Reply to Reviewer #1

- On P2349, Line 2: Delete "the" in front of "groundwater"

Reply: The word "the" has been removed.

- The figures are fine, but it may look better if the lines can be thicker. Now they are a little thin.

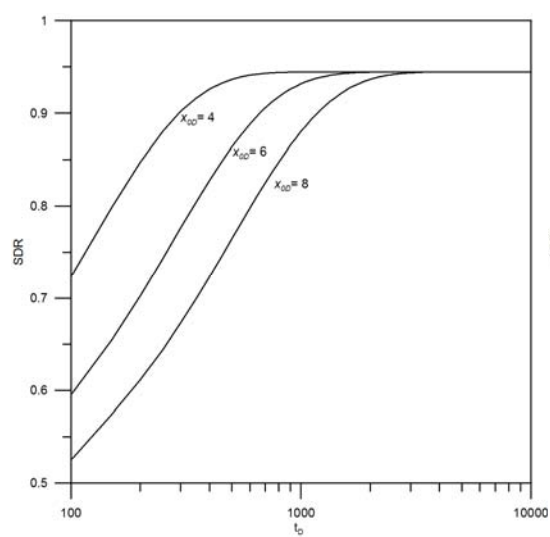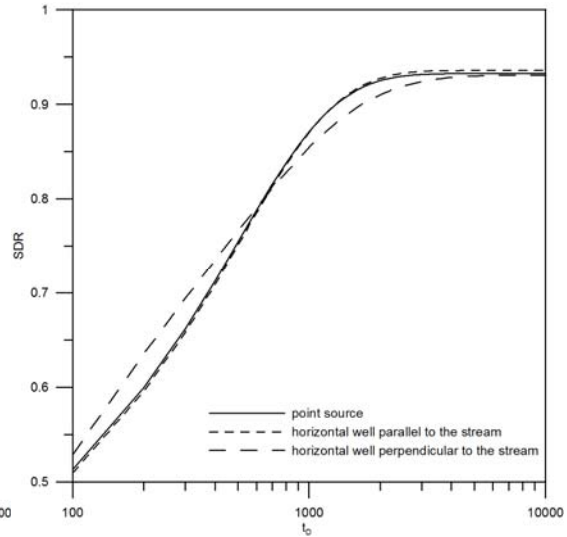Reply: Thanks for the suggestion. The lines in all figures are thicker now. The new figures, Figures 3-9, are shown below:
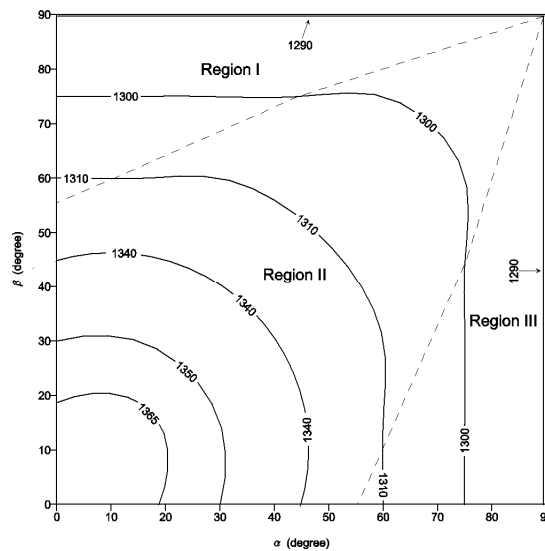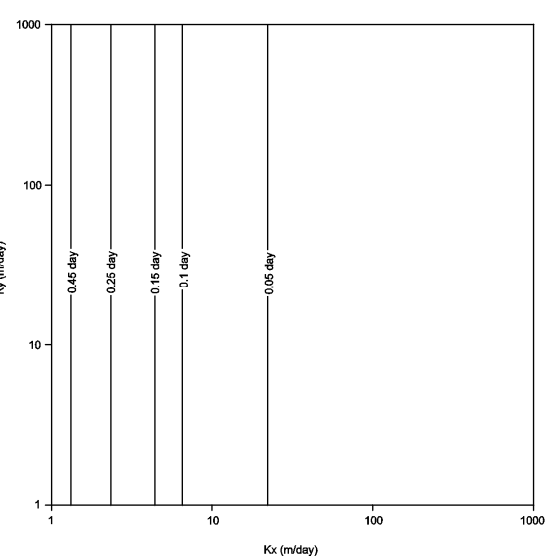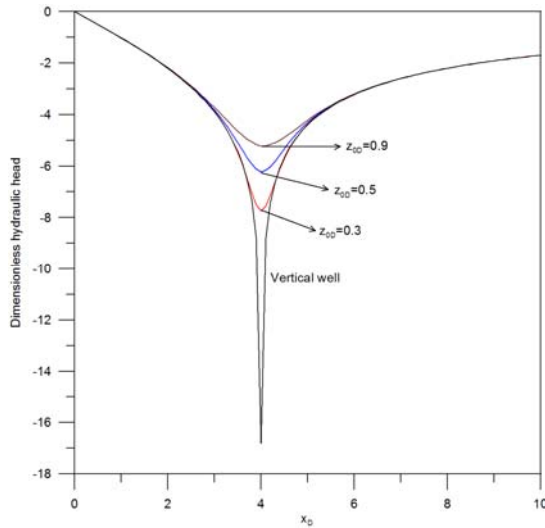
Figure 3
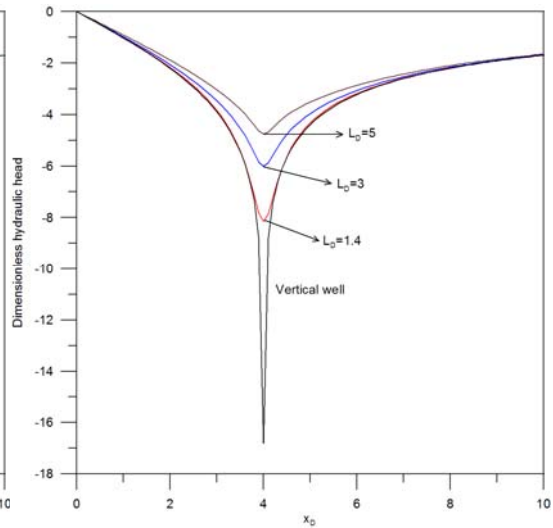
Figure 4

Figure 5

Figure 6
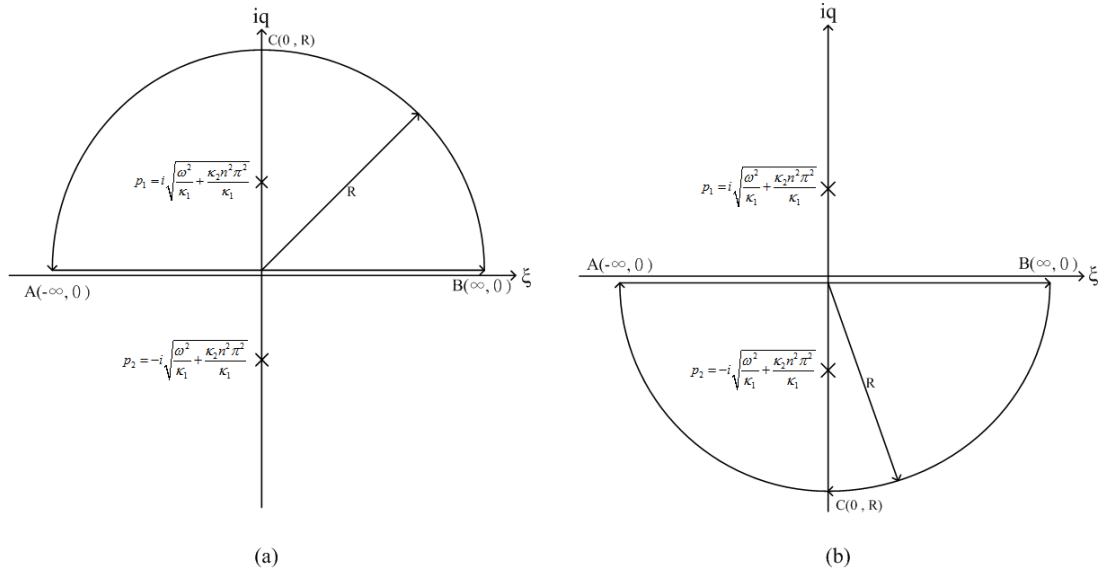
Figure 7

Figure 8

(a)

(b)

Figure 9

- In section 3, convert the dimensionless parameters into dimensional ones to give readers a sense of reality of the problem. Meanwhile, explain what kind of input parameters such as hydraulic conductivity, storativity, horizontal well length, etc. and why those values are chosen.

Reply: Thanks for the suggestion. In section 3, we have added dimensional parameters and their values after the related dimensionless ones in the revised manuscript.

We consider that the confined aquifer consists of sand and gravel and thus the hydraulic conductivity of this aquifer ranges from 1 to 1000 m/day (Freeze and Cherry, 1979). The values of K_x, K_y and K_z are considered to be 150 m/day. The storage coefficient, S, of the confined aquifer is in the range of $10^{-5} \sim 10^{-3}$ and considered to be 10^{-4}.

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The well length L is considered to range from 10 m to 100 m. For investigating its effect on the SDR, both maximum and minimum values are chosen in the study.

For acquiring clean stream water, the shortest distance between the stream and well is considered to be larger than 30 m (Linsley and Franzini, 1979). The distance from the stream to the middle of the well, x_0, depends on the location and length of the horizontal well. For example, x_0 is at least 80 m if a horizontal well with a length of 100 m is perpendicular to the stream while x_0 is at least 30 m if the horizontal well is parallel to the stream.

References

Freeze, R. A. and J. A. Cherry, 1979, *Groundwater*, Prentice-Hall, New Jersey.

Linsley, R. K. and J. B. Franzini, 1979, *Water Resources Engineering*, McGraw-Hill Book Company, New York.