
REDACTED

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Sent: Friday, July 14, 2023 2:17 PM
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Subject: FW: [External]HC&C Operational Figures

Hi Wes!

When we met on December 12, 2022 about DEQ's comments on the 2021 HC&C System Annual Report and associated HC&C Operational Figures, we discussed removing figures that weren't used to assess the HC&C System performance and DEQ was going to provide a list of figures that are most important to retain. We are currently preparing the HC&C operational figure set due to DEQ on August 31, 2023 and we are needing DEQ's quick concurrence to include these changes in the January through June 2023 figure set.

Below is a list of the HC&C Operational Figures sent to DEQ for the July through December 2022 submittal. The figure set consists of 269 figures with recommended changes shown in **orange**.

Figures 3.1a to 3.2d – Potentiometric Surface Contours (2 per month per WBZ – 48 Figures). **NW Natural recommends dropping these 48 figures. Figure sets 3.3a through 3.4d are essentially the same as this figure set with the river level subtracted and color coded to show reversals with the river.**

Figures 3.3a to 3.4d – Contours of water elevation differences between wells and the river (2 per month per WBZ – 48 Figures). **NW Natural recommends dropping the fill and DLA sets (3.3a, 3.3d, 3.4a, and 3.4d).**

Figures 4.1 to 4.85 – Plots of water elevation differences between wells and the river (1 per well with transducer – 85 Figures). **NW Natural recommends dropping Fill WBZ figure sets (4.1-4.17); MW-16-45 (4.29) because the well screen is clogged with DNAPL and is redundant with MW-16-65; MW-5-32 because the well screen is installed across the Fill and Upper Alluvium (4.43); offshore piezometers (4.22, 4.23, 4.24, 4.26, 4.31, 4.39, 4.48, 4.56, 4.57, 4.58, 4.59, 4.60, 4.63, 4.65, 4.69, 4.73, 4.74, 4.83); and DLA WBZ figure sets (4.77 -4.85).**

Figures 5.1 to 5.31 – Plots of water elevation differences between select well pairs (31 well pair Figures). NW Natural recommends removing well pairs showing vertical gradients between the Fill and Upper Alluvium WBZs (5.1, 5.2, 5.3, and 5.4); between the Upper and Lower Alluvium WBZs in Segment 2 where maintaining upward vertical gradients are not required (5.5, 5.6, 5.7, 5.8, 5.9, 5.10), and offshore piezometers (5.11, 5.15, 5.19, 5.25, 5.27, 5.28, 5.29).

Figures 6.1 to 6.2 – Contours of water elevation differences between upper and lower alluvium wells (2 per month - 12 Figures). No recommended changes.

Figures 7.1 to 7.16 – Plots of water elevation differences between select well pairs and the river (16 Figures). This series was developed to demonstrate capture of the deep lower alluvium, evaluating water levels in the deep lower alluvium, to lower alluvium and upper alluvium extraction wells. Recommend dropping entire figure set.

Figure 8.1 to 8.29 – Plots of pumping rates for the individual extraction wells (1 per extraction well plus totals – 29 Figures). No recommended changes.

I'd be happy to get on a WebEx call to run through the figures if you think that would be helpful.

Have a great weekend!

John J. Renda, RG

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