Department of Energy
Office of Legacy Management

MAR 0 2 2007

Mr. Paul Michalak
Fuel Cycle Licensing Branch, NMSS
U.S. Nuclear Regulatory Commission
Mail Stop T-8A33
Washington, D.C. 20555-0001

Subject: Transmittal of Data Validation Package for the Falls City, Texas, Disposal Site, October 2006

Dear Mr. Michalak:

Enclosed is the subject document that presents the results of the October 2006 sampling activity at the Department of Energy (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 the *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 call me at (513) 648-3148, or e-mail me at jane.powell@lm.doe.gov if you have any questions.

Sincerely,

Jane Powell

Jane Powell
Site Manager

Enclosure (3)

cc w/enclosure:
P. Bobeck, State of Texas
Falls City Public Library

cc w/o enclosure:
V. Kothari, DOE-LM/20
R. Ransbottom, Stoller
File FCT 410.02 (D. Roberts)

DOE–LM/1411–2007

Data Validation Package

October 2006
Falls City, Texas, Disposal Site

January 2007

U.S. Department of Energy
Office of Legacy Management

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for the U.S. Department of Energy Office of Legacy Management.
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Contents

Sampling Event Summary 1
Falls City, Texas, Sample Location Map 3
Data Assessment Summary 4
Water Sampling Field Activities Verification Checklist 5
Laboratory Performance Assessment 7
Sampling Quality Control Assessment 20
Certification 21

Attachment 1—Assessment of Anomalous Data

Minimums and Maximums Report
Anomalous Data Review Checksheet

Attachment 2—Data Presentation

Ground Water Quality Data
Static Water Level Data
Hydrograph
Time Versus Concentration Graphs

Attachment 3—Sampling and Analysis Work Order

Attachment 4—Trip Report

Sampling Event Summary

Site: Falls City, Texas, Disposal Site

Sampling Period: October 25, 2006

Five ground water samples were collected at the Falls City, Texas, Disposal Site 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; July 1997).

Sampling and analysis was conducted as specified in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (DOE 2006). One duplicate sample was collected from location 0906. Water levels were measured at each sampled well.

The monitoring network consists of seven wells: 0709, 0858, 0880, 0906, 0908, 0916, and 0921. Historically, wells 0908 and 0916 have not produced water and were confirmed as dry. These wells are located updip on the outcrop and are completed above the notable saturated interval in the formation. Water levels in the remaining wells decreased since the May 2006 sampling event. The water level has been trending lower at four wells (0709, 0858, 0880, 0921) adjacent to the cell since 1996; this may have been caused by dissipation of a legacy ground water mound.

The Falls City disposal cell is located near former open pit uranium mines in a geochemically active environment. Remnant uranium mineralization is being redistributed through recharge by oxidizing meteoric water at the formation outcrop immediately updip of the site. Superimposed on this naturally occurring environment is contamination that may be related to processing activities. Ground water in the uppermost aquifer is of poor quality and is not used locally as a potable source because it cannot reasonably be treated. Therefore, it is classified as Class III (limited use), and narrative supplemental standards were applied for cell performance and ground water compliance monitoring. There are no numerical concentration limits or points of compliance associated with narrative supplemental standards.

U.S. Department of Energy (DOE) monitors trends in ground water chemistry at the locations sampled during this event as an indication of initial cell performance, as stipulated in Section 5.2.3 of the LTSP. The LTSP establishes 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 ground water quality, and mobility of contaminants of concern generally increase as pH decreases. (As an aside, uranium concentrations in ground water near the former tailings piles were, in places, an order of magnitude higher than uranium concentrations in the tailings pore fluids from those piles, indicating that the source included remnant uranium mineralization at the site and was not solely related to processing operations.)

The pH values for all wells were found to be consistent with older data with slight decreases observed at most locations. The pH values remain above the lower 95th percentile and do not trigger a disposal cell performance evaluation.

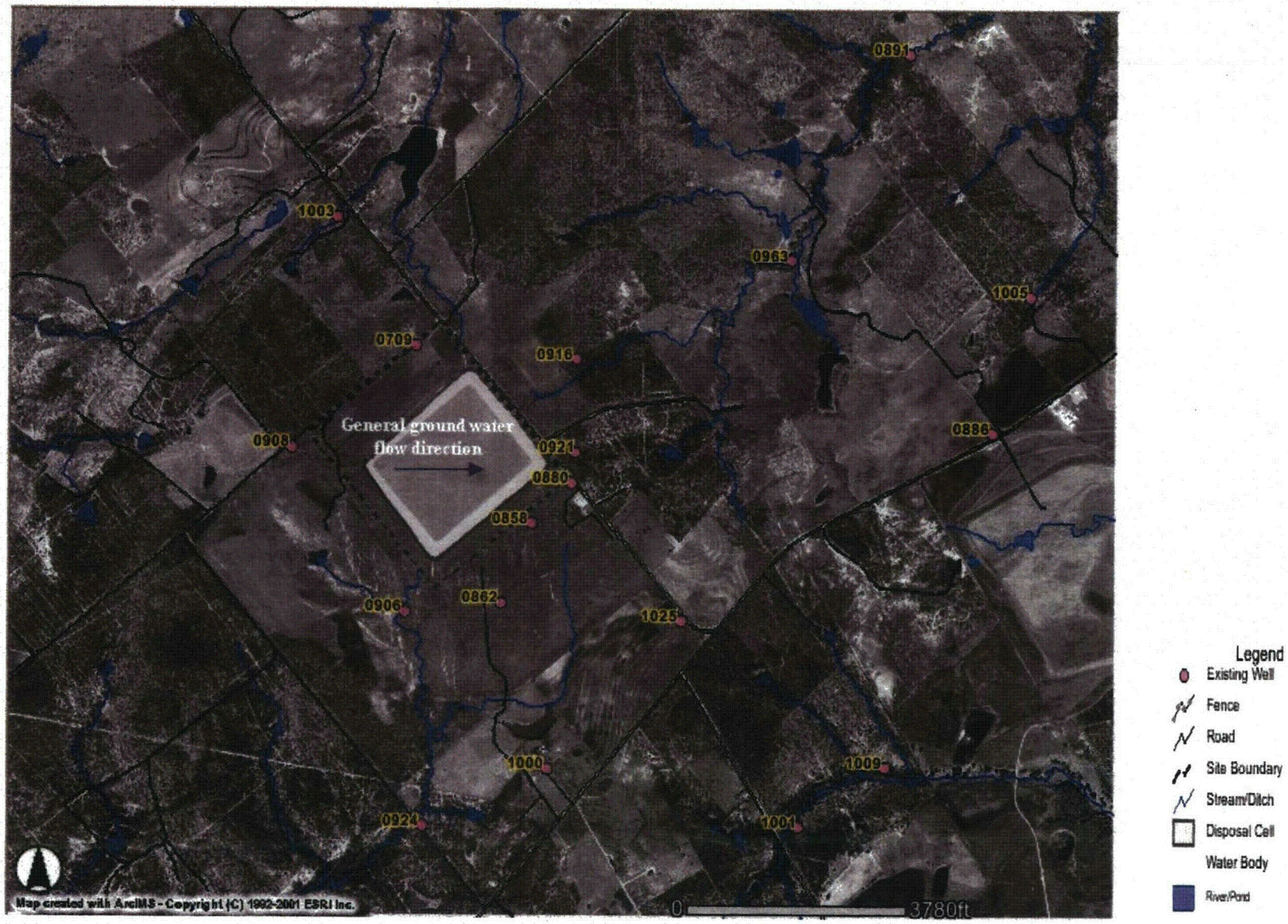
At well 0880, cadmium, gross alpha, radium, uranium, and vanadium levels have historically been higher and pH has generally been lower than the other wells in this monitoring network. The Remedial Action Plan states that "the distribution of other hazardous constituents...shows isolated points of elevated concentrations... [that] are contributed by the natural redistribution of mineralization rather than tailings seepage." Because these trends have persisted since before 1994 when the cell was completed and ground water at other nearby wells does not show similar concentrations of these analytes, the elevated concentrations at well 0880 are likely due to causes not related to disposal cell performance.

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.

Robert C Ransbottom

Robert Ransbottom
Site Lead, S.M. Stoller

1/16/07
Date



Falls City, Texas, Sample Location Map

Data Assessment Summary

Water Sampling Field Activities Verification Checklist

Project	Falls city, Texas	**Date(s) of Water Sampling**	October 25, 2006
Date(s) of Verification	December 27, 2006	**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 October 2, 2006.
2. Were the sampling locations specified in the planning documents sampled?	Yes	Wells 0908 and 0916 were verified dry.
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	Pre-trip calibration performed on October 17, 2006.
4. Was an operational check of the field equipment conducted twice daily?	Yes	Operational checks at 0830 and 1530 on October 25, 2006.
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	No alkalinity measured at location 0880, pH = 4.45.
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:	NA	
Was the flow rate less than 500 mL/min?		
Was one pump/tubing volume removed prior to sampling?		
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	No	All wells were sampled using the low-flow procedure with dedicated bladder pumps.
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	Duplicate sample from location 0906 assigned number 2276.
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?	No	Aliquots for sulfide analysis preserved by the lab upon receipt.
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):	06100526
Sample Event:	October 25, 2006
Site(s):	Falls City, Texas
Laboratory:	Paragon Analytics
Work Order No.:	0610216
Analysis:	Metals and Inorganics
Validator:	Steve Donivan
Review Date:	December 21, 2006

This validation was performed according to the *Environmental Procedures Catalog* (STO 6), "Standard Practice for Validation of Laboratory Data," GT-9(P) (2006). The procedure was applied at Level 3, Data Deliverables Verification. 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, Cobalt, Chromium, Copper, Potassium, Magnesium, Sodium, Nickel, Tin, Zinc	MET-A-020	SW-846 3005A	SW-846 6010B
Ammonia as N, NH_3-N	WCH-A-005	NA	MCAWW 350.1
Arsenic	GJO-13	SW-846 3005A	SW-846 6020A
Bromide	MIS-A-033	SW-856 9056	SW-856 9056
Cadmium, Lead, Antimony, Thallium	MET-A-026	SW-846 3005A	SW-846 6020
Chloride	MIS-A-039	SW-856 9056	SW-856 9056
Gross Alpha/Beta	GPC-A-001	SOP702R16	SPO724R8
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 SOP774R8	PA SOP774R8
Radium-228	GPC-A-020	PA SOP746R7	PA SOP724R8
Selenium	GJO-14	SW-846 3005A	SW-846 6020A
Sulfate, SO_4	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
All	All	Al	J	No matrix spike performed
All	All	Be	J	No matrix spike performed
All	All	Ca	J	No matrix spike performed
All	All	Co	J	No matrix spike performed
All	All	Cr	J	No matrix spike performed
All	All	Cu	J	No matrix spike performed
All	All	Fe	J	No matrix spike performed
All	All	K	J	No matrix spike performed
All	All	Mg	J	No matrix spike performed
All	All	Mn	J	No matrix spike performed
All	All	Na	J	No matrix spike performed
All	All	Ni	J	No matrix spike performed
All	All	Sn	J	No matrix spike performed
All	All	Zn	J	No matrix spike performed
All	All	Tl	J	Matrix spike failure
0610216-1	0709	Al	U	Less than 5 times the calibration blank
0610216-1	0709	Be	U	Less than 5 times the calibration blank
0610216-1	0709	Cd	U	Less than 5 times the calibration blank
0610216-1	0709	Pb	U	Less than 5 times the calibration blank
0610216-1	0709	Mn	U	Less than 5 times the calibration blank
0610216-1	0709	Sb	U	Less than 5 times the calibration blank
0610216-1	0709	Zn	U	Less than 5 times the calibration blank
0610216-2	0858	Al	U	Less than 5 times the calibration blank
0610216-2	0858	Pb	U	Less than 5 times the calibration blank
0610216-2	0858	Sb	U	Less than 5 times the calibration blank
0610216-3	0880	V	J	Interference check failure
0610216-4	0906	Al	U	Less than 5 times the calibration blank
0610216-4	0906	Pb	U	Less than 5 times the calibration blank
0610216-4	0906	Sb	U	Less than 5 times the calibration blank
0610216-4	0906	Se	U	Less than 5 times the calibration blank
0610216-4	0906	Zn	U	Less than 5 times the calibration blank
0610216-5	0921	Al	U	Less than 5 times the calibration blank
0610216-5	0921	Pb	U	Less than 5 times the calibration blank
0610216-5	0921	Ra-226	J	Less than 3 times the MDC
0610216-5	0921	Ra-228	J	Less than 3 times the MDC
0610216-5	0921	Sb	U	Less than 5 times the calibration blank
0610216-5	0921	V	J	Interference check failure
0610216-5	0921	Zn	U	Less than 5 times the calibration blank

Table 2 (continued). Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
0610216-6	2276 (0906 Dup)	Al	U	Less than 5 times the calibration blank
0610216-6	2276 (0906 Dup)	Pb	U	Less than 5 times the calibration blank
0610216-6	2276 (0906 Dup)	Sb	U	Less than 5 times the calibration blank
0610216-6	2276 (0906 Dup)	Se	U	Less than 5 times the calibration blank
0610216-6	2276 (0906 Dup)	V	J	Interference check failure
0610216-6	2276 (0906 Dup)	Zn	U	Less than 5 times the calibration blank

Sample Shipping/Receiving

Paragon Analytics in Ft. Collins, Colorado, received six water samples on October 27, 2006, 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 cool and intact with the temperature within the iced cooler of 3.6° C, which complies with requirements. All samples were received in the correct container types and were preserved correctly for the requested analyses and all samples were analyzed within the applicable holding times. The sample bottles collected for the determination of sulfide were not preserved at the time of collection because the required preservative was not available. The laboratory preserved these aliquots upon receipt as instructed by the Laboratory Coordinator.

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 SW-846 6010B

Calibrations for method 6010B analytes were performed on November 2, 2006, (November 27, 2006, for beryllium). The initial calibrations were performed using four calibration standards resulting in calibration curves where the absolute value of the curve intercept was less than three times the method detection limit (MDL). Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration

verification checks (CCVs) were made at the required frequency resulting in 19 CCVs. All initial and CCV 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 practical quantitation limit with the results within the acceptance range.

Method SW-846 6020A

Calibrations for vanadium were performed on November 9, 2006; for antimony, cadmium, lead, molybdenum, thallium, and uranium on November 13, 2006; and for arsenic and selenium on October 31, 2006. The initial calibrations were performed using six calibration standards resulting in calibration curves where the absolute values of the curve intercepts were less than three times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and CCV checks were made at the required frequency. All initial and continuing calibration verification results were within the acceptance range with the exception of for CCV1 and CCV2 for molybdenum. There were no samples associated with these CCVs. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curves near the practical quantitation limit. The results were within the acceptance range with the exception of vanadium. Vanadium results that are less than five times the practical quantitation limit are qualified with a "J" flag as estimated values. 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 six calibration standards on November 2, 2006. The calibration curve correlation coefficient (r^2) values were greater than 0.995 and the intercepts were less than three times the MDL. Initial calibration and calibration check standards were prepared from independent sources. Initial and CCV checks were made at the required frequency resulting in seven CCVs. All calibration checks met the acceptance criteria.

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 NH_3-N was performed using six calibration standards on November 9, 2006, resulting in a calibration curve r^2 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 three CCVs that met the acceptance criteria.

Method MCAWW 353.2

The initial calibration for NO_3+NO_2-N was performed using seven calibration standards on October 31, 2006, and November 2, 2006, resulting in calibration curve r^2 values greater than 0.995 and intercepts less than three times the MDL. Initial and continuing calibration checks were made at the required frequency resulting in eight CCVs that met the acceptance criteria.

Method MCAWW 376.1
The initial standardizations for sulfide were performed on November 1, 2006. Initial calibration checks were made at the required frequency resulting in one initial calibration verification (ICV) that met the acceptance criteria.

Radiochemical Analysis

Radiochemical results are qualified with a "J" flag (estimated) when the result is greater than the minimum detectable concentration (MDC), but less than three 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 total propagated uncertainty (TPU).

Gross Alpha/Beta
Plateau calibrations were performed on January 23, 2006. Alpha and beta attenuation calibrations were performed on February 21, 2006, covering a range of 0 milligrams (mg) to 204 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 September 19, 2006, and cell efficiency calibrations were performed on September 20, 2006. Daily efficiency calibration and background checks were performed on November 15, 2006. All calibration data met the acceptance criteria. All chemical tracer recoveries were within the acceptance range.

Radium-228
Plateau voltage determinations were performed on January 23, 2006, and detector efficiency calibrations were performed on April 26, 2006. Daily efficiency calibration and background checks were performed on November 15, 2006. All calibration data met the acceptance criteria. All chemical tracer recoveries were within the acceptance range.

Method and Calibration Blanks

All method, initial, and continuing calibration blank (CCB) results were below the practical quantitation limits for all analytes with the exception of CCB1 and CCB2 for molybdenum, CCB1 for uranium, CCB1 for chloride, and CCB2 for nitrate. There were no samples less than ten times the blank concentration associated with these CCBs. In cases where blank concentration exceeded the instrument detection limit, the associated sample results are qualified with a "U" flag (not detected) when the sample result is greater than the MDL but less than five times the blank concentration. All radiochemical method blank results were below the minimum detectable concentration.

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 with the exception of vanadium. Vanadium results that are greater than the MDL are qualified with a "J" flag as estimated values.

Matrix Spike Analysis

Matrix spike and matrix spike duplicate samples (MS/MSD) were analyzed for all analytes (when required) as a measure of method performance in the sample matrix with the exception of method 6010B analytes. Results for these analytes are qualified with a "J" flag as estimated values. MS/MSD data were not evaluated for chloride, nitrate, and sulfate because the concentration of the unspiked sample was greater than four times the spike concentration. The MS/MSD analyses resulted in acceptable recovery and precision for all analytes evaluated with the exception of thallium. The thallium results are qualified with a "J" flag as estimated values.

Laboratory Replicate Analysis

The laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference (RPD) values for the laboratory replicate samples and matrix spike duplicate sample results for non-radiochemical analytes were less than 20 percent with the exception of zinc. The zinc results that are greater than the method detection limit are qualified with a "J" flag as estimated values. The radiochemical relative error ratio for all laboratory replicate samples was less than three.

Laboratory Control Sample

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 all method 6010B and 6020A analytes to monitor chemical or physical interferences in the sample matrix. The serial dilution results were not evaluated in cases where the concentration of the undiluted sample was less than 100 times the method detection limit. All serial dilution results were within the acceptance range.

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 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.

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 a relative percent difference calculation. Typically, a charge balance difference of 10 percent is considered acceptable. The charge balance difference for all wells is less than ten percent indicating acceptable sampling and analysis performance.

Table 3. Comparison of Major Cations and Anions

Well	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
0709	105.78	112.46	3.06
0858	121.82	140.63	7.17
0880	348.34	381.08	4.49
0906	126.91	140.83	5.20
0921	124.93	140.01	5.69

Electronic Data Deliverable File

The Electronic Data Deliverable (EDD) file arrived on December 11, 2006, and the data loaded into SEEPro on December 27, 2006. 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.

SAMPLE MANAGEMENT SYSTEM
General Data Validation Worksheet

RIN: 06100526 **Lab Code:** PAR **Validator:** Steve Donivan **Validation Date:** 12/18/2006

Site: FALLS CITY **Analysis Type:** ☑ Metals ☑ General Chem ☑ Rad ☐ Oraganics

# of Samples: 6 **Matrix:** WATER **Requested Analysis Completed:** Yes

Chain of Custody
Present: OK **Signed:** OK **Dated:** OK

Sample
Integrity: OK **Preservation:** OK **Temperature:** OK

Exceptions

Method	Analyte	Location	Ticket	Collection Date	Preparation Date	Analysis Date	Dilution Factor	Holding Time Met	Detection Limit Met
SOP724R9	GROSS BETA	858	NFA 839	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS ALPHA	858	NFA 839	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS BETA	880	NFA 837	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS ALPHA	709	NFA 842	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS ALPHA	880	NFA 837	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS BETA	906	NFA 838	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS ALPHA	906	NFA 838	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS BETA	921	NFA 841	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS ALPHA	921	NFA 841	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS BETA	2276	NFA 840	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS ALPHA	2276	NFA 840	10/25/2006	11/27/2006	12/2/2006	1	Yes	No
SOP724R9	GROSS BETA	709	NFA 842	10/25/2006	11/27/2006	12/2/2006	1	Yes	No

Comments:
All samples were analyzed within the applicable holding times.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 06100526 **Lab Code:** PAR **Date Due:** 11/24/2006

Matrix: Water **Site Code:** FCT **Date Completed:** 12/14/2006

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	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						101.0		103.0
Aluminum	11/02/2006												101.0		
Antimony	11/13/2006	0.0000	1.0000	OK	OK	OK	OK			96.0	97.0	1.0	104.0		97.0
Arsenic	10/31/2006	0.0000	1.0000	OK	OK	OK	OK	OK	94.0				97.0		86.0
Arsenic	10/31/2006	0.0000	1.0000										104.0		86.0
Beryllium	11/27/2006	0.0000	1.0000	OK	OK	OK	OK						87.0		99.8
Beryllium	11/27/2006												91.0		
Cadmium	11/13/2006	0.0000	1.0000	OK	OK	OK	OK			87.0	88.0	1.0	97.0		113.0
Calcium	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						105.0		104.0
Calcium	11/02/2006												106.0		
Chromium	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						89.0		101.0
Chromium	11/02/2006												90.0		
Cobalt	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						92.0		101.0
Cobalt	11/02/2006												93.0		
Copper	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						102.0		104.0
Copper	11/02/2006												102.0		
Iron	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						108.0		102.0
Iron	11/02/2006												108.0		

Comments: _____

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 06100526 **Lab Code:** PAR **Date Due:** 11/24/2006

Matrix: Water **Site Code:** FCT **Date Completed:** 12/14/2006

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								
Lead	11/13/2006	0.0000	0.9999	OK	OK	OK	OK			113.0	113.0	0.0	109.0		93.0
Magnesium	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						107.0		105.0
Magnesium	11/02/2006												110.0		
Manganese	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						91.0		87.0
Manganese	11/02/2006												93.0		
Molybdenum	11/13/2006	0.0000	1.0000	OK	OK	OK	OK			107.0	108.0	1.0	117.0		96.0
Nickel	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						90.0		103.0
Nickel	11/02/2006												92.0		
Potassium	11/02/2006	0.0000	1.0000	OK	OK	OK	OK								93.0
Selenium	10/31/2006	0.0000	0.9996	OK	OK	OK	OK	OK	98.0				103.0		100.0
Selenium	10/31/2006	0.0000	0.9995										104.0		127.0
Sodium	11/02/2006	0.0000	1.0000	OK	OK	OK	OK								105.0
Thallium	11/13/2006	0.0000	0.9981	OK	OK	OK	OK			126.0	139.0	1.0	107.0		84.0
Tin	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						98.0		102.0
Tin	11/02/2006												101.0		
Uranium	11/13/2006	0.0000	0.9999	OK	OK	OK	OK			112.0	113.0	0.0	118.0		94.0
Vanadium	11/13/2006	0.0000	0.9999	OK	OK	OK	OK			85.0	90.0	5.0	138.0		61.3
Zinc	11/02/2006	0.0000	1.0000	OK	OK	OK	OK						91.0		109.0

Comments: _____

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 06100526 **Lab Code:** PAR **Date Due:** 11/24/2006

Matrix: Water **Site Code:** FCT **Date Completed:** 12/14/2006

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								
Zinc	11/02/2006												93.0		

Comments: _____

SAMPLE MANAGEMENT SYSTEM
Radiochemistry Data Validation Worksheet

RIN: 06100526 **Lab Code:** PAR **Date Due:** 11/24/2006

Matrix: Water **Site Code:** FCT **Date Completed:** 12/14/2006

Sample	Analyte	Date Analyzed	Result	Flag	Tracer %R	LCS %R	MS %R	Duplicate
0709	Radium-226	11/15/2006			109.0			
0709	Radium-228	11/15/2006			64.2	113.0		
0858	Radium-226	11/15/2006			95.4			
0858	Radium-228	11/15/2006			68.8			
0880	Radium-226	11/15/2006			99.4			
0880	Radium-228	11/15/2006			67.3			
0906	Radium-226	11/15/2006			94.8			
0906	Radium-228	11/15/2006			63.7			
0921	Radium-226	11/15/2006			86.8			
0921	Radium-228	11/15/2006			73.2			
2276	Radium-226	11/15/2006			103.0			
2276	Radium-228	11/15/2006			64.1			
Duplicate	Gross Alpha	12/05/2006						2.90
Duplicate	Gross Beta	12/05/2006						0.30
LCS	Radium-226	11/15/2006			105.0	79.5		
LCS	Radium-228	11/15/2006			59.5			
LCS	Gross Alpha	12/05/2006				102.0		
LCS	Gross Beta	12/05/2006				103.0		
LCSD	Radium-226	11/15/2006			104.0	84.2		0.30
LCSD	Radium-228	11/15/2006			68.2	101.0		0.50
Method Blank	Radium-226	11/15/2006	0.0073	U	105.0			
Method Blank	Radium-228	11/15/2006	0.1050	U	71.7			
Method Blank	Gross Alpha	12/05/2006	0.5400	U				
Method Blank	Gross Beta	12/05/2006	-0.1040	U				
MS	Gross Alpha	12/05/2006				107.0		
MS	Gross Beta	12/05/2006				94.3		

Comments: _____

SAMPLE MANAGEMENT SYSTEM

Inorganics Data Validation Worksheet

RIN: 06100526 **Lab Code:** PAR **Date Due:** 11/24/2006

Matrix: Water **Site Code:** FCT **Date Completed:** 12/14/2006

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	11/09/2006	-0.070	0.9995	OK	OK	OK	OK	OK	105.0				
Bromide	11/02/2006	0	0.9999	OK	OK	OK	OK	OK	99.0	102.0	101.0	1.00	
Chloride	11/02/2006	0	0.9999	OK	OK	OK	OK	OK	98.0				
Nitrate+Nitrite as N	11/02/2006	0.003	1.0000	OK	OK	OK	OK	OK	90.0				
Nitrate+Nitrite as N	11/02/2006	-0.010	0.9996										
Sulfate	11/02/2006	0	0.9999	OK	OK	OK	OK	OK	101.0				
Sulfide	11/01/2006							OK	102.0				
Total Dissolved Solids	11/01/2006							OK	96.0			0	

Comments: _____

Sampling Quality Control Assessment

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

All monitor well sample results were qualified with an "F" flag in the database indicating the wells were purged and sampled using the low-flow sampling method.

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 measures only laboratory performance. Duplicate samples were collected from well 0906. The non-radiochemical duplicate results were acceptable, meeting the EPA recommended laboratory duplicate criteria of less than 20 percent relative difference for results that are greater than five times the practical quantitation limit.

The radiochemical duplicate results were acceptable with relative error ratios of less than three.

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 — Date: 1-11-2007

Data Validation Lead: Steve Donivan — Date: 1-11-2007

Attachment 1
Assessment of Anomalous Data

Minimums and Maximums Report

Minimums and Maximums Report

The Minimums and Maximums Report is generated by a data validation application used to query 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 require further review if:

(1) Identified low concentrations are not the result of improved detection limits.
(2) The concentration detected is not within 50 percent of historical minimum or maximum values.
(3) There were five or more historical sample results for comparison.

One result from this sampling event requires further review and is listed on the Anomalous Data Review Checksheet.

The radium-226 result from location 0858 was listed on the Anomalous Data Review Checksheet for the May 2006 sampling event as anomalously low. The result for radium-226 from this location returned to a value within the previous historical range.

Data Validation Minimums and Maximums Report - No Field Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 06100526
Comparison: History Begin Date: 1/6/1996
Report Date: 12/27/2006

				Current			Historical Maximum			Historical Minimum			Count	
					Qualifiers			Qualifiers			Qualifiers			
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect
FCT03	0709	10/25/2006	Radium-226	5.38		F	4.5			2.47		FQ	20	0
FCT03	0858	10/25/2006	Nitrate + Nitrite as Nitrogen	0.32		F	0.31		FQ	0.01	U	FQ	5	2
FCT03	0880	10/25/2006	Molybdenum	0.058	B	F	0.01	U	F	0.0012	B	L	21	10
FCT03	0906	10/25/2006	Chloride	3600		F	3520		L	1640			23	0
FCT03	0906	10/25/2006	Manganese	3.5		FJ	3.48		F	2.2		F	23	0
FCT03	0906	10/25/2006	Sulfate	1800		F	1740	I	L	767			23	0
FCT03	0921	10/25/2006	Gross Alpha	468		F	457.35		F	146.3			28	0
FCT03	0921	10/25/2006	Gross Beta	415		F	336		F	125.87		F	28	0
FCT03	0921	10/25/2006	Nitrate + Nitrite as Nitrogen	2.9		F	4.2		F	3.6		F	8	0
FCT03	0921	10/25/2006	Sulfate	1700		F	1680			737			29	0
FCT03	0921	10/25/2006	Tin	0.076	B	FJ	0.059	B	F	0.0001	U	F	29	24
FCT03	0921	10/25/2006	Uranium	1.2		F	0.98		F	0.361		L	29	0

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.
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.

Anomalous Data Review Checksheet

Anomalous Data Review Checksheet

Site: Falls City, Texas **Sampling Data:** Ground Water

Reviewer: Steve Donivan (Name (print)) Steve Donivan (Signature) 1-11-2007 (Date)

Site Hydrologist: Robert Ransbottom (Name (print)) Robert C Ransbottom (Signature) 1/16/07 (Date)

Date of Review: December 27, 2006

Loc. No.	Analyte	Type of Anomaly	Disposition
0880	Molybdenum	High	Compare to future results

Attachment 2
Data Presentation

Ground Water Quality Data

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
Location: 0709 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/25/2006	0001	12.65	-	32.65	143		F	#		
Aluminum	mg/L	10/25/2006	0001	12.65	-	32.65	0.36	B	UFJ	#	.028	
Ammonia Total as N	mg/L	10/25/2006	0001	12.65	-	32.65	0.1	U	F	#	.1	
Antimony	mg/L	10/25/2006	0001	12.65	-	32.65	0.00024	B	UF	#	.000042	
Arsenic	mg/L	10/25/2006	0001	12.65	-	32.65	0.0009		F	#	.000023	
Beryllium	mg/L	10/25/2006	0001	12.65	-	32.65	0.0018	B	UFJ	#	.00019	
Bromide	mg/L	10/25/2006	0001	12.65	-	32.65	5		F	#	2	
Cadmium	mg/L	10/25/2006	0001	12.65	-	32.65	0.00022	B	UF	#	.000052	
Calcium	mg/L	10/25/2006	0001	12.65	-	32.65	1100		FJ	#	.03	
Chloride	mg/L	10/25/2006	0001	12.65	-	32.65	2600		F	#	40	
Chromium	mg/L	10/25/2006	0001	12.65	-	32.65	0.0021	U	FJ	#	.0021	
Cobalt	mg/L	10/25/2006	0001	12.65	-	32.65	0.0018	U	FJ	#	.0018	
Copper	mg/L	10/25/2006	0001	12.65	-	32.65	0.0021	U	FJ	#	.0021	
Gross Alpha	pCi/L	10/25/2006	0001	12.65	-	32.65	321		F	#	14	55.2
Gross Beta	pCi/L	10/25/2006	0001	12.65	-	32.65	209		F	#	25.6	38
Iron	mg/L	10/25/2006	0001	12.65	-	32.65	0.011	U	FJ	#	.011	
Lead	mg/L	10/25/2006	0001	12.65	-	32.65	0.00022	B	UF	#	.000058	
Magnesium	mg/L	10/25/2006	0001	12.65	-	32.65	88		FJ	#	.031	
Manganese	mg/L	10/25/2006	0001	12.65	-	32.65	0.0054	B	UFJ	#	.00048	
Molybdenum	mg/L	10/25/2006	0001	12.65	-	32.65	0.03		F	#	.00013	
Nickel	mg/L	10/25/2006	0001	12.65	-	32.65	0.0037	U	FJ	#	.0037	
Nitrate + Nitrite as Nitrogen	mg/L	10/25/2006	0001	12.65	-	32.65	12		F	#	.1	

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
Location: 0709 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Oxidation Reduction Potential	mV	10/25/2006	N001	12.65	-	32.65	183		F	#		
pH	s.u.	10/25/2006	N001	12.65	-	32.65	6.12		F	#		
Potassium	mg/L	10/25/2006	0001	12.65	-	32.65	57		FJ	#	.061	
Radium-226	pCi/L	10/25/2006	0001	12.65	-	32.65	5.38		F	#	.661	1.58
Radium-228	pCi/L	10/25/2006	0001	12.65	-	32.65	2.65		F	#	.855	.93
Selenium	mg/L	10/25/2006	0001	12.65	-	32.65	0.033		F	#	.00005	
Sodium	mg/L	10/25/2006	0001	12.65	-	32.65	970		FJ	#	.022	
Specific Conductance	umhos /cm	10/25/2006	N001	12.65	-	32.65	9163		F	#		
Sulfate	mg/L	10/25/2006	0001	12.65	-	32.65	1700		F	#	50	
Sulfide	mg/L	10/25/2006	0001	12.65	-	32.65	2	U	F	#	2	
Temperature	C	10/25/2006	N001	12.65	-	32.65	23.78		F	#		
Thallium	mg/L	10/25/2006	0001	12.65	-	32.65	0.00024		FJ	#	.000047	
Tin	mg/L	10/25/2006	0001	12.65	-	32.65	0.034	B	FJ	#	.016	
Total Dissolved Solids	mg/L	10/25/2006	0001	12.65	-	32.65	7000		F	#	200	
Turbidity	NTU	10/25/2006	N001	12.65	-	32.65	1.06		F	#		
Uranium	mg/L	10/25/2006	0001	12.65	-	32.65	0.61		F	#	.000048	
Vanadium	mg/L	10/25/2006	0001	12.65	-	32.65	0.00021	U	F	#	.00021	
Zinc	mg/L	10/25/2006	0001	12.65	-	32.65	0.0055	B	UFJ	#	.0044	

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
Location: 0858 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	10/25/2006	0001	39.42	-	49.42	79		F	#		
Aluminum	mg/L	10/25/2006	0001	39.42	-	49.42	1.1	B	UFJ	#	.055	
Ammonia Total as N	mg/L	10/25/2006	0001	39.42	-	49.42	0.1	U	F	#	.1	
Antimony	mg/L	10/25/2006	0001	39.42	-	49.42	0.0003	B	UF	#	.000042	
Arsenic	mg/L	10/25/2006	0001	39.42	-	49.42	0.0016		F	#	.000023	
Beryllium	mg/L	10/25/2006	0001	39.42	-	49.42	0.0064	B	FJ	#	.00038	
Bromide	mg/L	10/25/2006	0001	39.42	-	49.42	8		F	#	2	
Cadmium	mg/L	10/25/2006	0001	39.42	-	49.42	0.0054	E	F	#	.000052	
Calcium	mg/L	10/25/2006	0001	39.42	-	49.42	1200		FJ	#	.059	
Chloride	mg/L	10/25/2006	0001	39.42	-	49.42	3600		F	#	40	
Chromium	mg/L	10/25/2006	0001	39.42	-	49.42	0.0095	B	FJ	#	.0042	
Cobalt	mg/L	10/25/2006	0001	39.42	-	49.42	0.0039	B	FJ	#	.0036	
Copper	mg/L	10/25/2006	0001	39.42	-	49.42	0.0042	U	FJ	#	.0042	
Gross Alpha	pCi/L	10/25/2006	0001	39.42	-	49.42	42.2		F	#	13.8	12.7
Gross Beta	pCi/L	10/25/2006	0001	39.42	-	49.42	106		F	#	22.8	22.8
Iron	mg/L	10/25/2006	0001	39.42	-	49.42	0.18	B	FJ	#	.022	
Lead	mg/L	10/25/2006	0001	39.42	-	49.42	0.0003	B	UF	#	.000058	
Magnesium	mg/L	10/25/2006	0001	39.42	-	49.42	190		FJ	#	.062	
Manganese	mg/L	10/25/2006	0001	39.42	-	49.42	2.9		FJ	#	.00097	
Molybdenum	mg/L	10/25/2006	0001	39.42	-	49.42	0.0057		F	#	.00013	
Nickel	mg/L	10/25/2006	0001	39.42	-	49.42	0.027	B	FJ	#	.0073	
Nitrate + Nitrite as Nitrogen	mg/L	10/25/2006	0001	39.42	-	49.42	0.32		F	#	.01	

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
Location: 0858 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Oxidation Reduction Potential	mV	10/25/2006	N001	39.42	-	49.42	241.4		F	#		
pH	s.u.	10/25/2006	N001	39.42	-	49.42	5.83		F	#		
Potassium	mg/L	10/25/2006	0001	39.42	-	49.42	110		FJ	#	.12	
Radium-226	pCi/L	10/25/2006	0001	39.42	-	49.42	8.14		F	#	.479	2.2
Radium-228	pCi/L	10/25/2006	0001	39.42	-	49.42	13.2		F	#	.798	4
Selenium	mg/L	10/25/2006	0001	39.42	-	49.42	0.0097		F	#	.00005	
Sodium	mg/L	10/25/2006	0001	39.42	-	49.42	1000		FJ	#	.044	
Specific Conductance	umhos /cm	10/25/2006	N001	39.42	-	49.42	11345		F	#		
Sulfate	mg/L	10/25/2006	0001	39.42	-	49.42	1800		F	#	100	
Sulfide	mg/L	10/25/2006	0001	39.42	-	49.42	2	U	F	#	2	
Temperature	C	10/25/2006	N001	39.42	-	49.42	23.86		F	#		
Thallium	mg/L	10/25/2006	0001	39.42	-	49.42	0.00055	N	FJ	#	.000047	
Tin	mg/L	10/25/2006	0001	39.42	-	49.42	0.039	B	FJ	#	.031	
Total Dissolved Solids	mg/L	10/25/2006	0001	39.42	-	49.42	8600		F	#	200	
Turbidity	NTU	10/25/2006	N001	39.42	-	49.42	1.29		F	#		
Uranium	mg/L	10/25/2006	0001	39.42	-	49.42	0.047	E	F	#	.0000048	
Vanadium	mg/L	10/25/2006	0001	39.42	-	49.42	0.00021	U	F	#	.00021	
Zinc	mg/L	10/25/2006	0001	39.42	-	49.42	0.064	B	FJ	#	.0087	

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
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	10/25/2006	0001	32.3	-	42.3	0		F	#		
Aluminum	mg/L	10/25/2006	0001	32.3	-	42.3	130		FJ	#	.055	
Ammonia Total as N	mg/L	10/25/2006	0001	32.3	-	42.3	0.2		F	#	.1	
Antimony	mg/L	10/25/2006	0001	32.3	-	42.3	0.0018	B	F	#	.00042	
Arsenic	mg/L	10/25/2006	0001	32.3	-	42.3	0.038		F	#	.000023	
Beryllium	mg/L	10/25/2006	0001	32.3	-	42.3	0.37		FJ	#	.00038	
Bromide	mg/L	10/25/2006	0001	32.3	-	42.3	4	U	F	#	4	
Cadmium	mg/L	10/25/2006	0001	32.3	-	42.3	0.57		F	#	.0052	
Calcium	mg/L	10/25/2006	0001	32.3	-	42.3	450		FJ	#	.059	
Chloride	mg/L	10/25/2006	0001	32.3	-	42.3	1700		F	#	40	
Chromium	mg/L	10/25/2006	0001	32.3	-	42.3	0.012	B	FJ	#	.0042	
Cobalt	mg/L	10/25/2006	0001	32.3	-	42.3	1.1		FJ	#	.0036	
Copper	mg/L	10/25/2006	0001	32.3	-	42.3	0.0042	U	FJ	#	.0042	
Gross Alpha	pCi/L	10/25/2006	0001	32.3	-	42.3	2970		F	#	49	486
Gross Beta	pCi/L	10/25/2006	0001	32.3	-	42.3	2130		F	#	86	348
Iron	mg/L	10/25/2006	0001	32.3	-	42.3	280		FJ	#	.022	
Lead	mg/L	10/25/2006	0001	32.3	-	42.3	0.0038	B	F	#	.00058	
Magnesium	mg/L	10/25/2006	0001	32.3	-	42.3	1900		FJ	#	.062	
Manganese	mg/L	10/25/2006	0001	32.3	-	42.3	98		FJ	#	.00097	
Molybdenum	mg/L	10/25/2006	0001	32.3	-	42.3	0.058	B	F	#	.013	
Nickel	mg/L	10/25/2006	0001	32.3	-	42.3	1.6		FJ	#	.0073	
Nitrate + Nitrite as Nitrogen	mg/L	10/25/2006	0001	32.3	-	42.3	0.02		F	#	.01	

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
Location: 0880 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Oxidation Reduction Potential	mV	10/25/2006	N001	32.3	-	42.3	178		F	#		
pH	s.u.	10/25/2006	N001	32.3	-	42.3	4.45		F	#		
Potassium	mg/L	10/25/2006	0001	32.3	-	42.3	170		FJ	#	.12	
Radium-226	pCi/L	10/25/2006	0001	32.3	-	42.3	13		F	#	.609	3.4
Radium-228	pCi/L	10/25/2006	0001	32.3	-	42.3	8.02		F	#	.801	2.46
Selenium	mg/L	10/25/2006	0001	32.3	-	42.3	0.0046		F	#	.00005	
Sodium	mg/L	10/25/2006	0001	32.3	-	42.3	3800		FJ	#	.044	
Specific Conductance	umhos /cm	10/25/2006	N001	32.3	-	42.3	21780		F	#		
Sulfate	mg/L	10/25/2006	0001	32.3	-	42.3	16000		F	#	100	
Sulfide	mg/L	10/25/2006	0001	32.3	-	42.3	2	U	F	#	2	
Temperature	C	10/25/2006	N001	32.3	-	42.3	24.01		F	#		
Thallium	mg/L	10/25/2006	0001	32.3	-	42.3	0.005		FJ	#	.00047	
Tin	mg/L	10/25/2006	0001	32.3	-	42.3	0.078	B	FJ	#	.031	
Total Dissolved Solids	mg/L	10/25/2006	0001	32.3	-	42.3	26000		F	#	400	
Turbidity	NTU	10/25/2006	N001	32.3	-	42.3	1.94		F	#		
Uranium	mg/L	10/25/2006	0001	32.3	-	42.3	6.6		F	#	.00048	
Vanadium	mg/L	10/25/2006	0001	32.3	-	42.3	1.3		FJ	#	.01	
Zinc	mg/L	10/25/2006	0001	32.3	-	42.3	1.8		FJ	#	.0087	

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
Location: 0906 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/25/2006	0001	12.49	-	27.49	90		F	#		
Aluminum	mg/L	10/25/2006	0001	12.49	-	27.49	0.71	B	UFJ	#	.055	
Aluminum	mg/L	10/25/2006	0002	0	-	0	0.75	B	UJ	#	.055	
Ammonia Total as N	mg/L	10/25/2006	0001	12.49	-	27.49	0.1	U	F	#	.1	
Ammonia Total as N	mg/L	10/25/2006	0002	0	-	0	0.1	U		#	.1	
Antimony	mg/L	10/25/2006	0001	12.49	-	27.49	0.00021	B	UF	#	.000042	
Antimony	mg/L	10/25/2006	0002	0	-	0	0.00022	B	U	#	.000042	
Arsenic	mg/L	10/25/2006	0001	12.49	-	27.49	0.00089		F	#	.000023	
Arsenic	mg/L	10/25/2006	0002	0	-	0	0.00085			#	.000023	
Beryllium	mg/L	10/25/2006	0001	12.49	-	27.49	0.0032	B	FJ	#	.00038	
Beryllium	mg/L	10/25/2006	0002	0	-	0	0.0027	B	J	#	.00038	
Bromide	mg/L	10/25/2006	0001	12.49	-	27.49	6		F	#	2	
Bromide	mg/L	10/25/2006	0002	0	-	0	6.1			#	2	
Cadmium	mg/L	10/25/2006	0001	12.49	-	27.49	0.018		F	#	.000052	
Cadmium	mg/L	10/25/2006	0002	0	-	0	0.016			#	.000052	
Calcium	mg/L	10/25/2006	0001	12.49	-	27.49	1500		FJ	#	.059	
Calcium	mg/L	10/25/2006	0002	0	-	0	1500		J	#	.059	
Chloride	mg/L	10/25/2006	0001	12.49	-	27.49	3600		F	#	40	
Chloride	mg/L	10/25/2006	0002	0	-	0	3500			#	40	
Chromium	mg/L	10/25/2006	0001	12.49	-	27.49	0.0042	U	FJ	#	.0042	
Chromium	mg/L	10/25/2006	0002	0	-	0	0.0042	U	J	#	.0042	

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Cobalt	mg/L	10/25/2006	0001	12.49	-	27.49	0.0036	U	FJ	#	.0036	
Cobalt	mg/L	10/25/2006	0002	0	-	0	0.0036	U	J	#	.0036	
Copper	mg/L	10/25/2006	0001	12.49	-	27.49	0.0042	U	FJ	#	.0042	
Copper	mg/L	10/25/2006	0002	0	-	0	0.0042	U	J	#	.0042	
Gross Alpha	pCi/L	10/25/2006	0001	12.49	-	27.49	44.3		F	#	13.5	12.7
Gross Alpha	pCi/L	10/25/2006	0002	0	-	0	67.7			#	14	16.3
Gross Beta	pCi/L	10/25/2006	0001	12.49	-	27.49	98.7		F	#	22.7	21.8
Gross Beta	pCi/L	10/25/2006	0002	0	-	0	101			#	22.1	21.9
Iron	mg/L	10/25/2006	0001	12.49	-	27.49	0.022	U	FJ	#	.022	
Iron	mg/L	10/25/2006	0002	0	-	0	0.022	U	J	#	.022	
Lead	mg/L	10/25/2006	0001	12.49	-	27.49	0.00023	B	UF	#	.000058	
Lead	mg/L	10/25/2006	0002	0	-	0	0.00023	B	U	#	.000058	
Magnesium	mg/L	10/25/2006	0001	12.49	-	27.49	120		FJ	#	.062	
Magnesium	mg/L	10/25/2006	0002	0	-	0	120		J	#	.062	
Manganese	mg/L	10/25/2006	0001	12.49	-	27.49	3.5		FJ	#	.00097	
Manganese	mg/L	10/25/2006	0002	0	-	0	3.2		J	#	.00097	
Molybdenum	mg/L	10/25/2006	0001	12.49	-	27.49	0.004		F	#	.00013	
Molybdenum	mg/L	10/25/2006	0002	0	-	0	0.004			#	.00013	
Nickel	mg/L	10/25/2006	0001	12.49	-	27.49	0.0074	B	FJ	#	.0073	
Nickel	mg/L	10/25/2006	0002	0	-	0	0.012	B	J	#	.0073	
Nitrate + Nitrite as Nitrogen	mg/L	10/25/2006	0001	12.49	-	27.49	0.01	U	F	#	.01	
Nitrate + Nitrite as Nitrogen	mg/L	10/25/2006	0002	0	-	0	0.01	U		#	.01	
Oxidation Reduction Potential	mV	10/25/2006	N001	12.49	-	27.49	179.1		F	#		
pH	s.u.	10/25/2006	N001	12.49	-	27.49	5.47		F	#		

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Potassium	mg/L	10/25/2006	0001	12.49	-	27.49	85		FJ	#	.12	
Potassium	mg/L	10/25/2006	0002	0	-	0	83		J	#	.12	
Radium-226	pCi/L	10/25/2006	0001	12.49	-	27.49	4.32		F	#	.614	1.31
Radium-226	pCi/L	10/25/2006	0002	0	-	0	3.98			#	.454	1.11
Radium-228	pCi/L	10/25/2006	0001	12.49	-	27.49	5.88		F	#	.791	1.84
Radium-228	pCi/L	10/25/2006	0002	0	-	0	4.7			#	.78	1.49
Selenium	mg/L	10/25/2006	0001	12.49	-	27.49	0.0003		UF	#	.00005	
Selenium	mg/L	10/25/2006	0002	0	-	0	0.00033		U	#	.00005	
Sodium	mg/L	10/25/2006	0001	12.49	-	27.49	920		FJ	#	.044	
Sodium	mg/L	10/25/2006	0002	0	-	0	890		J	#	.044	
Specific Conductance	umhos /cm	10/25/2006	N001	12.49	-	27.49	11095		F	#		
Sulfate	mg/L	10/25/2006	0001	12.49	-	27.49	1800		F	#	100	
Sulfate	mg/L	10/25/2006	0002	0	-	0	1800			#	100	
Sulfide	mg/L	10/25/2006	0001	12.49	-	27.49	2	U	F	#	2	
Sulfide	mg/L	10/25/2006	0002	0	-	0	2	U		#	2	
Temperature	C	10/25/2006	N001	12.49	-	27.49	24.01		F	#		
Thallium	mg/L	10/25/2006	0001	12.49	-	27.49	0.0024		FJ	#	.000047	
Thallium	mg/L	10/25/2006	0002	0	-	0	0.0023		J	#	.000047	
Tin	mg/L	10/25/2006	0001	12.49	-	27.49	0.034	B	FJ	#	.031	
Tin	mg/L	10/25/2006	0002	0	-	0	0.034	B	J	#	.031	
Total Dissolved Solids	mg/L	10/25/2006	0001	12.49	-	27.49	8500		F	#	200	
Total Dissolved Solids	mg/L	10/25/2006	0002	0	-	0	8400			#	200	
Turbidity	NTU	10/25/2006	N001	12.49	-	27.49	0.75		F	#		

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Uranium	mg/L	10/25/2006	0001	12.49	-	27.49	0.092		F	#	.000024	
Uranium	mg/L	10/25/2006	0002	0	-	0	0.1			#	.000024	
Vanadium	mg/L	10/25/2006	0001	12.49	-	27.49	0.00021	U	F	#	.00021	
Vanadium	mg/L	10/25/2006	0002	0	-	0	0.0013		J	#	.00021	
Zinc	mg/L	10/25/2006	0001	12.49	-	27.49	0.04	B	UFJ	#	.0087	
Zinc	mg/L	10/25/2006	0002	0	-	0	0.043	B	UJ	#	.0087	

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
Location: 0921 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	10/25/2006	0001	44.55	-	54.55	425		F	#		
Aluminum	mg/L	10/25/2006	0001	44.55	-	54.55	0.77	B	UFJ	#	.055	
Ammonia Total as N	mg/L	10/25/2006	0001	44.55	-	54.55	0.1	U	F	#	.1	
Antimony	mg/L	10/25/2006	0001	44.55	-	54.55	0.00026	B	UF	#	.000042	
Arsenic	mg/L	10/25/2006	0001	44.55	-	54.55	0.0064		F	#	.000023	
Beryllium	mg/L	10/25/2006	0001	44.55	-	54.55	0.0031	B	FJ	#	.00038	
Bromide	mg/L	10/25/2006	0001	44.55	-	54.55	7.8		F	#	2	
Cadmium	mg/L	10/25/2006	0001	44.55	-	54.55	0.014		F	#	.000052	
Calcium	mg/L	10/25/2006	0001	44.55	-	54.55	1400		FJ	#	.059	
Chloride	mg/L	10/25/2006	0001	44.55	-	54.55	3400		F	#	40	
Chromium	mg/L	10/25/2006	0001	44.55	-	54.55	0.0042	U	FJ	#	.0042	
Cobalt	mg/L	10/25/2006	0001	44.55	-	54.55	0.0044	B	FJ	#	.0036	
Copper	mg/L	10/25/2006	0001	44.55	-	54.55	0.0042	U	FJ	#	.0042	
Gross Alpha	pCi/L	10/25/2006	0001	44.55	-	54.55	468		F	#	14.6	78.7
Gross Beta	pCi/L	10/25/2006	0001	44.55	-	54.55	415		F	#	24.1	69.2
Iron	mg/L	10/25/2006	0001	44.55	-	54.55	0.022	U	FJ	#	.022	
Lead	mg/L	10/25/2006	0001	44.55	-	54.55	0.00023	B	UF	#	.000058	
Magnesium	mg/L	10/25/2006	0001	44.55	-	54.55	170		FJ	#	.062	
Manganese	mg/L	10/25/2006	0001	44.55	-	54.55	1.7		FJ	#	.00097	
Molybdenum	mg/L	10/25/2006	0001	44.55	-	54.55	0.046		F	#	.00013	
Nickel	mg/L	10/25/2006	0001	44.55	-	54.55	0.04	B	FJ	#	.0073	
Nitrate + Nitrite as Nitrogen	mg/L	10/25/2006	0001	44.55	-	54.55	2.9		F	#	.05	

Ground Water Quality Data by Location (USEE100) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006
Location: 0921 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Data	QA	Detection Limit	Uncertainty
Oxidation Reduction Potential	mV	10/25/2006	N001	44.55	-	54.55	201.6		F	#		
pH	s.u.	10/25/2006	N001	44.55	-	54.55	5.96		F	#		
Potassium	mg/L	10/25/2006	0001	44.55	-	54.55	110		FJ	#	.12	
Radium-226	pCi/L	10/25/2006	0001	44.55	-	54.55	1.06		FJ	#	.661	.524
Radium-228	pCi/L	10/25/2006	0001	44.55	-	54.55	0.997		FJ	#	.675	.463
Selenium	mg/L	10/25/2006	0001	44.55	-	54.55	0.15		F	#	.0005	
Sodium	mg/L	10/25/2006	0001	44.55	-	54.55	880		FJ	#	.044	
Specific Conductance	umhos /cm	10/25/2006	N001	44.55	-	54.55	10934		F	#		
Sulfate	mg/L	10/25/2006	0001	44.55	-	54.55	1700		F	#	100	
Sulfide	mg/L	10/25/2006	0001	44.55	-	54.55	2	U	F	#	2	
Temperature	C	10/25/2006	N001	44.55	-	54.55	24.65		F	#		
Thallium	mg/L	10/25/2006	0001	44.55	-	54.55	0.0016		FJ	#	.000047	
Tin	mg/L	10/25/2006	0001	44.55	-	54.55	0.076	B	FJ	#	.031	
Total Dissolved Solids	mg/L	10/25/2006	0001	44.55	-	54.55	8600		F	#	200	
Turbidity	NTU	10/25/2006	N001	44.55	-	54.55	1.65		F	#		
Uranium	mg/L	10/25/2006	0001	44.55	-	54.55	1.2		F	#	.000097	
Vanadium	mg/L	10/25/2006	0001	44.55	-	54.55	0.00025	B	FJ	#	.00021	
Zinc	mg/L	10/25/2006	0001	44.55	-	54.55	0.029	B	UFJ	#	.0087	

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

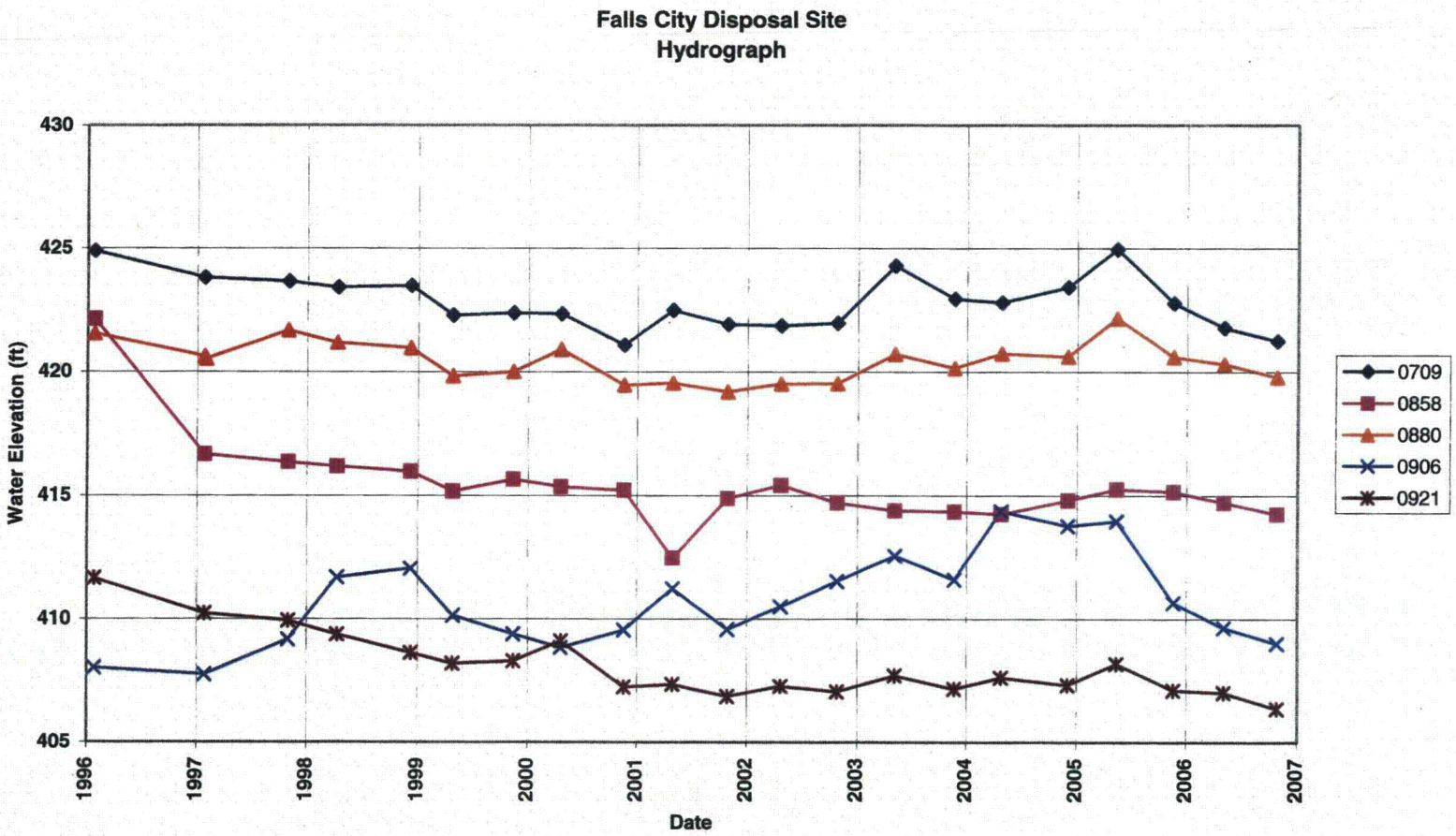
STATIC WATER LEVELS (USEE700) FOR SITE FCT03, Falls City Disposal Site
REPORT DATE: 12/28/2006

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	25-OCT-06	17:12:00	30.31	421.27	
0858	O	441.03	25-OCT-06	12:17:00	26.75	414.28	
0880	O	446.84	25-OCT-06	09:13:00	27.02	419.82	
0906	D	420.17	25-OCT-06	10:30:00	11.15	409.02	
0908	N	495.67	25-OCT-06				D
0916	D	420.39	25-OCT-06				D
0921	D	435.75	25-OCT-06	15:35:00	29.36	406.39	

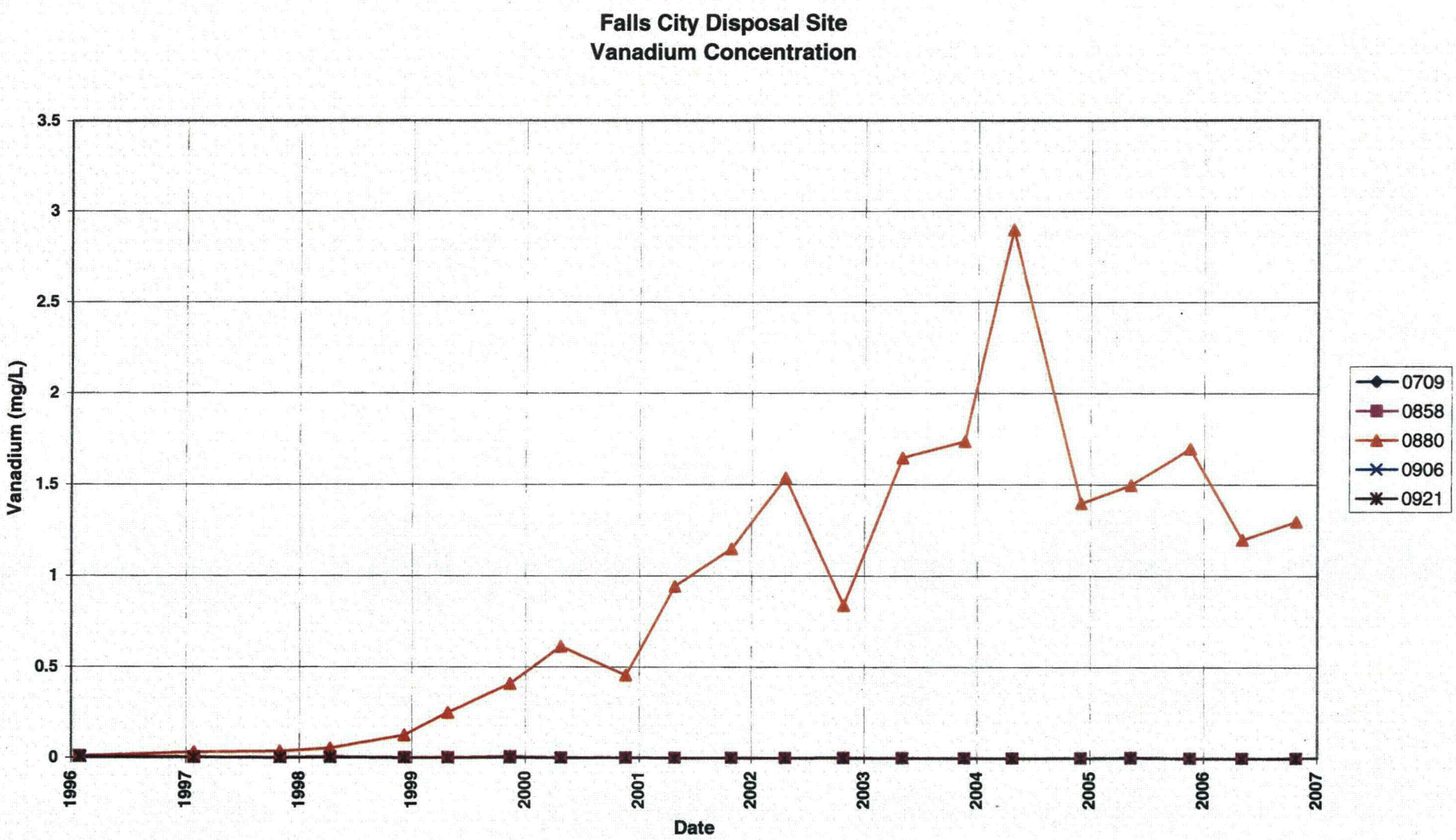
FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT O ON SITE
U UPGRADIENT

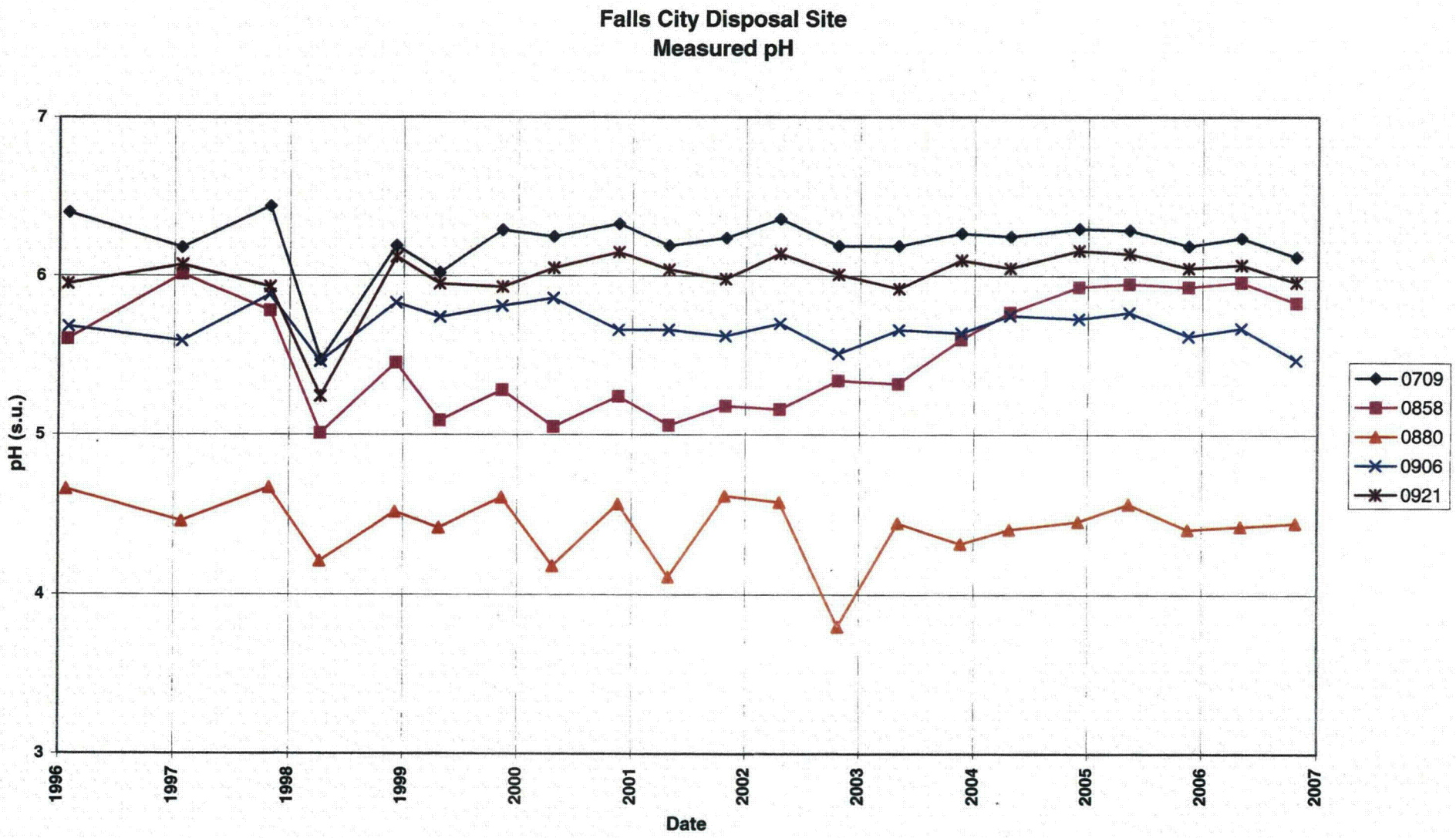
WATER LEVEL FLAGS: D Dry

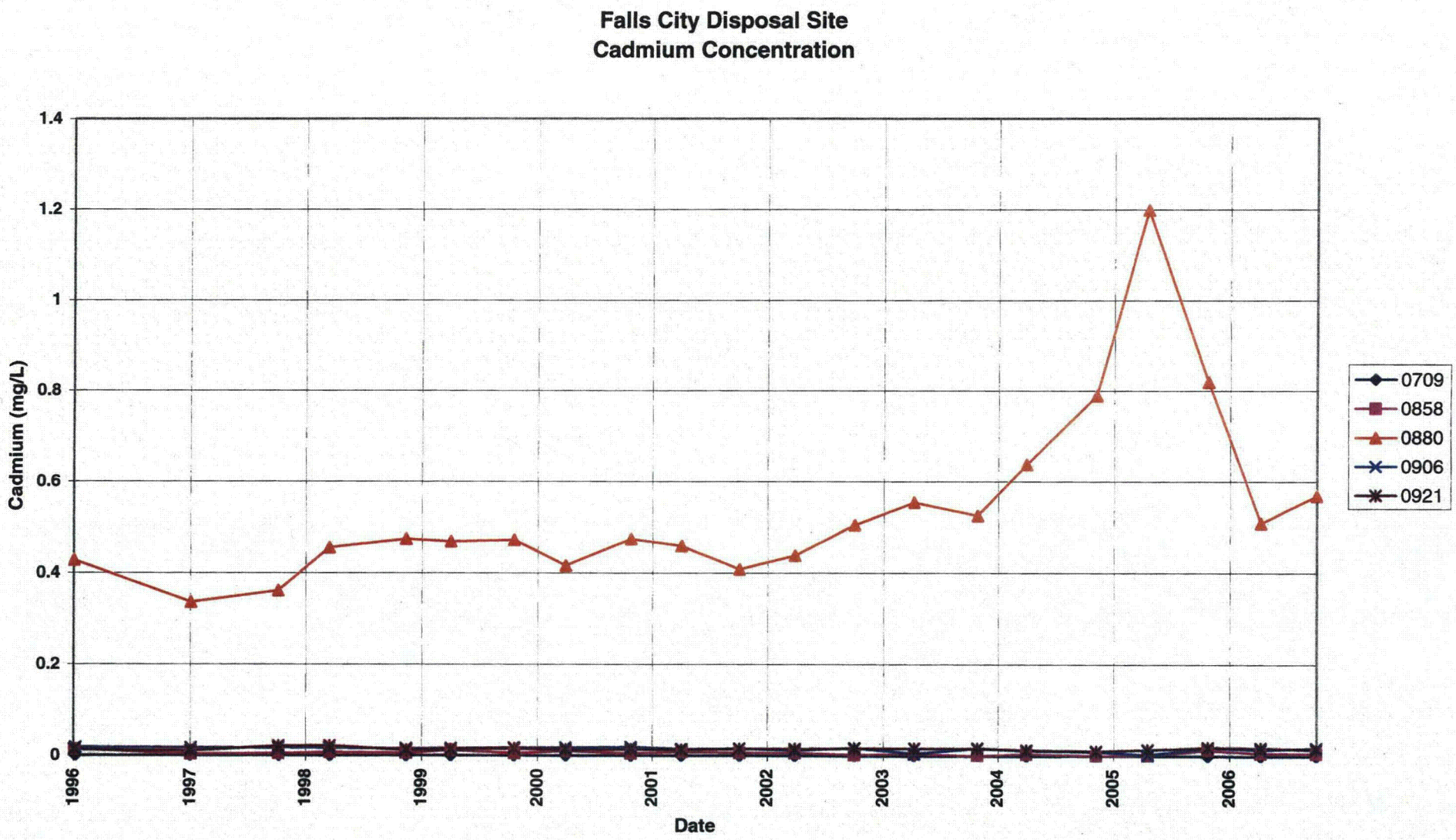
Hydrograph


Falls City Disposal Site
Hydrograph
Water Elevation (ft)
430
425
420
415
410
405
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Date
0709
0858
0880
0906
0921

Time Versus Concentration Graphs


Falls City Disposal Site
Vanadium Concentration
Vanadium (mg/L)
3.5
3
2.5
2
1.5
1
0.5
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Date
0709
0858
0880
0906
0921


Falls City Disposal Site
Measured pH
pH (s.u.)
7
6
5
4
3
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Date
0709
0858
0880
0906
0921


Falls City Disposal Site
Cadmium Concentration
Cadmium (mg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1996
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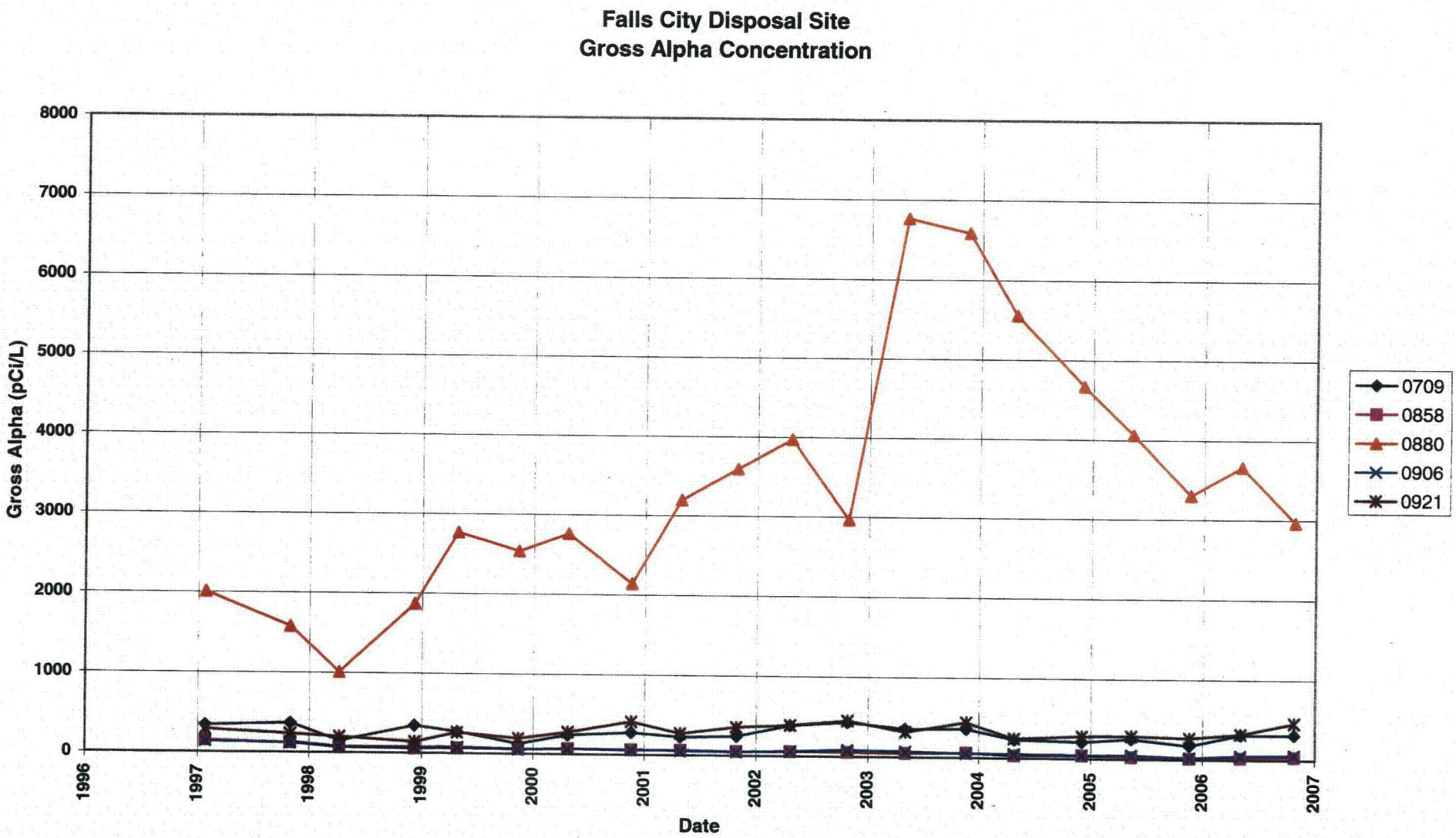
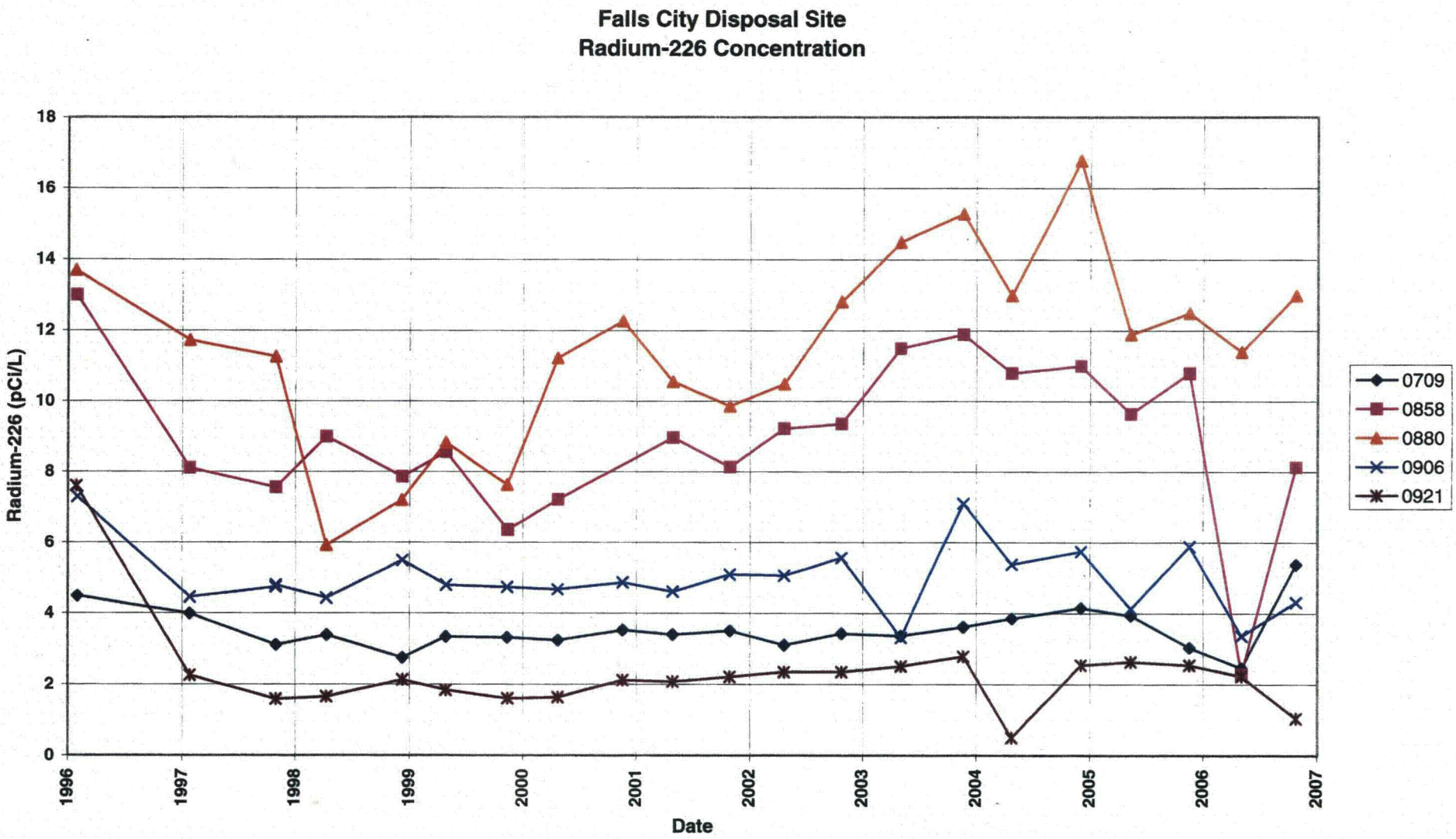
1998
1999
2000
2001
2002
2003
2004
2005
2006
Date
0709
0858
0880
0906
0921


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


Falls City Disposal Site
Radium-226 Concentration
Radium-226 (pCi/L)
0
2
4
6
8
10
12
14
16
18
1996
1997
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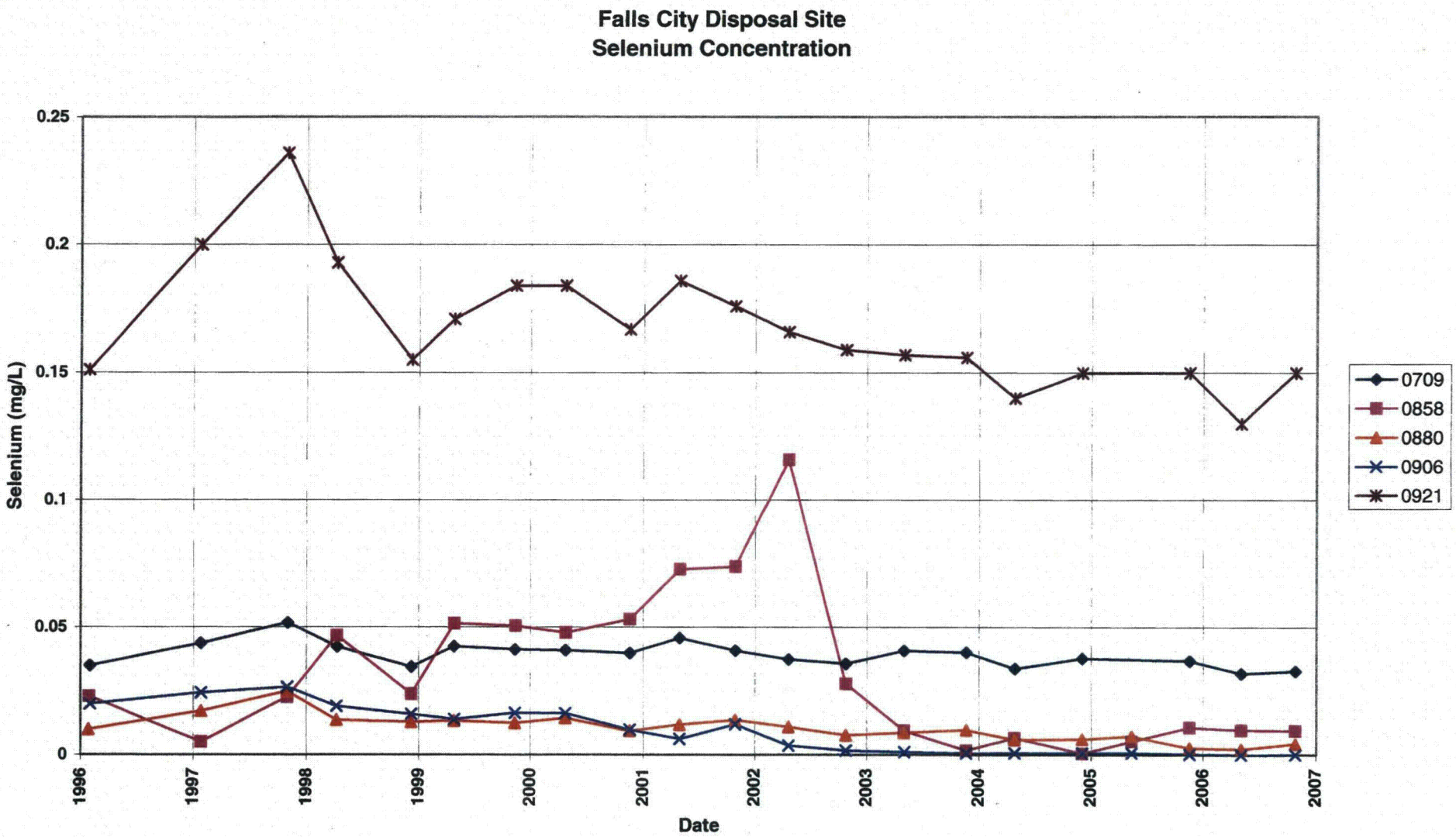
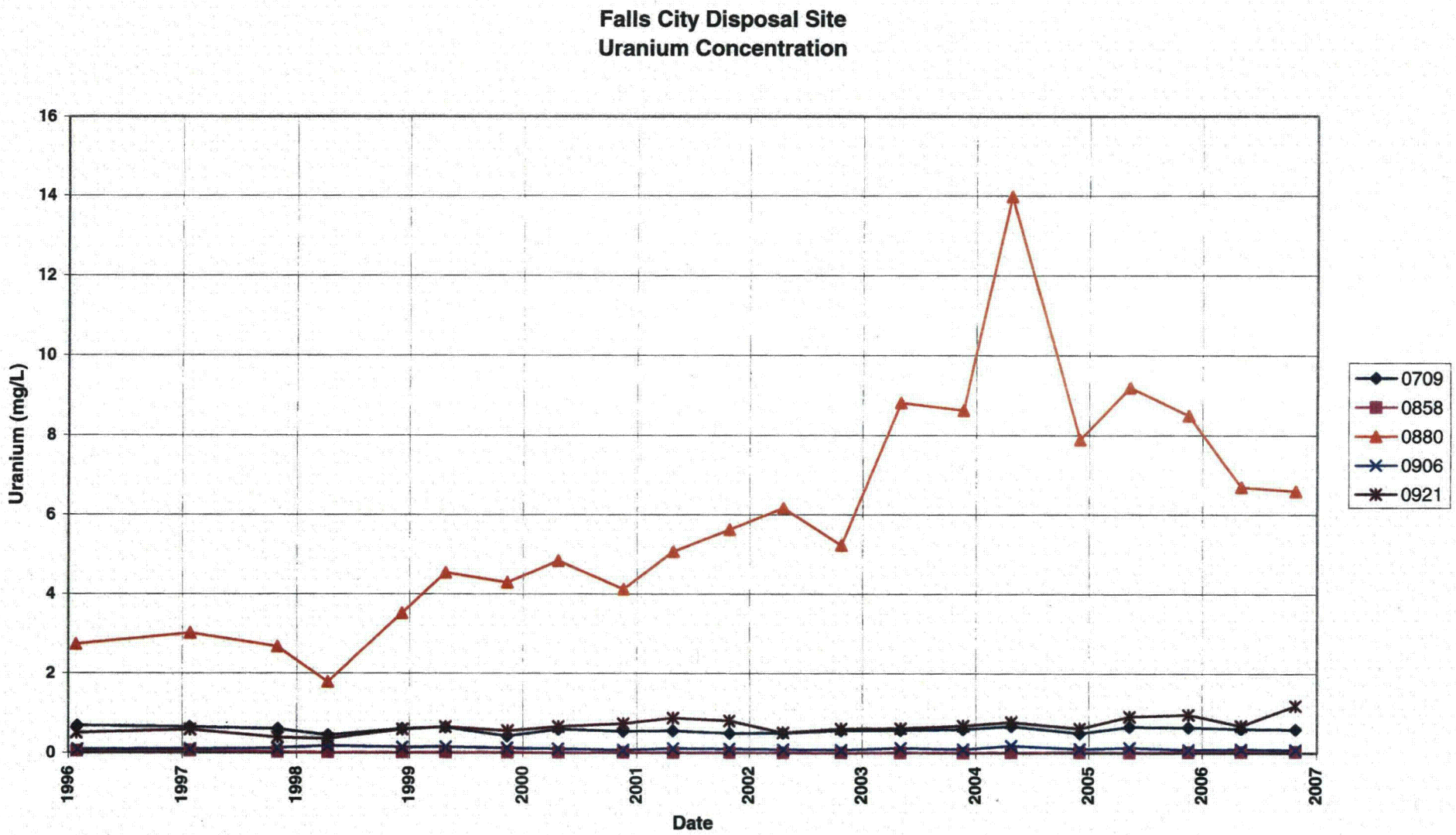
Date
0709
0858
0880
0906
0921


Falls City Disposal Site
Selenium Concentration
Selenium (mg/L)
0.25
0.2
0.15
0.1
0.05
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Date
0709
0858
0880
0906
0921


Falls City Disposal Site
Uranium Concentration
Uranium (mg/L)
16
14
12
10
8
6
4
2
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Date
0709
0858
0880
0906
0921

Attachment 3
Sampling and Analysis Work Order

Stoller

established 1959

Task Order ST07-101-05
Control Number 1000-T07-0005

October 2, 2006

Jane Powell
Program Manager
U.S. Department of Energy
Office of Legacy Management
11003 Hamilton-Cleves Highway
Harrison, OH 45030-9728

SUBJECT: Contract No. DE-AC01-02GJ79491, Stoller
October 2006 Environmental Sampling at Falls City, Texas

Reference: FY 2007 LM Task Order No. ST07-101-05-0502

Dear Ms. Powell:

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 23, 2006.

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 (970) 248-6588 or Mike Widdop at (970) 248-6793.

Sincerely,

Signature on original

Clay Carpenter
Project Manager

CC/lcg/mat
Enclosures (3)

cc: C. I. Bahrke, Stoller
S. E. Donivan, Stoller (e)
L. C. Goodknight, Stoller (e)
K. E. Miller, Stoller (e)
D. G. Traub, Stoller (e)
M. R. Widdop, Stoller (e)

cc w/o enclosures:
Correspondence Control File (Thru B. Bonnett)

Site	Falls City	
Analyte	Ground Water	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		
Sodium	X	

Analyte	Ground Water	Surface Water
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

DATE: November 14, 2006

TO: Bob Ransbottom

FROM: Emile A. Bettez and Jeff Walters

SUBJECT: Sampling Trip Report

Site: Falls City Texas, disposal site.

Date of Sampling Event: October 23 to October 27, 2006

Team Members: Emile A. Bettez and Jeff Walters

Number of Locations Sampled: Water samples for metals, radium-226/-228, gross alpha, sulfide, anions (Cl, SO_4, Br), (NO_2+NO_3)-N and TDS were collected from 5 monitor wells. In addition, 1 duplicate sample was collected for QA/QC purposes.

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

Location Specific Information:

Ticket Number	Sample Date	Location	Description
NFA 837	10/25/2006	0880	Cat. I. Water too acidic to measure alkalinity
NFA 838	10/25/2006	0906	Cat. I.
NFA 839	10/25/2006	0858	Cat. I., but very close to a Cat. II
NFA 840	10/25/2006	2276	Duplicate suite from well 0906
NFA 841	10/25/2006	0921	Cat. I.
NFA 842	10/25/2006	0709	Cat. I.

Field Variance: Sulfide samples could not be preserved in the field due to lack of NaOH and ZnAcO. After consulting with Steve Donivan, it was determined that the samples will be preserved upon arrival to the lab. Since the samples were shipped the day after collection, the quality of the sample was not compromised in any significant way.

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
2276	0906	Duplicate	Ground water	NFA 840

RIN Number Assigned: All samples were assigned to RIN 06100526

Sample Shipment: Samples were shipped overnight with FedEx waybill # 8527 5847 9329 to Paragon Analytics, Inc., from a FedEx office in San Antonio, Texas, on October 26, 2006.

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

Equipment: All wells were sampled using the low-flow procedure with dedicated bladder pumps.

Water Level Measurements: Water levels were collected in all sampled wells.

Date	Location	Water Level (ft. BTOC)
10/25/06	0709	30.31
10/25/06	0858	26.75
10/25/06	0880	27.02
10/25/06	0906	11.15
10/25/06	0908	DRY
10/25/06	0916	DRY
10/25/06	0921	29.36

Note: On the previous trip report, most wells sampled were category two and it was mentioned that they may need redevelopment work. During this visit some of the same wells sampled were category one so it does not appear that redevelopment is necessary. Other factors (i.e., precipitation) may be the difference.

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

> **Fences, Gates, Locks:** All were in good condition. New barbwire fencing was installed along the northern edge of the site, and a new gate was installed at the northeastern corner of the site. To document these new items, we took pictures. There is an opening at the northwestern corner of the site, were it appears a gate needs to be installed, but it is absent. We also documented this with pictures.
>
> **Signs**: No missing or vandalized signs were observed.
>
> **Trespassing/Site Disturbances:** N/A

Site Issues: Site is overgrown by large bushes and trees in many spots, making it somewhat difficult to locate wells.

Disposal Cell/Drainage Structure Integrity: N/A

Vegetation/Noxious Weed Concerns: N/A

Maintenance Requirements: N/A

Corrective Action Taken: N/A

cc: J. Powell, DOE (e)
S. E. Donivan, Stoller (e)
K. E. Miller, Stoller (e)