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

|  |
| --- |
| 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 |
| 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 Problem 1.

[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.]

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Value | | |
| Variables assigned to the Upstream Weighting Flow (UPW) Package | | | |
| Horizontal hydraulic conductivity (feet per second) | 4.0 x10-4 to 2.0 x10-3 | | |
| Vertical hydraulic conductivity (feet per second) | 1.0 x10-5 | | |
| Specific storage (per foot) | 1.0 x10-6 | | |
| Specific yield  (cubic foot of water drained per cubic foot of aquifer) | 0.1 to 0.2 | | |
| Variables assigned to the Discretization (DIS) File | | | |
| Aquifer thickness  (feet) | 130 to 520 | | |
| Variables assigned to the Unsaturated-Zone Flow (UZF1) Package | | | |
| Saturated water content of unsaturated zone  (cubic foot of water per cubic foot of bulk volume) | 0.22 | | |
| Brooks-Corey exponent  (unitless) | 5.5 | | |
| Vertical hydraulic conductivity of the unsaturated zone  (feet per second) | 1 x10-5 | | |
| Applied infiltration rate  (feet per second) | 1 x10-10 to 8 x10-10 | | |
| Evapotranspiration rate for well-watered conditions  (feet per second) | 1 x10-10 to 8 x10-8 | | |
| Evapotranspiration extinction depth  (feet) | 5 | | |
| Evapotranspiration extinction water content  (cubic foot of water per cubic foot of bulk volume) | 0.100 to 0.205 | | |
| 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 | | |
| Variables assigned to the Agricultural-Water Use (AGWU) 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 | | |
|  |  | | |

1Unsaturated flow beneath streams was not simulated.

2Segment 9 streambed hydraulic conductivity was equal to zero for a lined canal.

3These input values only are included in Example Problem 1b.