Department of Energy
Office of Legacy Management

JUN 11 2008

Mr. Conrad Kuharic
Radioactive Materials Division
Texas Commission on Environmental Quality
P.O. Box 13087, Mail Code 233
Austin, TX 78711

Subject: Transmittal of Data Validation Package for the Falls City, Texas, Disposal Site, October 2007

Dear Mr. Kuharic:

Enclosed is the subject document that presents the results of the October 2007 sampling activity at the DOE Falls City disposal site. Five ground water samples were collected to monitor ground water quality as an indication of disposal cell performance, as specified in the *Long-Term Surveillance Plan for the Falls City Disposal Site, Falls City, Texas* (LTSP; DOE 1997). Sampling and analysis was conducted as specified in *Ground Water and Surface Water Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (DOE 2005). Water levels were measured at each sampled well.

The results from this sampling event do not indicate any large deviations in ground water chemistry or water levels nor degradation of disposal cell performance. A more detailed evaluation is presented in the data validation package.

Please contact me at (970) 248-6016 if you have any questions.

Sincerely,

Jalena Maestas
Site Manager

Enclosure

cc w/enclosure:
P. Michalak, NRC (3)
Falls City Public Library

2597 B 3/4 Road, Grand Junction, CO 81503	☐	3600 Collins Ferry Road, Morgantown, WV 26505
626 Cochrans Mill Road, P.O. Box 10940, Pittsburgh, PA 15236	☐	1000 Independence Ave., S.W., Washington, DC 20585
11025 Dover St., Suite 1000, Westminster, CO 80021	☐	10995 Hamilton-Cleves Highway, Harrison, OH 45030
955 Mound Road, Miamisburg, OH 45342	☐	232 Energy Way, N. Las Vegas, NV 89030

REPLY TO: Grand Junction Office

cc w/o enclosure:
J. Maestas, DOE-LM
G. Smith, Texas Commission on Environmental Quality, Bureau of Radiation Control
M. Miller, Stoller (e)
File: FCT 410.02 (Roberts)

Sampling Events-DVPs/Falls City/DVP Falls City October 2007.doc

DOE–LM/1589–2008

Data Validation Package

October 2007 Groundwater Sampling at the Falls City, Texas, Disposal Site

March 2008

U.S. Department of Energy
Office of Legacy Management

Work Performed by the S.M. Stoller Corporation Under DOE Contract No. DE–AM01–07LM00060 for the U.S. Department of Energy Office of Legacy Management.

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Sampling Event Summary

Site: Falls City, Texas, Disposal Site

Sampling Period: October 31, 2007

Five disposal cell performance monitoring network wells were sampled at the Falls City, Texas, Disposal Site, as specified in the *Long-Term Surveillance Plan for the Falls City Disposal Site, Falls City, Texas* (LTSP) (July 1997). Additionally, well 0891 of the groundwater compliance monitoring network was sampled because this well was not sampled during the April 2007 event.

Sampling and analysis was conducted as specified in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. One duplicate sample was collected from location 0921. The duplicate sample results were acceptable for all analytes with the exception of radion-228. This duplicate result was rejected because of a suspected laboratory error. Water levels were measured at each sampled well.

The disposal cell performance monitoring network consists of wells 0709, 0858, 0906, and 0921 screened in the Conquista sandstone of the Deweesville/Conquista aquifer; well 0880 screened in the Deweesville sandstone of the Deweesville/Conquista aquifer; and wells 0908 and 0916 screened in the unsaturated zone of the Conquista sandstone. Wells 0908 and 0916 are monitored for water level to detect changes in groundwater levels near the disposal cell and have historically not produced water. These wells were confirmed as dry.

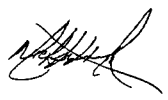
Water levels in wells 0709, 0858, and 0921 have generally declined since 1996, displaying fluctuations that may reflect variations in annual precipitation. Well 0906 is located directly downslope of the disposal cell and continues to display an upward trend in water level.

U.S. Department of Energy (DOE) monitors groundwater from the disposal cell performance monitoring network wells as a best management practice to demonstrate the continuing performance of the disposal cell. Because narrative supplemental standards apply, no concentration limits have been established. The LTSP established a screening monitoring program using pH as the indicator parameter to evaluate disposal cell performance. A follow-on investigation and evaluation of cell performance is triggered by pH results of two successive sampling events exceeding the *lower* 95th percentile (i.e., falling below) the baseline pH values established shortly after cell closure in 1994. This was established because pH was correlated to processing-related contamination, tailings fluids were generally lower in pH than background groundwater, and mobility of contaminants of concern generally increases as pH decreases. The pH values for all wells were found to be consistent with older data with increases observed at all locations. The pH values remain above the lower 95th percentile and do not trigger a disposal cell performance evaluation.

Groundwater samples from the five disposal cell performance monitoring network wells were analyzed for 33 constituents, including 10 that have maximum concentration limits specified in Table 1 to Subpart A of 40 CFR 192. Time-concentration graphs for those 10 constituents do not

indicate any large deviations in groundwater chemistry or degradation of disposal cell performance. The contaminant concentrations in well 0880 continue to be substantially greater for many contaminants than the concentrations reported in the other wells. The reason for the higher concentration of contaminants in this well is not clear, but may be a result of transient drainage from the disposal cell, residual processing site-related contamination, or the natural redistribution of uranium mineralization.

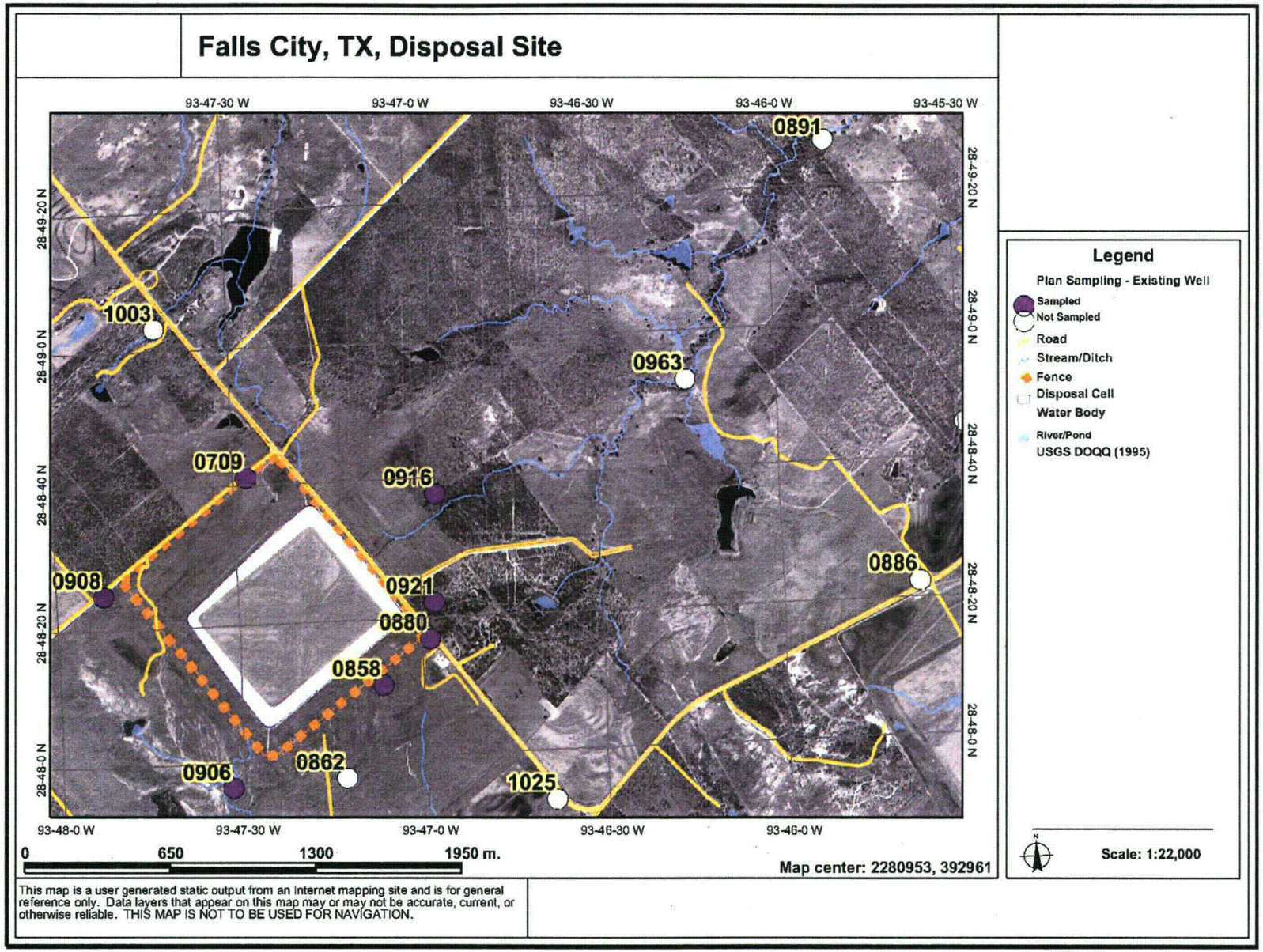
Well 0891 of the groundwater compliance monitoring network was sampled because this well was not sampled during the April 2007 sampling event and because the elevated uranium concentration observed in May 2006 might be indicative of contamination from former milling operations. The uranium concentration measured in this well returned to a lower value, indicating that the concentration is fluctuating rather than trending upward.



Digitally signed by Michele L. Miller
DN: cn=Michele L. Miller, c=us, o=u.s. government, ou=department of energy, public cas, people
Date: 2008.04.14 09:06:35 -04'00'

Michele Miller
Site Lead, S.M. Stoller

Date



Falls City, Texas, Well Location Map

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Data Assessment Summary

Water Sampling Field Activities Verification Checklist

Project	Falls City Disposal Site	**Date(s) of Water Sampling**	October 31, 2007
Date(s) of Verification	January 29, 2008	**Name of Verifier**	Steve Donivan

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOP's, instructions.		Work Order Letter dated September 20, 2007
2. Were the sampling locations specified in the planning documents sampled?	Yes	Wells 0908 and 0916 were dry. Well 0891 was added via email instruction dated October 11, 2007.
3. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibration was performed on October 26, 2007.
4. Was an operational check of the field equipment conducted twice daily?	Yes	Calibration checks were performed at 0830 and 1300 on October 31, 2007.
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4 hour delay between pump installation and sampling?	NA	

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	Duplicate sample collected from well 0921.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	NA	
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	Location ID 2312 was assigned to the duplicate from 0921.
Was the true identity of the samples recorded on the Quality Assurance Sample Log?	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?	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	

Laboratory Performance Assessment

General Information

Report Number (RIN):	07101197
Sample Event:	October 31, 2007
Site(s):	Falls City, Texas
Laboratory:	Paragon Analytics, Fort Collins, Colorado
Work Order No.:	0711020
Analysis:	Metals, Inorganics, and Radiochemistry
Validator:	Steve Donivan
Review Date:	January 25, 2008

This validation was performed according to the *Environmental Procedures Catalog* (STO 6), "Standard Practice for Validation of Laboratory Data," GT-9(P) rev 1 (2006). The procedure was applied at Level 3, Data Deliverables Verification. 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
Aluminum, Beryllium, Calcium, Chromium, Cobalt, Copper, Magnesium, Nickel, Potassium, Sodium, Tin, Zinc	MET-A-020	SW-846 3005A	SW-846 6010B
Ammonia as N, NH_3-N	WCH-A-005	NA	MCAWW 350.1
Antimony, Cadmium, Lead, Thallium	MET-A-026	SW-846 3005A	SW-846 6020A
Arsenic	GJO-13	SW-846 3005A	SW-846 6020A
Bromide	MIS-A-038	SW-856 9056	SW-856 9056
Chloride	MIS-A-039	SW-856 9056	SW-856 9056
Gross Alpha/Beta	GPC-A-001		SOP724R9
Iron	GJO-16	SW-846 3005A	SW-846 6010B
Manganese	GJO-17	SW-846 3005A	SW-846 6010B
Molybdenum	GJO-15	SW-846 3005A	SW-846 6020A
Nitrite + Nitrate as N, NO_2+NO_3-N	WCH-A-022	NA	MCAWW 353.2
Radium-226	ASP-A-016	PA SOP783R7	PA SOP783R7
Radium-228	GPC-A-020	PA SOP746R8	PA SOP724R9
Selenium	GJO-14	SW-846 3005A	SW-846 6020A
Sulfate	MIS-A-044	SW-856 9056	SW-856 9056
Sulfide	WCH-A-038	NA	MCAWW 376.1
TDS	WCH-A-033	NA	MCAWW 160.1
Uranium	GJO-01	SW-846 3005A	SW-846 6020A
Vanadium	GJO-18	SW-846 3005A	SW-846 6020A

Data Qualifier Summary

Analytical results were qualified as listed in Table 2. Refer to the sections below for an explanation of the data qualifiers applied.

Table 2. Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
0711020-1	0709	Aluminum	U	Less than 5 times the calibration blank
0711020-1	0709	Beryllium	U	Less than 5 times the calibration blank
0711020-1	0709	Iron	U	Less than 5 times the calibration blank
0711020-1	0709	Lead	U	Less than 5 times the calibration blank
0711020-1	0709	Manganese	U	Less than 5 times the calibration blank
0711020-1	0709	Thallium	U	Less than 5 times the calibration blank
0711020-2	0858	Aluminum	U	Less than 5 times the calibration blank
0711020-2	0858	Beryllium	U	Less than 5 times the calibration blank
0711020-2	0858	Gross Alpha	J	Less than 3 times the MDC
0711020-2	0858	Iron	U	Less than 5 times the calibration blank
0711020-2	0858	Lead	U	Less than 5 times the calibration blank
0711020-2	0858	Thallium	U	Less than 5 times the calibration blank
0711020-4	0891	Aluminum	U	Less than 5 times the calibration blank
0711020-4	0891	Beryllium	U	Less than 5 times the calibration blank
0711020-4	0891	Lead	U	Less than 5 times the calibration blank
0711020-5	0906	Aluminum	U	Less than 5 times the calibration blank
0711020-5	0906	Beryllium	U	Less than 5 times the calibration blank
0711020-5	0906	Lead	U	Less than 5 times the calibration blank
0711020-6	0921	Aluminum	U	Less than 5 times the calibration blank
0711020-6	0921	Beryllium	U	Less than 5 times the calibration blank
0711020-6	0921	Lead	U	Less than 5 times the calibration blank
0711020-6	0921	Radium-228	J	Less than 3 times the MDC
0711020-7	0921 Duplicate	Aluminum	U	Less than 5 times the calibration blank
0711020-7	0921 Duplicate	Beryllium	U	Less than 5 times the calibration blank
0711020-7	0921 Duplicate	Lead	U	Less than 5 times the calibration blank
0711020-7	0921 Duplicate	Radium-228	R	Suspected laboratory error

Sample Shipping/Receiving

Paragon Analytics in Fort Collins, Colorado, received seven water samples on November 2, 2007, under Air bill number 8605 0109 7088 accompanied by a Chain of Custody (COC) form. The COC form was checked to confirm that all of the samples were listed on the form with sample collection dates and times, and that signatures and dates were present, indicating sample relinquishment and receipt. The sample submittal documents, including the COC forms and the sample tickets, had no errors or omissions.

Preservation and Holding Times

The sample shipment was received intact with the temperature inside the iced cooler at 0.2°C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times.

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.

Method MCAWW 160.1

There is no initial or continuing calibration requirement associated with the determination of total dissolved solids.

Method MCAWW 350.1

The initial calibration for ammonia as N was performed using six calibration standards on November 12, 2007, resulting in a calibration curve with a correlation coefficient value greater than 0.995 and an intercept less than 3 times the method detection limit (MDL). Initial and continuing calibration checks were made at the required frequency, resulting in 10 continuing calibration verifications (CCV) that met the acceptance criteria.

Method MCAWW 353.2

The initial calibration for nitrite + nitrate as N was performed using seven calibration standards on November 13, 2007, resulting in a calibration curve with a correlation coefficient value greater than 0.995 and an intercept less than 3 times the MDL. Initial and continuing calibration checks were made at the required frequency, resulting in six CCVs that met the acceptance criteria.

Method MCAWW 376.1

The initial standardizations for sulfide were on October 31, 2007. Initial calibration checks were made at the required frequency, resulting in one initial calibration verification (ICV) that met the acceptance criteria.

Method SW-846 6010B

Calibrations for method 6010B analytes were performed on November 20, 2007. The initial calibrations were performed using one calibration standard and a blank. Calibration and laboratory spike standards were prepared from independent sources. ICV and CCV checks were made at the required frequency, resulting in eight CCVs. All calibration checks met the acceptance criteria. A reporting limit verification check was made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit. The reporting limit verification results were within the acceptance criteria range.

Method SW-846 6020A

Calibrations for vanadium were performed on November 15, 2007; for antimony, cadmium, lead, molybdenum, thallium, and uranium on November 20, 2007; and for arsenic and selenium on November 7, 2007. The initial calibrations were performed using eight calibration standards, resulting in calibration curves with correlation coefficient values greater than 0.995. The absolute values of the curve intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. ICV and CCV checks were made at the required frequency. All calibration checks met the acceptance criteria with the exception of CCV1 for uranium. There were no reported results associated with this CCV. Reporting limit verification checks were made at the beginning of each analytical sequence to verify the linearity of the calibration curve near the practical quantitation limit. All reporting limit verification results were within the acceptance range. The mass calibration and resolution was 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

Initial calibrations were performed for bromide, chloride, and sulfate using five calibration standards on October 29, 2007. The calibration curve correlation coefficient values were greater than 0.995, and intercepts were less than 3 times the MDL. Initial calibration and calibration check standards were prepared from independent sources. ICV and CCV checks were made at the required frequency, resulting in five CCVs for bromide and eight CCVs for chloride and sulfate. All calibration checks met the acceptance criteria.

Radiochemical Analysis

All radiochemical results reported included the calculated two-sigma total propagated uncertainty (TPU) and minimum detectable concentration (MDC). Radiochemical results are qualified with a "J" flag (estimated) when the result is greater than the MDC, but less than 3 times the MDC. Radiochemical results are qualified with a "U" flag (not detected) when the result is greater than the MDC but less than the two-sigma TPU.

Gross Alpha/Beta

Plateau calibrations were performed on November 8, 2007. Alpha attenuation calibrations were performed November 13, 2007, covering a range of 19 to 137 milligrams (mg). Beta attenuation

calibrations were performed November 14, 2007, covering a range of 16 to 161 mg. All standards were counted to a minimum of 10,000 counts. All calibration and background checks met acceptance criteria. The residual mass was between 50 mg and 100 mg for all samples.

Radium-226

Emanation cell plateau voltage determinations were performed on June 25, 2007, and cell efficiency calibrations were performed July 3, 2007. Daily efficiency calibration and background checks were performed on November 16, 2007. All calibration data met the acceptance criteria. The chemical recoveries met the acceptance criteria of 40 to 110 percent for all samples.

Radium-228

Plateau voltage determinations were performed on May 17, 2007, and detector efficiency calibrations were performed on July 11, 2007. Daily efficiency calibration and background checks were performed on December 4, 6, and 20, 2007. All calibration data met the acceptance criteria. The chemical recoveries met the acceptance criteria of 40 to 110 percent for all samples.

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 (CCB) results associated with the samples were below the practical quantitation limits with the exception of nitrate CCB6 and uranium CCB1. There were no reported results less than 10 times the blank concentration associated with these CCBs. In cases where a blank concentration exceeds the MDL, the associated sample results are qualified with a "U" flag (not detected) when the sample result is greater than the MDL but less than 5 times the blank concentration. All radiochemical method blank results were less than 1.65 times the respective TPU and/or below the MDC.

Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Analysis

ICP interference check samples ICSA and ICSAB were analyzed at the required frequency to verify the instrumental interelement and background correction factors. All check sample results met the acceptance criteria.

Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) samples were analyzed for all analytes (when required) as a measure of method performance in the sample matrix with the exception of arsenic and selenium. Results for these analytes are qualified with a "J" flag as estimated values. MS/MSD data were not evaluated for chloride and sulfate because the concentration of the unspiked sample was greater than 4 times the spike concentration. The MS/MSD analyses resulted in acceptable recovery and precision for all analytes evaluated.

Laboratory Replicate Analysis

The laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference (RPD) values for the laboratory replicate samples and MSD sample results for non-radiochemical analytes were less than 20 percent. The radiochemical relative error ratio for all laboratory replicate samples was less than three. For radium-226 and radium-228 analyses, laboratory control samples (LCS) were analyzed in duplicate in lieu of replicates because of limited sample volume provided to the laboratory.

Laboratory Control Samples

LCS 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 LCS results were acceptable for all analysis categories.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. ICP-MS serial dilution data are evaluated when the concentration of the undiluted sample is greater than 100 times the practical quantitation limit. ICP serial dilution data are evaluated when the concentration of the undiluted sample is greater than 50 times the practical quantitation limit. All evaluated serial dilution data were acceptable. No serial dilution data required evaluation.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of the method 6020A analytes (except for arsenic and selenium) to reduce interferences. The required detection limits were met for all analytes with the following exceptions. The required detection limits were not met for gross alpha and gross beta because of the elevated levels of dissolved solids in the samples. The required detection limits were not met for radium-228 for samples 0906 and 2312 because of a reduced aliquot size used by the laboratory.

Completeness

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

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. There were no manual integrations performed, and all peak integrations were satisfactory.

Cation/Anion Balance

The cation/anion balance is used to determine if major ion concentrations have been quantified correctly. The total cations should be equal to the total anions when expressed in milliequivalents per liter (meq/L). Table 3 shows the total cation and anion results from this event and the charge balance, which is an RPD calculation. Typically, a charge balance difference of 10 percent is considered acceptable. With the exception of well 0891, the charge balance difference is less than 10 percent, indicating acceptable sampling and analysis performance. There were no errors noted in the data for well 0891.

Table 3. Comparison of Major Cations and Anions

Well	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0709	97.96	110.06	5.82
0858	120.99	133.99	5.10
0880	307.18	357.44	7.56
0891	119.15	146.01	10.13
0906	125.35	134.57	3.55
0921	241.92	246.07	0.85

Electronic Data Deliverable (EDD) File

The revised EDD file arrived on December 28, 2007. 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 examined manually to verify that the sample results accurately reflect the data contained in the sample data package.

SAMPLE MANAGEMENT SYSTEM

EDD Non-Conformance Report

Report Date: 1/25/2008

EDD File: \\condor\sms\07101197\07101197.txt

EDD Errors:

Record	Error Type	Field	Error Description
			NO ERRORS DETECTED

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 07101197 Lab Code: PAR Validator: Steve Donivan Validation Date: 1/25/2008

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

# of Samples: 7 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	All analyses were completed within the applicable holding times.
☑ Detection Limits	There are 16 detection limit failures.
☐ Field/Trip Blanks	
☑ Field Duplicates	There was 1 duplicate evaluated.

SAMPLE MANAGEMENT SYSTEM

RIN: 07101197 Lab Code: PAR

Non-Compliance Report: Detection Limits

Project: Falls City

Validation Date: 1/25/2008

Ticket	Location	Lab Sample ID	Method Code	Lab Method	Analyte Name	Result	Qualifier	Reported Detection Limit	Required Detection Limit	Units
NFJ 259	2312	0711020-7	GPC-A-001	SOP724R10	GROSS BETA	326		21.1	4	pCi/L
NFJ 259	2312	0711020-7	GPC-A-001	SOP724R10	GROSS ALPHA	403		12.1	2	pCi/L
NFJ 259	2312	0711020-7	GPC-A-020	SOP724R10	Ra-228	12.3		8.85	1	pCi/L
NFJ 253	709	0711020-1	GPC-A-001	SOP724R10	GROSS BETA	215		22.7	4	pCi/L
NFJ 253	709	0711020-1	GPC-A-001	SOP724R10	GROSS ALPHA	233		11.7	2	pCi/L
NFJ 255	858	0711020-2	GPC-A-001	SOP724R10	GROSS BETA	128		22.7	4	pCi/L
NFJ 255	858	0711020-2	GPC-A-001	SOP724R10	GROSS ALPHA	41.2		14.6	2	pCi/L
NFJ 254	880	0711020-3	GPC-A-001	SOP724R10	GROSS BETA	3800		83.2	4	pCi/L
NFJ 254	880	0711020-3	GPC-A-001	SOP724R10	GROSS ALPHA	3030		46.9	2	pCi/L
NFJ 257	891	0711020-4	GPC-A-001	SOP724R10	GROSS ALPHA	12.5	U	12.7	2	pCi/L
NFJ 257	891	0711020-4	GPC-A-001	SOP724R10	GROSS BETA	70.9		20.6	4	pCi/L
NFJ 256	906	0711020-5	GPC-A-001	SOP724R10	GROSS BETA	112		21.2	4	pCi/L
NFJ 256	906	0711020-5	GPC-A-001	SOP724R10	GROSS ALPHA	43		13.5	2	pCi/L
NFJ 256	906	0711020-5	GPC-A-020	SOP724R10	Ra-228	12.4		8.75	1	pCi/L
NFJ 258	921	0711020-6	GPC-A-001	SOP724R10	GROSS BETA	334		22.2	4	pCi/L
NFJ 258	921	0711020-6	GPC-A-001	SOP724R10	GROSS ALPHA	483		11.4	2	pCi/L

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 07101197 **Lab Code:** PAR **Date Due:** 11/30/2007

Matrix: Water **Site Code:** FCT **Date Completed:** 12/31/2007

Analyte	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								
Aluminum	11/20/2007			OK	OK	OK	OK						102.0		110.0
Antimony	11/20/2007	0.0000	1.0000	OK	OK	OK	OK			94.0	95.0	1.0	99.0		86.0
Arsenic	11/07/2007	0.0000	1.0000	OK	OK	OK	OK	OK	101.0	100.0			85.0		79.0
Beryllium	11/20/2007			OK	OK	OK	OK						96.0		104.0
Cadmium	11/20/2007	0.0000	1.0000	OK	OK	OK	OK			88.0	90.0	2.0	96.0		103.0
Calcium	11/20/2007			OK	OK	OK	OK						105.0		103.0
Chromium	11/20/2007			OK	OK	OK	OK						93.0		100.0
Cobalt	11/20/2007			OK	OK	OK	OK						94.0		102.0
Copper	11/20/2007			OK	OK	OK	OK						104.0		101.0
Iron	11/20/2007			OK	OK	OK	OK						105.0		106.0
Lead	11/20/2007	0.0000	1.0000	OK	OK	OK	OK			98.0	100.0	2.0	101.0		115.0
Magnesium	11/20/2007			OK	OK	OK	OK						106.0		101.0
Manganese	11/20/2007			OK	OK	OK	OK						95.0		103.0
Molybdenum	11/20/2007	0.0000	1.0000	OK	OK	OK	OK			119.0	119.0	0.0	113.0	6.0	100.0
Nickel	11/20/2007			OK	OK	OK	OK						93.0		105.0
Potassium	11/20/2007			OK	OK	OK	OK								105.0
Selenium	11/07/2007	0.0000	1.0000	OK	OK	OK	OK	OK	94.0	82.0			78.0	0.0	123.0
Sodium	11/20/2007			OK	OK	OK	OK								89.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 07101197 **Lab Code:** PAR **Date Due:** 11/30/2007

Matrix: Water **Site Code:** FCT **Date Completed:** 12/31/2007

Analyte	Date Analyzed	CALIBRATION						Method	LCS	MS	MSD	Dup.	ICSAB	Serial Dil.	CRI
		Int.	R^2	ICV	CCV	ICB	CCB	Blank	%R	%R	%R	RPD	%R	%R	%R
Thallium	11/20/2007	0.0000	1.0000	OK	OK	OK	OK			121.0	119.0	1.0	103.0		90.0
Tin	11/20/2007			OK	OK	OK	OK						100.0		105.0
Uranium	11/20/2007	0.0000	1.0000	OK	OK	OK	OK			98.0	102.0	1.0	107.0	4.0	118.0
Vanadium	11/15/2007	0.0000	1.0000	OK	OK	OK	OK			121.0	119.0	1.0	111.0		92.0
Zinc	11/20/2007			OK	OK	OK	OK						94.0		102.0

SAMPLE MANAGEMENT SYSTEM
Radiochemistry Data Validation Worksheet

RIN: 07101197 **Lab Code:** PAR **Date Due:** 11/30/2007

Matrix: Water **Site Code:** FCT **Date Completed:** 12/31/2007

Sample	Analyte	Date Analyzed	Result	Flag	Tracer %R	LCS %R	MS %R	Duplicate
Method Blank	Gross Alpha	11/27/2007	-0.2490	U				
Duplicate	Gross Alpha	11/27/2007						0.04
LCS	Gross Alpha	11/27/2007				103.0		
Duplicate	Gross Beta	11/27/2007						1.34
LCS	Gross Beta	11/27/2007				99.3		
Method Blank	Gross Beta	11/27/2007	-0.1470	U				
0858	Radium-226	11/16/2007			93.0			
0880	Radium-226	11/16/2007			92.6			
0891	Radium-226	11/16/2007			93.0			
0906	Radium-226	11/16/2007			83.0			
0921	Radium-226	11/16/2007			93.4			
0921duplicate	Radium-226	11/16/2007			89.6			
LCSD	Radium-226	11/16/2007			94.1	77.0		1.00
0709	Radium-226	11/16/2007			96.3			
Method Blank	Radium-226	11/16/2007	0.4560	U	94.4			
LCS	Radium-226	11/16/2007			92.1	92.9		
0858	Radium-228	12/04/2007			53.2			
0880	Radium-228	12/04/2007			64.2			
Method Blank	Radium-228	12/04/2007	0.1970	U	50.0			
LCS	Radium-228	12/04/2007			63.3	104.0		
0709	Radium-228	12/04/2007			63.7			
0891	Radium-228	12/06/2007			64.9			
0921	Radium-228	12/06/2007			64.1			
LCS	Radium-228	12/06/2007			66.6	96.0		
LCSD	Radium-228	12/06/2007			63.8	94.2		0.20
Method Blank	Radium-228	12/06/2007	0.0475	U	59.1			
0906	Radium-228	12/20/2007			68.4			
0921 duplicate	Radium-228	12/20/2007			67.8			
LCS	Radium-228	12/20/2007			66.1	99.5		
0906 Duplicate	Radium-228	12/20/2007			67.3			0.80
Method Blank	Radium-228	12/20/2007	0.1300	U	69.8			

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 07101197 **Lab Code:** PAR **Date Due:** 11/30/2007

Matrix: Water **Site Code:** FCT **Date Completed:** 12/31/2007

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	11/12/2007	-0.005	0.9999	OK	OK	OK	OK	OK	102.0	92.0	93.0	1.00	
Bromide	11/05/2007	0.000	0.9999	OK	OK	OK	OK	OK	101.0	110.0	109.0	1.00	
Chloride	11/05/2007	0.000	1.0000	OK	OK	OK	OK	OK	100.0				
Nitrate+Nitrite as N	11/13/2007	0.000	0.9999	OK	OK	OK	OK	OK	98.0				
Sulfate	11/05/2007	0.000	1.0000	OK	OK	OK	OK	OK	97.0				
Sulfide	11/07/2007			OK	OK	OK	OK	OK	101.0				
Total Dissolved Solids	11/05/2007			OK	OK	OK	OK	OK	97.0				

Sampling Quality Control Assessment

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

Sampling Protocol

Sample results for monitor wells that met the Category I and II low-flow sampling criteria were qualified with an "F" flag in the database, indicating the wells were purged and sampled using the low-flow sampling method. All wells were equipped with dedicated bladder pumps.

All wells met the Category I criteria using the low-flow purge procedure with the following exceptions:

- Wells 0709 and 0858 were classified as Category II.

The sample results for these two wells were qualified with a "Q" flag, indicating the data are qualitative because of the sample quality.

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. Duplicate samples were collected from location 0921. The non-radiochemical duplicate results were acceptable, meeting the U.S. Environmental Protection Agency recommended laboratory duplicate criteria of less than 20 percent relative difference for results that are greater than 5 times the practical quantitation limit. The radiochemical duplicate results were acceptable with relative error ratios of less than three, with the exception of the radium-228 results. It is suspected that an aliquot from sample 0906 was taken when re-analyzing the duplicate of 0921 because of matrix interferences. The duplicate radium-228 result for location 0921 is qualified with an "R" flag as rejected because of a suspected laboratory error.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 07101197 **Lab Code:** PAR **Project:** Falls City **Validation Date:** 1/25/2008

Duplicate: 2312 **Sample:** 921

Analyte	Sample Result	Sample Flag	Sample Error	Duplicate Result	Duplicate Flag	Duplicate Error	RPD	RER	Units
ALUMINUM	160	B		160	B				UG/L
AMMONIA AS N	0.1	U		0.1	U				MG/L
ANTIMONY	0.24	B		0.2	B				UG/L
ARSENIC	5.3			5.5			3.70		UG/L
BERYLLIUM	2	B		1.7	B				UG/L
BROMIDE	7.7			8.1					MG/L
CADMIUM	17			17			0		UG/L
CALCIUM	1400000			1300000			7.41		UG/L
CHLORIDE	3000			3100			3.28		MG/L
CHROMIUM	3.8	U		3.8	U				UG/L
COBALT	4	U		4	U				UG/L
COPPER	3.5	U		3.5	U				UG/L
GROSS ALPHA	483		80.9	403		68.1	18.06	1.5	pCi/L
GROSS BETA	334		56.2	326		54.8	2.42	0.2	pCi/L
IRON	28	U		28	U				UG/L
LEAD	0.3	B		0.18	B				UG/L
MAGNESIUM	160000			160000			0		UG/L
MANGANESE	2000			1900			5.13		UG/L
MOLYBDENUM	43			43			0		UG/L
NICKEL	39	B		40	B		2.53		UG/L
NITRATE/NITRITE AS N	2.9			2.9			0		MG/L
POTASSIUM	110000			110000			0		UG/L
Ra-226	2.26		0.8	2.37		0.886		0.2	pCi/L
Ra-228	1.38		0.611	12.3		5.94		3.6	pCi/L
SELENIUM	150			150			0		UG/L
SODIUM	870000			860000			1.16		UG/L
SULFATE	1600			1600			0		MG/L
SULFIDE	2	U		2	U				MG/L
THALLIUM	2			2			0		UG/L
TIN	58	B		46	B				UG/L
TOTAL DISSOLVED SOLIDS	8100			8100			0		MG/L
URANIUM	850			860			1.17		UG/L
VANADIUM	0.32	U		0.32	U				UG/L
ZINC	19	B		17	B				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: Steve Donivan — 3-3-2008 (Date)

Data Validation Lead: Steve Donivan — 3-3-2008 (Date)

End of current text

Attachment 1
Assessment of Anomalous Data

Outliers Report

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 all new data that fall outside the historical data range. Data listed in the report are highlighted if the concentration detected is not within 50 percent of historical minimum or maximum values. A determination is also made if the data are normally distributed using the Studentized Range 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.

Ther beryllium result from location 0891 is listed as a potential outlier, however the data are not normally distributed. None of the data from this sampling event were identified as potential outliers and are acceptable for use as qualified.

Data Validation Outliers Report - No Field Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 07101197
Comparison: All Historical Data
Report Date: 1/29/2008

Site Code	Location Code	Sample Date	Analyte	Current Result	Current Qualifiers Lab	Current Qualifiers Data	Historical Maximum Result	Historical Maximum Qualifiers Lab	Historical Maximum Qualifiers Data	Historical Minimum Result	Historical Minimum Qualifiers Lab	Historical Minimum Qualifiers Data	Count N	Count N Below Detect	Normally Distributed	Statistical Outlier
FCT03	0891	10/31/2007	ALUMINUM	0.190000	B		0.13	B	UF	0.0064	U	F	8	7	Yes	No
FCT03	0891	10/31/2007	ANTIMONY	0.000084	B		0.001	B	U	0.0001	U	F	7	6	Yes	No
FCT03	0891	10/31/2007	BERYLLIUM	0.001600	B		0.0006	B	UF	0.0001	U	F	7	4	No	Yes
FCT03	0891	10/31/2007	LEAD	0.000094	B		0.0016	B		0.0001	U	F	15	13	Yes	No
FCT03	0891	10/31/2007	MANGANESE	4.500000			4.28			2.55		F	8	0	Yes	No
FCT03	0891	10/31/2007	THALLIUM	0.000640			0.00058	BE	UJ	0.0001	U	F	7	3	Yes	No

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).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
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.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

STATISTICAL TESTS:
The distribution of the data is tested for normality using the Studentized Range 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

Groundwater Quality Data

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0709 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/31/2007	0001	12.65	-	32.65	131		FQ	#		
Aluminum	mg/L	10/31/2007	0001	12.65	-	32.65	0.26	B	UFQ	#	.061	
Ammonia Total as N	mg/L	10/31/2007	0001	12.65	-	32.65	0.1	U	FQ	#	.1	
Antimony	mg/L	10/31/2007	0001	12.65	-	32.65	0.00016	B	FQ	#	.000063	
Arsenic	mg/L	10/31/2007	0001	12.65	-	32.65	0.0015		FQ	#	.000092	
Beryllium	mg/L	10/31/2007	0001	12.65	-	32.65	0.0018	B	UFQ	#	.00052	
Bromide	mg/L	10/31/2007	0001	12.65	-	32.65	6.3		FQ	#	2	
Cadmium	mg/L	10/31/2007	0001	12.65	-	32.65	0.00023	B	FQ	#	.000044	
Calcium	mg/L	10/31/2007	0001	12.65	-	32.65	1000		FQ	#	.064	
Chloride	mg/L	10/31/2007	0001	12.65	-	32.65	2600		FQ	#	40	
Chromium	mg/L	10/31/2007	0001	12.65	-	32.65	0.0038	U	FQ	#	.0038	
Cobalt	mg/L	10/31/2007	0001	12.65	-	32.65	0.004	U	FQ	#	.004	
Copper	mg/L	10/31/2007	0001	12.65	-	32.65	0.0035	U	FQ	#	.0035	
Gross Alpha	pCi/L	10/31/2007	0001	12.65	-	32.65	233		FQ	#	11.7	41.1
Gross Beta	pCi/L	10/31/2007	0001	12.65	-	32.65	215		FQ	#	22.7	38.2
Iron	mg/L	10/31/2007	0001	12.65	-	32.65	0.032	B	UFQ	#	.028	
Lead	mg/L	10/31/2007	0001	12.65	-	32.65	0.00016	B	UFQ	#	.000054	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0709 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Magnesium	mg/L	10/31/2007	0001	12.65	-	32.65	86		FQ	#	.044	
Manganese	mg/L	10/31/2007	0001	12.65	-	32.65	0.001	B	UFQ	#	.00082	
Molybdenum	mg/L	10/31/2007	0001	12.65	-	32.65	0.034		FQ	#	.000098	
Nickel	mg/L	10/31/2007	0001	12.65	-	32.65	0.0066	U	FQ	#	.0066	
Nitrate + Nitrite as Nitrogen	mg/L	10/31/2007	0001	12.65	-	32.65	11		FQ	#	.1	
Oxidation Reduction Potential	mV	10/31/2007	N001	12.65	-	32.65	190		FQ	#		
pH	s.u.	10/31/2007	N001	12.65	-	32.65	6.31		FQ	#		
Potassium	mg/L	10/31/2007	0001	12.65	-	32.65	55		FQ	#	.21	
Radium-226	pCi/L	10/31/2007	0001	12.65	-	32.65	3.67		FQ	#	.594	1.18
Radium-228	pCi/L	10/31/2007	0001	12.65	-	32.65	2.26		FQ	#	.756	.804
Selenium	mg/L	10/31/2007	0001	12.65	-	32.65	0.037		FQ	#	.00014	
Sodium	mg/L	10/31/2007	0001	12.65	-	32.65	910		FQ	#	.022	
Specific Conductance	umhos /cm	10/31/2007	N001	12.65	-	32.65	9270		FQ	#		
Sulfate	mg/L	10/31/2007	0001	12.65	-	32.65	1600		FQ	#	100	
Sulfide	mg/L	10/31/2007	0001	12.65	-	32.65	2	U	FQ	#	2	
Temperature	C	10/31/2007	N001	12.65	-	32.65	21.7		FQ	#		
Thallium	mg/L	10/31/2007	0001	12.65	-	32.65	0.00028		UFQ	#	.000025	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0709 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Tin	mg/L	10/31/2007	0001	12.65	-	32.65	0.025	B	FQ	#	.013	
Total Dissolved Solids	mg/L	10/31/2007	0001	12.65	-	32.65	6900		FQ	#	200	
Turbidity	NTU	10/31/2007	N001	12.65	-	32.65	1.87		FQ	#		
Uranium	mg/L	10/31/2007	0001	12.65	-	32.65	0.64		FQ	#	.00023	
Vanadium	mg/L	10/31/2007	0001	12.65	-	32.65	0.00032	U	FQ	#	.00032	
Zinc	mg/L	10/31/2007	0001	12.65	-	32.65	0.016	U	FQ	#	.016	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0858 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/31/2007	0001	39.42 - 49.42	134		FQ	#		
Aluminum	mg/L	10/31/2007	0001	39.42 - 49.42	0.28	B	UFQ	#	.061	
Ammonia Total as N	mg/L	10/31/2007	0001	39.42 - 49.42	0.34		FQ	#	.1	
Antimony	mg/L	10/31/2007	0001	39.42 - 49.42	0.00022	B	FQ	#	.000063	
Arsenic	mg/L	10/31/2007	0001	39.42 - 49.42	0.0019		FQ	#	.000018	
Beryllium	mg/L	10/31/2007	0001	39.42 - 49.42	0.0054		UFQ	#	.00052	
Bromide	mg/L	10/31/2007	0001	39.42 - 49.42	10		FQ	#	2	
Cadmium	mg/L	10/31/2007	0001	39.42 - 49.42	0.00021	B	FQ	#	.000044	
Calcium	mg/L	10/31/2007	0001	39.42 - 49.42	1200		FQ	#	.064	
Chloride	mg/L	10/31/2007	0001	39.42 - 49.42	3400		FQ	#	40	
Chromium	mg/L	10/31/2007	0001	39.42 - 49.42	0.0038	U	FQ	#	.0038	
Cobalt	mg/L	10/31/2007	0001	39.42 - 49.42	0.021	B	FQ	#	.004	
Copper	mg/L	10/31/2007	0001	39.42 - 49.42	0.0035	U	FQ	#	.0035	
Gross Alpha	pCi/L	10/31/2007	0001	39.42 - 49.42	41.2		FQJ	#	14.6	12.9
Gross Beta	pCi/L	10/31/2007	0001	39.42 - 49.42	128		FQ	#	22.7	25.7
Iron	mg/L	10/31/2007	0001	39.42 - 49.42	0.1	B	UFQ	#	.028	
Lead	mg/L	10/31/2007	0001	39.42 - 49.42	0.00014	B	UFQ	#	.000054	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0858 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Magnesium	mg/L	10/31/2007	0001	39.42 - 49.42	180		FQ	#	.044	
Manganese	mg/L	10/31/2007	0001	39.42 - 49.42	3.2		FQ	#	.00082	
Molybdenum	mg/L	10/31/2007	0001	39.42 - 49.42	0.0063		FQ	#	.000098	
Nickel	mg/L	10/31/2007	0001	39.42 - 49.42	0.028	B	FQ	#	.0066	
Nitrate + Nitrite as Nitrogen	mg/L	10/31/2007	0001	39.42 - 49.42	0.012		FQ	#	.01	
Oxidation Reduction Potential	mV	10/31/2007	N001	39.42 - 49.42	23		FQ	#		
pH	s.u.	10/31/2007	N001	39.42 - 49.42	6.04		FQ	#		
Potassium	mg/L	10/31/2007	0001	39.42 - 49.42	110		FQ	#	.21	
Radium-226	pCi/L	10/31/2007	0001	39.42 - 49.42	9.83		FQ	#	.44	2.65
Radium-228	pCi/L	10/31/2007	0001	39.42 - 49.42	19.7		FQ	#	.892	5.92
Selenium	mg/L	10/31/2007	0001	39.42 - 49.42	0.0013		FQ	#	.000028	
Sodium	mg/L	10/31/2007	0001	39.42 - 49.42	1000		FQ	#	.022	
Specific Conductance	umhos /cm	10/31/2007	N001	39.42 - 49.42	11275		FQ	#		
Sulfate	mg/L	10/31/2007	0001	39.42 - 49.42	1700		FQ	#	100	
Sulfide	mg/L	10/31/2007	0001	39.42 - 49.42	2	U	FQ	#	2	
Temperature	C	10/31/2007	N001	39.42 - 49.42	23.7		FQ	#		
Thallium	mg/L	10/31/2007	0001	39.42 - 49.42	0.00035		UFQ	#	.000025	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0858 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Tin	mg/L	10/31/2007	0001	39.42	-	49.42	0.015	B	FQ	#	.013	
Total Dissolved Solids	mg/L	10/31/2007	0001	39.42	-	49.42	8200		FQ	#	200	
Turbidity	NTU	10/31/2007	N001	39.42	-	49.42	4.34		FQ	#		
Uranium	mg/L	10/31/2007	0001	39.42	-	49.42	0.049		FQ	#	.000012	
Vanadium	mg/L	10/31/2007	0001	39.42	-	49.42	0.00032	U	FQ	#	.00032	
Zinc	mg/L	10/31/2007	0001	39.42	-	49.42	0.016	U	FQ	#	.016	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0880 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/31/2007	0001	32.3	-	42.3	0		F	#		
Aluminum	mg/L	10/31/2007	0001	32.3	-	42.3	140		F	#	.12	
Ammonia Total as N	mg/L	10/31/2007	0001	32.3	-	42.3	0.1	U	F	#	.1	
Antimony	mg/L	10/31/2007	0001	32.3	-	42.3	0.00028	B	F	#	.000063	
Arsenic	mg/L	10/31/2007	0001	32.3	-	42.3	0.037		F	#	.000092	
Beryllium	mg/L	10/31/2007	0001	32.3	-	42.3	0.39		F	#	.001	
Bromide	mg/L	10/31/2007	0001	32.3	-	42.3	2.5		F	#	.4	
Cadmium	mg/L	10/31/2007	0001	32.3	-	42.3	0.58		F	#	.00087	
Calcium	mg/L	10/31/2007	0001	32.3	-	42.3	400		F	#	.13	
Chloride	mg/L	10/31/2007	0001	32.3	-	42.3	1600		F	#	100	
Chromium	mg/L	10/31/2007	0001	32.3	-	42.3	0.011	B	F	#	.0075	
Cobalt	mg/L	10/31/2007	0001	32.3	-	42.3	1.1		F	#	.0079	
Copper	mg/L	10/31/2007	0001	32.3	-	42.3	0.007	U	F	#	.007	
Gross Alpha	pCi/L	10/31/2007	0001	32.3	-	42.3	8030		F	#	46.9	1290
Gross Beta	pCi/L	10/31/2007	0001	32.3	-	42.3	3800		F	#	83.2	611
Iron	mg/L	10/31/2007	0001	32.3	-	42.3	280		F	#	.056	
Lead	mg/L	10/31/2007	0001	32.3	-	42.3	0.0035		F	#	.000054	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0880 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Magnesium	mg/L	10/31/2007	0001	32.3	-	42.3	1800		F	#	.088	
Manganese	mg/L	10/31/2007	0001	32.3	-	42.3	92		F	#	.0016	
Molybdenum	mg/L	10/31/2007	0001	32.3	-	42.3	0.0046		F	#	.000098	
Nickel	mg/L	10/31/2007	0001	32.3	-	42.3	1.5		F	#	.013	
Nitrate + Nitrite as Nitrogen	mg/L	10/31/2007	0001	32.3	-	42.3	0.01	U	F	#	.01	
Oxidation Reduction Potential	mV	10/31/2007	N001	32.3	-	42.3	127		F	#		
pH	s.u.	10/31/2007	N001	32.3	-	42.3	4.6		F	#		
Potassium	mg/L	10/31/2007	0001	32.3	-	42.3	170		F	#	.43	
Radium-226	pCi/L	10/31/2007	0001	32.3	-	42.3	13.9		F	#	.512	3.64
Radium-228	pCi/L	10/31/2007	0001	32.3	-	42.3	7.89		F	#	.737	2.42
Selenium	mg/L	10/31/2007	0001	32.3	-	42.3	0.0054		F	#	.00014	
Sodium	mg/L	10/31/2007	0001	32.3	-	42.3	3100		F	#	.22	
Specific Conductance	umhos /cm	10/31/2007	N001	32.3	-	42.3	20967		F	#		
Sulfate	mg/L	10/31/2007	0001	32.3	-	42.3	15000		F	#	250	
Sulfide	mg/L	10/31/2007	0001	32.3	-	42.3	2	U	F	#	2	
Temperature	C	10/31/2007	N001	32.3	-	42.3	23.8		F	#		
Thallium	mg/L	10/31/2007	0001	32.3	-	42.3	0.0077		F	#	.0005	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0880 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Tin	mg/L	10/31/2007	0001	32.3	-	42.3	0.032	B	F	#	.026	
Total Dissolved Solids	mg/L	10/31/2007	0001	32.3	-	42.3	26000		F	#	400	
Turbidity	NTU	10/31/2007	N001	32.3	-	42.3	9.93		F	#		
Uranium	mg/L	10/31/2007	0001	32.3	-	42.3	8.3		F	#	.0058	
Vanadium	mg/L	10/31/2007	0001	32.3	-	42.3	1.7		F	#	.016	
Zinc	mg/L	10/31/2007	0001	32.3	-	42.3	1.8		F	#	.031	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0891 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/31/2007	0001	10.74 - 20.74	104		F	#		
Aluminum	mg/L	10/31/2007	0001	10.74 - 20.74	0.19	B	UF	#	.061	
Ammonia Total as N	mg/L	10/31/2007	0001	10.74 - 20.74	0.16		F	#	.1	
Antimony	mg/L	10/31/2007	0001	10.74 - 20.74	0.000084	B	F	#	.000063	
Arsenic	mg/L	10/31/2007	0001	10.74 - 20.74	0.0045		F	#	.000018	
Beryllium	mg/L	10/31/2007	0001	10.74 - 20.74	0.0016	B	UF	#	.00052	
Bromide	mg/L	10/31/2007	0001	10.74 - 20.74	13		F	#	4	
Cadmium	mg/L	10/31/2007	0001	10.74 - 20.74	0.00089		F	#	.000044	
Calcium	mg/L	10/31/2007	0001	10.74 - 20.74	1200		F	#	.064	
Chloride	mg/L	10/31/2007	0001	10.74 - 20.74	3700		F	#	40	
Chromium	mg/L	10/31/2007	0001	10.74 - 20.74	0.0038	U	F	#	.0038	
Cobalt	mg/L	10/31/2007	0001	10.74 - 20.74	0.0077	B	F	#	.004	
Copper	mg/L	10/31/2007	0001	10.74 - 20.74	0.0035	U	F	#	.0035	
Gross Alpha	pCi/L	10/31/2007	0001	10.74 - 20.74	12.5	U	F	#	12.7	8.46
Gross Beta	pCi/L	10/31/2007	0001	10.74 - 20.74	70.9		F	#	20.6	17.6
Iron	mg/L	10/31/2007	0001	10.74 - 20.74	0.56		F	#	.028	
Lead	mg/L	10/31/2007	0001	10.74 - 20.74	0.000094	B	UF	#	.000054	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0891 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Magnesium	mg/L	10/31/2007	0001	10.74	-	20.74	110		F	#	.044	
Manganese	mg/L	10/31/2007	0001	10.74	-	20.74	4.5		F	#	.00082	
Molybdenum	mg/L	10/31/2007	0001	10.74	-	20.74	0.004		F	#	.000098	
Nickel	mg/L	10/31/2007	0001	10.74	-	20.74	0.0066	U	F	#	.0066	
Nitrate + Nitrite as Nitrogen	mg/L	10/31/2007	0001	10.74	-	20.74	0.024		F	#	.01	
Oxidation Reduction Potential	mV	10/31/2007	N001	10.74	-	20.74	34		F	#		
pH	s.u.	10/31/2007	N001	10.74	-	20.74	5.9		F	#		
Potassium	mg/L	10/31/2007	0001	10.74	-	20.74	93		F	#	.21	
Radium-226	pCi/L	10/31/2007	0001	10.74	-	20.74	0.362	U	F	#	.676	.427
Radium-228	pCi/L	10/31/2007	0001	10.74	-	20.74	2.43		F	#	.798	.857
Selenium	mg/L	10/31/2007	0001	10.74	-	20.74	0.00038		F	#	.000028	
Sodium	mg/L	10/31/2007	0001	10.74	-	20.74	1100		F	#	.022	
Specific Conductance	umhos /cm	10/31/2007	N001	10.74	-	20.74	11607		F	#		
Sulfate	mg/L	10/31/2007	0001	10.74	-	20.74	1900		F	#	10	
Sulfide	mg/L	10/31/2007	0001	10.74	-	20.74	2	U	F	#	2	
Temperature	C	10/31/2007	N001	10.74	-	20.74	25.7		F	#		
Thallium	mg/L	10/31/2007	0001	10.74	-	20.74	0.00064		F	#	.000025	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0891 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Tin	mg/L	10/31/2007	0001	10.74	-	20.74	0.03	B	F	#	.013	
Total Dissolved Solids	mg/L	10/31/2007	0001	10.74	-	20.74	8400		F	#	200	
Turbidity	NTU	10/31/2007	N001	10.74	-	20.74	9.87		F	#		
Uranium	mg/L	10/31/2007	0001	10.74	-	20.74	0.033		F	#	.000012	
Vanadium	mg/L	10/31/2007	0001	10.74	-	20.74	0.00032	U	F	#	.00032	
Zinc	mg/L	10/31/2007	0001	10.74	-	20.74	0.042	B	F	#	.016	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0906 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/31/2007	0001	12.49	-	27.49	126		F	#		
Aluminum	mg/L	10/31/2007	0001	12.49	-	27.49	0.16	B	UF	#	.061	
Ammonia Total as N	mg/L	10/31/2007	0001	12.49	-	27.49	0.1	U	F	#	.1	
Antimony	mg/L	10/31/2007	0001	12.49	-	27.49	0.00013	B	F	#	.000063	
Arsenic	mg/L	10/31/2007	0001	12.49	-	27.49	0.001		F	#	.000018	
Beryllium	mg/L	10/31/2007	0001	12.49	-	27.49	0.0017	B	UF	#	.00052	
Bromide	mg/L	10/31/2007	0001	12.49	-	27.49	7.7		F	#	4	
Cadmium	mg/L	10/31/2007	0001	12.49	-	27.49	0.013		F	#	.000044	
Calcium	mg/L	10/31/2007	0001	12.49	-	27.49	1500		F	#	.064	
Chloride	mg/L	10/31/2007	0001	12.49	-	27.49	3500		F	#	40	
Chromium	mg/L	10/31/2007	0001	12.49	-	27.49	0.0038	U	F	#	.0038	
Cobalt	mg/L	10/31/2007	0001	12.49	-	27.49	0.004	U	F	#	.004	
Copper	mg/L	10/31/2007	0001	12.49	-	27.49	0.0035	U	F	#	.0035	
Gross Alpha	pCi/L	10/31/2007	0001	12.49	-	27.49	43		F	#	13.5	12.6
Gross Beta	pCi/L	10/31/2007	0001	12.49	-	27.49	112		F	#	21.2	23.1
Iron	mg/L	10/31/2007	0001	12.49	-	27.49	0.028	U	F	#	.028	
Lead	mg/L	10/31/2007	0001	12.49	-	27.49	0.000065	B	UF	#	.000054	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0906 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Magnesium	mg/L	10/31/2007	0001	12.49	-	27.49	110		F	#	.044	
Manganese	mg/L	10/31/2007	0001	12.49	-	27.49	2.7		F	#	.00082	
Molybdenum	mg/L	10/31/2007	0001	12.49	-	27.49	0.0036		F	#	.000098	
Nickel	mg/L	10/31/2007	0001	12.49	-	27.49	0.011	B	F	#	.0066	
Nitrate + Nitrite as Nitrogen	mg/L	10/31/2007	0001	12.49	-	27.49	0.012		F	#	.01	
Oxidation Reduction Potential	mV	10/31/2007	N001	12.49	-	27.49	22		F	#		
pH	s.u.	10/31/2007	N001	12.49	-	27.49	5.78		F	#		
Potassium	mg/L	10/31/2007	0001	12.49	-	27.49	90		F	#	.21	
Radium-226	pCi/L	10/31/2007	0001	12.49	-	27.49	5.7		F	#	.735	1.77
Radium-228	pCi/L	10/31/2007	0001	12.49	-	27.49	12.4		F	#	8.75	5.92
Selenium	mg/L	10/31/2007	0001	12.49	-	27.49	0.00056		F	#	.000028	
Sodium	mg/L	10/31/2007	0001	12.49	-	27.49	900		F	#	.022	
Specific Conductance	umhos /cm	10/31/2007	N001	12.49	-	27.49	11312		F	#		
Sulfate	mg/L	10/31/2007	0001	12.49	-	27.49	1600		F	#	10	
Sulfide	mg/L	10/31/2007	0001	12.49	-	27.49	2	U	F	#	2	
Temperature	C	10/31/2007	N001	12.49	-	27.49	25.8		F	#		
Thallium	mg/L	10/31/2007	0001	12.49	-	27.49	0.0018		F	#	.000025	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0906 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Tin	mg/L	10/31/2007	0001	12.49	-	27.49	0.043	B	F	#	.013	
Total Dissolved Solids	mg/L	10/31/2007	0001	12.49	-	27.49	8400		F	#	200	
Turbidity	NTU	10/31/2007	N001	12.49	-	27.49	3.19		F	#		
Uranium	mg/L	10/31/2007	0001	12.49	-	27.49	0.11		F	#	.000058	
Vanadium	mg/L	10/31/2007	0001	12.49	-	27.49	0.00032	U	F	#	.00032	
Zinc	mg/L	10/31/2007	0001	12.49	-	27.49	0.03	B	F	#	.016	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0921 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/31/2007	0001	44.55 - 54.55	348		F	#		
Aluminum	mg/L	10/31/2007	0001	44.55 - 54.55	0.16	B	UF	#	.061	
Aluminum	mg/L	10/31/2007	0002	44.55 - 54.55	0.16	B	UF	#	.061	
Ammonia Total as N	mg/L	10/31/2007	0001	44.55 - 54.55	0.1	U	F	#	.1	
Ammonia Total as N	mg/L	10/31/2007	0002	44.55 - 54.55	0.1	U	F	#	.1	
Antimony	mg/L	10/31/2007	0001	44.55 - 54.55	0.00024	B	F	#	.000063	
Antimony	mg/L	10/31/2007	0002	44.55 - 54.55	0.0002	B	F	#	.000063	
Arsenic	mg/L	10/31/2007	0001	44.55 - 54.55	0.0053		F	#	.00018	
Arsenic	mg/L	10/31/2007	0002	44.55 - 54.55	0.0055		F	#	.00018	
Beryllium	mg/L	10/31/2007	0001	44.55 - 54.55	0.002	B	UF	#	.00052	
Beryllium	mg/L	10/31/2007	0002	44.55 - 54.55	0.0017	B	UF	#	.00052	
Bromide	mg/L	10/31/2007	0001	44.55 - 54.55	7.7		F	#	4	
Bromide	mg/L	10/31/2007	0002	44.55 - 54.55	8.1		F	#	4	
Cadmium	mg/L	10/31/2007	0001	44.55 - 54.55	0.017		F	#	.000044	
Cadmium	mg/L	10/31/2007	0002	44.55 - 54.55	0.017		F	#	.000044	
Calcium	mg/L	10/31/2007	0001	44.55 - 54.55	1400		F	#	.064	
Calcium	mg/L	10/31/2007	0002	44.55 - 54.55	1300		F	#	.064	
Chloride	mg/L	10/31/2007	0001	44.55 - 54.55	3000		F	#	40	
Chloride	mg/L	10/31/2007	0002	44.55 - 54.55	3100		F	#	40	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0921 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Chromium	mg/L	10/31/2007	0001	44.55 - 54.55	0.0038	U	F	#	.0038	
Chromium	mg/L	10/31/2007	0002	44.55 - 54.55	0.0038	U	F	#	.0038	
Cobalt	mg/L	10/31/2007	0001	44.55 - 54.55	0.004	U	F	#	.004	
Cobalt	mg/L	10/31/2007	0002	44.55 - 54.55	0.004	U	F	#	.004	
Copper	mg/L	10/31/2007	0001	44.55 - 54.55	0.0035	U	F	#	.0035	
Copper	mg/L	10/31/2007	0002	44.55 - 54.55	0.0035	U	F	#	.0035	
Gross Alpha	pCi/L	10/31/2007	0001	44.55 - 54.55	483		F	#	11.4	80.9
Gross Alpha	pCi/L	10/31/2007	0002	44.55 - 54.55	403		F	#	12.1	68.1
Gross Beta	pCi/L	10/31/2007	0001	44.55 - 54.55	334		F	#	22.2	56.2
Gross Beta	pCi/L	10/31/2007	0002	44.55 - 54.55	326		F	#	21.1	54.8
Iron	mg/L	10/31/2007	0001	44.55 - 54.55	0.028	U	F	#	.028	
Iron	mg/L	10/31/2007	0002	44.55 - 54.55	0.028	U	F	#	.028	
Lead	mg/L	10/31/2007	0001	44.55 - 54.55	0.0003	B	UF	#	.000054	
Lead	mg/L	10/31/2007	0002	44.55 - 54.55	0.00018	B	UF	#	.000054	
Magnesium	mg/L	10/31/2007	0001	44.55 - 54.55	160		F	#	.044	
Magnesium	mg/L	10/31/2007	0002	44.55 - 54.55	160		F	#	.044	
Manganese	mg/L	10/31/2007	0001	44.55 - 54.55	2		F	#	.00082	
Manganese	mg/L	10/31/2007	0002	44.55 - 54.55	1.9		F	#	.00082	
Molybdenum	mg/L	10/31/2007	0001	44.55 - 54.55	0.043		F	#	.000098	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0921 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Molybdenum	mg/L	10/31/2007	0002	44.55 - 54.55	0.043		F	#	.000098	
Nickel	mg/L	10/31/2007	0001	44.55 - 54.55	0.039	B	F	#	.0066	
Nickel	mg/L	10/31/2007	0002	44.55 - 54.55	0.04	B	F	#	.0066	
Nitrate + Nitrite as Nitrogen	mg/L	10/31/2007	0001	44.55 - 54.55	2.9		F	#	.02	
Nitrate + Nitrite as Nitrogen	mg/L	10/31/2007	0002	44.55 - 54.55	2.9		F	#	.02	
Oxidation Reduction Potential	mV	10/31/2007	N001	44.55 - 54.55	61		F	#		
pH	s.u.	10/31/2007	N001	44.55 - 54.55	6.14		F	#		
Potassium	mg/L	10/31/2007	0001	44.55 - 54.55	110		F	#	.21	
Potassium	mg/L	10/31/2007	0002	44.55 - 54.55	110		F	#	.21	
Radium-226	pCi/L	10/31/2007	0001	44.55 - 54.55	2.26		F	#	.554	.8
Radium-226	pCi/L	10/31/2007	0002	44.55 - 54.55	2.37		F	#	.68	.886
Radium-228	pCi/L	10/31/2007	0001	44.55 - 54.55	1.38		FJ	#	.858	.611
Radium-228	pCi/L	10/31/2007	0002	44.55 - 54.55	12.3		RF	#	8.85	5.94
Selenium	mg/L	10/31/2007	0001	44.55 - 54.55	0.15		F	#	.00028	
Selenium	mg/L	10/31/2007	0002	44.55 - 54.55	0.15		F	#	.00028	
Sodium	mg/L	10/31/2007	0001	44.55 - 54.55	870		F	#	.022	
Sodium	mg/L	10/31/2007	0002	44.55 - 54.55	860		F	#	.022	
Specific Conductance	umhos /cm	10/31/2007	N001	44.55 - 54.55	10930		F	#		
Sulfate	mg/L	10/31/2007	0001	44.55 - 54.55	1600		F	#	10	

Groundwater Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008
Location: 0921 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Sulfate	mg/L	10/31/2007	0002	44.55 - 54.55	1600		F	#	10	
Sulfide	mg/L	10/31/2007	0001	44.55 - 54.55	2	U	F	#	2	
Sulfide	mg/L	10/31/2007	0002	44.55 - 54.55	2	U	F	#	2	
Temperature	C	10/31/2007	N001	44.55 - 54.55	25.1		F	#		
Thallium	mg/L	10/31/2007	0001	44.55 - 54.55	0.002		F	#	.000025	
Thallium	mg/L	10/31/2007	0002	44.55 - 54.55	0.002		F	#	.000025	
Tin	mg/L	10/31/2007	0001	44.55 - 54.55	0.058	B	F	#	.013	
Tin	mg/L	10/31/2007	0002	44.55 - 54.55	0.046	B	F	#	.013	
Total Dissolved Solids	mg/L	10/31/2007	0001	44.55 - 54.55	8100		F	#	200	
Total Dissolved Solids	mg/L	10/31/2007	0002	44.55 - 54.55	8100		F	#	200	
Turbidity	NTU	10/31/2007	N001	44.55 - 54.55	1.11		F	#		
Uranium	mg/L	10/31/2007	0001	44.55 - 54.55	0.85		F	#	.00023	
Uranium	mg/L	10/31/2007	0002	44.55 - 54.55	0.86		F	#	.00023	
Vanadium	mg/L	10/31/2007	0001	44.55 - 54.55	0.00032	U	F	#	.00032	
Vanadium	mg/L	10/31/2007	0002	44.55 - 54.55	0.00032	U	F	#	.00032	
Zinc	mg/L	10/31/2007	0001	44.55 - 54.55	0.019	B	F	#	.016	
Zinc	mg/L	10/31/2007	0002	44.55 - 54.55	0.017	B	F	#	.016	

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).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
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.	G Possible grout contamination, pH > 9.	J Estimated value.
L Less than 3 bore volumes purged prior to sampling.	Q Qualitative result due to sampling technique.	R Unusable result.
U Parameter analyzed for but was not detected.	X Location is undefined.	

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

Static Water Level Data

STATIC WATER LEVELS (USEE700) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 2/19/2008

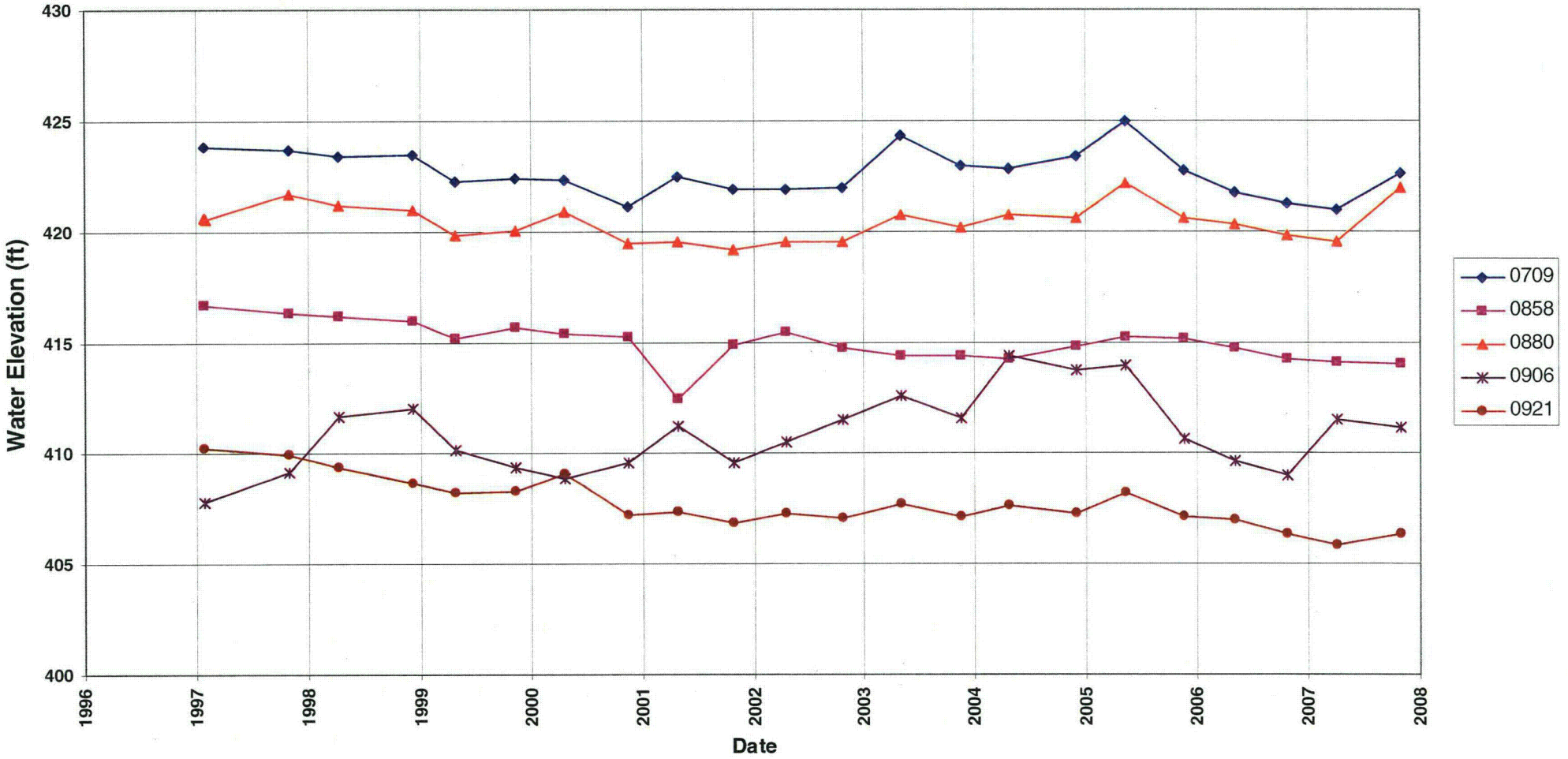
Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0709	D	451.58	10/31/2007		28.97	422.61	
0858	O	441.03	10/31/2007		26.99	414.04	
0880	O	446.84	10/31/2007		24.89	421.95	
0891	D	349.63	10/31/2007		11.22	338.41	
0906	D	420.17	10/31/2007		9.01	411.16	
0921	D	435.75	10/31/2007		29.41	406.34	

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

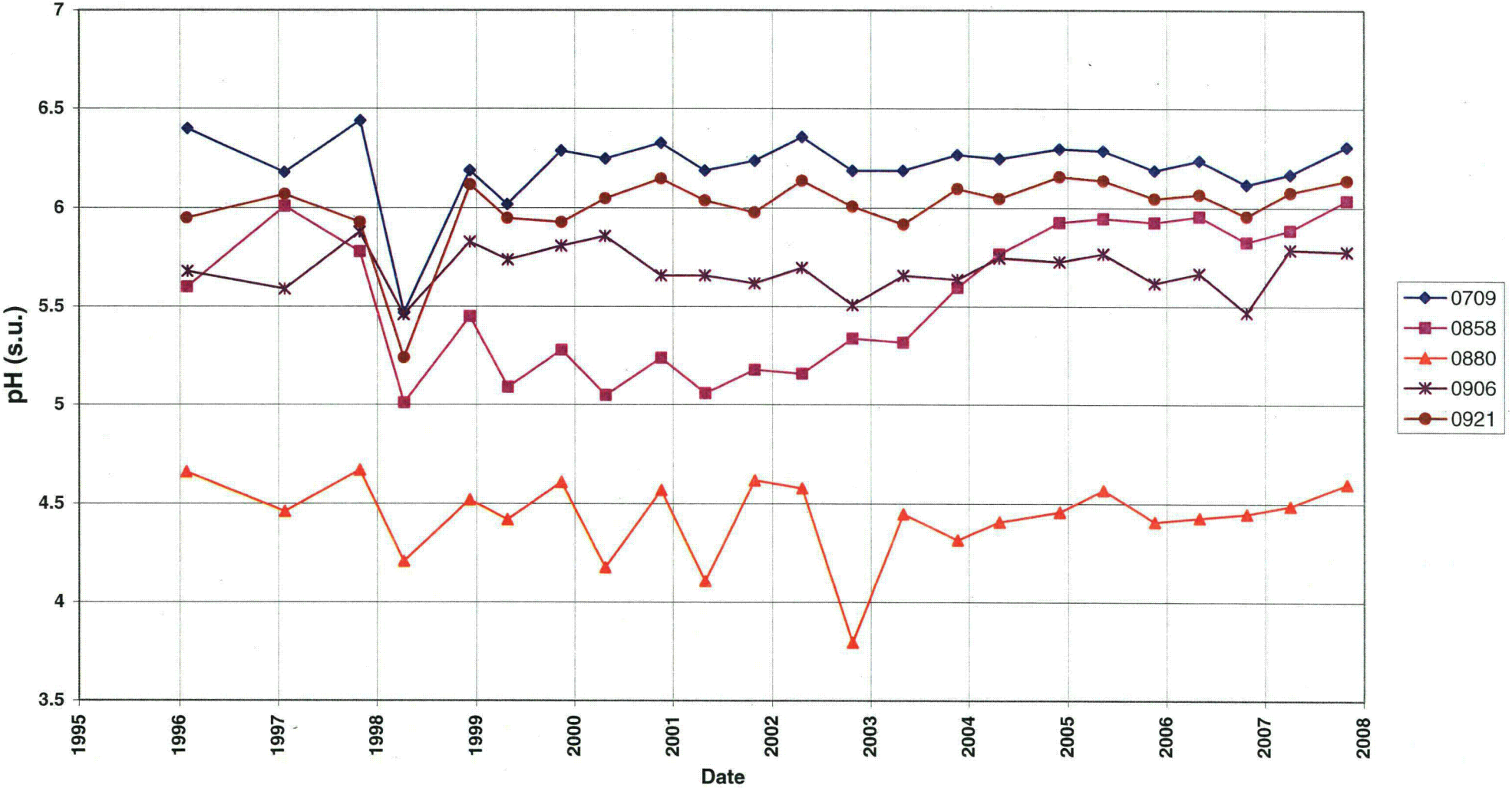
Hydrograph

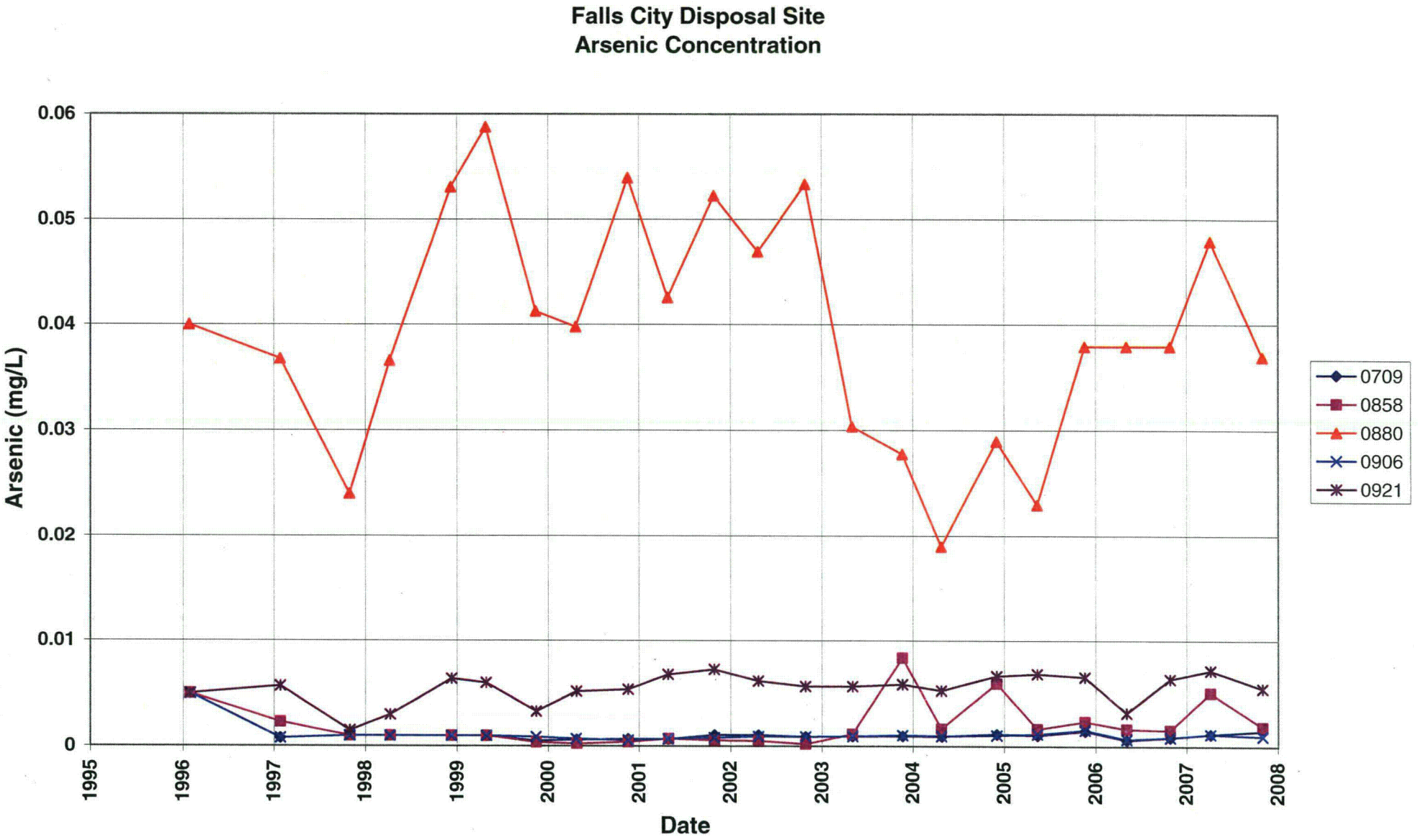
Falls City Disposal Site
Hydrograph



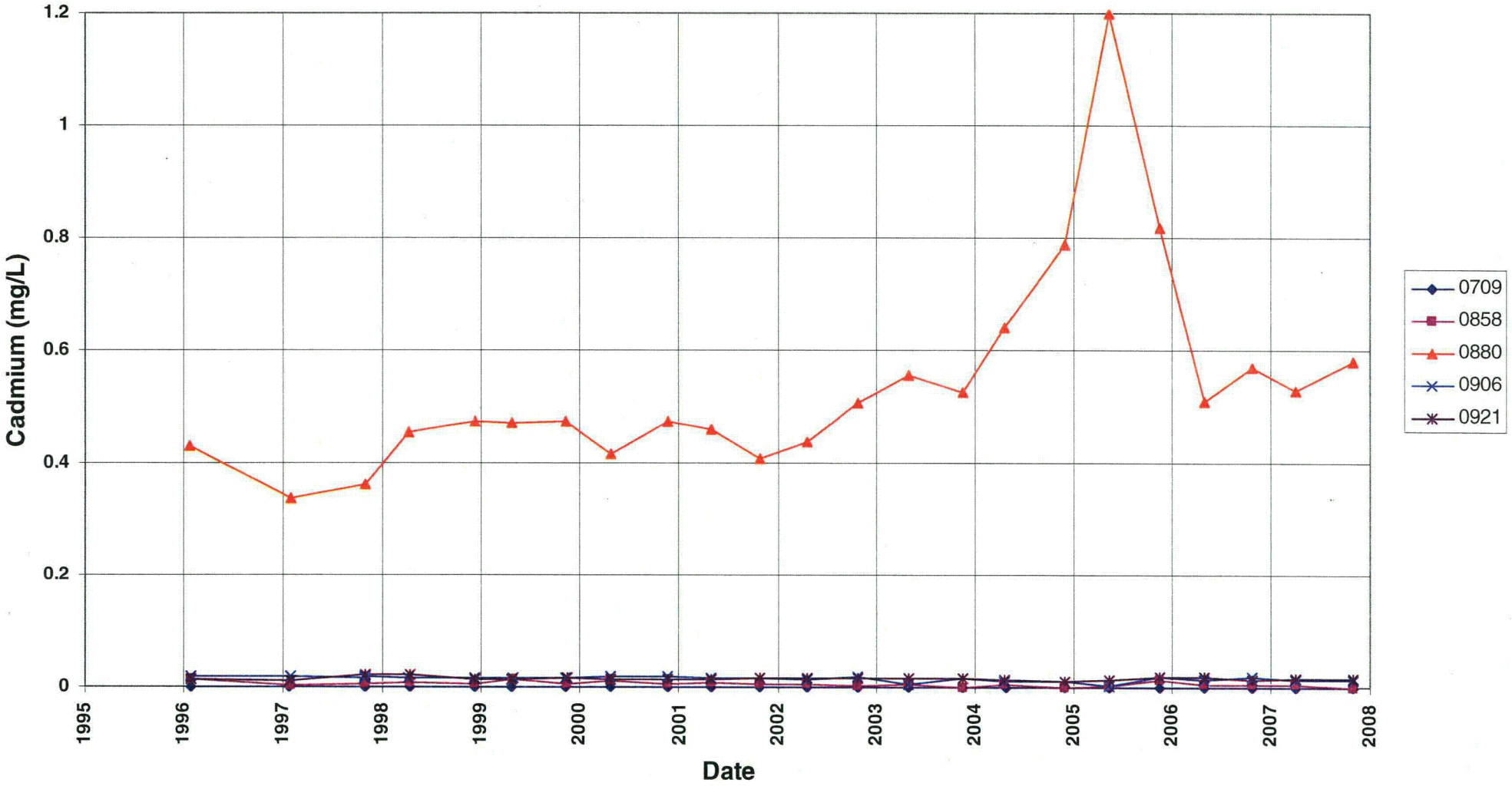
Time Versus Concentration Graphs

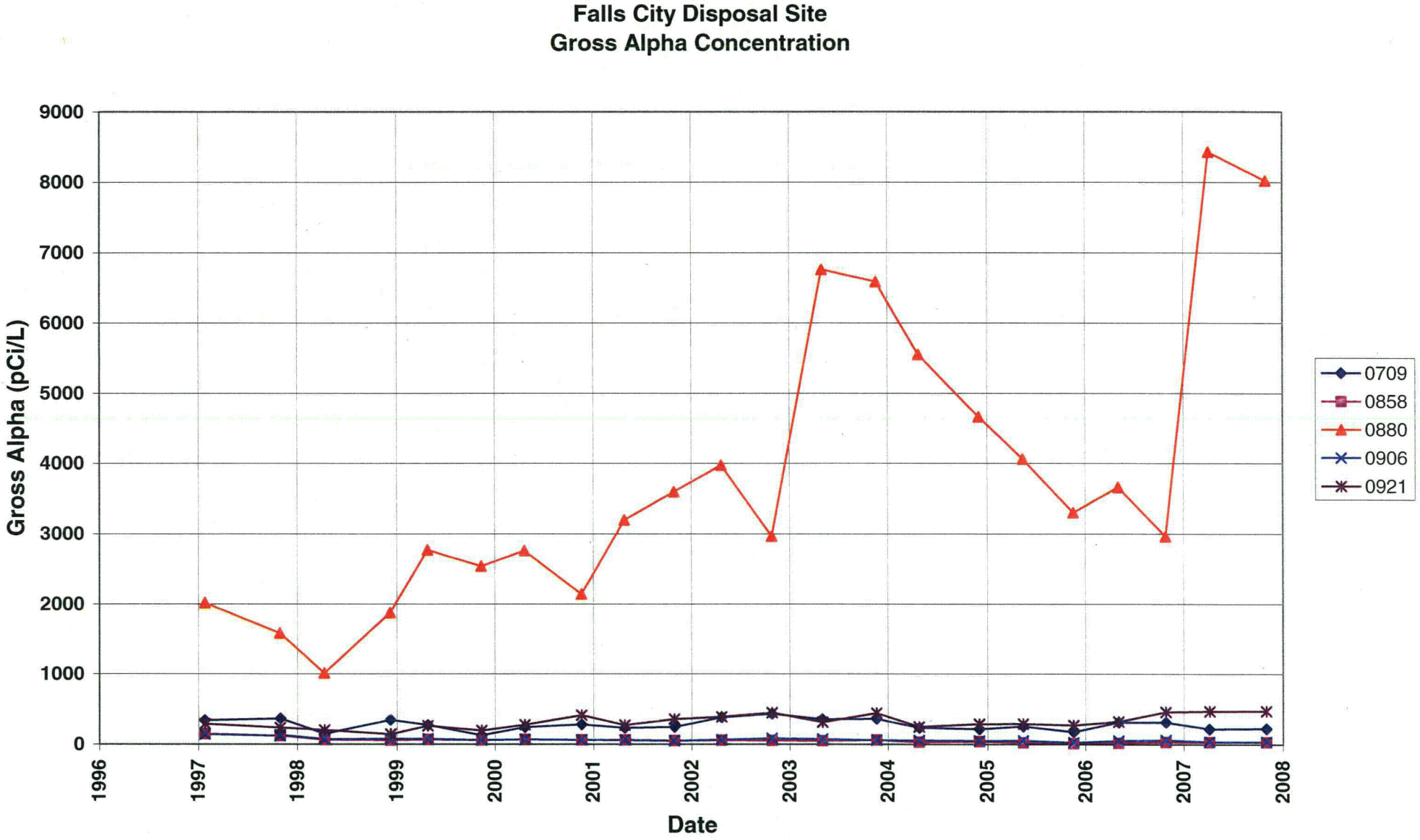
Falls City Disposal Site
pH Value

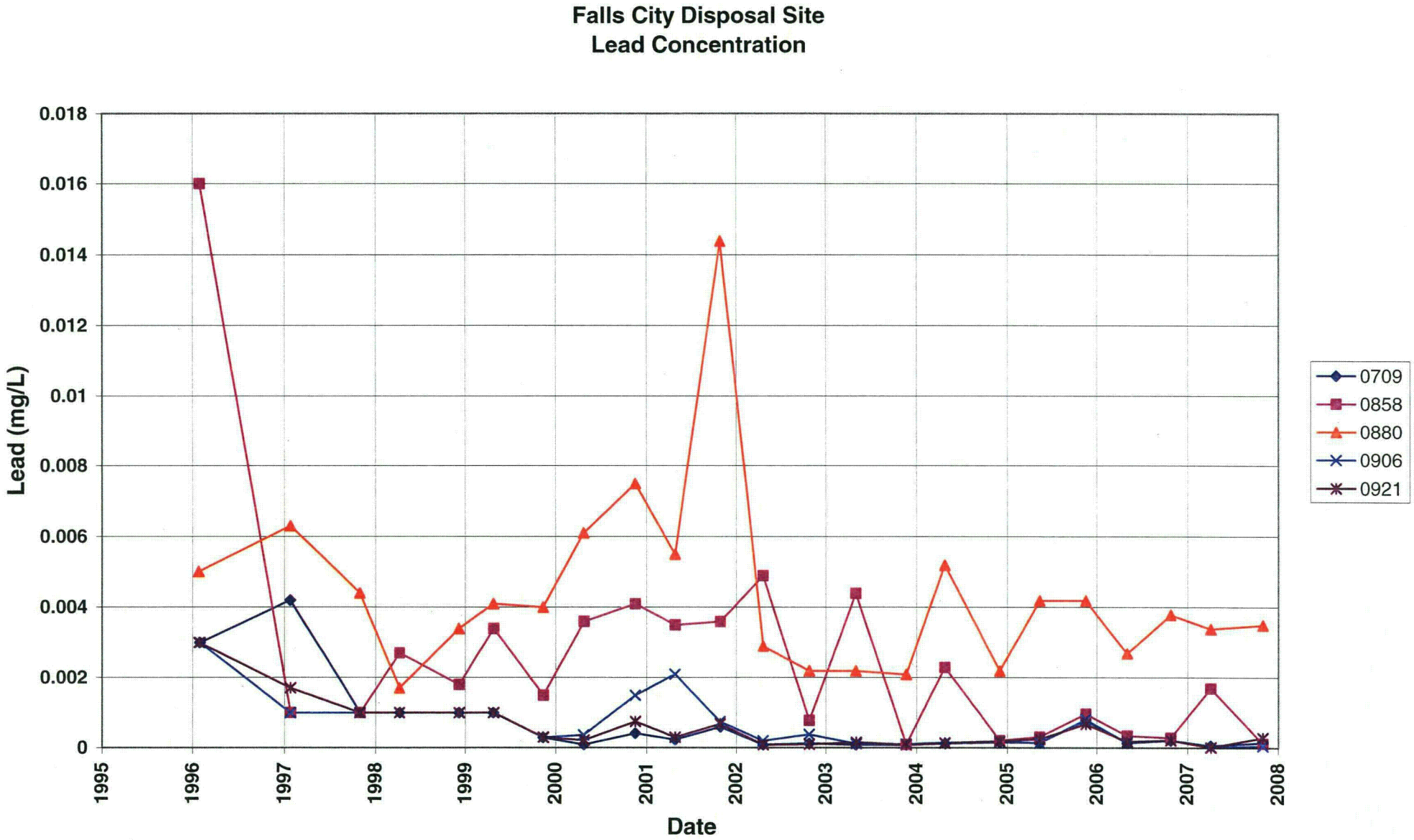



Falls City Disposal Site
Arsenic Concentration
Arsenic (mg/L)
0.06
0.05
0.04
0.03
0.02
0.01
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
0709
0858
0880
0906
0921

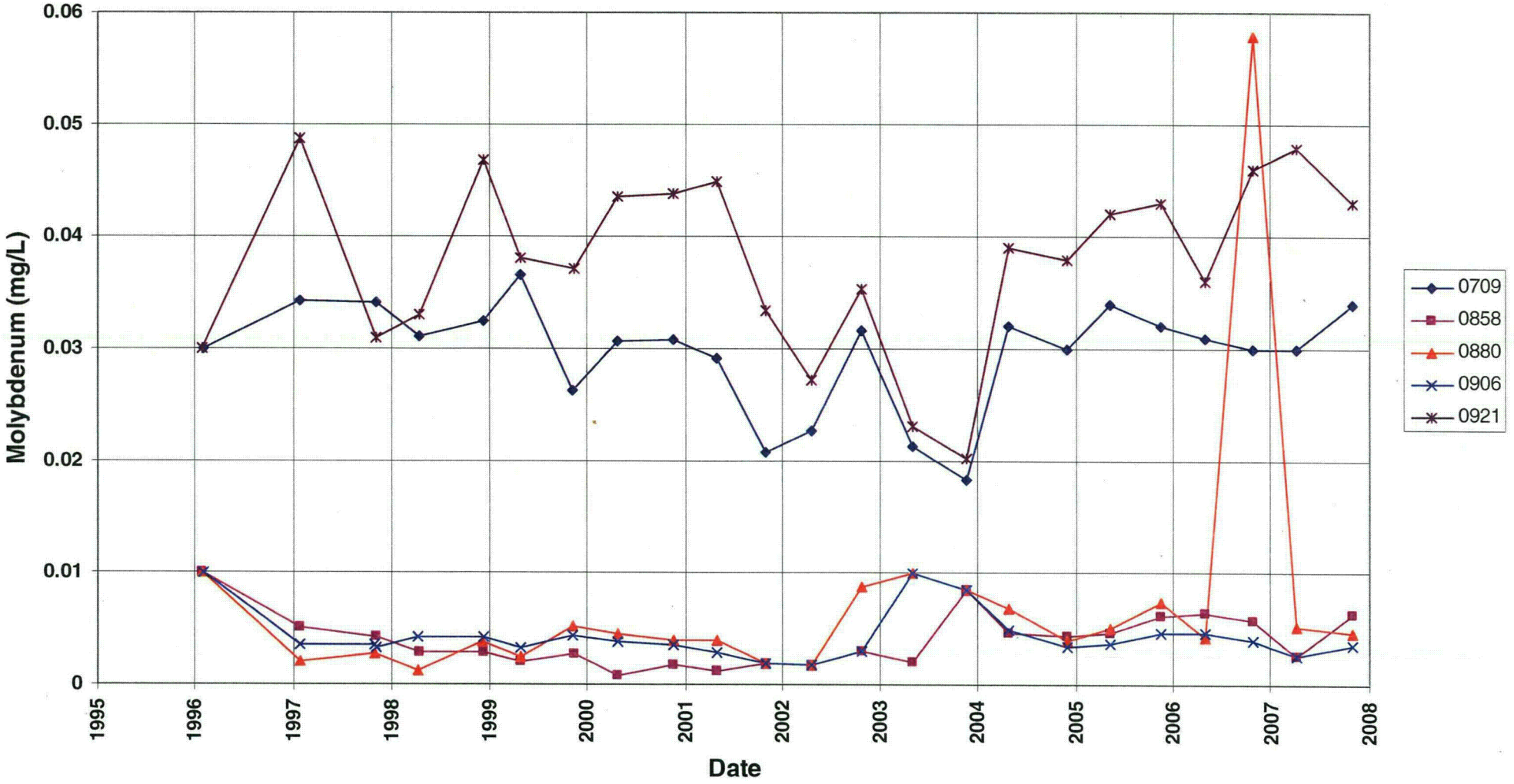
Falls City Disposal Site
Cadmium Concentration



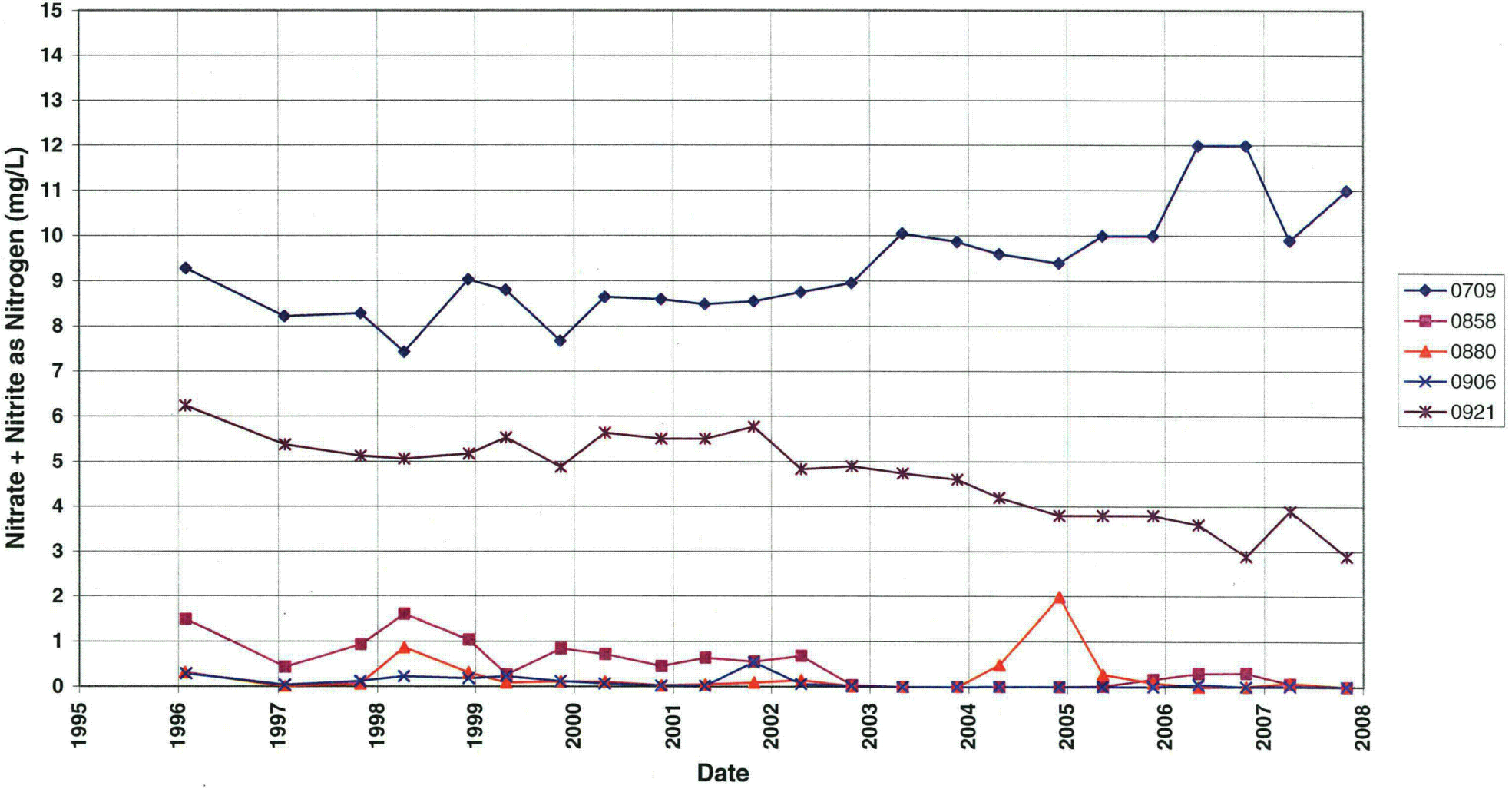

Falls City Disposal Site
Gross Alpha Concentration
Gross Alpha (pCi/L)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
0709
0858
0880
0906
0921

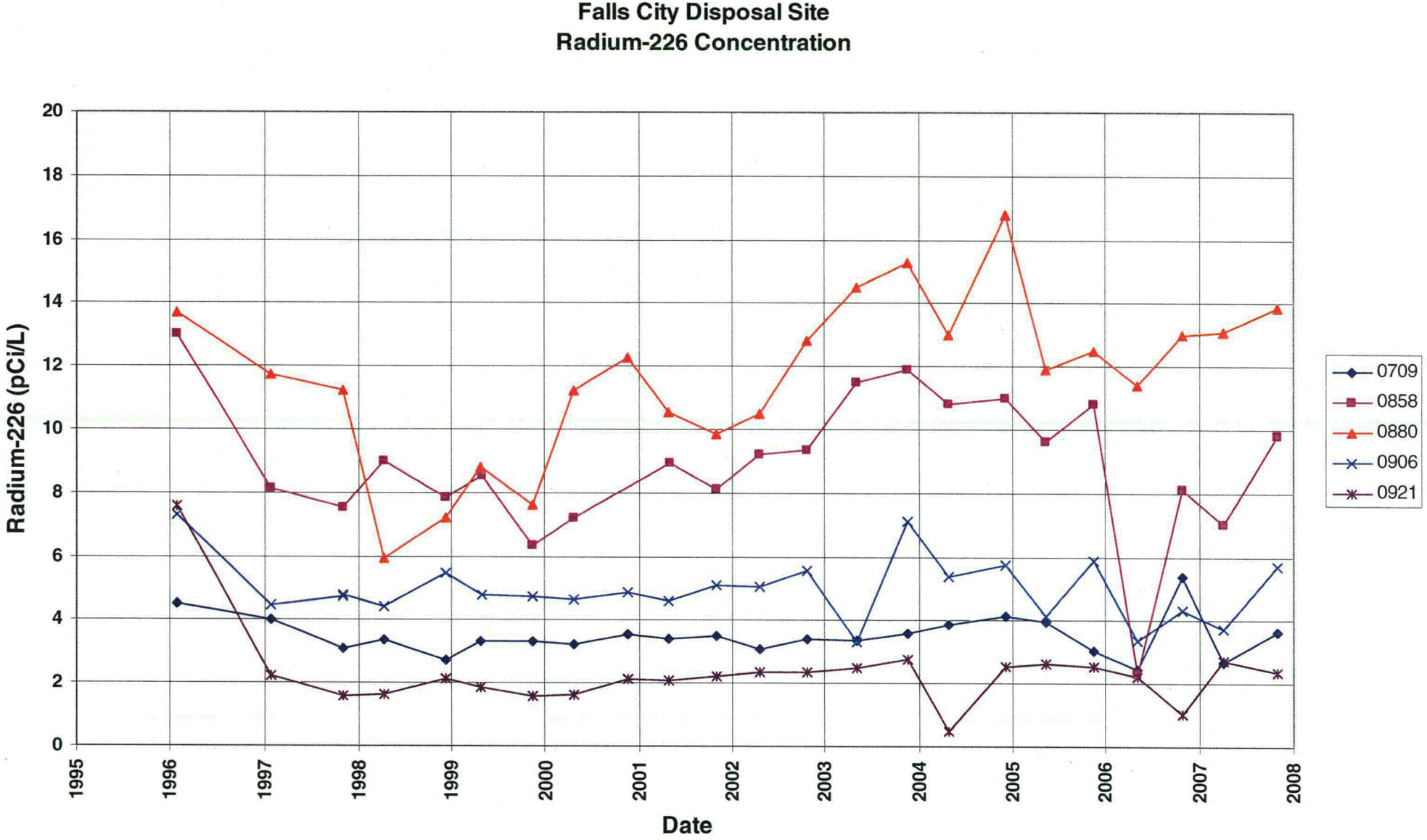

Falls City Disposal Site
Lead Concentration
Lead (mg/L)
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
0709
0858
0880
0906
0921

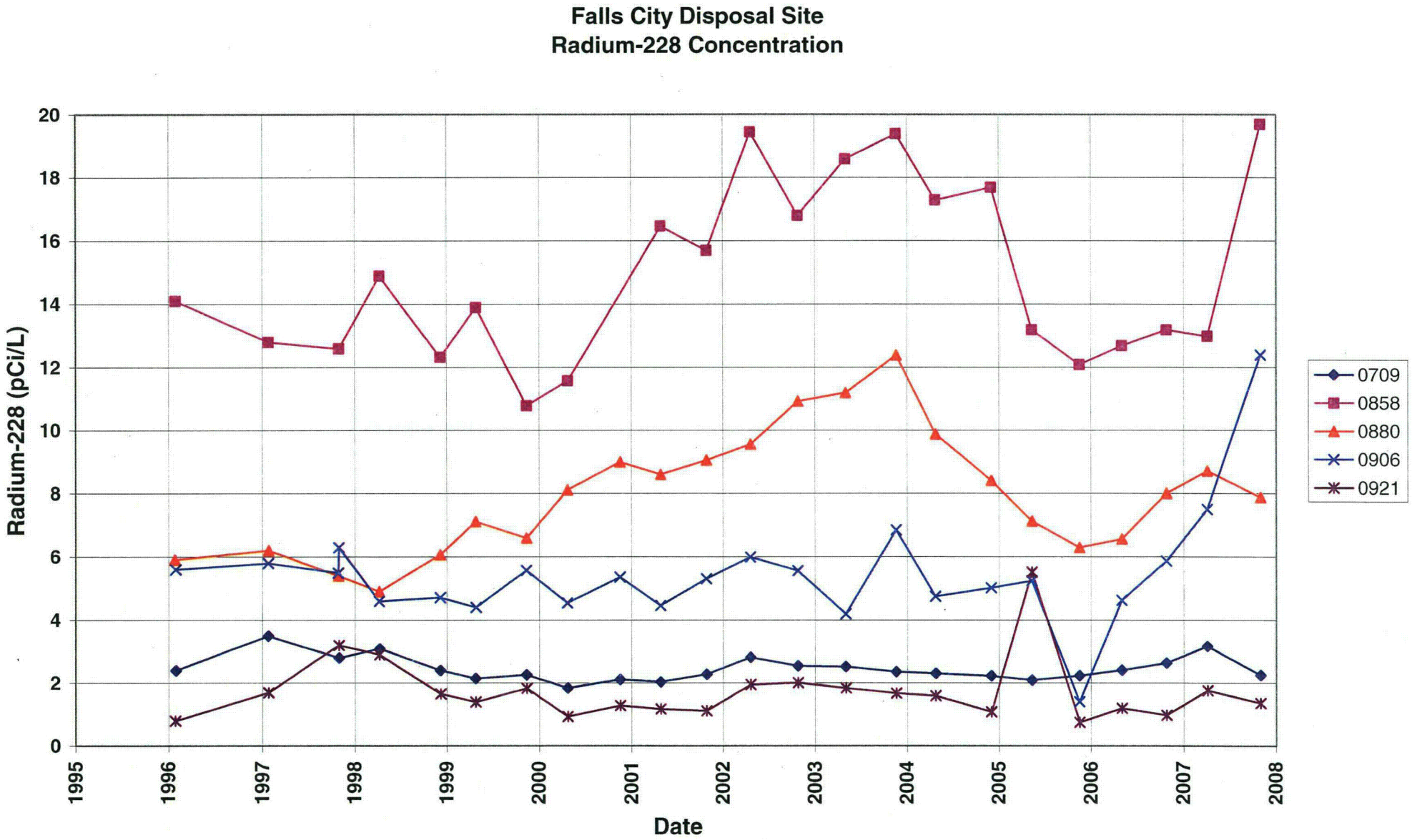
Falls City Disposal Site
Molybdenum Concentration



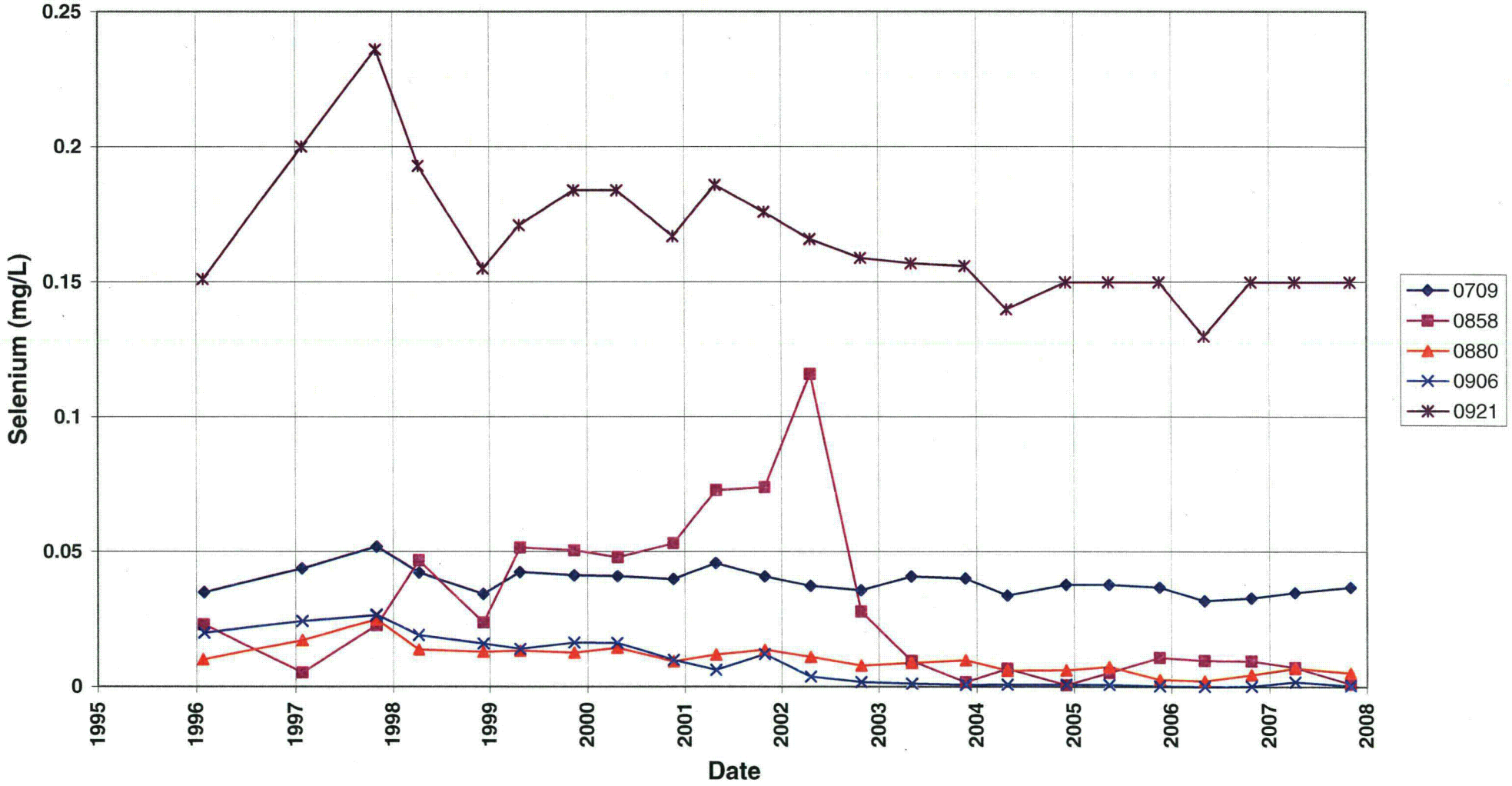
Falls City Disposal Site
Nitrate + Nitrite as Nitrogen Concentration



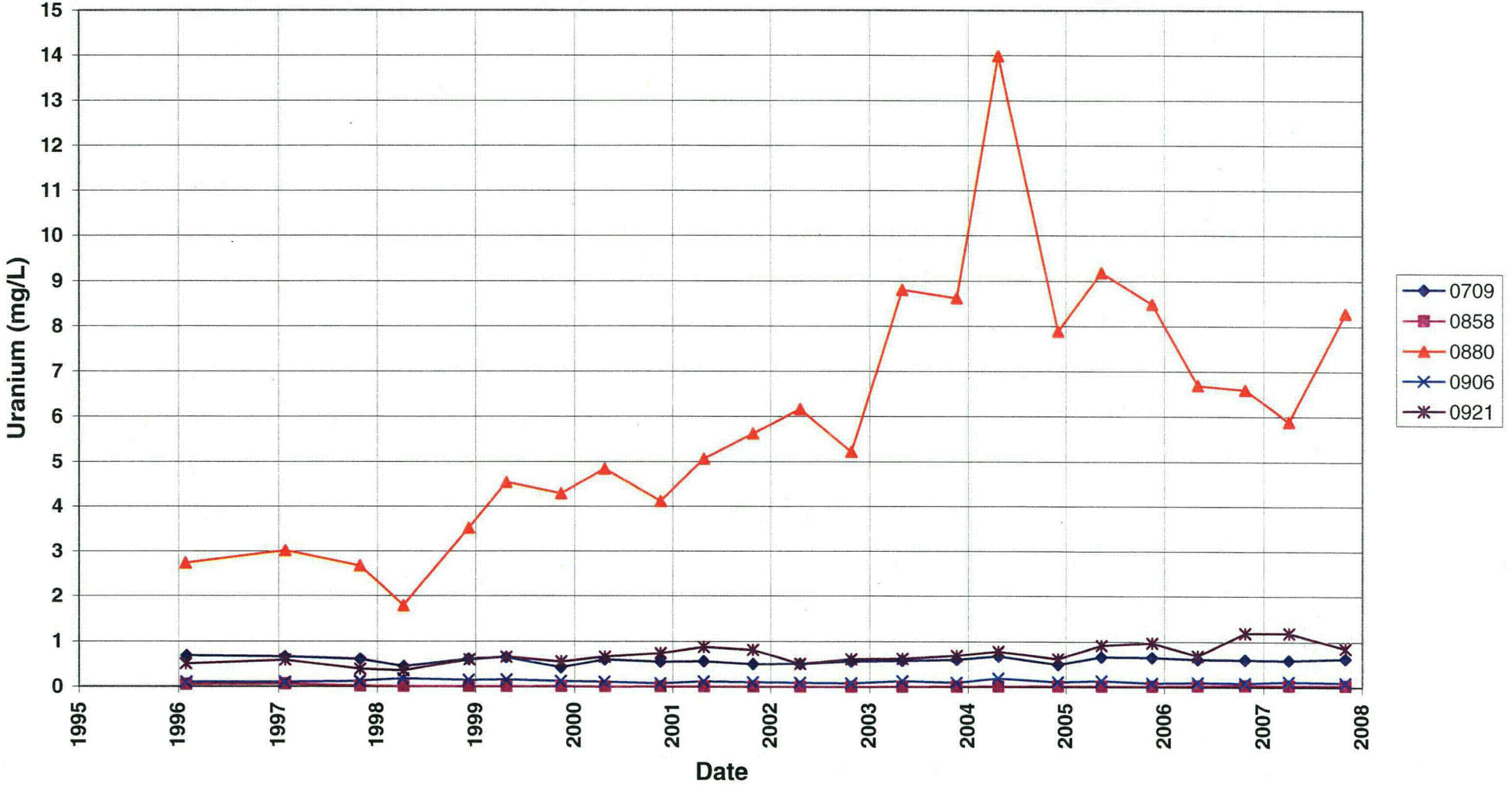

Falls City Disposal Site
Radium-226 Concentration
Radium-226 (pCi/L)
20
18
16
14
12
10
8
6
4
2
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
0709
0858
0880
0906
0921

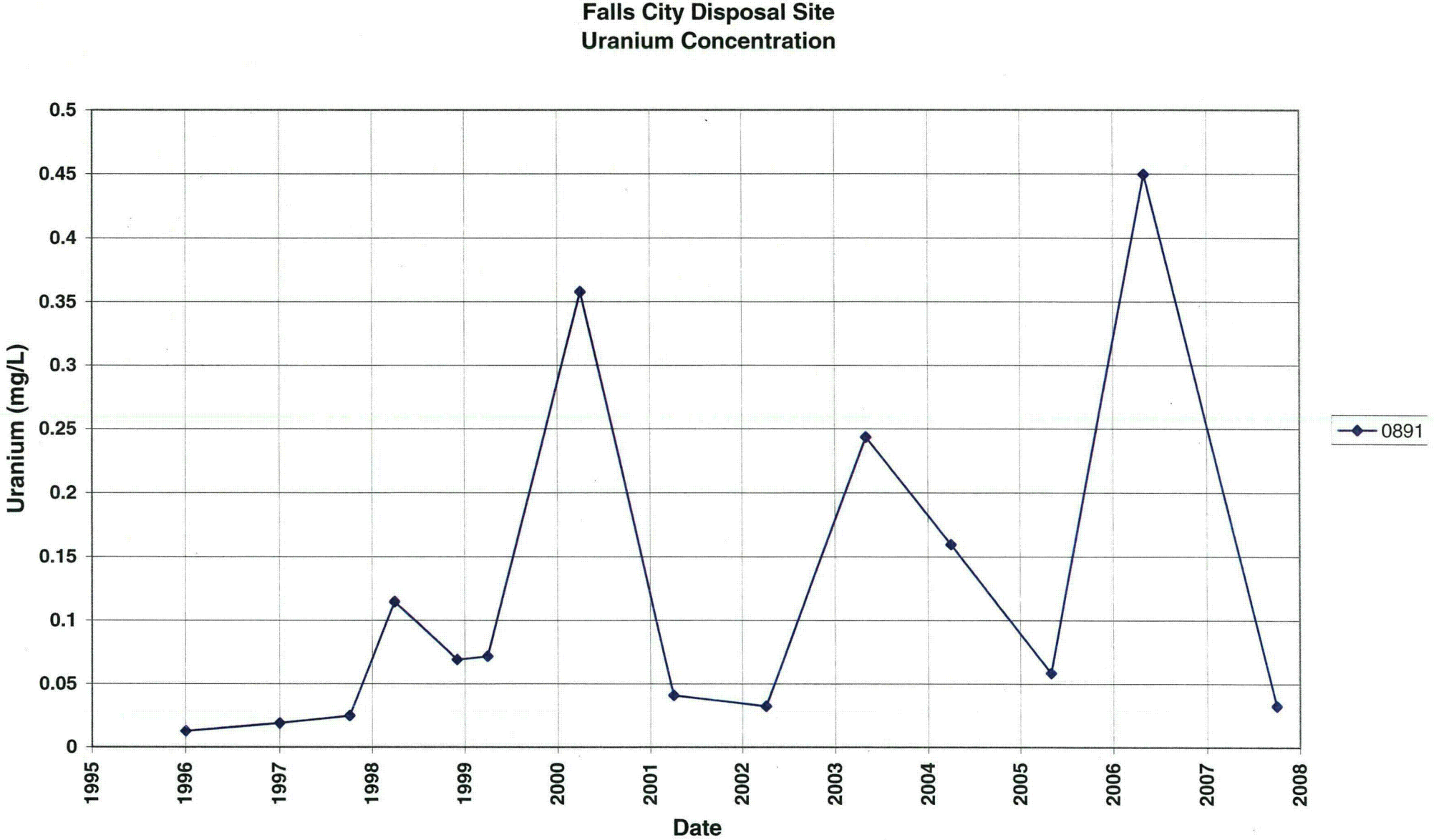

Falls City Disposal Site
Radium-228 Concentration
Radium-228 (pCi/L)
0
2
4
6
8
10
12
14
16
18
20
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
0709
0858
0880
0906
0921

Falls City Disposal Site
Selenium Concentration



Falls City Disposal Site
Uranium Concentration




Falls City Disposal Site
Uranium Concentration
Uranium (mg/L)
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Date
0891

Attachment 3
Sampling and Analysis Work Order

Stoller

established 1959

Task Order ST07-101-05
Control Number 1000-T07-1433

September 20, 2007

Richard P. Bush
Program Manager
U.S. Department of Energy
Grand Junction Office
2597 B ¾ Road
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AC01-02GJ79491, Stoller
October 2007 Environmental Sampling at Falls City, Texas

Reference: FY 2007 LM Task Order No. ST07-101-05

Dear Mr. Bush:

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 routine monitoring at Falls City, Texas. Water quality data will be collected from monitor wells at this site as part of the routine environmental sampling currently scheduled to begin the week of October 22, 2007.

The following list shows the monitor wells scheduled to be sampled during this event.

Monitor Wells (filtered)*

709 Cq/Ct	858 Cq	880 De	906 Cq	908 Cq	916 Cq	921 Cq

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

QA/QC 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.

If you have any questions, please call me at (937) 847-8350, extension 320.

Sincerely,

Robert Ransbottom
Project Manager

RR/lcg/mat
Enclosures (3)

cc: C. I. Bahrke, Stoller
S. E. Donivan, Stoller (e)
B. J. Gallagher, Stoller (e)
L. C. Goodknight, Stoller (e)
EDD Delivery (e)

cc w/o enclosures:
Correspondence Control File (Thru C. Weston)

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Site	Falls City	
Analyte	**Groundwater**	**Surface Water**
Approx No. Samples\yr	19	0
Field Measurements		
Alkalinity	X	
Dissolved Oxygen		
Redox Potential	X	
pH	X	
Specific Conductance	X	
Turbidity	X	
Temperature	X	
Laboratory Measurements		
Aluminum	X	
Ammonia as N (NH3-N)	X	
Antimony	X	
Arsenic	X	
Beryllium	X	
Bromide	X	
Cadmium	X	
Calcium	X	
Chloride	X	
Chromium	X	
Cobalt	X	
Copper	X	
Fluoride		
Gamma Spec		
Gross Alpha	X	
Gross Beta		
Iron	X	
Lead	X	
Lead-210		
Magnesium	X	
Manganese	X	
Molybdenum	X	
Nickel	X	
Nickel-63		
Nitrate + Nitrite as N (NO3+NO2)-N	X	
PCBs		
Phosphate		
Polonium-210		
Potassium	X	
Radium-226	X	
Radium-228	X	
Selenium	X	
Silica		

Analyte	Groundwater	Surface Water
Sodium	X	
Strontium		
Sulfate	X	
Sulfide	X	
Thallium	X	
Thorium-230		
Tin	X	
Total Dissolved Solids	X	
Total Organic Carbon		
Uranium	X	
Uranium-234, -238		
Vanadium	X	
VOCs		
Zinc	X	
Total No. of Analytes	33	0

Note: All analyte samples are considered filtered unless stated otherwise. All private well samples are to be unfiltered. The total number of analytes does not include field parameters.

Attachment 4
Trip Report

Stoller

Grand Junction Office

established 1959

Memorandum

Control Number N/A

DATE: November 8, 2007

TO: Bob Ransbottom

FROM: J. E. Price

SUBJECT: Sampling Trip Report

Site: Falls City, Texas

Dates of Sampling Event: October 29 – November 2, 2007.

Team Members: Joe Trevino and Jeff Price.

Number of Locations Sampled: 6 wells.

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

Field Variance: None.

Quality Control Sample Cross Reference: Following are the false identifications assigned to the quality control samples:

False ID	True ID	Sample Type	Associated Matrix	Ticket Number
2312	0921	Duplicate	Groundwater	NFJ-259

Water Level Measurements: Water level elevations were measured on sampled wells.

Well Inspection Summary: All wells inspected were in satisfactory conditions.

Requisition Number: 07101197.

Equipment: All equipment operated properly. The last remaining water level data logger was removed from the site (well 0891).

Regulatory: None.

Site Issues: The recent brush clearing with a tractor and brush-hog, for access to well locations, was very helpful. This brush clearing activity should continue to be done at least annually.

(JEP/lcg)

cc: J. Maestas, DOE (e)
C. I. Bahrke, Stoller (e)
S. E. Donivan, Stoller (e)
EDD Delivery (e)

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U.S. Department of Energy, Grand Junction Office
Long-Term Surveillance and Maintenance Program

Site Status Report

This form is intended to capture gross site status observations by visitors on the site for purposes other than the annual site inspection. Please record observations for those features you encounter – there is no need to visit features that are not in your work area.

Date of Visit – October 31, 2007.
Purpose of Visit - Routine water sampling at the Falls City, Texas, Disposal Site.

Security/Access Controls
Are access controls intact? *Yes.*
Are signs legible and in acceptable condition? *Yes.*
Do access controls appear effective? *Yes.*
Describe signs of intrusion (human, livestock, wildlife) *None.*

Vegetation
Does site vegetation appear healthy? *Yes.*
Is there encroachment on rip-rap covered areas? *Weed encroachment at usual locations seems to have been controlled well by recent herbicide application.*
Describe possible vegetation concerns. *Brush clearing to create routes to well locations should continue to be done at least annually.*

Containment or Site Integrity
Describe any observations indicating concerns about site integrity. This may include slope stability, impaired drainage structures, erosion, etc. *None.*

Maintenance
Describe observed maintenance needs. *Continued brush clearing activities as mentioned above.*

Health and Safety
Describe observed site health and safety concerns and recommend corrective action. *None.*

Stakeholders
Describe contacts with stakeholders, including landowners, regulators, or local officials. List any concerns.
Spoke with landowners Marilyn Biela and Fabian Neistroy, and vegetation control sub-contractor Rodger Lyssy. Both landowners were pleased that we are still sampling their wells; Rodger Lyssy voiced no concerns.

Form Completed By: *Jeff Price*