

Table H-1
Summary of Radioisotopes in Groundwater
 (All results in picoCuries per liter except Total U)

Sample Station	Sample Date	Ra-226		Ra-228		Th-228		Th-230		Th-232		U-234		U-235		U-238		Total U (ug/l)	
		Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty
CSMRI-1	3/1/2007	0.32	0.42	0.78	0.39	0.052	0.079	-0.031	0.057	0.012	0.025	NT	NA	NT	NA	NT	NA	1.2	NA
CSMRI-1B	3/8/2007	0.13	0.52	1.19	0.48	-0.03	0.12	-0.09	0.11	0.02	0.045	NT	NA	NT	NA	NT	NA	2.7	NA
CSMRI-2	3/8/2007	0.76	0.54	2.15	0.74	0.022	0.06	-0.01	0.045	0.011	0.015	NT	NA	NT	NA	NT	NA	0.72	NA
CSMRI-4	3/8/2007	0.09	0.29	0.37	0.32	-0.034	0.058	-0.037	0.045	0.013	0.013	NT	NA	NT	NA	NT	NA	48	NA
CSMRI-5	3/8/2007	1.78	0.6	0.39	0.33	-0.012	0.05	-0.061	0.044	0	0.012	NT	NA	NT	NA	NT	NA	5.8	NA
CSMRI-8	3/8/2007	0.7	0.42	1.06	0.45	0.072	0.051	-0.031	0.045	0.016	0.016	NT	NA	NT	NA	NT	NA	1,100	NA
CSMRI-9	3/1/2007	0.12	0.17	0.53	0.36	-0.017	0.069	0.04	0.069	0.027	0.028	NT	NA	NT	NA	NT	NA	7.9	NA
CSMRI-10	3/1/2007	0.19	0.25	0.63	0.39	0.014	0.069	-0.004	0.059	0.018	0.021	NT	NA	NT	NA	NT	NA	7.8	NA
CSMRI-11	3/1/2007	0.16	0.27	0.46	0.35	0.051	0.086	0.085	0.08	0.007	0.021	NT	NA	NT	NA	NT	NA	4.8	NA
MCL*		Total Ra = 5				NE		Th 230 + Th 232 = 60**				NE		NE		NE		30	

*Maximum Contaminant Level – National Primary Drinking Water Regulations

**5 CCR 1002-41 Reg 41 – Colorado Groundwater Standards

NE - Not Established

NT – Not Tested

NA – Not Applicable

Table H-2
Summary of Metals in Groundwater
 (All results in milligrams per liter)

Sample Station	Sample Date	Ag	As	Ba	Ca	Cd	Cr	Hg	K	Mg	Mo	Na	Pb	Se	V	Zn
CSMRI-1	3/1/2007	ND	ND	0.081 (B)	39	0.00045 (B)	0.00063 (B)	0.000017 (B)	3	12	0.0059 (B)	26	ND	0.0066	ND	0.048
CSMRI-1B	3/1/2007	ND	ND	0.098 (B)	130	ND	0.00014 (B)	0.000017 (B)	52	47	0.17	91	ND	0.0058	0.0009 (B)	ND
CSMRI-2	3/8/2007	ND	0.0058 (B)	0.12	88	ND	ND	ND	8.3	39	ND	21	ND	0.03	ND	0.0011 (B)
CSMRI-4	3/8/2007	ND	0.0057 (B)	0.072 (B)	120	0.00023 (B)	ND	0.000018 (B)	11	49	0.015	47	ND	0.019	ND	0.088
CSMRI-5	3/8/2007	ND	0.0037 (B)	0.063 (B)	80	ND	ND	ND	4.5	31	0.0019 (B)	34	ND	0.015	ND	0.083
CSMRI-8	3/1/2007	ND	0.0053 (B)	0.068 (B)	230	ND	ND	ND	23	72	0.094	74	ND	0.034	ND	0.0024 (B)
CSMRI-9	3/1/2007	ND	ND	0.08 (B)	69	ND	0.0011 (B)	0.000024 (B)	12	31	0.045	33	ND	0.011	0.001 (B)	ND
CSMRI-10	3/1/2007	0.00051 (B)	ND	0.064 (B)	79	ND	0.0013 (B)	0.000024 (B)	7.3	33	0.01	36	ND	0.01	0.0011 (B)	ND
CSMRI-11	3/1/2007	ND	ND	0.073 (B)	75	ND	0.00013 (B)	0.000023 (B)	9.7	29	0.033	33	ND	0.013	0.00073 (B)	0.0023 (B)
Detection Limits		0.01	0.01	0.1	1	0.005	0.01	0.0002	1	1	0.01	1	0.003	0.005	0.01	0.02
MCL*		NE	0.010	2	NE	0.005	0.1	0.002	NE	NE	NE	NE	0.015	0.05	NE	NE

*Maximum Contaminant Level – National Primary Drinking Water Regulations

ND – Non Detect

NE – Not Established

(B) – Detected above Instrument Detection Level but below Reported Detection Level

Table H-3
Summary of Radioisotopes in Surface Water
 (All results in picoCuries per liter except Total U)

Sample Station	Sample Date	Ra-226		Ra-228		Th-228		Th-230		Th-232		U-234		U-235		U-238		Total U	
		Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result	Uncertainty	Result (ug/l)	Uncertainty (ug/l)
SW-1	3/1/2007	-0.1	0.39	0.25	0.33	-0.038	0.07	0.15	0.11	0.026	0.035	NT	NA	NT	NA	NT	NA	1.7	NA
SW-2	3/8/2007	0.12	0.23	0.73	0.38	0.047	0.04	-0.055	0.043	0	0.011	NT	NA	NT	NA	NT	NA	1.7	NA
MCL*		Total Ra 5				NE		Th 230 + Th 232 = 60**				NE		NE		NE		30	

*Maximum Contaminant Level – National Primary Drinking Water Regulations

**5 CCR 1002-31 Reg 31 – Colorado Surface Water Standards

NE – Not Established

Table H-4
Summary of Metals in Surface Water
 (All results in milligrams per liter)

Sample Station	Sample Date	Ag	As	Ba	Ca	Cd	Cr	Hg	K	Mg	Mo	Na	Pb	Se	V	Zn
SW-1	3/1/2007	ND	ND	0.049 (B)	44	0.0011 (B)	0.00092 (B)	0.000023 (B)	4.3	11	0.0046 (B)	26	ND	ND	ND	0.22
SW-2	3/8/2007	ND	0.0053 (B)	0.049 (B)	39	0.00064 (B)	ND	ND	4.2	9.8	0.0014 (B)	22	ND	ND	ND	0.17
Detection Limits		0.01	0.01	0.1	1	0.005	0.01	0.0002	1	1	0.01	1	0.003	0.005	0.01	0.02
MCLs*		0.01	0.010	2	NE	0.005	0.1	0.002	NE	NE	NE	NE	0.015	0.05	NE	NE

*Maximum Contaminant Level – National Primary Drinking Water Regulations

ND – Non Detect

NE – Not Established

(B) – Detected above Instrument Detection Level but below Reported Detection Level

**Table H-5
Historical Summary of Radioisotopes in Groundwater (Stoller)**

Sample Station	Sample Date	Ra-226 (pCi/l)	Ra-228 (pCi/l)	Th-228 (pCi/l)	Th-230 (pCi/l)	Th-232 (pCi/l)	U-234 (pCi/l)	U-235 (pCi/l)	U-238 (pCi/l)	Total U (ug/l)
CSMRI-1	2/25/05	-0.11	0.81	0.007	0.07	0.01	0.77	0.043	0.53	1.61
	6/14/05	0.16	0.44	0.018	-0.021	0.012	0.43	0.011	0.217	0.64
	9/7/05	0.1	0.63	0.068	0.167	0.114	0.85	0.053	0.43	1.3
	12/20/05	-0.19	0.59	-0.045	0.32	0.014	0.94	0.073	0.46	1.41
	3/15/06	-0.15	0.58	0.025	0.032	-0.004	1.76	0.11	0.92	2.8
	6/14/06	0.42	0.05	0.15	-0.06	0.062	0.18	0.18	0.08	0.31
CSMRI-2	9/13/06	0.25	0.34	0.11	-0.079	0.027	0.45	0.051	0.25	0.77
	2/25/05	0.8	1.85	0.07	-0.02	0.01	0.6	0.05	0.16	0.53
	6/14/05	1.47	3.0	0.14	0.003	0.026	0.68	0.025	0.299	0.89
	9/7/05	1.78	2.71	0.162	0.108	0.049	0.65	0.050	0.31	0.94
	12/20/05	1.35	1.62	0.108	0.285	0.024	0.83	0.002	0.35	1.06
	3/15/06	1.25	2.53	0.03	0.204	0.012	0.83	0.066	0.45	1.36
CSMRI-4	6/14/06	0.99	1.79	0.25	0.22	0.049	0.69	0.04	0.25	0.76
	9/13/06	1.01	2.35	0.088	-0.039	-0.008	0.46	0.014	0.28	0.85
	2/25/05	-0.03	0.16	0.019	-0.009	0.013	9.7	0.53	8.2	24.7
	6/14/05	0.26	0.34	0.013	0.014	0.005	11.4	0.49	10.6	31.4
	9/7/05	0.17	0.78	-0.013	0.164	0.086	6.4	0.33	6.4	19.3
	12/20/05	0.13	0.1	0.033	0.311	0.012	11.5	0.61	11.4	34.3
CSMRI-5	3/15/06	0	0.38	0.004	0.174	0.007	9	0.43	9	27.1
	6/15/06	0.41	0.39	0.11	0.17	0.061	9.2	0.4	8.9	26.8
	9/13/06	-0.05	0.79	0.056	-0.015	0.007	6.5	0.35	6	17.9
	2/25/05	1.06	0.53	0.009	0.007	0.034	1.22	0.056	0.93	2.8
	6/14/05	2.51	0.44	-0.018	0.039	0.011	1.51	0.086	1.2	3.57
	9/7/05	2.50	0.76	0.06	1.25	0.051	1.85	0.051	1.47	4.4
MCL*	12/20/05	1.97	0.52	0.032	0.126	0.01	1.45	0.066	1.21	3.63
	3/15/06	0.57	0.45	0.038	0.144	0.019	1.81	0.058	1.38	4.1
	6/15/06	2.13	0.87	0.145	0.08	0.043	1.03	0.13	0.92	2.8
	9/13/06	2.29	0.56	0.053	-0.053	0.005	3.18	0.17	2.32	7
MCL*		Total Ra = 5		NE	Th 230 + Th 232 = 60**		NE	NE	NE	30

*Maximum Contaminant Level – National Primary Drinking Water Regulations

**5 CCR 1002-41 Reg 41 – Colorado Groundwater Standards

pCi/l - picocuries per liter

NE – Not Established

ug/l – micrograms per liter

Table H-6
Historical Summary of Metals in Groundwater (Stoller)
 (All results in milligrams per liter)

Sample Station	Sample Date	Ag	As	Ba	Ca	Cd	Cr	Hg	K	Mg	Mo	Na	Pb	Se	V	Zn
CSMRI-1	2/25/05	ND	ND	ND	28	ND	ND	ND	2.8	9.4	ND	29	ND	ND	ND	0.032
	6/14/05	ND	ND	ND	17	ND	ND	ND	2.3	5.1	ND	16	ND	ND	ND	0.032
	9/7/05	ND	ND	.055 (B)	21	ND	ND	ND	2.9	6.3	0.0021 (B)	25	ND	0.0041 (B)	ND	.034
	12/20/05	ND	ND	0.067 (B)	32	ND	ND	0.000034 (B)	2.9	10	ND	26	ND	ND	ND	0.052
	3/15/06	ND	ND	0.064 (B)	33	ND	ND	0.00002 (B)	2.6	10	0.0013 (B)	24	ND	ND	ND	0.049
	6/14/06	ND	ND	0.031 (B)	10	ND	ND	ND	1.9	3	0.0051 (B)	9.2	ND	0.0035 (B)	ND	0.015 (B)
CSMRI-2	9/13/06	ND	ND	0.061 (B)	20	ND	0.041 (B)	ND	2.7	6	0.0038 (B)	14	ND	ND	ND	0.03
	2/25/05	ND	ND	0.11	72	ND	ND	ND	7.1	32	ND	19	ND	ND	ND	0.02
	6/14/05	ND	ND	0.1	76	ND	ND	ND	6.3	32	ND	18	ND	ND	ND	ND
	9/7/05	ND	ND	0.11	81	ND	ND	ND	7.1	35	ND	19	ND	ND	ND	0.011 (B)
	12/20/05	ND	ND	0.098 (B)	76	ND	ND	0.000031 (B)	6.7	33	ND	18	ND	ND	ND	0.0043 (B)
	3/15/06	ND	ND	0.09 (B)	74	ND	ND	0.000023 (B)	6.1	31	ND	17	ND	ND	ND	0.0059 (B)
CSMRI-4	6/14/06	ND	ND	0.093 (B)	70	ND	ND	ND	6.3	31	0.0048 (B)	17	ND	0.0031 (B)	ND	0.0092 (B)
	9/13/06	ND	ND	0.11	81	ND	ND	ND	6.7	35	0.0014 (B)	19	ND	ND	ND	0.0092 (B)
	2/25/05	ND	ND	ND	72	ND	ND	ND	5.1	31	0.017	29	ND	ND	ND	0.12
	6/14/05	ND	ND	ND	86	ND	ND	ND	6.6	34	0.038	34	ND	0.0063	ND	0.068
	9/7/05	ND	0.0035 (B)	0.055 (B)	82	ND	ND	ND	7.6	33	0.035	31	ND	0.0049 (B)	ND	0.097
	12/20/05	ND	ND	0.056 (B)	100	ND	ND	0.000045 (B)	6.8	43	0.024	34	ND	ND	ND	0.18
CSMRI-5	3/15/06	ND	ND	0.042 (B)	81	ND	ND	0.000034 (B)	5	35	0.021	29	ND	ND	0.00056 (B)	0.21
	6/15/06	ND	0.0031 (B)	0.055 (B)	89	0.00085 (B)	ND	0.0000049 (B)	8.3	37	0.03	31	ND	ND	0.0011 (B)	0.11
	9/13/06	ND	ND	0.043 (B)	66	ND	ND	0.000016 (B)	8.3	27	0.038	30	ND	ND	ND	0.082
	2/25/05	ND	ND	ND	54	ND	ND	ND	3.4	22	ND	27	ND	ND	ND	0.067
	6/14/05	ND	ND	ND	63	ND	ND	ND	3.3	23	ND	28	ND	ND	ND	0.047
	9/7/05	ND	ND	0.085 (B)	85	ND	ND	ND	4.2	31	0.0042 (B)	35	ND	0.0037 (B)	0.0018 (B)	0.089
Detection Limits	12/20/05	ND	ND	0.072 (B)	79	0.00071 (B)	ND	0.000048 (B)	4.1	30	0.002 (B)	31	ND	ND	0.0012 (B)	0.17
	3/15/06	ND	ND	0.058 (B)	70	0.00037 (B)	ND	0.000029 (B)	3.5	26	0.0031 (B)	29	ND	0.0035 (B)	0.00067 (B)	0.11
	6/15/06	ND	ND	0.052 (B)	51	ND	ND	0.000012 (B)	3.6	19	0.0028 (B)	26	ND	ND	ND	0.055
	9/13/06	ND	ND	0.087 (B)	110	ND	0.0022 (B)	ND	4.5	41	0.0027 (B)	50	ND	ND	0.001 (B)	0.11
Detection Limits		0.01	0.01	0.1	1	0.005	0.01	0.0002	1	1	0.01	1	0.003	0.005	0.01	0.02
MCL*		NE	0.01	2	NE	0.005	0.1	0.002	NE	NE	NE	NE	0.015	0.05	NE	NE

*Maximum Contaminant Level – National Primary Drinking Water Regulations
 ND – non detect
 NE – not established
 (B) – Detected above Instrument Detection Level but below Reported Detection Level

Table H-7
Historical Summary of Radioisotopes in Surface Water (Stoller)

Sample Station	Sample Date	Ra-226 (pCi/l)	Ra-228 (pCi/l)	Th-228 (pCi/l)	Th-230 (pCi/l)	Th-232 (pCi/l)	U-234 (pCi/l)	U-235 (pCi/l)	U-238 (pCi/l)	Total (ug/l)	U
SW-1	2/25/05	0	0.58	0.018	-0.026	-0.001	0.89	0.083	0.65	1.97	
	6/14/05	0.14	0.05	0.05	-0.025	0.016	0.246	0.021	0.251	0.75	
	9/7/05	0.18	0.42	0.041	0.25	0.102	0.35	0.031	0.35	1.04	
	12/20/05	-0.31	0.47	0.028	0.197	-0.005	0.64	0.041	0.7	2.11	
	3/15/06	-0.16	0.35	0.059	0.125	0.005	0.6	0.029	0.53	1.59	
	6/14/06	0.13	0.45	0.16	0.53	0.062	0.11	0.08	0.19	0.61	
	9/13/06	-0.03	0.25	-0.019	-0.035	0.01	0.37	-0.005	0.34	1	
SW-2	2/25/05	0.45	0.06	0.011	-0.016	0.033	0.8	0.066	0.42	1.29	
	6/14/05	0.04	0.29	0.071	-0.028	0.007	0.259	0.032	0.23	0.69	
	9/7/05	-0.08	0.24	-0.013	0.107	0.051	0.54	0.014	0.54	1.62	
	12/20/05	0.09	0.07	-0.003	0.126	0	0.71	0.067	0.49	1.5	
	3/15/06	-0.04	-0.15	0.009	0.184	0.01	0.79	0.004	0.51	1.52	
	6/14/06	0.03	0.04	0.172	0.24	0.1	0.39	0	0.48	1.44	
	9/13/06	0.11	0.35	0.009	-0.03	0.01	0.43	-0.006	0.3	0.89	
MCL*		Total Ra = 5		NE	Th 230 + Th 232 = 60**		NE	NE	NE	30	

*Maximum Contaminant Level – National Primary Drinking Water Regulations

**5 CCR 1002-31 Reg 31 – Colorado Surface Water Standards

pCi/l - picoCuries per liter

ug/l – micrograms per liter

Table H-8
Historical Summary of Metals in Surface Water (Stoller)
(All results in milligrams per liter)

Sample Station	Sample Date	Ag	As	Ba	Ca	Cd	Cr	Hg	K	Mg	Mo	Na	Pb	Se	V	Zn
SW-1	2/25/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
	6/14/05	ND	ND	ND	11	ND	ND	ND	1.1	2.8	ND	5.2	ND	ND	ND	0.09
	9/7/05	ND	0.0037 (B)	0.029 (B)	20	ND	ND	ND	2.2	4.4	0.0044 (B)	8.5	ND	0.0045 (B)	ND	0.063
	12/20/05	ND	ND	0.042 (B)	35	0.00057 (B)	ND	0.000034 (B)	3.7	7.6	0.004 (B)	19	ND	ND	ND	0.22
	3/15/06	ND	ND	0.04 (B)	37	0.00084 (B)	0.00047 (B)	0.000024 (B)	3.7	8.5	0.0048 (B)	23	ND	ND	0.00067 (B)	0.19
	6/14/06	0.0012 (B)	0.0032 (B)	0.011 (B)	8.2	ND	ND	ND	1	1.9	0.0042 (B)	3.1	ND	ND	ND	0.029
	9/13/06	ND	ND	0.03 (B)	21	ND	ND	ND	2.1	4.4	0.0049 (B)	8.6	ND	ND	ND	0.053
SW-2	2/25/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17
	6/14/05	ND	ND	ND	11	ND	ND	ND	1.1	2.8	ND	4.8	ND	ND	ND	0.085
	9/7/05	ND	ND	0.028 (B)	20	ND	ND	ND	2.1	4.4	0.0037 (B)	8.7	ND	0.0037 (B)	ND	0.051
	12/20/05	ND	ND	0.042 (B)	35	0.00043 (B)	ND	0.000034 (B)	3.8	8	0.0038 (B)	19	ND	ND	ND	0.21
	3/15/06	ND	ND	0.042 (B)	39	0.00053 (B)	0.00055 (B)	0.000022 (B)	3.8	8.9	0.0046 (B)	25	ND	ND	0.00053 (B)	0.2
	6/14/06	ND	0.0022 (B)	0.011 (B)	8.4	ND	ND	ND	1	1.9	0.0045 (B)	3	ND	ND	ND	0.031
	9/13/06	ND	ND	0.03 (B)	21	ND	ND	ND	2.1	4.4	0.0048 (B)	8.5	ND	ND	ND	0.04
Detection Limits		0.01	0.01	0.1	1	0.005	0.01	0.0002	1	1	0.01	1	0.003	0.005	0.01	0.02
MCL*		0.01	0.01	2	NE	0.005	0.1	0.002	NE	NE	NE	NE	0.015	0.05	NE	NE

*Maximum Contaminant Level – National Primary Drinking Water Regulations

ND – Non Detect

NE – Not Established

Table H-9
CSMRI Historical Groundwater Data (Previous Consultants)
 (All results in picoCuries per liter)

Well ID (d)	Analyte	1/1991 (a)	6/1991 (a)	3/1999 (b)	6/1999 (b)	6/1999 (b)	10/1999 (b)	2/2003 (c)	4/2003 (c)	7/2003 (c)	10/2003 (c)
CSMRI-1	Ra-226			0.1	0.3	0.3	0.2	<0.55	<0.45	ND (<0.38)	ND (<0.31)
	U Total			2.09	2.59	2.59	1.44	2.4	2.9	0.87	1.4
	Th-230			0.4	0.2	0.2	0.2	<0.19	0.21	ND (<0.13)	<0.15
CSMRI-2	Ra-226		1.9	1.9	1.4	1.4	1.4	1.4	2.8	2.1	1.7
	U Total	11	5.7	0.55	1.46	1.46	0.71	1.5	1.3	1.9	1.3
	Th-230		0	0.1	0.1	0.1	0.9	<0.17	0.43	0.20	0.31
CSMRI-3	Ra-226		0.6	1.5	1.2	1.2	1.6	<0.75	<0.81	ND (<0.49)	<0.98
	U Total	17	10.4	8.41	12.4	12.4	10	12	12	9	10
	Th-230		0	0.3	0.3	0.3	1.1	<0.12	ND (<0.15)	ND (<0.17)	ND (<0.14)
CSMRI-4	Ra-226		1	<0.4	0.6	0.6	0.4	<0.85	<0.42	<0.32	ND (<0.64)
	U Total	86	57.3	23.4	58.6	58.6	33.7	16	34.2	53	19
	Th-230		0	0.7	0.3	0.3	0.4	<0.099	ND (<0.15)	ND (<0.17)	ND (<0.12)
CSMRI-5	Ra-226		0.6	2.4	3.3	3.3	2.7	ND (<0.49)	1.1	2.6	1.59
	U Total	14	16.8	3.6	3.6	3.6	4	2.8	2.3	2.7	3.3
	Th-230		0	0.2	0.2	0.2	1.4	0.062	ND (<0.14)	ND (<0.19)	ND (<0.13)

Notes: ND = Not Detected

a - Samples collected by Grant and Associates and analyzed by Barringer Labs

b - Samples collected by URS Greiner Woodward Clyde and analyzed by CORE Labs

c - Samples collected by New Horizons Environmental Consultants and analyzed by Paragon Analytics; Total U activity (pCi/l) calculated from concentration (ug/L) reported by Paragon.

d - Well Identification numbers changed from the 1991 data to the 1999 data. Data presented account for this change