FINAL

QUARTERLY SUMMARY REPORT
FIRST QUARTER 2013 SAMPLING EVENTS

OPERABLE UNIT No. 2 (GROUNDWATER)
FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Northwestern Division, Kansas City District

May 2013

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OPERABLE UNIT No. 2 (GROUNDWATER)
FORMER NEBRASKA ORDNANCE PLANT
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May 2013

I hereby certify that the enclosed *Quarterly Summary Report First Quarter 2013 Sampling Events*, shown and marked in this submittal, is in compliance with the contract specifications and is submitted for government approval for the former Nebraska Ordnance Plant near Mead, Nebraska.

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LIST OF ACRONYMS AND ABBREVIATIONS

AMA	Atlas Missile Area
AOP	Advanced Oxidation Process
CD	compact disc
COC	contaminant of concern
EW	extraction well
FEW	focused extraction well
GAC	granular activated carbon
GMP	Groundwater Monitoring Program
GTP	Groundwater Treatment Plant
LL	Load Line
µg/L	micrograms per liter
MS/MSD	matrix spike/matrix spike duplicate
NDEQ	Nebraska Department of Environmental Quality
NOP	Nebraska Ordnance Plant
O&M	operations and maintenance
QC	quality control
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
TCE	trichloroethene
UNFL	University of Nebraska-Lincoln Field Laboratory
VOC	volatile organic compound
WSW	water supply well

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1.0 INTRODUCTION

This report summarizes and discusses the results of the groundwater monitoring wells, water supply wells, and operations and maintenance (O&M) locations sampled during the First Quarter 2013 at the former Nebraska Ordnance Plant (NOP). Historical data and information prior to 2012 are presented in various documents including the *Supplemental Remedial Investigation/Feasibility Study, Operable Unit No. 1* (SEC Donohue, 1992), the *Remedial Investigation Report, Operable Unit No. 2 (Groundwater)* (Woodward-Clyde, 1993a), the *Draft Additional Field Investigation Report Operable Unit No. 2 (Groundwater)* (Woodward-Clyde, 1993b), and a series of Groundwater Monitoring Program (GMP) and O&M Annual Reports from 2000 through 2012.

This report contains the following Appendices:

- Appendix A contains the Concentration Trend Charts for Select Monitoring Wells;
- Appendix B contains the Concentration Trend Charts for Select Water Supply Wells;
- Appendix C contains the Quality Control Summary Report First Quarter 2013 Groundwater Monitoring Program Sampling Events (on a compact disk [CD]);
- Appendix D contains the Quality Control Summary Report First Quarter 2013 Water Supply Well Sampling Event (on a CD);
- Appendix E contains the Quality Control Summary Report First Quarter 2013 Operations and Maintenance Sampling Events (on a CD); and
- Appendix F contains the historical spreadsheet of all trichloroethene (TCE) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) results for the groundwater sampling program sampling events (on a CD).

The following sections 2.0, 3.0, and 4.0 contain a summary of results for the First Quarter 2013 sampling event for the Operable Unit 2 Record of Decision contaminants of concern (COCs) and other site specific compounds.

1.1 Objectives

The objectives of the GMP and O&M activities were established in the *Site-Wide Work Plan* (ECC, 2009a), which includes the Field Sampling Plan. The objectives consist of the following:

- To monitor and evaluate potential changes in the concentrations of COCs, as shown on Table 1-1 and defined in the *Record of Decision, Operable Unit No. 2, Former Nebraska Ordnance Plant, Mead, Nebraska* (Woodward-Clyde, 1996);
- To monitor and evaluate the concentration of groundwater plumes;
- To provide data for evaluating whether plume(s) are being contained by the groundwater extraction well network; and
- Treat and discharge extracted groundwater to meet applicable standards.

2.0 SUMMARY OF FIRST QUARTER 2013 GROUNDWATER MONITORING WELL SAMPLING EVENT

The following sections are a summary of the groundwater monitoring well sampling event.

2.1 Field Sampling

Samples from 130 groundwater monitoring wells were collected during the First Quarter 2013 monitoring well sampling event and are summarized below:

- Sixty-six groundwater monitoring wells were sampled for volatile organic compounds (VOCs);
- One hundred twelve groundwater monitoring wells were sampled for explosives;
- Thirteen field duplicate samples were collected;
- Six matrix spike (MS)/matrix spike duplicate (MSD) pairs were collected; and
- Five trip blanks were included with the volatile shipments.

2.2 Analytical Results

The First Quarter 2013 groundwater monitoring well validated analytical results for all site specific compounds are presented in Tables 2-1 through 2-6. Figure 2-1 illustrates all groundwater monitoring wells sampled during this sampling event. Groundwater monitoring well results are presented based on the following well categories defined in the 2013 GMP Plan included in Attachment 1 Field Sampling Plan, Appendix L of the *Site-Wide Work Plan, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009):

- Perimeter groundwater monitoring wells;
- Compliance groundwater monitoring wells;
- Interior Plume groundwater monitoring wells in the Load Line (LL)1 contaminant plume;
- Interior Plume groundwater monitoring wells in the LL2 and LL3 contaminant plumes;
- Interior Plume groundwater monitoring wells in LL4 contaminant plume, which includes the landfill and Atlas Missile Area (AMA) areas;
- Focused Extraction groundwater monitoring wells at the focused extraction well (FEW)-11, FEW-14, and FEW-15 sites; and
- Upgradient, Sidegradient and Downgradient groundwater monitoring wells.

The following is a summary of the former NOP groundwater monitoring well categories sampled during the First Quarter 2013 sampling event:

- Fifty-seven Perimeter groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-1);
- Thirty-three Compliance groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-2);
- Six LL1 Interior Plume groundwater monitoring wells monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-3);

- Twenty-six LL2 and LL3 Interior Plume groundwater monitoring wells monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-4);
- Four LL4/landfill/AMA Interior Plume groundwater monitoring wells monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-5); and
- Four Upgradient, Sidegradient, and Downgradient groundwater monitoring wells were sampled (detected results for site-specific compounds are presented in Table 2-6).

No Focused Extraction groundwater monitoring wells were sampled during the First Quarter 2013 sampling event.

2.3 Groundwater Monitoring Well Summary

The following is a summary of the groundwater monitoring well results for the First Quarter 2013 sampling event:

- Explosives COCs were detected in 15 Perimeter groundwater monitoring wells. All explosives detections were below the Final Target Groundwater Cleanup Goals. Vinyl chloride was detected in MW-159A at 2.9 µg/L. TCE was detected below the Final Target Groundwater Cleanup Goal in MW-80B. Results for all Perimeter groundwater monitoring wells are presented in Table 2-1.
- RDX was detected in 4 Compliance groundwater monitoring wells below the Final Target Groundwater Cleanup Goals. No VOCs were detected in the Compliance groundwater monitoring wells sampled. Results for all Compliance groundwater monitoring wells are presented in Table 2-2.
- TCE exceeded the Final Target Groundwater Cleanup Goals in four of the six LL1 Interior Plume groundwater monitoring well locations and RDX exceeded the goals in one location. Additional site specific compounds were detected including COCs detected below the Final Target Groundwater Cleanup Goals in the LL1 Interior Plume monitoring wells. Results for all LL1 Interior Plume monitoring wells are presented in Table 2-3.
- RDX exceeded the Final Target Groundwater Cleanup Goals in 20 LL2 and LL3 Interior Plume groundwater monitoring well locations and 2,4-DNT was exceeded at one location. No VOCs were detected in the three groundwater monitoring wells sampled. Additional site specific compounds were detected including COCs detected below the Final Target Groundwater Cleanup Goals in the LL2 and LL3 Interior Plume monitoring wells. Results for all LL2 and LL3 Interior Plume monitoring wells are presented in Table 2-4.
- No explosives were detected above the Final Target Groundwater Cleanup Goals for the four LL4, AMA and landfill Interior Plume groundwater monitoring well locations. TCE exceeded the Final Target Groundwater Cleanup Goals in all locations sampled. Results for all LL4, AMA, and landfill Interior Plume monitoring wells are presented in Table 2-5.

- In the four Upgradient, Sidegradient, and Downgradient groundwater monitoring well locations, TCE and RDX was detected in one groundwater monitoring well below the Final Target Groundwater Cleanup Goals. One additional site specific compound (4A-dinitrotoluene) was detected at 0.045 J µg/L which is below the Final Target Groundwater Cleanup Goals. Results for all Upgradient, Sidegradient, and Downgradient groundwater monitoring well locations are presented in Table 2-6.

Historical results are presented for all sampling locations in Appendix F. Appendix A contains trending charts for groundwater monitoring wells sampled during the First Quarter 2013 sampling event. All trending charts require four or more data points to be included in this report.

3.0 SUMMARY OF FIRST QUARTER 2013 WATER SUPPLY WELL SAMPLING EVENT

The following sections are a summary of the water supply wells sampling event.

3.1 Field Sampling

During the water supply well sampling event, 54 water supply well locations were sampled. In addition, the following samples were collected:

- Six field duplicate samples;
- Three MS/MSD samples; and
- Four trip blanks.

The sampling locations at water supply well (WSW)-75, WSW-97, WSW-114, WSW-116 University of Nebraska-Lincoln Field Laboratory (UNFL)-12, and UNFL-23, were listed on the sampling schedule but were not collected as planned. The water was turned off at the UNFL-12, and UNFL-23 sampling locations, and the WSW-75, WSW-97, WSW-114, and WSW-116 sampling locations were not accessible to the field crew at the time of sampling and a sample compliant with work plan requirements could not be obtained.

3.2 Analytical Results

The water supply well validated analytical results for site-specific compounds are presented in Table 3-1. Figure 3-1 illustrates the water supply wells sampled during the First Quarter 2013 sampling event.

3.3 Water Supply Well Summary

During the water supply well sampling event, there were multiple detections of COCs and other site specific compounds. There were no detections of TCE and/or RDX exceeding the Final Target Groundwater Cleanup Goal in any post GAC treatment system samples or any other samples collected during the water supply well sampling event. TCE and/or RDX exceeded the Final Target Groundwater Cleanup Goal in pretreatment granular activated carbon (GAC) system samples at three locations (WSW-52C-B, WSW-53-B, and WSW-54-B). RDX was detected at the Final Target Groundwater Cleanup Goals of 2.0 µg/L in WSW-50B. Results for

the water supply well sampling event are presented in Tables 3-1. Historical results are presented for all sampling locations in Appendix F. Appendix B contains trending charts for water supply wells sampled during the First Quarter 2013 sampling event.

4.0 SUMMARY OF FIRST QUARTER 2013 OPERATIONS AND MAINTENANCE SAMPLING EVENTS

The following sections are a summary of the O&M sampling events.

4.1 Field Sampling

During the O&M sampling events, the following field samples were collected:

- One water sample from each of the following extraction wells (EW) and focused extraction wells (FEW): EW-1R, EW-4, EW-7, EW-9, FEW-11, and FEW-14;
- One water sample from each of the following granular activated carbon (GAC) units during each month of this quarter: 320, 340, and 360;
- One influent water sample and one effluent water sample from the Main Groundwater Treatment Plant (GTP) during each month of this quarter; and one influent field duplicate sample and one effluent field duplicate sample in February 2013;
- One influent water sample and one effluent water sample from groundwater circulation well (GCW-01) in March 2013;
- One influent water sample and one effluent water sample from the LL1 GTP during each month of this quarter; and one influent field duplicate sample and one effluent field duplicate sample in February 2013;
- One influent air sample, one effluent air sample, and one field duplicate sample from the LL1 GTP;
- One influent water sample and one effluent water sample from the LL4 GTP during each month of this quarter;
- One effluent air sample from the LL4 GTP in January 2013; and
- One influent water sample and one effluent water sample from the AOP GTP in January and March 2013. Only the effluent water sample was collected in February because the associated influent water sample was collected from FEW-11.

A trip blank was included in each shipment that contained field samples scheduled for analysis of VOCs. The required frequency of collection for quality control (QC) samples (field duplicate and MS/MSD) is 10% and 5%, respectively. Five QC field duplicate samples and MS/MSD for each parameter was collected for the Main GTP and LL1 GTP sampling events. Field duplicates and MS/MSD samples were not collected for the AOP GTP or LL4 GTP sampling events. The required field QC frequency was met overall for the First Quarter 2013 O&M sampling events.

4.2 Analytical Results

The O&M validated analytical results for site-specific compounds are presented in Table 4-1. Figure 4-1 illustrates all O&M locations sampled during the First Quarter 2013.

4.3 Operations and Maintenance Summary

All extracted groundwater was treated on-site using GAC adsorption, AOP, or air stripping. Treated groundwater was properly disposed of through surface discharge or beneficial re-use. During the First Quarter 2013 O&M sampling events, there were no detections of TCE or RDX that exceeded the National Pollutant Discharge Elimination System limits in any treatment plant effluent water sample. The TCE results for air samples are compared to anticipated TCE concentrations in the influent of the treatment system. Effluent air standards are monitored to ensure the amount of TCE emitted per year remains below the NDEQ permitted threshold of 5 tons/year. All air effluent sample results are presented in Table 5-1.

5.0 DATA VALIDATION RESULTS

Data from the First Quarter 2013 GMP and O&M sampling events were validated in accordance with project required criteria and appropriate qualifiers were assigned to data. Data validation for the former NOP was performed in accordance with the *Mead Validation Guidelines* (ECC, 2007), which includes an evaluation of holding times, a comparison of both field and laboratory duplicate results, a review of trip blank results, and an evaluation of other quality control measurements reported by the laboratory.

The *Quality Control Summary Report First Quarter 2013 Groundwater Monitoring Program Sampling Events* is included as Appendix C, *Quality Control Summary Report First Quarter 2013 Water Supply Well Sampling Event,* is included as Appendix D, and the *Quality Control Summary Report First Quarter 2013 Operations and Maintenance Sampling Events,* is included as Appendix E. All of these reports are included on a CD. These Quality Control Summary Reports present the following information: locations sampled, planned and actual sample collection and analyses, detailed results of the data validation for all sampling events; including QC outliers, data qualifiers, sample collection summaries, data summary tables, and completeness calculations. Each Quality Control Summary Report contains appendices which include sample chain-of-custody records; field sampling documents consisting of water quality parameter forms, daily chemical quality control reports, and daily field logbook pages; data validation qualifiers reference sheet; and the complete analytical laboratory report for the associated sampling event.

6.0 FIRST QUARTER 2013 SAMPLING EVENTS SUMMARY.

Based on the results of the First Quarter 2013 GMP and O&M sampling events, the 2013 Sampling Plans that were previously developed are sufficient and meet the following objectives:

- To monitor and evaluate potential changes in the concentrations of COCs defined in the *Record of Decision* (Woodward-Clyde, 1996);
- To monitor and evaluate the concentration of groundwater plumes;

- To provide data for evaluating whether the plume(s) are being contained by the groundwater extraction well network; and
- Treat and discharge extracted groundwater to meet applicable standards.

GMP and O&M sampling programs will continue as planned for the remaining 2013 quarterly sampling events.

7.0 REFERENCES

ECC, 2007. *Mead Validation Guidelines.* 2007

ECC, 2009. *Final Site-Wide Work Plan, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska*. October.

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NDEQ, 2009. Nebraska Administrative Code, Title 117 - Nebraska Department of Environmental Quality, Chapter 4 – Standards for Water Quality, Section 003 – Aquatic Life, Part 003.01 – General Criteria for Aquatic Life, Subpart 003.01C – Toxic Substances. March.

SEC Donohue, 1992. *Supplemental Remedial Investigation/Feasibility Study, Operable Unit No. 1 Former Nebraska Ordnance Plant, Mead, Nebraska.* September.

Woodward-Clyde, 1993a. *Remedial Investigation Report, Operable Unit No. 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska.* May.

Woodward-Clyde, 1993b. *Draft Additional Field Investigation Report, Operable Unit No. 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska.* October.

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TABLES

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List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
1,2-DCP	1,2-dichloropropane
2,4-DNT	2,4-dinitrotoluene
2ADNT	2-amino-4,6-dinitrotoluene
4ADNT	4-amino-2,6-dinitrotoluene
AOP	Advanced Oxidation Process
CIS-1,2-DCE	cis-1,2-dichloroethene
EFF	effluent
EW	extraction well
GCW	groundwater extraction well
INF	influent
J	estimated
LL	Load Line
MW	monitoring well
ppbv	parts per billion by volume
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
TCE	trichloroethene
TNB	1,3,5-trinitrobenzene
TNT	2,4,6-trinitrotoluene
Trans-1,2-DCE	trans-1,2-dichloroethene
U	not detected at laboratory limit of detection
UJ	qualified as estimated and not detected at laboratory limit of detection
VOC	volatile organic compound
WSW	water supply well

All results are reported in µg/L

All air results are reported in ppbv

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Table 1-1
Final Target Groundwater Cleanup Goals
Groundwater Monitoring Program
Former Nebraska Ordnance Plant, Mead, Nebraska

Contaminant of Concern (COC)	Final Target Groundwater Cleanup Goal (μg/L)
Volatile Organic Compounds	
Methylene chloride	5
1,2-Dichloropropane	5
TCE	5
Explosive Compounds	
Trinitrobenzene (TNB)	0.778
2,4-Dinitrotoluene (2,4-DNT)	1.24
RDX	2
2,4,6-Trinitrotoluene (TNT)	2

Notes: *Source: Woodward-Clyde, Mead ROD, 1996*
Italics = Indicator compounds used to define groundwater contamination at the former Nebraska Ordnance Plant

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Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-106A	03/06/2013	0.091 U	0.091 U	0.045 U	0.045 U	0.045 U	0.091 U
MW-106B	03/06/2013	0.094 U	0.094 U	0.047 U	0.047 U	0.047 U	0.094 U
MW-107A	03/06/2013	0.092 U	0.092 U	0.046 U	0.046 U	0.046 U	0.092 U
MW-107B	03/06/2013	0.094 U	0.094 U	0.047 U	0.047 U	0.047 U	0.094 U
MW-107D	03/06/2013	0.091 U	0.091 U	0.045 U	0.045 U	0.045 U	0.091 U
MW-110A	03/07/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-110B	03/07/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-110D	03/07/2013	0.098 U	0.098 U	0.049 U	0.049 U	0.049 U	0.098 U
MW-112A	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-112B	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-113A	03/06/2013	0.092 U	0.092 U	0.046 U	0.046 U	0.046 U	0.092 U
MW-113B	03/06/2013	0.091 U	0.091 U	0.045 U	0.045 U	0.045 U	0.091 U
MW-113D	03/06/2013	0.091 U	0.091 U	0.045 U	0.045 U	0.045 U	0.091 U
MW-114A	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-114B	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-114D	03/04/2013	0.096 U	0.096 U	0.048 U	**0.073 J**	0.048 U	0.096 U
MW-115A	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-115B	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-115D	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-116A	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-116B	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-116D	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-118A	03/01/2013	0.096 U	0.096 U	**0.11 J**	**0.75**	0.048 U	0.096 U
MW-118B	03/01/2013	0.096 U	0.096 U	**0.11 J**	**0.79**	0.048 U	0.096 U
MW-147A	02/27/2013	0.092 U	0.092 U	0.046 U	0.046 U	0.046 U	0.092 U
MW-147B	02/27/2013	0.092 U	0.092 U	0.046 U	0.046 U	0.046 U	0.092 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-147D	02/27/2013	0.092 U	0.092 U	0.046 U	0.046 U	0.046 U	0.092 U
MW-159A	03/06/2013	0.95 U	**0.084 J**	0.046 U	0.046 U	**0.069 J**	0.092 U
MW-159B	03/06/2013	0.091 U	0.091 U	0.045 U	0.045 U	0.045 U	0.091 U
MW-35A	03/01/2013	0.096 U	0.096 U	**0.062 J**	**0.34 J**	0.048 U	0.096 U
MW-35B	03/01/2013	0.096 U	0.096 U	**0.044 J**	**0.084 J**	0.048 U	0.096 U
MW-35D	03/01/2013	0.096 U	0.096 U	**0.040 J**	0.048 U	0.048 U	0.096 U
MW-38A	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	**0.17 J**	0.096 U
MW-38D	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-46A	03/06/2013	0.091 U	0.091 U	0.045 U	0.045 U	0.045 U	0.091 U
MW-46B	03/06/2013	0.092 U	0.092 U	0.046 U	0.046 U	0.046 U	0.092 U
MW-46D	03/06/2013	0.091 U	0.091 U	0.045 U	0.045 U	0.045 U	0.091 U
MW-83A	02/27/2013	0.096 U	0.096 U	0.048 U	**0.21 J**	0.048 U	0.096 U
MW-83B	02/27/2013	0.096 U	0.096 U	0.048 U	**0.14 J**	0.048 U	0.096 U
MW-83D	02/27/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-84A	02/27/2013	0.096 U	0.096 U	0.048 U	**0.24 J**	0.048 U	0.096 U
MW-84B	03/26/2013	0.096 U	0.096 U	0.048 U	**0.13 J**	0.048 U	0.096 U
MW-84D	02/27/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-85A	03/01/2013	0.096 U	0.096 U	0.048 U	**0.72**	0.048 U	0.096 U
MW-85B	03/01/2013	0.096 U	0.096 U	**0.10 J**	**1.1**	0.048 U	0.096 U
MW-85D	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-95A	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-95B	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-95D	02/28/2013	0.096 U	0.096 U	0.048 U	**0.089 J**	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
MW-102A	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-102B	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-103A	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-103B	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-103D	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-106A	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-106B	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-107A	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-107B	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-107D	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-110A	03/07/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-110B	03/07/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-110D	03/07/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-112A	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-112B	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-113A	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-113B	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-113D	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-114A	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-114B	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-114D	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-115A	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-115B	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-115D	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-116A	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-116B	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-1 Perimeter Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-116D	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-159A	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**2.9**
MW-159B	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-38A	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-38D	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-46A	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-46B	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-46D	03/06/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-80A	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-80B	02/28/2013	0.25 U	0.25 U	0.25 U	**1.4**	0.25 U	0.25 U
MW-80D	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-2 Compliance Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-100A	03/01/2013	0.096 U	0.096 U	0.048 U	**0.095 J**	0.048 U	0.096 U
MW-100B	03/01/2013	0.096 U	0.096 U	0.048 U	**0.10 J**	0.048 U	0.096 U
MW-100D	03/01/2013	0.096 U	0.096 U	0.048 U	**0.082 J**	0.048 U	0.096 U
MW-158A	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-158B	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-158D	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-20A	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-20B	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-20C	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-82A	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-82B	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-82D	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-86A	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-86B	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-86D	03/01/2013	0.096 U	0.096 U	0.048 U	**0.59**	0.048 U	0.096 U
MW-88A	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-88B	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-88D	03/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-96A	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-96B	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-96D	02/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-97A	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-97B	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-97D	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-98A	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-98B	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
MW-98D	03/01/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-2 Compliance Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
MW-101A	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-101B	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-101D	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-158A	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-158B	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-158D	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-61A	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-61B	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-61D	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-88A	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-88B	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-88D	03/04/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-3 LL1 Interior Plume Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives							
	Sampling Date	**2,4-DNT**	**2A-DNT**	**4A-DNT**	**RDX**	**TNB**	**TNT**
MW-160A	03/07/2013	0.096 U	0.096 U	**0.42 J**	**1.8**	0.048 U	0.096 U
MW-160B	03/07/2013	0.096 U	0.096 U	**0.060 J**	**0.75 J**	0.048 U	0.096 U
MW-161A	03/07/2013	0.096 U	0.096 U	**0.068 J**	0.048 U	0.048 U	0.096 U
MW-161B	03/07/2013	**0.14 J**	0.096 U	**4.1 J**	**6.9**	**0.078 J**	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-3 LL1 Interior Plume Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-160A	03/07/2013	1.3 U	**4.5 J**	1.3 U	**2100**	1.3 U	1.3 U
MW-160B	03/07/2013	0.93 U	0.93 U	0.93 U	**250**	0.93 U	0.93 U
MW-161A	03/07/2013	1.3 U	**42.0**	1.3 U	**9400**	**1.9 J**	1.3 U
MW-161B	03/07/2013	1.3 U	**16.0**	1.3 U	**6900**	**2.1 J**	1.3 U
MW-179A	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-179B	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-4 LL2 and LL3 Interior Plume Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-04B	03/07/2013	0.096 U	0.096 U	**0.079 J**	**13.0**	0.048 U	0.096 U
MW-145B	03/07/2013	0.096 U	0.096 U	**0.56**	**24.0**	0.048 U	0.096 U
MW-148A	03/07/2013	0.098 U	0.098 U	0.049 U	0.049 U	0.049 U	0.098 U
MW-162A	02/27/2013	0.092 U	0.092 U	**0.58**	**63.0**	0.046 U	0.092 U
MW-163A	02/27/2013	0.092 U	0.092 U	**0.46**	**13.0**	0.046 U	0.092 U
MW-164A	02/27/2013	0.092 U	0.092 U	**1.3**	**76.0**	0.046 U	0.092 U
MW-165B	02/27/2013	0.092 U	0.092 U	**3.2**	**170**	0.046 U	0.092 U
MW-166A	02/27/2013	0.092 U	0.092 U	**0.49**	**68.0**	0.046 U	0.092 U
MW-166B	02/27/2013	0.092 U	0.092 U	0.046 U	**1.9**	0.046 U	0.092 U
MW-167A	02/27/2013	0.092 U	0.092 U	**0.98**	**34.0**	0.046 U	0.092 U
MW-167B	02/27/2013	0.092 U	0.092 U	**0.20 J**	**15.0**	0.046 U	0.092 U
MW-168A	02/27/2013	0.092 U	0.092 U	**0.067 J**	**7.3**	0.046 U	0.092 U
MW-168B	02/27/2013	0.092 U	0.092 U	0.046 U	**0.32 J**	0.046 U	0.092 U
MW-169A	02/27/2013	0.096 U	0.096 U	**0.078 J**	**12.0**	0.048 U	0.096 U
MW-169B	02/27/2013	0.096 U	0.096 U	**0.30 J**	**55.0**	0.048 U	0.096 U
MW-170A	02/27/2013	0.096 U	0.096 U	0.048 U	**5.3**	0.048 U	0.096 U
MW-171A	03/07/2013	**0.53**	**0.89**	**1.2**	**68.0**	0.048 U	**0.27 J**
MW-171B	03/07/2013	**3.1 J**	**5.2**	**3.1**	**89.0**	0.048 U	0.096 U
MW-172A	03/01/2013	0.096 U	0.096 U	**0.84**	**4.0**	0.048 U	0.096 U
MW-172B	03/01/2013	0.096 U	0.096 U	**0.51**	**2.8**	0.048 U	0.096 U
MW-173A	03/01/2013	0.096 U	0.096 U	**0.71**	**7.0**	0.048 U	0.096 U
MW-174A	02/28/2013	0.096 U	0.096 U	**0.055 J**	**0.16 J**	0.048 U	0.096 U
MW-174B	02/28/2013	0.096 U	0.096 U	**0.32 J**	**1.2**	0.048 U	0.096 U
MW-175A	02/27/2013	0.096 U	**0.47**	**2.1**	**8.7**	0.048 U	0.096 U
MW-175B	02/27/2013	0.096 U	**0.072 J**	**1.6**	**3.3**	0.048 U	0.096 U
MW-65A	03/07/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-4 LL2 and LL3 Interior Plume Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-175A	02/27/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-175B	02/27/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-65A	03/07/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-5 LL4, AMA, and Landfill Interior Plume Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-155B	03/06/2013	0.092 U	0.092 U	0.046 U	**0.25 J**	0.046 U	0.092 U
MW-176A	03/07/2013	0.096 U	0.096 U	**0.048 J**	**0.69**	0.048 U	0.096 U
MW-176B	03/07/2013	0.096 U	0.096 U	**0.043 J**	**0.25 J**	0.048 U	0.096 U
MW-178B	03/06/2013	0.092 U	0.092 U	0.046 U	**1.3**	0.046 U	0.092 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-5 LL4, AMA, and Landfill Interior Plume Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-155B	03/06/2013	0.73 U	**0.73 J**	0.73 U	**160**	0.73 U	0.73 U
MW-176A	03/07/2013	0.25 U	**2.6**	0.25 U	**470**	0.25 U	0.25 U
MW-176B	03/07/2013	0.50 U	**0.59 J**	0.50 U	**130**	0.50 U	0.50 U
MW-178B	03/06/2013	0.25 U	**0.65 J**	0.25 U	**30.0**	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-6 Upgradient, Sidegradient and Downgradient Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
MW-31A	03/07/2013	0.096 U	0.096 U	**0.045 J**	0.048 U	0.048 U	0.096 U
MW-31B	03/07/2013	0.096 U	0.096 U	0.048 U	**1.5**	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 2-6 Upgradient, Sidegradient and Downgradient Monitoring Wells

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
MW-177A	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-177B	02/28/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
MW-31A	03/07/2013	0.25 U	0.25 U	0.25 U	**0.22 J**	0.25 U	0.25 U
MW-31B	03/07/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 3-1 Water Supply Well

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
UNFL-09A	02/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
UNFL-10A	02/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
UNFL-27	02/04/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-100	01/28/2013	0.096 U	0.096 U	0.048 U	**0.12 J**	0.048 U	0.096 U
WSW-103	01/28/2013	0.096 UJ	0.096 UJ	0.048 UJ	0.048 UJ	0.048 UJ	0.096 UJ
WSW-104	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-105	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-106	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-109	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-110	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-112	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-113	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-115	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-117	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-29	01/28/2013	0.096 U	0.096 U	0.048 U	**0.12 J**	0.048 U	0.096 U
WSW-29A	01/28/2013	0.096 U	0.096 U	0.048 U	**0.35 J**	0.048 U	0.096 U
WSW-50A	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-50B	01/28/2013	0.10 U	0.10 U	0.050 U	**2.0**	**0.074 J**	0.10 U
WSW-51	01/28/2013	0.10 U	0.10 U	0.050 U	**0.31 J**	0.050 U	0.10 U
WSW-51A	01/28/2013	0.10 U	0.10 U	0.051 U	**1.6**	0.051 U	0.10 U
WSW-52A	01/31/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-52A-B	01/31/2013	0.096 U	0.096 U	0.048 U	**0.22 J**	0.048 U	0.096 U
WSW-52B	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-52C	02/15/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-52C-B	02/15/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-53	01/31/2013	0.10 U	0.10 U	0.050 U	0.050 U	0.050 U	0.10 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 3-1 Water Supply Well

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
WSW-53-B	01/31/2013	0.096 U	0.096 U	**0.24 J**	**6.2**	0.048 U	0.096 U
WSW-54	01/31/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-54-B	01/31/2013	0.096 U	0.096 U	**0.16 J**	**2.3**	0.048 U	0.096 U
WSW-55	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-56	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-57	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-58	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-59	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-60	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-61	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-62	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-65	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-66	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-67	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-68	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-73	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-74	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-76	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-77	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-79	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-86	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-87	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-89	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-91	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-92	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-95	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U
WSW-96	01/28/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 3-1 Water Supply Well

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
WSW-99	01/29/2013	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.096 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 3-1 Water Supply Well

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
UNFL-09A	02/04/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
UNFL-10A	02/04/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
UNFL-27	02/04/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-100	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-103	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-104	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-105	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-106	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-109	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-110	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-112	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-113	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-115	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-117	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-29	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-29A	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-50A	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-50B	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-51	01/28/2013	0.45 U	0.37 U	**0.59**	**0.43 J**	0.24 U	0.33 U
WSW-51A	01/28/2013	0.45 U	0.37 U	0.36 U	**4.6**	0.24 U	0.33 U
WSW-52A	01/31/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-52A-B	01/31/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-52B	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-52C	02/15/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-52C-B	02/15/2013	4.5 U	3.7 U	3.6 U	**130**	2.4 U	3.3 U
WSW-53	01/31/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 3-1 Water Supply Well

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
WSW-53-B	01/31/2013	0.45 U	0.37 U	0.36 U	**2.1**	0.24 U	0.33 U
WSW-54	01/31/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-54-B	01/31/2013	0.45 U	0.37 U	0.36 U	**4.4**	0.24 U	0.33 U
WSW-55	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-56	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-57	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-58	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-59	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-60	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-61	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-62	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-65	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-66	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-67	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-68	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-73	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-74	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-76	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-77	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-79	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-86	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-87	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-89	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-91	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-92	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-95	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 3-1 Water Supply Well

Results for First Quarter 2013 Sampling Event

Groundwater Monitoring Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	**1,2-DCP**	**CIS-1,2-DCE**	**Methylene Chloride**	**TCE**	**TRANS-1,2-DCE**	**Vinyl Chloride**
WSW-96	01/28/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U
WSW-99	01/29/2013	0.45 U	0.37 U	0.36 U	0.37 U	0.24 U	0.33 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter

Table 4-1 Operations and Maintenance

Results for First Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Explosives

	Sampling Date	2,4-DNT	2A-DNT	4A-DNT	RDX	TNB	TNT
AOP-EFF	01/03/2013	0.048 U	0.048 U	0.024 U	**3.3 J**	**0.039 J**	0.048 U
AOP-EFF	01/31/2013	0.048 U	0.048 U	0.024 U	**3.2**	**0.057 J**	**0.095 J**
AOP-EFF	02/28/2013	0.048 U	0.048 U	0.024 U	**3.2**	**0.043 J**	**0.10 J**
AOP-INF	01/03/2013	0.048 U	**0.055 J**	**1.0 J**	**4.2 J**	0.024 U	0.048 U
AOP-INF	02/28/2013	0.048 U	**0.029 J**	**0.95 J**	**4.0**	0.024 U	0.048 U
GTP-320	01/03/2013	0.048 U	0.048 U	0.024 U	**0.67 J**	0.024 U	0.048 U
GTP-320	01/31/2013	0.048 U	0.048 U	0.024 U	**0.83**	0.024 U	0.048 U
GTP-320	02/28/2013	0.048 U	0.048 U	0.024 U	**1.1**	0.024 U	0.048 U
GTP-340	01/03/2013	0.048 U	0.048 U	0.024 U	**0.50 J**	0.024 U	0.048 U
GTP-340	01/31/2013	0.048 U	0.048 U	0.024 U	**0.58**	0.024 U	0.048 U
GTP-340	02/28/2013	0.048 U	0.048 U	0.024 U	**0.58**	0.024 U	0.048 U
GTP-360	01/03/2013	0.048 U	0.048 U	0.024 U	**0.46 J**	0.024 U	0.048 U
GTP-360	01/31/2013	0.048 U	0.048 U	0.024 U	**0.61**	0.024 U	0.048 U
GTP-360	02/28/2013	0.048 U	0.048 U	0.024 U	**0.85**	0.024 U	0.048 U
GTP-EFF	01/03/2013	0.048 U	0.048 U	0.024 U	**0.54 J**	0.024 U	0.048 U
GTP-EFF	01/31/2013	0.048 U	0.048 U	0.024 U	**0.70**	0.024 U	0.048 U
GTP-EFF	02/28/2013	0.048 U	0.048 U	0.024 U	**0.87**	0.024 U	0.048 U
GTP-INF	01/03/2013	0.048 U	0.048 U	**0.21 J**	**5.7 J**	0.024 U	0.048 U
GTP-INF	01/31/2013	0.048 U	**0.027 J**	**0.18 J**	**4.4**	0.024 U	0.048 U
GTP-INF	02/28/2013	0.048 U	0.048 U	**0.18 J**	**4.4**	**0.031 J**	0.048 U
LL1-EFF	01/31/2013	0.048 U	0.048 U	0.024 U	**0.071 J**	0.024 U	0.048 U
LL1-INF	01/31/2013	0.048 U	0.048 U	0.024 U	**0.024 J**	0.024 U	0.048 U
LL4-EFF	01/31/2013	0.048 U	0.048 U	0.024 U	0.024 U	0.024 U	0.048 U
LL4-INF	01/31/2013	0.048 U	0.048 U	0.024 U	**0.041 J**	0.024 U	0.048 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter
Air results in ppbv = parts per billion per volume

Table 4-1 Operations and Maintenance

Results for First Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
AOP-EFF	01/03/2013	0.25 U	0.25 U	0.25 U	**0.28 J**	0.25 U	0.25 U
AOP-EFF	01/31/2013	0.25 U	0.25 U	0.25 U	**0.35 J**	0.25 U	0.25 U
AOP-EFF	02/28/2013	0.25 U	0.25 U	0.25 U	**0.38 J**	0.25 U	0.25 U
AOP-INF	01/03/2013	1.8 U	**5.3 J**	1.8 U	**1700**	1.8 U	1.8 U
AOP-INF	02/28/2013	1.3 U	**4.7 J**	1.3 U	**1600**	1.3 U	1.3 U
EW-1R	01/31/2013	0.25 U	0.25 U	0.25 U	**3.3**	0.25 U	0.25 U
GCW1-EFF	02/28/2013	0.25 U	0.25 U	0.25 U	**0.30 J**	0.25 U	0.25 U
GCW1-INF	02/28/2013	1.3 U	**3.0 J**	1.3 U	**420**	1.3 U	1.3 U
GTP-320	01/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
GTP-320	01/31/2013	0.25 U	0.25 U	0.25 U	**0.26 J**	0.25 U	0.25 U
GTP-320	02/28/2013	0.25 U	0.25 U	0.25 U	**0.27 J**	0.25 U	0.25 U
GTP-340	01/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
GTP-340	01/31/2013	0.25 U	0.25 U	0.25 U	**0.20 J**	0.25 U	0.25 U
GTP-340	02/28/2013	0.25 U	0.25 U	0.25 U	**0.17 J**	0.25 U	0.25 U
GTP-360	01/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
GTP-360	01/31/2013	0.25 U	0.25 U	0.25 U	**0.21 J**	0.25 U	0.25 U
GTP-360	02/28/2013	0.25 U	0.25 U	0.25 U	**0.21 J**	0.25 U	0.25 U
GTP-EFF	01/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
GTP-EFF	01/31/2013	0.25 U	0.25 U	0.25 U	**0.20 J**	0.25 U	0.25 U
GTP-EFF	02/28/2013	0.25 U	0.25 U	0.25 U	**0.21 J**	0.25 U	0.25 U
GTP-INF	01/03/2013	0.25 U	0.25 U	0.25 U	**0.63 J**	0.25 U	0.25 U
GTP-INF	01/31/2013	0.25 U	0.25 U	0.25 U	**0.76 J**	0.25 U	0.25 U
GTP-INF	02/28/2013	0.25 U	0.25 U	0.25 U	**0.71 J**	0.25 U	0.25 U
LL1_AIR_EF	01/31/2013	-	-	-	-	-	-
LL1-EFF	01/03/2013	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
LL1-EFF	01/31/2013	0.25 U	0.25 U	0.25 U	**0.21 J**	0.25 U	0.25 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter
Air results in ppbv = parts per billion per volume

Table 4-1 Operations and Maintenance

Results for First Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Volatile Organic Compounds							
	Sampling Date	1,2-DCP	CIS-1,2-DCE	Methylene Chloride	TCE	TRANS-1,2-DCE	Vinyl Chloride
LL1-EFF	02/28/2013	0.25 U	0.25 U	0.25 U	**0.15 J**	0.25 U	0.25 U
LL1-INF	01/03/2013	0.73 U	0.73 U	0.73 U	**130**	0.73 U	0.73 U
LL1-INF	01/31/2013	0.65 U	0.65 U	0.65 U	**140**	0.65 U	0.65 U
LL1-INF	02/28/2013	0.50 U	0.50 U	0.50 U	**130**	0.50 U	0.50 U
LL4_AIR_EF	01/03/2013	-	-	-	**330**	-	-
LL4-EFF	01/03/2013	0.25 U	0.25 U	0.25 U	**0.51 J**	0.25 U	0.25 U
LL4-EFF	01/31/2013	0.25 U	0.25 U	0.25 U	**0.70 J**	0.25 U	0.25 U
LL4-EFF	02/28/2013	0.25 U	0.25 U	0.25 U	**0.64 J**	0.25 U	0.25 U
LL4-INF	01/03/2013	1.3 U	**1.9 J**	1.3 U	**340**	1.3 U	1.3 U
LL4-INF	01/31/2013	1.3 U	**2.1 J**	1.3 U	**350**	1.3 U	1.3 U
LL4-INF	02/28/2013	1.1 U	**1.9 J**	1.1 U	**340**	1.1 U	1.1 U

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter
Air results in ppbv = parts per billion per volume

Table 4-1 Operations and Maintenance

Results for First Quarter 2013 Sampling Event

Operations and Maintenance Program

Former Nebraska Ordnance Plant, Mead, Nebraska

Wet Chemistry		
	Sampling Date	**Nitrogen, Nitrate**
GTP-EFF	01/03/2013	**3.9**
GTP-EFF	01/31/2013	**3.8**
GTP-EFF	02/28/2013	**4.2**
LL1-EFF	01/03/2013	**11.0**
LL1-EFF	01/31/2013	**10.0**
LL1-EFF	02/28/2013	**12.0 J**
LL4-EFF	01/03/2013	**7.3**
LL4-EFF	01/31/2013	**7.0**
LL4-EFF	02/28/2013	**7.8**

Detects are displayed in bold font

Indicates that result exceeds Final Target Groundwater Cleanup Goals

All results in µg/L = micrograms per liter
Air results in ppbv = parts per billion per volume

FIGURES

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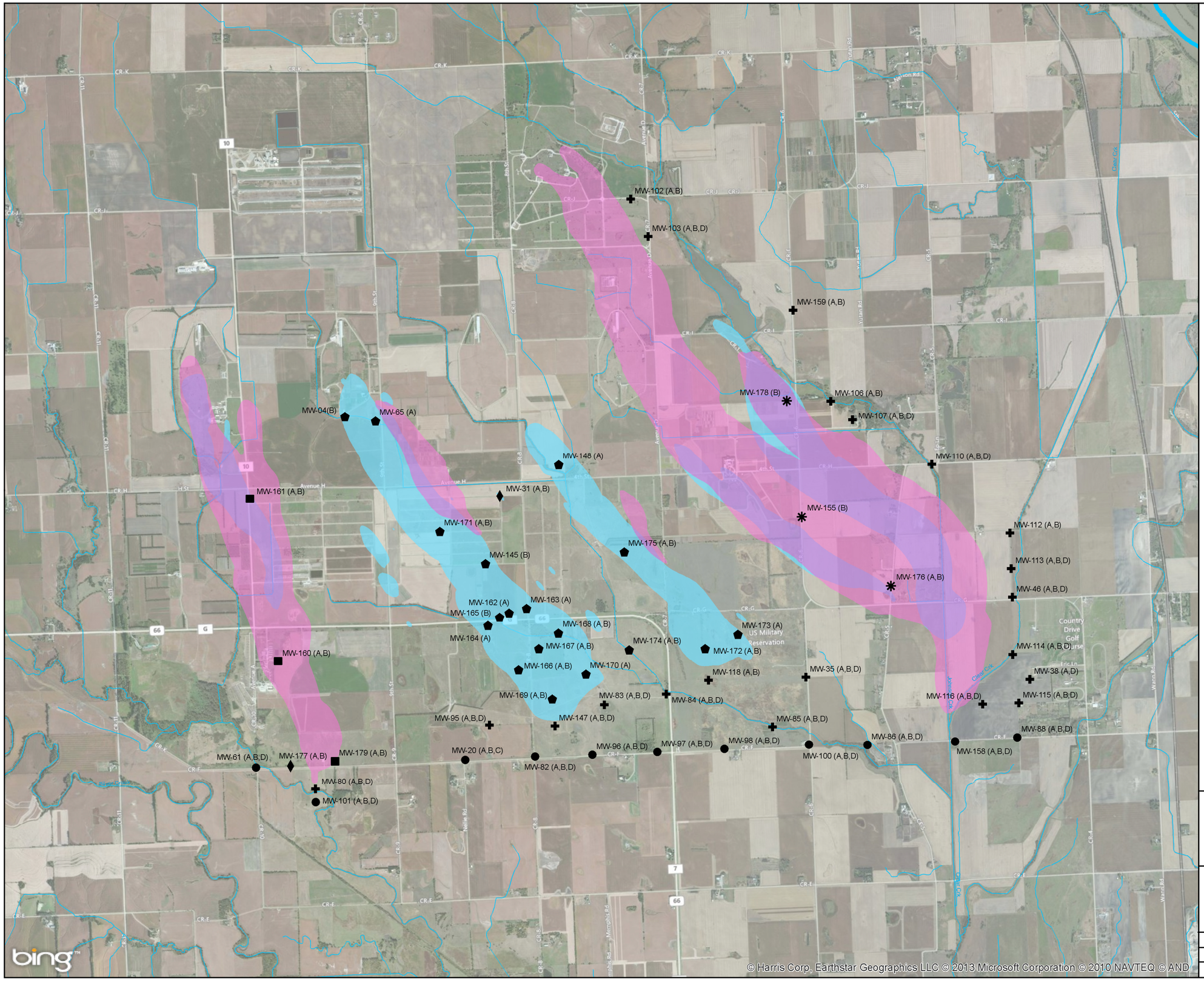

EXPLANATION

- ● Compliance Monitoring Well
- ■ Load Line 1 Interior Plume Monitoring Well
- ⬟ Load Line 2 and Load Line 3 Interior Plume Monitoring Well
- ✱ Load Line 4, Atlas Missile Area, and Landfill Interior Plume Monitoring Well
- ✚ Perimeter Monitoring Well
- ♦ Upgradient/Sidegradient/Downgradient Monitoring Well

Approximate Area of TCE at a concentration of 5 ug/L or greater (2012)

Approximate Area of RDX at a concentration of 2 ug/L or greater (2012)

Approximate Area of both TCE at a concentration of 5 ug/L or greater and RDX at a concentration of 2 ug/L or greater (2012)

NOTE:

TCE and RDX plume delineations are based on Groundwater Monitoring Program data, direct-push data, and other data. The plume delineations represent a combination of the shallow zone data and the intermediate zone data.

TCE - trichloroethene

RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine

ug/L - micrograms per liter

N

0 1,250 2,500 5,000 7,500 10,000 Feet

US Army Corps of Engineers ®
Kansas City District

Figure 2-1
Monitoring Wells
First Quarter 2013 Sampling Locations

Drawn by:	M Johanson	Reviewed by:	S Carter	Notes and Sources	
Date:	04/29/2013	Date:	04/30/2013	Projection: North American Datum 1983 Nebraska State Plane	
Version:		Revision Date / Initials:	04/30/2013 MGJ	Units: Feet	

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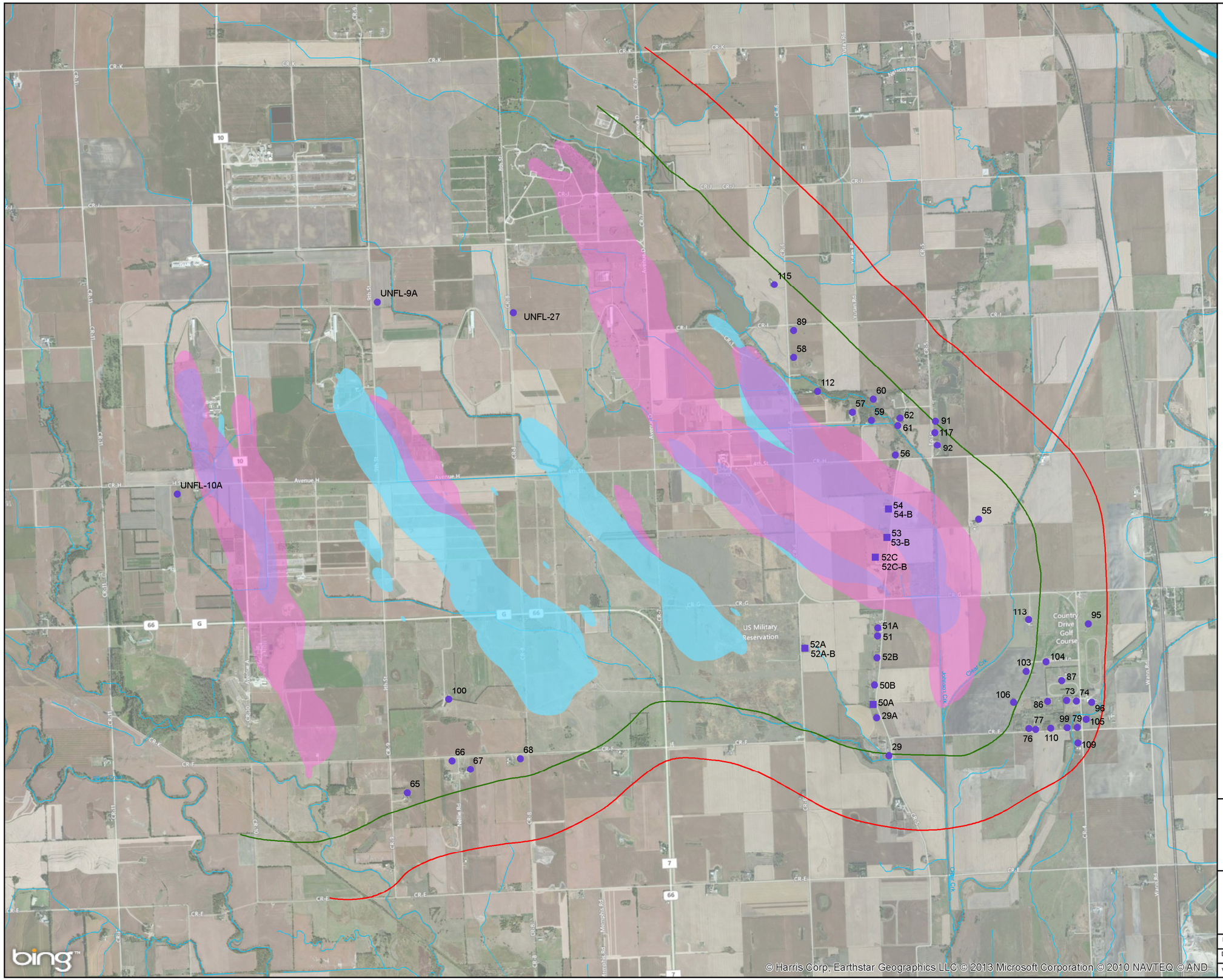

EXPLANATION

- Water Supply Well
- Alternate Water Supply Well
- Half-Mile Buffer Zone
- One-Mile Buffer Zone
- Approximate Area of TCE at a concentration of 5 ug/L or greater (2012)
- Approximate Area of RDX at a concentration of 2 ug/L or greater (2012)
- Approximate Area of both TCE at a concentration of 5 ug/L or greater and RDX at a concentration of 2 ug/L or greater (2012)

NOTE:

TCE and RDX plume delineations are based on Groundwater Monitoring Program data, direct-push data, and other data. The plume delineations represent a combination of the shallow zone data and the intermediate zone data.

TCE - trichloroethene

RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine

ug/L - micrograms per liter

N

0 1,250 2,500 5,000 7,500 10,000 Feet

US Army Corps of Engineers ®
Kansas City District

Figure 3-1
Water Supply Well
First Quarter 2013 Sampling Locations

Drawn by: M Johanson	Reviewed by: S Carter	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet	
Date: 04/29/2013	Date: 04/30/2013		
Version:	Revision Date / Initials 04/30/2013 MGJ		

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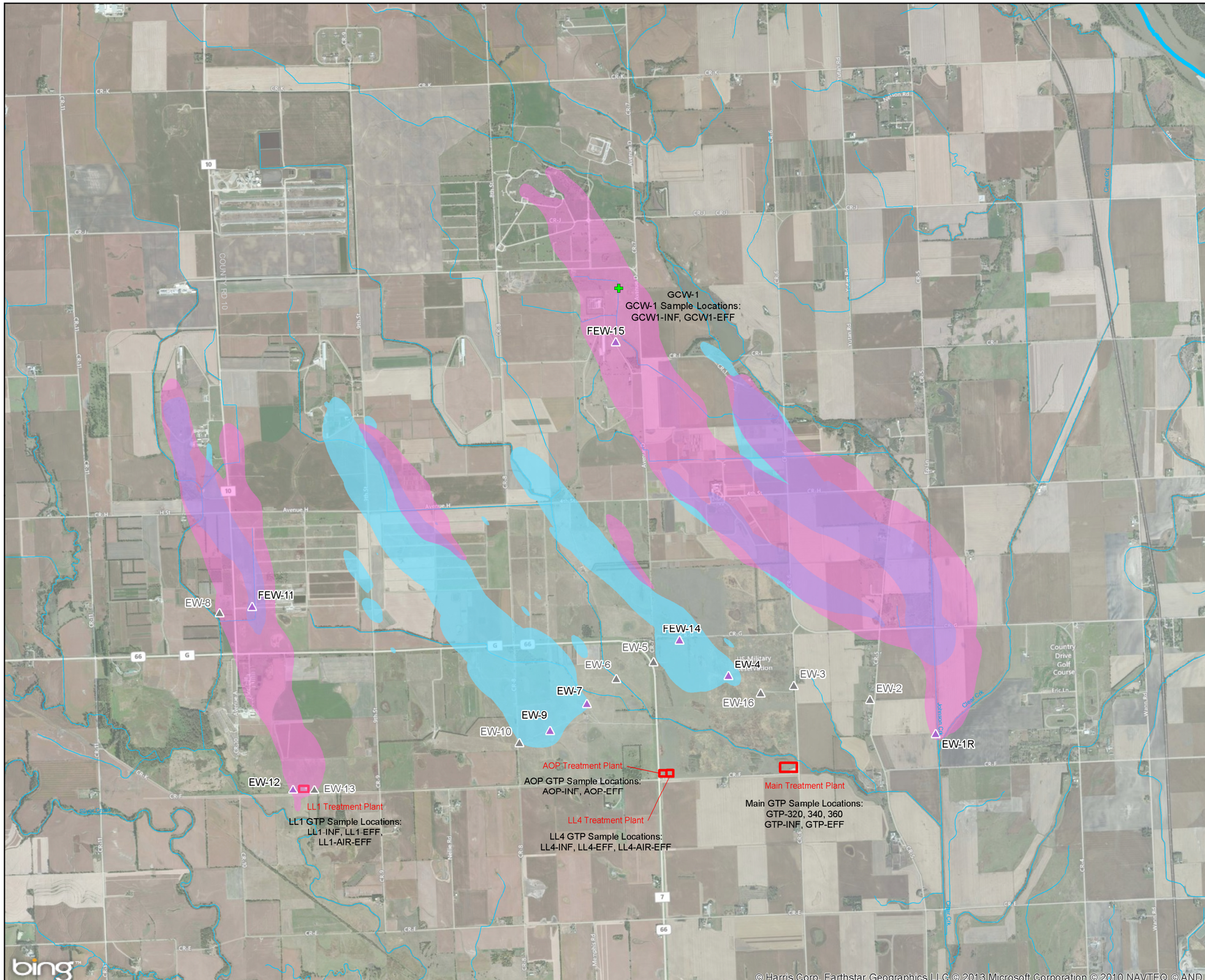

EXPLANATION

- Groundwater Circulation Well
- Groundwater Extraction Well (Sampled)
- Groundwater Extraction Well (Not Sampled)
- Water Treatment Plant
- Approximate Area of TCE at a concentration of 5 ug/L or greater (2012)
- Approximate Area of RDX at a concentration of 2 ug/L or greater (2012)
- Approximate Area of both TCE at a concentration of 5 ug/L or greater and RDX at a concentration of 2 ug/L or greater (2012)

NOTES:

TCE and RDX plume delineations are based on Groundwater Monitoring Program data, direct-push data, and other data. The plume delineations represent a combination of the shallow zone data and the intermediate zone data.

AOP - Advanced Oxidation Process
EFF - Effluent
EW - Extraction Well
FEW - Focused Extraction Well
GCW - Groundwater Circulation Well
GTP - Groundwater Treatment Plant
INF - Influent
LL1 - Load Line 1
LL4 - Load Line 4
RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
TCE - trichloroethene
ug/L - micrograms per liter

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0 1,250 2,500 5,000 7,500 10,000 Feet

US Army Corps of Engineers ®
Kansas City District

Figure 4-1
Operations and Maintenance
First Quarter 2013 Sampling Locations

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Date:	04/29/2013	Date:	04/30/2013	
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Appendix A
Concentration Trend Charts for Select Monitoring Wells

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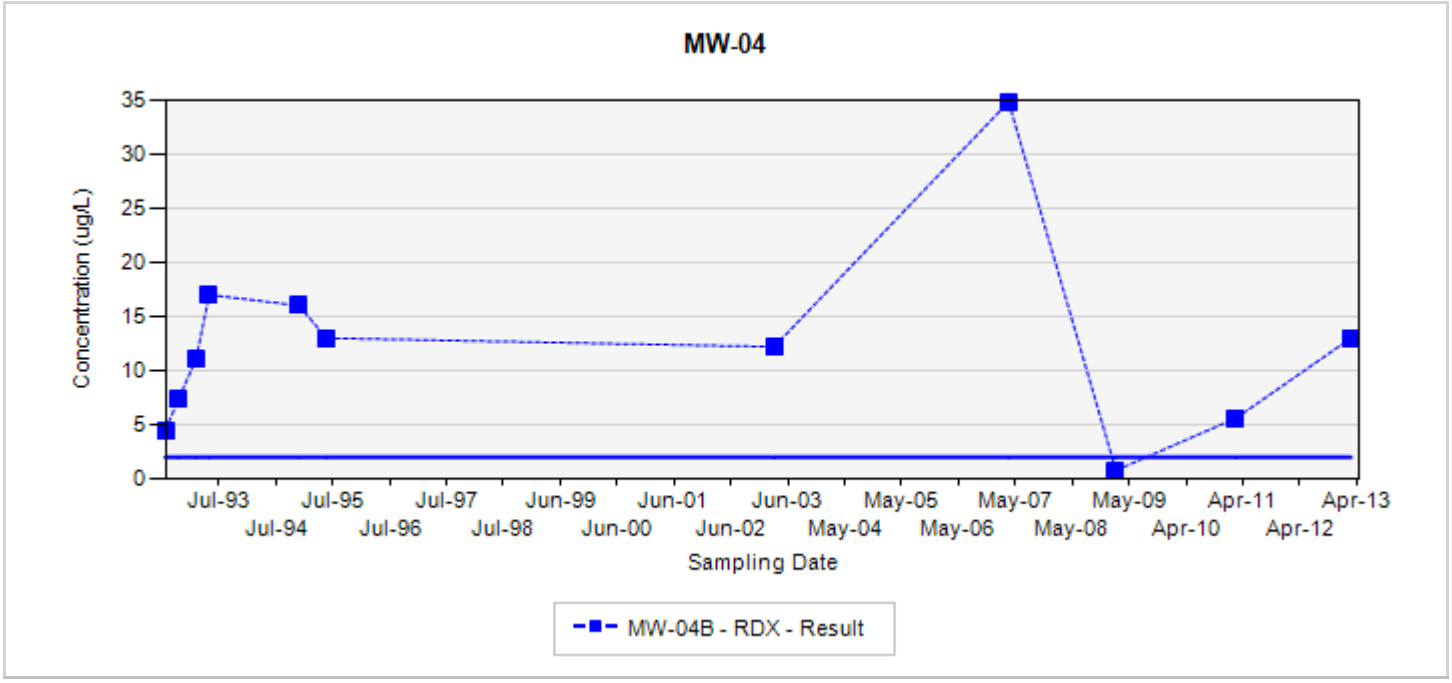

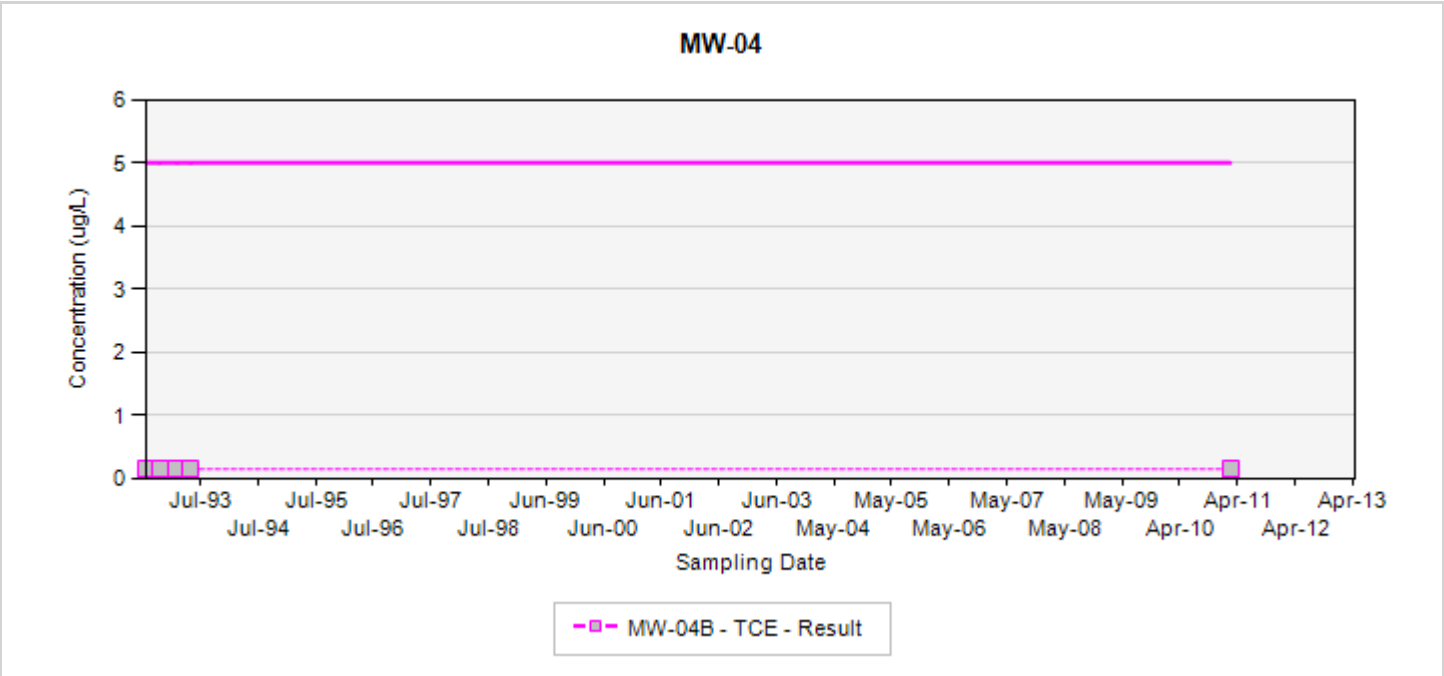

TCE - trichloroethene
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Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
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In the event that both a normal sample and a field duplicate were collected, the higher of the two results will be displayed on the chart

ug/L: micrograms per liter
Silver markers indicate non-detected results

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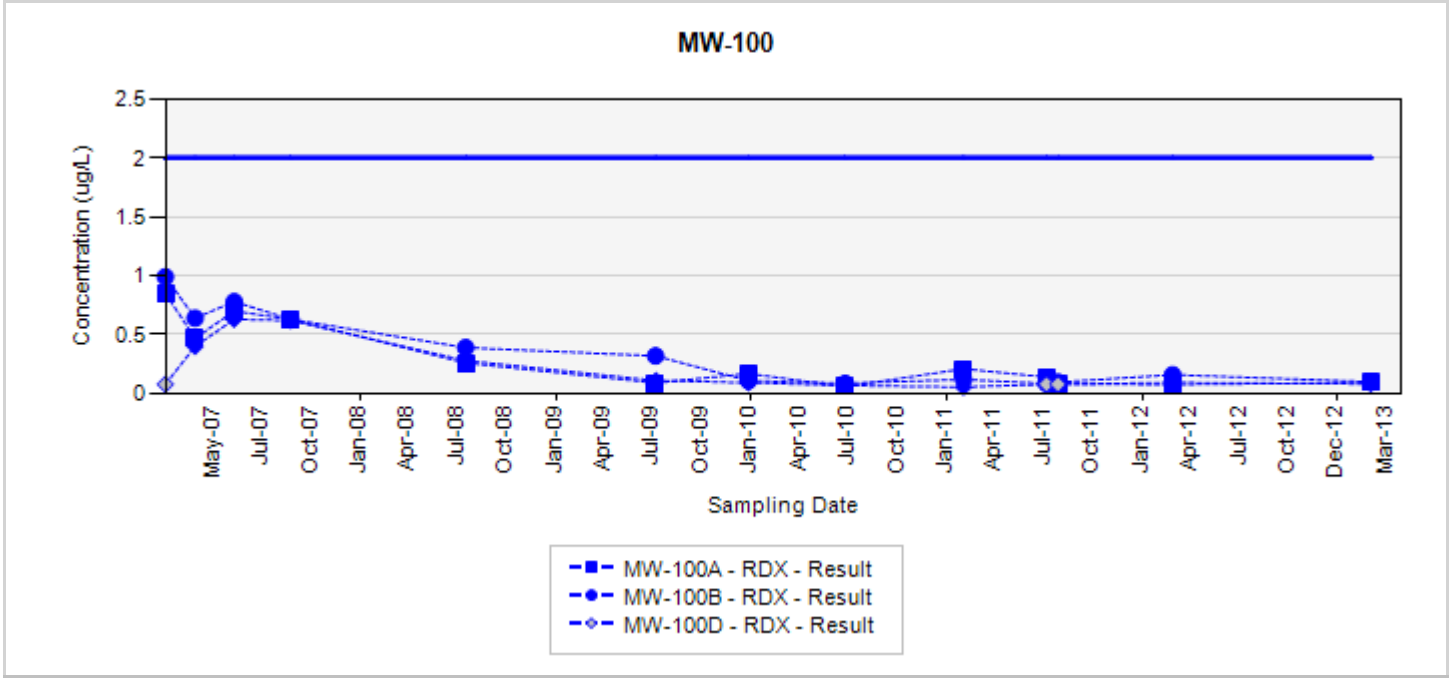

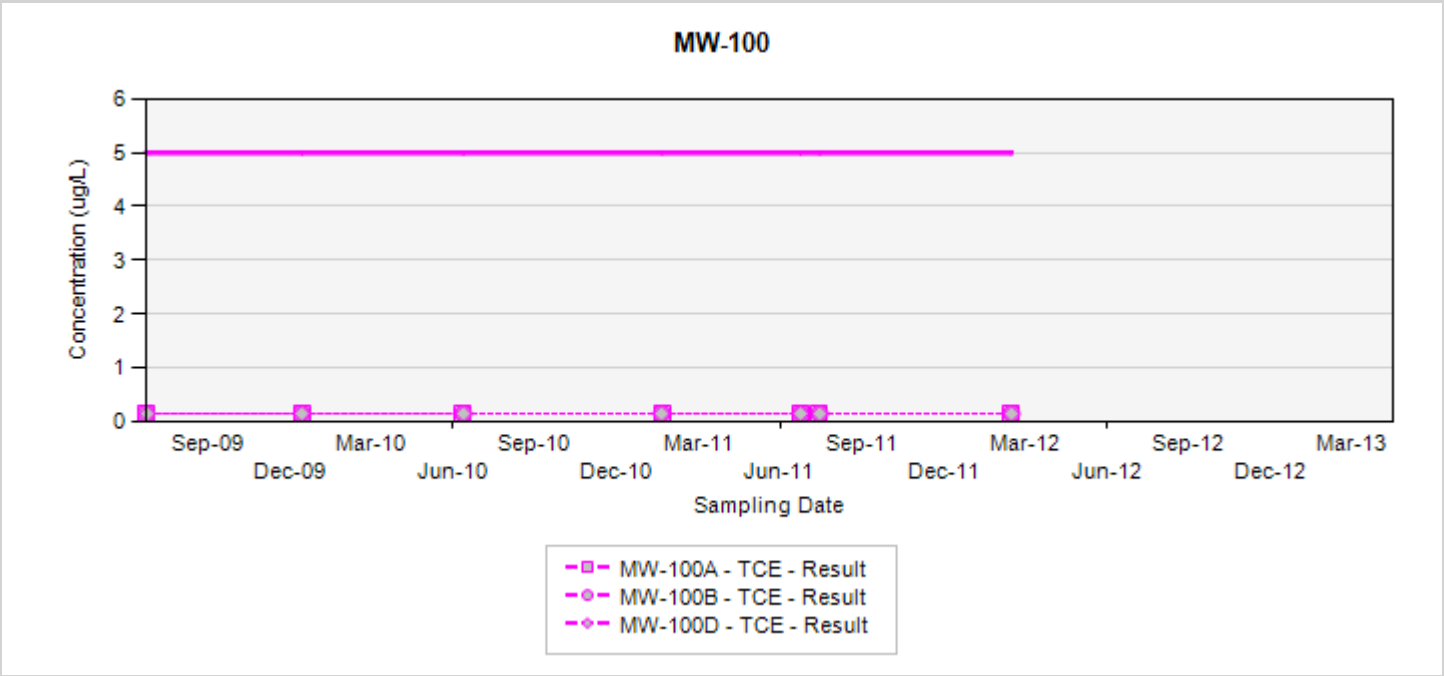

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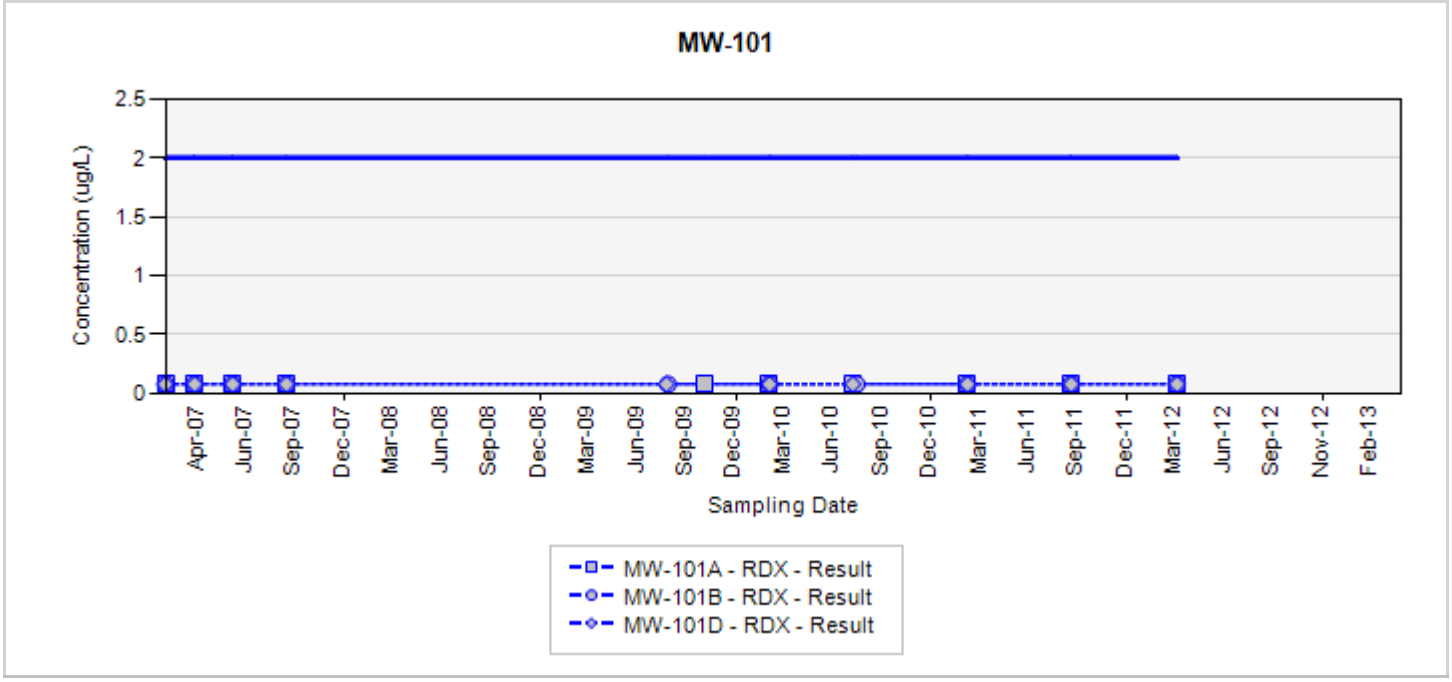

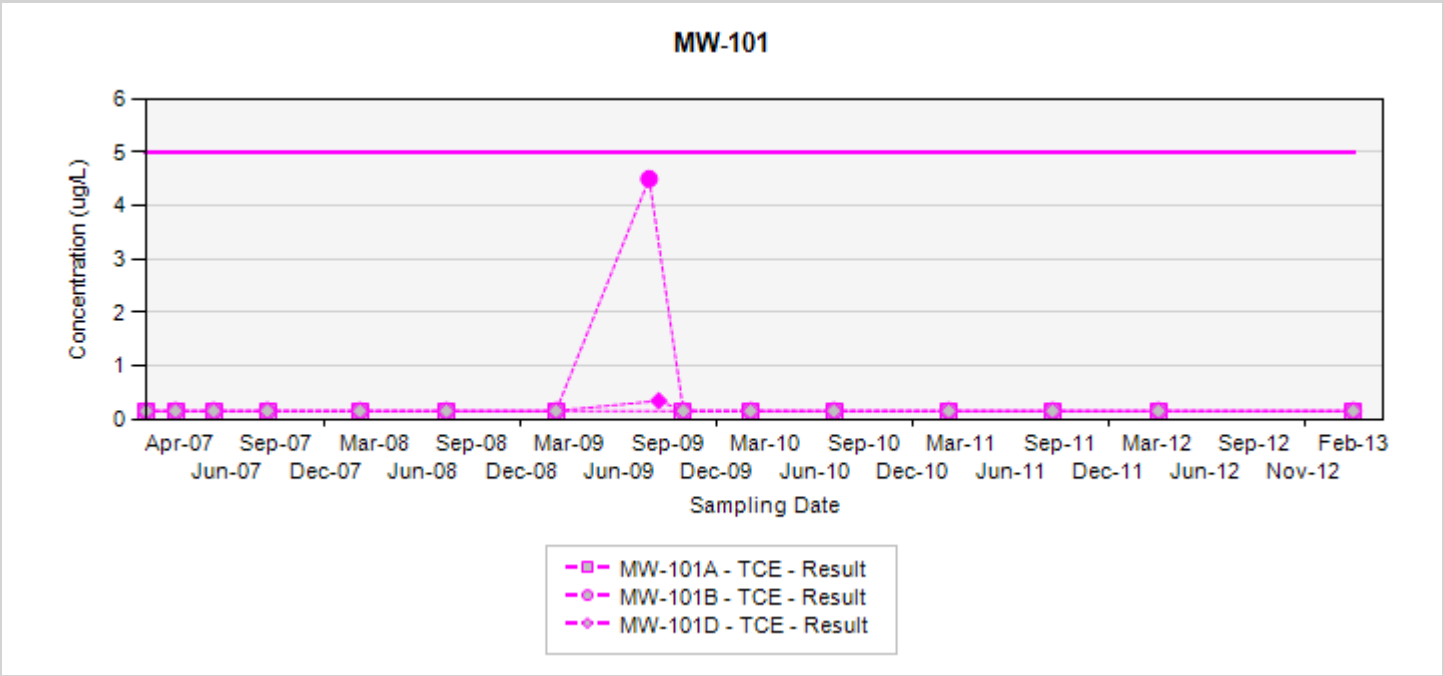

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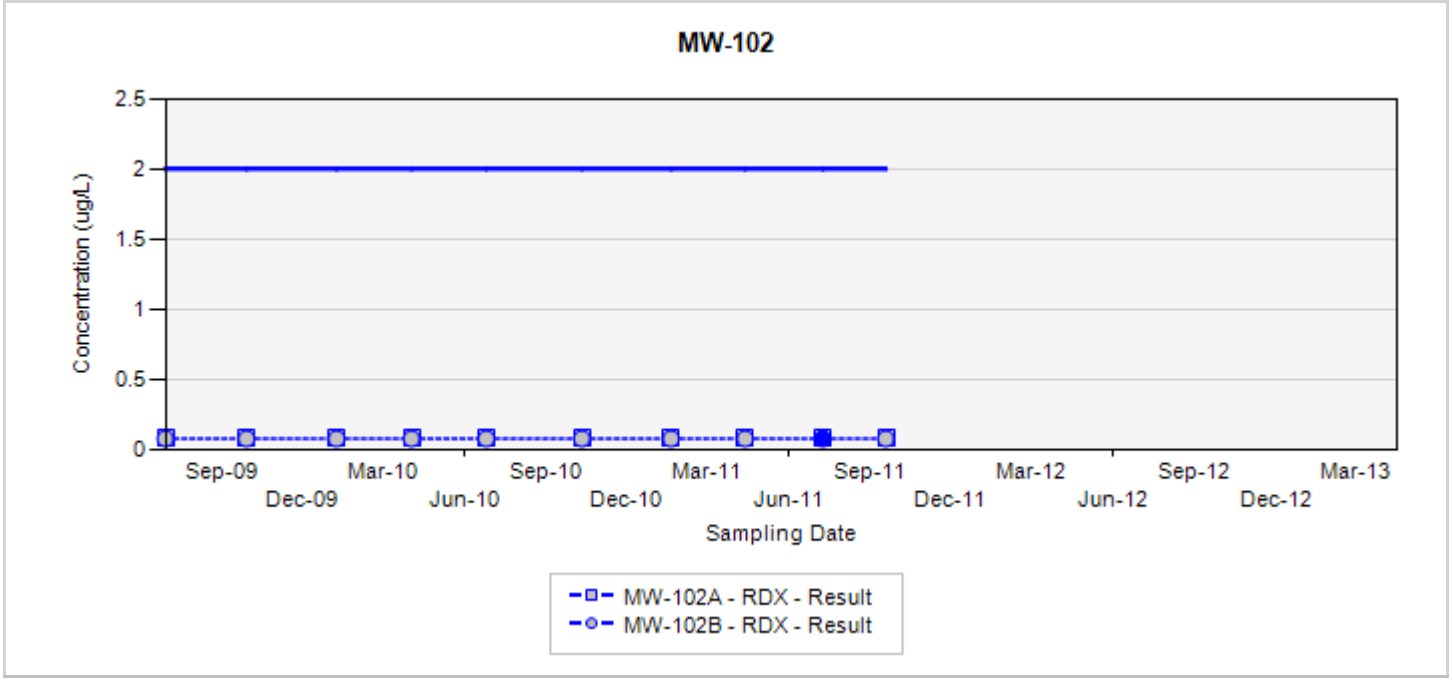

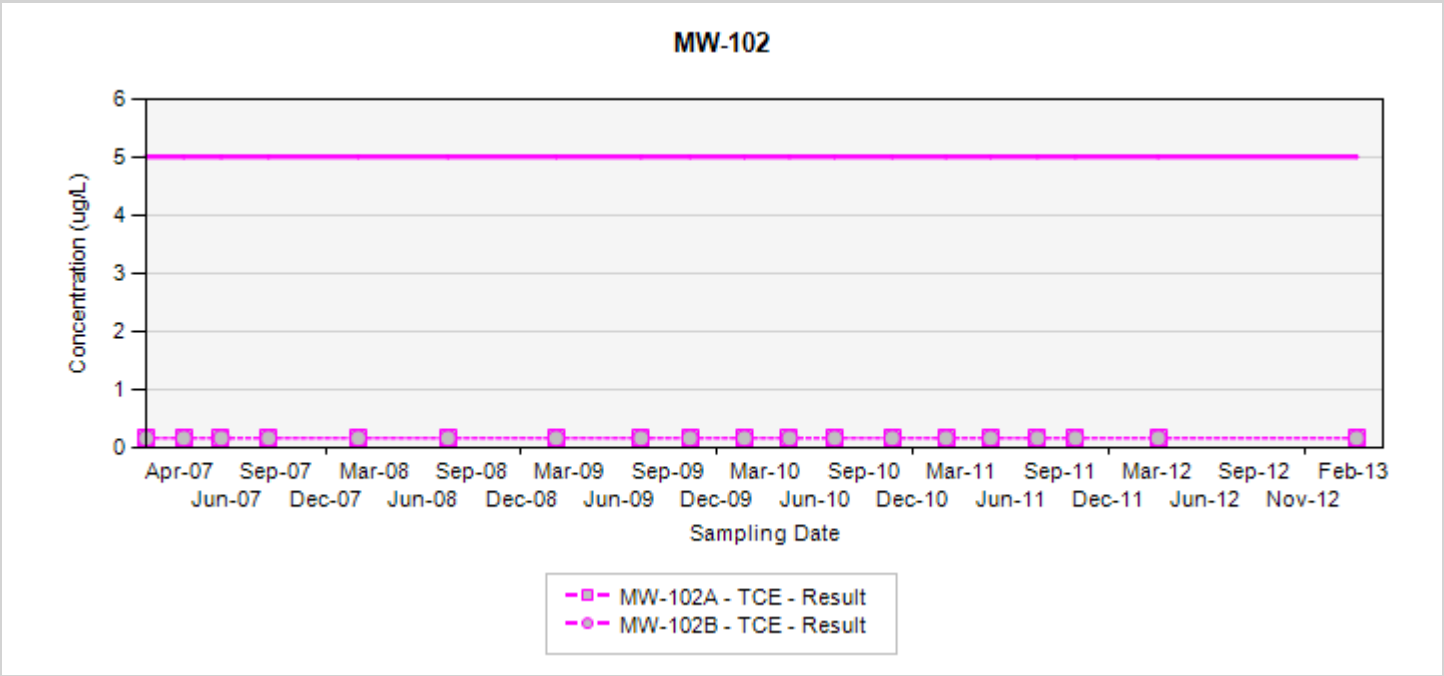

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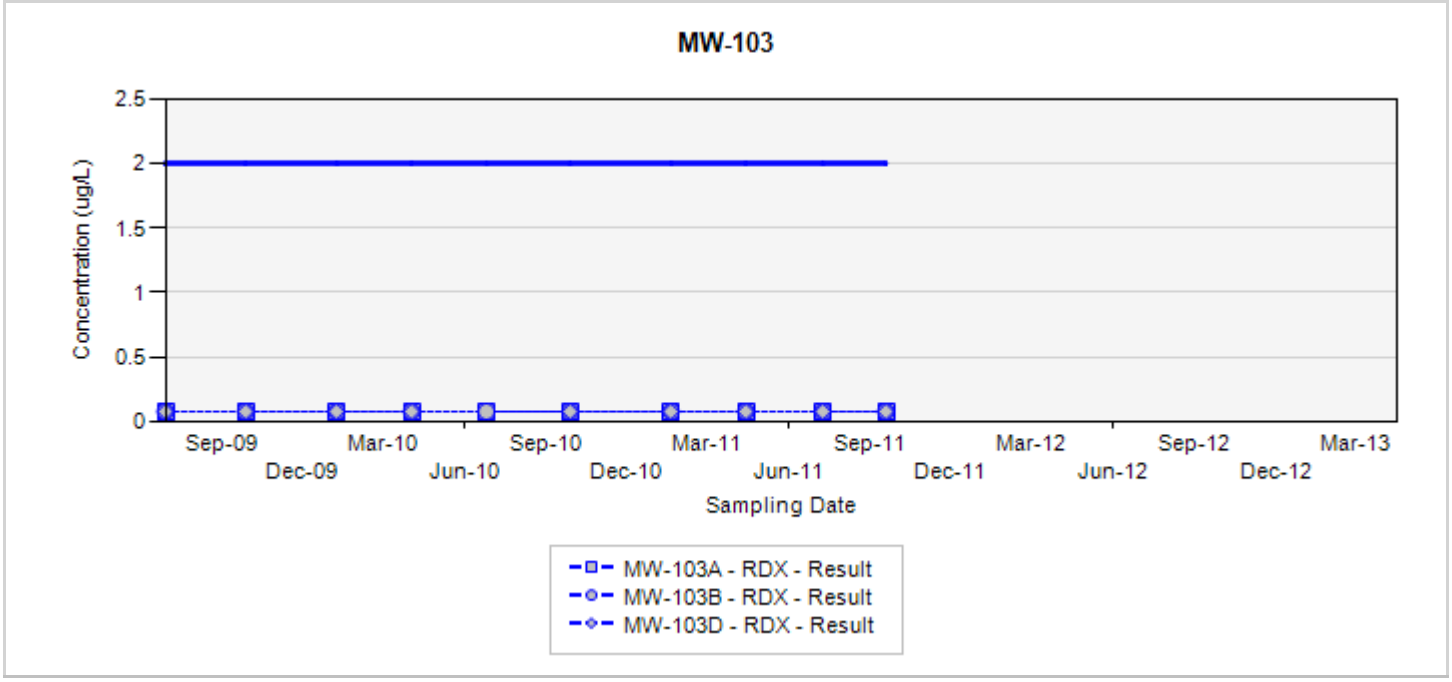

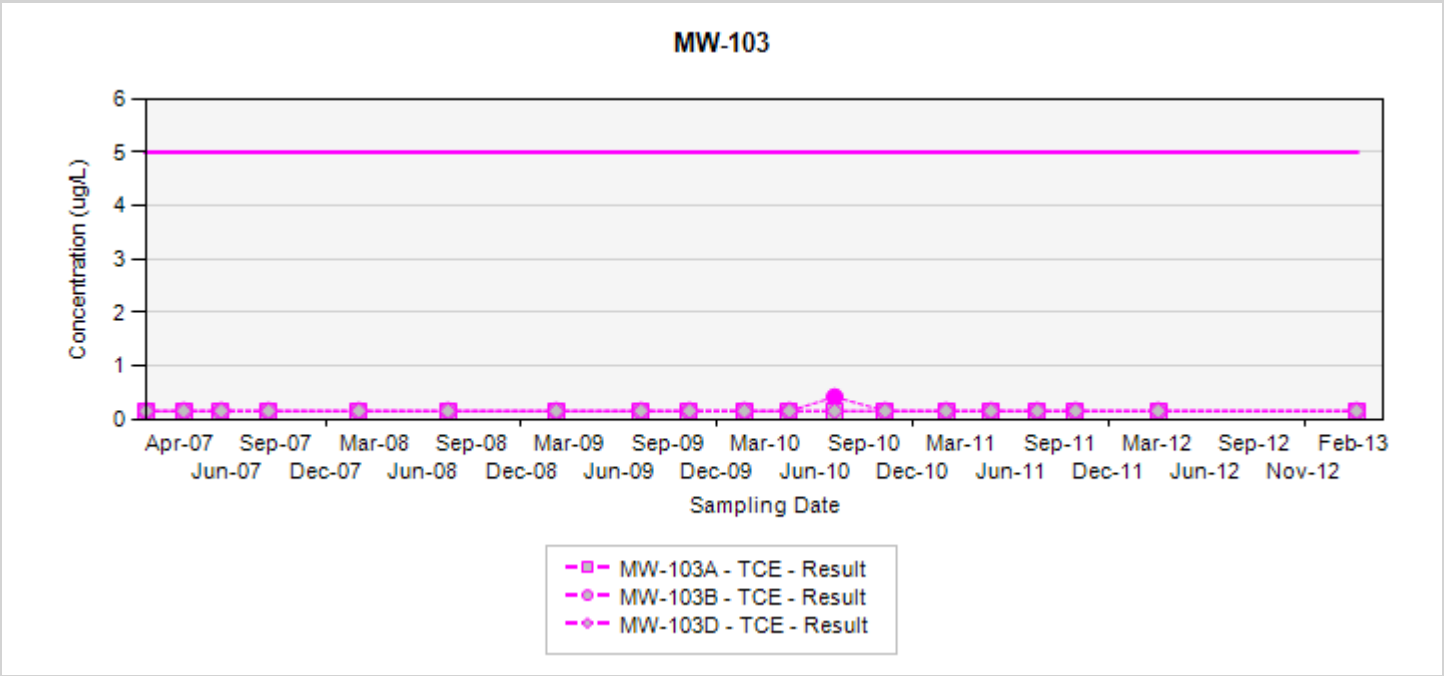

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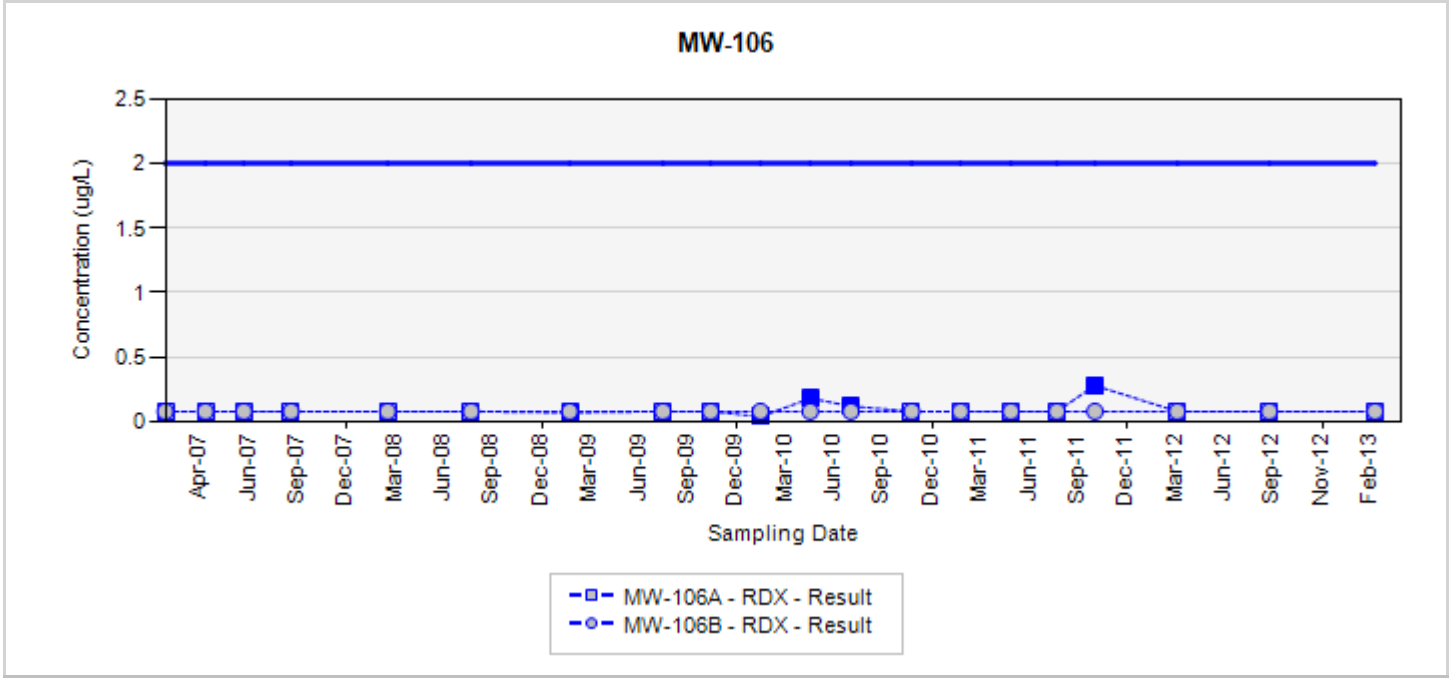

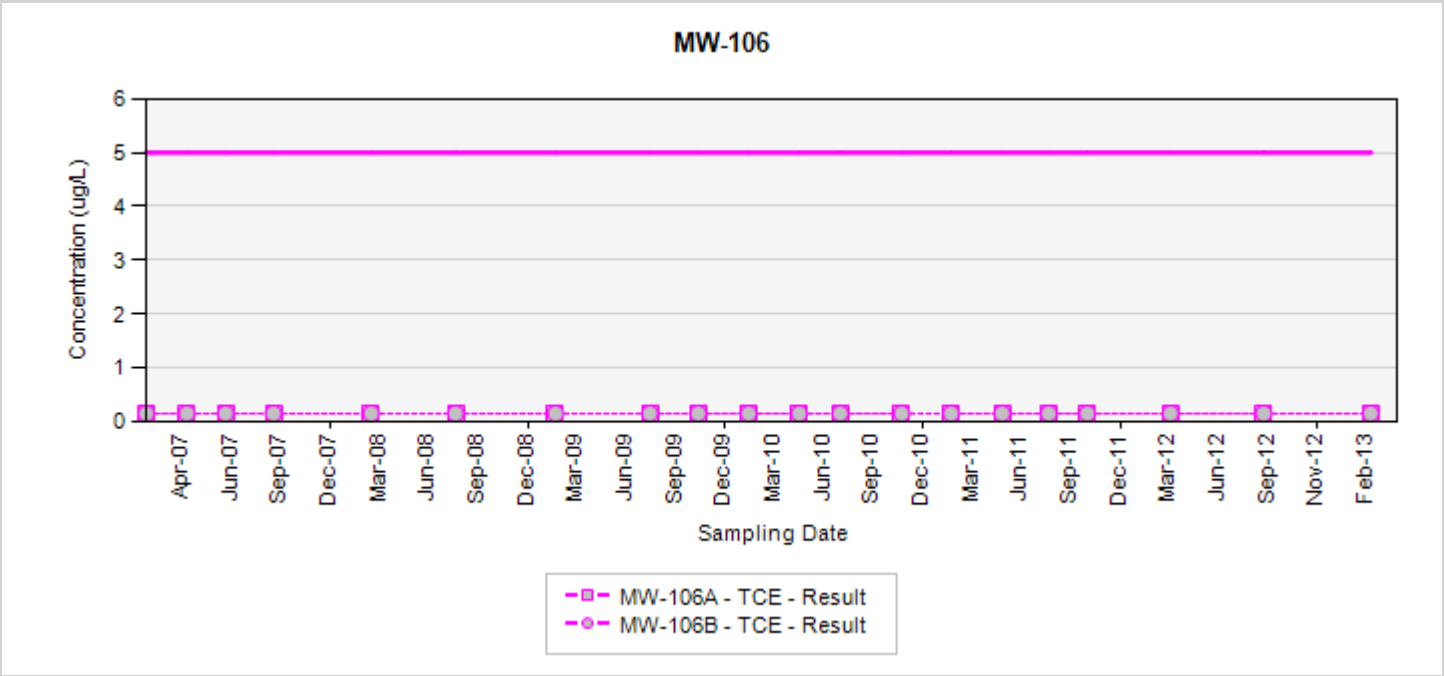

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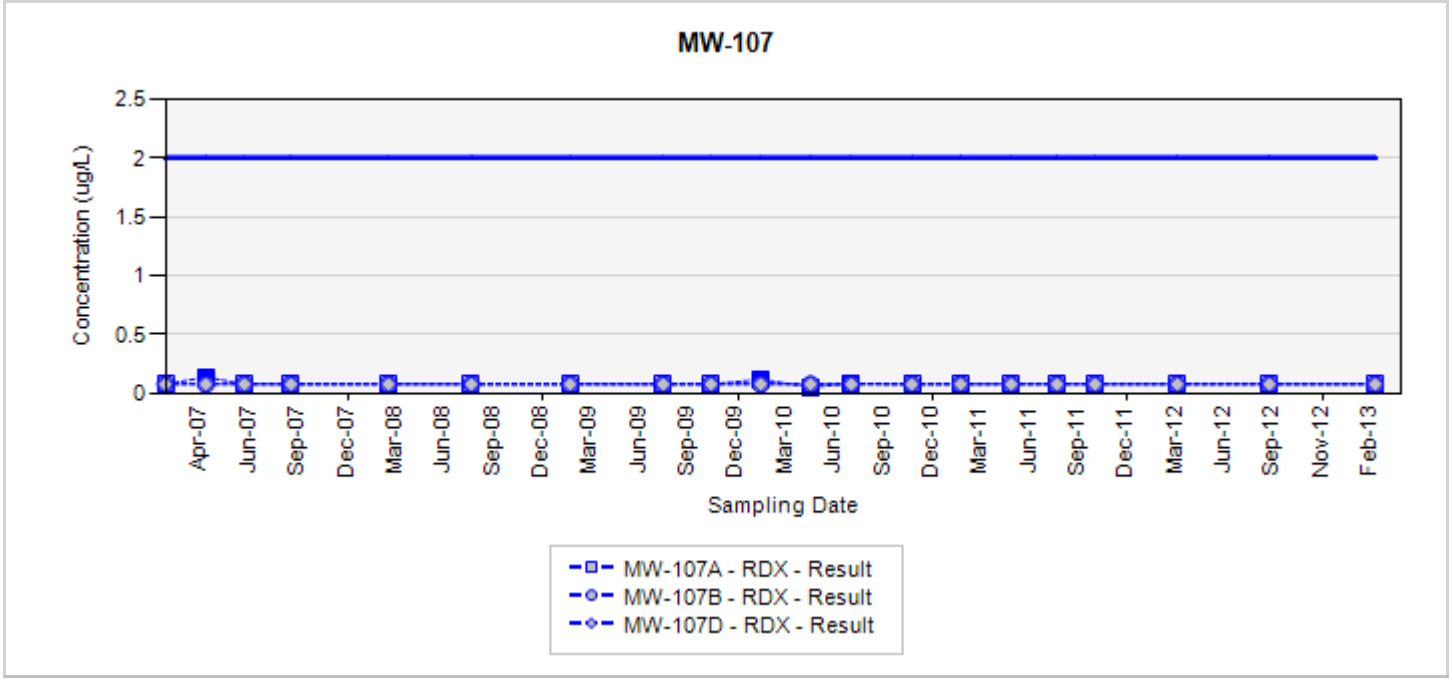

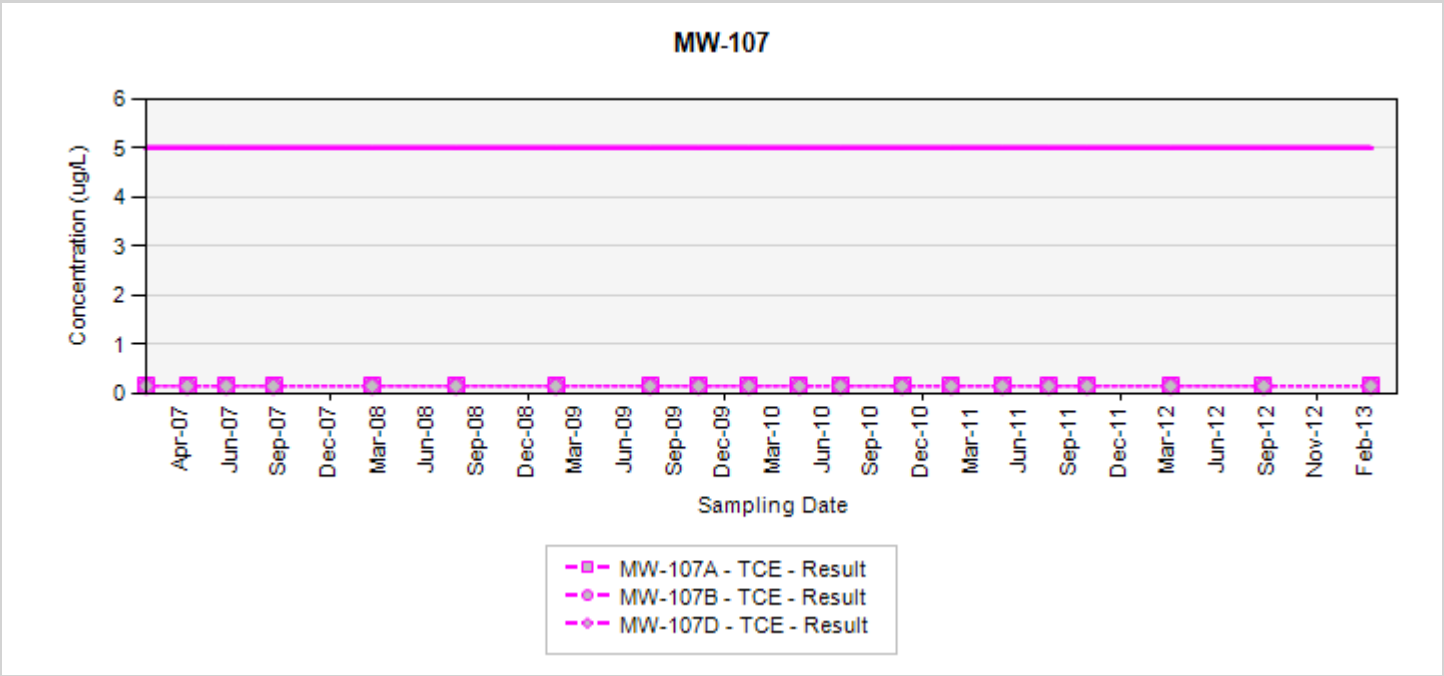

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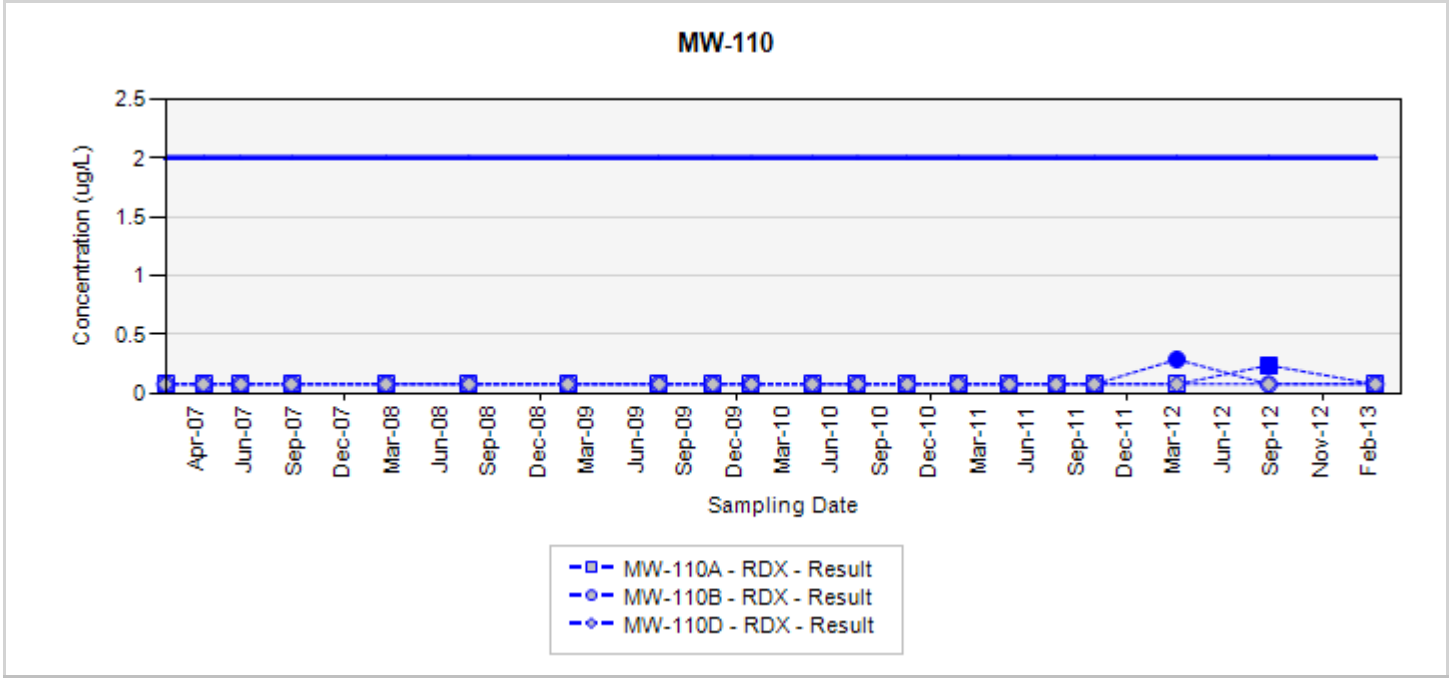

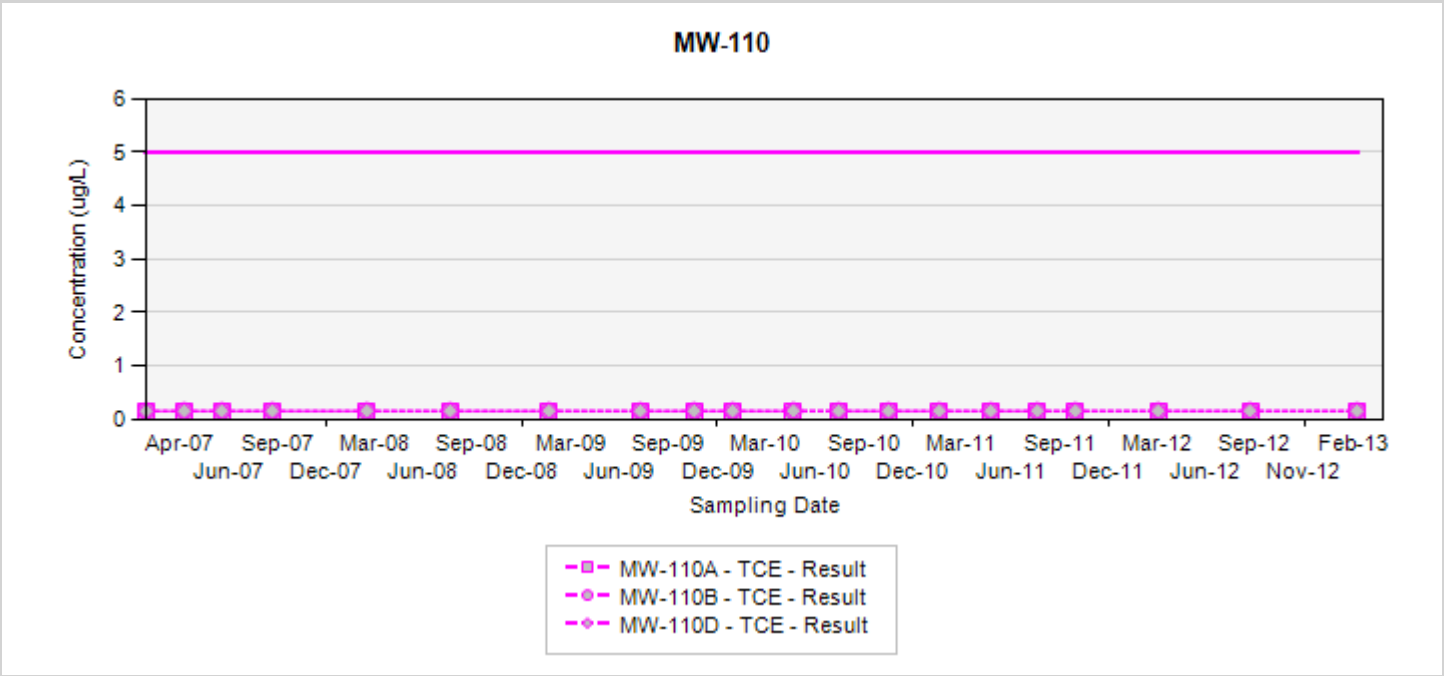

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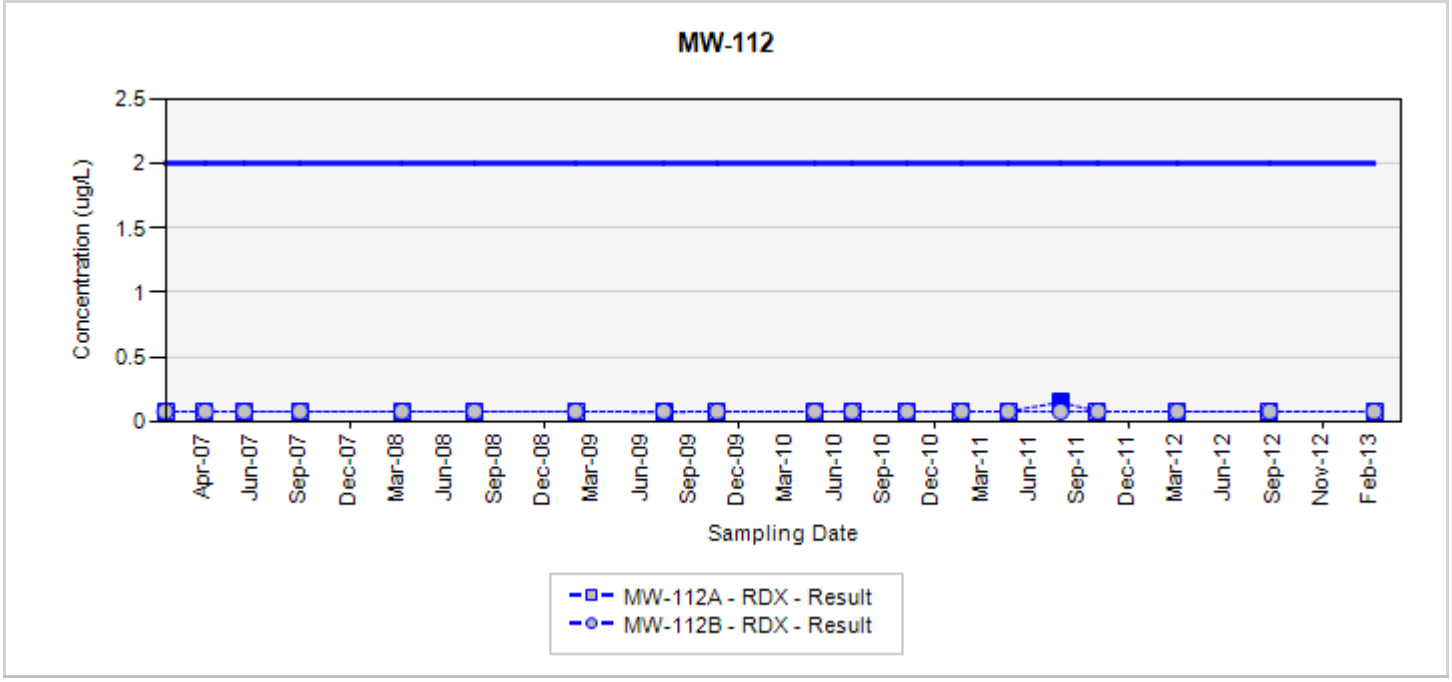

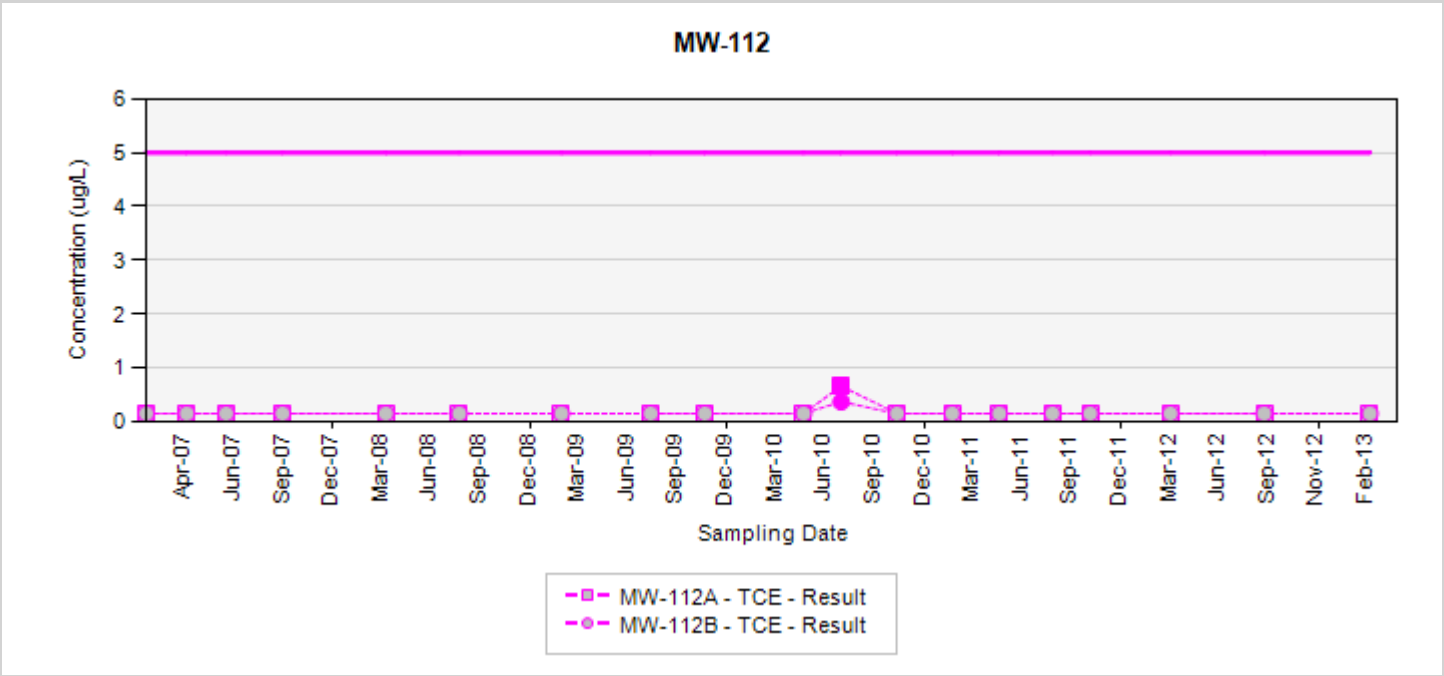

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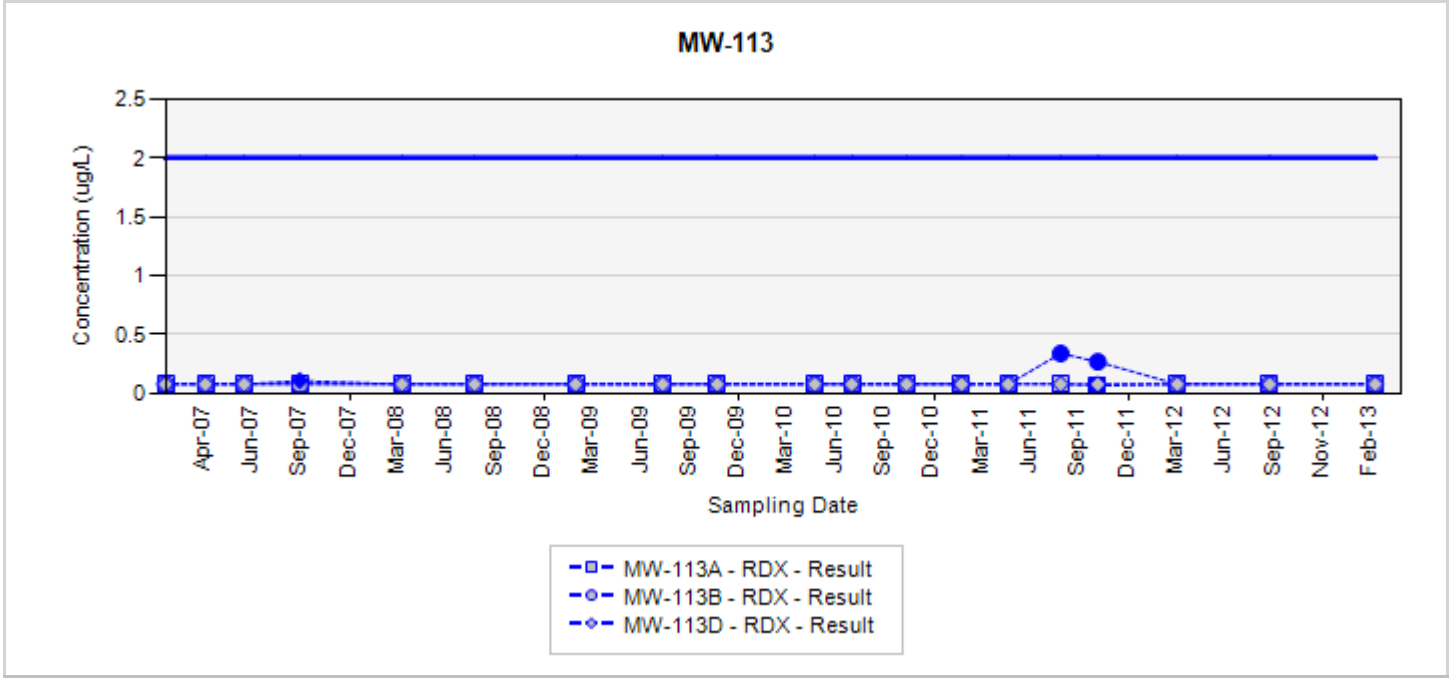

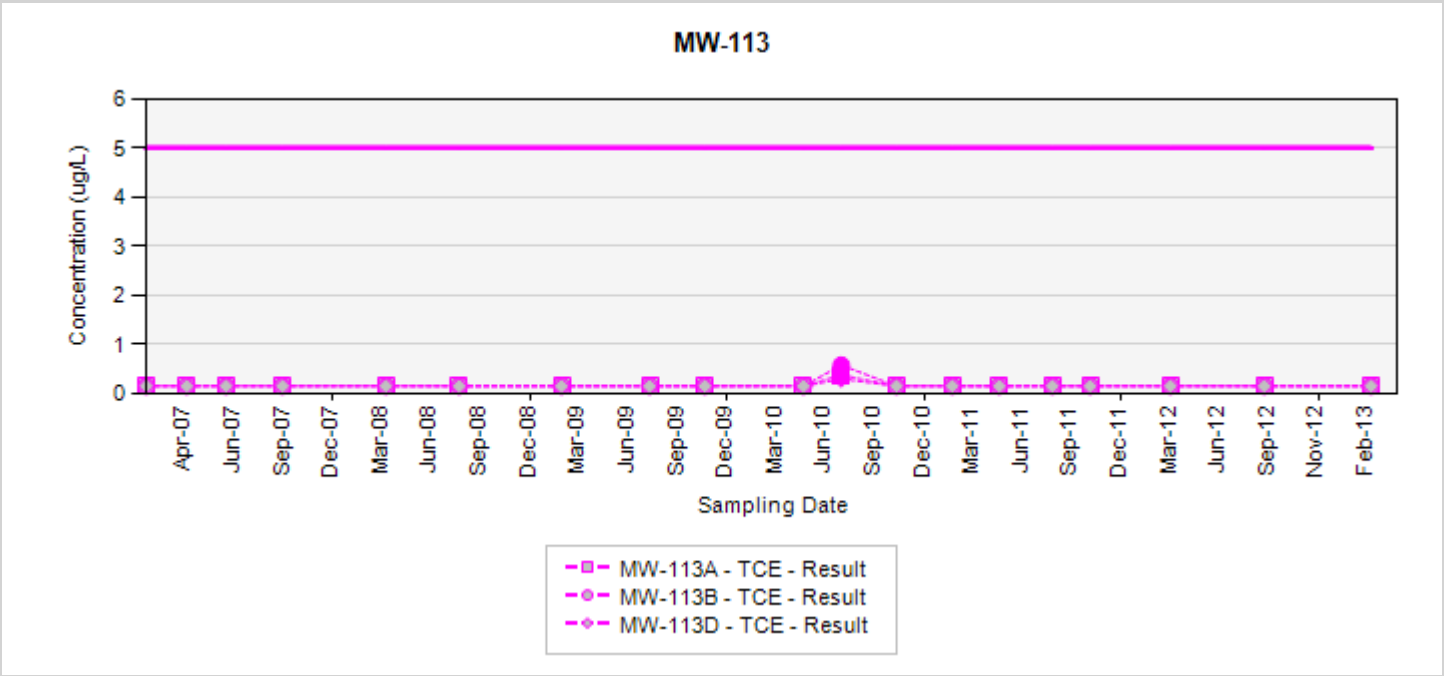

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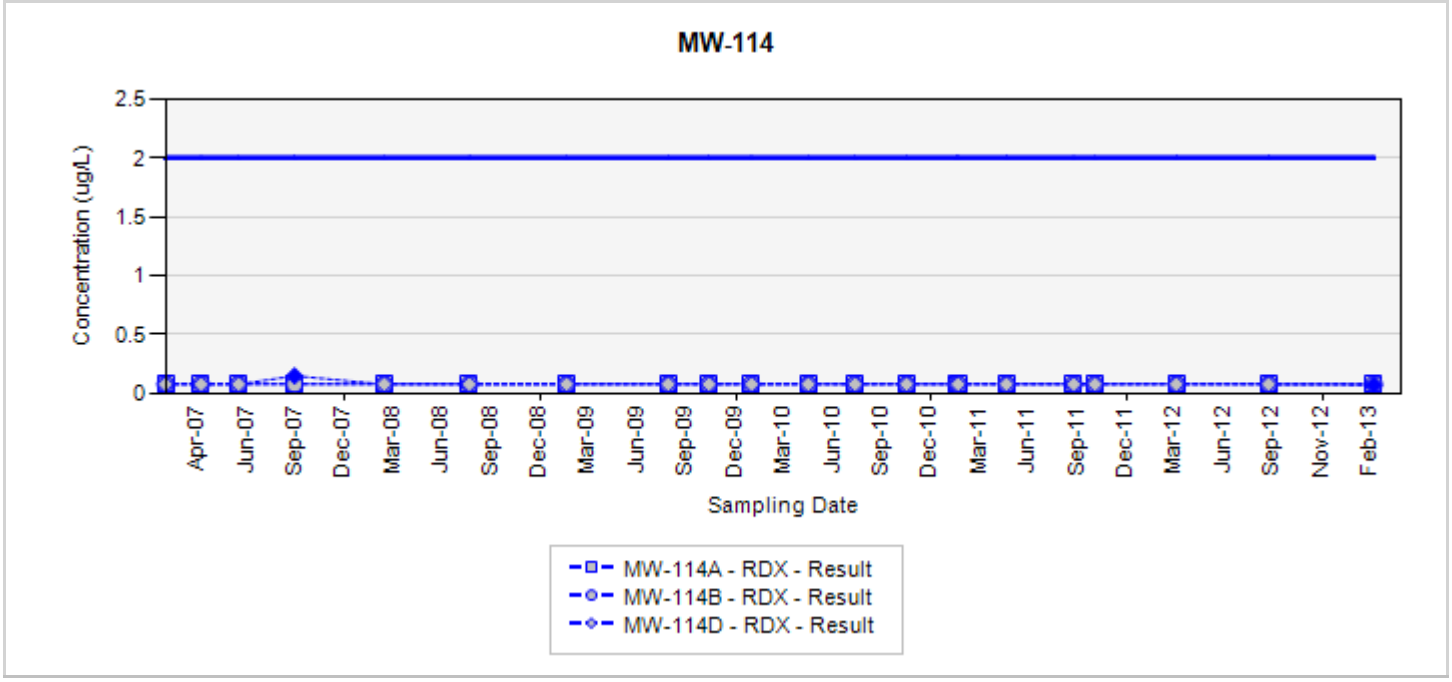

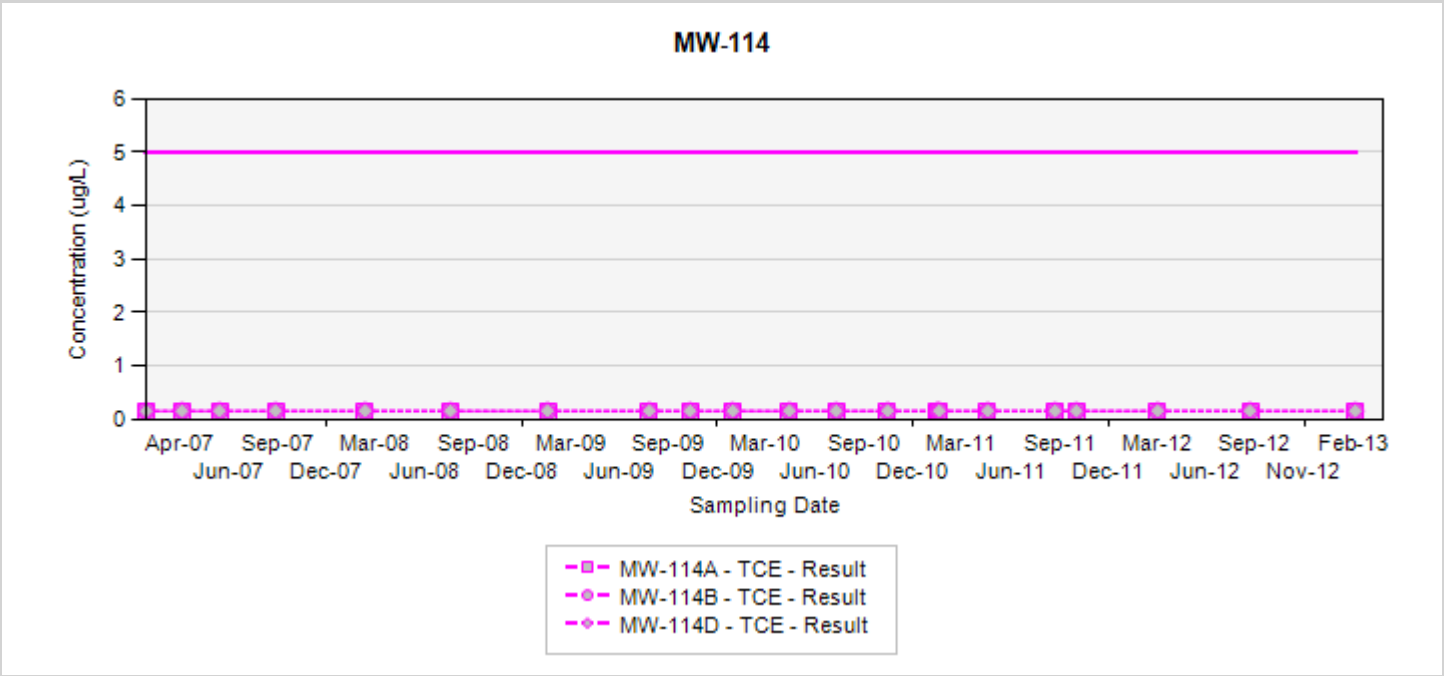

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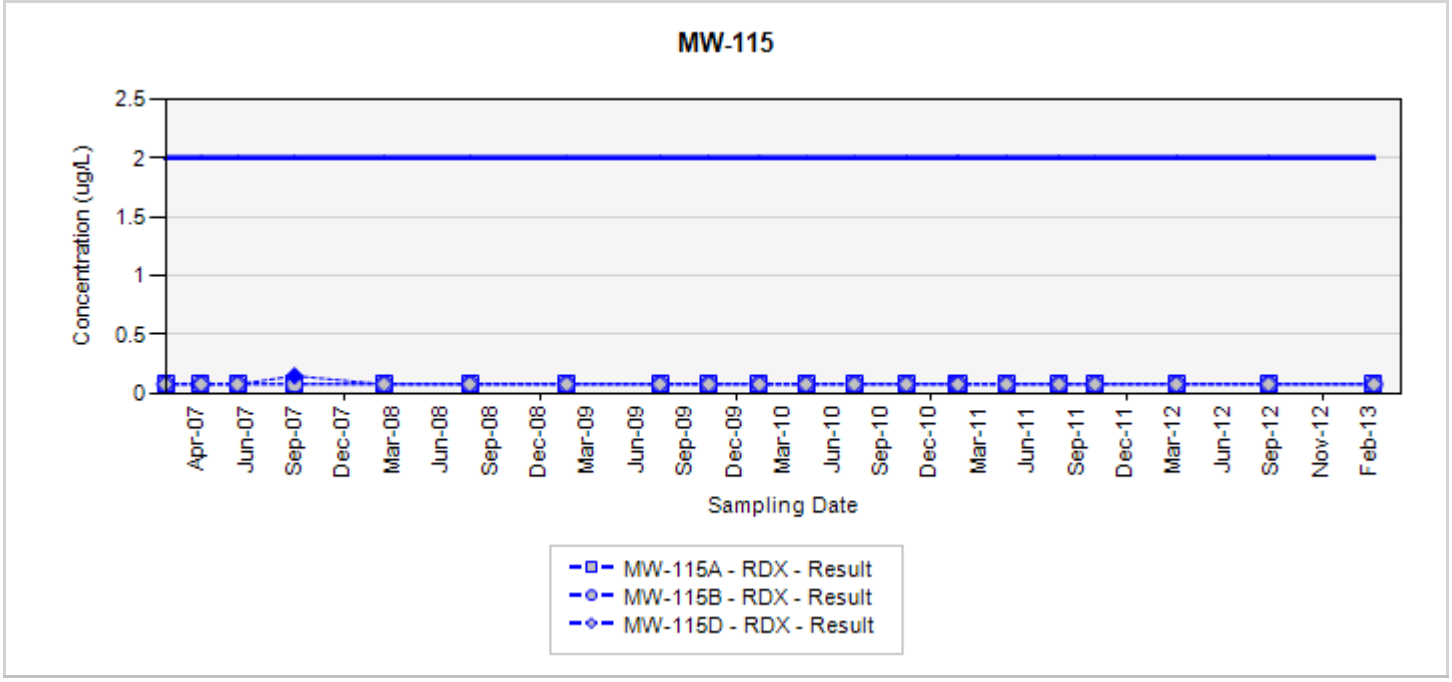

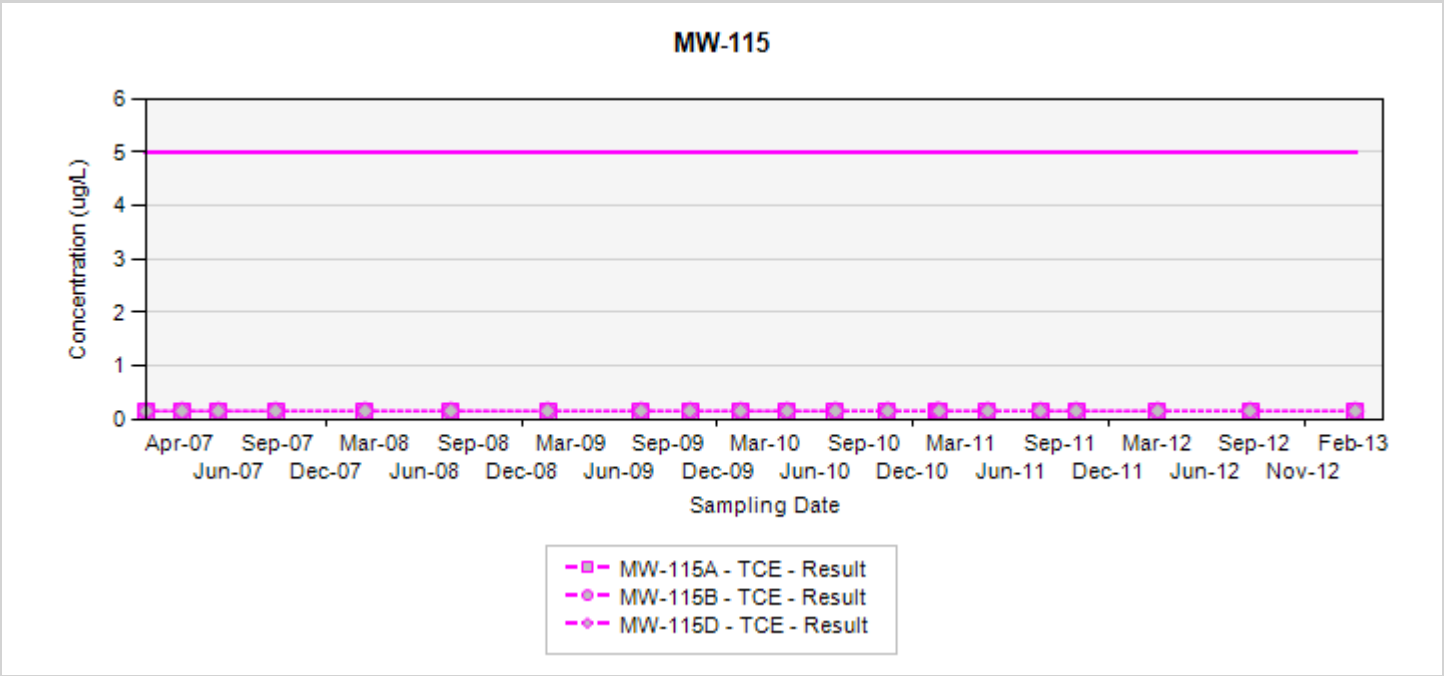

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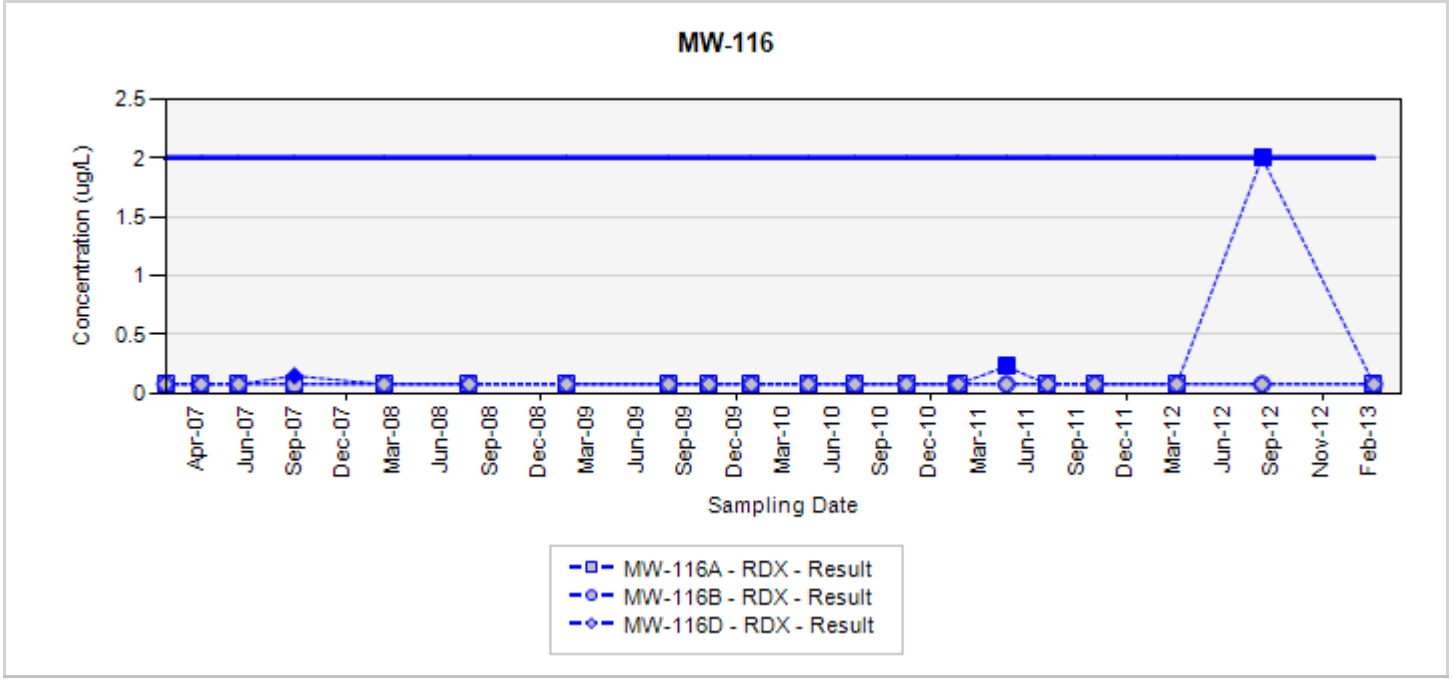

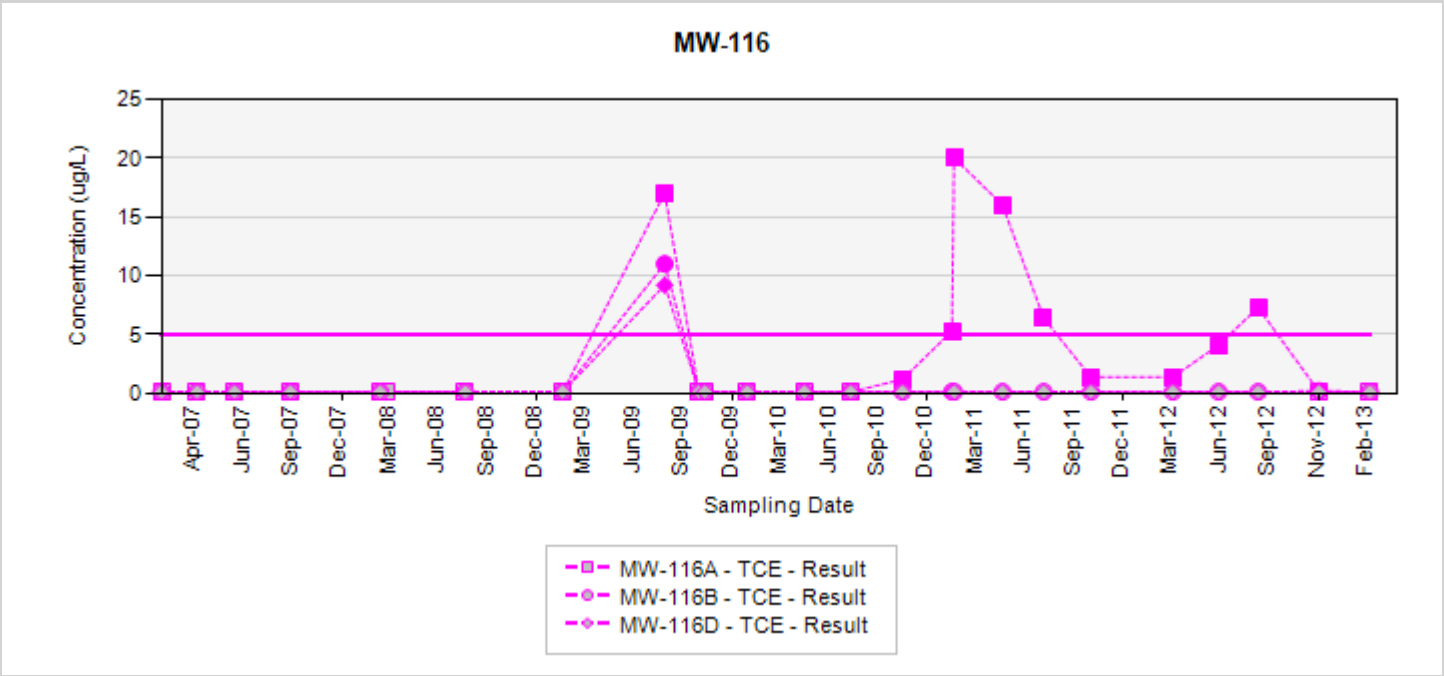

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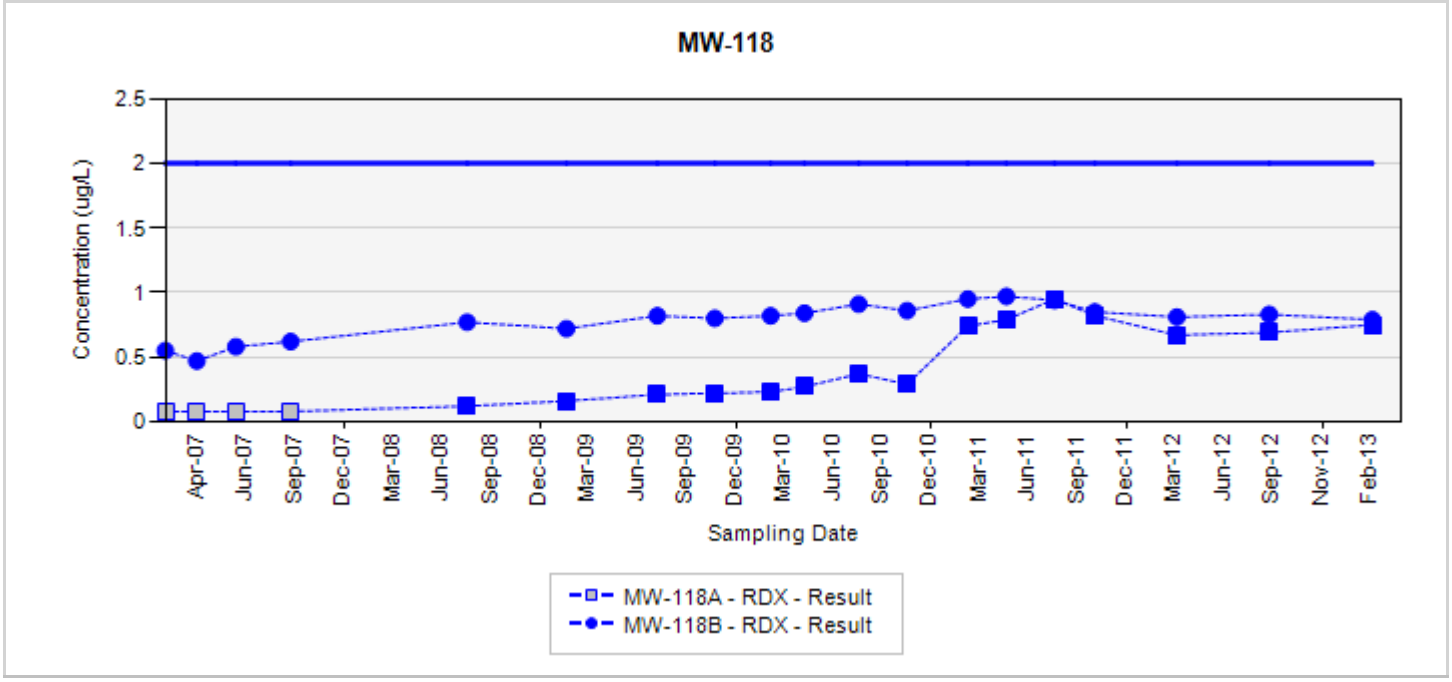

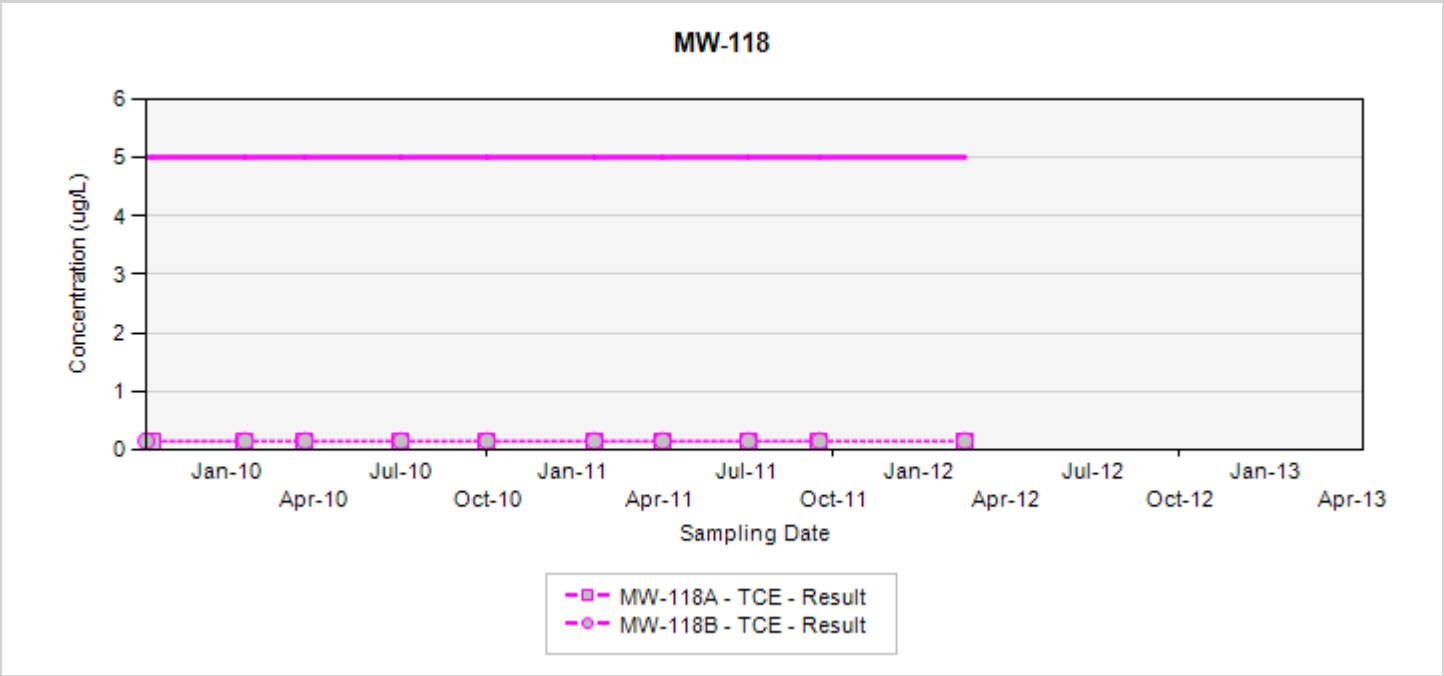

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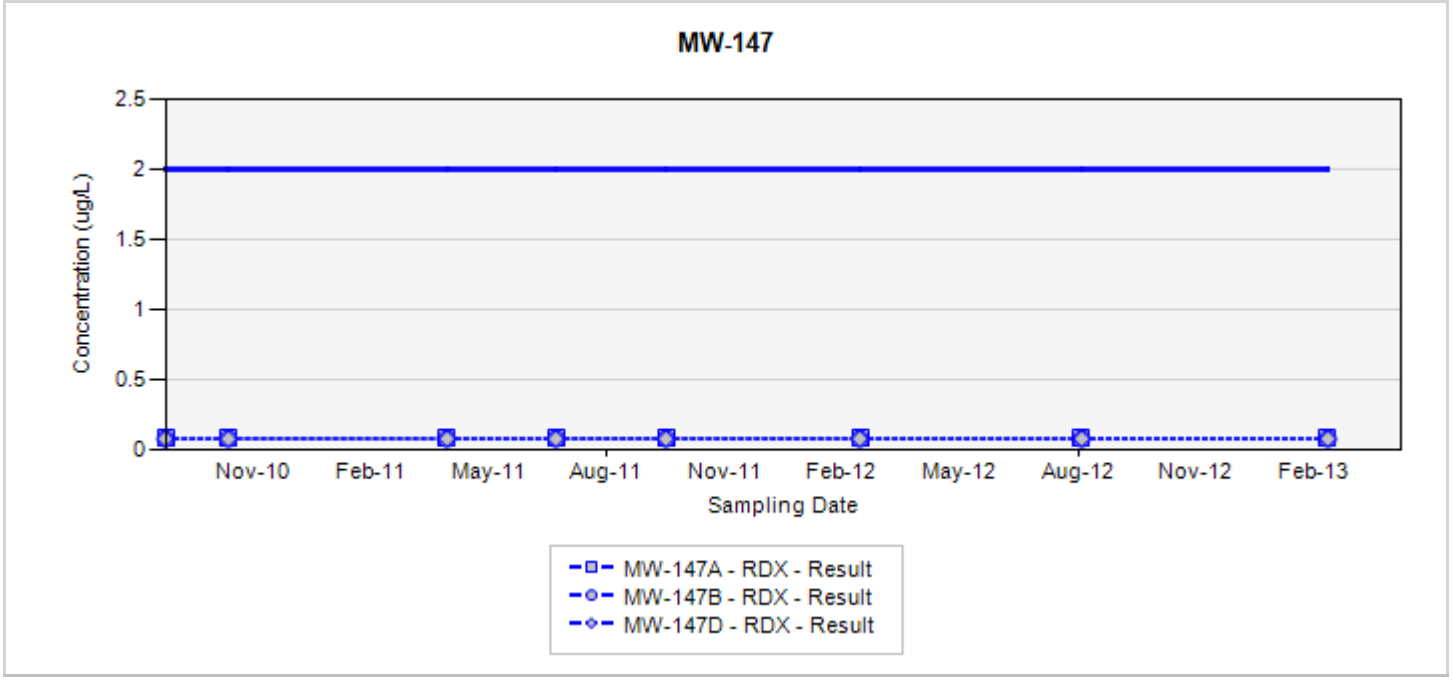

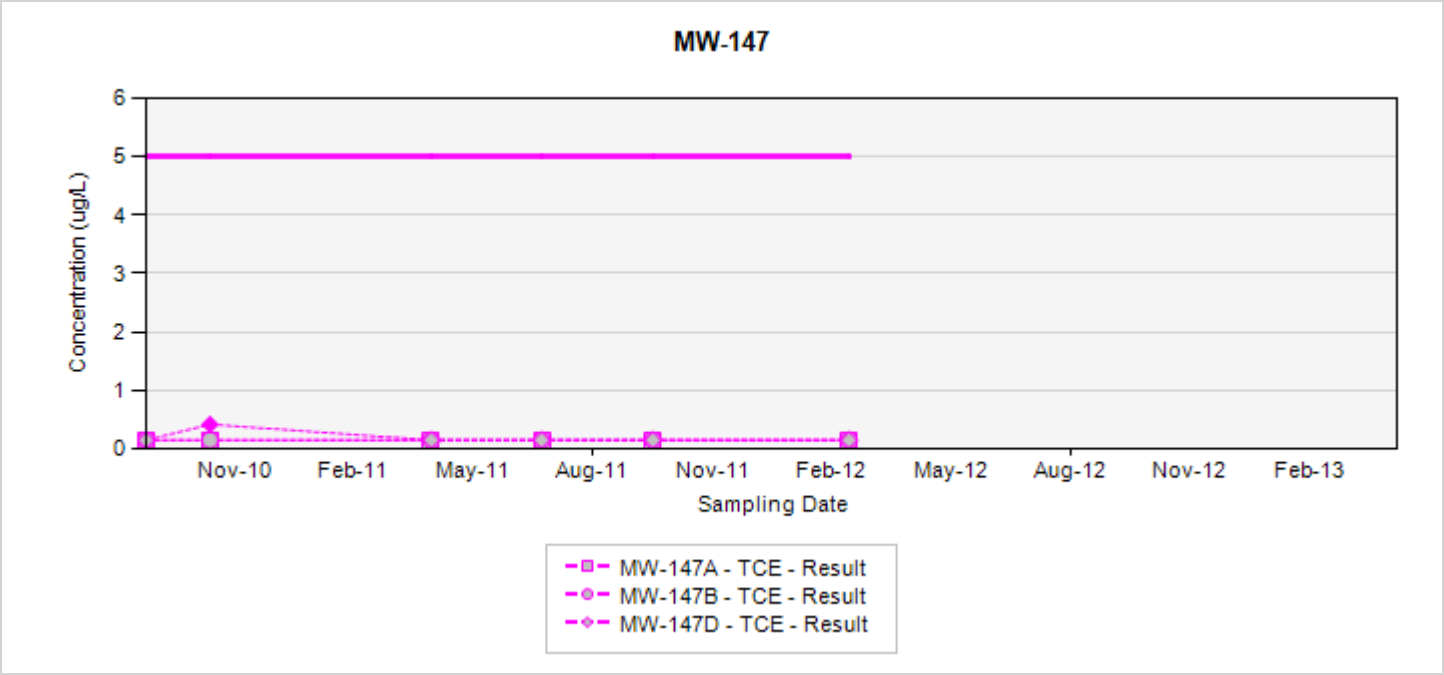

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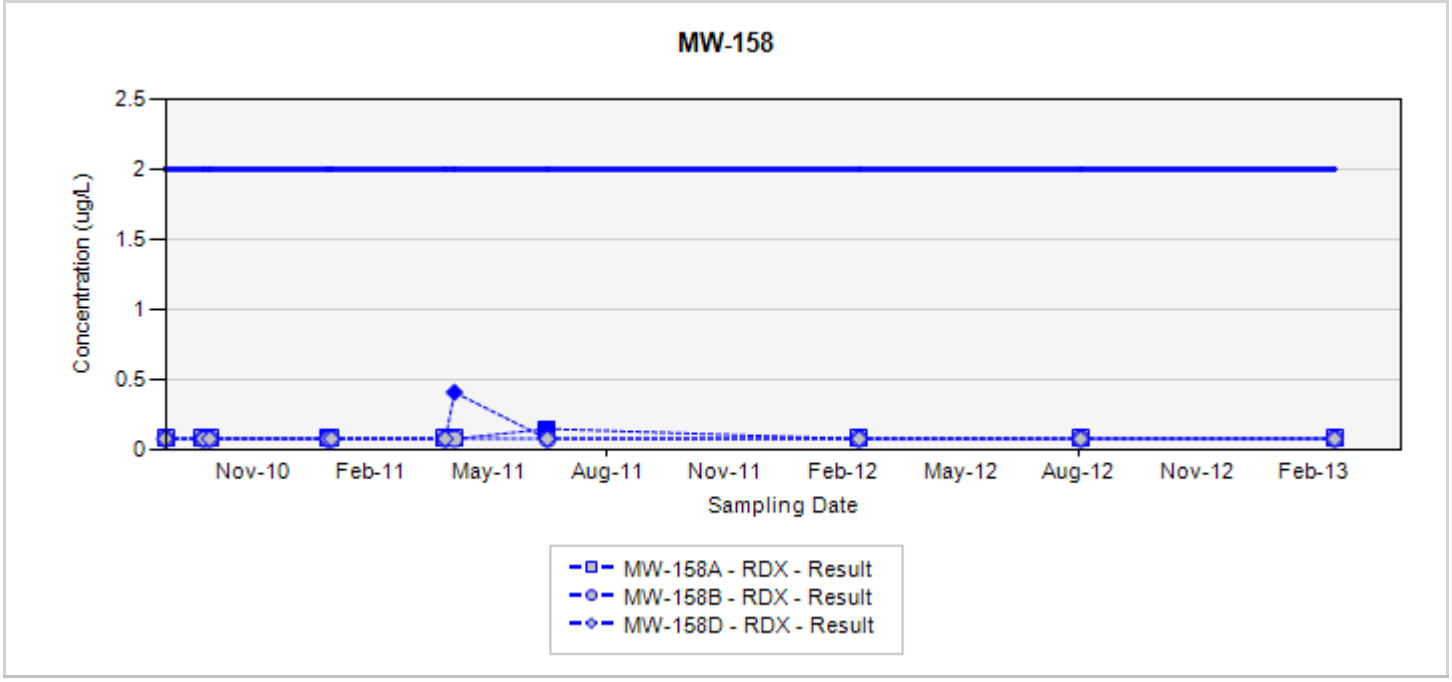

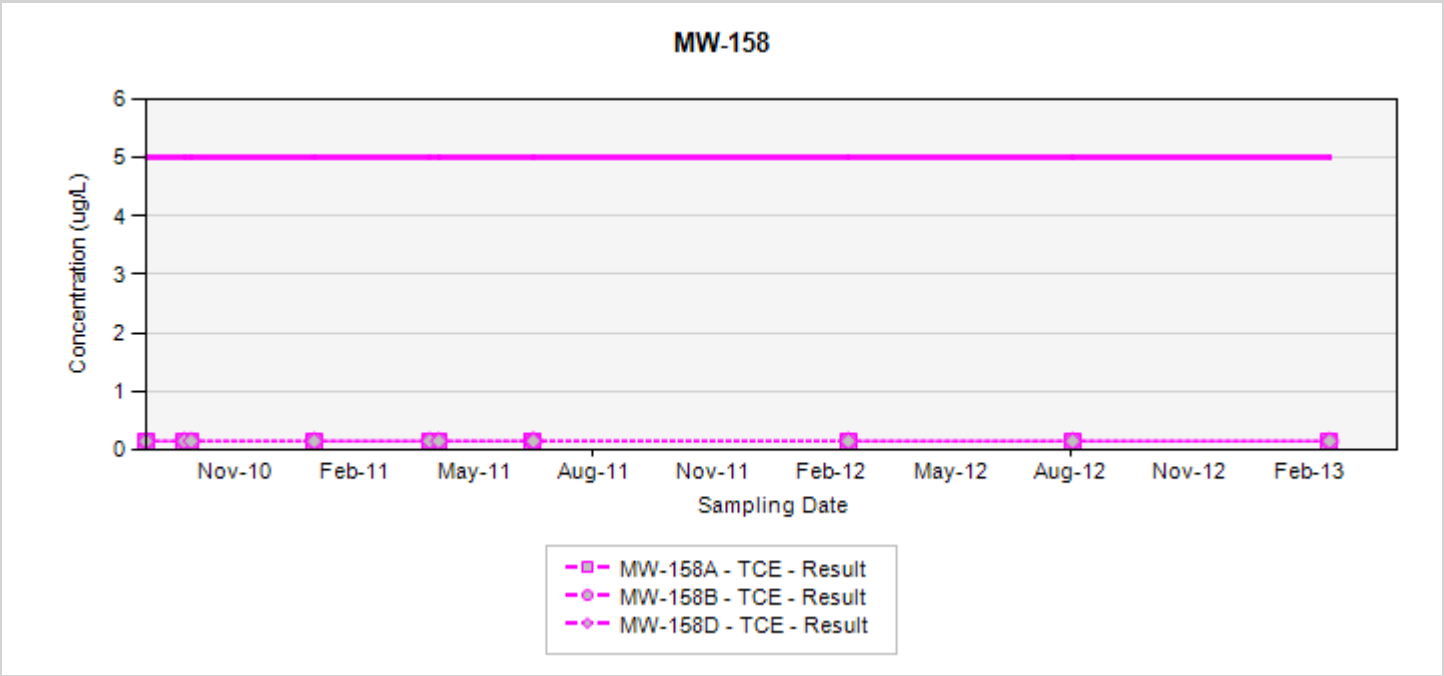

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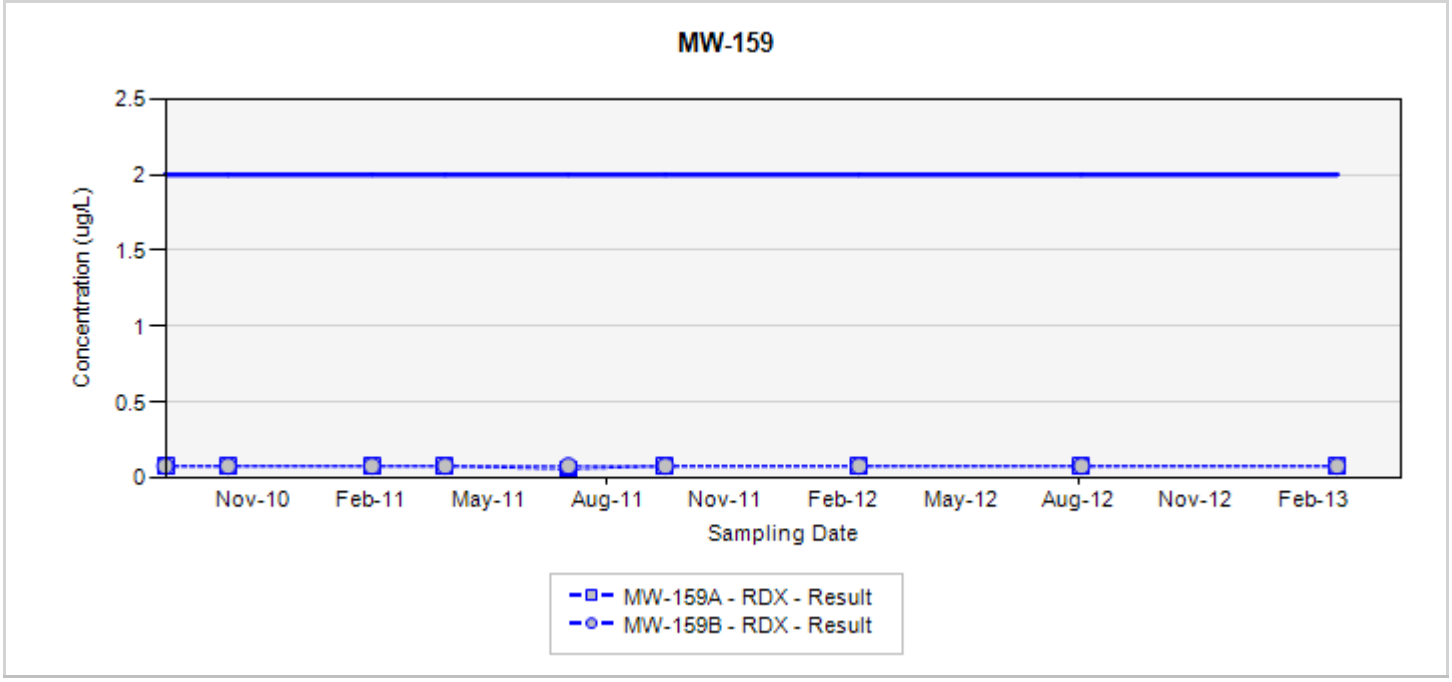

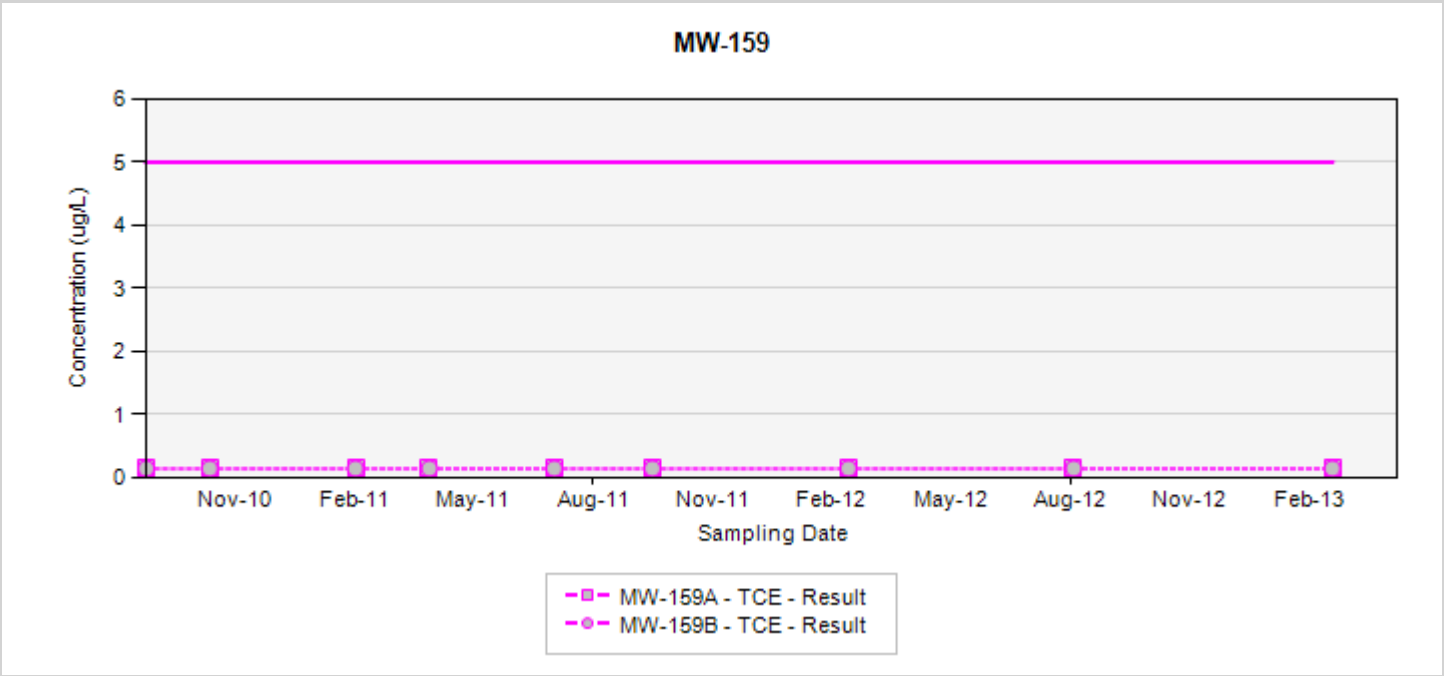

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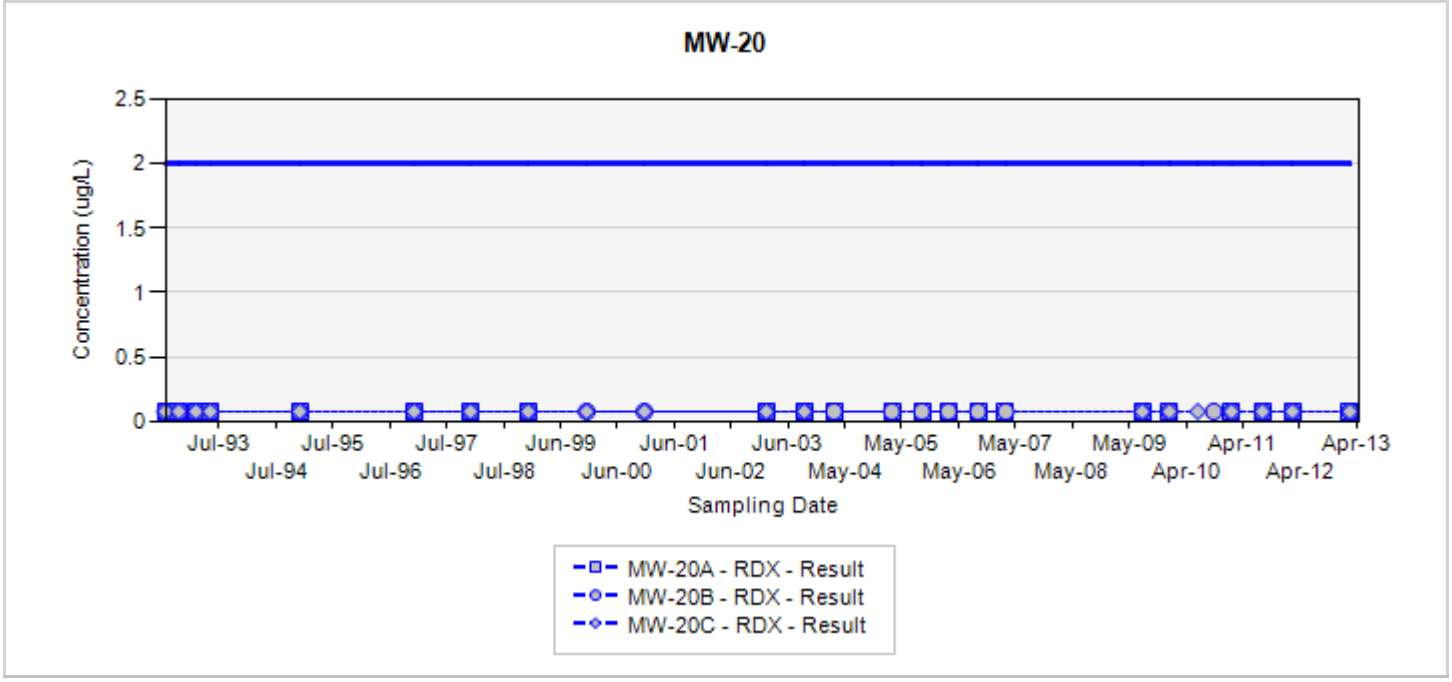

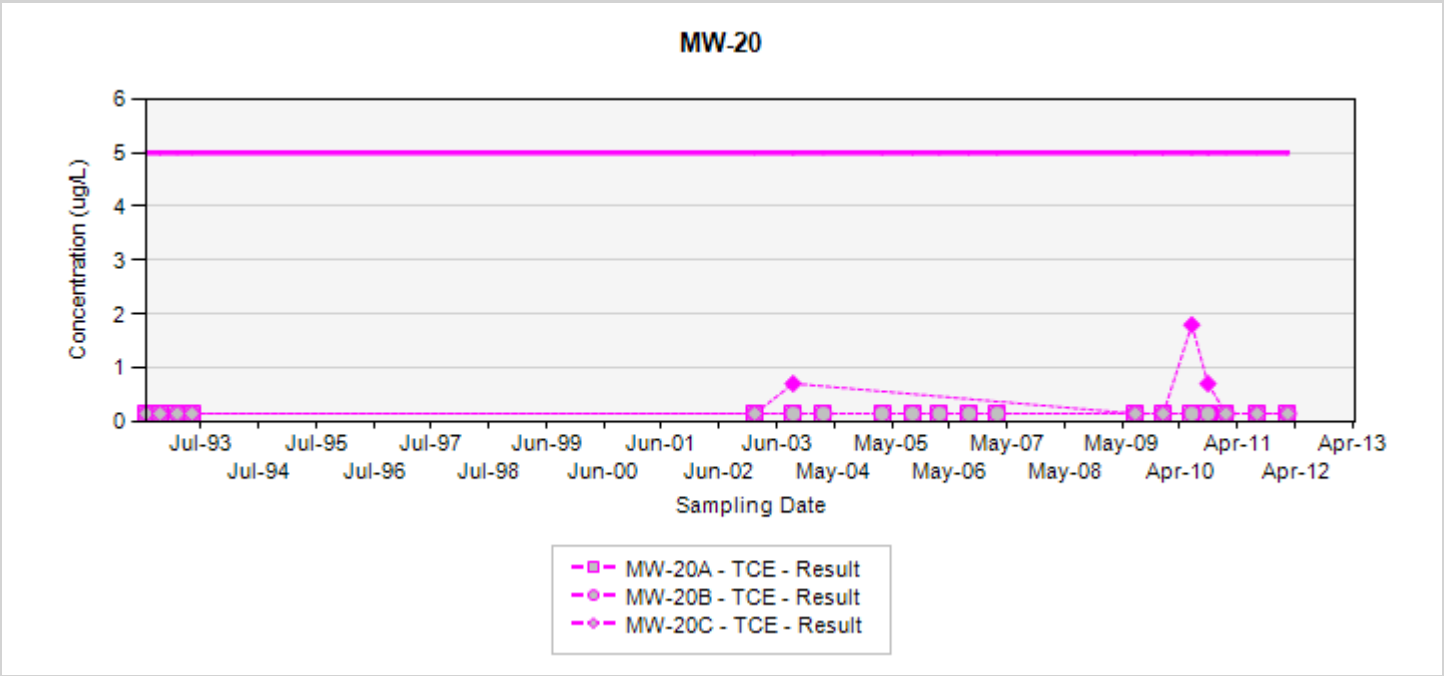

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RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
Final Target Groundwater Cleanup Goals for TCE is 5 UG/L
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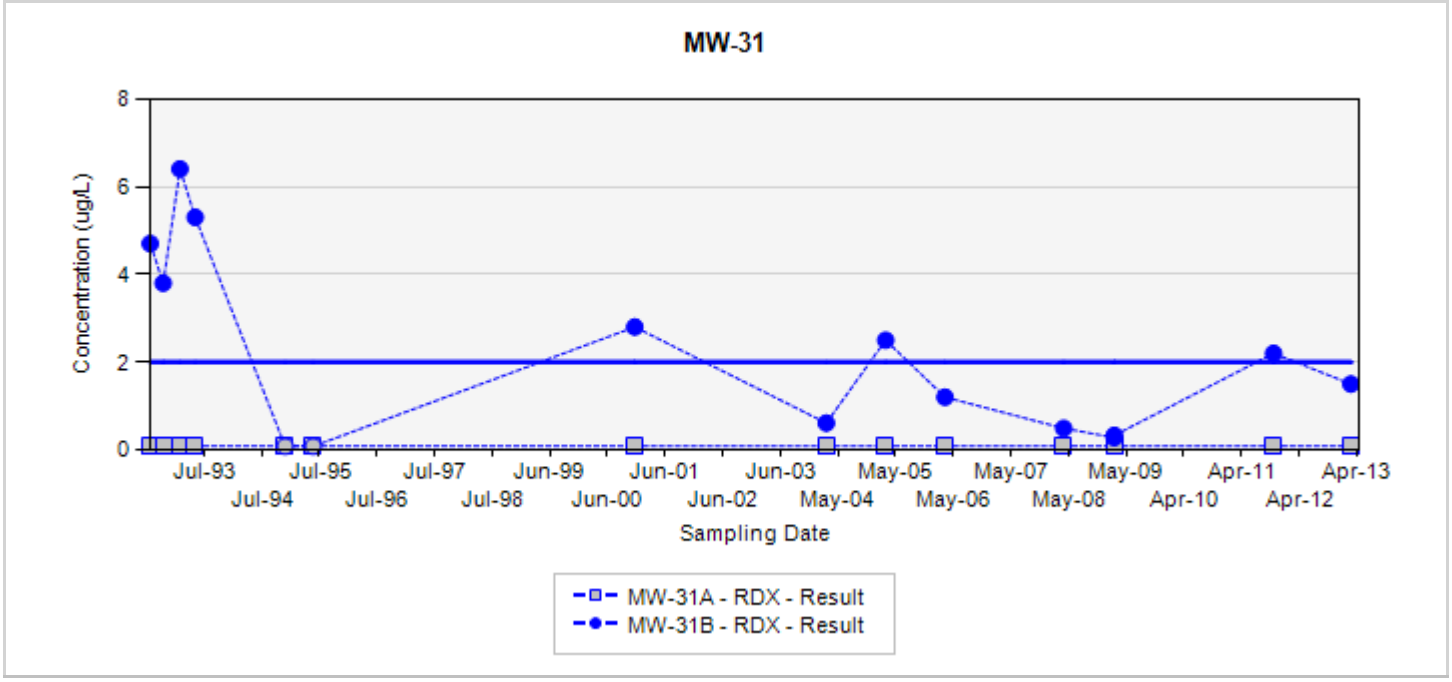
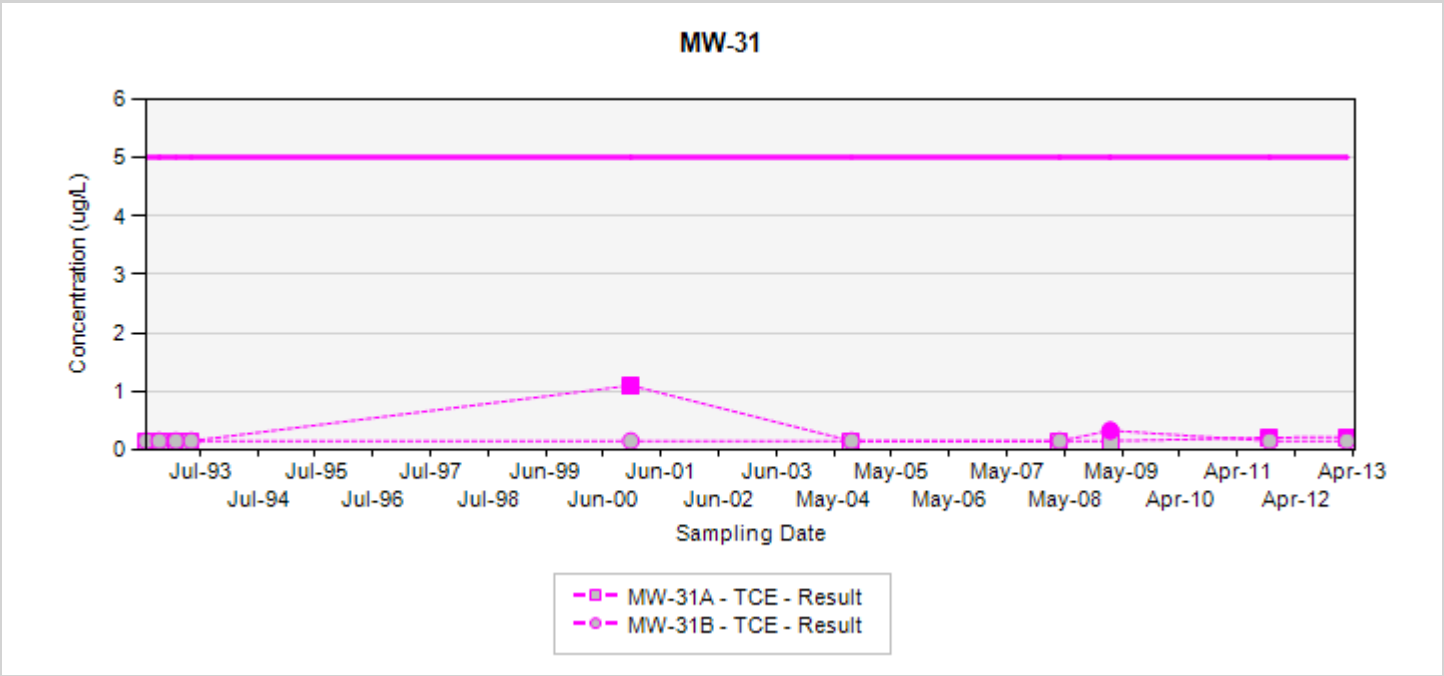
Appendix A
Concentration Trend Charts for Monitoring Wells





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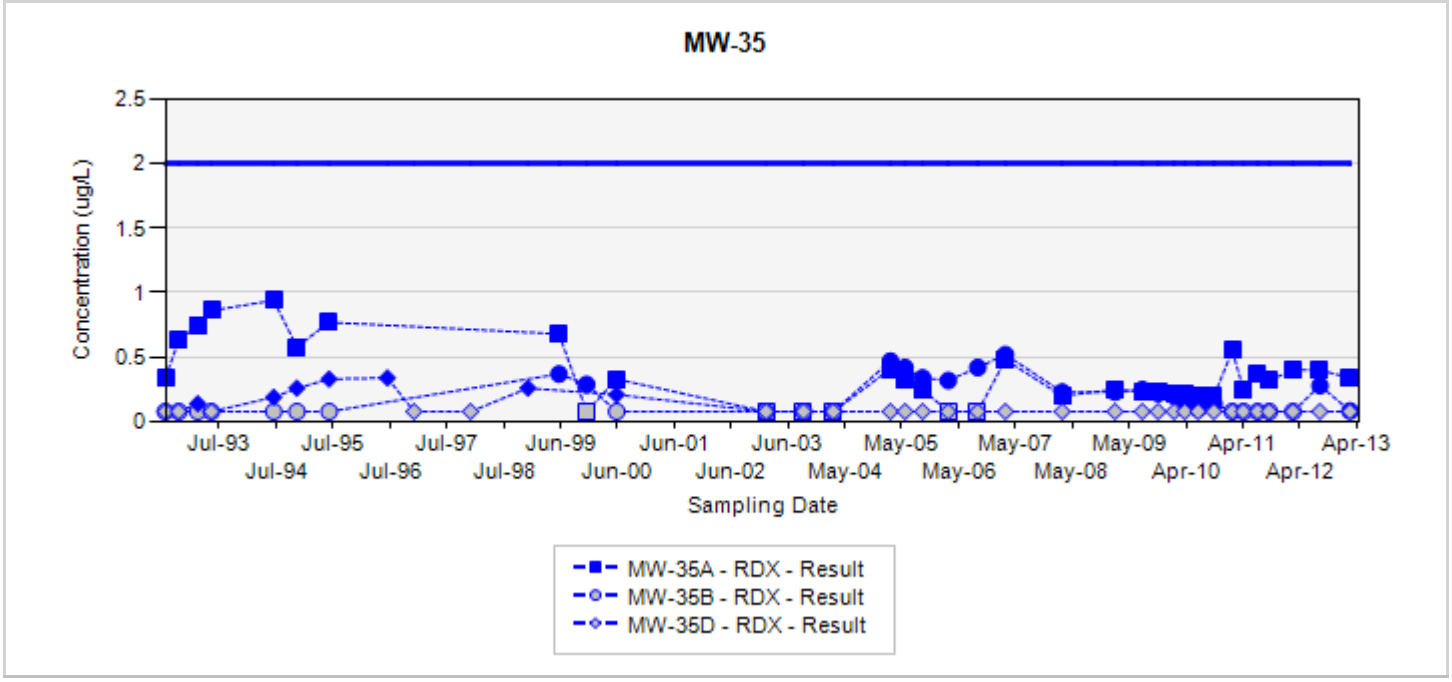

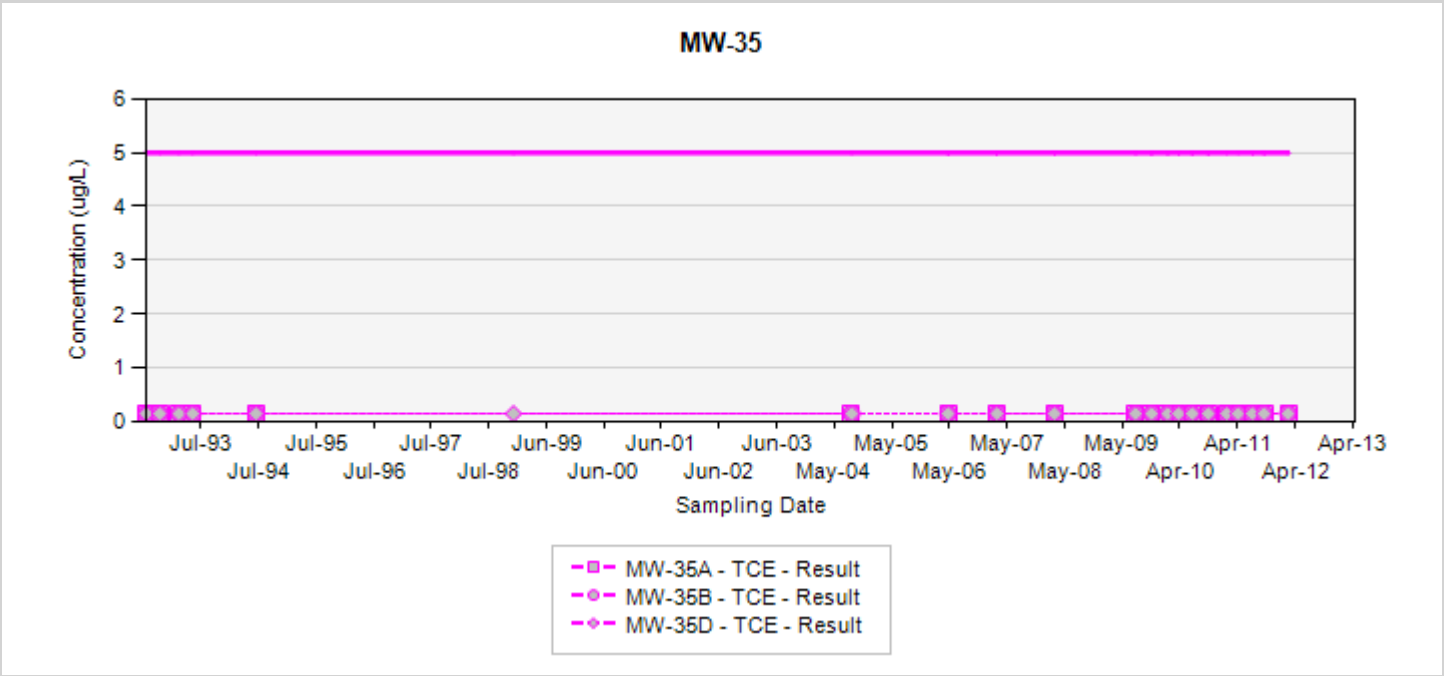

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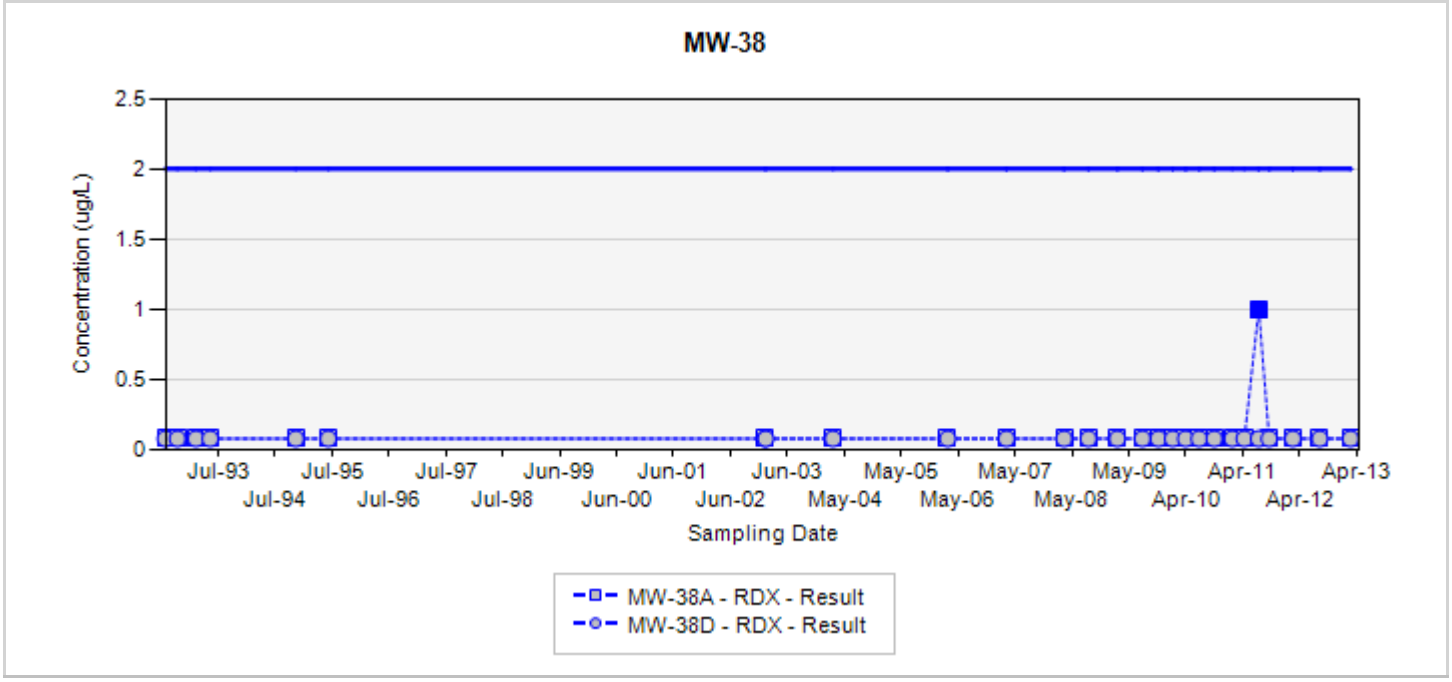

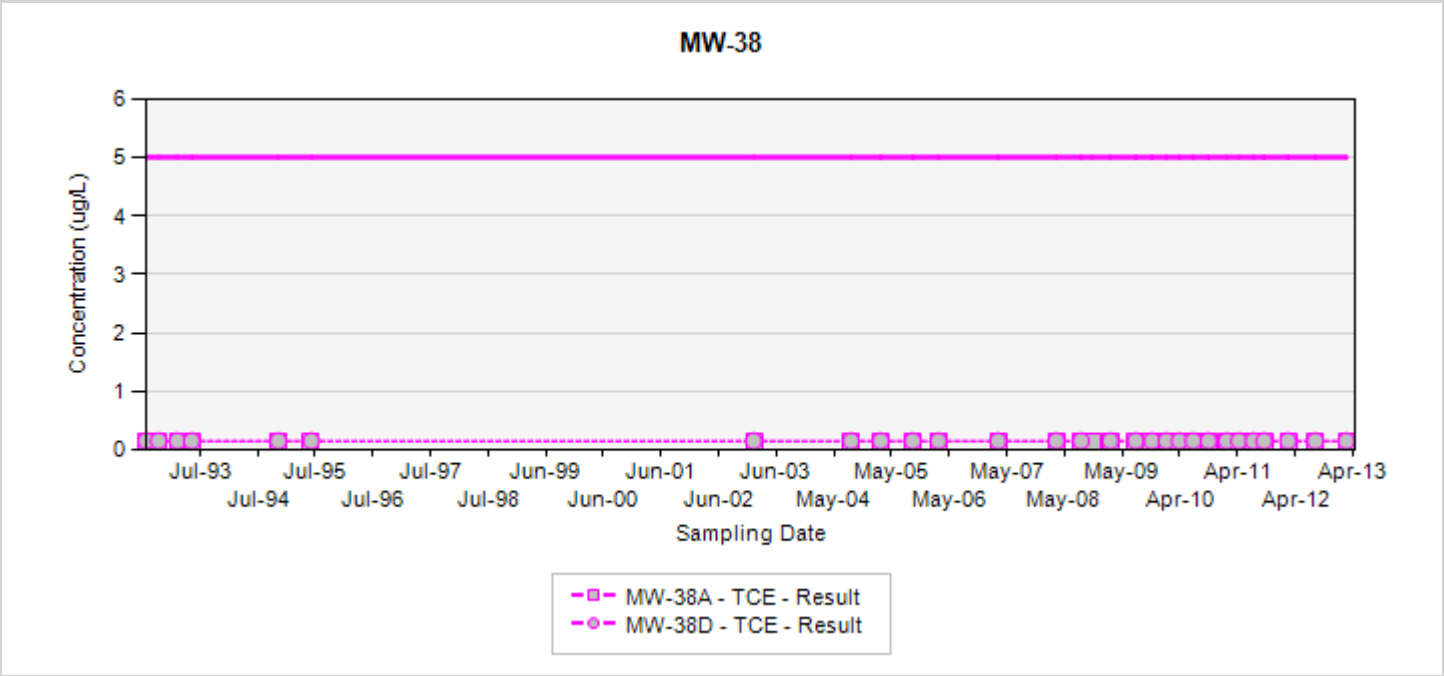

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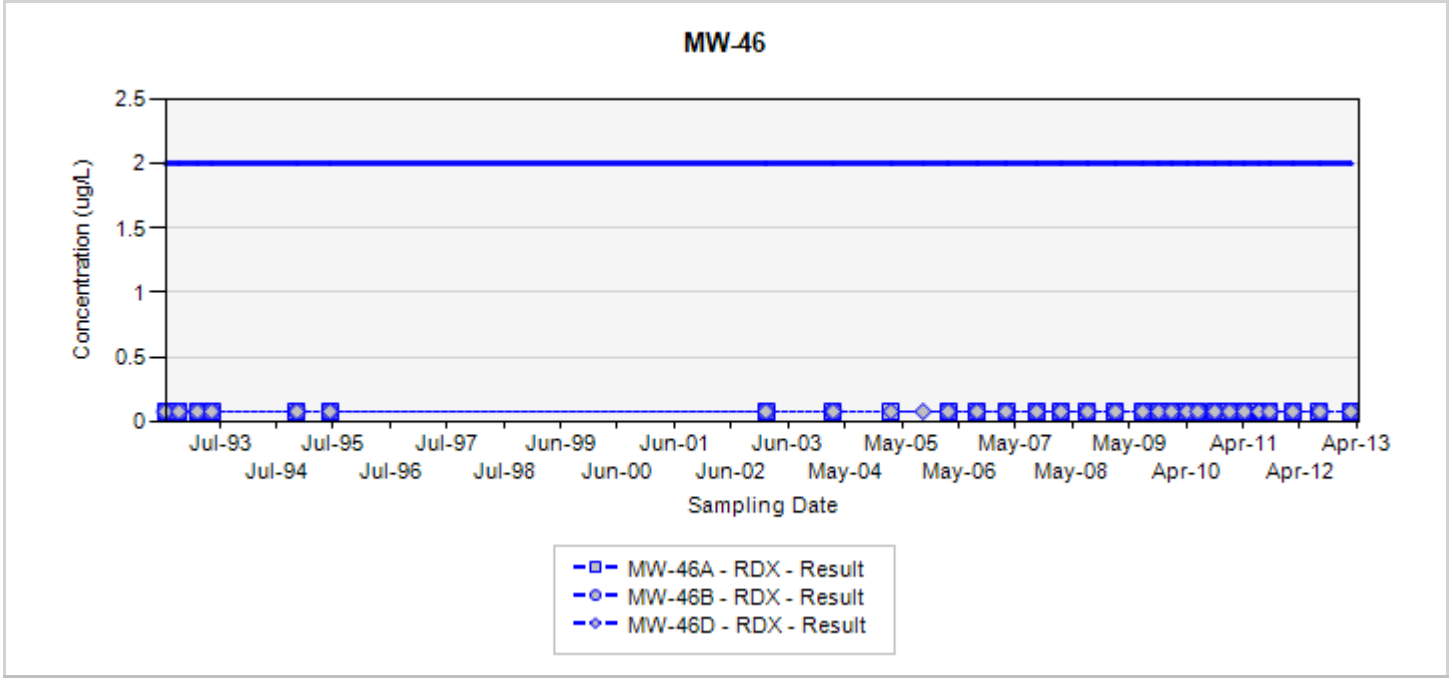

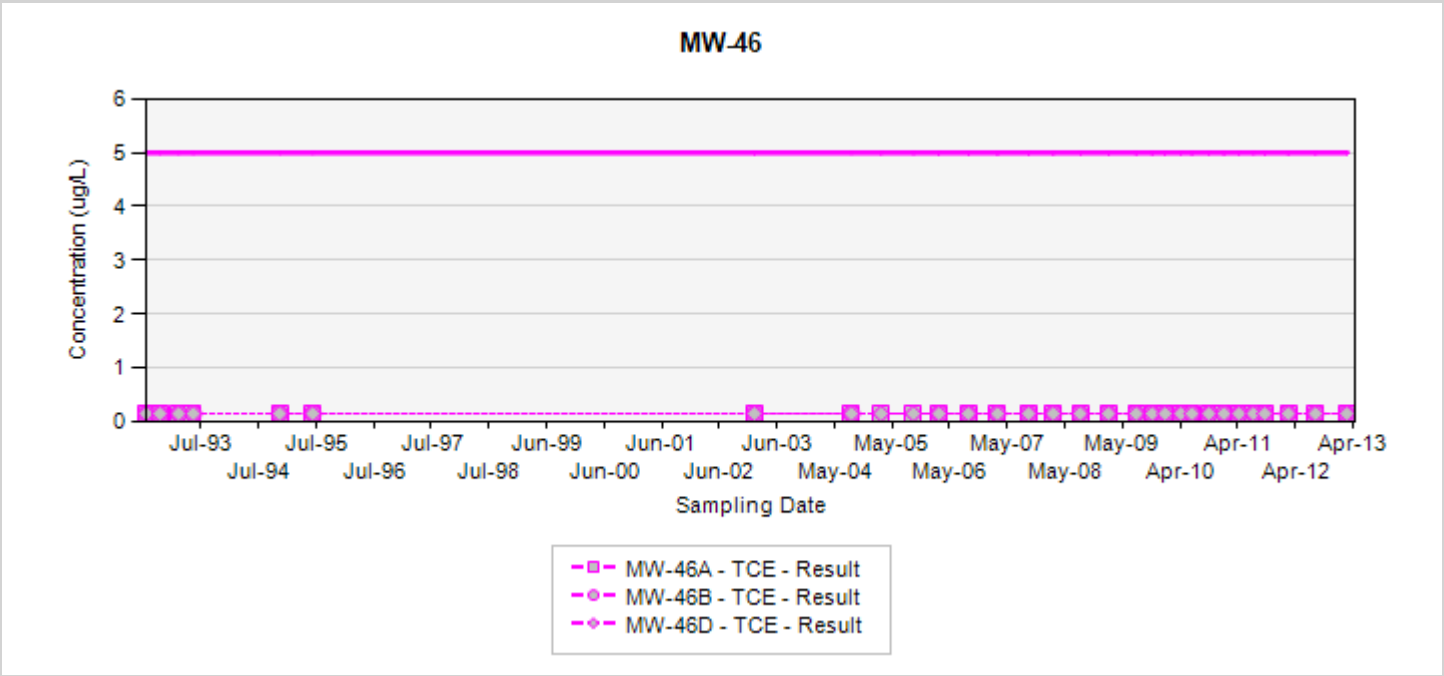

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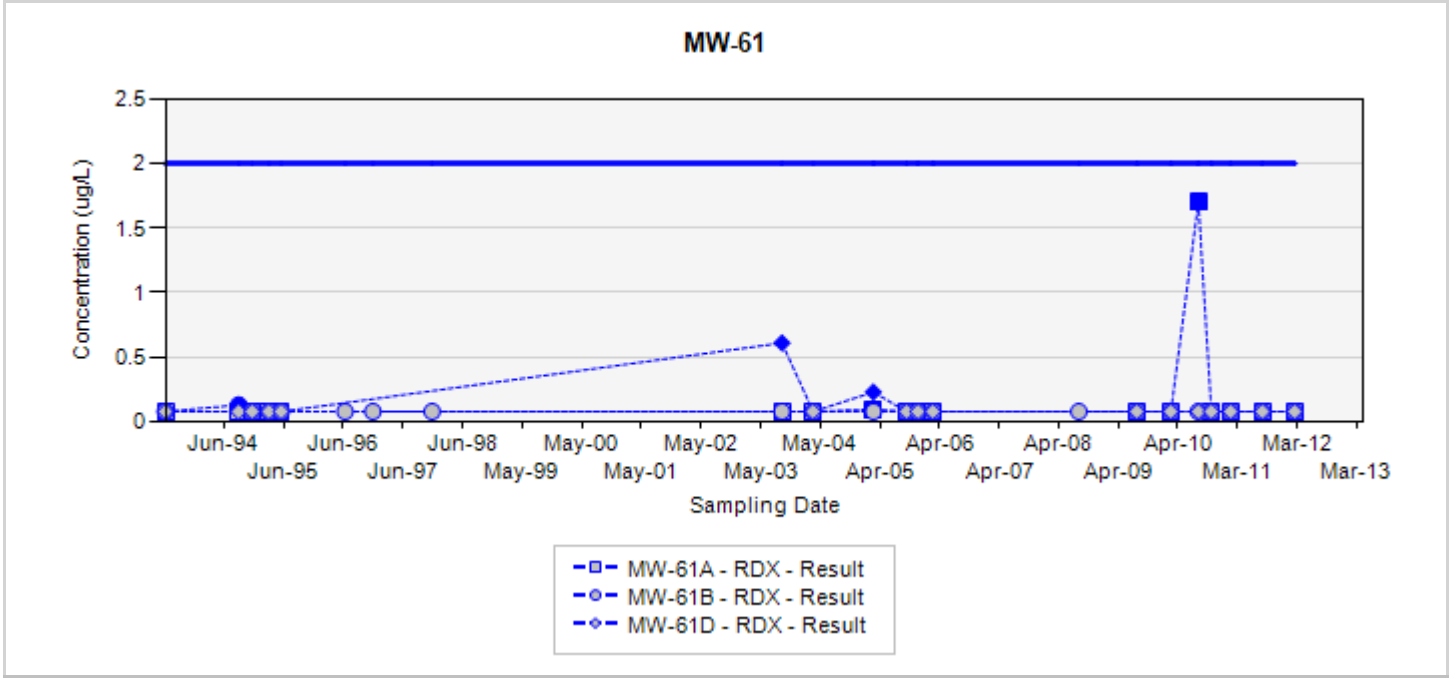

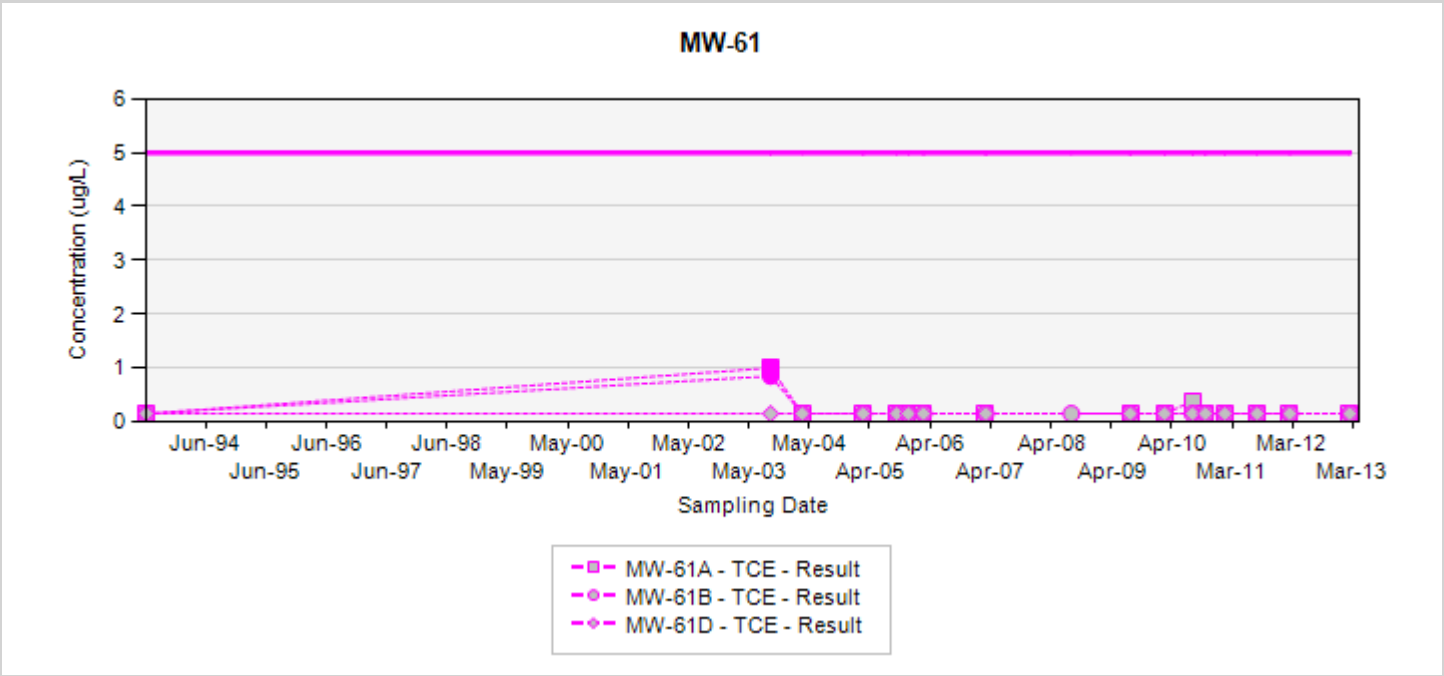

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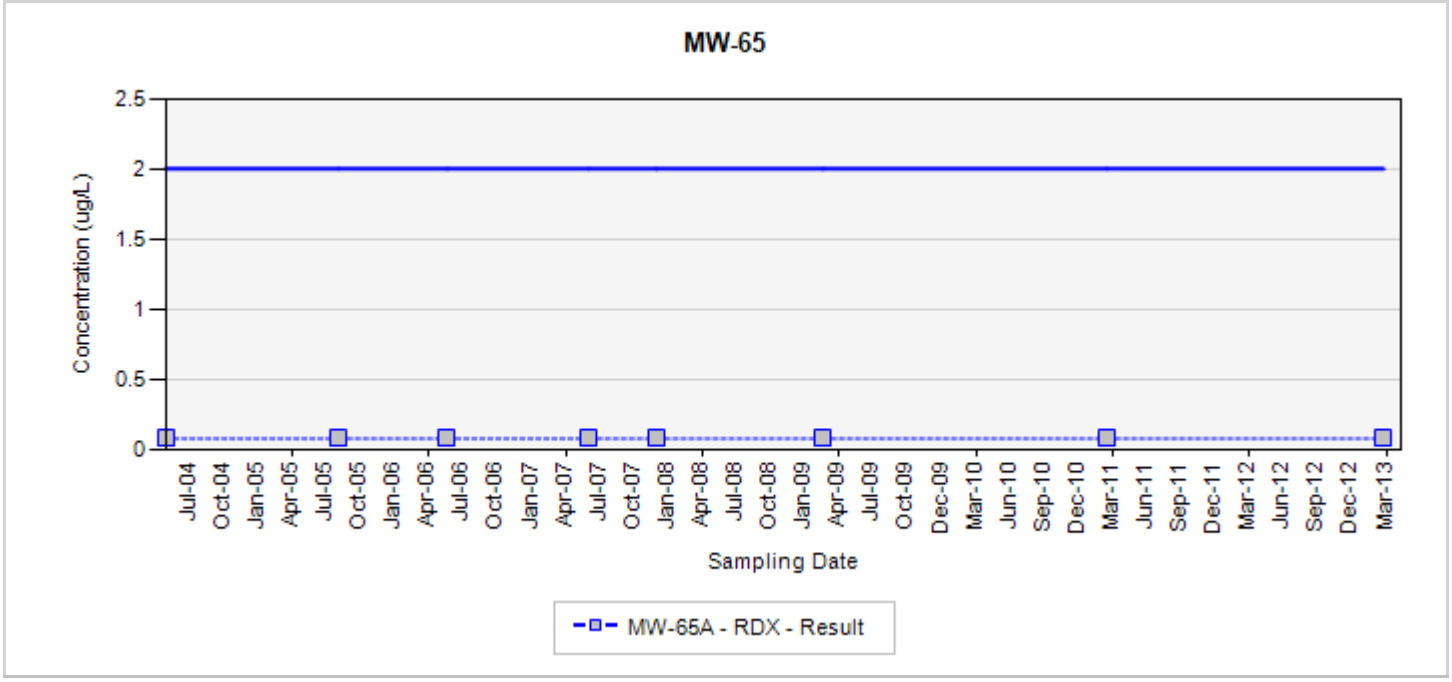

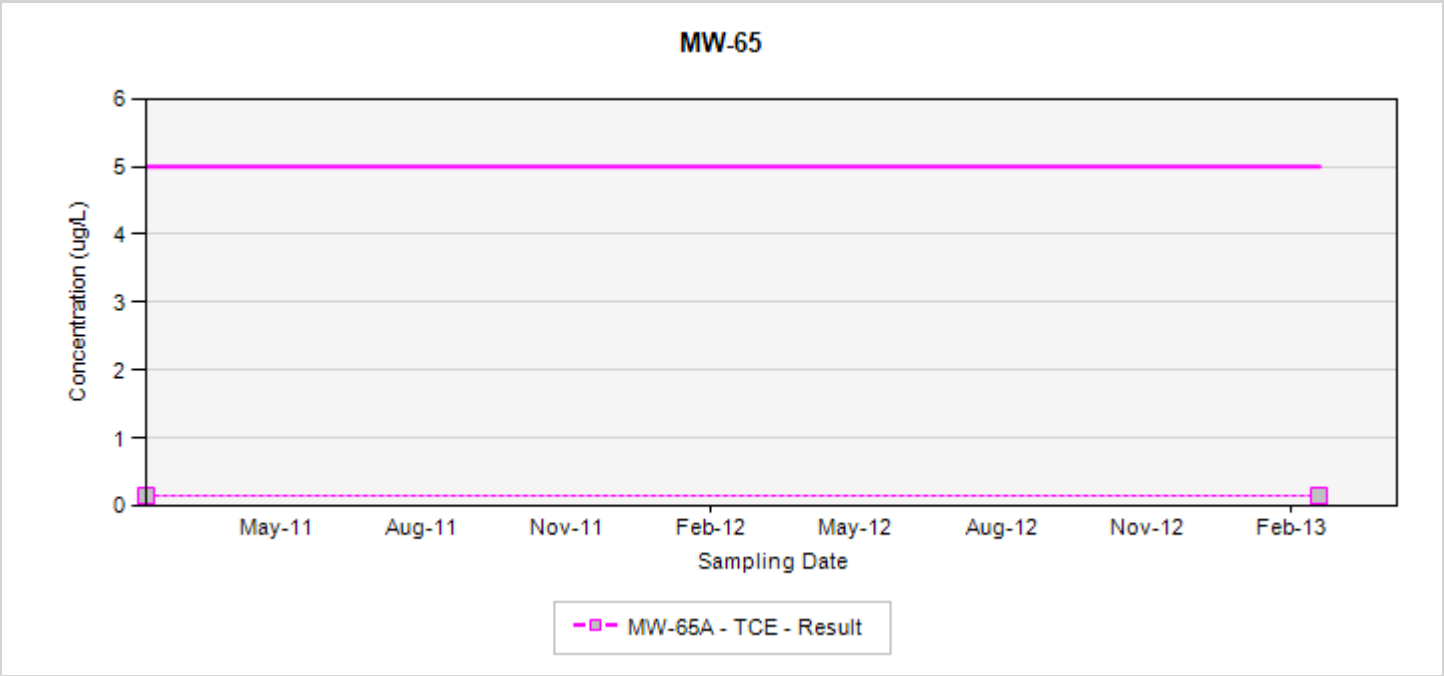

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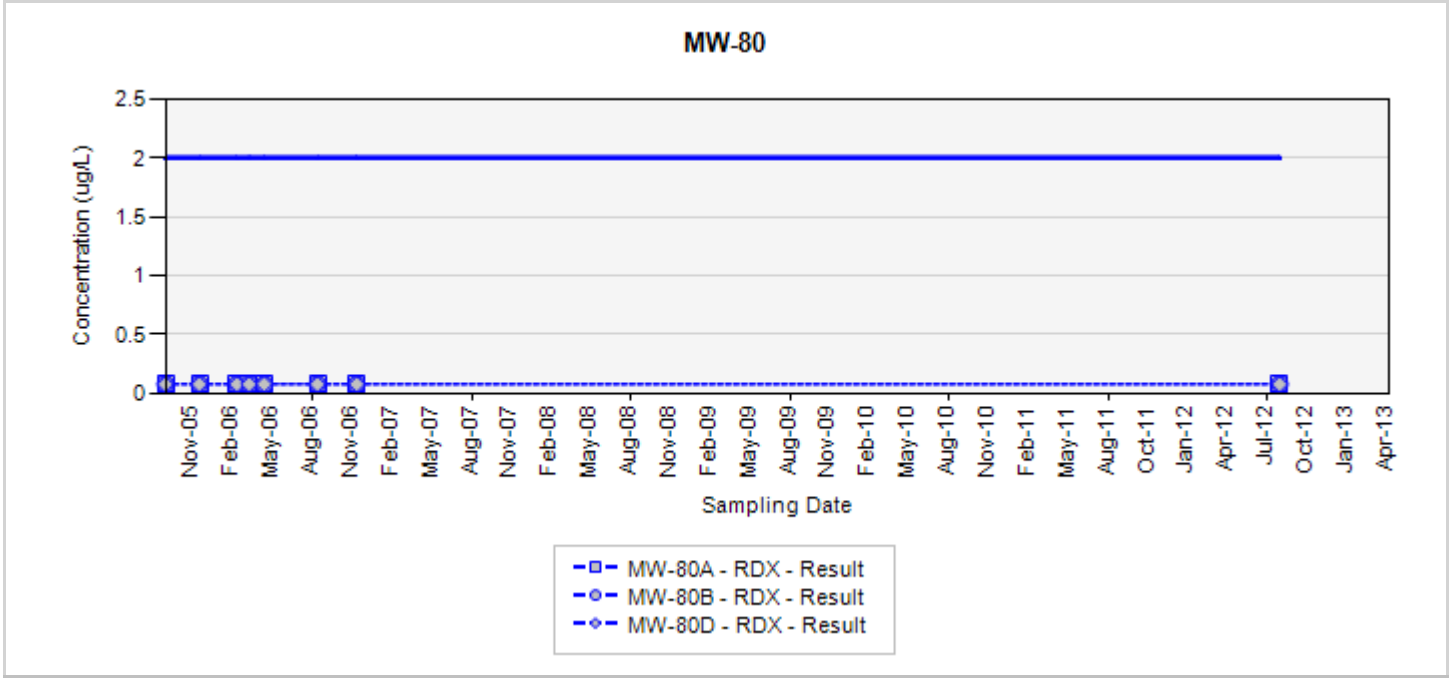

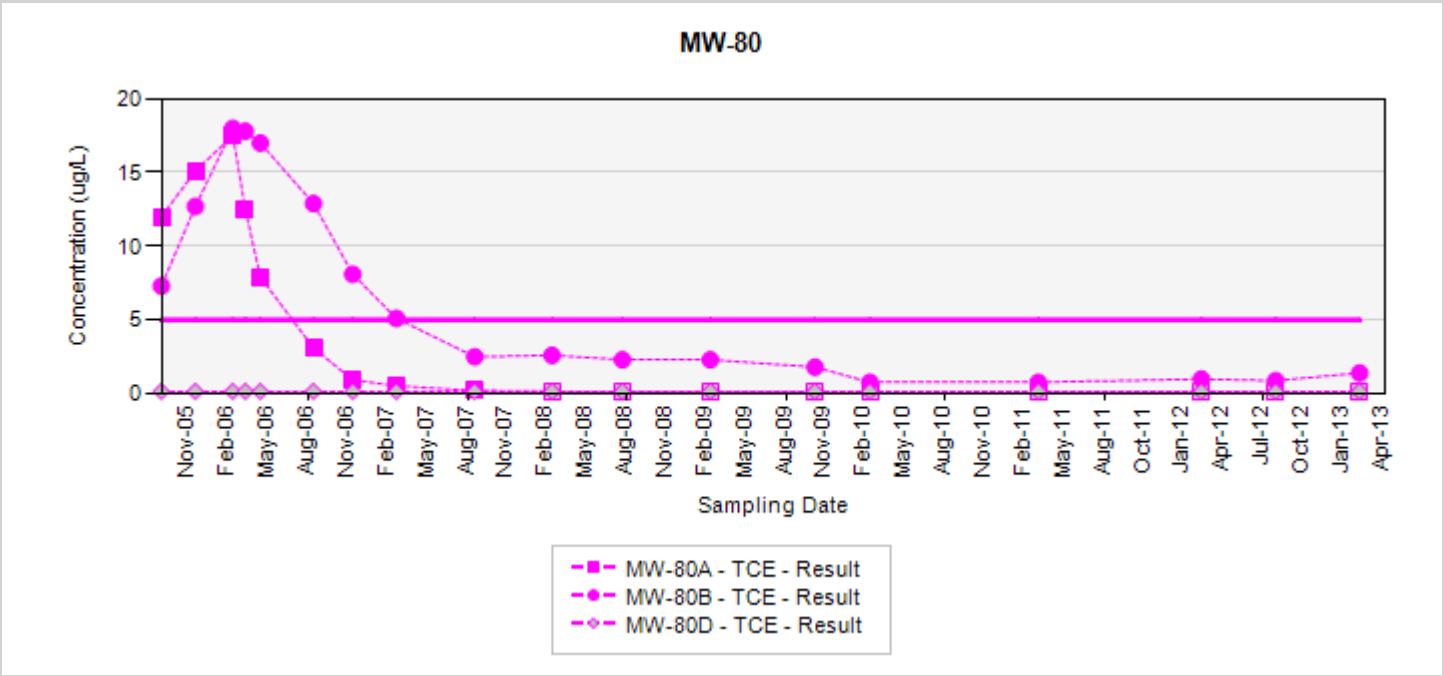

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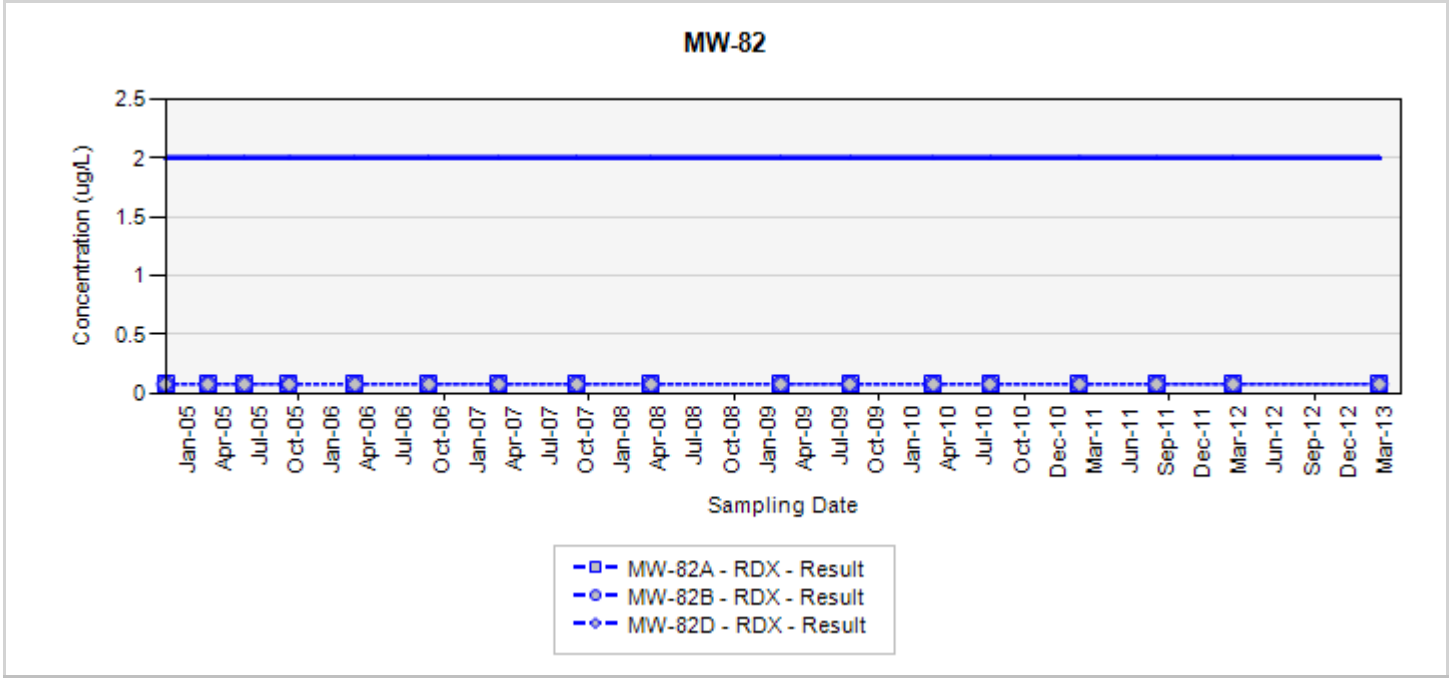

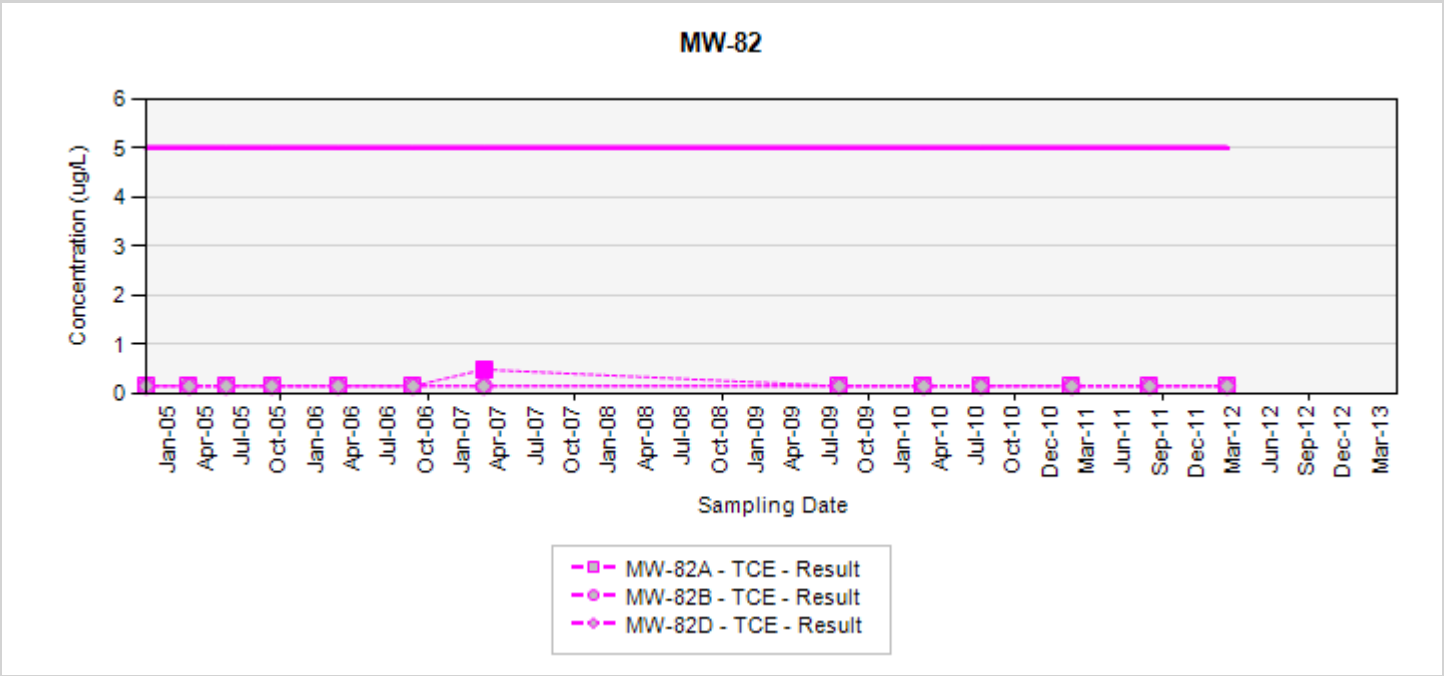

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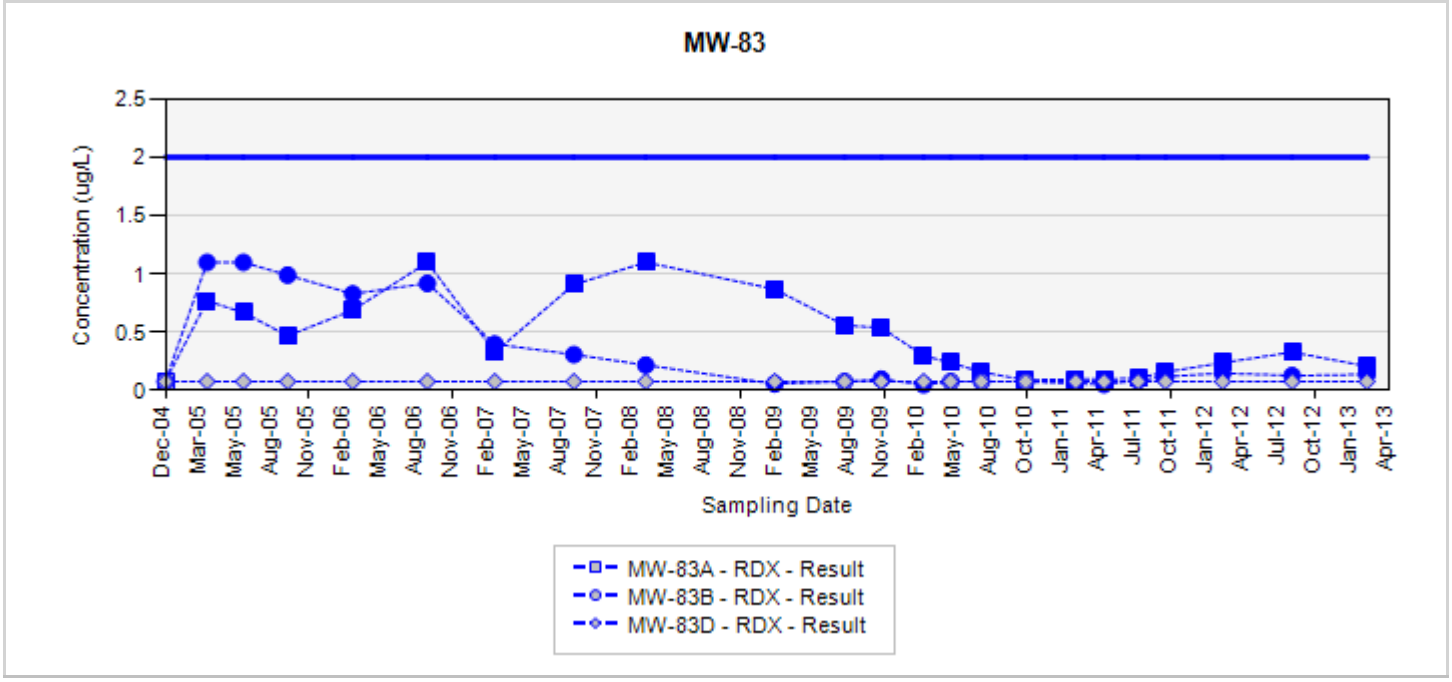

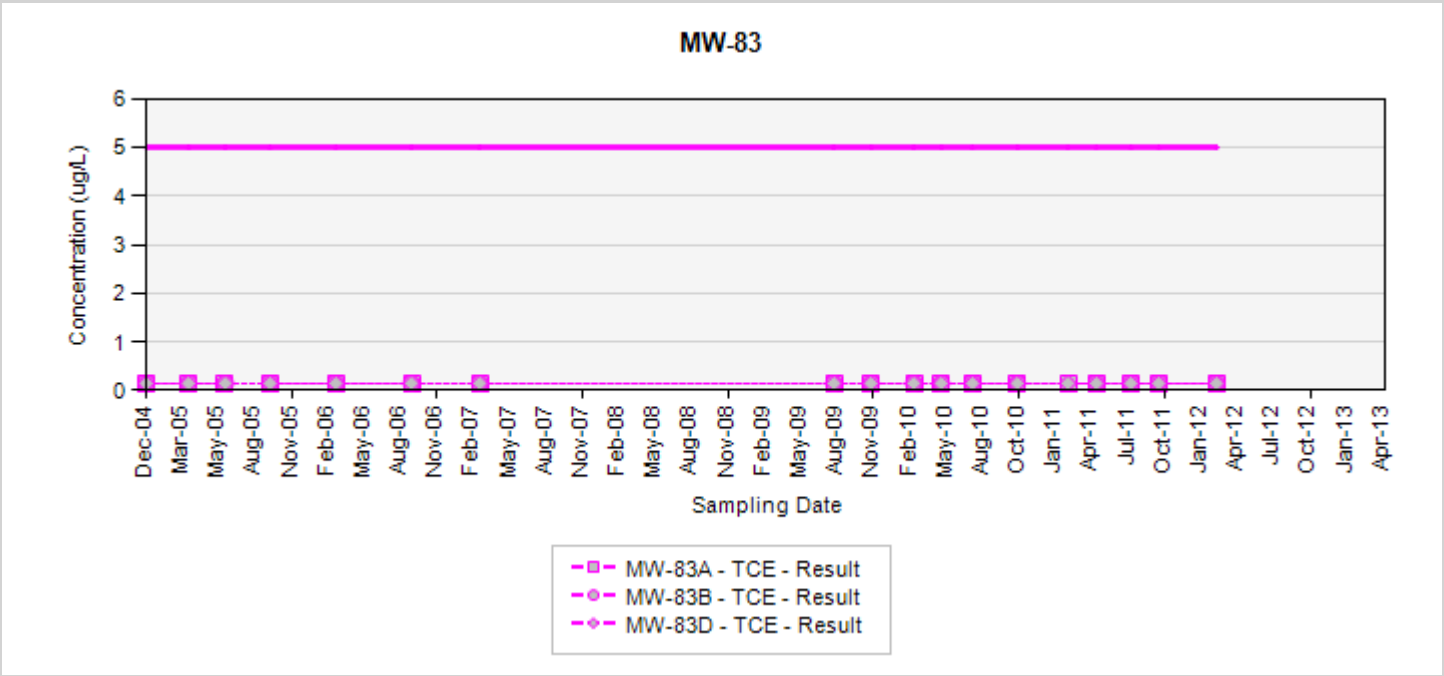

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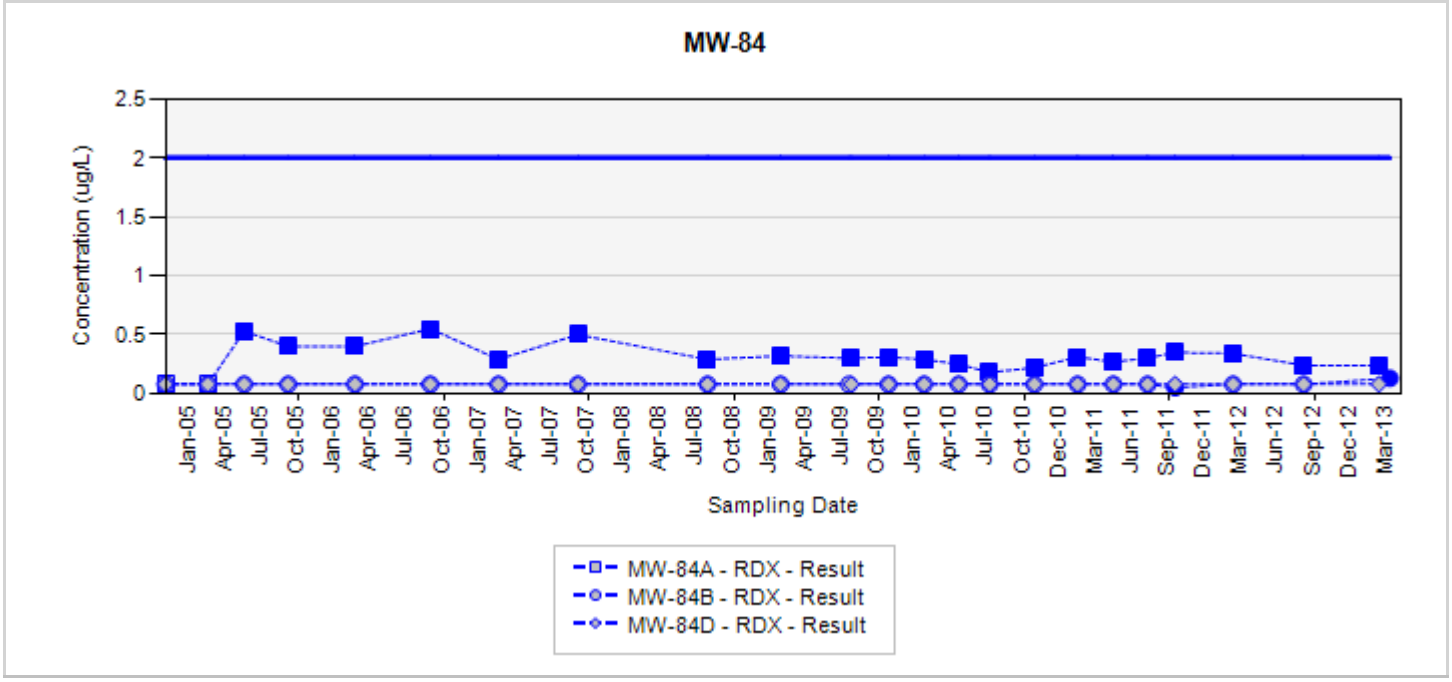

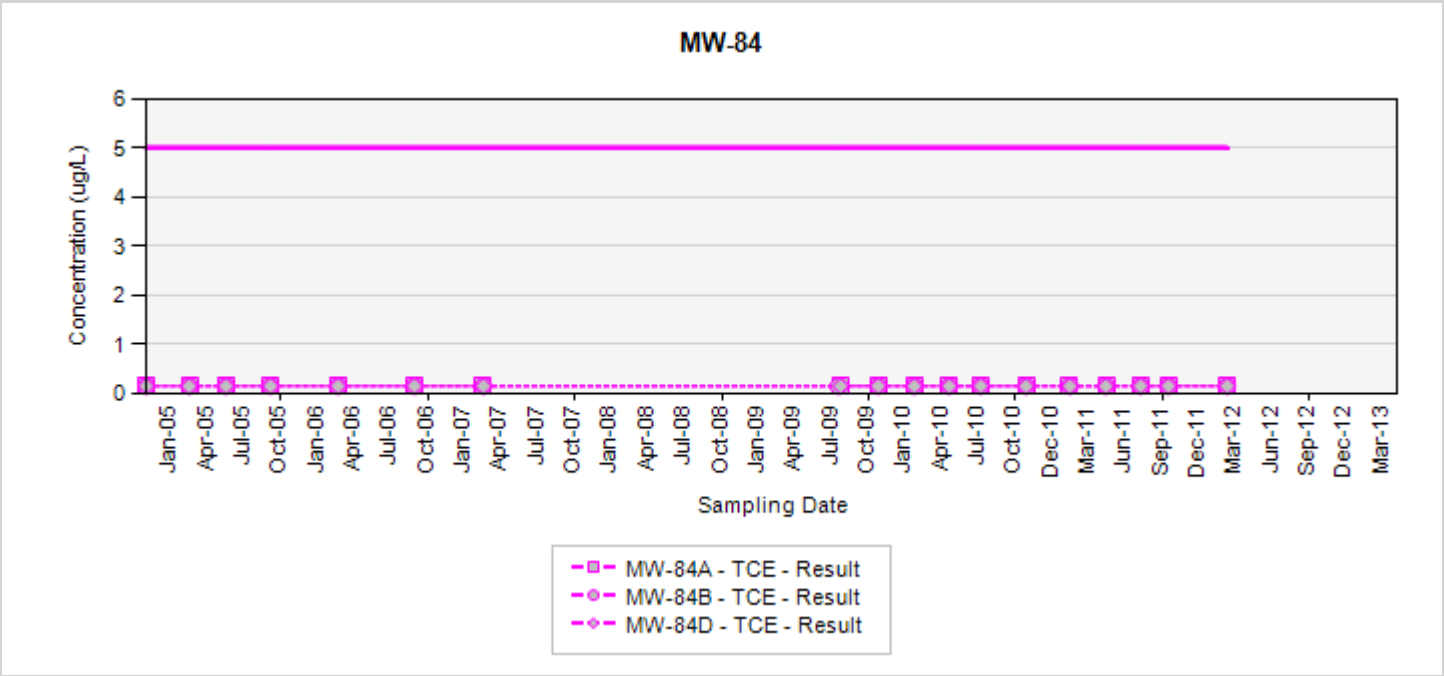

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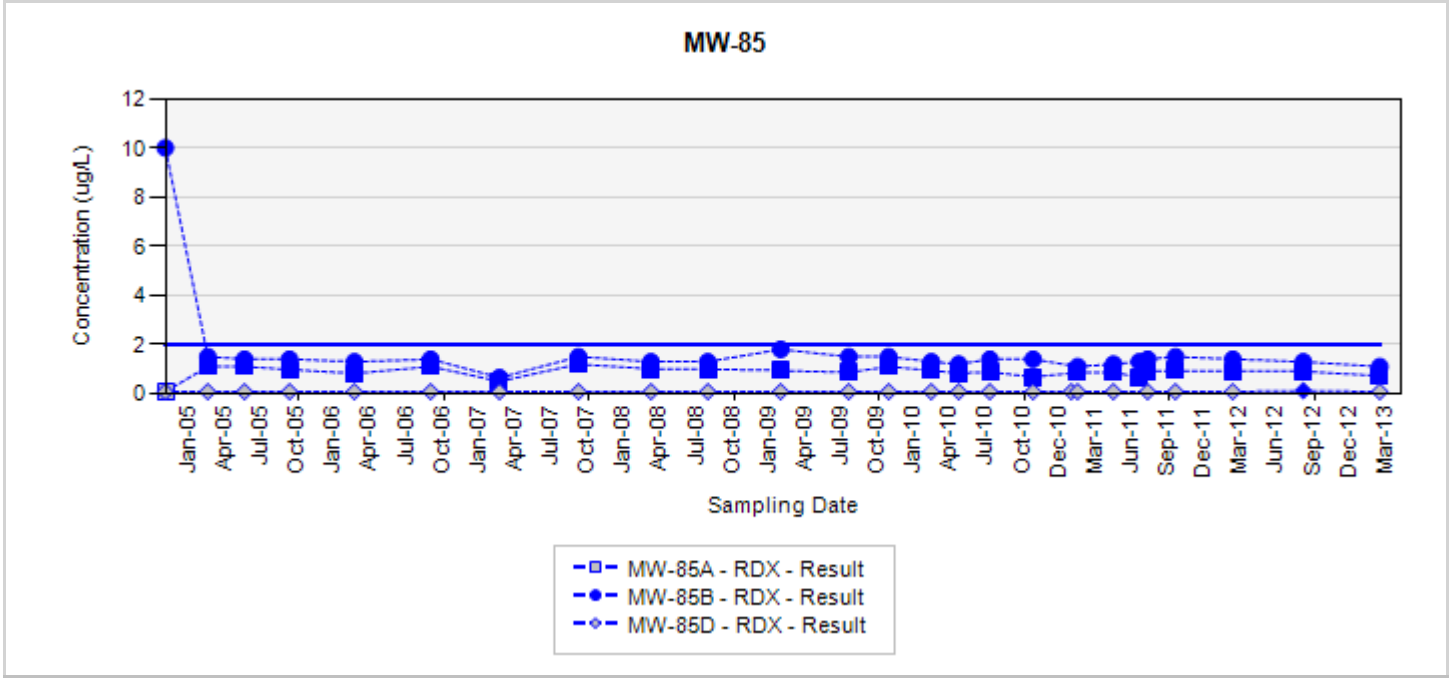

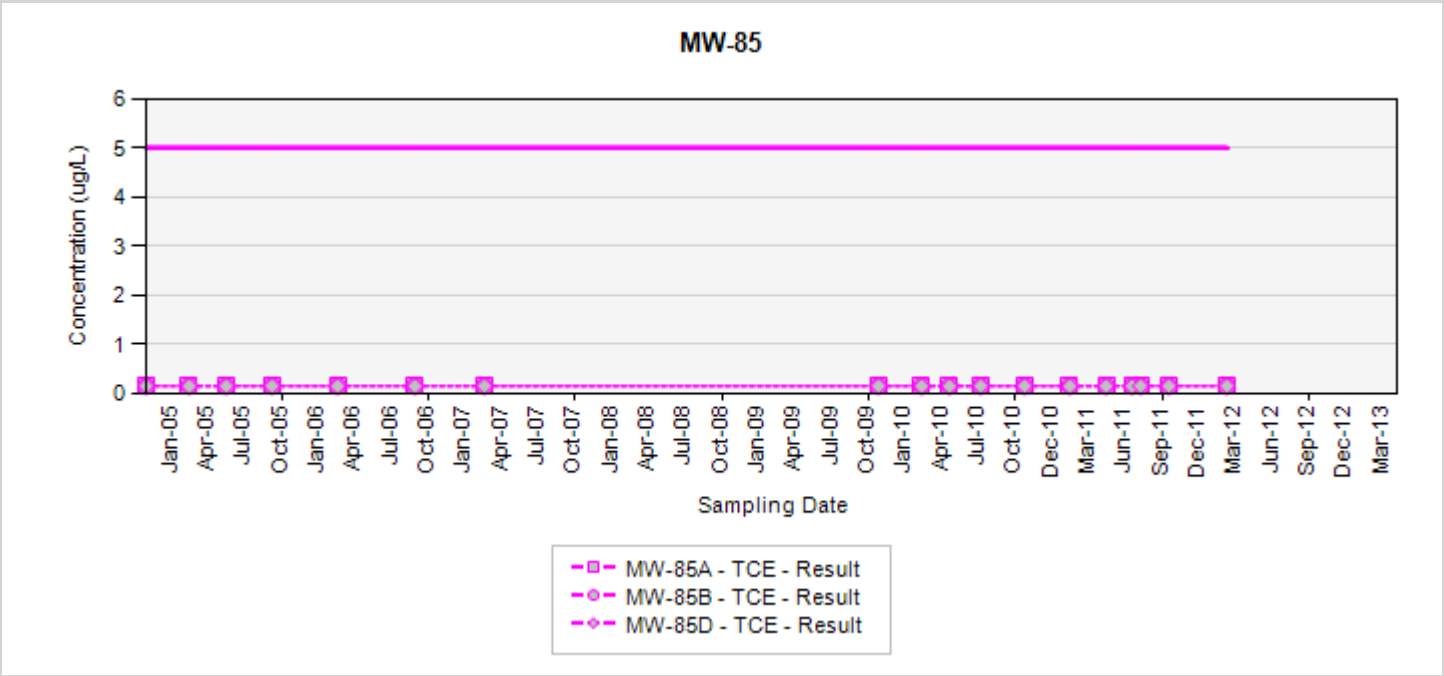

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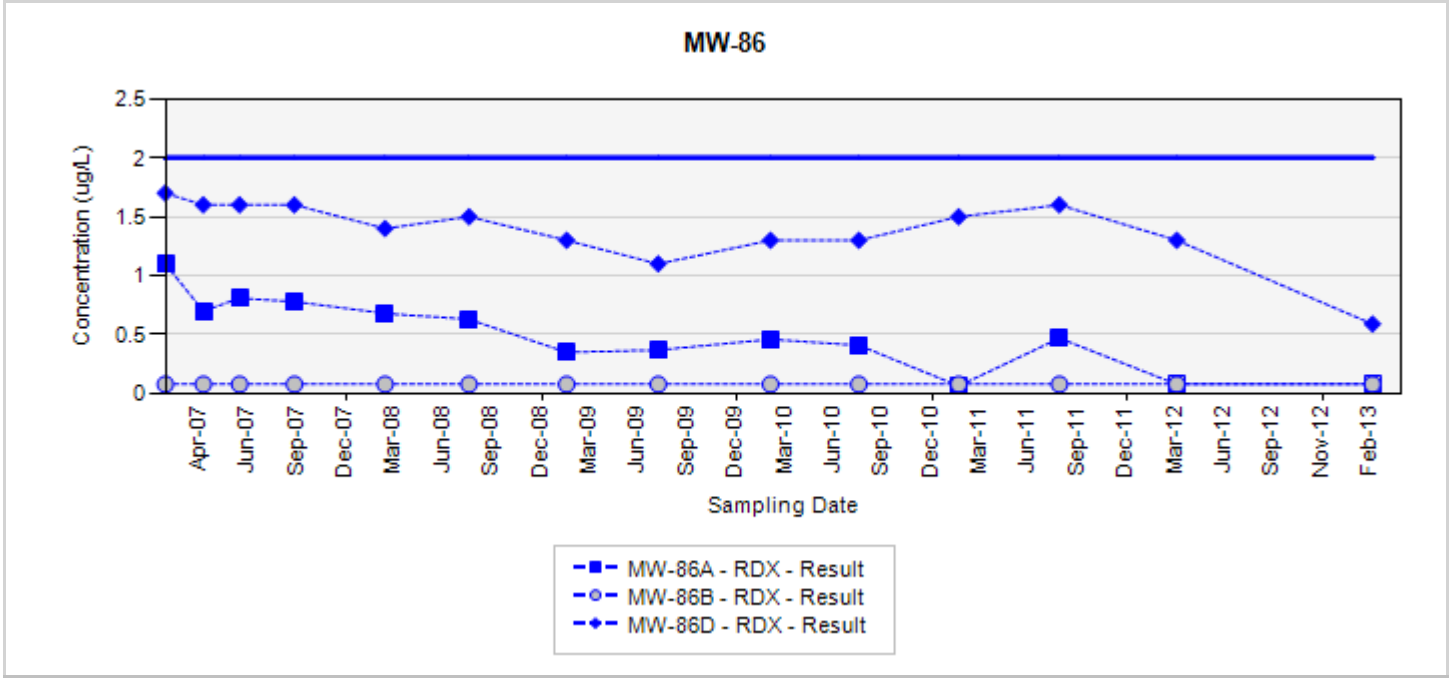

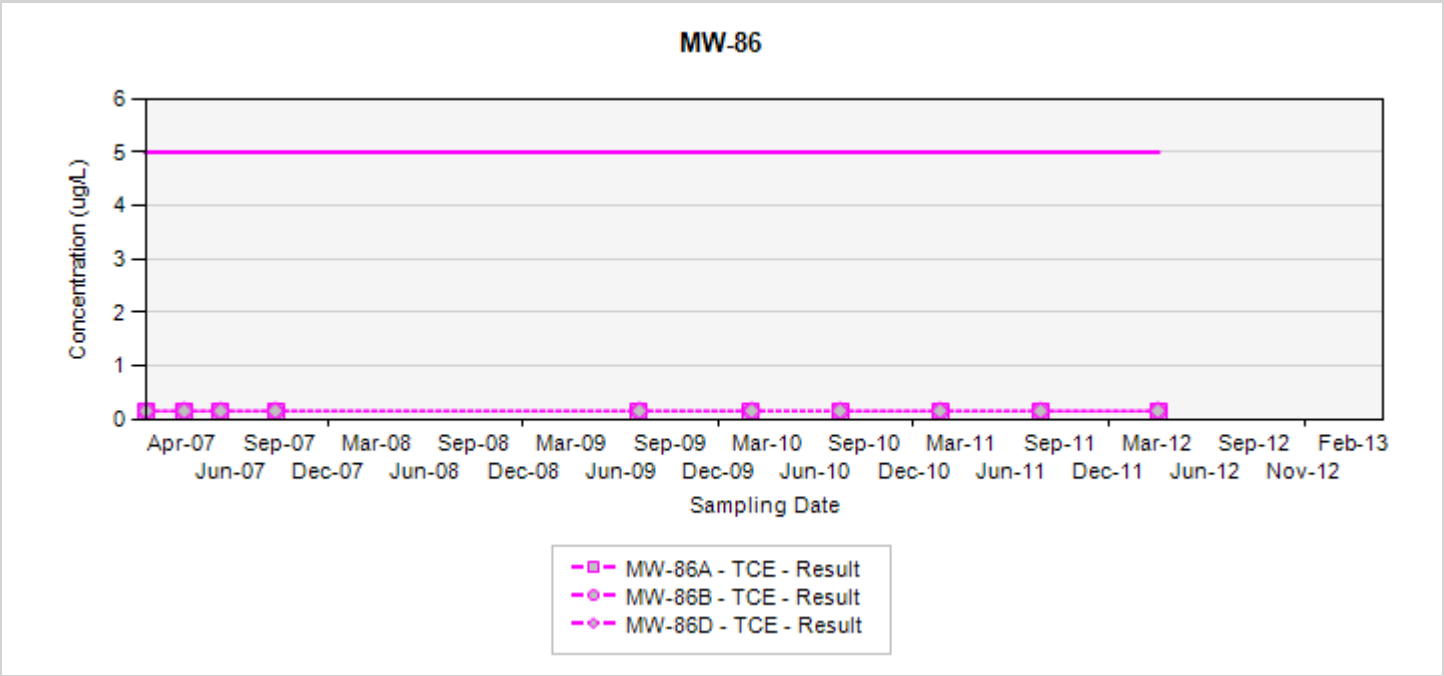

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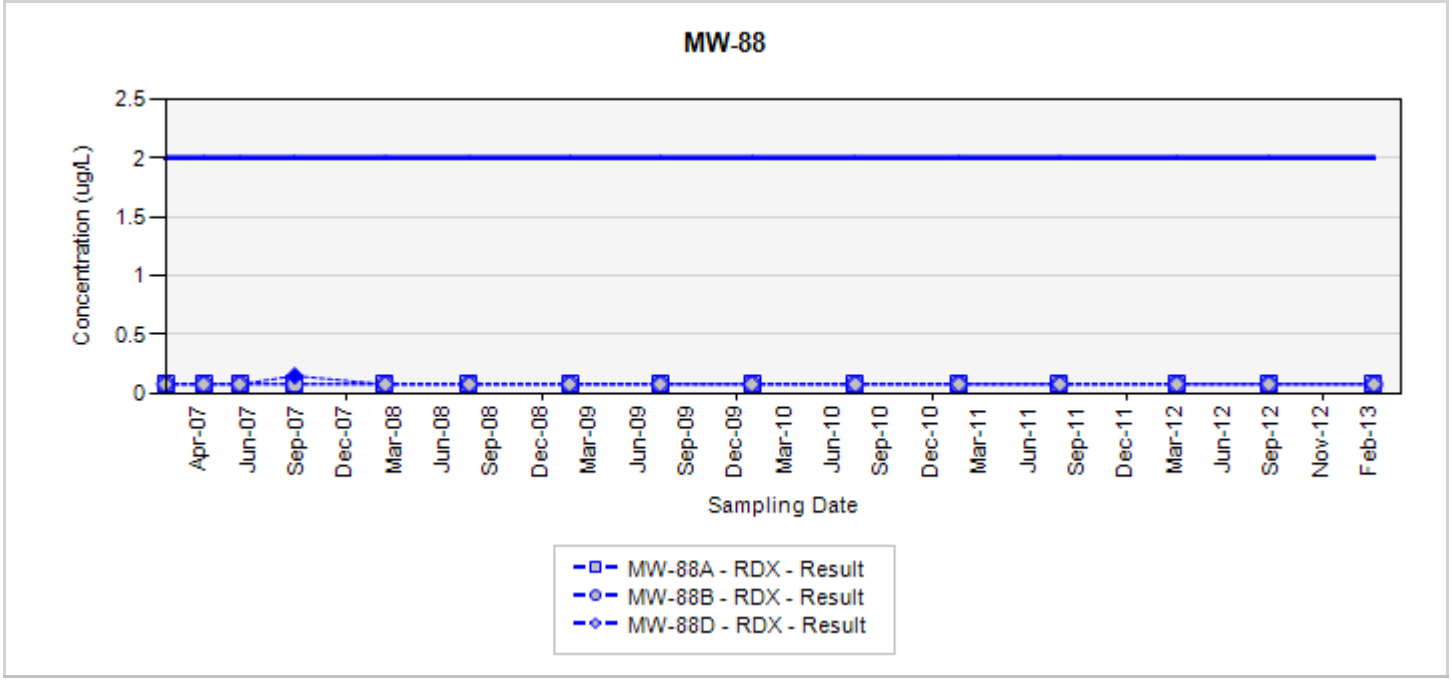

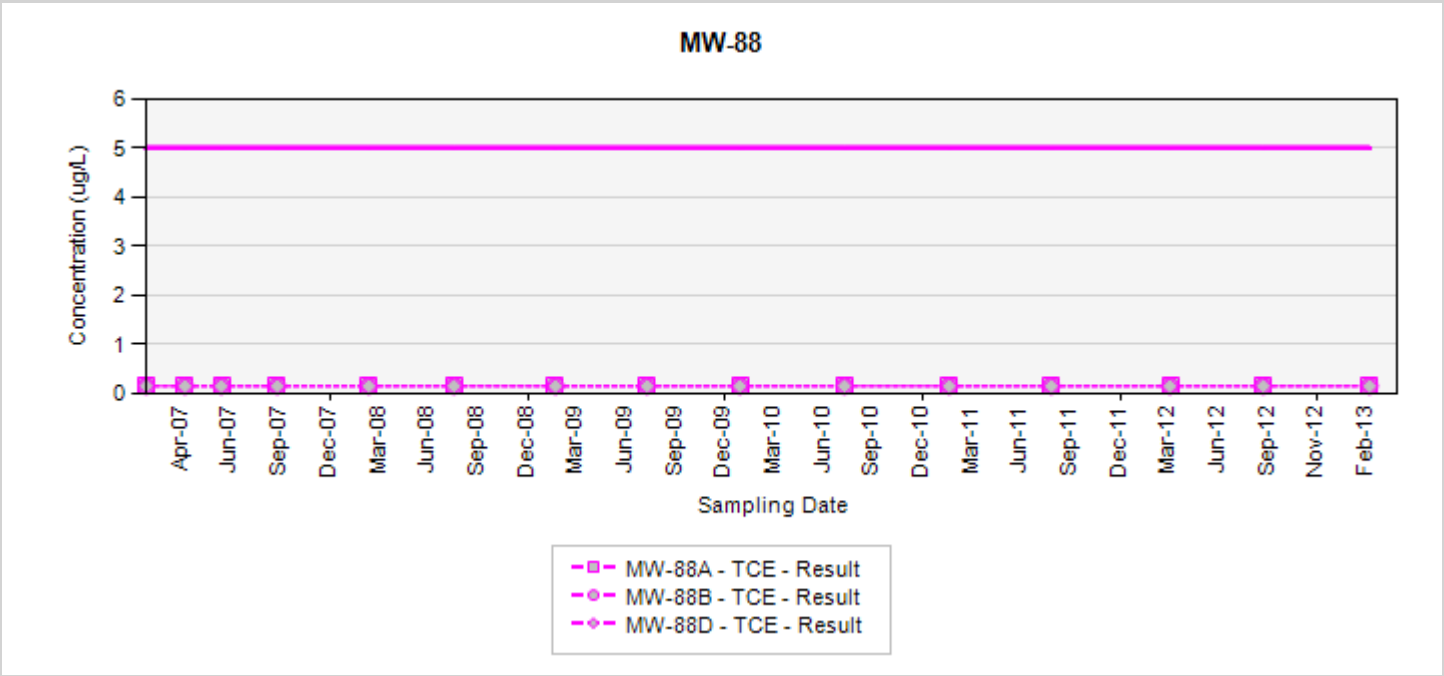

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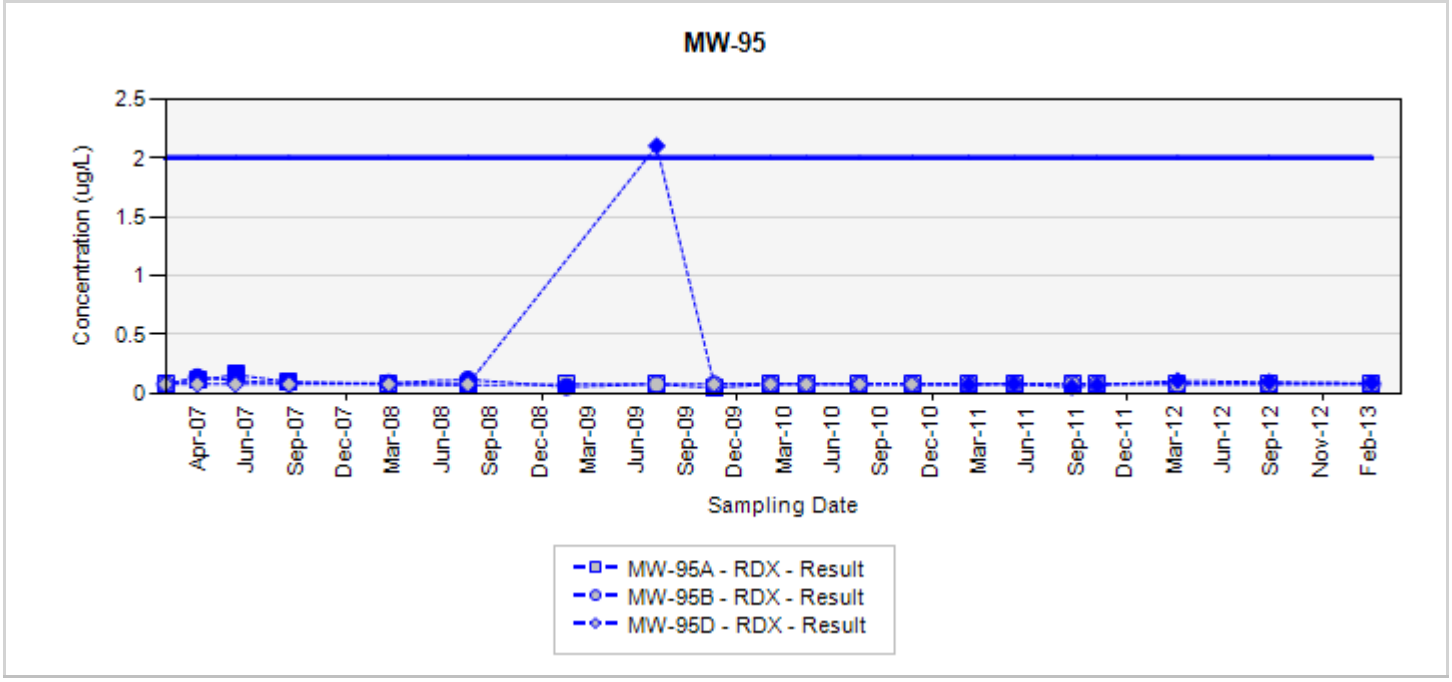

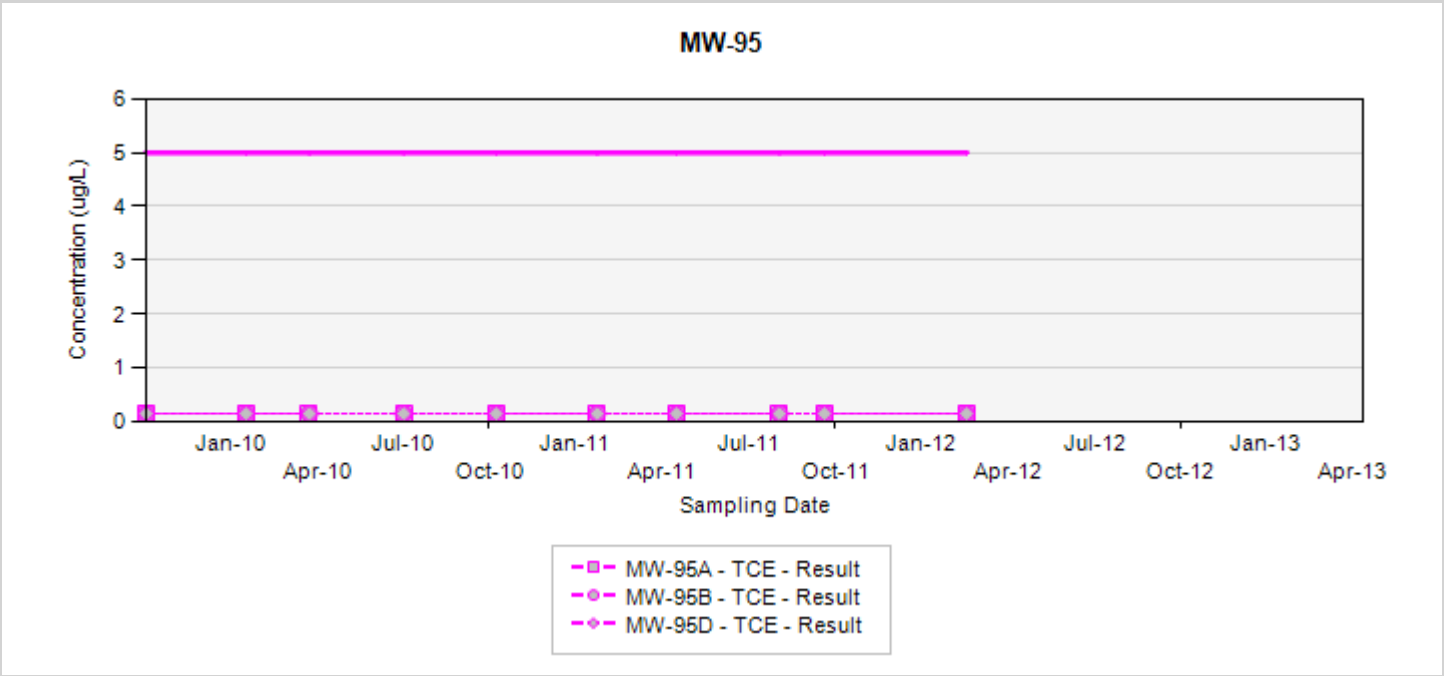

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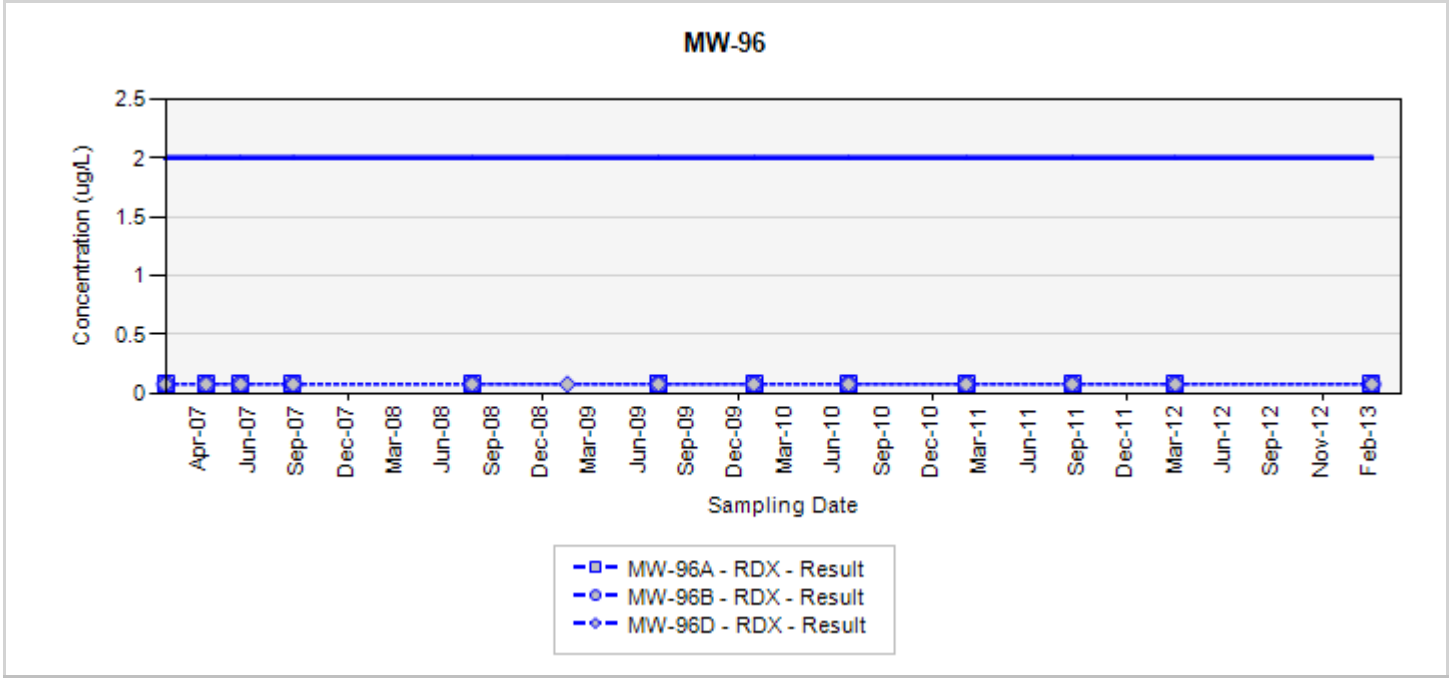

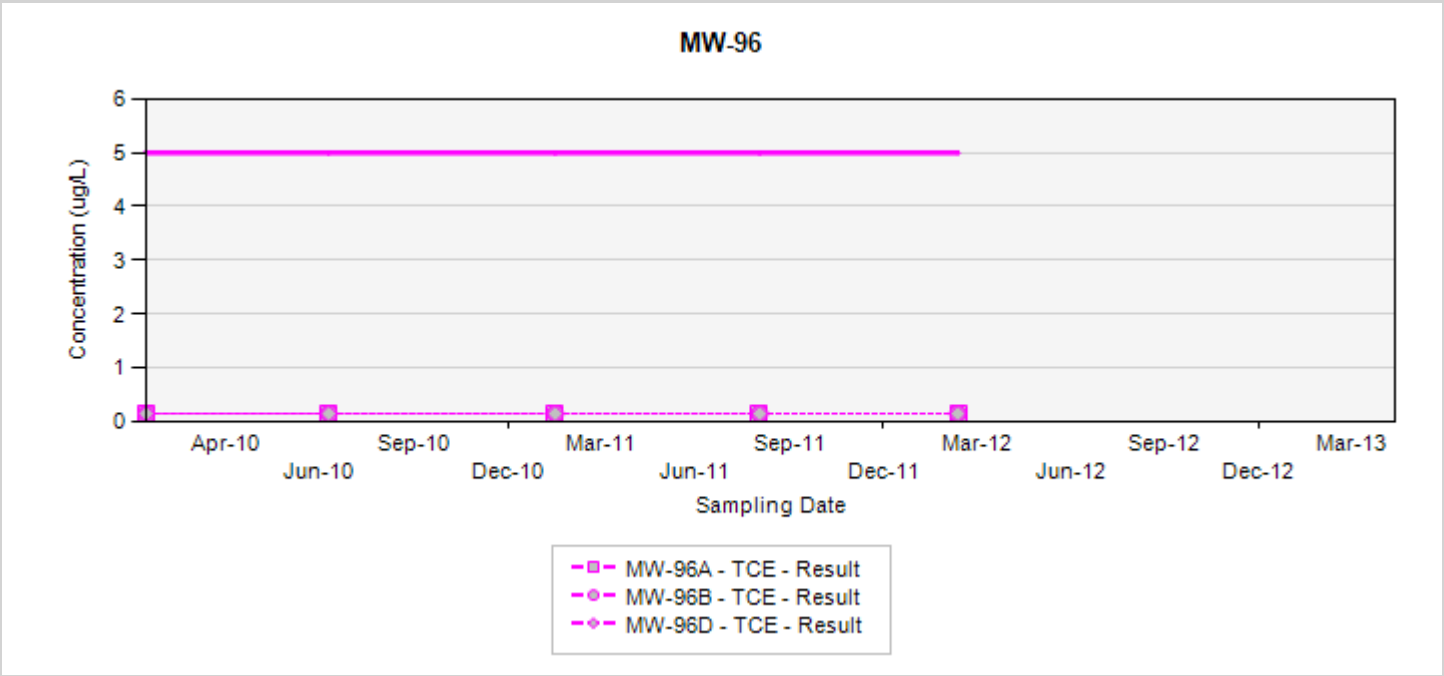

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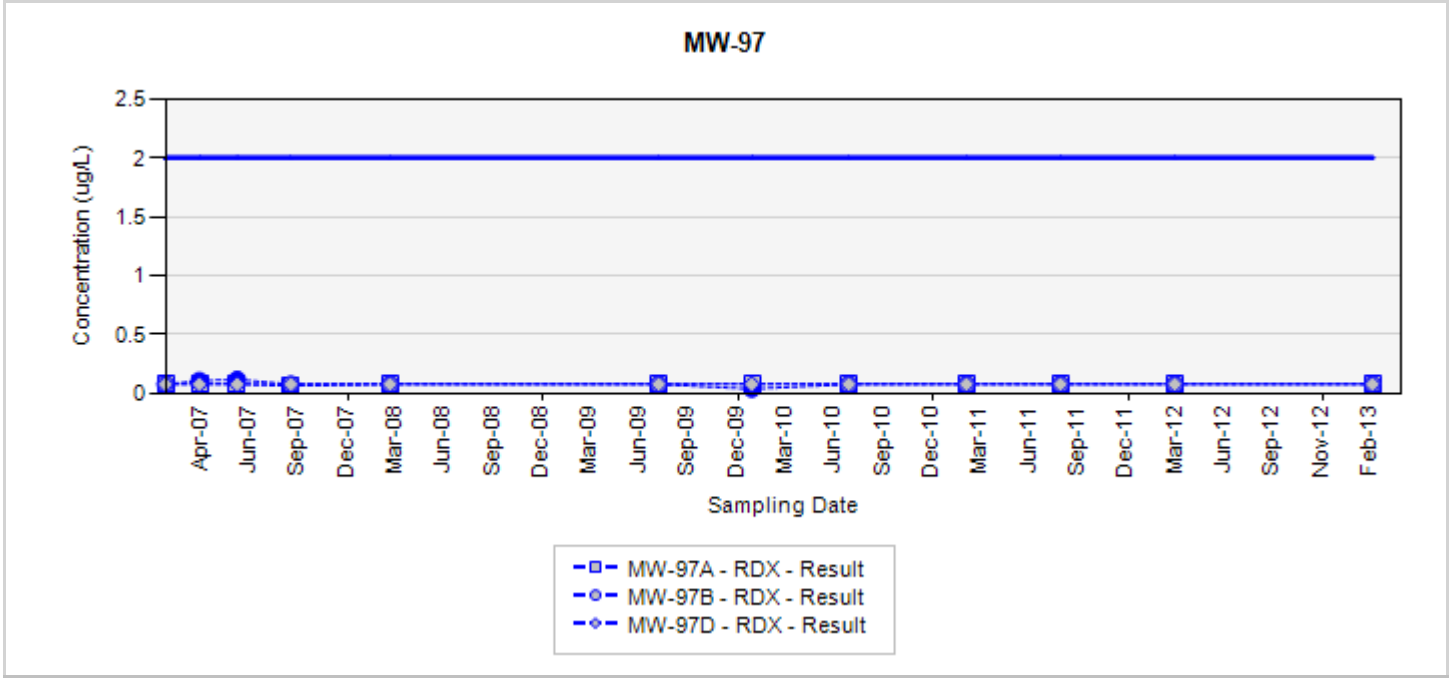

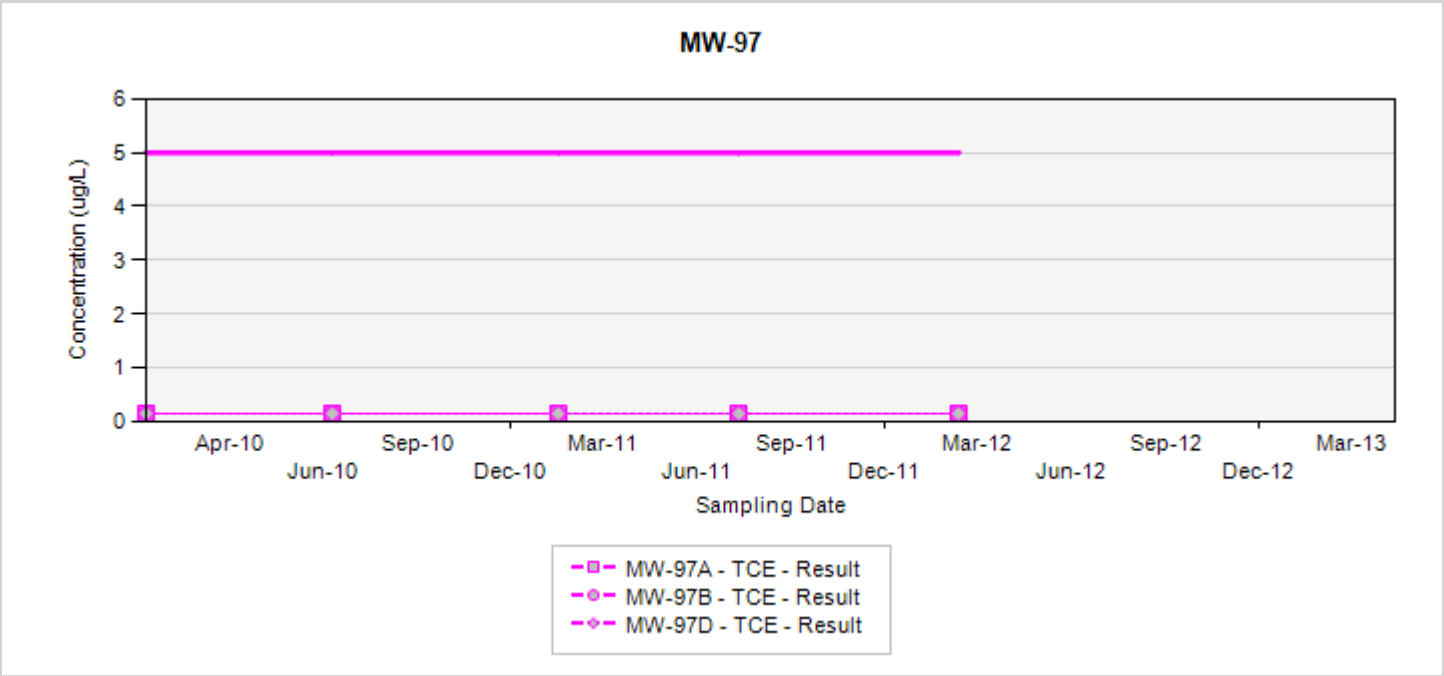

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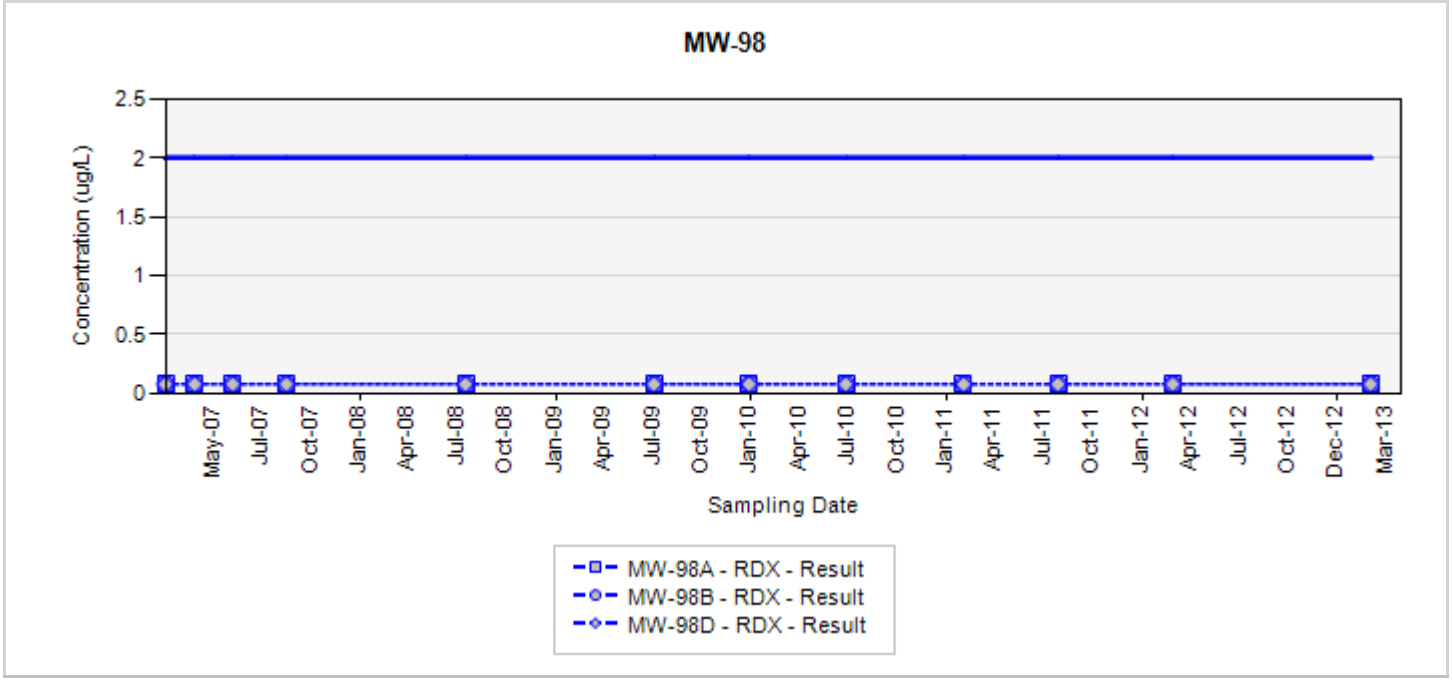

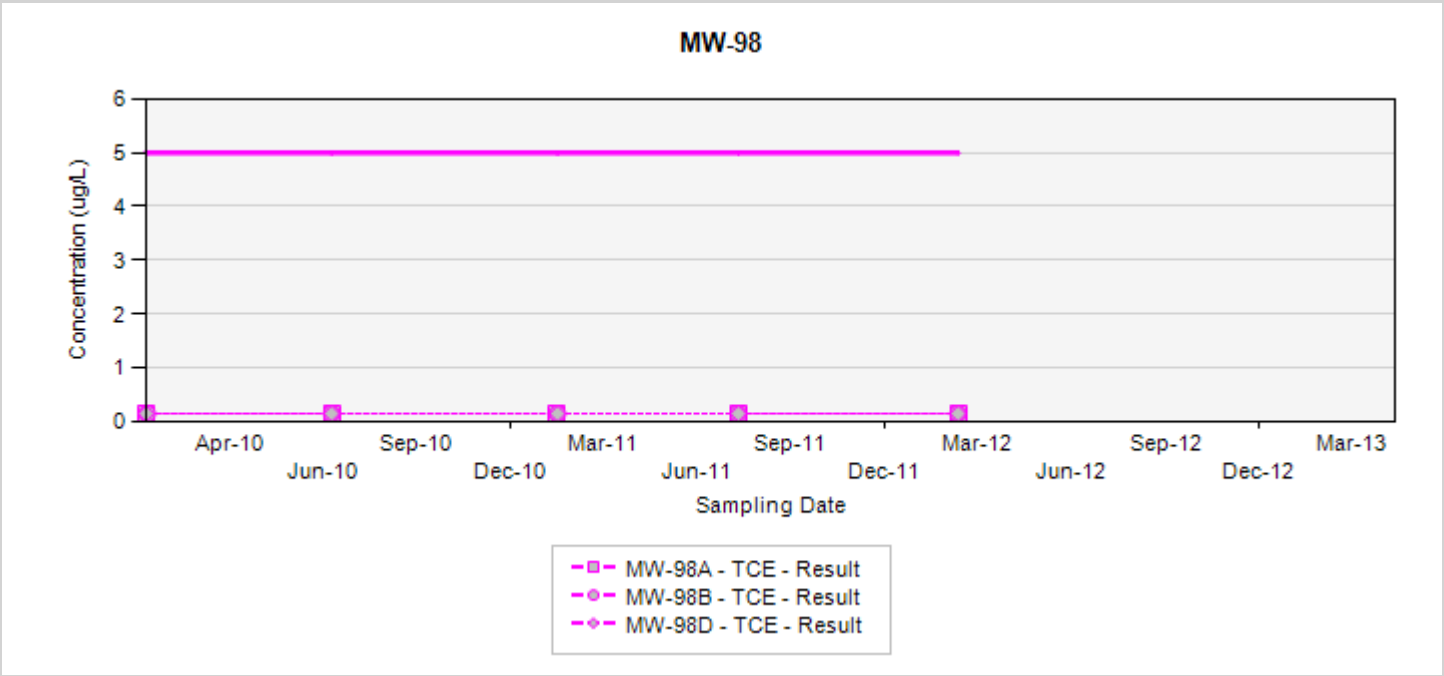

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Appendix B
Concentration Trend Charts for Select Water Supply Wells

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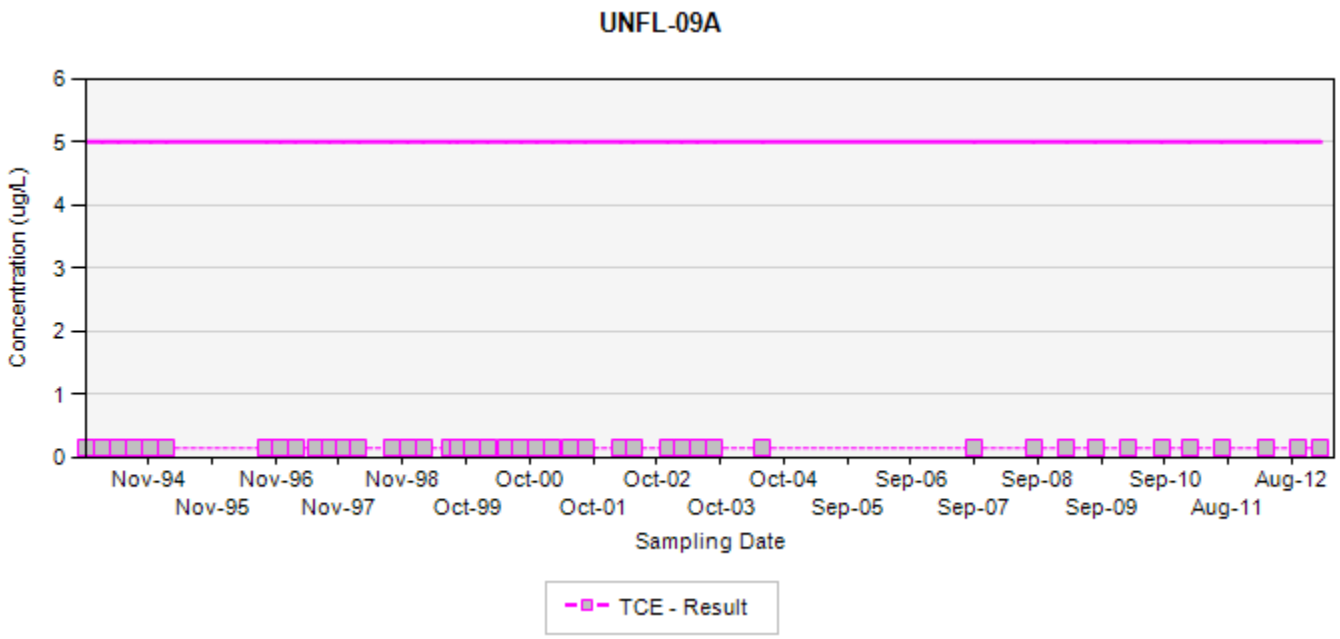
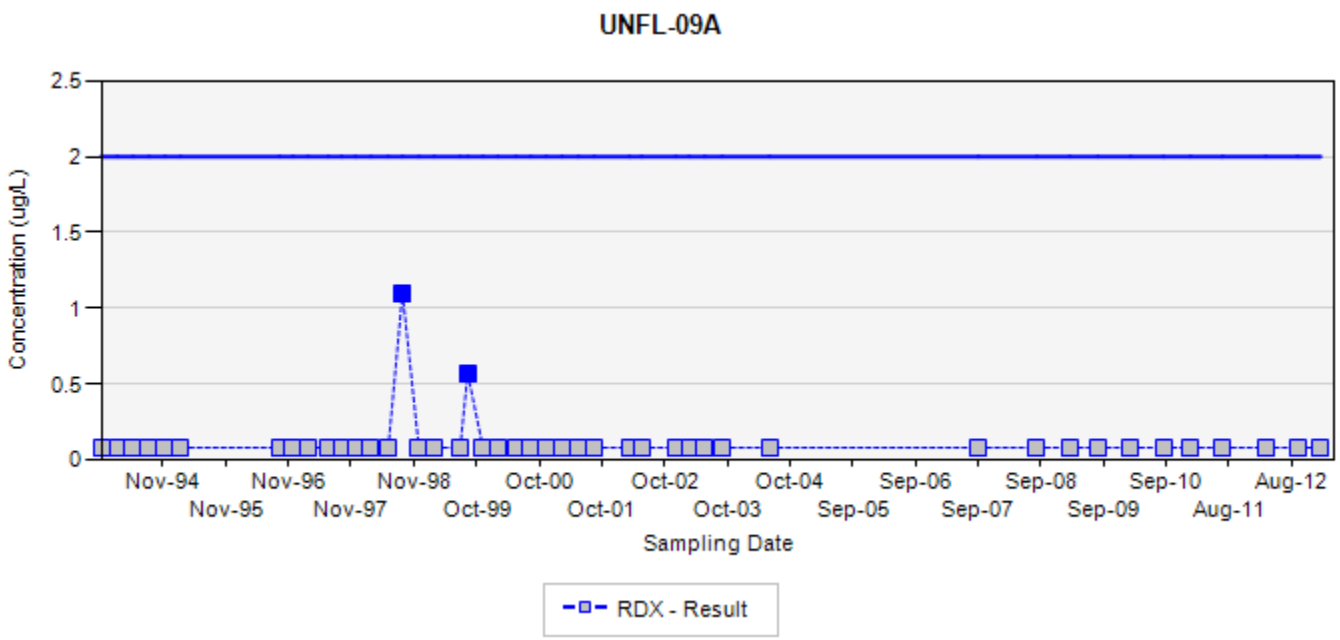
Appendix B
Concentration Trend Charts for Water Supply Wells





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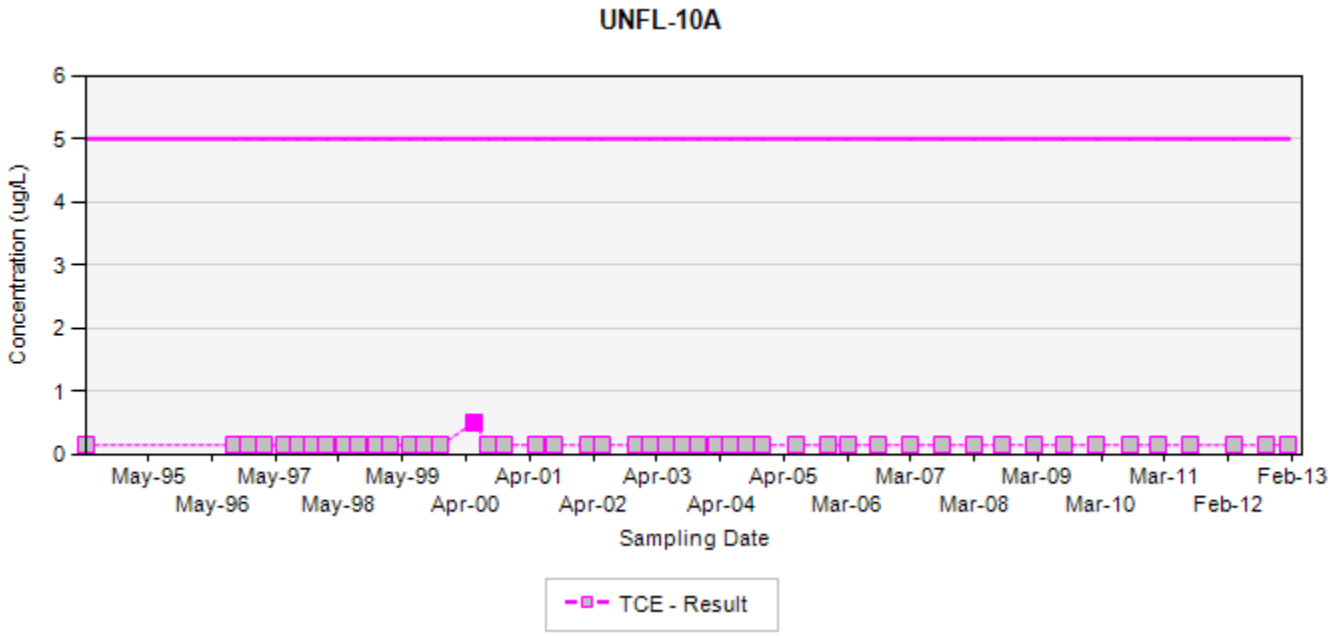

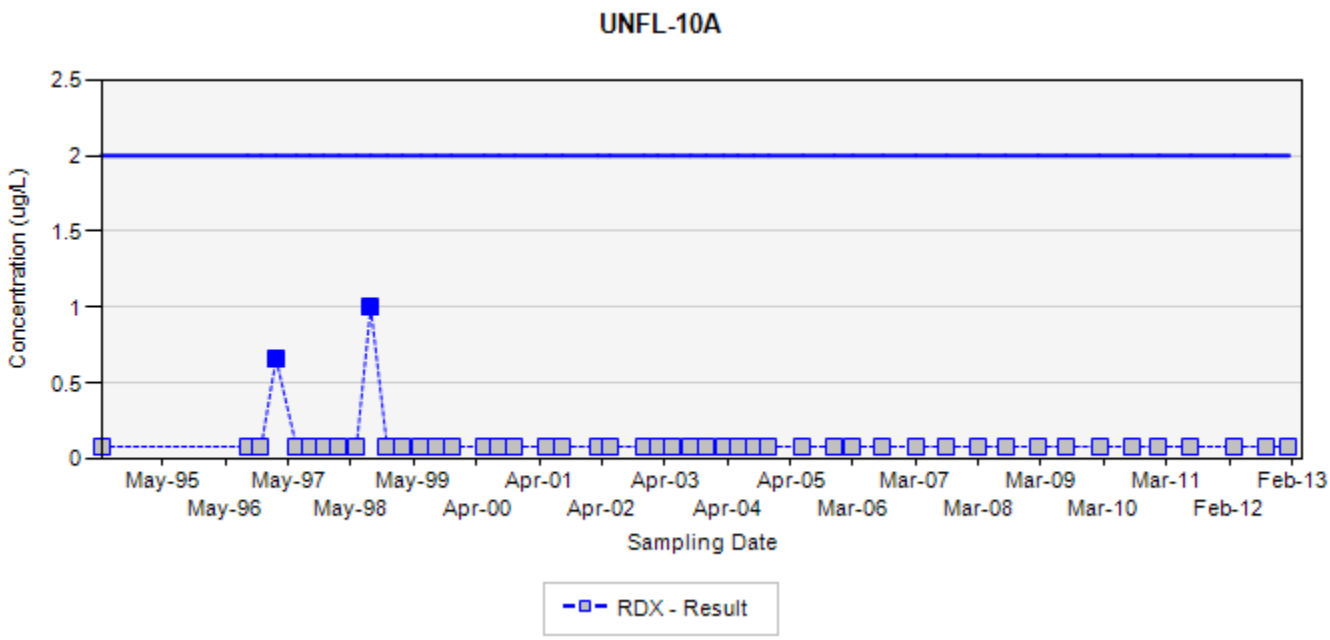

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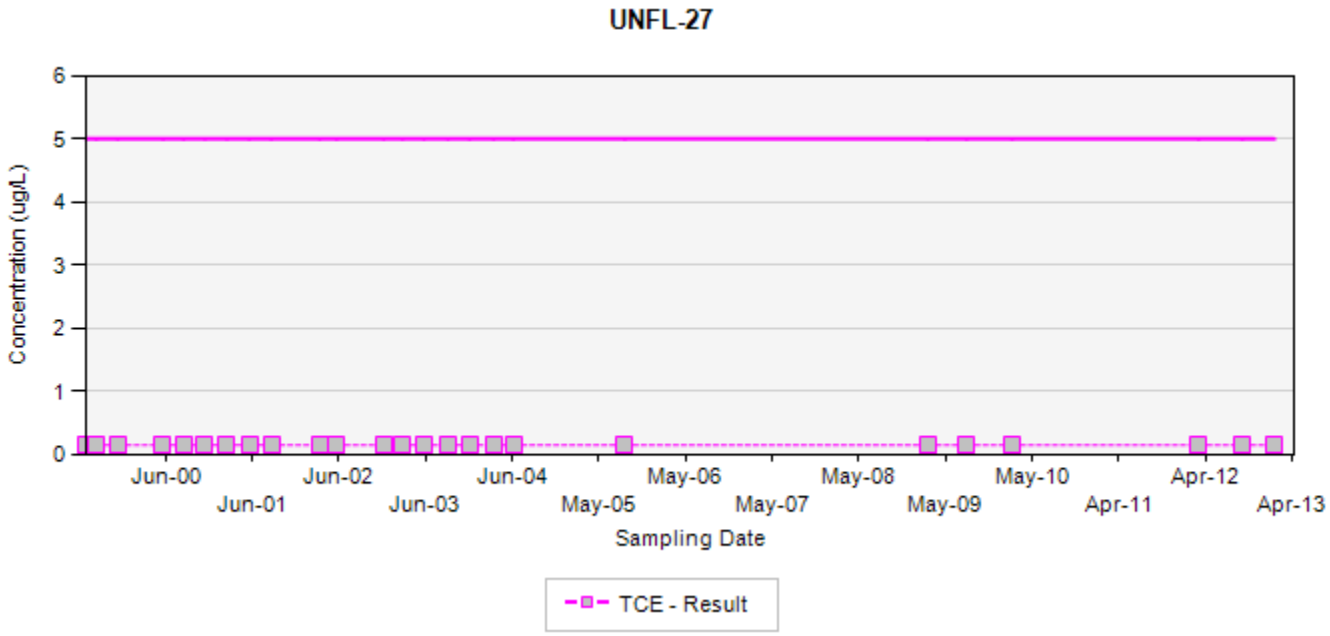

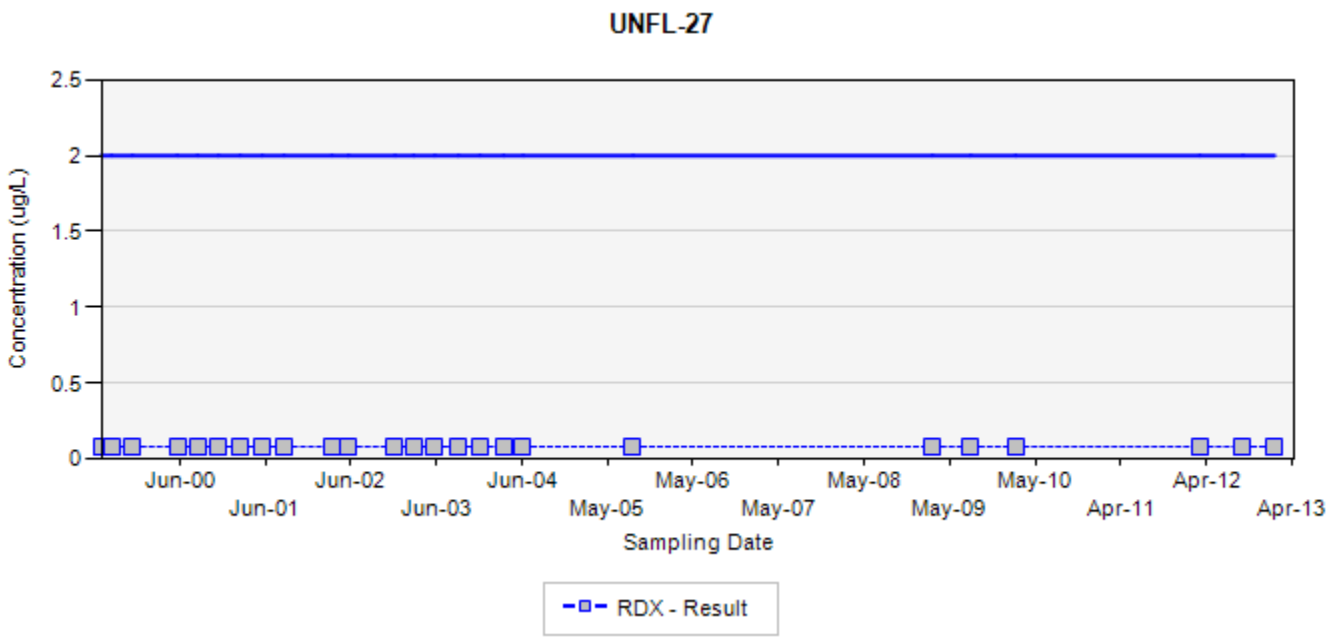

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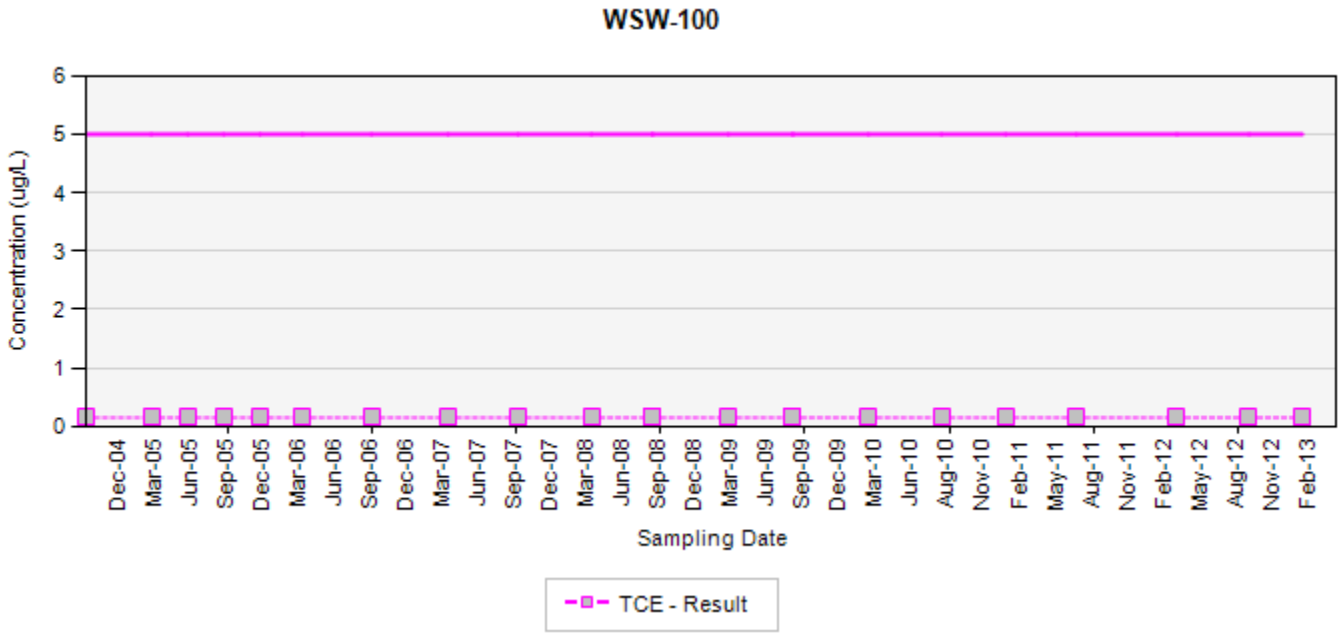

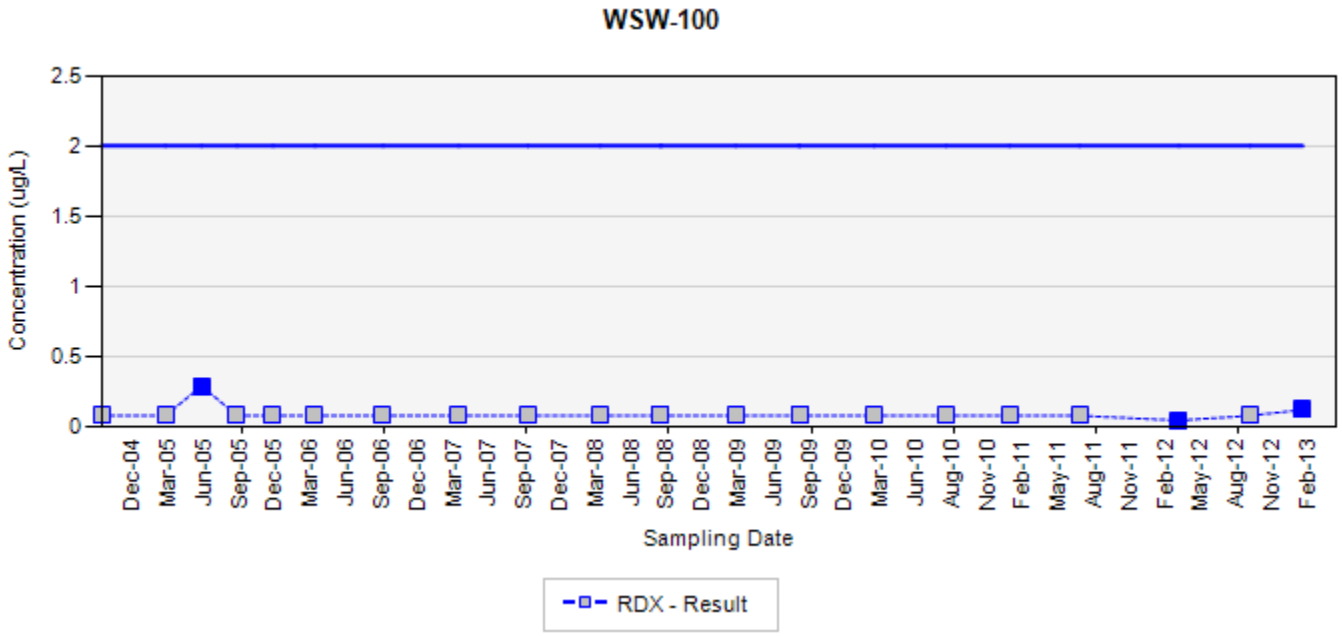

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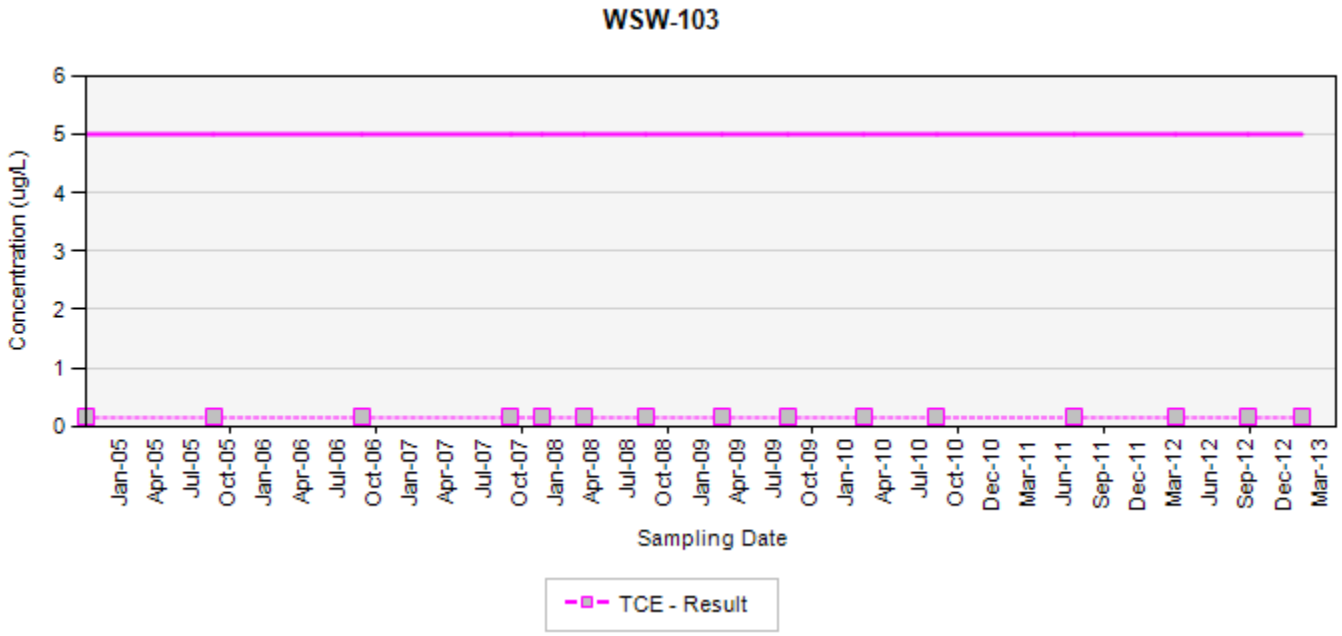

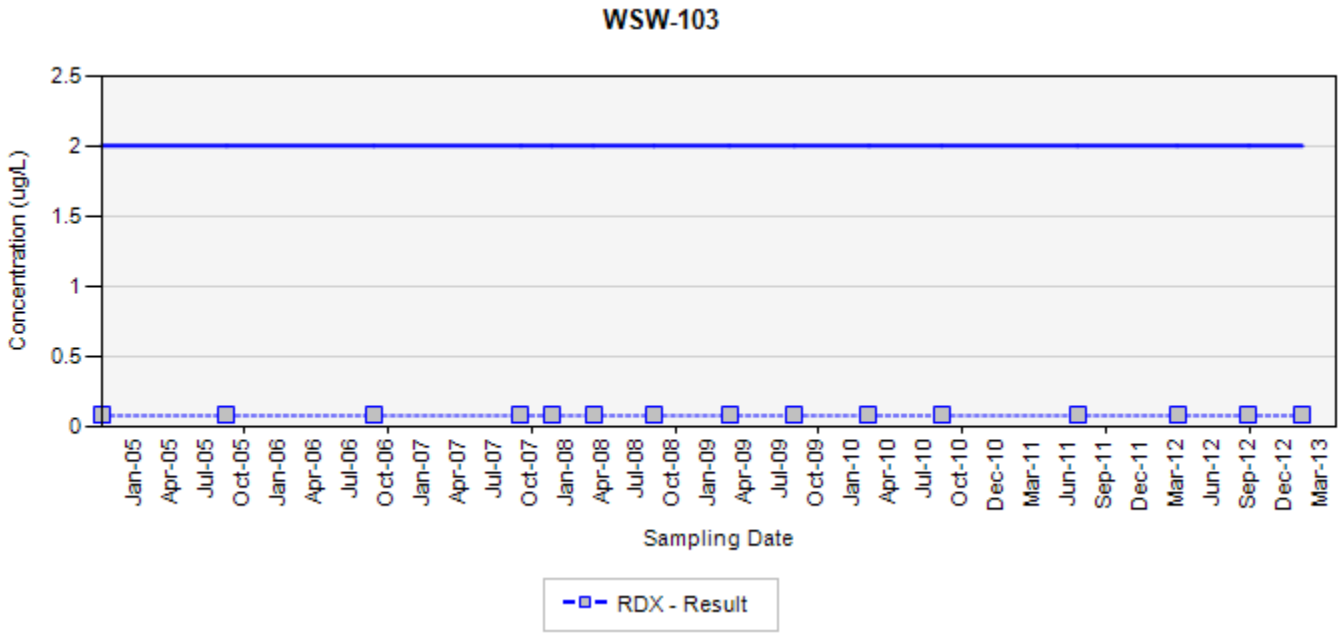

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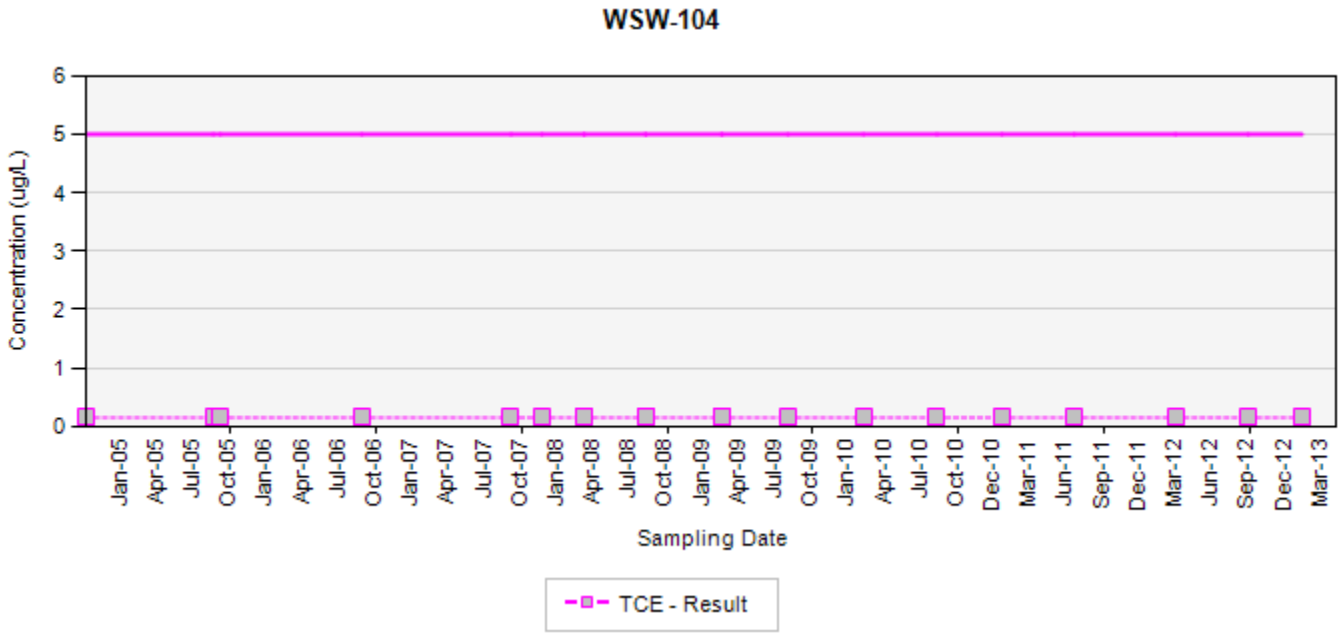

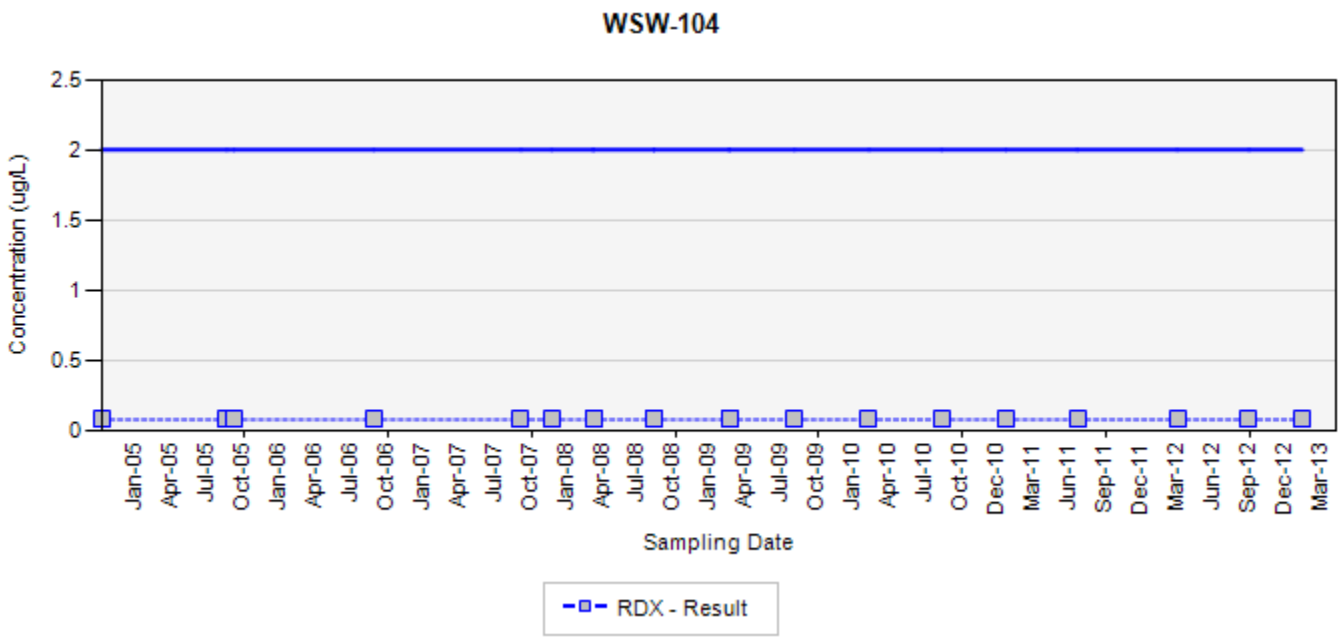

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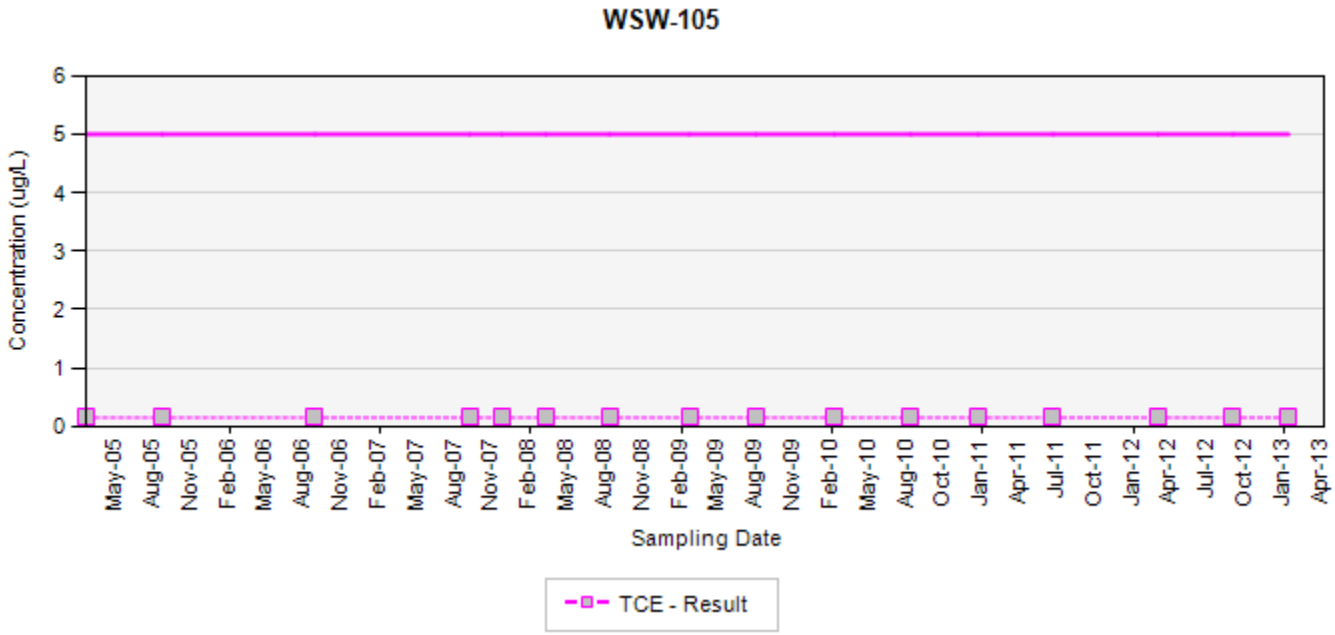

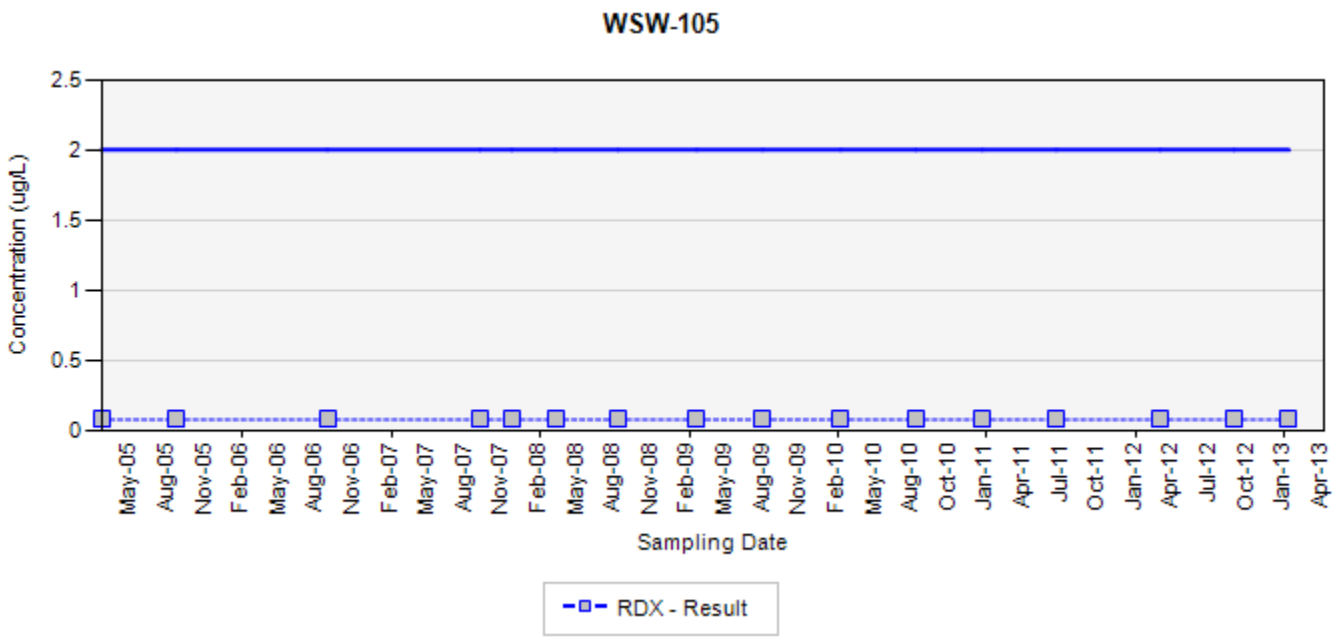

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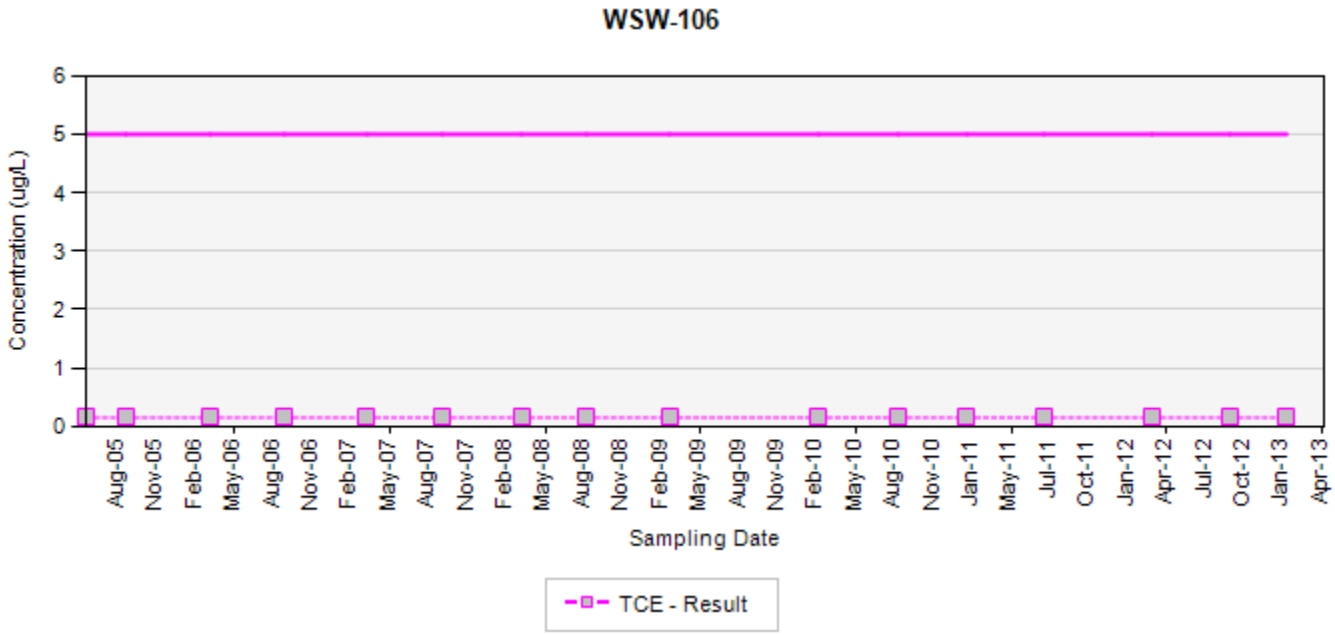

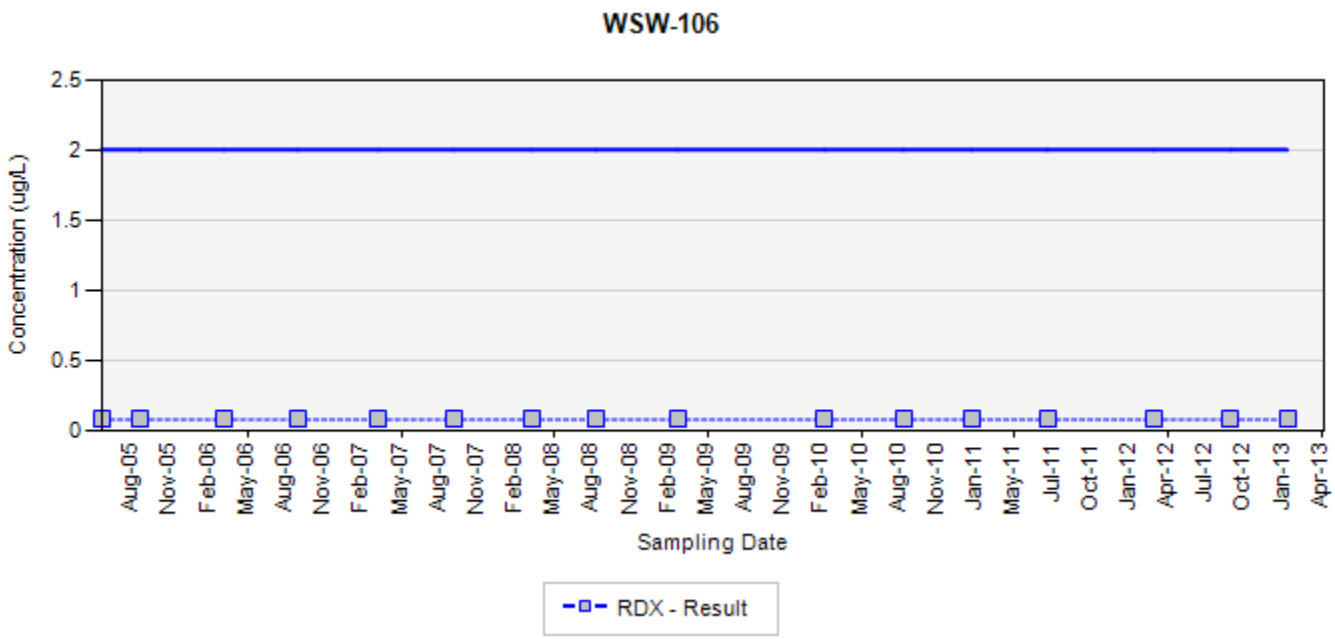

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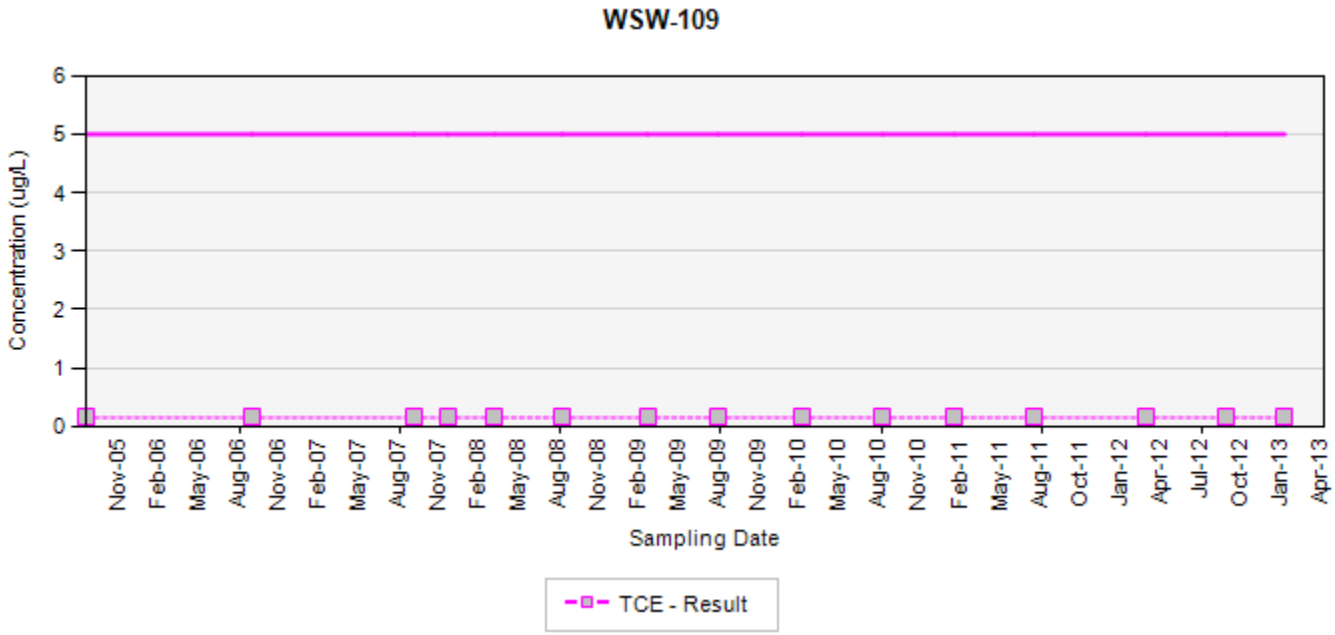

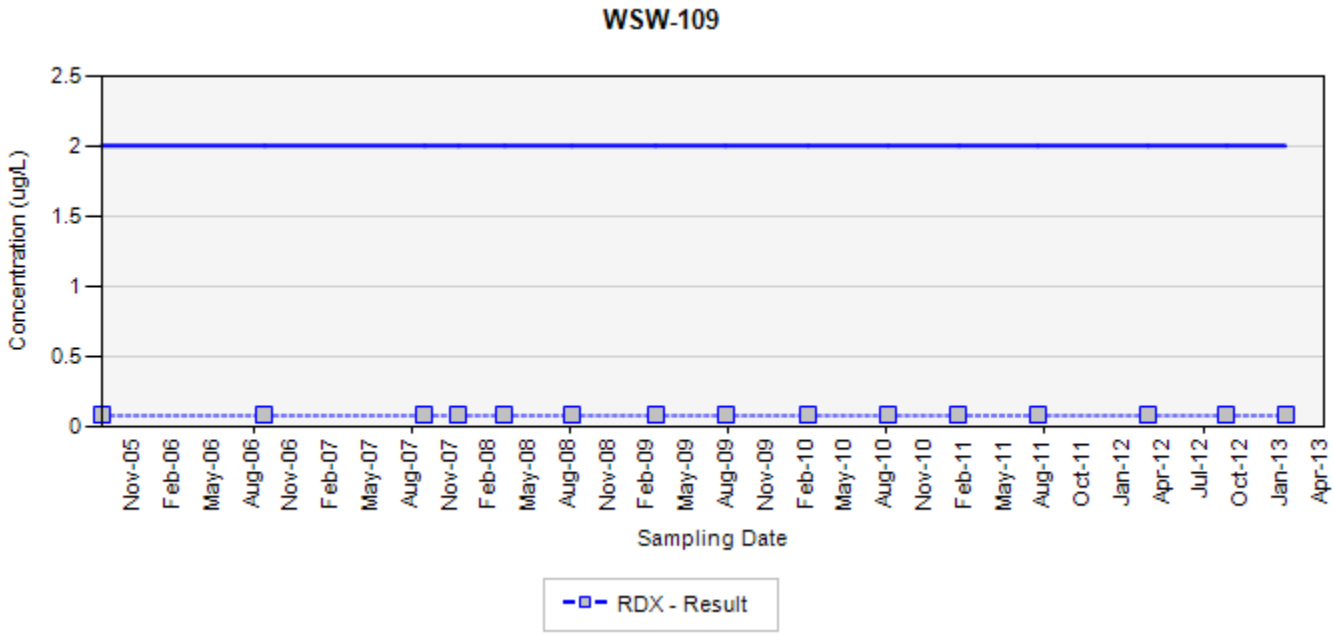

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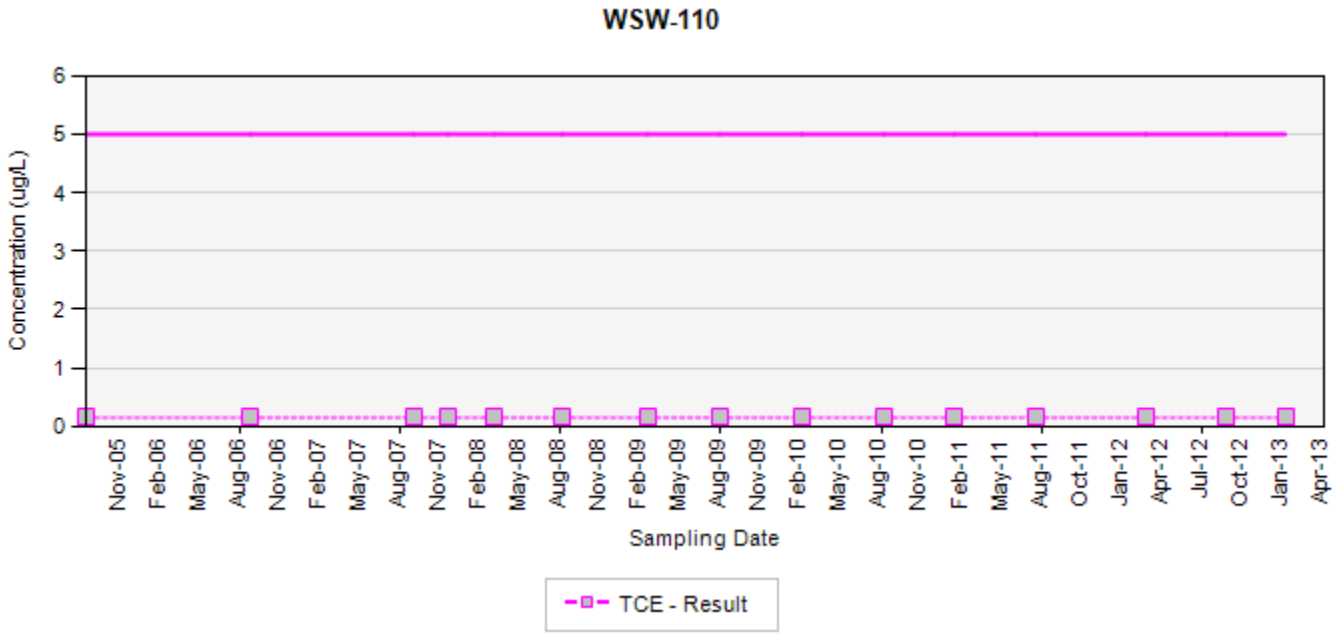

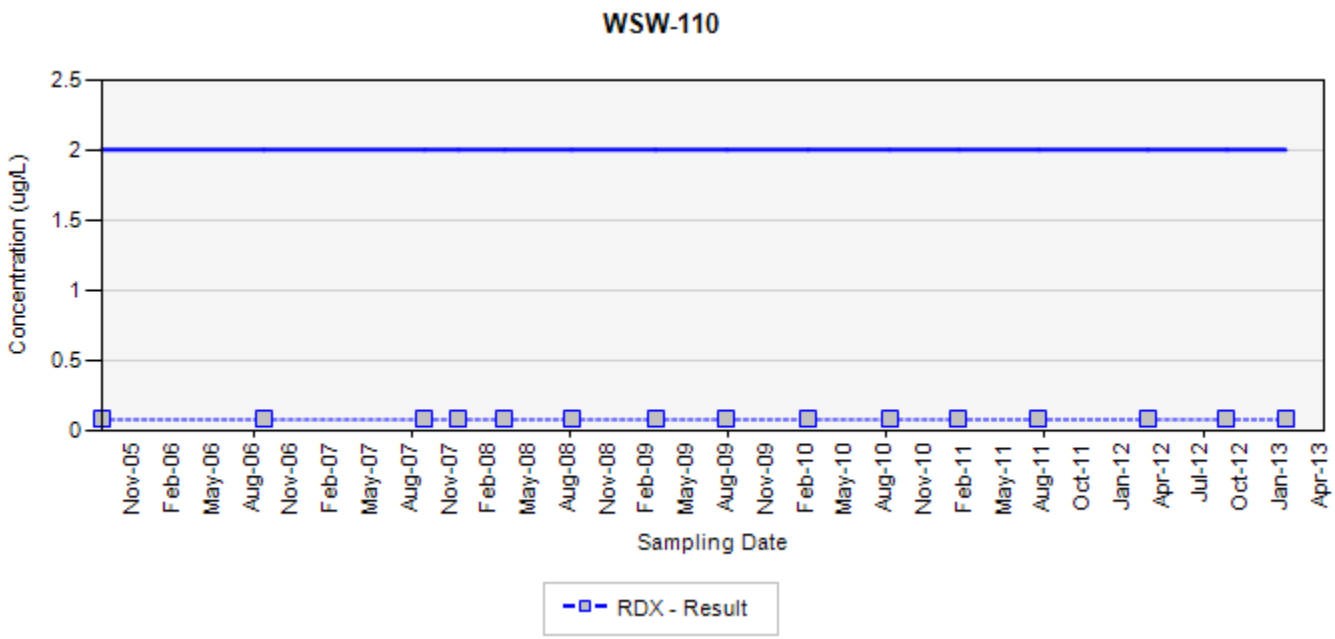

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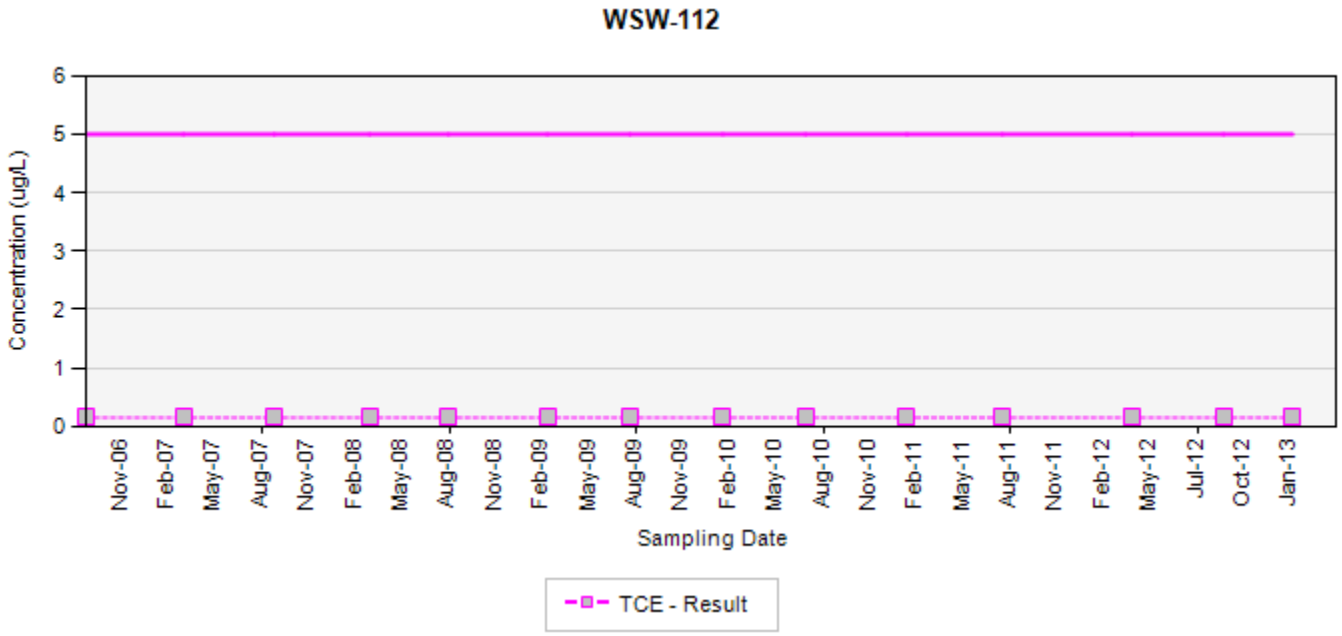

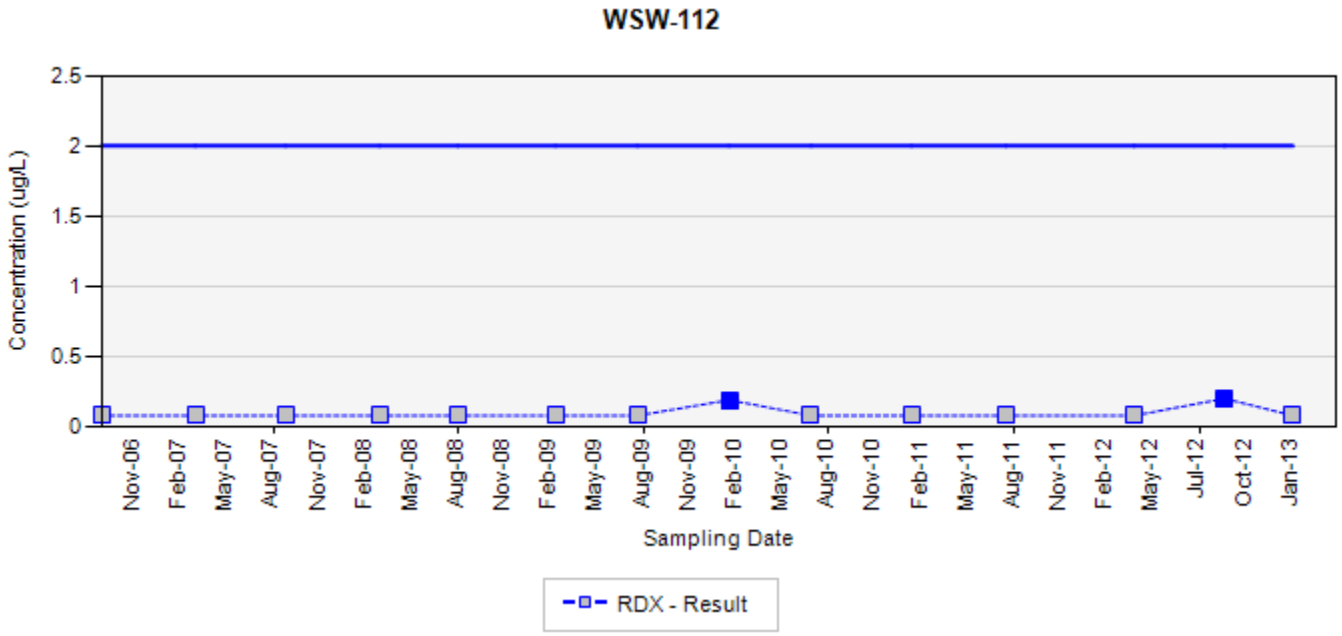

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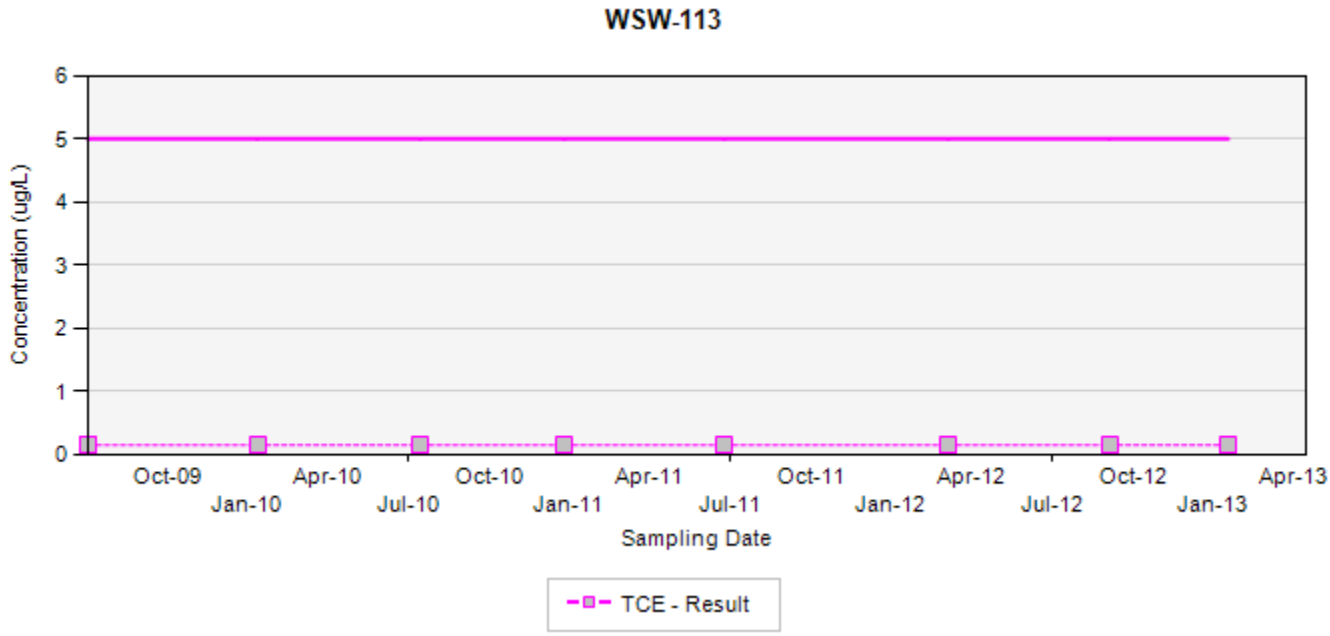

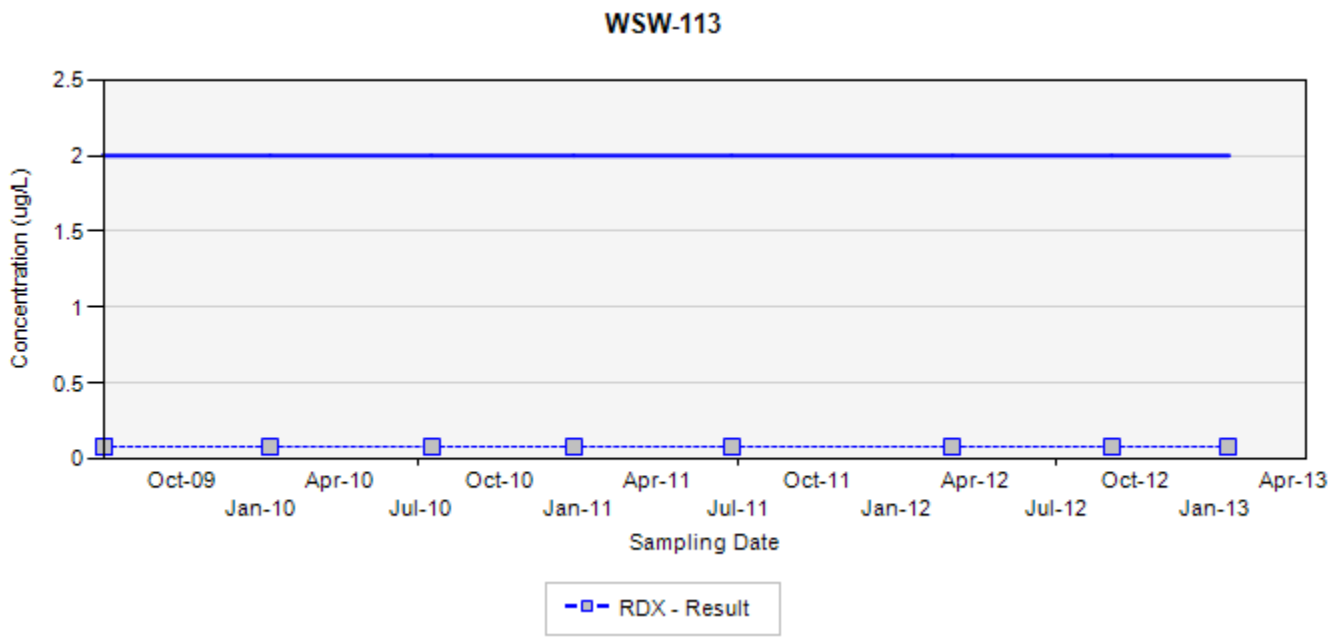

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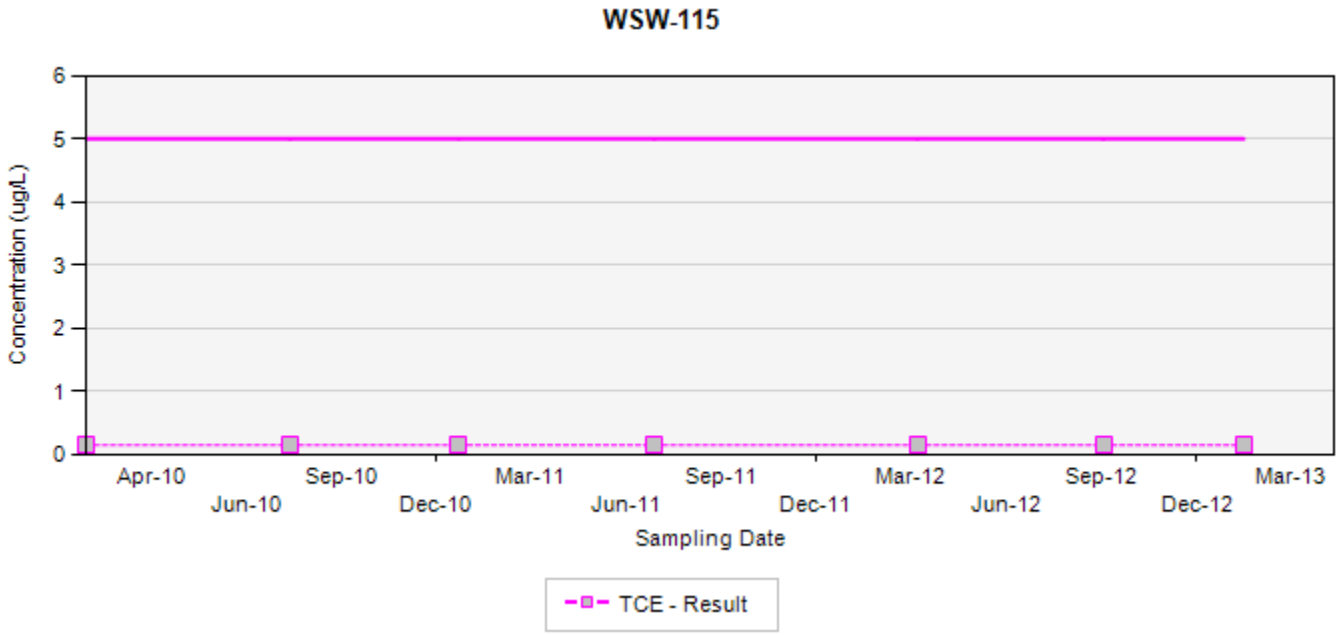

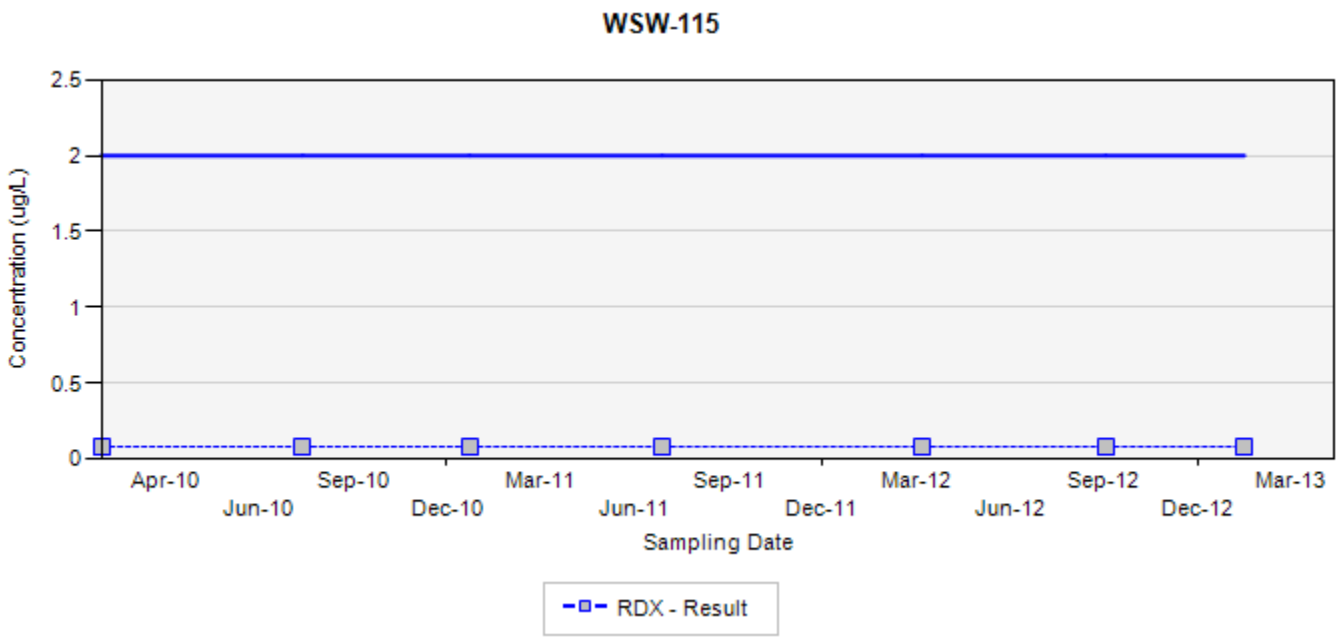

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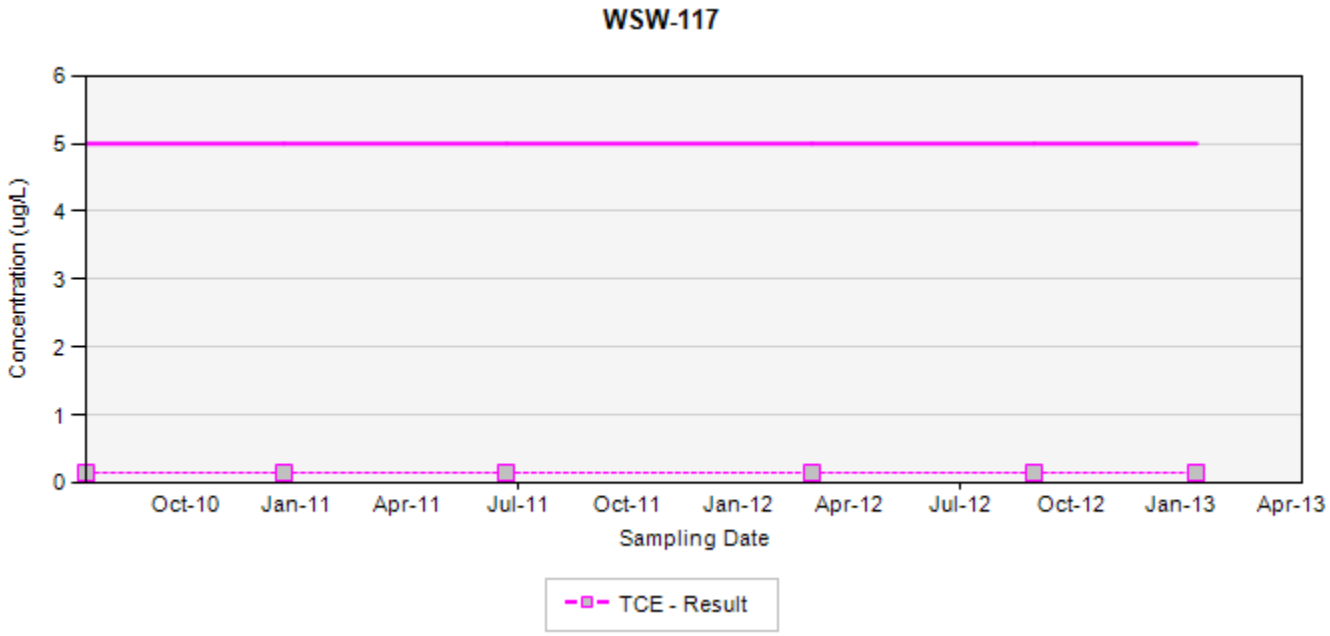

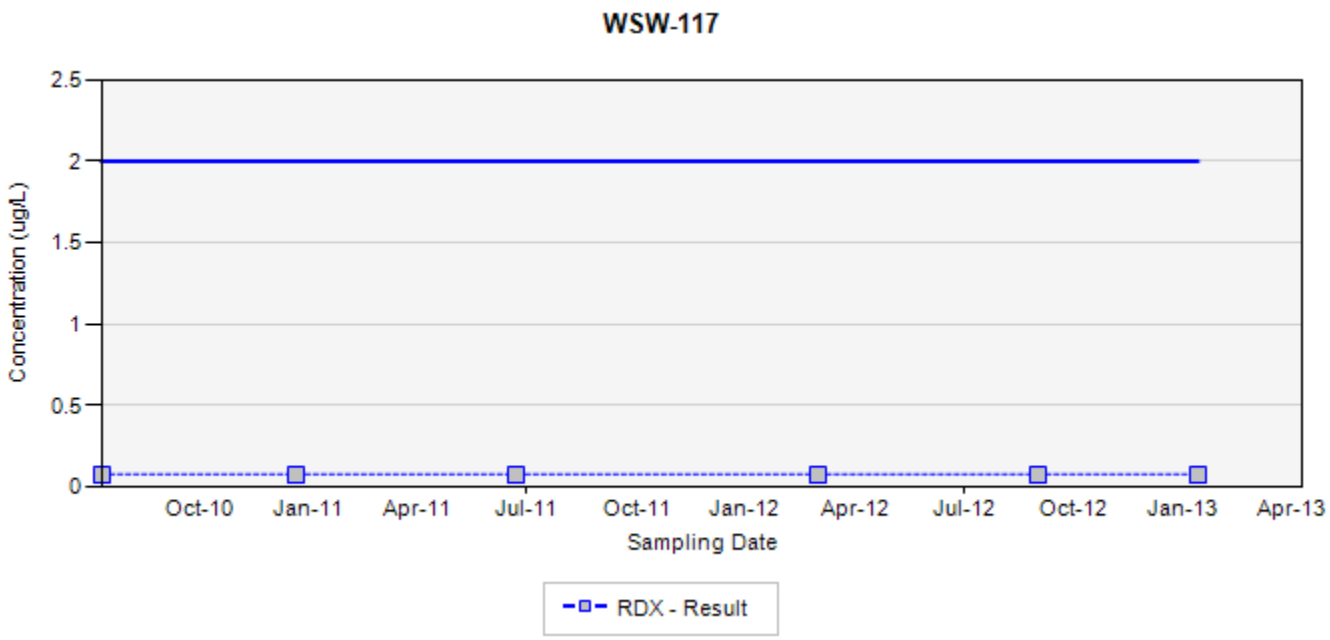

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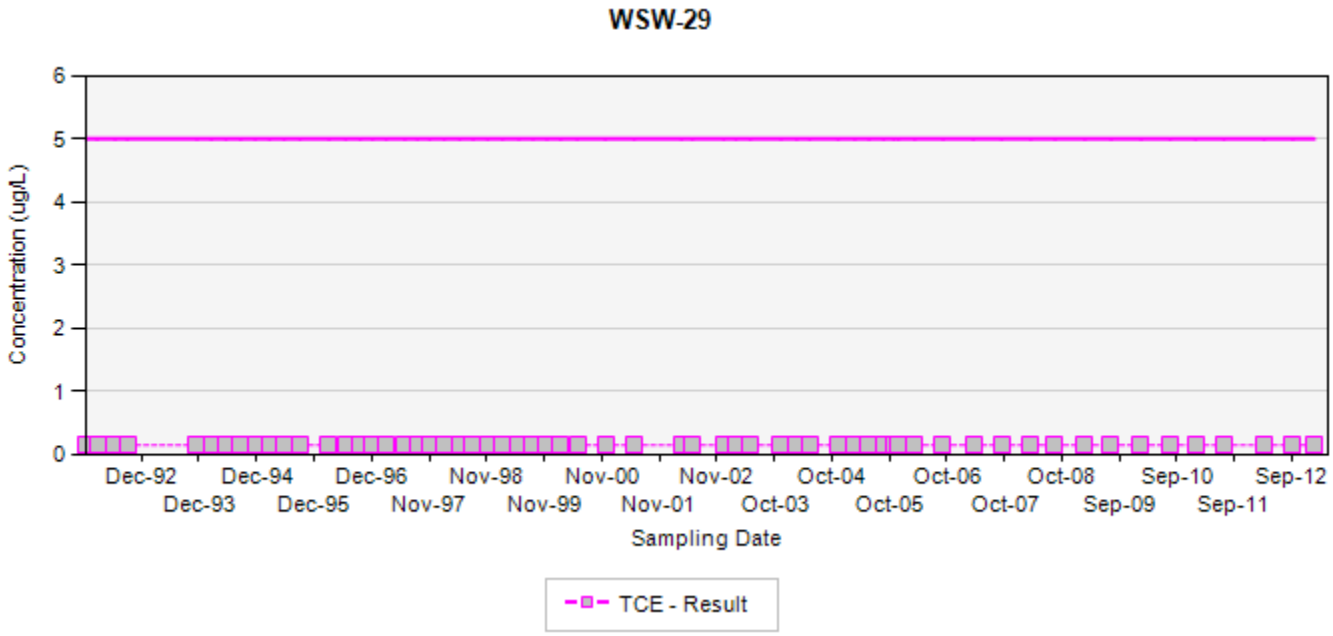

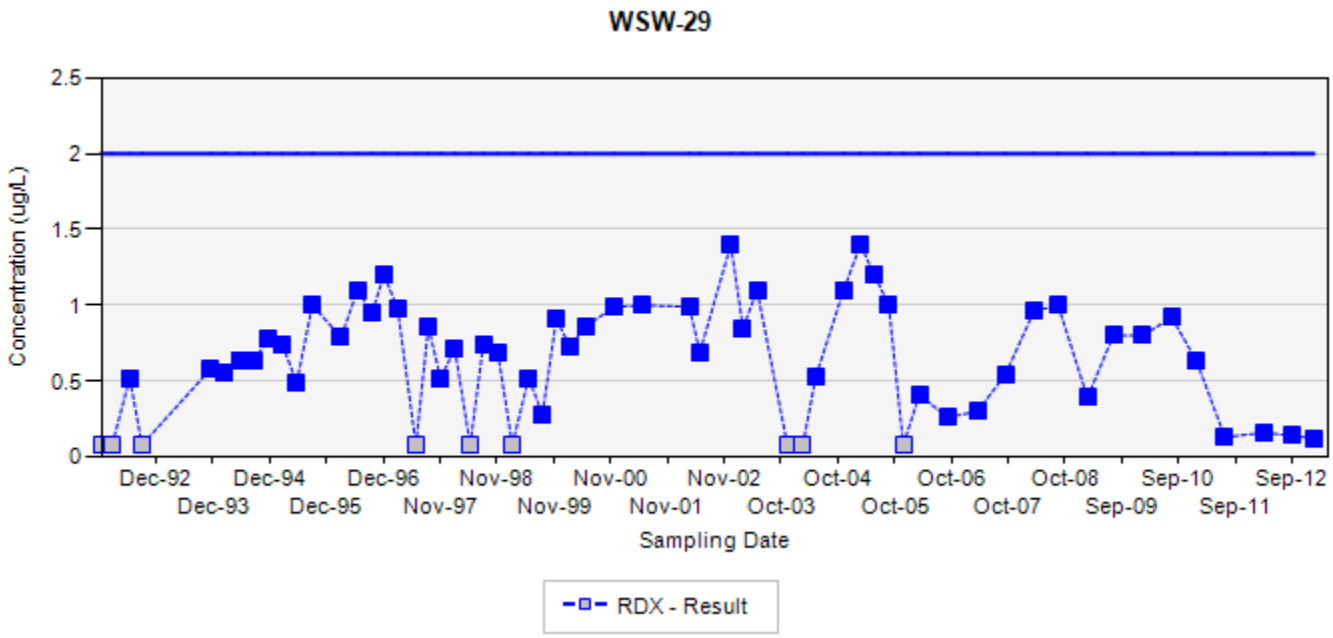

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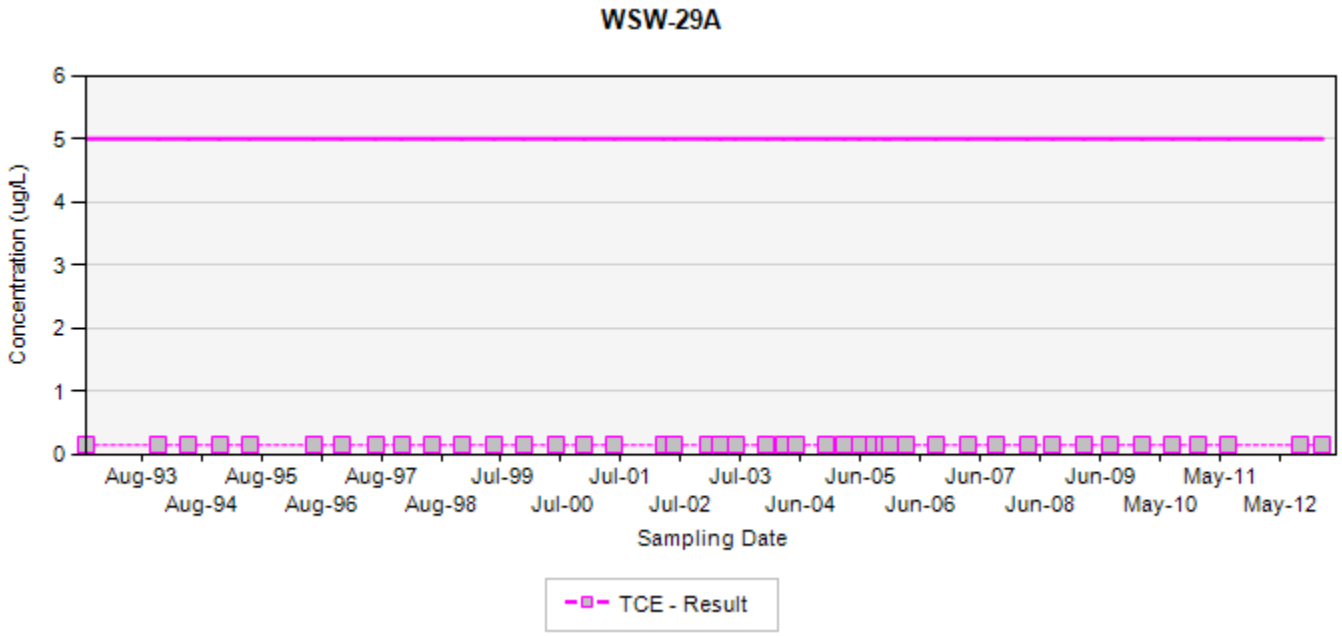

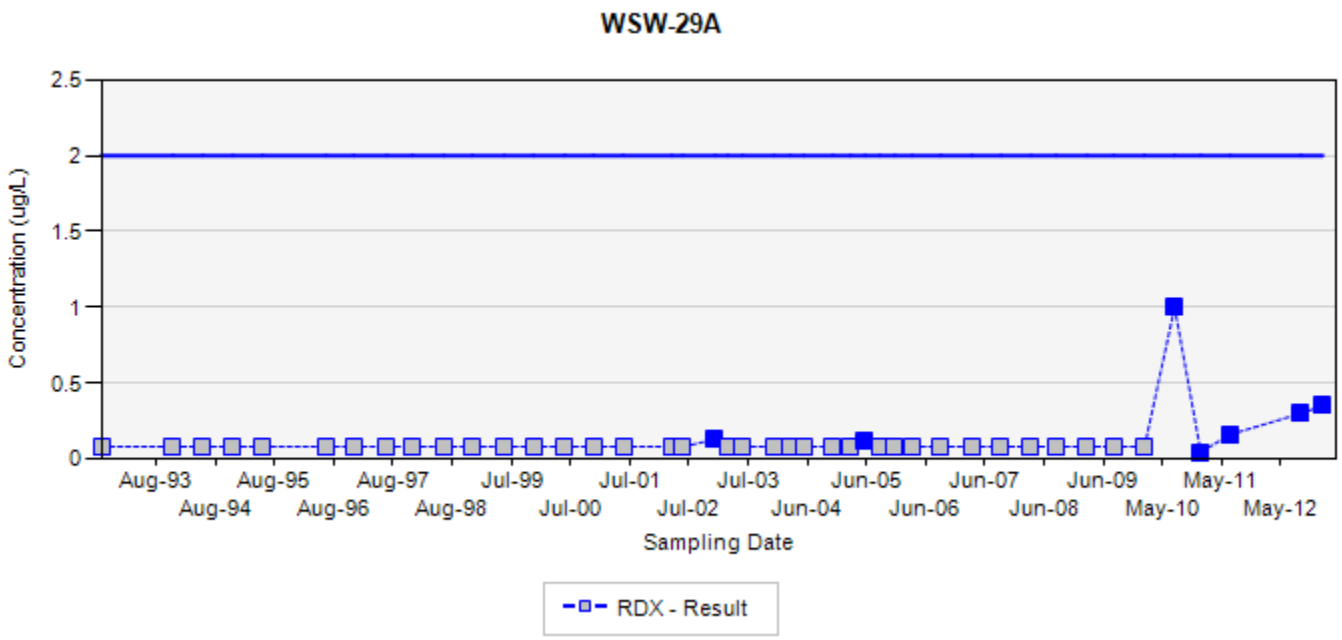

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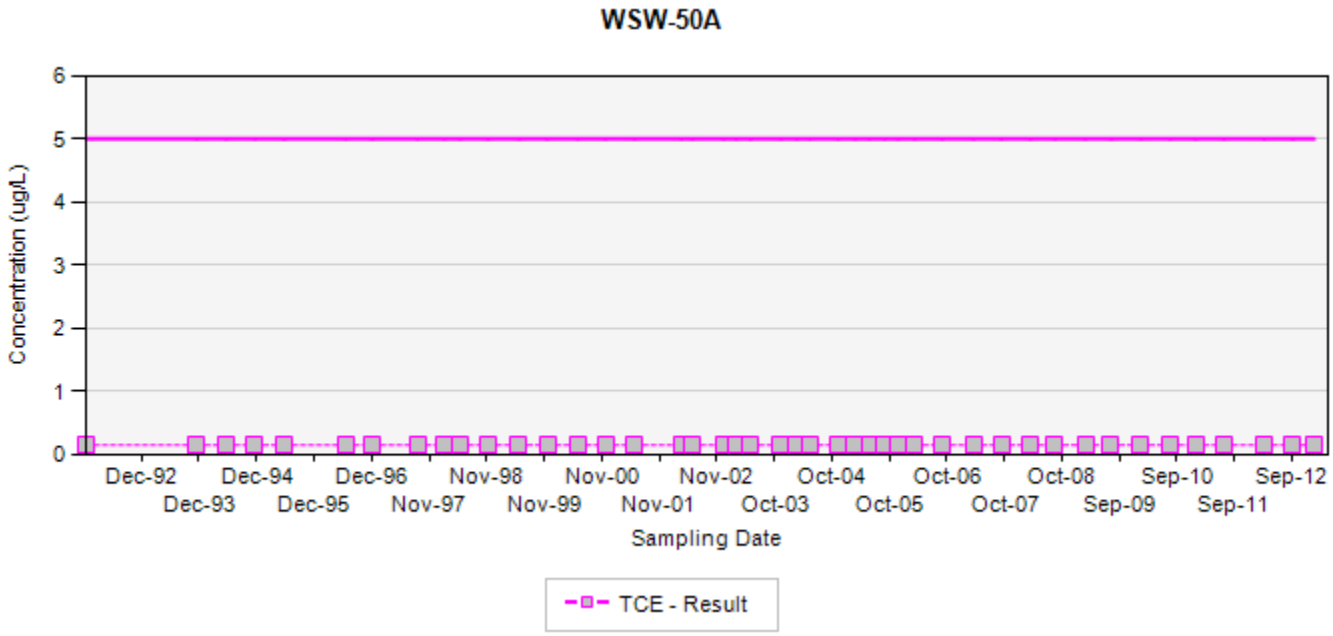

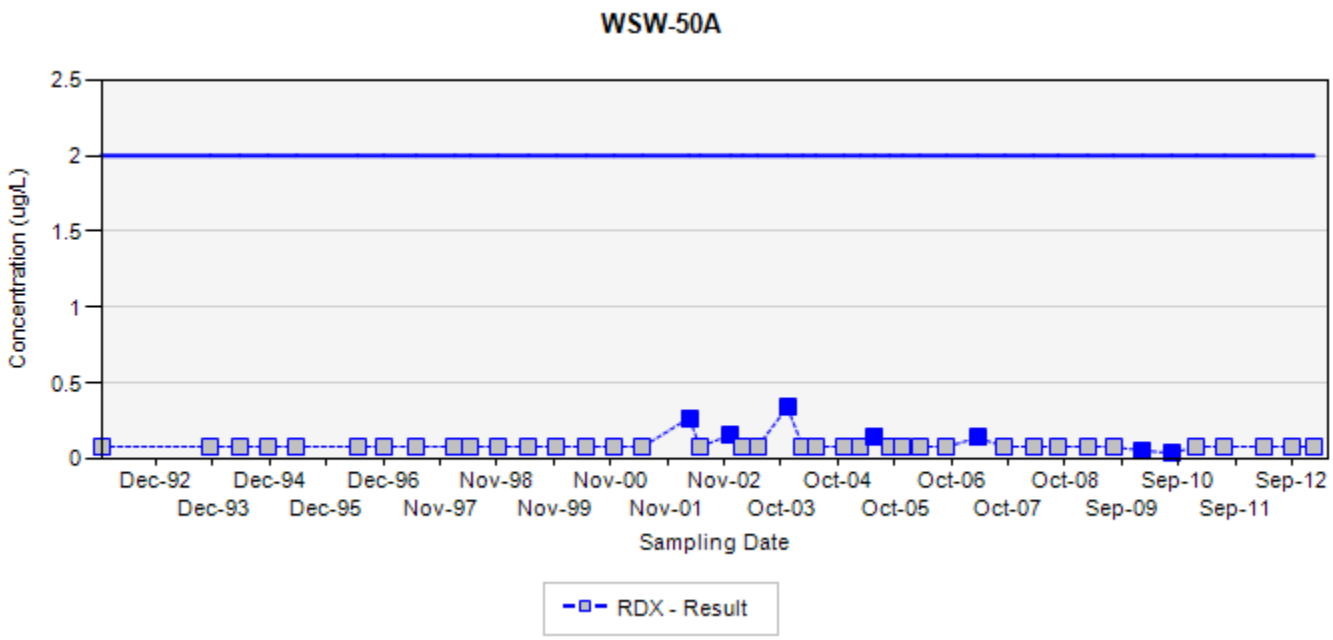

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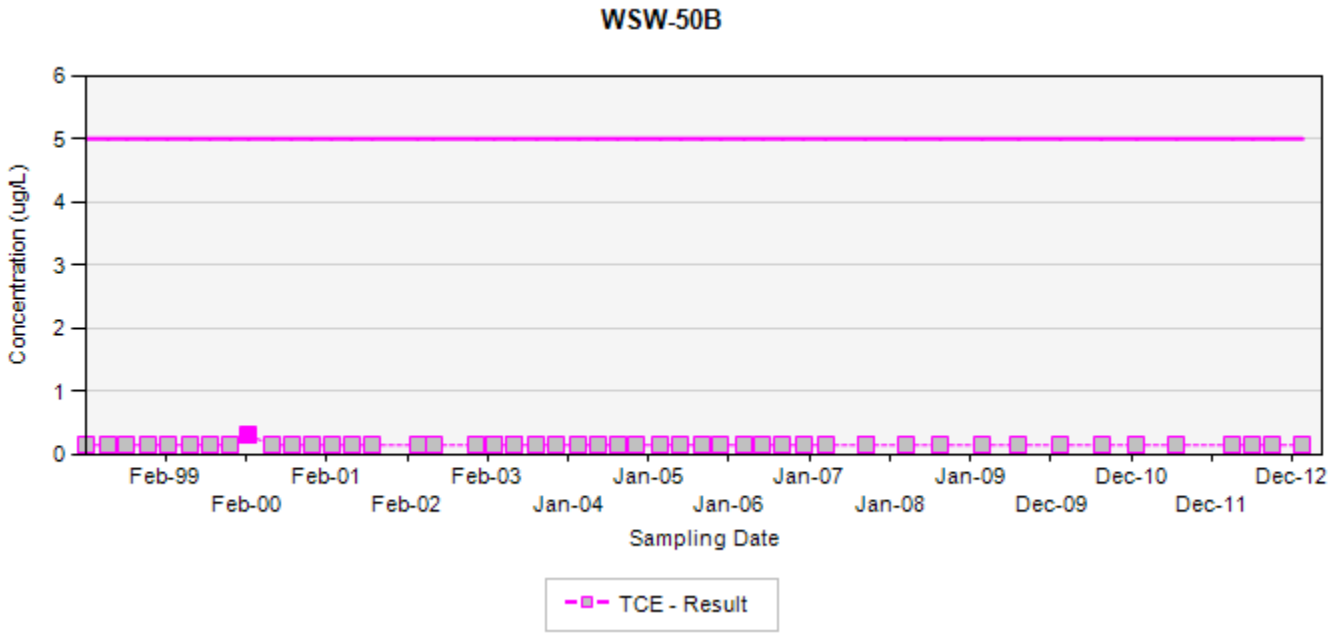

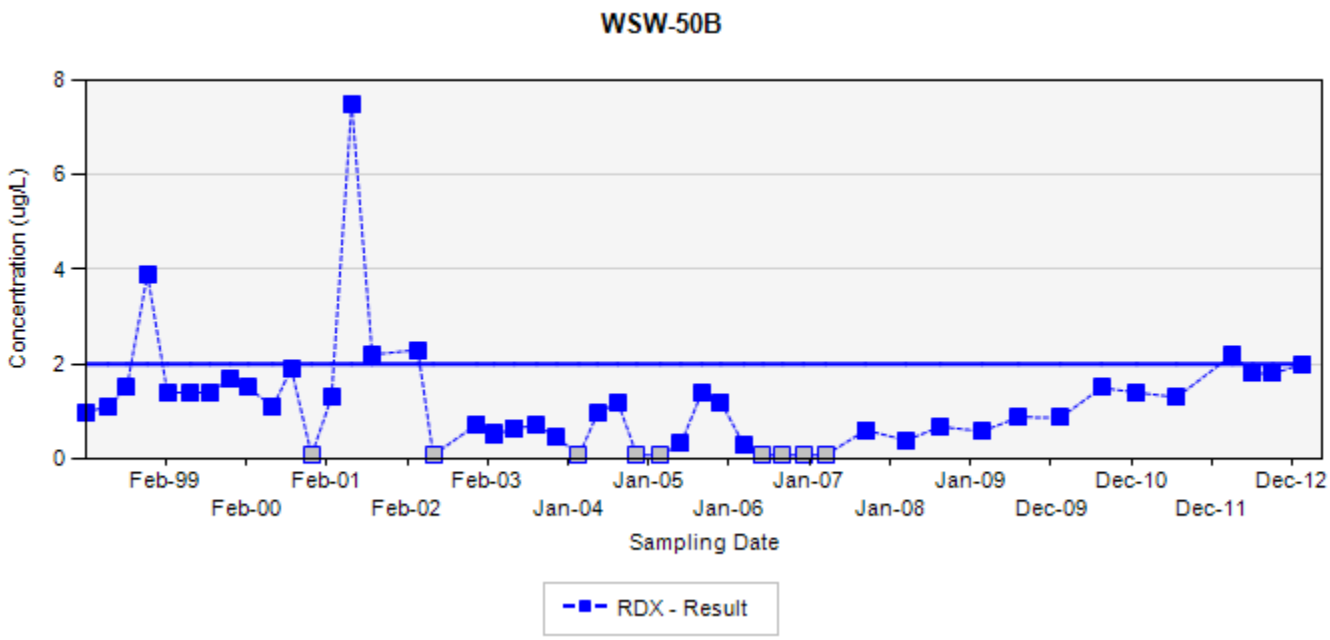

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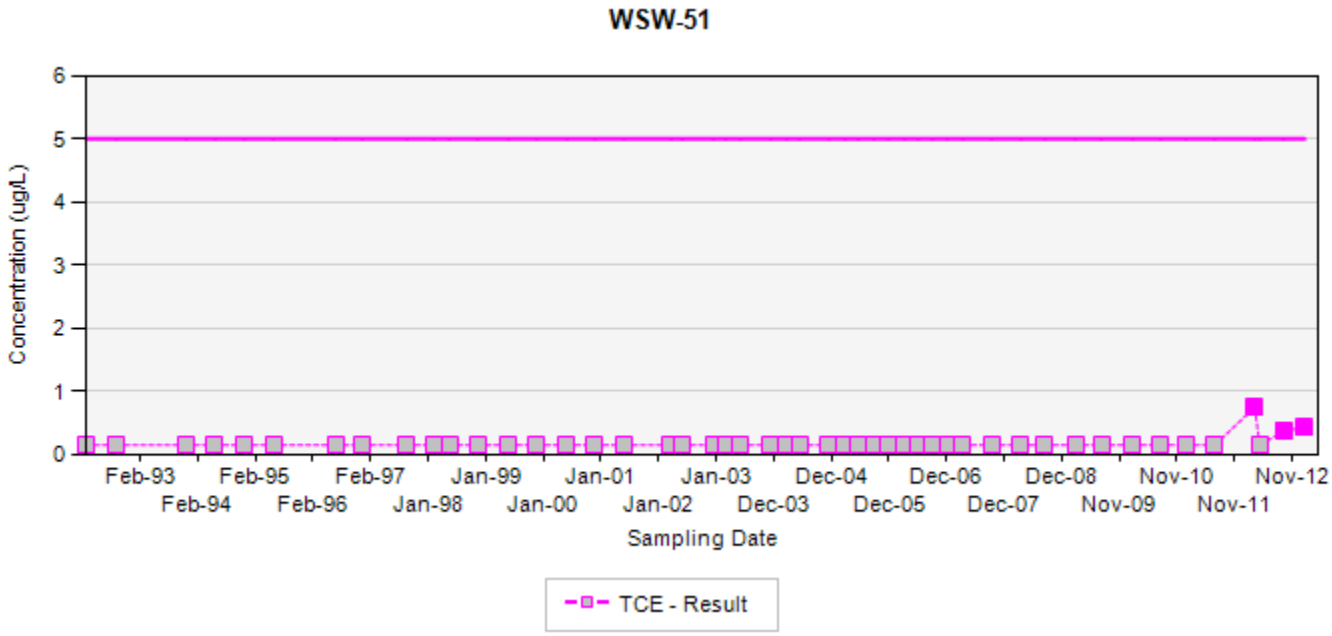

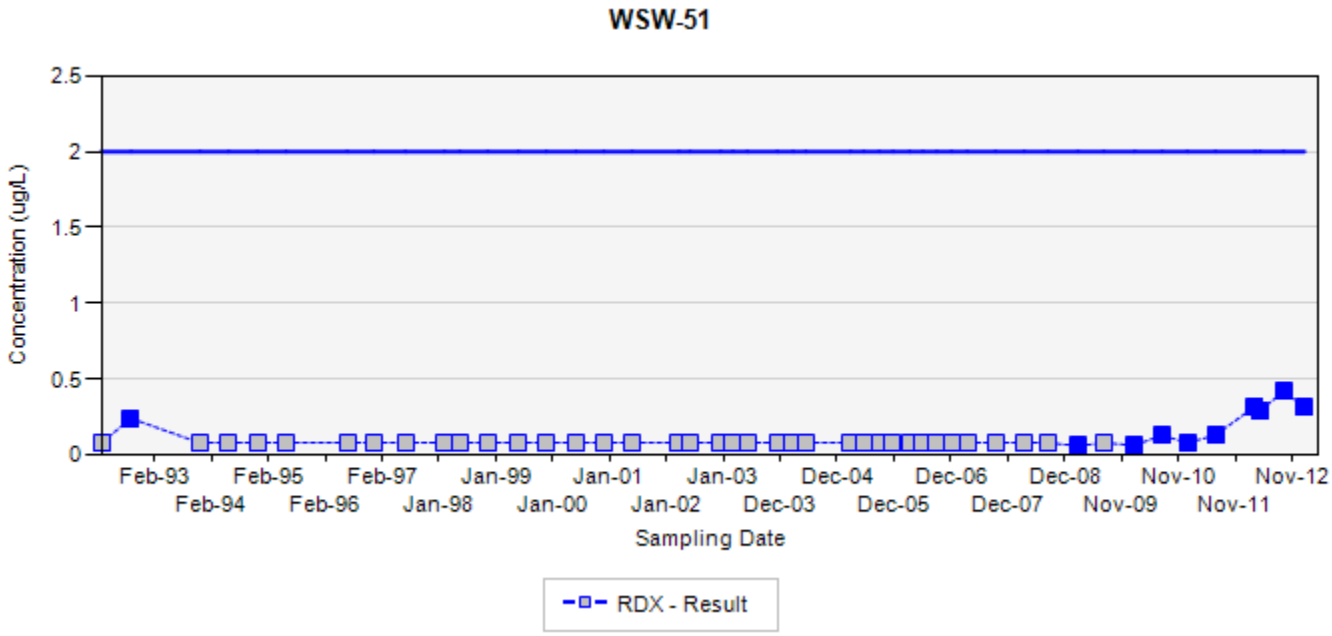

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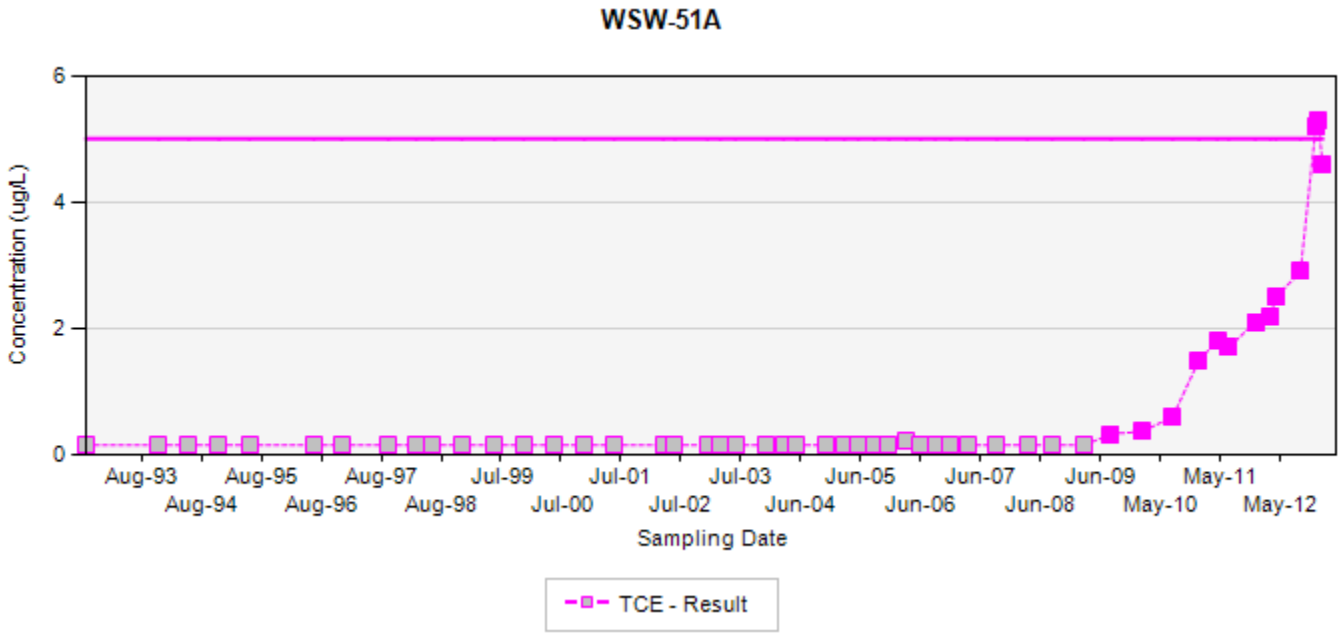

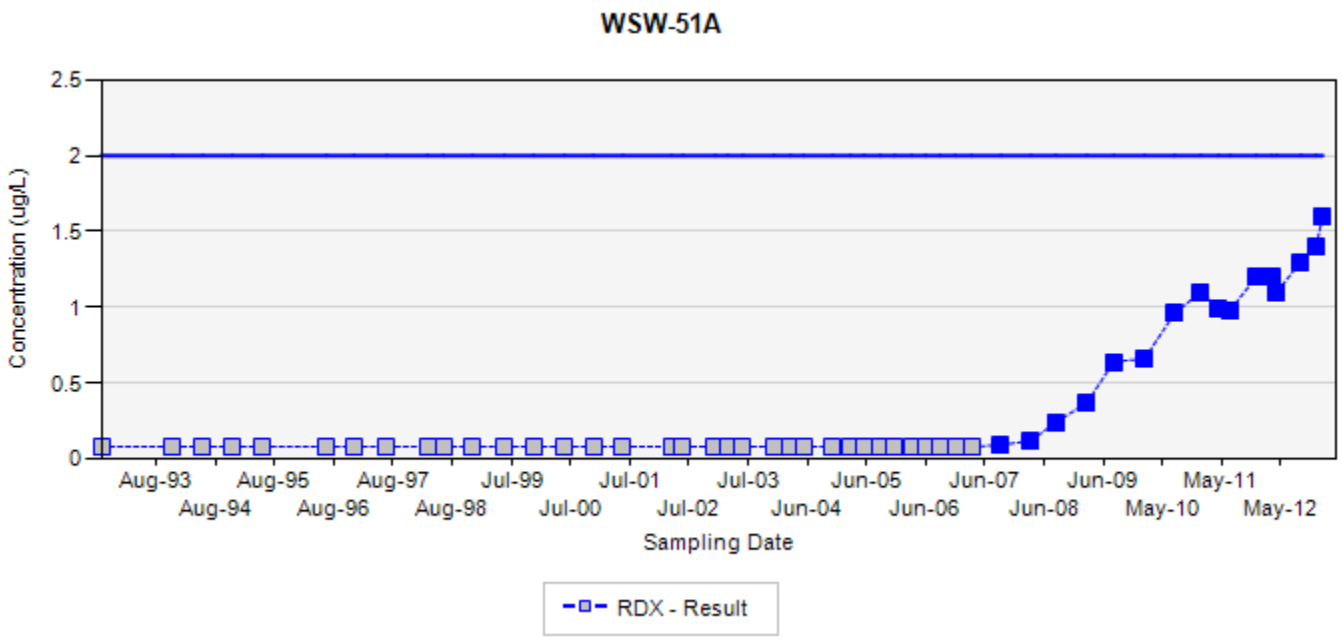

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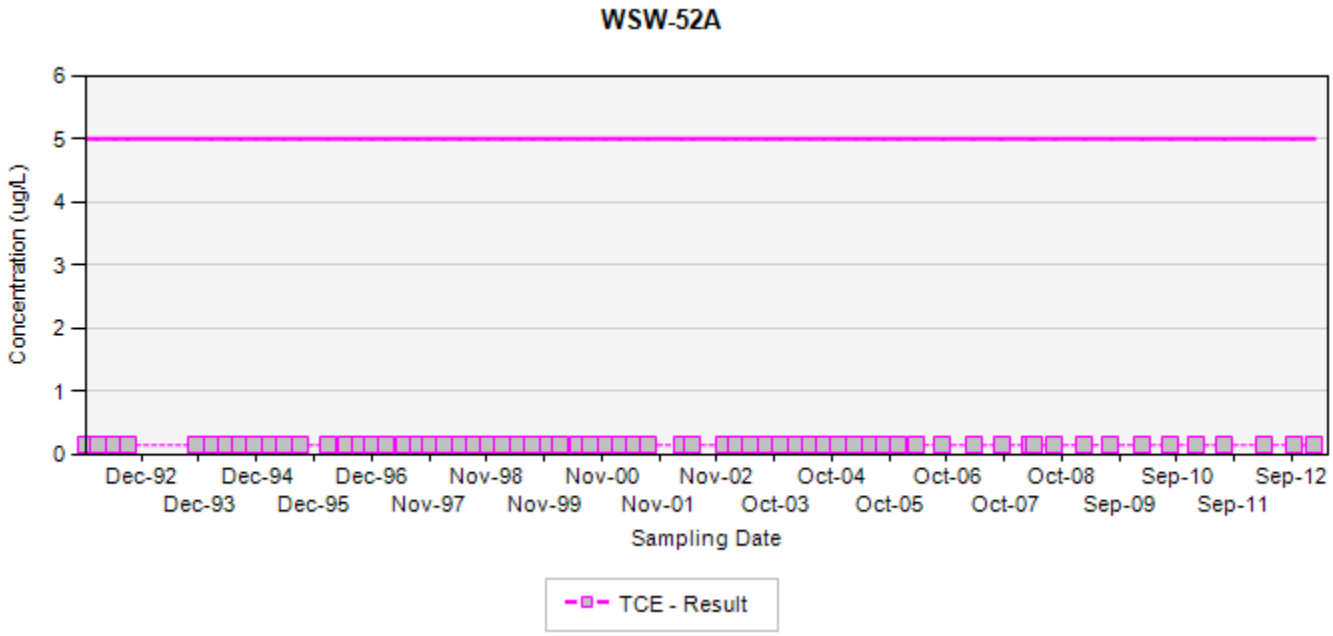

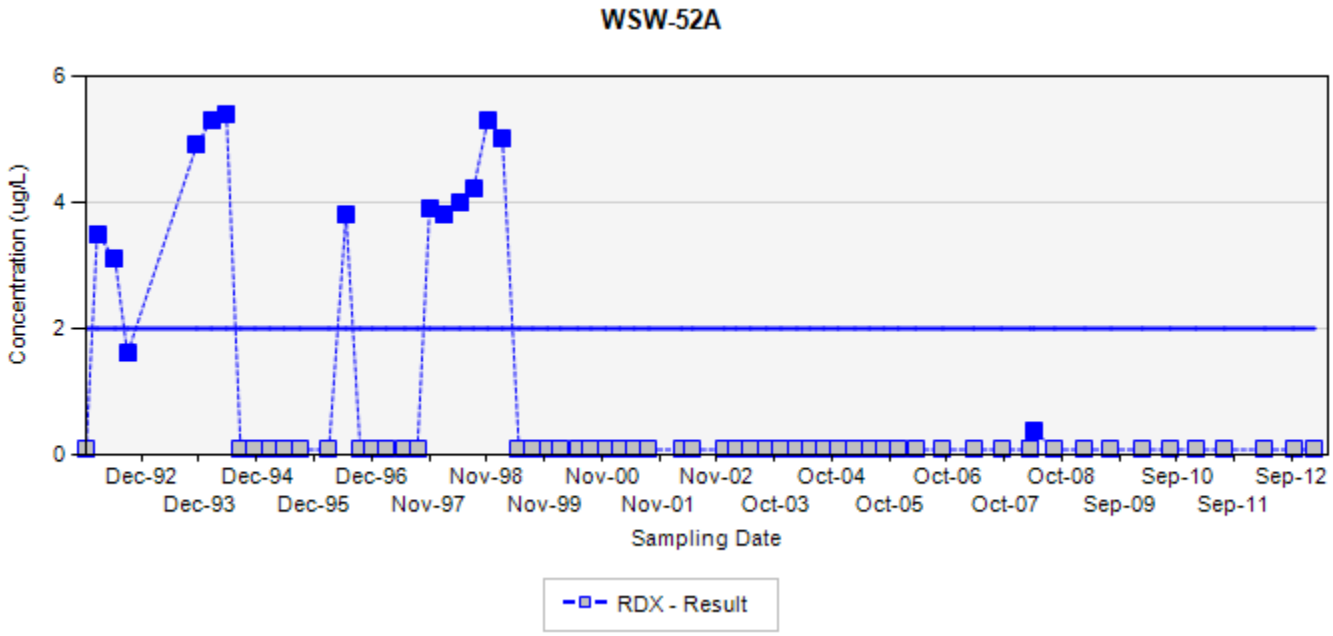

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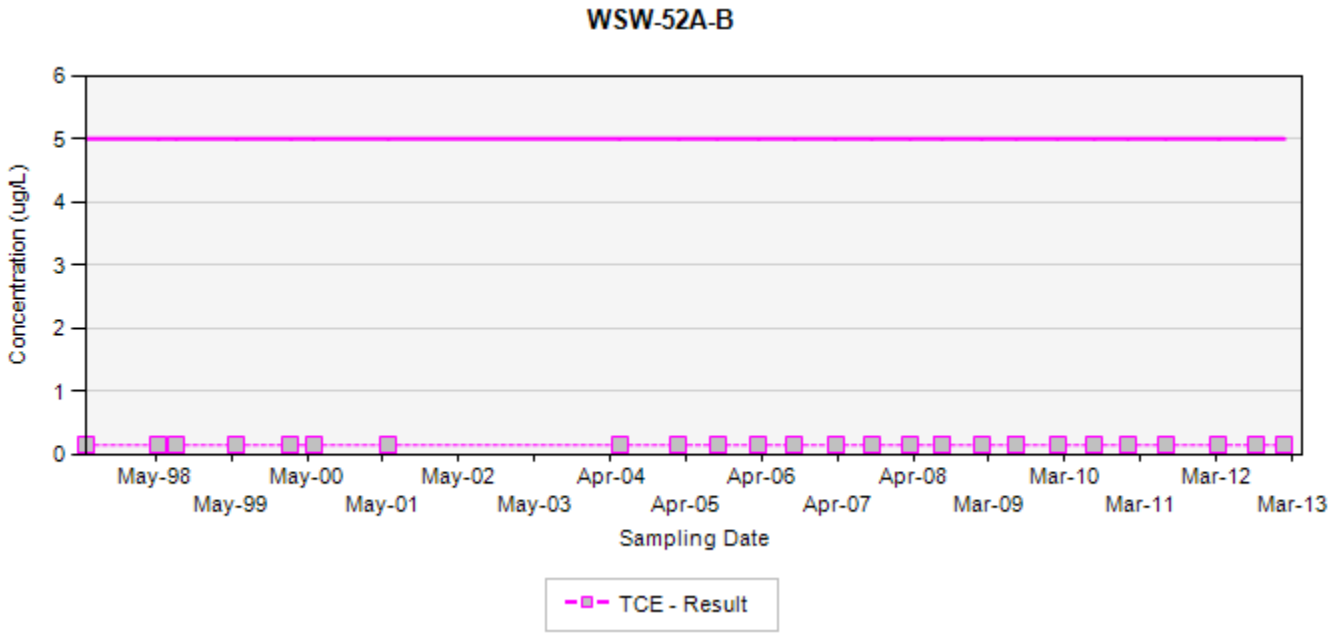

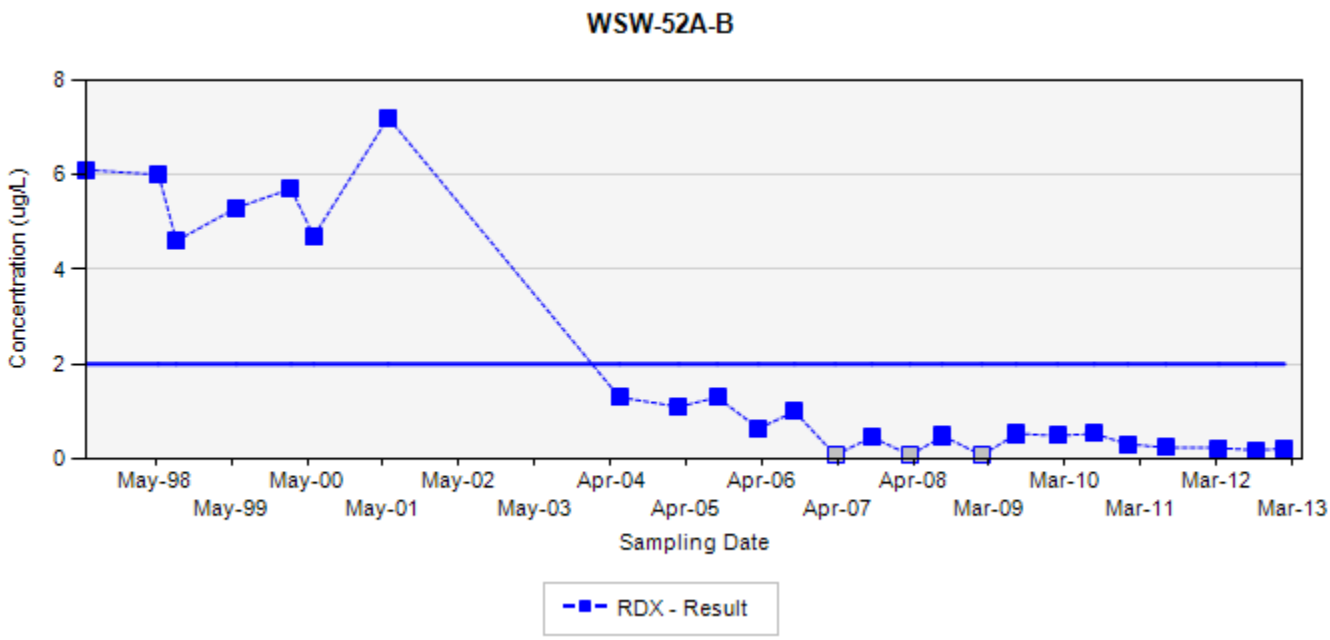

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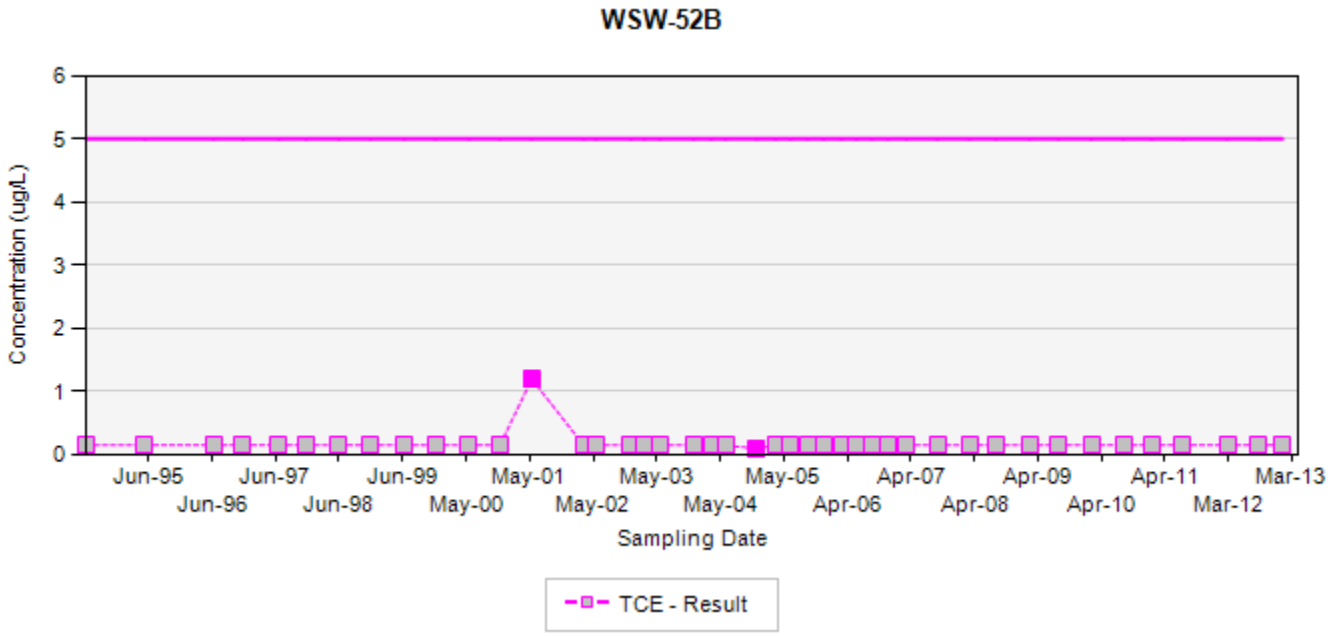

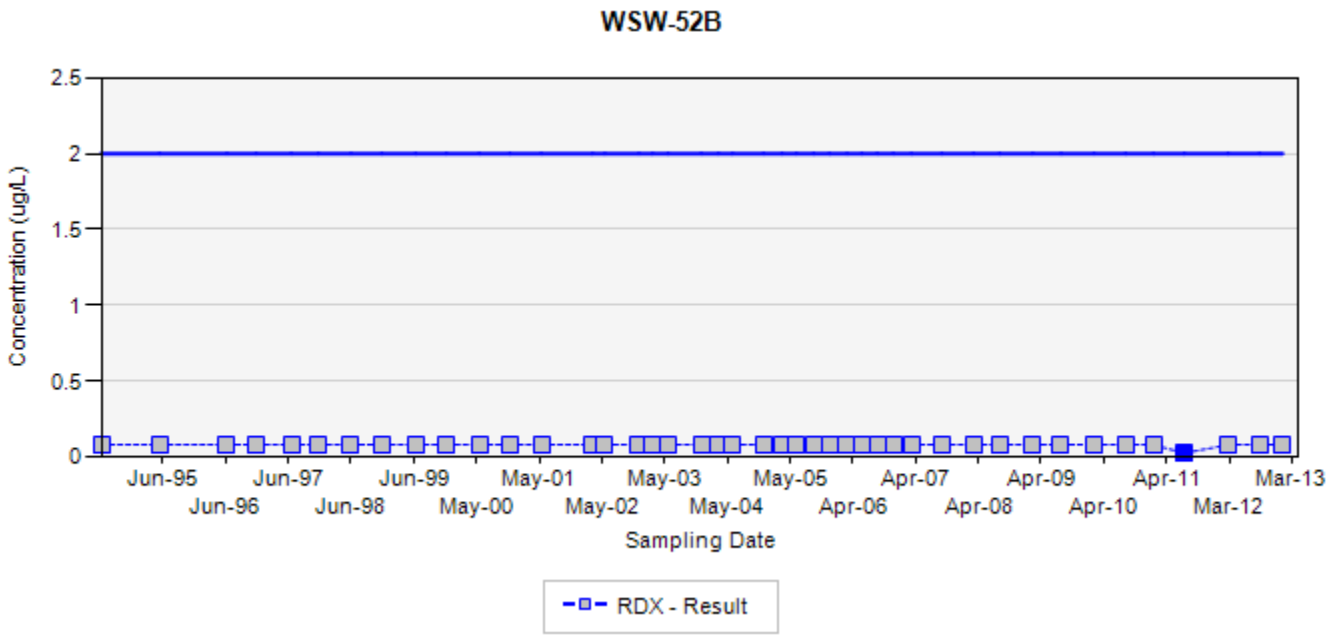

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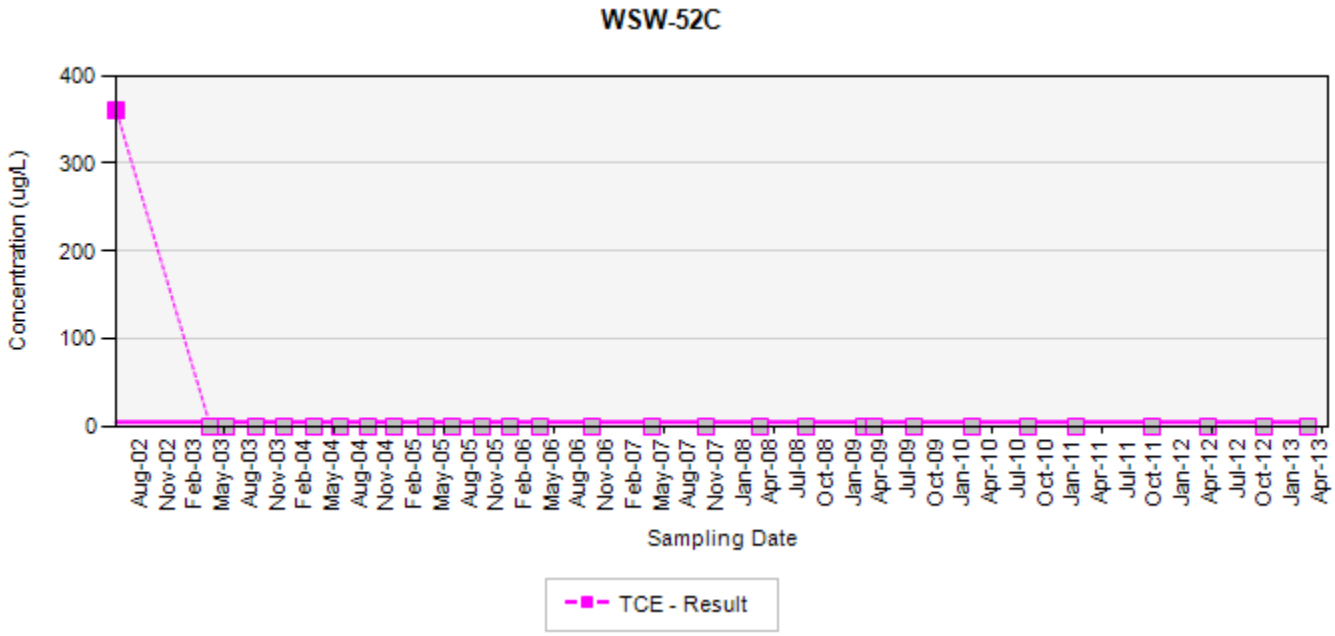

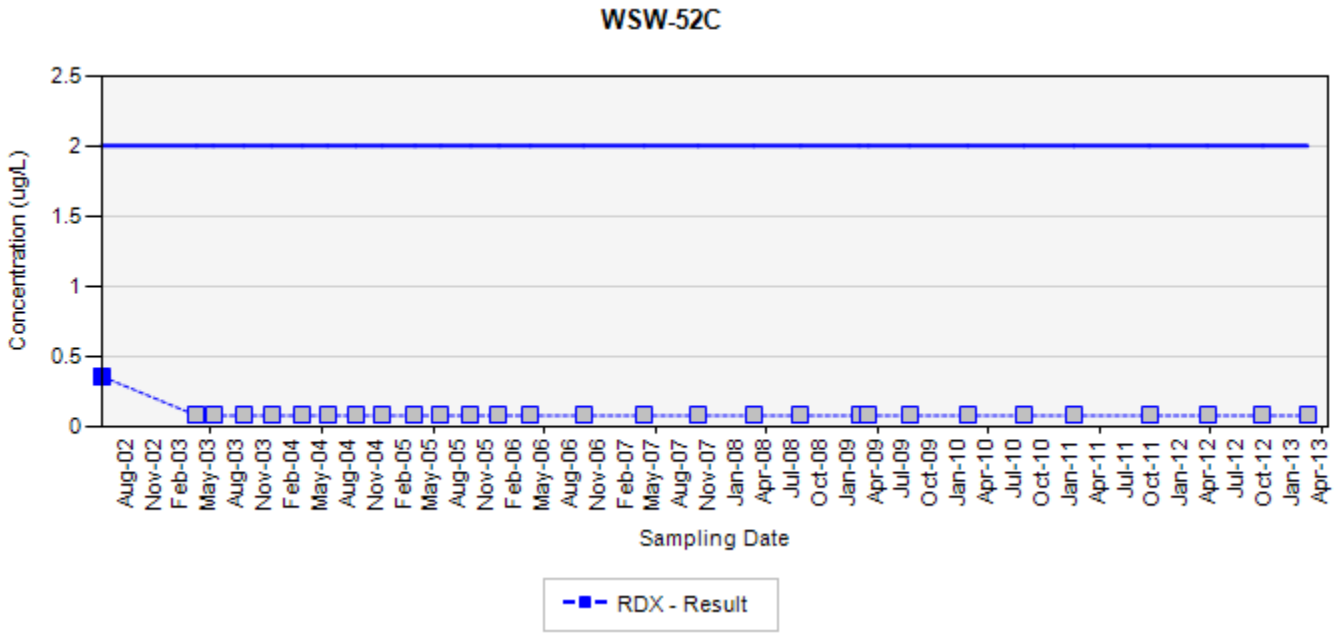

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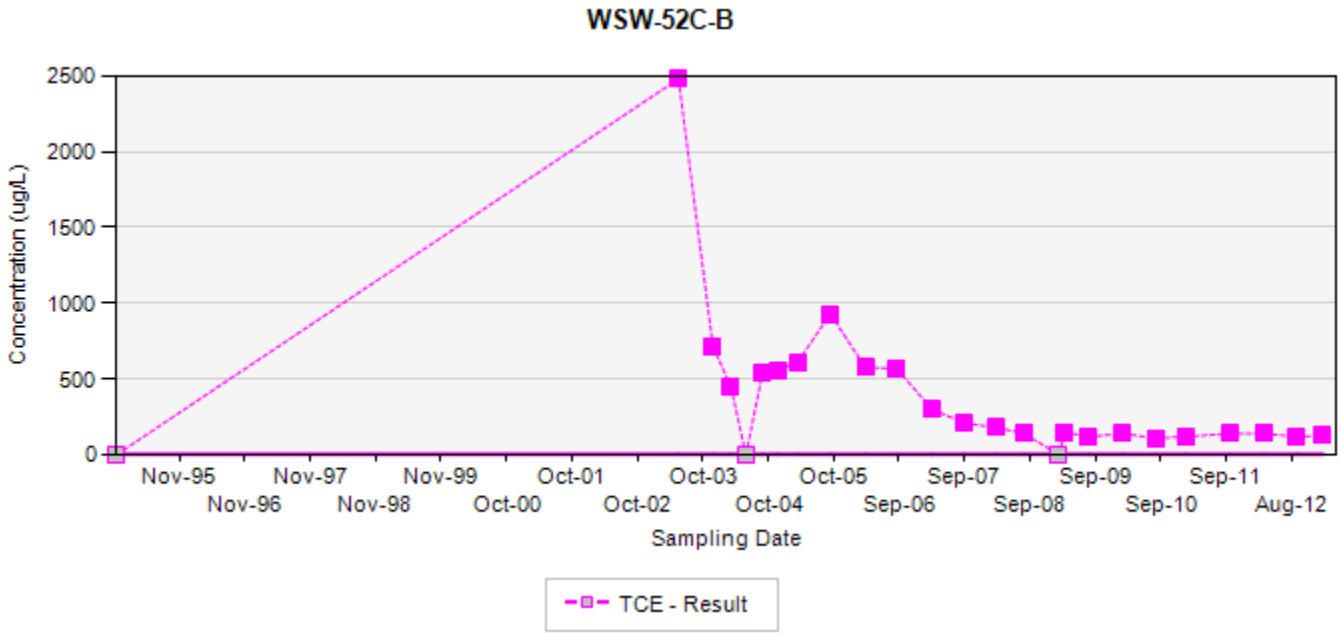

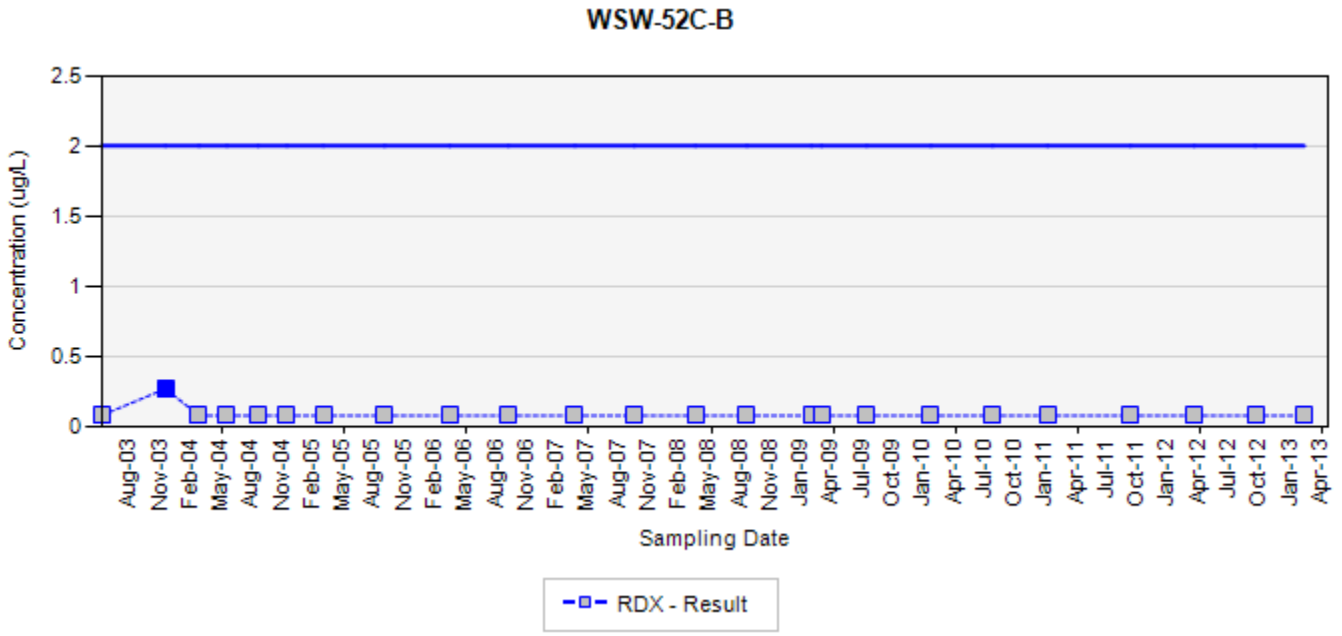

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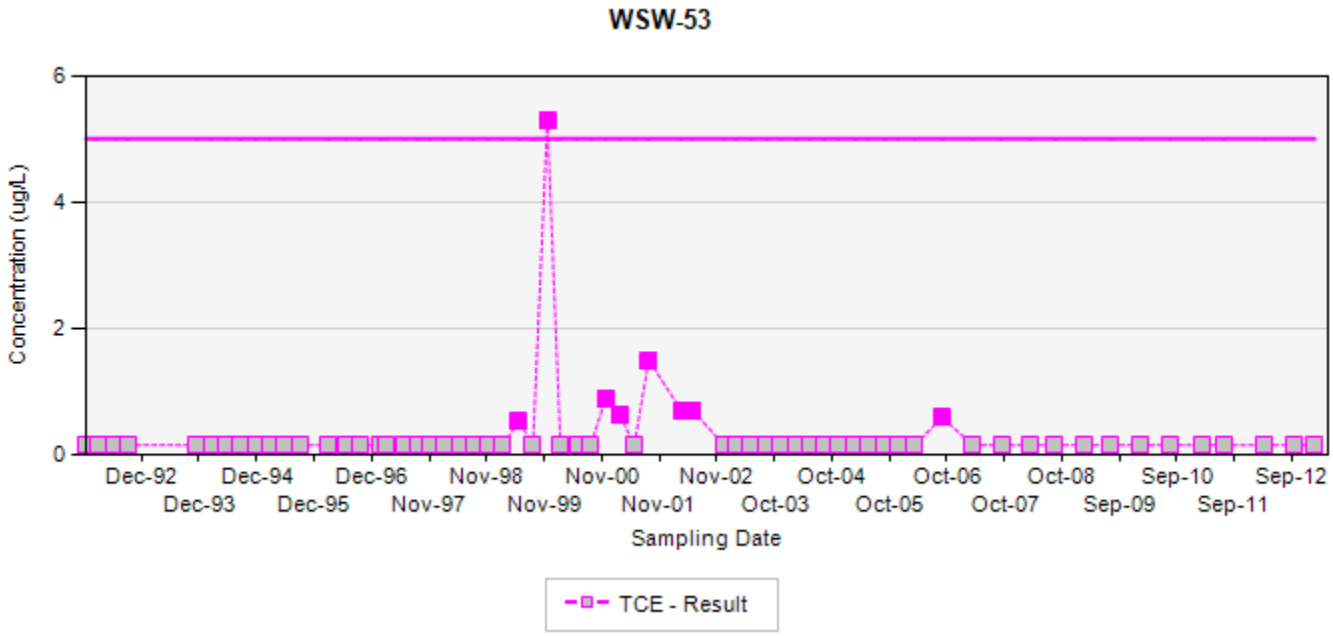

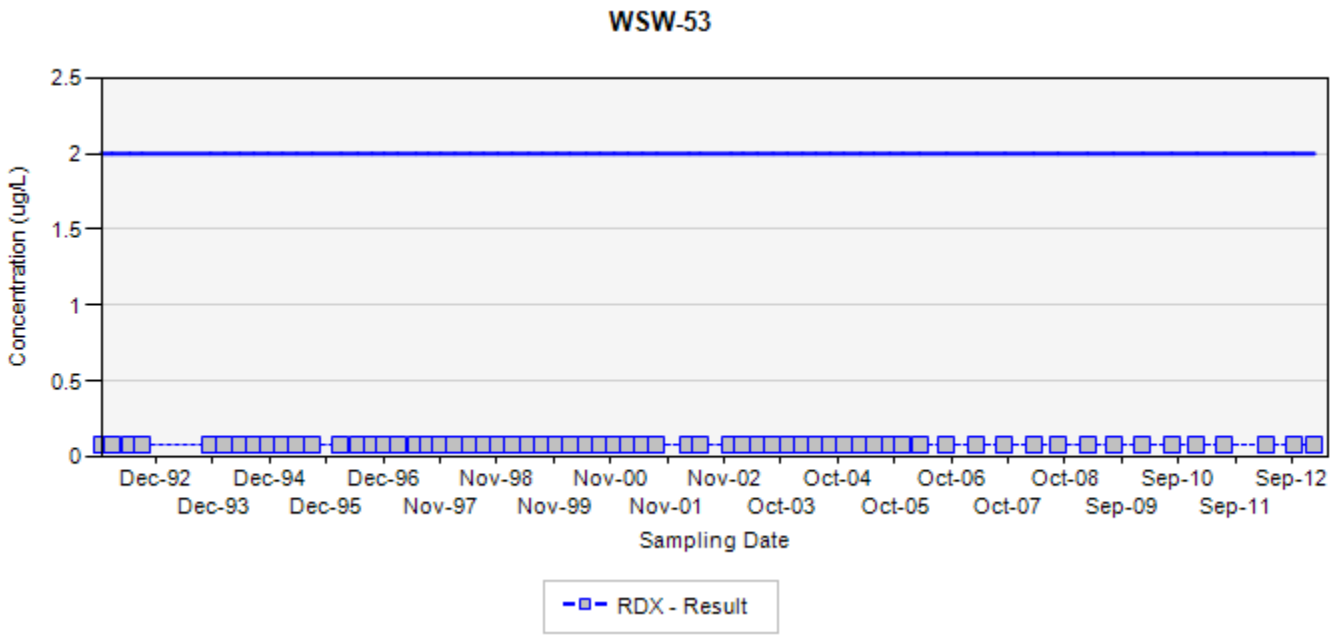

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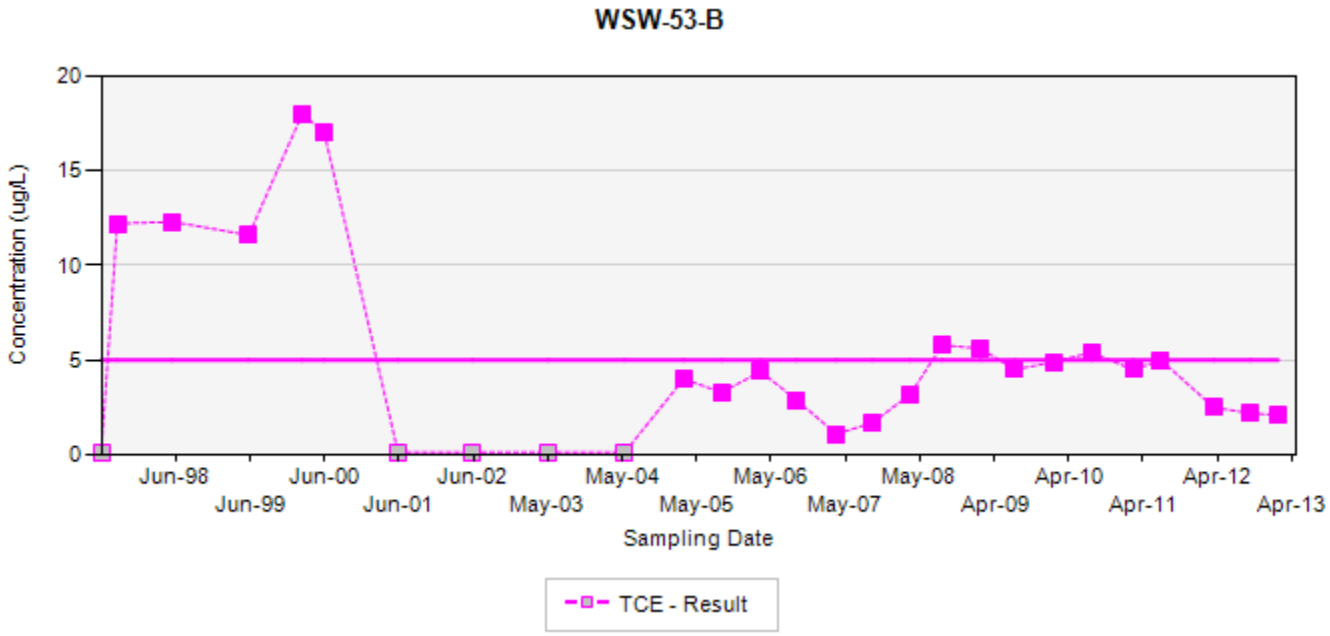

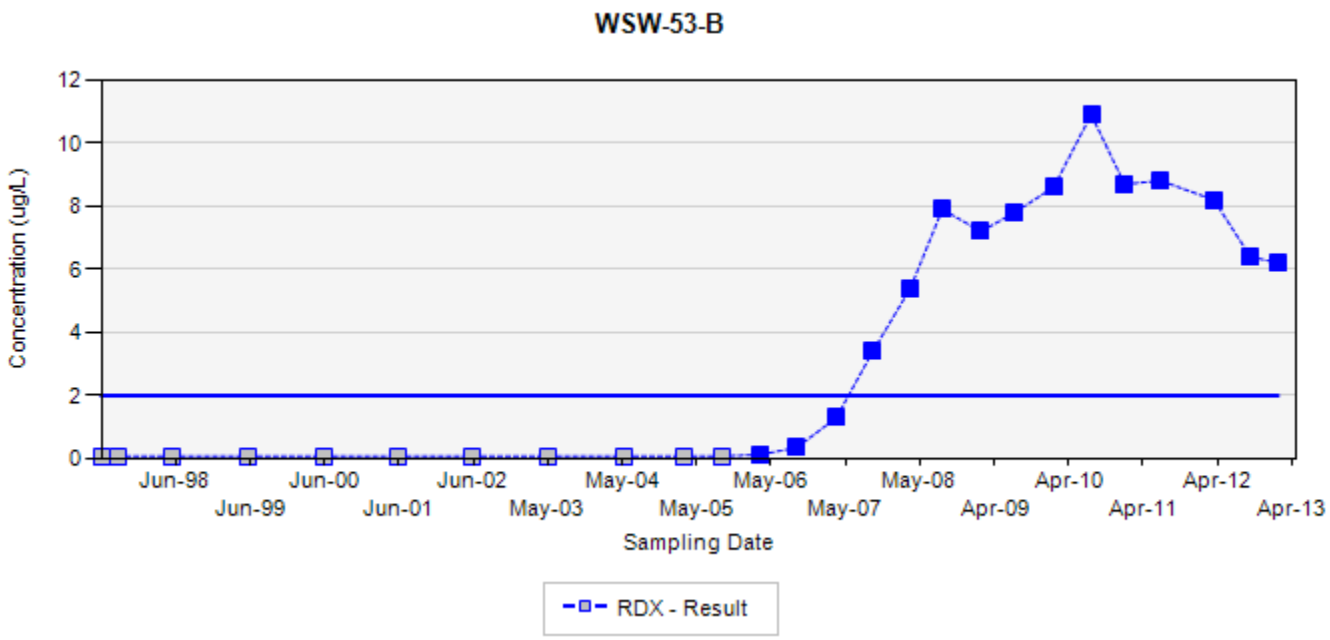

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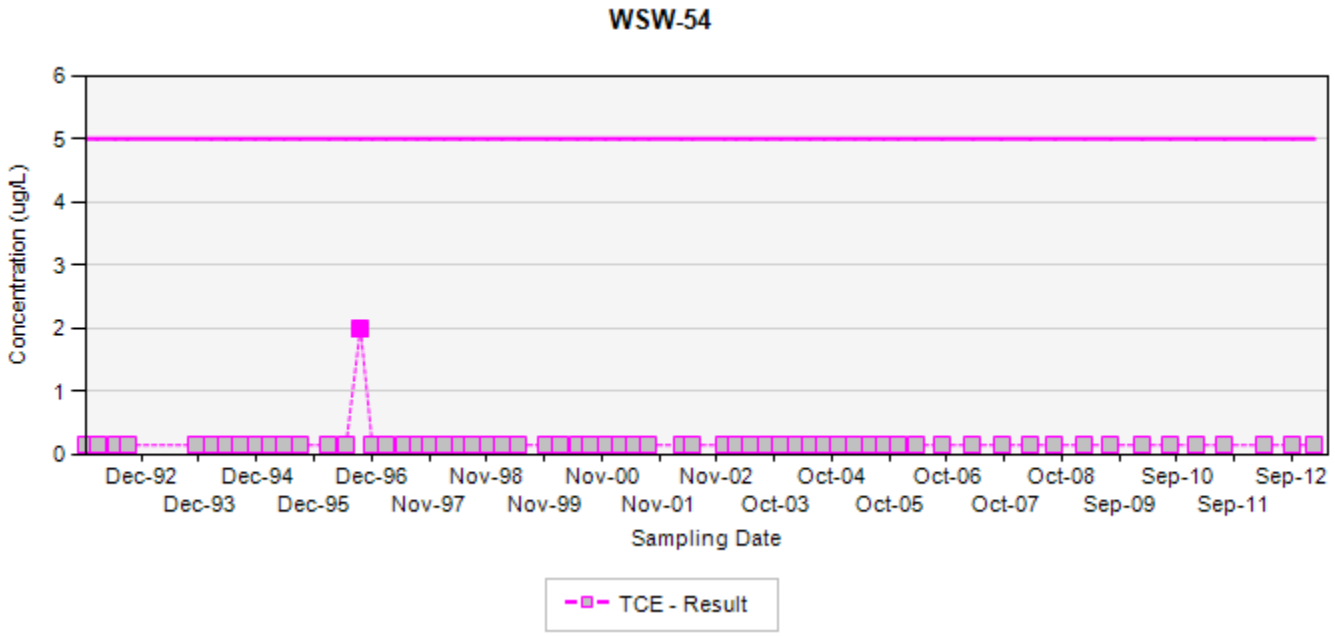

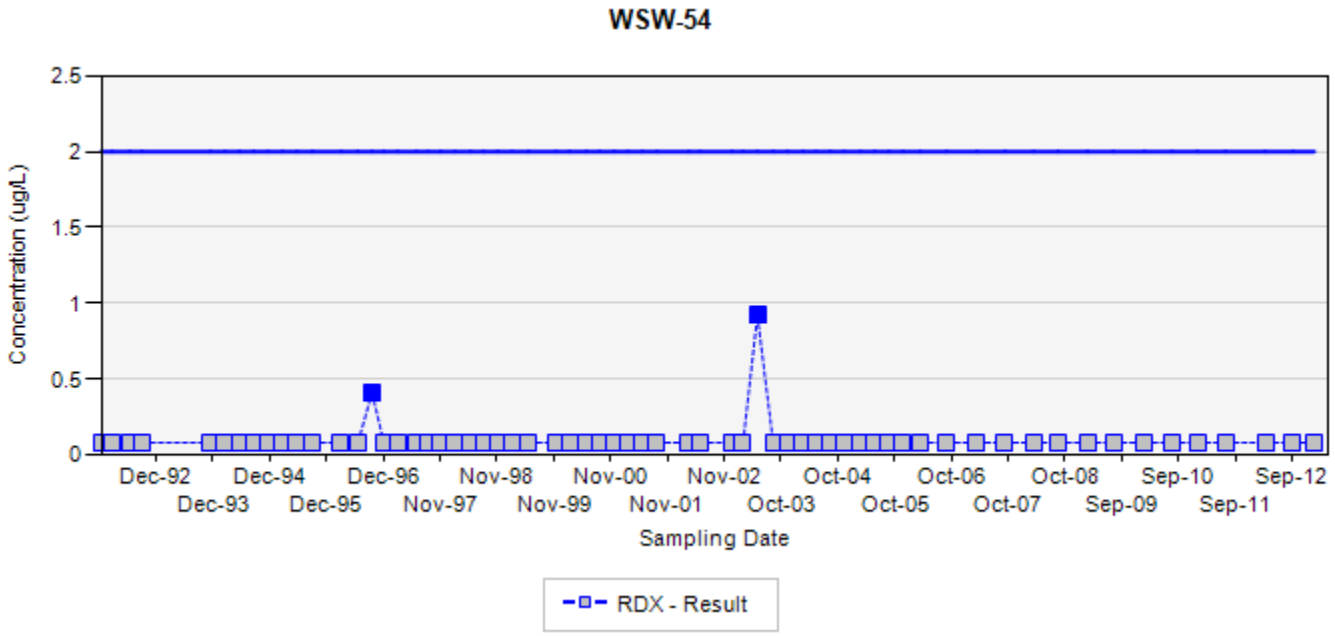

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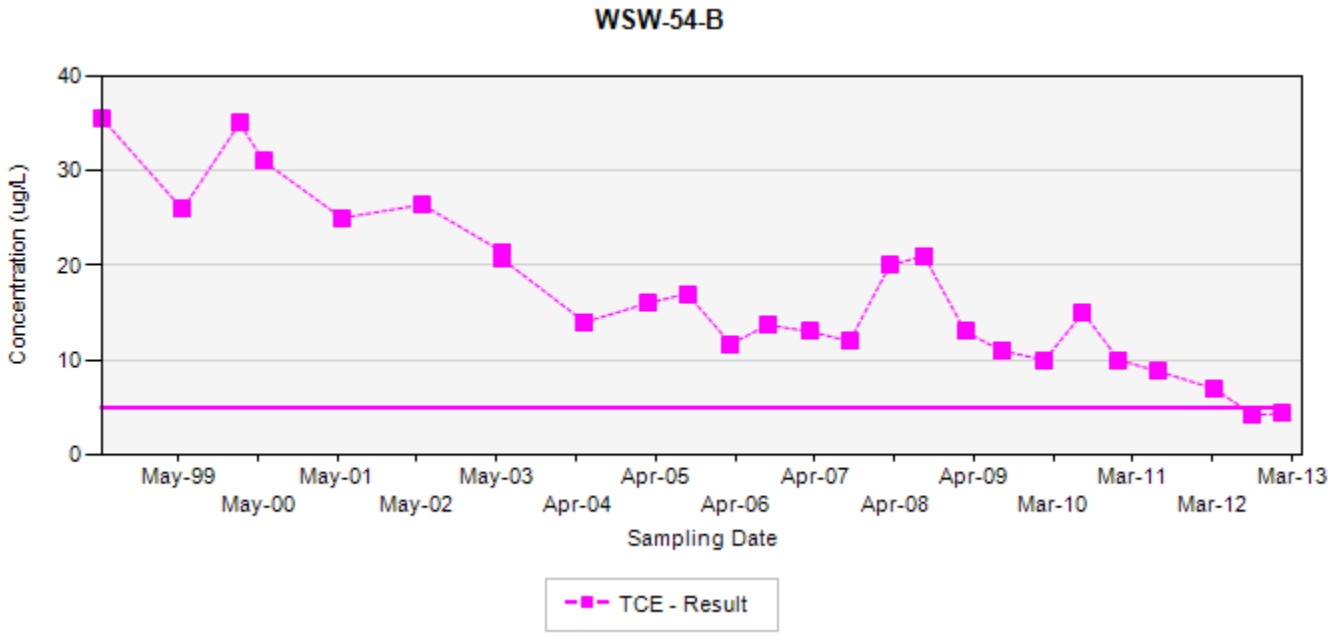

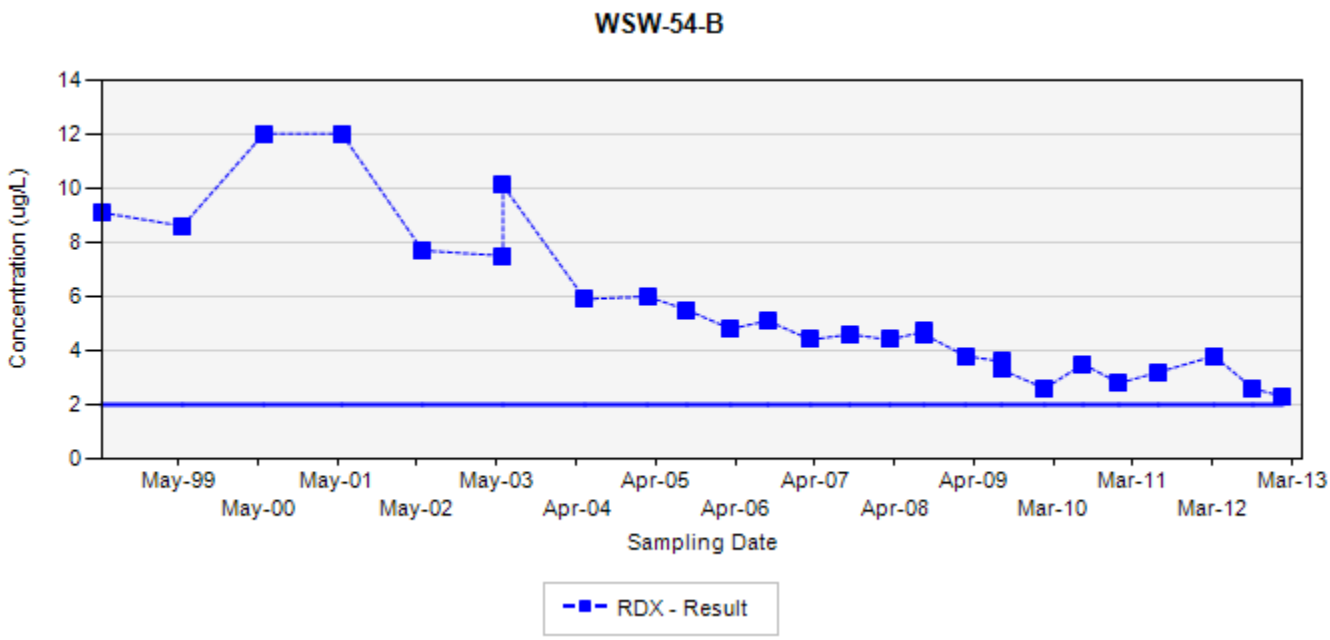

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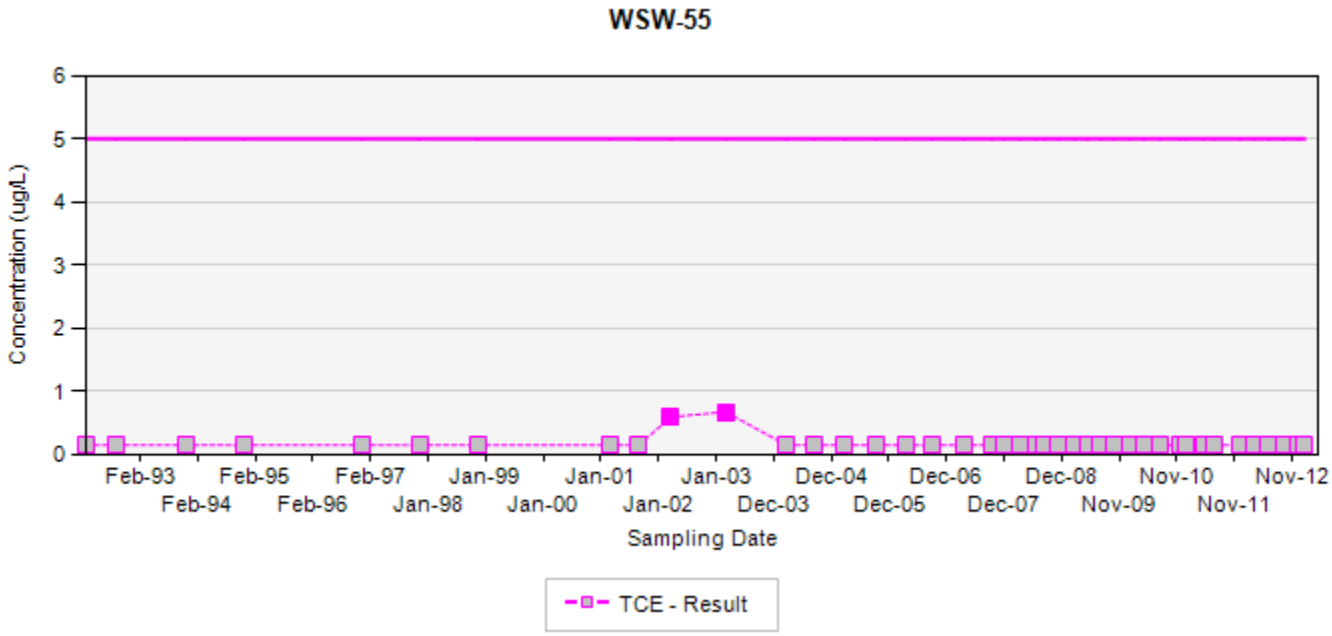

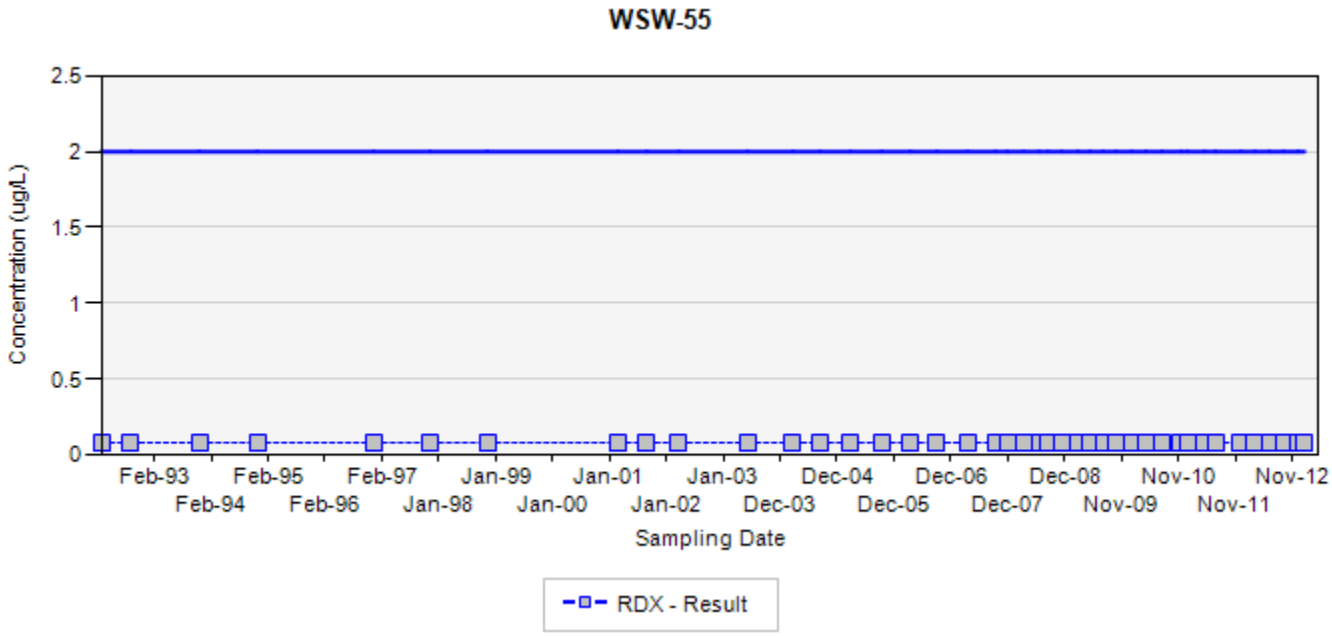

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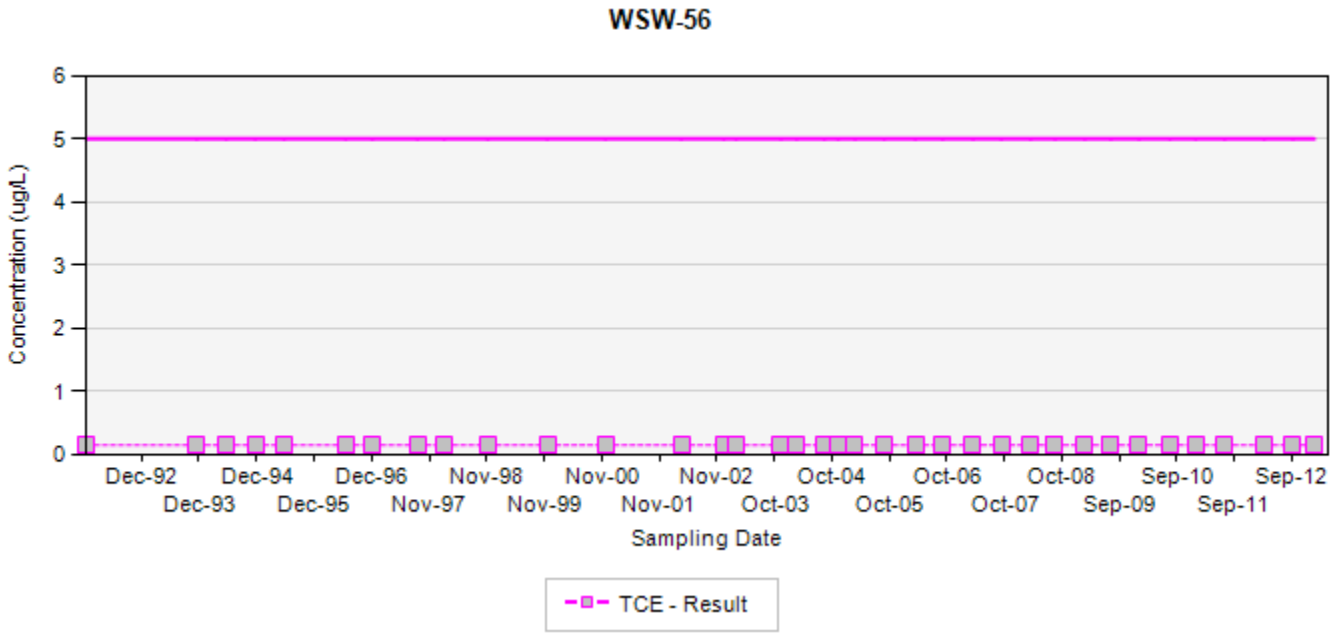

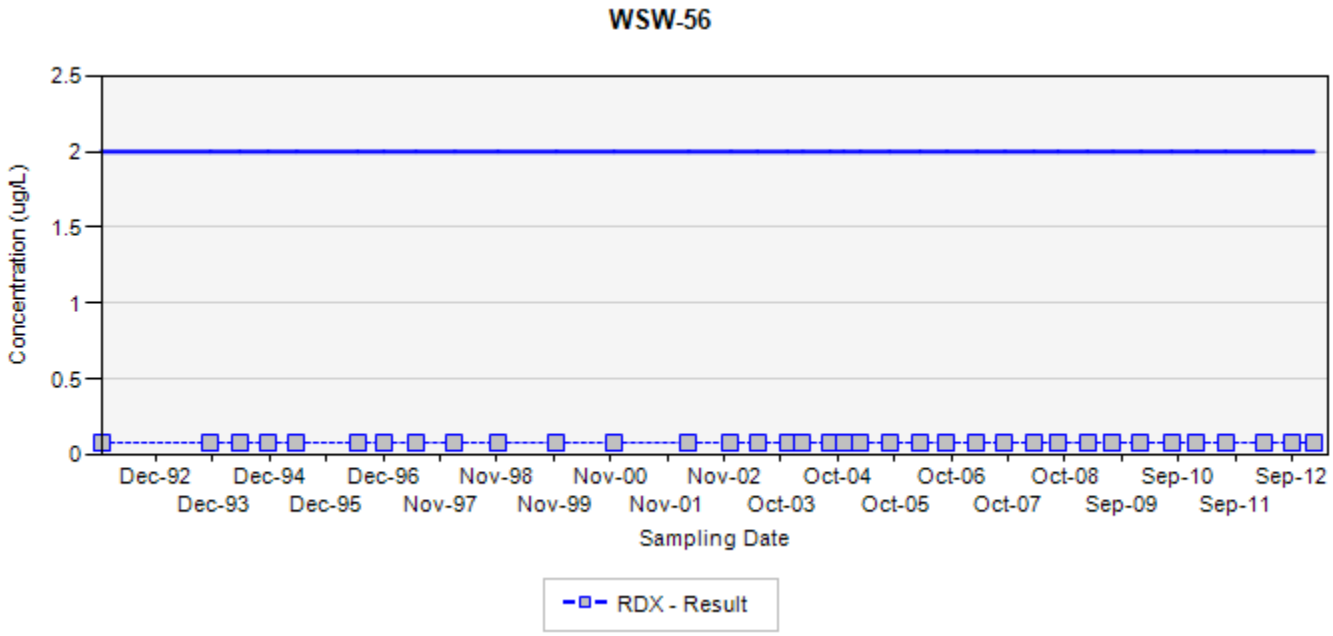

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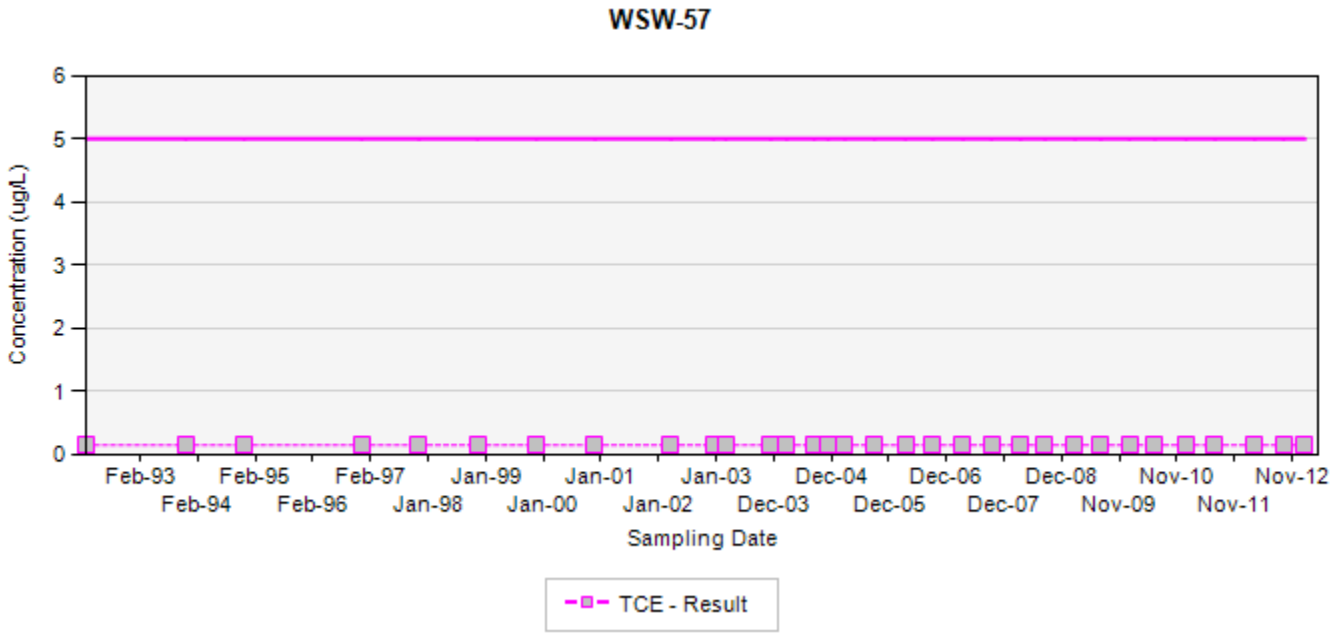

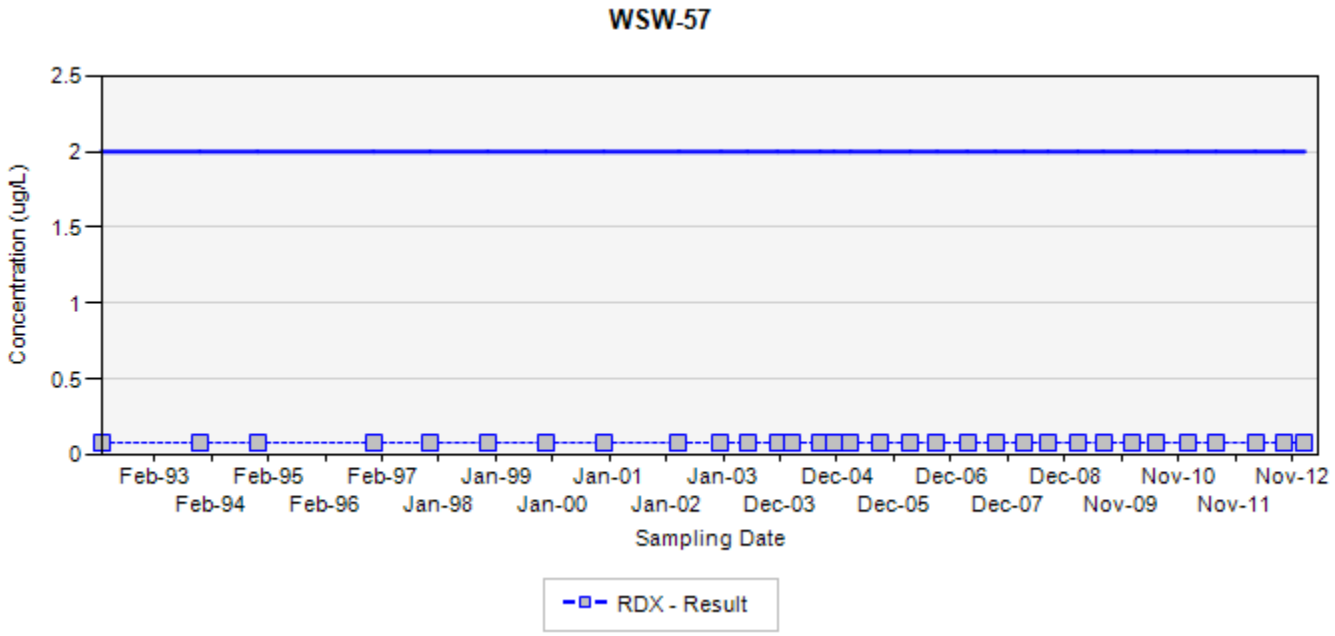

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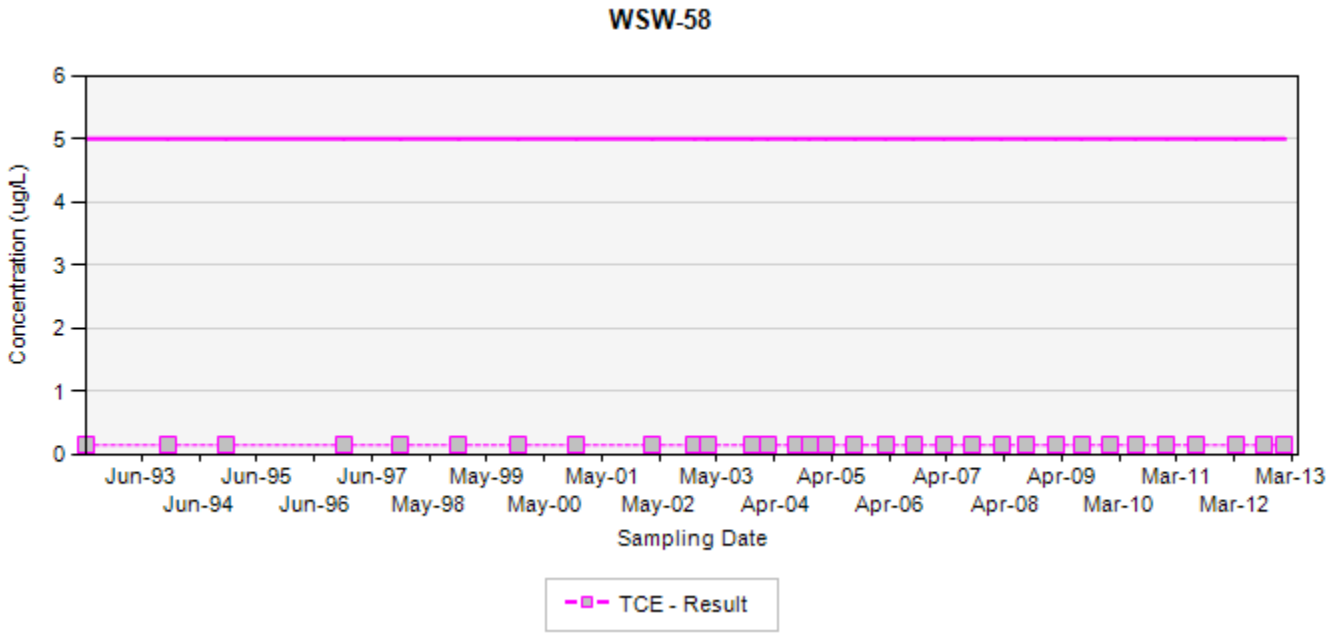

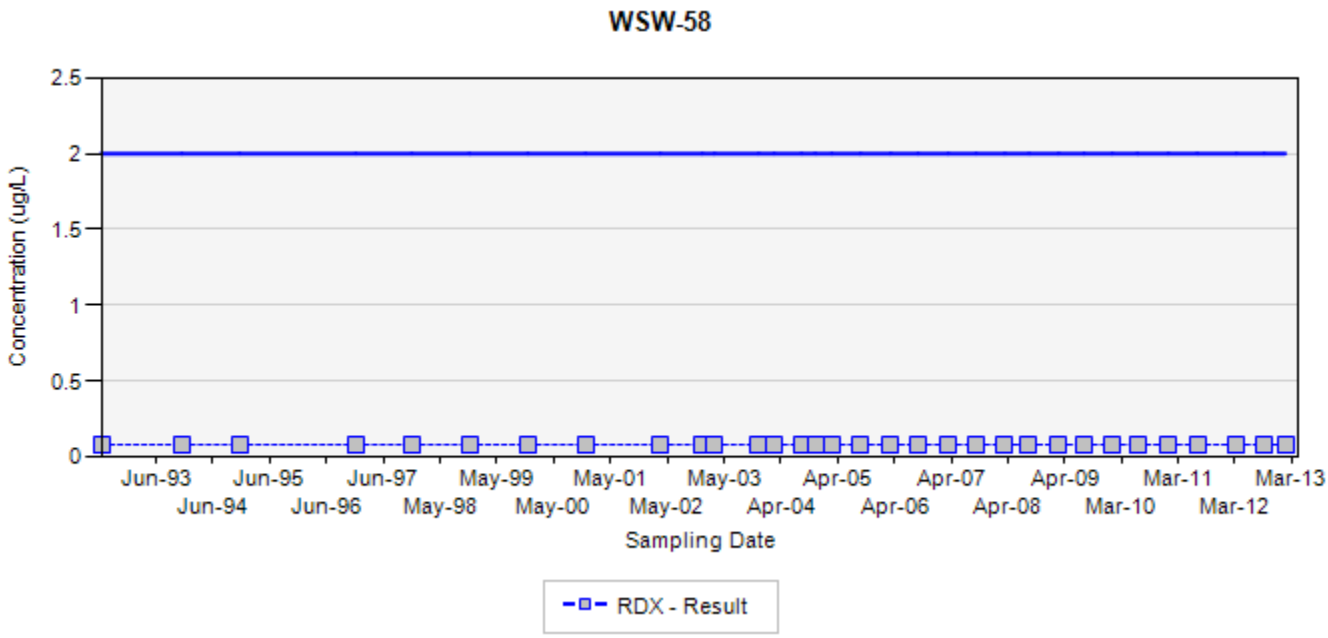

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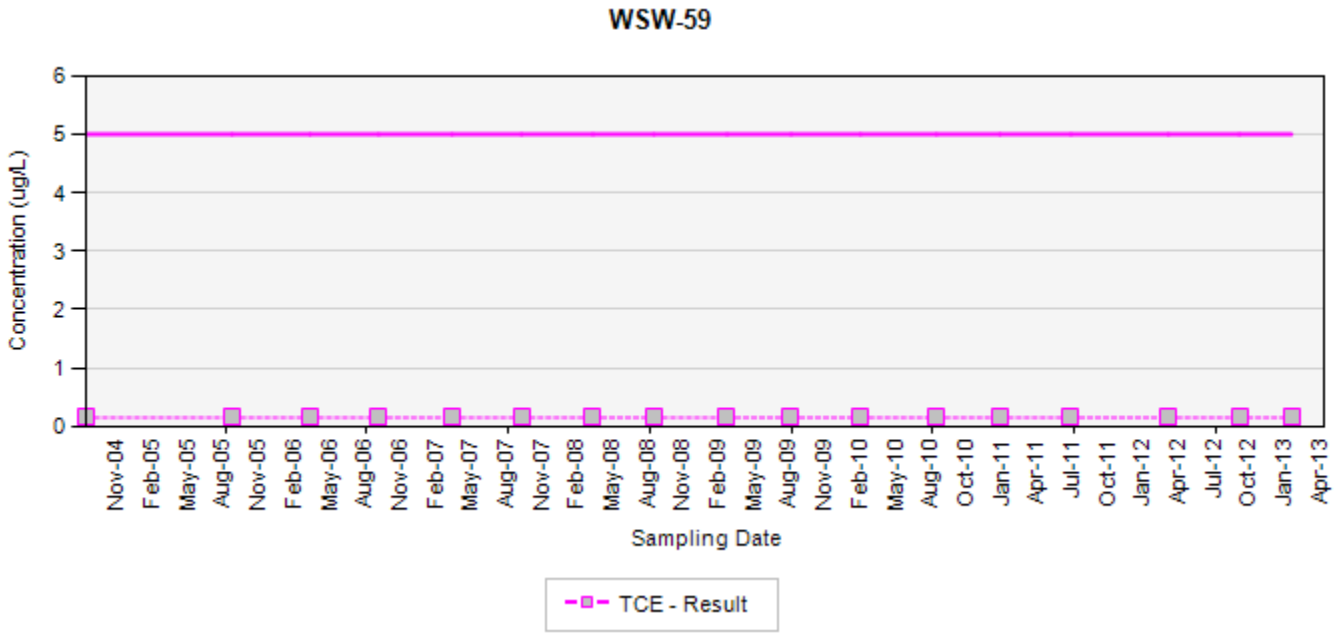

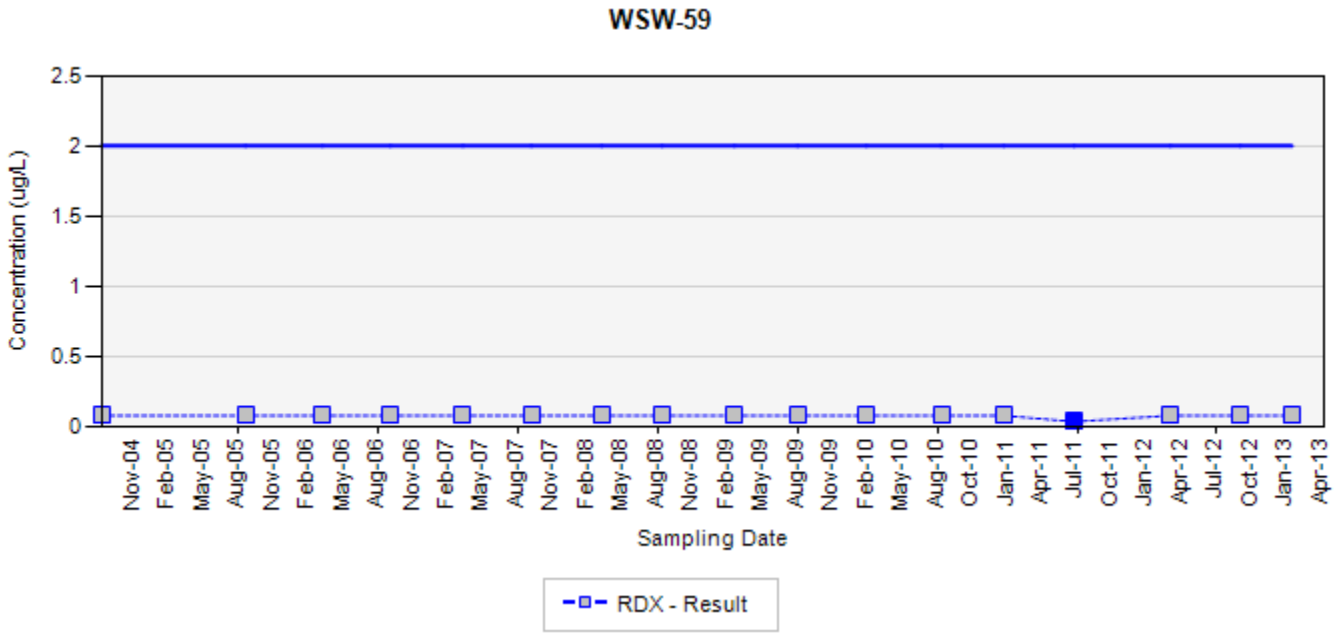

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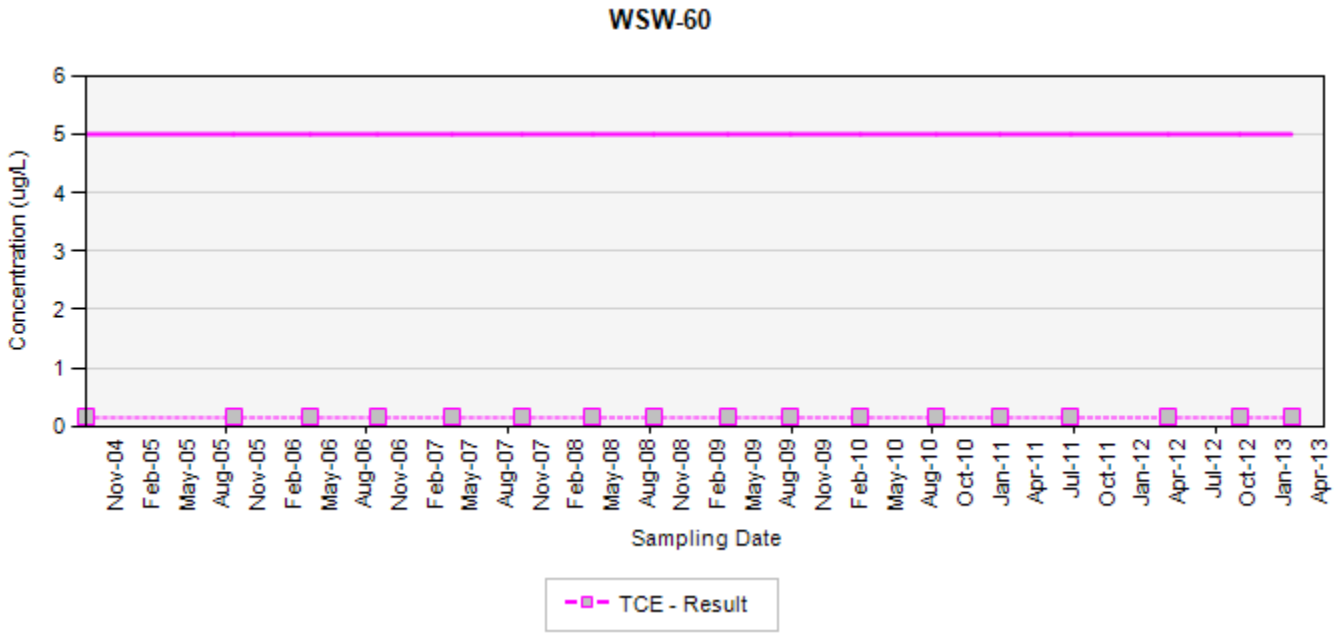

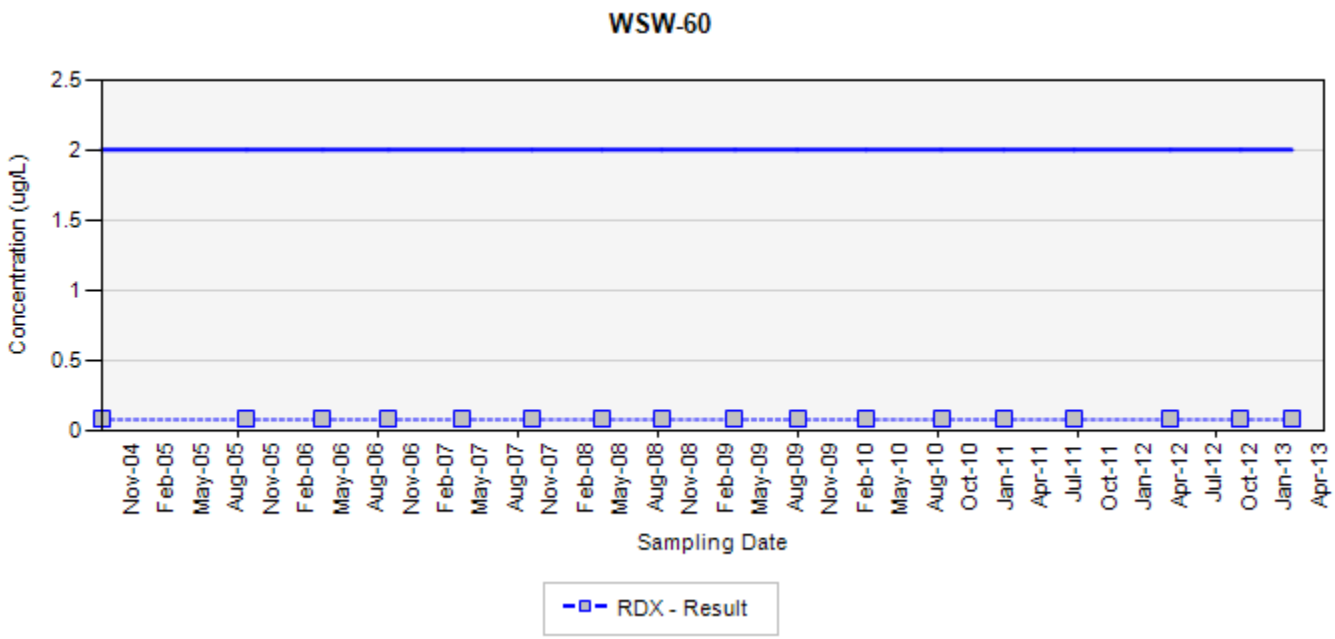

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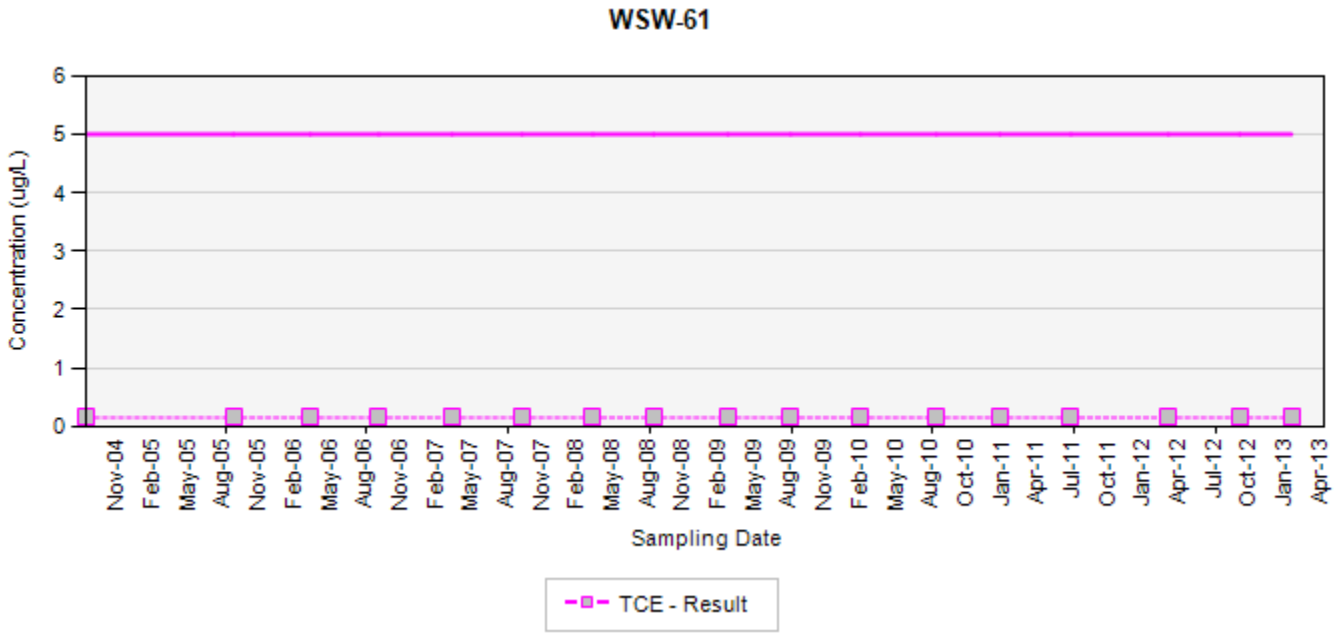

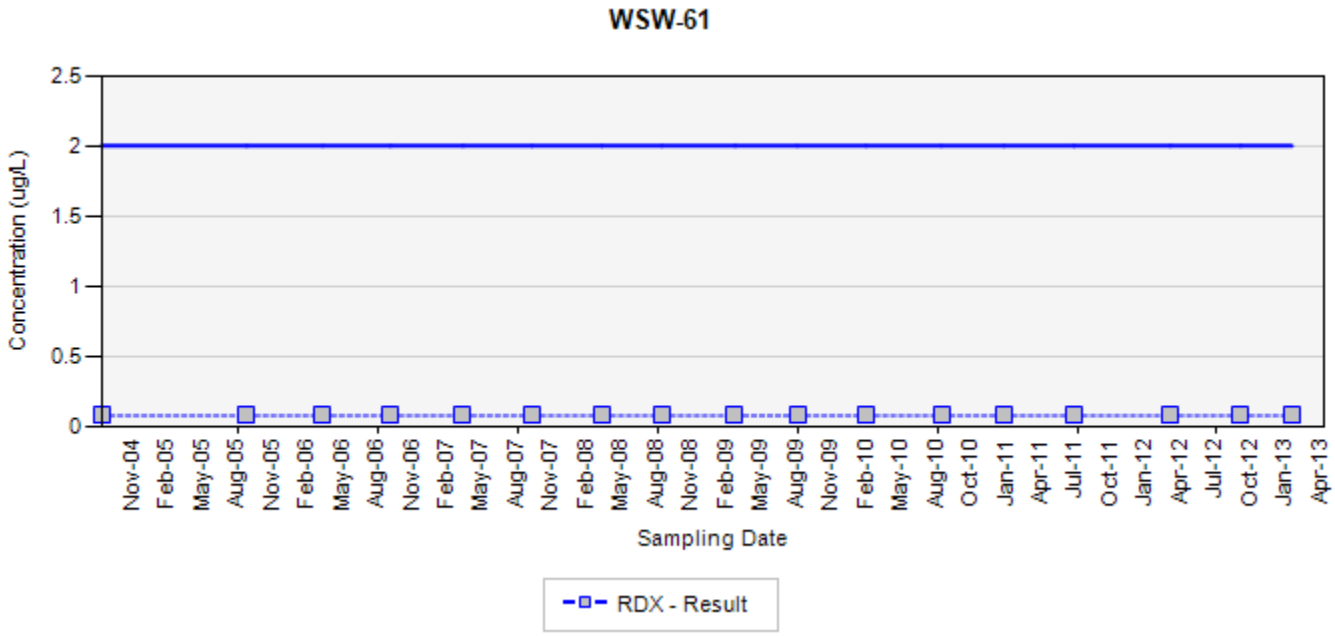

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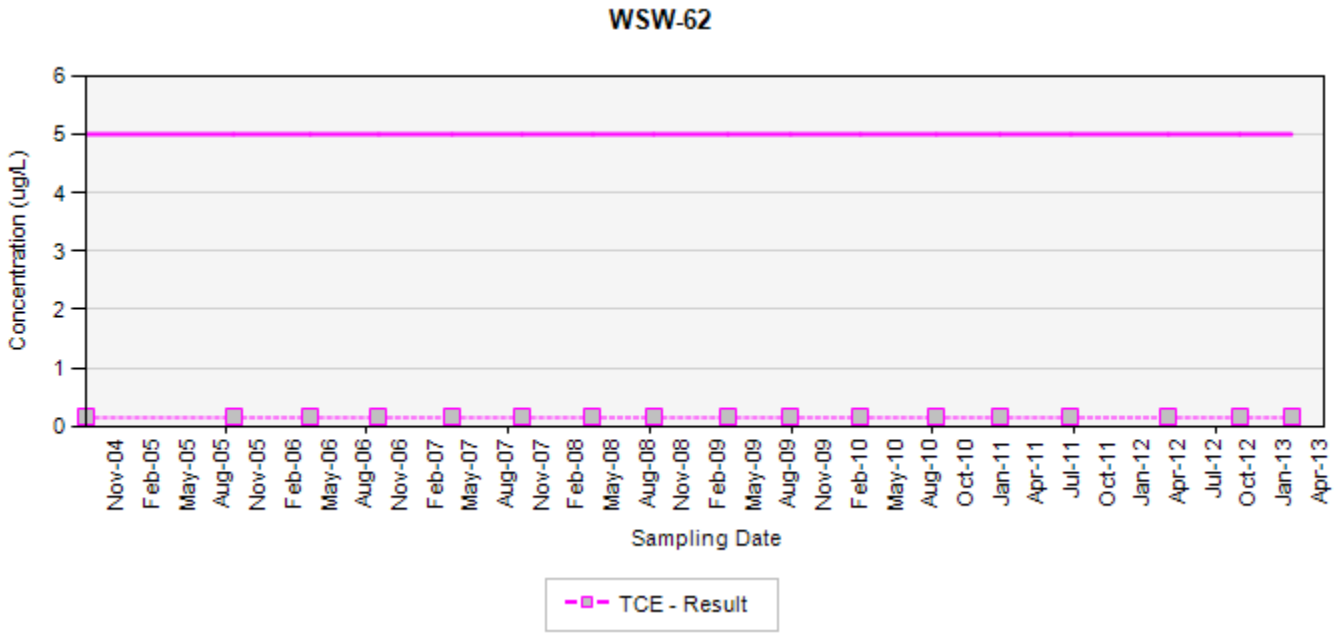

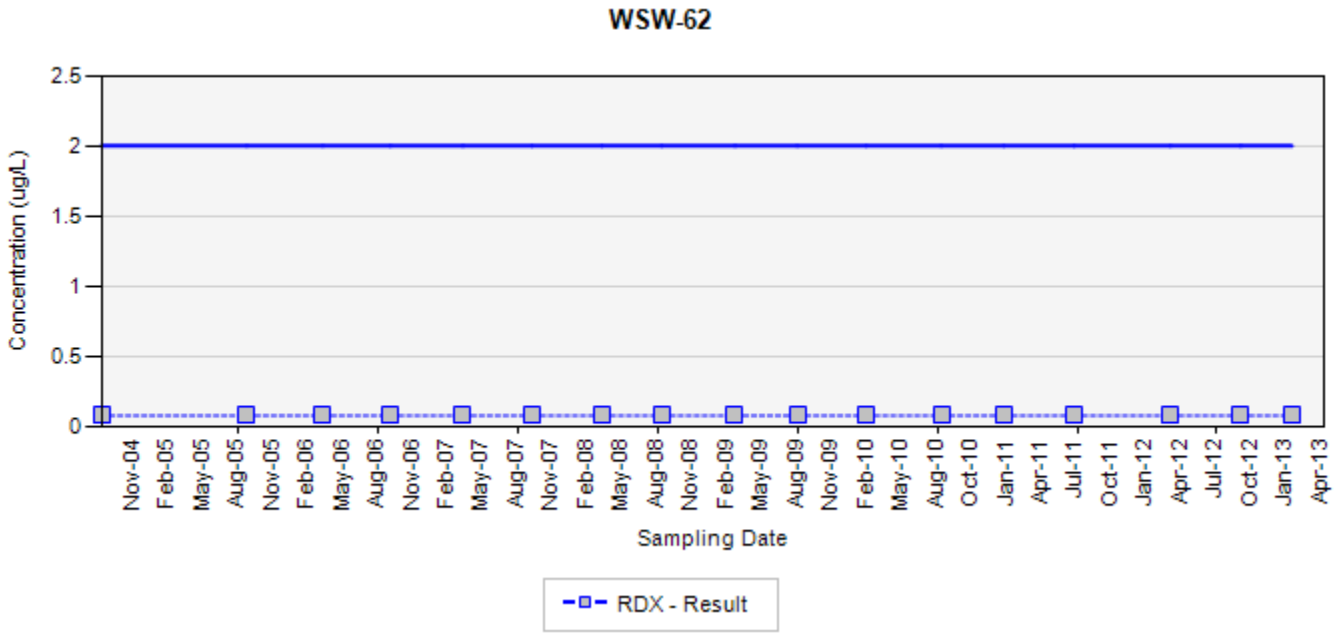

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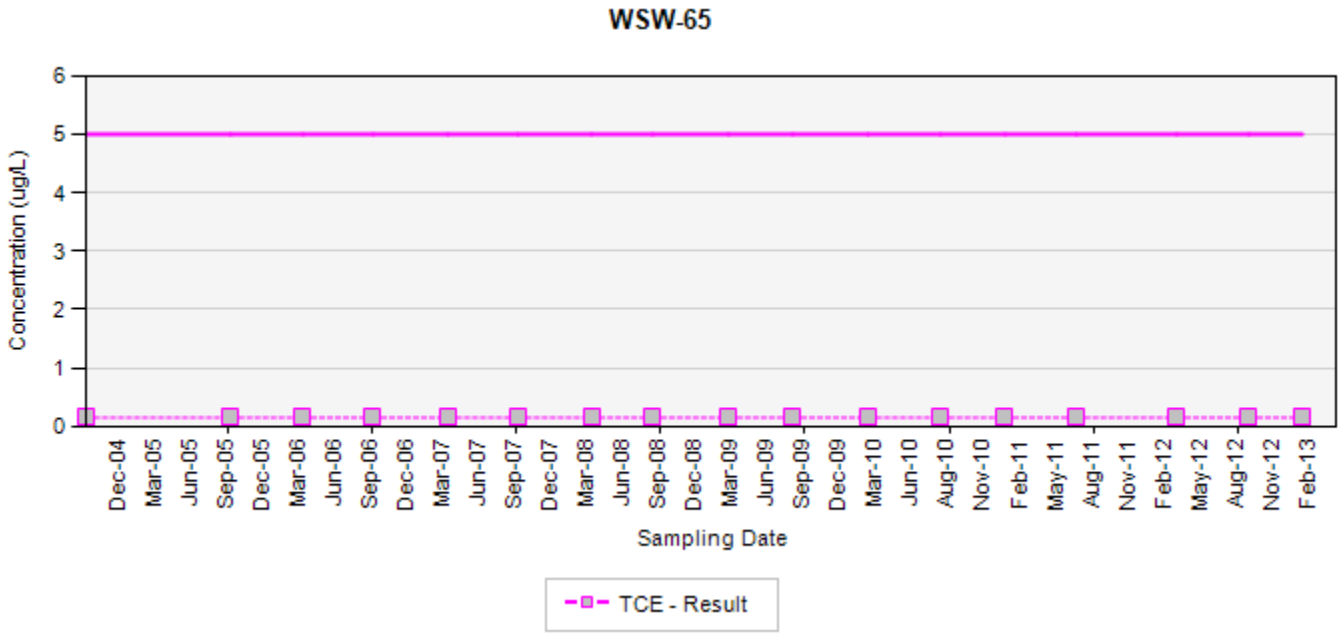

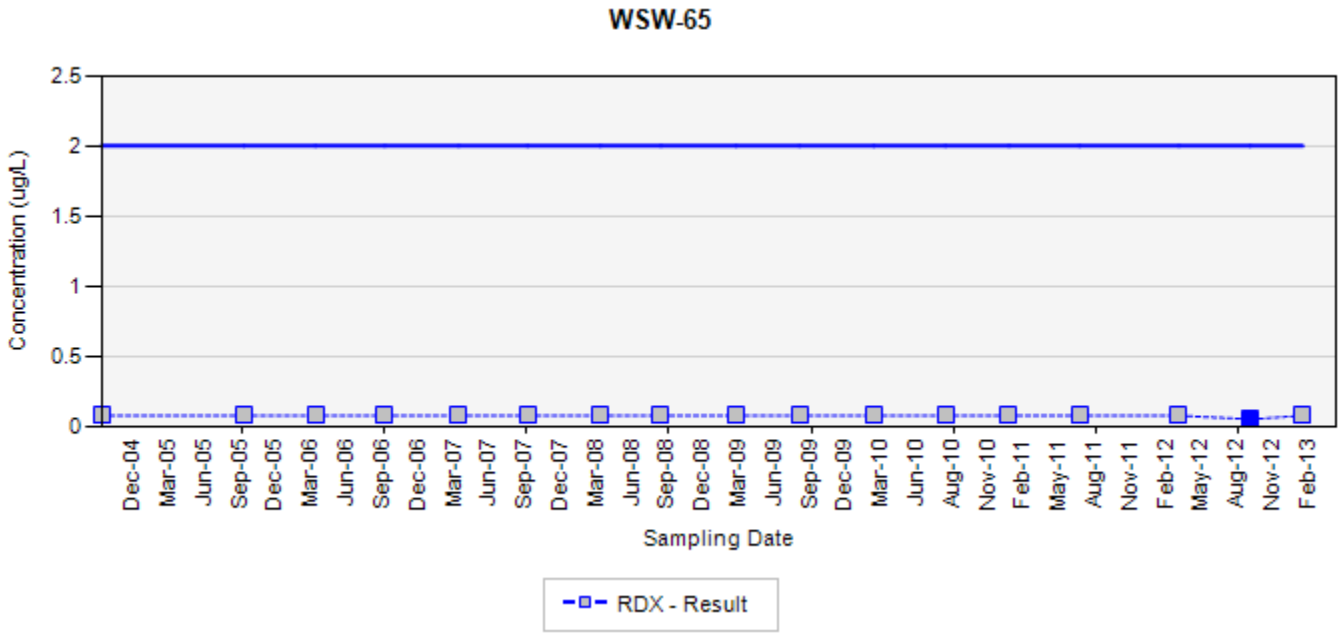

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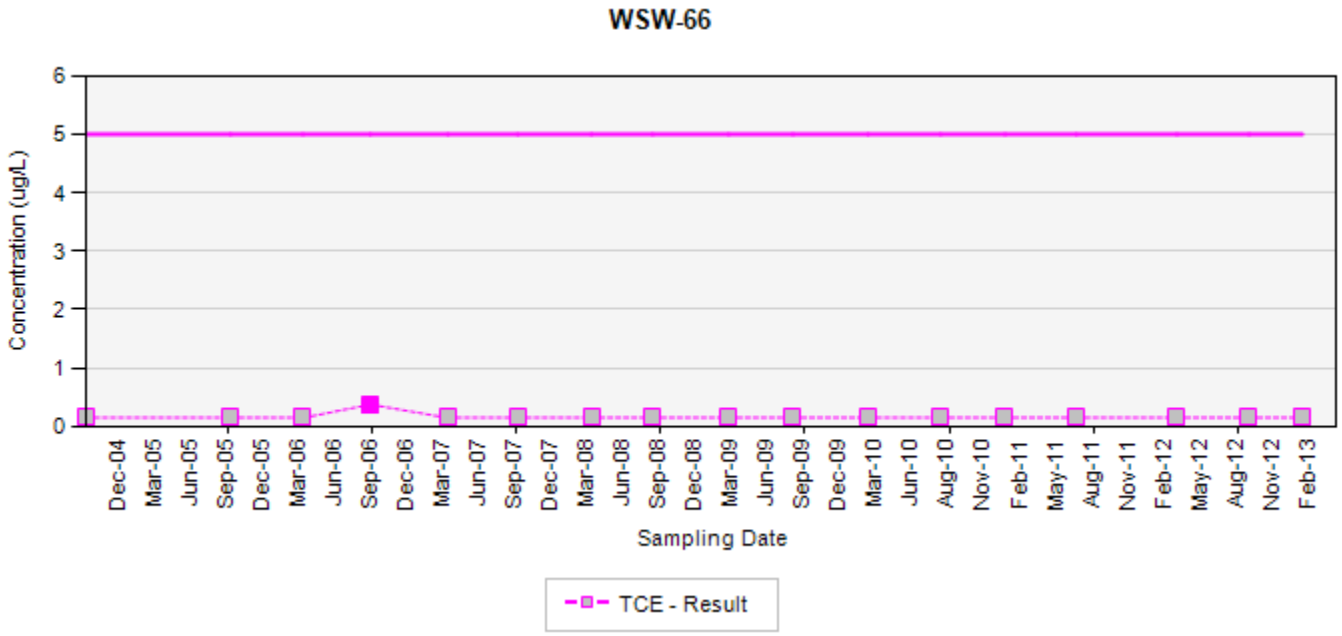

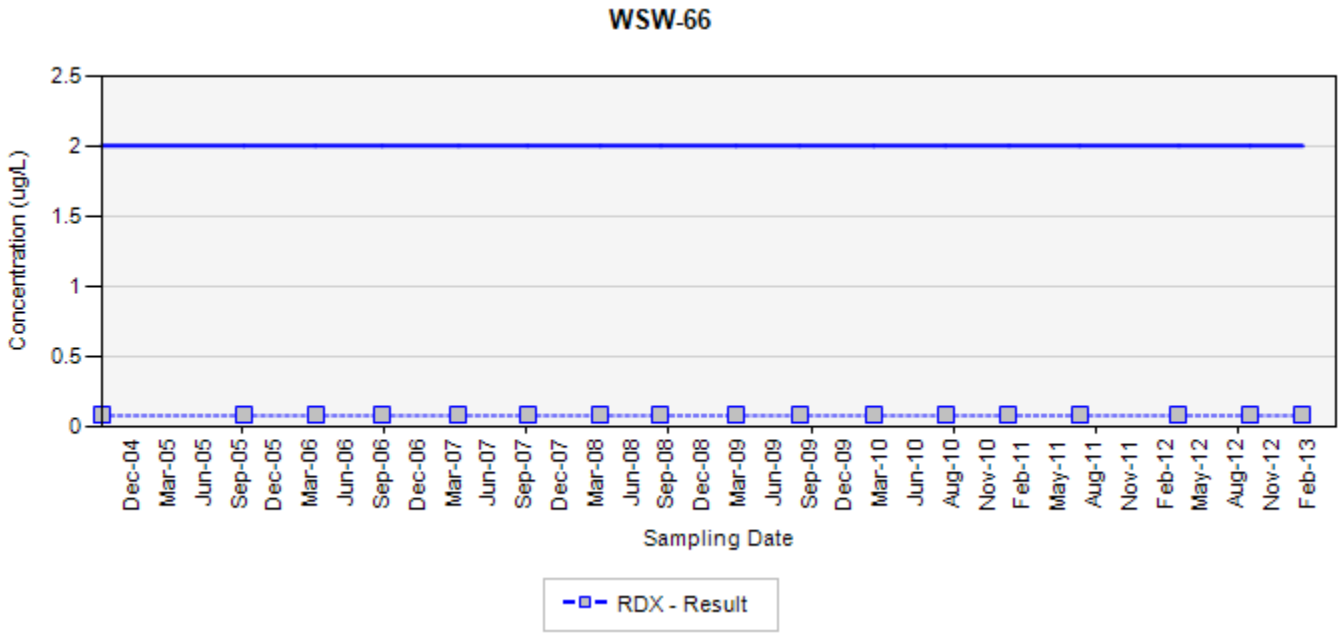

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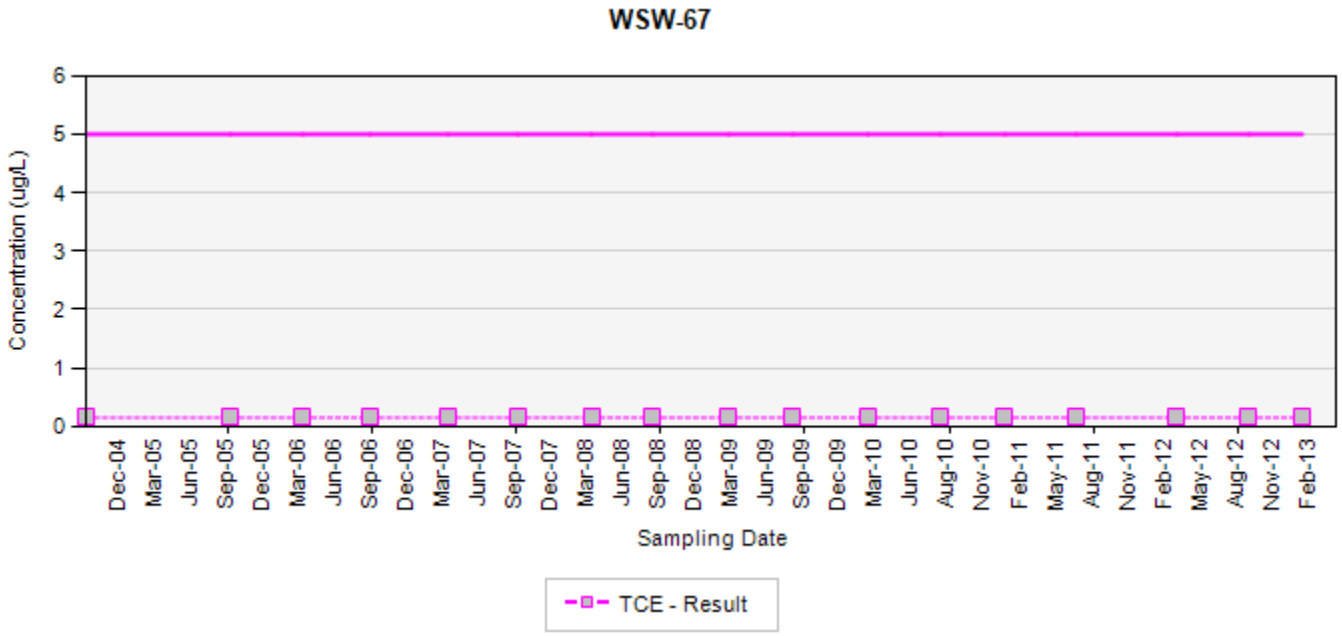

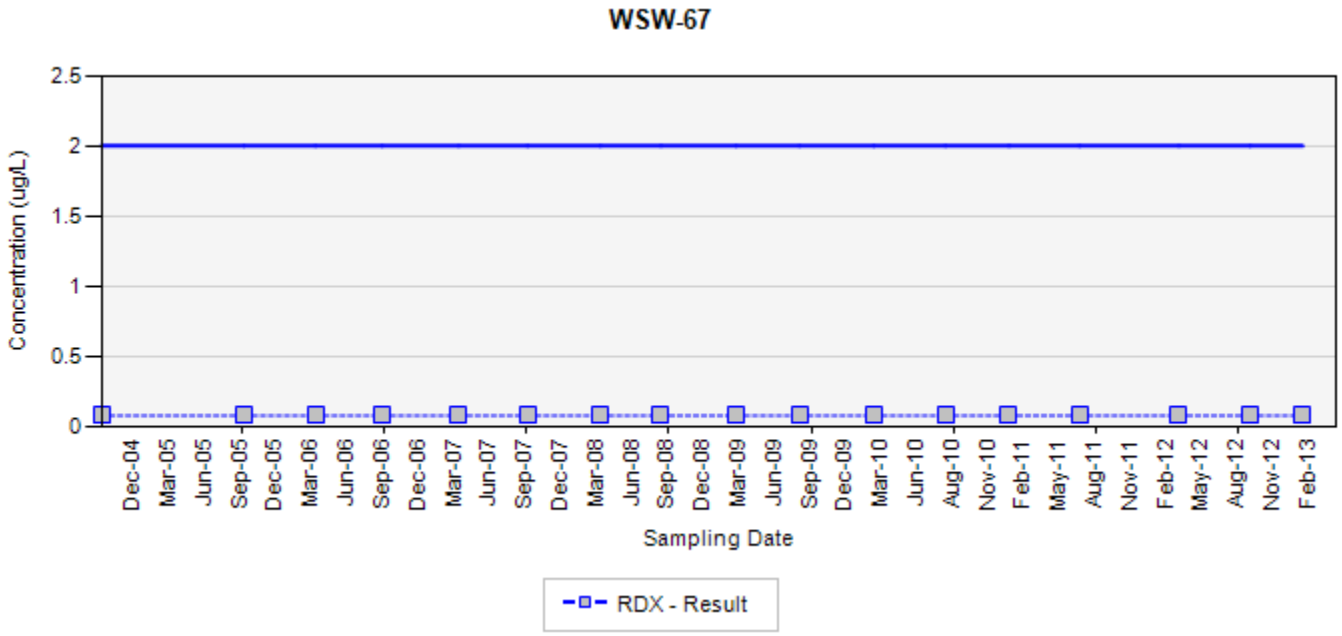

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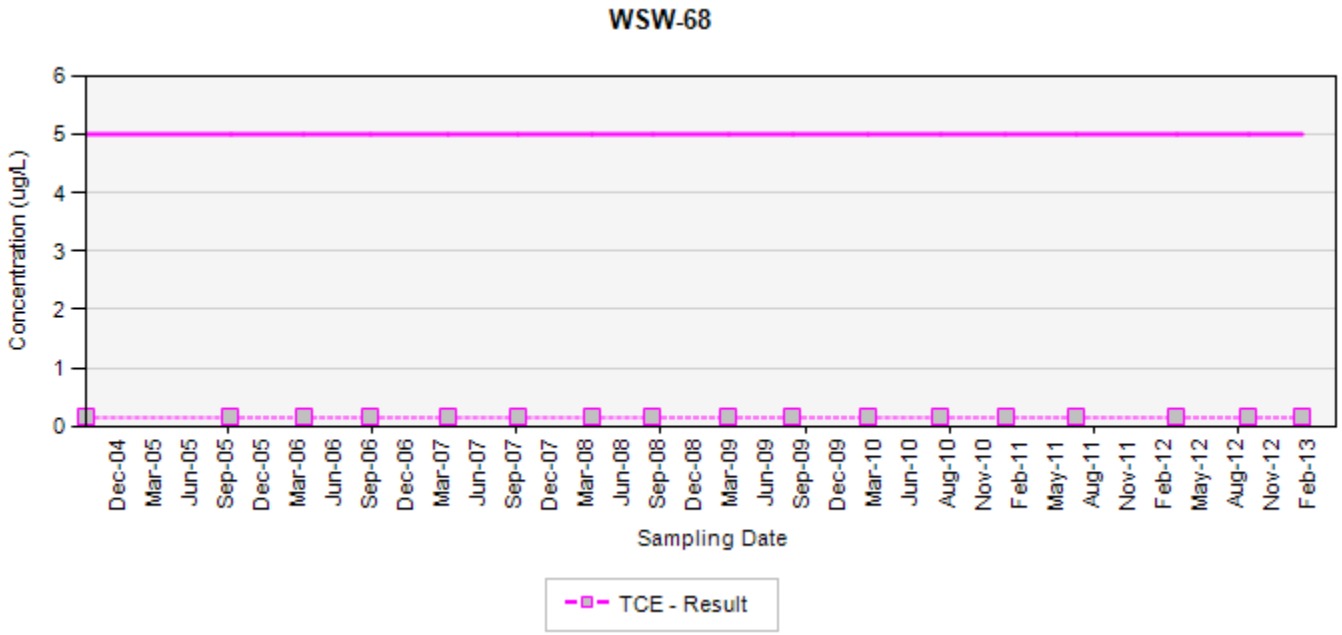

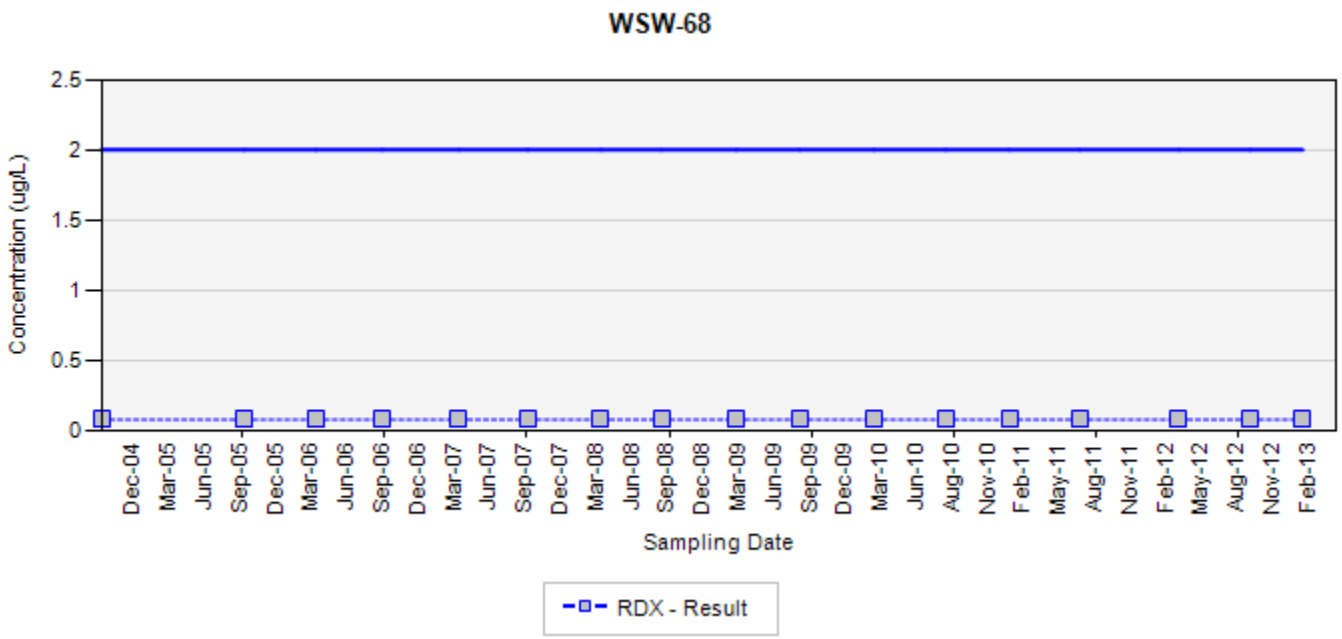

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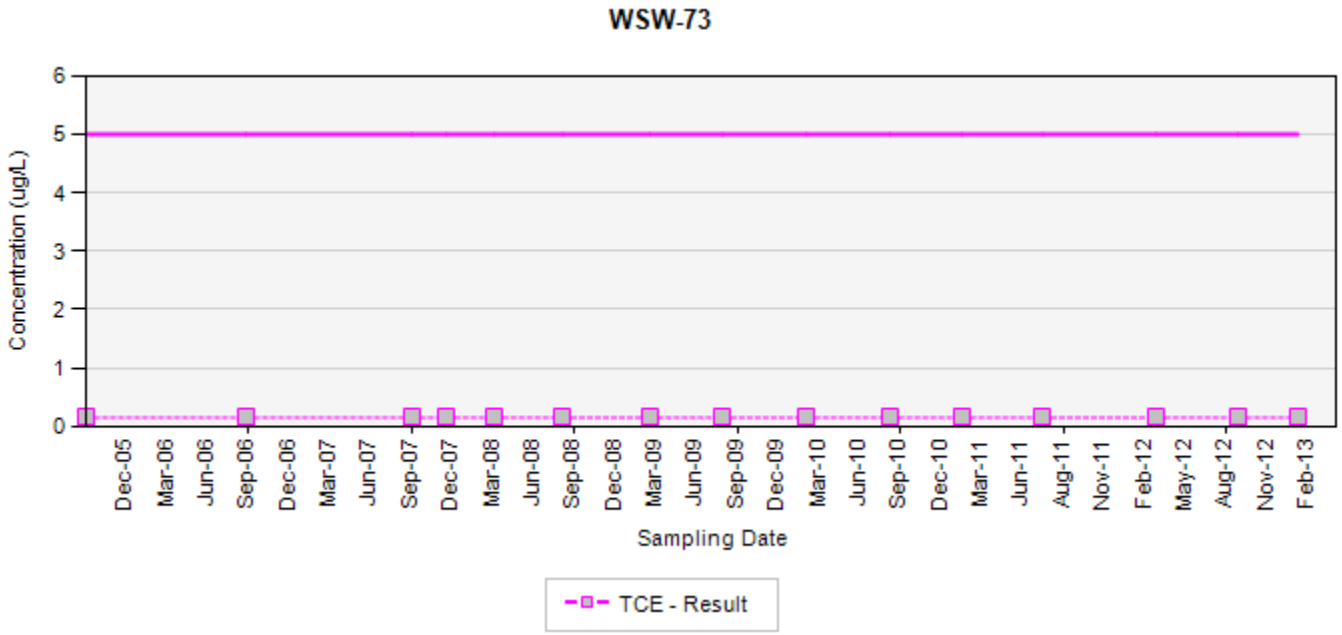

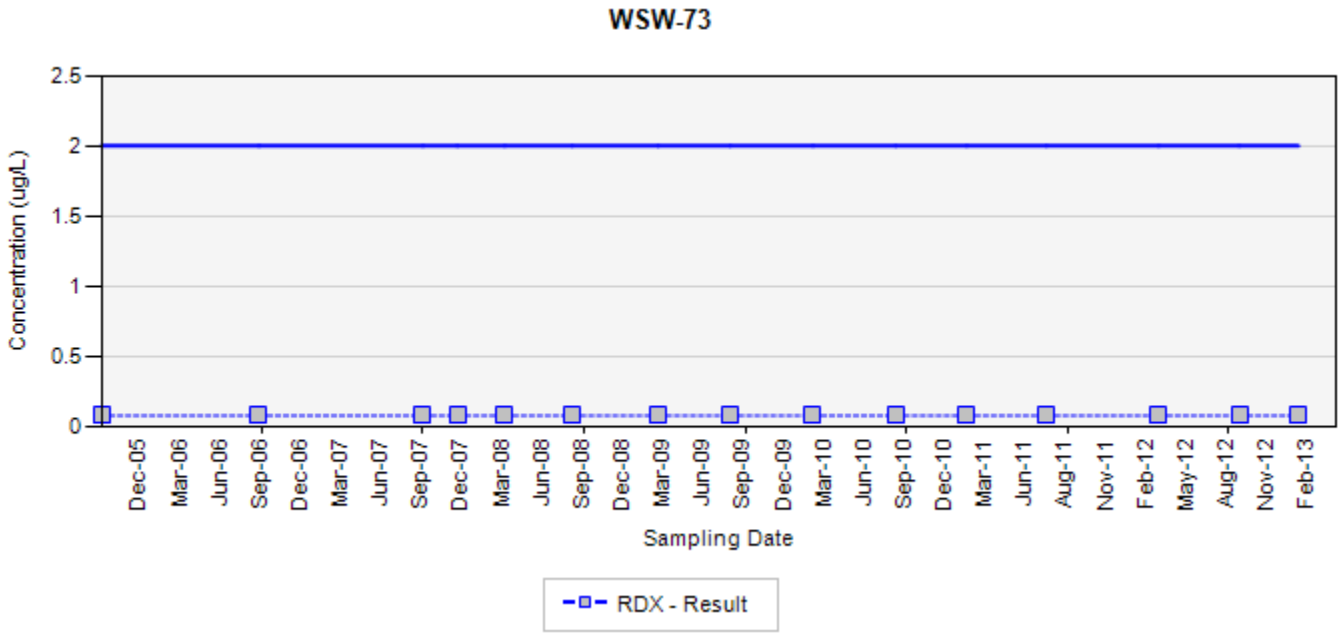

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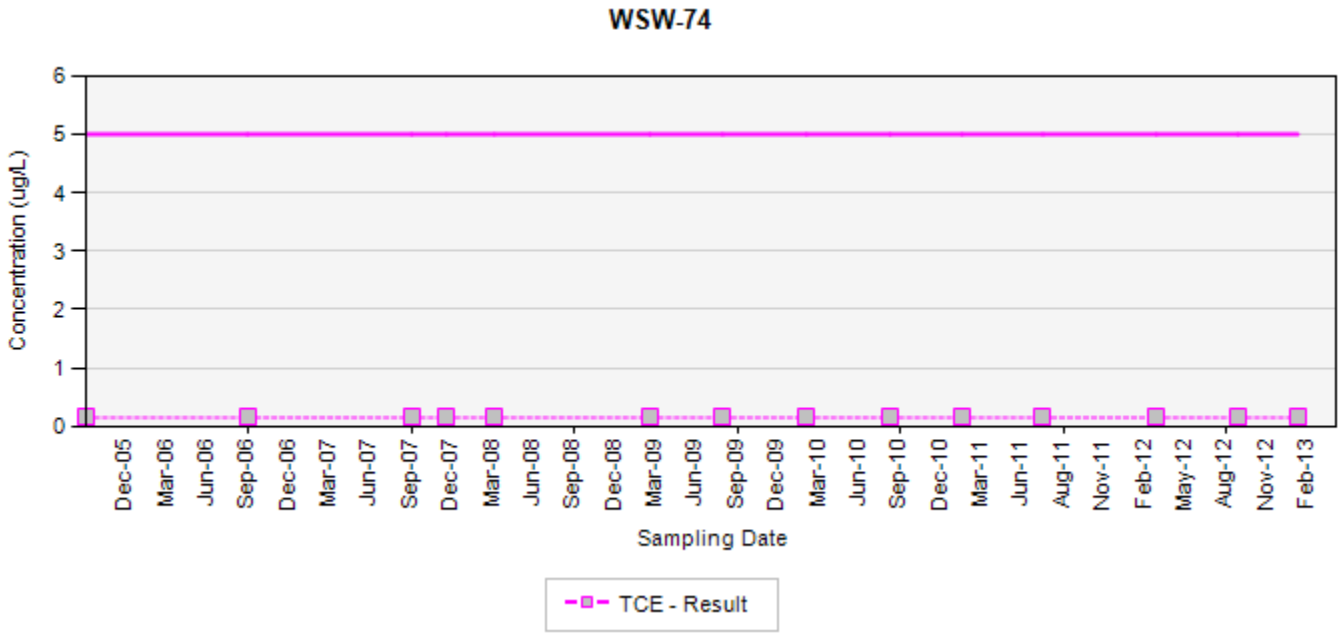

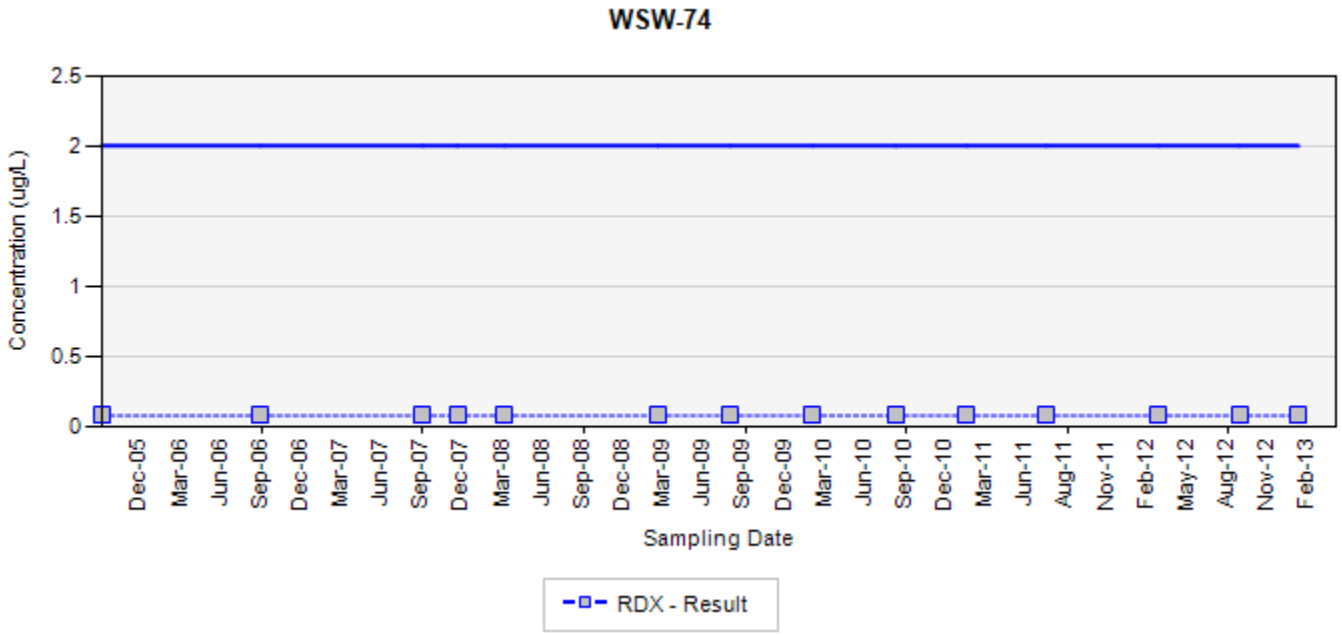

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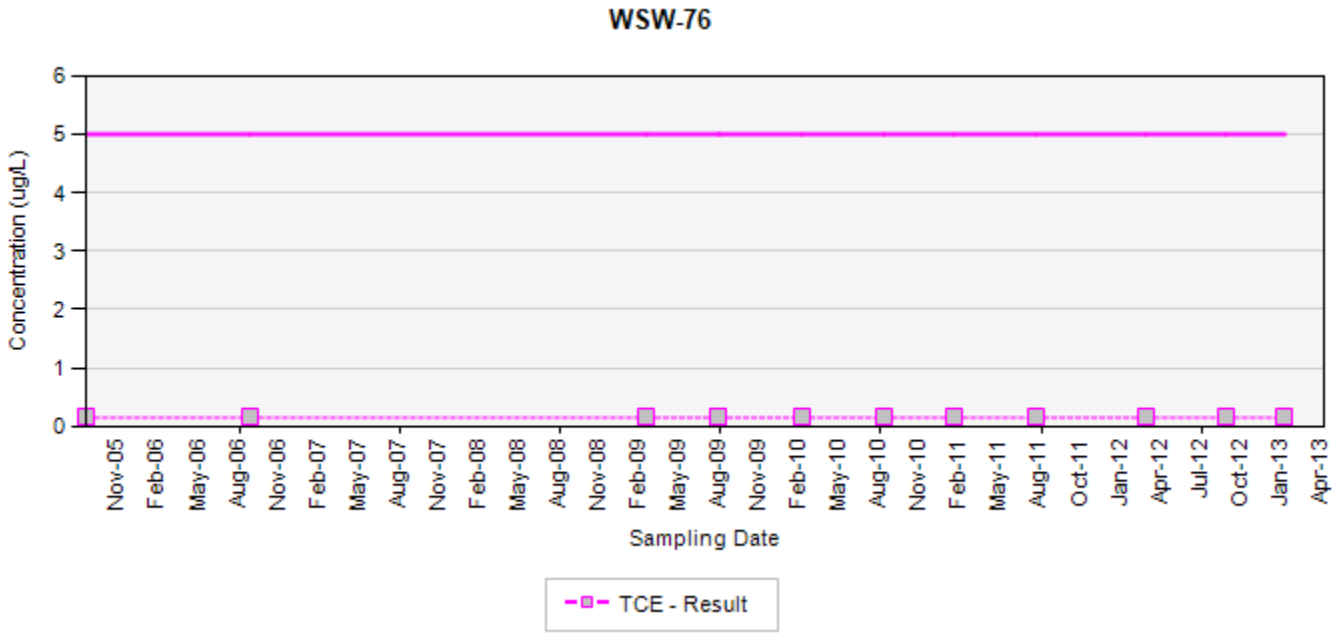

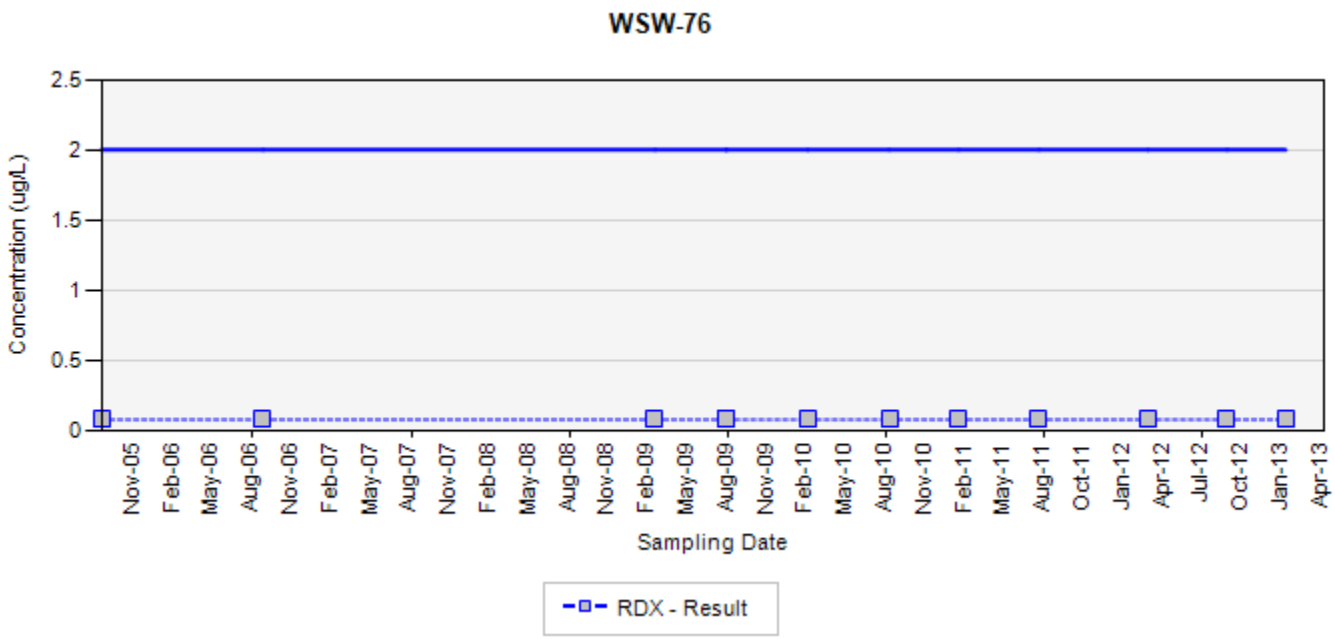

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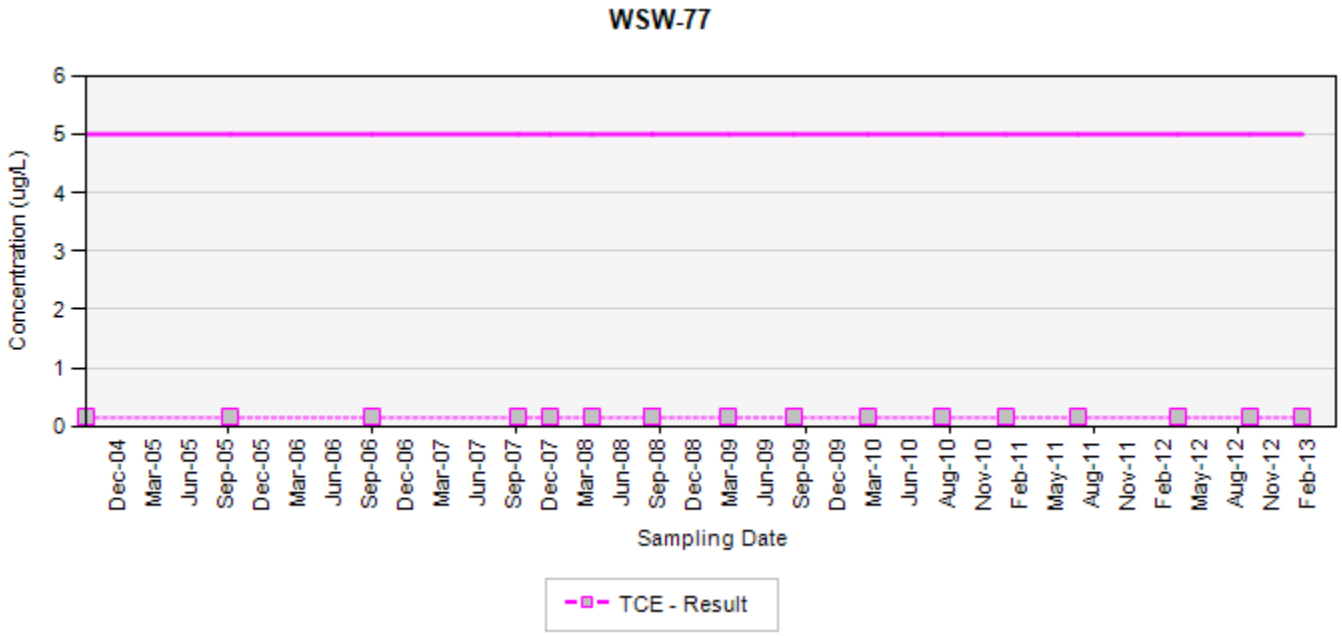

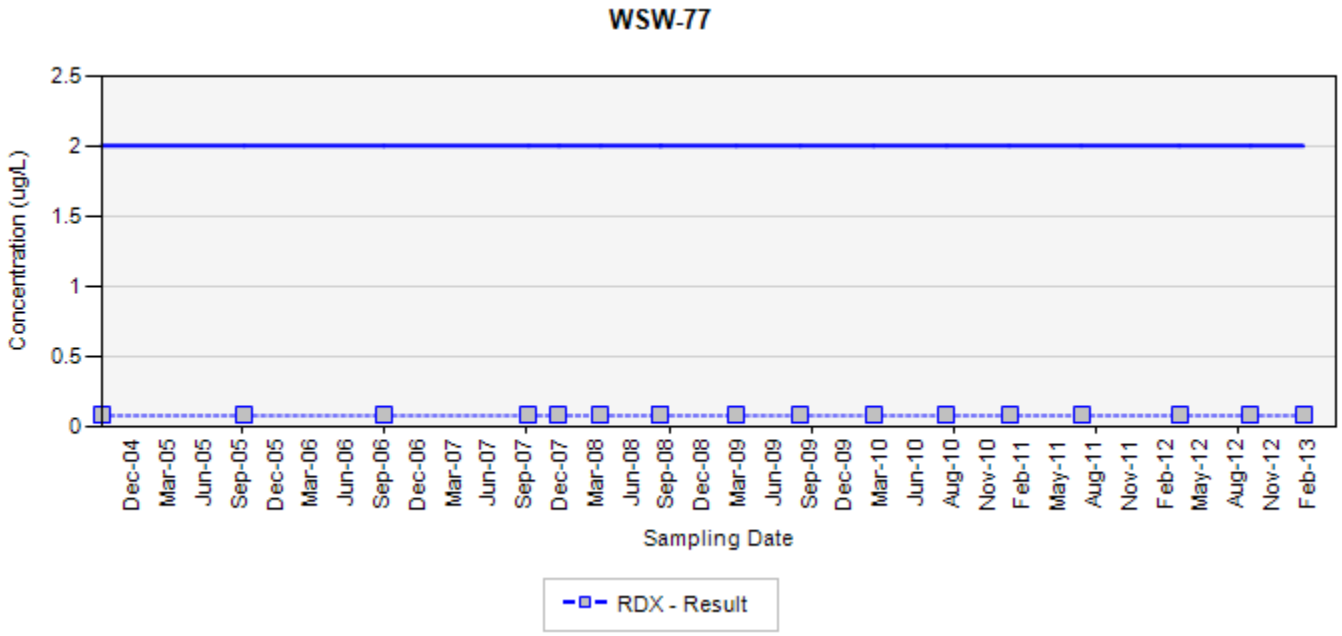

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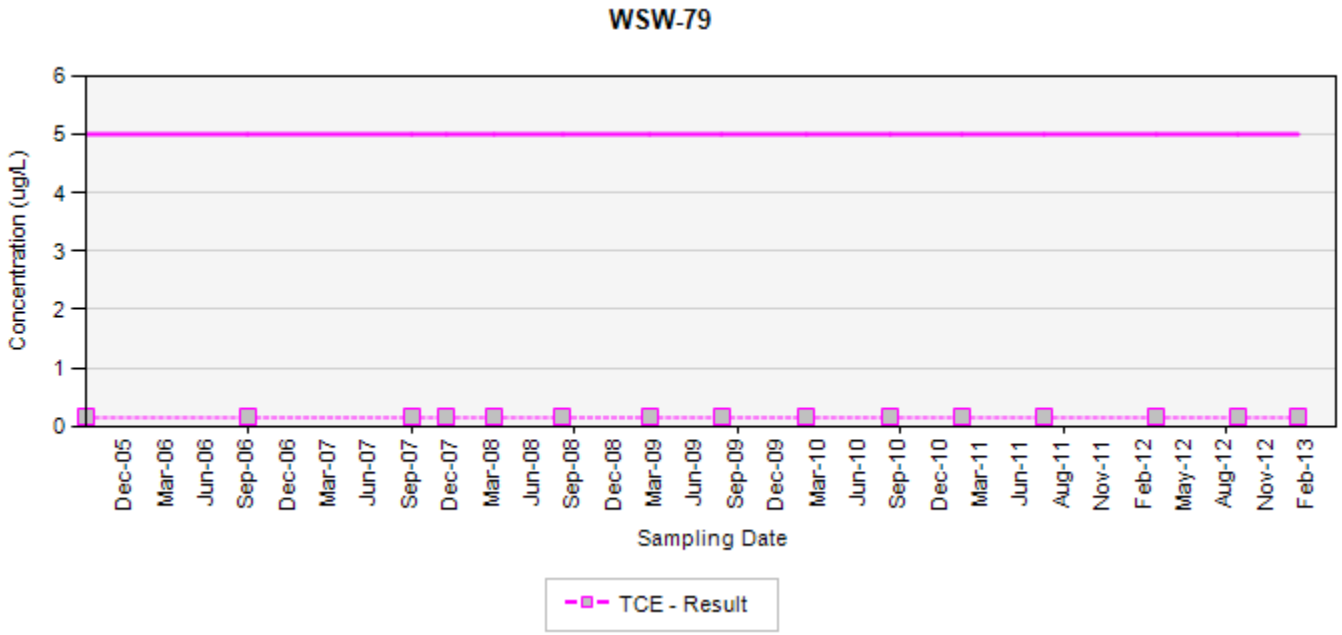

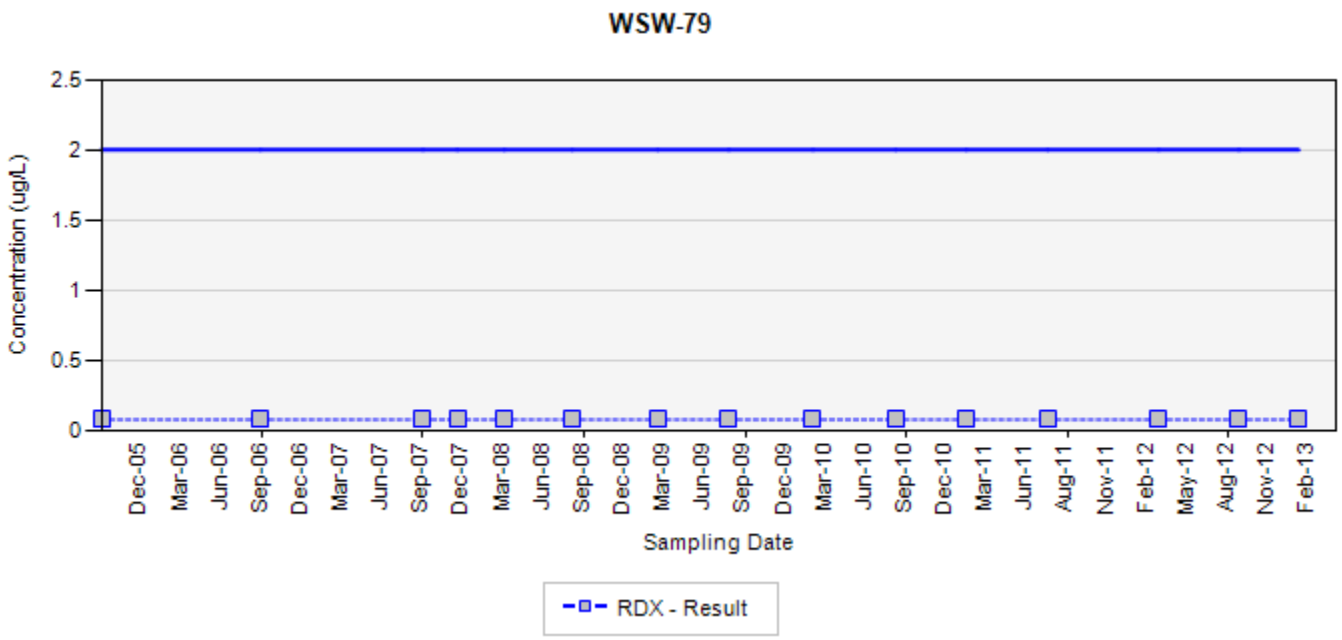

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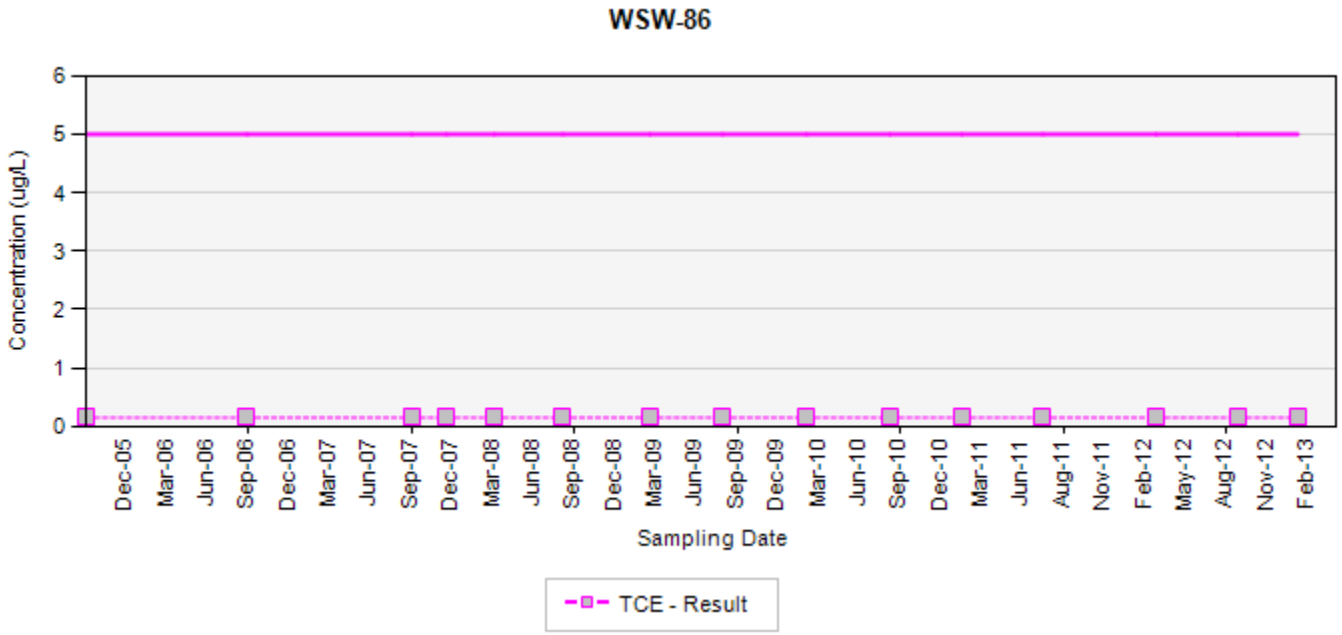

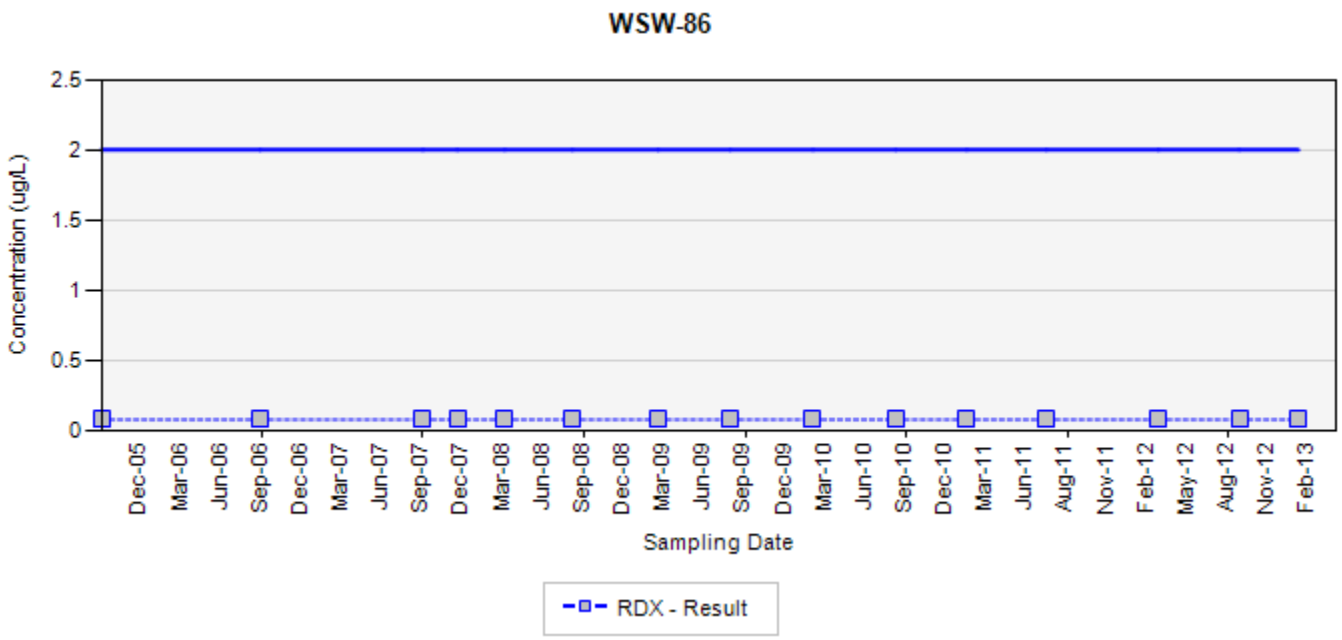

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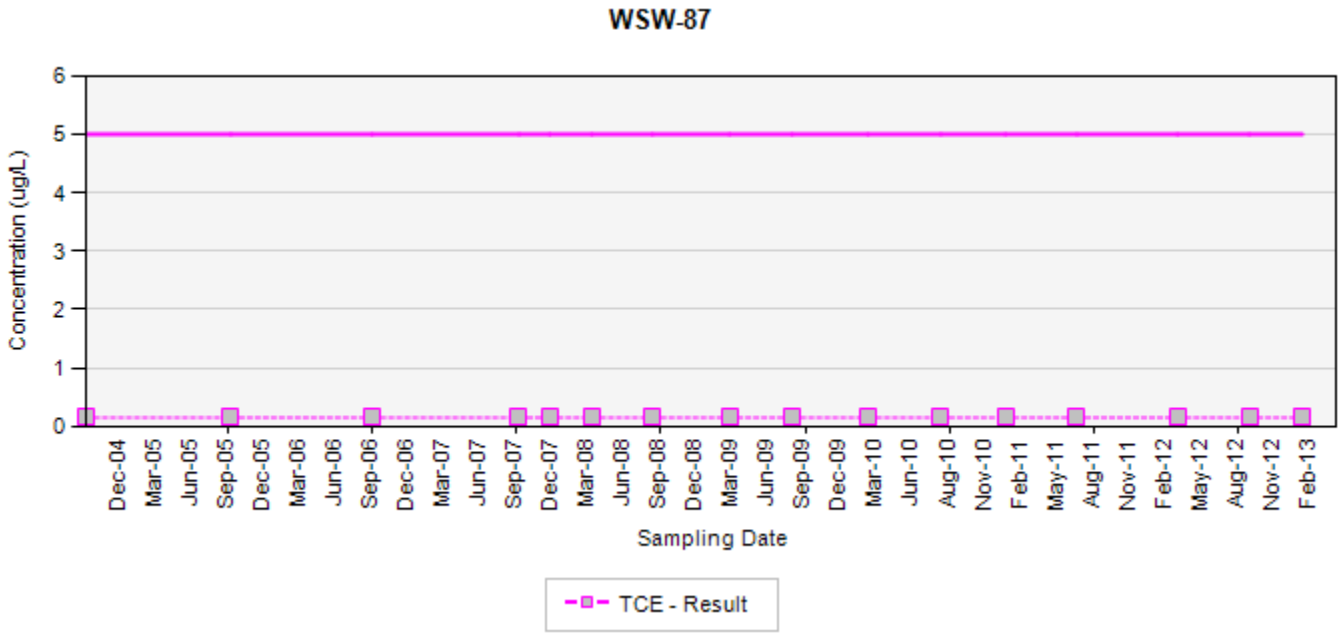

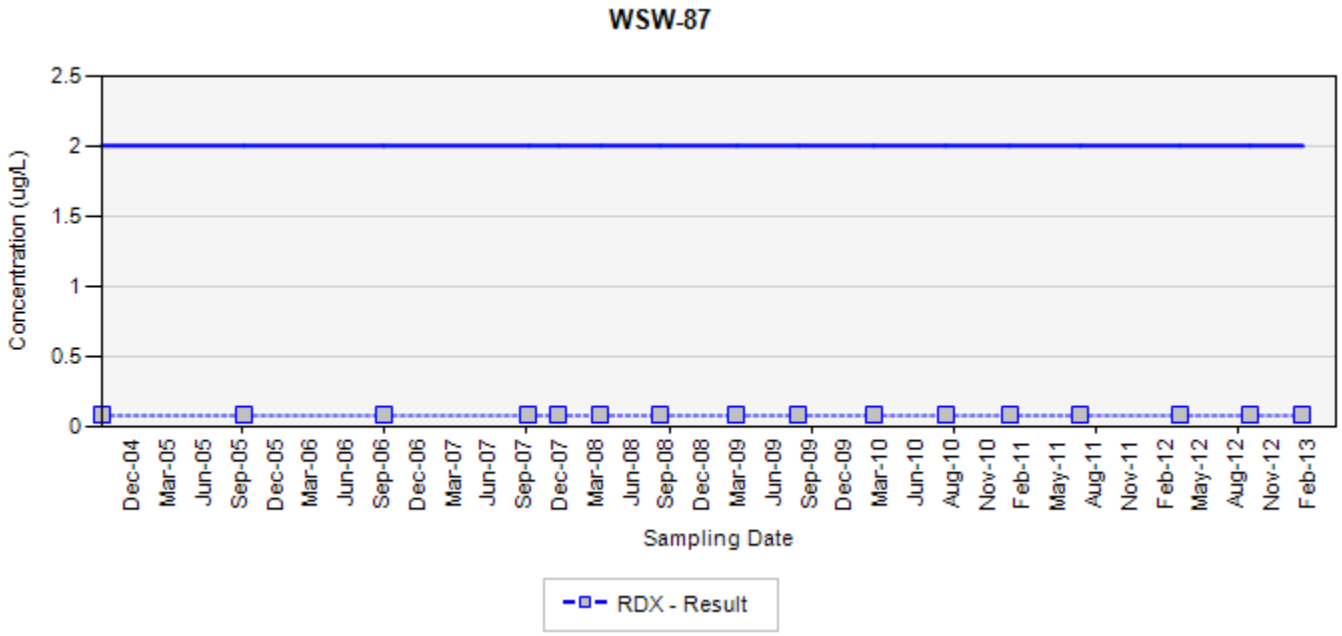

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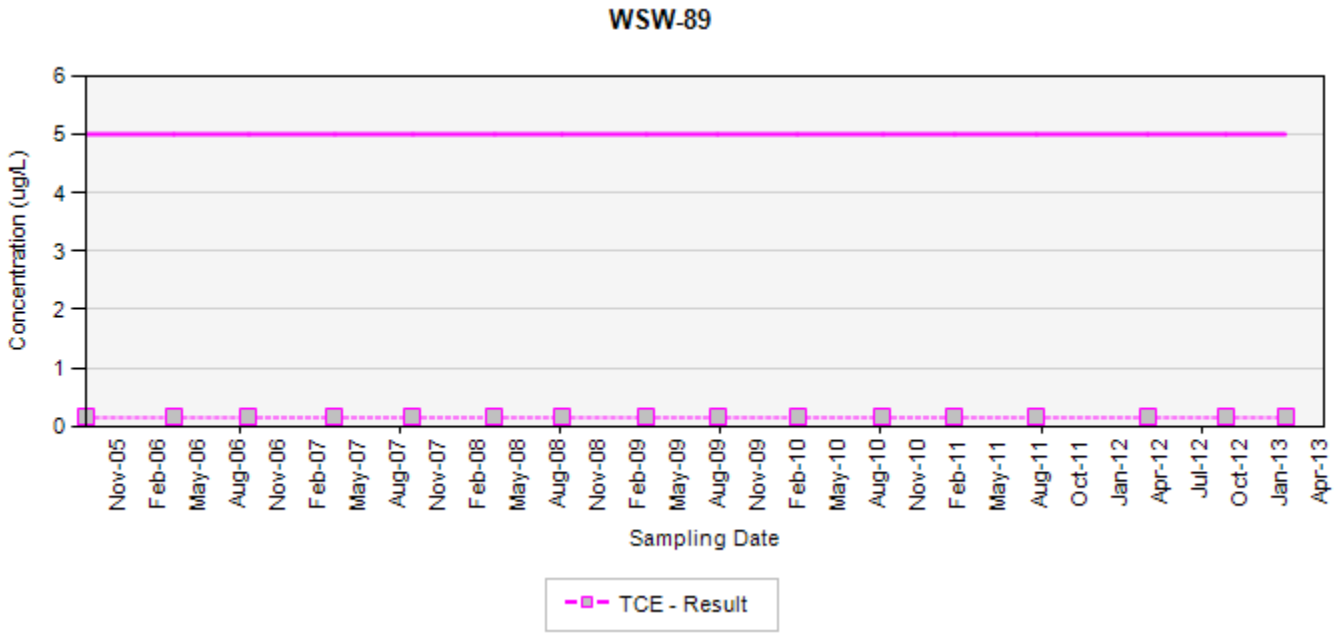

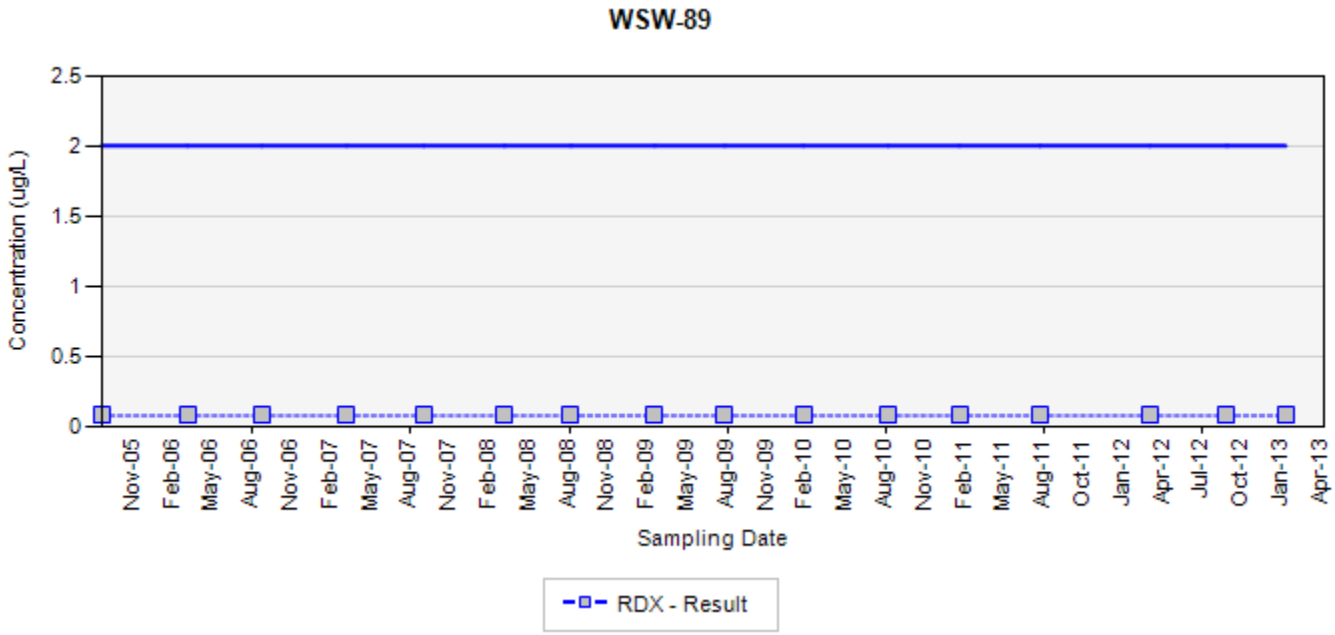

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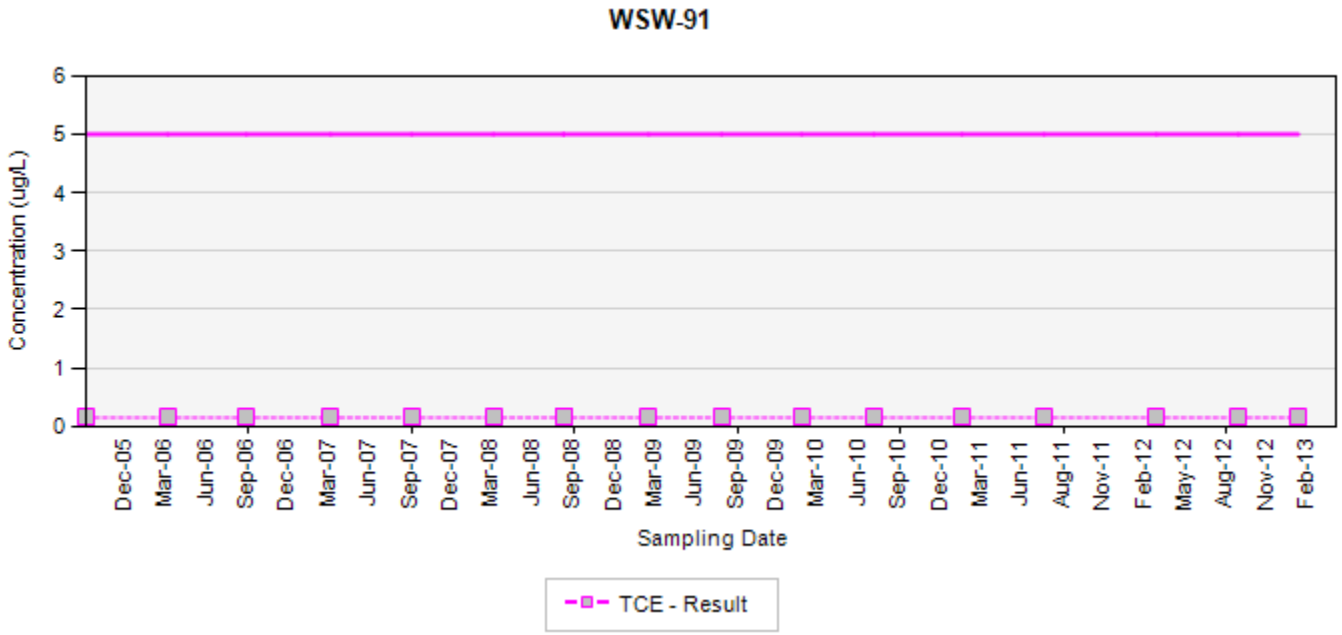

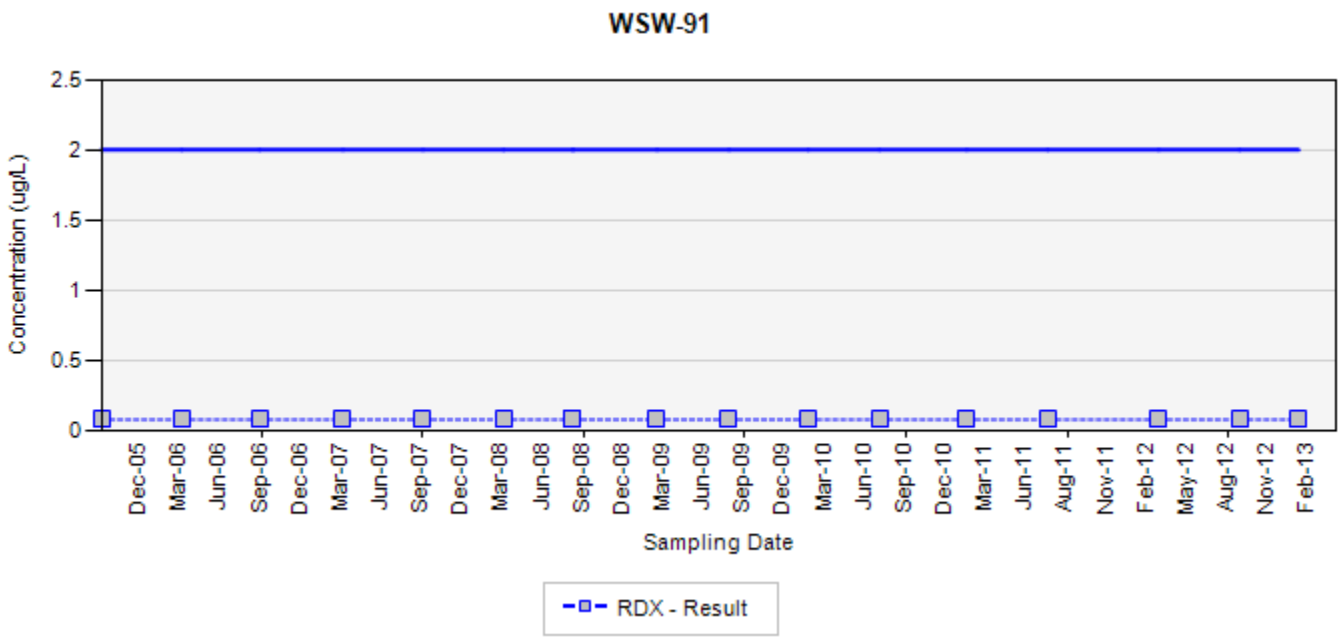

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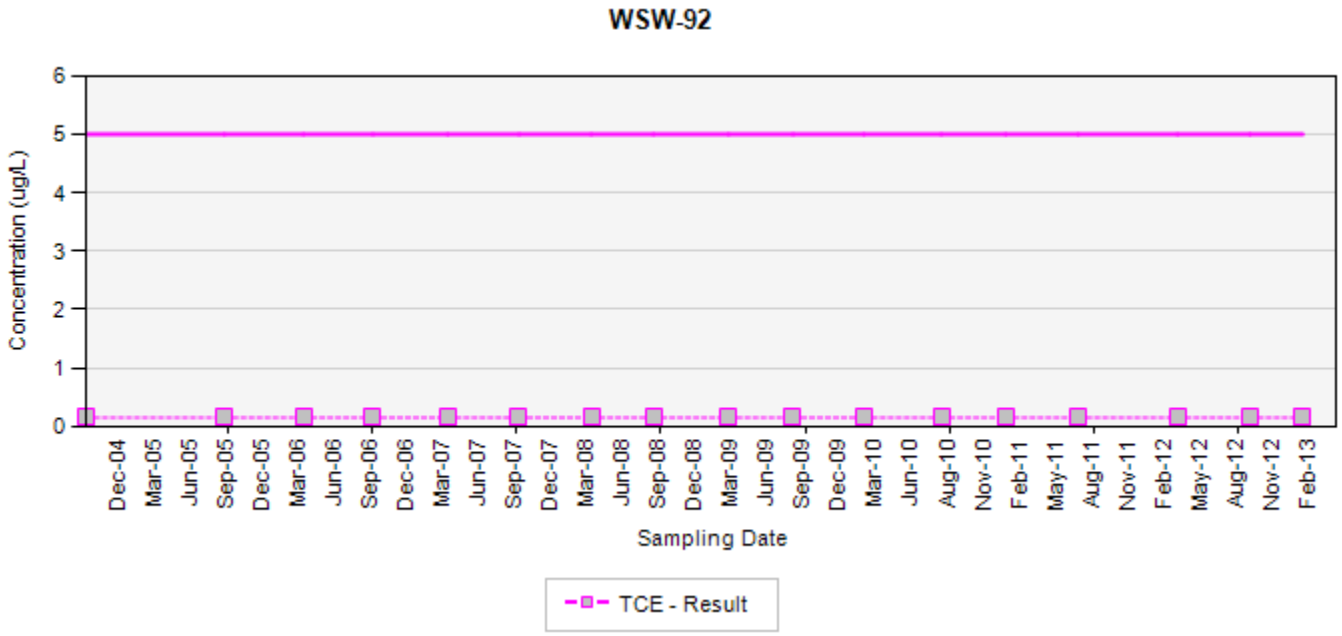

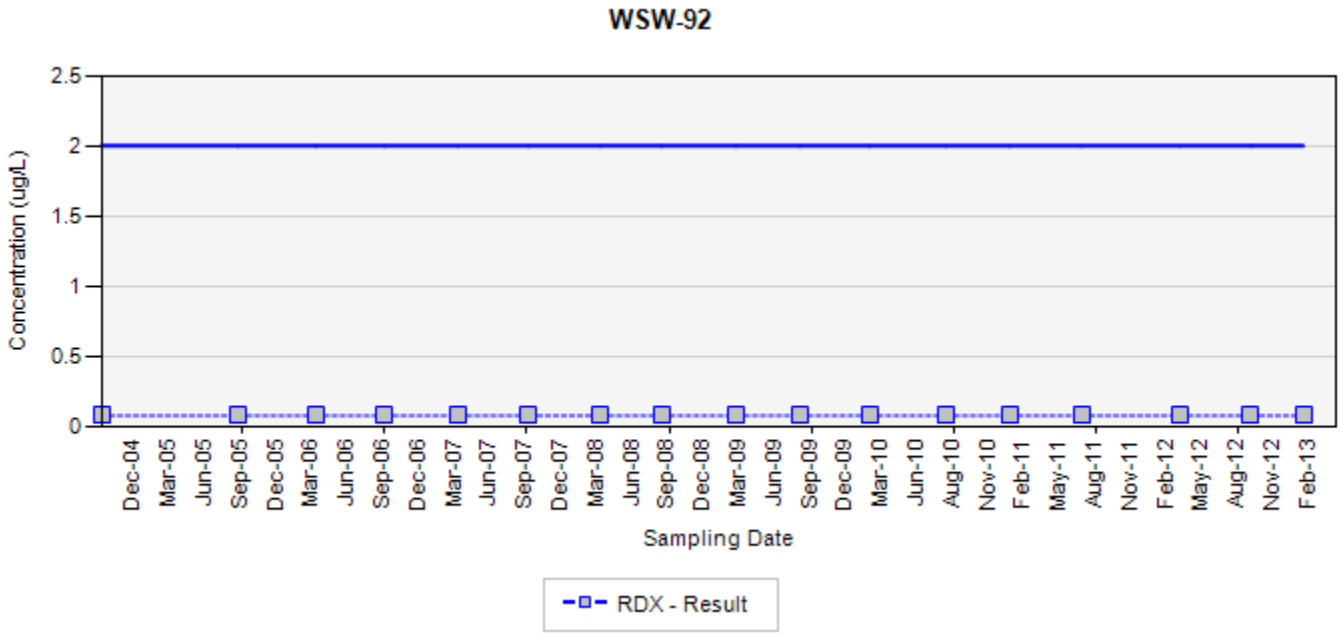

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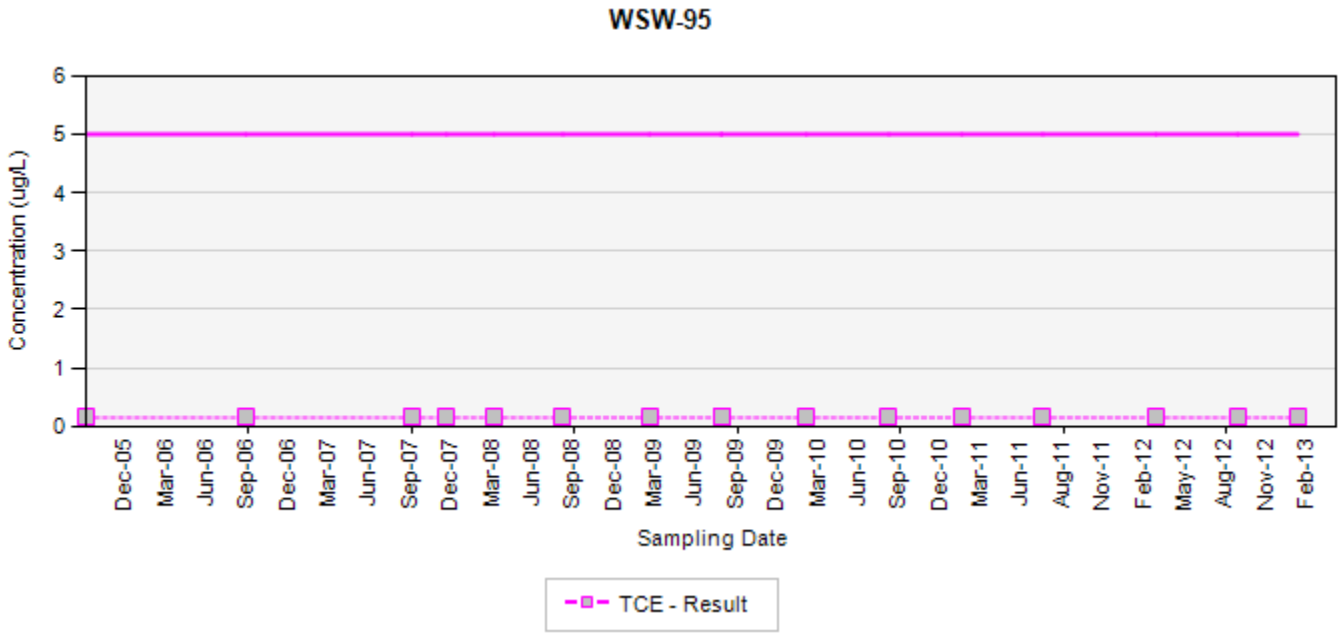

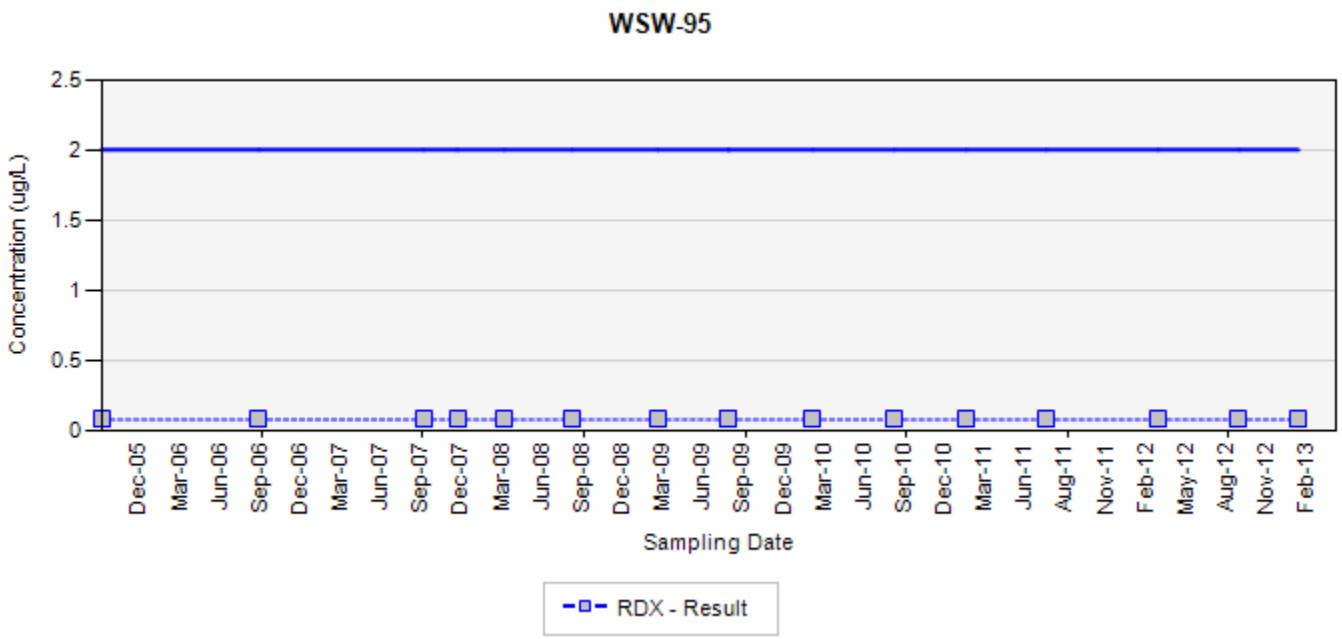

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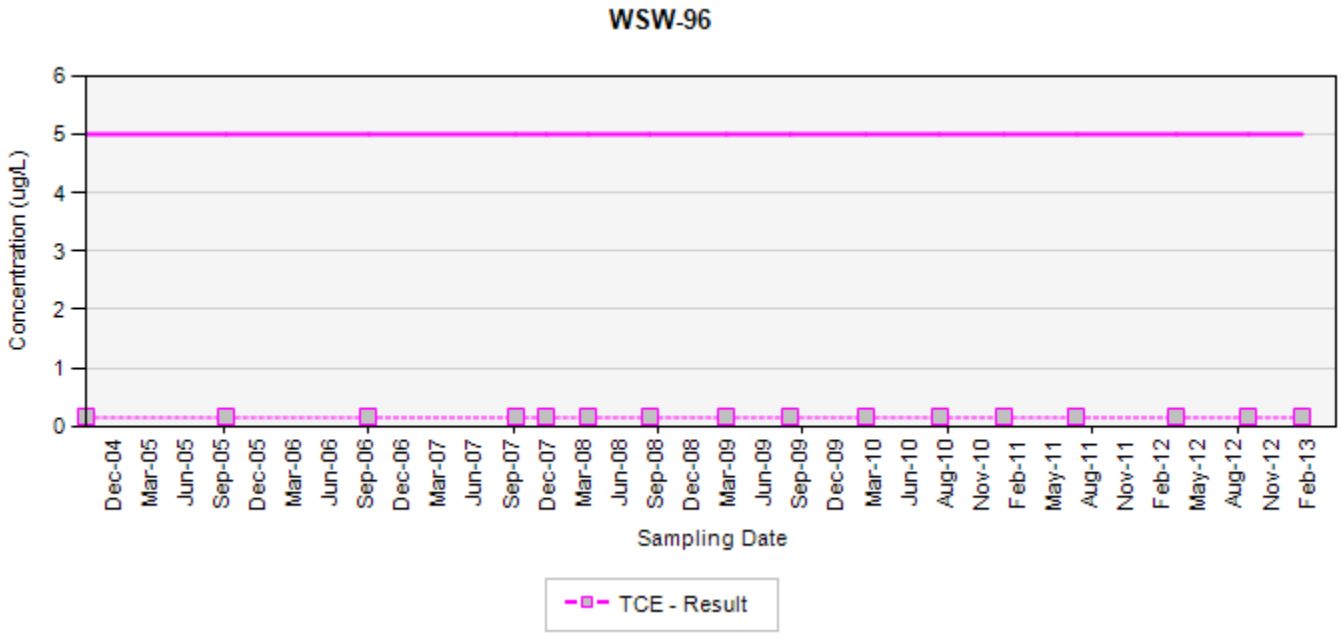

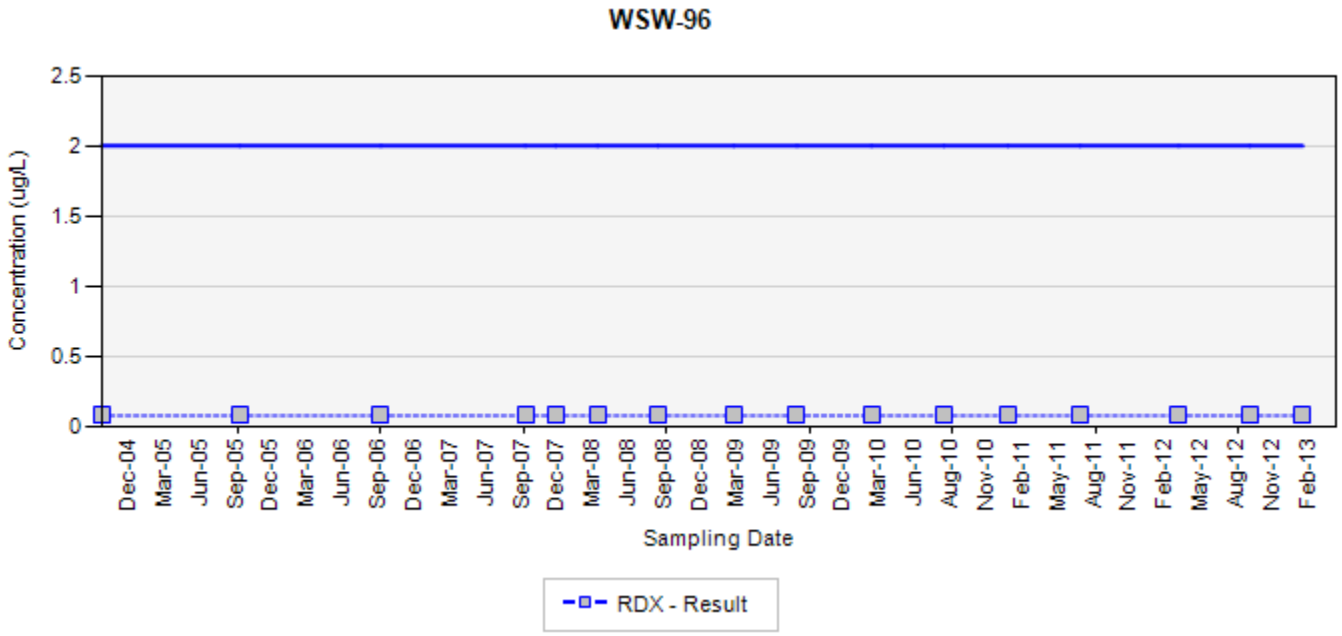

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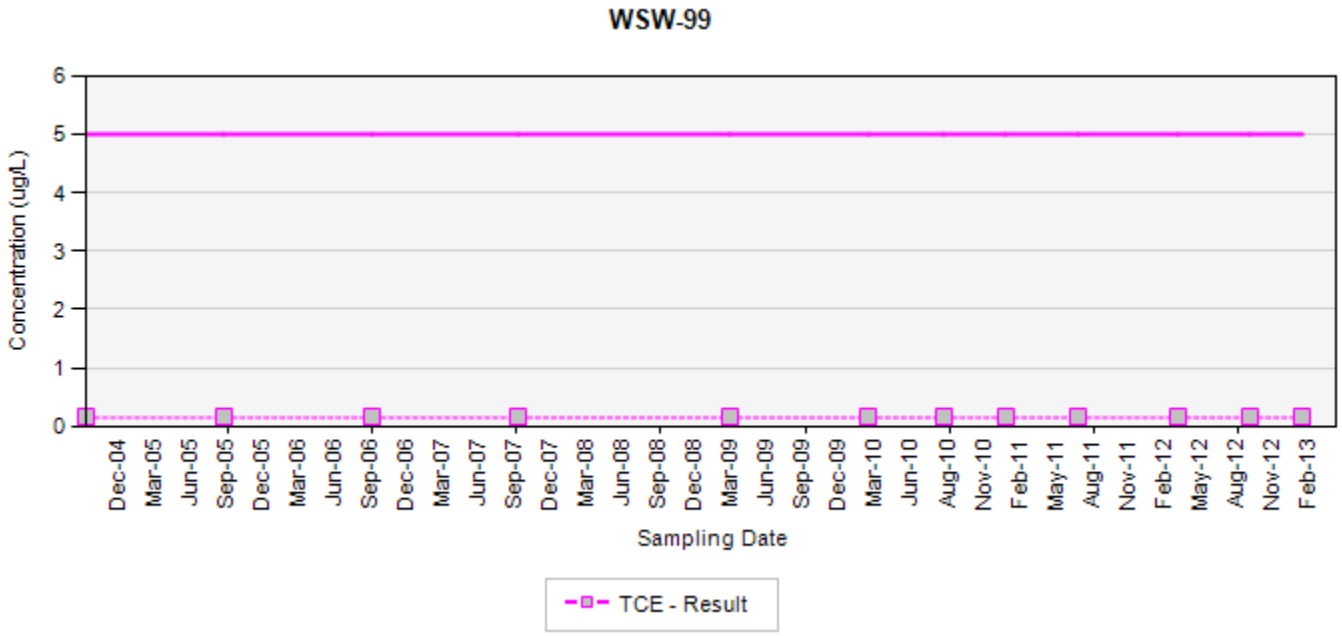

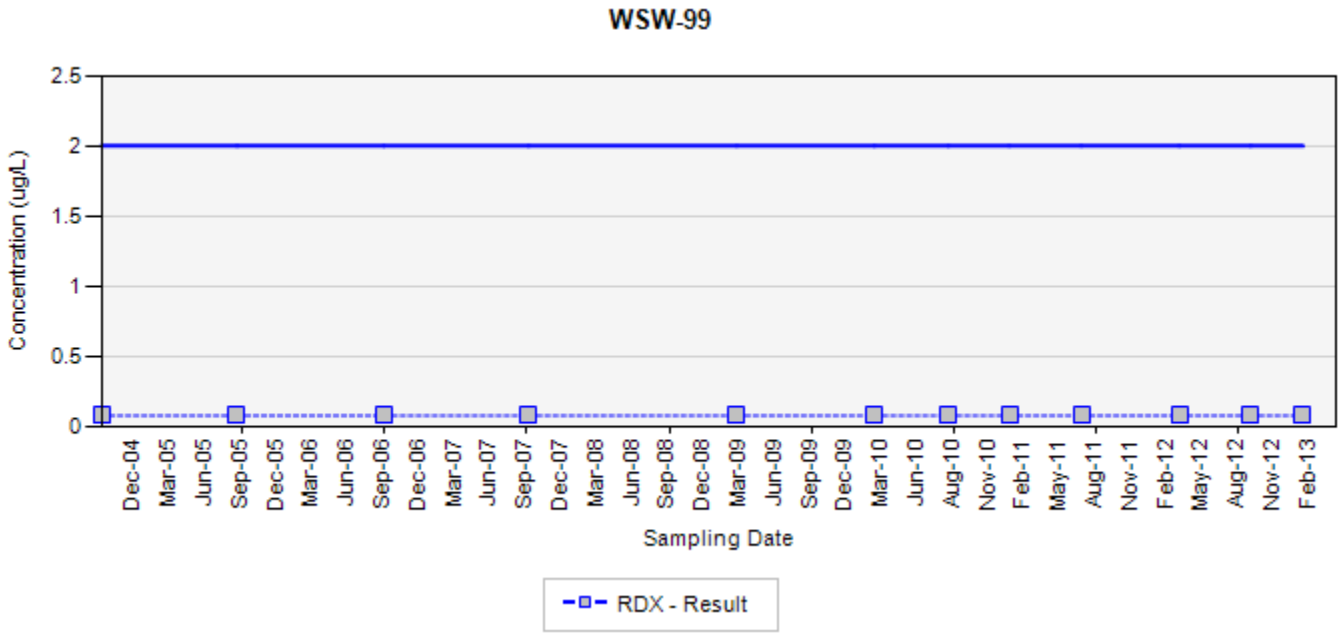

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Appendix C

Quality Control Summary Report First Quarter 2013 Groundwater Monitoring Program Sampling Events, Former Nebraska Ordnance Plant

(on CD)

Regional Office

1746 Cole Boulevard
Building 21, Suite 350
Lakewood, CO 80401

Phone: 303.298.7607
Fax: 303.298.7837

May 16, 2013

U.S. Army Corps of Engineers, Kansas City District
Attn: Jacqy Frazier
601 East 12th Street
Kansas City, MO 64106-2896

Re: Transmittal of the Final Quality Control Summary Report
First Quarter 2013 Groundwater Monitoring Program Sampling Events
Former Nebraska Ordnance Plant, Mead, Nebraska
Contract No. W912DQ-08-D-0001, Task Order No. 0002

Dear Ms. Frazier:

ECC is hereby transmitting one electronic copy of the Final Quality Control Summary Report for the First Quarter 2013 Groundwater Monitoring Program Sampling Events at the former Nebraska Ordnance Plant, Mead, Nebraska.

Please contact Mr. Brady Bigelow or me if you require additional information.

Sincerely,

John Ryder
Project Chemist
ECC

Enclosures
cc: Ms. Kristine Stein (USACE)
Mr. Jason L'Ecuyer (USACE)
Mr. Bradley Brink (USACE)
Mr. Kirk Boese (USACE)

Corporate Office

1240 Bayshore Highway
Burlingame, CA 94010

Phone: 650.347.1555
Fax: 650.347.8789
www.ecc.net

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE: May 16, 2013	TRANSMITTAL NO. 2013-037

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by contractor)

Attn: Jacqy Frazier USACE, Kansas City District 601 E. 12th St. Kansas City, MO 64106-2896	FROM: John Ryder ECC 1746 Cole Blvd, Bldg 21, Lakewood, CO 80401	CONTRACT NO. W912DQ-08-D-0001, Task Order 0002	CHECK ONE: __X__ THIS IS A NEW TRANSMITTAL ____ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SECTION NO. (cover only one section with each transmittal)	PROJECT TITLE AND LOCATION: Groundwater Monitoring Program, Former Nebraska Ordnance Plant, Mead, Nebraska		CHECK ONE: ___ FIO __X__ For Govt. Approval

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type, size, model number, etc.)* *b.*	MFG. OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction No. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*	FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruc. no. 6)* *h.*	FOR C E USE CODE *i.*
1	Quality Control Summary Report - Final		1 electronic					
	First Quarter 2013 Groundwater Monitoring Program Sampling Events							

REMARKS
Kristine Stein (USACE)
Jason L'Ecuyer (USACE)
Bradley Brink (USACE)
Kirk Boese (USACE)
Mead Library

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.
John Ryder, Denver Operations Group

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

FINAL
QUALITY CONTROL SUMMARY REPORT
FIRST QUARTER 2013

GROUNDWATER MONITORING PROGRAM
SAMPLING EVENTS

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

May 2013

Quality Control Summary Report
First Quarter 2013 Groundwater Monitoring Sampling Events
Former Nebraska Ordnance Plant, Mead, Nebraska

1.0 INTRODUCTION

Monitoring well sampling was conducted between February 28 and March 26, 2013 at the former Nebraska Ordnance Plant, near Mead, Nebraska. All sampling activities were performed in accordance with the *Site Wide Work Plan, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009). This Quality Control Summary Report presents a summary of the chemical data quality review for the First Quarter 2013 monitoring well sampling event.

TestAmerica of South Burlington, Vermont analyzed the samples for one or more of the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Solid Waste (SW)-846 Method 8260B; and
- Explosives by EPA SW-846 Method 8330.

Table 1-1 presents a complete list of the monitoring wells planned for sample collection, the corresponding sample identifications (IDs), and the requested analyses for the First Quarter 2013 monitoring well sampling event.

The chain-of-custody and field notes are included as Appendices A and B, respectively. Appendix C presents an explanation of data validation qualifiers and drinking water standards. Appendix D contains a compact disc (CD) with all analytical data.

2.0 FIELD SAMPLING ACTIVITIES

The field sampling team collected samples for chemical analyses from 130 monitoring wells during the First Quarter 2013 monitoring well sampling event. VOCs were sampled in 66 of the wells and 112 wells were sampled for explosives. The team also collected 13 field duplicate samples and six matrix spike (MS)/matrix spike duplicate (MSD) pairs with the monitoring well samples. Additionally, five trip blanks were included with the VOC sample shipments.

Table 2-1 summarizes the following information listed for the First Quarter 2013 Monitoring Well sampling event:

- Field Sample IDs:
- MS/MSD sample information;
- Quality control (QC) split sample information;
- Dates of sample collection and sample receipt by the laboratory;
- Laboratory Sample IDs;
- Laboratory sample delivery group (SDG) numbers; and
- Requested analyses.

3.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present results of the data quality evaluation. This evaluation was performed in accordance with the *Mead Validation Guidelines*, (ECC, 2007, approved by United States Army Corps of Engineers [USACE] 2007). Qualifiers were assigned based on laboratory QC criteria. Data quality evaluation results are presented in Table 3-1, and the QC outliers for the explosives analyses are presented in Table 3-2. QC outliers were not assigned to the VOC analyses.

3.1 Sample Receipt at the Laboratory

The laboratories received all samples in good condition and within the recommended temperature range of 4 ± 2 °C or just below 2° C, but not frozen.

3.2 Holding Times

The laboratories performed extractions and analyses of all samples within required method-specific holding times.

3.3 Tuning and Calibration

According to the *Mead Validation Guidelines* (ECC, 2007), assessment of tune and calibration information is assessed using the laboratory case-narrative or summary forms. The laboratory did not report any deviations for the calibration and tuning of pertinent instrumentation in the case narratives. The evaluation of the calibration summary forms indicated that all project criteria were met.

3.4 Laboratory Method Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank. For common laboratory contaminants, detections are qualified as non-detect (U) if the concentration in the sample is less than 10 times the concentration in the associated blank. Sample results that are either non-detect (U), or greater than 5 or 10 times the blank result do not require qualification.

There were no detections of target analytes in the laboratory method blanks.

3.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank (10 times for common laboratory contaminants). Sample results that are either non-detect (U), or greater than 5 or 10 times the blank result do not require qualification.

There were no detections of target analytes in the volatile trip blanks.

3.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) or prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects and UJ-coded for non-detects if the surrogate % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded (rejected) if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects.

The % REC for surrogate 1,2-dinitrobenzene on the confirmation column in the explosive analysis of one sample exceeded the laboratory QC limits. However, no qualification was required because all associated results were reported from the primary column, which met all surrogate % REC criteria for the sample.

3.7 Laboratory Control Sample / Laboratory Control Sample Duplicate

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent differences (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if the % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects if

the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds 30%.

All LCS/LCSD % RECs and RPDs were within laboratory QC limits.

3.8 Matrix Spike / Matrix Spike Duplicate

MS and MSD samples were analyzed for both volatile organic analyses and explosives. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the un-spiked portion of the sample for % REC of the spiked analytes. MS/MSD analyses were performed on the appropriate samples collected as listed on Table 2-1 Several additional explosive MS/MSD analyses were performed by the laboratory.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects if the MS/MSD % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated parent samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds QC limits.

All % RECs and all RPDs were within QC limits.

3.9 Field Duplicates

Field duplicates provide information regarding the reproducibility of analytical results and account for error introduced from handling, shipping, preparing, and analyzing field samples.

The following field duplicate pairs were collected during the First Quarter 2013 monitoring well sampling event:

- BMW-035-012013 / BMW-235-012013 (Explosives);
- AMW-038-012013 / AMW-238-012013 (VOCs and Explosives);
- AMW-046-012013 / AMW-246-012013 (VOCs and Explosives);
- AMW-080-012013 / AMW-280-012013 (VOCs);
- BMW-086-012013 / BMW-286-012013 (Explosives);
- AMW-098-012013 / AMW-298-012013 (Explosives);
- AMW-0100-012013 / AMW-2100-012013 (Explosives);
- AMW-0118-012013 / AMW-2118-012013 (Explosives);
- AMW-0106-012013 / AMW-2106-012013 (VOCs and Explosives);
- AMW-0107-012013 / AMW-2107-012013 (VOCs and Explosives);
- AMW-0147-012013 / AMW-2147-012013 (Explosives);

- AMW-0160-012013 / AMW-2160-012013 (VOCs and Explosives); and
- AMW-0161-012013 / AMW-2161-012013 (VOCs and Explosives).

The field duplicate precision criteria (RPD of < 50%) was met in the all duplicate pairs. Field duplicate results are considered acceptable when one result is not detected and the other result is detected below the limit of quantitation (LOQ) or if both results are less than the LOQ.

3.10 Dilutions and Re-analyses

Qualifiers assigned as a result of calibration range exceedance are not used in the calculation of analytical data completeness percentages if there are acceptable results from diluted sample analyses.

Seven samples required a dilution analysis because the concentration of hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) was above the calibration range. Nine water samples were initially analyzed at a dilution due to high level of trichloroethene (TCE). Five of the samples required a secondary dilution analysis. One sample was re-analyzed undiluted. According to the *Mead Validation Guidelines* (ECC, 2007) results exceeding the calibrations range are not used for reporting or project decisions when acceptable results from dilutions are available. The final dilution analysis results are reported for RDX and TCE, and the more concentrated analysis results are reported for all other sample results. Reporting limits were raised as appropriate. [Note: Only the appropriately diluted results were reported by the laboratory.]

3.11 Other Quality Control Parameters

All detected explosive results were confirmed on a second column. A column comparison between the detected explosive results was made using explosive identification summary forms. The validator confirmed all reported explosive detections for both columns and the inter-column RPDs.

Detected results with the intercolumn RPDs exceeding 40% are qualified as estimated (J). Table 3-1 presents data quality evaluation results and associated qualified samples. Table 3-2 presents the explosive QC outliers and associated samples for all assigned qualifiers. These qualifiers were not used to determine analytical completeness or project completeness.

2, 4-Dinitrotoluene was detected in sample AMW-059-012013 at 1.7 µg/l. Upon review of the photo diode array confirmation from the laboratory it was determined that this detection is a false positive and the sample result is qualified as non-detect (U).

3.12 Laboratory Qualifiers

Analytes detected below the LOQ, but above the detection limit (DL) were quantified and results were assigned an estimated (J) qualifier by the laboratory. These qualifiers were carried over by the validator and were not used to determine analytical completeness or project completeness (Section 4.0).

4.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for the First Quarter 2013 monitoring well sampling event.

4.1 Field Completeness

Field completeness for sample collection is assessed by comparing the number of samples collected to the number of samples planned for collection. Field completeness for the monitoring well sampling event was 100% for both VOCs and explosives. The overall field completeness percentage is 100% for the First Quarter 2013 monitoring well sampling event. All field completeness percentages exceed the field completeness goal of 95%. Section 2.0 presents the field sampling activities, including any deviations from planned sampling if applicable. Table 4-1 presents field completeness values for the monitoring well sampling event.

4.2 Analytical Completeness

Analytical completeness is calculated as both acceptable data completeness and quality data completeness.

Acceptable data is a measure of laboratory contract compliance. Acceptable data includes data that have not been rejected or qualified as estimated (J). Qualified data are considered acceptable if appropriate corrective actions were taken by the laboratory. Acceptable data completeness percentages for both VOCs and explosives are 100% which met the acceptable data completeness goals for each analytical method of 90%.

Quality data is a measure of the percentage of usable data points. Usable data points include all non-rejected data. Rejected data points with replacement data do not count against the quality data completeness. No data were rejected for the First Quarter 2013 monitoring well sampling event based on analytical data evaluation. The quality data completeness percentage for both VOCs and explosives is 100%. Overall quality data completeness is therefore 100%, which exceeds the quality data completeness goal of 80%. Table 4-2 presents analytical data completeness.

4.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the project as a whole. Project completeness is assessed by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/measurements planned. Project completeness is calculated using field completeness and analytical completeness (quality data) percentages. The project completeness percentage of 100% exceeded the project completeness goal of 90%. Table 4-3 presents project completeness percentage.

5.0 CONCLUSIONS

Data are valid for use, as qualified. Overall field completeness is 100%, acceptable data completeness is 100%, quality data completeness is 100%, and the overall project completeness is 100% for the First Quarter 2013 monitoring well sampling event.

Nine sample results for TCE and seven sample results for RDX were reported from a dilution due to calibration range exceedance. These results do not affect analytical or project completeness. Detected results qualified as estimated for inter-column RPD exceedances do not affect analytical or project completeness.

6.0 REFERENCES

ECC, 2009, *Site Wide Work Plan, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska*. August.

ECC, 2007 *Mead Validation Guidelines*, (approved by USACE 2007).

Tables

List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
C-RPD	column relative percent difference
GC/MS	gas chromatography–mass spectrometry
HPLC	high-performance liquid chromatography
ID	identification/identifier
J	estimated
Lab	laboratory
LOD	limit of detection
MS/MSD	matrix spike/matrix spike duplicate
MS	mass-spectrometry
MW	monitoring well
RPD	relative percent difference
SDG	sample delivery group
U	not detected at laboratory limit of detection
UCL	upper control limit
UJ	qualified as estimated and not detected at laboratory limit of detection

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
MW-04B	BMW-004-012013	Explosives
MW-100A	AMW-0100-012013	Explosives
MW-100B	BMW-0100-012013	Explosives
MW-100D	DMW-0100-012013	Explosives
MW-101A	AMW-0101-012013	Volatiles
MW-101B	BMW-0101-012013	Volatiles
MW-101D	DMW-0101-012013	Volatiles
MW-102A	AMW-0102-012013	Volatiles
MW-102B	BMW-0102-012013	Volatiles
MW-103A	AMW-0103-012013	Volatiles
MW-103B	BMW-0103-012013	Volatiles
MW-103D	DMW-0103-012013	Volatiles
MW-106A	AMW-0106-012013	Explosives, Volatiles
MW-106B	BMW-0106-012013	Explosives, Volatiles
MW-107A	AMW-0107-012013	Explosives, Volatiles
MW-107B	BMW-0107-012013	Explosives, Volatiles
MW-107D	DMW-0107-012013	Explosives, Volatiles
MW-110A	AMW-0110-012013	Explosives, Volatiles
MW-110B	BMW-0110-012013	Explosives, Volatiles
MW-110D	DMW-0110-012013	Explosives, Volatiles
MW-112A	AMW-0112-012013	Explosives, Volatiles
MW-112B	BMW-0112-012013	Explosives, Volatiles
MW-113A	AMW-0113-012013	Explosives, Volatiles
MW-113B	BMW-0113-012013	Explosives, Volatiles
MW-113D	DMW-0113-012013	Explosives, Volatiles
MW-114A	AMW-0114-012013	Explosives, Volatiles
MW-114B	BMW-0114-012013	Explosives, Volatiles
MW-114D	DMW-0114-012013	Explosives, Volatiles
MW-115A	AMW-0115-012013	Explosives, Volatiles
MW-115B	BMW-0115-012013	Explosives, Volatiles
MW-115D	DMW-0115-012013	Explosives, Volatiles
MW-116A	AMW-0116-012013	Explosives, Volatiles
MW-116B	BMW-0116-012013	Explosives, Volatiles
MW-116D	DMW-0116-012013	Explosives, Volatiles
MW-118A	AMW-0118-012013	Explosives
MW-118B	BMW-0118-012013	Explosives
MW-145B	BMW-0145-012013	Explosives
MW-147A	AMW-0147-012013	Explosives
MW-147B	BMW-0147-012013	Explosives
MW-147D	DMW-0147-012013	Explosives
MW-148A	AMW-0148-012013	Explosives
MW-155B	BMW-0155-012013	Explosives, Volatiles
MW-158A	AMW-0158-012013	Explosives, Volatiles
MW-158B	BMW-0158-012013	Explosives, Volatiles
MW-158D	DMW-0158-012013	Explosives, Volatiles
MW-159A	AMW-0159-012013	Explosives, Volatiles
MW-159B	BMW-0159-012013	Explosives, Volatiles
MW-160A	AMW-0160-012013	Explosives, Volatiles
MW-160B	BMW-0160-012013	Explosives, Volatiles

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
MW-161A	AMW-0161-012013	Explosives, Volatiles
MW-161B	BMW-0161-012013	Explosives, Volatiles
MW-162A	AMW-0162-012013	Explosives
MW-163A	AMW-0163-012013	Explosives
MW-164A	AMW-0164-012013	Explosives
MW-165B	BMW-0165-012013	Explosives
MW-166A	AMW-0166-012013	Explosives
MW-166B	BMW-0166-012013	Explosives
MW-167A	AMW-0167-012013	Explosives
MW-167B	BMW-0167-012013	Explosives
MW-168A	AMW-0168-012013	Explosives
MW-168B	BMW-0168-012013	Explosives
MW-169A	AMW-0169-012013	Explosives
MW-169B	BMW-0169-012013	Explosives
MW-170A	AMW-0170-012013	Explosives
MW-171A	AMW-0171-012013	Explosives
MW-171B	BMW-0171-012013	Explosives
MW-172A	AMW-0172-012013	Explosives
MW-172B	BMW-0172-012013	Explosives
MW-173A	AMW-0173-012013	Explosives
MW-174A	AMW-0174-012013	Explosives
MW-174B	BMW-0174-012013	Explosives
MW-175A	AMW-0175-012013	Explosives, Volatiles
MW-175B	BMW-0175-012013	Explosives, Volatiles
MW-176A	AMW-0176-012013	Explosives, Volatiles
MW-176B	BMW-0176-012013	Explosives, Volatiles
MW-177A	AMW-0177-012013	Volatiles
MW-177B	BMW-0177-012013	Volatiles
MW-178B	BMW-0178-012013	Explosives, Volatiles
MW-179A	AMW-0179-012013	Volatiles
MW-179B	BMW-0179-012013	Volatiles
MW-20A	AMW-020-012013	Explosives
MW-20B	BMW-020-012013	Explosives
MW-20C	CMW-020-012013	Explosives
MW-31A	AMW-031-012013	Explosives, Volatiles
MW-31B	BMW-031-012013	Explosives, Volatiles
MW-35A	AMW-035-012013	Explosives
MW-35B	BMW-035-012013	Explosives
MW-35D	DMW-035-012013	Explosives
MW-38A	AMW-038-012013	Explosives, Volatiles
MW-38D	DMW-038-012013	Explosives, Volatiles
MW-46A	AMW-046-012013	Explosives, Volatiles
MW-46B	BMW-046-012013	Explosives, Volatiles
MW-46D	DMW-046-012013	Explosives, Volatiles
MW-61A	AMW-061-012013	Volatiles
MW-61B	BMW-061-012013	Volatiles
MW-61D	DMW-061-012013	Volatiles
MW-65A	AMW-065-012013	Explosives, Volatiles
MW-80A	AMW-080-012013	Volatiles

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
MW-80B	BMW-080-012013	Volatiles
MW-80D	DMW-080-012013	Volatiles
MW-82A	AMW-082-012013	Explosives
MW-82B	BMW-082-012013	Explosives
MW-82D	DMW-082-012013	Explosives
MW-83A	AMW-083-012013	Explosives
MW-83B	BMW-083-012013	Explosives
MW-83D	DMW-083-012013	Explosives
MW-84A	AMW-084-012013	Explosives
MW-84B	BMW-084-012013	Explosives
MW-84D	DMW-084-012013	Explosives
MW-85A	AMW-085-012013	Explosives
MW-85B	BMW-085-012013	Explosives
MW-85D	DMW-085-012013	Explosives
MW-86A	AMW-086-012013	Explosives
MW-86B	BMW-086-012013	Explosives
MW-86D	DMW-086-012013	Explosives
MW-88A	AMW-088-012013	Explosives, Volatiles
MW-88B	BMW-088-012013	Explosives, Volatiles
MW-88D	DMW-088-012013	Explosives, Volatiles
MW-95A	AMW-095-012013	Explosives
MW-95B	BMW-095-012013	Explosives
MW-95D	DMW-095-012013	Explosives
MW-96A	AMW-096-012013	Explosives
MW-96B	BMW-096-012013	Explosives
MW-96D	DMW-096-012013	Explosives
MW-97A	AMW-097-012013	Explosives
MW-97B	BMW-097-012013	Explosives
MW-97D	DMW-097-012013	Explosives
MW-98A	AMW-098-012013	Explosives
MW-98B	BMW-098-012013	Explosives
MW-98D	DMW-098-012013	Explosives

Notes:

Volatiles	SW8260B	Volatile Organic Compounds by Capillary GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC

Table 2-1
Sample Collection Summary
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Quality Control Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
Field Samples								
AMW-084-012013			2/27/2013	3/1/2013	200-15293-23	15293	•	
DMW-084-012013			2/27/2013	3/1/2013	200-15293-24	15293	•	
AMW-083-012013			2/27/2013	3/1/2013	200-15293-20	15293	•	
BMW-083-012013			2/27/2013	3/1/2013	200-15293-21	15293	•	
DMW-083-012013			2/27/2013	3/1/2013	200-15293-22	15293	•	
AMW-0169-012013			2/27/2013	3/1/2013	200-15293-16	15293	•	
BMW-0169-012013			2/27/2013	3/1/2013	200-15293-17	15293	•	
AMW-0167-012013			2/27/2013	3/1/2013	200-15293-12	15293	•	
BMW-0167-012013			2/27/2013	3/1/2013	200-15293-13	15293	•	
AMW-0147-012013			2/27/2013	3/1/2013	200-15293-2	15293	•	
		AMW-2147-012013	2/27/2013	3/1/2013	200-15293-3	15293	•	
BMW-0147-012013			2/27/2013	3/1/2013	200-15293-4	15293	•	
DMW-0147-012013			2/27/2013	3/1/2013	200-15293-5	15293	•	
AMW-0170-012013			2/27/2013	3/1/2013	200-15293-25	15293	•	
AMW-0166-012013			2/27/2013	3/1/2013	200-15293-10	15293	•	
BMW-0166-012013			2/27/2013	3/1/2013	200-15293-11	15293	•	
AMW-0164-012013			2/27/2013	3/1/2013	200-15293-8	15293	•	
BMW-0165-012013			2/27/2013	3/1/2013	200-15293-9	15293	•	
AMW-0162-012013			2/27/2013	3/1/2013	200-15293-6	15293	•	
AMW-0163-012013			2/27/2013	3/1/2013	200-15293-7	15293	•	
AMW-0168-012013			2/27/2013	3/1/2013	200-15293-14	15293	•	
BMW-0168-012013			2/27/2013	3/1/2013	200-15293-15	15293	•	
AMW-0175-012013			2/27/2013	3/1/2013	200-15293-18	15293	•	•
BMW-0175-012013			2/27/2013	3/1/2013	200-15293-19	15293	•	•
AMW-0174-012013			2/28/2013	3/2/2013	200-15311-15	15311-1	•	
BMW-0174-012013			2/28/2013	3/2/2013	200-15311-16	15311-1	•	
AMW-061-012013			2/28/2013	3/2/2013	200-15311-28	15311-1		•
BMW-061-012013			2/28/2013	3/2/2013	200-15311-29	15311-1		•
DMW-061-012013			2/28/2013	3/2/2013	200-15311-30	15311-1		•
AMW-0101-012013			2/28/2013	3/2/2013	200-15311-6	15311-1		•
BMW-0101-012013			2/28/2013	3/2/2013	200-15311-7	15311-1		•

Table 2-1
Sample Collection Summary
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Quality Control Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
DMW-0101-012013			2/28/2013	3/2/2013	200-15311-8	15311-1		•
AMW-0177-012013			2/28/2013	3/2/2013	200-15311-17	15311-1		•
BMW-0177-012013			2/28/2013	3/2/2013	200-15311-18	15311-1		•
AMW-080-012013			2/28/2013	3/2/2013	200-15311-31	15311-1		•
		AMW-280-012013	2/28/2013	3/2/2013	200-15311-32	15311-1		•
BMW-080-012013			2/28/2013	3/2/2013	200-15311-33	15311-1		•
DMW-080-012013			2/28/2013	3/2/2013	200-15311-34	15311-1		•
AMW-0179-012013			2/28/2013	3/2/2013	200-15311-19	15311-1		•
BMW-0179-012013			2/28/2013	3/2/2013	200-15311-20	15311-1		•
AMW-020-012013			2/28/2013	3/2/2013	200-15311-21	15311-1	•	
BMW-020-012013			2/28/2013	3/2/2013	200-15311-22	15311-1	•	
CMW-020-012013			2/28/2013	3/2/2013	200-15311-23	15311-1	•	
AMW-095-012013			2/28/2013	3/2/2013	200-15311-45	15311-2	•	
BMW-095-012013			2/28/2013	3/2/2013	200-15311-46	15311-2	•	
DMW-095-012013			2/28/2013	3/2/2013	200-15311-47	15311-2	•	
AMW-082-012013			2/28/2013	3/2/2013	200-15311-35	15311-1	•	
BMW-082-012013			2/28/2013	3/2/2013	200-15311-36	15311-1	•	
DMW-082-012013			2/28/2013	3/2/2013	200-15311-37	15311-1	•	
AMW-096-012013			2/28/2013	3/2/2013	200-15311-48	15311-2	•	
BMW-096-012013			2/28/2013	3/2/2013	200-15311-49	15311-2	•	
DMW-096-012013			2/28/2013	3/2/2013	200-15311-50	15311-2	•	
AMW-097-012013			3/1/2013	3/2/2013	200-15311-51	15311-2	•	
BMW-097-012013			3/1/2013	3/2/2013	200-15311-52	15311-2	•	
DMW-097-012013			3/1/2013	3/2/2013	200-15311-53	15311-2	•	
AMW-098-012013			3/1/2013	3/2/2013	200-15311-54	15311-2	•	
		AMW-298-012013	3/1/2013	3/2/2013	200-15311-55	15311-2	•	
BMW-098-012013			3/1/2013	3/2/2013	200-15311-56	15311-2	•	
DMW-098-012013			3/1/2013	3/2/2013	200-15311-57	15311-2	•	
AMW-085-012013			3/1/2013	3/2/2013	200-15311-38	15311-2	•	
BMW-085-012013			3/1/2013	3/2/2013	200-15311-39	15311-2	•	
DMW-085-012013			3/1/2013	3/2/2013	200-15311-40	15311-2	•	
AMW-0100-012013			3/1/2013	3/2/2013	200-15311-2	15311-1	•	

Table 2-1
Sample Collection Summary
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Quality Control Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
		AMW-2100-012013	3/1/2013	3/2/2013	200-15311-3	15311-1	•	
BMW-0100-012013			3/1/2013	3/2/2013	200-15311-4	15311-1	•	
DMW-0100-012013			3/1/2013	3/2/2013	200-15311-5	15311-1	•	
AMW-035-012013			3/1/2013	3/2/2013	200-15311-24	15311-1	•	
BMW-035-012013			3/1/2013	3/2/2013	200-15311-25	15311-1	•	
		BMW-235-012013	3/1/2013	3/2/2013	200-15311-26	15311-1	•	
DMW-035-012013			3/1/2013	3/2/2013	200-15311-27	15311-1	•	
AMW-0172-012013			3/1/2013	3/2/2013	200-15311-12	15311-1	•	
BMW-0172-012013			3/1/2013	3/2/2013	200-15311-13	15311-1	•	
AMW-0173-012013			3/1/2013	3/2/2013	200-15311-14	15311-1	•	
AMW-0118-012013			3/1/2013	3/2/2013	200-15311-9	15311-1	•	
		AMW-2118-012013	3/1/2013	3/2/2013	200-15311-10	15311-1	•	
BMW-0118-012013	BMW-0118-012013		3/1/2013	3/2/2013	200-15311-11	15311-1	•	
AMW-086-012013			3/1/2013	3/2/2013	200-15311-41	15311-2	•	
BMW-086-012013			3/1/2013	3/2/2013	200-15311-42	15311-2	•	
		BMW-286-012013	3/1/2013	3/2/2013	200-15311-43	15311-2	•	
DMW-086-012013			3/1/2013	3/2/2013	200-15311-44	15311-2	•	
AMW-088-012013			3/4/2013	3/7/2013	200-15374-19	15374	•	•
BMW-088-012013			3/4/2013	3/7/2013	200-15374-20	15374	•	•
DMW-088-012013			3/4/2013	3/7/2013	200-15374-21	15374	•	•
AMW-0116-012013			3/4/2013	3/7/2013	200-15374-10	15374	•	•
BMW-0116-012013			3/4/2013	3/7/2013	200-15374-11	15374	•	•
DMW-0116-012013			3/4/2013	3/7/2013	200-15374-12	15374	•	•
AMW-0115-012013			3/4/2013	3/7/2013	200-15374-7	15374	•	•
BMW-0115-012013			3/4/2013	3/7/2013	200-15374-8	15374	•	•
DMW-0115-012013			3/4/2013	3/7/2013	200-15374-9	15374	•	•
AMW-0114-012013			3/4/2013	3/7/2013	200-15374-4	15374	•	•
BMW-0114-012013			3/4/2013	3/7/2013	200-15374-5	15374	•	•
DMW-0114-012013			3/4/2013	3/7/2013	200-15374-6	15374	•	•
AMW-0158-012013			3/4/2013	3/7/2013	200-15374-13	15374	•	•
BMW-0158-012013			3/4/2013	3/7/2013	200-15374-14	15374	•	•
DMW-0158-012013			3/4/2013	3/7/2013	200-15374-15	15374	•	•

Table 2-1
Sample Collection Summary
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Quality Control Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
AMW-038-012013			3/4/2013	3/7/2013	200-15374-16	15374	•	•
		AMW-238-012013	3/4/2013	3/7/2013	200-15374-17	15374	•	•
DMW-038-012013	DMW-038-012013		3/4/2013	3/7/2013	200-15374-18	15374	•	•
AMW-0112-012013			3/4/2013	3/7/2013	200-15374-2	15374	•	•
BMW-0112-012013			3/4/2013	3/7/2013	200-15374-3	15374	•	•
AMW-0106-012013			3/6/2013	3/8/2013	200-15405-7	15405	•	•
		AMW-2106-012013	3/6/2013	3/8/2013	200-15405-8	15405	•	•
BMW-0106-012013	BMW-0106-012013		3/6/2013	3/8/2013	200-15405-9	15405	•	•
AMW-0107-012013			3/6/2013	3/8/2013	200-15405-10	15405	•	•
		AMW-2107-012013	3/6/2013	3/8/2013	200-15405-11	15405	•	•
BMW-0107-012013	BMW-0107-012013		3/6/2013	3/8/2013	200-15405-12	15405	•	•
DMW-0107-012013			3/6/2013	3/8/2013	200-15405-13	15405	•	•
BMW-0178-012013			3/6/2013	3/8/2013	200-15405-19	15405	•	•
AMW-0159-012013			3/6/2013	3/8/2013	200-15405-17	15405	•	•
BMW-0159-012013			3/6/2013	3/8/2013	200-15405-18	15405	•	•
AMW-0102-012013			3/6/2013	3/8/2013	200-15405-2	15405		•
BMW-0102-012013			3/6/2013	3/8/2013	200-15405-3	15405		•
AMW-0103-012013			3/6/2013	3/8/2013	200-15405-4	15405		•
BMW-0103-012013			3/6/2013	3/8/2013	200-15405-5	15405		•
DMW-0103-012013			3/6/2013	3/8/2013	200-15405-6	15405		•
BMW-0155-012013			3/6/2013	3/8/2013	200-15405-24	15405	•	•
AMW-046-012013			3/6/2013	3/8/2013	200-15405-20	15405	•	•
		AMW-246-012013	3/6/2013	3/8/2013	200-15405-21	15405	•	•
BMW-046-012013	BMW-046-012013		3/6/2013	3/8/2013	200-15405-22	15405	•	•
DMW-046-012013			3/6/2013	3/8/2013	200-15405-23	15405	•	•
AMW-0113-012013			3/6/2013	3/8/2013	200-15405-14	15405	•	•
BMW-0113-012013			3/6/2013	3/8/2013	200-15405-15	15405	•	•
DMW-0113-012013			3/6/2013	3/8/2013	200-15405-16	15405	•	•
AMW-0176-012013			3/7/2013	3/9/2013	200-15420-16	15420	•	•
BMW-0176-012013			3/7/2013	3/9/2013	200-15420-17	15420	•	•
AMW-0110-012013			3/7/2013	3/9/2013	200-15420-3	15420	•	•
BMW-0110-012013			3/7/2013	3/9/2013	200-15420-4	15420	•	•

Table 2-1
Sample Collection Summary
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Quality Control Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	Volatiles
DMW-0110-012013			3/7/2013	3/9/2013	200-15420-5	15420	•	•
AMW-0148-012013			3/7/2013	3/9/2013	200-15420-7	15420	•	
AMW-031-012013			3/7/2013	3/9/2013	200-15420-18	15420	•	•
BMW-031-012013			3/7/2013	3/9/2013	200-15420-19	15420	•	•
BMW-0145-012013			3/7/2013	3/9/2013	200-15420-6	15420	•	
AMW-0171-012013			3/7/2013	3/9/2013	200-15420-14	15420	•	
BMW-0171-012013			3/7/2013	3/9/2013	200-15420-15	15420	•	
AMW-065-012013			3/7/2013	3/9/2013	200-15420-20	15420	•	•
BMW-004-012013			3/7/2013	3/9/2013	200-15420-2	15420	•	
AMW-0160-012013			3/7/2013	3/9/2013	200-15420-8	15420	•	•
		AMW-2160-012013	3/7/2013	3/9/2013	200-15420-9	15420	•	•
BMW-0160-012013			3/7/2013	3/9/2013	200-15420-10	15420	•	•
AMW-0161-012013			3/7/2013	3/9/2013	200-15420-11	15420	•	•
		AMW-2161-012013	3/7/2013	3/9/2013	200-15420-12	15420	•	•
BMW-0161-012013			3/7/2013	3/9/2013	200-15420-13	15420	•	•
BMW-084-012013	BMW-084-012013		3/26/2013	3/27/2013	200-15706-1	15706	•	
Trip Blanks								
TRB-284-012013			2/27/2013	3/1/2013	200-15293-1	15293		•
TRB-2174-012013			2/28/2013	3/2/2013	200-15311-1	15311-1		•
TRB-288-012013			3/4/2013	3/7/2013	200-15374-1	15374		•
TRB-2106-012013			3/6/2013	3/8/2013	200-15405-1	15405		•
TRB-2176-012013			3/7/2013	3/9/2013	200-15420-1	15420		•

Notes:

Volatiles SW8260B Volatile Organic Compounds by Capillary GC/MS

Explosives SW8330 Nitroaromatics and Nitramines by HPLC

• = Requested for the indicated analyses

Table 3-1
Data Quality Evaluation Results

First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	C_RPD	Comments	Final Result
AMW-0159-012013	3/6/2013	15405	200-15405-17	Explosives	1,3,5-trinitrobenzene	µg/L	0.069	J	X	Column RPD	0.069 J
AMW-0159-012013	3/6/2013	15405	200-15405-17	Explosives	2,4-dinitrotoluene	µg/L	1.7	J	X	Column RPD	1.7 J
AMW-0159-012013	3/6/2013	15405	200-15405-17	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.084	J	X	Column RPD	0.084 J
AMW-0160-012013	3/7/2013	15420	200-15420-8	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.42	J	X	Column RPD	0.42 J
AMW-0161-012013	3/7/2013	15420	200-15420-11	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.061	J	X	Column RPD	0.061 J
AMW-0169-012013	2/27/2013	15293	200-15293-16	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.078	J	X	Column RPD	0.078 J
AMW-0171-012013	3/7/2013	15420	200-15420-14	Explosives	2,4,6-trinitrotoluene	µg/L	0.27	J	X	Column RPD	0.27 J
AMW-0176-012013	3/7/2013	15420	200-15420-16	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.048	J	X	Column RPD	0.048 J
AMW-038-012013	3/4/2013	15374	200-15374-16	Explosives	1,3,5-trinitrobenzene	µg/L	0.17	J	X	Column RPD	0.17 J
AMW-2160-012013	3/7/2013	15420	200-15420-9	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.42	J	X	Column RPD	0.42 J
AMW-2161-012013	3/7/2013	15420	200-15420-12	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.068	J	X	Column RPD	0.068 J
AMW-238-012013	3/4/2013	15374	200-15374-17	Explosives	1,3,5-trinitrobenzene	µg/L	0.14	J	X	Column RPD	0.14 J
AMW-238-012013	3/4/2013	15374	200-15374-17	Explosives	2,4,6-trinitrotoluene	µg/L	0.10	J	X	Column RPD	0.10 J
BMW-0155-012013	3/6/2013	15405	200-15405-24	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.25	J	X	Column RPD	0.25 J
BMW-0160-012013	3/7/2013	15420	200-15420-10	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.060	J	X	Column RPD	0.060 J
BMW-0160-012013	3/7/2013	15420	200-15420-10	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.75	J	X	Column RPD	0.75 J
BMW-0161-012013	3/7/2013	15420	200-15420-13	Explosives	2,4-dinitrotoluene	µg/L	0.14	J	X	Column RPD	0.14 J
BMW-0161-012013	3/7/2013	15420	200-15420-13	Explosives	4-amino-2,6-dinitrotoluene	µg/L	4.1	J	X	Column RPD	4.1 J
BMW-0171-012013	3/7/2013	15420	200-15420-15	Explosives	2,4-dinitrotoluene	µg/L	3.1	J	X	Column RPD	3.1 J
BMW-0175-012013	2/27/2013	15293	200-15293-19	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.072	J	X	Column RPD	0.072 J
BMW-0176-012013	3/7/2013	15420	200-15420-17	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.043	J	X	Column RPD	0.043 J
BMW-0176-012013	3/7/2013	15420	200-15420-17	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.25	J	X	Column RPD	0.25 J
BMW-035-012013	3/1/2013	15311-1	200-15311-25	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.076	J	X	Column RPD	0.076 J
BMW-085-012013	3/1/2013	15311-2	200-15311-39	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.10	J	X	Column RPD	0.10 J
BMW-235-012013	3/1/2013	15311-1	200-15311-26	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.084	J	X	Column RPD	0.084 J

Note: The LOD values were used to display non detected lab results.

Reason for Qualification

C_RPD Column RPD

Table 3-2
Explosives Quality Control Outliers
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
Confirmation Column Difference					
AMW-0159-012013	15405	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	54.0 RPD
AMW-0159-012013	15405	2,4-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	56.6 RPD
AMW-0159-012013	15405	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	140 RPD
AMW-0160-012013	15420	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	173 RPD
AMW-0161-012013	15420	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	199 RPD
AMW-0169-012013	15293	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	42.4 RPD
AMW-0171-012013	15420	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	57.1 RPD
AMW-0176-012013	15420	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	189 RPD
AMW-038-012013	15374	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	74.1 RPD
AMW-2160-012013	15420	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	168 RPD
AMW-2161-012013	15420	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	199 RPD
AMW-238-012013	15374	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	115 RPD
AMW-238-012013	15374	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	176 RPD
BMW-0155-012013	15405	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	50.0 RPD
BMW-0160-012013	15420	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	147 RPD
BMW-0160-012013	15420	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	133 RPD
BMW-0161-012013	15420	2,4-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	113 RPD
BMW-0161-012013	15420	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	114 RPD

Table 3-2
Explosives Quality Control Outliers
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
Confirmation Column Difference					
BMW-0171-012013	15420	2,4-Dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	69.6 RPD
BMW-0175-012013	15293	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	94.1 RPD
BMW-0176-012013	15420	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	169 RPD
BMW-0176-012013	15420	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	56.4 RPD
BMW-035-012013	15311-1	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	101 RPD
BMW-085-012013	15311-2	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	45.4 RPD
BMW-235-012013	15311-1	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	81.7 RPD

Table 4-1
Field Completeness
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Explosives	124	124	100%
Volatiles	73	73	100%
Totals =	197	197	100.0%
Goal =			95%

Notes:

Number of Samples Planned includes field samples and field duplicate samples.

Table 4-2
Analytical Completeness
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters	Acceptable Data	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data	Quality Data Completeness	Quality Data Completeness Goals
Explosives (Analyte Count - 6)	744	744	100%	90%	744	100%	80%
Volatiles (Analyte Count - 6)	438	438	100%	90%	438	100%	80%
Totals =	1182	1182	99.5%	90%	1182	100.0%	80%

Notes:

Total number of parameters includes field samples (includes data points from dilutions and/or reanalyses to be used in place of original data) and field duplicates (does not include field blanks or trip blanks).
Acceptable data includes data that has not been rejected or qualified as estimated (J/UJ). Data points for which the required corrective actions were taken or do not require corrective action do not count against the acceptable data completeness goal calculation (i.e., results exceeding the calibration range that were reanalyzed at dilutions within the calibration range).
Quality data is defined as all non-rejected data.

Table 4-3
Project Completeness
First Quarter 2013 Monitoring Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical	Project Completeness
100.0%	100.0%	100.0%
Project Completeness Goal =		90%

Notes:

Analytical Completeness is the percentage of usable data (i.e. quality data completeness).
Project Completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

2413

7 OJM

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
1	TRB-284-012013	WQ	2/27/2013	8:35		X		FIELDQC	TB1	0.00	0.00
2	AMW-0147-012013	WG	2/27/2013	12:00			X	MW-147A	N1	100.00	100.00
3	AMW-2147-012013	WG	2/27/2013	12:00			X	MW-147A	FD1	100.00	100.00
4	BMW-0147-012013	WG	2/27/2013	12:10			X	MW-147B	N1	77.00	77.00
5	DMW-0147-012013	WG	2/27/2013	12:25			X	MW-147D	N1	125.00	132.00
6	AMW-0162-012013	WG	2/27/2013	14:35			X	MW-162A	N1	0.00	0.00
7	AMW-0163-012013	WG	2/27/2013	15:00			X	MW-163A	N1	0.00	0.00
8	AMW-0164-012013	WG	2/27/2013	14:00			X	MW-164A	N1	0.00	0.00
9	BMW-0165-012013	WG	2/27/2013	14:15			X	MW-165B	N1	0.00	0.00
10	AMW-0166-012013	WG	2/27/2013	13:30			X	MW-166A	N1	0.00	0.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
[illegible]	2-28-13	1800

Received by: *(Signature)*	Date	Time
Steph Bucher TABUR	3/1/13	1015

Shipping Date / Carrier / Airbill Number
2-28-13 Fed-ex 2178 6255 1166

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

Event: 1Q2013 monitoring well

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Analytical Test Method						1				
11	BMW-0166-012013	WG	2/27/2013	13:40			X	MW-166B	N1	0.00	0.00
12	AMW-0167-012013	WG	2/27/2013	11:10			X	MW-167A	N1	0.00	0.00
13	BMW-0167-012013	WG	2/27/2013	11:25			X	MW-167B	N1	0.00	0.00
14	AMW-0168-012013	WG	2/27/2013	15:20			X	MW-168A	N1	0.00	0.00
15	BMW-0168-012013	WG	2/27/2013	15:35			X	MW-168B	N1	0.00	0.00
16	AMW-0169-012013	WG	2/27/2013	10:35			X	MW-169A	N1	0.00	0.00
17	BMW-0169-012013	WG	2/27/2013	10:50			X	MW-169B	N1	0.00	0.00
18	AMW-0175-012013	WG	2/27/2013	16:05		X	X	MW-175A	N1	0.00	0.00
19	BMW-0175-012013	WG	2/27/2013	16:20		X	X	MW-175B	N1	0.00	0.00
20	AMW-083-012013	WG	2/27/2013	9:20			X	MW-83A	N1	103.50	108.50
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
[illegible]	2-28-13	1800

Received by: *(Signature)*	Date	Time

Shipping Date / Carrier / Airbill Number
2-28-13 Fed-ex 7948 6255 1166

Recevied by Laboratory: *(Signature, Date, Time)* & condition
Steph Boucher TA-Bur 1015 3/1/13

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

Event: 1Q2013 monitoring well

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
								1				
21	BMW-083-012013	WG	2/27/2013	9:30				X	MW-83B	N1	75.00	80.00
22	DMW-083-012013	WG	2/27/2013	9:40				X	MW-83D	N1	116.00	121.00
23	AMW-084-012013	WG	2/27/2013	8:35				X	MW-84A	N1	87.13	91.13
24	DMW-084-012013	WG	2/27/2013	8:55				X	MW-84D	N1	103.50	108.50
Cooler # 1		Turnaround Time:										
25	AMW-0170-012013	WG	2-27-13	1250				X	MW-170A	N1		

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[signature]	2-28-13	1800			

Shipping Date / Carrier / Airbill Number
2-28-13 Fed-Ex

Recevied by Laboratory: *(Signature, Date, Time)* & condition
3/1/13 1015 Steph Pauline TA-BUR

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022813

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3" 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2" 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
1	TRB-2174-012013	WQ	2/28/2013	8:45		X		FIELDQC	TB1	0.00	0.00
2	AMW-0100-012013	WG	3/1/2013	10:40			X	MW-100A	N1	83.00	93.00
3	AMW-2100-012013	WG	3/1/2013	10:40			X	MW-100A	FD1	83.00	93.00
4	BMW-0100-012013	WG	3/1/2013	11:05			X	MW-100B	N1	65.00	75.00
5	DMW-0100-012013	WG	3/1/2013	11:15			X	MW-100D	N1	99.90	104.90
6	AMW-0101-012013	WG	2/28/2013	10:20		X		MW-101A	N1	83.00	93.00
7	BMW-0101-012013	WG	2/28/2013	10:35		X		MW-101B	N1	30.00	40.00
8	DMW-0101-012013	WG	2/28/2013	10:50		X		MW-101D	N1	90.00	95.00
9	AMW-0118-012013	WG	3/1/2013	13:15			X	MW-118A	N1	84.75	95.25
10	AMW-2118-012013	WG	3/1/2013	13:15			X	MW-118A	FD1	84.75	95.25
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
Toby D. Hill	3-1-13	1700	[illegible]	3/2/13	1105

Shipping Date / Carrier / Airbill Number
Fed-Ex 7948 7403 2300

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022813

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
11	BMW-0118-012013	WG	3/1/2013	13:30			X	MW-118B	N1	70.00	75.00
12	BMW-0118-012013MS	WG	3/1/2013	13:30			X	MW-118B	MS1	70.00	75.00
13	BMW-0118-012013MSD	WG	3/1/2013	13:30			X	MW-118B	SD1	70.00	75.00
~~14~~	~~AMW-0170-012013~~	~~WG~~	~~2/27/2013~~	~~12:50~~			~~X~~	~~MW-170A~~	~~N1~~	~~0.00~~	~~0.00~~
15	AMW-0172-012013	WG	3/1/2013	12:25			X	MW-172A	N1	0.00	0.00
16	BMW-0172-012013	WG	3/1/2013	12:40			X	MW-172B	N1	0.00	0.00
17	AMW-0173-012013	WG	3/1/2013	12:55			X	MW-173A	N1	0.00	0.00
18	AMW-0174-012013	WG	2/28/2013	8:45			X	MW-174A	N1	0.00	0.00
19	BMW-0174-012013	WG	2/28/2013	9:00			X	MW-174B	N1	0.00	0.00
20	AMW-0177-012013	WG	2/28/2013	11:10		X		MW-177A	N1	0.00	0.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
Toby A. [illegible]	3-1-13	1700

Received by: *(Signature)*	Date	Time
[illegible] TABUL	3/2/13	1105

Shipping Date / Carrier / Airbill Number
Fed-ex 7948 7403 2300

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022813

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
21	BMW-0177-012013	WG	2/28/2013	11:30		X		MW-177B	N1	0.00	0.00
22	AMW-0179-012013	WG	2/28/2013	12:45		X		MW-179A	N1	0.00	0.00
23	BMW-0179-012013	WG	2/28/2013	13:00		X		MW-179B	N1	0.00	0.00
24	AMW-020-012013	WG	2/28/2013	13:30			X	MW-20A	N1	145.00	150.40
25	BMW-020-012013	WG	2/28/2013	13:45			X	MW-20B	N1	128.60	133.60
26	CMW-020-012013	WG	2/28/2013	14:00			X	MW-20C	N1	50.30	60.30
27	AMW-035-012013	WG	3/1/2013	11:35			X	MW-35A	N1	81.50	91.50
28	BMW-035-012013	WG	3/1/2013	11:50			X	MW-35B	N1	57.00	67.00
29	BMW-235-012013	WG	3/1/2013	11:50			X	MW-35B	FD1	57.00	67.00
30	DMW-035-012013	WG	3/1/2013	12:05			X	MW-35D	N1	100.50	105.50
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
Toby D. Li	3-1-13	1700

Received by: *(Signature)*	Date	Time
[signature] TABR	3/2/13	11:05

Shipping Date / Carrier / Airbill Number
Fed-Ex
7948 7403 2300

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022813

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

					Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
	Event: 1Q2013 monitoring well						1				
	Sample ID	Matrix	Date	Time	Samp Init.			Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
31	AMW-061-012013	WG	2/28/2013	9:30		X		MW-61A	N1	75.70	85.70
32	BMW-061-012013	WG	2/28/2013	9:40		X		MW-61B	N1	25.00	35.00
33	DMW-061-012013	WG	2/28/2013	9:55		X		MW-61D	N1	97.00	102.00
34	AMW-080-012013	WG	2/28/2013	11:50		X		MW-80A	N1	69.17	79.17
35	AMW-280-012013	WG	2/28/2013	11:50		X		MW-80A	FD1	69.17	79.17
36	BMW-080-012013	WG	2/28/2013	12:15		X		MW-80B	N1	30.00	40.00
37	DMW-080-012013	WG	2/28/2013	12:30		X		MW-80D	N1	87.70	92.70
38	AMW-082-012013	WG	2/28/2013	15:15			X	MW-82A	N1	89.50	94.50
39	BMW-082-012013	WG	2/28/2013	15:30			X	MW-82B	N1	61.20	65.70
40	DMW-082-012013	WG	2/28/2013	15:40			X	MW-82D	N1	120.00	125.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
Toby Q Ki	3-1-13	1700

Received by: *(Signature)*	Date	Time
[signature] FAB12	3/2/13	1105

Shipping Date / Carrier / Airbill Number
Fed-ex 7948 7403 2300

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022813

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
41	AMW-085-012013	WG	3/1/2013	10:00			X	MW-85A	N1	81.00	86.00
42	BMW-085-012013	WG	3/1/2013	10:15			X	MW-85B	N1	62.00	67.00
43	DMW-085-012013	WG	3/1/2013	10:25			X	MW-85D	N1	90.00	95.00
44	AMW-086-012013	WG	3/1/2013	14:15			X	MW-86A	N1	52.50	62.50
45	BMW-086-012013	WG	3/1/2013	14:25			X	MW-86B	N1	43.00	53.00
46	BMW-286-012013	WG	3/1/2013	14:25			X	MW-86B	FD1	43.00	53.00
47	DMW-086-012013	WG	3/1/2013	14:40			X	MW-86D	N1	68.98	74.50
48	AMW-095-012013	WG	2/28/2013	14:25			X	MW-95A	N1	93.00	103.00
49	BMW-095-012013	WG	2/28/2013	14:45			X	MW-95B	N1	65.00	75.00
50	DMW-095-012013	WG	2/28/2013	14:55			X	MW-95D	N1	124.50	129.50
Cooler # 1		**Turnaround Time:**									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
Toby D	3-1-13	1700	TABB	3/2/13	1105

Shipping Date / Carrier / Airbill Number
Fed-Ex 7948 7403 2300

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 022813

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: SW8260B/SW5030B/NONE-6 Compounds	Analytical Test Method: SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
51	AMW-096-012013	WG	2/28/2013	16:00			X	MW-96A	N1	82.50	92.50
52	BMW-096-012013	WG	2/28/2013	16:15			X	MW-96B	N1	71.00	81.00
53	DMW-096-012013	WG	2/28/2013	16:25			X	MW-96D	N1	101.50	106.00
54	AMW-097-012013	WG	3/1/2013	8:25			X	MW-97A	N1	83.00	93.00
55	BMW-097-012013	WG	3/1/2013	8:40			X	MW-97B	N1	68.00	73.00
56	DMW-097-012013	WG	3/1/2013	8:50			X	MW-97D	N1	99.98	105.50
57	AMW-098-012013	WG	3/1/2013	9:15			X	MW-98A	N1	82.00	92.00
58	AMW-298-012013	WG	3/1/2013	9:15			X	MW-98A	FD1	82.00	92.00
59	BMW-098-012013	WG	3/1/2013	9:35			X	MW-98B	N1	64.00	69.00
60	DMW-098-012013	WG	3/1/2013	9:45			X	MW-98D	N1	97.00	102.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
Toby O.	3-1-13	1700	[illegible] FAXED	3/2/13	11:05

Shipping Date / Carrier / Airbill Number
Fed-Ex 7948 7403 2360

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
1	TRB-288-012013	WQ	3/4/2013	8:15		X		FIELDQC	TB1	0.00	0.00
2	AMW-0112-012013	WG	3/4/2013	14:35		X	X	MW-112A	N1	42.50	47.50
3	BMW-0112-012013	WG	3/4/2013	14:55		X	X	MW-112B	N1	21.00	26.00
4	AMW-0114-012013	WG	3/4/2013	11:15		X	X	MW-114A	N1	37.00	47.00
5	BMW-0114-012013	WG	3/4/2013	11:30		X	X	MW-114B	N1	20.00	30.00
6	DMW-0114-012013	WG	3/4/2013	11:45		X	X	MW-114D	N1	52.44	58.00
7	AMW-0115-012013	WG	3/4/2013	10:30		X	X	MW-115A	N1	43.00	48.00
8	BMW-0115-012013	WG	3/4/2013	10:45		X	X	MW-115B	N1	28.00	33.00
9	DMW-0115-012013	WG	3/4/2013	10:55		X	X	MW-115D	N1	53.89	59.40
10	AMW-0116-012013	WG	3/4/2013	9:35		X	X	MW-116A	N1	37.50	42.50
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
Tony [illegible]	3-6-13	1700

Received by: *(Signature)*	Date	Time
Aleph Rouchon TABUR	3/7/13	1030

Shipping Date / Carrier / Airbill Number
Fed-EX 7949-0264-5940

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
11	BMW-0116-012013	WG	3/4/2013	9:55		X	X	MW-116B	N1	27.00	32.00
12	DMW-0116-012013	WG	3/4/2013	10:10		X	X	MW-116D	N1	47.98	53.50
13	AMW-0158-012013	WG	3/4/2013	12:20		X	X	MW-158A	N1	37.00	37.00
14	BMW-0158-012013	WG	3/4/2013	12:40		X	X	MW-158B	N1	24.00	24.00
15	DMW-0158-012013	WG	3/4/2013	12:55		X	X	MW-158D	N1	49.00	50.00
16	AMW-038-012013	WG	3/4/2013	13:25		X	X	MW-38A	N1	44.70	49.20
17	AMW-238-012013	WG	3/4/2013	13:25		X	X	MW-38A	FD1	44.70	49.20
18	DMW-038-012013	WG	3/4/2013	13:50		X	X	MW-38D	N1	58.50	63.50
19	DMW-038-012013MS	WG	3/4/2013	13:50		X	X	MW-38D	MS1	58.50	63.50
20	DMW-038-012013MSD	WG	3/4/2013	13:50		X	X	MW-38D	SD1	58.50	63.50
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
[illegible]	3-6-13	1700

Received by: *(Signature)*	Date	Time
[illegible] TABLIR	3/7/13	1030

Shipping Date / Carrier / Airbill Number
Fed-Ex 7749 0264 5940

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030413

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
21	AMW-088-012013	WG	3/4/2013	8:35		X	X	MW-88A	N1	35.00	45.00
22	BMW-088-012013	WG	3/4/2013	9:00		X	X	MW-88B	N1	20.00	30.00
23	DMW-088-012013	WG	3/4/2013	9:15		X	X	MW-88D	N1	50.50	55.50
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
Tony [illegible]	3-6-13	1700

Received by: *(Signature)*	Date	Time
[illegible] TASUR	3/7/13	1030

Shipping Date / Carrier / Airbill Number
Fed-Ex 7949 0264 5940

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030613

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
1	TRB-2106-012013	WQ	3/6/2013	8:10		X		FIELDQC	TB1	0.00	0.00
2	AMW-0102-012013	WG	3/6/2013	12:40		X		MW-102A	N1	117.00	127.00
3	BMW-0102-012013	WG	3/6/2013	12:55		X		MW-102B	N1	50.00	60.00
4	AMW-0103-012013	WG	3/6/2013	13:15		X		MW-103A	N1	116.00	126.00
5	BMW-0103-012013	WG	3/6/2013	13:25		X		MW-103B	N1	50.00	60.00
6	DMW-0103-012013	WG	3/6/2013	13:35		X		MW-103D	N1	130.00	135.00
7	AMW-0106-012013	WG	3/6/2013	8:50		X	X	MW-106A	N1	57.00	67.00
8	AMW-2106-012013	WG	3/6/2013	8:50		X	X	MW-106A	FD1	57.00	67.00
9	BMW-0106-012013	WG	3/6/2013	9:20		X	X	MW-106B	N1	25.00	35.00
10	BMW-0106-012013MS	WG	3/6/2013	9:20		X	X	MW-106B	MS1	25.00	35.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
Toby O Hill	3-7-13	1800

Received by: *(Signature)*	Date	Time
Steph Fuchs TABER	3/8/13	1025

Shipping Date / Carrier / Airbill Number
Fed-ex 7949-1382-2004

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030613

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
11	BMW-0106-012013MSD	WG	3/6/2013	9:20		X	X	MW-106B	SD1	25.00	35.00
12	AMW-0107-012013	WG	3/6/2013	10:05		X	X	MW-107A	N1	78.00	88.00
13	AMW-2107-012013	WG	3/6/2013	10:05		X	X	MW-107A	FD1	78.00	88.00
14	BMW-0107-012013	WG	3/6/2013	10:30		X	X	MW-107B	N1	45.00	55.00
15	BMW-0107-012013MS	WG	3/6/2013	10:30		X	X	MW-107B	MS1	45.00	55.00
16	BMW-0107-012013MSD	WG	3/6/2013	10:30		X	X	MW-107B	SD1	45.00	55.00
17	DMW-0107-012013	WG	3/6/2013	10:50		X	X	MW-107D	N1	95.50	100.50
18	AMW-0113-012013	WG	3/6/2013	15:40		X	X	MW-113A	N1	36.00	41.00
19	BMW-0113-012013	WG	3/6/2013	15:50		X	X	MW-113B	N1	26.00	31.00
20	DMW-0113-012013	WG	3/6/2013	16:10		X	X	MW-113D	N1	48.70	53.70
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
Toby O. H[illegible]	3-7-13	1800

Received by: *(Signature)*	Date	Time
Steph[illegible] TABER	3/8/13	1025

Shipping Date / Carrier / Airbill Number
Fed-Ex 7949-1382-2004

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030613

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

						Analytical Test Method	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds				
	Event: 1Q2013 monitoring well							1				
	Sample ID	Matrix	Date	Time	Samp Init.				Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
21	AMW-0159-012013	WG	3/6/2013	11:50			X	X	MW-159A	N1	120.00	127.00
22	BMW-0159-012013	WG	3/6/2013	12:10			X	X	MW-159B	N1	85.00	85.00
23	BMW-0178-012013	WG	3/6/2013	11:20			X	X	MW-178B	N1	0.00	0.00
24	AMW-046-012013	WG	3/6/2013	14:30			X	X	MW-46A	N1	33.20	43.20
25	AMW-246-012013	WG	3/6/2013	14:30			X	X	MW-46A	FD1	33.20	43.20
26	BMW-046-012013	WG	3/6/2013	14:50			X	X	MW-46B	N1	21.00	31.00
27	BMW-046-012013MS	WG	3/6/2013	14:50			X	X	MW-46B	MS1	21.00	31.00
28	BMW-046-012013MSD	WG	3/6/2013	14:50			X	X	MW-46B	SD1	21.00	31.00
29	DMW-046-012013	WG	3/6/2013	15:15			X	X	MW-46D	N1	52.50	57.50
Cooler # 1		**Turnaround Time:**										
30	BMW-0155-012013	WG	3/6/13	1400			X	X	MW-155B	N1		

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
Toby D. H	3-7-13	1800	Steph Bush TA Burl	3/8/13	1025	Fed-Ex 7949-1382-2004
						Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

Event: 1Q2013 monitoring well

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
					Analytical Test Method		1				
1	TRB-2176-012013	WQ	3/7/2013	7:45		X		FIELDQC	TB1	0.00	0.00
2	BMW-004-012013	WG	3/7/2013	12:05			X	MW-04B	N1	32.10	71.20
3	AMW-0110-012013	WG	3/7/2013	8:55		X	X	MW-110A	N1	39.50	44.50
4	BMW-0110-012013	WG	3/7/2013	9:10		X	X	MW-110B	N1	23.00	28.00
5	DMW-0110-012013	WG	3/7/2013	9:25		X	X	MW-110D	N1	50.00	55.00
6	BMW-0145-012013	WG	3/7/2013	10:45		X	X	MW-145B	N1	0.00	0.00
7	AMW-0148-012013	WG	3/7/2013	9:50			X	MW-148A	N1	0.00	0.00
~~8~~	~~BMW-0155-012013~~	~~WG~~	~~3/6/2013~~	~~14:00~~		~~X~~	~~X~~	~~MW-155B~~	~~N1~~	~~0.00~~	~~0.00~~
9	AMW-0160-012013	WG	3/7/2013	12:40		X	X	MW-160A	N1	0.00	0.00
10	AMW-2160-012013	WG	3/7/2013	12:40		X	X	MW-160A	FD1	0.00	0.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
Toby D Hill	3-8-13	1500	[illegible] THSW	3/8/13	0945

Shipping Date / Carrier / Airbill Number

FCl-ex
7949 2375 0973

Recevied by Laboratory: *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
11	BMW-0160-012013	WG	3/7/2013	13:05		X	X	MW-160B	N1	0.00	0.00
12	AMW-0161-012013	WG	3/7/2013	13:40		X	X	MW-161A	N1	0.00	0.00
13	AMW-2161-012013	WG	3/7/2013	13:40		X	X	MW-161A	FD1	0.00	0.00
14	BMW-0161-012013	WG	3/7/2013	14:00		X	X	MW-161B	N1	0.00	0.00
15	AMW-0171-012013	WG	3/7/2013	11:05			X	MW-171A	N1	0.00	0.00
16	BMW-0171-012013	WG	3/7/2013	11:20			X	MW-171B	N1	0.00	0.00
17	AMW-0176-012013	WG	3/7/2013	8:10		X	X	MW-176A	N1	0.00	0.00
18	BMW-0176-012013	WG	3/7/2013	8:30		X	X	MW-176B	N1	0.00	0.00
19	AMW-031-012013	WG	3/7/2013	10:10		X	X	MW-31A	N1	94.50	104.50
20	BMW-031-012013	WG	3/7/2013	10:25		X	X	MW-31B	N1	50.00	60.00
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
T Obyn D. Hun	3-8-13	1500	[illegible] FEDEX	3/9/13	0945

Shipping Date / Carrier / Airbill Number
Fed-ex 7949 2375 0973

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 030713

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT 05403

Comments:

Equipment:

Code	Matrix
WG	Ground Water
WQ	WATER QUALITY CONTROL MATRIX

Code	Container/Preservative
	3* 3 X 40 mL glass VOC vials w/Teflon-lined septa cap with no headspace,
1	2* 2 X 250 mL Amber Glass Bottles, 4 Degrees C

	Sample ID	Matrix	Date	Time	Samp Init.	SW8260B/SW5030B/NONE-6 Compounds	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
	Event: 1Q2013 monitoring well						1				
21	AMW-065-012013	WG	3/7/2013	11:40		X	X	MW-65A	N1	92.50	102.50
Cooler # 1		Turnaround Time:									

Relinquished by: *(Signature)*	Date	Time
Toby D. Aiez	3-8-13	1500

Received by: *(Signature)*	Date	Time
[illegible]	3/9/13	0945

Shipping Date / Carrier / Airbill Number
Fed-ex 7949 2375 0973

Recevied by Laboratory: *(Signature, Date, Time)* & condition

CHAIN-OF-CUSTODY RECORD

Environmental Chemical Corporation
John Ryder
1746 Cole Boulevard, Building 21, Suite 350, Lakewood, CO 80401
(303) 590-1157, add extension jryder@ecc.net

COC # 032613

Project Name: Former Nebraska Ordnance Plant	Laboratory: TestAmerica, Inc., South Burlington, VT
Project Number: FNOP01	Point of contact: Jim Madison (802) 660-1990
WBS Code: Please add WBS Code	Ship to: 30 Community Drive, Suite 11, South Burlington, VT

Comments: 2 Day TAT

Equipment:

Analytical Test Method: SW8330/METHOD/NONE-Explosives - 6 Compounds

Code	Matrix
WG	Ground Water

Code	Container/Preservative
1	2" 2 X 250 mL Amber Glass Bottles, 4 Degrees C

Event: First Quarter 2013

	Sample ID	Matrix	Date	Time	Samp Init.	SW8330/METHOD/NONE-Explosives - 6 Compounds	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom
1	BMW-084-012013	WG	3/26/2013	11:30		X	MW-84B	N1	66.50	71.50
2	BMW-084-012013MS	WG	3/26/2013	11:30		X	MW-84B	MS1	66.50	71.50
3	BMW-084-012013MSD	WG	3/26/2013	11:30		X	MW-84B	SD1	66.50	71.50

Cooler # 1 — **Turnaround Time:** ~~0~~ 2 **Days**

200-15706 Chain of Custody

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
Toby R K	3-26-13	1600	Fed-Ex	3-26-13	1600	Fed-Ex 7993-6874-2634
						Recevied by Laboratory: *(Signature, Date, Time)* & condition
						3/27/13 10:5
						Steph Rocker TABUR

Appendix B
Field Forms

Location Mead FNDP Date 12-6-12

Project / Client 4th Quarter Sampling

Ronnie Fisicus

1305 MW-177A WL- 6.72

AMW-0177-102012 3-VOCs

1320 MW-177B WL- 6.45

BMW-0177-102012 3-VOCs

1350 MW-179A WL- 8.95

AMW-0179-102012 3-VOCs

1400 MW-179B WL-

BMW-0179-102012 3-VOCs

1440 MW-175A WL- 50.57

AMW-0175-102012 3-VOCs / 2-Exp.

AMW-2175-102012 3-VOCs / 2-Exp.

1510 MW-175B WL- 50.59

BMW-0175-102012 3-VOCs / 2-Exp.

BMW-0175-102012 MS 3-VOCs / 2-Exp.

BMW-0175-102012 MSD 3-VOCs / 2-Exp.

1600 Returned to treatment Plant.

1615 Left Treatment Plant for the day.

RF

Location Mead FNDP Date 2-20-13

Project / Client 2ST QTR SE 2013

MW Event

Tody M. Wm (ECC)

0649 On site.

0702 Safety meeting

0730 Bagging dce.

0830 Sorting tethers.

0915 loading truck to set tethers.

1000 Heading to field.

1010 setting tethers.

MW-158 A,B,D / A is full of dce. chipping away.

MW-176 A, B

MW-159 A, B

MW-178 B

MW-155 B

MW-173 A

MW-172 A, B

MW-174 A, B

MW-175 A, B

MW-168 A, B

MW-148 A

MW-171 A/B

MW-145 B

MW-143 B

23 for day

Some tops were frozen

Location Pacad Fwor Date 2-21-13

Project / Client 1st QTR SE 2013

MW Event

Toby D.

0700 on site

0730 safety meeting

0800 Bagging ICE

0830 Sorting move tethers

0900 Heading to Field

0915 Setting tethers

MW-162 A

MW-165 B

MW-164 A

MW-166 A, B.

MW-167 A, B.

MW-169 A, B.

MW-170 A

MW-179 A, B.

MW-177 A, B

MW-160 A, B

MW-161. A, B

MW-85 A, B, D

MW-84 A, B, D ← B well needs work

MW-83 A, B, D

MW-147 A, B, D

1600 A + Plant

1715 off site / 1900 Report.

30 samples set

Location Date

Project / Client

Location Mcall FNOP Date 6-24-13

Project / Client 1st QTR SE 2013

MW Event

Toby D. K

0700 on site

0730 Safety meeting

0800 Bagging ICE

0830 Sorting move tethers

0900 Heading to Field

0915 Setting tethers

MW-162 A

MW-165 B

MW-164 A

MW-166 A, B.

MW-167 A, B.

MW-169 A, B.

MW-170 A

MW-179 A, B

MW-177 A, B

MW-160 A, B

MW-161 A, B

MW-85 A, B, D

MW-84 A, B, D ← B well needs work

MW-83 A, B, D

MW-147 A, B, D

1600 At plant

1715 off site / 19.00 Report.

30 samples set

Location Mcall Date 6-25-13

Project / Client FNOP 1st Quarter

Sampling Ronnie Fiscus

0850 Arrived at Treatment Plant

0920 Left Treatment Plant

0925 ~~MW~~-96A, MW-96B, MW-96D

96B Missing J-Plug

0945 MW-97A, MW-97B, MW-97D

1005 MW-98A, MW-98B, MW-98D

MW-98B, MW-98D Missing J-Plugs

1020 MW-100A, MW-100B, MW-100D

1045 MW-115A, MW-115B, MW-115D

1105 MW-116A, MW-116B, MW-116D

11:30 MW-114A, MW-114B, MW114D

1145 MW-88A, 88B, 88D

1210 MW-86A, 86B, 86D

1230 MW-46A, 46B, 46D

13:00 MW38A, MW-38D

1330 MW112A, MW-112B

1345 MW-113A, MW-113B, MW-113D

1405 Returned to Treatment Plant

1430 Left Treatment Plant

1435 MW-82A, MW-82B, MW-82D

1450 MW-20A, MW-20B, MW-20C

1530 Returned to Treatment Plant

1545 Left Treatment Plant for the day

RF S

Location Mead FNOP Date 2-26-13

Project / Client 1st Quarter Sampling
Ronnie Fiscus

0800 Arrived at Treatment Plant
0825 Left Treatment Plant
0835 MW-95A, MW-95B, MW-95D
0900 MW-80A, MW-80B, MW-80D
0920 MW-101A, MW-101B, MW-101D
0940 MW-61A, MW-61B, MW-61D
1000 ~~MW-65A~~ MW-04B
1030 MW-102A, MW-102B
1045 MW-103A, MW-103B, MW-103D
11:15 MW-107A, MW-107B, MW-107D
11:45 MW-106A, MW-106B
1205 MW-110A, MW-110B, MW-110D
Had to cut lock off MW-110B
1245 MW-35A, MW-35B, MW-35D
1305 MW-118A, MW-118B
1320 MW-31A, MW-31B
1345 MW-65A
1405 Returned to Treatment Plant
1430 Left Treatment Plant for Day

Location Date

Project / Client

Location Mead FNOP Date 2-26-13

Project / Client 1st Quarter Sampling
Ronnie Fiscus

0800 Arrived at Treatment Plant
0825 Left Treatment Plant
0835 MW-95A, MW-95B, MW-95D
0900 MW-80A, MW-80B, MW-80D
0920 MW-101A, MW-101B, MW-101D
0940 MW-61A, MW-61B, MW-61D
1000 ~~MW-65A~~ MW-04B
1030 MW-102A, MW-102B
1045 MW-103A, MW-103B, MW-103D
11:15 MW-107A, MW-107B, MW-107D
11:45 MW-106A, MW-106B
1205 MW-110A, MW-110B, MW-110D
Had to cut lock off MW-110B
1245 MW-35A, MW-35B, MW-35D
1305 MW-118A, MW-118B
1320 MW-31A, MW-31B
1345 MW-65A
1405 Returned to Treatment Plant
1430 Left Treatment Plant for Day

Location Mead FNOP Date 2-27-13

Project / Client 1st Quarter Sampling
Ronnie Fiscus

0800 Arrived at Treatment Plant
0830 Left Treatment Plant
0835 MW-84A WL-51.35
AMW-084-012013 2-Exp.
0855 MW-84D WL-51.57
DMW-084-012013 2-Exp.
0920 MW-83A WL-56.44
AMW-083-012013 2-Exp.
0930 MW-83B WL-56.30
BMW-083-012013 2-Exp.
0940 MW-83D WL-56.40
DMW-083-012013 2-Exp.
1035 MW-169A WL-49.81
AMW-0169-012013 2-Exp.
1050 MW-169B WL-49.76
BMW-0169-012013 2-Exp.
1110 MW-167A WL-47.27
AMW-0167-012013 2-Exp.
1125 MW-167B WL-~~48.47~~ 47.47
BMW-0167-012013 2-Exp.
1200 MW-147A WL-50.91
AMW-0147-012013 2-Exp.
AMW-2147-012013 2-Exp.

Location Mead FNOP Date 2-27-13

Project / Client 1st Quarter Sampling

Ronnie Fisons

1210 MW-147B WL- 50.73

BMW-0147-012013 2-Exp

1225 MW-147D WL- 50.47

DMW-0147-012013 2-Exp.

1250 MW-170A WL- 50.99

AMW-0170-012013 2-Exp.

1330 MW-166A WL- 50.58

AMW-0166-012013 2-Exp.

1340 MW-166B WL- 50.50

BMW-0166-012013 2-Exp.

1400 MW-164A WL- 46.61

AMW-0164-012013 2-Exp.

1415 MW-165B WL- 45.42

BMW-0165-012013 2-Exp.

1435 MW-162A WL- 45.45

AMW-0162-012013 2-Exp.

1500 MW-163A WL- 54.40

AMW-0163-012013 2-Exp.

1520 MW-168A WL- 53.21

AMW-0168-012013 2-Exp.

1535 MW-168B WL- 53.06

BMW-0168-012013 2-Exp.

1605 MW-175A WL- 50.87

Location Mead FNOP Date 2-27-13

Project / Client 1st Quarter Sampling

Ronnie Fisons

1620 MW-175B WL-51.08

BMW-0175-012013 2-Exp. 3-Voa

1650 Returned to Treatment Plant

1700 Left for the day.

Location Mead FNOP Date 2-28-13

Project / Client 1st Quarter Sampling

Ronnie Fiscus

0800 Arrived at Treatment Plant

Load material.

0835 Left Treatment Plant

0845 MW-174A WL-48.71

AMW-0174-012013 2-Exp.

0900 ~~MW-174~~ MW-174B WL-48.87

BMW-0174-012013 2-Exp.

0930 MW-61A WL-7.47

AMW-061-012013 3-Vo's

0940 MW-61B WL-7.56

BMW-061-012013 3-Vo's

0955 MW-61D WL-7.34

DMW-061-012013 3-Vo's

1020 MW-101A WL-8.90

AMW-0101-012013 3-Vo's

1035 MW-101B WL-8.90

BMW-0101-012013 3-Vo's

1050 MW-101D WL-9.00

DMW-0101-012013 3-Vo's

1110 MW-177A WL-7.95

AMW-0177-012013 3-Vo's

1130 MW-177B WL-7.53

BMW-0177-012013 3-Vo's

~~1150 MW~~

Location Mead FNOP Date 2-28-13

Project / Client 1st Quarter Sampling

Ronnie Fiscus

1150 MW-80A WL-~~8.25~~ 8.55

AMW-080-012013 3-Vo's

AMW-280-012013 3-Vo's

1215 MW-80B WL-8.80

BMW-080-012013 3-Vo's

1230 MW-80D WL-8.48

DMW-080-012013 3-Vo's

1245 MW-179A WL-9.45

AMW-0179-012013 3-Vo's

1300 MW-179B WL-9.57

BMW-0179-012013 3-Vo's

1330 MW-20A WL-60.05

AMW-020-012013 2-Exp.

1345 MW-20B WL-59.90

BMW-020-012013 2-Exp.

1400 MW-20C WL-59.17

CMW-020-012013 2-Exp.

1425 MW-95A WL-54.65

AMW-095-012013 2-Exp.

1445 MW-95B WL-54.28

BMW-095-012013 2-Exp.

1455 MW-95D WL-

DMW-095-012013 2-Exp.

Location Mead FNOP Date 2-28-13

Project / Client 1st Quarter Sampling

Ronnie Fiscus

1515 MW-82A WL- 50.28

AMW-082-012013 2-Exp.

1530 MW-82B WL-50.16

BMW-082-012013 2-Exp

1540 MW-82D WL-50.18

DMW-082-012013 2-Exp.

1600 MW-96A WL-52.49

AMW-096-012013 2-Exp.

1615 MW-96B WL-52.46

BMW-096-012013 2-Exp

1625 MW-96D WL-52.47

DMW-096-012013 2-Exp.

1640 Returned to Treatment Plant

1700 Left for the day.

RF

Location Date

Project / Client

Location [illegible] Date [illegible]

Project / Client 1st Quarter Sampling

Ronnie Fiscus

1105 MW-100B WL-56.31

BMW-0100-012013 2-Exp.

1115 MW-100D WL-56.42

DMW-0100-012013 2-Exp.

1135 MW-35A WL-54.00

AMW-035-012013 2-Exp.

1150 MW-35B WL-53.85

BMW-035-012013 2-Exp.

BMW-235-012013 2-Exp.

1205 MW-35D WL-53.81

DMW-035-012013 2-Exp.

1225 MW-172A WL-58.03

AMW-0172-012013 2-Exp.

1240 MW-172B WL-57.61

BMW-0172-012013 2-Exp.

1255 MW-173A WL-60.78

AMW-0173-012013 2-Exp.

1315 MW-118A WL-51.94

AMW-0118-012013 2-Exp.

AMW-2118-012013 2-Exp.

1330 MW-118B WL-51.92

BMW-0118-012013 2-Exp.

BMW-0118-012013MS 2-Exp

BMW-0118-012013MSD 2-Exp.

Location [illegible] Date [illegible]

Project / Client 1st Quarter Sampling

Ronnie Fiscus

1415 MW-86A WL-33.40

AMW-086-012013 2-Exp.

1425 MW-86B WL-33.79

BMW-086-012013 2-Exp.

BMW-286-012013 2-Exp.

1440 MW-86D WL-33.21

DMW-086-012013 2-Exp.

1500 Returned to Treatment Plant

1530 Left for the day.

RF

Location Mead FNOP Date 2-28-13

Project / Client 1st Quarter Sampling

Ronnie Fiscus

1515 MW-82A WL- 50.28

AMW-082-012013 2-Exp.

1530 MW-82B WL-50.16

BMW-082-012013 2-Exp

1540 MW-82D WL-50.18

DMW-082-012013 2-Exp.

1600 MW-96A WL-52.49

AMW-096-012013 2-Exp.

1615 MW-96B WL-52.46

BMW-096-012013 2-Exp

1625 MW-96D WL-52.47

DMW-096-012013 2-Exp.

1640 Returned to Treatment Plant

1700 Left for the day.

Location Mead FNOP Date 3-1-13

Project / Client 1st Quarter Sampling

Ronnie Fiscus

0800 Arrived at Treatment Plant

0820 Left Treatment Plant

0825 MW-97A WL-50.09

AMW-097-012013 2-Exp.

0840 MW-97B WL-49.96

BMW-097-012013 2-Exp.

0950 MW-97D WL-50.02

DMW-097-012013 2-Exp.

0915 MW-98A WL-51.34

AMW-098-012013 2-Exp

AMW-298-012013 2-Exp

0935 MW-98B WL-51.31

BMW-098-012013 2-Exp.

0945 MW-98D WL-

DMW-098-012013 2-Exp

1000 MW-85A WL-45.44

AMW-085-012013 2-Exp.

1015 MW-85B WL-45.19

BMW-085-012013 2-Exp.

1025 MW-85D WL-45.45

DMW-085-012013 2-Exp

1040 MW-100A WL-56.38

AMW-0100-012013 2-Exp.

Date 3-4-13

Project / Client 1st Quarter Sampling

Mike Daugherty

0800 Arrived @ Treatment plant, Safety meeting, Got sampling equipment

0815 TRB-288-012013 2-VOAs

0825 left Treatment Plant

0835 AMW-088-012013 2-Exp & 3-VOAs

MW-88A WL=8.05

MW-88B WL=8.12

MW-88D WL=8.23

0900 BMW-088-012013 2-Exp. & 3VOAs

0915 DMW-088-012013 2-Exp & 3VOAs

0935 AMW-0116-012013 2-Exp & 3 VOAs

MW-116A WL=6.79

MW-116B WL=6.76

MW-116D WL=6.76

0955 BMW-0116-012013 2-Exp & 3VOAs

1010 DMW-0116-012013 2-Exp. & 3VOAs

1030 AMW-0115-012013 2-Exp & 3VOAs

MW-115A WL=7.78

MW-115B WL=7.90

MW-115D WL=7.77

1045 BMW-0115-012013 2-Exp & 3VOAs

1055 DMW-0115-012013 2-Exp & 3VOAs

S. mcd

Location [illegible]

Date 3-4-13

Project / Client 1st Quarter Sampling

Mike Daugherty

1115 AMW-0114-012013 2-Exp. & 3VOAs

MW-114A WL=5.14

MW-114B WL=5.26

MW-114D WL=4.98

1130 BMW-0114-012013 2-Exp & 3VOAs

1145 DMW-0114-012013 2-Exp. & 3VOAs

1220 AMW-0158-012013 2-Exp. & 3VOAs

MW-158A WL=3.58

MW-158B WL=3.29

MW-158D WL=3.57

1240 BMW-0158-012013 2-Exp & 3VOAs

1255 DMW-0158-012013 2-Exp & 3VOAs

1325 AMW-038-012013 2-Exp & 3VOAs

MW-38A WL=8.02

MW-38D WL=7.59

also AMW-238-012013 2-Exp & 3VOA

1350 DMW-038-012013 2-Exp & 3VOAs

DMW-038-012013MS 2-Exp & 3VOAs

DMW-038-012013MSD 1-Exp & 3VOAs

1435 AMW-0112-012013 2-Exp & 3VOAs

MW-112A WL=1.99

MW-112B WL=1.92

1455 BMW-0112-012013 2-Exp & 3VOAs

1520 Left for the day

AMcd

Location Mead FMOP Date 3-6-13

Project / Client 1st Quarter Sampling

Mike Daugherty (ICR/Array)

0800 Arrived at Treatment Plant, Safety Meeting, & load-up

0810 TRB-2106-012013 2-VOAs

0825 Left Treatment plant for Sampling

0850 MW-106 A WL=20.03

AMW-0106-012013 2-Exp & 3VOAs

AMW-2106-012013 2-Exp. & 3VOAs

0920 MW-106B WL=19.75

BMW-0106-012013 1-Exp & 3 VOAs

BMW-0106-012013MS 1-Exp & 3VOAs

BMW-0106-012013MSD 1-Exp & 3 VOAs

(only a 130 bag deployed, not much water)

1005 MW-107 A WL=41.37

AMW-0107-012013 2-Exp & 3VOAs

AMW-2107-012013 2-Exp & 3VOAs

1030 MW-107 B WL=42.44

BMW-0107-012013 1-Exp & 3 VOAs

BMW-0107-012013MS 1-Exp & 3 VOAs

BMW-0107-012013MSD 1-Exp & 3 VOAs

(only a 130 bag deployed, not much water)

MW-107 D WL=41.97

1050 DMW-0107-012013 2-Exp. & 3VOAs

Location Mead FMOP Date 3-6-13

Project / Client 1st Quarter Sampling

Mike Daugherty (ICR/Array)

1120 MW-178B WL= 43.85

BMW-0178-012013 2-Exp. & 3VOAs

1150 MW-159A WL=51.40

AMW-0159-012013 2-Exp & 3VOAs

1210 MW-159 B WL=51.53

BMW-0159-012013 2-Exp & 3VOAs

1240 MW-102 A WL=36.15

AMW-0102-012013 3VOAs

1255 MW-102 B WL=36.89

BMW-0102-012013 3VOAs

1315 MW-103A WL=43.30

AMW-0103-012013 3VOAs

1325 MW-103B WL=42.95

BMW-0103-012013 3VOAs

1335 MW-103D WL=42.97

DMW-0103-012013 3 VOAs

1400 MW-155B WL=48.37

BMW-0155-012013 2-Exp & 3 VOAs

1430 MW-46A ~~MW-146 A~~ WL=5.50

AMW-046-012013 2-Exp & 3VOAs

AMW-246-012013 2-Exp & 3VOAs

Location Mead TNUT Date 5-6-13

Project / Client 1st Quarter Sampling

Mike Daugherty (ICR/Arcadis)

1450	MW-46B	WL= 5.61
	BMW-046-012013	2-Exp & 3VOAs
	BMW-046-012013MS	2-Exp & 3VOAs
	BMW-046-012013MSD	1-Exp & 3VOAs
1515	MW-46D	WL= 5.45
	DMW-046-012013	2-Exp & 3VOAs
1540	MW-113A	WL= 1.90
	AMW-0113-012013	2-Exp, & 3VOAs
1550	MW-113B	WL= 1.86
	BMW-0113-012013	2-Exp & 3VOAs
1610	MW-113D	WL= 1.94
	DMW-0113-012013	2-Exp & 3VOAs
1615	Return to treatment plant & put samples in fridge	
1630	Left for the day	

Location Date

Project / Client

Location Mead FNOP Date 3-6-13

Project / Client 1st Quarter Sampling

Mike Daugherty (ICR/Array)

1450 MW-46 B WL= 5.61

BMW-046-012013 2-Exp & 3 VOAs

BMW-046-012013MS 2-Exp & 3 VOAs

BMW-046-012013MSD 1-Exp & 3 VOAs

1515 MW-46 D WL= 5.45

DMW-046-012013 2-Exp & 3 VOAs

1540 MW-113 A WL= 1.90

AMW-0113-012013 2-Exp. & 3 VOAs

1550 MW-113 B WL= 1.86

BMW-0113-012013 2-Exp & 3 VOAs

1610 MW-113 D WL= 1.94

DMW-0113-012013 2-Exp & 3 VOAs

1615 Return to treatment plant & put samples in fridge

1630 Left for the day

Location Mead FNOP Date 3-7-13

Project / Client 1st Quarter Sampling - 2013

Mike Daugherty (ICR/Array)

~~0600~~ Arrive at Treatment Plant, Safety

0730 meeting, load up equipment

0745 TRB-2176-012013 2-VOAs

0755 Left Treatment Plant for Sampling

0810 MW-176A WL=9.87

AMW-0176-012013 2-Exp. & 3 VOCs

(tetters for A & B were reversed, so 176A was not resting at depth. 176B was at depth...)

0830 MW-176 B WL= 10.39

BMW-0176-012013 2-Exp. & 3 VOCs

0855 MW-110 A WL=7.56

AMW-0110-012013 2-Exp & 3 VOCs

0910 MW-110 B WL=7.87

BMW-0110-012013 2-Exp. & 3 VOCs

0925 MW-110 D WL=7.89

DMW-0110-012013 2-Exp & 3 VOCs

(Note - no lock on MW-110 B.)

0950 MW-148A WL=44.40

AMW-0148-012013 2-Exp.

1010 MW-31 A WL=48.94

AMW-031-012013 2-Exp. & 3 VOCs

1025 MW-31 B WL=49.08

BMW-031-012013 2-Exp. & 3 VOCs

Location Mead FNOP Date 3-7-13

Project / Client 1st Quarter Sampling - 2013

Mike Daugherty (ICR/Array)

1045 MW-145B WL=47.86

BMW-0145-012013 2-Exp & 3-VOCs

1105 MW-171 A WL=44.84

AMW-0171-012013 2-Exp.

(no bottom weight on tether, appears to have fallen off in well?..)

1120 MW-171 B WL=44.67

BMW-0171-012013 2-Exp

1140 MW-65A WL=34.35

AMW-065-012013 2-Exp & 3VOCs

1205 MW-04 B WL=37.11

BMW-004-012013 2-Exp.

1240 MW-160 A WL=49.05

AMW-~~010~~ mead -0160-012013 2-Exp & 3-VOCs

AMW-2160-012013 2-Exp & 3-VOCs

1305 MW-160 B WL=48.98

BMW-0160-012013 2-Exp & 3-VOCs

1340 MW-161 A WL=43.52

AMW-0161-012013 2-Exp & 3-VOCs

AMW-2161-012013 2-Exp & 3-VOCs

1400 MW-161B WL=43.68

BMW-0161-012013 2-Exp. & 3-VOCs

1420 Return to Treatment Plant, unload

1430 Left for the day

Location Date

Project / Client

Location Mead FNOP Date 3-7-13

Project / Client 1st Quarter Sampling - 2013

Mike Daugherty (ICR/Array)

1045 MW-145B WL=47.86

BMW-0145-012013 2-Exp & 3-VOCs

1105 MW-171 A WL=44.84

AMW-0171-012013 2-Exp

(no bottomweight on tether, appears to have fallen off in well?)

1120 MW-171 B WL=44.67

BMW-0171-012013 2-Exp

1140 MW-65A WL=34.35

AMW-065-012013 2-Exp & 3VOCs

1205 MW-04 B WL=37.11

BMW-004-012013 2-Exp

1240 MW-160 A WL=49.05

AMW-~~210~~ mw-0160-012013 2-Exp & 3-VOCs

AMW-2160-012013 2-Exp & 3-VOCs

1305 MW-160 B WL=48.98

BMW-0160-012013 2-Exp & 3-VOCs

1340 MW-161 A WL=43.52

AMW-0161-012013 2-Exp & 3-VOCs

AMW-2161-012013 2-Exp & 3-VOCs

1400 MW-161B WL=43.68

BMW-0161-012013 2-Exp & 3-VOCs

1420 Return to Treatment Plant, unload

1430 Left for the day

Location Mead FNOP Date 3-26-13

Project / Client 1st QTR SE 2013

Toby D Hiz (ECI)

1110 MW-84B

BMW-084-012013

BMW-084-012013 MS

BMW-084-012013 MSD

6 Exp.s / 8330

well had collapsed and was repaired this week so it could be sampled.

TH

Appendix C
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e., U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix D
Analytical Results on Compact Disc Summary Forms and Raw Data

Appendix D

Quality Control Summary Report First Quarter 2013 Water Supply Well Sampling Event, Former Nebraska Ordnance Plant (on CD)

Regional Office

1746 Cole Boulevard
Building 21, Suite 350
Lakewood, CO 80401

Phone: 303.298.7607
Fax: 303.298.7837

April 2, 2013

U.S. Army Corps of Engineers, Kansas City District
Attn: Jacqy Frazier
601 East 12th Street
Kansas City, MO 64106-2896

Re: Transmittal of Final Quality Control Summary Report
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska
Contract No. W912DQ-08-D-0001, Task Order No. 0002

Dear Ms. Frazier:

ECC is hereby transmitting one electronic copy of the Final Quality Control Summary Report for the First Quarter 2013 Water Supply Well Sampling Event at the former Nebraska Ordnance Plant, Mead, Nebraska.

Please contact Mr. Brady Bigelow or me if you require additional information.

Sincerely,

John Ryder
Project Chemist
ECC

Enclosures
cc: Ms. Kristine Stein (USACE)
Mr. Jason L'Ecuyer (USACE)
Mr. Bradley Brink (USACE)
Mr. Kirk Boese (USACE)

Corporate Office

1240 Bayshore Highway
Burlingame, CA 94010

Phone: 650.347.1555
Fax: 650.347.8789
www.ecc.net

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE: April 2, 2013	TRANSMITTAL NO. 2013-024

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by contractor)

Attn: Jacqy Frazier USACE, Kansas City District 601 E. 12th St. Kansas City, MO 64106-2896	FROM: John Ryder ECC 1746 Cole Blvd, Bldg 21, Lakewood, CO 80401	CONTRACT NO. W912DQ-08-D-0001, Task Order 0002	CHECK ONE: __X__ THIS IS A NEW TRANSMITTAL ____ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SECTION NO. (cover only one section with each transmittal)	PROJECT TITLE AND LOCATION: Groundwater Monitoring Program, Former Nebraska Ordnance Plant, Mead, Nebraska		CHECK ONE: ___ FIO __X__ For Govt. Approval

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type, size, model number, etc.)* *b.*	MFG. OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction No. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*	FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruc. no. 6)* *h.*	FOR C E USE CODE *i.*
1	Quality Control Summary Report - Final		1 electronic					
	First Quarter 2013 Water Supply Well Sampling Event							

REMARKS
Kristine Stein (USACE)
Jason L'Ecuyer (USACE)
Bradley Brink (USACE)
Kirk Boese (USACE)
Mead Library

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.
John Ryder, Denver Operations Group

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

FINAL
QUALITY CONTROL SUMMARY REPORT
FIRST QUARTER 2013

WATER SUPPLY WELL PROGRAM SAMPLING EVENT

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

Contract W912DQ-08-D-0001
Task Order 0002

April 2013

1.0 INTRODUCTION

Water supply well sampling was conducted between January 28 and February 15, 2013 at the former Nebraska Ordnance Plant, Mead, Nebraska. All sampling activities were performed in accordance with the *Site-Wide Work Plan, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009). This report presents a summary of the chemical data quality review for the First Quarter 2013 Water Supply Well sampling event.

TestAmerica analyzed the samples for one or more of the following constituents:

- Selected volatile organic compounds (VOCs) by U.S. Environmental Protection Agency Drinking Water Method 524.2
- Selected explosives by U.S. Environmental Protection Agency Method 8330
- Total suspended solids (TSS) by Method SM2540D.

TestAmerica of South Burlington, Vermont performed analysis for the explosives and TSS analyses and TestAmerica of Savannah, Georgia performed analysis for the VOCs. Table 1-1 lists the water supply wells planned for sample collection, the corresponding sample identification (ID) numbers, and the requested analyses for each sampled well. Appendix A includes associated chain of custody records. Appendix B presents an explanation of data validation qualifiers and drinking water standards and Appendix C contains a compact disk with all analytical data, including summary forms and raw data, for the First Quarter 2013 Water Supply Well sampling event.

2.0 SAMPLING ACTIVITIES

The field sampling team collected samples for chemical analyses from 54 locations during the First Quarter 2013 Water Supply Well sampling event. The team also collected six field duplicate samples, three matrix spike (MS) / matrix spike duplicate (MSD) sample pairs, and four trip blanks.

The sampling locations water supply well (WSW)-75, WSW-97, WSW-114, WSW-116, University of Nebraska-Lincoln Field Laboratory (UNFL)-12, and UNFL-23, were listed on the sampling schedule but were not collected as planned. The water was turned off at the UNFL-12, and UNFL-23 sampling locations, and the WSW-75, WSW-97, WSW-114, and WSW-116 sampling locations were not accessible to the field crew and a sample compliant with work plan requirements could not be obtained.

Table 2-1 summarizes the following information listed for the First Quarter 2013 Water Supply Well sampling event:

- Field Sample IDs,
- MS/MSD sample information;
- Quality control (QC) split (Field Duplicate) sample information;
- Dates of sample collection and sample receipt by the laboratory;

- Laboratory Sample IDs;
- Laboratory sample delivery group (SDG) numbers; and
- Requested analyses.

3.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present the data quality evaluation procedures performed in accordance with the *Mead Validation Guidelines*, (ECC, 2007), approved by USACE 2007. Both project specified limits and laboratory control limits were used to assess data quality. Data quality evaluation results and results qualifications are presented in Table 3-1 according to field sample ID. QC outliers and associated limits are presented in Table 3-2.

3.1 Sample Receipt at the Laboratory

The laboratories received all samples in good condition and within the recommended temperature range of 4 ± 2 °C. Sample preservation was not indicated on the chain of custody records. The VOC pH logs indicated that the field team properly preserved the samples to a pH less than 2.

3.2 Holding Times

The laboratories performed extractions and analyses of all samples within required method-specific holding times.

3.3 Tuning and Calibration

The laboratory did not report any deviations for the calibration and tuning of pertinent instrumentation in the case narratives. The evaluation of the calibration summary forms indicated that all project criteria were met.

3.4 Laboratory Method Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank. For common laboratory contaminants, detections are qualified as non-detect (U) if the concentration in the sample is less than 10 times the concentration in the associated blank. Sample results that are either non-detect (U), or greater than 5 or 10 times the blank result do not require qualification.

There were no detections of target analytes in the laboratory method blanks.

3.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections are qualified as non-detect (U) if the concentration in the sample is less than 5 times the concentration in the associated blank (10 times for common laboratory contaminants). Sample results that are either non-detect (U), or greater than 5 times the blank result do not require qualification.

There were no detections of target analytes in the volatile trip blanks.

3.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) or prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample. Surrogates were analyzed for each sample batch for VOCs and explosives.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects and UJ-coded for non-detects if the surrogate % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also, results for associated analytes in the affected samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects.

The surrogate % RECs were within laboratory QC limits with one exception. The surrogate % REC in sample 0103-012013 for the explosives analysis was below the QC limits. The sample was re-extracted and analyzed with acceptable %REC; however, the re-extraction was performed outside the holding times. All explosive results in the sample were qualified as estimated non-detect (UJ). Refer to Table 3-1 for data quality evaluation results and qualified samples. Table 3-2 presents the explosive QC outlier and associated sample for all assigned qualifiers.

3.7 Laboratory Control Samples and Laboratory Control Sample Duplicates

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent difference (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also, results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS/LCSD RPD exceeds 30%.

All LCS/LCSD % RECs were within laboratory QC limits and all RPDs were less than 30%.

3.8 Matrix Spikes and Matrix Spike Duplicates

MS/MSD analyses measure method accuracy and precision for a project-specific matrix. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the unspiked portion of the sample for % REC of the spiked analytes. MS/MSD samples were analyzed for each SDG for all analyses. MS/MSD results were provided for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory QC limits but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also, results for the affected analyte in the parent sample are J-coded for detects if the MS/MSD % RECs are greater than the QC limits. No action is required for non-detects.

All % RECs were within laboratory QC limits and all RPDs were less than 30%.

3.9 Field Duplicates

The field sampling team collected six field duplicate pairs during the First Quarter 2013 Water Supply Well sampling event. The field duplicate pairs are listed below:

- 056-012013 / 256-012013 (VOCs and Explosives);
- 068-012013 / 268-012013 (VOCs and Explosives);
- 087-012013 / 287-012013 (VOCs and Explosives);
- 096-012013 / 296-012013 (VOCs and Explosives);
- 0104-012013 / 2104-012013 (VOCs and Explosives); and
- 0113-012013 / 2113-012013 (VOCs and Explosives).

All field duplicate pairs met the precision criteria.

Note: Field duplicate results are also considered acceptable when one result is not detected and the other result is detected below the limit of quantitation (LOQ).

3.10 Dilutions and Reanalyses

Qualifiers assigned as a result of calibration range exceedances are not used in the calculation of analytical data completeness percentages if there are acceptable results from diluted sample analyses.

The VOC sample from well WSW-52C-B required a 10x dilution analysis due to high levels of trichloroethene (TCE) in the sample above the calibration range. All sample VOC results are reported from the dilution analysis. The VOC reporting limits are raised accordingly for the sample.

All other sample results are reported from undiluted analyses.

3.11 Other QC Parameters

All detected explosive results were confirmed on a second column. A column comparison between the detected explosive results was made using explosive identification summary forms. The validator confirmed all reported explosive detections for both columns and the inter-column RPDs.

One detected result with an inter-column RPD exceeding 40% was qualified as estimated (J). Refer to Table 3-1 for data quality evaluation results and qualified samples. Table 3-2 presents the explosive QC outlier and associated sample for all assigned qualifiers. This qualifier was not used to determine analytical completeness or project completeness in the Overall Assessment in Section 4.0.

3.12 Laboratory Qualifiers

Analytes detected below the LOQ, but above the detection limit were quantified and results were assigned an estimated (J) qualifier by the laboratory. These qualifiers were carried over by the validator and were not used to determine analytical or project completeness in the Overall Assessment in Section 4.0.

4.0 OVERALL ASSESSMENT

The following subsections present the field completeness, analytical completeness, and project completeness determinations for the First Quarter 2013 Water Supply Well sampling event. An evaluation of field, analytical, and project completeness is presented in Tables 4-1 through 4-3.

4.1 Field Completeness

Field completeness for sample collection was assessed by comparing the number of samples properly collected to the number of samples planned for collection. Six sample locations scheduled for VOC and explosive analysis sampling this quarter could not be sampled (UNFL-12, UNFL-23, WSW-75, WSW-97, WSW-114, and WSW-116). As a result, the field

completeness for the VOCs and explosives was determined to be 90.9%. TSS was not affected and the field completeness for TSS was 100%. The overall field completeness percentage is 91.2%, which is below the field completeness goal of 95%.

Section 2.0 presents the field sampling activities. Table 4-1 presents the field completeness.

4.2 Analytical Completeness

Analytical completeness was calculated as both acceptable data completeness and quality data completeness. Analytical completeness is presented in Table 4-2. The overall acceptable data completeness percentage goal is 95% (90% for each method), and the overall quality data completeness percentage goal is 80%.

Acceptable data completeness is a measure of laboratory contract compliance. Acceptable data includes data that has not been rejected or qualified as estimated (J). Qualified data is considered acceptable if appropriate corrective actions were taken by the laboratory. The acceptable data completeness percentage was 98.3% for explosives and 100% for both VOCs, and TSS. These all exceed the acceptable data completeness goals of 90% for each analytical method. Overall acceptable data completeness is 99.2%, which exceeds the overall acceptable data completeness goal of 95%.

Quality data is a measure of the percentage of usable data. Quality data includes all data except rejected data points, and does not include analyses for which replacement data points are available. Quality data completeness percentages for the VOCs, explosives, and TSS are 100%, as no sample results were rejected. These exceed the quality data completeness goals of 80% for each analytical method. Overall quality data completeness is also 100%, which exceeds the overall quality data completeness goal of 80%.

Table 4-2 presents acceptable and quality data completeness.

4.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples/measurements that are determined to be usable to the total number of samples/ measurements planned. Project completeness is calculated using the field completeness and analytical completeness (quality data) completeness percentages. Overall project completeness is 91.2%. The overall project completeness exceeds the project completeness goal of 90%.

Table 4-3 presents the project completeness percentages.

5.0 CONCLUSIONS

The data are acceptable. Six explosives results were UJ-coded due to low surrogate %REC and one explosives result was J-coded due to high column RPD. Qualified sample results are

presented in Table 3-1. Overall quality data completeness is 100%. Overall acceptable data completeness is 99.2% and overall field completeness is 91.2%, both of which meet project goals. The overall project completeness at 91.2% meets the project goal of 90%.

6.0 REFERENCES

ECC, 2007 *Mead Validation Guidelines*, (approved by USACE 2007)

ECC, 2009. *Site-Wide Work Plan, Support Services, Former Nebraska Ordnance Plant, Mead, Nebraska*. August.

Tables

List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
C-RPD	column relative percent difference
GC/MS	Gas chromatography–mass spectrometry
HPLC	high-performance liquid chromatography
ICV	initial calibration verification
ID	identification/identifier
Is_Surr	Internal standard-surrogate
J	estimated
Lab	laboratory
LWL	lower warning limit
MS/MSD	matrix spike/matrix spike duplicate
QC	Quality Control
RPD	relative percent difference
SDG	sample delivery group
TSS	total suspended solids
U	not detected at laboratory limit of detection
UCL	upper control limit
UNFL	University of Nebraska-Lincoln Field Laboratory
WSW	water supply well

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
UNFL-09A	UNFL-9A-012013	Explosives, Volatiles
UNFL-10A	UNFL-10A-012013	Explosives, Volatiles
UNFL-27	UNFL-027-012013	Explosives, Volatiles
WSW-100	0100-012013	Explosives, Volatiles
WSW-103	0103-012013	Explosives, Volatiles
WSW-104	0104-012013	Explosives, Volatiles
WSW-105	0105-012013	Explosives, Volatiles
WSW-106	0106-012013	Explosives, Volatiles
WSW-109	0109-012013	Explosives, Volatiles
WSW-110	0110-012013	Explosives, Volatiles
WSW-112	0112-012013	Explosives, Volatiles
WSW-113	0113-012013	Explosives, Volatiles
WSW-115	0115-012013	Explosives, Volatiles
WSW-117	0117-012013	Explosives, Volatiles
WSW-29	029-012013	Explosives, Volatiles
WSW-29A	029A-012013	Explosives, Volatiles
WSW-50A	050A-012013	Explosives, Volatiles
WSW-50B	050B-012013	Explosives, Volatiles
WSW-51	051-012013	Explosives, Volatiles
WSW-51A	051A-012013	Explosives, Volatiles
WSW-52A	052A-012013	Explosives, Volatiles
WSW-52A-B	052A-B-012013	Explosives, TSS, Volatiles
WSW-52B	052B-012013	Explosives, Volatiles
WSW-52C	052C-012013	Explosives, Volatiles
WSW-52C-B	052C-B-012013	Explosives, TSS, Volatiles
WSW-53	053-012013	Explosives, Volatiles
WSW-53-B	053-B-012013	Explosives, TSS, Volatiles
WSW-54	054-012013	Explosives, Volatiles
WSW-54-B	054-B-012013	Explosives, TSS, Volatiles
WSW-55	055-012013	Explosives, Volatiles
WSW-56	056-012013	Explosives, Volatiles
WSW-57	057-012013	Explosives, Volatiles
WSW-58	058-012013	Explosives, Volatiles
WSW-59	059-012013	Explosives, Volatiles
WSW-60	060-012013	Explosives, Volatiles
WSW-61	061-012013	Explosives, Volatiles
WSW-62	062-012013	Explosives, Volatiles
WSW-65	065-012013	Explosives, Volatiles
WSW-66	066-012013	Explosives, Volatiles
WSW-67	067-012013	Explosives, Volatiles
WSW-68	068-012013	Explosives, Volatiles
WSW-73	073-012013	Explosives, Volatiles
WSW-74	074-012013	Explosives, Volatiles
WSW-76	076-012013	Explosives, Volatiles
WSW-77	077-012013	Explosives, Volatiles
WSW-79	079-012013	Explosives, Volatiles
WSW-86	086-012013	Explosives, Volatiles
WSW-87	087-012013	Explosives, Volatiles
WSW-89	089-012013	Explosives, Volatiles

Table 1-1

Sample Locations, Sample IDs, and Analyses

First Quarter 2013 Water Supply Well Sampling Event

Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
WSW-91	091-012013	Explosives, Volatiles
WSW-92	092-012013	Explosives, Volatiles
WSW-95	095-012013	Explosives, Volatiles
WSW-96	096-012013	Explosives, Volatiles
WSW-99	099-012013	Explosives, Volatiles

Notes:

TSS	A2540D	Total Suspended Solids Dried at 103-105 C
Volatiles	E524.2	Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC

Table 2-1
Sample Collection Summary
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	TSS	Volatiles
Field Samples									
0100-012013			1/28/2013	1/31/2013	200-14842-1	14842-1	•		•
065-012013			1/28/2013	1/31/2013	200-14842-2	14842-1	•		•
066-012013			1/28/2013	1/31/2013	200-14842-3	14842-1	•		•
067-012013			1/28/2013	1/31/2013	200-14842-4	14842-1	•		•
068-012013			1/28/2013	1/31/2013	200-14842-5	14842-1	•		•
		268-012013	1/28/2013	1/31/2013	200-14842-6	14842-1	•		•
029-012013			1/28/2013	1/31/2013	200-14842-7	14842-1	•		•
029A-012013			1/28/2013	1/31/2013	200-14842-8	14842-1	•		•
050A-012013			1/28/2013	1/31/2013	200-14842-9	14842-1	•		•
050B-012013			1/28/2013	1/31/2013	200-14842-10	14842-1	•		•
052B-012013			1/28/2013	1/31/2013	200-14842-11	14842-1	•		•
051-012013			1/28/2013	1/31/2013	200-14842-12	14842-1	•		•
051A-012013			1/28/2013	1/31/2013	200-14842-13	14842-1	•		•
055-012013			1/28/2013	1/31/2013	200-14842-14	14842-1	•		•
0113-012013	0113-012013		1/28/2013	1/31/2013	200-14842-15	14842-1	•		•
		2113-012013	1/28/2013	1/31/2013	200-14842-16	14842-1	•		•
095-012013			1/28/2013	1/31/2013	200-14842-17	14842-1	•		•
087-012013	087-012013		1/28/2013	1/31/2013	200-14842-18	14842-2	•		•
		287-012013	1/28/2013	1/31/2013	200-14842-19	14842-2	•		•
074-012013			1/28/2013	1/31/2013	200-14842-20	14842-1	•		•
073-012013			1/28/2013	1/31/2013	200-14842-21	14842-1	•		•
086-012013			1/28/2013	1/31/2013	200-14842-22	14842-1	•		•
0106-012013			1/28/2013	1/31/2013	200-14842-23	14842-2	•		•
096-012013	096-012013		1/28/2013	1/31/2013	200-14842-24	14842-3	•		•
		296-012013	1/28/2013	1/31/2013	200-14842-25	14842-3	•		•
0104-012013			1/28/2013	1/31/2013	200-14842-26	14842-2	•		•
		2104-012013	1/28/2013	1/31/2013	200-14842-27	14842-2	•		•
0103-012013			1/28/2013	1/31/2013	200-14842-28	14842-2	•		•
0109-012013			1/28/2013	1/31/2013	200-14842-29	14842-2	•		•
0105-012013			1/28/2013	1/31/2013	200-14842-30	14842-2	•		•
079-012013			1/29/2013	1/31/2013	200-14842-31	14842-2	•		•

Table 2-1
Sample Collection Summary
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	TSS	Volatiles
099-012013			1/29/2013	1/31/2013	200-14842-32	14842-2	•		•
0110-012013			1/29/2013	1/31/2013	200-14842-33	14842-2	•		•
077-012013			1/29/2013	1/31/2013	200-14842-34	14842-2	•		•
076-012013			1/29/2013	1/31/2013	200-14842-35	14842-2	•		•
056-012013			1/29/2013	1/31/2013	200-14842-36	14842-2	•		•
		256-012013	1/29/2013	1/31/2013	200-14842-37	14842-2	•		•
059-012013			1/29/2013	1/31/2013	200-14842-38	14842-2	•		•
057-012013			1/29/2013	1/31/2013	200-14842-39	14842-2	•		•
0112-012013			1/29/2013	1/31/2013	200-14842-40	14842-2	•		•
058-012013			1/29/2013	1/31/2013	200-14842-41	14842-2	•		•
089-012013			1/29/2013	1/31/2013	200-14842-42	14842-2	•		•
0115-012013			1/29/2013	1/31/2013	200-14842-43	14842-3	•		•
092-012013			1/29/2013	1/31/2013	200-14842-44	14842-3	•		•
0117-012013			1/29/2013	1/31/2013	200-14842-45	14842-3	•		•
091-012013			1/29/2013	1/31/2013	200-14842-46	14842-3	•		•
062-012013			1/29/2013	1/31/2013	200-14842-47	14842-3	•		•
061-012013			1/29/2013	1/31/2013	200-14842-48	14842-3	•		•
060-012013			1/29/2013	1/31/2013	200-14842-49	14842-3	•		•
054-012013			1/31/2013	2/1/2013	200-14868-6	14868	•		•
054-B-012013			1/31/2013	2/1/2013	200-14868-7	14868	•	•	•
052A-012013			1/31/2013	2/1/2013	200-14868-2	14868	•		•
052A-B-012013			1/31/2013	2/1/2013	200-14868-3	14868	•	•	•
053-012013			1/31/2013	2/1/2013	200-14868-4	14868	•		•
053-B-012013			1/31/2013	2/1/2013	200-14868-5	14868	•	•	•
UNFL-027-012013			2/4/2013	2/5/2013	200-14943-2	14943	•		•
UNFL-9A-012013			2/4/2013	2/5/2013	200-14943-3	14943	•		•
UNFL-10A-012013			2/4/2013	2/5/2013	200-14943-4	14943	•		•
052C-012013			2/15/2013	2/16/2013	200-15129-2	15129	•		•
052C-B-012013			2/15/2013	2/16/2013	200-15129-3	15129	•	•	•
Trip Blanks									
TRB-2100-012013			1/28/2013	1/31/2013	200-14842-50	14842-3			•
TRB-252A-012013			1/31/2013	2/1/2013	200-14868-1	14868			•

Table 2-1
Sample Collection Summary
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicate Samples	Date Sampled	Date Received by Lab	Lab ID	SDG	Explosives	TSS	Volatiles
TRB-UNFL-227-012013			2/4/2013	2/5/2013	200-14943-1	14943			•
TRB-052C-012013			2/15/2013	2/16/2013	200-15129-1	15129			•

Notes:

TSS	A2540D	Total Suspended Solids Dried at 103-105 C
Volatiles	E524.2	Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC

• = Requested for the indicated analyses

Table 3-1
Data Quality Evaluation Results
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	C_RPD	IS_Surr	Comments	Final Result
0103-012013	1/28/2013	14842-2	200-14842-28	Explosives	1,3,5-trinitrobenzene	µg/L	0.048	UJ		X	Surrogate recovery outside project limits.	0.048 UJ
0103-012013	1/28/2013	14842-2	200-14842-28	Explosives	2,4,6-trinitrotoluene	µg/L	0.096	UJ		X	Surrogate recovery outside project limits.	0.096 UJ
0103-012013	1/28/2013	14842-2	200-14842-28	Explosives	2,4-dinitrotoluene	µg/L	0.096	UJ		X	Surrogate recovery outside project limits.	0.096 UJ
0103-012013	1/28/2013	14842-2	200-14842-28	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.096	UJ		X	Surrogate recovery outside project limits.	0.096 UJ
0103-012013	1/28/2013	14842-2	200-14842-28	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.048	UJ		X	Surrogate recovery outside project limits.	0.048 UJ
0103-012013	1/28/2013	14842-2	200-14842-28	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.048	UJ		X	Surrogate recovery outside project limits.	0.048 UJ
053-B-012013	1/31/2013	14868	200-14868-5	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.24	J	X		Column RPD	0.24 J

Reason for Qualification
C_RPD- Column RPD
IS_Surr- Internal standard, Surrogate recovery outside project limits.
Note: The LOD values were used to display non detected lab results.

Table 3-2
Explosives Quality Control Outliers
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
Confirmation Column Difference					
053-B-012013	14868	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	74.3 RPD
Surrogate					
0103-012013	14842-2	1,3,5-Trinitrobenzene	Surrogate < minimum LWL	1,2-Dinitrobenzene 70 - 115 %	56.3 %
0103-012013	14842-2	2,4,6-Trinitrotoluene	Surrogate < minimum LWL	1,2-Dinitrobenzene 70 - 115 %	56.3 %
0103-012013	14842-2	2,4-Dinitrotoluene	Surrogate < minimum LWL	1,2-Dinitrobenzene 70 - 115 %	56.3 %
0103-012013	14842-2	2-Amino-4,6-dinitrotoluene	Surrogate < minimum LWL	1,2-Dinitrobenzene 70 - 115 %	56.3 %
0103-012013	14842-2	4-Amino-2,6-dinitrotoluene	Surrogate < minimum LWL	1,2-Dinitrobenzene 70 - 115 %	56.3 %
0103-012013	14842-2	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Surrogate < minimum LWL	1,2-Dinitrobenzene 70 - 115 %	56.3 %

Table 4-1
Field Completeness
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Explosives	66	60	90.9%
Volatiles	66	60	90.9%
Total Suspended Solids	4	4	100.0%
Totals =	136	124	91.2%
Goal =			95%

Notes:

Number of Samples Planned includes field samples and field duplicate samples.

Table 4-2
Analytical Completeness
First Quarter2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters	Acceptable Data	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data	Quality Data Completeness	Quality Data Completeness Goals
Explosives (Analyte Count - 6)	360	354	98.3%	90%	360	100%	80%
Volatiles (Analyte Count - 6)	360	360	100%	90%	360	100%	80%
TSS (Analyte Count - 1)	4	4	100%	90%	4	100%	80%
Totals =	724	718	99.2%	95%	724	100.0%	80%

Notes:

Total number of parameters includes field samples (includes data points from dilutions and/or reanalyses to be used in place of original data) and field duplicates (does not include field blanks or trip blanks).
Acceptable data includes data that has not been rejected or qualified as estimated (J/UJ). Data points for which the required corrective actions were taken or do not require corrective action do not count against the acceptable data completeness goal calculation (i.e., results exceeding the calibration range that were reanalyzed at dilutions within the calibration range).
Quality data is defined as all non-rejected data.

Table 4-3
Project Completeness
First Quarter 2013 Water Supply Well Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical	Project Completeness
91.2%	100%	91.2%
Project Completeness Goal =		90%

Notes:

Analytical Completeness is the percentage of usable data (i.e. quality data completeness).
Project Completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
0100-012013	28-Jan	0830	G	W	2	X	
065-012013	28-Jan	0845	G	W	2	X	
066-012013	28-Jan	0900	G	W	2	X	
067-012013	28-Jan	0915	G	W	2	X	
068-012013	28-Jan	0930	G	W	2	X	
268-012013	28-Jan	0930	G	W	2	X	
029-012013	28-Jan	0945	G	W	2	X	
029A-012013	28-Jan	1000	G	W	2	X	
050A-012013	28-Jan	1015	G	W	2	X	
050B-012013	28-Jan	1030	G	W	2	X	
052B-012013	28-Jan	1045	G	W	2	X	
051-012013	28-Jan	1100	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby D. Hinz	ECC	1-29-13	Fed-ex 7946	2892	4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Steph Rucker sp 1/31/13			Steph Rucker	TABUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
051A-012013	28-Jan	1115	G	W	1	X	
055-012013	28-Jan	1135	G	W	2	X	
0113-012013	28-Jan	1145	G	W	2	X	
2113-012013	28-Jan	1145	G	W	2	X	
0113-012013 MS	28-Jan	1145	G	W	2	X	
0113-012013 MSD	28-Jan	1145	G	W	2	X	
095-012013	28-Jan	1215	G	W	2	X	
087-012013	28-Jan	1240	G	W	2	X	
287-012013	28-Jan	1240	G	W	2	X	
087-012013 MS	28-Jan	1240	G	W	2	X	
087-012013 MSD	28-Jan	1240	G	W	2	X	
074-012013	28-Jan	1300	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby O.	ECC	1-29-13	Fed-ex 7946	2892	4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steve Bruchy	TABUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
073-012013	28-Jan	1315	G	W	2	X	
086-012013	28-Jan	1325	G	W	2	X	
0106-012013	28-Jan	1340	G	W	2	X	
096-012013	28-Jan	1355	G	W	2	X	
296-012013	28-Jan	1355	G	W	2	X	
096-012013 MS	28-Jan	1355	G	W	2	X	
096-012013 MSD	28-Jan	1355	G	W	2	X	
0104-012013	28-Jan	1415	G	W	2	X	
2104-012013	28-Jan	1415	G	W	2	X	
0103-012013	28-Jan	1430	G	W	2	X	
0109-012013	28-Jan	1445	G	W	2	X	
0105-012013	28-Jan	1500	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby R. K	ECC	1-29-13	Fed-ex 7946 2892		4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Pachan	TMBUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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South Burlington, VT 5403
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Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
051A-012013	28-Jan	1115	G	W	1	X	
055-012013	28-Jan	1135	G	W	2	X	
0113-012013	28-Jan	1145	G	W	2	X	
2113-012013	28-Jan	1145	G	W	2	X	
0113-012013 MS	28-Jan	1145	G	W	2	X	
0113-012013 MSD	28-Jan	1145	G	W	2	X	
095-012013	28-Jan	1215	G	W	2	X	
087-012013	28-Jan	1240	G	W	2	X	
287-012013	28-Jan	1240	G	W	2	X	
087-012013 MS	28-Jan	1240	G	W	2	X	
087-012013 MSD	28-Jan	1240	G	W	2	X	
074-012013	28-Jan	1300	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby O.	ECC	1-29-13	Fed-ex 7946 2892 4699		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TABUL	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
073-012013	28-Jan	1315	G	W	2	X	
086-012013	28-Jan	1325	G	W	2	X	
0106-012013	28-Jan	1340	G	W	2	X	
096-012013	28-Jan	1355	G	W	2	X	
296-012013	28-Jan	1355	G	W	2	X	
096-012013 MS	28-Jan	1355	G	W	2	X	
096-012013 MSD	28-Jan	1355	G	W	2	X	
0104-012013	28-Jan	1415	G	W	2	X	
2104-012013	28-Jan	1415	G	W	2	X	
0103-012013	28-Jan	1430	G	W	2	X	
0109-012013	28-Jan	1445	G	W	2	X	
0105-012013	28-Jan	1500	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby R Hinz	ECC	1-29-13 1700	Fed-Ex 7946 2892		4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Bachman	TAB	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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South Burlington, VT 5403
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Groundwater samples

Chain of Custody Record

TestAmerica
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TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 01/29/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	4 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
079-012013	29-Jan	0855	G	W	2	X	
099-012013	29-Jan	0915	G	W	2	X	
0110-012013	29-Jan	0930	G	W	2	X	
077-012013	29-Jan	0945	G	W	2	X	
076-012013	29-Jan	1000	G	W	2	X	
056-012013	29-Jan	1020	G	W	2	X	
256-012013	29-Jan	1020	G	W	2	X	
059-012013	29-Jan	1035	G	W	2	X	
057-012013	29-Jan	1050	G	W	2	X	
0112-012013	29-Jan	1105	G	W	2	X	
058-012013	29-Jan	1130	G	W	2	X	
089-012013	29-Jan	1145	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	1-29-13 1700	Fed-ex 7946 2892 4699		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TABLR	1/31/13 2010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 01/29/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	5 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
0115 - 012013	29-Jan	1200	G	W	2	X	
092 - 012013	29-Jan	1215	G	W	2	X	
0117 - 01 2013	29-Jan	1230	G	W	2	X	
091 - 01 2013	29-Jan	1245	G	W	2	X	
062 - 012013	29-Jan	1300	G	W	2	X	
061 - 012013	29-Jan	1315	G	W	2	X	
060 - 012013	29-Jan	1330	G	W	2	X	
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
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Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby D.	ECC	1-29-13	Fed-ex 7946	2872	4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Franklin	TABUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

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SDG # 200-14842-1 ETR # _____

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
051A-012013	28-Jan	1115	G	W	1	X	
055-012013	28-Jan	1135	G	W	2	X	
0113-012013	28-Jan	1145	G	W	2	X	
2113-012013	28-Jan	1145	G	W	2	X	
0113-012013 MS	28-Jan	1145	G	W	2	X	
0113-012013 MSD	28-Jan	1145	G	W	2	X	
095-012013	28-Jan	1215	G	W	2	X	
087-012013	28-Jan	1240	G	W	2	X	
287-012013	28-Jan	1240	G	W	2	X	
087-012013 MS	28-Jan	1240	G	W	2	X	
087-012013 MSD	28-Jan	1240	G	W	2	X	
074-012013	28-Jan	1300	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby A. [illegible]	ECC	1-29-13	FedEx 7946	2892	4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TABLK	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

COPY = ORIGINAL ON FILE
SDG # 200-14842-1 ETR #

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			SDG No.
(303) 298-7837 FAX	☐ 3 weeks			
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
073-012013	28-Jan	1315	G	W	2	X	
086-012013	28-Jan	1325	G	W	2	X	
0106-012013	28-Jan	1340	G	W	2	X	
096-012013	28-Jan	1355	G	W	2	X	
296-012013	28-Jan	1355	G	W	2	X	
096-012013 MS	28-Jan	1355	G	W	2	X	
096-012013 MSD	28-Jan	1355	G	W	2	X	
0104-012013	28-Jan	1415	G	W	2	X	
2104-012013	28-Jan	1415	G	W	2	X	
0103-012013	28-Jan	1430	G	W	2	X	
0109-012013	28-Jan	1445	G	W	2	X	
0105-012013	28-Jan	1500	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby R Hinz	ECC	1700 1-29-13	Fed-Ex 7946 2892		4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Pachan	TABUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
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Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

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SDG # _____ ETR # _____

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 01/29/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	4 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
079-012013	29-Jan	0855	G	W	2	X	
099-012013	29-Jan	0915	G	W	2	X	
0110-012013	29-Jan	0930	G	W	2	X	
077-012013	29-Jan	0945	G	W	2	X	
076-012013	29-Jan	1000	G	W	2	X	
056-012013	29-Jan	1020	G	W	2	X	
256-012013	29-Jan	1020	G	W	2	X	
059-012013	29-Jan	1035	G	W	2	X	
057-012013	29-Jan	1050	G	W	2	X	
0112-012013	29-Jan	1105	G	W	2	X	
058-012013	29-Jan	1130	G	W	2	X	
089-012013	29-Jan	1145	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	1-29-13	Fed-ex 7946 2892		4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Stacy Pachan	TABLR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

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TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
051A-012013	28-Jan	1115	G	W	1	X	
055-012013	28-Jan	1135	G	W	2	X	
0113-012013	28-Jan	1145	G	W	2	X	
2113-012013	28-Jan	1145	G	W	2	X	
0113-012013 MS	28-Jan	1145	G	W	2	X	
0113-012013 MSD	28-Jan	1145	G	W	2	X	
095-012013	28-Jan	1215	G	W	2	X	
087-012013	28-Jan	1240	G	W	2	X	
287-012013	28-Jan	1240	G	W	2	X	
087-012013 MS	28-Jan	1240	G	W	2	X	
087-012013 MSD	28-Jan	1240	G	W	2	X	
074-012013	28-Jan	1300	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby O.	ECC	1-29-13	Fed-ex 7946 2892	4699	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steve Bruchu	TABUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
073-012013	28-Jan	1315	G	W	2	X	
086-012013	28-Jan	1325	G	W	2	X	
0106-012013	28-Jan	1340	G	W	2	X	
096-012013	28-Jan	1355	G	W	2	X	
296-012013	28-Jan	1355	G	W	2	X	
096-012013 MS	28-Jan	1355	G	W	2	X	
096-012013 MSD	28-Jan	1355	G	W	2	X	
0104-012013	28-Jan	1415	G	W	2	X	
2104-012013	28-Jan	1415	G	W	2	X	
0103-012013	28-Jan	1430	G	W	2	X	
0109-012013	28-Jan	1445	G	W	2	X	
0105-012013	28-Jan	1500	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

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☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby R Hinz	ECC	1-29-13 1700	Fed-Ex 7946 2892		4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Bachman	TAB	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 01/29/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	4 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
079-012013	29-Jan	0855	G	W	2	X	
099-012013	29-Jan	0915	G	W	2	X	
0110-012013	29-Jan	0930	G	W	2	X	
077-012013	29-Jan	0945	G	W	2	X	
076-012013	29-Jan	1000	G	W	2	X	
056-012013	29-Jan	1020	G	W	2	X	
256-012013	29-Jan	1020	G	W	2	X	
059-012013	29-Jan	1035	G	W	2	X	
057-012013	29-Jan	1050	G	W	2	X	
0112-012013	29-Jan	1105	G	W	2	X	
058-012013	29-Jan	1130	G	W	2	X	
089-012013	29-Jan	1145	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
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Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	1-29-13 1700	Fed-ex 7946 2892 4699		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	TABLER	1/31/13 2010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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South Burlington, VT 5403
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Groundwater samples

Chain of Custody Record

TestAmerica
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TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 01/29/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	5 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
0115 - 012013	29-Jan	1200	G	W	2	X	
092 - 012013	29-Jan	1215	G	W	2	X	
0117 - 01 2013	29-Jan	1230	G	W	2	X	
091 - 01 2013	29-Jan	1245	G	W	2	X	
062 - 012013	29-Jan	1300	G	W	2	X	
061 - 012013	29-Jan	1315	G	W	2	X	
060 - 012013	29-Jan	1330	G	W	2	X	
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby R.	ECC	1-29-13	Fed-ex 7946	2872	4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Franklin	TABUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Groundwater samples

COPY - ORIGINAL ON FILE
SDG # 200-14842-1 ETR #

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
073-012013	28-Jan	1315	G	W	2	X	
086-012013	28-Jan	1325	G	W	2	X	
0106-012013	28-Jan	1340	G	W	2	X	
096-012013	28-Jan	1355	G	W	2	X	
296-012013	28-Jan	1355	G	W	2	X	
096-012013 MS	28-Jan	1355	G	W	2	X	
096-012013 MSD	28-Jan	1355	G	W	2	X	
0104-012013	28-Jan	1415	G	W	2	X	
2104-012013	28-Jan	1415	G	W	2	X	
0103-012013	28-Jan	1470	G	W	2	X	
0109-012013	28-Jan	1445	G	W	2	X	
0105-012013	28-Jan	1500	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	1-29-13	Fed-Ex 7946 2892		4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Pruchnow	TMBUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

COPY = ORIGINAL ON FILE
SDG # _____ ETR # _____

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 01/29/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	5 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			SDG No.
(303) 298-7837 FAX	☐ 3 weeks			
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
0115 - 012013	29-Jan	1200	G	W	2	X	
092 - 012013	29-Jan	1215	G	W	2	X	
0117 - 01 2013	29-Jan	1230	G	W	2	X	
091 - 01 2013	29-Jan	1245	G	W	2	X	
062 - 012013	29-Jan	1300	G	W	2	X	
061 - 012013	29-Jan	1315	G	W	2	X	
060 - 012013	29-Jan	1330	G	W	2	X	
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby O.	ECC	1-29-13	Fed-ex 7946	2872	4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Fuchs	TABUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	2 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
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0113-012013 MS	28-Jan	1145	G	W	2	X	
0113-012013 MSD	28-Jan	1145	G	W	2	X	
095-012013	28-Jan	1215	G	W	2	X	
087-012013	28-Jan	1240	G	W	2	X	
287-012013	28-Jan	1240	G	W	2	X	
087-012013 MS	28-Jan	1240	G	W	2	X	
087-012013 MSD	28-Jan	1240	G	W	2	X	
074-012013	28-Jan	1300	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby O.	ECC	1-29-13	Fed-ex 7946 2892 4699		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TABLE	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Suite 11
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Groundwater samples

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 1/28/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	3 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
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Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
073-012013	28-Jan	1315	G	W	2	X	
086-012013	28-Jan	1325	G	W	2	X	
0106-012013	28-Jan	1340	G	W	2	X	
096-012013	28-Jan	1355	G	W	2	X	
296-012013	28-Jan	1355	G	W	2	X	
096-012013 MS	28-Jan	1355	G	W	2	X	
096-012013 MSD	28-Jan	1355	G	W	2	X	
0104-012013	28-Jan	1415	G	W	2	X	
2104-012013	28-Jan	1415	G	W	2	X	
0103-012013	28-Jan	1430	G	W	2	X	
0109-012013	28-Jan	1445	G	W	2	X	
0105-012013	28-Jan	1500	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☒ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

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Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	1-29-13 1700	Fed-Ex 7946 2892		4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Bachman	TAB	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Groundwater samples

Chain of Custody Record

TestAmerica
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Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 01/29/2013	COC No: 012813
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	4 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
079-012013	29-Jan	0855	G	W	2	X	
099-012013	29-Jan	0915	G	W	2	X	
0110-012013	29-Jan	0930	G	W	2	X	
077-012013	29-Jan	0945	G	W	2	X	
076-012013	29-Jan	1000	G	W	2	X	
056-012013	29-Jan	1020	G	W	2	X	
256-012013	29-Jan	1020	G	W	2	X	
059-012013	29-Jan	1035	G	W	2	X	
057-012013	29-Jan	1050	G	W	2	X	
0112-012013	29-Jan	1105	G	W	2	X	
058-012013	29-Jan	1130	G	W	2	X	
089-012013	29-Jan	1145	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
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Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby Hinz	ECC	1-29-13 1700	Fed-ex 7946 2892 4699		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Stacy Buchan	TABLR	1/31/13 2010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
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Groundwater samples

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ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	5 of 5 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
0115 - 012013	29-Jan	1200	G	W	2	X	
092 - 012013	29-Jan	1215	G	W	2	X	
0117 - 01 2013	29-Jan	1230	G	W	2	X	
091 - 01 2013	29-Jan	1245	G	W	2	X	
062 - 012013	29-Jan	1300	G	W	2	X	
061 - 012013	29-Jan	1315	G	W	2	X	
060 - 012013	29-Jan	1330	G	W	2	X	
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		
	29-Jan		G	W	2		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1700

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby R.	ECC	1-29-13	Fed-ex 7946	2872	4699
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Franklin	TABUR	1/31/13 1010
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENT.

TestAmerica Laboratories, I.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 01/31/2013	COC No: 013113
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 1 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	TSS / SM2540D	Sample Specific Notes:
052A-012013	31-Jan	0915	G	W	2	X		
052A-B-012013	31-Jan	0920	G	W	3	X	X	
053-012013	31-Jan	1100	G	W	2	X		
053-B-012013	31-Jan	1105	G	W	3	X	X	
054-012013	31-Jan	1530	G	W	2	X		
054-B-012013	31-Jan	1535	G	W	3	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby D. Hinz	ECC	1-31-13 1720	FedEx 7946 4786 6926		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steph Rucker	TABLR	2/1/13 1030
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

WSW Samples 1st QTR 2013

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 02/04/2013	COC No: 020413
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 1 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W)			
(303) 298-7607 Phone	TAT if different from Below			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	Sample Specific Notes:
UNFL-027-012013	4-Feb	855	G	W	2	X	
UNFL-9A-012013	4-Feb	0925	G	W	2	X	
UNFL-10A-012013	4-Feb	0955	G	W	2	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1600

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Toby D. Hinz	ECC	2-4-13	Fed-ex 7946 6928 3081		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			Steven Fischer	TABLR	2/5/13 1015
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 5403
phone 802.660.1990 fax 802.660.1919

WSW Sampling Event 1st QTR 2013

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: John Ryder	Site Contact: Toby Hinz	Date: 2/15/2013	COC No: 021513
ECC	Tel/Fax: (720) 232-6425	Lab Contact: Jim Madison	Carrier: FedEx	1 of 1 COCs
1746 Cole Blvd Building 21, Suite 350	Analysis Turnaround Time			Job No. 5447.002
Lakewood, CO 80401	Calendar (C) or Work Days (W) _____			
(303) 298-7607 Phone	TAT if different from Below _____			
(303) 298-7837 FAX	☐ 3 weeks			SDG No.
Project Name: FNOP 5447.002	☐ 2 weeks			
Site: Former NOP	☐ 1 week			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	8330 - Explosives	TSS / SM2540D	Sample Specific Notes:
052C-012013	15-Feb	1130	G	W	2	X		
052C-B-012013	15-Feb	1135	G	W	3	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	ECC	2-15-13 1600	Fed-Ex 7947	6275 6296	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[signature]		
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[signature]	TABR	2/16/13 1005

Appendix B
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e. U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix C
Analytical Results on Compact Disc Summary Forms and Raw Data

Appendix E

Quality Control Summary Report First Quarter 2013 Operations and Maintenance Sampling Events, Former Nebraska Ordnance Plant (on CD)

Regional Office

1746 Cole Boulevard
Building 21, Suite 350
Lakewood, CO 80401

Phone: 303.298.7607
Fax: 303.298.7837

April 29, 2013

U.S. Army Corps of Engineers, Kansas City District
Attn: Jacqy Frazier
601 East 12th Street
Kansas City, MO 64106-2896

Re: Transmittal of the Final Quality Control Summary Report
First Quarter 2013 Operations and Maintenance Sampling Events
Former Nebraska Ordnance Plant, Mead, Nebraska
Contract No. W912DQ-08-D-0001, Task Order No. 0002

Dear Ms. Frazier:

ECC is hereby transmitting one electronic copy of the Final Quality Control Summary Report for the First Quarter 2013 Operations and Maintenance Sampling Events at the former Nebraska Ordnance Plant, Mead, Nebraska.

Please contact Mr. Brady Bigelow or me if you require additional information.

Sincerely,

John Ryder
Project Chemist
ECC

Enclosures
cc: Ms. Kristine Stein (USACE)
Mr. Jason L'Ecuyer (USACE)
Mr. Bradley Brink (USACE)
Mr. Kirk Boese (USACE)

Corporate Office

1240 Bayshore Highway
Burlingame, CA 94010

Phone: 650.347.1555
Fax: 650.347.8789
www.ecc.net

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE: April 29, 2013]	TRANSMITTAL NO. 2013-031

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by contractor)

Attn: Jacqy Frazier USACE, Kansas City District 601 E. 12th St. Kansas City, MO 64106-2896	FROM: John Ryder ECC 1746 Cole Blvd, Bldg 21, Lakewood, CO 80401	CONTRACT NO. W912DQ-08-D-0001, Task Order 0002	CHECK ONE: __X__ THIS IS A NEW TRANSMITTAL ____ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SECTION NO. (cover only one section with each transmittal)	PROJECT TITLE AND LOCATION: Groundwater Monitoring Program, Former Nebraska Ordnance Plant, Mead, Nebraska		CHECK ONE: ___ FIO __X__ For Govt. Approval

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type, size, model number, etc.)* *b.*	MFG. OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction No. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*	FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruc. no. 6)* *h.*	FOR C E USE CODE *i.*
1	Quality Control Summary Report - Final		1 electronic					
	First Quarter 2013 Operations and Maintenance Sampling Events							

REMARKS
Kristine Stein (USACE)
Jason L'Ecuyer (USACE)
Bradley Brink (USACE)
Kirk Boese (USACE)
Mead Library

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.
John Ryder, Denver Operations Group

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

FINAL
QUALITY CONTROL SUMMARY REPORT
FIRST QUARTER 2013

OPERATIONS AND MAINTENANCE PROGRAM
SAMPLING EVENTS

FORMER NEBRASKA ORDNANCE PLANT
MEAD, NEBRASKA

Prepared for

United States Army Corps of Engineers
Kansas City District

April 2013

Quality Control Summary Report
First Quarter 2012 Operations and Maintenance Sampling Events
Former Nebraska Ordnance Plant
Mead, Nebraska

1.0 INTRODUCTION

Sampling was conducted at the Main Groundwater Treatment Plant (GTP), Load Line (LL) 1 GTP, LL4 GTP, Groundwater Circulation Well (GCW) 1, and the Advanced Oxidation Process (AOP) GTP for the Operations and Maintenance (O&M) program at the former Nebraska Ordnance Plant, near Mead, Nebraska. Sampling activities were performed in accordance with the *Site Wide Work Plan, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009). This Quality Control Summary Report is a summary of the chemical data quality review for the First Quarter 2013 O&M monthly sampling events.

TestAmerica analyzed the samples for one or more of the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Solid Waste (SW)-846 Method 8260B;
- Trichloroethene (TCE) by EPA Compendium Method Toxic Organic (TO)-15;
- Explosives by EPA SW-846 Method 8330; and
- Nitrate by SW-846 Method 9056.

TestAmerica of South Burlington, Vermont performed the VOCs and explosives analyses. TestAmerica of Denver, Colorado performed nitrates analysis.

Table 1-1 lists the sample locations, the corresponding sample identifications (IDs), and the requested analyses for the First Quarter 2013 O&M sampling event.

The chain-of-custody and field notes are included as Appendices A and B, respectively. Appendix C presents an explanation of data validation qualifiers and drinking water standards. Appendix D contains a compact disk with all analytical data.

2.0 FIELD SAMPLING ACTIVITIES

The field sampling team collected the following field samples during the First Quarter 2013 O&M sampling events:

- One water sample from each of the following extraction wells (EW) and focused extraction wells (FEW): EW-1R, EW-4, EW-7, EW-9, FEW-11, and FEW-14.
- One water sample from each of the following granular activated carbon (GAC) units during each month of this quarter: 320, 340, and 360.

- One influent water sample and one effluent water sample from the Main GTP during each month of this quarter; and one influent field duplicate sample and one effluent field duplicate sample in February 2013.
- One influent water sample and one effluent water sample from GCW-1 in March 2013.
- One influent water sample and one effluent water sample from the LL1 GTP during each month of this quarter; and one influent field duplicate sample and one effluent field duplicate sample in February 2013.
- One influent air sample, one effluent air sample, and one field duplicate sample from the LL1 GTP.
- One influent water sample and one effluent water sample from the LL4 GTP during each month of this quarter.
- One effluent air sample from the LL4 GTP in January 2013.
- One influent water sample and one effluent water sample from the AOP GTP in January and March 2013. Only the effluent water sample was collected in February because the associated influent water sample was collected from FEW-11.

A trip blank was included in each shipment that contained field samples scheduled for analysis of VOCs. The required frequency of collection for quality control (QC) samples (field duplicate and matrix spike/matrix spike duplicate [MS/MSD]) is one per quarter. At least one QC field duplicate sample and one MS/MSD for each parameter was collected for the Main GTP and LL1 GTP sampling events. Field duplicates and MS/MSD samples were not collected for the AOP GTP or LL4 GTP sampling events. The required field QC frequency was met overall for the First Quarter 2013 O&M sampling events.

Table 2-1 summarizes the following data for the First Quarter 2013 sampling events:

- Field sample IDs;
- MS/MSD sample information;
- QC (field duplicate) sample information;
- Dates of sample collection and sample receipt by the laboratory; and
- Laboratory sample IDs
- Laboratory sample delivery group (SDG) numbers; and
- Requested analyses.

3.0 DATA QUALITY EVALUATION PROCEDURES

The following subsections present the results of the data quality evaluation. This evaluation was performed in accordance with *Mead Validation Guidelines* (ECC, 2007). Qualifiers were assigned based on project QC limits and laboratory QC criteria. The data quality evaluation results are presented in Table 3-1. The QC outliers are presented in Tables 3-2 and 3-3.

3.1 Sample Receipt at the Laboratory

The laboratory received all samples in good condition, with proper preservatives, and within the recommended temperature range of 4 ± 2 °C.

3.2 Holding Times

The laboratory prepared and analyzed all samples within the required holding times with one exception: one sample for nitrate analysis was performed outside the holding time. Table 3-1 presents the data quality evaluation results and qualified samples. Tables 3-2 and 3-3 presents the QC outliers and associated samples for all assigned qualifiers.

3.3 Tuning and Calibration

The laboratory did not report any deviations for the calibration and tuning of instrumentations in the case narratives. The evaluation of the calibration summary forms indicated that all calibrations met the project criteria.

3.4 Laboratory Blanks

A laboratory method blank is an analyte-free matrix that is carried through the entire preparation and analysis sequence for the purpose of identifying potential contamination introduced during preparation and analysis. Method blanks were analyzed for each sample batch for all analyses.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections were qualified as non-detect (U) if the concentration in the sample was less than 5 times the concentration in the associated blank. For common laboratory contaminants, results were qualified as described above if the concentration in the sample was less than 10 times the concentration in the associated blank. Sample results that were either non-detect (U), or greater than 5 or 10 times the blank result did not require qualification.

There were no detections of target analytes in the laboratory method blanks.

3.5 Trip Blanks

A trip blank is an analyte-free matrix that accompanies samples through the sample collection and transportation process to identify potential VOC contamination. In accordance with the *Mead Validation Guidelines* (ECC, 2007), detections were qualified as non-detect (U) if the concentration in the sample was less than 5 times the concentration in the associated blank. Sample results that were either non-detect (U), or greater than 5 times the blank result did not require qualification.

There were no detections of target analytes in the trip blanks.

3.6 Surrogates

Surrogates are compounds not normally found in the environment that are added (spiked) into samples prior to extraction (for extractable methods) and prior to analysis (for non-extractable methods). The percent recovery (% REC) of each surrogate is used to assess the success of the sample preparation process for an individual sample. Samples spiked with surrogate compounds were analyzed for VOCs and explosives.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects and UJ-coded for non-detects if the surrogate % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for associated analytes in the affected samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects.

All surrogate % RECs were within QC limits.

3.7 Laboratory Control Sample / Laboratory Control Sample Duplicate

A laboratory control sample (LCS) consists of a matrix, similar to that of the field sample, which is spiked with known concentrations of analytes. The LCS % REC is a measure of the accuracy of the preparation and analytical methods. The laboratory control sample duplicate (LCSD) is a duplicate preparation and analysis of the LCS. The differences between the LCS and LCSD recoveries are used to calculate the relative percent difference (RPD), which is a measure of the precision of the preparation and analytical methods. LCS samples were analyzed for each sample batch for all analyses. LCSD samples were requested for analysis with each analytical batch that did not contain an MS/MSD.

In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the LCS % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated samples are J-coded for detects if the % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds 30%.

One LCS and one LCSD %RECs were above the QC limit for 1,3,5-trinitrobenzene, hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), 4-amino-2,6-dinitrotoluene, and 2-amino-4,6-dinitrotoluene. Any detections for these compounds were qualified in the in the associated samples. Table 3-1 presents the data quality evaluation results and qualified samples. Table 3-2 presents the explosives QC outliers and associated samples for all assigned qualifiers. All other LCS and LCSD % RECs were within laboratory QC limits. All RPDs, if applicable, were less than 30%.

3.8 Matrix Spike / Matrix Spike Duplicate Analyses

MS and MSD samples are analyzed for organic and inorganic analyses. A field sample is split into three portions (original, MS, and MSD) and known amounts of analytes are added (spiked) into the MS and MSD portions of the sample. The analytical results of these two portions are compared to each other for reproducibility using the RPD. These results are also compared against the un-spiked portion of the sample for % REC of the spiked analytes. MS/MSD samples were analyzed for VOCs, explosives, nitrate, and metals.

For organic analyses:
In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory QC limits, but greater than 10%. Non-detects are R-coded if % RECs are less than 10%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the parent sample are J-coded for detects if the MS/MSD % RECs are greater than the QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated parent samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds the QC limit.

For wet chemistry analyses:
In accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated parent samples are J-coded for detects and UJ-coded for non-detects if the MS/MSD % RECs are below the laboratory limits, but greater than 30%. Non-detects are R-coded if % RECs are less than 30%. Also in accordance with the *Mead Validation Guidelines* (ECC, 2007), results for the affected analyte in the associated parent samples are J-coded for detects if the MS/MSD % RECs are greater than the laboratory QC limits. No action is required for non-detects. Additionally, results for the affected analyte in the associated parent samples are J-coded for detects and UJ-coded for non-detects if the RPD exceeds the laboratory QC limit.

All % RECs and RPDs were within QC limits.

3.9 Field Duplicate Results

Field duplicate results provide information on the ability to reproduce field sample results and account for error introduced from handling, shipping, storage, preparation, and analysis of field samples. The team collected five field duplicate pairs during the First Quarter 2013 monthly O&M sampling events. The field duplicate pairs are listed below:

- 5447-0213-INF-144 / 5447-0213-2INF-144 (VOC, Explosives);
- 5447-0213-EFF-144 / 5447-0213-2EFF-144 (Nitrate);
- 5447-0213-LL1-INF-088 / 5447-0213-LL1-2INF-088 (VOC, Explosives);
- 5447-0213-LL1-EFF-088 / 5447-0213-LL1-2EFF-088 (Nitrate) and
- 5447-0213-LL1-AIR-EFF-088 / 5447-0213-LL1-2AIR-EFF-088 (VOC).

All field duplicate pairs met the precision criteria. No qualification is required for the field duplicate findings.

Note: Field duplicate results are considered acceptable when one result is a non-detect and the other result is a detect at a concentration below the limit of quantitation (LOQ).

3.10 Dilutions and Reanalyses

Qualifiers assigned as a result of calibration range exceedances are not used in the calculation of analytical data completeness percentages if there are acceptable results from diluted sample analyses.

One water sample for explosives analysis required a dilution because the RDX concentration was above the calibration range. Eleven water samples for VOCs were initially analyzed at a dilution due to high level of TCE. Three of these samples required a secondary dilution analysis. According to the *Mead Validation Guidelines* (ECC, 2007) results exceeding the calibrations range are not used for reporting or project decisions when acceptable results from dilutions are available.

All three air samples were analyzed at a dilution because the concentrations of TCE were above the calibration range. Only the dilution analyses were reported for the air samples. No qualifiers were assigned because acceptable results from diluted sample analyses were provided.

Four samples for nitrate analysis were analyzed at a dilution. Only the dilution analyses was reported. No qualifiers were assigned because the dilution analyses provided the acceptable results.

3.11 Other Quality Control Parameters

All detected explosive results were confirmed on a second column. A column comparison between the detected explosive results was made using explosive identification summary forms. The validator verified that the laboratory performed confirmation for all reported explosive detections and reported the inter-column RPDs.

Detected results with the inter-column RPDs exceeding 40% are qualified as estimated (J). Table 3-1 presents the data quality evaluation results and qualified samples. Table 3-2 presents the explosive QC outliers and associated samples for all assigned qualifiers. These qualifiers were not used to determine analytical completeness or project completeness in the Overall Assessment in Section 4.0.

3.12 Laboratory Qualifiers

The Laboratory quantified and assigned an estimated (J) qualifiers for analytes detected below the LOQ, but above the detection limit. The validator carried over these qualifiers but were not used to determine analytical or project completeness in the Overall Assessment in Section 4.0.

4.0 OVERALL ASSESSMENT

The following subsections discuss the field completeness, analytical completeness, and project completeness determinations for the First Quarter 2013 O&M sampling events. An evaluation of field, analytical, and project completeness is presented in Tables 4-1 through 4-3.

4.1 Field Completeness

Field completeness is assessed by comparing the number of samples properly collected to the number of samples planned for collection. Field completeness is presented in Table 4-1 for the O&M sampling events.

Field completeness for the First Quarter 2013 O&M sampling events was 100% for each analysis which exceeds the field completeness goal of 95%.

4.2 Analytical Completeness

Analytical completeness was calculated as both acceptable data completeness and quality data completeness. Analytical completeness is presented in Table 4-2. The overall acceptable data completeness percentage goal is 95% (90% for each method), and the overall quality data completeness percentage goal is 80%.

Acceptable data completeness is a measure of laboratory contract compliance. Acceptable data includes data that have not been rejected or qualified as estimated (J). Qualified data are considered acceptable if appropriate corrective actions were taken by the laboratory. Acceptable data completeness percentages for the O&M sampling events are as follows:

- VOCs: 100%
- VOC-Air 100%
- Explosives: 94.3%
- Nitrate: 90.9%

All analyses exceed the 90% criteria for the individual methods. The overall acceptable data completeness is 97.2% which exceeds the 95% criteria.

Quality data is a measure of the percentage of usable data points. Usable data points include all non-rejected data. Rejected data points with replacement data do not count against the quality data completeness. No data were rejected for the First Quarter 2013 O&M sampling events. The quality data completeness percentage for VOCs, explosives, and wet chemistry is 100% and overall quality data completeness is 100% for the First Quarter 2013 O&M sampling events.

4.3 Project Completeness

Project completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of

samples/measurements that are determined to be usable to the total number of samples/ measurements planned. Project completeness is calculated using the field completeness and analytical completeness (quality data) completeness percentages.

The O&M project completeness percentage is 100%, which exceed the project completeness goal of 90%. Table 4-3 presents project completeness values.

5.0 CONCLUSIONS

No data points were qualified as rejected (R). Data are valid for use, as qualified. Overall field completeness is 100%. Overall quality data completeness is 100% which is above the quality data completeness goal of 80%. Project completeness is 100% which exceeds the project completeness goal of 90%.

One nitrate result was qualified due to missed holding time. Eleven explosives results were qualified as estimated due to LCS/LCSD %REC above the QC limits. Three results for TCE were reported from a secondary dilution analysis due to calibration range exceedances. Seventeen explosive results were qualified as estimated for inter-column RPDs exceedances. The qualifiers as a result of method blanks and inter-column RPDs were not used to determine analytical completeness or project completeness.

6.0 REFERENCES

ECC, 2009, *Site Wide Work Plan, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska.* August.

ECC, 2007 *Mead Validation Guidelines*, (approved by United States Army Corps of Engineers 2007).

Tables

List of Acronyms for Tables

Term	Definition
µg/L	micrograms per liter
AOP	Advanced Oxidation Process
C-RPD	column relative percent difference
EFF	effluent
EW	extraction well
FEW	focused extraction well
GC/MS	gas chromatography–mass spectrometry
GCW	groundwater circulation well
GTP	groundwater treatment plant
HPLC	high-performance liquid chromatography
ID	identification/identifier
INF	influent
J	estimated
Lab	laboratory
LCS	laboratory control sample
LOD	limit of detection
LL	Load Line
MS/MSD	matrix spike/matrix spike duplicate
MS	mass-spectrometry
QC	quality control
% REC	percent recovery
RPD	relative percent difference
SDG	sample delivery group
SW	solid waste
U	not detected at laboratory limit of detection
UCL	upper control limit
UWL	upper warning level

Table 1-1
Sample Locations, Sample IDs, and Analyses
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Locations	Sample IDs	Analyses
AOP-EFF	5447-0113-AOP-EFF2-143	Explosives, Volatiles
AOP-EFF	5447-0213-AOP-EFF2-144	Explosives, Volatiles
AOP-EFF	5447-0313-AOP-EFF2-145	Explosives, Volatiles
AOP-INF	5447-0113-AOP-INF-143	Explosives, Volatiles
AOP-INF	5447-0313-AOP-INF-145	Explosives, Volatiles
EW-1R	5447-0213-EW1R-144	Volatiles
EW-4	5447-0213-EW04-144	Explosives
EW-7	5447-0213-EW07-144	Explosives
EW-9	5447-0213-EW09-144	Explosives
EW-9	5447-0213-EW09-144-A	Explosives
FEW-11	5447-0213-EW11-144	Explosives, Volatiles
FEW-14	5447-0213-EW14-144	Explosives
GCW1-EFF	GCW1-EFF-032013	Volatiles
GCW1-INF	GCW1-INF-032013	Volatiles
GTP-320	5447-0113-320-143	Explosives, Volatiles
GTP-320	5447-0213-320-144	Explosives, Volatiles
GTP-320	5447-0313-320-145	Explosives, Volatiles
GTP-340	5447-0113-340-143	Explosives, Volatiles
GTP-340	5447-0213-340-144	Explosives, Volatiles
GTP-340	5447-0313-340-145	Explosives, Volatiles
GTP-360	5447-0113-360-143	Explosives, Volatiles
GTP-360	5447-0213-360-144	Explosives, Volatiles
GTP-360	5447-0313-360-145	Explosives, Volatiles
GTP-EFF	5447-0113-EFF-143	Anions, Explosives,
GTP-EFF	5447-0213-EFF-144	Anions, Explosives,
GTP-EFF	5447-0313-EFF-145	Anions, Explosives,
GTP-INF	5447-0113-INF-143	Explosives, Volatiles
GTP-INF	5447-0213-INF-144	Explosives, Volatiles
GTP-INF	5447-0313-INF-145	Explosives, Volatiles
LL1_AIR_EF	5447-0213-LL1-AIR-EFF-088	Volatiles-Air
LL1-EFF	5447-0113-LL1-EFF-087	Anions, Volatiles
LL1-EFF	5447-0213-LL1-EFF-088	Anions, Explosives,
LL1-EFF	5447-0313-LL1-EFF-089	Anions, Volatiles
LL1-INF	5447-0113-LL1-INF-087	Volatiles
LL1-INF	5447-0213-LL1-INF-088	Explosives, Volatiles
LL1-INF	5447-0313-LL1-INF-089	Volatiles
LL4_AIR_EF	5447-0113-LL4-AIR-EFF	Volatiles-Air
LL4-EFF	5447-0113-LL4-EFF	Anions, Volatiles
LL4-EFF	5447-0213-LL4-EFF	Anions, Explosives,
LL4-EFF	5447-0313-LL4-EFF	Anions, Volatiles
LL4-INF	5447-0113-LL4-INF	Volatiles
LL4-INF	5447-0213-LL4-INF	Explosives, Volatiles
LL4-INF	5447-0313-LL4-INF	Volatiles

Notes:

Volatiles	SW8260B	Volatile Organic Compounds by Capillary GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC
Anions	SW9056	Anion Chromatography
Volatiles-Air	TO15	The Determination fo Volatile Organic Compounds in Air Collected in Specially-Prepared Canisters and Analyzed by GC/MS

Table 2-1
Sample Collection Summary
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicates	Date Sampled	Date Received by Lab	Lab ID	SDG	Anions	Explosives	Volatiles	Volatiles-Air
Field Samples										
5447-0113-INF-143			1/3/2013	1/4/2013	200-14437-1	14437		•	•	
		5447-0213-2INF-144	1/31/2013	2/1/2013	200-14869-2	14869		•	•	
5447-0213-INF-144	5447-0213-INF-144		1/31/2013	2/1/2013	200-14869-1	14869		•	•	
5447-0313-INF-145			2/28/2013	3/1/2013	200-15287-1	15287		•	•	
5447-0113-320-143			1/3/2013	1/4/2013	200-14437-2	14437		•	•	
5447-0213-320-144			1/31/2013	2/1/2013	200-14869-3	14869		•	•	
5447-0313-320-145			2/28/2013	3/1/2013	200-15287-2	15287		•	•	
5447-0113-340-143			1/3/2013	1/4/2013	200-14437-3	14437		•	•	
5447-0213-340-144			1/31/2013	2/1/2013	200-14869-4	14869		•	•	
5447-0313-340-145			2/28/2013	3/1/2013	200-15287-3	15287		•	•	
5447-0113-360-143			1/3/2013	1/4/2013	200-14437-4	14437		•	•	
5447-0213-360-144			1/31/2013	2/1/2013	200-14869-5	14869		•	•	
5447-0313-360-145			2/28/2013	3/1/2013	200-15287-4	15287		•	•	
5447-0113-EFF-143	5447-0113-EFF-143		1/3/2013	1/4/2013	200-14437-5	14437	•	•	•	
		5447-0213-2EFF-144	1/31/2013	2/1/2013	200-14869-16	14869	•			
5447-0213-EFF-144	5447-0213-EFF-144		1/31/2013	2/1/2013	200-14869-6	14869	•	•	•	
5447-0313-EFF-145			2/28/2013	3/1/2013	200-15287-5	15287	•	•	•	
5447-0113-LL1-INF-087			1/3/2013	1/4/2013	200-14436-1	14436			•	
		5447-0213-LL1-2INF-088	1/31/2013	2/1/2013	200-14871-2	14871		•	•	
5447-0213-LL1-INF-088	5447-0213-LL1-INF-088		1/31/2013	2/1/2013	200-14871-1	14871		•	•	
5447-0313-LL1-INF-089			2/28/2013	3/1/2013	200-15284-1	15284			•	
5447-0113-LL1-EFF-087			1/3/2013	1/4/2013	200-14436-2	14436	•		•	
		5447-0213-LL1-2EFF-088	1/31/2013	2/1/2013	200-14871-4	14871	•			
5447-0213-LL1-EFF-088	5447-0213-LL1-EFF-088		1/31/2013	2/1/2013	200-14871-3	14871	•	•	•	
5447-0313-LL1-EFF-089			2/28/2013	3/1/2013	200-15284-2	15284	•		•	
5447-0113-AOP-EFF2-143			1/3/2013	1/4/2013	200-14437-7	14437		•	•	
5447-0213-AOP-EFF2-144			1/31/2013	2/1/2013	200-14869-7	14869		•	•	
5447-0313-AOP-EFF2-145			2/28/2013	3/1/2013	200-15287-7	15287		•	•	
5447-0113-AOP-INF-143			1/3/2013	1/4/2013	200-14437-6	14437		•	•	
5447-0313-AOP-INF-145			2/28/2013	3/1/2013	200-15287-6	15287		•	•	

Table 2-1
Sample Collection Summary
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field Samples	MS/MSD Samples	Field Duplicates	Date Sampled	Date Received by Lab	Lab ID	SDG	Anions	Explosives	Volatiles	Volatiles-Air
5447-0113-LL4-INF			1/3/2013	1/4/2013	200-14438-1	14438			•	
5447-0213-LL4-INF			1/31/2013	2/1/2013	200-14872-1	14872		•	•	
5447-0313-LL4-INF			2/28/2013	3/1/2013	200-15285-1	15285			•	
5447-0113-LL4-EFF			1/3/2013	1/4/2013	200-14438-2	14438	•		•	
5447-0213-LL4-EFF			1/31/2013	2/1/2013	200-14872-2	14872	•	•	•	
5447-0313-LL4-EFF			2/28/2013	3/1/2013	200-15285-2	15285	•		•	
5447-0113-LL4-AIR-EFF			1/3/2013	1/4/2013	200-14442-1	14442				•
		5447-0213-LL1-2AIR-EFF-088	1/31/2013	2/1/2013	200-14876-2	14876				•
5447-0213-LL1-AIR-EFF-088			1/31/2013	2/1/2013	200-14876-1	14876				•
5447-0213-EW1R-144			1/31/2013	2/1/2013	200-14869-9	14869			•	
5447-0213-EW04-144			1/31/2013	2/1/2013	200-14869-10	14869		•		
5447-0213-EW14-144			1/31/2013	2/1/2013	200-14869-15	14869		•		
5447-0213-EW11-144			1/31/2013	2/1/2013	200-14869-14	14869		•	•	
5447-0213-EW09-144			1/31/2013	2/1/2013	200-14869-12	14869		•		
5447-0213-EW09-144-A			1/31/2013	2/1/2013	200-14869-13	14869		•		
5447-0213-EW07-144			1/31/2013	2/1/2013	200-14869-11	14869		•		
GCW1-INF-032013			2/28/2013	3/1/2013	200-15287-8	15287			•	
GCW1-EFF-032013			2/28/2013	3/1/2013	200-15287-9	15287			•	
Trip Blanks										
TRB-2INF-012013			1/3/2013	1/4/2013	200-14437-8	14437			•	
TRB-LL1-2INF-012013			1/3/2013	1/4/2013	200-14436-3	14436			•	
TRB-LL4-2INF-012013			1/3/2013	1/4/2013	200-14438-3	14438			•	
TRB-2INF-022013			1/31/2013	2/1/2013	200-14869-8	14869			•	
TRB-LL1-2INF-022013			1/31/2013	2/1/2013	200-14871-5	14871			•	
TRB-LL4-2INF-022013			1/31/2013	2/1/2013	200-14872-3	14872			•	
TRB-2INF-032013			2/28/2013	3/1/2013	200-15287-10	15287			•	
TRB-LL1-2INF-032013			2/28/2013	3/1/2013	200-15284-3	15284			•	
TRB-LL4-2INF-032013			2/28/2013	3/1/2013	200-15285-3	15285			•	

Notes:

Volatiles	SW8260B	Volatile Organic Compounds by Capillary GC/MS
Explosives	SW8330	Nitroaromatics and Nitramines by HPLC
Anions	SW9056	Anion Chromatography
Volatiles-Air	TO15	The Determination fo Volatile Organic Compounds in Air Collected in Specially-Prepared Canisters and Analyzed by GC/MS

• = Requested for the indicated analyses

Table 3-1
Data Quality Evaluation Results
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample Identification	Date Sampled	SDG	Lab Number	Analysis	Parameter	Units	Lab Result	Data Review Qualifier	%REC	C_RPD	OTHER	Comments	Final Result
5447-0113-320-143	1/3/2013	14437	200-14437-2	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.67	J	X			LCS Recovery	0.67 J
5447-0113-340-143	1/3/2013	14437	200-14437-3	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.50	J	X			LCS Recovery	0.50 J
5447-0113-360-143	1/3/2013	14437	200-14437-4	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.46	J	X			LCS Recovery	0.46 J
5447-0113-AOP-EFF2-143	1/3/2013	14437	200-14437-7	Explosives	1,3,5-trinitrobenzene	µg/L	0.039	J	X	X		Column RPD,LCS Recovery	0.039 J
5447-0113-AOP-EFF2-143	1/3/2013	14437	200-14437-7	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	3.3	J	X			LCS Recovery	3.3 J
5447-0113-AOP-INF-143	1/3/2013	14437	200-14437-6	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.055	J	X	X		Column RPD,LCS Recovery	0.055 J
5447-0113-AOP-INF-143	1/3/2013	14437	200-14437-6	Explosives	4-amino-2,6-dinitrotoluene	µg/L	1.0	J	X	X		Column RPD,LCS Recovery	1.0 J
5447-0113-AOP-INF-143	1/3/2013	14437	200-14437-6	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	4.2	J	X			LCS Recovery	4.2 J
5447-0113-EFF-143	1/3/2013	14437	200-14437-5	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.54	J	X			LCS Recovery	0.54 J
5447-0113-INF-143	1/3/2013	14437	200-14437-1	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.21	J	X			LCS Recovery	0.21 J
5447-0113-INF-143	1/3/2013	14437	200-14437-1	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	5.7	J	X			LCS Recovery	5.7 J
5447-0213-2INF-144	1/31/2013	14869	200-14869-2	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.027	J		X		Column RPD	0.027 J
5447-0213-AOP-EFF2-144	1/31/2013	14869	200-14869-7	Explosives	1,3,5-trinitrobenzene	µg/L	0.057	J		X		Column RPD	0.057 J
5447-0213-AOP-EFF2-144	1/31/2013	14869	200-14869-7	Explosives	2,4,6-trinitrotoluene	µg/L	0.095	J		X		Column RPD	0.095 J
5447-0213-EW11-144	1/31/2013	14869	200-14869-14	Explosives	1,3,5-trinitrobenzene	µg/L	0.021	J		X		Column RPD	0.021 J
5447-0213-EW11-144	1/31/2013	14869	200-14869-14	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.040	J		X		Column RPD	0.040 J
5447-0213-EW11-144	1/31/2013	14869	200-14869-14	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.95	J		X		Column RPD	0.95 J
5447-0213-EW14-144	1/31/2013	14869	200-14869-15	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.055	J		X		Column RPD	0.055 J
5447-0213-LL1-2INF-088	1/31/2013	14871	200-14871-2	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.052	J		X		Column RPD	0.052 J
5447-0213-LL1-EFF-088	1/31/2013	14871	200-14871-3	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.071	J		X		Column RPD	0.071 J
5447-0213-LL4-INF	1/31/2013	14872	200-14872-1	Explosives	hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	0.041	J		X		Column RPD	0.041 J
5447-0313-AOP-EFF2-145	2/28/2013	15287	200-15287-7	Explosives	1,3,5-trinitrobenzene	µg/L	0.043	J		X		Column RPD	0.043 J
5447-0313-AOP-EFF2-145	2/28/2013	15287	200-15287-7	Explosives	2,4,6-trinitrotoluene	µg/L	0.10	J		X		Column RPD	0.10 J
5447-0313-AOP-INF-145	2/28/2013	15287	200-15287-6	Explosives	2-amino-4,6-dinitrotoluene	µg/L	0.029	J		X		Column RPD	0.029 J
5447-0313-AOP-INF-145	2/28/2013	15287	200-15287-6	Explosives	4-amino-2,6-dinitrotoluene	µg/L	0.95	J		X		Column RPD	0.95 J
5447-0313-LL1-EFF-089	2/28/2013	15284	200-15284-2	Anions	Nitrate	MG/L	12	J			X	Test Hold Time	12 J

Note: The LOD values were used to display non detected lab results.

Reason for Qualification

%REC	LCS - low, LCS Recovery, MS - low, MS Recovery
C_RPD	Column RPD
OTHER	An analyte (non-common laboratory artifact) was detected in the sample at a concentration less than 5X the concentration detected in the associated method blank., Analyte not confirmed on second column, Blank - No Action, Column breakdown (pesticides), CRA/CRI Recovery, Data rejected due to radiological anomolies, Exceeds LinearCalibration Range, False Positive, Field Duplicate RPD, Hydrocarbon pattern does not match standard, Improper preparation/extraction, ICS, No precision available, Prep Hold Time, Raised reporting limit, Serial dilution, Tentatively Identified Compound, Test Hold Time, The analyte was found in an associated blank as well as in the sample.

Table 3-2
Explosives Quality Control Outliers
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
Confirmation Column Difference					
5447-0113-AOP-EFF2-143	14437	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	48.5 RPD
5447-0113-AOP-INF-143	14437	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	176 RPD
5447-0113-AOP-INF-143	14437	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	181 RPD
5447-0213-2INF-144	14869	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	89.8 RPD
5447-0213-AOP-EFF2-144	14869	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	40.6 RPD
5447-0213-AOP-EFF2-144	14869	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	63.9 RPD
5447-0213-EW11-144	14869	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	98.8 RPD
5447-0213-EW11-144	14869	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	186 RPD
5447-0213-EW11-144	14869	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	183 RPD
5447-0213-EW14-144	14869	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	74.3 RPD
5447-0213-LL1-2INF-088	14871	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	79.1 RPD
5447-0213-LL1-EFF-088	14871	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	51.3 RPD
5447-0213-LL4-INF	14872	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Confirmation Column Difference exceeds UCL	< 40 RPD	41.2 RPD
5447-0313-AOP-EFF2-145	15287	1,3,5-Trinitrobenzene	Confirmation Column Difference exceeds UCL	< 40 RPD	52.9 RPD
5447-0313-AOP-EFF2-145	15287	2,4,6-Trinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	89.9 RPD
5447-0313-AOP-INF-145	15287	2-Amino-4,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	177 RPD
5447-0313-AOP-INF-145	15287	4-Amino-2,6-dinitrotoluene	Confirmation Column Difference exceeds UCL	< 40 RPD	86.6 RPD
LCS Recovery					
5447-0113-320-143	14437	1,3,5-Trinitrobenzene	Laboratory Control Sample exceeds UCL	65 - 110 %	115 %

Table 3-2
Explosives Quality Control Outliers
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
5447-0113-320-143	14437	2-Amino-4,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	117 %
5447-0113-320-143	14437	4-Amino-2,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-320-143	14437	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-340-143	14437	1,3,5-Trinitrobenzene	Laboratory Control Sample exceeds UCL	65 - 110 %	115 %
5447-0113-340-143	14437	2-Amino-4,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	117 %
5447-0113-340-143	14437	4-Amino-2,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-340-143	14437	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-360-143	14437	1,3,5-Trinitrobenzene	Laboratory Control Sample exceeds UCL	65 - 110 %	115 %
5447-0113-360-143	14437	2-Amino-4,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	117 %
5447-0113-360-143	14437	4-Amino-2,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-360-143	14437	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-AOP-EFF2-143	14437	1,3,5-Trinitrobenzene	Laboratory Control Sample exceeds UCL	65 - 110 %	115 %
5447-0113-AOP-EFF2-143	14437	2-Amino-4,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	117 %
5447-0113-AOP-EFF2-143	14437	4-Amino-2,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-AOP-EFF2-143	14437	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-AOP-INF-143	14437	1,3,5-Trinitrobenzene	Laboratory Control Sample exceeds UCL	65 - 110 %	115 %
5447-0113-AOP-INF-143	14437	2-Amino-4,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	117 %
5447-0113-AOP-INF-143	14437	4-Amino-2,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-AOP-INF-143	14437	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %

Table 3-2
Explosives Quality Control Outliers
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
5447-0113-EFF-143	14437	1,3,5-Trinitrobenzene	Laboratory Control Sample exceeds UCL	65 - 110 %	115 %
5447-0113-EFF-143	14437	2-Amino-4,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	117 %
5447-0113-EFF-143	14437	4-Amino-2,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-EFF-143	14437	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-INF-143	14437	1,3,5-Trinitrobenzene	Laboratory Control Sample exceeds UCL	65 - 110 %	115 %
5447-0113-INF-143	14437	2-Amino-4,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	117 %
5447-0113-INF-143	14437	4-Amino-2,6-dinitrotoluene	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %
5447-0113-INF-143	14437	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Laboratory Control Sample exceeds UCL	70 - 115 %	116 %

Table 3-3
General Chemistry Quality Control Outliers
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Sample ID(s) Requiring Qualification	SDG	Compound(s)	QC Outlier	QC Parameter Control Limit	QC Result
Anions					
Test Hold Time					
5447-0313-LL1-EFF-089	15284	Nitrate	Test Exceeds UWL	< 2 Days	2.1 Days

Table 4-1
Field Completeness
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Number of Samples Planned	Number of Samples Collected	Field Completeness
Anions	11	11	100%
Explosives	32	32	100%
Volatiles	38	38	100%
Volatiles-Air	3	3	100%
Totals =	84	84	100.0%
Goal =			95%

Notes:

Number of Samples Planned includes field samples and field duplicate samples.

Table 4-2
Analytical Completeness
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Analysis	Total Number of Parameters	Acceptable Data	Acceptable Data Completeness	Acceptable Data Completeness Goals	Quality Data	Quality Data Completeness	Quality Data Completeness Goals
Anions (Analyte Count - 1)	11	10	90.9%	90%	11	100%	80%
Explosives (Analyte Count - 6)	192	181	94.3%	90%	192	100%	80%
Volatiles (Analyte Count - 6)	228	228	100%	90%	228	100%	80%
Volatiles-Air (Analyte Count - 1)	3	3	100%	90%	3	100%	80%
Totals =	434	422	97.2%	95%	434	100.0%	80%

Notes:

Total number of parameters includes field samples (includes data points from dilutions and/or reanalyses to be used in place of original data) and field duplicates (does not include field blanks or trip blanks).
Acceptable data includes data that has not been rejected or qualified as estimated (J/UJ). Data points for which the required corrective actions were taken or do not require corrective action do not count against the acceptable data completeness goal calculation (i.e., results exceeding the calibration range that were reanalyzed at dilutions within the calibration range).
Quality data is defined as all non-rejected data.

Table 4-3
Project Completeness
First Quarter 2013 Operations and Maintenance Sampling Event
Former Nebraska Ordnance Plant, Mead, Nebraska

Field	Analytical	Project Completeness
100.0%	100.0%	100.0%
Project Completeness Goal =		90%

Notes:

Analytical Completeness is the percentage of usable data (i.e. quality data completeness).
Project Completeness combines sampling and analytical protocols to assess the expectations of the project as a whole. Project completeness is determined by comparing the percentage of samples / measurements that are determined to be usable to the total number of samples / measurements planned.

Appendix A
Chain of Custody Records

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact: John Ryder
Company: ECC
Address: 1746 Cole Blvd Bld 21 Suite 350
City: Lakewood
State, Zip: Co 80401
Phone: 303-298-7607
Email:
Project Name: FMDP Mead
Site:

Sampler: TT / VS
Phone: 402-944-2964
Lab PM:
E-Mail:
Carrier Tracking No(s):
COC No:
Page: 1 of 1
Job #:

Due Date Requested:
TAT Requested (days):
PO #:
WO #:
Project #: 5440002
SSOW#:

Analysis Requested: VOC's 8260B

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOC's 8260B	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440-0113-221-INF-087	1-3-13	0812	G	W			3		
5440-0113-221-EFF-087	1-3-13	0814	G	W			3		
TRB-11-2INF-012013	1-3-13	0812	G	W			2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-3-13 1500	ECC	Fed Ex 8625-3615-1570	1-3-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/4/13 1010	Company TABUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: IT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FMDP Mead	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrates 9056	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440-0113-LL-EFF-089	1-3-13	0814	G	W			2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ___ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-3-13 1500	ECC	Fed Ex 8625-3615-1560	1-3-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/4/13 10:00	Company TAO
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FMUP Mead	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers
			Preservation Code:						
5447-0113-INF-143	1-3-13	0710	G	W			3	2	
5447-0113-320-143	1-3-13	0713	G	W			3	2	
5447-0113-340-143	1-3-13	0716	G	W			3	2	
5447-0113-360-143	1-3-13	0719	G	W			3	2	
5447-0113-EFF-143	1-3-13	0900	G	W			3	2	
5447-0113-AOP-INF-143	1-3-13	0831	G	W			3	2	
5447-0113-AOP-EFF2-143	1-3-13	0826	G	W			3	2	
TRB-2 INF-012013	1-3-13	0710	G	W			2		

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Special Instructions/Note:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-3-13 1500	ECC	FedEx 8605-3615-1570	1-3-13 1500	FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/4/13	Company TABUR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT/KS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2564	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Ste 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNUP Mod	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Water 9056	Total Number of Containers	Special Instructions/Note:
Preservation Code:									
5447-0113-EFF-143	1-3-13	0722	G	W			2		

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-3-13 1500	ECC	Fed Ex 8675-3675 1500	1-3-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Client Contact: John Ryder	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Company: ECC	Phone: 402-974-2964	E-Mail:		Page: 1 of 1
Address: 1746 Cole Blvd Bld 215-1350	Due Date Requested:			Job #:
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: ENDO Mead	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5447.0113-LL4 INF	1-3-13	0837	G	W			3		
5447-0113-LL4-EFF	1-3-13	0837	G	W			3		
TRB-LL4-2INF-010213	1-3-13	0837	G	W			2		

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

	Date/Time	Company		Date/Time	Company
Relinquished by: [signature]	1-3-13 1500	ECC	Received by: FedEx 8675-3615-1570	1-3-13 1500	FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	1/4/13 1010	TABLER
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

U.J.C
TM
PO 1-4-13

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Client Contact: John Ryder	Sampler: TT / VJ	Lab PM:	Carrier Tracking No(s):	COC No:
	Phone: 402-544-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 S-2350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNOU Mod	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	N-Hexane for 9056													Special Instructions/Note:
			Preservation Code:																	
5447-0113-LL4-EFF	1-3-13	0839	G	W			2													

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-3-13 1500	ECC	Fed Ex 8475-3445 1560	1-3-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	1/4/13 10:00	TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	
Company: ECC	Project Manager: John Ryder
Address: 1746 Cole Blvd B(#2) Suite 350	Phone:
City/State/Zip Lakewood CO 80401	Email:
Phone: 303-298-7602	
FAX: 303-298-7837	Site Contact: Tim Thacker
Project Name: FNDP Mach	TA Contact:
Site: 5449-002	Analysis Turnaround Time
PO #	Standard (Specify)
	Rush (Specify)

Samples Collected By: Tim Thacker

1 of 1 COCs

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
5449-0113-224-AIR-EFF	1-3-13	0843		30	0		3726	1											

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (Inches of Hg)	Interior	Ambient	
Start			
Stop			

Special Instructions/QC Requirements & Comments:

Samples Shipped by: [signature]	Date/Time: 1-3-13-1500	Samples Received by: [signature] 5625-3615-1581
Samples Relinquished by:	Date/Time:	Received by: [signature] 1/4/13 1010
Relinquished by:	Date/Time:	Received by:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:		Page: 1 of 2
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNUP Mead	Project #: 54470002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5447 0213-INF-144	1-31-13	0744	G	W			3	2		
5447 0213-DINF-144	1-31-13	0744	G	W			3	2		
5447 0213-INF-MS	1-31-13	0744	G	W			3	2		
5447 0213-INF-MSD	1-31-13	0744	G	W			3	2		
5447 0213-320-144	1-31-13	0750	G	W			3	2		
5447 0213-340-144	1-31-13	0754	G	W			3	2		
5447 0213-360-144	1-31-13	0757	G	W			3	2		
5447 0213-EFF-144	1-31-13	0800	G	W			3	2		
5447 0213-AOP-EFFD-144	1-31-13	0930	G	W			3	2		
TRB 2INF-022013	1-31-13	0744	G	W			2			
			G							

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-31-13 1500	ECC	Fed Ex 8675-3615-1618	1-31-13 1500	FedEx
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 2/1/13 1030	Company TABLK
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:	
Client Contact: John Reider	Phone: 402-944-2964	E-Mail:	Page: 2 of 2	
Company: ECC			Job #:	
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNOU Mead	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5447 0213-EW1R-144	1-31-13	1012	G	W			3	-		
5447 0213-EW04-144	1-31-13	1023	G	W			-	2		
5447 0213-EW07-144	1-31-13	1128	G	W			-	2		
5447 0213-EW09-144	1-31-13	1120	G	W			-	2		
5447 0213-EW09-144-A	1-31-13	1120	G	W			-	2		
5447 0213-EW11-144	1-31-13	1038	G	W			3	2		
5447 0213-EW14-144	1-31-13	1028	G	W			-	2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-31-13 1500	ECC	F&E 8615-3615-1618	1-31-13 1500	F&E
Relinquished by:	Date/Time:	Company	Received by: [signature] TA	Date/Time: 2/1/13 1030	Company TA-Bur
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

4.1 C
TH
JH 2-1-13

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30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Sidney Rider	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd 215-1350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-[illegible]-7607	PO #:			
Email:	WO #:			
Project Name: Enviro Metal	Project #: 54400002			
Site:	SSOW#:			

Analysis Requested: Nitrate 9056

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrate 9056	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
54400213-EFF-144	1-31-13	0800	G	W			2		
54400213-2EFF-144	1-31-13	0800	G	W			2		
54400213-EFF-MS	1-31-13	0800	G	W			2		
54400213-EFF-MSD	1-31-13	0800	G	W			2		

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-31-13 1500	ECC	Fed Ex 8605 3647 1607	1-31-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 2/1/13 09:30	Company THD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT/VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Rader	Phone: 402-944-3964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNOU Mod	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOC's 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5440-0313-LL1-INF-088	1-31-13	0840	G	W			3	2		
5440-0313-LL1-2INF-088	1-31-13	0840	G	W			3	2		
5440-0313-LL1-INF-MS	1-31-13	0840	G	W			3	2		
5440-0313-LL1-INF-MSD	1-31-13	0840	G	W			3	2		
5440-0313-LL1-EFF-088	1-31-13	0850	G	W			3	2		
TRB-LL1-2INF-020013	1-31-13	0840	G	W			2			
	TT									

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-31-13 1500	ECC	Fed Ex 8625-3615-1618	1-31-13 - 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 2/1/13 1030	Company TMBLC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Rader	Phone: 402-924-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd 215-1350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-[illegible]-7607	PO #:			
Email:	WO #:			
Project Name: Endo Mead	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested: Field Filtered Sample (Yes or No); Perform MS/MSD (Yes or No); Nitrates 9056; Total Number of containers

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2SO3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrates 9056	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440[illegible]-0013-LL-EFF-088	1-31-13	0850	G	W			2		
5440[illegible]-0013-LL-EFF-088	1-31-13	0850	G	W			2		
5440[illegible]-0013-LL-EFF-MS	1-31-13	0850	G	W			2		
5440[illegible]-0013-LL-EFF-MSD	1-31-13	0850	G	W			2		

TT

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-31-13 1500	ECC	Fed Ex 8675 3675 1607	1-31-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 2/1/13 09:30	Company TAO
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Client Contact: Robin Ryder	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Company: ECC	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			Job #:
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNDP Mod	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5447-0213-LL4-INF	1-31-13	0941	G	W			3	2		
5447-0213-LL4-EFF	1-31-13	0945	G	W			3	2		
TRB-LL4-2INF-022013	1-31-13	0941	G	W			2			

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-31-13 1500	ECC	Fed Ex 8675-3615-1618	1-31-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 2/1/13 1030	Company TMBLU
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: TT / VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Adam Barber	Phone: 402-974-2964	E-Mail:		Page: 1 of 1
Company: ECC				Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: FNOP Mead	Project #: 54470002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrates 9056	Total Number of containers
			Preservation Code:					
5447-0213-L24-GFF	~~0745~~ 1-31-13	0845	G	W			2	

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)
Other:

Special Instructions/Note:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1-31-13 1500	ECC	Fed Ex 8675-3615-1607	1-31-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 2/1/13 09:30	Company TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information		
Company: ECC	Project Manager: John Ryder	Samples Collected By: Tim Thomas
Address: 1746 Cole Blvd Bldg 1 Suite 350	Phone:	1 of 1 COCs
City/State/Zip Lakewood CO 80401	Email:	
Phone: 303-298-7607		
FAX: 303-298-7837	Site Contact: Tim Thomas	
Project Name: FNDP Mod	TA Contact:	
Site: 5447-002	Analysis Turnaround Time	
PO #	Standard (Specify)	
	Rush (Specify)	

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
5447-0213-LL1-AIR-EFF-088	1-31-13	0858		27	0		4958	1											
5447-0213-LL1-2AIR-EFF-088	1-31-13	0858		26	0		4646	1											

Temperature (Fahrenheit)	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

Special Instructions/QC Requirements & Comments:

Samples Shipped by:	Date/Time: 1-31-13 1500	Samples Received by: FedEx 8695 3415 1629
Samples Relinquished by:	Date/Time:	Received by: 2/1/13 2030
Relinquished by:	Date/Time:	Received by:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Sampler: TJ/CS	Lab PM:	Carrier Tracking No(s):	COC No:	
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:	Page: 1 of 1	
Company: ECC			Job #:	
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: ENVO Mead	Project #: 5447002			
Site:	SSOW#:			

Analysis Requested: VOCs 8260B

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOCs 8260B	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5447-0313-LL1-INF-089	2-28-13	0807	G	W			3		
5447-0313-LL1-EFF-089	2-28-13	0810	G	W			3		
TRB-LL1-2INF-032013	2-28-13	0807	G	W			2		

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2-28-13 1500	ECC	Fed Ex 8675-3613-1673	2-28-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	3/1/13 1015	TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Sampler: TJV5	Lab PM:	Carrier Tracking No(s):	COC No:	
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:	Page: 1 of 1	
Company: ECC			Job #:	
Address: 1746 Cole Blvd Bld 21 Ste 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: Co 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: ENDO Mod	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrates 9056/353.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440-0313-LL-EFR-089	2-28-13	0810	G	W			2		

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2-28-13 1500	ECC	Fed Ex 8675-3615-1662	2-28-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 3/1/13 9:30	Company TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information			
Sampler: T/VS	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:	Page: 1 of 1
Company: ECC			Job #:
Address: 1746 Cole Blvd Bld 21 Suite 350	Due Date Requested:		
City: Lakewood	TAT Requested (days):		
State, Zip: Co 80401			
Phone: 303-298-7607	PO #:		
Email:	WO #:		
Project Name: FNDP Mead	Project #: 5447002		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (w=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VOC's 8260B	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5447-0313-224-INF	2-28-13	0850	G	W			3		
5447-0313-224-EFF	2-28-13	0850	G	W			3		
TRB-224-2INF-022013	2-28-13	0850	G	W			2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2-28-13 1500	ECC	Fed Ex 800-463-3339	2-28-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	3/1/13 1015	TABur
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Client Contact: John Ryder	Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Company: ECC	Phone: 402-944-2964	E-Mail:		Page: 1 of 1
Address: 1746 Cole Blvd Bld 21 Ste 350	Due Date Requested:			Job #:
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7607	PO #:			
Email:	WO #:			
Project Name: Enviro Med	Project #: 5449002			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrates 9056 / 353.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5449-0313-LL4-EFF	2-28-13	0853	G	W			2		

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)
Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2-28-13 1500	ECC	Fed Ex 8675-3615-1662	2-28-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 3/1/13 09:30	Company TAO
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

4.6 cm FP 3/1/13

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information

Client Contact: John Ryder
Company: ECC
Address: 1746 Cole Blvd Bld 21 Suite 350
City: Lakewood
State, Zip: Co 80401
Phone: 303-298-7607
Email:
Project Name: FNOP Mod
Site:

Sampler: TVS
Phone: 702-944-2964
Lab PM:
E-Mail:
Carrier Tracking No(s):
COC No:
Page: 1 of 1
Job #:
Due Date Requested:
TAT Requested (days):
PO #:
WO #:
Project #: 5440002
SSOW#:

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	TCLP 8260B	Explosives 8330	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
5440-0313-INF-145	2-28-13	0730	G	W			3	2		
5440-0313-320-145	2-28-13	0732	G	W			3	2		
5440-0313-340-145	2-28-13	0734	G	W			3	2		
5440-0313-360-145	2-28-13	0738	G	W			3	2		
5440-0313-EFF-145	2-28-13	0742	G	W			3	2		
5440-0313-AOP-INF-145	2-28-13	0847	G	W			3	2		
5440-0313-AOP-EFF-145	2-28-13	0841	G	W			3	2		
GW1-INF-032013	2-28-13	0823	G	W			3			
GW1-EFF-032013	2-28-13	0825	G	W			3			
TRB-2INF-032013	2-28-13	0730	G	W			2			
				~~W~~						

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2-28-13 1500	ECC	Fed Ex 8625-3615-1673	3-28-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	3/1/13 1015	Company TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Burlington
30 Community Drive, Suite 11
South Burlington, VT 05403
Phone:(802)660-1990

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information				
Sampler: TVS	Lab PM:	Carrier Tracking No(s):	COC No:	
Client Contact: John Ryder	Phone: 402-944-2964	E-Mail:	Page: 1 of 1	
Company: ECC			Job #:	
Address: 1746 Cole Blvd Bld 21 Ste 350	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO 80401				
Phone: 303-298-7601	PO #:			
Email:	WO #:			
Project Name: FMDP Mead	Project #: 5440002			
Site:	SSOW#:			

Analysis Requested: Nitrate 7070/353.2

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Nitrate 7070/353.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
5440-0313-ECP.145	2-28-13	0742	G	W			2		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2-28-13 1500	ECC	Fed Ex 8675 3615 7662	2-28-13 1500	Fed Ex
Relinquished by:	Date/Time:	Company	Received by: [signature]	3/1/13 09:30	TAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

Appendix B
Field Notes

1-3-13 Sample Event #143

Time	Calibrate pH + Sond Meter
0705	pH 7.0 = 7.0 Sond 1408 = 1434/1409
0710	Sampled plant Influent 5447-0113-INF-143
0713	Sampled GAC 320 5447-0113-320-143
0716	Sampled GAC 340 5447-0113-340-143
0719	Sampled GAC 360 5447-0113-360-143
0722	Sampled plant Effluent 5447-0113-EFF-143
0831	Sampled AOP plant Influent 5447-0113-AOP-INF-143
0826	Sampled AOP plant Effluent 5447-0113-AOP-EFF-143

38° Cloudy
NW @ 10 mph
75% Humidity

1-3-13 Sample Event #143 cont.

Sampling Summary Bottles Filled

ID	Time	pH	Cond	Temp	Vol	Total Phosphorus	Nitrate
INF	0710	7.1	579	15.2	3	2	-
320	0713	7.1	599	12.8	3	2	-
340	0716	7.1	585	12.4	3	2	-
360	0719	7.2	580	12.4	3	2	-
EFF	0722	7.1	578	12.2	3	2	2
AOP-INF	0831	7.1	651	11.2	3	2	-
AOP-EFF2	0826	7.1	649	11.0	3	2	-

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1570

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1560

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Leader:
Report:
Date: January 3, 2013
Client:
Contract No: 5447-002
Report No. 143
Site: Mead NOP

Description and Location of Work: Sampled main plant

Weather Information:
Sky: Cloudy
Temp. Max/Min: 30 degrees
Precipitation: None
Wind Speed/Direction: NW. @ 10 mph
Humidity: 75%

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity		pH	Temp	Scond
0710	Sampled Influent	5447-0113-INF-143	7.1	15.2	579
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0713	Sampled GAC Vessel 320 Lead	5447-0113-320-143	7.1	12.8	599
0716	Sampled GAC Vessel 340 Lead	5447-0113-340-143	7.1	12.4	585
0719	Sampled GAC Vessel 360 Lead	5447-0113-360-143	7.2	12.4	580
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0722	Sampled Effluent	5447-0113-EFF-143	7.1	12.2	578
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative - Explosives				
	1 – 500ml poly bottle – no preservative – Nitrates				
	1 – 500ml poly bottle – H2SO4 – Nitrates				

0831	Sampled AOP Influent 5447-0113-AOP-INF-143	7.1	11.2	651
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
0826	Sampled AOP Effluent 5447-0113-AOP-EFF2-143	7.1	11.0	649
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0705– 0710 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1434/1409

Remarks: Samples shipped to Test America Burlington
Nitrate samples shipped to Test America Denver

Total Hours Worked: 6

Prepared by: (Signature) _____ (Print) Tim Thares

Chain of Custody's on file at the plant.

1-3-13 Sample Event # 87

Time Calibrate pH & Scond meters

0705 pH 7.0 = 7.0 Scond 1409 = 1434 / 1409

0812 Sample plant Influent 5449-0113-K22-INF-087

0814 Sample plant Effluent 5449-0113-K22-EFF-087

Sampling Summary Bottles filled

~~EO pHs~~

IO	Time	pH	Scond	Temp	VOC's	Nitrate
INF	0812	7.0	572	13.4	3	—
EFF	0814	8.3	561	11.4	3	2

VOC's shipped overnight to Test America Burlington Via FedEx Air Bill # 8675 3615 - 1570

Nitrate samples shipped overnight to Test America Denver via FedEx Air Bill # 8675 3615 1560

30° Cloudy
NW @ 10 mph
75% Humidity

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Leader: _____
Report: _____
Date: January 3, 2013
Client: _____
Contract No: 5447-002
Report No. 087
Site: Mead NOP

Description and Location of Work: Sampled LL1 Plant

Weather Information:
Sky: Cloudy
Temp. Max/Min: 30 degrees
Precipitation: None
Wind Speed/Direction: NW @ 10 mph
Humidity: 75%

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0812	Sampled Influent 5447-0113-LL1-INF-087	7.0	13.6	572
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
0814	Sampled Effluent 5447-0113-LL1-EFF-087	8.3	11.4	561
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0705– 0710 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1434/1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver.

Total Hours Worked: 2

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

1-3-13 Sample 224

Time Calibrate pH + Scond Meters

0705 pH 7.0 = 7.0 Scond 1409 = 1434/1409

0837 Sample plant Influent 5447.0113-224-INF

0937 Sample plant Effluent 5447.0113-224-EFF

0843 Sample Carbon Air 5447.0113-224-AIR-EFF

Sampling Summary Bottles Filled

ID	Time	pH	Scond	Temp	VOCs	Nitrates	SCD
INF	0837	7.2	583	10.7	3	-	-
EFF	0839	8.2	578	11.2	3	2	-
AIR-EFF	0843	-	-	-	-	-	1

VOC's shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675 3615 1570

Nitrates shipped overnight to Test America Denver via FedEx Air Bill # 8675 3615 1560

Air sample shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675 3615 1581

38° Cloudy
NW @ 10 mph
75% Humidity

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report: _____
Client: _____
Report No. 0 .

Leader: _____
Date: January 3, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL4 Plant

Weather Information:
Sky: Cloudy
Precipitation: None
Humidity: 75%

Temp. Max/Min: 30 degrees
Wind Speed/Direction: NW.@ 10 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0837	Sampled Influent 5447-0113-LL4-INF	7.2	10.7	583
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
0839	Sampled Effluent 5447-0113-LL4-EFF	8.2	11.2	578
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			
0843	Sampled Air Influent 5447-0113-LL4-AIR- INF			
	Influent sample – 1 – 1 Lt Canister – No Preservative – Air Sample			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0705– 0710 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1434/1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver.
Air samples shipped to Test America Burlington.

Total Hours Worked: 2

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report: _____
Client: _____
Report No. 144

Leader: _____
Date: January 31, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled Extraction Wells

Weather Information:
Sky: Partly Cloudy
Precipitation: None
Humidity: 65%

Temp. Max/Min: 10 degrees
Wind Speed/Direction: NW. @ 10 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity		pH	Temp	Scond
1012	Sampled EW-1R	5447-0213-EW01-144	7.1	12.6	781
1023	Sampled EW-4	5447-0213-EW04-144	7.1	13.0	465
1128	Sampled EW-7	5447-0213-EW07-144	7.2	11.5	502
1120	Sampled EW-9	5447-0213-EW09-144	7.2	14.6	425
1120	Sampled EW-9	5447-0213-EW09-144-A	7.2	14.6	425
1038	Sampled EW-11	5403-0213-EW11-144	7.2	11.9	652
1028	Sampled EW-14	5447-0213-EW14-144	7.2	12.0	467
	EW-1 well samples	3 – 40ml bottles –HCL – VOC'S			
	All other well samples	2 – 1Lt amber glass bottle – no preservative – Explosives			
	EW-11 well samples	3 – 40ml bottles –HCL – VOC'S			
		2 – 1Lt amber glass bottle – no preservative – Explosives			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0735 – 0740 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1409

Remarks: Samples shipped to Test America Burlington

Total Hours Worked: 4

Prepared by: (Signature) _____ (Print) Tim Thares

Chain of Custody's on file at the plant.

1-31-13 Sampling Event 144

Time	Calibrate pH & Cond meter
0735	pH 7.0 = 7.0 Cond 1409 = 1409
0744	Sample plant Influent 5447-0213-INF-144
0744	Sample plant Influent 5447-0213-2INF-144
0744	Sample plant Influent 5447-0213-INF-MS
0744	Sample plant Influent 5447-0213-INF-MSD
0750	Sample GAC 320 5447-0213-320-144
0754	Sample GAC 340 5447-0213-340-144
0757	Sample GAC 360 5447-0213-360-144
0800	Sample plant Effluent 5447-0213-EFF-144
0800	Sample plant Effluent 5447-0213-2EFF-144
0800	Sample plant Effluent 5447-0213-EFF-MS
0800	Sample plant Effluent 5447-0213-EFF-MSD
0730	Sample AOP Effluent 5447-0213-AOP-EFF2-144

10° Partly Cloudy
NW @ 10 mph
65% Humidity

1-31-13 Sample Event # 144

Sampling Summary Bottles Filled

ID	Time	pH	Sund	Temp	DO	Explosion	Nitrate
INF	0744	7.1	595	13.2	3	2	-
2INF	0744	7.1	595	13.2	3	2	-
INF MS	0744	7.1	595	13.2	3	2	-
INF-MSD	0744	7.1	595	13.2	3	2	-
320	0750	7.1	577	12.2	3	2	-
340	0754	7.1	576	11.8	3	2	-
360	0754	7.2	577	11.7	3	2	-
EFF	0800	7.1	577	11.7	3	2	2
2EFF	0800	7.1	577	11.7	-	-	2
EFF-MS	0800	7.1	577	11.7	-	-	2
EFF-MSD	0800	7.1	577	11.7	-	-	2
AOP-EFF2	0930	7.0	452	14.0	3	2	-

Sample shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1618

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1607

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report: _____
Client: _____
Report No. 144

Leader: _____
Date: January 31, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled main plant

Weather Information:
Sky: Partly Cloudy
Precipitation: None
Humidity: 65%

Temp. Max/Min: 10 degrees
Wind Speed/Direction: NW. @ 10 mph.

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity		pH	Temp	Scond
0744	Sampled Influent	5447-0213-INF-144	7.1	13.2	595
0744	Sampled Influent	5447-0213-2INF-144	7.1	13.2	595
0744	Sampled Influent	5447-0213-INF-MS	7.1	13.2	595
0744	Sampled Influent	5447-0213-INF-MSD	7.1	13.2	595
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0750	Sampled GAC Vessel 320 Lead	5447-0213-320-144	7.1	12.2	577
0754	Sampled GAC Vessel 340 Lead	5447-0213-340-144	7.1	11.8	576
0757	Sampled GAC Vessel 360 Lead	5447-0213-360-144	7.2	11.7	577
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0800	Sampled Effluent	5447-0213-EFF-144	7.1	11.7	577
0800	Sampled Effluent	5447-0213-2EFF-144	7.1	11.7	577
0800	Sampled Effluent	5447-0213-EFF-MS	7.1	11.7	577
0800	Sampled Effluent	5447-0213-EFF-MSD	7.1	11.7	577
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative - Explosives				
	1 – 500ml poly bottle – no preservative – Nitrates				
	1 – 500ml poly bottle – H2SO4 – Nitrates				
	QC/MS/MSD nitrates only.				

0930	Sampled AOP Effluent 5447-0213-AOP-EFF2-144	7.0	14.0	652
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0735– 0740 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1409

Remarks: Samples shipped to Test America Burlington
Nitrate samples shipped to Test America Denver

Total Hours Worked: 8

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

1-31-13 Sample Event # 144 cont.

Time	Calibrate pH & Cond meters
0735	pH 7.0 = 7.0 Cond 1409 = 1409

1012	Sampled EW-1R	5447-0213-EW1R-144
1023	Sampled EW-04	5447-0213-EW04-144
1128	Sampled EW07	5447-0213-EW07-144
1120	Sample EW09	5447-0213-EW09-144
1120	Sample EW-07UV	5447-0213-EW07-144-A
1038	Sampled EW-11	5447-0213-EW11-144
1028	Sample EW-14	5447-0213-EW14-144

10° Partly Cloudy
NW @ 10 mph
65% Humidity

1-31-13 Sample Event # 144 cont.

Sample Summary Bottles Filled

ID	Time	pH	Sand	Temp	VOC	Explosive
EW-1R	1012	7.1	787	12.6	3	–
EW-04	1023	7.1	465	13.0	[illegible]	2
EW-07	1128	7.2	500	11.5	–	2
EW 09	1120	7.2	425	14.6	–	2
EW-09 A	1120	7.2	425	14.6	–	2
EW-11	1038	7.2	652	11.9	3	2
EW 14	1028	7.2	467	12.0	–	2

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1618

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 01-31-13 ECC Project # 5447-002 Weather 10 & Partly Cloudy
Client/Site Mead NOP Purpose of sampling Test for TCE
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW – 1R Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump dedicated? Yes **No**

# of casing volumes purged 4 Other (describe)

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1012	7.1	12.6	781
Instrument ID			
Calibration Date	01/31/13	01/31/13	01/31/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -3 Total 3 glass
Analytes/parameters requested: -- Voc's
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 03/31/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 01/31/13 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 01-31-13 ECC Project # 5447-002 Weather 10 & Partly Cloudy
Client/Site Mead NOP Purpose of sampling Test for Explosives
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW - 4 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump ____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe) ____

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1023	7.1	13.0	465
Instrument ID			
Calibration Date	01/31/13	01/31/13	01/31/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter	Test Method	Results

Fluid collected for laboratory analysis: # & type of containers Raw water -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 01/31/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 01/31/13 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 01-31-13 ECC Project # 5447-002 Weather 10 & Partly Cloudy
Client/Site Mead NOP Purpose of sampling Test for Explosives
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW - 7 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump ____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe) ____

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1128	7.2	11.5	502
Instrument ID			
Calibration Date	01/31/13	01/31/13	01/31/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 01/31/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 01/31/13 Date

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 01-31-13 ECC Project # 5447-002 Weather 10 & Partly Cloudy
Client/Site Mead NOP Purpose of sampling Test for Explosives
Other activities underway at site today _____
Applicable Work Plan dated _____ Initial sampling event? Yes **No**

Well ID EW - 9 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump _____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe) _____

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1120	7.2	14.6	425
Instrument ID			
Calibration Date	01/31/13	01/31/13	01/31/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements _____

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 01/31/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: _____ Reviewed by _____

Date 01/31/13 Date _____

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 01-31-13 ECC Project # 5447-002 Weather 10 & Partly Cloudy
Client/Site Mead NOP Purpose of sampling Test for TCE & Explosives
Other activities underway at site today _____
Applicable Work Plan dated _____ Initial sampling event? Yes **No**

Well ID EW - 11 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump _____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe) _____

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1038	7.2	11.9	652
Instrument ID			
Calibration Date	01/31/13	01/31/13	01/31/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements _____

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -5 Total 5 glass
Analytes/parameters requested: -- TCE & Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 01/31/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: _____ Reviewed by _____

Date 01/31/13 Date _____

ENVIRONMENTAL CHEMICAL CORPORATION

FIELD WATER QUALITY RECORD
GROUNDWATER EXTRACTION WELL

Date 01-31-13 ECC Project # 5447-002 Weather 10 & Partly Cloudy
Client/Site Mead NOP Purpose of sampling Test for Explosives
Other activities underway at site today
Applicable Work Plan dated Initial sampling event? Yes **No**

Well ID EW - 14 Sample extraction through petcock/valve? **Yes** No

Purged prior to sampling? **Yes** No Bladder pump ____ dedicated? Yes **No**

# of casing volumes purged 4 Other (describe)

Media Micron size

SAMPLE FILTERING

Media N/A Micron size N/A

WATER QUALITY MEASUREMENTS

TIME 24 hr format	pH	TEMP. °C	TDS conductivity Mmhos/cm
1028	7.2	12.0	467
Instrument ID			
Calibration Date	01/31/13	01/31/13	01/31/13

*Denote conditions at time of sampling by adding an "S" to the time box Data record continued on back of sheet? Yes **No**

Other Field Measurements

Parameter Test Method Results

Fluid collected for laboratory analysis: # & type of containers Raw water -2 Total 2 glass
Analytes/parameters requested: -- Explosives
Receiving Laboratory: Test America Shipping Method Fed Ex. Over night
Holding Time in Field 15 minutes Date Shipped 01/31/13
Chain of Custody Form completed for these samples? **Yes** No

Recorded by: Reviewed by

Date 01/31/13 Date

1-31-13 Sample Event # 88

Time	Calibrate pH + Cond meters	
0735	pH 7.0 = 7.0	Cond 1409 = 1409
0840	Sample plant Influent	5447-0213-221-INF-088
0840	Sample plant Influent	5447-0213-221-2INF-088
0840	Sample plant Influent	5447-0213-221-INF-MS
0840	Sample plant Influent	5447-0213-221-INF-MSD
0850	Sample plant Effluent	5447-0213-221-EFF-088
0850	Sample plant Effluent	5447-0213-221-2EFF-088
0850	Sample plant Effluent	5447-0213-221-EFF-MS
0850	Sample plant Effluent	5447-0213-221-EFF-MSD
0858	Sample Carbon Air	5447-0213-221-AIR-EFF-088
0858	Sample Carbon Air	5447-0213-221-2AIR-EFF-088

10° Partly Cloudy
NW ~~10~~ 10 mph
65% Humidity

1-31-13 Sample Event #88

Sampling Summary BOHLS Filled.

ID	Time	pH	Scond	Temp	Jocs	Explosives	Nitrates	Tcb
INF	0840	6.9	567	11.2	3	2	-	-
2INF	0840	6.9	567	11.2	3	2	-	-
INF-MS	0840	6.9	567	11.2	3	2	-	-
INFMSD	0840	6.9	567	11.2	3	2	-	-
EFF	0850	8.2	549	9.5	3	2	2	-
2EFF	0850	8.2	549	9.5	-	-	2	-
EFF-MS	0850	8.2	549	9.5	-	-	2	-
EFFMSD	0850	8.2	549	9.5	-	-	2	-
AIR	0858	-	-	-	-	-	-	1
2AIR	0858	-	-	-	-	-	-	1

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8673 3615 1618

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1607

Air Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1629

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Leader: _____
Report: _____
Date: January 31, 2013
Client: _____
Contract No: 5447-002
Report No. 088
Site: Mead NOP

Description and Location of Work: Sampled LL1 Plant

Weather Information:
Sky: Partly Cloudy
Temp. Max/Min: 10 degrees
Precipitation: None
Wind Speed/Direction: NW @ 10 mph
Humidity: 65%

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity		pH	Temp	Scond
0840	Sampled Influent	5447-0213-LL1-INF-088	6.9	11.2	567
0840	Sampled Influent	5447-0213-LL1-2INF-088	6.9	11.2	567
0840	Sampled Influent	5447-0213-LL1-INF-MS	6.9	11.2	567
0840	Sampled Influent	5447-0213-LL1-INF-MSD	6.9	11.2	567
	Influent samples – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative – Explosives				
0850	Sampled Effluent	5447-0213-LL1-Eff-088	8.2	9.5	549
0850	Sampled Effluent	5447-0213-LL1-2Eff-088	8.2	9.5	549
0850	Sampled Effluent	5447-0213-LL1-Eff-MS	8.2	9.5	549
0850	Sampled Effluent	5447-0213-LL1-Eff-MSD	8.2	9.5	549
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S				
	2 – 1Lt amber glass bottle – no preservative - Explosives				
	1 – 1Lt poly bottle – no preservative – Nitrates				
	1 – 250ml poly bottle – H2SO4 – Nitrates				
	QC and MS/MSD Nitrates only				
0858	Sampled Carbon Air Effluent	5447-0213-AIR-EFF-088			
0858	Sampled Carbon Air Effluent	5447-0213-2AIR-EFF-088			
	Air sample – 1 – 1 Lt Canister no preservative Air sample				

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0735– 0740 Calibrate pH and S cond meters
pH 7.0 =7.0 S cond. 1409 = 1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver. Air samples sent to Test America Burlington.

Total Hours Worked: 6

Prepared by: (Signature) _____ (Print) Tim Thares

Chain of Custody's on file at the plant.

1-31-13 Sample LL4

Time Calibrate pH & Scond meter

0935 pH 7.0 = 7.0 Scond 1409 = 1409

0941 Sample plant Influent 5447-0213-LL4-INF

0945 Sample plant Effluent 5447-0213-LL4-EFF

S

Sampling Summary Bottles Filled

ID	Time	pH	Scond	Temp	VOCs	Explosives	Nitrate
INF	0941	7.1	584	10.9	3	2	-
EFF	0945	8.2	579	10.9	3	2	2

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1618

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1607

10° Partly Cloudy
NW @ 10 mph
65% Humidity

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report: _____
Client: _____
Report No. 0

Leader: _____
Date: January 31, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL4 Plant

Weather Information:
Sky: Partly Cloudy
Precipitation: None
Humidity: 65%

Temp. Max/Min: 10 degrees
Wind Speed/Direction: NW.@ 10 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0941	Sampled Influent 5447-0213-LL4-INF	7.1	10.9	584
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
0945	Sampled Effluent 5447-0113-LL4-EFF	8.2	11.2	578
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0735– 0740 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver.

Total Hours Worked: 2

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

3-28-13 Sampling Event # 145

Time	
	Calibrate pH & Scan meters
0720	pH 7.0 = 7.0 Scan 1409 = 1334 / 1409
0730	Sample plant Influent 5447-0313-INF-145
0732	Sample FAC 320 5447-0313-320-145
0734	Sample FAC 340 5447-0313-340-145
0738	Sample FAC 360 5447-0313-360-145
0742	Sample plant Effluent 5447-0313-EFF-145
0847	Sample AOP Influent 5447-0313-AOP-INF-145
0841	Sample AOP Effluent 5447-0313-AOP-EFF2-145
0823	Sample FCW-1 Influent FCW-INF-032013
0825	Sample FCW-1 Effluent FCW1-EFF-032013

27° cloudy
NNW @ 14 mph
91% Humidity

2-28-13 Sample Event # 145

Sampling Summary Bottles Filled

ID	Time	pH	Sand	Temp	Jars	Explosives	Nitrates
INF	0730	7.1	605	13.9	3	2	—
320	0732	7.1	604	13.0	3	2	—
340	0734	7.1	604	12.2	3	2	—
360	0738	7.1	600	11.9	3	2	—
EFF	0742	7.1	600	12.1	3	2	2
AOP-INF	0847	7.1	675	12.4	3	2	—
AOP-EFF	0841	7.1	669	12.3	3	2	—
GCW1-INF	0823	2.2	464	11.1	3	—	—
GCW1-EFF	0825	8.2	451	9.8	3	—	—

Samples shipped overnight to Test America Burlington via Fed Ex Air Bill # 8675-3615-1673

Nitrate samples shipped overnight to Test America Denver via Fed Ex Air Bill # 8675-3615-1662

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report:
Client:
Report No. 145

Leader:
Date: February 28, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled main plant

Weather Information:
Sky: Cloudy
Precipitation: None
Humidity: 91%

Temp. Max/Min: 27 degrees
Wind Speed/Direction: NNW. @ 14 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0730	Sampled Influent 5447-0313-INF-145	7.1	13.9	605
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
0732	Sampled GAC Vessel 320 Lead 5447-0313-320-145	7.1	13.0	604
0734	Sampled GAC Vessel 340 Lead 5447-0313-340-145	7.1	12.2	604
0738	Sampled GAC Vessel 360 Lead 5447-0313-360-145	7.1	11.9	600
	All GAC Vessel samples – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
0742	Sampled Effluent 5447-0313-EFF-145	7.1	12.1	600
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
	1 – 500ml poly bottle – no preservative – Nitrates			
	1 – 500ml poly bottle – H2SO4 – Nitrates			
0847	Sampled AOP Influent 5447-0313-AOP-INF-145	7.1	12.4	675
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			

0841	Sampled AOP Effluent 5447-0313-AOP-EFF2-145	7.1	12.3	669
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative - Explosives			
0823	Sampled Influent GCW1-INF-032013	7.2	11.1	464
	Influent sample – 3 – 40ml bottles –HCL – VOC'S			
0825	Sampled Effluent GCW1-EFF-032013	8.2	9.8	451
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0720– 0725 Calibrate pH and S cond meters
pH 7.0 = 7.0 S cond. 1409 = 1334/1409

Remarks: Samples shipped to Test America Burlington
Nitrate samples shipped to Test America Denver
GAC 380 not sample due to being off line

Total Hours Worked: 5

Prepared by: (Signature) (Print) Tim Thares

Chain of Custody's on file at the plant.

9-28-13 Sampling Event # 89

Time Calibrate pH & Cond meters

0720 pH 7.0 = 7.0 Cond 1409 = 1334/1409

0807 Sampled plant Influent 5449-0313-LL INF-089

0810 Sampled plant Effluent 5449-0313-LL-EFF-089

Sampling Summary Bottles Filled

ID	Time	pH	Cond	Temp	VOC's	Nitrates
INF	0807	7.0	587	12.7	3	–
EFF	0810	8.2	576	11.1	3	2

VOC's shipped overnight to Test America Burlington via FedEx Air Bill # 8675-3615-1673

Nitrates shipped overnight to Test America Denver via FedEx Air Bill # 8675-3615-1662

37° cloudy
NNWE 14 mph
91% Humidity

FIGURE 9-1
Environmental Chemical Corporation
1746 Cole Boulevard, Building 21, Suite 350
Lakewood, CO 80401

Daily Chemical Quality Control Report

Field Team: Tim Thares/Vince Stallbaumer
Report:
Client:
Report No. 089

Leader:
Date: February 28, 2013
Contract No: 5447-002
Site: Mead NOP

Description and Location of Work: Sampled LL1 Plant

Weather Information:
Sky: Cloudy
Precipitation: None
Humidity: 91%

Temp. Max/Min: 27 degrees
Wind Speed/Direction: NNW @ 14 mph

Contractor/Subcontractor and Area of Responsibility:

Work Performed Today: Indicate location and description of work performed.

Time	Activity	pH	Temp	Scond
0807	Sampled Influent 5447-0313-LL1-INF-089	7.0	12.7	587
	Influent samples – 3 – 40ml bottles –HCL – VOC'S			
	2 – 1Lt amber glass bottle – no preservative – Explosives			
0810	Sampled Effluent 5447-0313-LL1-EFF-089	8.2	11.1	576
	Effluent sample – 3 – 40ml bottles –HCL – VOC'S			
	1 – 1Lt poly bottle – no preservative – Nitrates			
	1 – 250ml poly bottle – H2SO4 – Nitrates			

Field Instrument Measurements: pH, S cond., Temp (degree C)

Calibration: 0720– 0725 Calibrate pH and S cond meters
pH 7.0 =7.0 S cond. 1409 = 1334/1409

Remarks: Water samples sent to Test America Burlington. Nitrates were sent to Test America Denver.

Total Hours Worked: 2

Prepared by: (Signature) _____ (Print) Tim Thares

Chain of Custody's on file at the plant.

Appendix C
Reference Sheet
Data Validation Qualifiers
Drinking Water Standards

Data Qualifiers and Drinking Water Standards Reference Sheet
Former Nebraska Ordnance Plant, Mead, Nebraska

Any qualifiers (i.e. U, J, or R) listed after a result are assigned during the data validation process. Data validation is a procedure which involves the review of quality control data provided by the laboratory. This review is followed by the assignment of data qualifiers (if necessary) which indicate the reliability of a result to the reader. Data validation is performed by a chemist employed outside of the laboratory or associated government installations to ensure accuracy in data reporting. A description of qualifiers is provided below.

No qualifier

- If a result has no assigned qualifier, the contaminant was detected, and the reader can be confident that the concentration is exact.

"U"

- A result followed by a "U" qualifier means that the contaminant was undetected, or not detected by the instrument.

"UJ"

- A result followed by a "UJ" qualifier means that the contaminant was not detected, but the associated detection level is not certain (estimated). For example, if a value is followed by a "UJ", the contaminant was not detected, but the associated detection level is in question. The detection level is in question because one or more of the laboratory quality control indicators do not meet acceptance criteria. The amount that the indicator fell outside of the criteria may be used as a rough estimate of how much the actual detection level differs from the stated one. Typically, this is a 10-30% difference.

"UR"

- A result followed by a "UR" qualifier means that the contaminant was not detected, but there is strong doubt that the associated detection level is accurate. For example, if a value is followed by a "UR", the contaminant was not detected, but the associated detection level is in strong doubt. The detection level is in doubt because results are unacceptable for a quality control indicator. In this case, the detection level cannot be estimated.

"J"

- A result followed by only a "J" qualifier means that the contaminant was detected, but there is some question that the stated concentration is exact. For example, if a result is "0.5 J", the contaminant was detected, but there is some question that the concentration is exactly 0.5. A "J" qualifier may be applied for two reasons: (1) the contaminant was detected below the reporting limit; or (2) the contaminant was detected, but one or more quality control indicators did not meet acceptance criteria. The reporting limit is equal to the concentration of the lowest standard used by the laboratory to calibrate the instrument. The reporting limit is the minimum concentration that can be stated with complete confidence.

“R”

- A result followed by only an “R” qualifier means that the contaminant was detected, but there is strong doubt that the concentration is exact. For example, if a result is “0.5 R”, the contaminant was detected, but there is strong doubt that the concentration is exactly 0.5. The concentration is in doubt because results are unacceptable for a quality control indicator. In this case, the detected concentration cannot be estimated. For comparison purposes, detected results are reported in the results letters with available Environmental Protection Agency drinking water standards. These standards include the maximum contaminant level (MCL) and various health advisories (HA). A description of the drinking water standards is provided below.

“MCL”

- The maximum contaminant level is the highest concentration of a contaminant that is allowed in drinking water. Maximum contaminant levels are enforceable Federal standards.

“HA”

- Health advisories provide estimates of acceptable drinking water concentrations for a chemical substance based on health effects information. Health advisories are not enforceable Federal standards, but serve as a technical guidance to assist Federal, State, and local officials.

Appendix D

Analytical Results on Compact Disc Summary Forms and Raw Data

Appendix F

Historical Detections spreadsheet of TCE and RDX for Monitoring Wells, Water Supply Wells and Surface Water Locations (on CD)