HEXION

Technical Sales Bulletin

Resin Coated Proppants

Determines propped fracture height by utilizing advanced resin coated proppants

PropTrac℠
Fracture Diagnostics Service

The Oilfield Technology Group (OTG) of Hexion is committed to developing technologies that enhance the industry's ability to perform and analyze hydraulic fracturing treatments that provide improved results.

OTG has introduced a revolutionary service that combines our core strengths of resin coated proppant technology with our substantial hydraulic fracturing experience. Utilizing this combination, a unique environmentally acceptable method for the determination of propped fracture height has been developed.

The PropTrac℠ Fracture Diagnostics Service combines OTG's resin coated proppants with a built-in tagging material and post frac logging service and analysis.

This solution is a simpler, easier and safer way for operators to optimize fracture treatments and improve treatment results.

The PropTrac Fracture Diagnostics Service provides the following benefits:

- **Does not use radioactive tracer materials as in conventional tracer jobs**
- **No special environmental or safety precautions, permits or regulatory compliance is necessary**
- **Logs can be run as often as desired during the life of the well**
- **Proppants with a built-in tagging material in the resin coating provide more accurate results**

Technical Advantages and Benefits

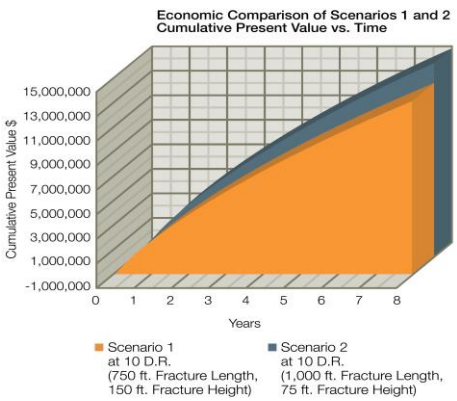
The actual resin coated proppant is delivered already tagged as compared to conventional tracer jobs where small additional radioactive tracer materials are continuously added to the proppant slurry. Since the proppant has the tag built-in to the coating, there is no guesswork as to where the proppant is actually located in the fracture.

The PropTrac Fracture Diagnostics Service logs can be run as often as desired during the life of the well. You don't have to worry about radioactive tracer half-life decay. The service may also allow you to observe how proppant distribution in the fracture may be affected by changes in flowing pressure, flow rates or fluid entry.

You may also obtain information to assist in analyzing refrac options during the life of the well.

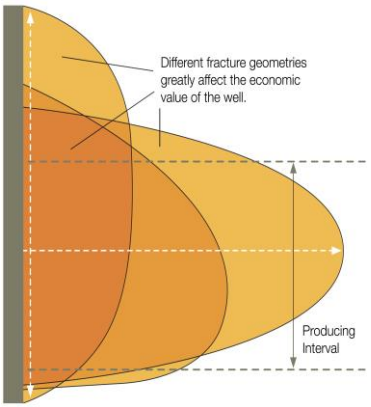
SPE Paper Reference

For more information, read SPE Paper 109969: *A New Environmentally Acceptable Technique for Determination of Propped Fracture Height and Width*



Environmentally Acceptable Alternative

The PropTrac Fracture Diagnostics Service does not use radioactive tracer materials as in conventional tracer jobs. Utilizing a patented coating technology, it offers an environmentally acceptable alternative for the personnel performing the fracture treatment and flowback. Unlike conventional radioactive tracer logging services, no special environmental or safety precautions, permits or regulatory compliance is necessary.



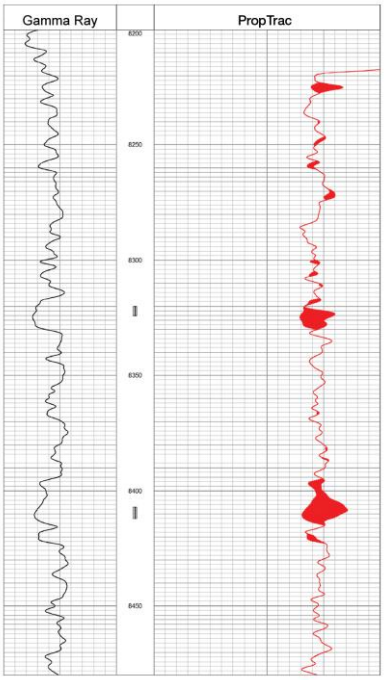
Case History: Rocky Mountains

A Rocky Mountain operator was looking for a way to confirm the propped fracture height in their wells to help them improve their fracturing strategy. They were sensitive to the environmental concerns held by the public in the area along with the regulatory restrictions and political issues that come with using radioactive tracers. The use of radioactive materials was prohibited, so the conventional methods were not an option.

Once the operator discovered PropTrac Fracture Diagnostics as an environmentally acceptable alternative, they were immediately interested in utilizing the service. Upon viewing the PropTrac Fracture Diagnostics well log results, they gained additional valuable information to help them reevaluate and optimize their perforating and fracturing designs.

Upper stage fracture treatment utilizing the service:

- Waterfrac at 40 bpm
- 88,020 lbs 20/40 PR6000™ PT proppant (includes built-in tagging material)
- Proppant conc. – 4 lb/gal
- Log performed 28 days after treatment

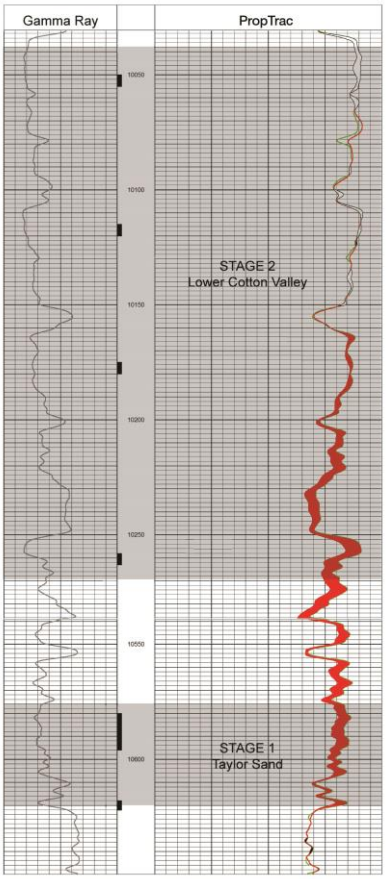


Case History: East Texas

An East Texas well was fractured with the PropTrac Fracture Diagnostics Service. As shown in the log to the right, no proppant was placed below the lower producing Taylor Sand interval which indicates an adequate lower fracture boundary. However, proppant was placed above the Taylor Sand interval which indicates communication between the lower stage and the next stage (Lower Cotton Valley). This shows how the service can help operators optimize fracture treatments and improve treatment results without the inherent issues associated with conventional radioactive tracer jobs.

Stage #1 fracture treatment utilizing PropTrac Fracture Diagnostics Service:

- Waterfrac at 50 BPM
- 150,000 lbs 40/70 frac sand
- 30,000 lbs 40/70 Black Plus™ PT proppant tail-in (includes built-in tagging material)
- Proppant conc. – 1.75 lb/gal
- Log performed 24 days after treatment



HEXION™

Hexion Inc.
Oilfield Technology Group
15366 Park Row
Houston, TX 77084 USA
+1 281 646 2800
hexion.com/oilfield

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