

Johnson, Bill H (DNR)

From: Johnson, Bill H (DNR)
Sent: Monday, February 25, 2013 3:11 PM
To: [REDACTED]
Cc: 'Tina Pint'; 'Cory D. Anderson'; 'Peter J. Hinck'; 'John Borovsky'; Colvin, Steve E (DNR); Fay, Lisa (DNR); 'David Blaha'; 'Al Trippel'; 'Melinda Todorov'; 'Deb McGovern'
Subject: RE: NorthMet Mine Site Model (Version 5.0) - ERM QA/QC

All, please note the QA/QC was performed on Version 5 of the Mine and Plant Site GoldSim models. The original title indicated Version 4.1 for the Mine Site Model only.

I apologize for any confusion. All points offered below are applicable. This error only occurs in the parent message below.

Thanks. Bill J.

Bill Johnson, Mining Section Lead
Environmental Policy & Review Unit
MDNR Division of Ecological & Water Resources

From: Johnson, Bill H (DNR)
Sent: Monday, February 25, 2013 3:05 PM
To: [REDACTED]
Cc: 'Tina Pint'; 'Cory D. Anderson'; 'Peter J. Hinck'; 'John Borovsky'; Colvin, Steve E (DNR); Fay, Lisa (DNR); 'David Blaha'; 'Al Trippel'; 'Melinda Todorov'; 'Deb McGovern'
Subject: NorthMet Mine Site Model (Version 4.1) - ERM QA/QC

For Your Information.

Jim, attached please find the final set of QA/QC documentation prepared by ERM on the Mine and Plant Sites' GoldSim models. Specifically:

Mine Site. The Task II Mine Site (Round 3) and Task I Mine Site (Round 4) QA/QC procedure was conducted by ERM on the Mine Site GoldSim Model Version. The technical memorandum describes a screening-level audit of the NorthMet Project Mine Site GoldSim water-quality model version 5.0 (simulation provided on February 1, 2013).

The document notes:

“Overall, the results of this audit provide good evidence that the v5 Mine Site GoldSim model has appropriate and mathematically correct algorithms for (1) estimating flows and chemical concentrations of impacted water leaving the Mine Site facilities, (2) simulating chemical migration in the surficial groundwater flowpaths, and (3) estimating Partridge River chemical concentrations caused by mixing of background and human-affected water sources to the river.”

Plant Site. The Task II Plant Site (Round 3) and Task I Plant Site (Round 4) QA/QC procedure was conducted by ERM on the Plant Site GoldSim Model Version. The technical memorandum describes a screening-level audit of the NorthMet Project Plant Site GoldSim water-quality model version 5 (simulation provided on February 5, 2013).

The document notes:

“Overall, the results of this audit provide good evidence that the v5 Plant Site GoldSim model has appropriate and mathematically correct algorithms for (1) estimating flows and chemical concentrations of impacted water leaving the

FTB, (2) simulating chemical migration in the surficial groundwater flowpaths, and (3) estimating Embarrass River chemical concentrations caused by mixing of background and human-affected water sources to the river.”

Overall Conclusion. Finally, for both models the document notes:

The Mine Site and Plant Site GoldSim models are very complex and contain thousands of lines of custom programming. It was not feasible to validate and check every line of code contain in the models. The approach taken by the ERM Team in the QA evaluations was to use a combination of independent calculations and professional judgment to identify potential problems with the codes and work with Barr to correct these issues.

There is good evidence that the v5 GoldSim models are functionally accurate and have addressed all issues identified by the ERM Team. The Team concludes that the v5 GoldSim models have acceptable reliability and can be used as a basis for assessing environmental impacts in the SDEIS.”

This completes the performance review of the GoldSim model and associated information. The Co-leads will next initiate the Cooperating Agencies’ review and comment period. Thank you for any assistance your team provided during the procedure to facilitate ERM’s review. Please contact me with any questions or concerns. Bill J.

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