22	A012273	200.7
Lead	mg/L	< 0.015		12/22/10 1:22	A012273	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		12/22/10 10:36	A012291	4500-NH3D
TOC	mg/L	12.6		12/22/10 14:13	A012295	5310/9060A
Total Alkalinity	mg/L	24.0		12/27/10 15:12	A012316	2320 B
Total Phosphorus	mg/L	< 0.020		12/28/10 13:47	A012330	4500-P B5,E

**ANALYTICAL RESULTS**

Lab Number: 1012221-02  
Sample Name: MW-20  
Date/Time Collected: 12/21/10 10:50  
Sample Matrix: Water

<u>Anions</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Sulfate as SO4	mg/L	8.95		12/22/10 12:29	A012292	300.0/9056A
Nitrate as N	mg/L	< 0.500		12/22/10 12:29	A012292	300.0/9056A
Nitrite as N	mg/L	< 0.500		12/22/10 12:29	A012292	300.0/9056A
<u>Dissolved Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Iron	mg/L	5.88		12/22/10 1:32	A012286	200.7
Manganese	mg/L	0.254		12/22/10 1:32	A012286	200.7
<u>Total Metals</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Chromium	mg/L	0.010		12/22/10 1:32	A012273	200.7
Lead	mg/L	< 0.015		12/22/10 1:32	A012273	200.7
<u>Wet Chemistry</u>	<u>Units</u>	<u>Result</u>	<u>Qualifier(s)</u>	<u>Date/Time Analyzed</u>	<u>Batch</u>	<u>Method</u>
Ammonia as N	mg/L	< 0.50		12/22/10 10:36	A012291	4500-NH3D
TOC	mg/L	< 1.00		12/22/10 14:13	A012295	5310/9060A
Total Alkalinity	mg/L	26.0		12/27/10 15:12	A012316	2320 B
Total Phosphorus	mg/L	0.238		12/28/10 13:47	A012330	4500-P B5,E

28 December 2010



Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)

Date Received: 21-Dec-10 14:15

### QUALITY CONTROL RESULTS

#### Total Metals -- Batch: A012273 (Water)

Prepared: 21-Dec-10 09:45 By: TC -- Analyzed: 22-Dec-10 00:53 By: TC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Chromium	<0.010 mg/L	101% / NA	91.0% / 92.8%		1.03%	
Lead	<0.015 mg/L	98.9% / NA	92.0% / 91.6%		0.425%	

#### Dissolved Metals -- Batch: A012286 (Water)

Prepared: 21-Dec-10 15:15 By: TC -- Analyzed: 22-Dec-10 09:31 By: TC

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Iron	<0.010 mg/L	111% / NA	103% / 105%		1.57%	
Manganese	<0.010 mg/L	106% / NA	98.5% / 100%		1.68%	

#### Wet Chemistry -- Batch: A012291 (Water)

Prepared: 22-Dec-10 10:36 By: SB -- Analyzed: 22-Dec-10 10:36 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.50 mg/L	101% / NA	110% / 104%		5.39%	

#### Anions -- Batch: A012292 (Water)

Prepared: 22-Dec-10 12:00 By: MG -- Analyzed: 22-Dec-10 14:30 By: MELIS

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Nitrate as N	<0.500 mg/L	91.7% / NA	90.8% / 91.3%		0.547%	
Nitrite as N	<0.500 mg/L	100% / NA	98.9% / 100%		1.05%	
Sulfate as SO4	<0.500 mg/L	104% / NA	102% / 100%		1.80%	

#### Wet Chemistry -- Batch: A012295 (Water)

Prepared: 22-Dec-10 14:13 By: SB -- Analyzed: 22-Dec-10 14:13 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TOC	<1.00 mg/L	99.2% / NA	99.7% / 99.5%		0.0886%	

#### Wet Chemistry -- Batch: A012316 (Water)

Prepared: 27-Dec-10 15:12 By: SB -- Analyzed: 27-Dec-10 15:12 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Alkalinity	<5.0 mg/L	100% / 102%	NA / NA		1.98%	

#### Wet Chemistry -- Batch: A012330 (Water)

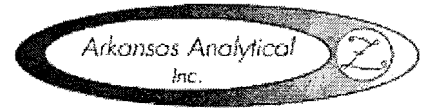
Prepared: 28-Dec-10 08:15 By: KP -- Analyzed: 28-Dec-10 13:47 By: KP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Total Phosphorus	<0.020 mg/L	101% / NA	98.4% / 99.2%		0.763%	



28 December 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)



Date Received: 21-Dec-10 14:15

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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, 20th Edition.  
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

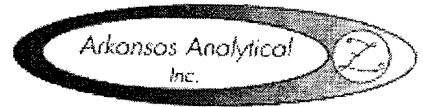
A handwritten signature in cursive script that reads "Norma James".

Reviewed by: \_\_\_\_\_

Norma James  
President

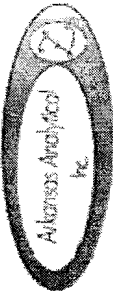
28 December 2010

Brent Parker  
El Dorado Chemical Inc.  
4500 North West Ave.  
El Dorado, AR 71731  
Project: Groundwater Sample(s)



# CHAIN OF CUSTODY RECORD

11701 Interstate 30, Bldg. 1, Ste. 115  
Little Rock, AR 72209  
PHONE: 501-455-3233  
FAX: 501-455-6118



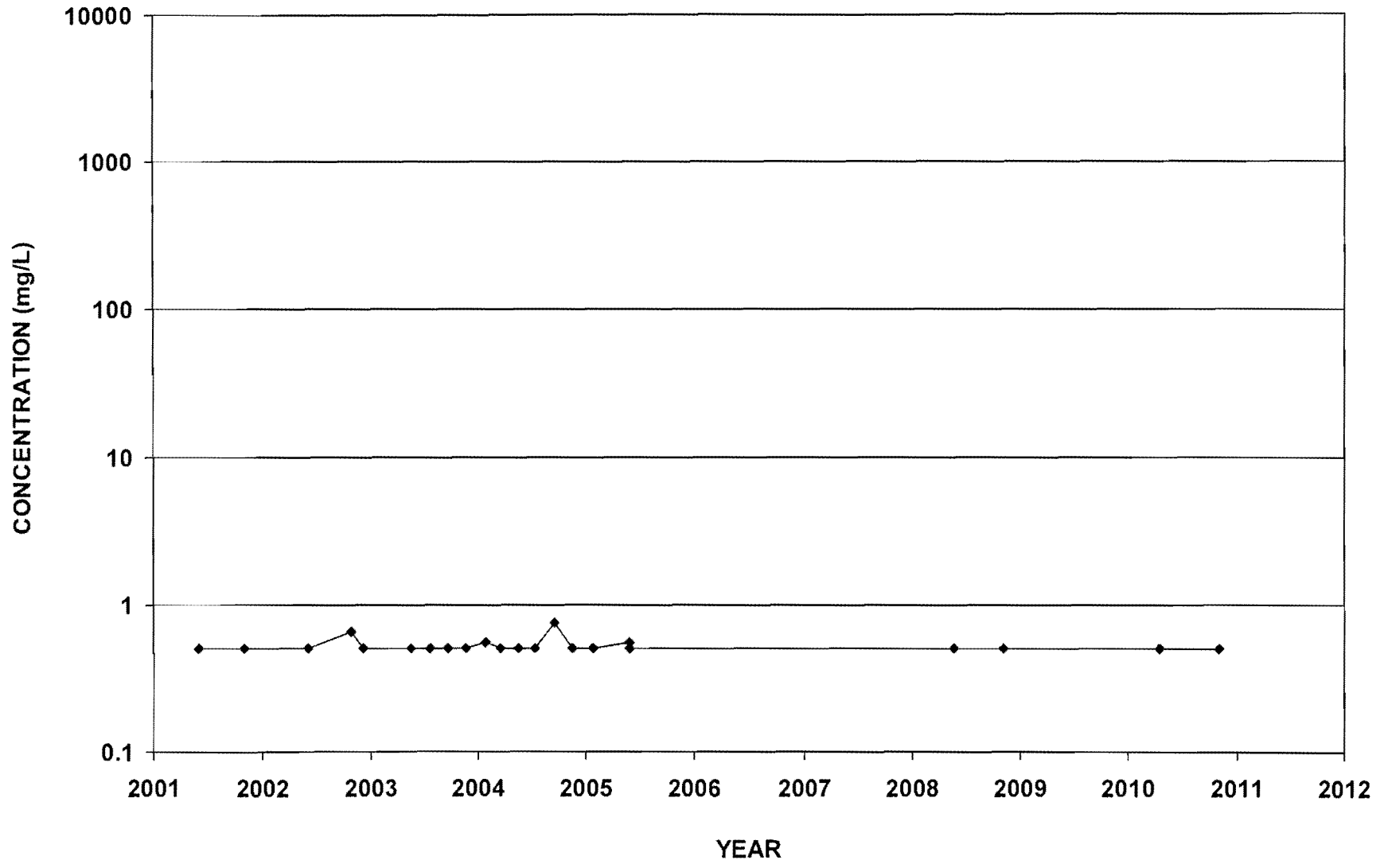
Date Received: 21-Dec-10 14:15

## CHAIN OF CUSTODY FORM(S)

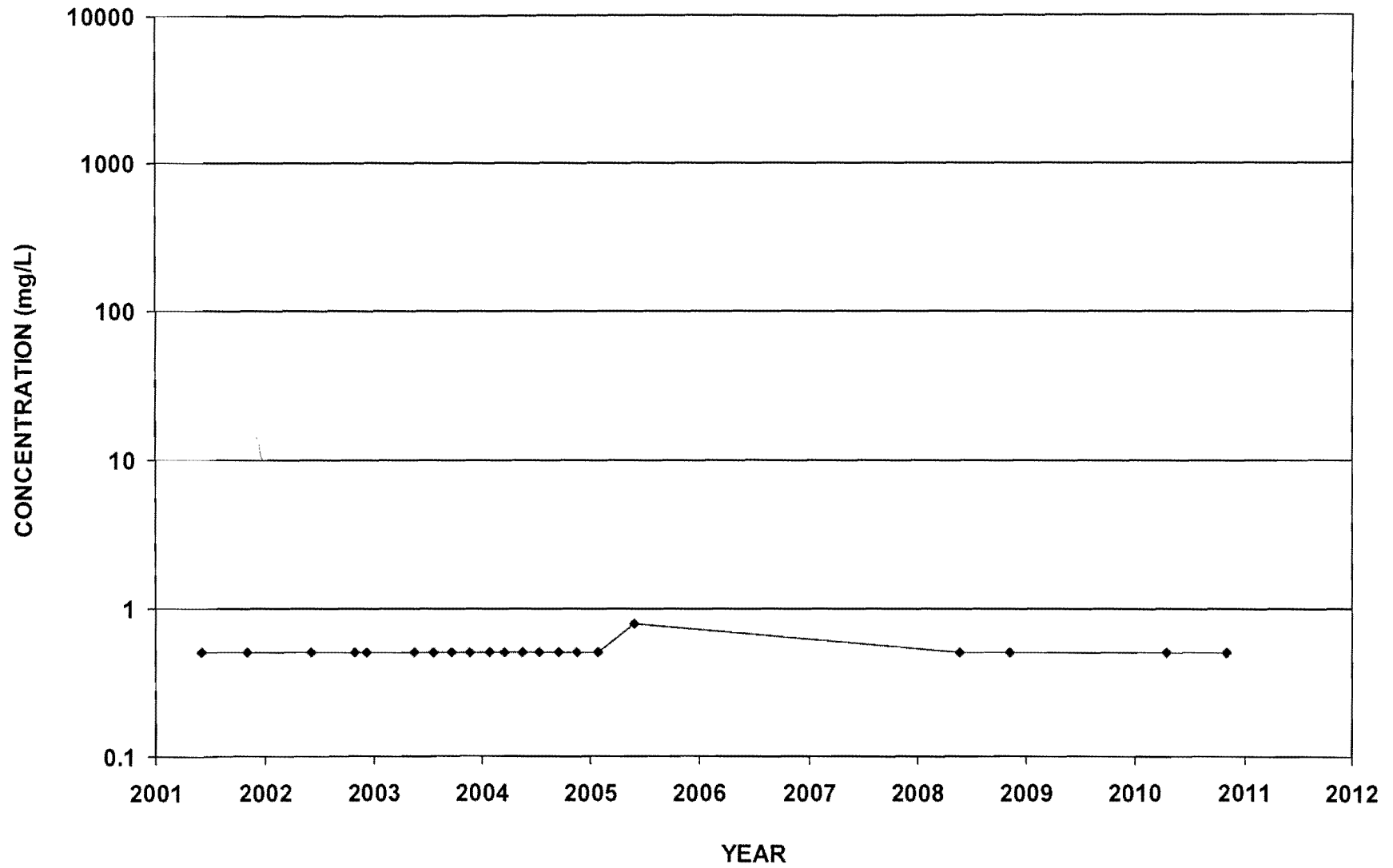
CLIENT INFORMATION		BILLING INFORMATION		Project Description		Turnaround Time		Preservation Codes	
El Dorado Chemical Inc. 4500 Northwest Ave. El Dorado, AR 71731		El Dorado Chemical Inc. P.O. Box 231 El Dorado, AR 71731		Groundwaters		24 Hour 48 Hour 72 Hour		1. Cool, 4 Degrees Centigrade 2. Sulfuric Acid (H2SO4) pH < 2 3. Nitric Acid (HNO3) pH < 2	
Attn: Brent Parker		Reporting Information Telephone: 870-463-4484 Fax: 870-463-1489		Reporting Information Telephone: 870-463-4484 Fax: 870-463-1489		Receiving & Cool Preservation Code		A. Thiosulfate for Dichromates B. Hydrochloric Acid(HCl) C. Sodium Hydroxide(NaOH), pH > 12	
R. Durham EMS Inc		R. Durham EMS Inc		Sampler(s) Printed		TEST PARAMETERS		Arkansas Analytical Work Order Number	
Sampler(s) Signature		Sampler(s) Printed		Sample		NO <sub>3</sub> , NO <sub>2</sub> , SO <sub>4</sub>		1012221	
Field Number	Sample Collection Date(s)	Time(s)	Sampler(s) Printed	Sample	IDENTIFICATION/DESCRIPTION	NO <sub>3</sub> , NO <sub>2</sub> , SO <sub>4</sub>	AMMONIUM, T. Phosphorus	01	
1	12-21-10	0945	5		MW17	✓	✓		
2	12-21-10	1050	5		MW20	✓	✓		
1. Requisitioned by: (Signature)		Date/Time		2. Received by: (Signature)		SAMPLE CONDITION UPON RECEIPT IN LAB		REMARKS / SAMPLE COMMENTS	
Brent Parker		12-21-10 1105		Donna Ramsey		1. CUSTODY SEALS 2. CONTAINERS CORRECT. 3. CO-LABELS AGREE. 4. PRESERVATION CONFIRMED 5. RECEIVED ON ICE. 6. TEMPERATURE ON RECEIPT		P.O. Number:	
3. Requisitioned by: (Signature)		Date/Time		4. Received by: (Signature)		FOR COMPLETION BY LAB ONLY			
Donna Ramsey		12-21-10 215P		Sueh Rose					

**APPENDIX B**  
**TREND GRAPHS**

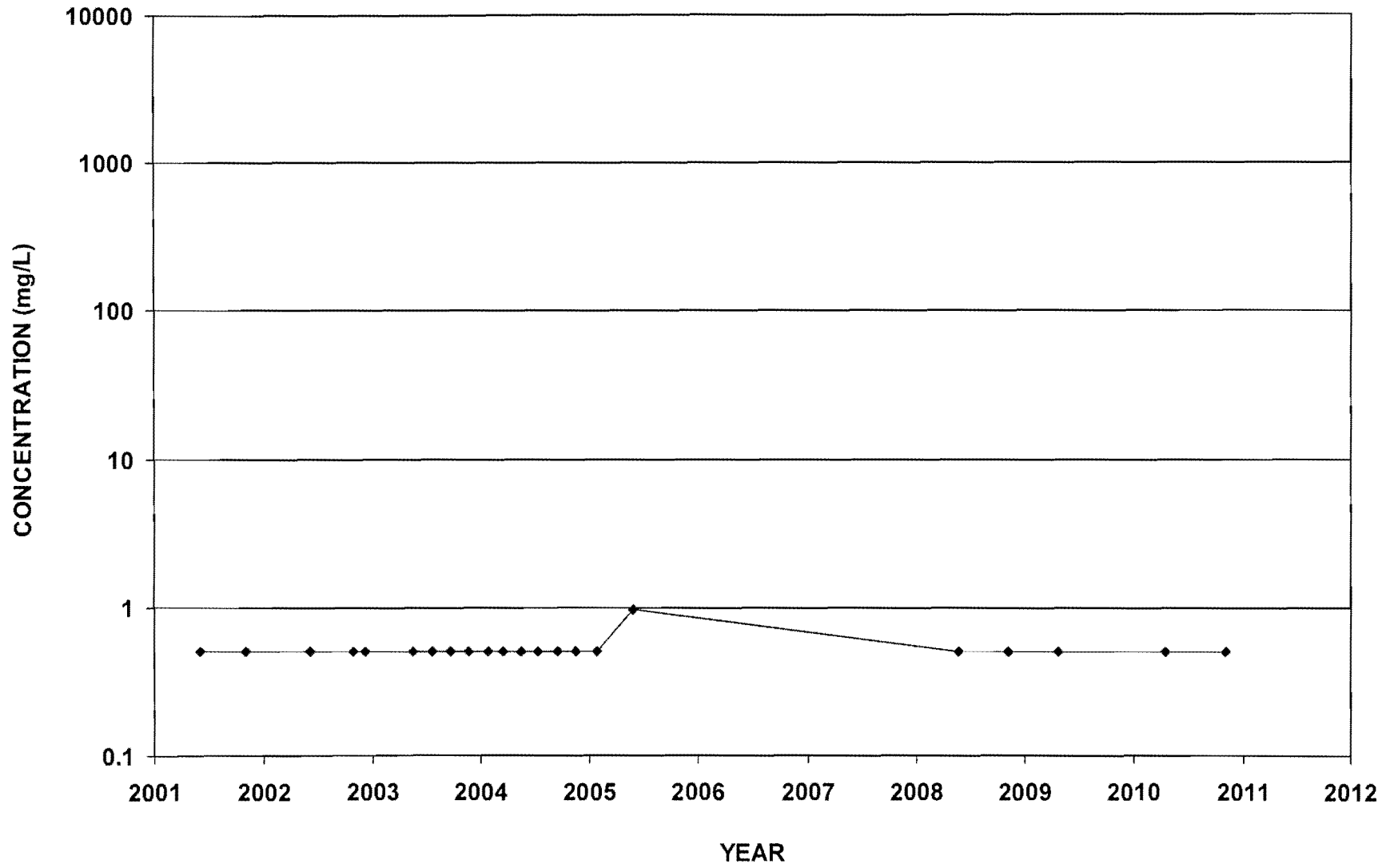
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Ammonia-N



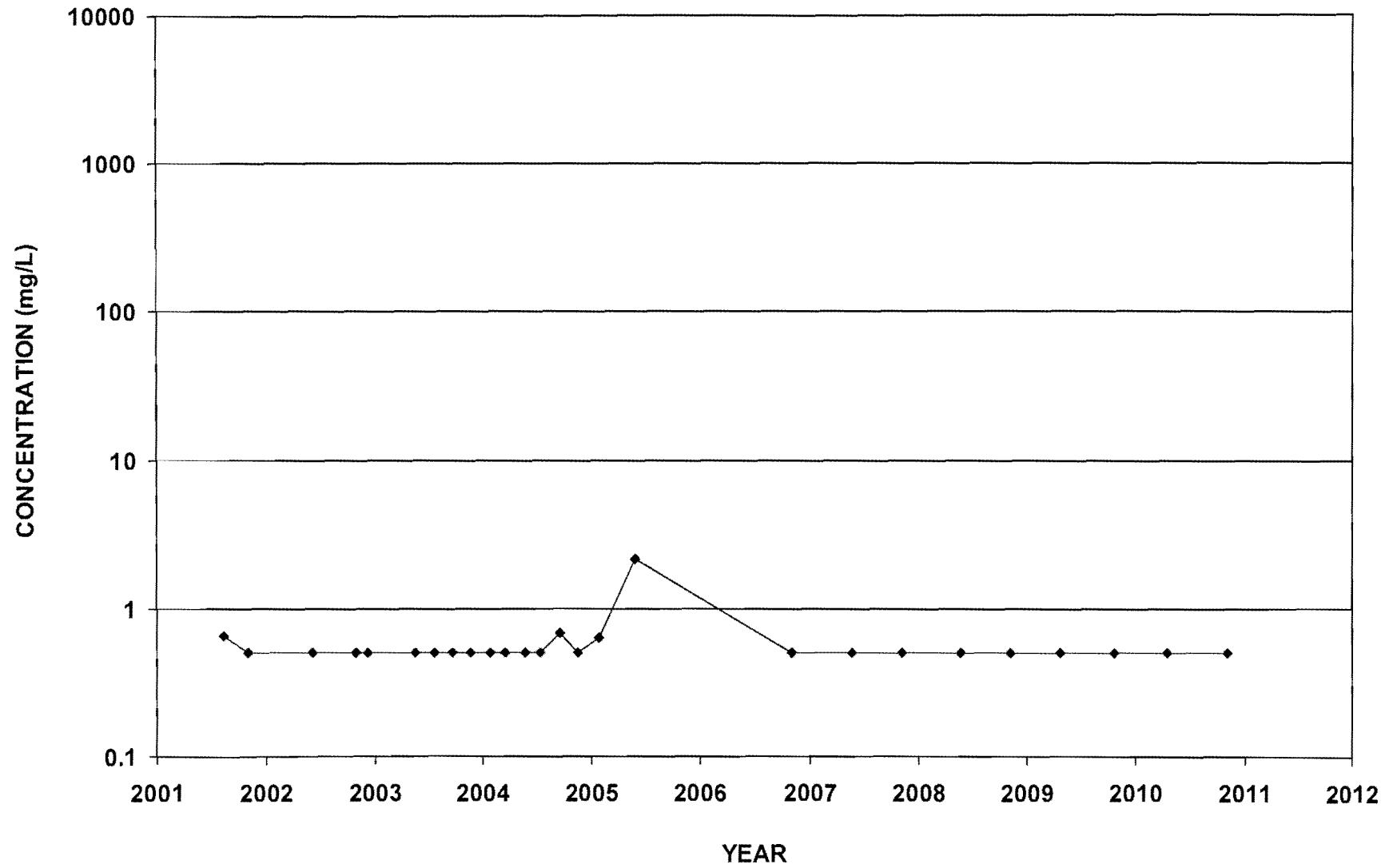
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Ammonia-N



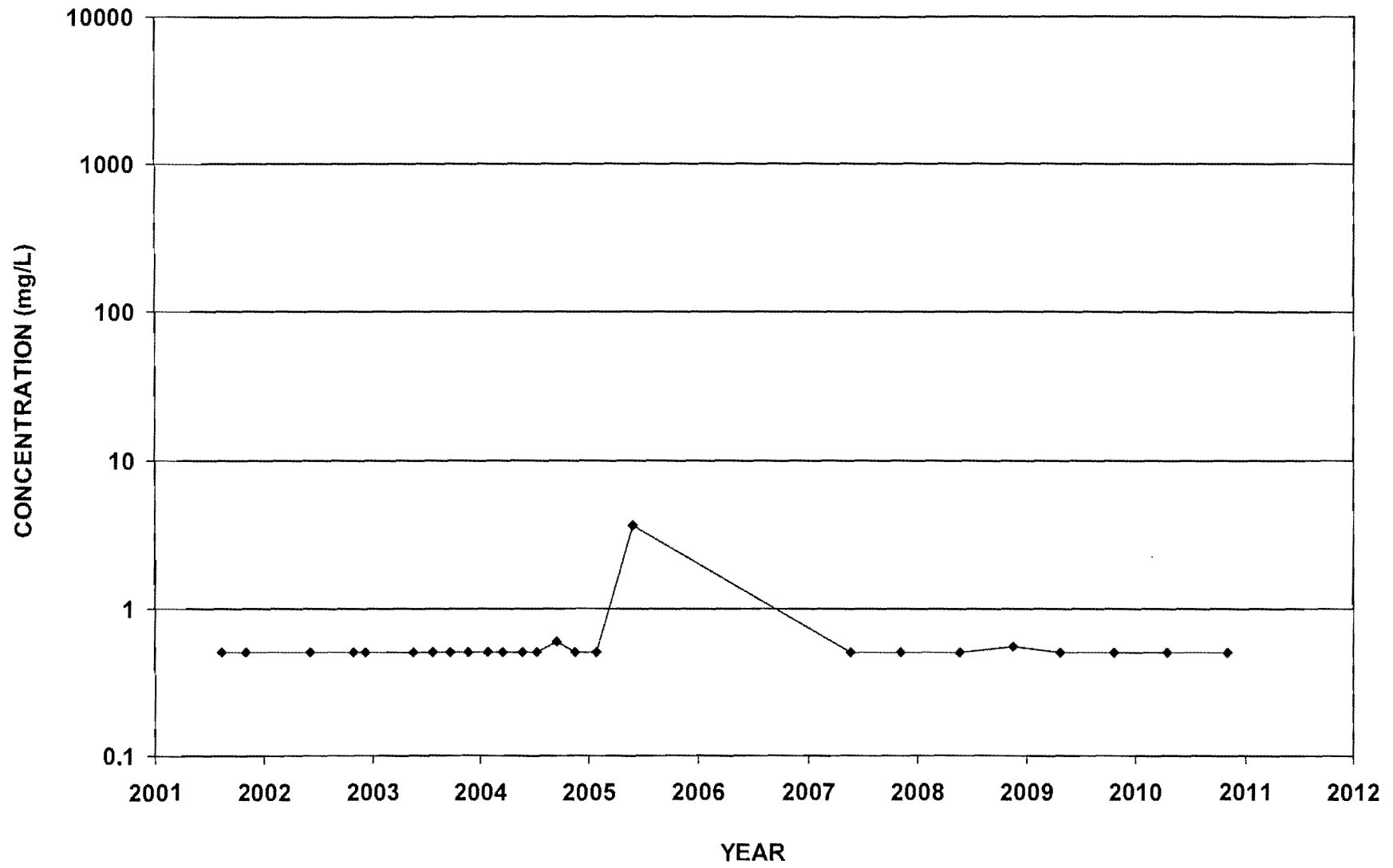
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Ammonia-N



ECMW-4  
Ammonia-N

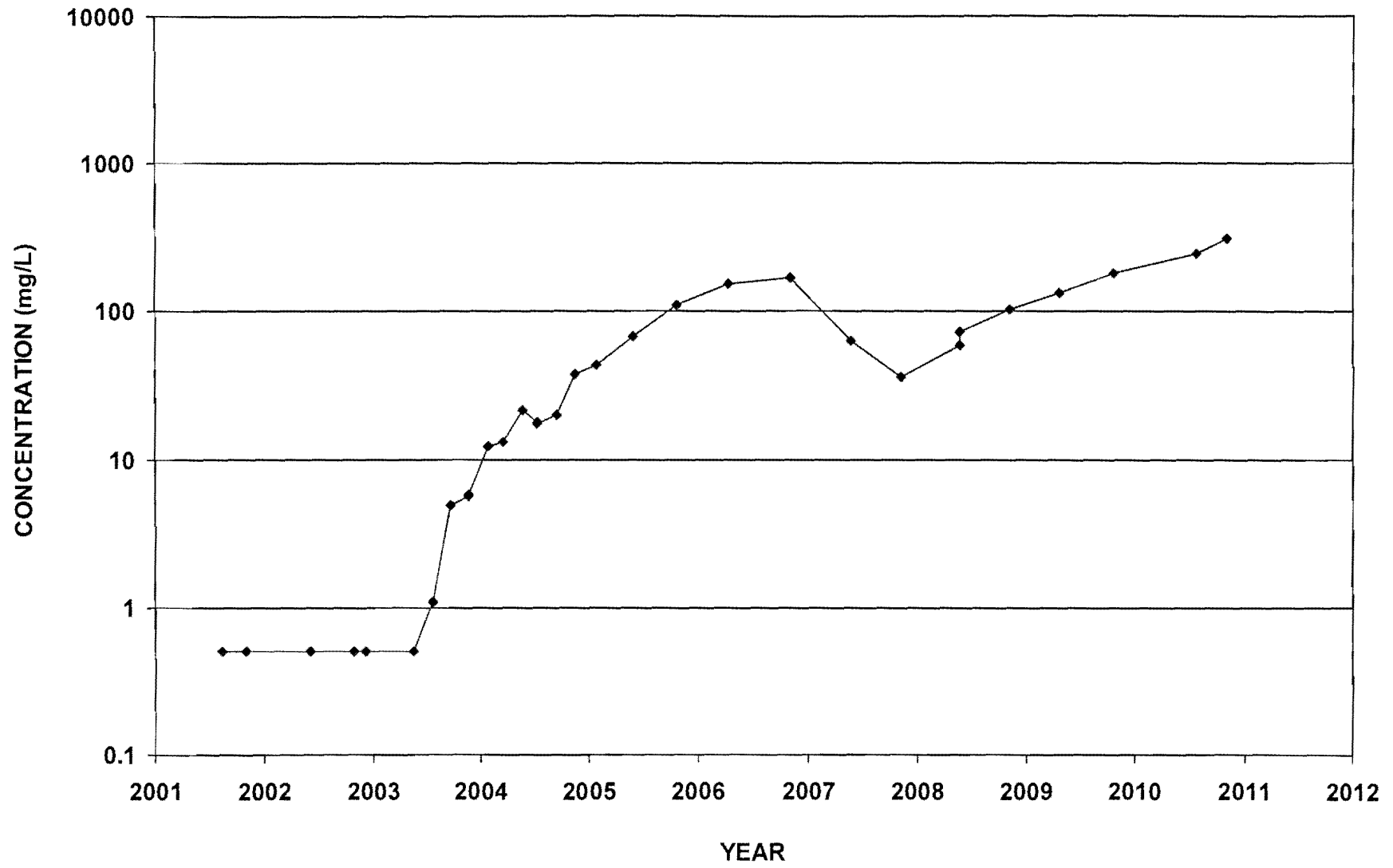


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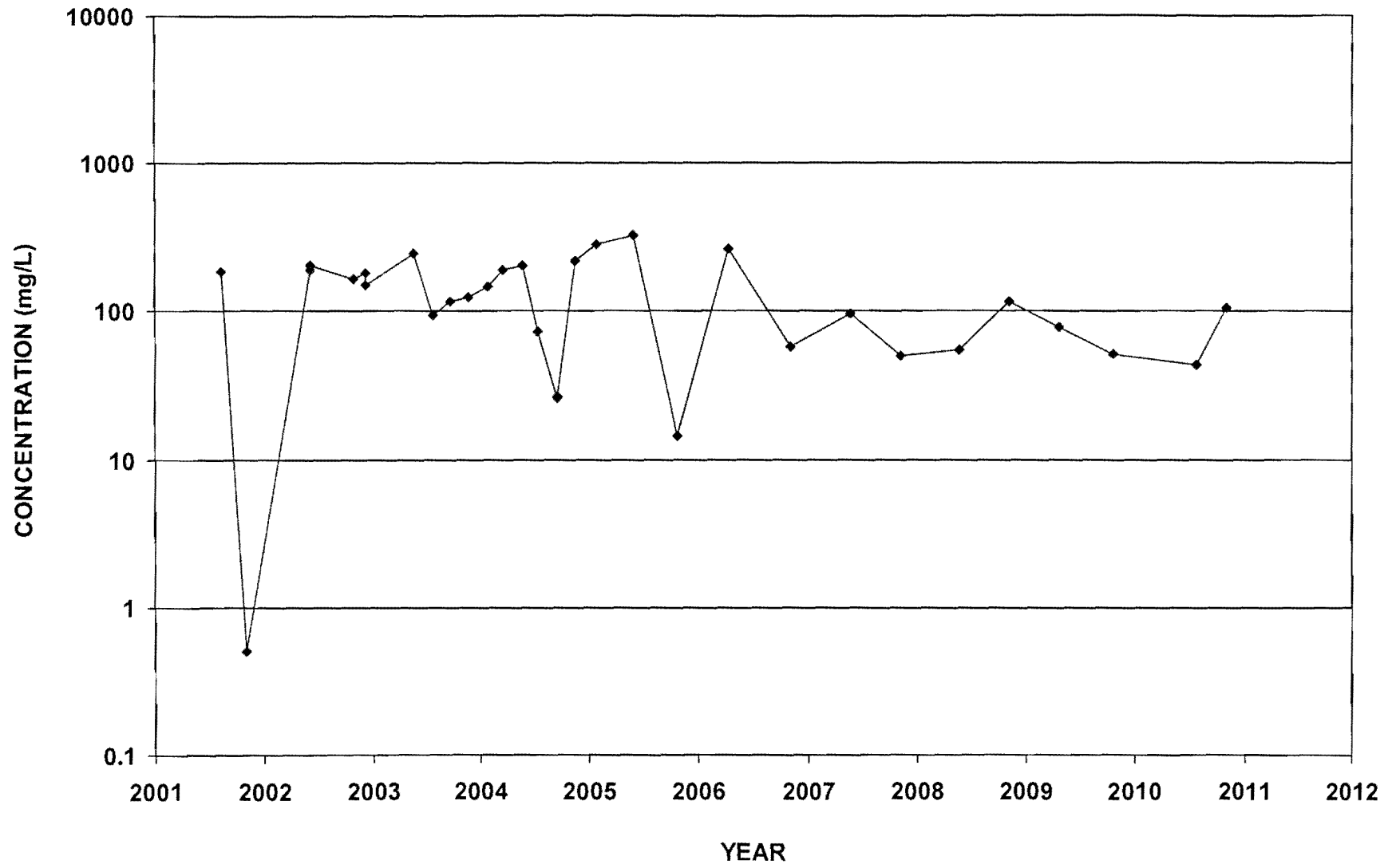




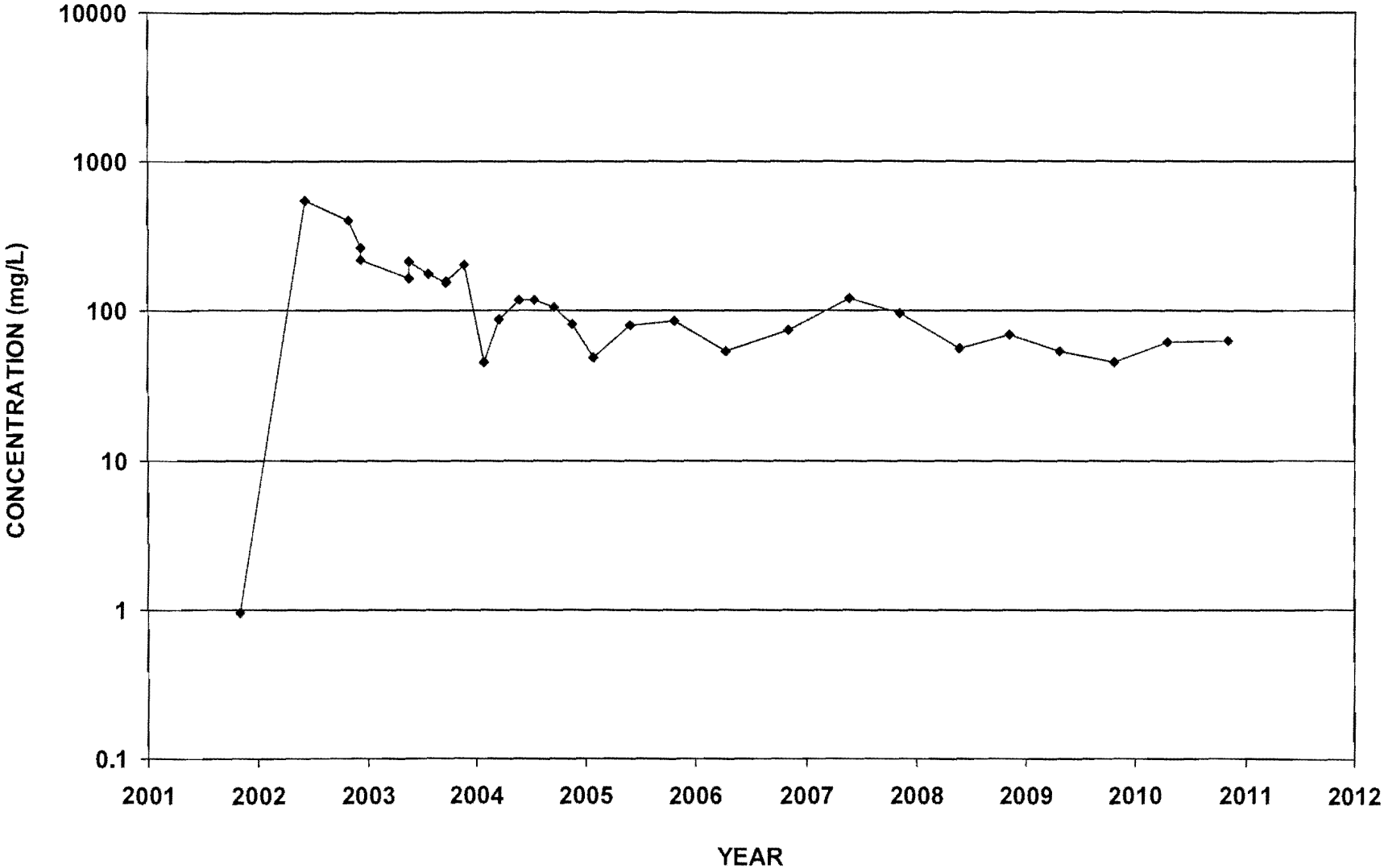
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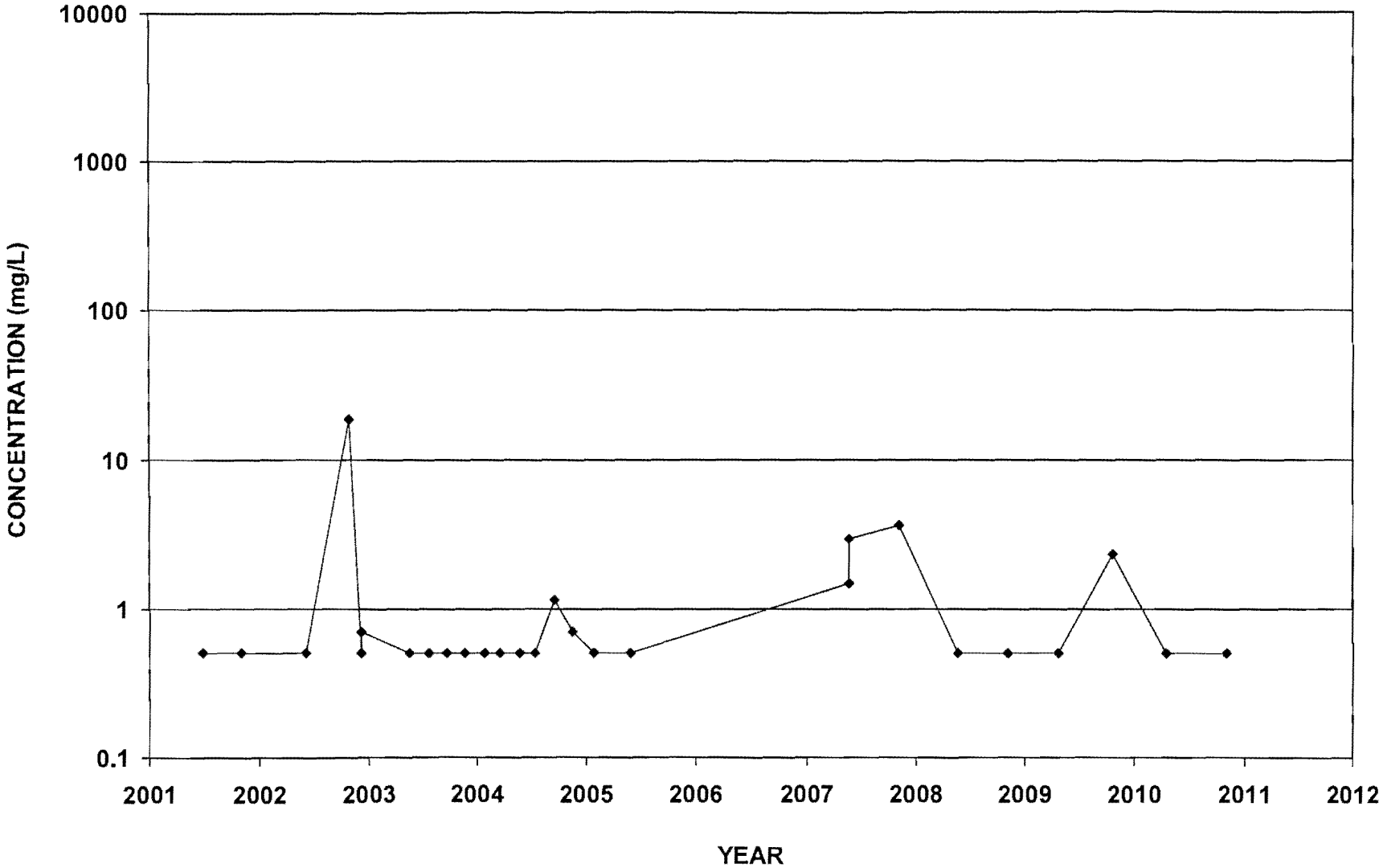
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Ammonia-N



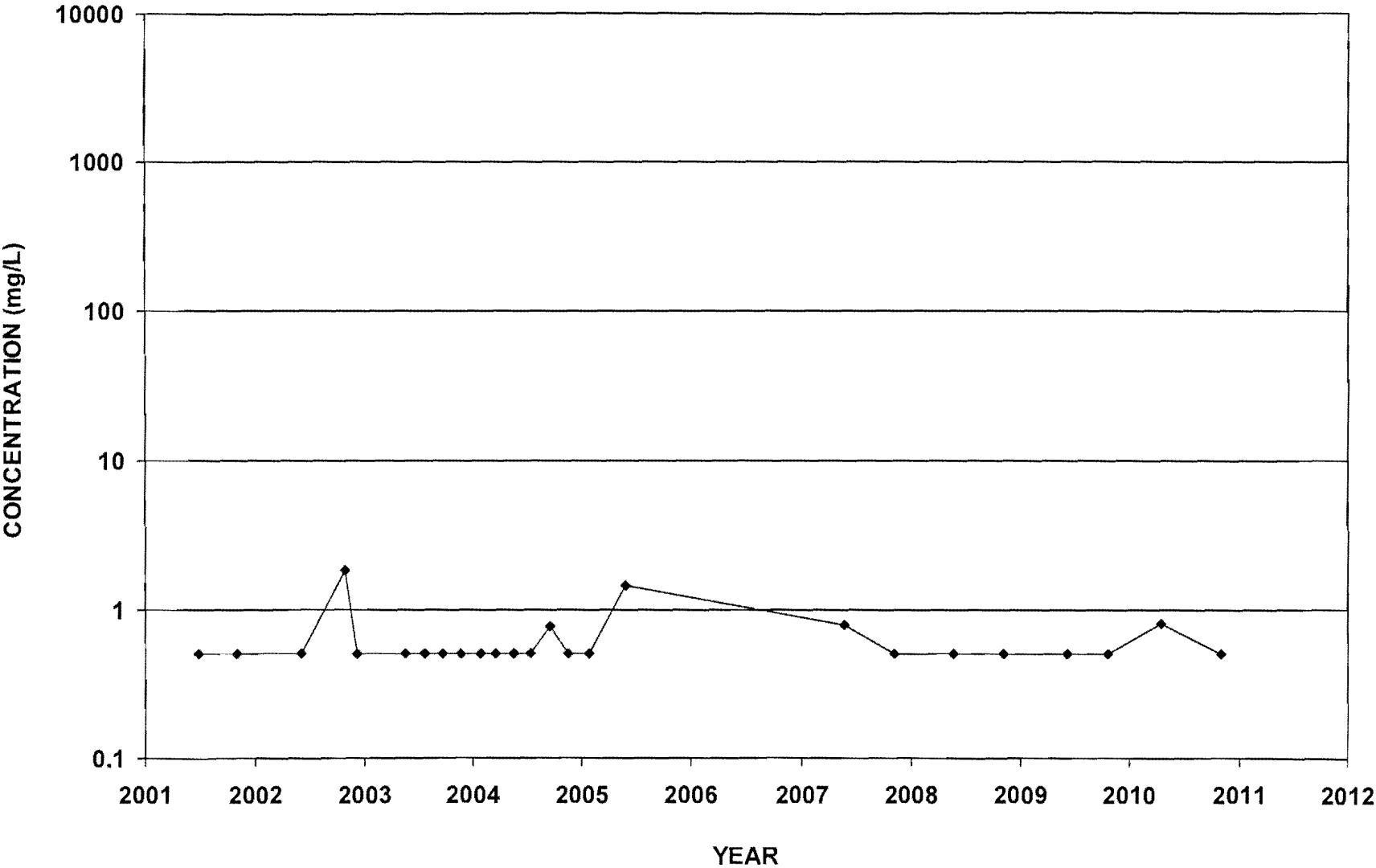
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Ammonia-N



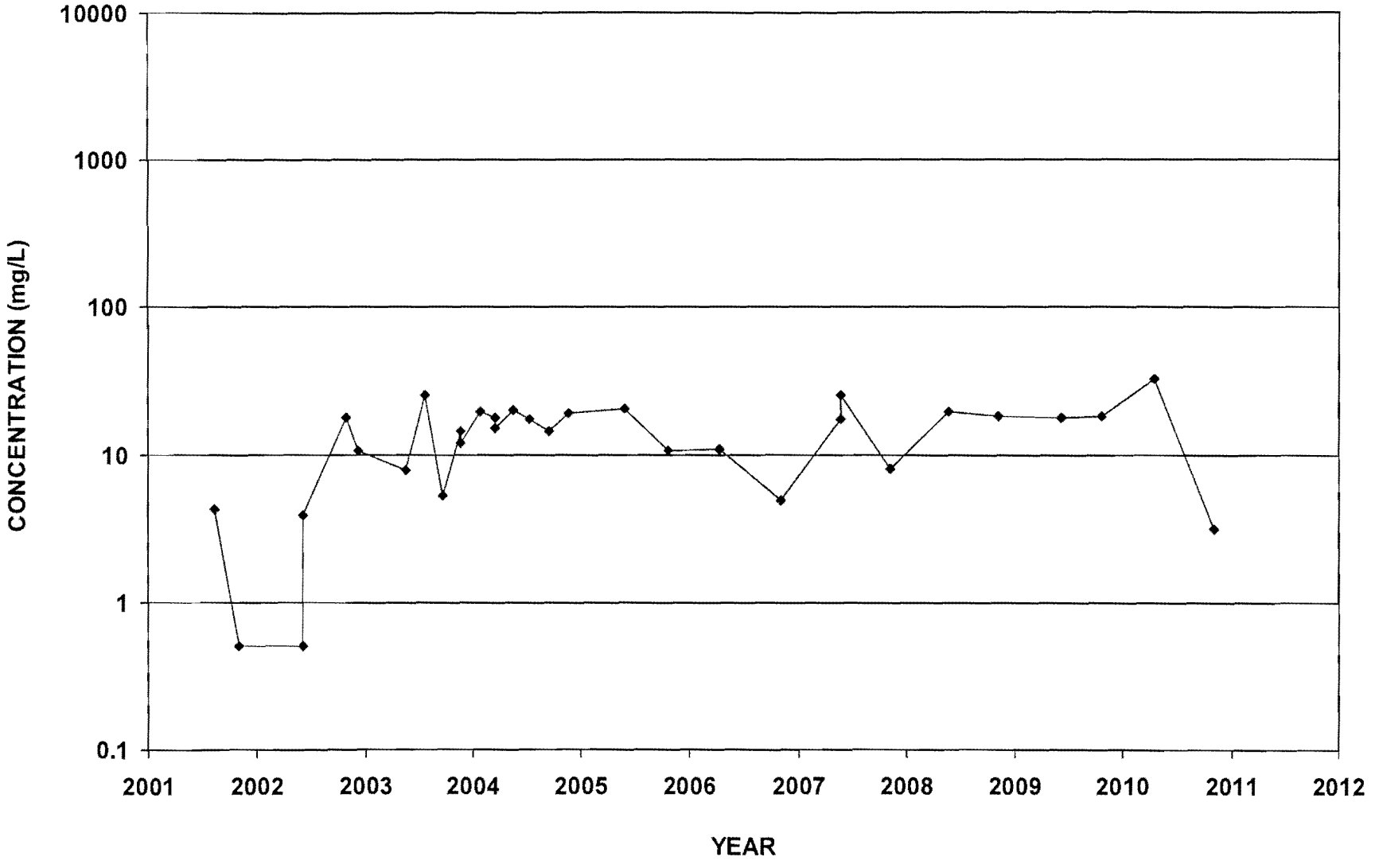
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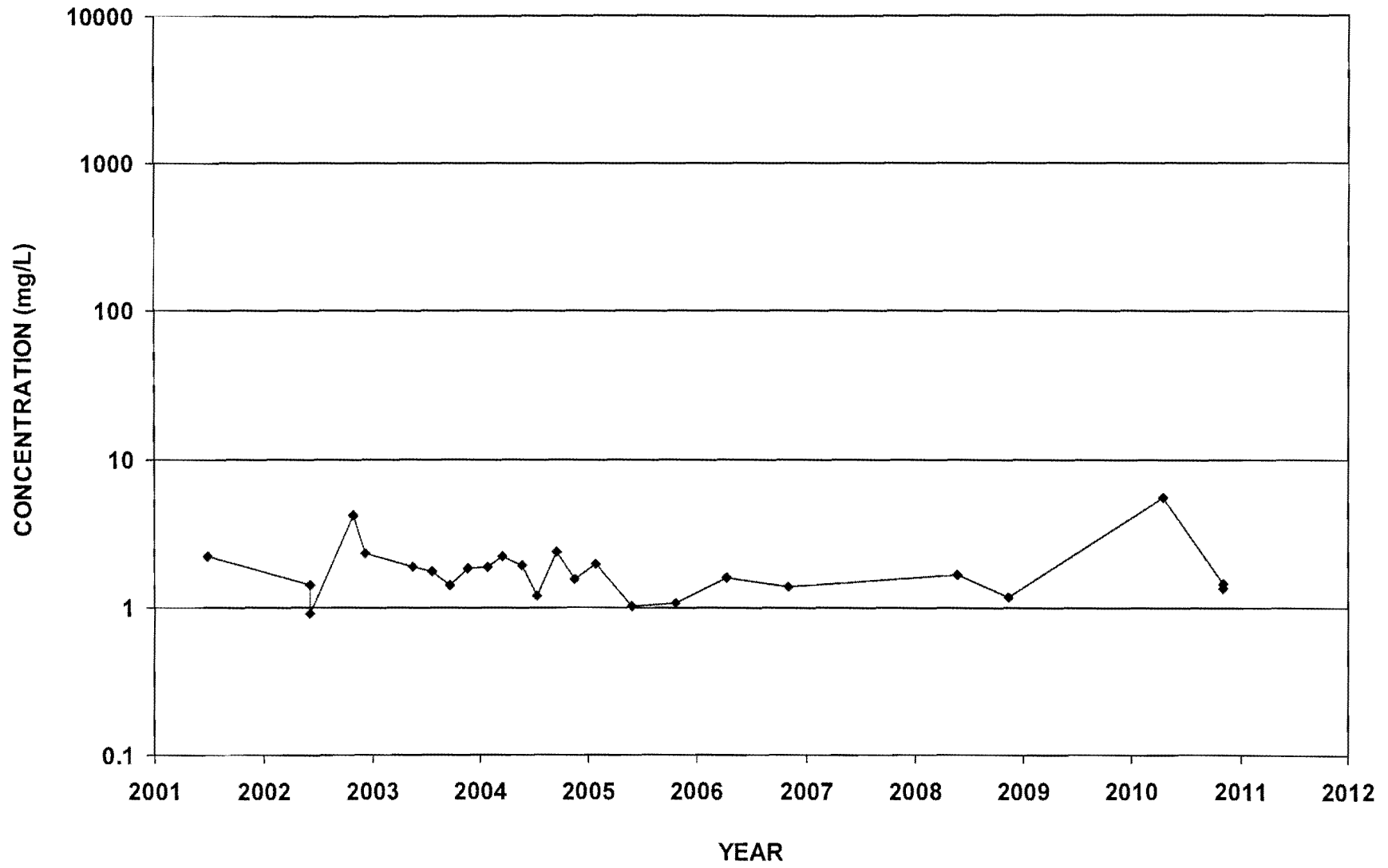
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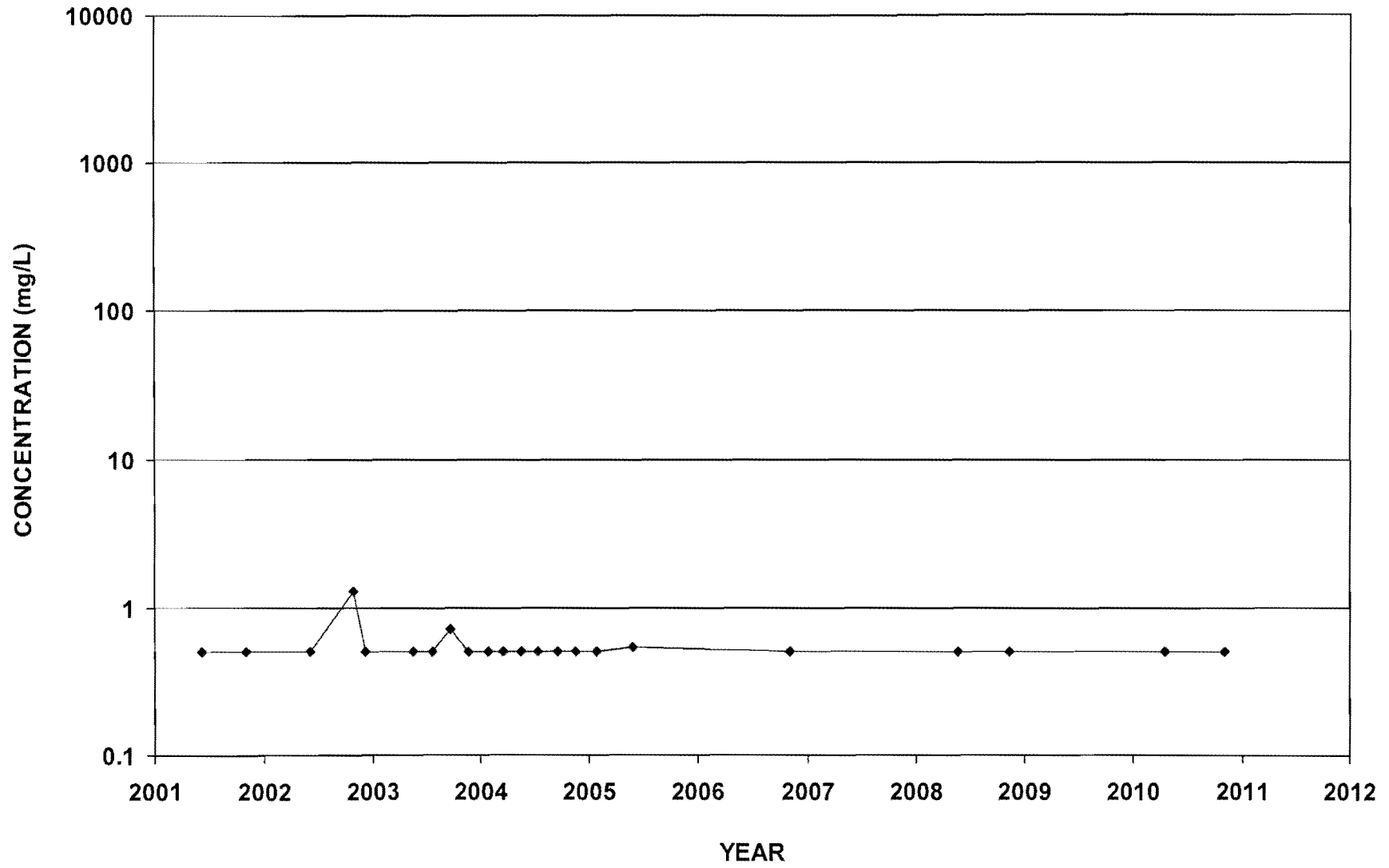
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Ammonia-N



ECMW-12  
Ammonia-N

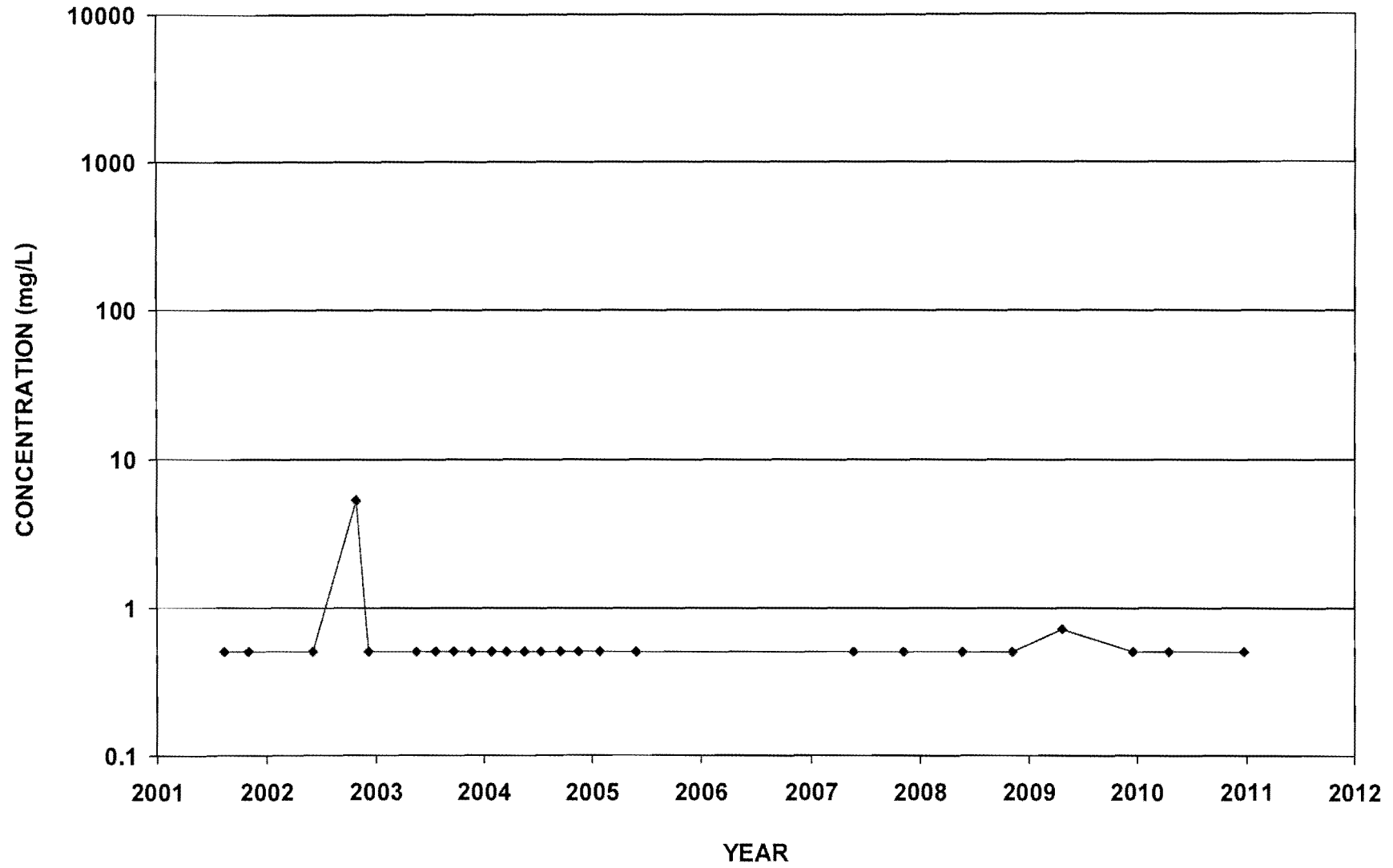


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Ammonia-N

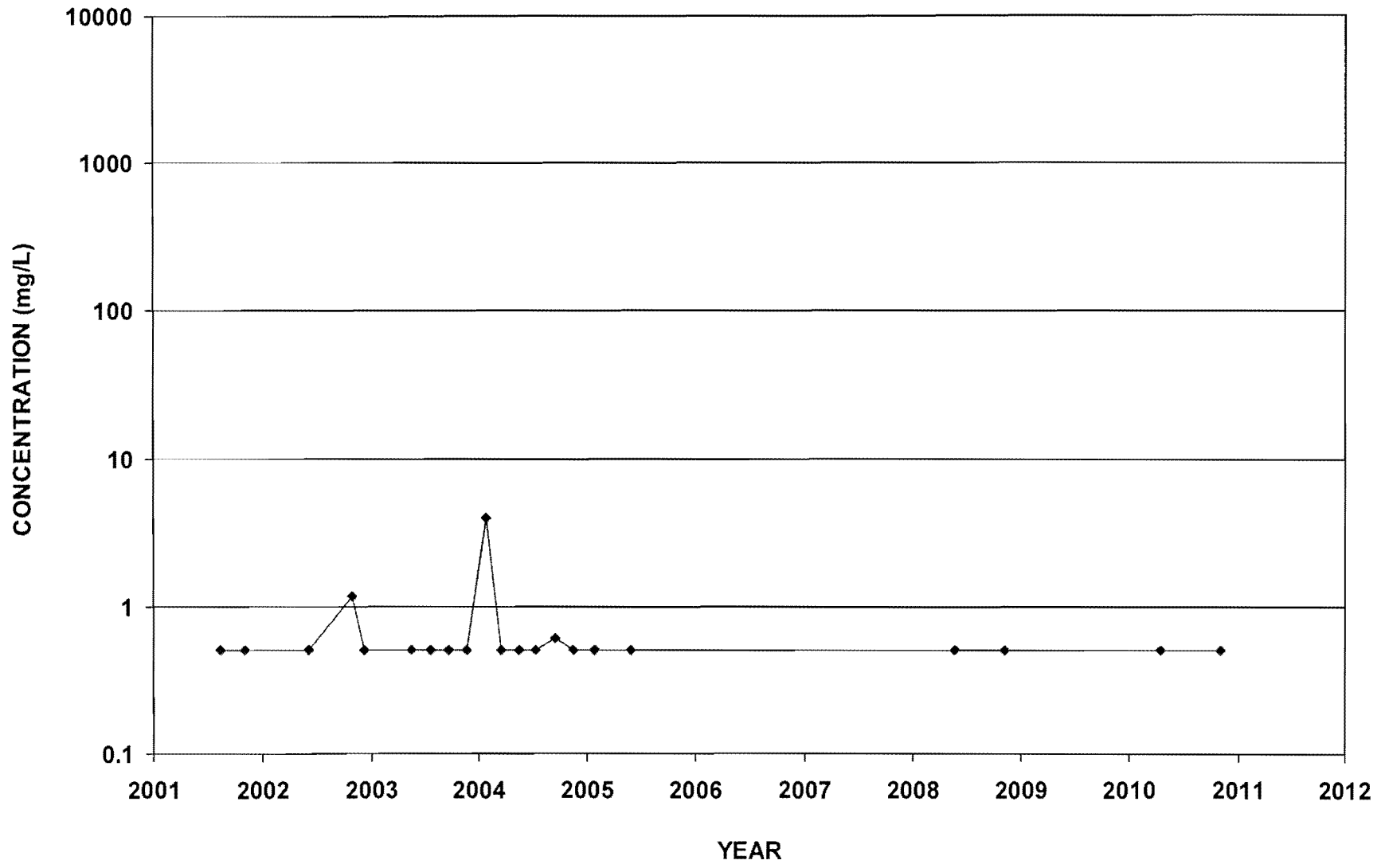




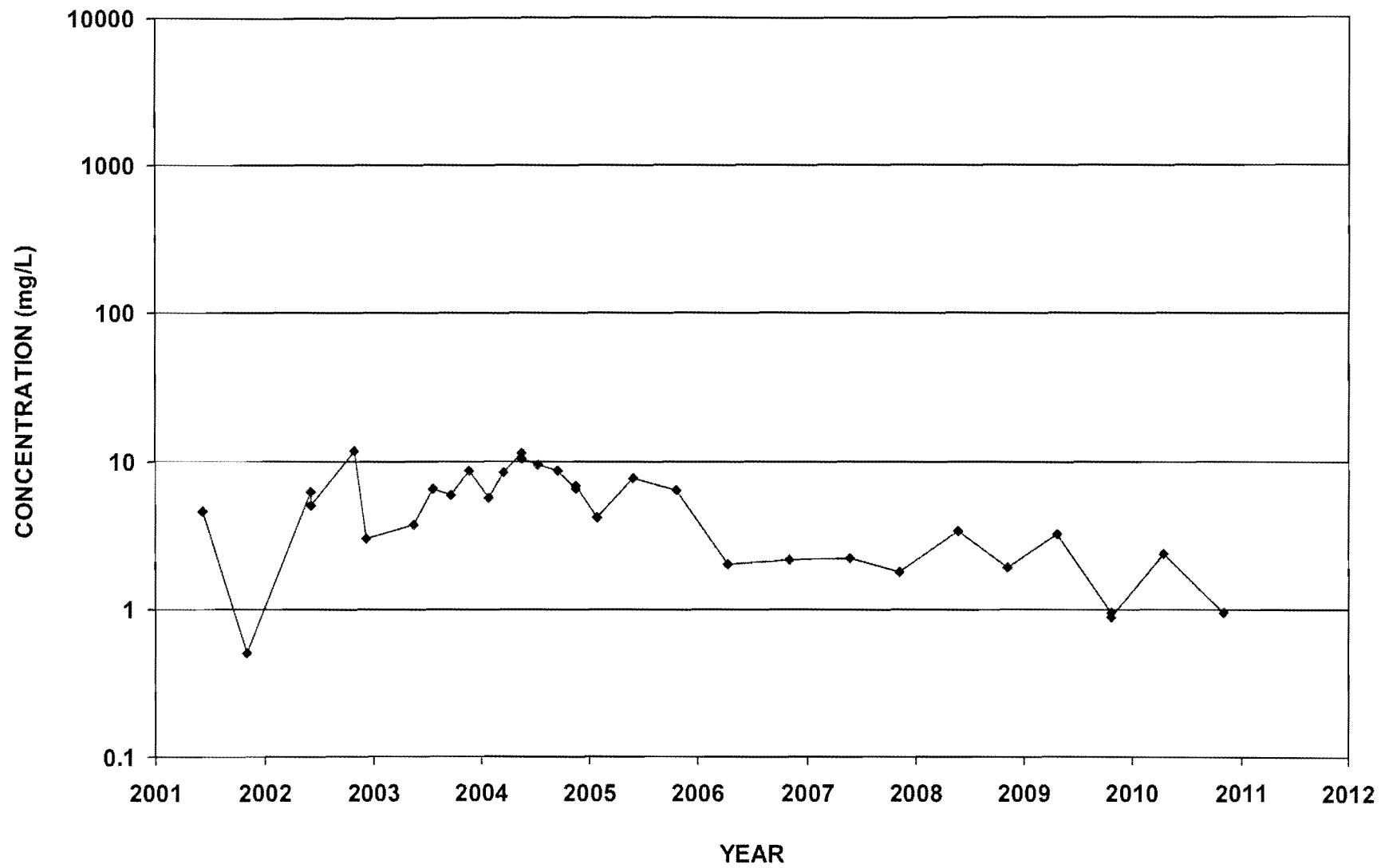
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Ammonia-N



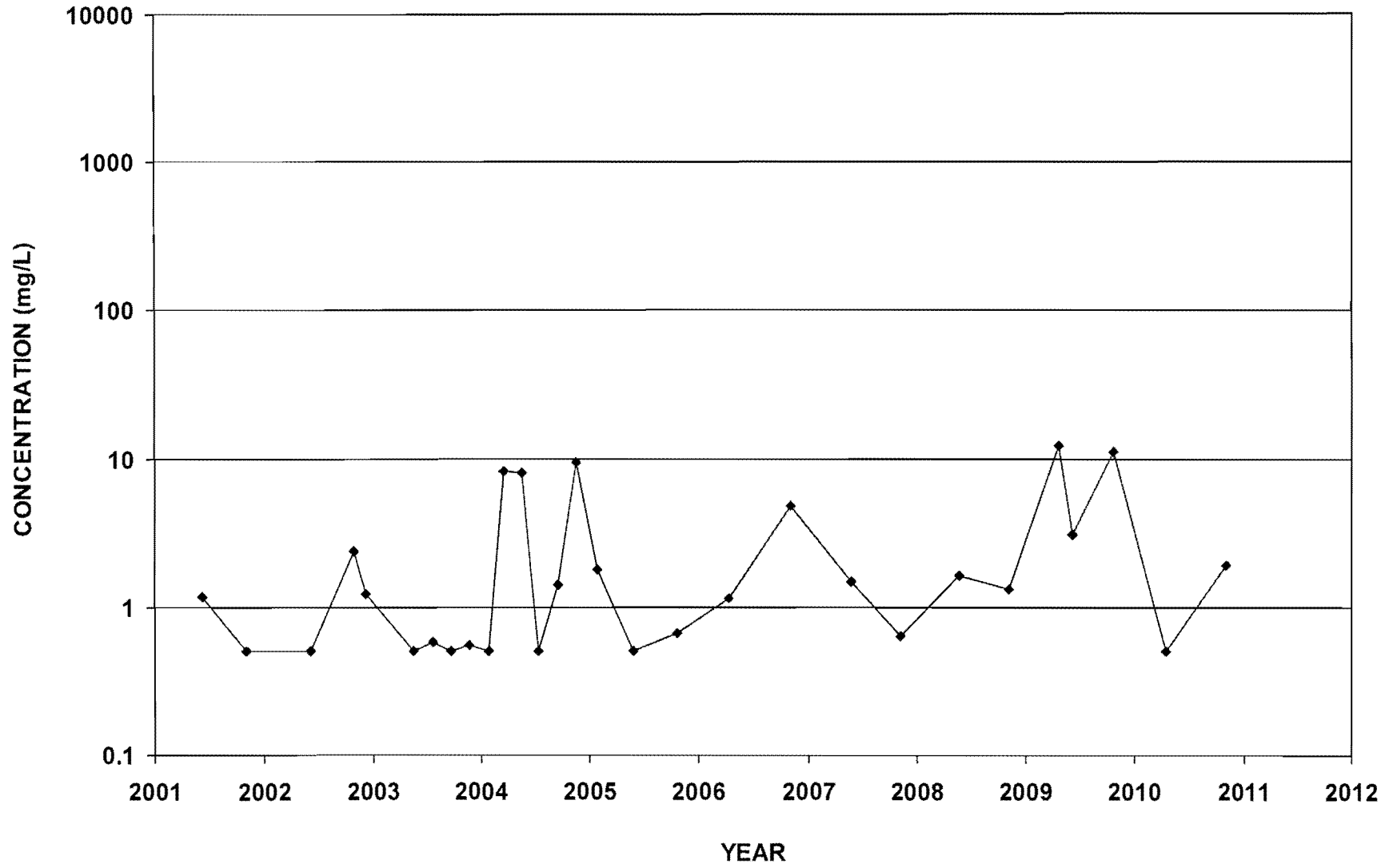
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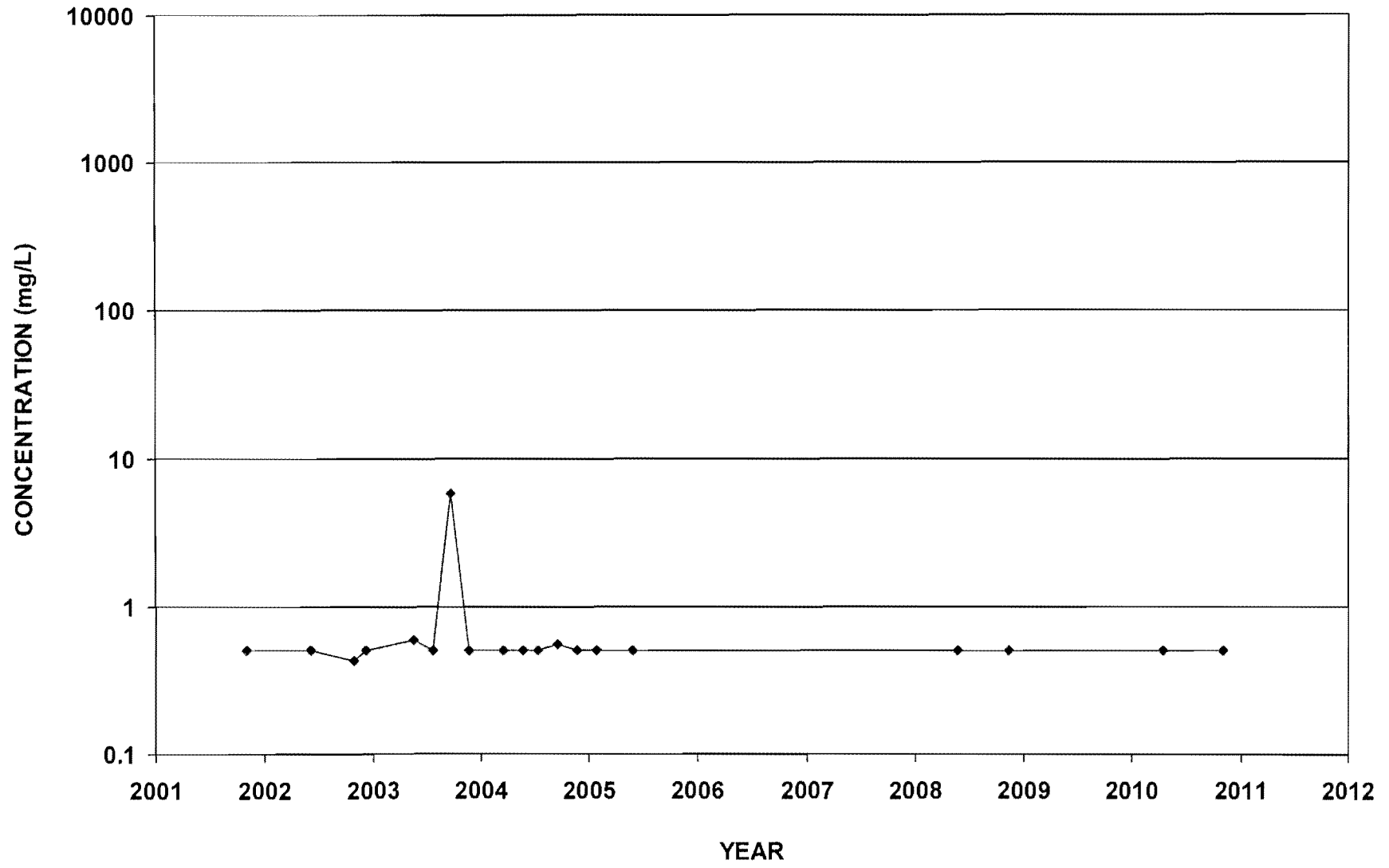
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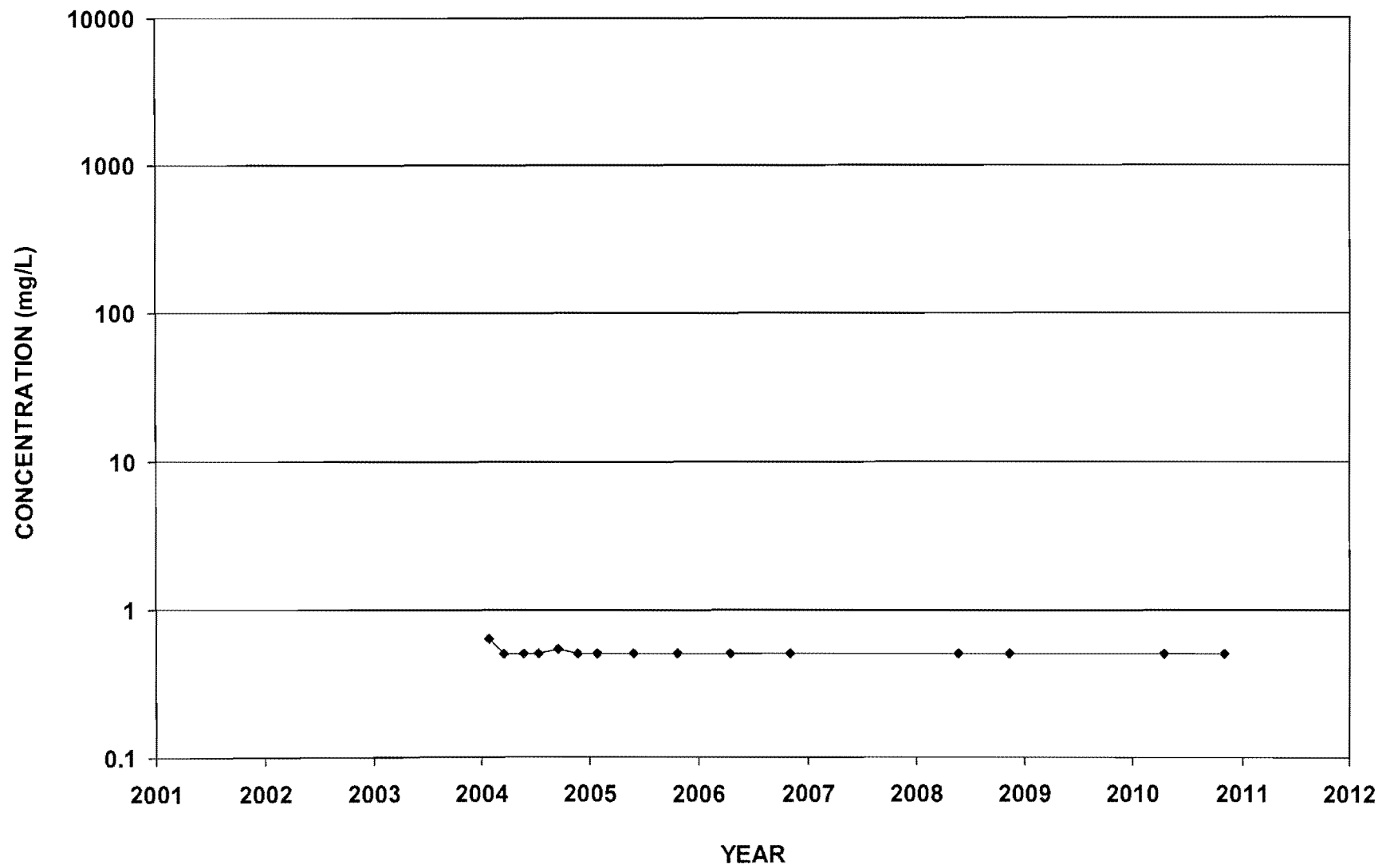
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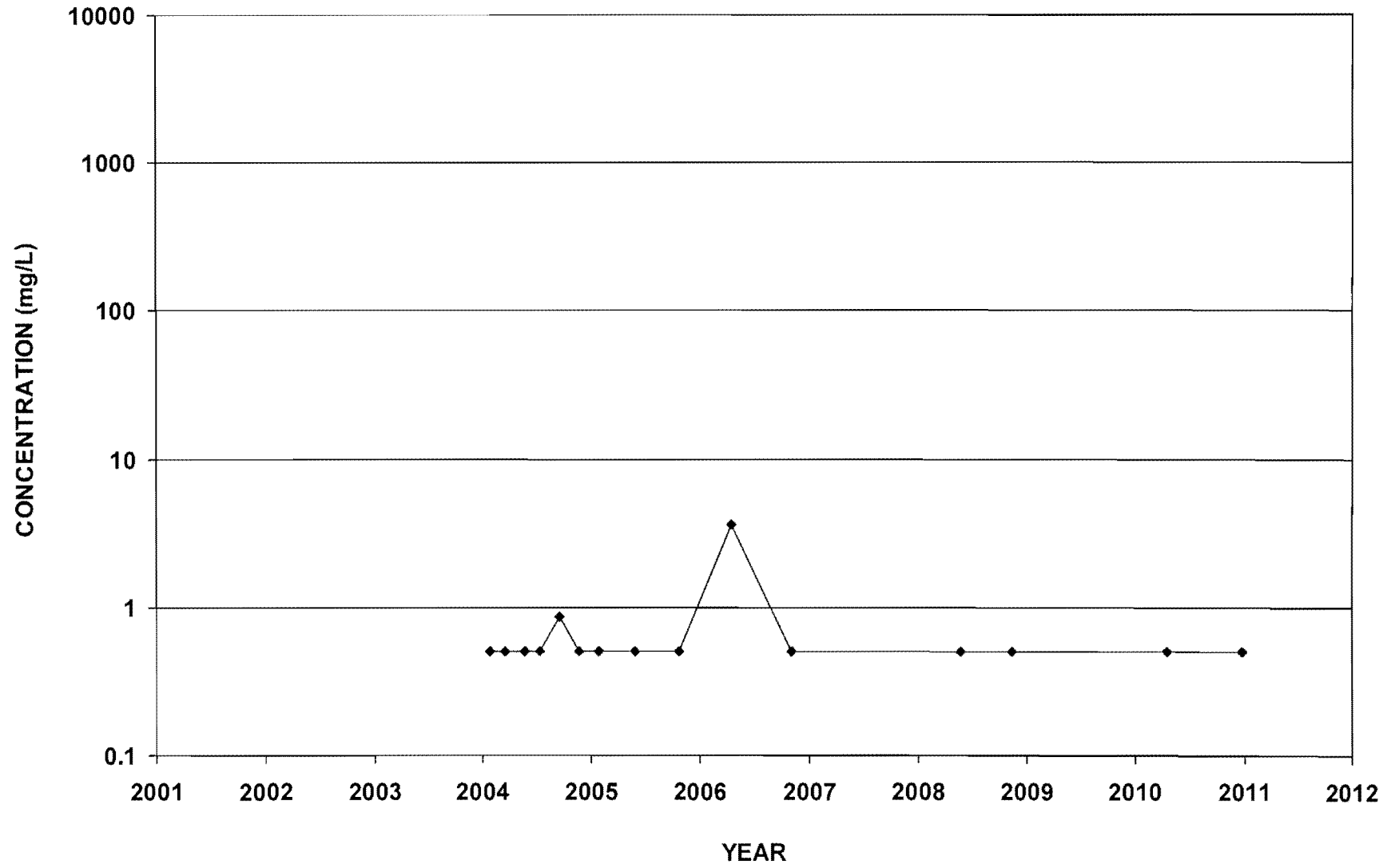
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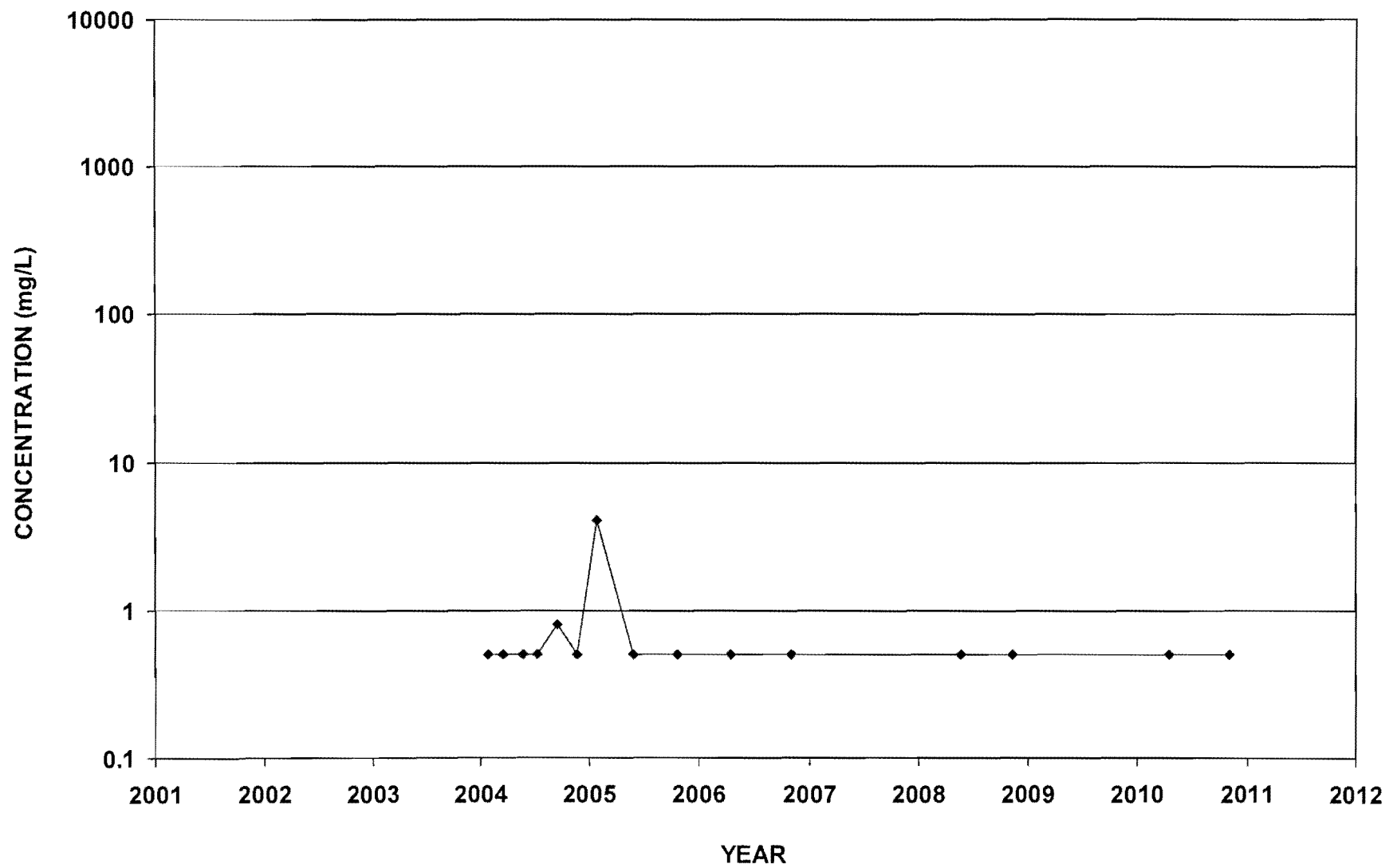
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Ammonia-N



ECMW-20  
Ammonia-N

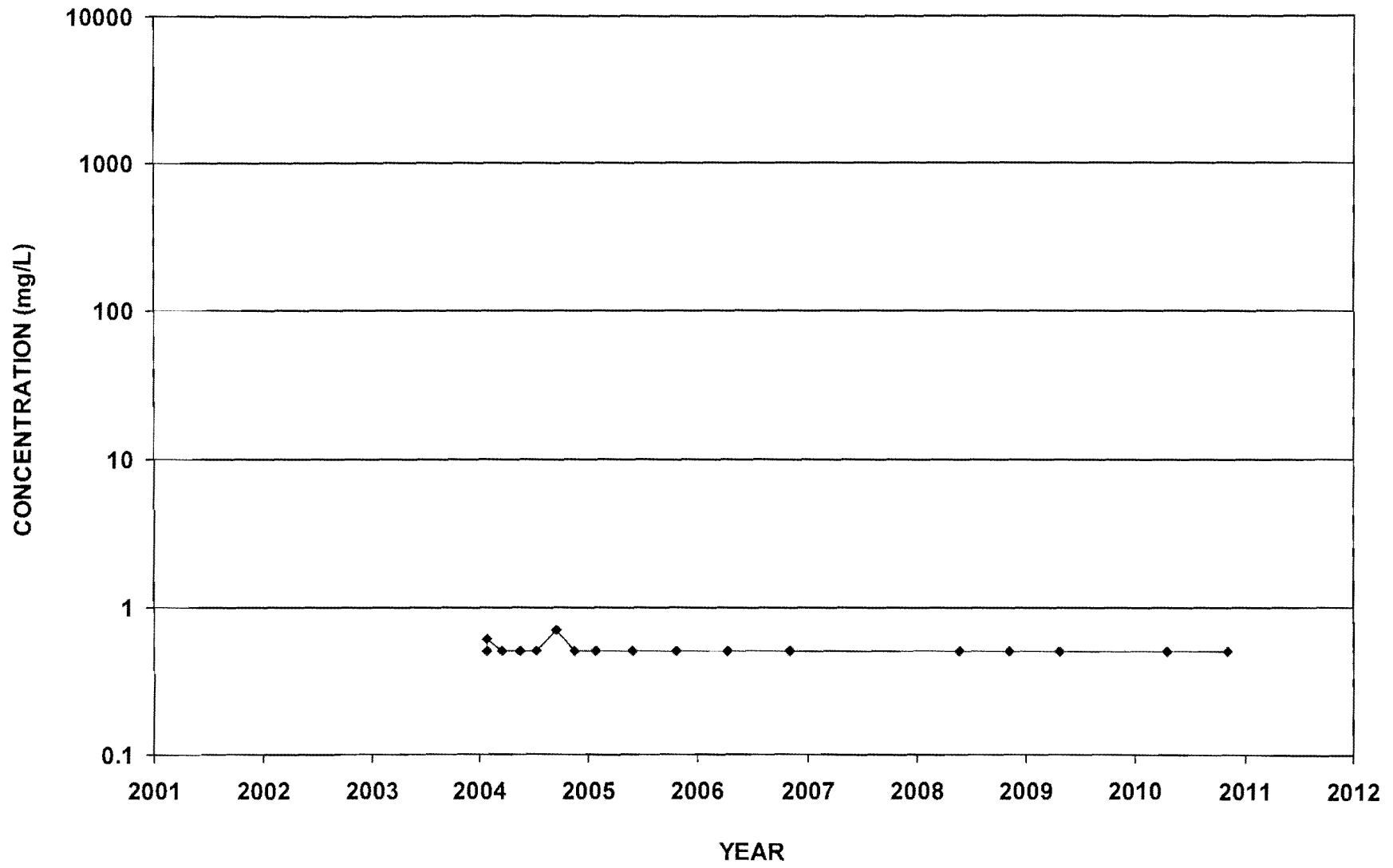


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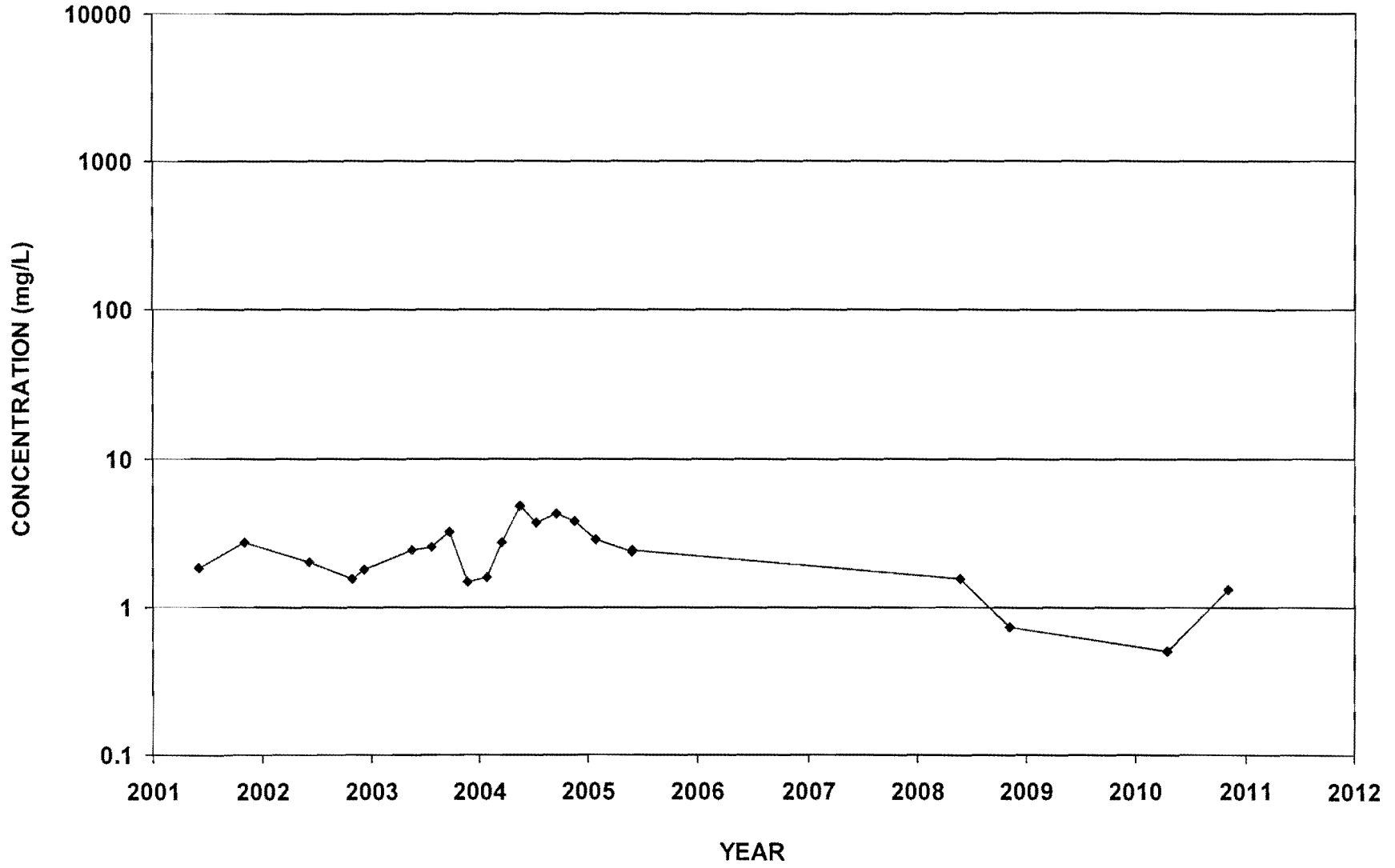




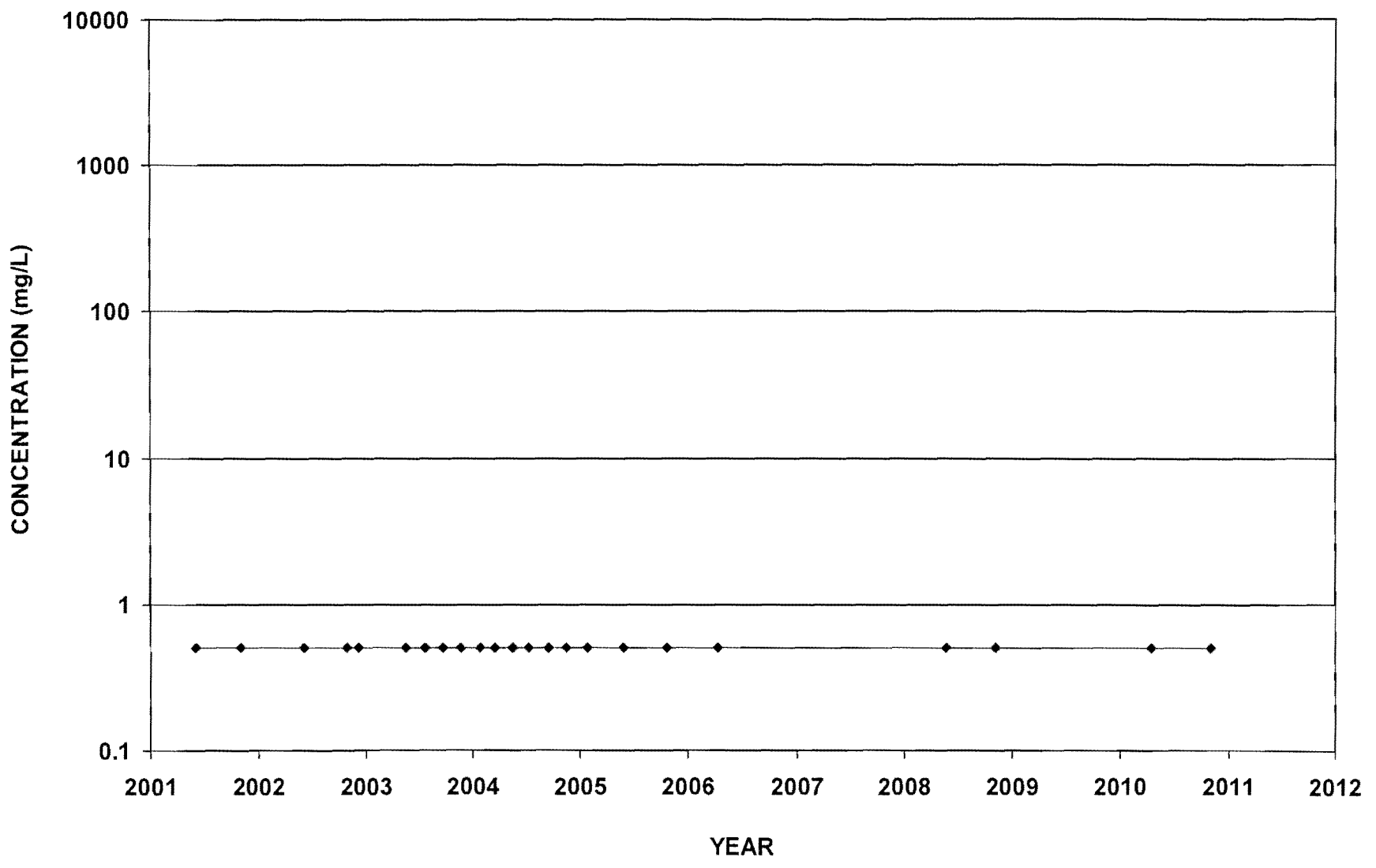
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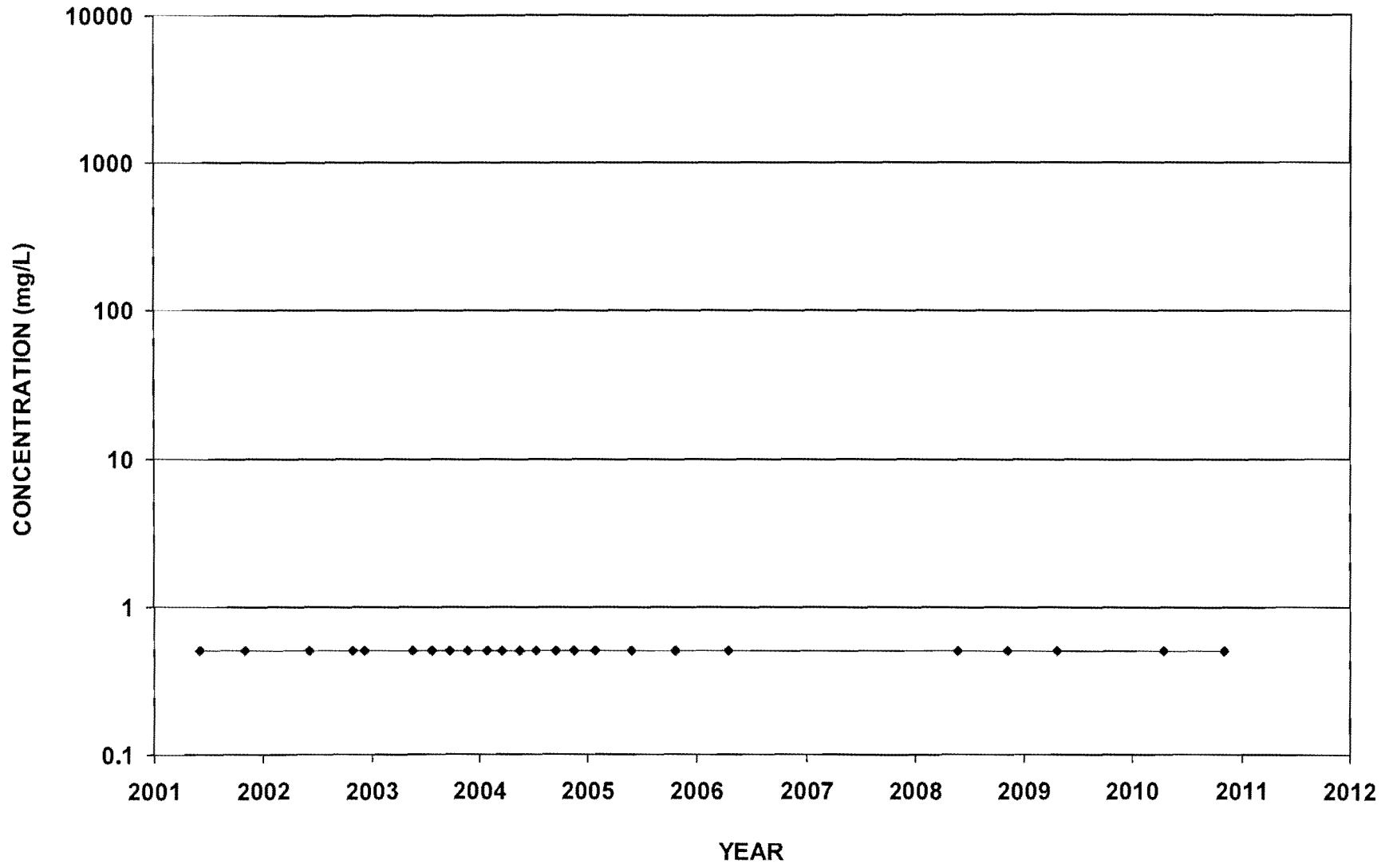
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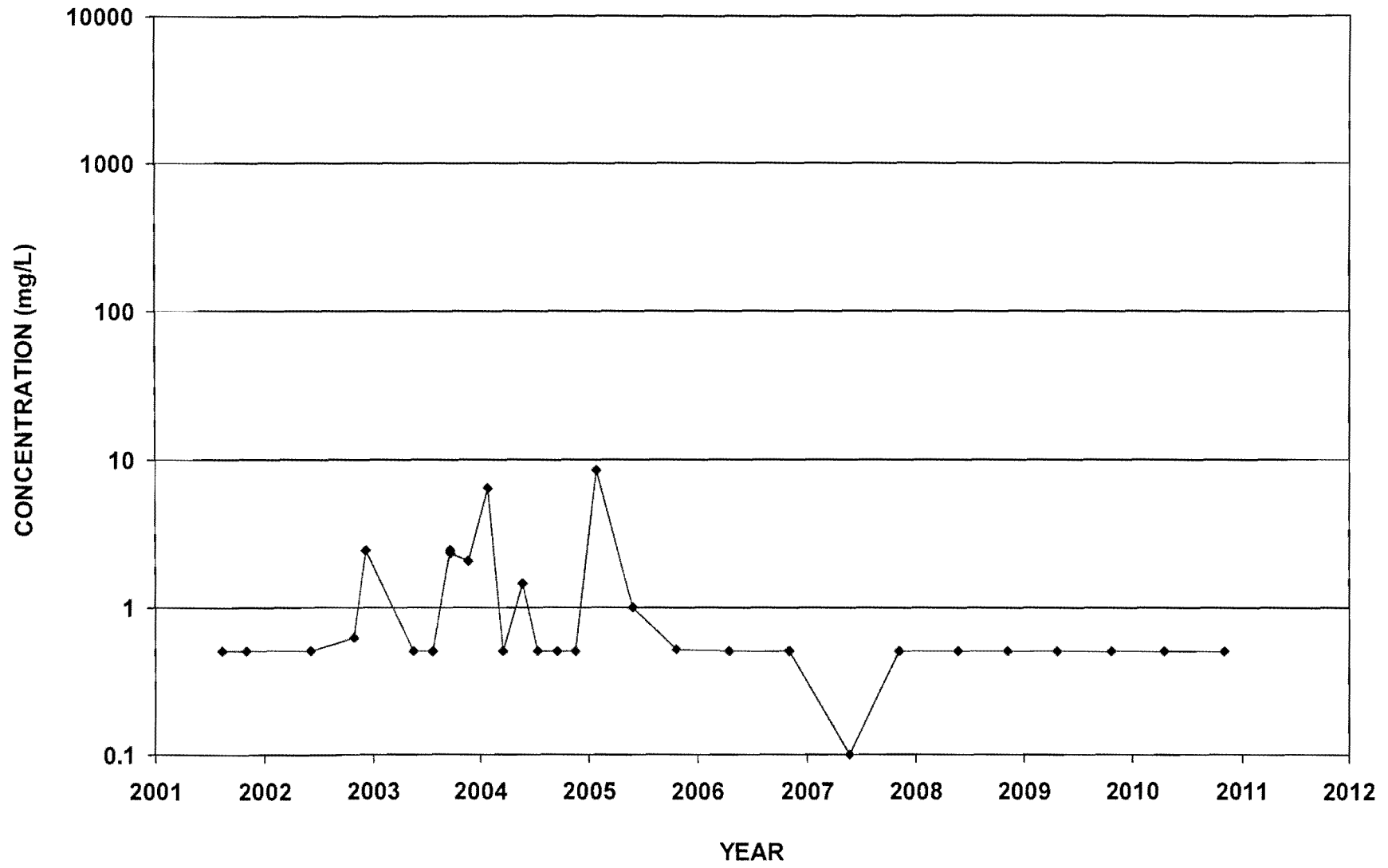
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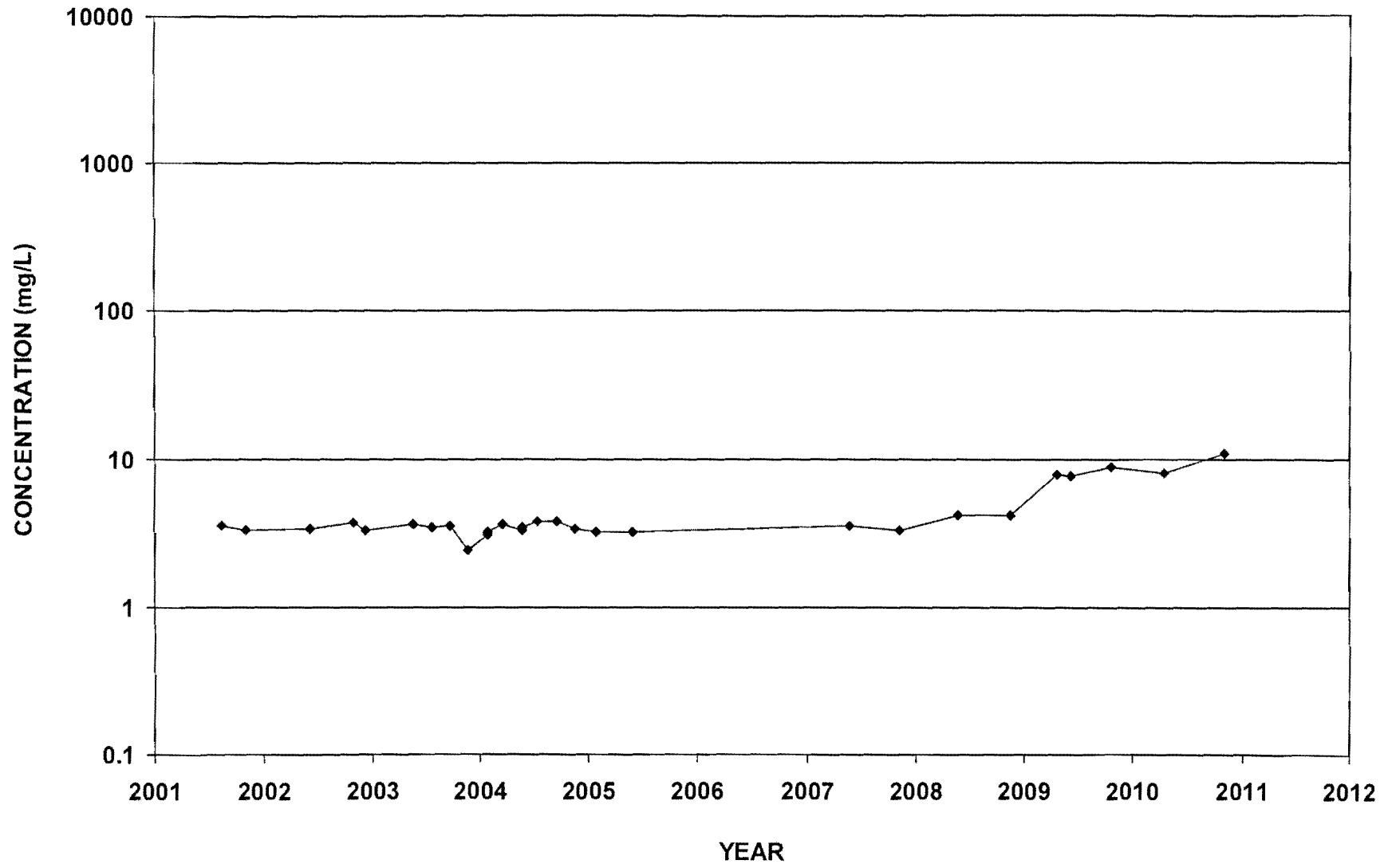
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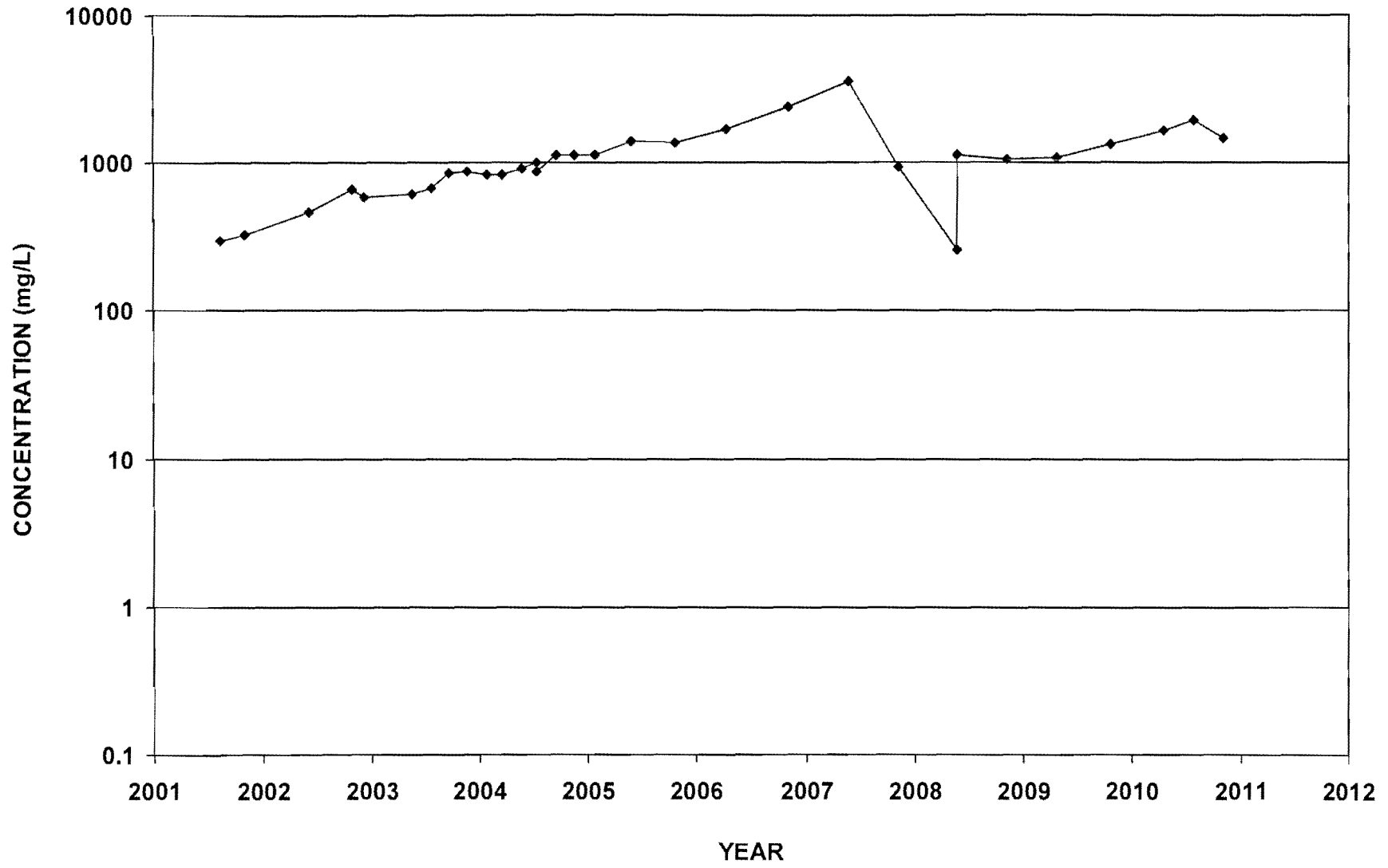
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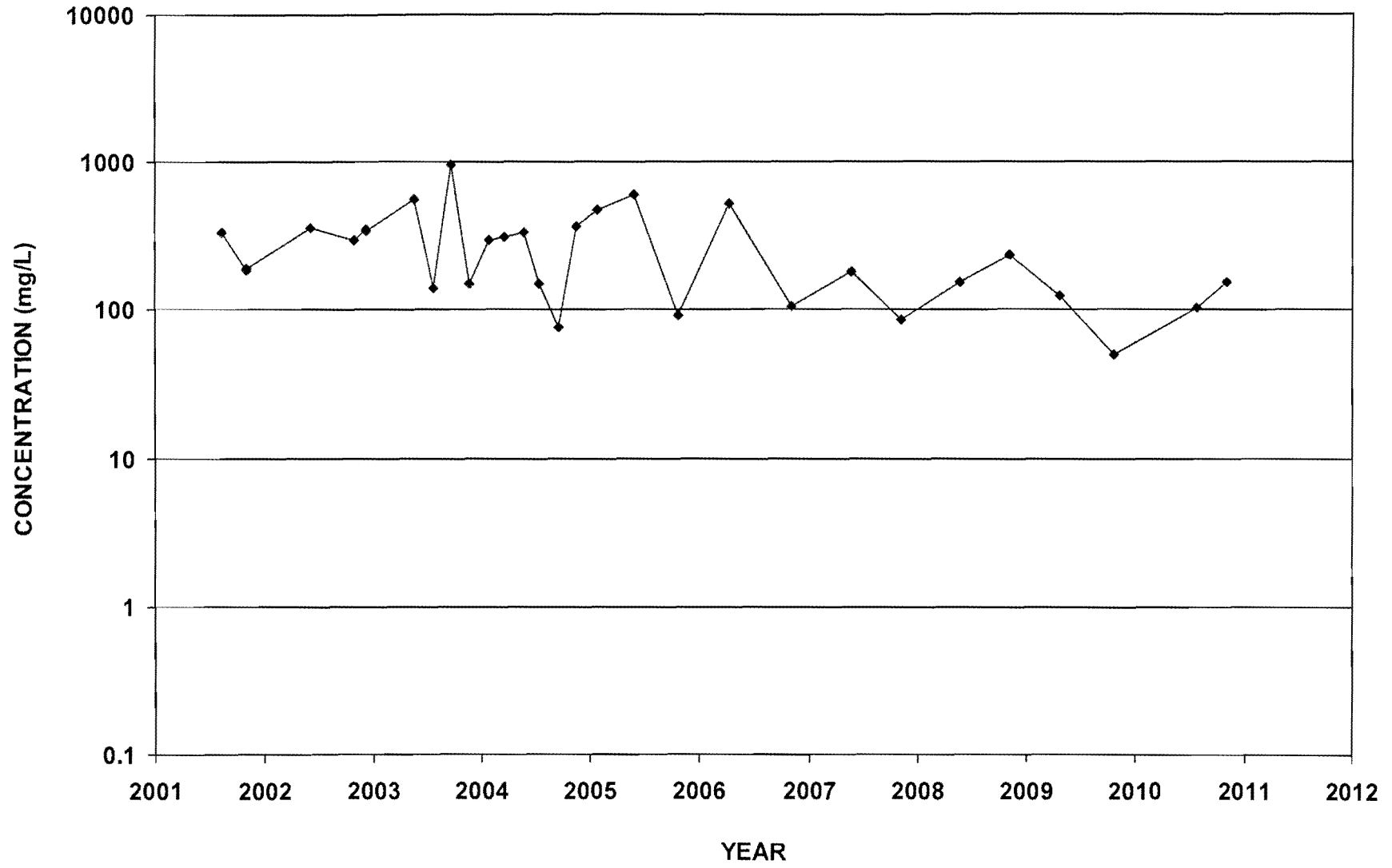
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Nitrate-N



ECMW-6  
Nitrate-N

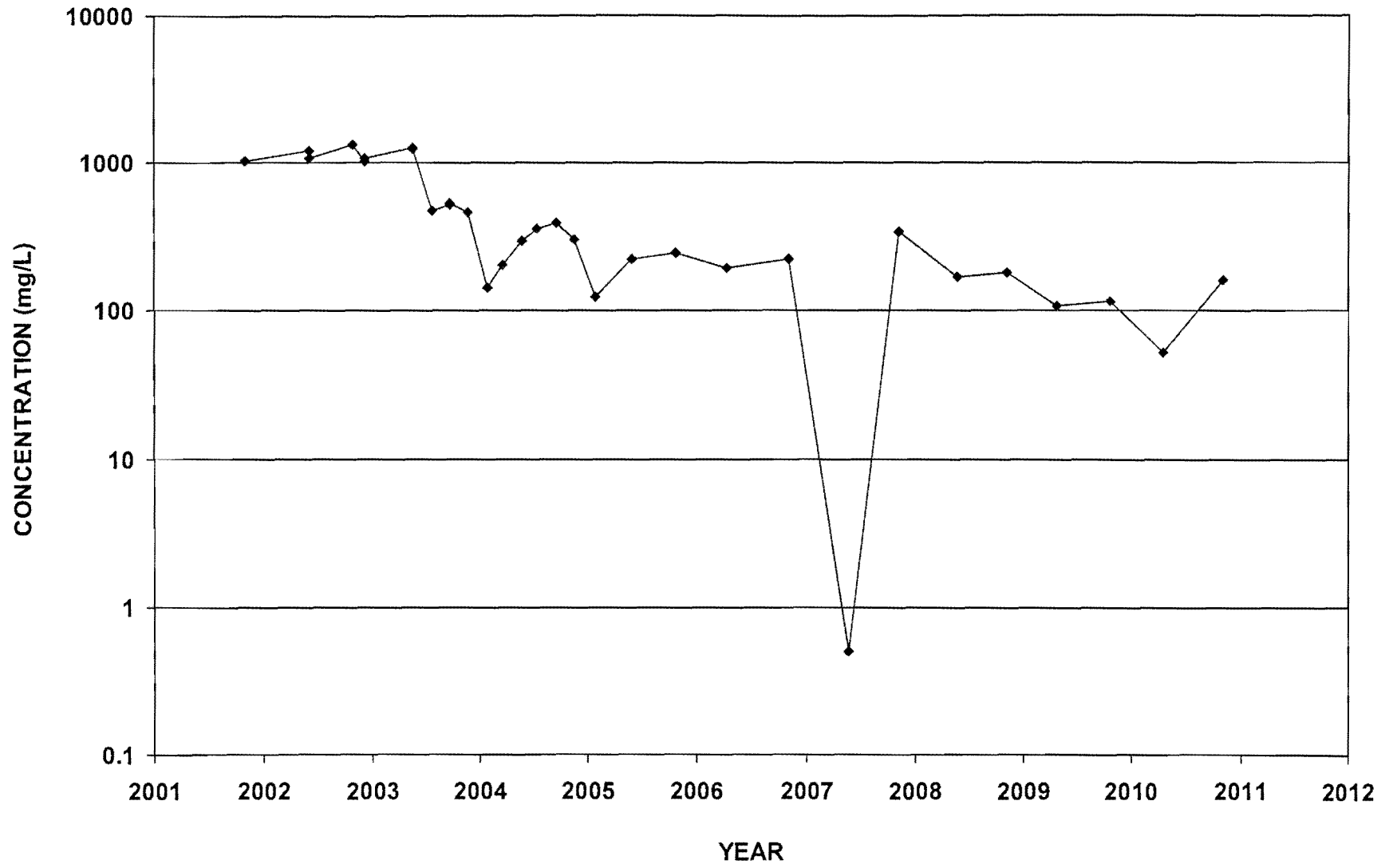


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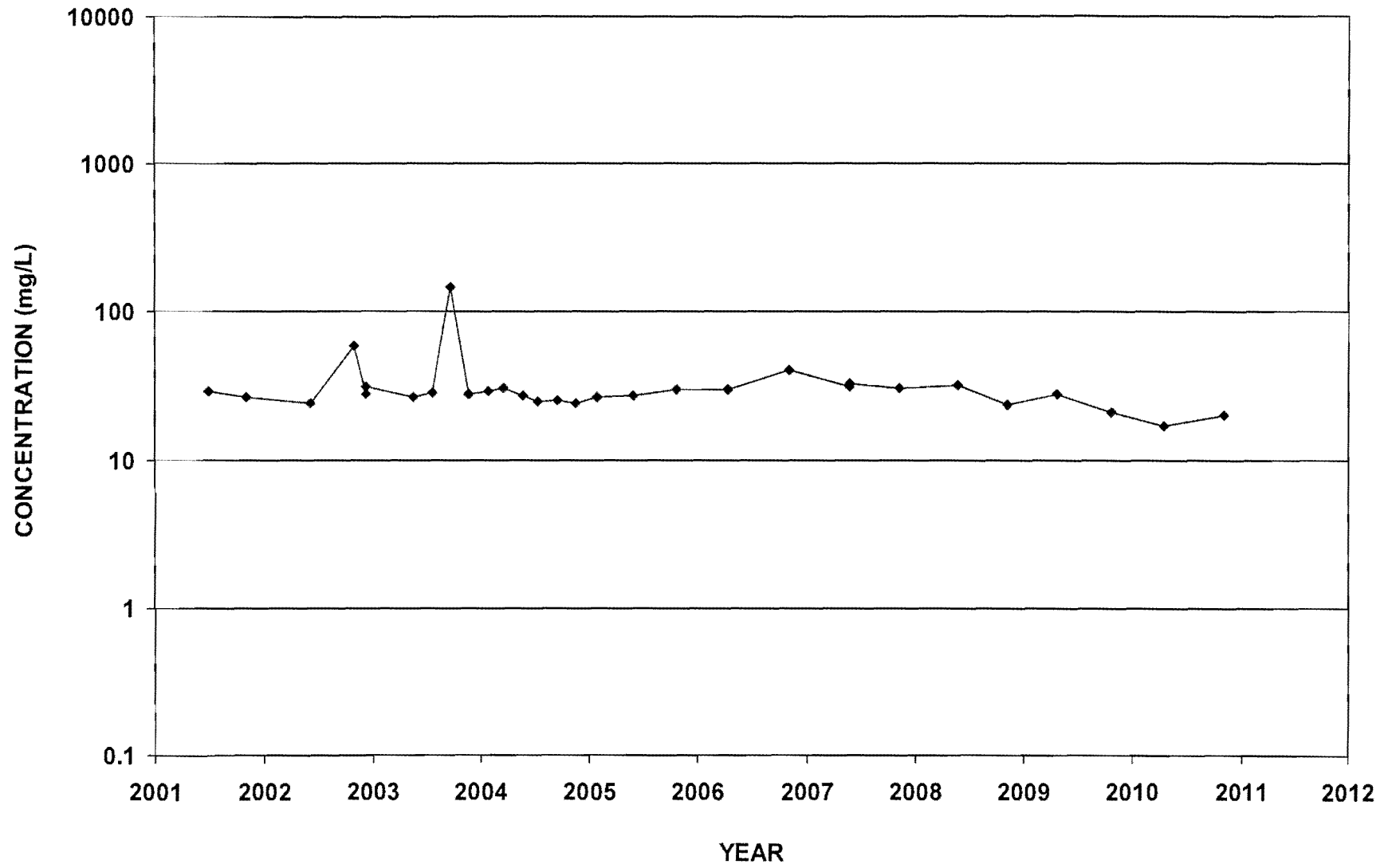




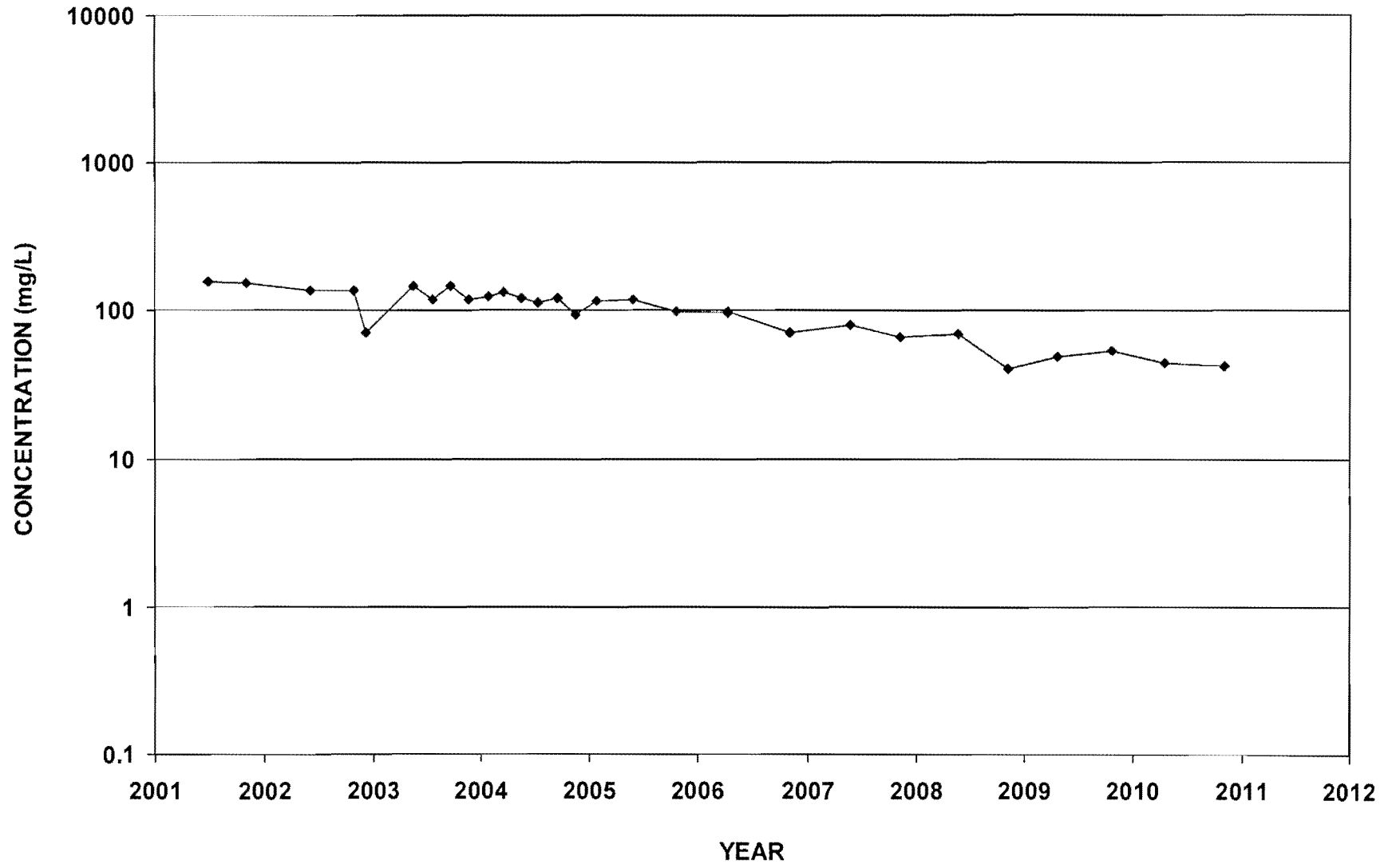
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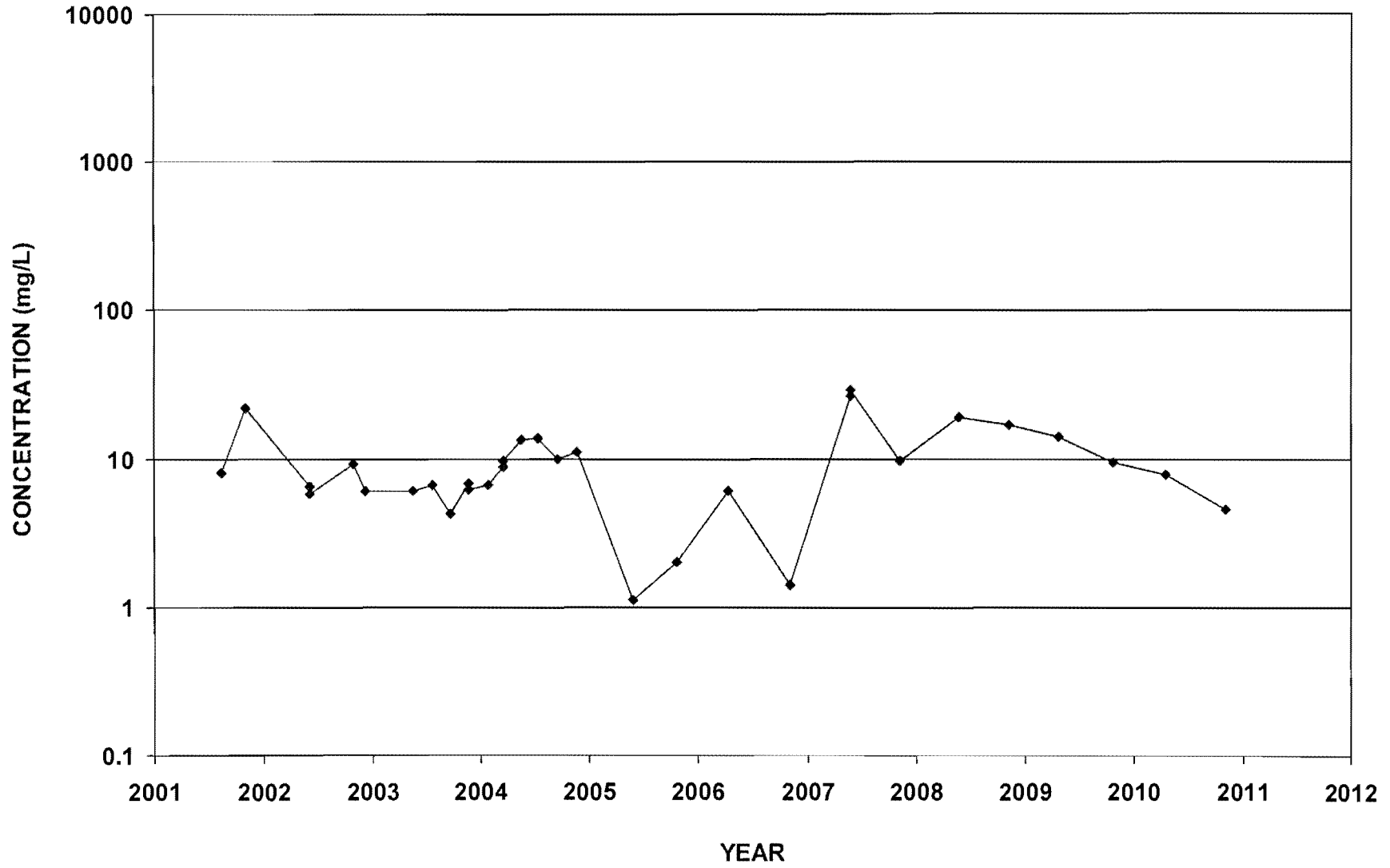
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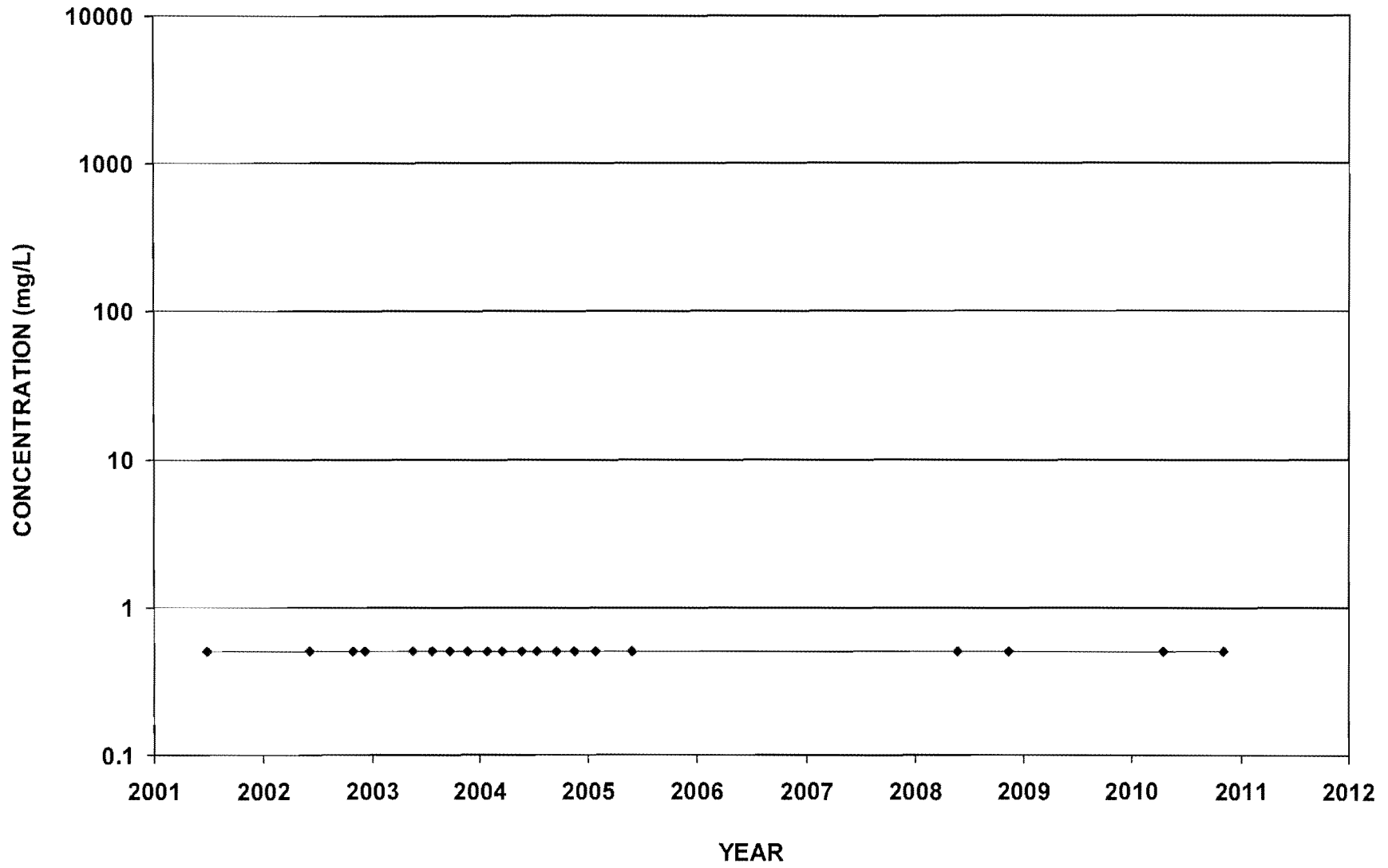
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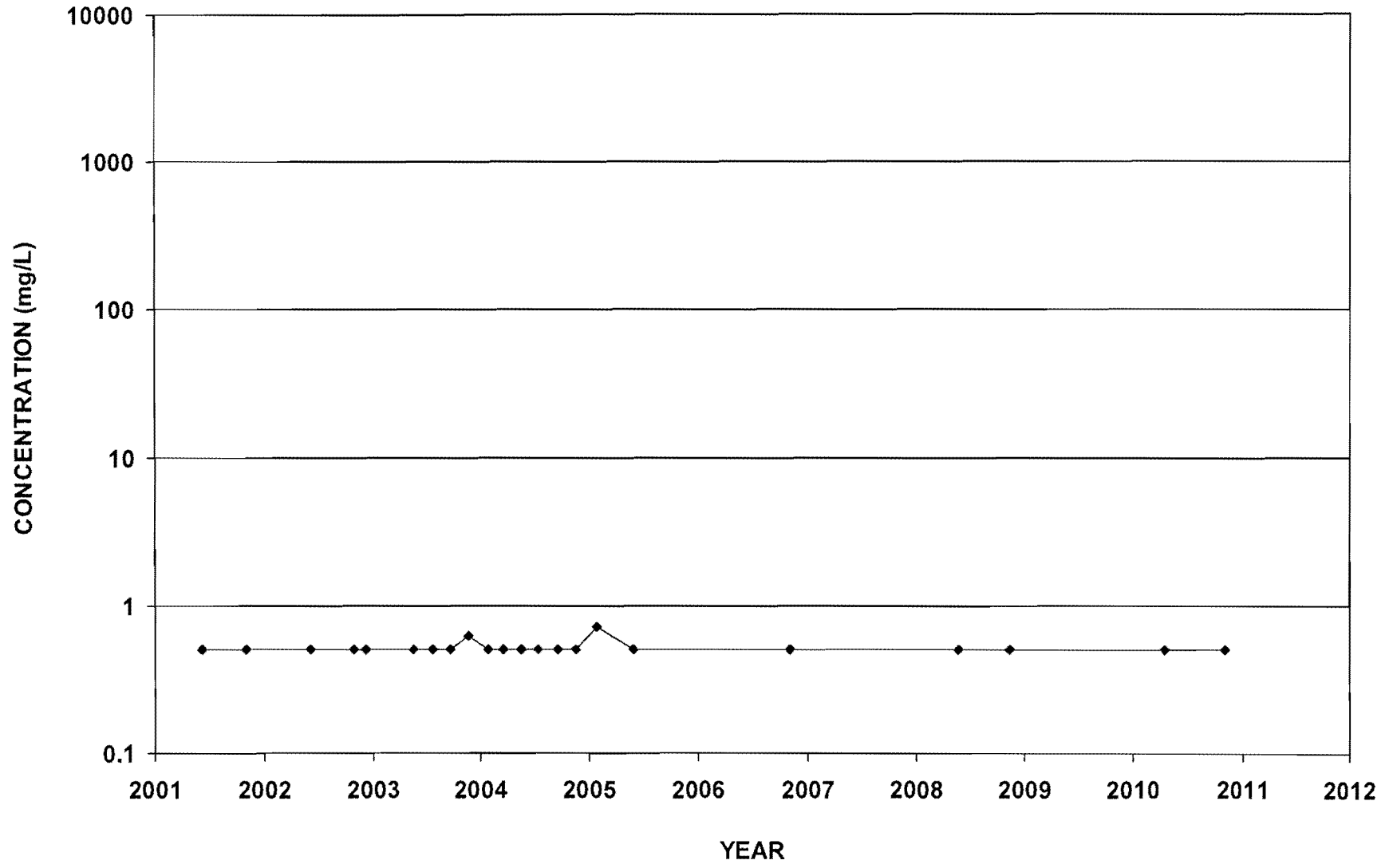
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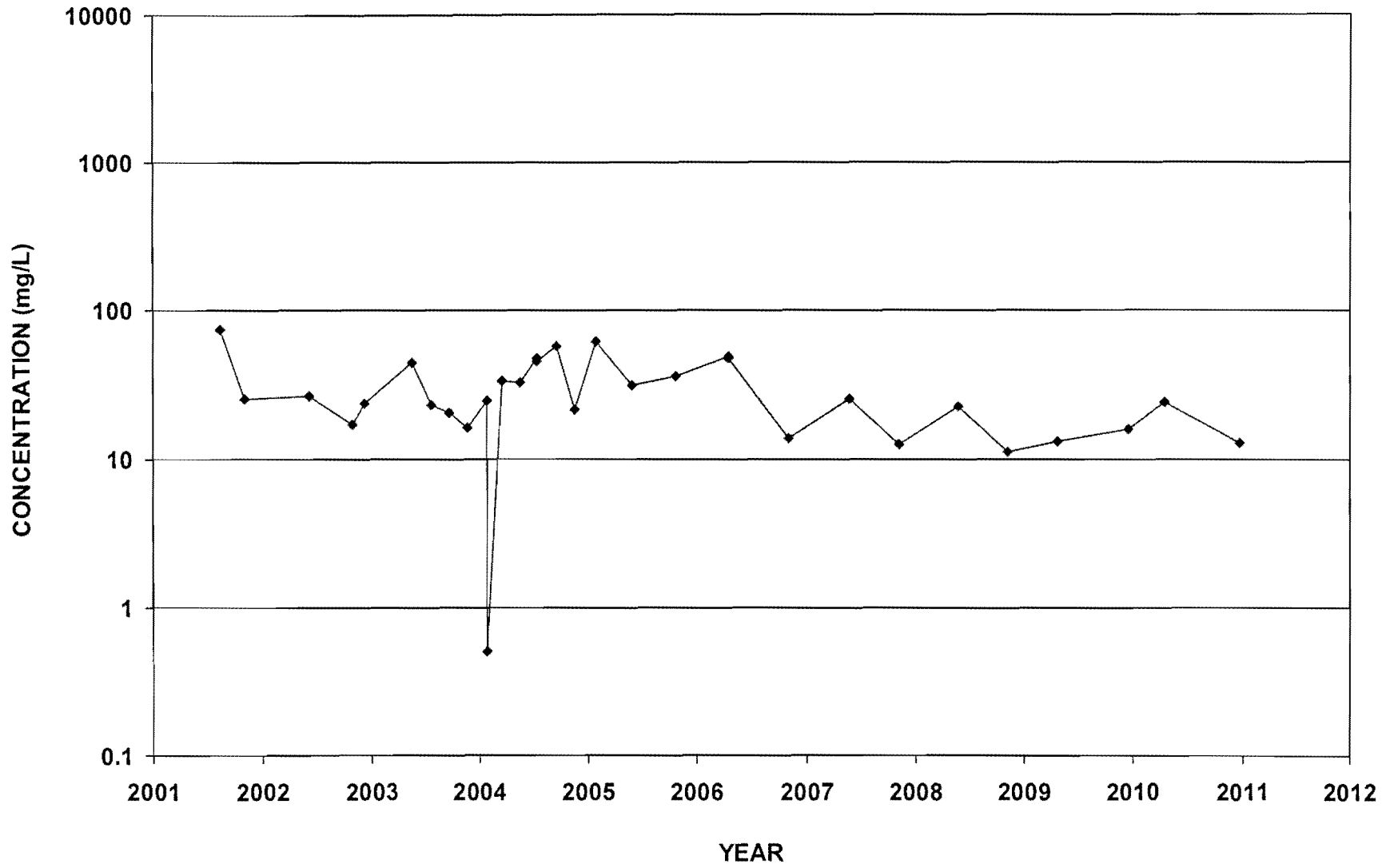
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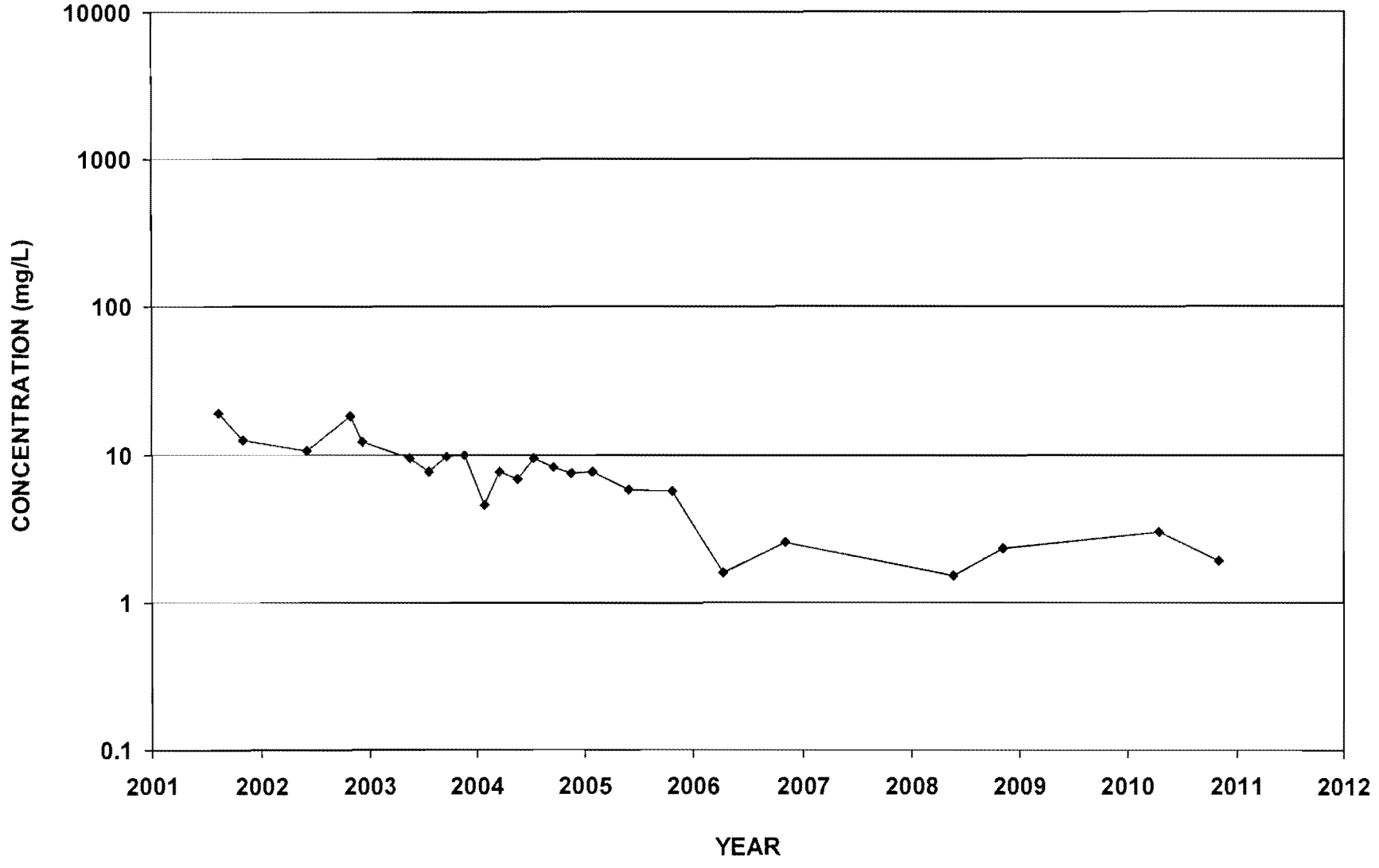
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Nitrate-N



ECMW-14  
Nitrate-N

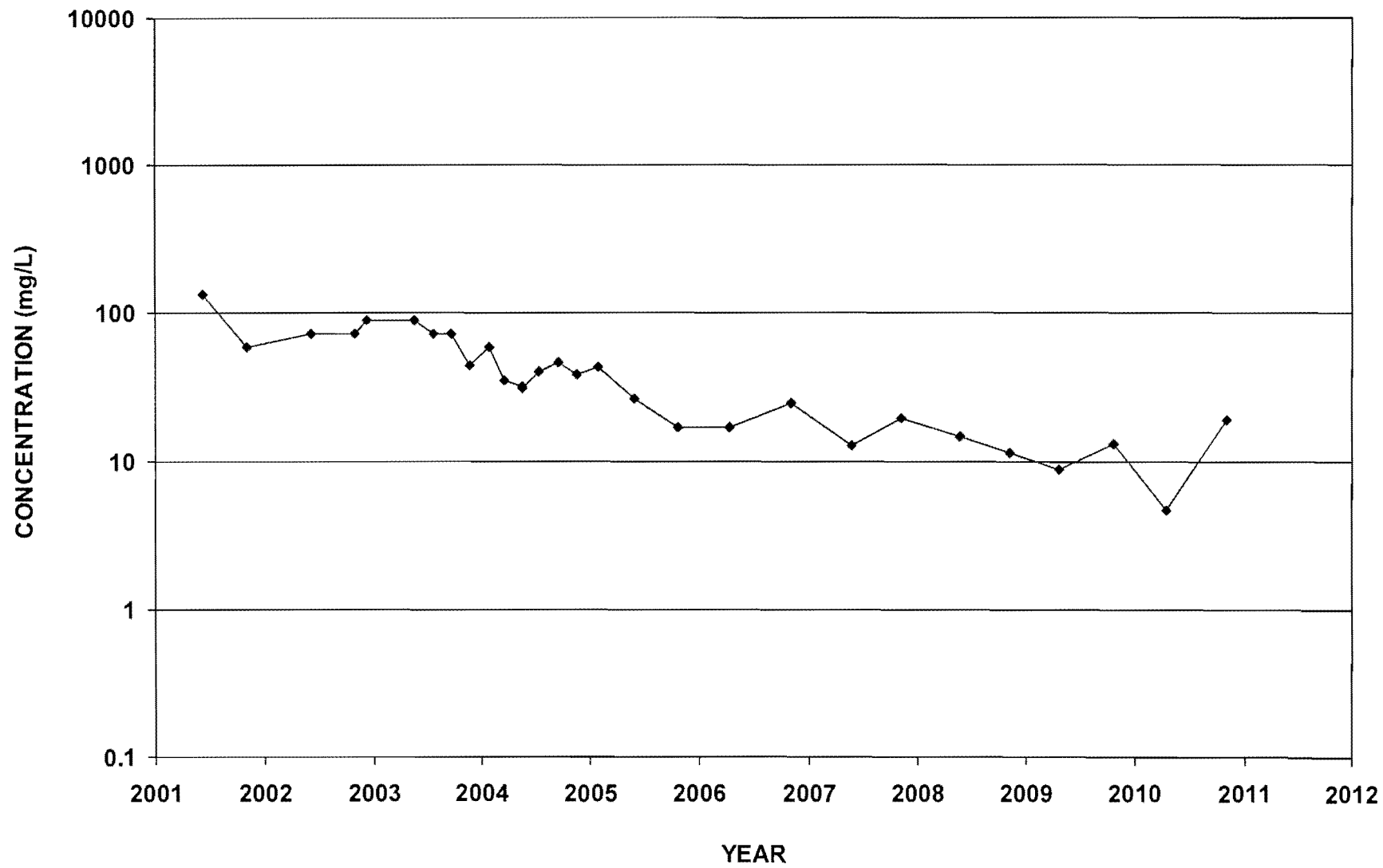


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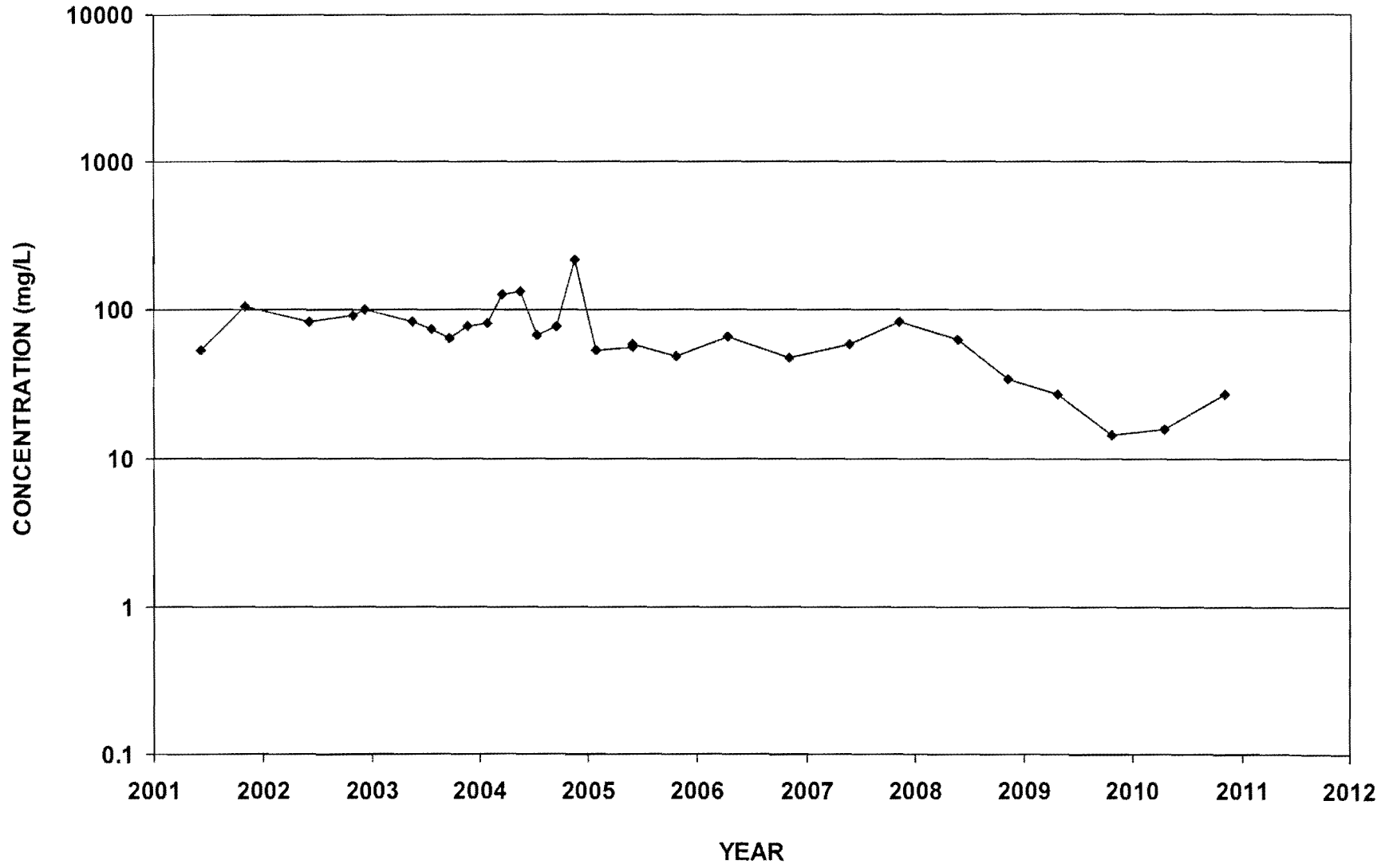




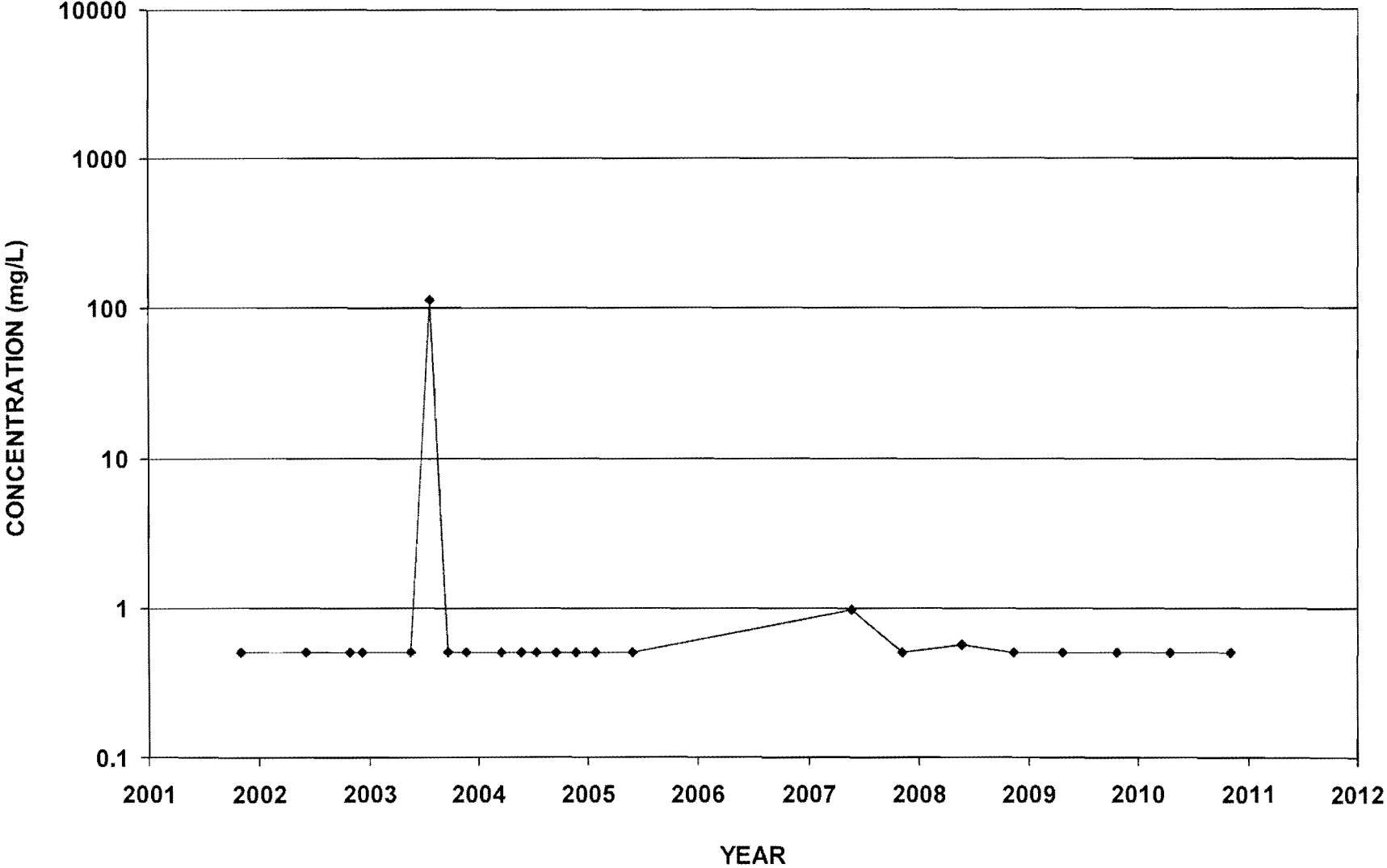
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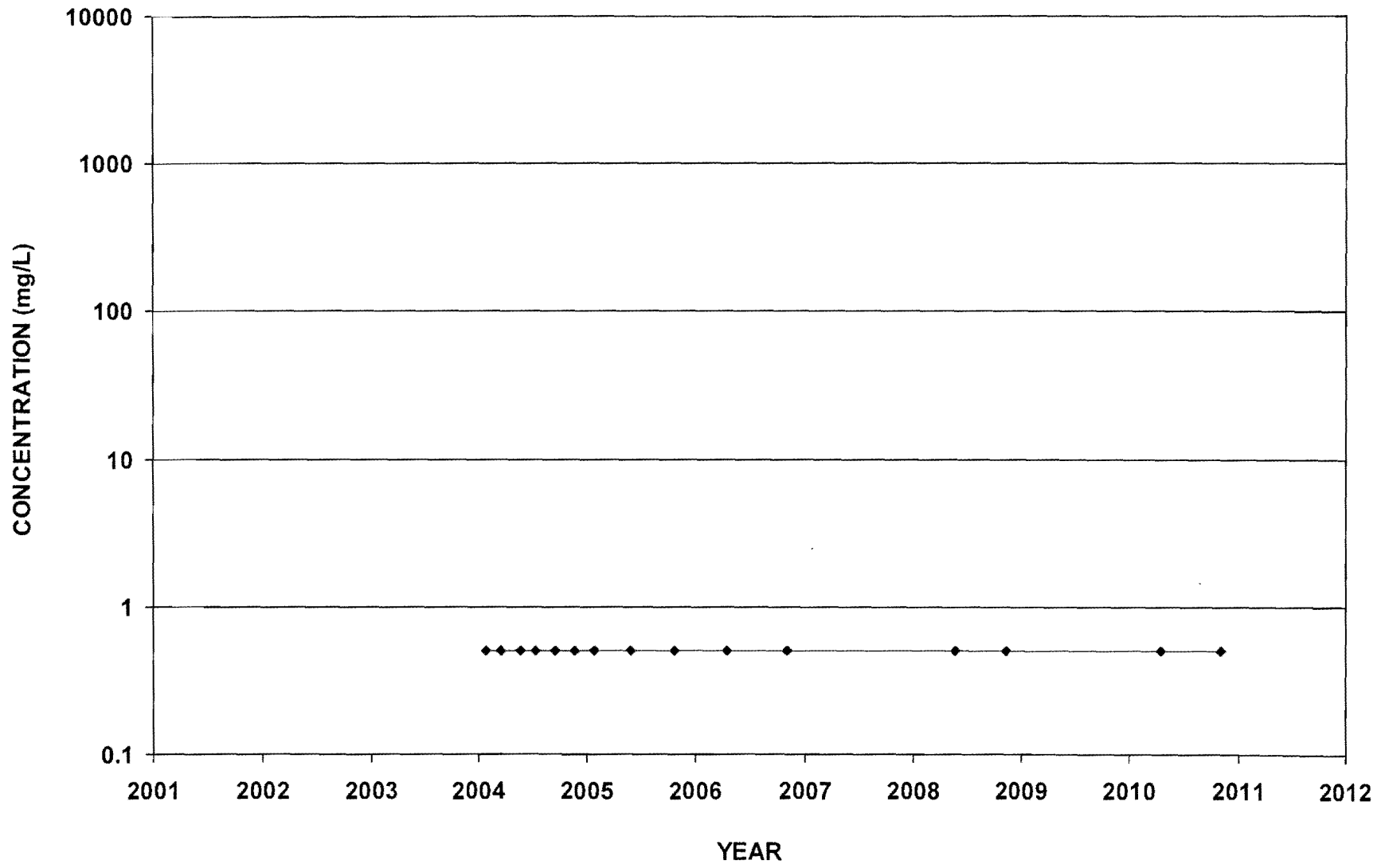
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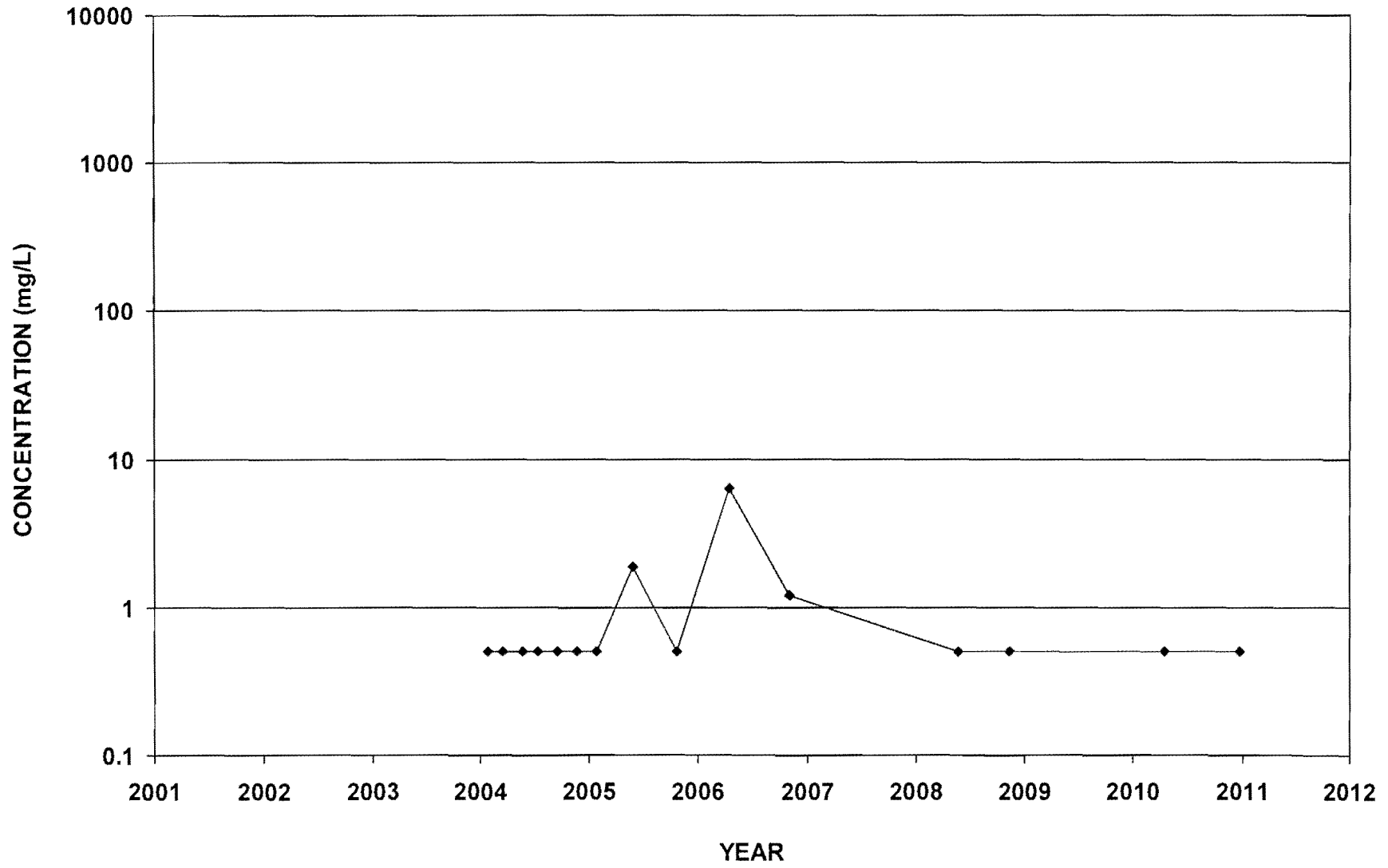
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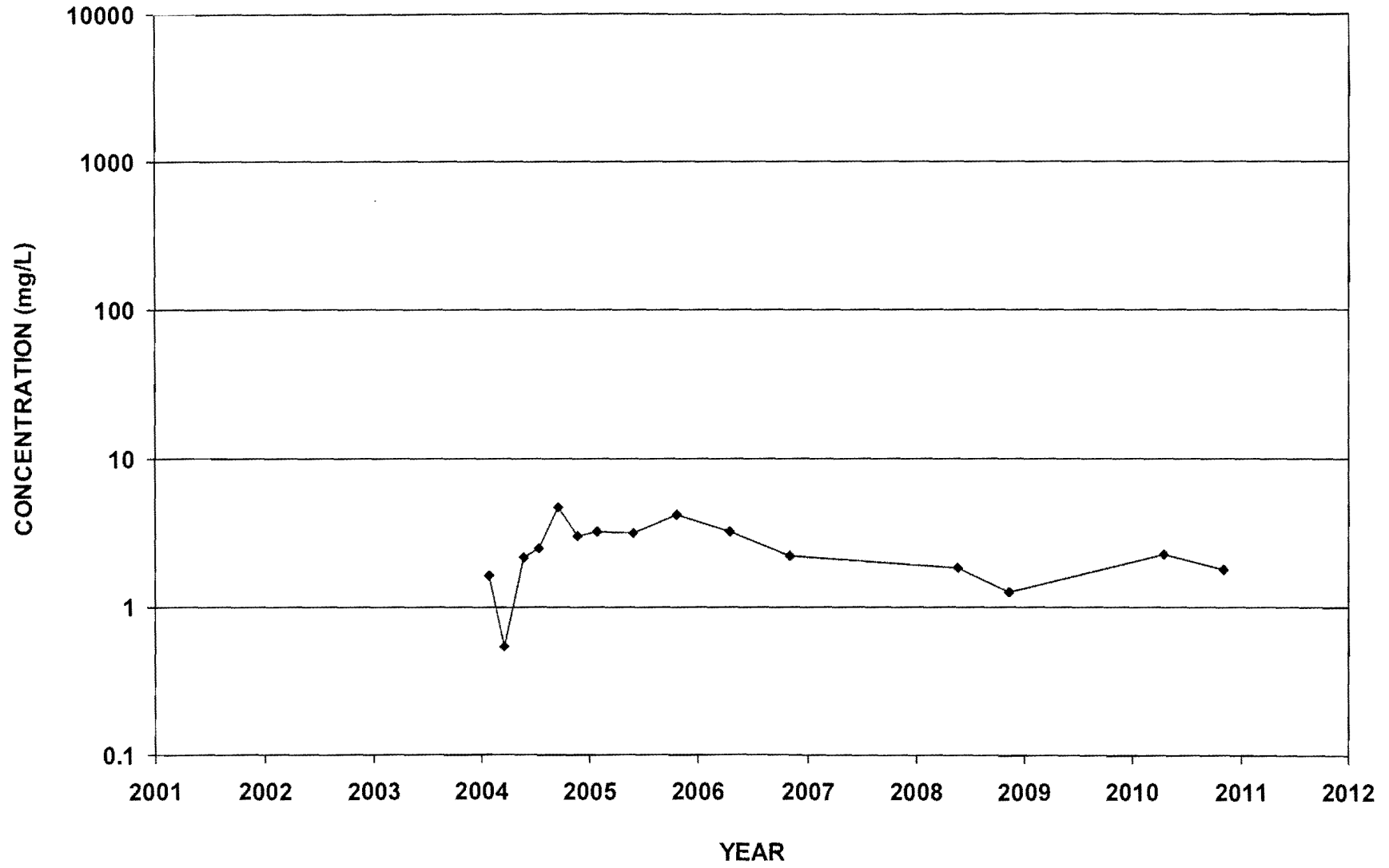
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Nitrate-N



ECMW-20  
Nitrate-N



ECMW-21  
Nitrate-N



ECMW-22  
Nitrate-N

