Preconceived Notions: Ignoring Hearsay and Discovering New Pay*

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Abstract

While conducting my Master's thesis research in south Texas, questions arose about a sand that sits above the main San Miguel pay zone. Operators in the area have reported that it is nonproductive. However, I could find no evidence that it has ever been tested. Upon examination, the resistivity invasion profile, with additional electric logs, core, mud logs, the position of this sand relative to the main pay zone, in relation to the overlying shales that cap it, suggested evidence to the contrary. After recompletions that targeted this sand zone in old wells proved to be productive, the notion that this overlooked sand zone was dry was proven false. It goes to show that you should never leave any stone unturned.
PRECONCIVED NOTIONS: IGNORING HEARSAY AND DISCOVERING NEW PAY

By: Casey Mitchell
HISTORY

• Discovered in early 1900s

• Produces from: L. Escondido, San Miguel, Anacacho, Chalk

• Waterflood San Miguel

• Low per-well production
LOCAL STRATIGRAPHY:

A. Hoffman #3

- Eocene
  - Wilcox
- Cretaceous
  - Escondido
  - Olmos
  - San Miguel
- O-1 Sand
- Lit
THE NOTION:

Producing Sand

“dry” sand

Producing Sand

Clara Adams #3
THE EVIDENCE:

1. Invasion Profile

Producing Sand

“dry” sand

Clara Adams #3
THE EVIDENCE:

2. “clean” sand

“dry” sand

Producing Sand

Clara Adams #3
THE EVIDENCE:

3. Good Porosity

Eastwood “A” #3

- GR: 67 API
- Phi S 18%
- Phi S 27%
- “dry” sand
- Producing Sand

GRSH: 75 API
THE EVIDENCE:

- RFOC: 8 ohmm
- ILM: 7 ohmm
- ILD: 6 ohmm
- GR: 60 API
- GRSH: 77 API
- Phi N: 27%
- Phi D: 12%
- Producing Sand
- "dry" sand

Federal Royalty A #12
THE EVIDENCE:

RFOC: 7.5 ohmm
ILM: 5 ohmm
ILD: 4 ohmm

Phi N: 36%
Phi D: 18%

Federal Royalty A #12

"dry" sand
Producing Sand
GR: 75 API
GRSH: 77 API
## THE EVIDENCE:

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<th></th>
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THE EVIDENCE:

O-1

1. SWA=0.124
2. Ooip @ 5 acre 76,455

Lit

1. SWA=.0367
2. Ooip @ 5 acre 2,254
3. $50/bbl @10% recovery = 12,700
4. Re-completion cost = 2,500
THE EVIDENCE:

Target
THE DISCOVERY:

Targets

Reference

#1

#5

#11W
THE DISCOVERY: Reference Well

P #11W
THE DISCOVERY:

Results: Faulted out!
THE DISCOVERY:

O-1

"Lit"

Perfs

GR

Phi N

P #5
THE DISCOVERY:

Originally 1/10 bopd, 1 bwpd
Now 5 bopd, no water
Conclusions