



Mudgrove

Petroleum Geology
212 Main Street, Claflin KS

NOTES

Company: American Warrior, Inc.
 Lease: Dorthy 1-3
 Field: Geneseo-Edwards
 Location: NW-SE-SE-SE
 Sec: 3 Twsp: 18S Rge: 8W
 County: Rice State: Kansas

KB: 1788' GL: 1780'
 API #: 15-159-22804-00-00
 Contractor: Duke Drilling Inc. (Rig #8)
 Spud: 10/29/2014 Comp: 11/4/2014
 RTD: 3400' LTD: 3382'
 Mud Up: 2600' Type Mud: Chemical

Samples Saved From: 2600' to RTD
 Drilling Time Kept From: 2600' to RTD
 Samples Examined From: 2600' to RTD
 Geological Supervision from: 2600' to RTD
 Surface Casing: 8 5/8@ 444'
 Production Casing: 5 1/2@3395'

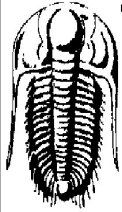
Geologist On Well: Wyatt Urban
 Electronic Surveys: Logged by Pioneer Energy Services :DIL, CNL/CDL, MEL/ BHCS

Image Header 02

American Warrior, Inc. well comparison sheet

| DRILLING WELL | | | | | COMPARISON WELL | | | | |
|---|--------|---------|------|---------|---|---------|--------|-----|----------------------------|
| American Warrior- Dorthy 1-3 NW-SE-SE-SE 3-18S-8W | | | | | American Warrior- Jean 1-2 NE-SW-SE-SW 2-18S-8W | | | | |
| 1788 KB | | | | | 1784 KB | | | | Structural Relationship |
| Formation | Sample | Sub-Sea | Log | Sub-Sea | Log | Sub-Sea | Sample | Log | |
| Heebner | 2710 | -922 | 2709 | -921 | 2695 | -911 | -11 | -10 | |
| Toronto | 2734 | -946 | 2736 | -948 | 2718 | -934 | -12 | -14 | |
| Douglas | 2750 | -962 | 2749 | -961 | 2733 | -949 | -13 | -12 | |
| Brown Lime | 2830 | -1042 | 2832 | -1044 | 2821 | -1037 | -5 | -7 | |
| Lansing | 2858 | -1070 | 2857 | -1069 | 2848 | -1064 | -6 | -5 | |
| BKC | 3168 | -1380 | 3169 | -1381 | 3166 | -1382 | 2 | 1 | |
| Congl. Sd. | 3238 | -1450 | 3224 | -1436 | 3221 | -1437 | -13 | 1 | |
| Arbuckle | 3290 | -1502 | 3287 | -1499 | 3287 | -1503 | 1 | 4 | |
| RTD | 3400 | -1612 | 3400 | -1612 | 3365 | -1581 | -31 | -31 | |
| LTD | 3382 | -1594 | 3382 | -1594 | 3366 | -1582 | -12 | -12 | |

Image Header 03



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

American Warrior Inc
3118 Cummings Rd Garden City KS 67846
ATTN: Wyatt Urban

3-18-8 Rice
Dorothy #1-3
Job Ticket: 61880 **DST#: 1**
Test Start: 2014.11.02 @ 02:10:00

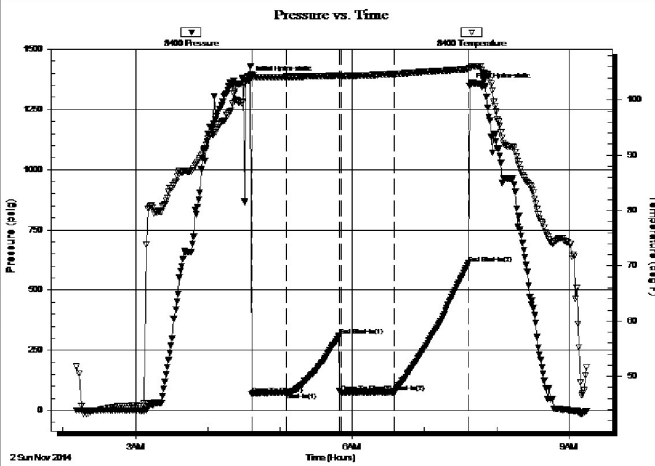
GENERAL INFORMATION:

Formation: **Lansing A-C**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:36:30
Time Test Ended: 09:14:30
Interval: **2846.00 ft (KB) To 2900.00 ft (KB) (TVD)**
Total Depth: 2900.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Jared Scheck
Unit No: S5-Great Bend-100
Reference Elevations: 1788.00 ft (KB)
1780.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8400

Press@RunDepth: 76.65 psig @ ft (KB) Capacity: 5000.00 psig
Start Date: 2014.11.02 End Date: 2014.11.02 Last Calib.: 2014.11.02
Start Time: 02:11:00 End Time: 09:14:30 Time On Btm: 2014.11.02 @ 04:35:00
Time Off Btm: 2014.11.02 @ 07:37:30

TEST COMMENT: IFF-30 Minutes-Weak blow built 7 inches into bucket w water
ISIP-45 Minutes-No blow back
FFP-45 Minutes-Weak blow built 7 inches into w water
FSIP-60 Minutes-No blow back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1375.11 | 104.32 | Initial Hydro-static |
| 2 | 66.69 | 104.51 | Open To Flow (1) |
| 30 | 75.31 | 104.17 | Shut-In(1) |
| 74 | 311.21 | 104.41 | End Shut-In(1) |
| 76 | 74.45 | 104.31 | Open To Flow (2) |
| 120 | 76.65 | 104.69 | Shut-In(2) |
| 182 | 611.54 | 105.56 | End Shut-In(2) |
| 183 | 1345.84 | 105.79 | Final Hydro-static |

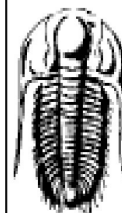
Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 65.00 | mud | 0.91 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|----------------|-----------------|------------------|
| | | | |

Image Header 04



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

American Warrior Inc
3118 Cummings Rd Garden City KS 67846
ATTN: Wyatt Urban

3-18-8 Rice
Dorothy #1-3
Job Ticket: 61881 **DST#: 2**
Test Start: 2014.11.03 @ 09:00:00

GENERAL INFORMATION:

Formation: **Conglomerate**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:16:30
Test Type: Conventional Bottom Hole (Initial)
Tester: Jared Scheck

Time Test Ended: 14:37:00

Unit No: S5-Great Bnd -100

Interval: 3142.00 ft (KB) To 3253.00 ft (KB) (TVD)

Reference Elevations: 1788.00 ft (KB)

Total Depth: 3253.00 ft (KB) (TVD)

1780.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 6666

Press@RunDepth: 113.27 psig @ ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.11.03

End Date: 2014.11.03

Last Calib.: 2014.11.03

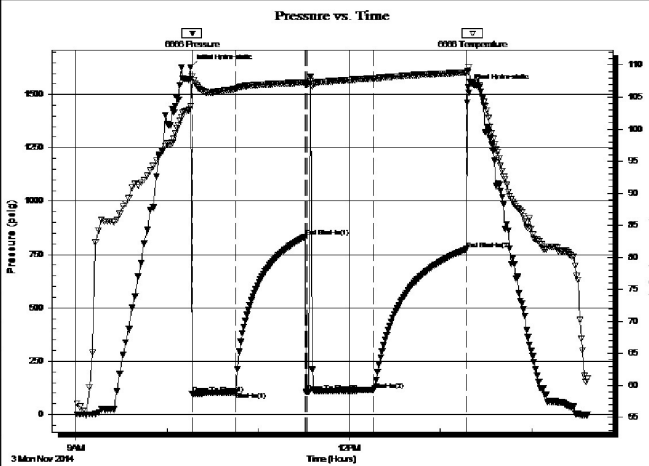
Start Time: 09:01:00

End Time: 14:37:00

Time On Btm: 2014.11.03 @ 10:15:30

Time Off Btm: 2014.11.03 @ 13:18:00

TEST COMMENT: IFF-30 Minutes-Weak blow built 7 1/2 inches tool chased 15 feet to bottom
 ISIP-45 Minutes-No blow back
 FFP-45 Minutes-No blow flushed tool w eak surge built 1 1/4 into bucket
 FSIP-60 Minutes-No blow back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1627.25 | 103.55 | Initial Hydro-static |
| 1 | 97.18 | 108.21 | Open To Flow (1) |
| 30 | 104.46 | 106.28 | Shut-In(1) |
| 76 | 833.01 | 107.26 | End Shut-In(1) |
| 77 | 106.17 | 107.09 | Open To Flow (2) |
| 121 | 113.27 | 107.93 | Shut-In(2) |
| 182 | 774.96 | 108.84 | End Shut-In(2) |
| 183 | 1533.45 | 108.98 | Final Hydro-static |

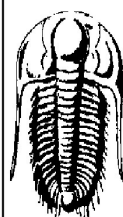
Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------------|--------------|
| 70.00 | mud spot oil 100% mud | 0.98 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

| | Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|--|----------------|-----------------|------------------|
| | | | |

Image Header 05



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

American Warrior Inc

3-18-8 Rice

3118 Cummings Rd Garden City KS 67846

Dorothy #1-3

Job Ticket: 61882

DST#: 3

ATTN: Wyatt Urban

Test Start: 2014.11.03 @ 21:50:00

GENERAL INFORMATION:

Formation: **Cong.sd**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:46:30

Time Test Ended: 03:55:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: S5-Great Bend -100

Interval: 3145.00 ft (KB) To 3263.00 ft (KB) (TVD)

Reference Elevations: 1788.00 ft (KB)

Total Depth: 3263.00 ft (KB) (TVD)

1780.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 8400

Press@RunDepth: 101.56 psig @ ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.11.03

End Date: 2014.11.04

Last Calib.: 2014.11.04

Start Time: 21:51:00

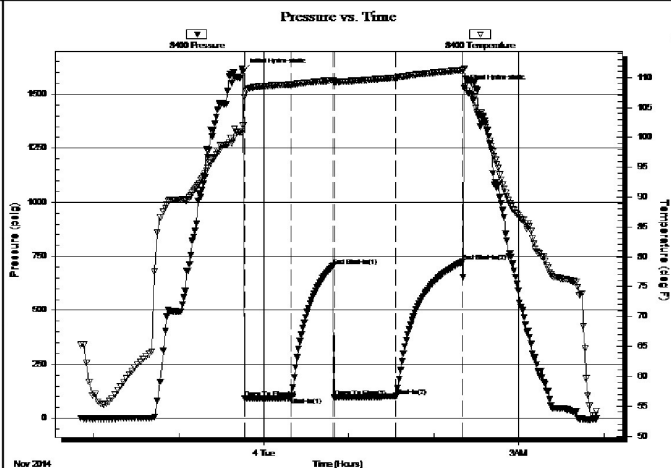
End Time: 03:55:00

Time On Btm: 2014.11.03 @ 23:45:30

Time Off Btm: 2014.11.04 @ 02:21:30

TEST COMMENT: IFF-30 Minutes-Weak blow built 4 inches into water tool chased 8 to 10 feet

ISIP- 30 Minutes-No blow back
 FFP- 45 Minutes-Weak blow built 4 inches into water
 FSIP- 45 Minutes-No blow back



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1604.28 | 102.02 | Initial Hydro-static |
| 1 | 92.00 | 106.80 | Open To Flow (1) |
| 34 | 95.66 | 108.81 | Shut-In(1) |
| 64 | 705.51 | 109.50 | End Shut-In(1) |
| 65 | 98.17 | 109.27 | Open To Flow (2) |
| 108 | 101.56 | 109.98 | Shut-In(2) |
| 155 | 723.73 | 111.23 | End Shut-In(2) |
| 156 | 1530.09 | 111.50 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-----------------------|--------------|
| 60.00 | GO& Mud 5%g5%o 90%mud | 0.84 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

| Choke (inches) | Pressure (psig) | Gas Rate (Mcf/d) |
|----------------|-----------------|------------------|
| | | |

ROCK TYPES

Dolprim
 Lmst fw<7
 shale, grn
 shale, gry
 Carbon Sh
 shale, red
 Ss

ACCESSORIES

STRINGER

••• Sandstone

OTHER SYMBOLS

Oil Show
 ● Good Show
 ○ Fair Show
 ○ Poor Show
 ○ Spotted or Trace
 ○ Questionable Str
 D Dead Oil Str
 ■ Fluorescence
 * Gas

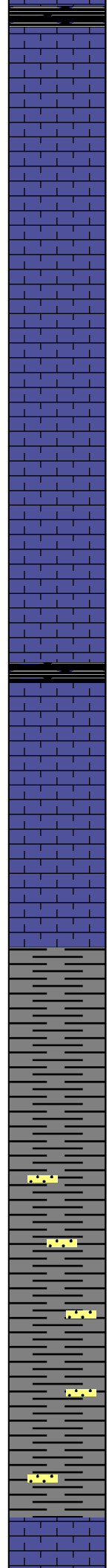
DST
 ■ DST Int
 ■ DST alt
 ■ Core
 ■ tail pipe

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| Curve Track #1 | | Depth Intervals | DST | Lithology | Oil Show | Geological Descriptions | TG, C1 - C5 | | | | | |
|----------------|-------------|-------------------|-----|-----------|----------|--|-------------|-------------------|------------|------------|------------|------------|
| ROP (min/ft) | Gamma (API) | | | | | | Cal (in) | Total Gas (units) | C1 (units) | C2 (units) | C3 (units) | C4 (units) |
| 0 | 150 | 7 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 16 | 16 | | | | LS, cream, gry, FXL, poor visible porosity, chalky, no shows | 0 | 0 | 0 | 0 | 0 | 0 |

2620
2640
2660
2680
2700
2720
2740
2760
2780
2800
2820

0 ROP (min/ft) 7
0 Gamma (API) 150
6 Cal (in) 16



Black carb Sh.

LS, tan, brown, FXL, foss, poor scattered porosity, chalky, no shows

LS, tan, brown, FXL, foss, chalky, no shows, no odor

LS, gry, brown, foss, poor scattered porosity, chalky, no shows

Heebner 2710.0 (-922.0)

Black carb Sh.

Toronto 2726.0 (-938.0)

LS, tan, brown, FXL, few foss, poor scattered porosity, chalky in parts, no shows, no odor

Douglas 2748.0 (-960.0)

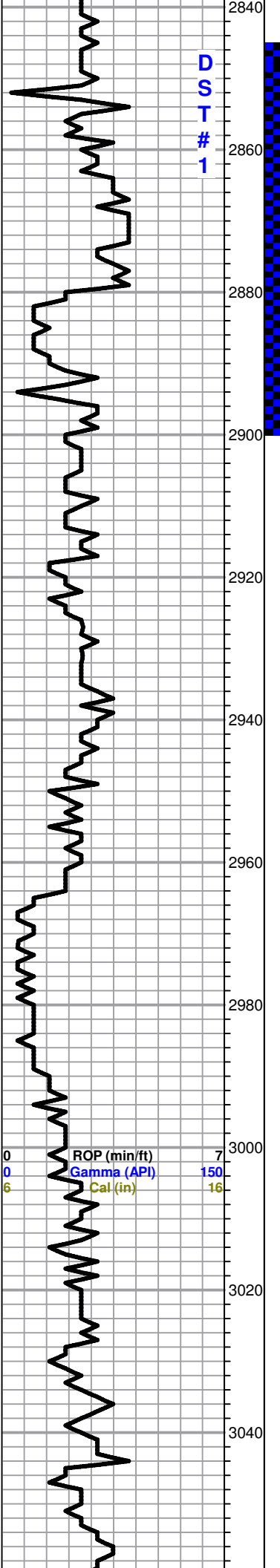
Sh, gry, maroon, greenish, waxey

Sh, gry, maroon, green, waxey Sd. gry, V. F. grain, well sorted, rounded, no shows,

Sh, A/A, Trc. Sd. gry, V. F. grain, well sorted, no shows

Brown Lime 2830.0 (-1042.0)

0 Total Gas (units) 100
0 C1 (units) 100
0 C2 (units) 100
0 C3 (units) 100
0 C4 (units) 100



LS, brown, FXL, poor visible porosity, cherty, no shows

LS, tan, brown, FXL, desnse, poor visible porosity, no shows

Lansing 2858.0 (-1070.0)

LS, tan, FXL, gran, few foss, poor scattered porosity, no shows

● LS, tan, buff, oom, good fair vuggy oom porosity, SFO, good odor, Lt. brown stain

LS, tan, buff, FXL, poor visible porosity, chalky, no shows,

LS, tan, brown, FXL, dense, cherty in parts, poor visible porosity, no shows

LS, tan, brown, FXL, few foss, poor scattered porosity, no shows

○ LS, cream, tan, F-Med XLN, ool, poorly developed, poor visible porosity, trc SFO, no odor, Lt. brown stain

○ LS, cream, white, oom, chalky, fair oom vuggy porosity, Lt. SFO, Lt. brown stain, no odor

LS, cream, white, FXL, chalky, few foss, no shows,

LS, tan, brown, few gry, FXL, poor visible porosity, chalky, no shows

○ LS, brown, tan, FXL, ool, poor scattered vuggy porosity, chalky, NSFO, trc. brown stain, no odor

LS, tan, F-Med XLN, ool, poor oom vuggy porosity, no shows, no odor

DST#1 2846-2900
30-45-45-60

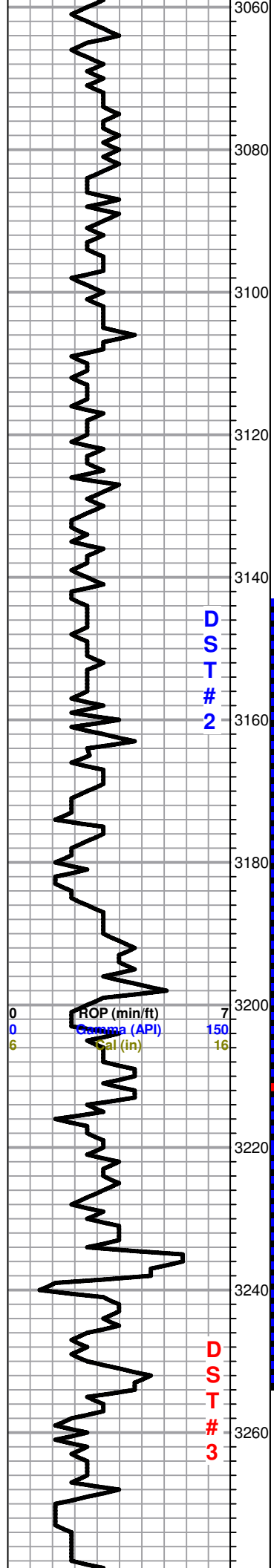
Blow: Weak

Tool Slid 10' to bottom

Recovery: 65' Mud

Pressure:
ISIP 311 psi
FSIP 611 psi
IFP 66-75 psi
FFP 74-76 psi
HSH 1375-1345 psi

| | | |
|---|-------------------|-----|
| 0 | Total Gas (units) | 100 |
| 0 | C1 (units) | 100 |
| 0 | C2 (units) | 100 |
| 0 | C3 (units) | 100 |
| 0 | C4 (units) | 100 |



D
S
T

2

D
S
T

3

ROP (min/ft) 7
Gamma (API) 150
Cal (in) 16

LS, cream, tan, FXL, dense, cherty, no shows

LS, tan, brown, FXL, few foss, poor visible porosity, chalky, no shows, trc. few brown cherts

LS, tan, brown, FXL, dense, poor visible porosity, no shows

LS, cream, white, FXL, dense, chalky in parts, few foss, trc. brown stain, NSFO, no odor

LS, white, cream, FXL, dense, poor visible porosity, trc. cherts, brown, tan, no shows

BKC 3168.0 (-1380.0)

Sh, black, greenish, gry, silty

Sh, A/A, trc. pyrite

LS, cream, tan, FXL, dense, poor visible porosity, no shows, no odor

LS, tan, oom, good vuggy porosity, chalky, trc. black stain, NSFO, no odor

Sh. V. C. maroon, soft silty, Trc. Sd, gry, V. F. grain, sub rounded, well sorted, no shows

V.C, shales, trc. Sd. A/A

Cong. Sand 3238.0 (-1450.0)

Sd. white, V.F. grain, well sorted, rounded, Lt. trc. SFO, black stain, no odor

Sd, white, gry, Med. grain, rounded, loose sub rounded qtz, SFO

Sh, maroon, greenish, maroon, mica, few silty

DST # 2 3142-3253
30-45-45-60

Blow: Weak

Recovery:
70' Oil Spotted Mud

Pressures:
ISIP 833 psi
FSIP 774 psi
IFP 97-104 psi
FFP 106-113 psi
HSH 1627-1533 psi

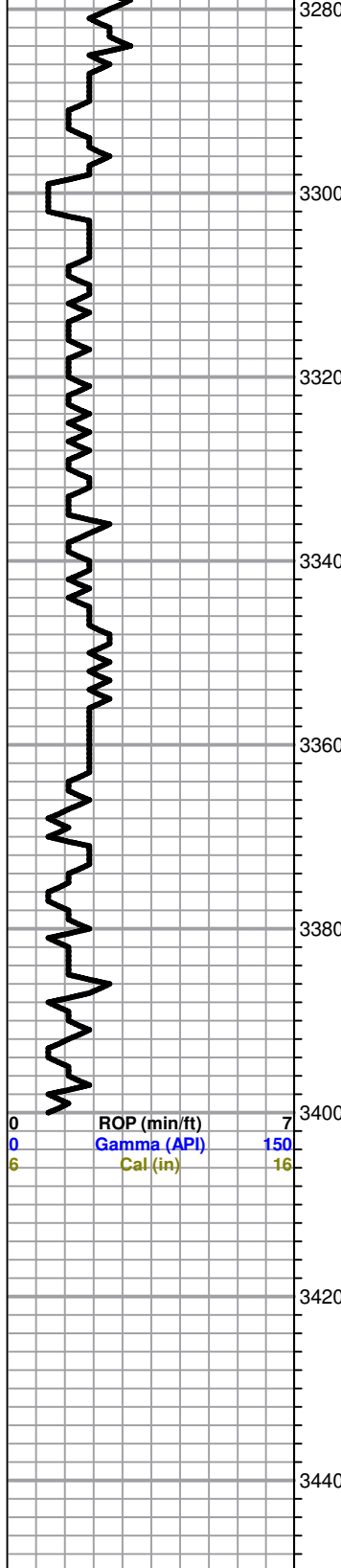
| | | |
|---|-------------------|-----|
| 0 | Total Gas (units) | 100 |
| 0 | C1 (units) | 100 |
| 0 | C2 (units) | 100 |
| 0 | C3 (units) | 100 |
| 0 | C4 (units) | 100 |

DST#3 3145-3263
30-30-45-45

Blow: Weak

Recovery:
60' GOCM
(5%G, 5%O, 90%M)

Pressures:
ISIP 705 psi
FSIP 723 psi
IFP 92-95 psi
FFP 98-101 psi
HSH 1604-1530 psi



Sh, maroon, aqua green, gray

Arbuckle 3290.0 (-1502.0)

Dol. tan, brown, FXL, poor to fair scattered vuggy porosity, Lt. SFO, trc. brown stain, fair odor

Dol. tan, FXL, dense, poor scattered vuggy porosity, Lt. SFO, fair odor, Lt. brown stain

Dol. tan, FXL, poor scattered porosity, trc brown stain, faint odor, Trc. white chert

Dol. tan, FXL, poor scattered porosity, poor INXLN porosity, NSFO, faint odor

Dol. A/A, trc. white, cherts

Dol. tan, brown FXL, dense, poor visible porosity, trc. white, opaque cherts, NSFO, no odor

RTD 3400.0 (-1502.0)

| | | |
|---|-------------------|-----|
| 0 | Total Gas (units) | 100 |
| 0 | C1 (units) | 100 |
| 0 | C2 (units) | 100 |
| 0 | C3 (units) | 100 |
| 0 | C4 (units) | 100 |

| | | |
|---|--------------|-----|
| 0 | ROP (min/ft) | 7 |
| 0 | Gamma (API) | 150 |
| 6 | Cal (in) | 16 |