

Errata for
U.S. Geological Survey Open-File Report 00-184, MODFLOW-2000, The U.S.
Geological Survey modular ground-water model—User Guide to the
Observation, Sensitivity, and Parameter-Estimation Processes and three post-
processing programs,
by Mary C. Hill, Edward R. Banta, Arlen W. Harbaugh, and Evan R.
Anderman (2000)

p. 12: Add to footnote 1: “When the OBS and SEN Processes are active and the PES Process is either active or inactive, the number of time steps executed may be less than the number defined in the Discretization Input File. Only the number of time steps required to simulate the defined observations are executed.”

p. 26: Add the following paragraph: “Parameters representing the hydraulic head at constant-head boundaries depend on a datum. For example, the datum may be sea level or may be the lowest elevation of the system, which may be 1000 feet or more. If the values of these parameters are used to scale sensitivities, different results would be obtained for different datums. Yet, the dynamics being simulated would be identical. Clearly this makes no sense. In MODFLOW-2000, the scaling by the parameter value is omitted for parameters that represent the hydraulic-head at constant-head boundaries.”

p. 37: Second and third paragraphs. Add sentence to the end of each paragraph: “Information for the observation is omitted from the underscore files (Table 5).”

p. 39: In the definition of IREFSP, add STAT-FLAG and PLOT-SYMBOL to the list of variables from item 3 that are ignored.

p. 42: In the definition of nqcl, change “wells” to “cells”.

p. 73: In the definition of IUHEAD, for $IUHEAD \leq 0$. Add “Any negative integer or zero can be used.” after “sensitivities are stored in memory.”

p. 73: At the end of the explanation for ISENSU, add: “The arrays are one-percent scaled sensitivities unless the parameter type is ‘CHD’, in which case unscaled sensitivities are printed.”

p. 86: Table 8 (below) replaces Table 8 as originally published.

p. 92: In item 6 near the bottom of the page, change “BEALEP” to “BEALE2K”.

p. 93: Table 12 (below) replaces Table 12 as originally published.

p. 110: In the “True Value” column of Table A1, change the entry for parameter SS_1 from 2.00×10^{-3} to 1.00×10^{-3} , and change the entry for parameter SS_2 from 2.00×10^{-6} to 1.00×10^{-4} .

p. 203: In the second paragraph, insert “The MPI software is not distributed with MODFLOW-2000 and must be obtained and installed separately.” before the sentence that begins “Users will need to read the relevant MPI documentation....”

p. 203: In the third paragraph, delete “by activating one statement in each of two files,”.

p. 203: In step 2, Delete the first two sentences. The description of step 2 should start: “The program will search for file”

Table 8: Information contained in the _rs file of table 5, which is produced by MODFLOW-2000 and used by the post-processing program RESAN-2000

Item	Format	Variables	Description
1	7I5,I10,F25.0	NPE, ND, NH, NQT, MPR, IPR, NSETS, NRAN, VAR	Number of estimated parameters, number of observations, number of head observations, number of observations other than heads, number of prior information equations, number of prior with a full weight matrix, number of sets of random deviates number for random number generator, calculated error variance
2	6(A10,1X)	PARNAM	Parameter names
3	16F25.0	COV(NP,NP)	Parameter variance-covariance matrix
4	16F15.0	WT(NH)	Weights for the head observations
5	16F15.0	WQ(NQT,NQT)	Full weight matrix for observations other than heads
6	16F15.0	X(NP,ND)	Sensitivities for all parameters and observations
7	8F15.0	PRM(NP,I), WP(I), I=1,MPR	Coefficients and weights for the prior information equations.
8	16I5	NIPR(IPR)	Parameters with prior information with a full weight matrix.
9	8F15.0	WTPS(IPR,IPR)	Square-root of the full weight matrix for prior information

Table 12: Information contained in the _b1 file of table 5, which is produced when IBEFLG=1 in the Parameter-Estimation Process input. This file is read by MODFLOW-2000 when IBEFLG=2 and by BEALE-2000.

Item	Format	Variables	Description
1	5I10,1X,F13.0	NPE, ND, NDMH, MPR, IPR VAR	Number of estimated parameters and observations, number of observations with full weighting, number of prior-information equations, prior information with a full weight matrix, and the calculated error variance
2	6(A10,1X)	PARNAM(NPE)	Parameter names
3	6F13.0	BOPT(NPE)	Optimized parameter values
4	6(A12,1X)	OBSNAM(ND)	Observation names
5	6F13.0	H(ND)	Simulated equivalents of the observations calculated using the optimized parameter values
6	6F13.0	HOBS(ND)	Observed values.
7	8F15.0	WT(NH)	Weights for the head observations (NH = ND – NDMH)
8	8F15.0	WTQ(NDMH,NDMH)	Weight matrix for the observations other than heads
9	6F13.0	X(NPE,ND)	Sensitivities for all parameters and observations.
10	8F15.0	PRM(NPE,J), WP(J), J=1,MPR	Prior information equation coefficients and weights
11	8I10	NIPR(IPR)	List of parameters for which prior information has a full weight matrix.
12	8F13.0	BPRI(IPR)	Prior information values
13	8F13.0	WTP(IPR,IPR)	Full weight matrix
14	8I10	LN(NPE)	Flag indicating whether each parameter is log-transformed
"THE PARAMETER SETS FOLLOW"			
15	8F13.0	BBEA(NPE)	Sets of parameter values used to calculate Beale's measure. 2 × NPE sets of parameter values are listed.