Appendix B

Analytical Results for Bedrock Groundwater Samples, January 2000 through April 2011

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Bedrock Groundwaters -- Upgradient -- 92-06[a,b]

Analyte	Unit	10/30/00	10/10/01
Field Measurements			
Alkalinity	mg/L	189	182
Conductivity[c]	µmhos/cm	560	560
DO[c]	mg/L	1.4	--
ORP[c]	mV	-51	-46
pH[c]	s.u.	7.24	7.52
Temperature[c]	C	11.3	11.6
Turbidity[c]	NTU	0.84	4.3
Common Ions			
Ca	mg/L	72.8	69.3
Chloride	mg/L	2.15	2.44
Fluoride	µg/L	124	242
Hardness	mg/L	225	214
K	mg/L	1.98	1.81
Mg	mg/L	10.5	9.99
Na	mg/L	32.1	31.4
NO_3+NO_2 as N	µg/L	32.4UJ	358R
SO_4	mg/L	91.0	96.8
TDS[c]	mg/L	340	--
Metals			
As	µg/L	0.28	0.6U
Fe	µg/L	109	84
Mn	µg/L	433	406
Mo	µg/L	1.9	1.9U
Se	µg/L	0.1U	0.3U
U	µg/L	0.1U	0.1U
V	µg/L	1.3U	0.3U
Radiological			
Alpha[d]	pCi/L	7.6U	11.4UJ
Alpha-U[e]	pCi/L	7.6U	11.4UJ
Beta	pCi/L	7.4U	13.1
U	µg/L	0.1U	0.1U
U-234	pCi/L	0.52U	--
U-238	pCi/L	0.10U	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Upgradient -- 92-13[a,b]

Analyte	Unit	10/30/00	10/10/01
Field Measurements			
Alkalinity	mg/L	275	271
Conductivity[c]	µmhos/cm	649	592
ORP[c]	mV	109	37
pH[c]	s.u.	9.64	9.48
Temperature[c]	C	11.2	11.6
Turbidity[c]	NTU	5.66	11.9
Common Ions			
Ca	mg/L	7.06	6.15
Chloride	mg/L	4.50	5.06
Fluoride	µg/L	1220	1190
Hardness	mg/L	25.2	22.7
K	mg/L	2.35	2.20
Mg	mg/L	1.85	1.78
Na	mg/L	145	135
NO_3+NO_2 as N	µg/L	2710J	2610
SO_4	mg/L	36.3	40.7
TDS[c]	mg/L	458	--
Metals			
As	µg/L	40.6	37.6
Fe	µg/L	11.7U	34
Mn	µg/L	2U	1.9
Mo	µg/L	75.6	70.7
Se	µg/L	2.2	1.8
U	µg/L	2.2	1.8
V	µg/L	2.3	3.9
Radiological			
Alpha[d]	pCi/L	9.0U	6.8J
Alpha-U[e]	pCi/L	9.0U	5.6J
Beta	pCi/L	7.5U	4.7U
U	µg/L	2.2	1.8
U-234	pCi/L	6.5	--
U-238	pCi/L	0.88	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- On-Site -- 31SW93-200-4[a,b]

Analyte	Unit	10/10/01	10/10/02	10/06/03
Field Measurements				
Alkalinity	mg/L	167	333	114
Conductivity[c]	µmhos/cm	3960	4705	3840
ORP[c]	mV	19	--	33.8
pH[c]	s.u.	7.21	6.76	7.11
Temperature[c]	C	13.4	14.41	15.29
Turbidity[c]	NTU	2.34	16.4	1.04
Common Ions				
Ca	mg/L	538	464	503
Chloride	mg/L	285	177	137
Fluoride	µg/L	425	126U	294
Hardness	mg/L	1930	1790	1830
K	mg/L	17.5	22.2	17.9
Mg	mg/L	142	154	140
Na	mg/L	310	695	341
NO_3+NO_2 as N	µg/L	12600	1030	4520
SO_4	mg/L	2140	2700	2160
Metals				
As	µg/L	0.6U	2.3	0.100U
Fe	µg/L	198	4550	372
Mn	µg/L	94.8	827	53.1
Mo	µg/L	1.9U	1.7U	1.70U
Se	µg/L	8.6	0.1U	2.50
U	µg/L	11.5	44.8	10.00
V	µg/L	0.35	0.3U	0.300U
Radiological				
Alpha[d]	pCi/L	17.0	18.9	12.0U
Alpha-U[e]	pCi/L	9.1	0[f]	12.0U
Beta	pCi/L	16.9	26.3	21.2
U	µg/L	11.5	44.8	10.00

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- On-Site -- 93-01[a,b]

Analyte	Unit	11/01/00	10/09/01	10/09/02	10/06/03	10/08/04	10/05/05	10/02/06	10/09/07	10/08/08	10/07/09	10/13/10
Field Measurements												
Alkalinity	mg/L	200	187	375	344	395	390	399	412	382	--	394
Conductivity[c]	µmhos/cm	584	586	691	692	733	741	731	694	755	712	737
DO[c]	mg/L	5.5R	--	--	--	0.95	3.02	0.51	--	--	--	--
ORP[c]	mV	83	49	--	157.2	142	24	22	86	-45	--	-33.1
pH[c]	s.u.	7.21	7.58	7.61	7.79	7.58	7.56	7.27	7.53	7.47	7.43	7.53
Temperature[c]	C	9.5	9.9	9.53	10.97	10.0	10.1	10.36	9.63	11.77	9.33	11.09
Turbidity[c]	NTU	2.18	18.6	4.23	0.82	1.43	1.82	0.42	1.29	1.58	1.52	1.72
Common Ions												
Ca	mg/L	67.6	67.0	27.6	25.3	29.0	29.0	30.0	26.0	31.0	31.0J	30.0
Chloride	mg/L	2.42	2.72	5.55	5.01	5.30	5.40	6.10	4.90	4.60	4.30	4.30
Fluoride	µg/L	137	169	340	704	660.	600.	670.	710.	600.	610.	560.
Hardness	mg/L	214	211	98.2	91.6	104	103	108	97.0	111	110J	107
K	mg/L	2.23	1.99	2.84	2.74	5.00	4.80	4.90	4.60	4.50J	3.60J	4.10J
Mg	mg/L	10.9	10.5	7.12	6.90	7.60	7.40	8.00	7.80	8.10	8.00	7.80
Na	mg/L	38.2	38.2	123	128	110	120	140	130	120J	120J	120
NO_3+NO_2 as N	µg/L	32.4U	88.7	12.7	102	24	10.U	24	10.U	10.U	10.U	10.U
SO_4	mg/L	102	110	5.35	2.96	1.00	0.720	1.50	1.50	11.0	10.0	6.20
TDS[c]	mg/L	380	--	--	--	--	--	--	--	--	--	--
Metals												
As	µg/L	1	0.6U	2.3	1.90	0.34	0.29	0.31	0.27	0.37	0.38	0.34
Fe	µg/L	46.8	48.2	0.8U	0.800U	7U	11U	43	19	54	1.6U	4.9U
Mn	µg/L	393	372	89.7	27.3	55	67	70	67	88	88	79
Mo	µg/L	1.3	1.9U	1.7U	1.70U	0.17U	0.068U	0.13U	0.029U	0.03U	0.02U	0.16
Se	µg/L	0.1U	0.3U	0.1U	0.100U	0.029U	0.023U	0.025U	0.028U	0.024U	0.032U	0.032U
U	µg/L	0.1U	0.1U	0.2	0.100U	0.11J	0.0048U	0.12J	0.0035U	0.062	0.077	0.077
V	µg/L	1.3U	0.99	11	2.70	0.44J	0.1U	0.21U	0.28J	0.1U	0.2J	0.14
Radiological												
Alpha[d]	pCi/L	7.6U	4.0UJ	5.3	7.1	8.5	--	--	--	--	--	--
Alpha-U[e]	pCi/L	7.6U	4.0UJ	5.2	7.1[g]	8.4	--	--	--	--	--	--
Beta	pCi/L	7.4U	3.8U	5.8	5.9U	7.7	--	--	--	--	--	--
U	µg/L	0.1U	0.1U	0.2	0.100U	0.11J	0.0048U	0.12J	0.0035U	0.062	0.077	0.077
U-234	pCi/L	0.52U	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	0.10U	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] Uranium activity is below detection limits.

Bedrock Groundwaters -- Cross Gradient -- 31NE93-205[a,b]

Analyte	Unit	10/31/00	10/15/01	10/04/06
Field Measurements				
Alkalinity	mg/L	--	185	173
Conductivity[c]	µmhos/cm	589	846	734
DO[c]	mg/L	0.3	--	0.66
ORP[c]	mV	33	-57	18
pH[c]	s.u.	6.85	6.85	6.89
Temperature[c]	C	13.2	15.9	11.8
Turbidity[c]	NTU	1.36	1.01	4.26
Common Ions				
Ca	mg/L	72.6	63.1	64.0
Chloride	mg/L	2.76	2.88	3.30
Fluoride	µg/L	99.5	188	100.U
Hardness	mg/L	268	234	230
K	mg/L	4.31	3.85	5.40
Mg	mg/L	21.1	18.5	17.0
Na	mg/L	89.4	81.3	80.0
NO_3+NO_2 as N	µg/L	32.4U	515R	10.U
SO_4	mg/L	289	289	210
TDS[c]	mg/L	592	--	--
Metals				
As	µg/L	25.5	32.7	31
Fe	µg/L	627	584	540
Mn	µg/L	691	652	650
Mo	µg/L	0.63	1.9U	1.4
Se	µg/L	0.1U	0.52	0.025U
U	µg/L	0.27	0.69	0.16
V	µg/L	1.3U	0.3U	0.21U
Radiological				
Alpha[d]	pCi/L	9.1U	3.8	--
Alpha-U[e]	pCi/L	9.1U	3.3	--
Beta	pCi/L	7.5U	6.1	--
U	µg/L	0.27	0.69	0.16
U-234	pCi/L	1.6	--	--
U-238	pCi/L	0.10U	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 31SW93-197-2[a,b]

Analyte	Unit	07/26/00	10/19/00
Field Measurements			
Alkalinity	mg/L	165	172
Conductivity[c]	µmhos/cm	499	497
DO[c]	mg/L	0.13	0.18
ORP[c]	mV	-96	-112
pH[c]	s.u.	7.31	7.48
Temperature[c]	C	14	13
Turbidity[c]	NTU	1.33	0.77
Common Ions			
Ca	mg/L	58.3	58.8
Chloride	mg/L	1.99	1.47
Fluoride	µg/L	165	152
Hardness	mg/L	184	186
K	mg/L	2.05	2.14
Mg	mg/L	9.43	9.51
Na	mg/L	32.9	31.9
NO_3+NO_2 as N	µg/L	32.4U	32.4U
SO_4	mg/L	73.1	77.4
TDS[c]	mg/L	323	320
Metals			
As	µg/L	0.3U	0.2U
Fe	µg/L	272	299
Mn	µg/L	280	290
Mo	µg/L	0.3U	2.1
Se	µg/L	0.1U	0.1U
U	µg/L	0.10U	0.1U
V	µg/L	1.3U	1.3U
Radiological			
Alpha[d]	pCi/L	3.3UJ	7.7U
Alpha-U[e]	pCi/L	3.3UJ	7.7U
Beta	pCi/L	3.8U	7.5U
U	µg/L	0.10U	0.1U
U-234	pCi/L	0.30U	0.52U
U-235	pCi/L	0.19U	--
U-238	pCi/L	0.15U	0.10U

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[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 31SW93-197-3[a,b]

Analyte	Unit	07/26/00	10/20/00
Field Measurements			
Alkalinity	mg/L	1973	--
Conductivity[c]	µmhos/cm	7800	573
DO[c]	mg/L	2.5	--
ORP[c]	mV	59	27
pH[c]	s.u.	7.62	7.64
Temperature[c]	C	16.4	14.2
Turbidity[c]	NTU	60.4	182
Common Ions			
Ca	mg/L	24.8	22.5
Chloride	mg/L	6.85	4.55
Fluoride	µg/L	718	641
Hardness	mg/L	98.7	90.6
K	mg/L	4.33	4.23
Mg	mg/L	8.92	8.36
Na	mg/L	146	129
NO_3+NO_2 as N	µg/L	32.4U	334
SO_4	mg/L	30.6	17.1
TDS[c]	mg/L	700	505
Metals			
As	µg/L	2.5	0.64
Fe	µg/L	17.8	11.7U
Mn	µg/L	6.9	12.8
Mo	µg/L	25.8	17
Se	µg/L	0.11	2.5
U	µg/L	2.1	1.5
V	µg/L	1.3U	1.3U
Radiological			
Alpha[d]	pCi/L	9.6J	9.0U
Alpha-U[e]	pCi/L	6.3J	9.0U
Beta	pCi/L	7.7U	7.5U
U	µg/L	2.1	1.5
U-234	pCi/L	2.7	0.52U
U-235	pCi/L	0.080U	--
U-238	pCi/L	0.58	0.65

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 31SW93-197-4[a,b]

Analyte	Unit	07/27/00	10/19/00
Field Measurements			
Alkalinity	mg/L	915	--
Conductivity[c]	µmhos/cm	2800	3010
ORP[c]	mV	118	34
pH[c]	s.u.	7.16	7.44
Temperature[c]	C	11.7	10.9
Turbidity[c]	NTU	200	>1000
Common Ions			
Ca	mg/L	54.3	51.7
Chloride	mg/L	27.4	--
Fluoride	µg/L	886	--
Hardness	mg/L	223	209
K	mg/L	9.10	9.26
Mg	mg/L	21.3	19.5
Na	mg/L	618	634
NO_3+NO_2 as N	µg/L	3960J	--
SO_4	mg/L	622	--
TDS[c]	mg/L	2040	--
Metals			
As	µg/L	0.3U	0.2U
Fe	µg/L	13.4	53.3
Mn	µg/L	25.7	28.1
Mo	µg/L	0.3U	4
Se	µg/L	0.26	0.59
U	µg/L	3.9	4.4
V	µg/L	1.3U	1.3
Radiological			
Alpha[d]	pCi/L	13.9UJ	--
Alpha-U[e]	pCi/L	13.9UJ	--
Beta	pCi/L	14.9U	--
U	µg/L	3.9	4.4
U-234	pCi/L	4.1	--
U-235	pCi/L	0.17U	--
U-238	pCi/L	1.2	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 31SW93-197-5[a,b]

Analyte	Unit	04/24/00	07/26/00	10/19/00
Field Measurements				
Alkalinity	mg/L	508	496	546
Conductivity[c]	µmhos/cm	2710	4170	2540
DO[c]	mg/L	--	5.87R	8.8R
ORP[c]	mV	140	194	207
pH[c]	s.u.	6.14	6.88	6.71
Temperature[c]	C	10.5	11.8	11.4
Turbidity[c]	NTU	72.1	151	116
Common Ions				
Ca	mg/L	325	317	330
Chloride	mg/L	--	92.2	97.4
Fluoride	µg/L	--	345	688
Hardness	mg/L	1090	1060	1110
K	mg/L	5.09	4.85	5.09
Mg	mg/L	67.9	65.7	68.3
Na	mg/L	258	255	259
NO_3+NO_2 as N	µg/L	--	1300	1230
SO_4	mg/L	--	928	920
TDS[c]	mg/L	--	2150	2150
Metals				
As	µg/L	0.2U	0.3U	0.2U
Fe	µg/L	7.4U	9.1U	11.7U
Mn	µg/L	1.4	1.5U	2.8
Mo	µg/L	0.40U	0.30U	0.3U
Se	µg/L	13.9	12.5	11.8
U	µg/L	23.2	22.2	23.4
V	µg/L	0.4U	1.3U	1.3U
Radiological				
Alpha[d]	pCi/L	--	14.2U	13.1UJ
Alpha-U[e]	pCi/L	--	14.2U	13.1UJ
Beta	pCi/L	--	15.0	13.2U
U	µg/L	23.2	22.2	23.4
U-234	pCi/L	16.3	10.1	12.4
U-235	pCi/L	--	0.42U	--
U-238	pCi/L	9.2	7.3	9.6

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 95-07[a,b]

Analyte	Unit	10/31/00	10/16/01	10/04/06
Field Measurements				
Alkalinity	mg/L	1046	1272	1449
Conductivity[c]	µmhos/cm	2350	2270	2269
DO[c]	mg/L	--	--	0.92
ORP[c]	mV	-85	-105	39
pH[c]	s.u.	7.81	7.6	7.62
Temperature[c]	C	11.9	14.6	14.0
Turbidity[c]	NTU	476	272	32.5
Common Ions				
Ca	mg/L	17.7	15.7	11.0
Chloride	mg/L	26.8	30.1	30.0
Fluoride	µg/L	2670	2770	3200.
Hardness	mg/L	79.2	69.1	50.9
K	mg/L	6.82	5.92	12.0
Mg	mg/L	8.50	7.25	5.70
Na	mg/L	563	503	500
NO_3+NO_2 as N	µg/L	32.4U	206R	10.U
SO_4	mg/L	6.63	6.77	8.70
TDS[c]	mg/L	1530	--	--
Metals				
As	µg/L	0.52	0.96	0.69
Fe	µg/L	95.9	36.9	230
Mn	µg/L	89.8	46	61
Mo	µg/L	3.5	1.9U	0.13U
Se	µg/L	0.1U	0.3U	0.025U
U	µg/L	2.1	1.7	1.1
V	µg/L	1.3U	0.3U	0.21U
Radiological				
Alpha[d]	pCi/L	11.3UJ	11.0	--
Alpha-U[e]	pCi/L	11.3UJ	9.8	--
Beta	pCi/L	13.2	8.2U	--
U	µg/L	2.1	1.7	1.1
U-234	pCi/L	2.8	--	--
U-238	pCi/L	1.1	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- AEC 6[a,b]

Analyte	Unit	07/27/00
Field Measurements		
Alkalinity	mg/L	136
Conductivity[c]	µmhos/cm	351
DO[c]	mg/L	0.1
ORP[c]	mV	-275
pH[c]	s.u.	8.98
Temperature[c]	C	14.8
Turbidity[c]	NTU	8.35
Common Ions		
Ca	mg/L	28.5
Chloride	mg/L	1.76
Fluoride	µg/L	85.1
Hardness	mg/L	105
K	mg/L	2.08
Mg	mg/L	8.24
Na	mg/L	32.6
NO_3+NO_2 as N	µg/L	32.4U
SO_4	mg/L	40.6
TDS[c]	mg/L	233
Metals		
As	µg/L	2.2
Fe	µg/L	47.8
Mn	µg/L	96.5
Mo	µg/L	0.3U
Se	µg/L	0.1U
U	µg/L	0.10U
V	µg/L	1.3U
Radiological		
Alpha[d]	pCi/L	3.6UJ
Alpha-U[e]	pCi/L	3.6UJ
Beta	pCi/L	4.9U
U	µg/L	0.10U
U-234	pCi/L	0.17U
U-235	pCi/L	0.10U
U-238	pCi/L	0.12U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 83-70[a,b]

Analyte	Unit	04/18/00	10/19/00	10/16/01	10/07/02	10/07/03	10/04/04	10/04/05	10/03/06	10/10/07	10/09/08	10/07/09	10/12/10
Field Measurements													
Alkalinity	mg/L	144	236	121	223	195	210	200	197	187	10	200	215
Conductivity[c]	µmhos/cm	610	613	611	597	573	611	601	600	583	523	588	648
DO[c]	mg/L	1.33	0.47	--	--	--	1.18	2.22	--	--	--	--	4.09
ORP[c]	mV	74	-94	-123	--	-128	-127	-126	23	--	210.0	--	-162.5R
pH[c]	s.u.	6.96	7.44	7.32	7.45	7.54	7.66	7.64	7.25	8.16	7.04	7.66	7.90
Temperature[c]	C	10.3	12.3	11.6	11.2	11.3	12.4	18.2	11.3	12.6	10.17	12.59	11.44
Turbidity[c]	NTU	1.28	1.81	0.62	1.02	0.51	1.41	9.83	4.22	1.33	6.87	0.66	23.4
Common Ions													
Ca	mg/L	55.3	54.1	45.0	51.2	48.3	58.0	59.0	58.0	52.0	56.0	57.0J	55.0
Chloride	mg/L	2.93	2.87	3.66	3.50	3.31	3.10	3.40	3.90	3.00	3.00	2.90	2.80
Fluoride	µg/L	138	144	26.2U	159	174	170.	100.U	140.	220.	260.	200.	170.
Hardness	mg/L	184	180	150	172	163	190	193	190	175	185	188J	179
K	mg/L	2.89	2.83	2.40	2.71	2.57	4.20	4.00	3.90	3.60	3.50J	2.80J	3.20J
Mg	mg/L	11.1	11.0	9.09	10.8	10.4	11.0	11.0	11.0	11.0	11.0	11.0	10.0
Na	mg/L	63.1	62.1	53.9	58.9	66.1	52.0	52.0	61.0	57.0J	56.0	54.0J	53.0
NO_3+NO_2 as N	µg/L	32.4U	32.4U	110	9.9	4.50U	10.U	10.U	15	10.U	10.U	10.U	10.U
SO_4	mg/L	102	103	110	110	106	98.0	100	100	100	100	110	100
TDS[c]	mg/L	335	382	--	--	--	--	--	--	--	--	--	--
Metals													
As	µg/L	0.2U	0.2U	0.6U	0.1U	0.120	0.31	0.007U	0.3	0.12	0.15	0.13	0.1
Fe	µg/L	344	375	310	412	571	250	310	200	350	3.1U	400	300
Mn	µg/L	298	282	234	272	255	270	260	260	260	270	280	250
Mo	µg/L	0.4U	0.4	1.9U	1.7U	1.70U	2.7J	0.068U	3.2J	1.2	1.1	1.1	0.95
Se	µg/L	0.2U	0.1U	0.3U	0.1U	0.100U	0.029U	0.023U	0.025U	0.028U	0.024U	0.032U	0.034
U	µg/L	0.10U	0.1U	0.1U	0.1U	0.320	0.0083U	0.0048U	0.0048U	0.0035U	0.036	0.024	0.091
V	µg/L	0.4U	1.3U	0.3U	0.3U	0.300U	0.32J	0.1U	0.21U	0.095U	0.1U	0.05U	0.036
Radiological													
Alpha[d]	pCi/L	3.7U	7.8U	2.9U	3.9U	3.6UJ	4.0	--	--	--	--	--	--
Alpha-U[e]	pCi/L	3.7U	7.8U	2.9U	3.9U	3.6UJ	4.0[g]	--	--	--	--	--	--
Beta	pCi/L	4.7	7.4U	3.1	4.9	4.0U	3.9	--	--	--	--	--	--
U	µg/L	0.10U	0.1U	0.1U	0.1U	0.320	0.0083U	0.0048U	0.0048U	0.0035U	0.036	0.024	0.091
U-234	pCi/L	0.44U	0.52U	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	0.10U	0.10U	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] Uranium activity is below detection limits.

Bedrock Groundwaters -- Down Gradient -- 92-10[a,b]

Analyte	Unit	04/19/00	10/31/00	10/16/01	10/09/02	10/07/03	10/05/04	10/04/05	10/04/06	10/10/07	10/09/08	10/06/09	10/13/10
Field Measurements													
Alkalinity	mg/L	191	182	180	199	280	187	178	191	179	194	215	194
Conductivity[c]	µmhos/cm	590	720	617	627	614	880	704	752	747	604	869	975
DO[c]	mg/L	1.41	--	--	--	--	--	1.11	0.20	--	--	--	--
ORP[c]	mV	53	-109	-67	--	-109	-60	-92	-37	-92	-76.7	--	-322.9R
pH[c]	s.u.	7.57	7.76	7.51	7.42	7.49	7.52	7.45	7.29	7.41	7.53	7.38	6.98
Temperature[c]	C	9.3	10	10.8	11.8	10.8	11.3	11.1	11.5	11.13	11.98	11.48	11.07
Turbidity[c]	NTU	3.67	1.68	32.9	4.78	4.25	7.14	4.36	2.39	2.65	118.0	27.8	22.9
Common Ions													
Ca	mg/L	64.0	80.7	62.1	66.8	67.2	100	89.0	99.0	92.0	100	110J	120
Chloride	mg/L	5.99	18.2	9.78	12.2	14.6	32.0	20.0	25.0	26.0	29.0	32.0	40.0
Fluoride	µg/L	153	172	193	217J	166	140.	120.	140.	180.	130.	170.	120.
Hardness	mg/L	206	258	200	217	220	320	284	313	300	320	353J	382
K	mg/L	2.73	2.84	2.54	2.66	2.56	4.70	4.20	4.20	4.10	4.30J	3.40J	4.20J
Mg	mg/L	11.3	13.7	11.0	12.3	12.6	17.0	15.0	16.0	17.0	17.0	19.0	20.0
Na	mg/L	46.1	56.0	43.5	45.0	49.2	58.0	43.0	53.0	53.0	53.0J	52.0J	57.0
NO_3+NO_2 as N	µg/L	32.4U	32.4UJ	193	486R	4.50U	10.U	10.U	10.U	10.U	10.U	10.U	10.U
SO_4	mg/L	105	155	126	131	135	210	160	180	190	210	220	240
TDS[c]	mg/L	345	453	--	--	--	--	--	--	--	--	--	--
Metals													
As	µg/L	0.2U	0.2U	0.6U	0.1U	0.100U	0.23	0.007U	0.012U	0.028	0.018	0.087	0.051
Fe	µg/L	397	564	381	396	475	510	470	570	620	3.1U	680	660
Mn	µg/L	310	365	303	329	329	420	380	410	410	510J	480	480
Mo	µg/L	0.4U	1.1	2.4	1.7U	1.90	0.17U	0.068U	1.8J	1.7	1.6	1.5	1.4
Se	µg/L	0.2U	0.1U	0.3U	0.1U	0.100U	0.029U	0.023U	0.025U	0.028U	0.024U	0.032U	0.032U
U	µg/L	0.10U	0.1U	0.22	0.1U	0.120	0.0083U	0.0048U	0.11J	0.0035U	0.31	0.07	0.045
V	µg/L	0.4U	1.3U	0.3U	0.3U	0.300U	0.12U	0.1U	0.21U	0.095U	0.26	0.05U	0.019
Radiological													
Alpha[d]	pCi/L	3.6U	8.5U	2.9U	4.6	3.6UJ	7.9	--	--	--	--	--	--
Alpha-U[e]	pCi/L	3.6U	8.5U	2.9U	4.6[g]	3.6UJ	7.9[g]	--	--	--	--	--	--
Beta	pCi/L	3.2U	7.5U	2.8	5.0U	5.9	6.8	--	--	--	--	--	--
U	µg/L	0.10U	0.1U	0.22	0.1U	0.120	0.0083U	0.0048U	0.11J	0.0035U	0.31	0.07	0.045
U-234	pCi/L	1.1U	0.52U	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	0.10U	0.10U	--	--	--	--	--	--	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] Uranium activity is below detection limits.

Bedrock Groundwaters -- Down Gradient -- 92-12[a,b]

Analyte	Unit	04/18/00	11/02/00	10/16/01	10/09/02	10/07/03
Field Measurements						
Alkalinity	mg/L	286	293	354	352	397
Conductivity[c]	µmhos/cm	801	800	823	845	857
ORP[c]	mV	90	164	85	--	107
pH[c]	s.u.	7.58	7.74	7.56	7.45	7.67
Temperature[c]	C	10.8	10.1	10.8	10.3	12.4
Turbidity[c]	NTU	104	534	>1000	245	5.82
Common Ions						
Ca	mg/L	36.6	36.1	37.1	40.3	42.0
Chloride	mg/L	3.38	3.97	4.51	4.15	4.10
Fluoride	µg/L	432	432	600	25.1URJ	281
Hardness	mg/L	136	135	141	156	164
K	mg/L	3.52	3.38	3.52	3.60	3.86
Mg	mg/L	10.8	10.8	11.7	13.4	14.3
Na	mg/L	128	124	127	127	137
NO_3+NO_2 as N	µg/L	679	735J	1280	1430	658
SO_4	mg/L	104	101	110	106	107
TDS[c]	mg/L	172R	525	--	--	--
Metals						
As	µg/L	0.29	0.39	0.6U	0.12	0.350
Fe	µg/L	7.4U	11.7U	7.8	0.8U	0.800U
Mn	µg/L	2.3	2U	1.2	0.65	1.60
Mo	µg/L	27.1	25.7	17.1	13.5	20.4
Se	µg/L	2.2	2.7	3.8	3.7	3.00
U	µg/L	0.1U	2	2.1	2.4	2.60
V	µg/L	0.5	1.3U	0.3U	0.3U	0.480
Radiological						
Alpha[d]	pCi/L	6.0U	8.9U	4.3	5.2U	5.2J
Alpha-U[e]	pCi/L	6.0U	8.9U	2.9	5.2U	3.4J
Beta	pCi/L	6.3U	7.6	4.0	5.1U	5.6U
U	µg/L	0.1U	2	2.1	2.4	2.60
U-234	pCi/L	1.1U	0.52U	--	--	--
U-238	pCi/L	0.89	0.76	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 95-02[a,b]

Analyte	Unit	11/01/00	10/17/01	10/08/02
Field Measurements				
Alkalinity	mg/L	180	165	167
Conductivity[c]	µmhos/cm	600	603	589
DO[c]	mg/L	0	--	--
ORP[c]	mV	-85	-54	--
pH[c]	s.u.	7.14	7.21	7.19
Temperature[c]	C	12.1	12.6	12.4
Turbidity[c]	NTU	4.99	2.86	0.79
Common Ions				
Ca	mg/L	39.2	37.0	36.5
Chloride	mg/L	6.02	6.41	6.45
Fluoride	µg/L	258	329	349
Hardness	mg/L	144	137	137
K	mg/L	2.95	2.68	2.82
Mg	mg/L	11.2	10.8	11.1
Na	mg/L	72.6	70.6	69.5
NO_3+NO_2 as N	µg/L	32.4UJ	2630R	12.6
SO_4	mg/L	114	128	123
TDS[c]	mg/L	378	--	--
Metals				
As	µg/L	0.57	0.71	0.59
Fe	µg/L	488	563	599
Mn	µg/L	217	211	207
Mo	µg/L	0.32	1.9U	1.7U
Se	µg/L	0.1U	0.42	0.1U
U	µg/L	0.25	0.1U	0.18
V	µg/L	1.3U	0.3U	0.3U
Radiological				
Alpha[d]	pCi/L	7.5U	4.1UJ	4.3U
Alpha-U[e]	pCi/L	7.5U	4.1UJ	4.3U
Beta	pCi/L	7.4U	5.1	5.0U
U	µg/L	0.25	0.1U	0.18
U-234	pCi/L	0.52U	--	--
U-238	pCi/L	0.13	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 95-04[a,b]

Analyte	Unit	10/31/00	10/11/01	10/08/02	10/07/03
Field Measurements					
Alkalinity	mg/L	240	218	253	235
Conductivity[c]	µmhos/cm	1580	1588	1592	1462
ORP[c]	mV	-95	-72	--	-97
pH[c]	s.u.	7.02	7.21	7.1	7.19
Temperature[c]	C	10.9	9.9	13.5	11.9
Turbidity[c]	NTU	3.27	1.78	4.52	4.3
Common Ions					
Ca	mg/L	161	154	158	148
Chloride	mg/L	74.8	78.2	81.1	75.7
Fluoride	µg/L	12.5RU	221	160	192
Hardness	mg/L	628	597	606	573
K	mg/L	3.59	3.22	3.58	3.45
Mg	mg/L	54.9	51.6	51.3	49.3
Na	mg/L	122	117	121	125
NO_3+NO_2 as N	µg/L	32.4UJ	38	8.8	4.50U
SO_4	mg/L	515	539	549	525
TDS[c]	mg/L	1170	--	--	--
Metals					
As	µg/L	0.96	0.73	0.24	0.240
Fe	µg/L	1410	1370	1460	1350
Mn	µg/L	439	408	481	482
Mo	µg/L	6.2	4.3	6.2	5.20
Se	µg/L	0.1U	0.3U	0.1U	0.100U
U	µg/L	4.8	4.5	1.9	2.30
V	µg/L	1.3U	0.3U	0.3U	0.300U
Radiological					
Alpha[d]	pCi/L	8.5UJ	11.4UJ	8.8U	6.9UJ
Alpha-U[e]	pCi/L	8.5UJ	11.4UJ	8.8U	6.9UJ
Beta	pCi/L	10.3	11.5U	8.9	7.9
U	µg/L	4.8	4.5	1.9	2.30
U-234	pCi/L	0.52U	--	--	--
U-238	pCi/L	2.0	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 95-06[a,b]

Analyte	Unit	04/19/00	10/31/00	10/17/01	10/04/06
Field Measurements					
Alkalinity	mg/L	321	353	317	423
Conductivity[c]	µmhos/cm	2270	2220	2220	1919
DO[c]	mg/L	--	--	--	0.80
ORP[c]	mV	47	-61	-22	-5
pH[c]	s.u.	7.14	7.33	7.08	7.04
Temperature[c]	C	12.1	11.9	12.2	11.6
Turbidity[c]	NTU	15.4	17.6	11.2	6.52
Common Ions					
Ca	mg/L	235	229	211	220
Chloride	mg/L	112	110	114	88.0
Fluoride	µg/L	124	136	352	230.
Hardness	mg/L	857	830	771	768
K	mg/L	7.64	7.17	6.87	10.0
Mg	mg/L	65.5	62.6	59.2	53.0
Na	mg/L	241	229	219	220
NO_3+NO_2 as N	µg/L	32.4U	38.5	428R	10.U
SO_4	mg/L	823	821	844	670
TDS[c]	mg/L	1720	1720	--	--
Metals					
As	µg/L	0.2U	0.33	0.6U	0.012U
Fe	µg/L	248	1440	567	810
Mn	µg/L	481	688	445	450
Mo	µg/L	6.5	3	1.9U	0.13U
Se	µg/L	0.2U	0.1U	2.7	0.025U
U	µg/L	64.3	57.2	64.4	46
V	µg/L	0.4U	1.3U	0.3U	0.21U
Radiological					
Alpha[d]	pCi/L	61.1	47.1J	38.3J	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	--
Beta	pCi/L	27.2	24.3	13.9	--
U	µg/L	64.3	57.2	64.4	46
U-234	pCi/L	46.3	26.7	--	--
U-238	pCi/L	26.9	22.1	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 95-08[a,b]

Analyte	Unit	10/31/00
Field Measurements		
Alkalinity	mg/L	286
Conductivity[c]	µmhos/cm	595
DO[c]	mg/L	2.3
ORP[c]	mV	101
pH[c]	s.u.	7.75
Temperature[c]	C	12.4
Turbidity[c]	NTU	4.3
Common Ions		
Ca	mg/L	28.1
Chloride	mg/L	5.78
Fluoride	µg/L	813
Hardness	mg/L	107
K	mg/L	3.57
Mg	mg/L	8.93
Na	mg/L	94.0
NO_3+NO_2 as N	µg/L	32.4U
SO_4	mg/L	34.3
TDS[c]	mg/L	365
Metals		
As	µg/L	0.21
Fe	µg/L	11.7U
Mn	µg/L	44.9
Mo	µg/L	0.3U
Se	µg/L	0.1U
U	µg/L	0.1U
V	µg/L	1.3U
Radiological		
Alpha[d]	pCi/L	8.1U
Alpha-U[e]	pCi/L	8.1U
Beta	pCi/L	7.5U
U	µg/L	0.1U
U-234	pCi/L	1.1
U-238	pCi/L	0.10U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.