

Reservoir Consulting



GET RESULTS

- Production Data and Well Test Analysis
- Reservoir Stimulation Studies
- Formation Damage Evaluation
- Integrated Development Studies

The independent application of hydraulic fracture modeling and well testing to understand fracture performance has been common practice. Today, Pinnacle Technologies integrates these two very valuable tools to better understand fracture performance.

Well testing and fracture modeling each require the acquisition of specific data sets. When sufficient data are available, the integration of well test data and fracture models can lead to significant economic benefits through improved treatment designs.

The ability to successfully optimize fracture treatments relies on the accuracy of our fracture geometry predictions and our knowledge of basic reservoir properties. In many cases, basic reservoir parameters are unknown and fracture treatment designs are based on gross “estimates” of reservoir permeability and pressure. In addition, detailed fracture modeling of actual treatment data is often performed to estimate fracture geometry and evaluate the relative success (or failure) of treatments without verifying data to support that the model at least approximates the actual fracture geometry. Although fracture modeling is an essential component in our quest to understand fracture performance, one cannot validate these models without baseline reservoir data. We recognize that it is usually impractical to routinely obtain pre- and post-fracture pressure buildup data (especially in tight formations), but it is often essential to gather some well test data to provide the basis to make key economic decisions concerning fracture designs.

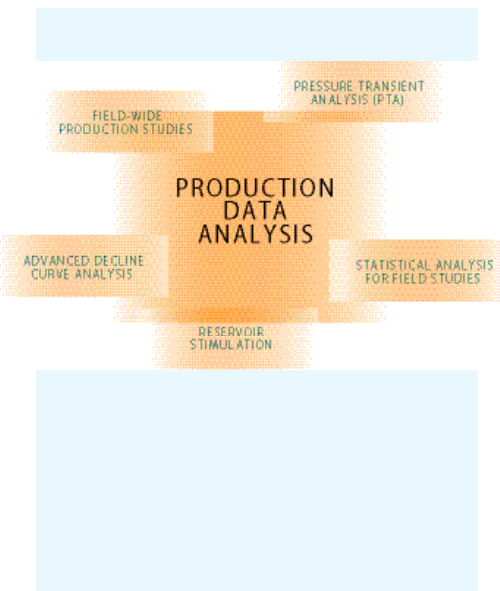
The process of designing and optimizing hydraulic fractures starts with an assessment of the reservoir. Pinnacle consultants review existing reservoir and geological data with our clients. If necessary, we then recommend additional testing such as pressure transient tests to better quantify reservoir properties such as permeability and pressure.

Pinnacle has state of the art well testing software and experienced consultants to both design and analyze well tests. We routinely recommend and perform post-frac well tests and detailed well production analyses to evaluate fracture performance. This process provides the necessary feedback and “quality control” needed to improve and optimize future fracture designs and field development strategies for our clients.

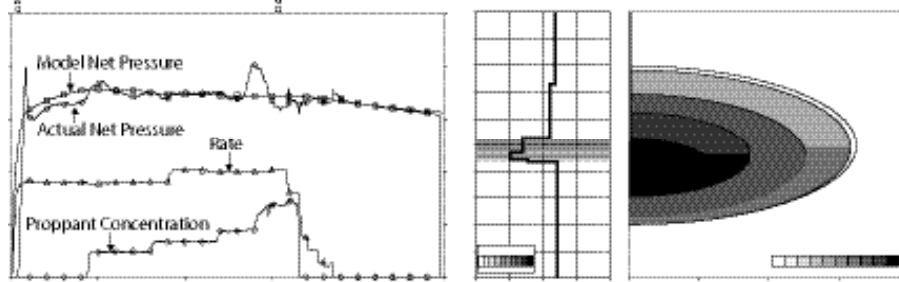
Our experience and innovative ideas in fracture and reservoir consulting of tight reservoirs make us the ideal choice to provide expert support for:

- Infill drilling studies
- New field development strategies
- Expert witness testimony

Pinnacle Technologies’ proven combination of fracture consulting, diagnostic measurements and reservoir consulting provides our clients with tangible results in maximizing economic return. Please contact us to learn how Pinnacle’s reservoir consulting can help you.



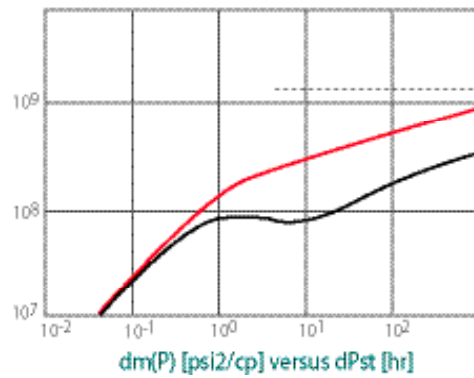
Net Pressure History Match Moxa Arch: MA-1



PROBLEM

What proppant type and pad size results in maximum economic benefits?

Well MA-1 $k=0.024$ mD $L_p=670$ ft $FCD=16$



SOLUTION

Integrate net pressure history matching, production data analysis and well testing to better understand fracture performance.

Pinnacle

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