

# COMPANY X

## STIMULANT UPTAKE TESTING AT ELEVATED TEMPERATURE

### XYZ DEPOSIT



**Job# 16-000**

Revision Comments	Date	Testing By	Reviewed by
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## 1 INTRODUCTION

A deposit sample was submitted for absorption/uptake evaluation with a stimulation chemical by Company X. Uptake testing was performed in the autoclave apparatus over a one-day exposure period. All testing was performed according to the protocol developed by ABC Company and Cormetrics Ltd.

## 2 TEST SAMPLES

### 2.1 Deposit Sample

A deposit was received from Company X for use in testing. The particulate sample was pre-screened to obtain a minimum particle size for use in the solvency test. The deposit was identified as being from the following location.

Field	Sample Name
XYZ	XXX Well

**Table 1: Deposit Samples Received**

### 2.2 Scale Remover

A sample of stimulant chemicals identified as A and B were received for use in testing. The fluids were evaluated neat (no dilution) in all tests. The pH of the fluid was measured pre and post-test with results listed in the following table.

Fluid Sample	pH	
	Pre-Exposure	Post-Exposure
A	4.71	7.48
B	2.75	2.11

**Table 2: Fluid Sample pH Values**

## 3 UPTAKE TESTING PROTOCOL

A small (approximately 2 gram) sample of pre-screened deposit (particulate size > than 150 micron/100 mesh) was weighed out and placed inside a Teflon cup. (Photographs of each deposit prior to exposure are in Appendix I). A 180 mL volume of test fluid was then added to the deposit and the Teflon cup was inserted into the autoclave base. The autoclave assembly was sealed and 2500 kPa of nitrogen was applied to the test cells. Autoclave cells were placed in individual heating mantles and brought to 160°C for the duration of the test. The fluids were stagnant for the entire test period.

After 20 hours exposure at 160°C the autoclaves were de-pressurised and cell contents were filtered through a 100 mesh (150 micron) filter. The Teflon cup used for holding the solution in the autoclave was rinsed repeatedly with distilled water and this solution was also filtered to retain undissolved particulate. The cup was then placed in an oven for drying and re-weighed to determine residual mass of deposit that had adhered to the cup wall. The Teflon cup was then cleaned thoroughly and dried to determine the after cleaning mass. This step is complete based on our experience that some stimulation products will cause a weight gain in the Teflon cup that we do not want to allocate as particulate material. The 100 mesh filter was dried in an oven and the contents were agitated lightly to allow any additional removal of small particulate. It was then re-weighed to determine the mass of the retained material.

#### 4 UPTAKE DATA AND DISCUSSION

Photographs of the analysis steps are presented in Appendix I. The following summary table records measurements collected during the analysis and determines the amount of solid sample that was solubilized or broken down by the stimulation solvent (uptake percentage).

		A	B
Deposit	Initial (g)	1.9996	2.0010
Teflon Cup	After Exposure (g)	150.845	151.872
	After Cleaning (g)	150.686	151.790
	Deposit (g)	0.159	0.082
100 Mesh Filter	Initial (g)	41.3351	40.9490
	Final (g)	42.3082	41.0139
	Filtered Deposit (g)	0.9731	0.0649
Total Remaining Deposit (Cup and Filter)	Deposit (g)	1.1321	0.1469
% Filtrate (Uptake)	Uptake %	51.3	96.8

**Table 3: Filter Deposit & Uptake Calculations**

Stimulant chemical A had a 51.3% uptake based on a 150 micron/100 mesh screening. Residual deposit that adhered to the cup was determined by the weight change “after exposure” and “after cleaning”. The post-test fluid had increased to a near neutral pH, indicating that its acidity was altered.

The B stimulant had a higher uptake of 96.8%. The post-test fluid remained acidic with a final pH of 2.1.

## **5 CONCLUSION**

The B stimulant was very effective in dissolving the supplied deposit. Uptake level was 96.8% and the test fluid was still acidic (pH~2) indicating there was residual activity still remaining.

The A product had a lower uptake at 51.3% and the post test filtrate pH was neutralized.



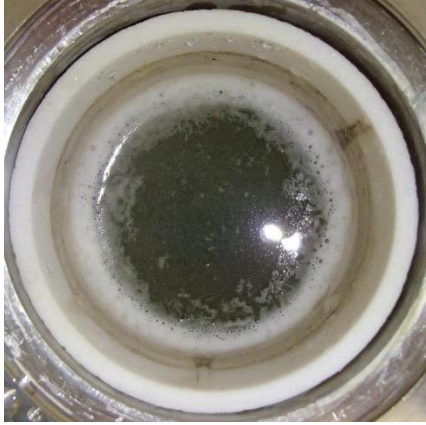



Sincerely,







Frank Hornsby  
President  
**Cormetrics Limited**

***Please note, all inhibitor samples and electrodes are stored for 6 months prior to disposal.***

## **APPENDIX I – TEST PHOTOGRAPHS**

Fluid	Initial Deposit	Post Test Screened Deposit	Post Test Fluids
A			
B			

**Figure 1: Deposit and Fluid Visuals**

Fluid	Pre Test Teflon Cup	Post Test Rinsed Teflon Cup
A	 A top-down view of a white Teflon cup containing a clear, colorless liquid. The cup's interior surface is smooth and free of any visible deposits.	
	 A top-down view of the same white Teflon cup after being rinsed. The liquid is gone, and the interior surface is clean and clear, with no visible residue or deposits.	
B	 A top-down view of a white Teflon cup containing a clear, colorless liquid. The cup's interior surface is smooth and free of any visible deposits.	
	 A top-down view of the same white Teflon cup after being rinsed. The interior surface is heavily coated with a white, crystalline deposit, particularly concentrated in the center and along the bottom edge.	

**Figure 2: Teflon Cup Visual**