



Scale 1:240 Imperial

Well Name: Arkansas River Unit #1-3
Surface Location: 2206' FNL, 1382' FEL Sec. 3-22S-16W
Bottom Location:
API: 15-145-21792-00-00
License Number:
Spud Date: 12/8/2014 Time: 8:30 PM
Region: Pawnee County
Drilling Completed: 12/14/2014 Time: 8:15 AM
Surface Coordinates:
Bottom Hole Coordinates:
Ground Elevation: 1986.00ft
K.B. Elevation: 1999.00ft
Logged Interval: 3200.00ft To: 4100.00ft
Total Depth: 4100.00ft
Formation: Simp/Cong Sand
Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR

Company: Shelby Resources, LLC
Address: 445 Union Blvd, Suite 208
Lakewood, CO 80228

Contact Geologist: Janine Sturdavant
Contact Phone Nbr: 303-907-2209 / 720-274-4682
Well Name: Arkansas River Unit #1-3
Location: 2206' FNL, 1382' FEL Sec. 3-22S-16W API: 15-145-21792-00-00
Pool: Field: Zook
State: Kansas Country: USA

LOGGED BY



Company: Shelby Resources, LLC
Address: 445 UNION BLVD. Suite 208
LAKEWOOD, CO. 80228

Phone Nbr: 203-671-6034
Logged By: Geologist Name: Jeremy Schwartz

NOTES

The Shelby Resources, LLC Arkansas River Unit #1-3 was drilled to a total depth of 4100', bottoming in the Arbuckle. A TookeDaq gas detector was employed in the drilling of said well.

2 DST's were conducted. The reports can be found at the bottom of this log.

Due to the DST results, gas kicks, sample shows, and log analysis, it was determined by all consenting parties to further test the well through production pipe. The dry samples were saved and will be available for further review at the Kansas Geological Society Well Sample Library, located in Wichita, KS.

Respectfully Submitted,
Jeremy Schwartz
Geologist

CONTRACTOR

Contractor: Sterling Drilling Co
Rig #: 5
Rig Type: mud rotary
Spud Date: 12/8/2014 Time: 8:30 PM
TD Date: 12/14/2014 Time: 8:15 AM

K.B. Elevation: 1999.00ft
K.B. to Ground: 13.00ft

CLIENT:	SHELBY RESOURCES, LLC
WELL NAME:	ARKANSAS RIVER UNIT #1-3
LEGAL:	C S/2 S/2 NE/4 3-22S-16W
COUNTY:	PAWNEE COUNTY, KS
API:	15-145-21 792-00-00
DRLG CONTRACTOR:	STERLING DRILLING CO.
RIG #:	5
DOGHOUSE #:	620-388-5433
TOOLPUSHER:	ALAN LOFTIS
CELL #:	620-388-2736

[illegible]

PROGNOSIS		
ANHYDRITE TOP		19999
HEEBNER SHALE	3424	-14.25
LANSING	3548	-15499
BKC	3780	-1781
PENN CONG	3872	-1873
ARBUCKLE	3964	-1965
TD	4000	-2001

DST #1 (3806-3849) Conglomerate
10-45-15
Weak Surface Blow
No BB
No Blow/Flush Tool/Good Surge/
Still Weak Surface/Pull Test
15' Mud
SIP: 113 N/A

DST #2 (3879-3919) Simp Sand
15-45-60-90
Strong Blow BOB 1"
BB BOB 5"
Strong Blow BOB 45SEC/GTS 2"
BB BOB 3MIN 30SEC
425' CGO, 63' MCGO (080%/G10%)
SIP: 1150-1137

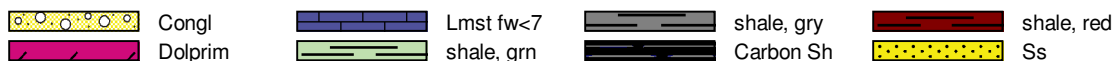
DST #3(3960-3966) Arbuckle
15-45-60-90
Strong Blow BOB 13MIN 30SEC
No BB

DST #1 (3758-3855) Cong/Viola
 10-45-70-90
 Strong Blow BOB 1"
 Surface BB
 Surge at Open then Weak Surface
 Flush Tool/BOB 1" GTS 41"
 BB BOB 1"
 2772' SM CGO (065%/G30%)
 189' OCGM (025%/G25%)
 63' SOCM (05%)
 SIP: 1239-1226

DST #2 (3873-3895) Arbuckle
10-45-30-60
Strong Blow BOB 40SEC
BB 3/4"
Strong Blow BOB 30SEC
No BB
2614' SMGCW (W95%/G3%)
189' MW
SIP: 1311-1310

Strong Blow BOB 1MIN 30SEC
No BB
1890' SM GCW (W9.5%/G3%)

ROCK TYPES



ACCESSORIES

MINERAL

△ Chert White

FOSSIL

∩ Bioclastic or Fragmental
F Fossils < 20%

STRINGER

~ Chert
Limestone
Sandstone
Siltstone
Shale
red shale

TEXTURE

C Chalky

OTHER SYMBOLS

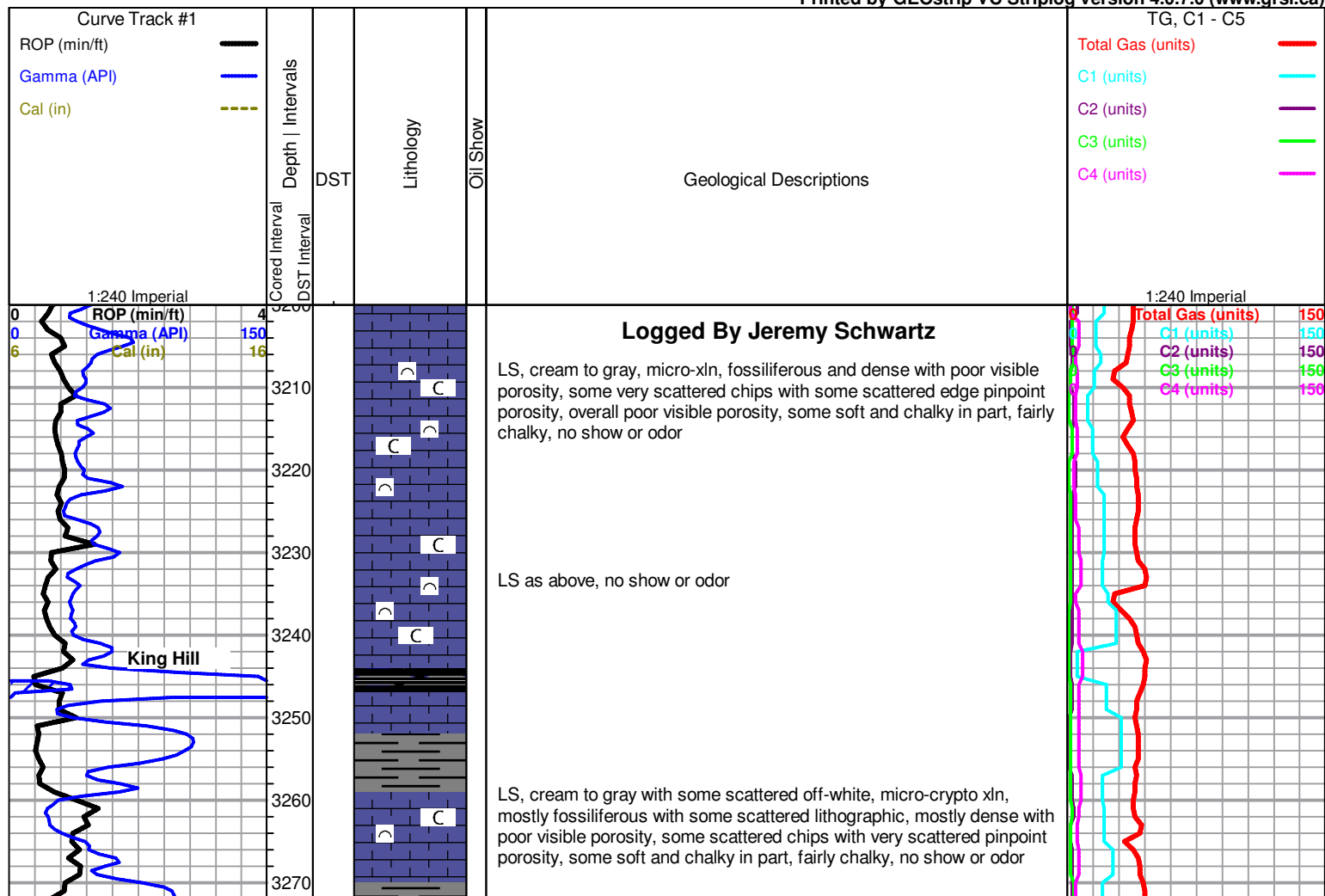
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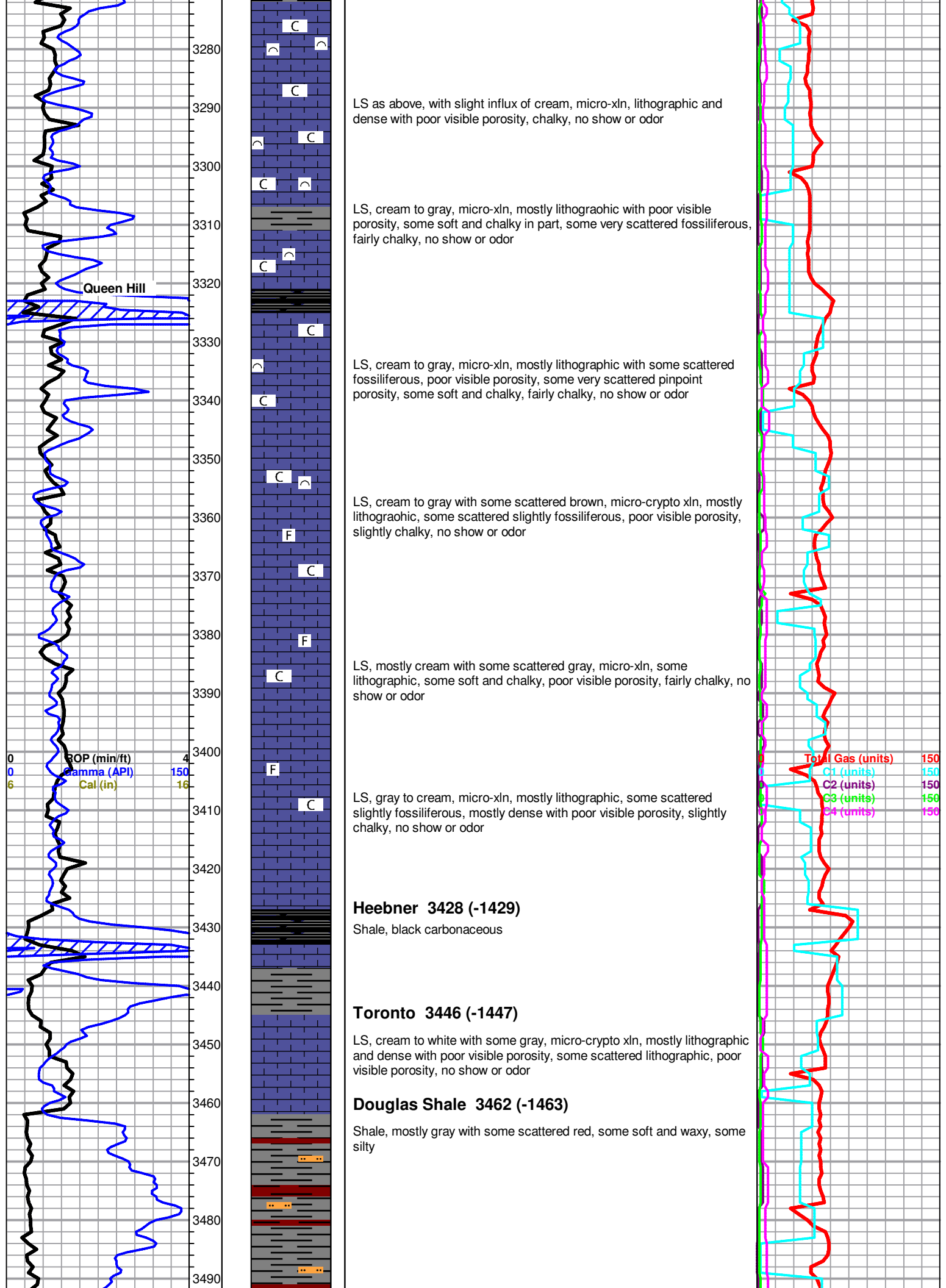
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Digital Photo
Document
Folder
Link
Vertical Log File
Horizontal Log File
Core Log File
Drill Cuttings Rpt

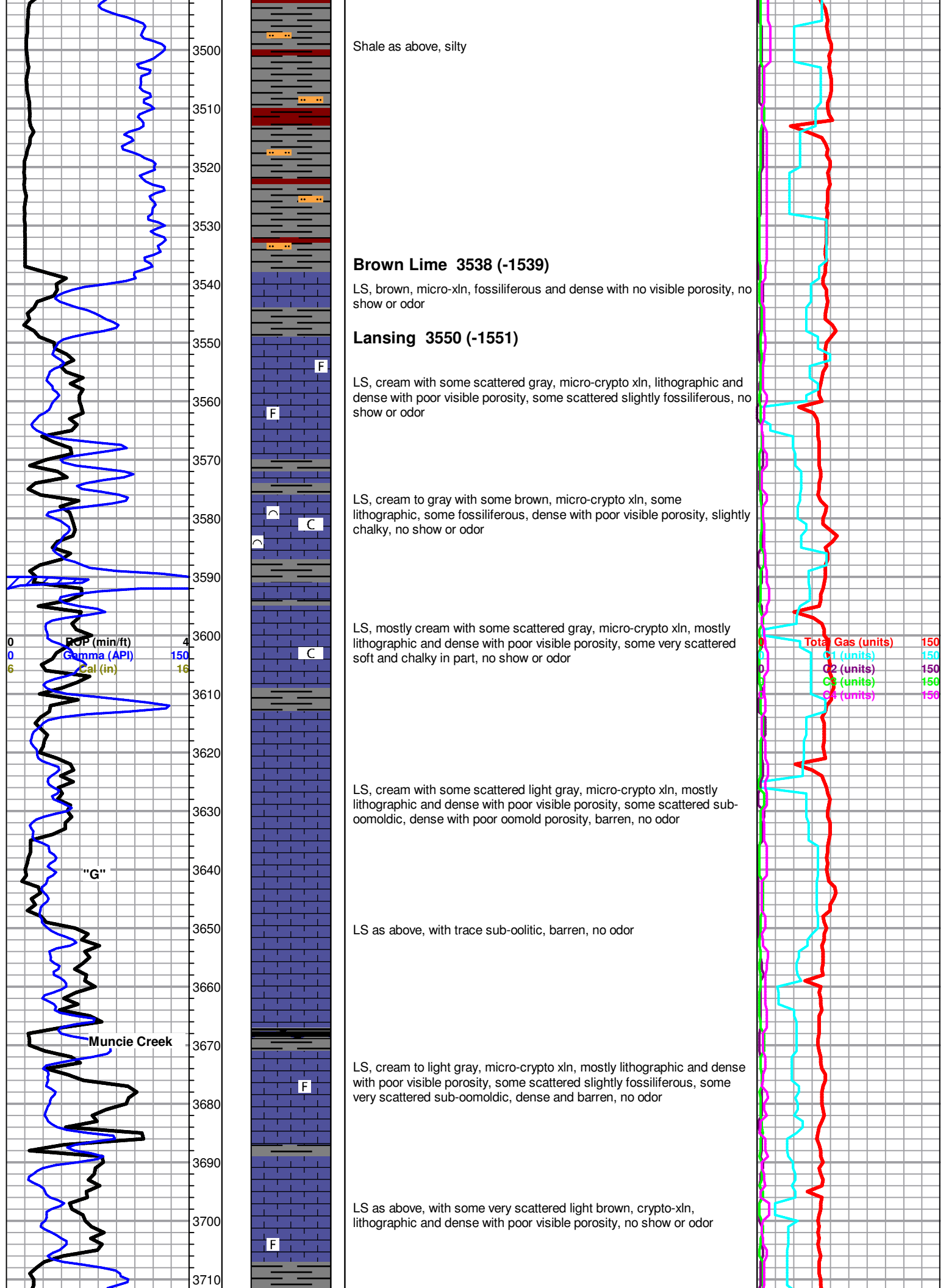
DST

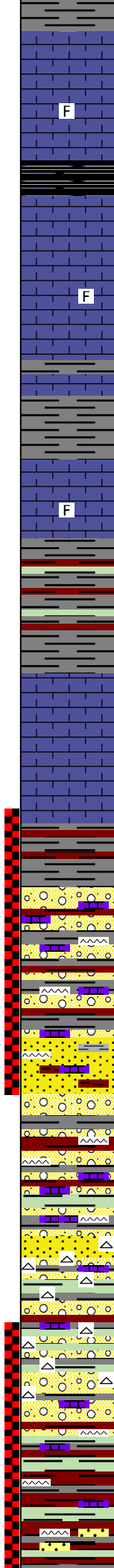
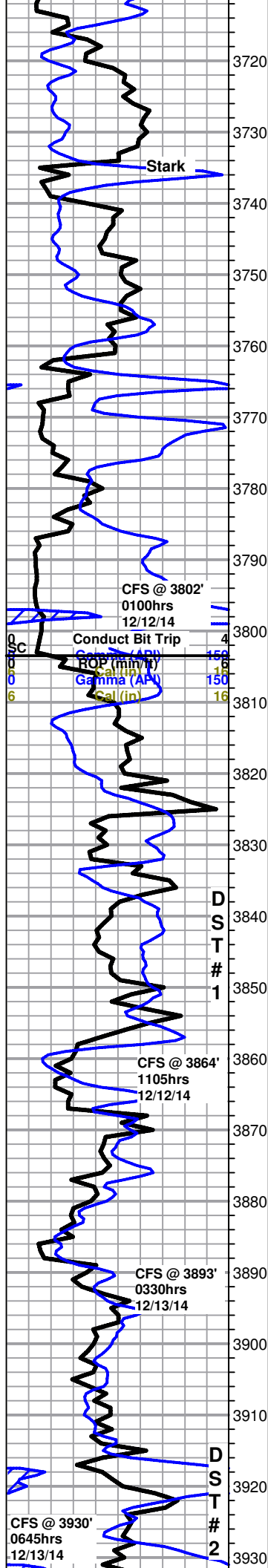
DST Int
DST alt

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LS, cream to light gray, micro-crypto xln, mostly lithographic and dense with poor visible porosity, some very scattered slightly fossiliferous with trace sub-oomoldic, no show or odor

LS as above, with some very scattered light brown, crypto-xln, dense with no visible porosity, no show or odor

LS, cream to light gray with some scattered light brown, micro-crypto xln, lithographic and dense with poor visible porosity, some very scattered slightly fossiliferous, no show or odor

BKC 3786 (-1787)

3802' 60" Mostly gray shale with some very scattered red and trace green

Marmaton 3806 (-1807)

LS, cream to light gray, micro-crypto xln, lithographic and dense with poor visible porosity, no show or odor

LS as above, with some gray and red shale, no show or odor

Mixed cream to gray LS, gray and red shales, and scattered orange to red chert, red wash, no show or odor

Conglomerate Sand 3856 (-1857)

Mixed LS, shales, and cherts as above, with SS, brown to clear, fine-grained, sub-angular to sub-rounded, mostly fairly well cemented and dense, some scattered friable, some slightly chalky, some with shale and chert inclusions, silicious, some bleeding oil and gas bubbles, good show free oil in tray, fair odor

Shelby Arkansas River Unit 1-3 dst 1.jpg

Mixed LS, gray and red shale with trace green, and mixed orange to red and tan to brown with some scattered cream cherts, red wash, no show or odor

Merlin Sand 3886 (-1887)

3893' 30" Chert, white with some scattered tan to brown and red, fresh and sharp, few very scattered chips with tripolitic edges and scattered black stain, also with conglomerate as above, found a couple very small sand clusters, clear to light brown, fine grained, mostly sub-rounded and well sorted, friable, no odor

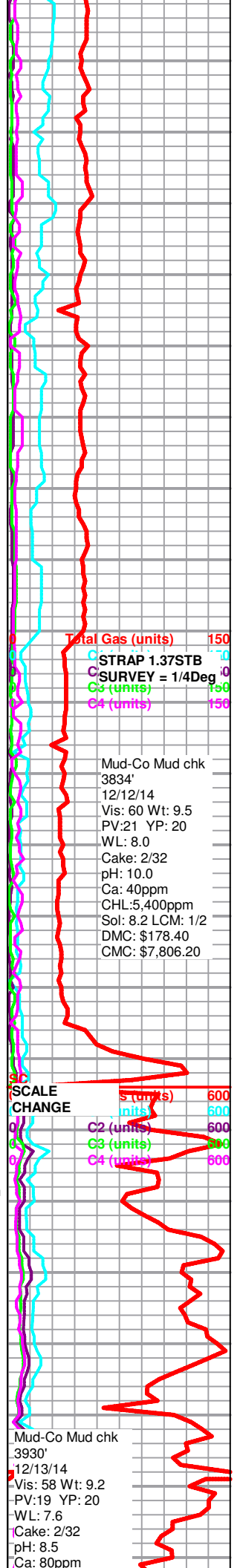
Merlin SS.jpg

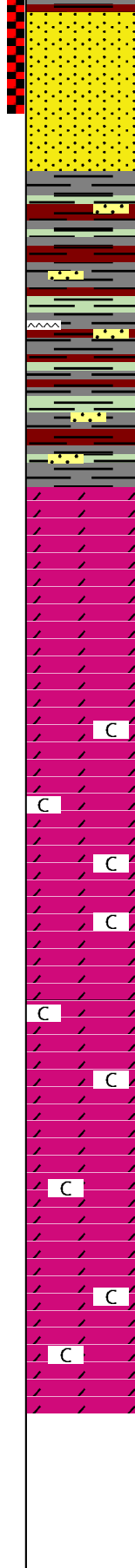
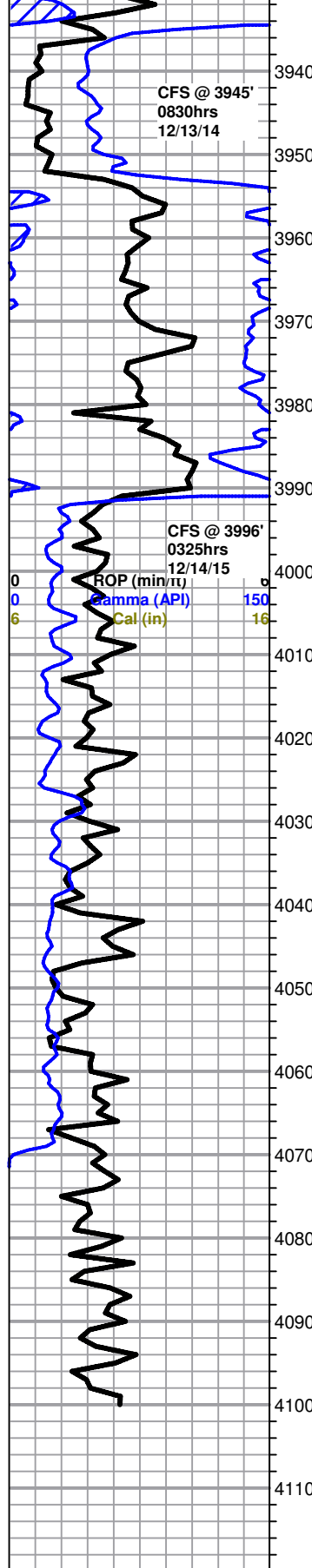
Mostly conglomerate with some white to tan and brown chert, red wash, no show or odor

Conglomerate with abundant red and gray shale with some very scattered green, no show or odor

3930' 30" Mostly red shale with some gray and very scattered green, also with some very scattered tan to cream and gray cherts, heavy red wash, no show or odor

3930' 60" Mostly same as above, also found few very scattered SS clusters, clear, sub-rounded to rounded, f-med grained, fairly friable, chalky, barren, no odor





Simpson Sand 3933 (-1934)

Shelby Arkansas River Unit 1-3 dst 2.jpg

SS, clear to milky white, med grained, sub-rounded to rounded and well sorted, fairly well cemented, some fairly friable, some clusters calcareous, some slightly chalk filled, some with very scattered shale inclusions, some clean (~30-40%), most appear barren, some with very scattered black stain, few clusters with slight to fair show free oil upon break, with abundant red shale and red wash, VSSFO in tray, poor odor

~3950' Mostly gray and red shales with some green, with some scattered SS as above, also with abundant green to gray clay, some globs with sand grains trapped, NSFO, no odor

Shale as above, with some scattered SS, and some very scattered brown chert, no shows or odor

Gray and red shale with some green, with some scattered SS, clear to milky, med-grained, well sorted, fairly friable, some glauconitic, some slightly chalky, barren, no odor

Arbuckle 3991 (-1992)

3996' 30" Dolomite, cream, micro-xln, lithographic and dense with poor visible porosity, barren, also with some scattered SS as above, NSFO, no odor in cup

3996' 60" Dolomite as above, with some scattered sub-sucrosic with poor sub-rhombic development, dense and barren, no odor in cup

~4000' Dolomite, cream, micro-xln, mostly lithographic with some sub-sucrosic, some with scattered fair sub-rhombic development, dense with poor visible porosity, no show or odor

~4010' Dolomite as above, with some scattered off-white, sub-sucrosic and dense with scattered sub-rhombic development, slightly chalky, no show or odor

~4020' Dolomite, cream with some very scattered off-white to white, sub-sucrosic to sucrosic and dense with poor visible porosity, fairly chalky, no show or odor

Dolomite as above, fairly chalky, no show or odor

Dolomite, cream to off-white with some scattered light brown to brown, micro-xln, mostly sub-sucrosic and dense with poor visible porosity, slightly chalky, no show or odor

Dolomite as above, no show or odor

Dolomite, cream with some light brown to brown, micro-xln, mostly sub-sucrosic and dense with poor visible porosity, some scattered sucrosic, no show or odor

Dolomite as above, slightly chalky, no show or odor

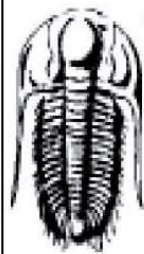
Dolomite, cream with some light brown to brown, micro-xln, sub-sucrosic to sucrosic and dense with poor visible porosity, some very scattered sub-rhombic development, no show or odor

Rotary TD 4100' @ 0815hrs 12/14/14
Nabors Well Services Logging TD @ 4101'
Complete Logging Operations @ 1630hrs 12/14/14
Geologist Jeremy Schwartz off location @ 1700 hrs 12/14/14

CHL:5.600ppm
Sol: 6.1 LCM: 1/2
DMC: \$1,544.45
CMC: \$9,350.65

Total Gas (units) 600
G1 (units) 600
G2 (units) 600
G3 (units) 600
G4 (units) 600

Mud-Co Mud chk
4076"
12/14/14
Vis: 52 Wt: 9.2
PV:19 YP: 20
WL: 7.2
Cake: 2/32
pH: 11.0
Ca: 20ppm
CHL:5,200ppm
Sol: 6.1 LCM: 1/2
DMC: \$451.35
CMC: \$9,802.00


**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Shelby Resources L.L.C

3-22s-16w Pawnee

445 Union Blvd Suite 208 Lakewood CO 80228

Arkansas River Unit

Job Ticket: 61894

DST#: 1

ATTN: Jeremy Schwartz

Test Start: 2014.12.12 @ 14:10:00

GENERAL INFORMATION:

Formation: **Conglomerate**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:58:00

Time Test Ended: 22:57:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: S5-Great Bend-50

Interval: **3825.00 ft (KB) To 3864.00 ft (KB) (TVD)**

Reference Elevations: 1999.00 ft (KB)

Total Depth: 3864.00 ft (KB) (TVD)

1986.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 13.00 ft

Serial #: 6999 Outside

Press@RunDepth: 147.02 psig @ 3861.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.12.12

End Date: 2014.12.12

Last Calib.: 2014.12.13

Start Time: 14:11:00

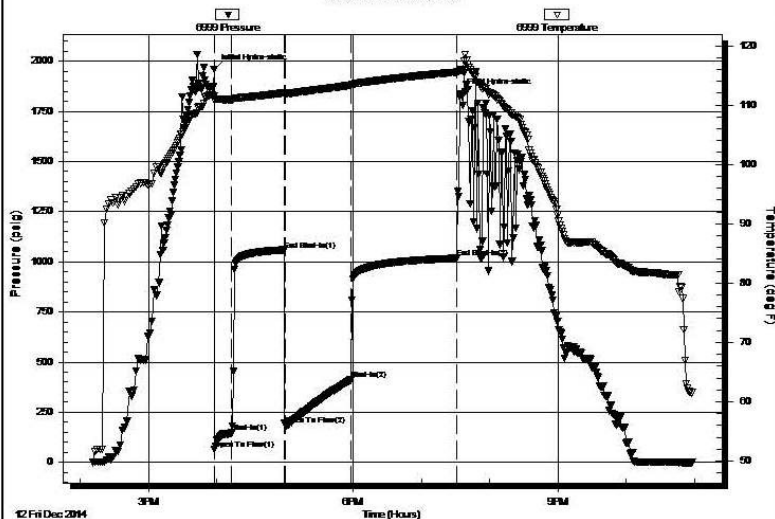
End Time: 22:57:30

Time On Btm: 2014.12.12 @ 15:57:30

Time Off Btm: 2014.12.12 @ 19:34:00

TEST COMMENT: IFR-15 Minutes-Strong blow built bottom of bucket in 3 minutes
 ISIP-45 Minutes-Blow back 8 inches
 FFP-60 Minutes-Strong blow built bottom of bucket in 3 minutes
 FSIP-90 Minutes-Blow back bottom of bucket

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1958.76	111.50	Initial Hydro-static
1	63.82	110.78	Open To Flow (1)
16	147.02	110.92	Shut-In (1)
62	1059.45	112.06	End Shut-In (1)
63	187.09	111.88	Open To Flow (2)
121	411.67	113.35	Shut-In (2)
213	1017.79	115.53	End Shut-In (2)
217	1839.23	115.89	Final Hydro-static

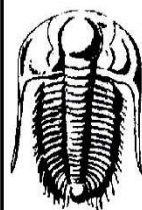
Recovery

Length (ft)	Description	Volume (bbl)
330.00	Oil 90% 10% mud	1.62
720.00	Gas oil 10% gas 90% Oil	10.10
0.00	gas in pipe 3525	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Shelby Resources L.L.C

445 Union Blvd Suite 208 Lakewood CO 80228

ATTN: Jeremy Schwartz

3-22s-16w Pawnee**Arkansas River Unit**

Job Ticket: 61895

DST#: 2

Test Start: 2014.12.13 @ 11:45:00

GENERAL INFORMATION:

Formation: **Simpson Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:48:00

Time Test Ended: 20:04:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: S5-Great Bend -50

Interval: 3897.00 ft (KB) To 3945.00 ft (KB) (TVD)

Total Depth: 3945.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1999.00 ft (KB)

1986.00 ft (CF)

KB to GR/CF: 13.00 ft

Serial #: 8400

Press@RunDepth: 1138.95 psig @ ft (KB)

Start Date: 2014.12.13

End Date:

2014.12.13

Start Time: 11:46:00

End Time:

20:04:00

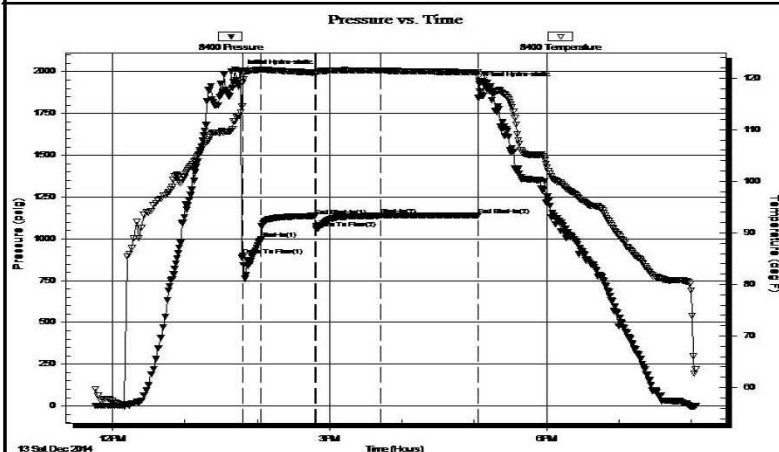
Capacity: 5000.00 psig

Last Calib.: 2014.12.13

Time On Btm: 2014.12.13 @ 13:46:30

Time Off Btm: 2014.12.13 @ 17:04:00

TEST COMMENT: IFP- 15 Minutes-Strong blow built bottom of bucket in 1 minute
 ISIP-45 Minutes-No blow back
 FFP-45 Minutes-Strong blow built bottom of bucket in 1 minute
 FSIP-90 Minutes-No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1995.22	113.34	Initial Hydro-static
2	899.77	119.15	Open To Flow (1)
17	997.00	121.63	Shut-In (1)
62	1137.36	121.06	End Shut-In (1)
63	1060.58	121.04	Open To Flow (2)
116	1138.95	121.50	Shut-In (2)
197	1141.35	121.16	End Shut-In (2)
198	1926.41	119.45	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2200.00	water	30.04

Gas Rates

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