TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-01A

Analyte	Units	9/12/2007	11/6/2007	2/13/2008	5/13/2008	8/22/2008	8/5/2009
FIELD PARAMETERS							
Field pH	S.U.	6.16	6.59	5.93	6.01	5.92	6.08
Field Electrical Conductance	umhos/cm	1457	1263	1379	1393	1314	1448
Field Temperature	deg c	11.14	8.81	8.2	10.2	12.9	21.75
Color	none	NR	NR	NR	NR	NR	100
MAJOR CATIONS							
Dissolved Calcium	mg/L	75	75	73	66	68	59.9
Dissolved Magnesium	mg/L	50.4	49	47	45	43	40.6
Dissolved Sodium	mg/L	194	174	184	167	180	161
Dissolved Potassium	mg/L	5.4	7	6	6	6	4.9
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	171.3	213.9	224.6	202.5	205.7	224
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	209	214	225	202	206	224
Chloride	mg/L	23.2	2	3	2	3	4.8
Fluoride	mg/L	NR	NR	NR	NR	NR	0.68
Sulfate	mg/L	650	530	539	524	571	501
METALS							
Dissolved Aluminum	mg/L	0.1405	0.14	0.16	0.20	0.11	0.16
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	0.0144	0.030	0.024	0.009	0.048	0.026
Dissolved Barium	mg/L	0.0526	0.040	0.057	0.056	0.034	0.031
Dissolved Boron	mg/L	1.18	1.1	1.1	1.0	1.1	1.0
Dissolved Cadmium	mg/L	< 0.00025	0.00021	0.00010	0.00017	0.00015	0.00017
Dissolved Chromium	mg/L	0.0026	0.003	0.004	0.006	< 0.001	0.0024
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	0.0065
Dissolved Copper	mg/L	0.0293	0.016	0.018	0.022	0.007	0.0071
Dissolved Iron	mg/L	9.810	10.5	9.17	6.02	17.7	18.0
Total Iron	mg/L	56.8	86.7	26.4	11.3	17.0	36.0
Dissolved Lead	mg/L	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000067
Dissolved Manganese	mg/L	1.11	0.82	0.82	0.84	0.65	0.60
Dissolved Mercury	mg/L	0.000011	0.00002	0.00004	0.00005	0.00002	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.0380
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	0.0015
Dissolved Nickel	mg/L	0.0255	0.03	0.03	0.03	0.02	0.021
Dissolved Selenium	mg/L	< 0.0020	0.001	< 0.001	< 0.001	< 0.001	0.00044
Dissolved Uranium	mg/L	0.003	0.002	0.001	0.001	0.001	0.00070
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.0027
Dissolved Zinc	mg/L	0.0087	< 0.01	< 0.01	< 0.01	< 0.01	0.014
NUTRIENTS							
Nitrate-N	mg/L	< 0.01	0.29	0.08	0.01	0.03	0.030
Nitrite-N	mg/L	0.05	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Nitrogen, Nitrate-Nitrite	mg/L	0.04	0.31	0.08	0.01	0.03	0.030
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	1453	1570	1400	1340	1330	1290
Lab pH	S.U.	6.3	6.2	6.2	6.2	6.3	6.2
Acidity, Total	mg/L	< 1	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	395	389	376	350	347	341
SAR	none	4.25	3.84	4.13	3.88	4.2	4.0
Total Dissolved Solids	mg/L	1100	1110	1080	1060	1090	1180
Total Suspended Solids	mg/L	3580	1530	146	30	10	186

Note:
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NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-01S

Analyte	Units	9/12/2007	11/6/2007	2/13/2008	5/13/2008	8/24/2008	8/5/2009
FIELD PARAMETERS							
Field pH	S.U.	6.08	6.76	6.12	6.00	5.92	6.06
Field Electrical Conductance	umhos/cm	1373	1281	1414	1465	1398	1448
Field Temperature	deg c	8.9	7.47	7	9.8	15.5	13.2
Color	none	NR	NR	NR	NR	NR	25
MAJOR CATIONS							
Dissolved Calcium	mg/L	66.7	75	77	71	75	67.1
Dissolved Magnesium	mg/L	56.2	60	61	61	66	59.1
Dissolved Sodium	mg/L	159	162	167	153	157	154
Dissolved Potassium	mg/L	4	6	4	5	5	4.3
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	177.0	218.9	231.1	216.4	230.3	234
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	216	218	231	216	231	234
Chloride	mg/L	17.9	2	3	2	2	2.3
Fluoride	mg/L	NR	NR	NR	NR	NR	0.43
Sulfate	mg/L	500	515	563	586	559	553
METALS							
Dissolved Aluminum	mg/L	< 0.0500	< 0.03	< 0.03	< 0.03	< 0.03	0.017
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	< 0.0020	< 0.003	< 0.003	< 0.003	< 0.003	0.00080
Dissolved Barium	mg/L	0.1100	0.12	0.11	0.11	0.10	0.097
Dissolved Boron	mg/L	1.98	1.9	1.9	1.8	1.9	2.0
Dissolved Cadmium	mg/L	< 0.00025	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Dissolved Chromium	mg/L	0.0048	< 0.001	< 0.001	< 0.001	< 0.001	0.00044
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	0.0011
Dissolved Copper	mg/L	0.0030	0.001	0.002	0.002	0.001	< 0.00050
Dissolved Iron	mg/L	3.110	4.18	4.64	4.25	4.82	5.1
Total Iron	mg/L	6.92	4.72	5.08	4.65	5.75	5.4
Dissolved Lead	mg/L	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	0.62	0.67	0.67	0.59	0.60	0.56
Dissolved Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00002	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.00375
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	< 0.0005
Dissolved Nickel	mg/L	0.0032	< 0.01	< 0.01	0.01	< 0.01	0.0015
Dissolved Selenium	mg/L	< 0.0020	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Uranium	mg/L	< 0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.00022
Dissolved Zinc	mg/L	< 0.0020	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS							
Nitrate-N	mg/L	0.02	< 0.01	0.01	0.01	< 0.01	0.010
Nitrite-N	mg/L	0.06	0.01	< 0.01	< 0.01	0.01	< 0.01
Nitrogen, Nitrate-Nitrite	mg/L	0.08	0.01	0.01	0.01	< 0.01	0.010
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	1406	1510	1440	1400	1380	1440
Lab pH	S.U.	6.5	6.2	6.3	6.3	6.4	6.5
Acidity, Total	mg/L	< 1	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	398	434	443	428	459	411
SAR	none	3.47	3.38	3.45	3.22	3.19	3.3
Total Dissolved Solids	mg/L	960	1080	1030	1030	1090	1040
Total Suspended Solids	mg/L	253	79	32	32	96	36.7

Note:
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NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-02C

Analyte	Units	12/9/2006	2/21/2007	5/29/2007	8/27/2007	11/14/2007	2/21/2008	5/21/2008	8/28/2008	8/13/2009
FIELD PARAMETERS										
Field pH	S.U.	8.1	7.9	7.9	8.0	8.5	7.90	7.81	7.72	7.65
Field Electrical Conductance	umhos/cm	5570	6219	6072	5793	5971	6489	6226	5558	6107
Field Temperature	deg c	9.5	8.67	9.97	10.6	8.95	8.9	9.1	9.9	9.9
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	100
MAJOR CATIONS										
Dissolved Calcium	mg/L	36	29	24	23	24	22	24	21	18.2
Dissolved Magnesium	mg/L	24	21	19	17	19	18	20	15	15.3
Dissolved Sodium	mg/L	1540	1540	1380	1430	1520	1520	1500	1590	1260
Dissolved Potassium	mg/L	9	9	8	8	9	10	9	9	8
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	885.2	918.0	893.4	934.4	901.6	942.6	942.6	967.2	1040
Alkalinity, Carbonate as CaCO3	mg/L	<0	<0	<0	<0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	881	922	891	933	903	945	940	967	1040
Chloride	mg/L	5	5	5	5	5	5	6	4	4.4
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	2.0
Sulfate	mg/L	2820	2580	2440	2450	2380	2550	2480	2690	2460
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.0095
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	0.0016
Dissolved Barium	mg/L	0.059	0.067	0.046	0.054	0.046	0.037	0.047	0.042	0.035
Dissolved Boron	mg/L	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.46
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	0.004	< 0.001	< 0.001	0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	0.004	0.004	0.032	0.003	0.006	0.006	0.007	0.0065
Dissolved Iron	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.038
Total Iron	mg/L	39.6	35.7	23	7.17	23.6	10.0	8.16	17.1	15.4
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	0.0010	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.097	0.091	0.072	0.070	0.079	0.075	0.077	0.059	0.072
Dissolved Mercury	mg/L	< 0.00002	0.00001	< 0.00001	0.00003	< 0.00001	0.00004	0.00002	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0377
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0013
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.34
Dissolved Selenium	mg/L	0.004	0.003	0.003	0.002	0.002	0.005	< 0.001	0.002	0.0021
Dissolved Uranium	mg/L	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.00098
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0018
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0089
NUTRIENTS										
Nitrate-N	mg/L	0.02	< 0.01	0.01	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrite-N	mg/L	< 0.01	0.09	< 0.01	< 0.01	0.11	0.05	0.04	0.03	0.040
Nitrogen, Nitrate-Nitrite	mg/L	0.02	0.02	0.01	0.04	0.01	0.01	< 0.01	0.01	< 0.01
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	6040	6040	6070	5980	5920	6060	6130	5960	5980
Lab pH	S.U.	8.0	8.0	8.0	8.1	8.1	8.0	8.0	8.1	8.1
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	189	159	138	128	138	129	142	114	138
SAR	none	48.8	53.2	51.1	55.0	56.3	58.2	54.7	64.7	58.6
Total Dissolved Solids	mg/L	4330	4320	4440	4360	4810	4490	4730	4490	4430
Total Suspended Solids	mg/L	NR	1260	1260	2060	2400	700	550	1910	414

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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-03C

Analyte	Units	12/9/2006	2/27/2007	5/29/2007	8/29/2007	11/12/2007	2/20/2008	5/20/2008	8/26/2008	8/5/2009
FIELD PARAMETERS										
Field pH	S.U.	7.6	7.5	7.5	7.8	7.53	7.43	7.41	7.32	7.22
Field Electrical Conductance	umhos/cm	821	776	788	795	780	856	814	818	779
Field Temperature	deg c	9.6	8.74	11.27	12.1	10.89	9.1	11.6	12.1	9.91
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	10
MAJOR CATIONS										
Dissolved Calcium	mg/L	77	93	97	92	98	92	92	98	78.3
Dissolved Magnesium	mg/L	34	41	41	38	40	38	40	41	32.8
Dissolved Sodium	mg/L	42	27	27	24	23	23	25	24	21.1
Dissolved Potassium	mg/L	3	5	3	4	3	4	4	4	3.1
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	297.5	300.8	225.4	276.2	258.2	273.0	277.0	277.9	288
Alkalinity, Carbonate as CaCO3	mg/L	<0	<0	<0	<0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	298	300	225	276	258	273	277	278	288
Chloride	mg/L	3	3	3	3	2	2	2	4	3.2
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.67
Sulfate	mg/L	95	98	108	105	109	118	124	125	90.2
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.0041
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.0005
Dissolved Barium	mg/L	0.19	0.21	0.19	0.26	0.22	0.22	0.23	0.24	0.24
Dissolved Boron	mg/L	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.073
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Dissolved Chromium	mg/L	< 0.001	< 0.001	0.001	0.001	< 0.001	< 0.001	< 0.001	0.001	0.00074
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	< 0.001	< 0.001	0.001	0.006	0.001	< 0.001	< 0.001	0.00026
Dissolved Iron	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Total Iron	mg/L	0.02	<0.01	<0.01	<0.01	< 0.01	< 0.01	0.01	0.02	0.0069
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	0.012	0.016	0.013	0.010	< 0.005	< 0.005	< 0.005	< 0.005	0.0021
Dissolved Mercury	mg/L	< 0.00002	< 0.00001	< 0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.000131
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0027
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.00038
Dissolved Selenium	mg/L	0.002	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.0028
Dissolved Uranium	mg/L	0.004	0.006	0.005	0.006	0.006	0.006	0.006	0.006	0.0054
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00016
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS										
Nitrate-N	mg/L	22.6	13.6	12.0	11.6	13.0	13.1	7.20	14.3	15.29
Nitrite-N	mg/L	< 0.01	0.02	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0091
Nitrogen, Nitrate-Nitrite	mg/L	22.6	13.6	12.0	11.6	13.0	13.1	7.20	14.3	15.3
Ammonia Nitrogen	mg/L	NR	0.03	< 0.01	< 0.01	0.01	0.03	0.06	< 0.01	< 0.020
Phosphate, Ortho	mg/L	NR	< 0.001	< 0.001	< 0.001	0.002	0.002	0.005	< 0.001	0.0030
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	758	824	796	819	840	811	828	791	733
Lab pH	S.U.	7.1	7.6	7.5	7.5	7.7	7.7	7.8	7.6	7.8
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	332	401	411	387	409	386	394	414	342
SAR	none	1.0	0.6	0.6	0.5	0.55	0.51	0.55	0.51	0.52
Total Dissolved Solids	mg/L	532	547	506	521	537	493	564	575	486
Total Suspended Solids	mg/L	NR	6	< 1	< 1	< 4	1	< 1	1	< 1.0

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NS - location visited, no sample collected because well was dry or frozen shut
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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-03D

Analyte	Units	12/12/2006	2/28/2007	5/30/2007	8/30/2007	11/14/2007	2/21/2008	5/21/2008	8/28/2008	8/6/2009
FIELD PARAMETERS										
Field pH	S.U.	8.4	8.2	8.2	8.0	8.96	8.15	8.16	8.07	8.1
Field Electrical Conductance	umhos/cm	1828	2123	2213	2181	2217	2406	2285	2220	2282
Field Temperature	deg c	6.7	9.17	9.7	12.3	8.96	8.1	9.6	10.0	9.98
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	20
MAJOR CATIONS										
Dissolved Calcium	mg/L	16	12	9	7	9	5	5	5	3.8
Dissolved Magnesium	mg/L	5	4	3	2	4	2	3	2	2.2
Dissolved Sodium	mg/L	460	538	550	609	560	570	609	601	568
Dissolved Potassium	mg/L	3	4	3	3	3	3	3	3	3.1
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	1131.1	1278.7	1262.3	1319.7	1221.3	1245.9	1270.5	1270.5	1220
Alkalinity, Carbonate as CaCO3	mg/L	<0	20	<0	<0	< 0	< 1	< 0	< 0	< 10.0
Alkalinity, Total	mg/L	1130	1300	1260	1320	1220	1240	1270	1270	1220
Chloride	mg/L	10	8	10	9	10	10	10	11	8.5
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	3.1
Sulfate	mg/L	32	16	15	11	9	9	9	7	7.2
METALS										
Dissolved Aluminum	mg/L	0.09	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.015
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00086
Dissolved Arsenic	mg/L	0.003	0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	0.0020
Dissolved Barium	mg/L	0.047	0.032	0.017	0.028	0.018	0.029	0.030	0.022	0.027
Dissolved Boron	mg/L	0.5	0.6	0.5	0.6	0.6	0.7	0.7	0.7	0.65
Dissolved Cadmium	mg/L	< 0.00008	0.00010	0.00009	< 0.00008	< 0.00008	0.00008	< 0.00008	< 0.00008	< 0.000080
Dissolved Chromium	mg/L	< 0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.00030
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0010
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0010
Dissolved Copper	mg/L	NR	0.007	0.005	0.016	0.003	0.004	0.005	0.007	0.0040
Dissolved Iron	mg/L	0.08	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.016
Total Iron	mg/L	79.8	3.69	3.62	1.3	4.56	6.16	1.87	0.93	9.8
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.00010
Dissolved Manganese	mg/L	0.046	0.032	0.024	0.020	0.023	0.020	0.019	0.021	0.021
Dissolved Mercury	mg/L	< 0.00002	0.00001	< 0.00001	0.00002	< 0.00001	0.00003	0.00001	0.00002	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0272
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0095
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0021
Dissolved Selenium	mg/L	0.005	0.005	0.002	0.002	0.002	< 0.001	< 0.001	0.001	0.00033
Dissolved Uranium	mg/L	0.008	0.006	0.004	0.003	0.003	0.003	0.003	0.002	0.0018
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0038
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0051
NUTRIENTS										
Nitrate-N	mg/L	0.02	0.04	0.08	0.02	0.80	0.52	0.99	1.81	0.60
Nitrite-N	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	0.26	0.15	0.12	0.12	0.072
Nitrogen, Nitrate-Nitrite	mg/L	0.02	0.04	0.08	0.02	1.06	0.67	1.11	1.93	0.67
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	1910	2100	2220	2180	2220	2290	2310	2150	2190
Lab pH	S.U.	8.3	8.3	8.3	8.3	8.4	8.3	8.2	8.1	8.2
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5.0
Hardness as CaCO3	mg/L	60	46	35	27	39	21	25	21	18.7
SAR	none	25.7	34.4	40.6	51.2	39.0	54.5	53.2	57.4	57.2
Total Dissolved Solids	mg/L	1320	1400	1370	1330	1490	1440	1520	1480	1480
Total Suspended Solids	mg/L	NR	252	88	166	180	260	39	26	210

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R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-03HTB

Analyte	Units	11/29/2009
FIELD PARAMETERS		
Field pH	S.U.	8.29
Field Electrical Conductance	umhos/cm	2402
Field Temperature	deg c	8.58
Color	none	100
MAJOR CATIONS		
Dissolved Calcium	mg/L	5.7
Dissolved Magnesium	mg/L	3.4
Dissolved Sodium	mg/L	634
Dissolved Potassium	mg/L	3.5
MAJOR ANIONS		
Alkalinity, Bicarbonate as CaCO3	mg/L	1410
Alkalinity, Carbonate as CaCO3	mg/L	< 10
Alkalinity, Total	mg/L	1410
Chloride	mg/L	7.9
Fluoride	mg/L	2.9
Sulfate	mg/L	12.7
METALS		
Dissolved Aluminum	mg/L	0.35
Dissolved Antimony	mg/L	< 0.001
Dissolved Arsenic	mg/L	0.0024
Dissolved Barium	mg/L	0.25
Dissolved Boron	mg/L	0.53
Dissolved Cadmium	mg/L	< 0.00008
Dissolved Chromium	mg/L	0.0017
Trivalent Chromium	mg/L	0.0012
Hexavalent Chromium	mg/L	< 0.1
Dissolved Copper	mg/L	0.0025
Dissolved Iron	mg/L	0.38
Total Iron	mg/L	2.9
Dissolved Lead	mg/L	0.0027
Dissolved Manganese	mg/L	0.028
Dissolved Mercury	mg/L	NR
Total Mercury	ug/L	0.00173
Dissolved Molybdenum	mg/l	0.0025
Dissolved Nickel	mg/L	0.0035
Dissolved Selenium	mg/L	0.00049
Dissolved Uranium	mg/L	0.00072
Dissolved Vanadium	mg/L	0.0040
Dissolved Zinc	mg/L	0.0069
NUTRIENTS		
Nitrate-N	mg/L	< 0.01
Nitrite-N	mg/L	0.011
Nitrogen, Nitrate-Nitrite	mg/L	0.010
Ammonia Nitrogen	mg/L	NR
Phosphate, Ortho	mg/L	NR
OTHER CONSTITUENTS		
Lab Specific Conductance	umhos/cm	2420
Lab pH	S.U.	8.3
Acidity, Total	mg/L	< 5
Hardness as CaCO3	mg/L	28.5
SAR	none	51.7
Total Dissolved Solids	mg/L	1800
Total Suspended Solids	mg/L	84.5

Note:
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Sample in italics is inconsistent with other samples collected at the same location and is not in
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-03S

Analyte	Units	12/9/2006	2/21/2007	5/29/2007	8/29/2007	11/14/2007	2/20/2008	5/20/2008	8/26/2008	8/5/2009
FIELD PARAMETERS										
Field pH	S.U.	7.7	7.6	7.5	7.6	8.44	7.63	7.37	7.30	7.36
Field Electrical Conductance	umhos/cm	820	771	778	770	779	821	806	806	722
Field Temperature	deg c	8.6	8.31	13.9	13.7	8.97	8.5	14.9	9.2	10.67
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	2
MAJOR CATIONS										
Dissolved Calcium	mg/L	70	68	68	67	71	66	69	73	55.2
Dissolved Magnesium	mg/L	50	49	50	46	51	46	51	51	41.2
Dissolved Sodium	mg/L	30	34	31	32	33	33	33	34	28.3
Dissolved Potassium	mg/L	2	2	2	2	2	2	2	2	1.8
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	350.0	347.5	316.4	321.3	313.1	323.8	319.7	322.1	319
Alkalinity, Carbonate as CaCO3	mg/L	<0	<0	<0	<0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	350	347	316	321	313	323	320	322	319
Chloride	mg/L	3	2	2	2	2	3	2	2	3.2
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.62
Sulfate	mg/L	50	42	40	34	34	37	37	38	34.2
METALS										
Dissolved Aluminum	mg/L	0.10	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.003
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.00028
Dissolved Barium	mg/L	0.097	0.093	0.076	0.12	0.099	0.12	0.14	0.13	0.15
Dissolved Boron	mg/L	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.1	< 0.1	0.2	0.095
Dissolved Cadmium	mg/L	< 0.00008	< 0.000084	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Dissolved Chromium	mg/L	0.002	0.002	0.003	0.004	0.003	0.002	0.003	0.002	0.0024
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0014
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0010
Dissolved Copper	mg/L	NR	0.002	< 0.001	0.001	< 0.001	0.001	< 0.001	< 0.001	0.00032
Dissolved Iron	mg/L	0.15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Total Iron	mg/L	76.1	27.8	10.7	0.83	1.53	3.84	2.33	32.2	2.2
Dissolved Lead	mg/L	< 0.0005	0.0008	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	0.072	0.047	0.018	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.0005
Dissolved Mercury	mg/L	< 0.00002	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.000523
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.00082
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.00042
Dissolved Selenium	mg/L	0.005	0.005	0.005	0.006	0.005	0.006	0.004	0.005	0.0041
Dissolved Uranium	mg/L	0.006	0.006	0.005	0.006	0.006	0.006	0.006	0.006	0.0046
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0013
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS										
Nitrate-N	mg/L	16.9	16.1	15.8	17.3	17.2	18.8	7.06	24.8	16.66
Nitrite-N	mg/L	0.20	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.040
Nitrogen, Nitrate-Nitrite	mg/L	17.1	16.1	15.8	17.3	17.2	18.8	7.06	24.8	16.7
Ammonia Nitrogen	mg/L	NR	0.11	< 0.01	< 0.01	0.06	0.03	< 0.01	0.02	< 0.020
Phosphate, Ortho	mg/L	0.02	0.02	0.07	0.06	0.08	0.06	0.057	0.053	0.050
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	780	785	778	764	769	794	820	807	685
Lab pH	S.U.	7.4	7.8	7.6	7.9	7.8	7.8	7.8	7.8	7.8
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	381	372	376	357	387	354	382	392	307
SAR	none	0.7	0.8	0.7	0.7	0.73	0.76	0.73	0.75	0.69
Total Dissolved Solids	mg/L	481	481	476	457	449	452	515	560	424
Total Suspended Solids	mg/L	NR	755	20	48	97	239	182	964	29.2

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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-04C

Analyte	Units	12/6/2006	2/24/2007	5/24/2007	8/24/2007	11/8/2007	2/18/2008	5/14/2008	8/25/2008	8/7/2009
FIELD PARAMETERS										
Field pH	S.U.	7.3	7.2	7.1	7.2	7.55	7.16	7.13	6.92	7.02
Field Electrical Conductance	umhos/cm	5010	5096	5030	4938	5029	5305	5188	5130	5054
Field Temperature	deg c	9	8.27	11.07	11.5	11.44	9.8	11.9	17.5	12.64
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	7
MAJOR CATIONS										
Dissolved Calcium	mg/L	32	34	34	33	33	32	31	32	30.4
Dissolved Magnesium	mg/L	25	25	27	25	25	25	25	23	24.7
Dissolved Sodium	mg/L	1300	1300	1220	1180	1320	1160	1340	1260	1170
Dissolved Potassium	mg/L	9	9	8	8	10	8	9	8	7.7
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	959.0	1032.8	1008.2	942.6	922.1	983.6	975.4	1002.5	1020
Alkalinity, Carbonate as CaCO3	mg/L	<0	<0	<0	<0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	956	1030	1010	942	922	983	973	1002	1020
Chloride	mg/L	5	6	6	8	6	7	6	6	6.4
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.91
Sulfate	mg/L	1850	1910	1940	1880	1780	1860	1960	1880	1800
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.008
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.00081
Dissolved Barium	mg/L	0.072	0.067	0.050	0.049	0.046	0.045	0.040	0.038	0.035
Dissolved Boron	mg/L	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	0.001	< 0.001	0.0018
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0013
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0005
Dissolved Copper	mg/L	NR	0.002	0.003	0.023	< 0.001	0.004	< 0.001	0.006	0.0044
Dissolved Iron	mg/L	0.02	0.20	0.31	0.47	0.52	0.56	0.64	0.69	0.83
Total Iron	mg/L	0.55	7	0.62	0.61	0.81	1.11	0.94	1.21	1.1
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.094	0.12	0.075	0.064	0.060	0.055	0.051	0.048	0.042
Dissolved Mercury	mg/L	< 0.00002	0.00002	< 0.00001	0.00001	< 0.00001	0.00003	0.00004	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00144
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.30
Dissolved Selenium	mg/L	0.002	0.002	0.002	0.002	0.003	< 0.001	< 0.001	0.001	0.0017
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00064
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.19
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	0.04	0.04	0.01	0.01	0.01	< 0.01	0.02	0.010
Nitrite-N	mg/L	0.04	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.05	0.04	0.01	0.01	0.01	< 0.01	0.02	0.010
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	4960	5470	5180	5200	5310	5030	1800	5030	4950
Lab pH	S.U.	7.4	7.4	7.3	7.3	7.2	7.3	7.3	7.3	7.4
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	183	188	196	185	185	183	180	175	178
SAR	none	41.8	41.3	37.9	37.7	42.2	37.3	43.4	41.5	38.3
Total Dissolved Solids	mg/L	3560	3720	3530	3730	3670	3800	3670	3680	3680
Total Suspended Solids	mg/L	NR	436	23	13	43	55	35	35	18.4

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S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-04D

Analyte	Units	12/6/2006	2/28/2007	5/24/2007	8/24/2007	11/8/2007	2/18/2008	5/14/2008	8/25/2008	8/11/2009
FIELD PARAMETERS										
Field pH	S.U.	8.5	8.2	8.5	8.4	8.73	8.32	8.45	8.30	8.51
Field Electrical Conductance	umhos/cm	1653	1763	1782	1753	1792	1886	1840	1819	1815
Field Temperature	deg c	10.4	9.52	11.49	11.4	11.62	10.2	11.7	13.6	12.33
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	40
MAJOR CATIONS										
Dissolved Calcium	mg/L	4	4	4	3	3	2	3	3	2.4
Dissolved Magnesium	mg/L	2	2	2	2	1	1	1	1	1.4
Dissolved Sodium	mg/L	454	443	428	442	476	433	494	459	441
Dissolved Potassium	mg/L	2	2	2	2	3	2	2	2	2
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	772.1	844.3	827.9	743.4	728.7	789.3	799.2	795.9	834
Alkalinity, Carbonate as CaCO3	mg/L	26.7	36.7	20.0	41.7	58.3	50.0	28.3	40	33.2
Alkalinity, Total	mg/L	798	883	850	784	788	840	827	836	867
Chloride	mg/L	5	4	6	6	6	6	5	5	4.7
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	5.2
Sulfate	mg/L	131	140	156	144	148	143	158	147	140
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.019
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.00025
Dissolved Barium	mg/L	0.032	0.035	0.032	0.037	0.031	0.035	0.032	0.031	0.036
Dissolved Boron	mg/L	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.63
Dissolved Cadmium	mg/L	0.00010	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Dissolved Chromium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.00046
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	< 0.001	0.001	0.009	< 0.001	< 0.001	< 0.001	0.003	< 0.00050
Dissolved Iron	mg/L	0.03	0.03	0.04	0.02	0.02	0.02	0.02	0.02	0.039
Total Iron	mg/L	1.98	0.81	1.52	0.01	0.57	0.69	0.54	0.47	0.12
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	0.017	0.025	0.023	0.015	0.016	0.016	0.014	0.014	0.015
Dissolved Mercury	mg/L	< 0.00002	0.00001	< 0.00001	0.00001	< 0.00001	0.00004	0.00005	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.000913
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0035
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.00031
Dissolved Selenium	mg/L	0.001	0.001	< 0.001	0.002	0.002	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0012
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	0.01	0.02	0.02	0.02	0.01	< 0.01	< 0.01	< 0.01
Nitrite-N	mg/L	0.04	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.014
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.01	0.02	0.02	0.02	0.01	< 0.01	0.01	< 0.01
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	1730	1720	1840	1880	1930	1850	1740	1820	1820
Lab pH	S.U.	8.5	8.6	8.6	8.8	8.6	8.6	8.6	8.6	8.6
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	18	18	18	16	12	9	12	12	11.7
SAR	none	46.3	45.2	43.6	48.5	60.8	62.4	63.1	58.6	56.1
Total Dissolved Solids	mg/L	1140	1180	1160	1140	1170	1170	1180	1180	1160
Total Suspended Solids	mg/L	NR	22	41	< 1	17	22	8	11	3.3

Note:
< - Values below the reporting limit are entered as less than the reporting limit.
NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-05C

Analyte	Units	12/6/2006	2/28/2007	5/29/2007	8/28/2007	11/8/2007	2/19/2008	5/20/2008	8/27/2008	8/11/2009
FIELD PARAMETERS										
Field pH	S.U.	7.4	7.3	7.3	7.3	7.37	7.27	7.10	7.12	7.29
Field Electrical Conductance	umhos/cm	2680	2670	2755	2695	2760	2953	2818	2850	2873
Field Temperature	deg c	10.7	10.04	13.54	13.0	11.79	10.3	13.5	12.8	16.48
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	65
MAJOR CATIONS										
Dissolved Calcium	mg/L	10	10	9	8	9	8	8	9	8.8
Dissolved Magnesium	mg/L	6	7	8	6	7	7	7	7	7.4
Dissolved Sodium	mg/L	652	680	632	669	702	682	686	682	762
Dissolved Potassium	mg/L	4	4	3	4	5	4	4	4	3.7
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	803.3	909.8	885.2	860.7	844.3	893.4	909.8	942.6	979
Alkalinity, Carbonate as CaCO3	mg/L	<0	<0	<0	<0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	803	909	886	857	844	895	907	942	979
Chloride	mg/L	4	3	4	4	5	5	4	5	3.4
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	2.6
Sulfate	mg/L	609	617	611	595	573	616	690	705	628
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.0083
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.0005
Dissolved Barium	mg/L	0.041	0.038	0.024	0.028	0.024	0.026	0.023	0.021	0.020
Dissolved Boron	mg/L	1.1	1.1	1.0	1.1	1.1	1.1	1.0	1.3	1.2
Dissolved Cadmium	mg/L	0.00012	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Dissolved Chromium	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	0.00084
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0005
Dissolved Copper	mg/L	NR	0.001	< 0.001	0.014	< 0.001	0.001	< 0.001	0.003	< 0.00050
Dissolved Iron	mg/L	0.03	0.18	0.26	0.36	0.48	0.51	0.52	0.62	0.68
Total Iron	mg/L	1.32	0.48	0.49	0.62	0.95	0.85	0.78	1.26	2.0
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000057
Dissolved Manganese	mg/L	0.077	0.077	0.045	0.037	0.040	0.036	0.031	0.037	0.032
Dissolved Mercury	mg/L	< 0.00002	0.00001	< 0.00001	< 0.00001	< 0.00001	0.00005	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00288
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.00081
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.00065
Dissolved Selenium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Uranium	mg/L	0.002	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.00026
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00052
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0025
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	0.03	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	0.020
Nitrite-N	mg/L	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.015
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.03	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	0.035
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2540	2640	2770	2700	2830	2770	2910	2760	2820
Lab pH	S.U.	7.5	7.5	7.4	7.4	7.4	7.5	7.5	7.4	7.6
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	50	54	55	46	51	49	49	51	52.6
SAR	none	40.2	40.3	36.9	42.8	42.6	42.5	42.7	41.4	45.7
Total Dissolved Solids	mg/L	1740	1870	1870	1920	1860	1900	1970	1970	1950
Total Suspended Solids	mg/L	NR	11	5	< 1	10	14	5	20	44.0

Note:
< - Values below the reporting limit are entered as less than the reporting limit.
NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-05D

Analyte	Units	12/6/2006	2/28/2007	5/29/2007	8/28/2007	11/8/2007	2/19/2008	5/20/2008	8/27/2008	8/11/2009
FIELD PARAMETERS										
Field pH	S.U.	8.7	8.5	8.5	8.5	8.72	8.37	8.47	8.35	8.48
Field Electrical Conductance	umhos/cm	1970	2190	2191	2146	2176	2303	2193	2211	2224
Field Temperature	deg c	10	11.02	13.42	13.0	12.76	11.5	13.6	12.7	13.8
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	15
MAJOR CATIONS										
Dissolved Calcium	mg/L	3	4	4	3	3	2	3	3	2.8
Dissolved Magnesium	mg/L	2	2	2	2	2	2	2	2	1.7
Dissolved Sodium	mg/L	563	554	518	519	569	542	530	593	611
Dissolved Potassium	mg/L	2	3	2	3	3	3	2	3	2.4
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	852.5	901.6	819.7	811.5	777.0	852.5	860.7	850.8	889
Alkalinity, Carbonate as CaCO3	mg/L	38.3	46.7	40.0	45.0	63.3	38.3	38.3	50.0	25.8
Alkalinity, Total	mg/L	887	951	860	857	840	893	898	900	915
Chloride	mg/L	3	3	3	4	5	4	4	4	3.0
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	3.3
Sulfate	mg/L	278	305	298	289	304	300	319	348	302
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.0095
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.00035
Dissolved Barium	mg/L	0.020	0.025	0.020	0.023	0.020	0.023	0.022	0.019	0.020
Dissolved Boron	mg/L	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.67
Dissolved Cadmium	mg/L	0.00010	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Dissolved Chromium	mg/L	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.00034
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0006
Dissolved Copper	mg/L	NR	< 0.001	< 0.001	0.011	< 0.001	< 0.001	< 0.001	0.002	0.00028
Dissolved Iron	mg/L	< 0.01	0.01	0.02	< 0.01	0.01	0.01	0.01	< 0.01	0.017
Total Iron	mg/L	0.15	0.03	0.02	0.03	0.19	0.36	0.28	0.05	0.094
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	0.006	0.015	0.012	0.009	0.010	0.009	0.009	0.008	0.010
Dissolved Mercury	mg/L	< 0.00002	0.00003	< 0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00041
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0020
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.00039
Dissolved Selenium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00085
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	0.010
Nitrite-N	mg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0067
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	0.017
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2200	2130	2240	2160	2250	2170	2270	2170	2250
Lab pH	S.U.	8.6	8.7	8.6	8.7	8.6	8.7	8.7	8.7	8.6
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	16	18	18	15	16	13	16	16	14.1
SAR	none	61.8	56.5	52.8	57.8	62.4	64.8	58.2	65.1	70.8
Total Dissolved Solids	mg/L	1400	1320	1420	1440	1430	1560	1480	1460	1440
Total Suspended Solids	mg/L	NR	< 1	< 1	1	4	7	6	1	1.5

Note:
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NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-05S

Analyte	Units	12/6/2006	2/28/2007	5/29/2007	8/28/2007	11/8/2007	2/19/2008	5/20/2008	8/27/2008	8/11/2009
FIELD PARAMETERS										
Field pH	S.U.	NS	NS	NS	NS	NS	NS	NS	NS	NS
Field Electrical Conductance	umhos/cm	NS	NS	NS	NS	NS	NS	NS	NS	NS
Field Temperature	deg c	NS	NS	NS	NS	NS	NS	NS	NS	NS
Color	none	NR	NR	NR	NR	NS	NS	NS	NS	NS
MAJOR CATIONS										
Dissolved Calcium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Magnesium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Sodium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Potassium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Alkalinity, Carbonate as CaCO3	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Alkalinity, Total	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloride	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoride	mg/L	NR	NR	NR	NR	NS	NS	NS	NS	NS
Sulfate	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
METALS										
Dissolved Aluminum	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Antimony	mg/L	NR	NR	NR	NR	NS	NS	NS	NS	NS
Dissolved Arsenic	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Barium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Boron	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Cadmium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Chromium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trivalent Chromium	mg/L	NR	NR	NR	NR	NS	NS	NS	NS	NS
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NS	NS	NS	NS	NS
Dissolved Copper	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Iron	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Iron	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Lead	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Manganese	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Mercury	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Mercury	ug/L	NR	NR	NR	NR	NS	NS	NS	NS	NS
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NS	NS	NS	NS	NS
Dissolved Nickel	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Selenium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Uranium	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NS	NS	NS	NS	NS
Dissolved Zinc	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
NUTRIENTS										
Nitrate-N	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nitrite-N	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nitrogen, Nitrate-Nitrite	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ammonia Nitrogen	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phosphate, Ortho	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lab pH	S.U.	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acidity, Total	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Hardness as CaCO3	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
SAR	none	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Dissolved Solids	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Suspended Solids	mg/L	NS	NS	NS	NS	NS	NS	NS	NS	NS

Note:
< - Values below the reporting limit are entered as less than the reporting limit.
NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-06C

Analyte	Units	12/10/2006	2/21/2007	5/24/2007	8/28/2007	11/12/2007	2/20/2008	5/20/2008	8/25/2008	8/7/2009
FIELD PARAMETERS										
Field pH	S.U.	6.6	6.5	6.6	6.5	6.54	6.47	6.41	6.28	6.3
Field Electrical Conductance	umhos/cm	8340	9422	9307	9197	9123	10040	9170	9380	9823
Field Temperature	deg c	8.5	8.65	8.66	9.6	12.46	8.4	9.39	10.2	14.3
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	15
MAJOR CATIONS										
Dissolved Calcium	mg/L	342	299	329	327	367	354	360	360	374
Dissolved Magnesium	mg/L	311	264	292	278	318	309	328	305	356
Dissolved Sodium	mg/L	2020	2020	1980	2120	2020	1920	1880	1940	1770
Dissolved Potassium	mg/L	18	18	18	20	19	21	18	18	17.9
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	622.1	699.2	683.6	656.6	623.8	630.3	649.2	642.6	480
Alkalinity, Carbonate as CaCO3	mg/L	< 0	< 0	< 0	< 0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	622	699	683	657	624	630	649	642	480
Chloride	mg/L	8	7	8	7	7	7	7	6	7.6
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.64
Sulfate	mg/L	6100	5310	5420	5470	5270	5800	6030	5560	5860
METALS										
Dissolved Aluminum	mg/L	< 0.03	0.12	< 0.03	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.015
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	0.005	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.0023
Dissolved Barium	mg/L	0.056	0.050	0.030	0.025	0.024	0.026	0.021	0.019	0.016
Dissolved Boron	mg/L	2.9	2.5	2.2	2.4	2.6	2.7	2.6	2.7	3.4
Dissolved Cadmium	mg/L	0.00009	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	< 0.001	0.002	0.002	0.002	0.003	< 0.001	0.001	< 0.001	0.0032
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0032
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	0.007	0.005	0.039	0.005	0.010	0.007	0.008	0.012
Dissolved Iron	mg/L	1.29	2.06	2.21	2.54	2.68	2.51	2.42	2.40	2.5
Total Iron	mg/L	6.21	11.4	3.52	3.86	3.18	4.26	3.25	2.78	2.5
Dissolved Lead	mg/L	< 0.0005	0.0008	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.98	0.72	0.64	0.51	0.53	0.54	0.54	0.49	0.61
Dissolved Mercury	mg/L	< 0.00002	0.00001	< 0.00001	0.00003	< 0.00001	0.00007	< 0.00001	< 0.00005	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00440
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Nickel	mg/L	NR	0.01	0.02	0.02	0.02	0.02	0.06	0.01	0.50
Dissolved Selenium	mg/L	0.003	0.005	0.004	0.003	0.004	0.001	< 0.001	0.003	0.0043
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0018
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.014
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	0.01	0.04	< 0.01	0.02	< 0.01	< 0.01	0.03	< 0.01
Nitrite-N	mg/L	0.01	0.02	< 0.01	0.01	< 0.01	0.01	0.03	0.02	0.011
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.05	0.04	0.01	0.02	0.01	< 0.01	0.05	0.010
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	9400	9220	9270	8830	9580	9380	9380	9130	9620
Lab pH	S.U.	6.7	6.7	6.6	6.7	6.7	6.6	6.7	6.6	6.7
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	2140	1830	2020	1140	2220	2150	2240	2150	2400
SAR	none	19.0	20.5	19.2	27.3	18.6	18.0	17.3	18.2	15.8
Total Dissolved Solids	mg/L	8390	8460	8130	8900	8840	8910	8560	8670	9270
Total Suspended Solids	mg/L	NR	745	75	105	14	99	43	17	3.7

Note:
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NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-06D

Analyte	Units	12/10/2006	3/1/2007	5/25/2007	8/29/2007	11/14/2007	2/21/2008	5/21/2008	8/28/2008	8/13/2009
FIELD PARAMETERS										
Field pH	S.U.	8.4	7.6	8.4	8.3	8.84	8.27	8.29	8.04	8.09
Field Electrical Conductance	umhos/cm	2050	1916	1887	1921	1908	2015	1915	1797	1926
Field Temperature	deg c	11.1	8.71	10.55	17.9	10.43	12.2	12.9	9.5	13.23
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	10
MAJOR CATIONS										
Dissolved Calcium	mg/L	6	6	4	4	4	3	3	3	3.1
Dissolved Magnesium	mg/L	4	3	2	2	2	2	2	2	2.0
Dissolved Sodium	mg/L	578	507	469	484	486	483	486	506	517
Dissolved Potassium	mg/L	7	3	3	3	3	3	2	3	3.2
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	1180.3	1008.2	1024.6	1000.0	975.4	1024.6	1016.4	1065.6	1080
Alkalinity, Carbonate as CaCO3	mg/L	38.3	46.7	< 0	26.7	30.0	23.3	18.3	< 0	24.6
Alkalinity, Total	mg/L	1220	1050	1030	1030	1000	1050	1030	1070	1110
Chloride	mg/L	10	8	8	4	2	9	8	7	7.5
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	3.9
Sulfate	mg/L	164	78	77	61	35	37	25	19	31.2
METALS										
Dissolved Aluminum	mg/L	0.85	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.08	< 0.03	0.010
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.0011
Dissolved Barium	mg/L	0.078	0.040	0.026	0.060	0.033	0.037	0.044	0.018	0.035
Dissolved Boron	mg/L	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.41
Dissolved Cadmium	mg/L	0.00020	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	0.001	0.001	0.002	0.002	0.002	0.001	0.001	< 0.001	0.0023
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0013
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0010
Dissolved Copper	mg/L	NR	0.001	< 0.001	0.011	< 0.001	< 0.001	0.002	0.003	0.00052
Dissolved Iron	mg/L	0.41	0.03	0.02	0.03	0.04	0.04	0.04	0.03	0.061
Total Iron	mg/L	24.2	8.92	14.2	6.89	2.12	3.04	0.65	2.05	3.7
Dissolved Lead	mg/L	0.0008	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.007	0.025	0.023	0.022	0.023	0.019	0.017	0.017	0.019
Dissolved Mercury	mg/L	< 0.00002	0.00003	< 0.00001	0.00003	< 0.00001	0.00004	0.00001	0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00513
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0068
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0099
Dissolved Selenium	mg/L	< 0.001	0.001	0.001	0.002	< 0.001	< 0.001	< 0.001	0.001	0.0009
Dissolved Uranium	mg/L	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.00058
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0024
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	0.04	0.02	< 0.01	< 0.01	< 0.01
Nitrite-N	mg/L	0.03	0.06	0.01	0.01	< 0.01	< 0.01	0.02	0.02	0.018
Nitrogen, Nitrate-Nitrite	mg/L	< 0.01	0.06	< 0.01	0.01	0.04	0.02	< 0.01	0.01	< 0.01
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2260	1890	2000	2020	1980	1960	1920	1950	1820
Lab pH	S.U.	8.2	8.5	8.4	8.3	8.5	8.4	8.4	8.5	8.4
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	31	27	18	19	18	16	16	16	16.0
SAR	none	44.8	42.2	47.8	48.5	49.5	53.0	53.3	55.5	56.2
Total Dissolved Solids	mg/L	1520	1320	1260	1260	1300	1290	1270	1260	1250
Total Suspended Solids	mg/L	NR	300	673	251	65	77	16	60	209

Note:
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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-07C

Analyte	Units	12/10/2006	2/23/2007	5/28/2007	8/29/2007	11/9/2007	2/19/2008	5/19/2008	8/26/2008	8/7/2009
FIELD PARAMETERS										
Field pH	S.U.	7.7	7.6	7.5	7.3	7.82	7.51	7.48	7.43	7.38
Field Electrical Conductance	umhos/cm	3380	3700	3803	3715	3679	3991	3626	3777	3831
Field Temperature	deg c	9.1	8.43	12.15	11.7	9.64	9.6	11.5	11.8	10.45
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	2
MAJOR CATIONS										
Dissolved Calcium	mg/L	24	27	30	26	27	25	26	29	24.9
Dissolved Magnesium	mg/L	21	23	26	22	22	21	23	24	22.1
Dissolved Sodium	mg/L	846	839	851	875	870	841	874	962	820
Dissolved Potassium	mg/L	7	7	7	7.6	8	7	7	8	6.6
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	511.5	508.2	491.0	469.7	443.4	470.5	477.0	476.2	491
Alkalinity, Carbonate as CaCO3	mg/L	< 0	< 0	< 0	< 0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	512	508	491	470	443	470	477	476	491
Chloride	mg/L	4	4	4	4	4	4	3	4	4.4
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.64
Sulfate	mg/L	1560	1540	1500	1490	1420	1560	1690	1730	1520
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.008
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.001
Dissolved Barium	mg/L	0.024	0.037	0.040	0.044	0.031	0.028	0.027	0.033	0.026
Dissolved Boron	mg/L	1.0	1.0	1.0	1.0	1.1	1.1	1.0	1.1	1.1
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0015
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0015
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	0.002	0.002	0.015	0.002	0.003	0.003	0.003	0.0035
Dissolved Iron	mg/L	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.02	0.02	< 0.01	< 0.1
Total Iron	mg/L	0.11	0.05	0.05	0.03	0.02	0.03	0.02	0.09	0.022
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.030	0.051	0.070	0.044	0.042	0.032	0.034	0.057	0.031
Dissolved Mercury	mg/L	< 0.00002	< 0.00001	< 0.00001	0.00002	< 0.00001	0.00004	0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.000212
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.21
Dissolved Selenium	mg/L	0.001	0.002	0.001	0.002	0.002	0.002	< 0.001	< 0.001	0.0013
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00061
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	0.05	< 0.01	0.02	< 0.01	0.01	0.01	0.01	0.020
Nitrite-N	mg/L	0.02	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.05	0.01	0.02	0.03	0.01	0.01	0.01	0.020
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	3740	3750	3750	3680	3870	3830	3840	3670	3850
Lab pH	S.U.	7.6	7.8	7.6	7.7	7.7	7.7	7.6	7.7	7.7
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	146	162	180	156	158	149	160	171	153
SAR	none	30.4	28.7	19.4	30.5	30.1	30.0	30.1	32.0	28.8
Total Dissolved Solids	mg/L	2640	2690	2670	2720	2690	2770	2820	2770	2720
Total Suspended Solids	mg/L	NR	< 1	< 1	3	< 3	2	< 2	4	0.60

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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-07D

Analyte	Units	12/13/2006	2/24/2007	5/30/2007	8/29/2007	11/13/2007	2/21/2008	5/21/2008	8/28/2008	8/10/2009
FIELD PARAMETERS										
Field pH	S.U.	8.4	8.2	8.2	7.7	7.81	8.21	8.11	7.91	7.99
Field Electrical Conductance	umhos/cm	2000	1998	2003	2008	2039	2146	2081	1929	2051
Field Temperature	deg c	9.1	8.17	9.5	10.1	9.21	9.2	9.6	9.5	10.12
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	5
MAJOR CATIONS										
Dissolved Calcium	mg/L	11	10	6	6	5	3	4	4	3.5
Dissolved Magnesium	mg/L	4	4	3	2	3	2	3	2	2.3
Dissolved Sodium	mg/L	482	525	522	505	541	515	548	551	499
Dissolved Potassium	mg/L	4	4	3	3	3	3	4	3	4.5
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	1188.5	1237.7	1123.0	1147.5	1082.0	1155.7	1155.7	1188.5	1020
Alkalinity, Carbonate as CaCO3	mg/L	< 0	< 0	30	< 0	< 0	< 1	< 0	< 0	< 5.0
Alkalinity, Total	mg/L	1180	1240	1150	1150	1080	1150	1160	1190	1020
Chloride	mg/L	10	8	8	9	8	9	8	7	6.9
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	1.8
Sulfate	mg/L	15	13	5	7	5	< 5	4	5	2.9
METALS										
Dissolved Aluminum	mg/L	< 0.03	0.16	< 0.03	0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.017
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.00050
Dissolved Arsenic	mg/L	0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.00061
Dissolved Barium	mg/L	0.054	0.090	0.078	0.11	0.057	0.10	0.097	0.097	0.11
Dissolved Boron	mg/L	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.50
Dissolved Cadmium	mg/L	0.0013	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.000080
Dissolved Chromium	mg/L	0.011	< 0.001	< 0.001	0.001	< 0.001	< 0.001	0.001	< 0.001	0.00031
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0010
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0062
Dissolved Copper	mg/L	NR	0.003	0.001	0.012	0.002	0.001	0.007	0.003	0.0036
Dissolved Iron	mg/L	< 0.01	0.35	< 0.01	< 0.01	0.01	< 0.01	0.02	< 0.01	0.018
Total Iron	mg/L	10	173	1.06	18.3	4.26	0.68	0.32	1.16	0.39
Dissolved Lead	mg/L	0.0046	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000080
Dissolved Manganese	mg/L	0.026	0.045	0.018	0.019	0.022	0.011	0.017	0.012	0.013
Dissolved Mercury	mg/L	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00005	< 0.00001	0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00193
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0045
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.00094
Dissolved Selenium	mg/L	0.002	0.003	0.001	0.002	0.002	< 0.001	0.002	< 0.001	< 0.00050
Dissolved Uranium	mg/L	0.003	0.002	< 0.001	0.001	0.001	< 0.001	< 0.001	< 0.001	0.00028
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0090
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0033
NUTRIENTS										
Nitrate-N	mg/L	0.09	0.04	0.05	< 0.01	0.09	0.01	< 0.01	0.01	0.010
Nitrite-N	mg/L	< 0.01	0.06	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.0072
Nitrogen, Nitrate-Nitrite	mg/L	0.09	0.10	0.05	< 0.01	0.09	0.01	0.01	0.01	0.017
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	1940	2030	2060	2120	2030	2010	2080	2060	2030
Lab pH	S.U.	8.3	8.4	8.3	8.1	8.2	8.3	8.2	8.3	8.3
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5.0
Hardness as CaCO3	mg/L	44	41	27	24	25	16	22	18	19.2
SAR	none	31.6	35.5	43.4	44.8	47.2	56.5	50.4	56.2	54.2
Total Dissolved Solids	mg/L	1250	1490	1250	1270	1370	1260	1340	1330	1330
Total Suspended Solids	mg/L	NR	3740	44	306	210	38	23	73	42.4

Note:
< - Values below the reporting limit are entered as less than the reporting limit.
NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-08C

Analyte	Units	12/7/2006	2/28/2007	5/24/2007	8/28/2007	11/13/2007	2/21/2008	5/21/2008	8/27/2008	8/12/2009
FIELD PARAMETERS										
Field pH	S.U.	7.9	7.7	7.7	7.8	7.63	7.74	7.71	7.61	7.7
Field Electrical Conductance	umhos/cm	4840	4770	4736	4572	4924	5045	4867	4831	4799
Field Temperature	deg c	10.5	10.02	13.18	12.2	11.51	11.1	12.8	12.4	14.2
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	45
MAJOR CATIONS										
Dissolved Calcium	mg/L	34	30	31	25	32	28	28	29	28.4
Dissolved Magnesium	mg/L	25	25	26	19	27	23	24	22	24.4
Dissolved Sodium	mg/L	1300	1300	1240	1310	1250	1270	1180	1260	1290
Dissolved Potassium	mg/L	10	9	9	10	9	10	8	10	9.8
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	2500.0	2524.6	2409.8	2278.7	2213.1	2114.8	2327.9	2349.2	2400
Alkalinity, Carbonate as CaCO3	mg/L	< 0	< 0	< 0	< 0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	2500	2530	2410	2280	2210	2110	2330	2349	2400
Chloride	mg/L	5	4	5	7	8	7	8	6	3.9
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	1.3
Sulfate	mg/L	577	550	539	497	541	550	609	611	508
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.034
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00088
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.001
Dissolved Barium	mg/L	0.11	0.062	0.059	0.13	0.064	0.072	0.071	0.064	0.066
Dissolved Boron	mg/L	0.9	1.0	0.9	0.9	1.1	1.1	1.0	1.1	1.1
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	0.002	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0011
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0011
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	< 0.001	0.002	0.025	0.001	0.001	0.003	0.005	0.0016
Dissolved Iron	mg/L	0.03	0.02	0.02	0.02	0.01	0.05	0.05	0.07	0.12
Total Iron	mg/L	13.2	0.8	0.26	2.15	0.25	0.19	0.22	0.20	0.30
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0020
Dissolved Manganese	mg/L	0.11	0.054	0.062	0.14	0.068	0.074	0.063	0.074	0.064
Dissolved Mercury	mg/L	< 0.00002	0.00002	< 0.00001	0.00001	0.00001	0.00002	0.00003	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00173
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0006
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.067
Dissolved Selenium	mg/L	0.001	0.001	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	0.00057
Dissolved Uranium	mg/L	0.004	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00046
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
NUTRIENTS										
Nitrate-N	mg/L	0.04	0.02	0.03	0.01	0.03	0.01	< 0.01	0.03	< 0.01
Nitrite-N	mg/L	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.0061
Nitrogen, Nitrate-Nitrite	mg/L	0.07	0.02	0.03	0.01	0.03	0.01	< 0.01	0.03	< 0.01
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	4660	4530	4840	4570	4860	4670	4840	4660	4810
Lab pH	S.U.	7.8	7.9	7.9	8.0	7.9	7.9	7.9	7.8	8.0
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	188	178	184	140	191	165	169	163	172
SAR	none	41.3	42.4	39.7	48.2	39.4	43.1	39.5	42.9	43.0
Total Dissolved Solids	mg/L	3210	3380	3240	3320	3450	3260	3360	3420	3310
Total Suspended Solids	mg/L	NR	25	7	73	6	4	4	2	14.0

Note:
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NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-08D

Analyte	Units	12/7/2006	2/28/2007	5/24/2007	8/28/2007	11/13/2007	2/20/2008	5/21/2008	8/27/2008	8/12/2009
FIELD PARAMETERS										
Field pH	S.U.	8.7	8.5	8.4	8.4	7.9	8.44	8.48	8.31	8.38
Field Electrical Conductance	umhos/cm	2190	2096	2109	2096	2170	2264	2182	2169	2167
Field Temperature	deg c	11	10.2	12.92	12.3	11.51	10.8	12.6	12.3	13.33
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	10
MAJOR CATIONS										
Dissolved Calcium	mg/L	4	5	5	3	4	3	3	3	3.0
Dissolved Magnesium	mg/L	2	2	3	2	2	2	2	2	1.9
Dissolved Sodium	mg/L	529	536	510	545	565	543	539	562	560
Dissolved Potassium	mg/L	3	3	3	3	3	3	3	3	3.1
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	991.8	991.8	983.6	934.4	877.0	934.4	942.6	954.9	1010
Alkalinity, Carbonate as CaCO3	mg/L	65	36.67	20.00	45.00	50.00	41.67	41.67	55.00	33.6
Alkalinity, Total	mg/L	1060	1030	1000	980	924	974	985	1009	1040
Chloride	mg/L	5	5	5	5	6	6	6	7	5.2
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	3.7
Sulfate	mg/L	206	187	203	188	193	200	216	218	179
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03	0.0096
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.001
Dissolved Barium	mg/L	0.052	0.059	0.049	0.065	0.060	0.060	0.062	0.055	0.057
Dissolved Boron	mg/L	0.5	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.62
Dissolved Cadmium	mg/L	0.00010	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	< 0.001	0.002	0.011	< 0.001	< 0.001	0.002	0.002	0.00071
Dissolved Iron	mg/L	0.03	0.04	0.04	0.02	0.03	0.03	0.03	0.03	0.051
Total Iron	mg/L	1.55	0.26	0.04	0.31	0.20	0.26	0.29	0.23	0.35
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.012	0.021	0.018	0.0102	0.014	0.012	0.011	0.011	0.012
Dissolved Mercury	mg/L	< 0.00002	0.00002	< 0.00001	0.00001	< 0.00001	0.00005	0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.000559
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0028
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.025
Dissolved Selenium	mg/L	0.001	0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	0.00067
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00078
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
NUTRIENTS										
Nitrate-N	mg/L	0.02	0.02	0.02	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01
Nitrite-N	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01
Nitrogen, Nitrate-Nitrite	mg/L	0.02	0.02	0.02	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2120	2160	2200	2140	2240	2140	2220	2120	2260
Lab pH	S.U.	8.6	8.6	8.5	8.6	8.7	8.6	8.6	8.6	8.5
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	18	21	25	15	18	16	16	16	15.3
SAR	none	53.9	51.2	44.5	60.4	57.6	59.6	59.1	61.7	62.4
Total Dissolved Solids	mg/L	1370	1420	1390	1450	1420	1360	1470	1420	1400
Total Suspended Solids	mg/L	NR	7	1	9	4	6	5	5	6.8

Note:
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NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-08HTB

Analyte	Units	11/29/2009
FIELD PARAMETERS		
Field pH	S.U.	8.68
Field Electrical Conductance	umhos/cm	1943
Field Temperature	deg c	8.91
Color	none	100
MAJOR CATIONS		
Dissolved Calcium	mg/L	3.0
Dissolved Magnesium	mg/L	1.8
Dissolved Sodium	mg/L	498
Dissolved Potassium	mg/L	2.9
MAJOR ANIONS		
Alkalinity, Bicarbonate as CaCO3	mg/L	961
Alkalinity, Carbonate as CaCO3	mg/L	69.2
Alkalinity, Total	mg/L	1030
Chloride	mg/L	13.7
Fluoride	mg/L	4.1
Sulfate	mg/L	68.5
METALS		
Dissolved Aluminum	mg/L	0.037
Dissolved Antimony	mg/L	0.0017
Dissolved Arsenic	mg/L	0.0060
Dissolved Barium	mg/L	0.094
Dissolved Boron	mg/L	0.66
Dissolved Cadmium	mg/L	< 0.00008
Dissolved Chromium	mg/L	0.00078
Trivalent Chromium	mg/L	0.0047
Hexavalent Chromium	mg/L	< 0.1
Dissolved Copper	mg/L	0.0035
Dissolved Iron	mg/L	0.063
Total Iron	mg/L	15.5
Dissolved Lead	mg/L	0.0016
Dissolved Manganese	mg/L	0.0080
Dissolved Mercury	mg/L	NR
Total Mercury	ug/L	0.0113
Dissolved Molybdenum	mg/l	0.0092
Dissolved Nickel	mg/L	0.0049
Dissolved Selenium	mg/L	0.00086
Dissolved Uranium	mg/L	0.00056
Dissolved Vanadium	mg/L	0.0040
Dissolved Zinc	mg/L	0.0057
NUTRIENTS		
Nitrate-N	mg/L	< 0.01
Nitrite-N	mg/L	0.0083
Nitrogen, Nitrate-Nitrite	mg/L	< 0.01
Ammonia Nitrogen	mg/L	NR
Phosphate, Ortho	mg/L	NR
OTHER CONSTITUENTS		
Lab Specific Conductance	umhos/cm	1930
Lab pH	S.U.	8.7
Acidity, Total	mg/L	< 5
Hardness as CaCO3	mg/L	15.1
SAR	none	55.8
Total Dissolved Solids	mg/L	1350
Total Suspended Solids	mg/L	332

Note:
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NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not incl
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-08S

Analyte	Units	12/7/2006	2/21/2007	5/24/2007	8/27/2007	11/13/2007	2/21/2008	5/21/2008	8/27/2008	8/13/2009
FIELD PARAMETERS										
Field pH	S.U.	7.4	7.4	7.4	7.2	7.17	7.16	7.04	7.02	7.42
Field Electrical Conductance	umhos/cm	3370	3322	3295	3182	3600	3529	3347	3366	3241
Field Temperature	deg c	7.3	8.76	10.07	10.6	8.97	7.7	10.0	9.7	10.84
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	100
MAJOR CATIONS										
Dissolved Calcium	mg/L	82	70	69	64	72	64	66	70	63.0
Dissolved Magnesium	mg/L	55	53	54	48	56	49	53	51	49.1
Dissolved Sodium	mg/L	690	700	665	661	719	692	683	761	691
Dissolved Potassium	mg/L	10	9	8	8	9	9	8	9	9.4
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	836.1	827.9	779.5	748.4	723.0	817.2	750.0	799.2	817
Alkalinity, Carbonate as CaCO3	mg/L	< 0	< 0	< 0	< 0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	835	829	779	748	722	817	750	799	817
Chloride	mg/L	26	27	28	27	28	30	30	32	25.5
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.60
Sulfate	mg/L	1180	1080	1100	1040	1040	1140	1150	1160	1080
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.016
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.0016
Dissolved Barium	mg/L	0.022	0.035	0.029	0.028	0.019	0.024	0.027	0.020	0.016
Dissolved Boron	mg/L	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.35
Dissolved Cadmium	mg/L	0.00012	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0009
Dissolved Copper	mg/L	NR	0.003	0.003	0.015	0.002	0.004	0.005	0.003	0.0037
Dissolved Iron	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.034
Total Iron	mg/L	196	21.3	23.4	4.22	14.1	39.9	22.1	15.7	30.6
Dissolved Lead	mg/L	< 0.0005	0.0040	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.32	0.26	0.17	0.13	0.10	0.074	0.061	0.054	0.097
Dissolved Mercury	mg/L	< 0.00002	0.00001	< 0.00001	0.00002	< 0.00001	0.00004	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0310
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0030
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.10
Dissolved Selenium	mg/L	0.012	0.014	0.015	0.019	0.014	0.006	0.014	0.016	0.014
Dissolved Uranium	mg/L	0.004	0.051	0.048	0.058	0.054	0.058	0.059	0.052	0.048
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00071
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0058
NUTRIENTS										
Nitrate-N	mg/L	3.06	3.29	3.86	3.63	4.06	4.04	4.24	4.66	5.29
Nitrite-N	mg/L	0.01	0.09	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.0061
Nitrogen, Nitrate-Nitrite	mg/L	3.07	3.35	3.86	3.63	4.06	4.04	4.26	4.66	5.3
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	3380	3320	3320	3370	3320	3240	3350	3280	3230
Lab pH	S.U.	7.5	7.4	7.2	7.4	7.2	7.3	7.3	7.4	7.4
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	431	393	395	358	410	362	383	385	360
SAR	none	14.5	15.4	14.6	15.2	15.4	15.8	15.2	16.9	15.9
Total Dissolved Solids	mg/L	2360	2360	2240	2280	2360	2380	2410	2380	2320
Total Suspended Solids	mg/L	NR	1310	1160	1400	1010	1340	1060	444	659

Note:
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NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-09A2

Analyte	Units	9/11/2007	11/7/2007	2/14/2008	5/13/2008	8/21/2008	8/4/2009
FIELD PARAMETERS							
Field pH	S.U.	7.0	6.97	6.85	6.89	6.91	6.8
Field Electrical Conductance	umhos/cm	6272	8118	9726	10480	7195	4100
Field Temperature	deg c	9.09	9.36	6.9	12.0	8.6	6.48
Color	none	NR	NR	NR	NR	NR	20
MAJOR CATIONS							
Dissolved Calcium	mg/L	386	596	761	738	405	264
Dissolved Magnesium	mg/L	329	471	639	617	364	142
Dissolved Sodium	mg/L	989	1320	1840	1990	1390	626
Dissolved Potassium	mg/L	10.7	19	22	16	14	8.3
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	357.4	435.2	504.1	528.7	486.1	478
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	436	435	504	529	486	478
Chloride	mg/L	11.6	11	14	15	8	10.0
Fluoride	mg/L	NR	NR	NR	NR	NR	0.66
Sulfate	mg/L	3950	5410	7380	7860	4620	2100
METALS							
Dissolved Aluminum	mg/L	< 0.0500	< 0.03	< 0.03	0.03	< 0.03	0.0021
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	0.00027
Dissolved Arsenic	mg/L	0.0028	0.004	0.004	0.004	< 0.003	0.0018
Dissolved Barium	mg/L	0.0573	0.054	0.038	0.032	0.021	0.031
Dissolved Boron	mg/L	0.14	0.2	0.2	0.2	0.2	0.14
Dissolved Cadmium	mg/L	0.00030	0.00038	0.00062	0.00055	0.00046	0.00029
Dissolved Chromium	mg/L	0.0036	0.001	< 0.001	0.002	< 0.001	< 0.0005
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.005
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	0.0005
Dissolved Copper	mg/L	0.0228	0.008	0.017	0.012	0.008	0.0023
Dissolved Iron	mg/L	< 0.025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Total Iron	mg/L	3.72	12.2	1.08	2.13	50.3	19.3
Dissolved Lead	mg/L	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	3.35	4.01	5.23	5.04	3.45	2.3
Dissolved Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00004	0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.0390
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	0.0033
Dissolved Nickel	mg/L	0.0227	0.04	0.06	0.08	0.03	0.0078
Dissolved Selenium	mg/L	0.0155	0.024	< 0.001	0.044	0.008	0.0012
Dissolved Uranium	mg/L	0.050	0.069	0.092	0.093	0.058	0.026
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.0021
Dissolved Zinc	mg/L	0.0236	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005
NUTRIENTS							
Nitrate-N	mg/L	2.57	4.36	7.45	8.18	2.04	0.0106
Nitrite-N	mg/L	0.04	0.05	0.05	0.08	0.05	0.0094
Nitrogen, Nitrate-Nitrite	mg/L	2.61	4.41	7.50	8.26	1.99	0.020
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	6389	8580	10400	9790	7760	4160
Lab pH	S.U.	7.2	7.1	7.0	7.1	7.1	7.3
Acidity, Total	mg/L	< 1.00	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	2320	3420	4530	4380	2510	1240
SAR	none	8.94	9.81	11.9	13.08	12.1	7.7
Total Dissolved Solids	mg/L	5880	8260	12000	10900	6940	3730
Total Suspended Solids	mg/L	123	444	24	150	2050	737

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R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-09S

Analyte	Units	9/13/2007	11/13/2007	2/26/2008	5/21/2008	8/28/2008	8/13/2009
FIELD PARAMETERS							
Field pH	S.U.	7.5	7.33	7.13	7.22	7.07	7.09
Field Electrical Conductance	umhos/cm	5416	6472	6787	6616	6504	6660
Field Temperature	deg c	8.8	8.58	7.8	8.6	8.2	7.24
Color	none	NR	NR	NR	NR	NR	12
MAJOR CATIONS							
Dissolved Calcium	mg/L	197	205	201	230	222	235
Dissolved Magnesium	mg/L	146	156	156	189	175	193
Dissolved Sodium	mg/L	1010	1280	1230	1350	1370	1230
Dissolved Potassium	mg/L	15.3	20	21	18	21	22.9
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	377.9	603.3	642.6	663.1	674.6	726
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	461	603	643	663	675	726
Chloride	mg/L	13.1	11	10	12	11	8.7
Fluoride	mg/L	NR	NR	NR	NR	NR	0.35
Sulfate	mg/L	2830	3290	3400	3730	3730	3160
METALS							
Dissolved Aluminum	mg/L	< 0.0500	< 0.03	0.04	< 0.03	< 0.03	0.0065
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	0.00068
Dissolved Arsenic	mg/L	0.0032	< 0.003	< 0.003	< 0.003	< 0.003	0.0018
Dissolved Barium	mg/L	0.0413	0.034	0.037	0.026	0.028	0.023
Dissolved Boron	mg/L	0.38	0.6	0.6	0.5	0.6	0.52
Dissolved Cadmium	mg/L	< 0.00025	0.00018	0.00087	0.00054	0.00012	0.00032
Dissolved Chromium	mg/L	< 0.0020	< 0.001	< 0.001	< 0.001	< 0.001	0.00068
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	0.00068
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	0.0242	0.006	0.007	0.007	0.008	0.010
Dissolved Iron	mg/L	< 0.025	< 0.01	< 0.01	0.02	< 0.01	0.068
Total Iron	mg/L	0.055	31.6	1.59	0.63	0.12	0.37
Dissolved Lead	mg/L	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.4629	0.35	0.43	0.42	0.20	0.94
Dissolved Mercury	mg/L	<0.00001	< 0.00001	0.00003	< 0.00001	0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.00151
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	0.013
Dissolved Nickel	mg/L	0.0107	0.01	0.02	0.02	0.01	0.27
Dissolved Selenium	mg/L	0.0035	0.003	0.003	0.003	0.003	0.0042
Dissolved Uranium	mg/L	0.016	0.022	0.017	0.026	0.020	0.013
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.0021
Dissolved Zinc	mg/L	0.0095	< 0.01	< 0.01	< 0.01	0.15	0.011
NUTRIENTS							
Nitrate-N	mg/L	0.11	0.80	0.34	0.47	0.59	1.1
Nitrite-N	mg/L	0.04	0.04	0.10	0.09	0.02	< 0.01
Nitrogen, Nitrate-Nitrite	mg/L	0.15	0.84	0.44	0.56	0.61	1.1
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	5449	6390	5830	7020	6330	5930
Lab pH	S.U.	7.6	7.5	7.4	7.3	7.3	7.4
Acidity, Total	mg/L	< 1.00	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	1090	1150	1140	1350	1270	1380
SAR	none	13.3	16.4	15.8	16.0	16.7	14.5
Total Dissolved Solids	mg/L	4570	5540	4830	5080	5410	5250
Total Suspended Solids	mg/L	898	1840	179	51	24	124

Note:
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NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-10C

Analyte	Units	12/12/2006	2/22/2007	5/23/2007	8/24/2007	11/13/2007	2/14/2008	5/14/2008	8/24/2008	8/12/2009
FIELD PARAMETERS										
Field pH	S.U.	7.2	7.0	7.0	7.0	6.89	7.03	6.95	6.90	7.03
Field Electrical Conductance	umhos/cm	2630	2887	2876	2831	2940	2773	2979	2863	2936
Field Temperature	deg c	9.1	8.79	9.44	9.9	9.81	8.6	11.2	12.1	11.74
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	20
MAJOR CATIONS										
Dissolved Calcium	mg/L	38	40	39	38	45	41	37	41	42.8
Dissolved Magnesium	mg/L	33	34	34	32	39	34	32	35	38.4
Dissolved Sodium	mg/L	595	622	628	590	650	640	655	652	644
Dissolved Potassium	mg/L	6	6	6	6	7	7	7	7	7.5
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	569.7	595.9	567.2	536.1	521.3	545.9	554.9	553.3	585
Alkalinity, Carbonate as CaCO3	mg/L	< 0	< 0	< 0	< 0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	570	596	567	536	521	546	555	553	585
Chloride	mg/L	4	4	4	5	5	3	4	3	3.9
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.65
Sulfate	mg/L	1030	996	1060	996	980	1030	1100	1060	982
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.0080
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00053
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.001
Dissolved Barium	mg/L	0.022	0.029	0.029	0.03	0.030	0.026	0.029	0.029	0.028
Dissolved Boron	mg/L	1.1	1.1	1.1	1.1	1.2	1.2	1.1	1.2	1.1
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	0.001	0.001	0.012	0.001	0.002	< 0.001	0.003	0.0026
Dissolved Iron	mg/L	0.01	0.03	0.03	0.02	0.03	0.02	0.03	0.03	0.043
Total Iron	mg/L	0.14	0.06	0.06	0.01	0.06	0.04	0.04	0.05	0.034
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.037	0.044	0.043	0.038	0.044	0.044	0.042	0.045	0.048
Dissolved Mercury	mg/L	< 0.00002	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00002	0.00002	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.000679
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.11
Dissolved Selenium	mg/L	0.001	0.001	< 0.001	0.001	0.001	< 0.001	< 0.001	< 0.001	0.00067
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00022
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
NUTRIENTS										
Nitrate-N	mg/L	0.01	0.01	0.02	0.01	0.01	0.01	< 0.01	< 0.01	< 0.01
Nitrite-N	mg/L	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.02	0.02	0.01	0.01	0.01	< 0.01	0.01	< 0.01
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2850	2930	2980	3000	2960	2940	2880	2880	2940
Lab pH	S.U.	7.1	7.2	7.1	7.1	7.2	7.1	7.1	7.3	7.3
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	231	240	237	227	273	242	224	247	265
SAR	none	17.0	17.5	17.7	17.0	17.1	17.9	19.0	18.1	17.2
Total Dissolved Solids	mg/L	2000	2040	2060	2050	2050	2100	2110	2120	2060
Total Suspended Solids	mg/L	NR	< 1	< 1	< 1	< 0.8	< 2	< 1	< 1	0.91

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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-10D1

Analyte	Units	12/11/2006	2/23/2007	5/23/2007	8/24/2007	11/8/2007	2/15/2008	5/14/2008	8/24/2008	8/12/2009	11/23/2009
FIELD PARAMETERS											
Field pH	S.U.	8.3	8.1	8.2	8.0	8.21	8.04	8.09	8.02	8.12	8.49
Field Electrical Conductance	umhos/cm	1971	1982	1997	1961	2001	2048	2059	1959	2023	1844
Field Temperature	deg c	9.2	9.2	10.29	10.7	10.74	10.7	11.5	13.1	12.42	9.58
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	100	100
MAJOR CATIONS											
Dissolved Calcium	mg/L	3	4	4	4	3	4	3	4	3.7	3.4
Dissolved Magnesium	mg/L	2	3	3	3	2	2	2	2	2.6	2.3
Dissolved Sodium	mg/L	513	542	516	505	555	565	567	551	557	530
Dissolved Potassium	mg/L	3	3	3	3	3	3	3	3	3.2	3.1
MAJOR ANIONS											
Alkalinity, Bicarbonate as CaCO3	mg/L	1147.5	1196.7	1180.3	1098.4	1131.1	1114.8	1139.3	1123.8	1200	1170
Alkalinity, Carbonate as CaCO3	mg/L	26.67	26.67	< 0	< 0	< 0	16.67	< 0	40.00	< 5	< 10
Alkalinity, Total	mg/L	1170	1220	1180	1090	1130	1130	1140	1163	1200	1170
Chloride	mg/L	7	6	6	9	8	8	7	7	6.8	6.1
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	3.1	2.6
Sulfate	mg/L	12	10	<5	<5	< 5	< 5	< 5	< 5	7.3	1.1
METALS											
Dissolved Aluminum	mg/L	0.06	0.07	0.06	0.06	0.06	0.04	< 0.03	< 0.03	0.088	0.090
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001	< 0.0005
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.001	0.00036
Dissolved Barium	mg/L	0.13	0.13	0.15	0.15	0.15	0.13	0.13	0.15	0.14	0.17
Dissolved Boron	mg/L	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.53	0.50
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016	< 0.00008
Dissolved Chromium	mg/L	0.001	0.002	< 0.001	0.003	0.002	0.001	0.002	< 0.001	0.0020	0.0014
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0020	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001	0.035
Dissolved Copper	mg/L	NR	0.001	< 0.001	0.01	< 0.001	< 0.001	< 0.001	0.004	0.0011	0.00063
Dissolved Iron	mg/L	0.13	0.13	0.12	0.12	0.10	0.10	0.08	0.14	0.21	0.20
Total Iron	mg/L	0.24	0.57	0.29	0.19	0.33	0.45	0.36	0.24	0.046	0.32
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.00019	0.00019
Dissolved Manganese	mg/L	0.008	0.021	0.017	0.016	0.013	0.018	0.010	0.017	0.025	0.022
Dissolved Mercury	mg/L	< 0.00005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00004	< 0.00005	NR	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00173	0.00103
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.00086	0.00077
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.0033	0.00087
Dissolved Selenium	mg/L	0.002	0.002	< 0.001	0.003	0.002	< 0.001	< 0.001	< 0.001	0.0007	< 0.0005
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.00026
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0032	0.0026
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010	< 0.005
NUTRIENTS											
Nitrate-N	mg/L	0.02	NR	0.02	0.02	< 0.03	< 0.01	< 0.01	< 0.01	< 0.01	0.003
Nitrite-N	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.03	< 0.01	< 0.01	0.06	0.0056	0.007
Nitrogen, Nitrate-Nitrite	mg/L	0.02	0.02	0.02	0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.010
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS											
Lab Specific Conductance	umhos/cm	2020	2040	2030	2060	2130	2030	2010	2010	2000	1880
Lab pH	S.U.	8.2	8.3	8.2	8.3	8.1	8.3	8.3	8.3	8.3	8.4
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5	< 5
Hardness as CaCO3	mg/L	16	22	22	22	16	18	16	18	19.7	18.0
SAR	none	56.3	49.9	47.5	46.5	62.0	57.6	62.2	56.2	54.6	54.4
Total Dissolved Solids	mg/L	1340	1340	1360	1350	1380	1380	1390	1370	1380	1310
Total Suspended Solids	mg/L	NR	17	5	2	7	6	10	2	5.4	4.1

Note:
< - Values below the reporting limit are entered as less than the reporting limit.
NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-10D2

Analyte	Units	12/12/2006	2/22/2007	5/23/2007	8/23/2007	11/7/2007	2/15/2008	5/15/2008	8/24/2008	*8/13/2009*
FIELD PARAMETERS										
Field pH	S.U.	8.7	8.7	8.7	8.5	8.95	8.59	8.47	8.38	*8.37*
Field Electrical Conductance	umhos/cm	1681	1701	1689	1685	1707	1747	1642	1683	*1720*
Field Temperature	deg c	12	13.26	14.33	15.6	14.79	14.2	14.5	16.2	*14.77*
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	*15*
MAJOR CATIONS										
Dissolved Calcium	mg/L	2	2	3	2	2	2	2	2	*2.6*
Dissolved Magnesium	mg/L	1	1	2	1	1	1	1	1	*1.5*
Dissolved Sodium	mg/L	413	442	417	419	445	456	445	449	*440*
Dissolved Potassium	mg/L	2	2	2	2	2	2	2	2	*2.3*
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	712.3	741.0	743.4	641.0	659.0	691.0	695.9	696.7	*39.5*
Alkalinity, Carbonate as CaCO3	mg/L	51.67	51.67	15.00	50.00	63.33	41.67	38.33	45.00	*39.7*
Alkalinity, Total	mg/L	764	793	759	691	722	733	733	742	*79.2*
Chloride	mg/L	6	6	6	7	6	6	6	6	*6.2*
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	*5.8*
Sulfate	mg/L	182	174	177	170	161	170	189	170	*170*
METALS										
Dissolved Aluminum	mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	*0.0090*
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	*< 0.001*
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	*< 0.001*
Dissolved Barium	mg/L	0.10	0.11	0.10	0.12	0.12	0.11	0.11	0.10	*0.090*
Dissolved Boron	mg/L	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	*0.57*
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	*< 0.00016*
Dissolved Chromium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.001	0.001	*0.00095*
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	*NR*
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	*< 0.001*
Dissolved Copper	mg/L	NR	< 0.001	< 0.001	0.009	< 0.001	< 0.001	0.009	0.003	*0.0010*
Dissolved Iron	mg/L	0.01	0.03	0.03	0.01	0.03	0.02	0.02	0.04	*0.047*
Total Iron	mg/L	0.64	1.18	1.23	1.42	0.74	1.52	1.41	1.80	*1.5*
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	*< 0.0002*
Dissolved Manganese	mg/L	< 0.005	0.007	0.006	< 0.005	0.005	< 0.005	< 0.005	0.007	*0.0087*
Dissolved Mercury	mg/L	< 0.00002	< 0.00001	< 0.00001	0.00003	< 0.00001	< 0.00001	< 0.00001	< 0.00005	*NR*
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	*0.00126*
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	*0.017*
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	*0.021*
Dissolved Selenium	mg/L	< 0.001	0.002	< 0.001	0.002	0.002	< 0.001	0.001	< 0.001	*0.0009*
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	*< 0.001*
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	*0.00069*
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	*< 0.010*
NUTRIENTS										
Nitrate-N	mg/L	0.01	0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	*< 0.01*
Nitrite-N	mg/L	< 0.01	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	*0.011*
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.02	0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	*< 0.01*
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	*NR*
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	*NR*
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	1740	1720	1750	1700	1740	1730	1730	1680	*1720*
Lab pH	S.U.	8.7	8.7	8.6	8.8	8.6	8.7	8.6	8.6	*8.6*
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	*< 2.5*
Hardness as CaCO3	mg/L	9	9	16	9	9	9	9	9	*12.3*
SAR	none	59.5	63.7	45.8	60.4	64.2	65.7	64.2	64.7	*52.8*
Total Dissolved Solids	mg/L	1070	1070	1080	1110	1090	1120	1090	1110	*1100*
Total Suspended Solids	mg/L	NR	50	22	69	26	66	33	10	*36.7*

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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-11A1

Analyte	Units	9/12/2007	11/6/2007	2/13/2008	5/13/2008	8/22/2008	8/4/2009
FIELD PARAMETERS							
Field pH	S.U.	7.0	7.3	6.81	6.95	6.79	7.09
Field Electrical Conductance	umhos/cm	2133	1964	2196	2494	2208	2878
Field Temperature	deg c	10.38	9.78	9.2	10.1	14.7	8.33
Color	none	NR	NR	NR	NR	NR	0
MAJOR CATIONS							
Dissolved Calcium	mg/L	160	145	148	143	152	134
Dissolved Magnesium	mg/L	62.7	65	68	68	69	83.4
Dissolved Sodium	mg/L	317	306	321	299	300	459
Dissolved Potassium	mg/L	4.8	6	5	5	5	3.4
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	521.3	655.7	684.4	667.2	679.5	747
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	636	655	685	667	680	747
Chloride	mg/L	9.2	7	8	8	8	10.9
Fluoride	mg/L	NR	NR	NR	NR	NR	0.88
Sulfate	mg/L	616	558	634	676	715	985
METALS							
Dissolved Aluminum	mg/L	< 0.0500	< 0.03	< 0.03	< 0.03	< 0.03	0.0032
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	0.00048
Dissolved Arsenic	mg/L	0.0052	< 0.003	< 0.003	< 0.003	< 0.003	0.00086
Dissolved Barium	mg/L	0.2120	0.16	0.14	0.14	0.12	0.098
Dissolved Boron	mg/L	0.58	0.6	0.6	0.5	0.6	0.41
Dissolved Cadmium	mg/L	< 0.00025	< 0.00008	< 0.00008	< 0.00008	< 0.00008	0.00020
Dissolved Chromium	mg/L	0.0078	< 0.001	< 0.001	0.002	< 0.001	0.00049
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.005
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	0.0008
Dissolved Copper	mg/L	0.0081	0.004	0.004	0.004	0.004	0.0054
Dissolved Iron	mg/L	1.060	0.07	0.05	0.09	0.23	< 0.05
Total Iron	mg/L	4.8	35.9	0.96	1.48	1.49	4.6
Dissolved Lead	mg/L	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	2.35	1.47	1.55	1.80	2.15	0.086
Dissolved Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.00377
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	0.0052
Dissolved Nickel	mg/L	0.0070	0.01	0.01	0.02	0.01	0.0032
Dissolved Selenium	mg/L	< 0.0020	0.002	< 0.001	< 0.001	0.001	0.016
Dissolved Uranium	mg/L	0.020	0.018	0.019	0.019	0.016	0.040
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.0016
Dissolved Zinc	mg/L	< 0.0020	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005
NUTRIENTS							
Nitrate-N	mg/L	0.06	0.08	0.01	0.01	0.01	0.0941
Nitrite-N	mg/L	0.02	0.01	< 0.01	< 0.01	< 0.01	0.0059
Nitrogen, Nitrate-Nitrite	mg/L	0.08	0.09	0.01	0.01	0.01	0.10
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	2176	2320	2210	2190	2220	2770
Lab pH	S.U.	7.2	7.2	7.0	7.1	7.0	7.5
Acidity, Total	mg/L	< 1.00	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	658	630	650	637	664	677
SAR	none	5.38	5.31	5.48	5.16	5.1	7.7
Total Dissolved Solids	mg/L	1580	1330	1610	1620	1650	2100
Total Suspended Solids	mg/L	73	1800	17	26	143	134

Note:
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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-11S

Analyte	Units	9/12/2007	11/6/2007	2/13/2008	5/13/2008	8/22/2008	8/4/2009
FIELD PARAMETERS							
Field pH	S.U.	6.9	7.31	6.72	6.69	6.58	6.68
Field Electrical Conductance	umhos/cm	3313	3069	3422	3535	3416	3347
Field Temperature	deg c	9.98	9.92	9.5	9.9	12.2	8.07
Color	none	NR	NR	NR	NR	NR	50
MAJOR CATIONS							
Dissolved Calcium	mg/L	262	260	272	258	274	232
Dissolved Magnesium	mg/L	187	176	182	171	190	168
Dissolved Sodium	mg/L	380	380	396	386	374	366
Dissolved Potassium	mg/L	10.6	15	13	15	13	11.8
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	328.7	407.4	454.1	441.8	449.2	489
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	401	407	454	442	449	489
Chloride	mg/L	7.5	6	7	7	7	6.8
Fluoride	mg/L	NR	NR	NR	NR	NR	0.64
Sulfate	mg/L	1690	1630	1750	1880	1990	1570
METALS							
Dissolved Aluminum	mg/L	< 0.0500	< 0.03	< 0.03	< 0.03	< 0.03	0.0025
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	< 0.0020	< 0.003	< 0.003	< 0.003	< 0.003	0.0020
Dissolved Barium	mg/L	0.1050	0.12	0.10	0.10	0.098	0.088
Dissolved Boron	mg/L	0.78	0.7	0.7	0.7	0.7	0.72
Dissolved Cadmium	mg/L	< 0.00025	< 0.00008	< 0.00008	0.00011	0.00021	0.000046
Dissolved Chromium	mg/L	< 0.0020	0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.005
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	0.0005
Dissolved Copper	mg/L	0.0074	0.003	0.005	0.003	0.002	< 0.0005
Dissolved Iron	mg/L	1.210	2.11	2.24	1.87	1.52	1.1
Total Iron	mg/L	5.55	3.38	2.65	1.97	1.59	3.3
Dissolved Lead	mg/L	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	0.81	0.82	0.96	0.92	0.82	0.81
Dissolved Mercury	mg/L	< 0.00001	< 0.00001	0.00002	0.00001	0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.00322
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	< 0.0005
Dissolved Nickel	mg/L	0.0082	0.01	0.02	0.03	0.01	< 0.0005
Dissolved Selenium	mg/L	< 0.0020	0.002	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Uranium	mg/L	< 0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.00027
Dissolved Zinc	mg/L	< 0.0020	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005
NUTRIENTS							
Nitrate-N	mg/L	< 0.01	< 0.01	< 0.01	0.26	0.33	0.0141
Nitrite-N	mg/L	0.04	0.01	< 0.01	< 0.01	0.02	0.0059
Nitrogen, Nitrate-Nitrite	mg/L	< 0.01	< 0.01	< 0.01	0.26	0.35	0.020
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	3342	3610	3420	3400	3410	3270
Lab pH	S.U.	7.4	6.9	6.9	6.9	6.9	7.1
Acidity, Total	mg/L	< 1.00	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	1420	1370	1420	1340	1460	1270
SAR	none	4.38	4.46	4.56	4.57	4.2	4.5
Total Dissolved Solids	mg/L	3060	3080	3100	3150	3140	2870
Total Suspended Solids	mg/L	169	82	28	14	11	105

Note:
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NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-12C

Analyte	Units	12/6/2006	2/23/2007	5/25/2007	8/24/2007	11/9/2007	2/15/2008	5/14/2008	8/25/2008	8/11/2009
FIELD PARAMETERS										
Field pH	S.U.	7.2	7.2	7.1	7.1	7.59	6.99	6.94	6.91	7
Field Electrical Conductance	umhos/cm	2310	2203	2148	2186	2201	2289	2304	2288	2277
Field Temperature	deg c	8.4	9.44	9.79	10.6	9.87	9.9	10.9	14.6	12.42
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	27
MAJOR CATIONS										
Dissolved Calcium	mg/L	8	8	7	8	8	8	8	8	7.9
Dissolved Magnesium	mg/L	7	7	6	6	6	6	6	6	6.5
Dissolved Sodium	mg/L	518	520	512	499	524	540	550	523	542
Dissolved Potassium	mg/L	5	5	4	5	6	5	5	5	4.5
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	479.5	518.0	495.9	463.1	459.8	495.9	482.0	500.8	510
Alkalinity, Carbonate as CaCO3	mg/L	< 0	< 0	< 0	< 0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	479	518	496	463	460	496	482	501	510
Chloride	mg/L	4	6	5	6	5	5	4	4	5.3
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.87
Sulfate	mg/L	679	679	678	661	619	666	686	659	633
METALS										
Dissolved Aluminum	mg/L	< 0.03	0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.017
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0005
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.0005
Dissolved Barium	mg/L	0.024	0.034	0.027	0.033	0.032	0.028	0.031	0.030	0.032
Dissolved Boron	mg/L	0.8	0.8	0.8	0.9	0.8	0.9	0.8	0.9	0.93
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Dissolved Chromium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.00039
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	0.001	< 0.001	0.010	0.001	0.001	< 0.001	0.003	< 0.00050
Dissolved Iron	mg/L	0.05	0.07	0.04	0.05	0.05	0.04	0.05	0.04	0.053
Total Iron	mg/L	1.87	1.9	1.05	0.92	1.46	1.25	0.90	0.61	0.59
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0001
Dissolved Manganese	mg/L	< 0.005	0.010	0.010	0.007	0.007	0.008	0.006	0.007	0.0080
Dissolved Mercury	mg/L	< 0.00002	< 0.00001	< 0.00001	< 0.00001	0.00001	< 0.00001	0.00005	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00166
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0005
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.00045
Dissolved Selenium	mg/L	< 0.001	0.001	< 0.001	0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Uranium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0005
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00022
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	0.07	0.1	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nitrite-N	mg/L	0.04	0.02	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.012
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.09	0.11	0.01	0.01	< 0.01	< 0.01	0.01	0.010
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2050	2330	2250	2320	2330	2250	2140	2270	2350
Lab pH	S.U.	7.3	7.3	7.2	7.4	7.3	7.3	7.2	7.3	7.3
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5
Hardness as CaCO3	mg/L	49	49	42	45	45	44	45	45	46.4
SAR	none	32.3	32.4	34.3	32.5	34.1	35.2	35.8	34.0	34.6
Total Dissolved Solids	mg/L	1460	1540	1240	1470	1490	1540	1480	1510	1540
Total Suspended Solids	mg/L	NR	45	58	31	43	49	12	19	16.9

Note:
< - Values below the reporting limit are entered as less than the reporting limit.
NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-12D

Analyte	Units	12/13/2006	2/27/2007	5/30/2007	8/28/2007	11/12/2007	2/18/2008	5/19/2008	8/27/2008	8/13/2009
FIELD PARAMETERS										
Field pH	S.U.	8.4	8.3	8.2	8.2	8.22	8.22	8.19	8.01	8.06
Field Electrical Conductance	umhos/cm	1810	1951	2004	2001	1975	2120	1927	1981	1970
Field Temperature	deg c	9.7	10.97	12.15	14.5	12.94	10.4	15.2	13.1	13.94
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	50
MAJOR CATIONS										
Dissolved Calcium	mg/L	7	5	4	4	3	3	3	3	2.9
Dissolved Magnesium	mg/L	4	3	2	2	2	2	2	2	2.3
Dissolved Sodium	mg/L	506	540	528	531	548	508	551	552	530
Dissolved Potassium	mg/L	4	3	3	3	3	3	3	3	3.2
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	1172.1	1237.7	1172.1	1139.3	1041.0	1131.1	1180.3	1121.3	1200
Alkalinity, Carbonate as CaCO3	mg/L	38.33	31.67	< 0	< 0	21.67	25.00	< 0	< 0	< 5
Alkalinity, Total	mg/L	1210	1270	1170	1140	1060	1160	1180	1121	1200
Chloride	mg/L	9	9	8	8	8	9	8	8	7.8
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	3.1
Sulfate	mg/L	5	<5	<5	<5	< 5	< 5	7	< 5	0.6
METALS										
Dissolved Aluminum	mg/L	0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.010
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.001
Dissolved Barium	mg/L	0.051	0.058	0.054	0.17	0.081	0.084	0.071	0.076	0.082
Dissolved Boron	mg/L	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.6	0.36
Dissolved Cadmium	mg/L	0.00011	0.00012	< 0.00008	0.00013	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	< 0.001	0.002	0.002	0.004	0.002	0.001	< 0.001	< 0.001	0.0008
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0008
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	0.002	< 0.001	0.032	0.001	< 0.001	< 0.001	0.002	0.00077
Dissolved Iron	mg/L	0.03	0.03	0.02	0.05	0.02	0.02	0.03	0.02	0.079
Total Iron	mg/L	1.63	0.78	0.96	1.21	0.29	0.26	0.58	0.28	0.19
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.019	0.026	0.022	0.022	0.017	0.016	0.015	0.014	0.018
Dissolved Mercury	mg/L	< 0.00005	0.00002	< 0.00001	0.00007	0.00001	0.00003	0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.000670
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0014
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0035
Dissolved Selenium	mg/L	0.001	0.002	< 0.001	0.001	0.001	< 0.001	< 0.001	< 0.001	0.00082
Dissolved Uranium	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0010
Dissolved Zinc	mg/L	NR	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
NUTRIENTS										
Nitrate-N	mg/L	0.01	0.03	0.08	< 0.01	0.84	0.01	< 0.01	< 0.01	< 0.01
Nitrite-N	mg/L	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.01	< 0.01
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.04	0.08	< 0.01	0.84	0.01	0.01	< 0.01	< 0.01
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2030	1880	2050	2030	2070	2090	2180	2010	1980
Lab pH	S.U.	8.4	8.4	8.4	8.3	8.4	8.4	8.2	8.4	8.4
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	34	25	18	20	16	16	16	16	16.8
SAR	none	37.8	47.2	53.8	51.7	60.1	55.7	60.5	60.6	56.4
Total Dissolved Solids	mg/L	1280	1340	1260	1350	1400	1350	1320	1290	1290
Total Suspended Solids	mg/L	NR	27	26	38	9	8	16	43	2.2

Note:
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NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-13C

Analyte	Units	12/13/2006	2/24/2007	5/30/2007	8/29/2007	11/12/2007	2/21/2008	5/21/2008	8/28/2008	8/13/2009
FIELD PARAMETERS										
Field pH	S.U.	8.2	8.1	7.9	7.6	7.89	7.65	7.79	7.75	7.76
Field Electrical Conductance	umhos/cm	1940	2231	2478	2514	2425	2654	2619	2412	2490
Field Temperature	deg c	7.8	7.98	9.58	10.3	9.39	8.8	9.6	9.6	9.72
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	100
MAJOR CATIONS										
Dissolved Calcium	mg/L	22	18	12	11	10	8	7	7	6.1
Dissolved Magnesium	mg/L	8	6	5	4	4	4	4	3	3.3
Dissolved Sodium	mg/L	514	603	628	654	689	637	670	696	663
Dissolved Potassium	mg/L	4	4	4	6	4	4	4	4	4.4
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	1114.8	1377.0	1327.9	1311.5	1229.5	1344.3	1352.5	1385.2	1440
Alkalinity, Carbonate as CaCO3	mg/L	26.67	< 0	< 0	< 0	< 0	< 1	< 0	< 0	< 5
Alkalinity, Total	mg/L	1140	1370	1330	1310	1230	1340	1350	1380	1440
Chloride	mg/L	10	8	6	8	8	8	9	8	7.2
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	1.8
Sulfate	mg/L	136	126	116	96	111	105	128	127	102
METALS										
Dissolved Aluminum	mg/L	< 0.03	0.25	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.024
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	0.005	< 0.003	< 0.003	< 0.003	< 0.003	0.0023
Dissolved Barium	mg/L	0.061	0.067	0.040	0.066	0.023	0.035	0.045	0.027	0.041
Dissolved Boron	mg/L	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.6	0.37
Dissolved Cadmium	mg/L	0.00018	0.00020	0.00015	< 0.00008	< 0.00008	0.00010	< 0.00008	< 0.00008	< 0.00016
Dissolved Chromium	mg/L	< 0.001	0.007	0.001	0.001	0.001	< 0.001	0.001	< 0.001	0.00058
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00058
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.001
Dissolved Copper	mg/L	NR	0.005	0.002	0.015	0.004	0.004	0.011	0.005	0.0012
Dissolved Iron	mg/L	0.07	0.69	0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	0.056
Total Iron	mg/L	38.5	18	9.03	14.3	5.89	24.8	15.2	6.23	37.7
Dissolved Lead	mg/L	< 0.0005	0.0035	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0007	< 0.0005	< 0.0002
Dissolved Manganese	mg/L	0.069	0.073	0.043	0.036	0.040	0.035	0.035	0.033	0.034
Dissolved Mercury	mg/L	< 0.00005	< 0.00001	< 0.00001	0.00004	< 0.00001	0.00004	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0231
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.015
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.015
Dissolved Selenium	mg/L	< 0.001	0.002	0.002	0.019	0.002	< 0.001	< 0.001	< 0.001	0.0025
Dissolved Uranium	mg/L	0.007	0.006	0.004	0.004	0.003	0.003	0.002	0.002	0.0017
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0054
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.010
NUTRIENTS										
Nitrate-N	mg/L	0.01	< 0.01	0.04	0.01	< 0.01	0.30	0.26	0.23	< 0.01
Nitrite-N	mg/L	< 0.01	0.15	0.01	0.01	0.39	0.34	0.10	0.07	0.61
Nitrogen, Nitrate-Nitrite	mg/L	0.01	0.02	0.05	0.02	0.35	0.64	0.36	0.30	< 0.01
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2090	2490	2540	2620	2530	2560	2090	2540	2500
Lab pH	S.U.	8.1	8.2	8.1	7.9	8.1	8.0	8.0	8.1	8.1
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 2.5
Hardness as CaCO3	mg/L	88	70	51	43	41	36	34	30	28.9
SAR	none	23.9	31.4	38.4	43.3	46.6	45.9	50.0	55.4	53.7
Total Dissolved Solids	mg/L	1380	1750	1590	1830	1720	1870	1850	1760	1750
Total Suspended Solids	mg/L	NR	1460	386	NR	537	4800	384	446	1200

Note:
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NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-13S

Analyte	Units	12/9/2006	2/23/2007	5/25/2007	8/29/2007	11/9/2007	2/18/2008	5/19/2008	8/26/2008	8/10/2009
FIELD PARAMETERS										
Field pH	S.U.	8.3	8.2	8.2	7.9	8.23	8.11	8.14	8.05	7.93
Field Electrical Conductance	umhos/cm	2510	2871	2698	2863	2785	3016	2835	2872	2963
Field Temperature	deg c	10	9.35	10.01	17.6	6.52	11.2	16.9	13.9	11.69
Color	none	NR	NR	NR	NR	NR	NR	NR	NR	77
MAJOR CATIONS										
Dissolved Calcium	mg/L	9	9	7	7	7	7	6	7	5.9
Dissolved Magnesium	mg/L	5	5	4	4	4	5	4	4	4.1
Dissolved Sodium	mg/L	715	718	750	744	760	714	733	780	732
Dissolved Potassium	mg/L	4	4	4	4	5	4	4	5	3.6
MAJOR ANIONS										
Alkalinity, Bicarbonate as CaCO3	mg/L	1254.1	1459.0	1409.8	1393.4	1303.3	1352.5	1401.6	1393.4	1410
Alkalinity, Carbonate as CaCO3	mg/L	43.33	26.67	< 0	< 0	25.00	25.00	< 0	< 0	< 5.0
Alkalinity, Total	mg/L	1300	1480	1410	1390	1330	1380	1400	1400	1410
Chloride	mg/L	12	12	11	12	12	12	12	11	10.7
Fluoride	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.56
Sulfate	mg/L	247	224	226	285	202	282	259	261	257
METALS										
Dissolved Aluminum	mg/L	0.14	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.015
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.00050
Dissolved Arsenic	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.00082
Dissolved Barium	mg/L	0.086	0.11	0.096	0.18	0.18	0.084	0.11	0.12	0.12
Dissolved Boron	mg/L	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.44
Dissolved Cadmium	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.000080
Dissolved Chromium	mg/L	0.003	0.002	0.001	0.002	0.003	< 0.001	0.001	0.001	0.00092
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	< 0.0010
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.12
Dissolved Copper	mg/L	NR	0.001	< 0.001	0.014	0.001	0.002	0.001	0.003	0.0010
Dissolved Iron	mg/L	0.14	0.02	0.02	0.02	0.07	< 0.01	0.02	0.03	0.030
Total Iron	mg/L	6.12	1.25	2.06	5.08	0.66	3.00	5.19	1.24	1.2
Dissolved Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.00010
Dissolved Manganese	mg/L	0.051	0.059	0.046	0.052	0.053	0.068	0.052	0.056	0.062
Dissolved Mercury	mg/L	< 0.00002	< 0.00001	< 0.00001	0.00001	< 0.00001	0.00004	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	NR	NR	NR	0.00330
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	NR	NR	NR	0.0026
Dissolved Nickel	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0017
Dissolved Selenium	mg/L	0.001	0.003	< 0.001	0.003	0.004	< 0.001	< 0.001	0.001	< 0.00050
Dissolved Uranium	mg/L	0.002	0.001	< 0.001	< 0.001	0.001	0.001	< 0.001	< 0.001	0.00051
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	0.0054
Dissolved Zinc	mg/L	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS										
Nitrate-N	mg/L	< 0.01	NR	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.070
Nitrite-N	mg/L	0.04	< 0.01	< 0.01	< 0.01	< 0.01	0.06	0.08	0.06	0.0055
Nitrogen, Nitrate-Nitrite	mg/L	0.03	0.02	< 0.01	< 0.01	0.02	0.01	0.01	0.01	0.076
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS										
Lab Specific Conductance	umhos/cm	2780	2830	2870	2940	2980	2930	2940	2810	2960
Lab pH	S.U.	8.1	8.4	8.2	8.1	8.4	8.2	8.2	8.3	8.3
Acidity, Total	mg/L	< 2	< 5	< 5	< 1	< 1	< 1	< 1	< 1	< 5.0
Hardness as CaCO3	mg/L	43	43	34	34	34	38	31	34	31.7
SAR	none	47.4	47.6	56.0	55.9	56.8	50.4	56.9	58.2	56.6
Total Dissolved Solids	mg/L	1850	1910	1860	1980	1960	1970	1940	1980	1970
Total Suspended Solids	mg/L	NR	34	27	780	245	63	20	17	14.7

Note:
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NR - value not reported by laboratory or analysis not performed
NS - location visited, no sample collected because well was dry or frozen shut
R- Results rejected for QC reasons (e.g. incorrect sample preservation)
Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-14A1

Analyte	Units	9/12/2007	11/6/2007	2/13/2008	5/12/2008	8/22/2008	8/6/2009
FIELD PARAMETERS							
Field pH	S.U.	7.32	7.65	7.20	7.24	7.15	7.12
Field Electrical Conductance	umhos/cm	3687	3344	3794	3734	3519	3313
Field Temperature	deg c	8.37	8.85	7.5	8.5	10.9	9.77
Color	none	NR	NR	NR	NR	NR	2
MAJOR CATIONS							
Dissolved Calcium	mg/L	99.2	110	120	108	111	89.9
Dissolved Magnesium	mg/L	21.2	22	24	24	22	18.9
Dissolved Sodium	mg/L	811	828	890	774	810	737
Dissolved Potassium	mg/L	6.4	10	8	7	7	6.4
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	786.1	983.6	1057.4	1000.0	1024.6	1020
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	< 1	< 0	< 0	< 5.0
Alkalinity, Total	mg/L	959	985	1060	999	1024	1020
Chloride	mg/L	7.8	6	8	6	6	4.9
Fluoride	mg/L	NR	NR	NR	NR	NR	0.87
Sulfate	mg/L	1130	1020	1200	1130	1120	913
METALS							
Dissolved Aluminum	mg/L	< 0.0500	< 0.03	< 0.03	< 0.03	< 0.03	0.0082
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	< 0.00050
Dissolved Arsenic	mg/L	0.0051	0.004	0.004	0.004	0.003	0.0042
Dissolved Barium	mg/L	0.1231	0.10	0.10	0.086	0.072	0.054
Dissolved Boron	mg/L	0.54	0.5	0.5	0.5	0.5	0.38
Dissolved Cadmium	mg/L	< 0.00025	0.00012	< 0.00008	< 0.00008	< 0.00008	< 0.000080
Dissolved Chromium	mg/L	0.0093	< 0.001	0.001	< 0.001	< 0.001	0.00043
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.0010
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.0010
Dissolved Copper	mg/L	0.0174	0.003	0.004	0.003	0.004	0.00088
Dissolved Iron	mg/L	0.030	0.06	0.05	0.05	0.03	0.028
Total Iron	mg/L	3.77	6.60	0.26	0.09	0.14	0.18
Dissolved Lead	mg/L	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.00010
Dissolved Manganese	mg/L	1.35	1.51	1.29	1.26	1.45	1.3
Dissolved Mercury	mg/L	< 0.00001	< 0.00001	0.00002	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.00153
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	0.017
Dissolved Nickel	mg/L	0.0093	0.01	0.01	0.03	0.01	0.0059
Dissolved Selenium	mg/L	< 0.0020	0.002	< 0.001	< 0.001	< 0.001	< 0.00050
Dissolved Uranium	mg/L	0.077	0.11	0.12	0.11	0.10	0.082
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.0017
Dissolved Zinc	mg/L	< 0.0020	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS							
Nitrate-N	mg/L	0.03	0.01	< 0.01	< 0.01	< 0.01	0.020
Nitrite-N	mg/L	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
Nitrogen, Nitrate-Nitrite	mg/L	0.05	0.01	< 0.01	< 0.01	< 0.01	0.020
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	3750	3910	3900	3700	3560	3140
Lab pH	S.U.	7.8	7.5	7.4	7.5	7.4	7.6
Acidity, Total	mg/L	< 1.00	< 1	< 1	< 1	< 1	< 5.0
Hardness as CaCO3	mg/L	335	365	398	369	368	302
SAR	none	19.3	18.8	19.4	17.6	18.4	18.4
Total Dissolved Solids	mg/L	2810	2750	2670	2710	2660	2370
Total Suspended Solids	mg/L	51	257	10	2	12	9.5

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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-14S

Analyte	Units	9/12/2007	11/6/2007	2/13/2008	5/12/2008	8/22/2008	8/6/2009
FIELD PARAMETERS							
Field pH	S.U.	R	7.51	7.08	7.08	7.01	7
Field Electrical Conductance	umhos/cm	R	2834	3091	3155	3079	3181
Field Temperature	deg c	R	7.54	7.0	10.2	10.5	9.73
Color	none	NR	NR	NR	NR	NR	100
MAJOR CATIONS							
Dissolved Calcium	mg/L	R	38	34	31	36	31.9
Dissolved Magnesium	mg/L	R	21	20	19	19	19.2
Dissolved Sodium	mg/L	R	752	796	708	763	724
Dissolved Potassium	mg/L	R	8	7	6	7	6.2
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	R	934.4	1024.6	967.2	1004.9	1030
Alkalinity, Carbonate as CaCO3	mg/L	R	< 0	< 1	< 0	< 0	< 5.0
Alkalinity, Total	mg/L	R	930	1020	967	1004	1030
Chloride	mg/L	R	4	5	3	4	3.0
Fluoride	mg/L	NR	NR	NR	NR	NR	1.3
Sulfate	mg/L	R	697	746	789	832	767
METALS							
Dissolved Aluminum	mg/L	R	0.49	0.33	0.36	0.33	0.51
Dissolved Antimony	mg/L	R	NR	NR	NR	NR	< 0.00050
Dissolved Arsenic	mg/L	R	< 0.003	< 0.003	< 0.003	< 0.003	0.0013
Dissolved Barium	mg/L	R	0.062	0.055	0.042	0.042	0.035
Dissolved Boron	mg/L	R	0.9	0.9	1.0	0.9	0.90
Dissolved Cadmium	mg/L	R	0.00027	< 0.00008	< 0.00008	< 0.00008	0.000040
Dissolved Chromium	mg/L	R	0.003	0.004	0.003	< 0.001	0.0021
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	0.0021
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.0010
Dissolved Copper	mg/L	R	0.003	0.004	0.003	0.007	0.0035
Dissolved Iron	mg/L	R	4.14	3.45	4.07	4.05	4.1
Total Iron	mg/L	R	4.92	4.26	4.43	4.50	4.3
Dissolved Lead	mg/L	R	0.0015	0.0012	0.0009	0.0017	0.0015
Dissolved Manganese	mg/L	R	0.40	0.34	0.34	0.33	0.31
Dissolved Mercury	mg/L	R	< 0.00001	0.00005	< 0.00001	< 0.00005	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.0576
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	0.0064
Dissolved Nickel	mg/L	R	< 0.01	< 0.01	0.01	< 0.01	0.0015
Dissolved Selenium	mg/L	R	0.004	< 0.001	< 0.001	0.002	0.00080
Dissolved Uranium	mg/L	R	0.005	0.005	0.004	0.005	0.0051
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.0047
Dissolved Zinc	mg/L	R	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS							
Nitrate-N	mg/L	R	0.02	0.02	0.02	< 0.01	0.010
Nitrite-N	mg/L	R	< 0.01	< 0.01	< 0.01	0.01	< 0.010
Nitrogen, Nitrate-Nitrite	mg/L	R	0.02	0.02	0.02	0.01	0.010
Ammonia Nitrogen	mg/L	R	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	R	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	R	3180	3170	3130	3140	3130
Lab pH	S.U.	R	7.3	7.3	7.3	7.3	7.5
Acidity, Total	mg/L	R	< 1	< 1	< 1	< 1	< 5.0
Hardness as CaCO3	mg/L	R	181	167	156	168	159
SAR	none	R	24.3	26.8	24.7	25.6	25.0
Total Dissolved Solids	mg/L	R	2410	2440	2390	2500	2570
Total Suspended Solids	mg/L	R	17	14	7	7	4.8

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Sample in italics is inconsistent with other samples collected at the same location and is not included in the Piper Diagram
S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-15A1

Analyte	Units	9/11/2007	11/6/2007	2/14/2008	5/12/2008	8/22/2008	8/6/2009
FIELD PARAMETERS							
Field pH	S.U.	7	7.59	6.71	6.86	6.81	6.89
Field Electrical Conductance	umhos/cm	3185	2983	3224	3482	3157	3396
Field Temperature	deg c	11.56	9.51	6.5	8.8	13.2	14.65
Color	none	NR	NR	NR	NR	NR	10
MAJOR CATIONS							
Dissolved Calcium	mg/L	199	208	231	207	200	256
Dissolved Magnesium	mg/L	73.2	82	90	92	83	81.5
Dissolved Sodium	mg/L	518	564	576	542	484	474
Dissolved Potassium	mg/L	8.5	13.1	11	9	10	12.8
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	592.6	751.6	852.5	877.0	724.6	822
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	< 1	< 0	< 0	< 5.0
Alkalinity, Total	mg/L	723	752	848	879	724	822
Chloride	mg/L	38.1	26	25	21	36	27.1
Fluoride	mg/L	NR	NR	NR	NR	NR	0.81
Sulfate	mg/L	1170	1110	1260	1300	1240	1260
METALS							
Dissolved Aluminum	mg/L	< 0.0500	< 0.03	< 0.03	< 0.03	< 0.03	0.0057
Dissolved Antimony	mg/L	NR	NR	NR	NR	NR	< 0.00050
Dissolved Arsenic	mg/L	0.0037	0.009	0.009	0.007	0.007	0.0038
Dissolved Barium	mg/L	0.0689	0.072	0.056	0.054	0.060	0.052
Dissolved Boron	mg/L	0.92	0.8	0.8	0.7	0.8	0.77
Dissolved Cadmium	mg/L	< 0.00025	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.000080
Dissolved Chromium	mg/L	0.0059	0.001	< 0.001	< 0.001	< 0.001	0.00058
Trivalent Chromium	mg/L	NR	NR	NR	NR	NR	0.00058
Hexavalent Chromium	mg/L	NR	NR	NR	NR	NR	< 0.0010
Dissolved Copper	mg/L	0.0118	0.003	0.003	0.003	0.004	0.0012
Dissolved Iron	mg/L	3.950	7.97	7.93	9.08	7.29	2.0
Total Iron	mg/L	16.1	8.85	8.73	9.76	10.8	1.9
Dissolved Lead	mg/L	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000088
Dissolved Manganese	mg/L	3.06	2.86	2.90	2.84	2.83	2.1
Dissolved Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NR	NR	NR	0.00116
Dissolved Molybdenum	mg/l	NR	NR	NR	NR	NR	0.0050
Dissolved Nickel	mg/L	0.0083	0.01	0.01	0.03	0.02	0.0052
Dissolved Selenium	mg/L	< 0.0020	0.002	0.002	0.004	0.001	0.00029
Dissolved Uranium	mg/L	0.019	0.023	0.025	0.022	0.022	0.044
Dissolved Vanadium	mg/L	NR	NR	NR	NR	NR	0.00083
Dissolved Zinc	mg/L	0.0028	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0050
NUTRIENTS							
Nitrate-N	mg/L	< 0.01	0.01	0.02	0.01	0.01	0.010
Nitrite-N	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
Nitrogen, Nitrate-Nitrite	mg/L	< 0.01	0.01	0.02	0.01	0.01	0.010
Ammonia Nitrogen	mg/L	NR	NR	NR	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NR	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	3280	3390	3440	3450	2990	3210
Lab pH	S.U.	7.4	7.1	7.1	7.1	7.1	7.3
Acidity, Total	mg/L	< 1.00	< 1	< 1	< 1	< 1	< 5.0
Hardness as CaCO3	mg/L	798	857	947	896	841	976
SAR	none	7.98	8.38	8.14	7.88	7.3	6.6
Total Dissolved Solids	mg/L	2470	2630	2520	2710	2450	2620
Total Suspended Solids	mg/L	268	43	54	41	193	15.4

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S.U. - standard units
umhos/cm - micromhos per centimeter
mg/L - milligrams per liter
SAR - Sodium Adsorption Ratio

TABLE 2.5-6-1
GROUND WATER QUALITY
SHMW-15S

Analyte	Units	9/11/2007	11/6/2007	2/14/2008	5/12/2008	8/21/2008	8/6/2009
FIELD PARAMETERS							
Field pH	S.U.	7.24	8.1	NS	7.12	7.22	7.16
Field Electrical Conductance	umhos/cm	2608	2424	NS	2687	2602	2575
Field Temperature	deg c	8.39	7.69	NS	9.2	10.7	11.12
Color	none	NR	NR	NS	NR	NR	8
MAJOR CATIONS							
Dissolved Calcium	mg/L	15	19	NS	16	18	23.5
Dissolved Magnesium	mg/L	12	13	NS	13	13	14.2
Dissolved Sodium	mg/L	604	643	NS	608	642	564
Dissolved Potassium	mg/L	6.5	10	NS	8	8	9.5
MAJOR ANIONS							
Alkalinity, Bicarbonate as CaCO3	mg/L	459.8	573.8	NS	606.6	597.5	574
Alkalinity, Carbonate as CaCO3	mg/L	<4	< 0	NS	< 0	< 0	< 5.0
Alkalinity, Total	mg/L	561	573	NS	606	598	574
Chloride	mg/L	11.3	7	NS	6	8	7.1
Fluoride	mg/L	NR	NR	NS	NR	NR	0.63
Sulfate	mg/L	841	768	NS	903	883	799
METALS							
Dissolved Aluminum	mg/L	0.1202	< 0.03	NS	< 0.03	< 0.03	0.012
Dissolved Antimony	mg/L	NR	NR	NS	NR	NR	< 0.00050
Dissolved Arsenic	mg/L	< 0.0020	< 0.003	NS	< 0.003	< 0.003	0.00078
Dissolved Barium	mg/L	0.0508	0.058	NS	0.050	0.047	0.096
Dissolved Boron	mg/L	1.32	1.2	NS	1.2	1.3	0.97
Dissolved Cadmium	mg/L	< 0.00025	< 0.00008	NS	< 0.00008	< 0.00008	< 0.000080
Dissolved Chromium	mg/L	0.0042	0.001	NS	0.001	< 0.001	0.00037
Trivalent Chromium	mg/L	NR	NR	NS	NR	NR	< 0.0010
Hexavalent Chromium	mg/L	NR	NR	NS	NR	NR	< 0.0010
Dissolved Copper	mg/L	0.0131	0.001	NS	< 0.001	0.003	< 0.00050
Dissolved Iron	mg/L	0.069	0.05	NS	0.06	0.08	1.3
Total Iron	mg/L	5.21	0.54	NS	0.60	0.52	1.8
Dissolved Lead	mg/L	< 0.0020	< 0.0005	NS	< 0.0005	< 0.0005	< 0.00010
Dissolved Manganese	mg/L	0.0703	0.088	NS	0.082	0.091	0.26
Dissolved Mercury	mg/L	< 0.00001	< 0.00001	NS	< 0.00001	< 0.00001	NR
Total Mercury	ug/L	NR	NR	NS	NR	NR	0.00145
Dissolved Molybdenum	mg/l	NR	NR	NS	NR	NR	0.00030
Dissolved Nickel	mg/L	< 0.0020	< 0.01	NS	< 0.01	< 0.01	0.00048
Dissolved Selenium	mg/L	< 0.0020	0.001	NS	< 0.001	< 0.001	< 0.00050
Dissolved Uranium	mg/L	< 0.002	< 0.001	NS	< 0.001	< 0.001	0.00026
Dissolved Vanadium	mg/L	NR	NR	NS	NR	NR	0.00028
Dissolved Zinc	mg/L	< 0.0020	< 0.01	NS	< 0.01	< 0.01	< 0.0050
NUTRIENTS							
Nitrate-N	mg/L	< 0.01	0.04	NS	0.01	< 0.01	0.020
Nitrite-N	mg/L	0.03	< 0.01	NS	< 0.01	< 0.01	< 0.010
Nitrogen, Nitrate-Nitrite	mg/L	0.02	0.04	NS	0.01	< 0.01	0.020
Ammonia Nitrogen	mg/L	NR	NR	NS	NR	NR	NR
Phosphate, Ortho	mg/L	NR	NR	NS	NR	NR	NR
OTHER CONSTITUENTS							
Lab Specific Conductance	umhos/cm	2685	2750	NS	2640	2700	2490
Lab pH	S.U.	7.5	7.4	NS	7.5	7.5	7.6
Acidity, Total	mg/L	< 1.00	< 1	NS	< 1	< 1	< 5.0
Hardness as CaCO3	mg/L	86.9	101	NS	93	98	NR
SAR	none	28.2	27.8	NS	27.4	28.2	22.7
Total Dissolved Solids	mg/L	1880	1910	NS	1820	1870	1740
Total Suspended Solids	mg/L	88	23	NS	18	16	28.3

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