

From: Barzin Chiniwala (Geolog, USA) <b.chiniwala@geolog.com>
Sent: Friday, May 25, 2018 3:03 PM
To: Moore, Dennis D. (MRO) <ddmoore@marathonoil.com>
Subject: [External] RE: Upcoming IADC - DEC Technology Forum

Beware of links/attachments.

Dear Dennis,

Hope this email finds you well.

I am getting back to you about my initial query on my request to present some material on GEOLOG Drilling Technologies.

I am looking to present a service called BitLife – Bit run optimization tool. Below is the abstract.

Abstract:

Utilization of polycrystalline diamond compact (PDC) bits has led to improved drilling efficiency and bit performance, especially in long laterals in unconventional organic tight rocks. It is important to identify when the bit wear starts occurring and in what rock type. No definitive methodology has been proved up to date to help operators to understand precisely when a drill bit is starting to wear off and the attempt to drill ahead becomes an invisible NPT and a high risk of tools lost in hole. The intense heat generated by drill bit wear during drilling, in conjunction with drilling fluid, hydrocarbons and non-hydrocarbon gases, is recognized to generate artifacts that are usually not present naturally. Drill bit metamorphism defines the artifact produced by the interaction between the drill-bit, rocks and drilling fluid and is related to gas and rock artifacts. The additional heat produced by part of the mechanical energy applied to the bit being transformed into heat by friction, thermally crack oil-based drilling fluids and produce both hydrocarbons and Rock artifacts. This thermal cracking of hydrocarbons in the drilling fluids generate unsaturated alkanes such as ethylene and propylene.

In the case studies, we will show how the real-time application of alkenes detection for identifying drill bit metamorphism combined with XRF elemental analysis to identify the abrasive silica rich layer, can be utilized to aid geo-steering and provide early alerts to prevent drill bit wear and if necessary to trip out of hole with BHA to avoid severe damage to the bit, thus avoiding junk in hole. This real-time technology is of primary importance to optimize drilling operation by performing timely Bit trip and saving rig time to significantly reduce invisible NPT.

Attached is the URTeC 2017 paper, for your perusal, which has been published on this topic. My presentation will cover part of the paper published as well as many more recent cases in US Land.

I will appreciate if you can give me an opportunity to present at on one of the upcoming DEC forums.