



**U.S. Department of Energy**

Grand Junction Office  
2597 B<sup>3</sup>/<sub>4</sub> Road  
Grand Junction, CO 81503

WM-42

JAN 13 2003

James Yusko  
Pennsylvania Department of Environmental Quality  
400 Waterfront Drive  
Pittsburgh, PA 15222-4745

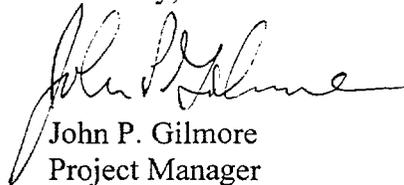
Subject: Data Validation Package for the Canonsburg/Burrell Long-Term Surveillance and Monitoring Site, October 2002

Dear Mr. Yusko:

Enclosed is a copy of the data validation for sampling at the Canonsburg/Burrell, Pennsylvania, Long-Term Surveillance and Monitoring site in October 2002. A disk is also enclosed for your use.

If you have any questions or comments, please call me at 970/248-6027.

Sincerely,



John P. Gilmore  
Project Manager

Enclosures

cc w/enclosures:

S. Harper, Department of Environmental Protection  
M. Layton, Nuclear Regulatory Commission

cc w/o enclosures:

M. Widdop, ~~MACTEC-ERS~~ Stoller  
File Project LCAN 6.7 thru A. Garcia  
File Project LBUR 6.7 thru A. Garcia



**DATA VALIDATION  
CANONSBURG DISPOSAL SITE  
CANONSBURG, PENNSYLVANIA**

**October 2002  
Water Sampling**

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

Prepared by the  
U.S. Department of Energy  
Grand Junction Office



# CANONSBURG, PENNSYLVANIA

Sampled October 2002

## DATA PACKAGE CONTENTS

This data package includes the following information:

- | <u>Item No.</u> | <u>Description of Contents</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.              | <b>Site Hydrologist Summary.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2.              | <b>Data Package Assessment</b> , which includes the following: <ul style="list-style-type: none"><li>a. Field activities verification checklist.</li><li>b. Confirmation that chain-of-custody was maintained.</li><li>c. Confirmation that holding time requirements were met.</li><li>d. Evaluation of adequacy of the QC sample results.</li></ul>                                                                                                                                                                                                                                                                                                                       |
| 3.              | <b>Data Assessment Summary</b> , which describes problems identified in the data validation process and summarizes the validator's findings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4.              | <b>Suspected Anomalies Reports (SAR)</b> , which is generated by the SEEPro database system. This report compares the new data set with historical data and designates "suspected anomalies" based on the many criteria listed as footnotes on each page. In aggregate, these criteria cause the suspected anomaly program to be very conservative; many of the data shown in the tables are not, in the evaluator's judgment, truly anomalies, but merely natural variations in data or routine changes in laboratory detection limits. The designation "OK" affirms the judgment that the particular entry is not an anomaly and, therefore, requires no further inquiry. |
| 5.              | <b>UMTRA Database Printouts</b> of analytical data organized as follows: <ul style="list-style-type: none"><li>a. Ground water quality data (included on disk).</li><li>b. Surface water quality data (included on disk).</li><li>c. Equipment blank data (included on disk).</li><li>d. Time versus concentration graphs.</li><li>e. Static ground water level measurement data.</li></ul>                                                                                                                                                                                                                                                                                 |
| 6.              | <b>Sampling and Analysis Work Order and Trip Report.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7.              | <b>Site Map.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Site Hydrologist Summary

**Site:** Canonsburg, Pennsylvania

**Sampling Period:** October 8, 2002

### SUMMARY CRITERIA

Concentrations of uranium did not exceed the alternate concentration limit (ACL) of 1.0 mg/L in point-of-compliance (POC) wells 0412, 0413, and 0414 at the Cannonsburg site. As expected, the UMTRA ground water standard (40 CFR 192.04 Table 1) for uranium (0.044 mg/L) was exceeded in samples from wells 0412 (0.0994) and 0413 (0.134 mg/L), which is consistent with historical results. Graphs of uranium concentrations versus time for wells 0412 and 0413 are included with the analytical data.

The uranium concentration (0.0005 mg/L) at point-of-exposure (POE) location 0602 in Chartiers Creek did not exceed the ACL of 0.01 mg/L. In addition, molybdenum and uranium results from samples collected from Chartiers Creek downstream of the Canonsburg site (locations 0602 and 0603) were compared to benchmark values derived from historical data from location 0601, which is located upstream of the site on Chartiers Creek. Downstream concentrations were less than their respective benchmark value, which indicates minimal site-related impacts to water quality in Chartiers Creek.



Dick Heydenburg  
Site Hydrologist

10 Dec 02

Date

# DATA ASSESSMENT

## Water Sampling Field Activities Verification Checklist

Project Cannonsburg  
 Date(s) of Verification 12/16/02

Date(s) of Water Sampling 10/8/02  
 Name of Verifier Sam Campbell

**Response Comments**  
 (Yes, No, N/A)

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                              |                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|
| <p>1. Is the SAP the primary document directing field procedures?<br/>                 List other documents, SOP's, instructions.</p>                                                                                                                                                                                                                                                                                                                                                               | <p><u>Yes</u></p>                                                            | <p><u>Sampling work order dated 9/10/02</u></p>              |
| <p>2. Were the sampling locations specified in the planning documents sampled?</p>                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><u>Yes</u></p>                                                            |                                                              |
| <p>3. Was a pre-trip calibration conducted as specified in the above named documents?</p>                                                                                                                                                                                                                                                                                                                                                                                                           | <p><u>Yes</u></p>                                                            |                                                              |
| <p>4. Was an operational check of the field equipment conducted twice daily?<br/>                 Did the operational checks meet criteria?</p>                                                                                                                                                                                                                                                                                                                                                     | <p><u>Yes</u><br/><u>Yes</u></p>                                             | <p><u>only one required - all samples collected p.m.</u></p> |
| <p>5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?</p>                                                                                                                                                                                                                                                                                                                                                                 | <p><u>Yes</u></p>                                                            |                                                              |
| <p>6. Was the Category of the well documented?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><u>Yes</u></p>                                                            |                                                              |
| <p>7. Were the following conditions met when purging a Category I well:<br/>                 Were two pump/tubing volumes purged prior to sampling?<br/>                 Did the water level stabilize prior to sampling?<br/>                 Was a turbidity of less than 10 NTUs obtained prior to sampling?<br/>                 Was the flow rate less than 500 mL/min?<br/>                 If a portable pump was used, was there a 4 hour delay between pump installation and sampling?</p> | <p><u>Yes</u><br/><u>Yes</u><br/><u>Yes</u><br/><u>Yes</u><br/><u>NA</u></p> |                                                              |
| <p>8. Were the following conditions met when purging a Category II well:<br/>                 Was the flow rate less than 100 mL/min?</p>                                                                                                                                                                                                                                                                                                                                                           | <p><u>Yes</u></p>                                                            |                                                              |

## Water Sampling Field Activities Verification Checklist (continued)

- |                                                                                                                       |            |                                                  |
|-----------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------|
| Were two pump/tubing volumes removed prior to sampling?                                                               | <u>Yes</u> | _____                                            |
| Were water levels documented during the purge?                                                                        | <u>Yes</u> | _____                                            |
| 9. Were duplicates taken at a frequency of one per 20 samples for ground water and surface water?                     | <u>Yes</u> | _____                                            |
| 10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment? | <u>Yes</u> | _____                                            |
| 11. Were trip blanks prepared and included with each shipment of VOC samples?                                         | <u>NA</u>  | _____                                            |
| 12. Were QC samples assigned a fictitious site identification number?                                                 | <u>Yes</u> | _____                                            |
| Was the true identity of the samples recorded on the Quality Assurance Sample Log?                                    | <u>Yes</u> | _____                                            |
| 13. Were samples collected in the containers specified?                                                               | <u>Yes</u> | _____                                            |
| 14. Were samples filtered and preserved as specified?                                                                 | <u>Yes</u> | _____                                            |
| 15. Were the number and types of samples collected as specified?                                                      | <u>Yes</u> | _____                                            |
| 16. Were chain of custody records completed and was sample custody maintained?                                        | <u>Yes</u> | _____                                            |
| 17. Are field data sheets signed and dated by both team members?                                                      | <u>Yes</u> | _____                                            |
| 18. Was all other pertinent information documented on the field data sheets?                                          | <u>Yes</u> | _____                                            |
| 19. Was the presence or absence of ice in the cooler documented at every sample location?                             | <u>Yes</u> | _____                                            |
| 20. Were water levels measured at the locations specified in the planning documents?                                  | <u>Yes</u> | <u>Except wells 504 and 505 - decommissioned</u> |

### DATA PACKAGE ASSESSMENT

REQUISITION NUMBERS: 18183 SITE: Canonsburg LABORATORY: GSO ANALYSIS DATES: 10/15-10/21/02

REVIEWER: JEFF PRICE J. E. Price 11/5/02  
NAME (print) SIGNATURE DATE

	ICP-MS	ICP-AES	GFAA	FAA	NaBH <sub>4</sub>	AS	LSc	PC	IC	Gravimetric	Colorimetric	Other
CHAIN OF CUSTODY	OK	OK	NA	NA	NA	NA	NA	NA	OK	NA	NA	NA
HOLDING TIME	OK	OK							OK			
CALIB. VERIFICATION (For AS, internal tracer)	OK	OK							OK	NA		
PREP. BLANKS (Only if digestion)	NA	NA							NA		NA	
INT/CONT CAL. BLANKS	OK	①				NA	NA	NA	OK	NA		
ICP SERIAL DILUTION	OK	OK	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ICS (ICP only)	NA	OK	NA	NA	NA	NA	NA	NA	NA	NA	NA	
LAB. CONTROL SAMPLE	NA	NA							NA			
DUPLICATES	OK	OK							OK			
POSTDIGEST. SPKS. (Only if MS fails)	NA	NA				NA	NA	NA	NA	NA	NA	
MATRIX SPKS.	OK	OK							OK	NA		
OVERALL ASSESS.	OK	OK	↓	↓	↓	↓	↓	↓	OK	↓	↓	↓

DATA REQUIRING FLAGS: ① Blank contamination: "U" flag K 291683 (701)

**CANONSBURG, PENNSYLVANIA  
OCTOBER 2002 SAMPLING  
DATA ASSESSMENT SUMMARY**

The DOE-GJO Analytical Laboratory analyzed samples and reported results for this sampling event under requisition number 18183 for the Long Term Surveillance and Maintenance (LTSM) program.

**METALS/MAJOR CATIONS ANALYSES**

The determination of calcium, magnesium, manganese, molybdenum, potassium, and sodium was performed by inductively coupled plasma-atomic emission spectrometry (ICP-AES). Uranium was analyzed by inductively coupled plasma-mass spectrometry (ICP-MS). The potassium result from the equipment blank sample was qualified with a "U" flag (nondetect) in the database because of continuing calibration blank contamination.

**INORGANIC ANALYSES**

Chloride and sulfate were determined by ion chromatography (IC). Total dissolved solids (TDS) were determined gravimetrically. Data validation qualifiers were not required for these analyses.

**FIELD ANALYSIS/ACTIVITIES**

All ground water results were qualified with an "F" flag in the database indicating the wells were purged and sampled using the low-flow method. Results from well 0414A were qualified with a "Q" flag in the database indicating the data are considered qualitative because of the protocol used to purge and sample the well.

One equipment blank was collected and analyzed for the same constituents as the Canonsburg environmental samples. There were no site-related contaminants detected in the equipment blank in concentrations above the contract required detection limit (CRDL); therefore, equipment blank results are acceptable.

A field duplicate sample was collected from well 0412. There are no established regulatory criteria for the evaluation of field duplicate samples; therefore, EPA guidance for *laboratory* duplicates (which is conservative for field duplicates) was used to assess the precision of the field duplicates. The duplicate results met the laboratory duplicate criteria (less than 20 relative percent difference) and are considered acceptable.

**SAR**

Results listed in the SAR are considered acceptable if: (1) identified low concentrations were the result of low detection limits; (2) the concentration detected was within 50 percent of the historical concentration range; or (3) there were less than 5 historical samples for comparison. All results listed in the SAR met the criteria listed above and considered valid.

## SUMMARY

All analytical quality control criteria were met except as qualified on the Ground Water Quality Data by Parameter, Surface Water Quality Data by Parameter and equipment blank reports. The meaning of data qualifiers is as defined on the UMTRA database printout or as defined in the USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media Multi-Concentration, Document Number ILMO2.0, 1991.

A disk copy of the Ground Water Quality Data by Parameter, Surface Water Quality by Parameter, and equipment blank database reports with the qualifiers incorporated is included in this package. All data in this package are considered validated and may be treated as final results.

  
\_\_\_\_\_  
Sam Campbell  
Data Validation Lead

12/17/02  
Date

**SAR**

SUSPECTED ANOMALIES REPORT

REPORT DATE: 12/13/2002

TIME: 1:49:25 PM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/5/2002 to 10/10/2002

Older Data Only Used for Baseline Data

80 Chemical Records

1175 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE UNITS	ANOMALOUS TEST DATA POINT			# OF SAMP. %NON DETE C	ALL TIME MINIMUMS		LOWER BOUND UPPER BOUND	3 MOST RECENT SAMPLING EVENTS								
			LOG DATE	SAMPLE VALUE	VALUE		LOG DATE	SAMPLE VALUE		VALUE	LOG DATE	SAMPLE VALUE	VALUE	LOG DATE	SAMPLE VALUE	VALUE		
			FLAGS	UNCERTAINTY	DETLIM		FLAGS	UNCERTAINTY		DETLIM	FLAGS	UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY	DETLIM		
0410	OK	Ca	10/8/2002	0001	41.1000	24	38.400	39.400	42.5997	10/30/2001	0001	49.7000	10/3/2000	0001	48.0000	9/25/1999	0001	41.7000
		mg/L			0.0446	0	52.100	56.500	51.8317			0.0653			0.0481			
	OK	K	10/8/2002	0001	1.3500	24	0.970	1.000	0.9462	10/30/2001	0001	1.0900	10/3/2000	0001	1.2100	9/25/1999	0001	1.0700
		mg/L			0.0259	0	1.720	2.500	1.3005	E		0.0151			0.0327			
	OK	Mn	10/8/2002	0001	2.2800	25	1.470	2.660	2.7310	10/30/2001	0001	3.1600	10/3/2000	0001	3.1100	9/25/1999	0001	2.6900
		mg/L			0.0002	0	3.420	4.050	3.2846			0.0001			0.002			
OK	Na	10/8/2002	0001	65.1000	24	32.100	38.000	44.4267	10/30/2001	0001	52.4000	10/3/2000	0001	50.5000	9/25/1999	0001	43.3000	
	mg/L			0.895	0	50.500	52.400	54.0404			0.0074			0.302				
OK	U	10/8/2002	0001	0.0001	25	0.000	0.000	0.0001	10/30/2001	0001	0.0006	10/3/2000	0001	0.0002	9/25/1999	0001	0.0002	
	mg/L	U		0.0001	80	0.001	0.003	0.0045	B		0.0001	B		0.0001	U		0.0002	
0412	OK	Mn	10/8/2002	0001	20.4000	23	4.050	9.400	21.0802	10/30/2001	0001	22.3000	10/4/2000	0001	21.1000	9/26/1999	0001	20.4000
		mg/L			0.002	0	23.000	26.600	26.4136			0.001			0.002			
	OK	ORP	10/8/2002	N001	40.0000	10	-69.000	-58.000	0.0000	10/30/2001	N001	3.0000	10/4/2000	N001	-25.0000	9/26/1999	N001	-69.0000
mV					0	303.000	350.000	32.5757										
0413	OK	ORP	10/8/2002	N001	-6.0000	10	-124.000	-111.000	0.0000	10/30/2001	N001	-84.0000	10/4/2000	N001	-92.0000	9/25/1999	N001	-111.0000
		mV				0	306.000	409.000	-58.8173									
	OK	SO4	10/8/2002	0001	88.0000	23	73.300	74.100	12.4570	10/30/2001	0001	79.9000	10/4/2000	0001	105.0000	9/25/1999	0001	73.3000
mg/L				0.0393	0	356.000	356.000	83.2096			0.2045			0.0589				
0414A	OK	Mo	10/8/2002	0001	0.0030	1	0.002	0.002	0.0000	10/30/2001	0001	0.0019	10/30/2001	0001	0.0019	10/30/2001	0001	0.0019
		mg/L	U		0.003	100	0.002	0.002	0.0019	U		0.0019	U		0.0019	U		0.0019
	OK	ORP	10/8/2002	N001	-1.8000	1	-40.000	-40.000	-20.0000	10/30/2001	N001	-40.0000	10/30/2001	N001	-40.0000	10/30/2001	N001	-40.0000
mV					0	-40.000	-40.000	-80.0000										
0424	OK	Mg	10/8/2002	0001	25.5000	9	24.100	24.300	22.8625	10/30/2001	0001	24.3000	10/3/2000	0001	24.1000	9/25/1999	0001	24.6000
		mg/L			0.011	0	26.400	26.500	24.9478			0.0041			0.0352			
	OK	Na	10/8/2002	0001	138.0000	9	123.000	140.000	117.0927	10/30/2001	0001	123.0000	10/3/2000	0001	140.0000	9/25/1999	0001	141.0000
mg/L				0.895	0	157.000	160.000	134.9004			0.0074			0.302				

Error Type Flags :  
 2 - All time high detection limit  
 3 - Too low (non-trend approach)  
 4 - Too high (non-trend approach)  
 5 - Too low (trend approach)  
 6 - Too high (trend approach)

Flags :  
 I - Increased detection limit due to required dilution.  
 L - Less than three bore volumes removed before sampling.  
 J - Estimated value.  
 H - Hold time expired, value suspect.

Approved by Sam Campbell  
 Hydrologist "Ok" indicates insignificant variation

Date 12/13/02

SUSPECTED ANOMALIES REPORT

REPORT DATE: 12/13/2002 TIME: 1:49:27 PM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/5/2002 to 10/10/2002

Older Data Only Used for Baseline Data

80 Chemical Records

1175 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE UNITS	ANOMALOUS TEST DATA POINT			# OF SAMP. %NON DETE C	ALL TIME MINIMUMS		LOWER BOUND UPPER BOUND	3 MOST RECENT SAMPLING EVENTS								
			LOG DATE	SAMPLE	VALUE		ALL TIME MAXIMUMS			LOG DATE	SAMPLE	VALUE	LOG DATE	SAMPLE	VALUE	LOG DATE	SAMPLE	VALUE
			FLAGS	UNCERTAINTY	DETLIM		FLAGS	UNCERTAINTY		DETLIM	FLAGS	UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY
0424	OK 6	ORP	10/8/2002	N001	-0.1000	9	-110.000	-94.000	0.0000	10/30/2001	N001	-110.0000	10/3/2000	N001	2.0000	9/25/1999	N001	-67.0000
		mV				0	463.000	463.000	-14.1694									
	OK 3	SO4	10/8/2002	0001	171.0000	9	150.000	162.000	127.5807	10/30/2001	0001	162.0000	10/3/2000	0001	166.0000	9/25/1999	0001	150.0000
		mg/L				0	210.000	230.000	164.3390			0.409			0.0589			
OK 3	U	10/8/2002	0001	0.0001	11	0.000	0.000	0.0001	10/30/2001	0001	0.0006	10/3/2000	0001	0.0002	9/25/1999	0001	0.0002	
	mg/L	U		0.0001	81.818	0.001	0.001	0.0015	B		0.0001	B		0.0001	U		0.0002	
0602	OK 5	ORP	10/8/2002	N001	-77.0000	6	102.000	130.000	89.6347	10/30/2001	N001	130.0000	10/3/2000	N001	190.0000	9/25/1999	N001	102.0000
		mV				0	186.000	190.000	192.1071									
0603	OK 5	ORP	10/8/2002	N001	-65.0000	7	-52.000	30.000	0.0000	10/30/2001	N001	-52.0000	10/3/2000	N001	220.0000	9/25/1999	N001	30.0000
		mV				0	279.000	279.000	146.3290									

Error Type Flags :  
 2 - All time high detection limit  
 3 - Too low (non-trend approach)  
 4 - Too high (non-trend approach)  
 5 - Too low (trend approach)  
 6 - Too high (trend approach)

Flags :  
 I - Increased detection limit due to required dilution.  
 L - Less than three bore volumes removed before sampling.  
 J - Estimated value.  
 H - Hold time expired, value suspect.

Approved by Sam Campbell  
 Hydrologist "Ok" indicates insignificant variation

Date 12/13/02

# **WATER QUALITY DATA**

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER (USEE201) FOR SITE CAN01, CANONSBURG  
 REPORT DATE: 12/17/2002 9:43 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE:		ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS:			DETECTION LIMIT	UN-CERTAINTY
				DATE	ID				LAB	DATA	QA		
Alkalinity, Total (As CaCO3	mg/L	0406A	WL	10/08/2002	0001	UM		731	F	#	-	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	21	F	#	-	-	
	mg/L	0412	WL	10/08/2002	0001	UM	O	449	F	#	-	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	345	F	#	-	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		235	FQ	#	-	-	
	mg/L	0424	WL	10/08/2002	0001	UM	C	347	F	#	-	-	
Calcium	mg/L	0406A	WL	10/08/2002	0001	UM		202.000	F	#	0.0446	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	41.100	F	#	0.0446	-	
	mg/L	0412	WL	10/08/2002	0001	UM	O	387.000	F	#	0.0446	-	
	mg/L	0412	WL	10/08/2002	0002	UM	O	395.000	F	#	0.0446	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	123.000	F	#	0.0446	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		107.000	FQ	#	0.0446	-	
	mg/L	0424	WL	10/08/2002	0001	UM	C	99.100	F	#	0.0446	-	
Chloride	mg/L	0406A	WL	10/08/2002	0001	UM		51.400	F	#	0.0401	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	173.000	F	#	0.2005	-	
	mg/L	0412	WL	10/08/2002	0001	UM	O	27.200	F	#	0.802	-	
	mg/L	0412	WL	10/08/2002	0002	UM	O	25.200	F	#	0.802	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	24.600	F	#	0.0401	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		9.470	FQ	#	0.0802	-	
	mg/L	0424	WL	10/08/2002	0001	UM	C	100.000	F	#	0.0802	-	
Magnesium	mg/L	0406A	WL	10/08/2002	0001	UM		40.400	F	#	0.011	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	19.100	F	#	0.011	-	
	mg/L	0412	WL	10/08/2002	0001	UM	O	75.100	F	#	0.011	-	
	mg/L	0412	WL	10/08/2002	0002	UM	O	76.200	F	#	0.011	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	18.100	F	#	0.011	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		19.300	FQ	#	0.011	-	

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER (USEE201) FOR SITE CAN01, CANONSBURG  
 REPORT DATE: 12/17/2002 9:43 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE:		ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS:			DETECTION LIMIT	UN-CERTAINTY
				DATE	ID				LAB	DATA	QA		
Magnesium	mg/L	0424	WL	10/08/2002	0001	UM	C	25.500	F	#	0.011	-	
Manganese	mg/L	0406A	WL	10/08/2002	0001	UM		4.430	F	#	0.0002	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	2.280	F	#	0.0002	-	
	mg/L	0412	WL	10/08/2002	0001	UM	O	20.400	F	#	0.002	-	
	mg/L	0412	WL	10/08/2002	0002	UM	O	20.800	F	#	0.002	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	2.910	F	#	0.0002	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		9.460	FQ	#	0.0002	-	
	mg/L	0424	WL	10/08/2002	0001	UM	C	5.560	F	#	0.0002	-	
Molybdenum	mg/L	0406A	WL	10/08/2002	0001	UM		0.003	U	F	#	0.003	-
	mg/L	0410	WL	10/08/2002	0001	UM	U	0.003	U	F	#	0.003	-
	mg/L	0412	WL	10/08/2002	0001	UM	O	0.003	U	F	#	0.003	-
	mg/L	0412	WL	10/08/2002	0002	UM	O	0.003	U	F	#	0.003	-
	mg/L	0413	WL	10/08/2002	0001	UM	O	0.003	U	F	#	0.003	-
	mg/L	0414A	WL	10/08/2002	0001	UM		0.003	U	FQ	#	0.003	-
	mg/L	0424	WL	10/08/2002	0001	UM	C	0.003	U	F	#	0.003	-
Oxidation Reduction Potent	mV	0406A	WL	10/08/2002	N001	UM		-7	F	#	-	-	
	mV	0410	WL	10/08/2002	N001	UM	U	71.1	F	#	-	-	
	mV	0412	WL	10/08/2002	N001	UM	O	40	F	#	-	-	
	mV	0413	WL	10/08/2002	N001	UM	O	-6	F	#	-	-	
	mV	0414A	WL	10/08/2002	N001	UM		-1.8	FQ	#	-	-	
	mV	0424	WL	10/08/2002	N001	UM	C	-0.1	F	#	-	-	
pH	s.u.	0406A	WL	10/08/2002	N001	UM		7.01	F	#	-	-	
	s.u.	0410	WL	10/08/2002	N001	UM	U	5.66	F	#	-	-	
	s.u.	0412	WL	10/08/2002	N001	UM	O	6.72	F	#	-	-	
	s.u.	0413	WL	10/08/2002	N001	UM	O	6.99	F	#	-	-	

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER (USEE201) FOR SITE CAN01, CANONSBURG

REPORT DATE: 12/17/2002 9:43 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE:		ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS:			DETECTION LIMIT	UN-CERTAINTY
				DATE	ID				LAB	DATA	QA		
pH	s.u.	0414A	WL	10/08/2002	N001	UM		6.92	FQ	#	-	-	
	s.u.	0424	WL	10/08/2002	N001	UM	C	6.89	F	#	-	-	
Potassium	mg/L	0406A	WL	10/08/2002	0001	UM		4.360	F	#	0.0259	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	1.350	F	#	0.0259	-	
	mg/L	0412	WL	10/08/2002	0001	UM	O	2.750	F	#	0.0259	-	
	mg/L	0412	WL	10/08/2002	0002	UM	O	2.620	F	#	0.0259	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	4.090	F	#	0.0259	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		1.640	FQ	#	0.0259	-	
	mg/L	0424	WL	10/08/2002	0001	UM	C	3.010	F	#	0.0259	-	
Sodium	mg/L	0406A	WL	10/08/2002	0001	UM		37.300	F	#	0.895	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	65.100	F	#	0.895	-	
	mg/L	0412	WL	10/08/2002	0001	UM	O	73.100	F	#	0.895	-	
	mg/L	0412	WL	10/08/2002	0002	UM	O	69.300	F	#	0.895	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	32.800	F	#	0.895	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		14.600	FQ	#	0.895	-	
	mg/L	0424	WL	10/08/2002	0001	UM	C	138.000	F	#	0.895	-	
Specific Conductance	umhos/cm	0406A	WL	10/08/2002	N001	UM		1501	F	#	-	-	
	umhos/cm	0410	WL	10/08/2002	N001	UM	U	795	F	#	-	-	
	umhos/cm	0412	WL	10/08/2002	N001	UM	O	2078	F	#	-	-	
	umhos/cm	0413	WL	10/08/2002	N001	UM	O	981	F	#	-	-	
	umhos/cm	0414A	WL	10/08/2002	N001	UM		835	FQ	#	-	-	
	umhos/cm	0424	WL	10/08/2002	N001	UM	C	1308	F	#	-	-	
Sulfate	mg/L	0406A	WL	10/08/2002	0001	UM		27.500	F	#	0.0393	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	86.700	F	#	0.1965	-	
	mg/L	0412	WL	10/08/2002	0001	UM	O	998.000	F	#	0.786	-	

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER (USEE201) FOR SITE CAN01, CANONSBURG  
 REPORT DATE: 12/17/2002 9:43 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE:		ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS:			DETECTION LIMIT	UN-CERTAINTY
				DATE	ID				LAB	DATA	QA		
Sulfate	mg/L	0412	WL	10/08/2002	0002	UM	O	970.000	F	#	0.786	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	88.000	F	#	0.0393	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		138.000	FQ	#	0.0786	-	
	mg/L	0424	WL	10/08/2002	0001	UM	C	171.000	F	#	0.0786	-	
Temperature	C	0406A	WL	10/08/2002	N001	UM		18.3	F	#	-	-	
	C	0410	WL	10/08/2002	N001	UM	U	16.9	F	#	-	-	
	C	0412	WL	10/08/2002	N001	UM	O	13.2	F	#	-	-	
	C	0413	WL	10/08/2002	N001	UM	O	15.93	F	#	-	-	
	C	0414A	WL	10/08/2002	N001	UM		14.77	FQ	#	-	-	
	C	0424	WL	10/08/2002	N001	UM	C	16.4	F	#	-	-	
Turbidity	NTU	0406A	WL	10/08/2002	N001	UM		9.69	F	#	-	-	
	NTU	0410	WL	10/08/2002	N001	UM	U	7.9	F	#	-	-	
	NTU	0412	WL	10/08/2002	N001	UM	O	9.83	F	#	-	-	
	NTU	0413	WL	10/08/2002	N001	UM	O	6.95	F	#	-	-	
	NTU	0414A	WL	10/08/2002	N001	UM		3.28	FQ	#	-	-	
	NTU	0424	WL	10/08/2002	N001	UM	C	2.8	F	#	-	-	
Uranium	mg/L	0406A	WL	10/08/2002	0001	UM		0.0019	F	#	0.0001	-	
	mg/L	0410	WL	10/08/2002	0001	UM	U	0.0001	U	F	#	0.0001	-
	mg/L	0412	WL	10/08/2002	0001	UM	O	0.0994	F	#	0.0001	-	
	mg/L	0412	WL	10/08/2002	0002	UM	O	0.102	F	#	0.0001	-	
	mg/L	0413	WL	10/08/2002	0001	UM	O	0.134	F	#	0.0001	-	
	mg/L	0414A	WL	10/08/2002	0001	UM		0.0025	FQ	#	0.0001	-	
	mg/L	0424	WL	10/08/2002	0001	UM	C	0.0001	U	F	#	0.0001	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER (USEE201) FOR SITE CAN01, CANONSBURG  
 REPORT DATE: 12/17/2002 9:43 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
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RECORDS: SELECTED FROM USEE200 WHERE site\_code='CAN01' AND quality\_assurance = TRUE AND (data\_validation\_qualifiers IS NULL OR data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%') AND DATE\_SAMPLED between #10/1/2002# and #10/15/2002#

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

LOCATION TYPES: WL WELL

ZONES OF COMPLETION:

UM UNCONSOLIDATED MATERIALS

FLOW CODES: C CROSS GRADIENT O ON-SITE U UPGRADIENT

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > 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
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) 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.

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE CAN01, CANONSBURG  
 REPORT DATE: 12/13/2002 3:43 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE:		RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
			DATE	ID		LAB	DATA	QA		
Alkalinity, Total (As CaCO3	mg/L	0601	10/08/2002	0001	142			#	-	-
	mg/L	0602	10/08/2002	0001	142			#	-	-
	mg/L	0603	10/08/2002	0001	120			#	-	-
Calcium	mg/L	0601	10/08/2002	0001	103.000			#	0.0446	-
	mg/L	0602	10/08/2002	0001	103.000			#	0.0446	-
	mg/L	0603	10/08/2002	0001	94.600			#	0.0446	-
Chloride	mg/L	0601	10/08/2002	0001	124.000			#	0.2005	-
	mg/L	0602	10/08/2002	0001	121.000			#	0.401	-
	mg/L	0603	10/08/2002	0001	98.700			#	0.2005	-
Magnesium	mg/L	0601	10/08/2002	0001	28.800			#	0.011	-
	mg/L	0602	10/08/2002	0001	28.600			#	0.011	-
	mg/L	0603	10/08/2002	0001	25.000			#	0.011	-
Manganese	mg/L	0601	10/08/2002	0001	0.0569			#	0.0002	-
	mg/L	0602	10/08/2002	0001	0.0471			#	0.0002	-
	mg/L	0603	10/08/2002	0001	0.0603			#	0.0002	-
Molybdenum	mg/L	0601	10/08/2002	0001	0.0573			#	0.003	-
	mg/L	0602	10/08/2002	0001	0.0595			#	0.003	-
	mg/L	0603	10/08/2002	0001	0.0502			#	0.003	-
Oxidation Reduction Potent	mV	0601	10/08/2002	N001	65			#	-	-
	mV	0602	10/08/2002	N001	-77			#	-	-
	mV	0603	10/08/2002	N001	-65			#	-	-
pH	s.u.	0601	10/08/2002	N001	8.29			#	-	-
	s.u.	0602	10/08/2002	N001	7.25			#	-	-
	s.u.	0603	10/08/2002	N001	8.24			#	-	-
Potassium	mg/L	0601	10/08/2002	0001	8.110			#	0.0259	-
	mg/L	0602	10/08/2002	0001	8.080			#	0.0259	-
	mg/L	0603	10/08/2002	0001	7.060			#	0.0259	-
Sodium	mg/L	0601	10/08/2002	0001	180.000			#	0.895	-
	mg/L	0602	10/08/2002	0001	179.000			#	0.895	-
	mg/L	0603	10/08/2002	0001	155.000			#	0.895	-
Specific Conductance	umhos/cm	0601	10/08/2002	N001	1357			#	-	-
	umhos/cm	0602	10/08/2002	N001	1499			#	-	-
	umhos/cm	0603	10/08/2002	N001	1324			#	-	-
Sulfate	mg/L	0601	10/08/2002	0001	454.000			#	0.1965	-
	mg/L	0602	10/08/2002	0001	453.000			#	0.393	-
	mg/L	0603	10/08/2002	0001	371.000			#	0.1965	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE CAN01, CANONSBURG  
 REPORT DATE: 12/13/2002 3:43 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE:		RESULT	QUALIFIERS:		DETECTION LIMIT	UN-CERTAINTY
			DATE	ID		LAB	DATA QA		
Temperature	C	0601	10/08/2002	N001	15.5			#	-
	C	0602	10/08/2002	N001	15.6			#	-
	C	0603	10/08/2002	N001	16.2			#	-
Uranium	mg/L	0601	10/08/2002	0001	0.0004 B			#	0.0001
	mg/L	0602	10/08/2002	0001	0.0005 B			#	0.0001
	mg/L	0603	10/08/2002	0001	0.0004 B			#	0.0001

RECORDS: SELECTED FROM USEE800 WHERE site\_code='CAN01' AND quality\_assurance = TRUE AND (data\_validation\_qualifiers IS NULL OR data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%') AND DATE\_SAMPLED between #10/1/2002# and #10/10/2002#

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

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > 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
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

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

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

BLANKS REPORT (USEE810) FOR SITE CAN01, CANONSBURG  
 REPORT DATE: 12/13/2002 3:43 pm

PARAMETER	UNITS	LOCATION ID	SAMPLE DATE	SAMPLE ID	SAMPLE TYPE	RESULT	QUALIFIERS: LAB DATA QA	DETECTIO N	UN- CERTAINTY
Calcium	mg/L	0999	10/08/2002	0001	E	0.0613	B #	0.0446	-
Chloride	mg/L	0999	10/08/2002	0001	E	0.163	B #	0.0401	-
Magnesium	mg/L	0999	10/08/2002	0001	E	0.0303	B #	0.011	-
Manganese	mg/L	0999	10/08/2002	0001	E	0.00063	B #	0.0002	-
Molybdenum	mg/L	0999	10/08/2002	0001	E	0.003	U #	0.003	-
Potassium	mg/L	0999	10/08/2002	0001	E	0.0777	B U #	0.0259	-
Sodium	mg/L	0999	10/08/2002	0001	E	1.390	#	0.895	-
Sulfate	mg/L	0999	10/08/2002	0001	E	0.0393	U #	0.0393	-
Uranium	mg/L	0999	10/08/2002	0001	E	0.0001	U #	0.0001	-

BLANKS REPORT (USEE810) FOR SITE CAN01, CANONSBURG

REPORT DATE: 12/13/2002 3:43 pm

PARAMETER	UNITS	LOCATION	SAMPLE		SAMPLE	RESULT	QUALIFIERS:			DETECTIO	UN-
		ID	DATE	ID			TYPE	LAB	DATA		

RECORDS: SELECTED FROM USEE810 WHERE site\_code='CAN01' AND quality\_assurance = TRUE AND (data\_validation\_qualifiers IS NULL OR data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%') AND DATE\_SAMPLED between #10/1/2002# and #10/10/2002#

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

SAMPLE TYPES: E EQUIPMENT BLANK

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > 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
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

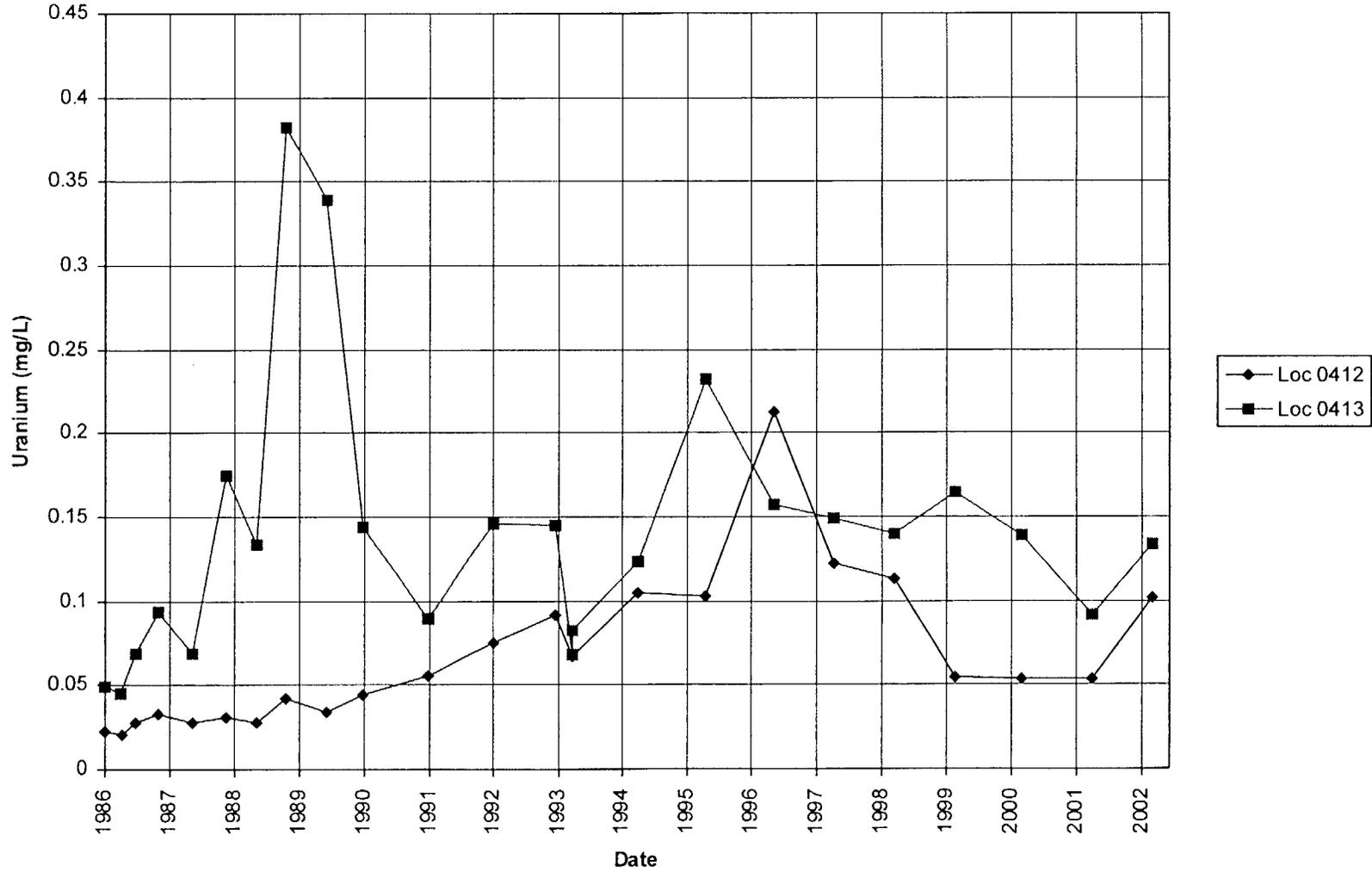
- |                                                      |                                                |                    |
|------------------------------------------------------|------------------------------------------------|--------------------|
| F Low flow sampling method used.                     | 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.

# **TIME VERSUS CONCENTRATION GRAPHS**

CANONSBURG (CAN01)

Uranium Concentration



# **WATER LEVELS**

STATIC GROUND WATER LEVELS (USEE700) FOR SITE CAN01, CANONSBURG  
 REPORT DATE: 12/13/2002 3:44 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT NGVD)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	GROUND WATER ELEVATION (FT NGVD)	WATER LEVEL FLAG
			DATE	TIME			
0406A		941.26	10/08/2002	15:15	10.49	930.77	
0410	U	969.16	10/08/2002	13:22	11.33	957.83	
0412	O	949.70	10/08/2002	11:56	15.38	934.32	
0413	O	940.36	10/08/2002	14:41	8.25	932.11	
0414A		942.48	10/08/2002	13:40	9.15	933.33	
0424	C	942.25	10/08/2002	14:16	13.97	928.28	

RECORDS: SELECTED FROM USEE700 WHERE site\_code='CAN01' AND LOG\_DATE between #10/1/2002# and #10/10/2002#

FLOW CODES: C CROSS GRADIENT O ON-SITE U UPGRADIENT

WATER LEVEL FLAGS:

**SAMPLING AND ANALYSIS  
WORK ORDER  
AND TRIP REPORT**

CONTRACT NO.: DE-AC13-02GJ79491  
TASK ORDER NO.: ST02-109  
CONTROL NO.: N/A

MEMO TO: Carl Jacobson  
FROM: Lauren Goodknight  
DATE: September 10, 2002  
SUBJECT: October LTSM Sampling at Canonsburg, Pennsylvania

Ground water sampling for the LTSM Canonsburg, Pennsylvania, site is scheduled to begin the week of October 7, 2002. The attached tables indicate which monitor wells and surface locations will be sampled as well as which laboratory measurements will be performed.

Normally, for any UMTRA Ground Water Project site, a letter is sent to DOE one month in advance informing them of upcoming sampling events. However, because there are no UMTRA Ground Water Project samples to be collected, this will not be done for the Canonsburg site.

If you have any additions or deletions to these lists please let me know as soon as possible.

LCG  
Attachments

Distribution:

cc/w: C. Bahrke  
R. Chessmore  
K. Miller  
D. Traub  
M. Widdop  
Project Record File LCAN 6.07 thru A. Garcia

**Sampling Frequencies for Locations at  
Canonsburg, Pennsylvania**

Wells	Quarterly	Semiannually	Annually	Biennially	Not Sampled	Notes
<b><i>LTSM Program Monitor Wells</i></b>						
406A			X			Replaces destroyed well 406
410			X			
412			X			
413			X			
414A			X			
424			X			
504					X	WL only
505					X	WL only
<b><i>LTSM Program Surface Locations</i></b>						
601			X			
602			X			
603			X			

Sampling conducted in October

**Constituent Sampling Breakdown  
For Individual Sites**

Site	Canonsburg	
	Ground Water	Surface Water
<b>Analyte</b>		
<b>Approx. No. Samples/yr</b>	6	3
<i>Field Measurements</i>	<i>LTSM</i>	<i>LTSM</i>
Alkalinity	X	X
Dissolved Oxygen		
Redox Potential	X	X
pH	X	X
Specific Conductance	X	X
Turbidity	X	
Temperature	X	X
<i>Laboratory Measurements</i>	<i>LTSM</i>	<i>LTSM</i>
Aluminum		
Ammonium		
Antimony		
Arsenic		
Beryllium		
Bromide		
Cadmium		
Calcium	X	X
Chloride	X	X
Chromium		
Cobalt		
Copper		
Fluoride		
Gamma Spec		
Gross Alpha		
Gross Beta		
Iron		
Lead		
Lead-210		
Magnesium	X	X
Manganese	X	X
Molybdenum	X	X

**Constituent Sampling Breakdown  
For Individual Sites**

Site	Canonsburg	
	Ground Water	Surface Water
<i>Laboratory Measurements (Continued)</i>	<i>LTSM</i>	<i>LTSM</i>
Nickel		
Nickel-63		
Nitrate		
PCBs		
Phosphate		
Polonium-210		
Potassium	X	X
Radium-226		
Radium-228		
Selenium		
Silica		
Sodium	X	X
Strontium		
Sulfate	X	X
Sulfide		
Thallium		
Thorium-230		
Tin		
Total Dissolved Solids		
Total Organic Carbon		
Uranium	X	X
Vanadium		
Zinc		
<b>Total No. of Analytes</b>	9	9

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.

## Memorandum

CONTRACT NO: DE-AC13-02GJ79491  
TASK ORDER NO: ST02-102  
CONTROL NO: N/A

DATE: November 6, 2002  
TO: Carl Jacobson  
FROM: David Miller  
SUBJECT: LTSM Sampling Trip Report

**Site:** Canonsburg, Pennsylvania

**Dates of Sampling Event:** October 8, 2002

**Team Members:** David Miller and Tom Maveal.

**Number of Locations Sampled:** Six ground water monitor wells and three surface water locations.

**Locations Not Sampled/Reason:** None

**Field Variance:** None

**Well/Location Specific Information:** Dedicated tubing was installed in all wells. All wells were sampled following low-flow procedures and were classified as Category I wells at 100 mL/min.

**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
700	412	Duplicate	Ground Water	NDT 677
701	602	Equipment Blank	Surface Water	NDT 684

**Requisition Numbers Assigned:** The LTSM requisition number is 18090.

**Water Level Measurements:** Water levels were measured at all sampled wells.

**Well Inspection Summary:** Well inspections were conducted on all sampled wells. All wells were in good shape except for the locks; several locks were rusted and had to be cut off to open the wells. New locks were placed on all wells.

**Data Loggers:** Dataloggers were not downloaded during this sampling event.

**Corrective Action:** None

**Equipment:** All equipment operated satisfactorily.

**Regulatory Issues:** None

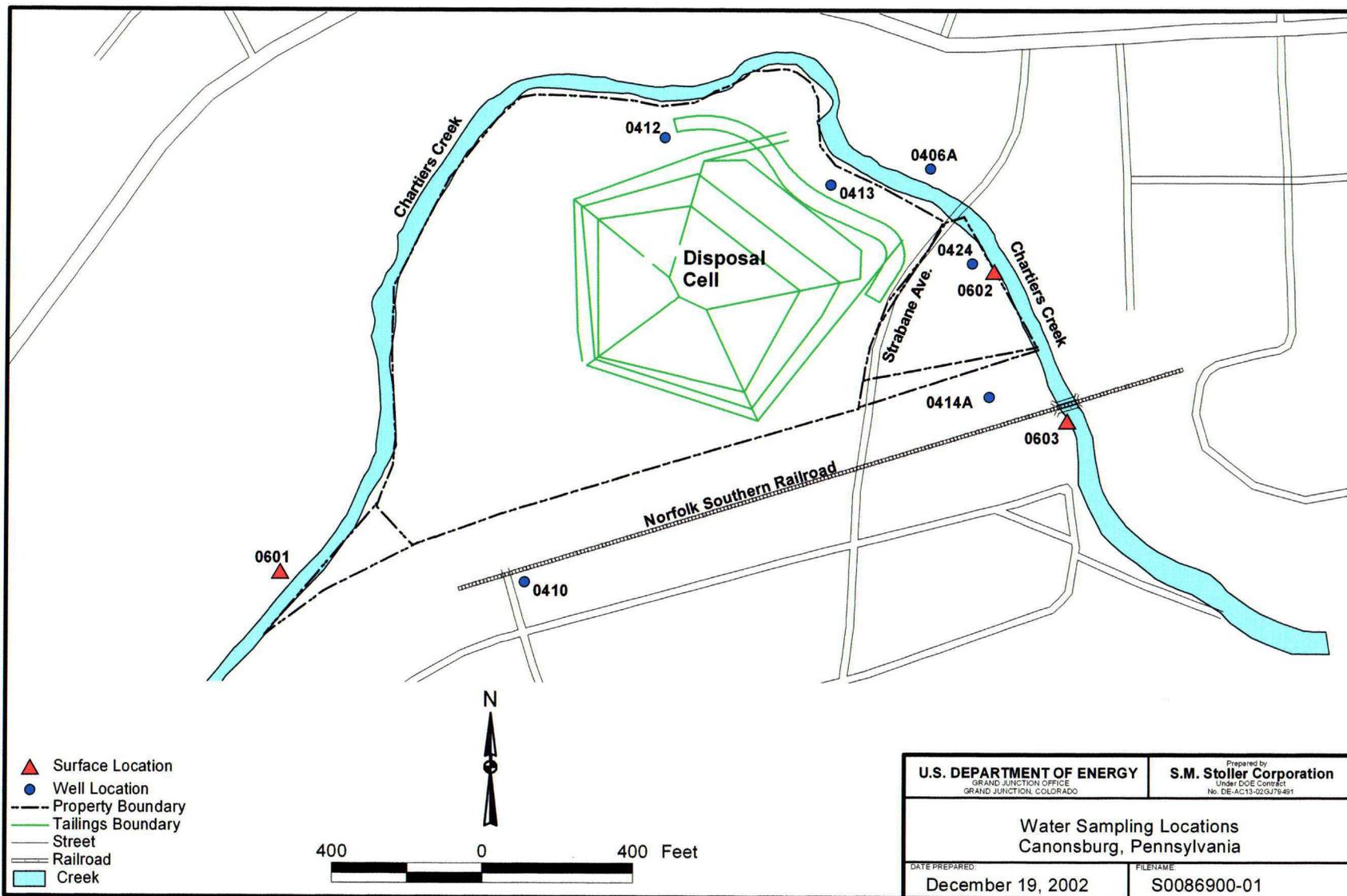
**Site Issues:** A Site Status Report was completed.

**Additional Action Required/Taken:** None

DM/lcg

cc: C. I. Bahrke  
R. K. Johnson  
K. E. Miller  
Project Record File LCAN 6.07 thru A. Temple

# SITE MAP



<b>U.S. DEPARTMENT OF ENERGY</b> <small>GRAND JUNCTION OFFICE GRAND JUNCTION, COLORADO</small>	Prepared by <b>S.M. Stoller Corporation</b> <small>Under DOE Contract No. DE-AC13-02GJ79491</small>
	<b>Water Sampling Locations Canonsburg, Pennsylvania</b>
<small>DATE PREPARED:</small> December 19, 2002	<small>FILENAME:</small> S0086900-01

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