



## MEMORANDUM

To: Mary Halstead  
From: Annette Hein  
Date: 10/5/2018  
Subject: Revisions to AUG3 interface and pre-processor

In revising the Laramie-Fox Hills and Arapaho aquifers in 2018, it was found that changes were needed to the AUG-3 program. This memo presents these changes.

The AUG-3 program consists of an Excel interface to the Modflow program and pre-processor, together with input aquifer parameters. In revising the Laramie-Fox Hills aquifer, it was found that several changes to the spreadsheet and pre-processing program were needed.

- 1) All changes apply only to the Designated Basins version of AUG3.
- 2) New streams were added to the inputs: Lost Creek to LF02 and Kiowa-Bijou to LF03. To adjust for this, the stream names were added to the hidden "Rivers" sheet of the Excel interface and the total stream counts adjusted.
- 3) The LF02 window was extended, and the nontributary line was moved into an area where the pre-processing program had no available window listed. The Fortran pre-processing program AUG4.for was edited to extend the window and allow runs in the newly not-nontributary area.
  - a) Line 290: under nrows, change 34 to 56 (extending LF02)
  - b) Line 1564: under subroutine assignmodel, change II.lt.44.and.JJ.gt.65 to II.lt.67.and.JJ.gt.4 (adjust bounds on LF02)
  - c) Line 1570: under subroutine assignmodel, change II.gt.66.and.JJ.gt.55 to II.gt.66.and.JJ.gt.52 (adjust bounds on LF03)
- 4) The preprocessor returned an error about "adequate model not found" in the overlapping area of the AR02 and AR04 windows. The AUG4.for file was edited to allow runs in this area.
  - a) Line 1583: under subroutine assignmodel, change II.lt.72.and.JJ.gt.37 to II.lt.74.and.JJ.gt.37 (adjust bounds on AR02)
  - b) Line 1592: under subroutine assignmodel, change II.gt.77 to II.gt.73 (adjust bounds on AR04)



- 5) Since changes had been made to the pre-processor, the changed version was saved with the name AUG4\_db instead of AUG4 for use in designated basins.
- 6) The file aug4.bat is called by the Excel interface to run the pre-processor. In the designated basins file, aug4.bat was edited so that all calls to AUG4 now refer to AUG4\_db instead.
- 7) No revision was needed to any part of the Excel interface in the changed preprocessor--the Excel macros were searched for any reference to AUG4.exe and none was found.

The assigned areas now used by the preprocessor within the Laramie-Fox Hills can be found by reading lines 1550-1574 of the Fortran preprocessor code aug4\_db.for and is also shown in the map on the next page.

