

In reference to report:

Mack, T.J., 2009, Assessment of ground-water resources in the Seacoast region of New Hampshire: U.S. Geological Survey Scientific Investigations Report 2008–5222, 188 p., available online at <http://pubs.usgs.gov/sir/2008/5222>.

Appendix 8. Transient Model Parameter Correlation Coefficient Matrix

Table

8–1. Correlation matrix for transient-model parameters, Seacoast model, southeastern New Hampshire	150
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Table 8-1. Correlation matrix for transient-model parameters, Seacoast model, southeastern New Hampshire.—Continued

[See footnote for values in **bold**]

Parameter name	Parameter name																
	Ktill	Ksdlv	Ksd	Ksvd	Rxk1	Rxk2	Rxk3	Rxk4	Rxk1v	Rxk2v	Ksdl	Ksb1	Ktillv	Ksdlv	Rxk3v	Ktill	
Kwetv	-7.49E-2	9.04E-2	6.08E-2	0.292	9.93E-2	0.272	4.66E-2	-0.144	-0.144	-7.96E-2	0.174	-0.486	0.272	4.66E-2	-0.144	-0.144	-7.96E-2
	0.153	-5.48E-2	-0.176	.174	-0.486	1	-0.328	-6.99E-2	-6.99E-2	3.64E-2	-0.176	-0.486	1	-0.328	-6.99E-2	-6.99E-2	3.64E-2
	2.64E-2	3.01E-2	-2.17E-2	-0.114	-6.92E-2	-7.11E-2	-7.72E-2	-1.20	-1.20	-0.101	3.01E-2	-2.17E-2	-0.114	-6.92E-2	-7.11E-2	-7.72E-2	-0.101
	-5.01E-2	0.131	.145	4.50E-2	-8.57E-2	-9.97E-2	-1.21	-8.71E-2	-8.71E-2	-7.49E-2	0.131	.145	4.50E-2	-8.57E-2	-9.97E-2	-1.21	-7.49E-2
	-1.135	-8.78E-2	5.87E-2	3.55E-2	.159	-5.39E-2	-8.12E-2	-8.69E-2	-8.69E-2	-1.78E-2	-8.78E-2	5.87E-2	3.55E-2	.159	-5.39E-2	-8.12E-2	-8.69E-2
	4.57E-2	-8.82E-2	-9.82E-2	-4.22E-2	7.98E-2	7.10E-3	-4.09E-2	-1.03	-1.03	-9.57E-2	-8.82E-2	-9.82E-2	-4.22E-2	7.98E-2	7.10E-3	-4.09E-2	-1.03
	-7.70E-2																
Hani1	.216	.188	-.183	-.521	-.581	-.587	-.342	5.20E-2	5.20E-2	.136	.188	-.183	-.521	-.581	-.587	-.342	5.20E-2
	-.263	.115	-3.74E-2	-.159	-3.17E-2	-3.28	1	.363	.363	7.47E-2	.115	-3.74E-2	-.159	-3.17E-2	-3.28	1	.363
	.147	-1.35E-2	4.26E-2	-.270	.202	.139	.116	.142	.142	.106	-1.35E-2	4.26E-2	-.270	.202	.139	.116	.142
	8.49E-2	7.53E-2	5.68E-2	4.38E-2	9.27E-2	.132	.157	.134	.134	.114	7.53E-2	5.68E-2	4.38E-2	9.27E-2	.132	.157	.134
	.131	8.44E-2	1.50E-2	4.61E-2	6.24E-2	6.43E-2	.122	.118	.118	5.58E-2	.131	8.44E-2	1.50E-2	6.24E-2	6.43E-2	.122	.118
	4.24E-2	.114	9.97E-2	6.17E-2	2.20E-2	7.25E-2	.110	8.73E-2	8.73E-2	.118	4.24E-2	.114	9.97E-2	6.17E-2	7.25E-2	.110	8.73E-2
	.107																
Hani2	.137	-.100	.201	-.584E-2	-.135	-.202	-899	-3.39E-2	-3.39E-2	8.74E-2	.137	-.100	.201	-.584E-2	-.135	-.202	-3.39E-2
	-.139	8.75E-2	.163	-.226	-2.41E-2	-6.99E-2	.363	1	1	-8.23E-2	-.139	8.75E-2	.163	-.226	-2.41E-2	-6.99E-2	.363
	-3.71E-2	-1.95E-2	4.48E-2	-.113	.120	8.47E-2	-5.14E-2	3.80E-3	3.80E-3	8.78E-2	-3.71E-2	-1.95E-2	4.48E-2	-.113	.120	8.47E-2	-5.14E-2
	.127	.186	.196	4.65E-2	-5.28E-2	2.39E-4	5.04E-2	9.91E-2	9.91E-2	-5.59E-2	.127	.186	.196	4.65E-2	-5.28E-2	2.39E-4	5.04E-2
	5.45E-2	.103	.177	7.88E-2	.222	-3.86E-2	-2.46E-2	-1.46E-3	-1.46E-3	.164	5.45E-2	.103	.177	7.88E-2	.222	-3.86E-2	-2.46E-2
	.168	-6.17E-2	9.09E-2	.143	.188	2.43E-2	7.60E-2	-3.47E-2	-3.47E-2	.164	.168	-6.17E-2	9.09E-2	.143	.188	2.43E-2	7.60E-2
	-3.90E-2																
SSR1	-5.23E-2	.237	.113	-5.36E-2	-8.22E-3	-8.51E-2	-5.38E-2	.114	.114	-2.19E-2	-5.23E-2	.237	.113	-5.36E-2	-8.22E-3	-8.51E-2	-5.38E-2
	5.65E-2	-.117	-3.00E-2	1.11E-3	-2.74E-2	3.64E-2	7.47E-2	-8.23E-2	-8.23E-2	1	5.65E-2	-.117	-3.00E-2	1.11E-3	-2.74E-2	3.64E-2	7.47E-2
	.854	.608	-.602	-.488	-.144	-5.03E-2	.245	3.31E-2	3.31E-2	-.182	.854	.608	-.602	-.488	-.144	-5.03E-2	.245
	-.213	-.142	-.112	6.17E-2	.25	.133	3.09E-2	-9.20E-2	-9.20E-2	.244	-.213	-.142	-.112	6.17E-2	.25	.133	3.09E-2
	-6.68E-2	-.125	-.293	5.85E-2	-.242	.235	.205	.132	.132	-.305	-6.68E-2	-.125	-.293	5.85E-2	-.242	.235	.205
	-.186	.252	-.244	-.270	-.266	.187	4.27E-2	.162	.162	.188	-.186	.252	-.244	-.270	-.266	.187	4.27E-2
	.177										.177						

Table 8-1. Correlation matrix for transient-model parameters, Seacoast model, southeastern New Hampshire.—Continued

Parameter name	Parameter name															
	Ktill Rxx3v SSR2 R6 RCH28 RCH38 RCH48	Ktillv Rxx4v SSR3 R7 RCH29 RCH39	Ksd Ksb1 SSR4 R8 RCH30 RCH40	Ksdv Km SSsd R9 RCH31 RCH41	Rxx1 Kmv SSwet R10 RCH32 RCH42	Rxx2 Kwet R1 R11 RCH33 RCH43	Rxx3 Kwv R2 R12 RCH34 RCH44	Rxx4 Hani1 R3 RCH25 RCH35 RCH45	Rxx1v Hani2 R4 RCH26 RCH36 RCH46	Rxx2v SSR1 R5 RCH27 RCH37 RCH47						
RCH40	-5.06E-2 4.03E-2 0.393 -.468 -2.37E-3 -.503 .438	8.47E-2 3.35E-2 7.41E-2 -0.673 -.417 .489	0.28 -.101 .172 -.440 -.284 1	4.28E-2 -0.110 .342 -.292 -.678 -.566	-0.162 3.55E-2 -5.10E-2 .206 7.71E-2 -.594	1.36E-2 -2.43E-2 -0.151 .601 -.596 -.670	-1.37E-2 -8.82E-2 -6.50E-2 0.347 .571 .384	1.44E-2 0.114 .551 .170 .516 .150	6.66E-2 -6.17E-2 0.207 -.148 .353 .487	1.67E-2 0.252 -.351 .574 -.594 .493						
RCH41	.143 -7.60E-2 -.390 .444 .138 .405 -.253	.184 -2.79E-2 -.139 .532 .430 -.388	-3.82E-2 .102 -.197 .334 .300 -.566	-9.71E-2 6.80E-2 -.13 .209 .535 1	.182 -8.80E-2 -8.55E-2 -.148 -5.17E-2 .319	1.00E-2 -1.88E-2 .241 -.404 .45 .504	-1.17 -9.82E-2 .152 -.158 -.391 -.284	-5.84E-2 9.97E-2 -.343 -1.26E-2 -.315 -5.40E-2	-9.02E-2 9.09E-2 -2.92E-2 .238 -.183 -.302	-9.62E-2 -.244 .382 -.357 .519 -.293						
RCH42	.177 -.106 -.469 .595 .128 .594 -.390	.104 -3.85E-2 -9.83E-2 .770 .556 -.568	-0.168 .113 -.199 .514 .395 -.594	-7.62E-2 .124 -.296 .352 .772 .319	.267 -.110 -9.51E-2 -.185 -3.80E-2 1	3.06E-2 -3.23E-2 .289 -.597 .675 .675	-9.54E-2 -4.22E-2 .176 -.273 -.561 -.363	-8.64E-2 6.17E-2 -.524 -6.96E-2 -.480 -7.45E-2	-0.119 .143 -.109 .286 -.300 -.435	-7.96E-2 -.270 .485 -.544 .716 -.441						
RCH43	.157 -.113 -.481 .625 8.87E-2 .698 -.474	-5.26E-2 -4.40E-2 -8.65E-2 .883 .555 -.639	-0.321 3.68E-2 -.189 .644 .413 -.670	-6.76E-2 .164 -.352 .497 .882 .504	.331 -.106 -.145 -.138 2.31E-2 .675	1.94E-2 -4.54E-2 .296 -.671 .824 1	6.61E-3 7.98E-2 .171 -.332 -.605 -.488	-8.43E-2 2.20E-2 -.598 -.111 -.546 -8.91E-2	-0.177 .188 -.171 .276 -.351 -.573	2.54E-2 -.266 .479 -.616 .780 -.551						

[See footnote for values in **bold**]

Table 8-1. Correlation matrix for transient-model parameters, Seacoast model, southeastern New Hampshire.—Continued

[See footnote for values in **bold**]

Parameter name	Parameter name														
	Ktill Rxx3v SSR2 R6 RCH28 RCH38 RCH48	Ktillv Rxx4v SSR3 R7 RCH29 RCH39	Ksd Ksb1 SSR4 R8 RCH30 RCH40	Ksdv Km SSsd R9 RCH31 RCH41	Rxx1 Kmv SSwet R10 RCH32 RCH42	Rxx2 Kwet R1 R11 RCH33 RCH43	Rxx3 Kwetv R2 R12 RCH34 RCH44	Rxx4 Hani1 R3 RCH25 RCH35 RCH45	Rxx1v Hani2 R4 RCH26 RCH36 RCH46	Rxx2v SSR1 R5 RCH27 RCH37 RCH47					
RCH48	-6.27E-2	9.83E-2	0.198	3.35E-2	-9.16E-2	2.86E-2	-1.01E-2	1.04E-2	4.57E-2	-1.58E-2					
	3.68E-2	3.34E-2	-6.12E-2	-9.47E-2	3.30E-2	-4.56E-3	-7.70E-2	0.107	-3.90E-2	0.177					
	0.270	4.20E-2	.114	0.250	-4.97E-2	-8.95E-2	-3.17E-2	.392	0.156	-2.31					
	-3.15	-0.468	-.301	-.197	0.154	0.430	0.257	.134	-8.67E-2	.409					
	1.41E-2	-.277	-.186	-.471	6.63E-2	-.412	.413	.375	.261	-.405					
	-.343	.410	.438	-.253	-.390	-.474	.294	.121	.352	.259					

* The correlation between Kim and Kmv is 0.91.

* The absolute correlations between the following parameters are between 0.85 and 0.90.

Parameter	Parameter	Correlation
Rxx4	Hani2	-0.90
SSR1	SSR2	.85
SSR1	SSR3	.88
R7	RCH31	.90
R7	RCH43	.88
RCH31	RCH43	.88

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