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## PREDICT-K “TIP OF THE MONTH”

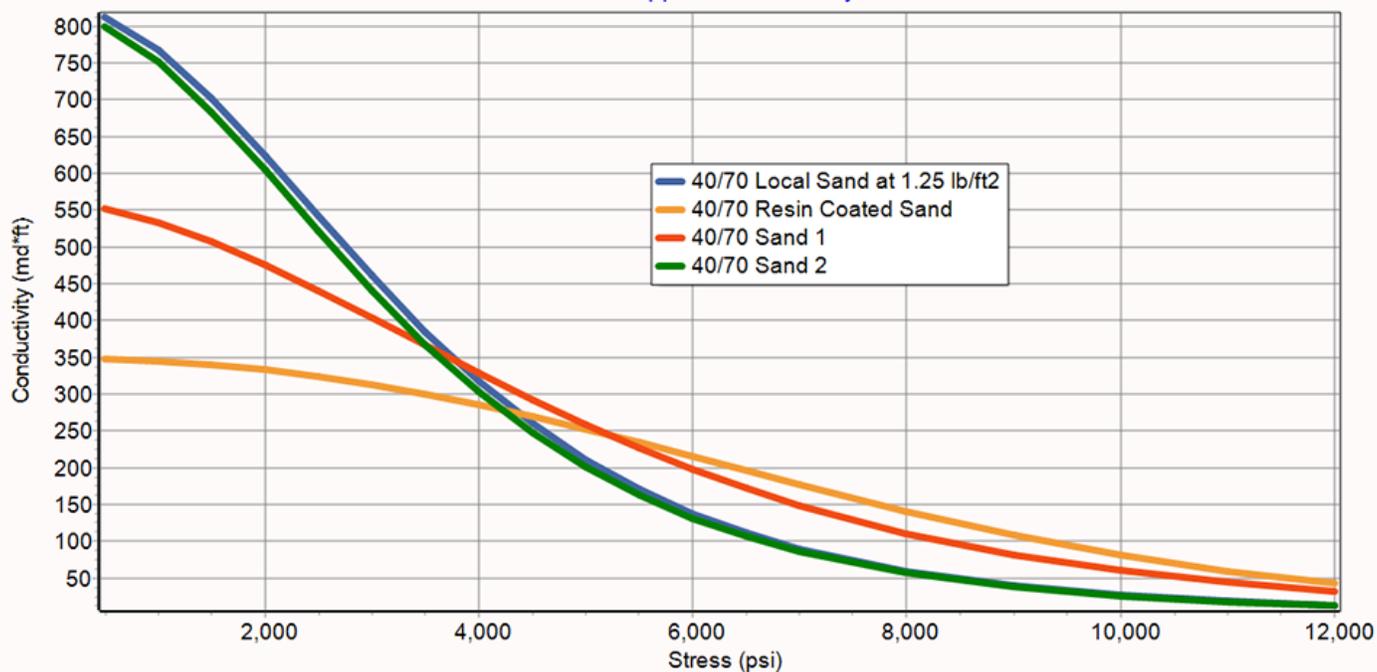
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### Baseline Conductivity Mode

Everything that Predict-K does starts with a calculation of proppant pack permeability and width under ideal conditions. These ideal conditions match what was created for the hundreds of conductivity tests that are in Proppant Manager and the thousands of tests that StimLab has performed in the past thirty years. In Predict-K, these foundational calculations can be viewed in the Baseline Analysis Mode. Baseline Analysis Mode determines the permeability and width of a proppant pack as a function of proppant type and size, proppant concentration, embedment, stress, temperature, number of stress cycles, and time. How the proppant size based on the sieve distribution affects the model was the topic of the tip from July, 2017. Beyond an understanding of the effect of sieve distribution, Baseline Analysis Mode can be used to provide an improved understanding of how multiple proppants compare across a wide stress range or at different concentrations.

The plot below shows the predicted conductivity for two 40/70 sands, a 40/70 resin coated sand, and locally sourced 40/70 sand from our recent testing of regional sands. The curve show conductivity at 1 lb/ft<sup>2</sup> except for the regional sand curve which uses 1.25 lb/ft<sup>2</sup> assuming that the lower cost of this product would allow for more proppant to be delivered downhole at the same cost. Depending on the closure stress range for the well in question, initial observations about the impact of proppant choice on well performance can be established. Below about 3000 psi closure stress, Sand 2 or the higher concentration of local sand would result in improved performance. From 3000 to close to 5000 psi, proppant selection will have minimal impact. Above 5000 psi, the higher strength of Sand 1 or resin coated sand starts to make an impact. With more well data, these results can be confirmed by an in depth analysis performed in Production Analysis Mode.

Baseline Proppant Conductivity



More extensive comparisons can be performed in Baseline Conductivity Mode by altering sieve distribution or other proppant properties or by using products from a personal proppant database as was discussed in the April tip. The advantage of Baseline Conductivity Mode is that comparisons can be made quickly with basic well information.

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6. [Running the Proppant Manager Correlations](#)
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8. [Baseline Conductivity](#) [Demonstration Base Project for Videos 8 - 10](#)
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