

Revision History File

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Publication Title: Documentation of the Streamflow-Routing (SFR2) Package to Include Unsaturated Flow Beneath Streams—A Modification to SFR1

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Summary of Product Components

Component	Description	Last Revised in Pub Version	Date of Last Revision
Book	Documentation of Streamflow-Routing Package to include unsaturated flow beneath streams for MODFLOW-2000	1.10	April 20, 2006

Historical List of Revisions (latest revision first)

Version 1.10—April 20, 2006

Book—

Page 4: 1st column. Below equation 6. "where z_1 and z_2 are points below and above the wetting front" was replaced with "where z_1 and z_2 are points above and below the wetting front"

Page 4: 2nd column. Below equation 8. "Combining equations 8 and 9 gives" was replaced with: "Combining equations 7 and 8."

Page 4: New equation 9.

$$\frac{dz_f}{dt} = u_s(\theta_1, \theta_2) = \frac{K(\theta_1) - K(\theta_2)}{\theta_1 - \theta_2}$$

Page 4: 2nd column. Below equation 9. " θ_2 is the volumetric water content of a wetting front; θ_1 is the volumetric water content below a wetting front" was replaced with:

θ_1 is the volumetric water content above a wetting front; θ_2 is the volumetric water content below a wetting front.

Page 5. 1st column. Figure 2. Top of graph changed from " θ_2 and θ_1 " to " θ_{f_2} and θ_{f_1} "

Page 5. 2nd column. Last paragraph. "As shown in figure 1, " was replaced with "As shown in figure 2."

Page 18. 3rd paragraph. 4th sentence, "Finally, neither the Parameter-Estimation nor the Ground-Water Transport Processes work when unsaturated flow is specified beneath streams" was replaced with "Parameters can be used to define streambed hydraulic conductivity only when data input follows the SFR1 input structure (Prudic and others, 2004). The calculation of sensitivities for, or estimation of, parameters using the Sensitivity Process are not supported by SFR1 nor SFR2. Additionally, the Ground-Water Transport Process is only available using the original SFR1 input structure and is not available when simulating unsaturated flow beneath streams."

Page 18. Last line. NSFRPAR. "This variable must be zero when NSTRM is negative" was added to the end of the last line.

Page 19. 1st paragraph. NPARSEG. "This variable must be zero when NSTRM is negative" was added to the end of the paragraph.

Page 21. Note 6. 3rd sentence. "This would be implemented by setting the streambed hydraulic conductivity, segment inflow, overland runoff, and direct precipitation to zero for the inactive segments in Item 4 for the specific stress periods when they are known to be inactive or dry" was replaced with "This would be implemented by setting the streambed hydraulic conductivity, segment inflow, overland runoff, and direct precipitation to zero for the inactive segments in Items 4 or 6 for the specific stress periods when they are known to be inactive or dry."

Page 21. Note 8: "When STRTOP, SLOPE, STRTHICK, and STRHC1 are specified for each reach, the variables are not read using Items 4c or 4d or Items 6b or 6c" was replaced with "When STRTOP, SLOPE, STRTHICK, and STRHC1 are specified for each reach, the variables are not read using Items 6b or 6c."

Page 22. 3. Data: Parval. End of description: "or by a value generated by the Parameter-Estimation Process" was replaced with "when ISENALL in that file is less than zero."

Page 25. 4c. Data: Brackets were deleted around ELEVUP.

Page 25. 4c. THICKM1. 2nd sentence deleted.

Page 25. 4c. ELEVUP. 2nd and 3rd sentences deleted.

Page 25. 4c. WIDTH1. 2nd and 3rd sentences deleted.

Page 25. 4d. Data: Brackets were deleted around ELEVDN.

Page 25. 4d. THICKM2. 2nd sentence deleted.

Page 25. 4d. ELEVDN. 2nd and 3rd sentences deleted.

Page 25. 4d. WIDTH2. 2nd and 3rd sentence deleted.

Page 28. 6b. Brackets added to HCOND1 and THICKM1.

Page 28. 6b. HCOND1. "This variable is read for each stress period when NSTRM is positive or when ISFROPT is 4 or 5" was added to the end of the 1st sentence.

Page 28. 6b. THTS1. "This variable is read when ISFROPT is 4 or 5" was replaced with "This variable is read for the first stress period when ICALC is 1 or 2 and ISFROPT is 4 or 5."

Page 28. 6b. THTI1. "This variable is read when ISFROPT is 4 or 5" was replaced with "This variable is read for the first stress period when ICALC is 1 or 2 and ISFROPT is 4 or 5."

Page 28. 6b. EPS1. "This variable is read when ISFROPT is 4 or 5" was replaced with "This variable is read for the first stress period when ICALC is 1 or 2 and ISFROPT is 4 or 5."

Page 28. 6b. UHC1. "This variable is read only when ISFROPT is 5" was replaced with "This variable is read only for the first stress period when ICALC is 1 or 2 and ISFROPT is 5."

Page 28. 6b. The following sentence was added "These variables are read for each stress period when NSTRM is positive. THICKM1 and ELEVUP are read only for the first stress period when ICALC is 1 or 2 and ISFROPT is 4 or 5. WIDTH1 is read for all stress periods when ICALC is 1 and ISFROPT is 1 but is only read for the first stress period when ISFROPT is greater than 1. WIDTH1 and DEPTH1 are read for all stress periods when ICALC is 0 and are not dependent on the value of ISFROPT" after "See Item 4, Part 4c for definitions of variables THICKM1, ELEVUP, WIDTH1, and DEPTH1."

Page 28. 6c. Brackets added to HCOND2 and THICKM2.

Page 28. 6c. HCOND2. "This variable is read for each stress period when NSTRM is positive or when ISFROPT is 4 or 5" was added to the end of the 1st sentence.

Page 28. 6c. THTS2. "This variable is read when ISFROPT is 4 or 5" was replaced with "This variable is read for the first stress period when ICALC is 1 or 2 and ISFROPT is 4 or 5."

Page 28. 6c. THTI2. "This variable is read when ISFROPT is 4 or 5" was replaced with "This variable is read for the first stress period when ICALC is 1 or 2 and ISFROPT is 4 or 5."

Page 28. 6c. EPS2. "This variable is read when ISFROPT is 4 or 5" was replaced with "This variable is read for the first stress period when ICALC is 1 or 2 and ISFROPT is 4 or 5."

Page 28. 6c. UHC2. "This variable is read only when ISFROPT is 5" was replaced with "This variable is read only for the first stress period when ICALC is 1 or 2 and ISFROPT is 5."

Page 28. 6c. The following sentence was added "The same options apply to these variables as explained for the upstream variables in Item 6b." after "See Item 4, Part 4d for definitions of variables THICKM2, ELEVDN, WIDTH2, and DEPTH2."

Page 29. 6d. "See Item 4, Part 4e for variable definitions" was replaced with "See Item 4, Part 4e for variable definitions. These variables are read only for the first stress period when ISFROPT is 2, 3, 4, or 5."

Page 29. 6e. "If Ground-Water Transport (GWT) Process is active (Ftype "GWT" exists), then read Part 4g NSOL times (where NSOL is the number of solutes being simulated)" was replaced with "If Ground-Water Transport (GWT) Process is active (Ftype "GWT" exists), then read Part 6f NSOL times (where NSOL is the number of solutes being simulated)"

Page 32. 1st paragraph. 4th and 5th sentences. "A description of the basin-fill aquifer is presented in figure 5. Variables used to route flow in streams and flow through the aquifer and results from these simulations are presented in the section titled "Hypothetical Test Simulation" and in figures 6 and 7" were replaced with "A description of the basin-fill aquifer is presented in figure 6. Variables used to route flow in streams and flow through the aquifer and results from these simulations are presented in the section titled "Hypothetical Test Simulation" and in table 4 and figure 7."

Page 35. File name: testsfr2.dis. Added "Item 4: DELC to the line below "Item 3: DELR"

Page 36. File name: testsfr2.1pf. Footnote 7: "Ratio of vertical to horizontal hydraulic conductivity" replaced with "Vertical hydraulic conductivity."

Page 37. File name: Testsfr2.sfr. Replaced line 3 with "-100 1 0 0 1.0 0.00001 -1 0 5 10 5 20"

Page 37. File name: Testsfr2.sfr. Item 5. stress period 2, stress period 3, and stress period 50. Deleted 0.5 140. .3 .1 3.5 6.0e-6 from Items 6b, 6c.

Page 37. File name: Testsfr2.sfr. Footnote 4. "Read and print flags for stress period 1 (Input Item 5)" was replaced with "Read and print flags for stress period (Input Item 5)."

Page 37. File name: Testsfr2.sfr. Footnote 7 was replaced with "Stream segment data for 8-point cross section (Input Item 6d)." Footnotes 8 and 9 were deleted.

Page 45. Line 17. STREAM LEAKAGE = 4th column "0.0000" was replaced with "3.3353E-02"

Page 45. Line 18. TOTAL IN = 4th column "3.3353E-02" was replaced with "0.1829"