

Table 2
Summary of Rock Analyses
Madison Water Utility Unit Wells 10, 12, 29, and 30
Madison, Wisconsin

SAMPLE ID LOCATION AND DEPTH (feet)	TOTAL S ppm	SULFATE as S ppm	SULFIDES as S ppm	FE ppm	MN ppm	FE ppm as FE (OH) ₃	MN ppm as MnO ₂	RATIO OF FE(OH) ₃ /MnO ₂
UW29								
UW29 25-55	200	200	<100	8,900	534	17,034	845	20
UW29 55-70	<100	<100	100	6,000	497	11,484	787	15
UW29 70-85	<100	<100	<100	8,500	1,110	16,269	1,757	9
UW29 85-145	100	100	<100	11,800	401	22,585	635	36
UW29 145-165	100	100	<100	8,600	308	16,460	488	34
UW29 165-220	<100	<100	100	10,300	243	19,714	385	51
UW29 220-290	<100	<100	<100	6,200	510	11,867	807	15
UW29 290-295	100	100	<100	13,800	592	26,413	937	28
UW29 295-350	<100	<100	<100	6,600	198	12,632	313	40
UW29 350-400	<100	<100	100	9,100	92	17,417	146	120
UW29 400-445	<100	<100	100	5,600	83	10,718	131	82
UW29 445-455	100	0	100	9,200	103	17,609	163	108
UW29 455-475	<100	<100	100	5,600	432	10,718	684	16
UW29 475-485	600	200	400	6,800	1,440	13,015	2,279	6
UW29 485-550	100	100	<100	7,700	55	14,738	87	169
UW29 550-615	100	0	100	5,800	54	11,101	85	130
UW29 615-635	<100	<100	100	6,800	59	13,015	93	139
UW29 635-650	<100	<100	100	6,700	47	12,824	74	172
UW29 650-700	100	0	100	5,900	36	11,292	57	198
UW29 700-750	<100	<100	<100	4,800	31	9,187	49	187
UW29 750-760	<100	<100	100	10,100	37	19,331	59	330
UW29 760-795	<100	<100	100	9,500	64	18,183	101	179
UW29 795-810	200	100	100	74,500	272	142,591	431	331

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UW10								
UW10 150-170	100	0	100	8,600	81	16,460	128	128
UW10 170-190	100	100	<100	19,200	532	36,748	842	44
UW10 240-270	<100	<100	<100	5,700	406	10,910	643	17
UW10 270-380	100	0	100	7,200	98	13,781	155	89
UW10 415-435	8,900	1500	7,400	21,900	1,230	41,916	1,947	22
UW10 485-570	<100	<100	100	7,200	154	13,781	244	57
UW10 570-645	100	100	<100	7,400	139	14,163	220	64
UW10 645-725	100	0	100	6,700	171	12,824	271	47
UW10 725-850	100	100	<100	8,000	64	15,312	101	151
UW10 865-870	200	100	100	23,500	99	44,978	157	287
UW10 870-995	<100	<100	100	8,300	61	15,886	97	165
UW10 997-1000	100	0	100	14,800	113	28,327	179	158
UW12								
UW12 90-257	100	0	100	7,600	381	14,546	603	24
UW12 260-395	100	100	<100	7,700	191	14,738	302	49
UW12 405-420	13,200	1700	11500	25,400	818	48,615	1,295	38
UW12 437-595	200	100	100	10,200	655	19,523	1,037	19
UW12 610-705	400	200	200	9,300	229	17,800	362	49
UW12 720-804	100	0	100	9,700	203	18,566	321	58
UW12 810-975	100	100	<100	9,800	58	18,757	92	204
UW12 977-986	400	200	200	17,200	176	32,920	279	118

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UW30								
UW30 40-60	<100	<100	100	8,100	601	15,503	951	16
UW30 70-150	100	0	100	12,600	313	24,116	495	49
UW30 185-280	100	100	<100	6,900	142	13,206	225	59
UW30 286-303	1,700	1,300	400	13,000	979	24,882	1,550	16
UW30 312-500	300	0	300	5,700	428	10,910	677	16
UW30 510-650	300	100	200	5,900	341	11,292	540	21
UW30 675-790	900	0	900	8,000	92	15,312	146	105
UW30 795-805	100	0	100	43,000	125	82,301	198	416
Average	871	197	689	11,518	315	22,045	499	96
Maximum	13,200	1,700	11,500	74,500	1,440	142,591	2,279	416
Minimum	100	--	<100	4,800	31	9,187	49	6

Notes:

NA = not analyzed.

Some sulfides analysis are greater than total sulfur, due to inaccuracies between the different analytical methods.

Table 3
Stabilized Field Parameters
Madison Water Utility Unit Wells 12, 29, and 30
Madison, Wisconsin

FIELD PARAMETERS	UW12	UW29	UW30
pH (units)	7.27	7.19	7.25
Eh (mv)	298	113	118
Dissolved Oxygen (mg/L)	3.42	0.15	0.14
Conductivity (mS/cm)	0.528	0.587	0.521

Table 4
Summary of Sampling Results, Madison Water Utility Unit Well 29
Madison, Wisconsin

SAMPLE ID TIME COLLECTED	SAMPLE 1 9:34	SAMPLE 2 9:39	SAMPLE 3 9:45	SAMPLE 4 10:01	SAMPLE 5 11:38	SAMPLE 6 12:49	SAMPLE 7 13:37	SAMPLE 8 14:22	SAMPLE 9 15:05
Inorganic Results (mg/L)									
Alkalinity	330	330	350	340	NA	NA	NA	NA	330
Chloride	1.3Q	1.3Q	1.4Q	1.3Q	NA	NA	NA	NA	1.4Q
Nitrate-N	<0.06	<0.06	<0.06	<0.06	NA	NA	NA	NA	0.16Q
Sulfate	3.5	3.5	3.6	3.7	NA	NA	NA	NA	3.9
Ammonia-N	<0.023	<0.023	<0.023	<0.023	NA	NA	NA	NA	<0.023
TKN	0.32	<0.10	0.11	<0.10	NA	NA	NA	NA	<0.10
TOC	<0.70	<0.70	<0.70	<0.70	NA	NA	NA	NA	<0.70
TDS	220	220	220	98	NA	NA	NA	NA	210
Bromide	0.0104	0.0125	0.0121	0.0114	0.0117	0.00964	0.00910	0.0104	0.00958
Iodide	0.00108	0.00111	0.000941	0.000747	0.000719	0.000911	0.000841	0.000883	0.00118
Metals Results (mg/L)									
Potassium	1.245	1.317	1.182	1.209	NA	NA	NA	NA	1.185
Sodium	2.475	2.978	2.306	2.443	NA	NA	NA	NA	2.086
Calcium	38.4	66.6	77.1	67.6	NA	NA	NA	NA	74.4
Iron	1.01	1.36	1.43	0.987	NA	NA	NA	NA	0.516
Magnesium	17.7	37.4	36.9	35.8	NA	NA	NA	NA	36.1
Manganese	0.0903	0.149	0.209	0.219	NA	NA	NA	NA	0.226
Volatile Organic Compound Results									
Methylene chloride	<0.15	NA	NA	NA	NA	NA	NA	NA	0.15 B,Q
Isotope Results									
dD H ₂ O (‰)	-60.2	NA	NA	NA	NA	NA	NA	NA	-60.2
d ¹⁸ O H ₂ O (‰)	-9.07	NA	NA	NA	NA	NA	NA	NA	-9.07
Tritium (TU)	<1	NA	NA	NA	NA	NA	NA	NA	<1
d ¹³ C DIC (‰)	-9.24	NA	NA	NA	NA	NA	NA	NA	-9.24
Field Parameters									
pH (units)	7.81	7.40	7.23	7.16	7.18	7.18	7.18	7.19	7.19
ORP (mv)	-161	-100	-83	-85	-88	-89	-77	-74	-71
Dissolved oxygen (mg/L)	5.32	4.45	1.69	0.39	0.34	0.09	0.11	0.12	0.15
Conductivity (mS/cm)	0.551	0.593	0.599	0.593	0.590	0.585	0.587	0.587	0.587
Temperature (degrees C)	10.54	10.72	10.72	10.45	10.41	10.38	10.53	10.51	10.48

Notes:

NA = not analyzed.

B = analyte detected in associated method blank.

Q = value between limit of detection and limit of quantification.

Table 5
Summary of Analytical Data
Madison Water Utility Unit Well 29
Madison, Wisconsin

SAMPLE ID DATE	UW12 2006	UW29 1/8/2007	UW30 2/14/2003
Inorganic Results (mg/L)			
Alkalinity	279	330	254
Chloride	2.45	1.4Q	3.1
Nitrate-N	0.708	0.16Q	
Sulfate	10.05	3.9	20.6
Ammonia-N		<0.023	
TKN		<0.10	
TOC		<0.70	
TDS	326	210	
Metals Results			
Potassium (mg/L)		1.185	
Sodium (mg/L)	2.2	2.086	3.6
Calcium (mg/L)	63	74.4	56.1
Iron (mg/L)	0.006	0.516	0.3
Magnesium (mg/L)	33	36.1	33.8
Manganese (µg/L)	15	226	15
Organic Results			
Methylene chloride		0.15 B,Q	
Isotope Results			
dD H ₂ O (‰)		-60.2	
d ¹⁸ O H ₂ O (‰)		-9.07	
Tritium (TU)		<1	
d ¹³ C DIC (‰)		-9.24	
Field Parameters	January 10, 2007	January 8, 2007	January 10, 2007
pH (units)	7.27	7.19	7.25
ORP (mv)	113	-71	-67
Eh (mv)	298	113	118
Dissolved oxygen (mg/L)	3.42	0.15	0.14
Conductivity (mS/cm)	0.528	0.587	0.521
Temperature (degrees C)	10.98	10.48	10.81

Notes:

NA = not analyzed.

B = analyte detected in associated method blank.

Q = value between limit of detection and limit of quantification.