

## Johnson, Bill H (DNR)

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**From:** Al Trippel <[REDACTED]>  
**Sent:** Tuesday, July 31, 2012 9:19 AM  
**To:** David Blaha  
**Cc:** Paul Haby; Houston Kempton; Carlson, Erik (DNR); 'Fred Marinelli'  
**Subject:** RE: (NorthMet ) Mine Site CVs and CPs

Dave -- FYI since you weren't in the email chain. Please coordinate with Fred and reply back to Erik

Erik -- we are not sure there is value in completely stopping our QAQC effort and the team will revert to you shortly with suggestions

Thanks, Al

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**From:** Carlson, Erik (DNR) [mailto:[REDACTED]]  
**Sent:** Monday, July 30, 2012 7:18 AM  
**To:** 'Fred Marinelli'  
**Cc:** Al Trippel; Paul Haby; Houston Kempton  
**Subject:** RE: Mine Site CVs and CPs

Fred,  
PolyMet has agreed to "debug" their model. They are likely to pull in someone other than Barr to do that. Is what Corey and Peter are doing, which I understand to be providing spreadsheets reflecting control volumes, still worth doing now considering the model is likely to change after the debugging exercise? Should we only provide control volume locations now and suspend the spreadsheet generation activities until the model is corrected?  
-Erik

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**From:** Peter J. Hinck [mailto:[REDACTED]]  
**Sent:** Sunday, July 29, 2012 2:50 PM  
**To:** 'Fred Marinelli'  
**Cc:** Tina Pint; Cory D. Anderson; Carlson, Erik (DNR); Al Trippel; Paul Haby; Houston Kempton  
**Subject:** RE: Mine Site CVs and CPs

Thanks Fred. I'm going to get started on these today and tomorrow, using Cory's Plant Site outputs (from his Wednesday submittal) as a guide for formatting. I hope to have something complete that we can discuss either late Monday or Tuesday morning.

Looking at what Cory submitted last week, am I correct to assume that you'd like additional CVs for the Partridge River nodes and for at least one of the Mine Site groundwater flowpaths? If so I can also get working on those when I get these first two completed.

Peter

Peter J. Hinck, PE

Water Resources Engineer

Minneapolis office: [REDACTED]

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[REDACTED]

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**From:** Fred Marinelli [mailto:fred.marinelli@barr.com]  
**Sent:** Friday, July 27, 2012 7:46 PM  
**To:** Peter J. Hinck  
**Cc:** Tina Pint; Cory D. Anderson; Carlson, Erik (DNR); Al Trippel; Paul Haby; Houston Kempton; Fred Marinelli  
**Subject:** Mine Site CVs and CPs

Peter,

Please find attachment showing my first crack at defining three CVs and associated CPs for the Mine Site. These are intended to get the ball rolling. Other CVs and CPs will be specified in the future. Since you know the model better than anyone, I trust your judgement to modify the CVs shown, to add CPs that are useful, and possibly eliminate CPs that are not useful. You can email or call me on my cell any time this weekend (781.217.1000).

Based on review of the Plant Site spreadsheets, please consider the following:

One Excel file for each CV.

All flows in one table, with inflows grouped together and outflows grouped together.

All concentrations in one table with each concentration cell row/column matching the flow cell/column in the flow table. For example cell G120 in the flow table connects to cell G120 in the concentration table. Both represent the same CP and time step. Then if we want to compute mass flux, we create a new table that multiplies flow cell G120 by concentration cell G120 and (with unit conversions) puts the result in cell G120 of the mass flux table. In the mass flux table, we can write one equation and then copy it over the entire table. (Clear as mud?)

Provide concentrations in mg/L to be consistent with the results and culpability spreadsheets previously provided.

Use wrapping on column labels to reduce column width.

Develop a unique ID for each CP and Mass Point (MP) that can be shown on the flow charts and in the column headings on the spreadsheet tables. An example might be 3-12 to imply control volume 3 and associated flow line 12. I'm open to your suggestions on this. Also show the GoldSim variable name and 3 or 4 word description in the column headings (as Cory has done for the Plant Site).

Hope this helps.

Fred

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