



U.S. Department of Energy

2597 B ¾ Road
Grand Junction, CO 81503

MAR 17 2004

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

WM-42

Subject: Data Validation Package for the Canonsburg Long-Term Surveillance and Monitoring Site, October 2003

Dear Mr. Yusko:

Enclosed is a copy of the data validation from the water sampling conducted at the Canonsburg, Pennsylvania, site in October 2003. A disk is also enclosed for your use.

Concentrations of uranium did not exceed the alternate concentration limit of 1.0 mg/L in-point-of-compliance wells 0412, 0413, and 0414, at the Canonsburg site. As expected, the UMTRA ground water standard for uranium was exceeded in samples from wells 0412 and 0413, which is consistent with historical results. The uranium concentration at point-of-exposure location 0602 in Chartiers Creek did not exceed the alternate concentration limit. Molybdenum and uranium results from samples collected from Chartiers Creek downstream of the Canonsburg site 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.

If you have any questions or comments, please call me at 304/285-4991.

Sincerely,

Michael K. Tuckey /for
Ronald K. Staubly
Site Manager

Enclosures

cc w/enclosures:

S. Harper, Department of Environmental Protection

~~B. Von Till, Nuclear Regulatory Commission~~

11M5508

cc w/o enclosures:

J. Price, Stoller

Project File CAN410.02 (D. Roberts)

staubly/DVPCANPEN.doc

DATA VALIDATION CANONSBURG, PA

**October 2003
Water Sampling**

Prepared by the
U.S. Department of Energy
Grand Junction, Colorado



CANONSBURG, PENNSYLVANIA

Sampled October 2003

DATA PACKAGE CONTENTS

This data package includes the following information:

- | <u>Item No.</u> | <u>Description of Contents</u> |
|-----------------|--|
| 1. | Site Hydrologist Summary. |
| 2. | Data Package Assessment, which includes the following: <ul style="list-style-type: none">a. Field activities verification checklist.b. Confirmation that chain-of-custody was maintained.c. Confirmation that holding time requirements were met.d. Evaluation of adequacy of the QC sample results. |
| 3. | Data Assessment Summary, which describes problems identified in the data validation process and summarizes the validator's findings. |
| 4. | Suspected Anomalies Reports (SAR), 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. | UMTRA Database Printouts of analytical data organized as follows: <ul style="list-style-type: none">a. Ground water quality data (included on disk).b. Surface water quality data (included on disk).c. Equipment blank data (included on disk).d. Time versus concentration graphs.e. Static ground water level measurement data. |
| 6. | Sampling and Analysis Work Order and Trip Report. |
| 7. | Site Map. |

Site Hydrologist Summary

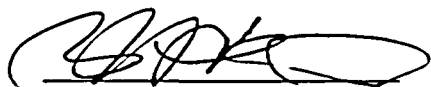
Site: Canonsburg, Pennsylvania

Sampling Period: October 28 - 29, 2003

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 Canonsburg 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 (0.180) and 0413 (0.197 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 (0.00066 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

20 Jan 2004
Date

DATA ASSESSMENT

Data Package Assessment

Requisition Numbers: 18706 Site: Canonsburg, Pa Laboratory: GJO Analysis Dates: 11/04 – 11/07/03
 Reviewer: Jeff Price *J. E. Price* January 5, 2004
Name (print) Signature Date

	ICP-MS	ICP-AES	FAA	NaBH ₄	AS	LSc	PC	IC	Gravimetric	Colorimetric	Other
Chain of Custody	<u>OK</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Holding Time	<u>OK</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Calib. Verification (For As, internal tracer)	<u>OK</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Prep. Blanks (Only if digestion)	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Int/Cont Cal. Blanks	<u>OK</u>	<u>1</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
ICP Serial Dilution	<u>OK</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
ICS (ICP only)	<u>NA</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Lab Control Sample	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Duplicates	<u>OK</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Postdigest. Spks. (Only if MS fails)	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Matrix Spks.	<u>OK</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Overall Assess.	<u>OK</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>OK</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

Data Requiring Flags: 1 - Blank contamination, "U" flag the following samples: Calcium sample 300703 (604); Potassium sample 300703 (604).

Water Sampling Field Activities Verification Checklist

Project Canonsburg, Pa Date(s) of Water Sampling 10/28 – 10/29/03
 Date(s) of Verification 01/09/04 Name of Verifier Jeff Price

	Response (Yes, No, N/A)	Comments
1. Is the SAP the primary document directing field procedures? List other documents, SOP's, instructions.	Yes	Work Request.
2. Were the sampling locations specified in the planning documents sampled?	Yes	
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	
4. Was an operational check of the field equipment conducted twice daily? Did the operational checks meet criteria?	Yes Yes	
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the Category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged prior to sampling? Did the water level stabilize prior to sampling? Did pH, specific conductance, and turbidity measurements stabilize prior to sampling? Was the flow rate less than 500 mL/min? If a portable pump was used, was there a 4 hour delay between pump installation and sampling?	Yes Yes Yes Yes N/A	

Water Sampling Field Activities Verification Checklist (continued)

8. Were the following conditions met when purging a Category II well:

Was the flow rate less than 500 mL/min?

Yes

Was one pump/tubing volume removed prior to sampling?

Yes

9. Were duplicates taken at a frequency of one per 20 samples?

Yes

10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?

Yes

11. Were trip blanks prepared and included with each shipment of VOC samples?

N/A

12. Were QC samples assigned a fictitious site identification number?

Yes

Was the true identity of the samples recorded on the Quality Assurance Sample Log?

Yes

13. Were samples collected in the containers specified?

Yes

14. Were samples filtered and preserved as specified?

Yes

15. Were the number and types of samples collected as specified?

Yes

16. Were chain of custody records completed and was sample custody maintained?

Yes

17. Are field data sheets signed and dated by both team members?

yes

18. Was all other pertinent information documented on the field data sheets?

Yes

19. Was the presence or absence of ice in the cooler documented at every sample location?

Yes

20. Were water levels measured at the locations specified in the planning documents?

Yes

**CANONSBURG, PENNSYLVANIA
OCTOBER 2003 SAMPLING
DATA ASSESSMENT SUMMARY**

The DOE-GJO Analytical Laboratory analyzed samples and reported results for this sampling event under requisition number 18706.

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).

INORGANIC ANALYSES

Chloride and sulfate were determined by ion chromatography (IC). Total dissolved solids (TDS) were determined gravimetrically.

FIELD ANALYSIS/ACTIVITIES

All ground water results were qualified with an "F" flag in the database indicating that the wells were purged and sampled using the low-flow method. Results from well 0410 were qualified with a "Q" flag in the database. This qualification was necessary because the sampling procedure criteria of no water level draw down while sampling could not be met. If a static water level cannot be maintained during the purging phase prior to sampling, the water is not coming exclusively from the aquifer and is instead being mixed with stagnant borehole water. This mixing condition may or may not cause a problem, however, the data are flagged as qualitative in nature.

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 surface location 0602. 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.

J. E. Price
Jeff Price
Data Validation Lead

Jan 14, 04
Date

SAR

SUSPECTED ANOMALIES REPORT

REPORT DATE: 1/12/2004

TIME: 11:40:41 AM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 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	
0406A OK	0	ALK mg/L	10/28/2003	0001	595.0000	1	731.0000	731.0000	365.5000	10/8/2002	0001	731.0000	10/8/2002	0001	731.0000	10/8/2002	0001	731.0000
	0	Ca mg/L	10/28/2003	0001	194.0000	1	202.0000	202.0000	101.0000	10/8/2002	0001	202.0000	10/8/2002	0001	202.0000	10/8/2002	0001	202.0000
	0	Chloride mg/L	10/28/2003	0001	80.8000	1	51.4000	51.4000	25.7000	10/8/2002	0001	51.4000	10/8/2002	0001	51.4000	10/8/2002	0001	51.4000
	0	EC umhos/c	10/28/2003	N001	1360.0000	1	1501.0000	1501.0000	750.5000	10/8/2002	N001	1501.0000	10/8/2002	N001	1501.0000	10/8/2002	N001	1501.0000
	0	K mg/L	10/28/2003	0001	3.7300	1	4.3600	4.3600	2.1800	10/8/2002	0001	4.3600	10/8/2002	0001	4.3600	10/8/2002	0001	4.3600
	0	Mg mg/L	10/28/2003	0001	43.1000	1	40.4000	40.4000	20.2000	10/8/2002	0001	40.4000	10/8/2002	0001	40.4000	10/8/2002	0001	40.4000
	0	Mn mg/L	10/28/2003	0001	2.7100	1	4.4300	4.4300	2.2150	10/8/2002	0001	4.4300	10/8/2002	0001	4.4300	10/8/2002	0001	4.4300
	0	Mo mg/L	10/28/2003	0001	0.0017	1	0.0030	0.0030	0.0008	10/8/2002	0001	0.0030	10/8/2002	0001	0.0030	10/8/2002	0001	0.0030
	0	Na mg/L	10/28/2003	0001	45.7000	1	37.3000	37.3000	18.6500	10/8/2002	0001	37.3000	10/8/2002	0001	37.3000	10/8/2002	0001	37.3000
	3	ORP mV	10/28/2003	N001	-124.0000	1	-7.0000	-7.0000	-3.5000	10/8/2002	N001	-7.0000	10/8/2002	N001	-7.0000	10/8/2002	N001	-7.0000
	0	PH s.u.	10/28/2003	N001	6.8600	1	7.0100	7.0100	3.5050	10/8/2002	N001	7.0100	10/8/2002	N001	7.0100	10/8/2002	N001	7.0100
	0	SO4 mg/L	10/28/2003	0001	51.9000	1	27.5000	27.5000	13.7500	10/8/2002	0001	27.5000	10/8/2002	0001	27.5000	10/8/2002	0001	27.5000
	0	TMP C	10/28/2003	N001	16.9200	1	18.3000	18.3000	9.1500	10/8/2002	N001	18.3000	10/8/2002	N001	18.3000	10/8/2002	N001	18.3000
						0	18.3000	18.3000	36.6000									

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 J. P. Rin
 Hydrologist "Ok" indicates insignificant variation

Date Jan 12, 04

SUSPECTED ANOMALIES REPORT

REPORT DATE: 1/12/2004

TIME: 11:40:43 AM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE UNITS	ANOMALOUS TEST DATA POINT			# OF SAMP.	ALL TIME MINIMUMS		LOWER BOUND UPPER BOUND	3 MOST RECENT SAMPLING EVENTS								
			LOG DATE	SAMPLE VALUE	DETLIM		ALL TIME MAXIMUMS			LOG DATE	SAMPLE VALUE	DETLIM	LOG DATE	SAMPLE VALUE	DETLIM	LOG DATE	SAMPLE VALUE	DETLIM
			FLAGS	UNCERTAINTY						FLAGS	UNCERTAINTY		FLAGS	UNCERTAINTY		FLAGS	UNCERTAINTY	
0408A OK ↓	0	TURBID NTU	10/28/2003	N001	9.9900	1	9.690	9.690	4.8450	10/8/2002	N001	9.6900	10/8/2002	N001	9.6900	10/8/2002	N001	9.6900
						0	9.690	9.690	19.3800									
	0	U mg/L	10/28/2003	0001	0.0007	1	0.002	0.002	0.0005	10/8/2002	0001	0.0019	10/8/2002	0001	0.0019	10/8/2002	0001	0.0019
			B		0.0001	0	0.002	0.002	0.0076			0.0001			0.0001			0.0001
0410 Low OK ↓	5	ALK mg/L	10/28/2003	0001	10.0000	27	21.000	44.000	34.1103	10/8/2002	0001	21.0000	10/3/2000	N001	59.0000	10/3/2000	0001	81.0000
						0	99.000	120.000	76.1222									
	5	Ca mg/L	10/28/2003	0001	24.7000	25	38.400	39.400	40.3592	10/8/2002	0001	41.1000	10/30/2001	0001	49.7000	10/3/2000	0001	48.0000
					0.056	0	52.100	56.500	48.7711			0.0446			0.0653			0.0481
	5	Chloride mg/L	10/28/2003	0001	93.5000	25	36.000	37.000	156.2695	10/8/2002	0001	173.0000	10/30/2001	0001	182.0000	10/3/2000	0001	163.0000
					0.231	0	173.000	182.000	205.6669			0.2005			0.1865			0.0239
	5	EC umhos/c	10/28/2003	N001	530.0000	25	344.000	355.000	735.5854	10/8/2002	N001	795.0000	10/30/2001	N001	764.0000	10/3/2000	N001	749.0000
						0	795.000	850.000	871.6016									
	0	K mg/L	10/28/2003	0001	0.9940	25	0.970	1.000	0.9927	10/8/2002	0001	1.3500	10/30/2001	0001	1.0900	10/3/2000	0001	1.2100
					0.0091	0	1.720	2.500	1.3433			0.0259	E		0.0151			0.0327
	5	Mg mg/L	10/28/2003	0001	12.5000	25	13.200	13.800	18.8601	10/8/2002	0001	19.1000	10/30/2001	0001	20.4000	10/3/2000	0001	19.5000
					0.005	0	19.500	20.400	20.8548			0.011			0.0041			0.0352
	5	Mn mg/L	10/28/2003	0001	1.3800	26	1.470	2.280	2.5064	10/8/2002	0001	2.2800	10/30/2001	0001	3.1600	10/3/2000	0001	3.1100
				0.0001	0	3.420	4.050	3.1347			0.0002			0.0001			0.002	
0	Mo mg/L	10/28/2003	0001	0.0017	25	0.000	0.001	0.0003	10/8/2002	0001	0.0030	10/30/2001	0001	0.0019	10/3/2000	0001	0.0004	
			U		0.0017	92	0.200	0.200	0.3000		U		U		U		0.0004	
0	Na mg/L	10/28/2003	0001	54.9000	25	32.100	38.000	47.5807	10/8/2002	0001	65.1000	10/30/2001	0001	52.4000	10/3/2000	0001	50.5000	
				0.0064	0	52.400	65.100	57.4353			0.895			0.0074			0.302	
6	ORP mV	10/28/2003	N001	156.0000	10	33.000	71.000	0.0000	10/8/2002	N001	71.1000	10/30/2001	N001	33.0000	10/3/2000	N001	77.0000	
					0	331.000	362.000	76.4028										
5	PH s.u.	10/28/2003	N001	5.2600	25	5.190	5.200	5.3463	10/8/2002	N001	5.6600	10/30/2001	N001	5.6100	10/3/2000	N001	5.4500	
					0	6.220	6.250	5.8141										

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 J. P. [Signature]
 Hydrologist "Ok" indicates insignificant variation

Date Jan 12, 04

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 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	DET LIM		ALL TIME MAXIMUMS	LOG DATE		SAMPLE VALUE	DET LIM	LOG DATE	SAMPLE VALUE	DET LIM	LOG DATE	SAMPLE VALUE	DET LIM	
			FLAGS	UNCERTAINTY	DET LIM		FLAGS	UNCERTAINTY		DET LIM	FLAGS	UNCERTAINTY	DET LIM	FLAGS	UNCERTAINTY	DET LIM	FLAGS	UNCERTAINTY
0410 OK	0	SO4 mg/L	10/28/2003	0001	83.5000 0.153	25 0	72.700 163.000	83.200 171.000	62.6316 88.9969	10/8/2002	0001	86.7000 0.1965	10/30/2001	0001	95.4000 0.2045	10/3/2000	0001	83.2000 0.0589
	0	TMP C	10/28/2003	N001	15.3900	25 0	8.500 17.000	9.000 17.200	15.3420 17.8625	10/8/2002	N001	16.9000	10/30/2001	N001	8.5000	10/3/2000	N001	15.9000
	0	TURBIDI NTU	10/28/2003	N001	5.2900	10 0	7.900 34.400	14.700 58.000	0.8675 37.5161	10/8/2002	N001	7.9000	10/30/2001	N001	58.0000	10/3/2000	N001	18.9000
	0	U mg/L	10/28/2003	0001	0.0001 0.0001	26 80.769	0.000 0.001	0.000 0.003	0.0000 0.0004	10/8/2002	0001	0.0001 0.0001	10/30/2001	0001	0.0006 0.0001	10/3/2000	0001	0.0002 0.0001
0412	6	ALK mg/L	10/29/2003	0001	765.0000	26 0	284.000 500.000	289.000 549.000	387.4306 499.0528	10/8/2002	0001	449.0000	10/4/2000	N001	437.0000	10/4/2000	0001	397.0000
	6	Ca mg/L	10/29/2003	0001	473.0000 0.056	24 0	166.000 410.000	203.000 465.000	353.3888 444.3765	10/8/2002	0001	387.0000 0.0446	10/30/2001	0001	363.0000 0.0653	10/4/2000	0001	360.0000 0.0481
	0	Chloride mg/L	10/29/2003	0001	23.4000 0.0231	24 0	26.800 80.000	27.200 84.000	11.7930 27.2857	10/8/2002	0001	27.2000 0.802	10/30/2001	0001	28.8000 0.746	10/4/2000	0001	27.7000 0.0239
	0	EC umhos/c	10/29/2003	N001	2398.0000	24 0	790.000 2310.000	950.000 2460.000	2164.5729 2700.0529	10/8/2002	N001	2078.0000	10/30/2001	N001	2190.0000	10/4/2000	N001	2280.0000
	0	K mg/L	10/29/2003	0001	2.7200 0.0091	24 0	1.620 3.600	1.670 7.440	2.2040 3.0010	10/8/2002	0001	2.7500 0.0259	10/30/2001	0001	2.3300 0.0151	10/4/2000	0001	2.4300 0.0327
	5	Mg mg/L	10/29/2003	0001	67.2000 0.005	24 0	43.400 82.100	43.500 84.000	69.5144 86.6840	10/8/2002	0001	75.1000 0.011	10/30/2001	0001	70.5000 0.0041	10/4/2000	0001	72.2000 0.0352
	0	Mn mg/L	10/29/2003	0001	23.4000 0.0005	24 0	4.050 23.000	9.400 26.600	20.5720 26.4691	10/8/2002	0001	20.4000 0.002	10/30/2001	0001	22.3000 0.001	10/4/2000	0001	21.1000 0.002
	6	Mo mg/L	10/29/2003	0001	0.0085 0.0085	24 58.333	0.000 0.100	0.001 0.200	0.0000 0.0027	10/8/2002	0001	0.0030 0.003	10/30/2001	0001	0.0019 0.0019	10/4/2000	0001	0.0005 0.0004
	5	Na mg/L	10/29/2003	0001	50.1000 0.0064	24 0	70.500 147.000	73.100 176.000	57.4826 77.9243	10/8/2002	0001	73.1000 0.895	10/30/2001	0001	70.5000 0.0074	10/4/2000	0001	74.2000 0.302

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Approved by J. P. Prie
 Hydrologist "Ok" indicates insignificant variation

Date Jan 14, 04

SUSPECTED ANOMALIES REPORT

REPORT DATE: 1/12/2004

TIME: 11:40:45 AM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE UNITS	ANOMALOUS TEST DATA POINT			# OF SAMP.	ALL TIME MINIMUMS		LOWER BOUND UPPER BOUND	3 MOST RECENT SAMPLING EVENTS								
			LOG DATE	SAMPLE VALUE	%NON DETE C		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	
0412 c/c	5	ORP mV	10/29/2003	N001	-40.0000	11	-69.000	-58.000	0.0000	10/8/2002	N001	40.0000	10/30/2001	N001	3.0000	10/4/2000	N001	-25.0000
						0	303.000	350.000	80.1703									
	6	PH s.u.	10/29/2003	N001	6.3900	24	5.910	6.100	6.1148	10/8/2002	N001	6.7200	10/30/2001	N001	6.1300	10/4/2000	N001	6.2300
						0	6.630	6.720	6.3660									
	5	SO4 mg/L	10/29/2003	0001	893.0000 0.306	24	479.000	486.000	964.3891	10/8/2002	0001	998.0000 0.786	10/30/2001	0001	1030.0000 0.818	10/4/2000	0001	935.0000 0.0589
						0	1030.000	1100.000	1137.0019									
5	TMP C	10/29/2003	N001	12.0800	24	10.600	11.000	12.4624	10/8/2002	N001	13.2000	10/30/2001	N001	12.8000	10/4/2000	N001	13.1000	
					0	13.500	14.000	13.7807										
0	TURBIDI NTU	10/29/2003	N001	4.0700	8	0.830	1.300	0.0000	10/8/2002	N001	9.8300	10/30/2001	N001	4.8400	10/4/2000	N001	29.8000	
					0	29.800	68.800	38.7188										
6	U mg/L	10/29/2003	0001	0.1800 0.0001	24	0.018	0.021	0.0419	10/8/2002	0001	0.0994 0.0001	10/30/2001	0001	0.0536 0.0001	10/4/2000	0001	0.0536 0.0001	
					0	0.122	0.213	0.1254										
0413	0	ALK mg/L	10/28/2003	0001	317.0000	25	99.000	220.000	299.9669	10/8/2002	0001	345.0000	10/4/2000	0001	377.0000	10/4/2000	N001	355.0000
	6	Ca mg/L	10/28/2003	0001	118.0000 0.056	24	97.800	103.000	95.3033	10/8/2002	0001	123.0000 0.0446	10/30/2001	0001	114.0000 0.0653	10/4/2000	0001	116.0000 0.0481
						0	181.000	181.000	117.8788									
	0	Chloride mg/L	10/28/2003	0001	6.8500 0.0231	24	8.610	9.210	1.6651	10/8/2002	0001	24.6000 0.0401	10/30/2001	0001	22.3000 0.1865	10/4/2000	0001	22.7000 0.0239
						0	120.000	120.000	29.2216									
	0	EC umhos/c	10/28/2003	N001	703.0000	24	598.000	600.000	682.3937	10/8/2002	N001	981.0000	10/30/2001	N001	798.0000	10/4/2000	N001	855.0000
						0	1150.000	1150.000	970.1568									
	6	K mg/L	10/28/2003	0001	4.6700 0.0091	24	2.000	3.190	3.4274	10/8/2002	0001	4.0900 0.0259	10/30/2001	0001	3.6700 E 0.0151	10/4/2000	0001	3.9300 0.0327
					0	4.510	6.300	4.4588										
6	Mg mg/L	10/28/2003	0001	17.4000 0.005	24	14.900	15.200	13.2939	10/8/2002	0001	18.1000 0.011	10/30/2001	0001	16.3000 0.0041	10/4/2000	0001	17.2000 0.0352	
					0	28.400	29.200	16.6787										
5	Mn mg/L	10/28/2003	0001	0.9120 0.0001	24	1.300	1.400	1.0096	10/8/2002	0001	2.9100 0.0002	10/30/2001	0001	2.6100 0.0001	10/4/2000	0001	2.7500 0.002	
					0	7.470	7.470	3.1759										

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Approved by J. E. Rin
 Hydrologist "Ok" indicates insignificant variation

Date Jan 14, 04

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 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	LOG DATE	SAMPLE VALUE		LOG DATE	SAMPLE VALUE		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	DETLIM			
0413 ck	0	Mo mg/L	10/28/2003	0001	0.0017	24	0.002	0.002	0.0000	10/8/2002	0001	0.0030	10/30/2001	0001	0.0019	10/4/2000	0001	0.0029				
			U		0.0017	45.833	0.190	0.190	0.0028	U		0.003	U		0.0019	B		0.0004				
	0	Na mg/L	10/28/2003	0001	19.0000	24	26.700	28.400	8.9983	10/8/2002	0001	32.8000	10/30/2001	0001	28.4000	10/4/2000	0001	40.2000				
					0.0064	0	155.000	155.000	34.7627			0.895			0.0074			0.302				
	6	ORP mV	10/28/2003	N001	15.0000	11	-124.000	-111.000	0.0000	10/8/2002	N001	-6.0000	10/30/2001	N001	-84.0000	10/4/2000	N001	-92.0000				
						0	306.000	409.000	8.7634													
	5	PH s.u.	10/28/2003	N001	6.6100	24	6.420	6.500	6.6842	10/8/2002	N001	6.9900	10/30/2001	N001	6.7300	10/4/2000	N001	6.7200				
						0	6.990	7.000	6.9597													
	0	SO4 mg/L	10/28/2003	0001	55.4000	24	73.300	74.100	12.5641	10/8/2002	0001	88.0000	10/30/2001	0001	79.9000	10/4/2000	0001	105.0000				
					0.0153	0	356.000	356.000	86.0760			0.0393			0.2045			0.0589				
5	TMP C	10/28/2003	N001	13.8400	24	8.100	9.400	14.0784	10/8/2002	N001	15.9300	10/30/2001	N001	14.4000	10/4/2000	N001	15.8000					
					0	17.500	17.500	17.7501														
0	TURBIDI NTU	10/28/2003	N001	9.6300	10	6.640	6.950	0.0000	10/8/2002	N001	6.9500	10/30/2001	N001	29.9000	10/4/2000	N001	6.6400					
					0	91.000	228.000	35.8696														
6	U mg/L	10/28/2003	0001	0.1970	24	0.045	0.049	0.0842	10/8/2002	0001	0.1340	10/30/2001	0001	0.0914	10/4/2000	0001	0.1390					
				0.0001	0	0.339	0.382	0.1850			0.0001			0.0001			0.0001					
0414A	0	ALK mg/L	10/28/2003	0001	222.0000	1	235.000	235.000	117.5000	10/8/2002	0001	235.0000	10/8/2002	0001	235.0000	10/8/2002	0001	235.0000				
						0	235.000	235.000	470.0000													
	0	Ca mg/L	10/28/2003	0001	109.0000	2	103.000	107.000	51.5000	10/8/2002	0001	107.0000	10/30/2001	0001	103.0000	10/30/2001	0001	103.0000				
					0.056	0	103.000	107.000	214.0000			0.0446			0.0653			0.0653				
	0	Chloride mg/L	10/28/2003	0001	5.5400	2	9.470	17.700	4.7350	10/8/2002	0001	9.4700	10/30/2001	0001	17.7000	10/30/2001	0001	17.7000				
					0.231	0	17.700	17.700	35.4000			0.0802			0.1865			0.1865				
0	EC umhos/c	10/28/2003	N001	761.0000	2	715.000	835.000	357.5000	10/8/2002	N001	835.0000	10/30/2001	N001	715.0000	10/30/2001	N001	715.0000					
					0	715.000	835.000	1670.0000														
0	K mg/L	10/28/2003	0001	1.4800	2	1.490	1.640	0.7450	10/8/2002	0001	1.6400	10/30/2001	0001	1.4900	10/30/2001	0001	1.4900					
				0.0091	0	1.490	1.640	3.2800			0.0259	E		0.0151	E		0.0151					

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Approved by *A.E. P...*
 Hydrologist "Ok" indicates insignificant variation

Date *Jan 14, 04*

SUSPECTED ANOMALIES REPORT
 REPORT DATE: 1/12/2004 TIME: 11:40:48 AM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 History Records

LOC. ID.	ERR. TYPE FLAG	PARAM CODE UNITS	ANOMALOUS TEST DATA POINT			# OF SAMP.	ALL TIME MINIMUMS		LOWER BOUND UPPER BOUND	3 MOST RECENT SAMPLING EVENTS								
			LOG DATE	SAMPLE VALUE	VALUE		ALL TIME MAXIMUMS	LOG DATE		SAMPLE VALUE	VALUE	LOG DATE	SAMPLE VALUE	VALUE	LOG DATE	SAMPLE VALUE	VALUE	
			FLAGS	UNCERTAINTY	DETLIM		%NON DETE C	FLAGS		UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY	DETLIM	
0414A EK	0	Mg mg/L	10/28/2003	0001	20.0000 0.005	2 0	19.300 19.300	19.300 38.6000	9.6500	10/8/2002	0001	19.3000 0.011	10/30/2001	0001	19.3000 0.0041	10/30/2001	0001	19.3000 0.0041
	0	Mn mg/L	10/28/2003	0001	8.0900 0.0001	2 0	7.010 7.010	9.460 9.460	3.5050	10/8/2002	0001	9.4600 0.0002	10/30/2001	0001	7.0100 0.0001	10/30/2001	0001	7.0100 0.0001
	0	Mo mg/L	10/28/2003	0001	0.0017 0.0017	2 100	0.002 0.002	0.003 0.003	0.0010	10/8/2002	0001	0.0030 0.003	10/30/2001	0001	0.0019 0.0019	10/30/2001	0001	0.0019 0.0019
	0	Na mg/L	10/28/2003	0001	19.5000 0.0064	2 0	10.200 10.200	14.600 14.600	5.1000	10/8/2002	0001	14.6000 0.895	10/30/2001	0001	10.2000 0.0074	10/30/2001	0001	10.2000 0.0074
	4	ORP mV	10/28/2003	N001	14.0000	2	-40.000	-1.800	-20.0000	10/8/2002	N001	-1.8000	10/30/2001	N001	-40.0000	10/30/2001	N001	-40.0000
	0	PH s.u.	10/28/2003	N001	6.5500	2	6.580	6.920	3.2900	10/8/2002	N001	6.9200	10/30/2001	N001	6.5800	10/30/2001	N001	6.5800
	0	SO4 mg/L	10/28/2003	0001	185.0000 0.153	2 0	124.000 124.000	138.000 138.000	62.0000	10/8/2002	0001	138.0000 0.0786	10/30/2001	0001	124.0000 0.2045	10/30/2001	0001	124.0000 0.2045
	0	TMP C	10/28/2003	N001	13.2400	2	13.500	14.770	6.7500	10/8/2002	N001	14.7700	10/30/2001	N001	13.5000	10/30/2001	N001	13.5000
	0	TURBIDI NTU	10/28/2003	N001	4.4000	2	3.280	1000.000	1.6400	10/8/2002	N001	3.2800	10/30/2001	N001	1000.0000	10/30/2001	N001	1000.0000
	4	U mg/L	10/28/2003	0001	0.0059 0.0001	2 0	0.002 0.002	0.003 0.003	0.0010	10/8/2002	0001	0.0025 0.0001	10/30/2001	0001	0.0019 0.0001	10/30/2001	0001	0.0019 0.0001
0424	0	ALK mg/L	10/28/2003	0001	373.0000	12	327.000	347.000	332.9724	10/8/2002	0001	347.0000	10/3/2000	0001	395.0000	10/3/2000	N001	432.0000
	0	Ca mg/L	10/28/2003	0001	93.0000 0.056	10 0	95.500 105.000	95.900 110.000	92.3945	10/8/2002	0001	99.1000 0.0446	10/30/2001	0001	100.0000 0.0653	10/3/2000	0001	95.5000 0.0481
	0	Chloride mg/L	10/28/2003	0001	91.0000 0.231	10 0	94.500 139.000	100.000 150.000	82.3743	10/8/2002	0001	100.0000 0.0802	10/30/2001	0001	106.0000 0.373	10/3/2000	0001	105.0000 0.0239

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Approved by *J. E. Price*
 Hydrologist "Ok" indicates insignificant variation

Date *Jan 14, 04*

SUSPECTED ANOMALIES REPORT

REPORT DATE: 1/12/2004

TIME: 11:40:49 AM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 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		ALL TIME MAXIMUMS	LOG DATE		SAMPLE VALUE	VALUE	LOG DATE	SAMPLE VALUE	VALUE	LOG DATE	SAMPLE VALUE	VALUE	
			FLAGS	UNCERTAINTY	DETLIM		ALL TIME MAXIMUMS	FLAGS		UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY	DETLIM	FLAGS	UNCERTAINTY	DETLIM	
0424 OK	5	EC umhos/c	10/28/2003	N001	1182.0000	10	1167.000	1170.000	1201.0912	10/8/2002	N001	1308.0000	10/30/2001	N001	1280.0000	10/3/2000	N001	1378.0000
	5	K mg/L	10/28/2003	0001	2.6700	10	2.900	2.970	2.7847	10/8/2002	0001	3.0100	10/30/2001	0001	2.9700	10/3/2000	0001	3.0300
	0	Mg mg/L	10/28/2003	0001	24.4000	10	24.100	24.300	23.2363	10/8/2002	0001	25.5000	10/30/2001	0001	24.3000	10/3/2000	0001	24.1000
	5	Mn mg/L	10/28/2003	0001	4.8600	11	5.560	5.810	5.2531	10/8/2002	0001	5.5600	10/30/2001	0001	6.1200	10/3/2000	0001	5.8100
	0	Mo mg/L	10/28/2003	0001	0.0017	10	0.001	0.001	0.0007	10/8/2002	0001	0.0030	10/30/2001	0001	0.0019	10/3/2000	0001	0.0018
	6	Na mg/L	10/28/2003	0001	139.0000	10	123.000	138.000	123.2582	10/8/2002	0001	138.0000	10/30/2001	0001	123.0000	10/3/2000	0001	140.0000
	5	ORP mV	10/28/2003	N001	-32.0000	10	-110.000	-94.000	0.0000	10/8/2002	N001	-0.1000	10/30/2001	N001	-110.0000	10/3/2000	N001	2.0000
	0	PH s.u.	10/28/2003	N001	6.5800	10	6.310	6.410	6.4390	10/8/2002	N001	6.8900	10/30/2001	N001	6.5200	10/3/2000	N001	6.4300
	0	SO4 mg/L	10/28/2003	0001	154.0000	10	150.000	162.000	130.1670	10/8/2002	0001	171.0000	10/30/2001	0001	162.0000	10/3/2000	0001	166.0000
	5	TMP C	10/28/2003	N001	13.8300	10	12.500	12.700	15.1511	10/8/2002	N001	16.4000	10/30/2001	N001	15.4000	10/3/2000	N001	14.1000
	0	TURBIDI NTU	10/28/2003	N001	1.8000	10	1.810	2.800	0.0000	10/8/2002	N001	2.8000	10/30/2001	N001	1.8100	10/3/2000	N001	23.5000
	0	U mg/L	10/28/2003	0001	0.0001	12	0.000	0.000	0.0001	10/8/2002	0001	0.0001	10/30/2001	0001	0.0006	10/3/2000	0001	0.0002
	0601	6	ALK mg/L	10/28/2003	0001	162.0000	18	125.000	126.000	129.7073	10/8/2002	0001	142.0000	10/3/2000	0001	139.0000	10/3/2000	N001

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 Hydrologist "OK" indicates insignificant variation

Date Jan 14, 04

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			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		
0601 OK	5	Ca mg/L	10/28/2003	0001	69.0000 0.056	18 0	74.800 115.000	79.700 118.000	84.1398 124.0425	10/8/2002	0001	103.0000 0.0446	10/30/2001	0001	115.0000 0.0653	10/3/2000	0001	85.1000 0.0481
	5	Chloride mg/L	10/28/2003	0001	43.1000 0.231	17 0	31.000 124.000	33.600 134.000	76.1489 158.7245	10/8/2002	0001	124.0000 0.2005	10/30/2001	0001	134.0000 0.373	10/3/2000	0001	72.2000 0.0239
	5	EC umhos/c	10/28/2003	N001	574.0000	17 0	468.000 1571.000	495.000 1865.000	1136.2791 1842.9124	10/8/2002	N001	1357.0000	10/30/2001	N001	1865.0000	10/3/2000	N001	1103.0000
	5	K mg/L	10/28/2003	0001	3.7500 0.0091	18 0	3.200 8.900	3.390 10.400	6.4226 10.4216	10/8/2002	0001	8.1100 0.0259	10/30/2001	0001	8.5500 E 0.0151	10/3/2000	0001	6.8400 0.0327
	5	Mg mg/L	10/28/2003	0001	14.0000 0.005	18 0	15.100 29.300	16.000 32.200	21.8393 34.9813	10/8/2002	0001	28.8000 0.011	10/30/2001	0001	29.3000 0.0041	10/3/2000	0001	21.8000 0.0352
	0	Mn mg/L	10/28/2003	0001	0.0732 0.0001	19 0	0.057 0.190	0.067 0.200	0.0294 0.0909	10/8/2002	0001	0.0569 0.0002	10/30/2001	0001	0.0952 0.0001	10/3/2000	0001	0.0873 0.002
	0	Mo mg/L	10/28/2003	0001	0.0242 0.0017	19 0	0.040 0.150	0.040 0.220	0.0139 0.0995	10/8/2002	0001	0.0573 0.003	10/30/2001	0001	0.0464 0.0019	10/3/2000	0001	0.0583 0.0004
	5	Na mg/L	10/28/2003	0001	37.1000 0.0064	18 0	32.000 173.000	36.700 180.000	122.9161 226.0623	10/8/2002	0001	180.0000 0.895	10/30/2001	0001	173.0000 0.0074	10/3/2000	0001	104.0000 0.302
	6	ORP mV	10/28/2003	N001	137.0000	8 0	49.000 176.000	61.000 186.000	0.0000 125.4382	10/8/2002	N001	65.0000	10/30/2001	N001	49.0000	10/3/2000	N001	176.0000
	5	PH s.u.	10/28/2003	N001	6.5100	17 0	6.930 8.290	7.150 8.540	8.0157 8.7076	10/8/2002	N001	8.2900	10/30/2001	N001	8.5400	10/3/2000	N001	8.2400
	5	SO4 mg/L	10/28/2003	0001	90.2000 0.153	18 0	104.000 460.000	111.000 494.000	284.6497 608.8686	10/8/2002	0001	454.0000 0.1965	10/30/2001	0001	494.0000 0.409	10/3/2000	0001	238.0000 0.0589
	0	TMP C	10/28/2003	N001	8.7900	17 0	3.000 23.600	5.400 24.400	4.5591 21.9399	10/8/2002	N001	15.5000	10/30/2001	N001	5.4000	10/3/2000	N001	19.7000
	0	TURBIDI NTU	10/28/2003	N001	21.9000	3 0	7.730 12.000	12.000 16.700	3.8650 33.4000	10/3/2000	N001	7.7300	10/11/1998	N001	16.7000	11/12/1997	N001	12.0000

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 *J.E. P...*
 Hydrologist "OK" indicates insignificant variation

Date *Jan 14, 04*

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 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		ALL TIME MAXIMUMS	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	FLAGS	UNCERTAINTY
0601 OK	0	U mg/L	10/28/2003 B	0001 0.0001	0.0005 0.0001	18 72.222	0.000 0.001	0.000 0.003	0.0002 0.0009	10/8/2002 B	0001 0.0001	0.0005 0.0001	10/30/2001 B	0001 0.0001	0.0009 0.0001	10/3/2000 B	0001 0.0001	0.0006 0.0001
0602 OK	0	ALK mg/L	10/28/2003	0001	148.0000	19	114.000 164.000	124.000 166.000	126.3241 153.7683	10/8/2002	0001	142.0000	10/30/2001	0001	143.0000	10/3/2000	N001	130.0000
	5	Ca mg/L	10/28/2003	0001	68.7000 0.056	18	67.000 117.000	78.300 121.000	83.9068 126.0496	10/8/2002	0001	103.0000 0.0446	10/30/2001	0001	121.0000 0.0653	10/3/2000	0001	83.6000 0.0481
	5	Chloride mg/L	10/28/2003	0001	42.3000 0.231	17	31.000 121.000	32.800 133.000	80.6350 156.1673	10/8/2002	0001	121.0000 0.401	10/30/2001	0001	133.0000 0.373	10/3/2000	0001	79.8000 0.0239
	5	EC umhos/c	10/28/2003	N001	599.0000	17	459.000 1548.000	480.000 1650.000	1202.7955 1969.0209	10/8/2002	N001	1499.0000	10/30/2001	N001	1650.0000	10/3/2000	N001	1031.0000
	5	K mg/L	10/28/2003	0001	3.6600 0.0091	18	3.300 8.790	3.500 10.200	6.3878 10.3598	10/8/2002	0001	8.0800 0.0259	10/30/2001 E	0001	8.2800 0.0151	10/3/2000	0001	6.8300 0.0327
	5	Mg mg/L	10/28/2003	0001	14.0000 0.005	18	14.000 30.400	15.800 31.700	21.5270 35.7826	10/8/2002	0001	28.6000 0.011	10/30/2001	0001	30.4000 0.0041	10/3/2000	0001	20.9000 0.0352
	0	Mn mg/L	10/28/2003	0001	0.0647 0.0001	19	0.004 0.220	0.047 0.440	0.0000 0.0705	10/8/2002	0001	0.0471 0.0002	10/30/2001 B	0001	0.0038 0.0001	10/3/2000	0001	0.0736 0.002
	5	Mo mg/L	10/28/2003	0001	0.0214 0.0017	19	0.040 0.112	0.040 0.170	0.0306 0.1040	10/8/2002	0001	0.0595 0.003	10/30/2001	0001	0.0398 0.0019	10/3/2000	0001	0.0953 0.0004
	5	Na mg/L	10/28/2003	0001	36.9000 0.0064	18	31.400 179.000	36.000 182.000	120.0365 233.1334	10/8/2002	0001	179.0000 0.895	10/30/2001	0001	182.0000 0.0074	10/3/2000	0001	93.0000 0.302
	0	ORP mV	10/28/2003	N001	75.0000	7	-77.000 186.000	102.000 190.000	0.0000 109.0370	10/8/2002	N001	-77.0000	10/30/2001	N001	130.0000	10/3/2000	N001	190.0000
	5	PH s.u.	10/28/2003	N001	7.6400	17	7.140 7.970	7.250 8.300	7.7161 8.1252	10/8/2002	N001	7.2500	10/30/2001	N001	7.9200	10/3/2000	N001	7.9700
	5	SO4 mg/L	10/28/2003	0001	90.3000 0.153	18	112.000 456.000	120.000 514.000	279.7542 631.3558	10/8/2002	0001	453.0000 0.393	10/30/2001	0001	514.0000 0.409	10/3/2000	0001	234.0000 0.0589

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Flags :
 I - Increased detection limit due to required dilution.
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Approved by J.E. [Signature]
 Hydrologist "OK" indicates insignificant variation

Date Jan 14, 04

SUSPECTED ANOMALIES REPORT
 REPORT DATE: 1/12/2004 TIME: 11:40:53 AM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 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		ALL TIME MAXIMUMS	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	
0602 OK	0	TMP C	10/28/2003	N001	9.6300	17	3.000	5.700	7.2445	10/8/2002	N001	15.6000	10/30/2001	N001	9.6000	10/3/2000	N001	19.0000
	0	TURBIDI NTU	10/28/2003	N001	20.7000	3	5.400	9.280	21.2233	10/3/2000	N001	5.4000	10/11/1998	N001	14.8000	11/12/1997	N001	9.2800
	0	U mg/L	10/28/2003	0001	0.0007	18	0.000	0.001	29.6000	10/8/2002	0001	0.0005	10/30/2001	0001	0.0010	10/3/2000	0001	0.0007
			B		0.0001	72.222	0.002	0.003	0.0011	B	0.0001			0.0001	B		0.0001	
0603	0	ALK mg/L	10/28/2003	0001	157.0000	11	93.000	120.000	102.7931	10/8/2002	0001	120.0000	10/3/2000	N001	138.0000	10/3/2000	0001	217.0000
	5	Ca mg/L	10/28/2003	0001	67.8000	10	78.300	78.700	85.4530	10/8/2002	0001	94.6000	10/30/2001	0001	118.0000	10/3/2000	0001	87.8000
					0.056	0	112.000	118.000	127.9419			0.0446			0.0653			0.0481
	5	Chloride mg/L	10/28/2003	0001	44.6000	9	39.000	43.600	80.5304	10/8/2002	0001	98.7000	10/30/2001	0001	133.0000	10/3/2000	0001	80.5000
					0.231	0	115.000	133.000	154.0026			0.2005			0.373			0.0239
	5	EC umhos/c	10/28/2003	N001	595.0000	9	582.000	705.000	667.7264	10/8/2002	N001	1324.0000	10/30/2001	N001	1700.0000	10/3/2000	N001	1050.0000
						0	9500.000	9500.000	2309.7818									
	5	K mg/L	10/28/2003	0001	3.6800	10	4.060	5.400	6.1251	10/8/2002	0001	7.0600	10/30/2001	0001	8.0900	10/3/2000	0001	6.7800
					0.0091	0	9.100	9.100	9.6755			0.0259	E		0.0151			0.0327
	5	Mg mg/L	10/28/2003	0001	13.7000	10	15.900	16.200	21.6608	10/8/2002	0001	25.0000	10/30/2001	0001	30.1000	10/3/2000	0001	21.7000
					0.005	0	30.100	30.600	36.5037			0.011			0.0041			0.0352
	0	Mn mg/L	10/28/2003	0001	0.0649	11	0.060	0.074	0.0422	10/8/2002	0001	0.0603	10/30/2001	0001	0.0928	10/3/2000	0001	0.0773
					0.0001	0	0.120	0.130	0.0789			0.0002			0.0001			0.002
0	Mo mg/L	10/28/2003	0001	0.0226	11	0.040	0.049	0.0181	10/8/2002	0001	0.0502	10/30/2001	0001	0.0395	10/3/2000	0001	0.0680	
				0.0017	0	0.100	0.104	0.0757			0.003			0.0019			0.0004	
5	Na mg/L	10/28/2003	0001	37.8000	10	41.300	53.000	125.8064	10/8/2002	0001	155.0000	10/30/2001	0001	182.0000	10/3/2000	0001	96.7000	
				0.0084	0	162.000	182.000	233.3356			0.895			0.0074			0.302	
6	ORP mV	10/28/2003	N001	81.0000	8	-65.000	-52.000	0.0000	10/8/2002	N001	-65.0000	10/30/2001	N001	-52.0000	10/3/2000	N001	220.0000	
					0	279.000	279.000	-15.8496										

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Approved by *J.E. Pini*
 Hydrologist "OK" indicates insignificant variation

Date *Jan 14, 04*

SUSPECTED ANOMALIES REPORT

REPORT DATE: 1/12/2004

TIME: 11:40:54 AM

Site : CAN01 CANONSBURG

Test Data Date Range : 10/1/2003 to 12/1/2003

Older Data Only Used for Baseline Data

135 Chemical Records

1842 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
0603 OK ↓	5	PH s.u.	10/28/2003	N001	7.3200	9	7.520	7.660	8.1510	10/8/2002	N001	8.2400	10/30/2001	N001	8.0300	10/3/2000	N001	8.0100
						0	8.240	8.320	8.3996									
	5	SO4 mg/L	10/28/2003	0001	90.0000	10	121.000	124.000	268.6765	10/8/2002	0001	371.0000	10/30/2001	0001	516.0000	10/3/2000	0001	240.0000
					0.153	0	438.000	516.000	628.8287			0.1965			0.409			0.0589
	5	TMP C	10/28/2003	N001	9.2600	9	5.700	6.400	9.6094	10/8/2002	N001	16.2000	10/30/2001	N001	9.2000	10/3/2000	N001	18.1000
						0	17.000	18.100	23.3522									
0	TURBIDI NTU	10/28/2003	N001	23.9000	3	8.030	9.900	4.0150	10/3/2000	N001	8.0300	10/11/1998	N001	27.0000	11/11/1997	N001	9.9000	
0	U mg/L	10/28/2003	0001	0.0006	11	0.000	0.000	0.0001	10/8/2002	0001	0.0004	10/30/2001	0001	0.0011	10/3/2000	0001	0.0007	
			B		0.0001	72.727	0.001	0.001	0.0017	B		0.0001		0.0001	B		0.0001	

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Approved by J. E. P. [Signature]

Date Jan 14, 04

Hydrologist "Ok" indicates insignificant variation

DATA REVIEW CHECKSHEET

WATER QUALITY DATA

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE CAN01, CANONSBURG
 REPORT DATE: 1/12/2004 10:57 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3)	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	595	F #	-	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	10	FQ #	-	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	765	F #	-	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	317	F #	-	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	222	F #	-	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	373	F #	-	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	162	#	-	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	148	#	-	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	157	#	-	-
Calcium	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	194.000	F #	0.056	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	24.700	FQ #	0.056	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	473.000	F #	0.056	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	118.000	F #	0.056	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	109.000	F #	0.056	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	93.000	F #	0.056	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	69.000	#	0.056	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	68.700	#	0.056	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	68.400	#	0.056	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	67.800	#	0.056	-
Chloride	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	80.800	F #	0.0231	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	93.500	FQ #	0.231	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	23.400	F #	0.0231	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	6.850	F #	0.0231	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	5.540	F #	0.231	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	91.000	F #	0.231	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	43.100	#	0.231	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE CAN01, CANONSBURG
 REPORT DATE: 1/12/2004 10:57 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	42.300	#	0.231	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	42.400	#	0.231	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	44.600	#	0.231	-
Magnesium	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	43.100	F #	0.005	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	12.500	FQ #	0.005	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	67.200	F #	0.005	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	17.400	F #	0.005	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	20.000	F #	0.005	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	24.400	F #	0.005	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	14.000	#	0.005	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	14.000	#	0.005	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	14.200	#	0.005	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	13.700	#	0.005	-
Manganese	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	2.710	F #	0.0001	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	1.380	FQ #	0.0001	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	23.400	F #	0.0005	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	0.912	F #	0.0001	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	8.090	F #	0.0001	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	4.860	F #	0.0001	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	0.0732	#	0.0001	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	0.0647	#	0.0001	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	0.0644	#	0.0001	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	0.0649	#	0.0001	-
Molybdenum	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	0.00170 U	F #	0.0017	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	0.00170 U	FQ #	0.0017	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	0.00850 U	F #	0.0085	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE CAN01, CANONSBURG
 REPORT DATE: 1/12/2004 10:57 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN-CERTAINTY
				DATE	ID			LAB	DATA	QA		
Molybdenum	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	0.00170	U	F	#	0.0017	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	0.00170	U	F	#	0.0017	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	0.00170	U	F	#	0.0017	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	0.0242			#	0.0017	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	0.0214			#	0.0017	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	0.0263			#	0.0017	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	0.0226			#	0.0017	-
Oxidation Reduction Potent	mV	0406A	WL	10/28/2003	N001	5.00 - 15.00	-124		F	#	-	-
	mV	0410	WL	10/28/2003	N001	11.48 - 16.08	156		FQ	#	-	-
	mV	0412	WL	10/29/2003	N001	13.21 - 18.21	-40		F	#	-	-
	mV	0413	WL	10/28/2003	N001	6.05 - 11.05	15		F	#	-	-
	mV	0414A	WL	10/28/2003	N001	4.31 - 14.43	14		F	#	-	-
	mV	0424	WL	10/28/2003	N001	7.58 - 12.58	-32		F	#	-	-
	mV	0601	SL	10/28/2003	N001	0.00 - 0.00	137			#	-	-
	mV	0602	SL	10/28/2003	N001	0.00 - 0.00	75			#	-	-
	mV	0603	SL	10/28/2003	N001	0.00 - 0.00	81			#	-	-
pH	s.u.	0406A	WL	10/28/2003	N001	5.00 - 15.00	6.86		F	#	-	-
	s.u.	0410	WL	10/28/2003	N001	11.48 - 16.08	5.26		FQ	#	-	-
	s.u.	0412	WL	10/29/2003	N001	13.21 - 18.21	6.39		F	#	-	-
	s.u.	0413	WL	10/28/2003	N001	6.05 - 11.05	6.61		F	#	-	-
	s.u.	0414A	WL	10/28/2003	N001	4.31 - 14.43	6.55		F	#	-	-
	s.u.	0424	WL	10/28/2003	N001	7.58 - 12.58	6.58		F	#	-	-
	s.u.	0601	SL	10/28/2003	N001	0.00 - 0.00	6.51			#	-	-
	s.u.	0602	SL	10/28/2003	N001	0.00 - 0.00	7.64			#	-	-
	s.u.	0603	SL	10/28/2003	N001	0.00 - 0.00	7.32			#	-	-
Potassium	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	3.730		F	#	0.0091	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE CAN01, CANONSBURG
 REPORT DATE: 1/12/2004 10:57 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Potassium	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	0.994	FQ #	0.0091	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	2.720	F #	0.0091	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	4.670	F #	0.0091	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	1.480	F #	0.0091	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	2.670	F #	0.0091	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	3.750	#	0.0091	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	3.660	#	0.0091	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	3.720	#	0.0091	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	3.680	#	0.0091	-
Sodium	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	45.700	F #	0.0064	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	54.900	FQ #	0.0064	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	50.100	F #	0.0064	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	19.000	F #	0.0064	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	19.500	F #	0.0064	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	139.000	F #	0.0064	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	37.100	#	0.0064	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	36.900	#	0.0064	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	37.600	#	0.0064	-
Specific Conductance	umhos/cm	0406A	WL	10/28/2003	N001	5.00 - 15.00	1360	F #	-	-
	umhos/cm	0410	WL	10/28/2003	N001	11.48 - 16.08	530	FQ #	-	-
	umhos/cm	0412	WL	10/29/2003	N001	13.21 - 18.21	2398	F #	-	-
	umhos/cm	0413	WL	10/28/2003	N001	6.05 - 11.05	703	F #	-	-
	umhos/cm	0414A	WL	10/28/2003	N001	4.31 - 14.43	761	F #	-	-
	umhos/cm	0424	WL	10/28/2003	N001	7.58 - 12.58	1182	F #	-	-
	umhos/cm	0601	SL	10/28/2003	N001	0.00 - 0.00	574	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE CAN01, CANONSBURG
 REPORT DATE: 1/12/2004 10:57 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0602	SL	10/28/2003	N001	0.00 - 0.00	599	#	-	-
	umhos/cm	0603	SL	10/28/2003	N001	0.00 - 0.00	595	#	-	-
Sulfate	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	51.900	F #	0.0153	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	83.500	FQ #	0.153	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	893.000	F #	0.306	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	55.400	F #	0.0153	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	185.000	F #	0.153	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	154.000	F #	0.153	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	90.200	#	0.153	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	90.300	#	0.153	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	87.900	#	0.153	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	90.000	#	0.153	-
Temperature	C	0406A	WL	10/28/2003	N001	5.00 - 15.00	16.92	F #	-	-
	C	0410	WL	10/28/2003	N001	11.48 - 16.08	15.39	FQ #	-	-
	C	0412	WL	10/29/2003	N001	13.21 - 18.21	12.08	F #	-	-
	C	0413	WL	10/28/2003	N001	6.05 - 11.05	13.84	F #	-	-
	C	0414A	WL	10/28/2003	N001	4.31 - 14.43	13.24	F #	-	-
	C	0424	WL	10/28/2003	N001	7.58 - 12.58	13.83	F #	-	-
	C	0601	SL	10/28/2003	N001	0.00 - 0.00	8.79	#	-	-
	C	0602	SL	10/28/2003	N001	0.00 - 0.00	9.63	#	-	-
	C	0603	SL	10/28/2003	N001	0.00 - 0.00	9.26	#	-	-
Turbidity	NTU	0406A	WL	10/28/2003	N001	5.00 - 15.00	9.99	F #	-	-
	NTU	0410	WL	10/28/2003	N001	11.48 - 16.08	5.29	FQ #	-	-
	NTU	0412	WL	10/29/2003	N001	13.21 - 18.21	4.07	F #	-	-
	NTU	0413	WL	10/28/2003	N001	6.05 - 11.05	9.63	F #	-	-
	NTU	0414A	WL	10/28/2003	N001	4.31 - 14.43	4.4	F #	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE CAN01, CANONSBURG
 REPORT DATE: 1/12/2004 10:57 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0424	WL	10/28/2003	N001	7.58 - 12.58	1.8	F #	-	-
	NTU	0601	SL	10/28/2003	N001	0.00 - 0.00	21.9	#	-	-
	NTU	0602	SL	10/28/2003	N001	0.00 - 0.00	20.7	#	-	-
	NTU	0603	SL	10/28/2003	N001	0.00 - 0.00	23.9	#	-	-
Uranium	mg/L	0406A	WL	10/28/2003	0001	5.00 - 15.00	0.00074	B F #	0.0001	-
	mg/L	0410	WL	10/28/2003	0001	11.48 - 16.08	0.00010	U FQ #	0.0001	-
	mg/L	0412	WL	10/29/2003	0001	13.21 - 18.21	0.180	F #	0.0001	-
	mg/L	0413	WL	10/28/2003	0001	6.05 - 11.05	0.197	F #	0.0001	-
	mg/L	0414A	WL	10/28/2003	0001	4.31 - 14.43	0.00590	F #	0.0001	-
	mg/L	0424	WL	10/28/2003	0001	7.58 - 12.58	0.00010	U F #	0.0001	-
	mg/L	0601	SL	10/28/2003	0001	0.00 - 0.00	0.00049	B #	0.0001	-
	mg/L	0602	SL	10/28/2003	0001	0.00 - 0.00	0.00066	B #	0.0001	-
	mg/L	0602	SL	10/28/2003	0002	0.00 - 0.00	0.00064	B #	0.0001	-
	mg/L	0603	SL	10/28/2003	0001	0.00 - 0.00	0.00060	B #	0.0001	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE CAN01, CANONSBURG
 REPORT DATE: 1/12/2004 10:57 am

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE ID	DEPTH RANGE (FT BLS)	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 #10/1/2003# and #12/1/2003#

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

LOCATION TYPES: SL SURFACE LOCATION WL WELL

LOCATION SUBTYPES:

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.

BLANKS REPORT
LAB REQUISITION(S): 18706
REPORT DATE: 01/12/04 08:53:42: AM

PARAMETER	SITE CODE	LOCATION ID	SAMPLE DATE	ID	UNITS	RESULT	QUALIFIERS LAB DATA	DETECTION LIMIT	UNCERTAINTY	SAMPLE TYPE
Calcium	CAN01	0999	10/28/2003	0001	mg/L	0.953	U	0.056		E
Chloride	CAN01	0999	10/28/2003	0001	mg/L	0.321	B	0.0231		E
Magnesium	CAN01	0999	10/28/2003	0001	mg/L	0.0433	B	0.005		E
Manganese	CAN01	0999	10/28/2003	0001	mg/L	0.0014	B	0.0001		E
Molybdenum	CAN01	0999	10/28/2003	0001	mg/L	0.0017	U	0.0017		E
Potassium	CAN01	0999	10/28/2003	0001	mg/L	0.0219	B U	0.0091		E
Sodium	CAN01	0999	10/28/2003	0001	mg/L	1.56		0.0064		E
Sulfate	CAN01	0999	10/28/2003	0001	mg/L	0.0153	U	0.0153		E
Uranium	CAN01	0999	10/28/2003	0001	mg/L	0.0001	U	0.0001		E

BLANKS REPORT

LAB REQUISITION(S): 18706

REPORT DATE: 01/12/04 08:53:43: AM

PARAMETER	SITE CODE	LOCATION ID	SAMPLE DATE	SAMPLE ID	UNITS	RESULT	QUALIFIERS LAB DATA	DETECTION LIMIT	UNCERTAINTY	SAMPLE TYPE
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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.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- 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.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.
- J Estimated

DATA QUALIFIERS:

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

SAMPLE TYPES:

- AK ANALYTICAL KNOWN
- F FIELD SAMPLE
- K KNOWN
- R REPLICATE
- XB EXTRACTION BLANK
- D DUPLICATE
- FB FIELD BLANK
- L LABORATORY
- TB TRIP BLANK
- E EQUIPMENT BLANK
- FR FIELD SAMPLE WITH REPLICATES
- N NOT KNOWN
- TK THEORETICAL KNOWN

WATER LEVELS

STATIC WATER LEVELS (USEE700) FOR SITE CAN01, CANONSBURG
 REPORT DATE: 1/14/2004 2:14 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
0406A		941.26	10/28/2003	14:56	8.31	932.95	
0410	U	969.16	10/28/2003	14:22	9.84	959.32	
0412	O	949.70	10/29/2003	09:30	11.00	938.70	
0413	O	940.36	10/28/2003	13:34	3.03	937.33	
0414A		942.48	10/28/2003	11:19	5.52	936.96	
0424	C	942.25	10/28/2003	10:44	12.96	929.29	

RECORDS: SELECTED FROM USEE700 WHERE site_code='CAN01' AND LOG_DATE between #10/1/2003# and #11/1/2003#

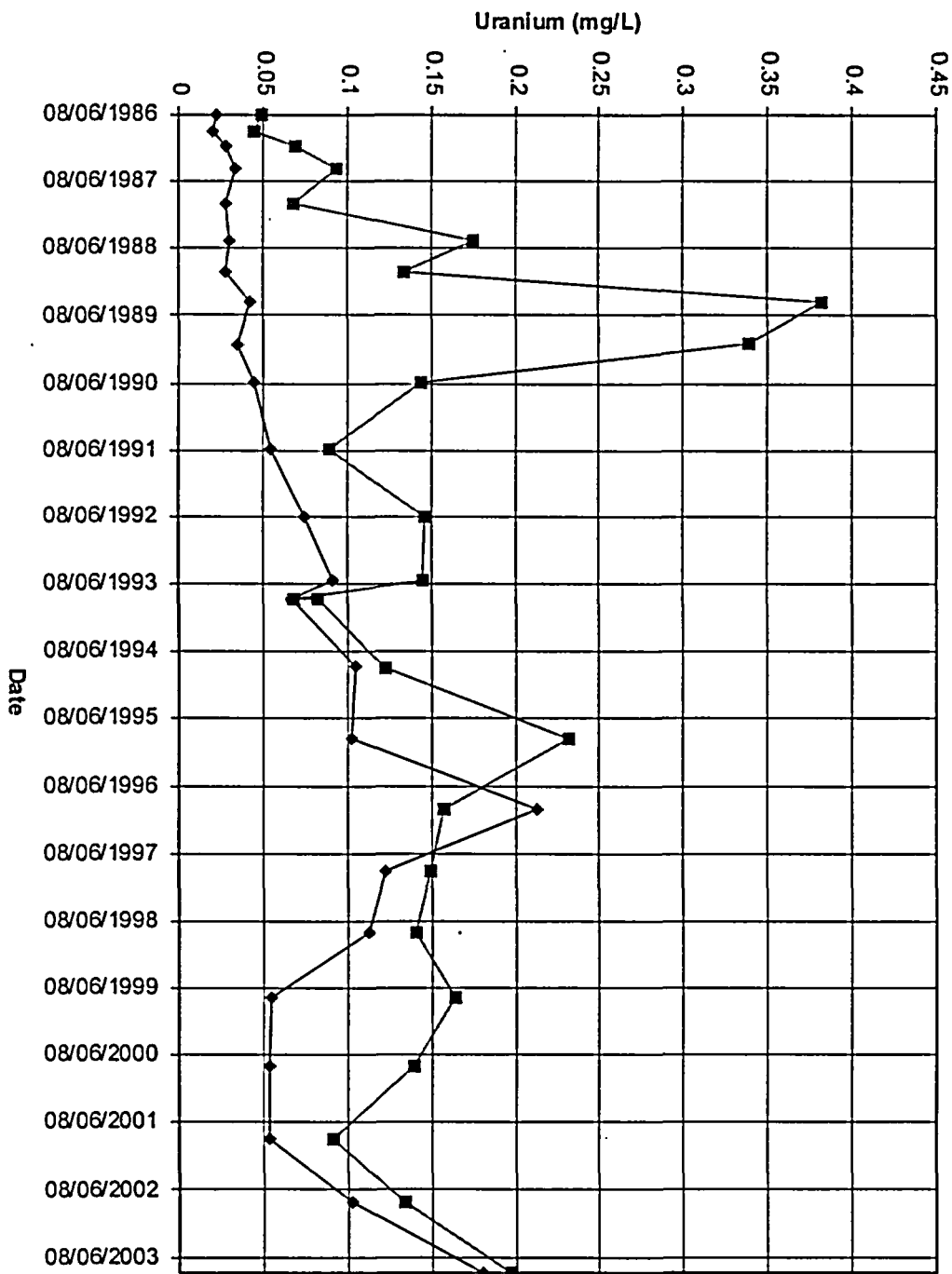
FLOW CODES: C CROSS GRADIENT O ON-SITE U UPGRADIENT

WATER LEVEL FLAGS:

TIME VERSUS CONCENTRATION GRAPHS

CANONSBURG (CAN01)

Uranium Concentration



◆ Loc 0412
■ Loc 0413

**WORK ORDER
AND
TRIP REPORT**

Memorandum

Control Number N/A

DATE: September 30, 2003
TO: Carl L. Jacobson
FROM: Lauren C. Goodknight
SUBJECT: October 2003 Ground Water Sampling at Canonsburg, Pennsylvania

Ground water sampling for the Canonsburg, Pennsylvania, site is scheduled to begin the week of October 27, 2003. 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. I. Bahrke, Stoller
R. B. Chessmore, Stoller
R. K. Johnson, Stoller
K. E. Miller, Stoller
D. G. Traub, Stoller
M. R. Widdop, Stoller
Project Record File LCAN 6.07 thru A. Temple

Memorandum

Control Number N/A

DATE: November 5, 2003
TO: Mike Widdop
FROM: Sam Campbell
SUBJECT: Sampling Trip Report

Site: Canonsburg, Pennsylvania

Dates of Sampling Event: October 28 and October 29, 2003

Team Members: Sam Campbell and David Miller

Number of Locations Sampled: 6 monitor wells and 3 surface water locations.

Locations Not Sampled/Reason: None.

Field Variance: None

Location Specific Information: All wells were purged using the low-flow method; well 0410 was classified as a Category II well because water level stability could not be maintained at a low purge rate.

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
206	602	Duplicate	Surface water	NDT-690
604	Equipment blank	Equipment blank	Ground Water	NDT-696

Requisition Numbers Assigned: All samples were assigned to requisition 18706.

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

Well Inspection Summary: Well inspections were conducted at all sampled wells, which were found in good condition.

Equipment: All equipment functioned properly.

Regulatory: Jane Powell (DOE LM-Morgantown) observed sampling at well 0412.

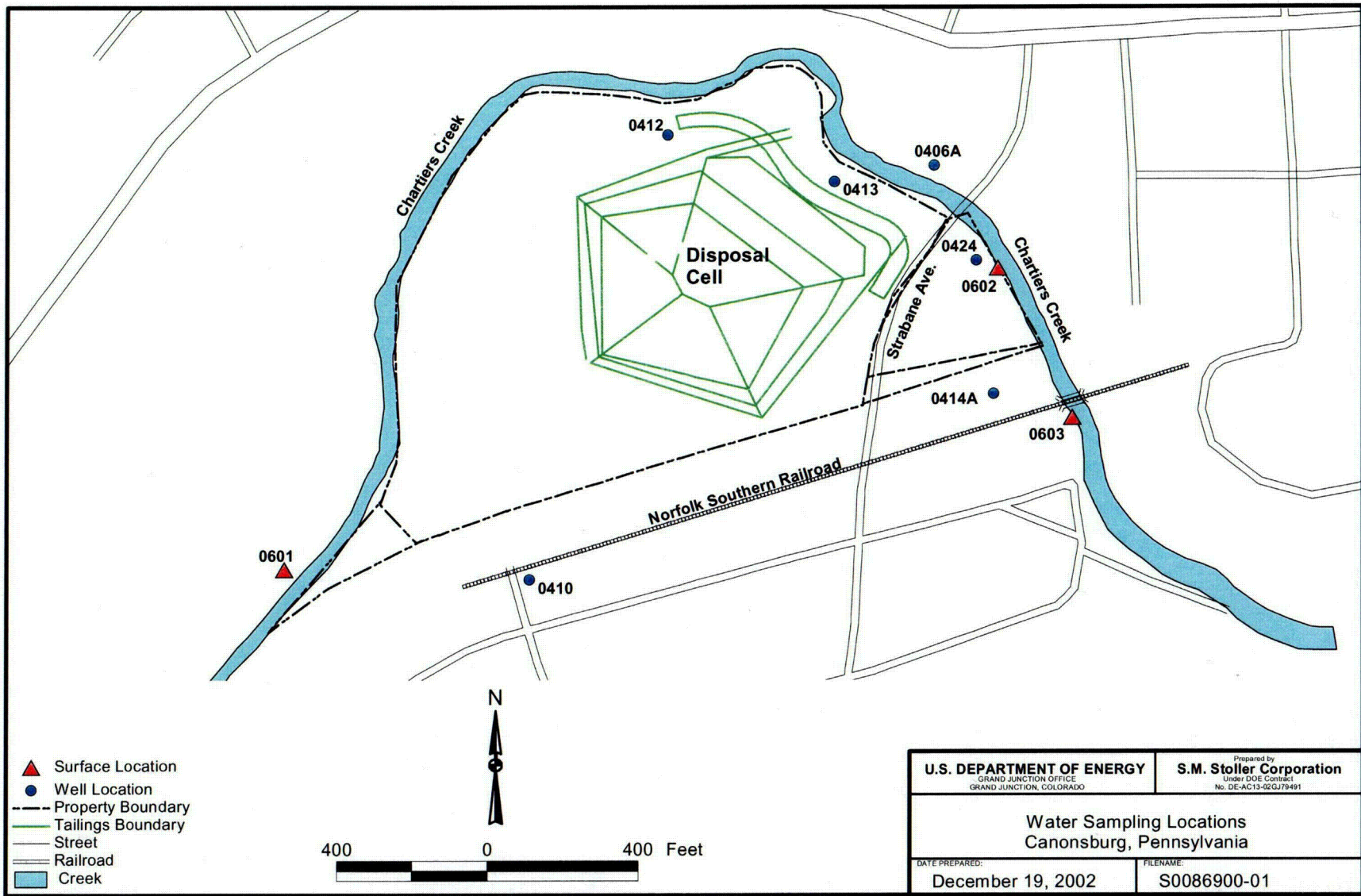
Site Issues: Decommissioned well locations were inspected to assess surface restoration of the site. Surface restoration at former well locations 0407 and 0502 was not complete; the PVC riser and cap of the wells were still exposed in a large hole surrounding the wells.

Corrective Action Required/Taken: The hole around former well locations 0407 and 0502 was filled with gravel.

(SEC/lcg)

cc: R. K. Johnson, Stoller
K. E. Miller, Stoller

**SAMPLING LOCATION
MAP**



m:\lts\1111\0005\10s\0086900.apr r50329 12/19/2002, 9:50