Table 1. MODFLOW-NWT Packages and files used for Example Problems 1 and 2.

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| MODFLOW-NWT Packages and Files |
| Basic (BAS6) Package |
| Output Control (OC) Option file |
| Discretization (DIS) file |
| Upstream-Weighted Flow (UPW) Package |
| Newton (NWT) Solver Package  Agricultural Water Use (AG) Package |
| Unsaturated-Zone Flow (UZF1) Package |
| Streamflow-Routing (SFR2) Package |
| Lake (LAK) Package (example problem 2) |
| Gage (GAG) Package |

Table 2. Hydraulic properties and other selected variables used in the Upstream-Weighted Flow (UPW), Unsaturated-Zone Flow (UZF1), and the Streamflow-Routing (SFR2) Packages for Example Problems 1 and 2.

[Note, English units used for test simulation 2 are consistent with units of example problem as described by Prudic and others (2004) and were not changed to conform to the Standard International units used elsewhere in this document.]

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| Variable | Value |  |
| Variables assigned to the Upstream Weighting Flow (UPW) Package | | |
|  | Example problem 1 | Example problem 2 |
| Horizontal hydraulic conductivity | 4.0 x10-4 to 2.0 x10-3 feet per second | 0.026-0.39 meters per day |
| Vertical hydraulic conductivity | 1.0 x10-5 feet per second | 0.026-0.39 meters per day |
| Specific storage | 1.0 x10-6 per foot | 2.0 x10-6 per meter |
| Specific yield | 0.1 to 0.2 (cubic foot of water drained per cubic foot of aquifer) | 0.08 to 0.15 (cubic meters of water drained per cubic meter of aquifer) |

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| Variables assigned to the Unsaturated-Zone Flow (UZF1) Package | | | |
|  | **Example problem 1** | | **Example problem 2** |
|  | **Fine soil** | **Course soil** |  |
|  |  |  |  |
| Saturated water content of unsaturated zone | 0.38 cubic foot of water per cubic foot of bulk volume | 0.32 cubic foot of water per cubic foot of bulk volume | 0.13-0.2 cubic meter of water per cubic meter of bulk volume |
| Brooks-Corey exponent  (unitless) | 7.5 | 6.5 | 4 |
| Vertical hydraulic conductivity of the unsaturated zone | 4 feet per day | 8.6 feet per day | 0.02-0.27 meters per day |
| Natural precipitation | 0.003 to 0.015 inches per month | 0.003 to 0.015 inches per month | 865-1168 mm per year |
| Evapotranspiration rate for well-watered conditions  (inches per month) | 0.003 to 2.5 | 0.003 to 2.5 |  |
| Evapotranspiration extinction depth  (feet) | 5 | 5 |  |
| Evapotranspiration extinction water content  (cubic foot of water per cubic foot of bulk volume) | 0.12 | 0.10 |  |

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| Variables assigned to the Streamflow-Routing (SFR2) Package1 | |
| ICALC (channel geometry) | 0 to 4 |
| Streambed hydraulic conductivity2  (feet per second) | 3 x10-5 to 6 x10-5 |
| Streambed thickness  (feet) | 2 to 3 |

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| Variables assigned to the Agricultural-Water Use (AG) Package | | | |
| **Options** | **Variable 1** | | **Variable 2** |
| Etemand | Accel = 100 | |  |
| Irrigation\_well | Numirrwells = 6 | | Maxcellswell = 1 |
| Supplemental\_well3 | Numsupwells = 6 | | Maxdiversions = 1 |
| Irrigation\_sfr3 | Numirrdiversions = 1 | | Maxcellsdiversion = 6 |
| Welllist | Unitwelllist = -2 | |  |
| Wellirrlist | Unitwellirrlist = -2 | |  |
| Sfrlist3 | Unitsfrlist = -2 | |  |
| Sfrirrlist3 | Unitsfrirrlist = -2 | |  |
| Timeseries\_well |  |  | |
| Timeseries\_wellet |  |  | |
| Timeseries\_sfr3 |  |  | |
| Timeseries\_sfret3 |  |  | |
| Maximum well capacity | -10.0 | | |
| Irrigation stress periods | 5-10, 17-22 | | |
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