

Data Validation Package

April 2012
Groundwater Sampling at the
Falls City, Texas, Disposal Site

June 2012



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Sampling Event Summary

Site: Falls City, Texas, Disposal Site

Sampling Period: April 4, 2012

Ten groundwater samples were collected at the Falls City, Texas, Disposal Site as specified in the March 2008 *Long-Term Surveillance Plan for the U.S. Department of Energy Falls City Uranium Mill Tailings Disposal Site Falls City, Texas*.

Sampling and analysis were conducted as specified in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites (LMS/PLN/S04351, continually updated)*.

The wells sampled included the cell performance monitoring wells (0709, 0858, 0880, 0906, and 0921) and the groundwater monitoring wells (0862, 0886, 0891, 0924, and 0963). A duplicate sample was collected from location 0891.

Water levels were measured at each sampled well. Historically, wells 0908 and 0916 have not produced water and were confirmed as dry. These wells are completed above the saturated interval in the formation. The water level has been trending lower at four wells (0709, 0858, 0880, 0906, and 0921) adjacent to the cell since 1996.

The time-concentration graphs included in this report show that analyte concentrations have increased significantly in well 0891 since 2006. The concentration of uranium in this well decreased slightly from 2011, but remains near the historical high of 2.9 milligrams per liter. No other significant uranium concentration changes were observed in the other wells sampled.



Michele L. Miller
2012.07.03 14:15:25
-04'00'

Michele Miller
Site Lead, S.M. Stoller Corporation

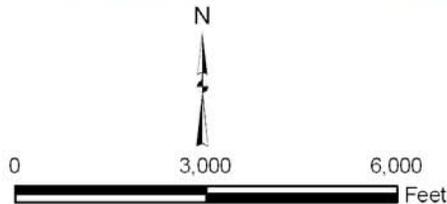
Date



Aerial Imagery: NAIP 2010

Legend

- 0906 Cell Performance Network Monitoring Well and Identifier
- 0924 Groundwater Compliance Network Monitoring Well and Identifier



U.S. DEPARTMENT OF ENERGY
 GRAND JUNCTION, COLORADO

Work Performed by
S.M. Stoller Corporation
 Under DOE Contract
 No. DE-AM01-07LM0060

**Monitoring Well Locations
 Falls City, TX, Disposal Site**

DATE PREPARED:
 June 14, 2011

FILENAME:
 S0789700

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Falls City, Texas, Monitoring Well Location Map

Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	<u>Falls City, Texas</u>	Date(s) of Water Sampling	<u>April 4, 2012</u>
Date(s) of Verification	<u>June 5, 2012</u>	Name of Verifier	<u>Steve Donovan</u>

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures? List other documents, SOPs, instructions.	<u>Yes</u>	<u>Work Order letter dated February 28, 2012.</u>
2. Were the sampling locations specified in the planning documents sampled?	<u>Yes</u>	<u>Wells 0908 and 0916 were confirmed as dry.</u>
3. Was a pre-trip calibration conducted as specified in the above-named documents?	<u>No</u>	<u>Pre-trip calibration was not documented.</u>
4. Was an operational check of the field equipment conducted daily? Did the operational checks meet criteria?	<u>Yes</u> <u>Yes</u>	
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	<u>Yes</u>	
6. Was the category of the well documented?	<u>Yes</u>	
7. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged prior to sampling? Did the water level stabilize prior to sampling? Did pH, specific conductance, and turbidity measurements stabilize prior to sampling? Was the flow rate less than 500 mL/min? If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	<u>Yes</u> <u>Yes</u> <u>Yes</u> <u>Yes</u> <u>NA</u>	<u>Turbidity at well 0963 was greater than 10 NTUs, sample was filtered.</u>

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well: Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	A duplicate sample was collected from well 0891.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	NA	Dedicated equipment was used, an equipment blank was not required.
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number? Was the true identity of the samples recorded on the Quality Assurance Sample Log or in the Field Data Collection System (FDCS) report?	Yes	Location ID 2913 was used for the duplicate sample.
	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members (hardcopies) or are dates present for the "Date Signed" fields (FDCS)?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

General Information

Report Number (RIN): 12034437
Sample Event: April 4, 2012
Site(s): Falls City, Texas
Laboratory: ALS Laboratory Group, Fort Collins, Colorado
Work Order No.: 1204102
Analysis: Metals and Wet Chemistry
Validator: Steve Donovan
Review Date: June 5, 2012

This validation was performed according to the *Environmental Procedures Catalog* (LMS/PRO/S04325), "Standard Practice for Validation of Laboratory Data." The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 1.

Table 1. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	EPA 350.1	EPA 350.1
Chloride	MIS-A-045	SW-846 9056	SW-846 9056
Metals: Ca, Fe, K, Mg, Na	LMM-01	SW-846 3005A	SW-846 6010B
Nitrite + Nitrate as N	WCH-A-022	EPA 353.2	EPA 353.2
Sulfate	MIS-A-045	SW-846 9056	SW-846 9056
Uranium	LMM-02	SW-846 3005A	SW-846 6020A

Data Qualifier Summary

None of the analytical results required qualification.

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado received 11 water sample on April 10, 2012, accompanied by a Chain of Custody form. The Chain of Custody form was checked to confirm that the sample was listed on the form and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents had no errors or omissions with the following exception. There was no relinquishment signature on the form. Copies of the air waybill labels were included with the receiving documentation.

Preservation and Holding Times

The sample shipment was received intact with the temperature inside the iced cooler at 1.2 °C, which complies with requirements. The samples were received in the correct container types and had been preserved correctly for the requested analyses and all samples were analyzed within the applicable holding times.

Detection and Quantitation Limits

The method detection limit (MDL) was reported for all analytes as required. The MDL, as defined in 40 CFR 136, is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The practical quantitation limit (PQL) for these analytes is the lowest concentration that can be reliably measured, and is defined as 5 times the MDL. The reported MDLs for all analytes demonstrate compliance with contractual requirements.

Laboratory Instrument Calibration

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed correctly in accordance with the cited methods. All calibration and laboratory spike standards were prepared from independent sources.

Method MCAWW 350.1

Calibration was performed for ammonia as N on April 17, 2012, using six calibration standards. The calibration curve correlation coefficient value was greater than 0.995 and the absolute value of the intercept was less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in six verification checks. All calibration checks met the acceptance criteria.

Method MCAWW 353.2

Calibration was performed for nitrate + nitrite as N on April 20, 2012, using seven calibration standards. The calibration curve correlation coefficient value was greater than 0.995 and the absolute value of the intercept was less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 11 verification checks. All calibration checks met the acceptance criteria.

Method SW-846 6010B

Calibrations for calcium, iron, magnesium, potassium, and sodium were performed on April 12 and April 25, 2012. The initial calibrations were performed using five calibration standards resulting in calibration curves with correlation coefficient (r^2) values greater than 0.995. The absolute values of the curve intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 21 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range.

Method SW-846 6020A, Uranium

Calibration was performed for uranium on April 18, 2012. The initial calibration was performed using four calibration standards resulting in a calibration curve with a correlation coefficient (r^2)

value greater than 0.995. The absolute value of the curve intercept was less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 18 verification checks. All initial and continuing calibration verification results were within the acceptance range. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curves near the PQL. All check results were within the acceptance range. The mass calibration and resolution were checked at the beginning of each analytical run in accordance with the procedure. Internal standard recoveries were stable and within acceptance ranges.

Method SW-846 9056

Calibrations were performed for chloride and sulfate on February 15, 2012, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency resulting in 12 verification checks. All calibration checks met the acceptance criteria.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. All method blank and initial and continuing calibration blank results were below the applicable PQL.

Inductively Coupled Plasma Interference Check Sample Analysis

Interference check samples A and AB were analyzed at the required frequency to verify the interelement and background correction factors for all inductively coupled plasma instruments. All check sample results met the acceptance criteria.

Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spike recoveries met the recovery and precision criteria for all analytes evaluated.

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference for replicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than the PQL, the range should be no greater than the PQL. The replicate results met these criteria demonstrating acceptable laboratory precision.

Laboratory Control Samples

Laboratory control samples were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. The laboratory control sample results were acceptable for all analyses.

Metals Serial Dilution

Serial dilutions were performed during the metals analysis to monitor physical or chemical interferences that may exist in the sample matrix. Serial dilutions were prepared and analyzed for all metals. The acceptance criteria were met for all analytes.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of uranium to reduce interferences. The required detection limits were achieved for all analytes.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Electronic Data Deliverable (EDD) File

The EDD file arrived on May 1, 2012. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

Anion/Cation Balance

The anion/cation balance is used to determine if major ion concentrations have been quantified correctly. The total anions should balance with (be equal to) the total cations when expressed in milliequivalents per liter (meq/L). Table 2 shows the total anion and cation results in groundwater samples from this event and the charge balance, which is a relative percent difference calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

Table 2. Comparison of Major Anions and Cations in Groundwater Samples

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
FCT03	0862	43.80	47.60	4.15
FCT03	0891	324.67	362.30	5.48

The charge balance for wells 0862 and 0891 were acceptable with values less than ten percent.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 12034437 Lab Code: PAR Validator: Steve Donovan Validation Date: 6/5/2012

Project: Falls City Analysis Type: Metals General Chem Rad Organics

of Samples: 11 Matrix: WATER Requested Analysis Completed: Yes

Chain of Custody

Present: OK Signed: OK Dated: OK

Sample

Integrity: OK Preservation: OK Temperature: OK

Select Quality Parameters

- Holding Times
- Detection Limits
- Field/Trip Blanks
- Field Duplicates

All analyses were completed within the applicable holding times.

The reported detection limits are equal to or below contract requirements.

There was 1 duplicate evaluated.

SAMPLE MANAGEMENT SYSTEM
Metals Data Validation Worksheet

RIN: 12034437 Lab Code: PAR Date Due: 5/8/2012
 Matrix: Water Site Code: FCT Date Completed: 5/1/2012

Analyte	Method Type	Date Analyzed	CALIBRATION							Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB									
Calcium	ICP/ES	04/12/2012	0.0000	1.0000	OK	OK	OK	OK	OK	94.0			4.0	107.0	2.0	105.0	
Calcium	ICP/ES	04/25/2012	0.0000	1.0000	OK	OK	OK	OK	OK	97.0			11.0	109.0		108.0	
Iron	ICP/ES	04/12/2012	0.0000	1.0000	OK	OK	OK	OK	OK	95.0				109.0		104.0	
Iron	ICP/ES	04/25/2012	0.0000	1.0000	OK	OK	OK	OK	OK	97.0	100.0	100.0	0.0	111.0		104.0	
Magnesium	ICP/ES	04/12/2012	0.0000	1.0000	OK	OK	OK	OK	OK	95.0				106.0	8.0	104.0	
Magnesium	ICP/ES	04/25/2012	0.0000	1.0000	OK	OK	OK	OK	OK	99.0	88.0	106.0	11.0	110.0		107.0	
Potassium	ICP/ES	04/12/2012	0.0000	1.0000	OK	OK	OK	OK	OK	97.0						80.0	
Potassium	ICP/ES	04/25/2012	0.0000	1.0000	OK	OK	OK	OK	OK	95.0	96.0	124.0	13.0			81.0	
Sodium	ICP/ES	04/12/2012	0.0000	1.0000	OK	OK	OK	OK	OK	94.0			2.0		9.0	83.0	
Sodium	ICP/ES	04/25/2012	0.0000	1.0000	OK	OK	OK	OK	OK	95.0			11.0			84.0	
Uranium	ICP/MS	04/18/2012	0.0000	1.0000	OK	OK	OK	OK	OK	102.0			0.0	102.0	1.0	90.0	

SAMPLE MANAGEMENT SYSTEM
Wet Chemistry Data Validation Worksheet

RIN: 12034437 Lab Code: PAR Date Due: 5/8/2012
 Matrix: Water Site Code: FCT Date Completed: 5/1/2012

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
AMMONIA AS N	04/17/2012	-0.010	1.0000	OK	OK	OK	OK	OK	100.00	105.0	106.0	1.00	
CHLORIDE	04/10/2012	0.000	1.0000	OK	OK	OK	OK	OK	93.00				
Nitrate+Nitrite as N	04/20/2012	0.000	1.0000	OK	OK	OK	OK	OK	96.00	111.0	112.0	1.00	
SULFATE	04/10/2012	0.000	1.0000	OK	OK	OK	OK	OK	95.00				

Sampling Quality Control Assessment

The following information summarizes and assesses quality control for this sampling event.

Sampling Protocol

Sample results for all monitoring wells met the Category I or II low-flow sampling criteria and were qualified with an “F” flag in the database, indicating the wells were purged and sampled using the low-flow sampling method.

The groundwater sample results for wells 0858, 0862, and 0886 were qualified with a “Q” flag in the database indicating the data are considered qualitative because the wells were sampled using Category II criteria. Well 0963 had a turbidity value greater than ten NTUs. The sample from this well was filtered.

Equipment Blank Assessment

Collection and analysis of an equipment blank was not performed because all samples were collected with dedicated bladder pumps.

Field Duplicate Assessment

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory duplicates, which measure only laboratory performance. The relative percent difference for duplicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than the PQL, the range should be no greater than the PQL. A duplicate sample was collected from location 0891. The duplicate results met these criteria, demonstrating acceptable overall precision for all analytes.

SAMPLE MANAGEMENT SYSTEM
Validation Report: Field Duplicates

RIN: 12034437 Lab Code: PAR Project: Falls City Validation Date: 6/5/2012

Duplicate: 2913

Sample: 0891

Analyte	Sample				Duplicate				RPD	RER	Units
	Result	Flag	Error	Dilution	Result	Flag	Error	Dilution			
AMMONIA AS N	0.1	U		1	0.1	U		1			MG/L
Calcium	2100000			10	2100000			10	0		UG/L
CHLORIDE	11000			1000	11000			1000	0		MG/L
Iron	88	B		10	230	B		10			UG/L
Magnesium	250000			10	260000			10	3.92		UG/L
Nitrate+Nitrite as N	0.21			1	0.2			1	4.88		MG/L
Potassium	140000			10	140000			10	0		UG/L
Sodium	4500000			100	4500000			100	0		UG/L
SULFATE	2200			500	2200			500	0		MG/L
Uranium	2700			200	2700			200	0		UG/L

Certification

All laboratory analytical quality control criteria were met except as qualified in this report. The data qualifiers listed on the SEEPro database reports are defined on the last page of each report. All data in this package are considered validated and available for use.

Laboratory Coordinator:



Digitally signed by Stephen E. Donivan
DN: c=us, o=u.s. government, ou=department
of energy, ou=headquarters, ou=people,
cn=Stephen E. Donivan
Date: 2012.06.25 07:11:15 -06'00'

Steve Donivan

Date

Data Validation Lead:



Digitally signed by Stephen E. Donivan
DN: c=us, o=u.s. government, ou=department
of energy, ou=headquarters, ou=people,
cn=Stephen E. Donivan
Date: 2012.06.25 07:11:43 -06'00'

Steve Donivan

Date

Attachment 1
Assessment of Anomalous Data

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Potential Outliers Report

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Potential Outliers Report

Potential outliers are measurements that are extremely large or small relative to the rest of the data and, therefore, are suspected of misrepresenting the population from which they were collected. Potential outliers may result from transcription errors, data-coding errors, or measurement system problems. However, outliers may also represent true extreme values of a distribution and indicate more variability in the population than was expected.

Statistical outlier tests give probabilistic evidence that an extreme value does not "fit" with the distribution of the remainder of the data and is therefore a statistical outlier. These tests should only be used to identify data points that require further investigation. The tests alone cannot determine whether a statistical outlier should be discarded or corrected within a data set.

There are three steps involved in identifying extreme values or outliers:

1. Identify extreme values that may be potential outliers by generating the Outliers Report using the Sample Management System from data in the SEEPro database. The application compares the new data set with historical data and lists the new data that fall outside the historical data range. A determination is also made if the data are normally distributed using the Shapiro-Wilk Test.
2. Apply the appropriate statistical test. Dixon's Extreme Value test is used to test for statistical outliers when the sample size is less than or equal to 25. This test considers both extreme values that are much smaller than the rest of the data (case 1) and extreme values that are much larger than the rest of the data (case 2). This test is valid only if the data without the suspected outlier are normally distributed. Rosner's Test is a parametric test that is used to detect outliers for sample sizes of 25 or more. This test also assumes that the data without the suspected outliers are normally distributed.
3. Scientifically review statistical outliers and decide on their disposition.

The nitrate + nitrite (as N) result from well 0891 and the uranium result from well 0921 were identified as potential outliers. Well 0891 exhibits a general increase in analyte concentrations. Additionally, this well was sampled in duplicate with acceptable results. The uranium concentration in well 0921 has been trending upward since 2006. The data from the event are acceptable as qualified.

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Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: ALS Laboratory Group

RIN: 12034437

Report Date: 6/5/2012

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
FCT03	0891	N002	04/04/2012	Chloride	11000	F	10000		F	1120	N	J	22	0	No
FCT03	0891	N001	04/04/2012	Chloride	11000	F	10000		F	1120	N	J	22	0	No
FCT03	0891	N002	04/04/2012	Magnesium	260	F	250		F	59.1		F	22	0	No
FCT03	0891	N002	04/04/2012	Nitrate + Nitrite as Nitrogen	0.2	F	0.1		F	0.01	U	F	9	2	Yes
FCT03	0891	N001	04/04/2012	Nitrate + Nitrite as Nitrogen	0.21	F	0.1		F	0.01	U	F	9	2	Yes
FCT03	0891	N001	04/04/2012	Potassium	140	F	130		FJ	45.2		F	22	0	No
FCT03	0891	N002	04/04/2012	Potassium	140	F	130		FJ	45.2		F	22	0	No
FCT03	0891	N002	04/04/2012	Sodium	4500	F	3400		F	730		F	22	0	No
FCT03	0891	N001	04/04/2012	Sodium	4500	F	3400		F	730		F	22	0	No
FCT03	0891	N002	04/04/2012	Sulfate	2200	F	1900		F	964			22	0	No
FCT03	0891	N001	04/04/2012	Sulfate	2200	F	1900		F	964			22	0	No
FCT03	0921	N001	04/04/2012	Uranium	1.7	F	1.4		F	0.043			53	0	Yes
FCT03	0963	0001	04/04/2012	Uranium	0.074	F	0.367			0.076		F	30	0	No

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 12034437

Report Date: 6/5/2012

Site Code	Location Code	Sample ID	Sample Date	Analyte	Result	Current Qualifiers		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
						Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
FCT03	0891	N001	04/04/2012	Specific Conductance	31259		F	29012		F	6623		F	18	0	No
FCT03	0906	N001	04/04/2012	Temperature	26.08		F	25.9		F	21.73		F	38	0	No
FCT03	0924	N001	04/04/2012	Specific Conductance	12682		F	12514		F	546			40	0	No
FCT03	0963	N001	04/04/2012	Specific Conductance	9007		F	8404		F	696		F	29	0	No

STATISTICAL TESTS:

The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test

Outliers are identified using Dixon's Test when there are 25 or fewer data points.

Outliers are identified using Rosner's Test when there are 26 or more data points.

See Data Quality Assessment: Statistical Methods for Practitioners, EPA QC/G-9S, February 2006.

Attachment 2

Data Presentation

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Groundwater Quality Data

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Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0709 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Dissolved Oxygen	mg/L	04/04/2012	N001	12.65 - 32.65	5.19		F	#		
Oxidation Reduction Potential	mV	04/04/2012	N001	12.65 - 32.65	157.7		F	#		
pH	s.u.	04/04/2012	N001	12.65 - 32.65	6.25		F	#		
Specific Conductance	umhos/cm	04/04/2012	N001	12.65 - 32.65	8844		F	#		
Temperature	C	04/04/2012	N001	12.65 - 32.65	24.63		F	#		
Turbidity	NTU	04/04/2012	N001	12.65 - 32.65	1		F	#		
Uranium	mg/L	04/04/2012	N001	12.65 - 32.65	0.46		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0858 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Dissolved Oxygen	mg/L	04/04/2012	N001	39.42 - 49.42	0.6		FQ	#		
Oxidation Reduction Potential	mV	04/04/2012	N001	39.42 - 49.42	111.7		FQ	#		
pH	s.u.	04/04/2012	N001	39.42 - 49.42	6.07		FQ	#		
Specific Conductance	umhos/cm	04/04/2012	N001	39.42 - 49.42	10702		FQ	#		
Temperature	C	04/04/2012	N001	39.42 - 49.42	23.87		FQ	#		
Turbidity	NTU	04/04/2012	N001	39.42 - 49.42	2.82		FQ	#		
Uranium	mg/L	04/04/2012	N001	39.42 - 49.42	0.068		FQ	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0862 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	04/04/2012	N001	117.77 - 127.77	298		FQ	#		
Ammonia Total as N	mg/L	04/04/2012	N001	117.77 - 127.77	0.1	U	FQ	#	0.1	
Calcium	mg/L	04/04/2012	N001	117.77 - 127.77	370		FQ	#	0.12	
Chloride	mg/L	04/04/2012	N001	117.77 - 127.77	590		FQ	#	10	
Dissolved Oxygen	mg/L	04/04/2012	N001	117.77 - 127.77	0.54		FQ	#		
Iron	mg/L	04/04/2012	N001	117.77 - 127.77	0.049	U	FQ	#	0.049	
Magnesium	mg/L	04/04/2012	N001	117.77 - 127.77	24		FQ	#	0.13	
Nitrate + Nitrite as Nitrogen	mg/L	04/04/2012	N001	117.77 - 127.77	0.14		FQ	#	0.01	
Oxidation Reduction Potential	mV	04/04/2012	N001	117.77 - 127.77	63.8		FQ	#		
pH	s.u.	04/04/2012	N001	117.77 - 127.77	6.81		FQ	#		
Potassium	mg/L	04/04/2012	N001	117.77 - 127.77	46	N	FQ	#	1.1	
Sodium	mg/L	04/04/2012	N001	117.77 - 127.77	510		FQ	#	0.066	
Specific Conductance	umhos/cm	04/04/2012	N001	117.77 - 127.77	4354		FQ	#		
Sulfate	mg/L	04/04/2012	N001	117.77 - 127.77	1200		FQ	#	25	
Temperature	C	04/04/2012	N001	117.77 - 127.77	25.13		FQ	#		
Turbidity	NTU	04/04/2012	N001	117.77 - 127.77	1.93		FQ	#		
Uranium	mg/L	04/04/2012	N001	117.77 - 127.77	0.0016		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0880 WELL

Parameter	Units	Sample		Depth Range		Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Data	QA		
Dissolved Oxygen	mg/L	04/04/2012	N001	32.3	- 42.3	1.18		F	#		
Oxidation Reduction Potential	mV	04/04/2012	N001	32.3	- 42.3	200.1		F	#		
pH	s.u.	04/04/2012	N001	32.3	- 42.3	4.38		F	#		
Specific Conductance	umhos/cm	04/04/2012	N001	32.3	- 42.3	19851		F	#		
Temperature	C	04/04/2012	N001	32.3	- 42.3	22.87		F	#		
Turbidity	NTU	04/04/2012	N001	32.3	- 42.3	4.48		F	#		
Uranium	mg/L	04/04/2012	N001	32.3	- 42.3	5.9		F	#	0.0029	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0886 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Dissolved Oxygen	mg/L	04/04/2012	N001	19.17 - 49.17	2.54		FQ	#		
Oxidation Reduction Potential	mV	04/04/2012	N001	19.17 - 49.17	116		FQ	#		
pH	s.u.	04/04/2012	N001	19.17 - 49.17	5.61		FQ	#		
Specific Conductance	umhos /cm	04/04/2012	N001	19.17 - 49.17	4557		FQ	#		
Temperature	C	04/04/2012	N001	19.17 - 49.17	26.11		FQ	#		
Turbidity	NTU	04/04/2012	N001	19.17 - 49.17	9.51		FQ	#		
Uranium	mg/L	04/04/2012	N001	19.17 - 49.17	0.011		FQ	#	0.000029	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0891 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	04/04/2012	N001	10.74 - 20.74	309		F	#		
Ammonia Total as N	mg/L	04/04/2012	N001	10.74 - 20.74	0.1	U	F	#	0.1	
Ammonia Total as N	mg/L	04/04/2012	N002	10.74 - 20.74	0.1	U	F	#	0.1	
Calcium	mg/L	04/04/2012	N001	10.74 - 20.74	2100		F	#	0.12	
Calcium	mg/L	04/04/2012	N002	10.74 - 20.74	2100		F	#	0.12	
Chloride	mg/L	04/04/2012	N001	10.74 - 20.74	11000		F	#	200	
Chloride	mg/L	04/04/2012	N002	10.74 - 20.74	11000		F	#	200	
Dissolved Oxygen	mg/L	04/04/2012	N001	10.74 - 20.74	0.98		F	#		
Iron	mg/L	04/04/2012	N001	10.74 - 20.74	0.088	B	F	#	0.049	
Iron	mg/L	04/04/2012	N002	10.74 - 20.74	0.23	B	F	#	0.049	
Magnesium	mg/L	04/04/2012	N001	10.74 - 20.74	250		F	#	0.13	
Magnesium	mg/L	04/04/2012	N002	10.74 - 20.74	260		F	#	0.13	
Nitrate + Nitrite as Nitrogen	mg/L	04/04/2012	N001	10.74 - 20.74	0.21		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	04/04/2012	N002	10.74 - 20.74	0.2		F	#	0.01	
Oxidation Reduction Potential	mV	04/04/2012	N001	10.74 - 20.74	130.3		F	#		
pH	s.u.	04/04/2012	N001	10.74 - 20.74	6.29		F	#		
Potassium	mg/L	04/04/2012	N001	10.74 - 20.74	140		F	#	1.1	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0891 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Potassium	mg/L	04/04/2012	N002	10.74 - 20.74	140		F	#	1.1	
Sodium	mg/L	04/04/2012	N001	10.74 - 20.74	4500		F	#	0.66	
Sodium	mg/L	04/04/2012	N002	10.74 - 20.74	4500		F	#	0.66	
Specific Conductance	umhos /cm	04/04/2012	N001	10.74 - 20.74	31259		F	#		
Sulfate	mg/L	04/04/2012	N001	10.74 - 20.74	2200		F	#	250	
Sulfate	mg/L	04/04/2012	N002	10.74 - 20.74	2200		F	#	250	
Temperature	C	04/04/2012	N001	10.74 - 20.74	23.54		F	#		
Turbidity	NTU	04/04/2012	N001	10.74 - 20.74	8.05		F	#		
Uranium	mg/L	04/04/2012	N001	10.74 - 20.74	2.7		F	#	0.00058	
Uranium	mg/L	04/04/2012	N002	10.74 - 20.74	2.7		F	#	0.00058	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0906 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Dissolved Oxygen	mg/L	04/04/2012	N001	12.49 - 27.49	0.81		F	#		
Oxidation Reduction Potential	mV	04/04/2012	N001	12.49 - 27.49	227.7		F	#		
pH	s.u.	04/04/2012	N001	12.49 - 27.49	5.55		F	#		
Specific Conductance	umhos /cm	04/04/2012	N001	12.49 - 27.49	11642		F	#		
Temperature	C	04/04/2012	N001	12.49 - 27.49	26.08		F	#		
Turbidity	NTU	04/04/2012	N001	12.49 - 27.49	1.19		F	#		
Uranium	mg/L	04/04/2012	N001	12.49 - 27.49	0.059		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0921 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Dissolved Oxygen	mg/L	04/04/2012	N001	44.55 - 54.55	2.29		F	#		
Oxidation Reduction Potential	mV	04/04/2012	N001	44.55 - 54.55	140.3		F	#		
pH	s.u.	04/04/2012	N001	44.55 - 54.55	6.05		F	#		
Specific Conductance	umhos/cm	04/04/2012	N001	44.55 - 54.55	10526		F	#		
Temperature	C	04/04/2012	N001	44.55 - 54.55	25.29		F	#		
Turbidity	NTU	04/04/2012	N001	44.55 - 54.55	1.01		F	#		
Uranium	mg/L	04/04/2012	N001	44.55 - 54.55	1.7		F	#	0.00058	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0924 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Dissolved Oxygen	mg/L	04/04/2012	N001	19.7	- 29.7	0.84		F	#		
Oxidation Reduction Potential	mV	04/04/2012	N001	19.7	- 29.7	131.9		F	#		
pH	s.u.	04/04/2012	N001	19.7	- 29.7	6.33		F	#		
Specific Conductance	umhos /cm	04/04/2012	N001	19.7	- 29.7	12682		F	#		
Temperature	C	04/04/2012	N001	19.7	- 29.7	25.88		F	#		
Turbidity	NTU	04/04/2012	N001	19.7	- 29.7	0.77		F	#		
Uranium	mg/L	04/04/2012	N001	19.7	- 29.7	0.48		F	#	0.00015	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site

REPORT DATE: 6/5/2012

Location: 0963 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Dissolved Oxygen	mg/L	04/04/2012	N001	4.38	-	14.38	1.01		F	#		
Oxidation Reduction Potential	mV	04/04/2012	N001	4.38	-	14.38	373.5		F	#		
pH	s.u.	04/04/2012	N001	4.38	-	14.38	3.29		F	#		
Specific Conductance	umhos/cm	04/04/2012	N001	4.38	-	14.38	9007		F	#		
Temperature	C	04/04/2012	N001	4.38	-	14.38	23.03		F	#		
Turbidity	NTU	04/04/2012	N001	4.38	-	14.38	15.8		F	#		
Uranium	mg/L	04/04/2012	0001	4.38	-	14.38	0.074		F	#	0.00015	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X,Y,Z Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- G Possible grout contamination, pH > 9.
- Q Qualitative result due to sampling technique.
- X Location is undefined.
- J Estimated value.
- R Unusable result.

QA QUALIFIER:

- # Validated according to quality assurance guidelines.

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Static Water Level Data

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STATIC WATER LEVELS (USEE700) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 6/5/2012

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0709	D	451.58	04/04/2012	16:07:11	33.39	418.19	
0858	O	441.03	04/04/2012	14:43:15	29.43	411.6	
0862	O	428.67	04/04/2012	14:23:52	67.32	361.35	
0880	O	446.84	04/04/2012	09:02:55	28.41	418.43	
0886	D	403.52	04/04/2012	10:56:35	34.66	368.86	
0891	D	349.63	04/04/2012	17:37:46	13.85	335.78	
0906	D	420.17	04/04/2012	13:40:06	14.38	405.79	
0908	N	495.67	04/04/2012	16:07:00			D
0916	D	420.39	04/04/2012	15:08:00			D
0921	D	435.75	04/04/2012	15:07:37	32.03	403.72	
0924	D	396.44	04/04/2012	16:48:30	16.26	380.18	
0963	D	373.23	04/04/2012	12:17:26	10.59	362.64	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT F OFF SITE
 N UNKNOWN O ON SITE U UPGRADIENT

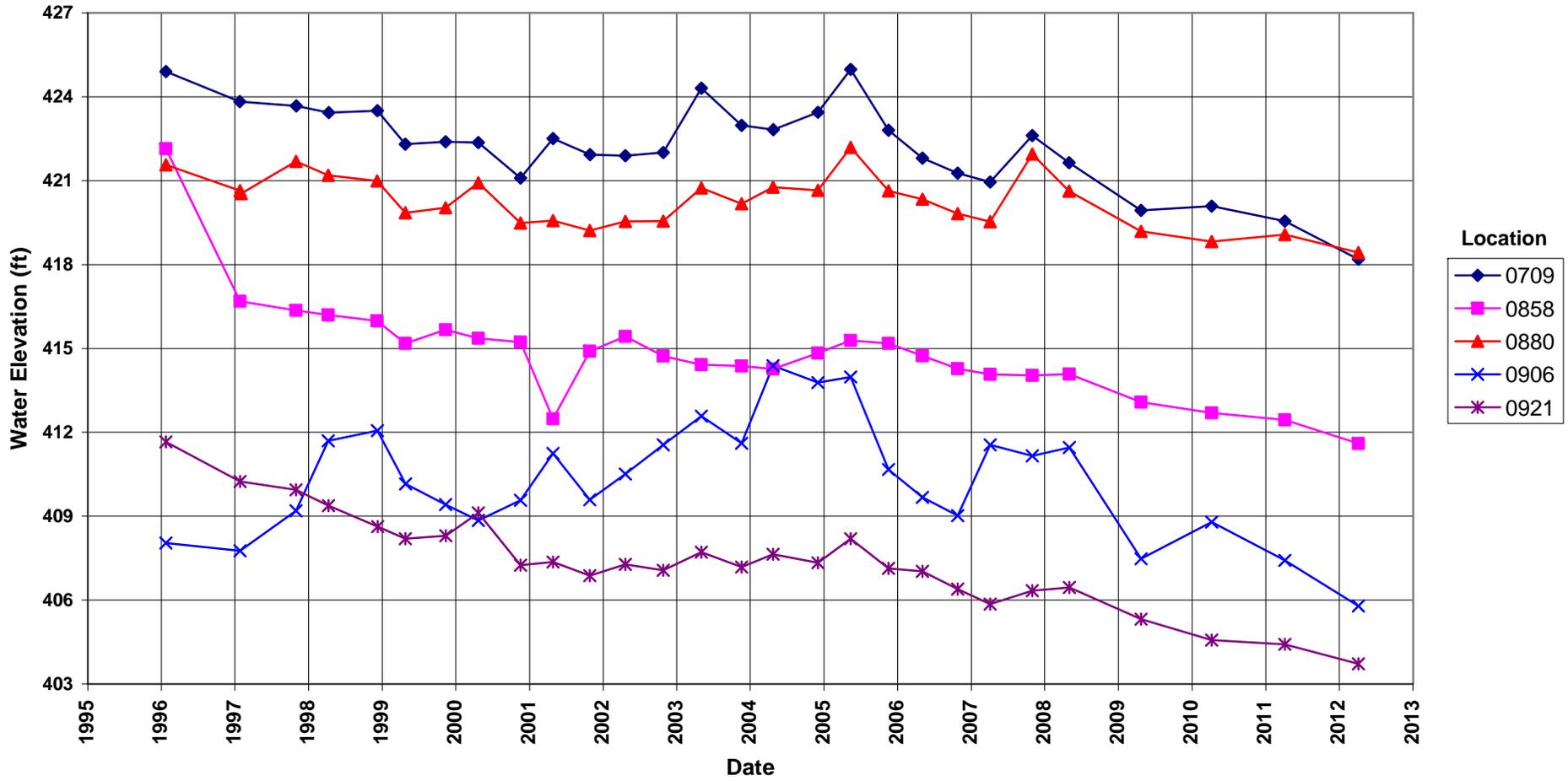
WATER LEVEL FLAGS: D Dry F Flowing B Below top of pump

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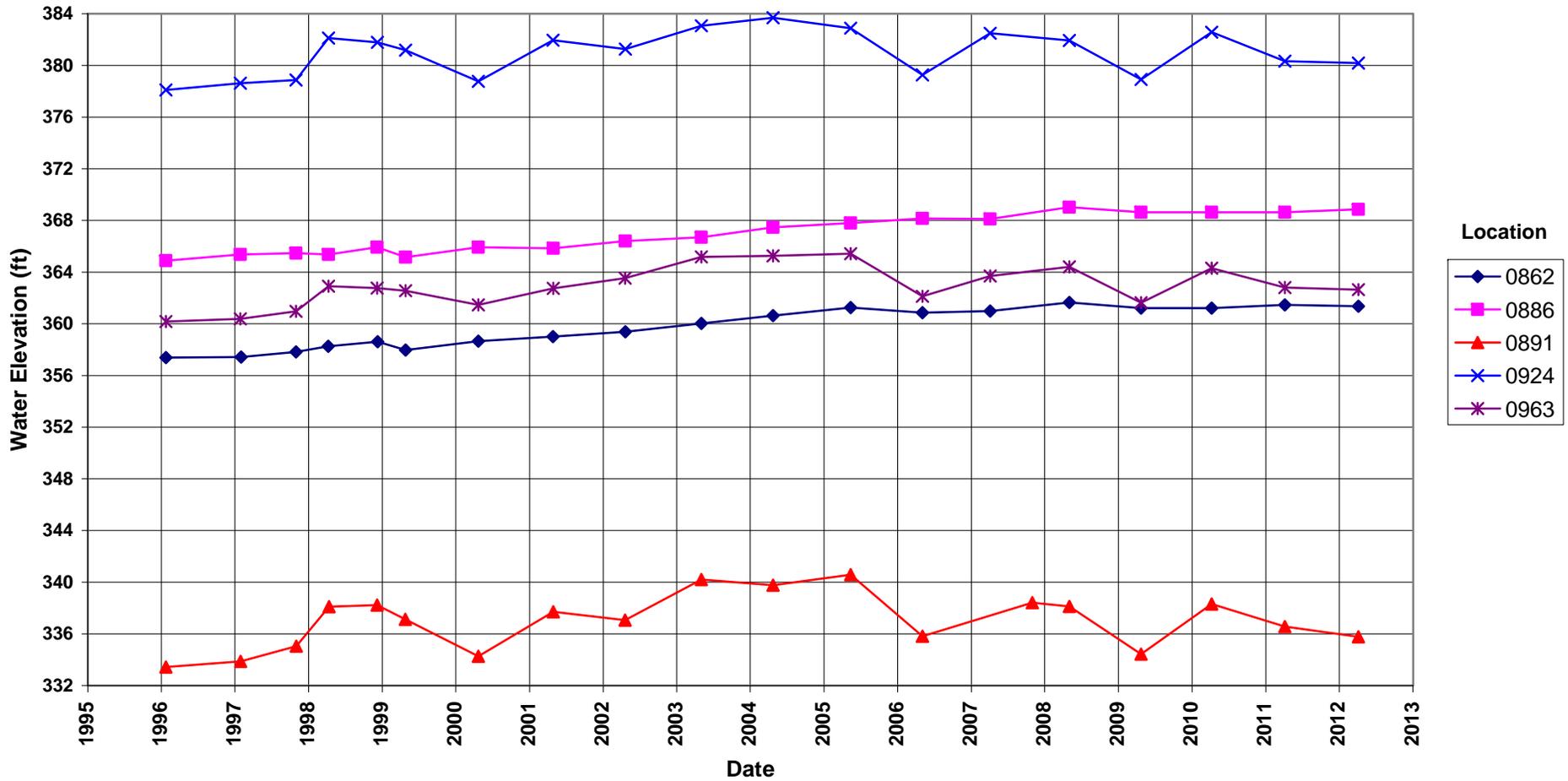
Hydrographs

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Falls City Disposal Site Cell Performance Monitoring Wells Hydrograph



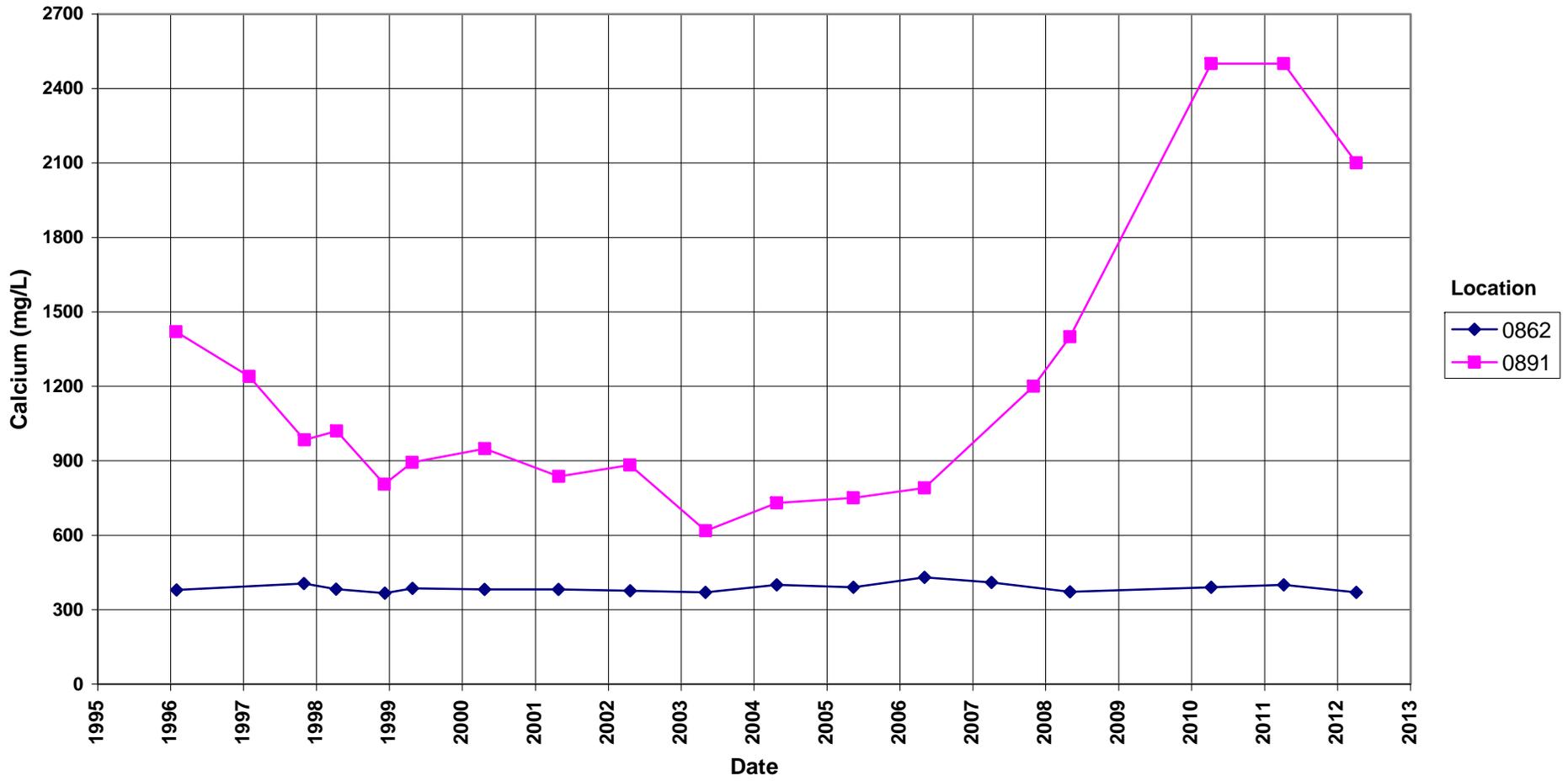
Falls City Disposal Site Groundwater Compliance Monitoring Wells Hydrograph



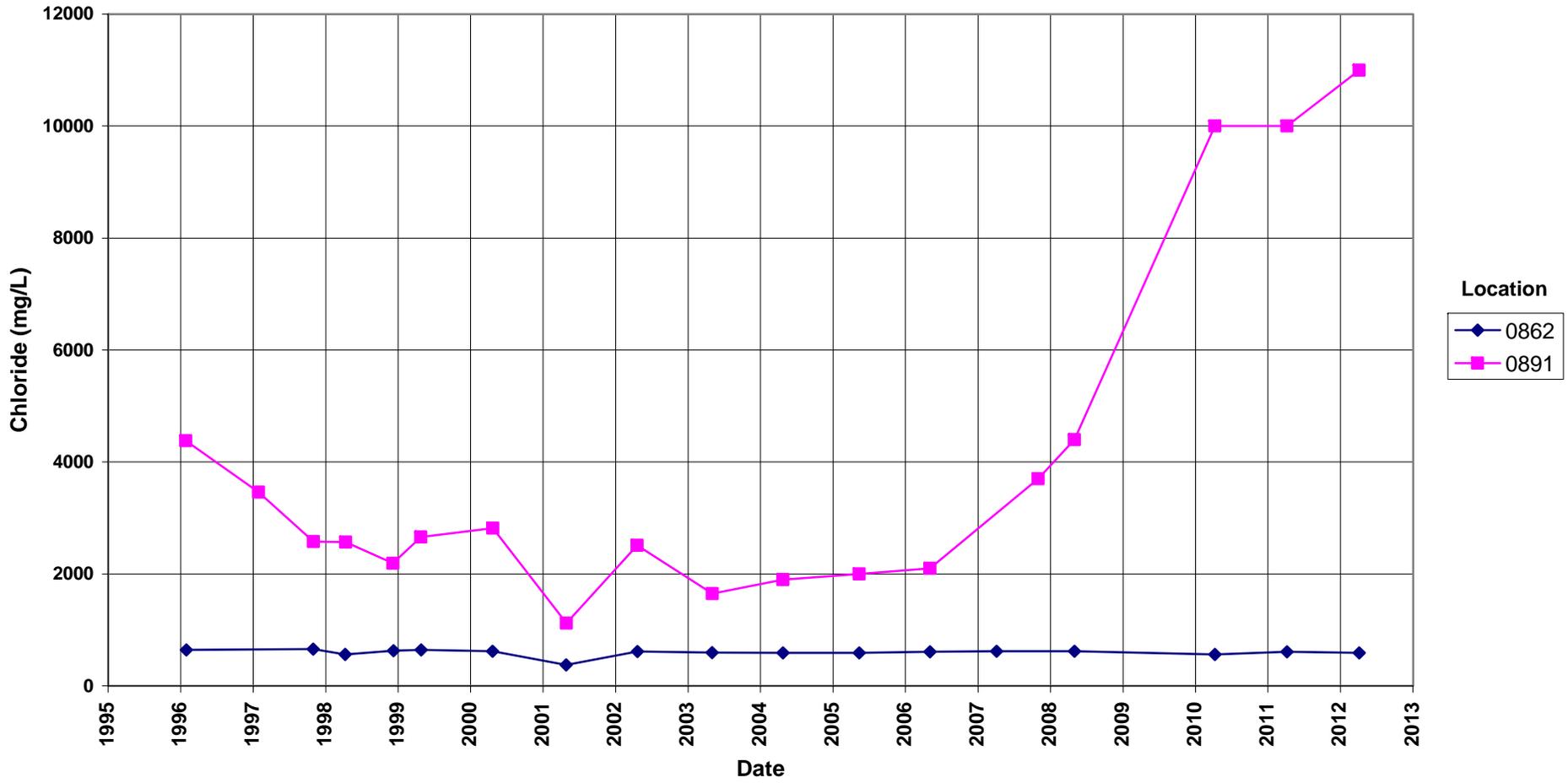
Time-Concentration Graphs

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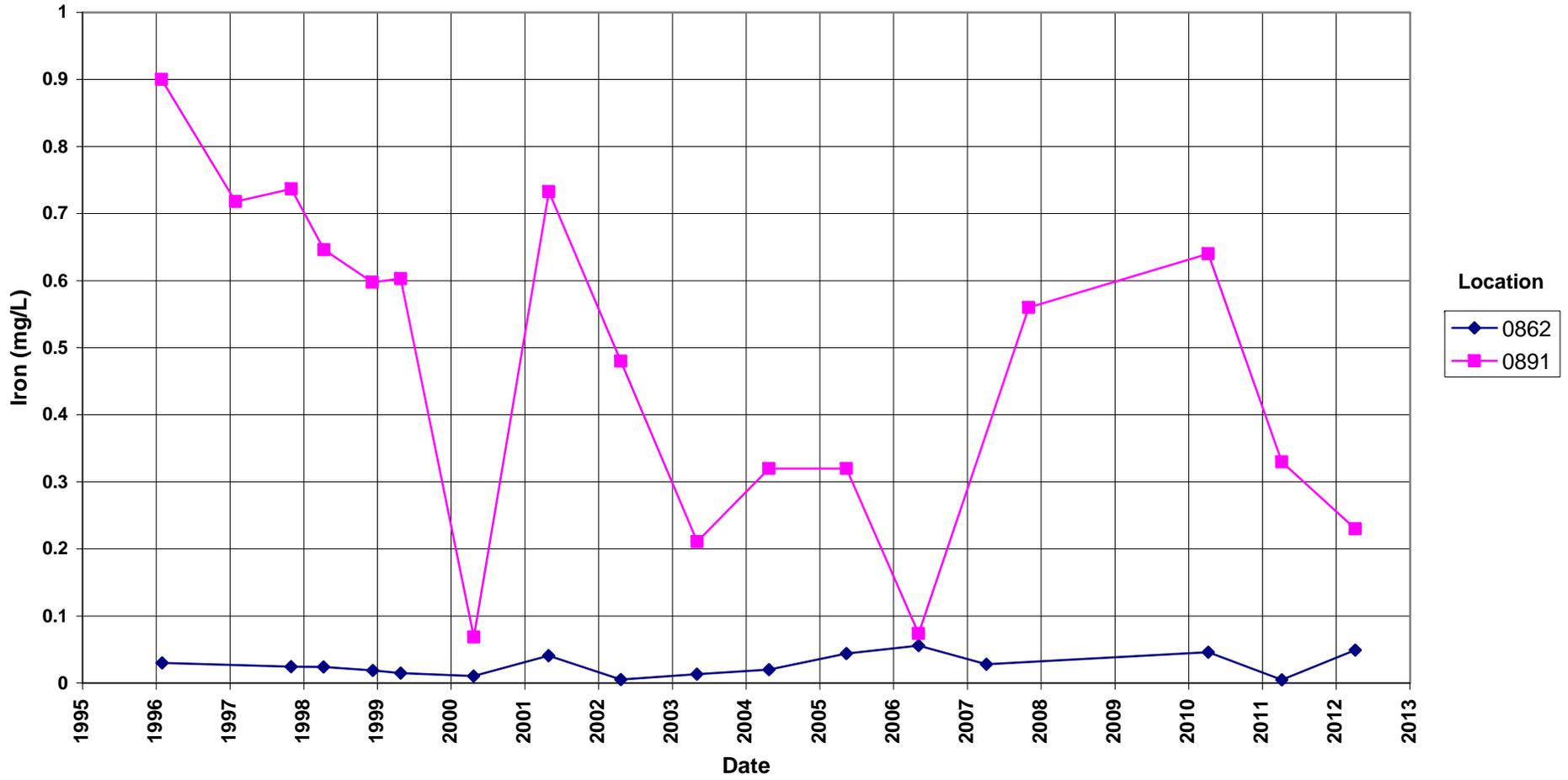
Falls City Disposal Site Calcium Concentration



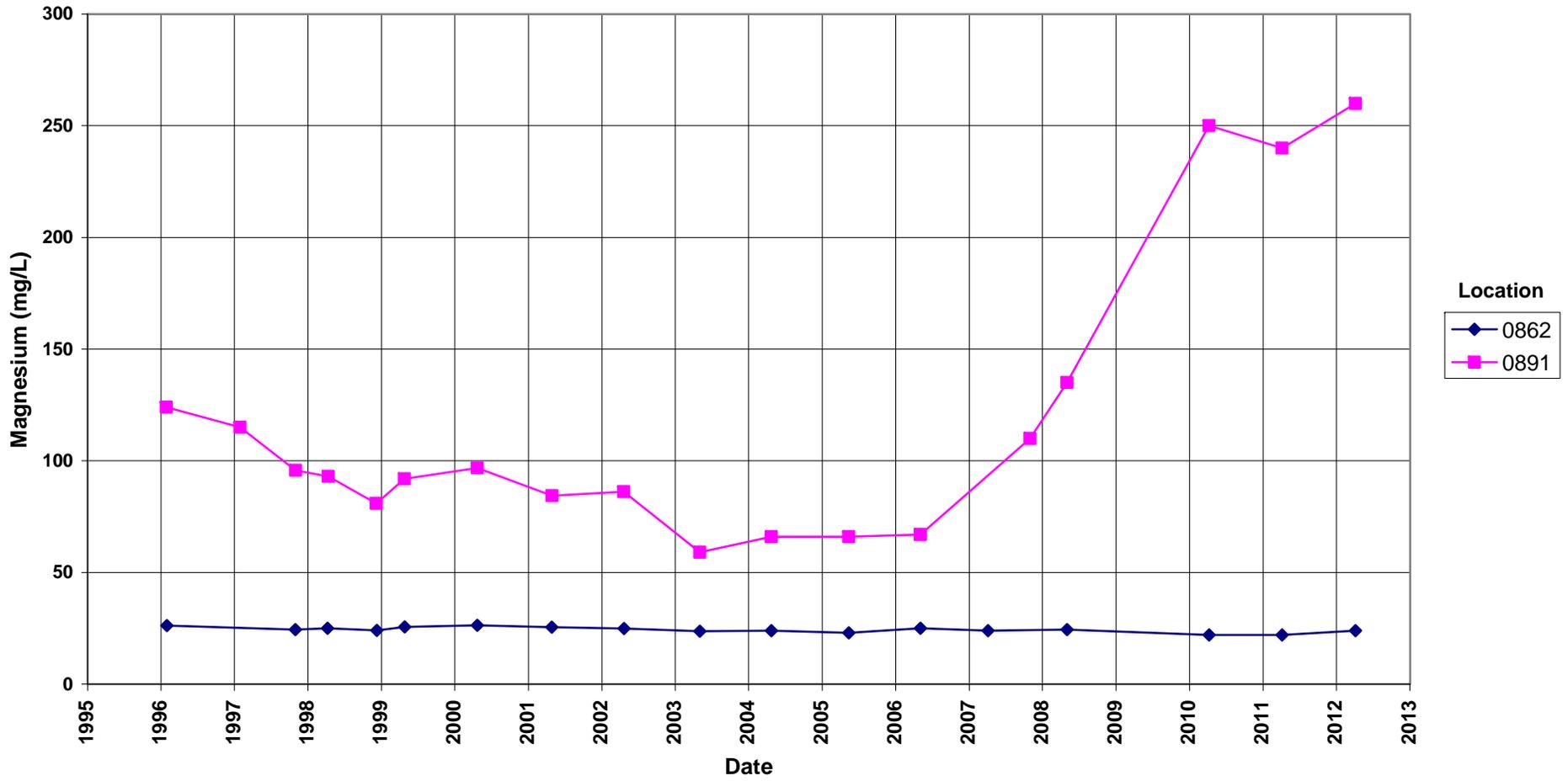
Falls City Disposal Site Chloride Concentration



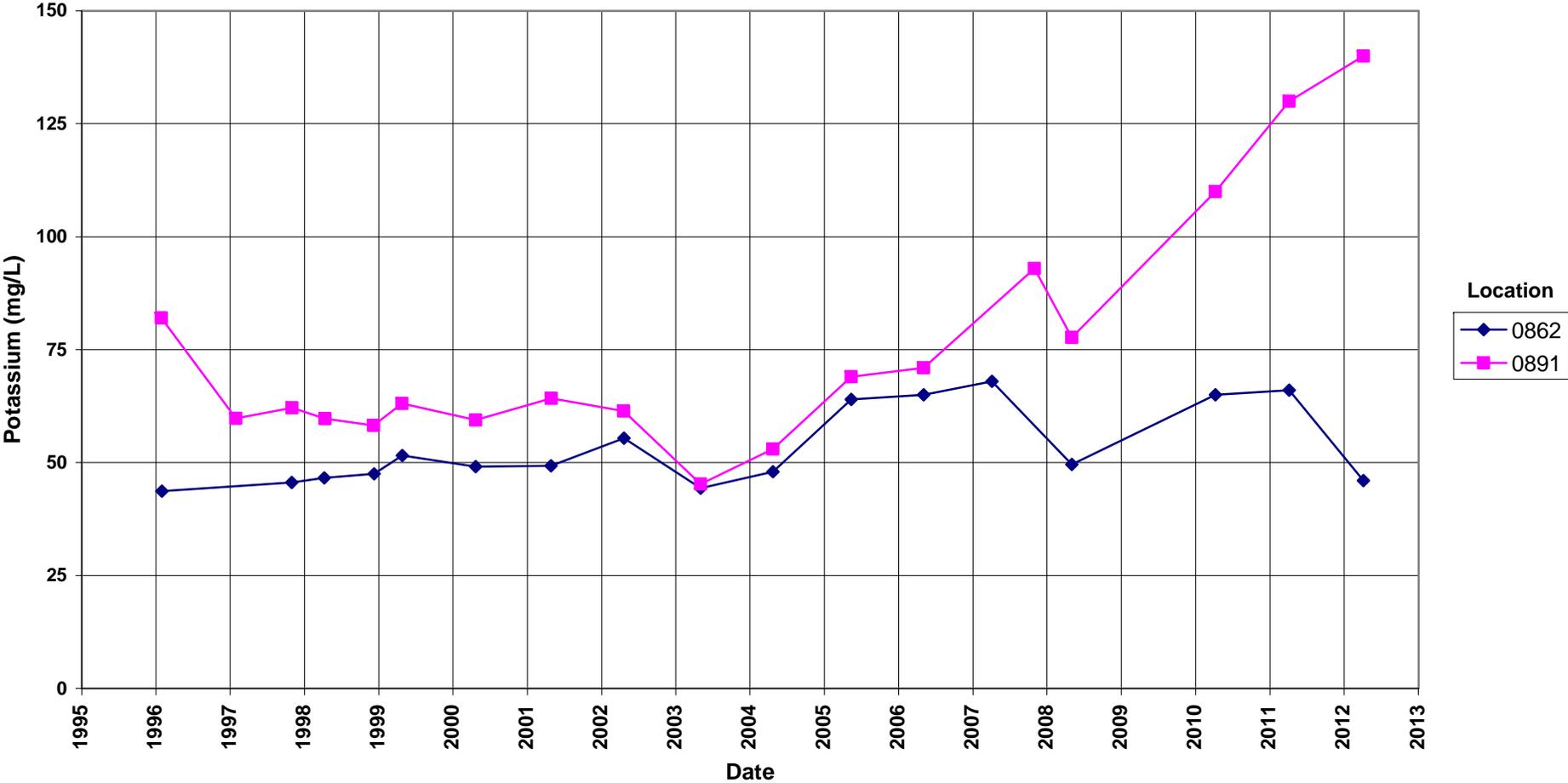
Falls City Disposal Site Iron Concentration



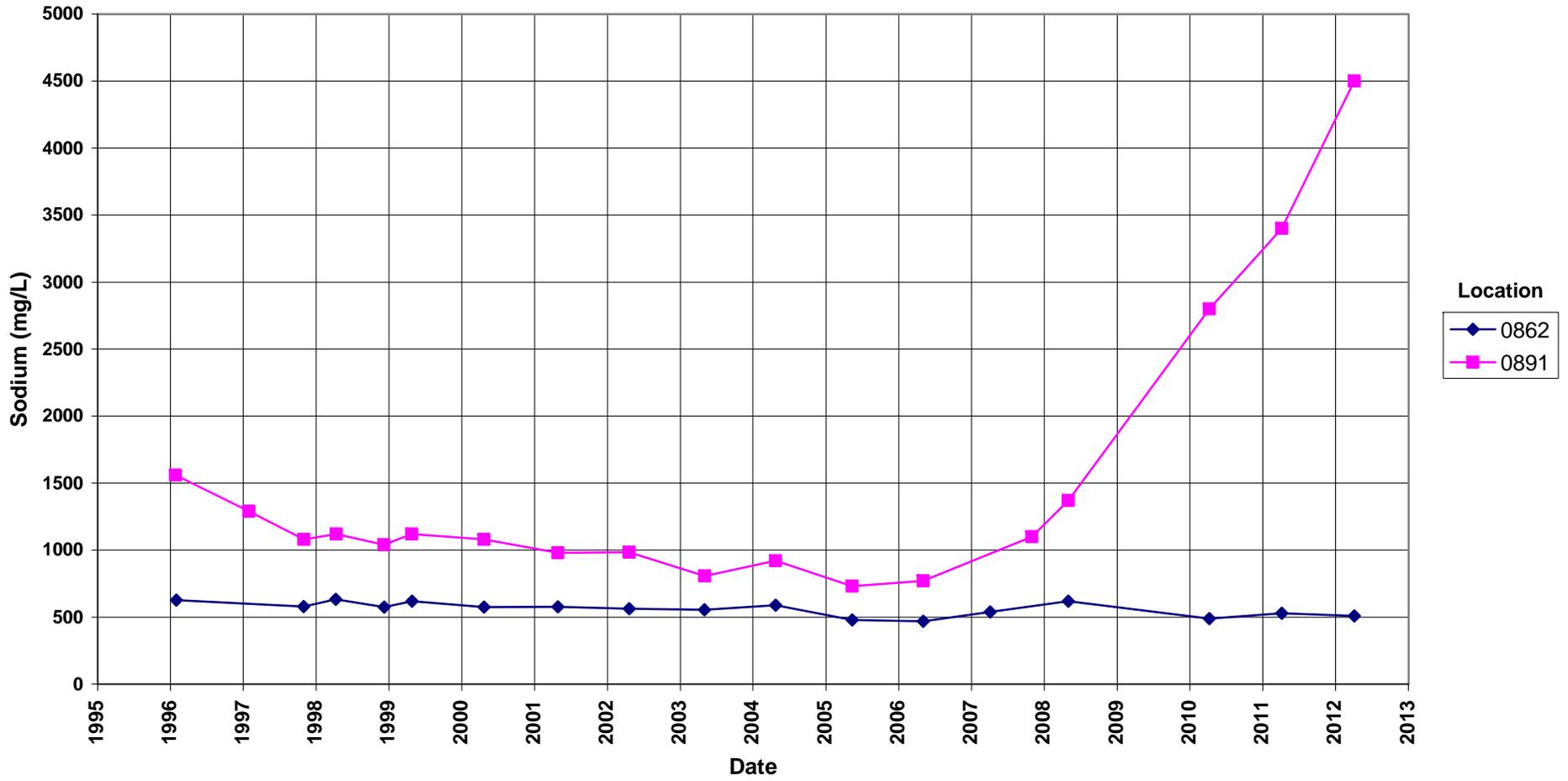
Falls City Disposal Site Magnesium Concentration



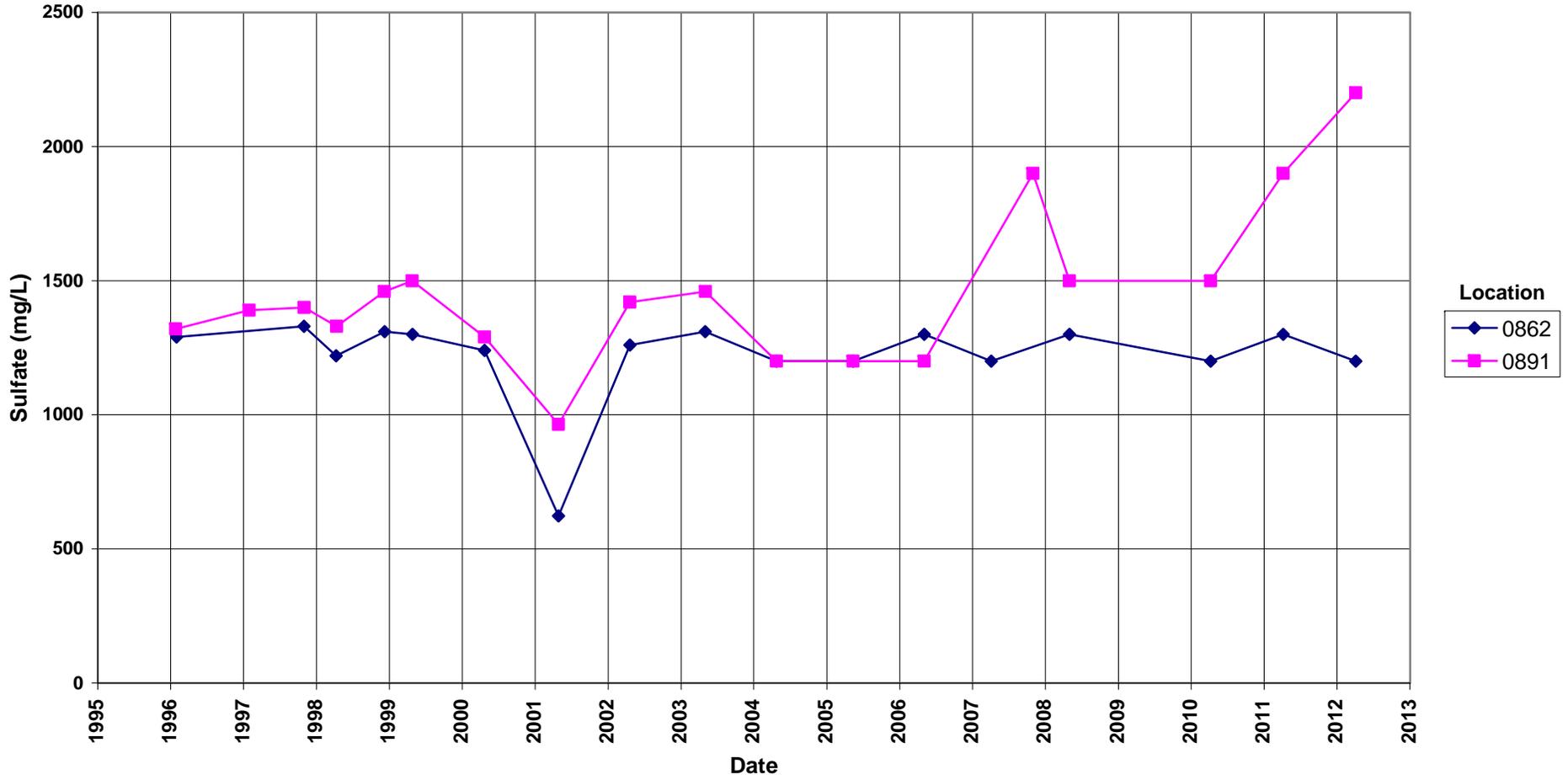
Falls City Disposal Site Potassium Concentration



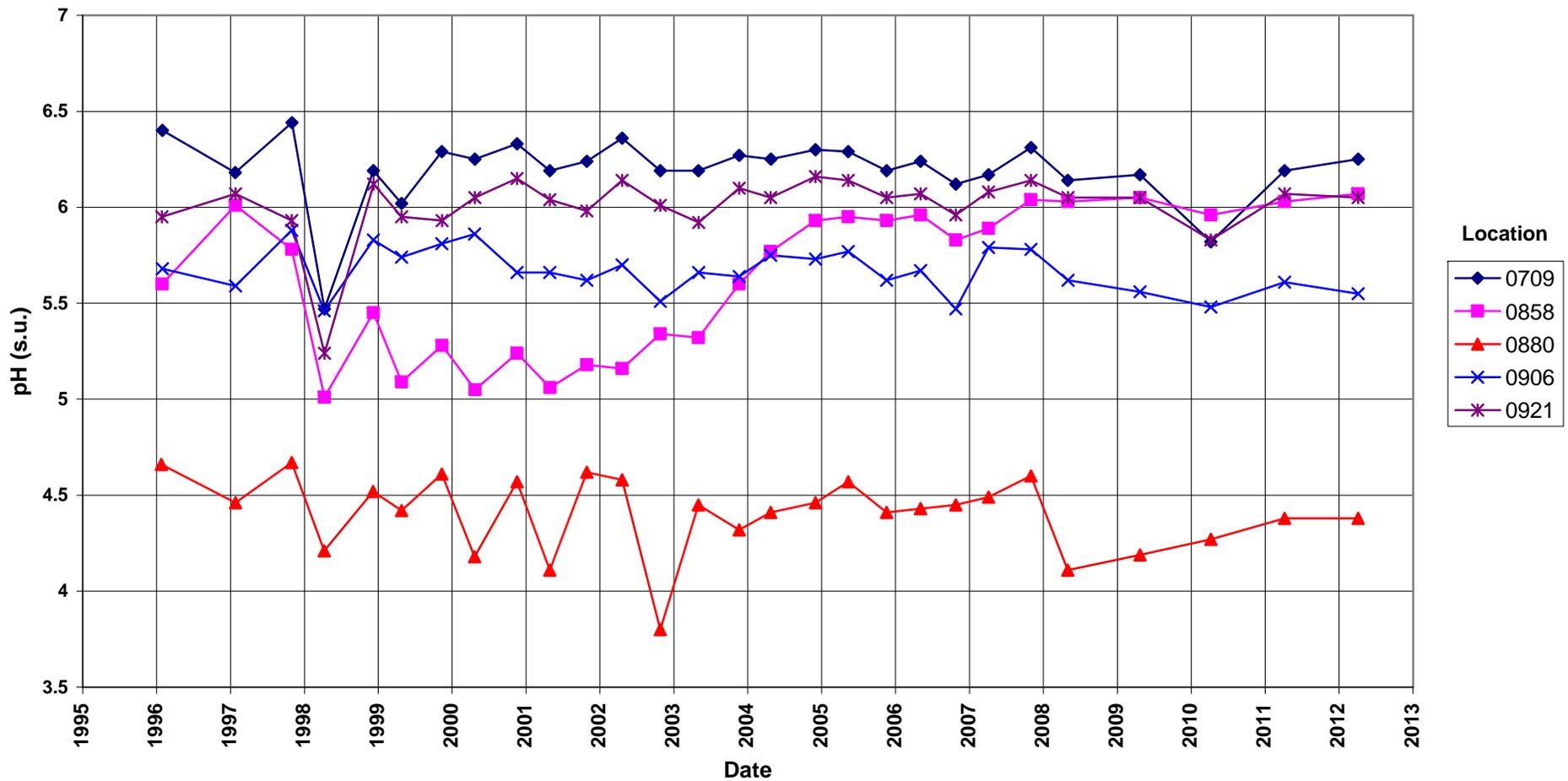
Falls City Disposal Site Sodium Concentration



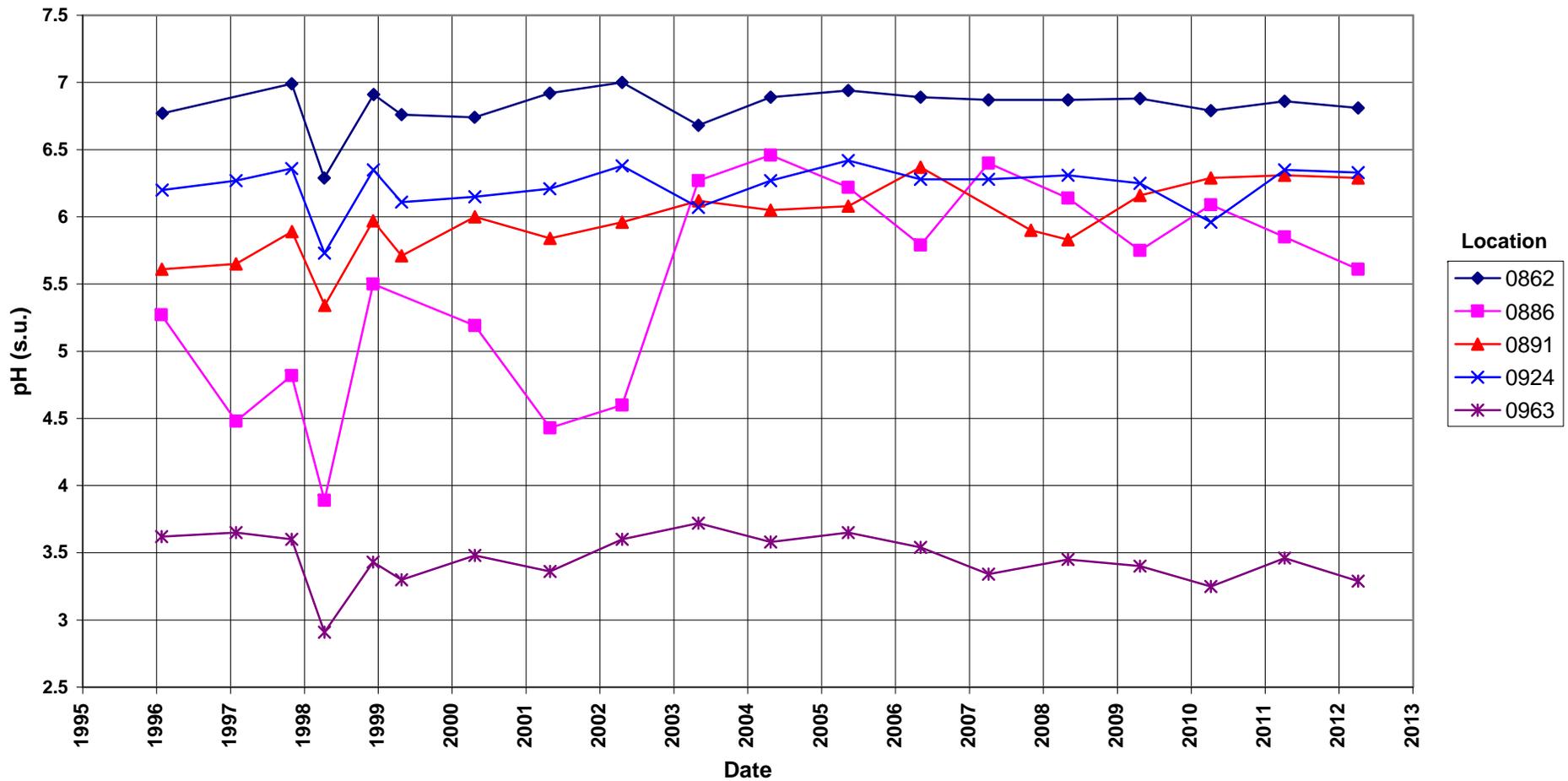
Falls City Disposal Site Sulfate Concentration



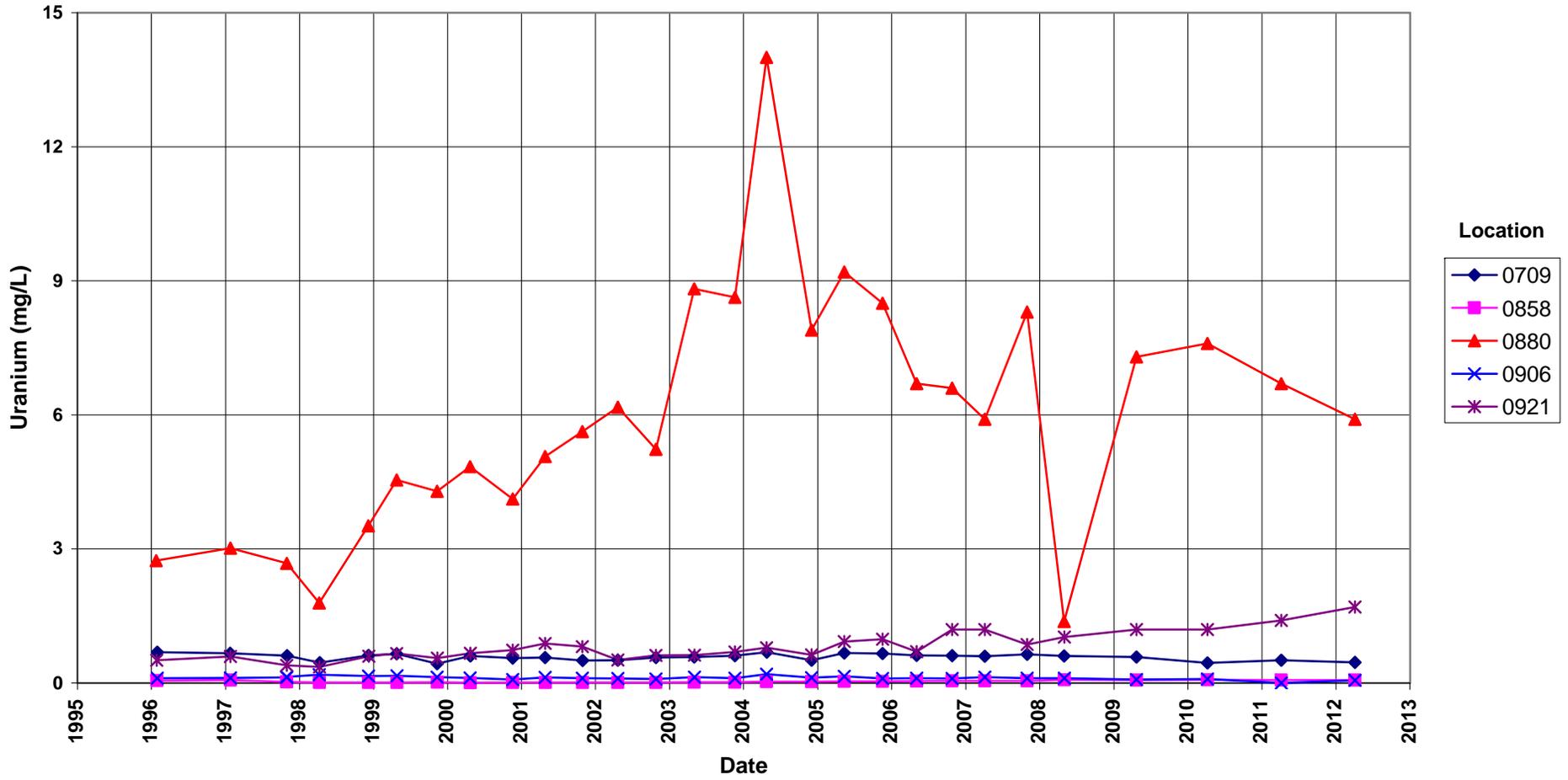
Falls City Disposal Site Cell Performance Monitoring Wells pH Value



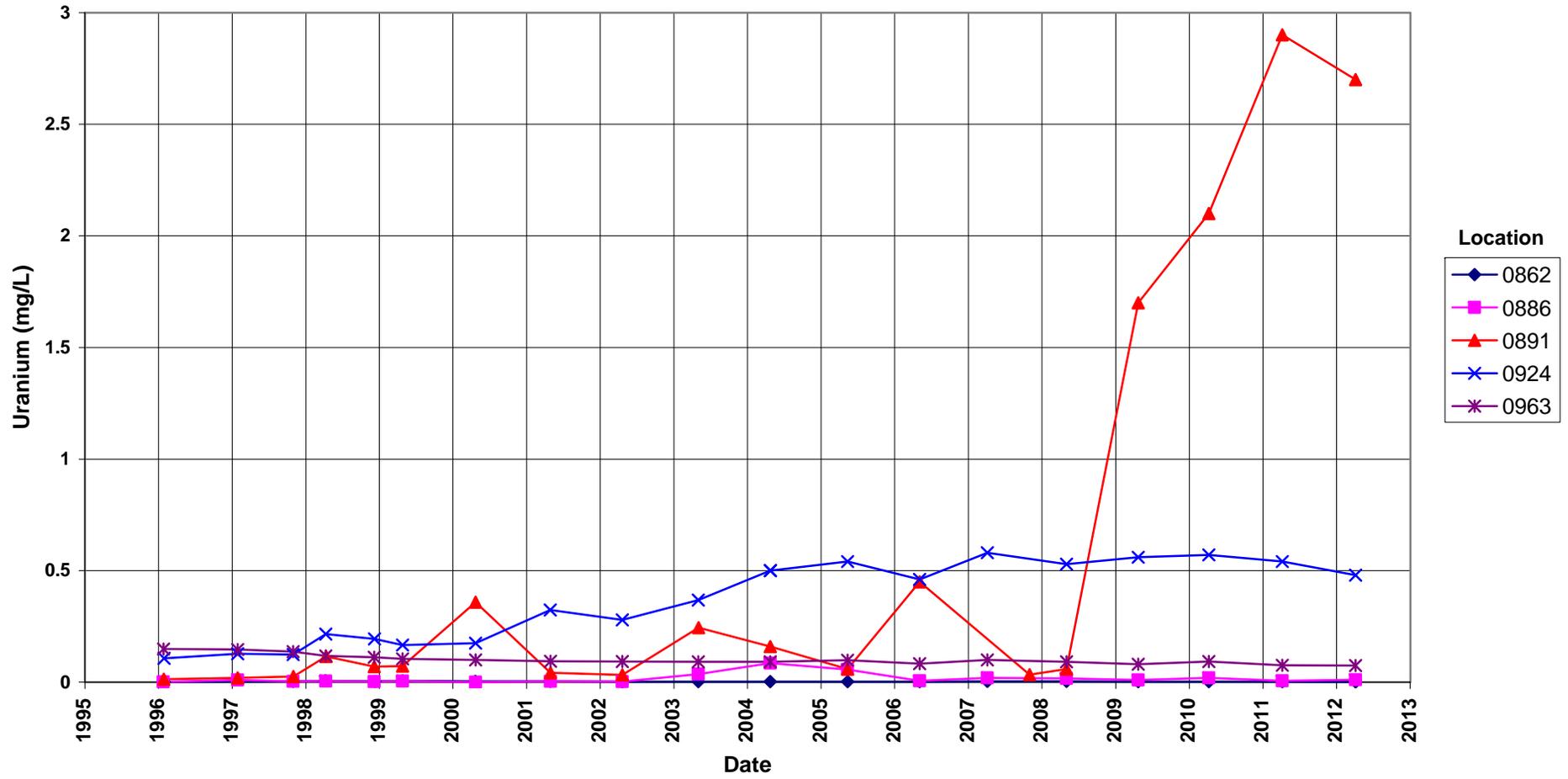
Falls City Disposal Site Groundwater Compliance Monitoring Wells pH Value



Falls City Disposal Site Cell Performance Monitoring Wells Uranium Concentration



Falls City Disposal Site Groundwater Compliance Monitoring Wells Uranium Concentration



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Attachment 3
Sampling and Analysis Work Order

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established 1959

Task Order LM00-501
Control Number 12-0418

March 6, 2012

U.S. Department of Energy
Office of Legacy Management
ATTN: Art Kleinrath
Site Manager
2597 Legacy Way
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AM01-07LM00060, S.M. Stoller Corporations (Stoller)
April 2012 Environmental Sampling at the Falls City, Texas, Disposal Site

REFERENCE: Task Order LM00-501-02-105-402, Falls City, Texas, Disposal Site

Dear Mr. Kleinrath:

The purpose of this letter is to inform you of the upcoming sampling at Falls City, Texas. Enclosed are the map and tables specifying sample locations and analytes for monitoring at the Falls City site. Water quality data will be collected at this site as part of the routine environmental sampling currently scheduled to begin the week of April 2, 2012.

The following list shows the monitoring wells (with associated zone of completion) scheduled to be sampled during this event.

Monitoring Wells*

709 Cq/Ct	862 D1	886 De	906 Cq	916 Cq	924 Cq	963 Cq
858 Cq	880 De	891 D1	908 Cq	921 Cq		

*NOTE: Cq = Conquista Clay – Whitsett Formation; Ct = Claystone; De = DeWeesville Sand – Whitsett Formation; D1 = Dilworth Sand – Whitsett Formation

All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. Access agreements are being reviewed and are expected to be complete by the beginning of fieldwork.

Please call me at (412) 818-7015 if you have any questions.

Sincerely,

Michele L. Miller
Project Manager, SM Stoller
Corporation, Contractor to US
Department of Energy- Office of
Legacy Management
2012.03.06 09:21:57 -0500

Michele Miller
Project Manager

MM/lcg/lb

Art Kleinrath
Control Number 12-0418
Page 2

Enclosures (3)

cc: (electronic)
Karl Stoeckle, DOE
Steve Donovan, Stoller
Bev Gallagher, Stoller
Lauren Goodknight, Stoller
Michele Miller, Stoller
EDD Delivery
rc-grand.junction
File: FCT 410.02(A)

Sampling Frequencies for Locations at Falls City, Texas

Location ID	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
Monitoring Wells						
709			X			
858			X			
862			X			
880			X			
886			X			
891			X			Collect duplicate from this well
906			X			
908			X			
916			X			
921			X			
924			X			
963			X			

Annual sampling conducted in April
 Based on LTSP dated March 2008

Constituent Sampling Breakdown

Site	Falls City		Required Detection Limit (mg/L)	Analytical Method	Line Item Code
Analyte	Groundwater	Surface Water			
Approx. No. Samples/yr	12	0			
<i>Field Measurements</i>					
Alkalinity	862 and 891 only				
Dissolved Oxygen	X				
Redox Potential	X				
pH	X				
Specific Conductance	X				
Turbidity	X				
Temperature	X				
<i>Laboratory Measurements</i>					
Aluminum					
Ammonia as N (NH3-N)	862 and 891 only		0.1	EPA 350.1	WCH-A-005
Calcium	862 and 891 only		5	SW-846 6010	LMM-01
Chloride	862 and 891 only		0.5	SW-846 9056	WCH-A-039
Chromium					
Gross Alpha					
Gross Beta					
Iron	862 and 891 only		0.05	SW-846 6020	LMM-02
Lead					
Magnesium	862 and 891 only		5	SW-846 6010	LMM-01
Manganese					
Molybdenum					
Nickel					
Nickel-63					
Nitrate + Nitrite as N (NO ₃ +NO ₂)-N	862 and 891 only		0.05	EPA 353.1	WCH-A-022
Potassium	862 and 891 only		1	SW-846 6010	LMM-01
Radium-226					
Radium-228					
Selenium					
Silica					
Sodium	862 and 891 only		1	SW-846 6010	LMM-01
Strontium					
Sulfate	862 and 891 only		0.5	SW-846 9056	MIS-A-044
Sulfide					
Total Dissolved Solids					
Total Organic Carbon					
Uranium	X		0.0001	SW-846 6020	LMM-02
Vanadium					
Zinc					
Total No. of Analytes	10	0			

Note: All private well samples are to be unfiltered. The total number of analytes does not include field parameters.

Attachment 4 Trip Report

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Memorandum

Control Number N/A

DATE: April 11, 2012
 TO: Michele Miller
 FROM: Jeff Walters
 SUBJECT: Sampling Trip Report

Site: Falls City, Texas

Dates of Sampling Event: April 2 through April 6, 2012

Team Members: Joe Trevino and Jeff Walters

Number of Locations Sampled: 10 monitoring wells and 1 duplicate collected, for a total of 11 samples. No equipment blanks were required.

Locations Not Sampled/Reason: Monitoring wells 0908 and 0916 were dry.

Location Specific Information: All wells were sampled for U. Wells 0862 and 0891 had additional samples collected for Ca, Fe, Mg, Na, K, (NO₃+NO₂)-N, NH₃-N, Cl, and SO₄. These two wells also had field alkalinity readings collected and recorded in the FDCS.

Ticket Number	Location	Sample Date	Description	Notes
KEQ 579	0709	4/4/12	CAT I	
KEQ 580	0858	4/4/12	CAT II	
KEQ 581	0862	4/4/12	CAT II	
KEQ 582	0880	4/4/12	CAT I	
KEQ 583	0886	4/4/12	CAT II	Split samples with Conoco Phillips
KEQ 584	0891	4/4/12	CAT I	Duplicated
KEQ 585	0906	4/4/12	CAT I	
KEQ 587	0908	4/4/12	Dry	TD measured at 60.07 BTOC
KEQ 591	0916	4/4/12	Dry	TD measured at 19.60 BTOC
KEQ 586	0921	4/4/12	CAT I	
KEQ 590	0924	4/4/12	CAT I	
KEQ 588	0963	4/4/12	CAT I	Filtered due to turbidity higher than 10 NTUs. This well shows obvious signs of flooding in the area. Based on the debris line, about 1.5ft of the 2.5ft above ground casing appears to have been under water. It does not look like flood water made it into the well.

Quality Control Sample Cross Reference: The following is the false identification assigned to the quality control sample:

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
2913	0891	Duplicate	Groundwater	KEQ 589

Field Variance: None

Requisition Numbers Assigned: All samples were assigned to RIN 12034437.

Sample Shipment: Samples were shipped overnight FedEx from Evergreen, Colorado, to ALS Labs in Ft Collins CO on April 9, 2012.

Water Level Measurements: Water level measurements were collected in all sampled wells. See the FDCS for those readings.

Well Inspection Summary: Well inspections were conducted at all sampled wells. All wells were in good condition.

Equipment: The ten wells sampled were equipped with dedicated submersible pumps. Each well was sampled using low-flow techniques.

Note: The oil and gas industry has moved into the area. A lot of traffic is now traveling the roads around that area. New power lines were being installed along the roadway on the north side of the cell. New property owners are in the process of changing fence configurations and mowing all vegetation (small trees included) east of the cell property. Some type of large sand storage and loading is taking place east of monitoring well 0963. Previous travel routes to wells will very likely change as development in the area continues.

All hotels in Floresville and the surrounding area including southeastern San Antonio were sold out. The hotel attendant said most will be sold out for the foreseeable future.

Institutional Controls: All gates accessed during the sampling event were appropriately closed and locked.

Fences, Gates, Locks: All OK

Signs: No issues observed.

Trespassing/Site Disturbances: None Observed.

Site Issues

Disposal Cell/Drainage Structure Integrity: Looked OK.

Vegetation/Noxious Weed Concerns: N/A

Maintenance Requirements: The road to well 0921 is almost gone. Vegetation is reclaiming that area.

Corrective Action Taken: Cut back some bushes around various wells.

(JW/lcg)

cc: (electronic)

Art Kleinrath, DOE

Steve Donivan, Stoller

EDD Delivery