Predict-K "Tip of the Month"

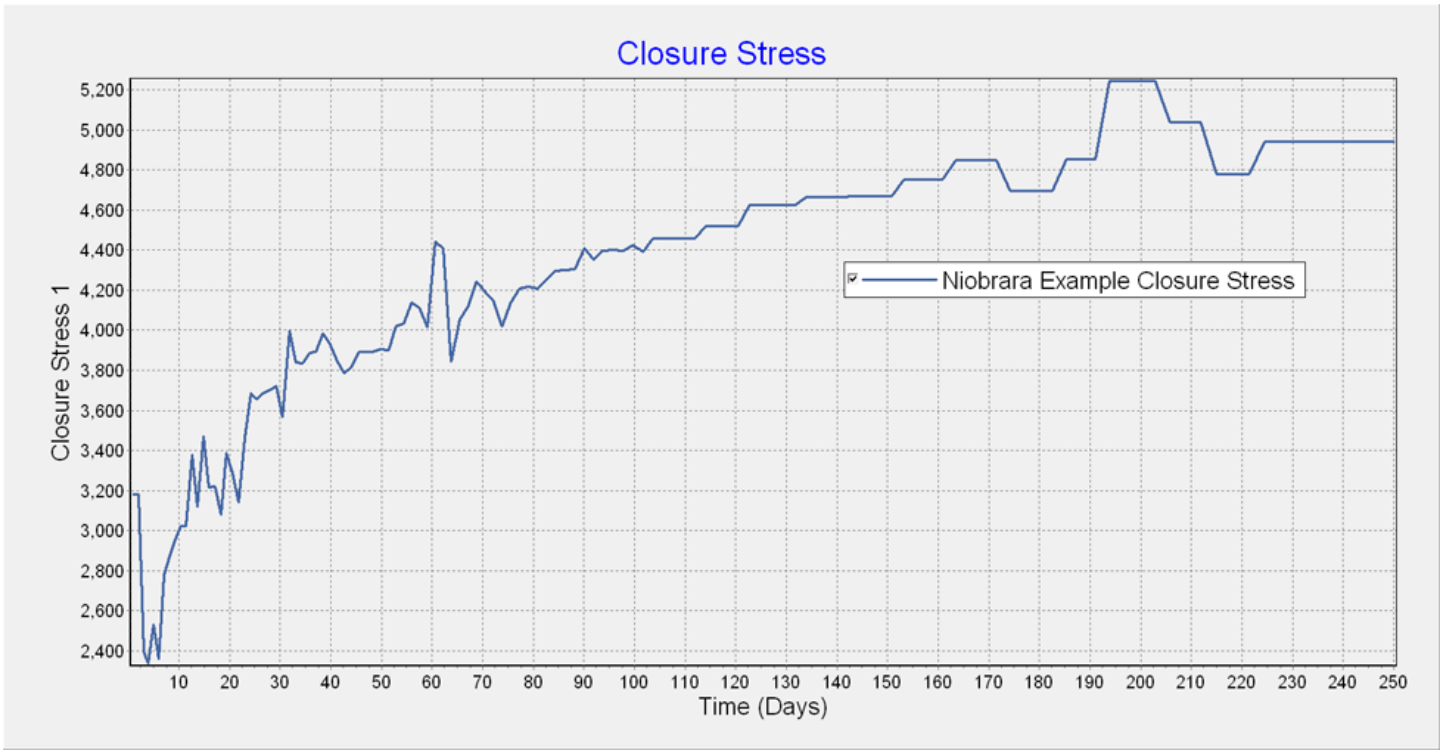
Closure Stress vs Time Graphic

Predict-K is a product of the Stim-Lab Inc. Proppant Consortium which gives the software a number of advantages. Predict-K's model and database is consistently updated based on the testing performed by the Proppant Consortium, and this testing is directed by Stim-Lab personnel in close cooperation with operators and service companies who complete and produce wells on a day-to-day basis. This cooperation ensures that the testing driving Predict-K's development is specifically targeted to address the current industry needs. Additionally, it means that a new version of Predict-K is released about every 6 months in conjunction with the Proppant Consortium meetings. Typically, the updates are posted to the Consortium website by early March and August.

The Predict-K version that was introduced at the Consortium meeting this past February included a new feature requested by the Proppant Consortium membership in addition to the other model and database changes that were made. Since the introduction of the Predict-K production simulator, closure stress on the proppant pack has been calculated by the model to allow for the various calculations that Predict-K must perform. In production analysis mode, the closure stress at each time step has been available in the width report, but many members wanted a more straightforward way to find the stress value.

		Fracture Widths and Corrections (in)						
Time (days)	Stress (psi)	Original Width	Stress Loss	Embedment Loss	External Width	Spalling Loss	Filtercake Loss	Internal Width
1.00	3180.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0146	**0.0917**
2.00	3180.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0146	**0.0917**
3.01	2393.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0146	**0.0917**
4.03	2338.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0146	**0.0918**
5.06	2529.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0145	**0.0919**
6.10	2362.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0145	**0.0919**
7.15	2778.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0144	**0.0919**
8.21	2883.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0144	**0.0920**
9.29	2958.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0144	**0.0920**
10.37	3023.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0144	**0.0920**
11.46	3023.2	**0.1130**	0.0055	0.0011	**0.1064**	4.000E-6	0.0144	**0.0920**
12.57	3380.2	**0.1130**	0.0058	0.0012	**0.1060**	4.000E-6	0.0144	**0.0915**
13.68	3120.2	**0.1130**	0.0058	0.0012	**0.1060**	4.000E-6	0.0144	**0.0915**
14.81	3472.2	**0.1130**	0.0060	0.0012	**0.1058**	5.000E-6	0.0144	**0.0913**
15.95	3214.2	**0.1130**	0.0060	0.0012	**0.1058**	5.000E-6	0.0144	**0.0913**
17.10	3220.2	**0.1130**	0.0060	0.0012	**0.1058**	5.000E-6	0.0144	**0.0913**
18.26	3080.2	**0.1130**	0.0060	0.0012	**0.1058**	5.000E-6	0.0144	**0.0913**
19.43	3389.2	**0.1130**	0.0060	0.0012	**0.1058**	5.000E-6	0.0144	**0.0913**
20.61	3288.2	**0.1130**	0.0060	0.0012	**0.1058**	5.000E-6	0.0144	**0.0913**
21.81	3143.2	**0.1130**	0.0060	0.0012	**0.1058**	5.000E-6	0.0144	**0.0913**
23.02	3461.2	**0.1130**	0.0060	0.0012	**0.1058**	5.000E-6	0.0144	**0.0913**
24.24	3684.2	**0.1130**	0.0063	0.0013	**0.1053**	6.000E-6	0.0144	**0.0909**
25.47	3654.2	**0.1130**	0.0063	0.0013	**0.1053**	6.000E-6	0.0144	**0.0909**
26.72	3687.2	**0.1130**	0.0063	0.0013	**0.1053**	6.000E-6	0.0144	**0.0909**
27.97	3705.2	**0.1130**	0.0064	0.0013	**0.1052**	6.000E-6	0.0144	**0.0908**
29.24	3720.2	**0.1130**	0.0064	0.0013	**0.1052**	6.000E-6	0.0144	**0.0908**
30.53	3566.2	**0.1130**	0.0064	0.0013	**0.1052**	6.000E-6	0.0144	**0.0908**
31.82	3998.2	**0.1130**	0.0069	0.0015	**0.1046**	7.000E-6	0.0144	**0.0902**
33.13	3839.2	**0.1130**	0.0069	0.0015	**0.1046**	7.000E-6	0.0144	**0.0902**
34.45	3835.2	**0.1130**	0.0069	0.0015	**0.1046**	7.000E-6	0.0144	**0.0902**
35.78	3888.2	**0.1130**	0.0069	0.0015	**0.1046**	7.000E-6	0.0144	**0.0902**
37.13	3893.2	**0.1130**	0.0069	0.0015	**0.1046**	7.000E-6	0.0144	**0.0902**
38.49	3986.2	**0.1130**	0.0069	0.0015	**0.1046**	7.000E-6	0.0144	**0.0902**
39.87	3933.2	**0.1130**	0.0069	0.0015	**0.1046**	7.000E-6	0.0144	**0.0902**
41.26	3849.2	**0.1130**	0.0069	0.0015	**0.1046**	7.000E-6	0.0144	**0.0902**

In response to this request, a new graph was made available in production analysis mode which plots closure stress on the proppant pack versus producing time. Predict-K users can now quickly determine the stress that a proppant pack has been or will be exposed to in order to help determine the type of proppant that will give the best performance under those conditions or explain the difference in production performance that was predicted. Once the production engine is run, the plot is also copied to other analysis modes for quick reference when making comparison of baseline and dynamic conductivity.



At the Consortium meeting that will be held this August 4th and 5th in San Antonio, a new version of Predict-K will also be released with exciting new changes. Be sure to update to the newest version when it becomes available after each meeting to ensure that you can use all of the available features and take advantage of the proppant database and model updates as well.

To view our series of Predict-K training videos please go to: http://www.corelab.com/stimlab/training-videos

To view the Predict-K Tip of the Month archive please go to: http://www.corelab.com/stimlab/predictk-tip-of-the-month

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