

Bakken Proof Positive Test Results

ND Fracking Tests – Successfully Replicated EPA
Texas Results – Refer to Exhibits 1 & 2 Halliburton
Sign off.

FANN 50 Test Results – Also Refer to Exhibit 2 below for Halliburton Sign Off

From: Monte Besler [mailto:Monte.Besler@FRACN8R.com]
To: Michael Kelly
Subject: FANN 50 Test Results

The FANN Model 50 rotational viscometer tests have been completed. The test was run using distilled water to minimize any variables due to water source. The fluid system chosen is a borate cross-linked guar gel with an equivalent 25 lb/MGal guar concentration with typical ingredients used for hydraulic fracturing the Bakken/Three Forks formations in North Dakota. The tests were run under pressure at 220F. The viscometer was outfitted with a B5X bob for the tests. Results indicate no apparent difference between the Anolite treated sample and the Anolite free control sample. The relatively short-term fluid stability of around 15 minutes, for both fluid tests, is a characteristic of using distilled water as the base fluid.

In addition to the FANN Model 50 rotational viscometer tests, the linear guar gel base fluid samples, prior to crosslinking and pH elevation, were evaluated at about 70F for viscosity development and stability, using a FANN Model 35 viscometer. Again, there seems to be no apparent difference between the Anolite treated sample and the Anolite free control sample.

The concentration of Anolite chosen for the testing was 1.0 gal/Mgal. It was my understanding from our conversations that this was at or above the target concentration for field use. If no adverse gel effects occurred at this concentration, then lower concentrations should also be satisfactory. I would recommend, however, that if any application at significantly higher concentrations is desired, the fluid should be retested to better simulate that condition before recommending the elevated concentration.

Please call if any questions.

Monte R. Besler

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Bakken Proof Positive Test Results

ND Flowback - Kill Tests - 28 Day Results to
successfully recycle flowback frac water to reusable
Levels – Refer to Exhibit 3 for Kill Test Specifics

- Reduce Water Waste by reusing for Fracking
- Reduce Tanker Road Traffic – save on transport costs.
- Reduce Environmental Hazards from inadvertent Flowback spills.

Open Top Tank – Fracking Flowback Process

CERTIFICATE OF ANALYSIS

NUMBER 12072012

28 Day Final Report

COMPANY: N. DAKOTA (UNDISCLOSED)

ATTN: KENT KIRKHAMMER/ MIKE KELLY

SAMPLE: PRODUCTION WATER SAMPLE (SENT NOV. 1, 2012)

DATE: 12/07/2012

INTRODUCTION: PRODUCTION WATER SAMPLES, MULTIPLE, SENT FROM UNDISCLOSED WELL SITE IN N. DAKOTA ARE BEING TESTED FOR KILL STUDY, USING BIOCIDES INCLUDING GLUTARALDEHYDE (GLUT.)50%, DBNPA, QUAT. & ANOLITE. KILL STUDIES ARE BEING CONDUCTED ON SRB'S (SULFATE REDUCING BACTERIA) AS WELL APB'S (ACID PRODUCING BACTERIA).

RESULTS:

Sulfate-reducing Bacteria (SRB) and Acid-producing Bacteria (APB) Time Kill Study- 28 Day Results

SAMPLE	BIOCIDES	CONTACT TIME	APB'S (CFU'S)	SRB'S (CFU'S)
WELL WATER	GLUT. 50%	2	<10¹	0
WELL WATER	DBNPA	2	0	0
WELL WATER	QUAT.	2	0	10³
WELL WATER	ANOLITE	2	10¹	0
CONTROL (NO ADDED BACTERIA)				
WELL WATER	GLUT. 50%	24	0	0
WELL WATER	DBNPA	24	0	0
WELL WATER	QUAT.	24	0	10⁴

WELL WATER	ANOLITE	24	10¹	0
CONTROL (NO ADDED BACTERIA)			10¹	10⁵
CONTROL (WITH ADDED BACTERIA)			10⁵	10¹

DOSINGS USED:

- 1. GLUT. 50% AT 0.3 GALL./1000 GALL. FRAC WATER**
- 2. DBNPA AT 0.1 GALL./1000 GALL. FRAC WATER**
- 3. ANOLITE AT 0.5 GALL./1000 GALL. FRAC WATER**

Test Procedures:

Sulfate-reducing Bacteria and Acid-producing Bacteria Time Kill Study

100 ml of Produced Water is measured out, The desired amount of Bacteria (2%) to be tested is introduced into Produced Water. The Produced Water is then treated with desired amount of Anolite and shaken. After the desired time interval has elapsed, Modified Postgate “B” Sulfate –reducer Serial Dilution vials and Phenol Red Acid-producer Serial Dilution vials are then inoculated from the treated samples. The vials are then placed in an incubator for the desired time interval.

Respectfully submitted,

Envirocleanse LLC
Phil Bellan, MD