

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

New Well  Re-Entry  Workover

Oil  WSW  SWD

Gas  DH  EOR

OG  GSW

CM (Coal Bed Methane)

Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

Deepening  Re-perf.  Conv. to EOR  Conv. to SWD

Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: \_\_\_\_\_

Confidential Release Date: \_\_\_\_\_

Wireline Log Received  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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# Deutsch Oil Company

Scale 1:240 Imperial

Well Name: VRP Unit #1-32  
Surface Location: Sec. 32 - T2S - R35W  
Bottom Location:  
API: 15-153-21206-0000  
License Number: 3180  
Spud Date: 1/11/2018 Time: 6:00 PM  
Region: Rawlins County Time: 3:15 AM  
Drilling Completed: 1/21/2018  
Surface Coordinates: 1275' FSL & 330' FWL  
Bottom Hole Coordinates:  
Ground Elevation: 3150.00ft  
K.B. Elevation: 3155.00ft  
Logged Interval: 3720.00ft To: 4800.00ft  
Total Depth: 4800.00ft  
Formation: Mississippian  
Drilling Fluid Type: Chemical/Fresh Water Gel

## OPERATOR

Company: Deutsch Oil Company  
Address: 8100 E. 22nd Street North  
Bldg. 600  
Wichita, KS 67226  
Contact Geologist: Kent Deutsch  
Contact Phone Nbr: 316-681-3567  
Well Name: VRP Unit #1-32  
Location: Sec. 32 - T2S - R35W  
API: 15-153-21206-0000  
Pool: Kansas Field: wildcat  
State: Kansas Country: USA

## SURFACE CO-ORDINATES

Well Type: Vertical  
Longitude: -101.277731  
Latitude: 39.832459  
N/S Co-ord: 1275' FSL  
E/W Co-ord: 330' FWL

## LOGGED BY

***Keith Reavis***  
***Consulting Geologist***

Company: Keith Reavis, Inc.  
Address: 3420 22nd Street  
Great Bend, KS 67530  
Phone Nbr: 620-617-4091  
Logged By: KLG #136 Name: Keith Reavis

## CONTRACTOR

Contractor: Murfin Drilling Company  
Rig #: 3  
Rig Type: mud rotary  
Spud Date: 1/11/2018 Time: 6:00 PM  
TD Date: 1/21/2018 Time: 3:15 AM  
Rig Release: Time:

## ELEVATIONS

K.B. Elevation: 3155.00ft Ground Elevation: 3150.00ft  
K.B. to Ground: 5.00ft

## NOTES

Due to successful drill stem tests and positive electrical log calculations, the operator elected to run 5 1/2 inch production



Due to successful unit tests and positive electrical log calculations, the operator elected to run 3 1/2 inch production casing to further test the VRP Unit #1-32 through perforations and stimulation.

Gamma ray and caliper curves were imported into this log from the electrical log suite. Electrical log measurements were consistently around 3-5 ft. low drillers measurements. Drill time was not shifted to provide an exact match to the electrical log but was left as recorded in the field.

Samples were saved and will be available for review at the Kansas Geological Well Sample Library in Wichita, KS.

Respectfully submitted,  
Keith Reavis

## daily drilling report

DATE	7:00 AM DEPTH	REMARKS
01/14/2018		Geologist Keith Reavis on location @ 3717 ft, just completed bit trip
01/15/2018	3933	on loc @ 3920 ft, hrs to begin samples, show in Topeka warrants test, TOH w/bit an TIH w/tools, conduct DST #1, successful test, TOH lay down tools, TIH w/bit, resume drilling, Lecompton, shut down and circ prior to Oread
01/16/2018	3959	cfs thru night, sub-zero weather and wind, to cold to test Oread if show, resume drilling 0900 hrs, cut Oread, show warrants test, TOH for DST #2, conduct and complete DST #2, successful test, lay down tool, TIH
01/17/2018	4065	finish TIH w/bit, ctch, resume drilling, Lansing A show warrants test, TOH w/bit, conduct and complete DST #3, successful test, TIH w/bit, resume drilling
01/18/2018	4180	drilling E, E, F, G, show in G warrants test, conduct and complete DST #4, successful test, TIH w/bit, resume drilling
01/19/2018	4305	drilling ahead, lower Lansing, Stark to BKC, conduct DST #5, straddle test, J zone, successful test, TIH w/PDC bit, resume drilling
01/20/2018	4565	drilling Marmaton, Pawnee, Cherokee, short trip, TOH w/bit, conduct and complete DST #6, successful test, TIH w/bit, rat-hole ahead to TD
01/21/2018	4800	drilling ahead, Cherokee, Mississippian, TD @ 0315 hrs, cfs, short trip, ctch, TOH for logs, conduct and complete logging operations, geol. off loc. 1300 hrs

## well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
VRP Unit #1-32					Murfin - Uhlaender #1-29				Murfin - Loker Trust #1-1			
1275' FSL & 330' FWL					2310' FNL & 1650' FEL				1320' FSL & 1980' FWL			
Sec 32-T2S-R35W					Sec 29-T2S-R35W				Sec 1-T3S-R36W			
1275' FSL & 330' FWL					3226 KB		Structural Relationship		3254 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Topeka	3864	-709	3867	-712	3936	-710	1	-2	3976	-722	13	10
Lecompton	3914	-759	3917	-762	3984	-758	-1	-4	4028	-774	15	12
Oread	3975	-820	3977	-822	4041	-815	-5	-7	4096	-842	22	20
Beebner	4022	-867	4025	-870	4090	-864	-3	-6	4137	-883	16	13
Lansing	4072	-917	4074	-919	4136	-910	-7	-9	4182	-928	11	9
Lansing G	4185	-1030	4188	-1033	4252	-1026	-4	-7	4298	-1044	14	11
Stark	4290	-1135	4294	-1139	4356	-1130	-5	-9	4401	-1147	12	8
Base KC	4339	-1184	4342	-1187	4406	-1180	-4	-7	4448	-1194	10	7
Pawnee	4464	-1309	4469	-1314	4533	-1307	-2	-7	4578	-1324	15	10
Cherokee	4538	-1383	4541	-1386	4605	-1379	-4	-7	4649	-1395	12	9
Mississippian	4718	-1563	4726	-1571	4792	-1566	3	-5	4846	-1592	29	21
Rotary TD	4800	-1645	4805	-1650	4890	-1664	19	14	4892	-1638	-7	-12

### ROCK TYPES

Cht	Lmst fw<7	shale, gry	Shcol
Dolprim	Lmst fw>7	Carbon Sh	Ss
sdy lmst	shale, grn	shale, red	Sltst

### ACCESSORIES

<b>MINERAL</b>	<b>FOSSIL</b>	<b>STRINGER</b>	<b>TEXTURE</b>
- Argillaceous	∩ Bioclastic or Fragmental	Dolomite	C Chalky
⊥ Calcareous	∞ Fish Remains	Limestone	L Lithogr
▲ Chert, dark	F Fossils < 20%	Siltstone	
× Mineral Crystals	φ Oolite	red shale	

- Pyrite
- Silty
- △ Chert White
- Pellets
- ⊗ Fossilinid

### OTHER SYMBOLS

#### MISC

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

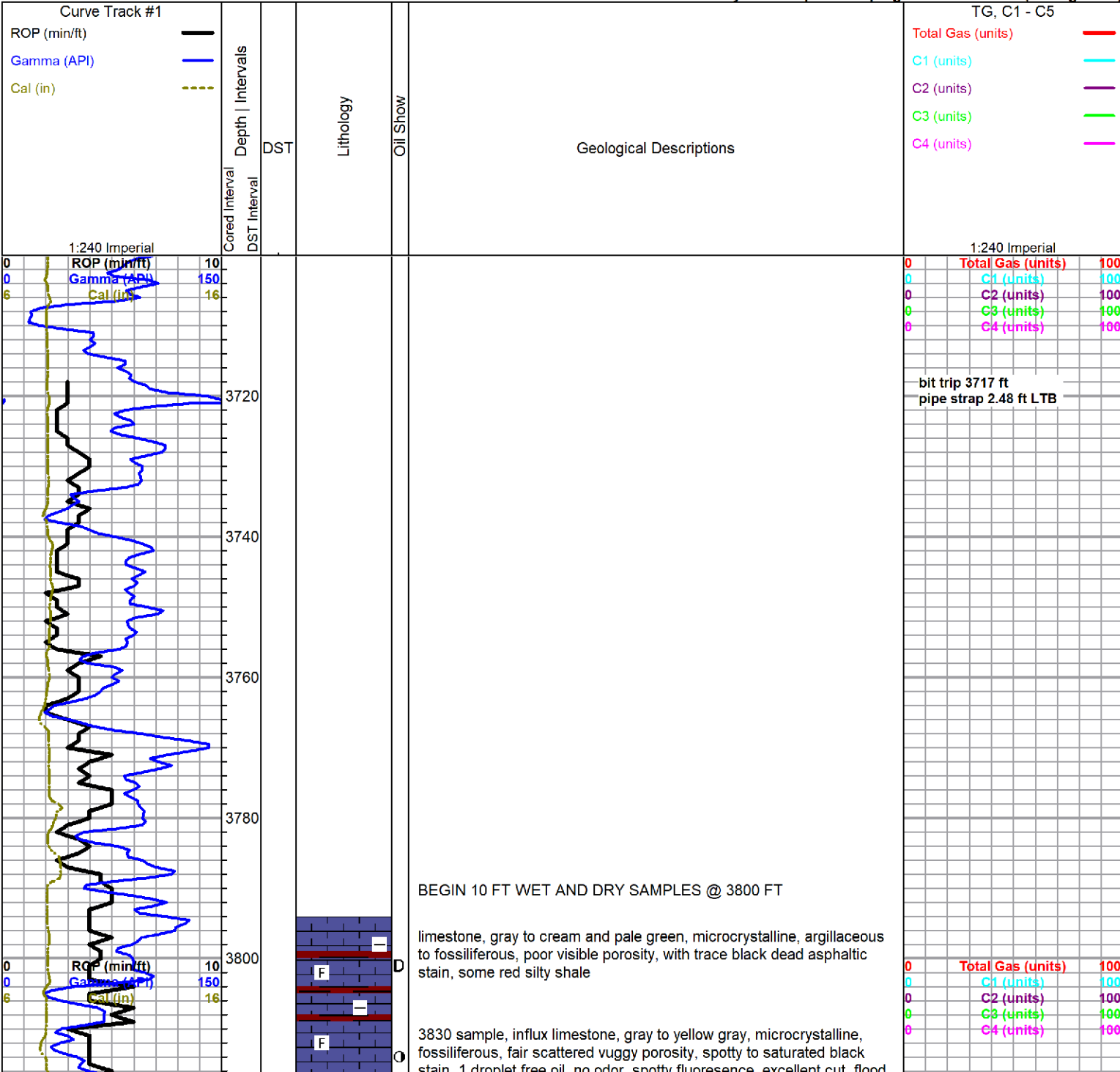
#### Oil Show

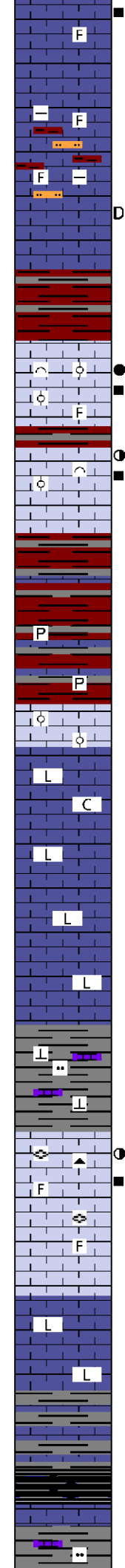
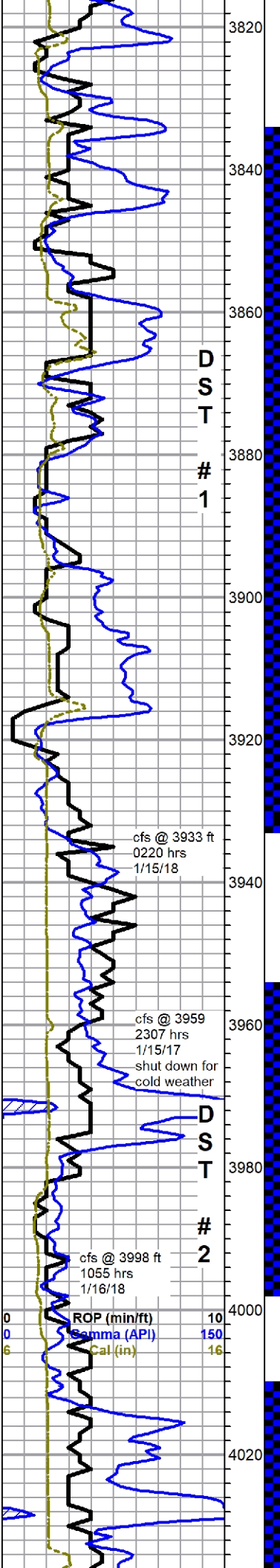
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- Dead Oil Stn
- Fluorescence
- \* Gas

#### DST

- DST Int
- DST alt
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)





stain, fluorescent blue, no odor, spotty fluorescence, excellent cut, flood red and maroon shale, silty

3840 sample, flood limestone, light gray to cream, microcrystalline, fossiliferous, dense to chalky, barren, shales drop out

limestone a.a. with influx red argillaceous and fossiliferous limestone, light red to pink siltstone, red silty shale

limestone a.a., red limestone dropping out, some scattered black stain, no show free oil or odor,

3870 sample, flood red and gray shale

**Topeka 3864 -709**  
3880 sample, limestone, gray to cream, oolitic to bioclastic, recrystallized, good wormy interclast solution vugs, saturated black to brown stain, good show free oil, fair odor, light spotty fluorescence, excellent cut, still carrying abundant shales

3890-3900 sample, limestone a.a. with influx limestone, white to gray and cream, oolitic to bioclastic and fossiliferous, chalky in part, poor overall porosity, scattered black staining, trace heavy oil (from above?) no odor, fair overall fluorescence, good bright slow streaming cut

flood red, brick and gray shales, with limestone a.a., heavy red wash in samples

shale and limestone a.a., abundant pyrite nodules, some with to light gray limestone with yellow cast, fossiliferous, slightly vuggy, fair staining, no show free oil, no odor, some good scattered fluorescence, good cut

**Lecompton 3914 -760**  
light tan, micro-oolitic, poor visible porosity, fairly dense, barren, shales have dropped out

cfs samples, limestone, light gray to white, cryptocrystalline, lithographic to slightly fossiliferous, some chalky, dense, no shows, very little shale

limestone, gray, micro-cryptocrystalline, lithographic to arenaceous, dense, no shows

shale, gray, limey to silty, soft to dense, gray shaley limestone, soft

**Oread 3975 -820**  
3990 sample: limestone, white to light gray, mostly cryptocrystalline, grainy fossiliferous with loose fusulinids, abundant chalk, scattered fair vugs with dark wormy stain (appx 15%) slight show heavy clingy free oil, fair odor, good fluorescence, excellent cut, with smokey gray chert

a.a., increasing chalk, marked decrease in show

limestone, gray to light gray, cryptocrystalline, lithographic, dense

gray shale and dark gray arenaceous limestone

**Heebner 4022 -867**  
black carbonaceous shale  
abundant pyrite nodules

dst 1.JPG

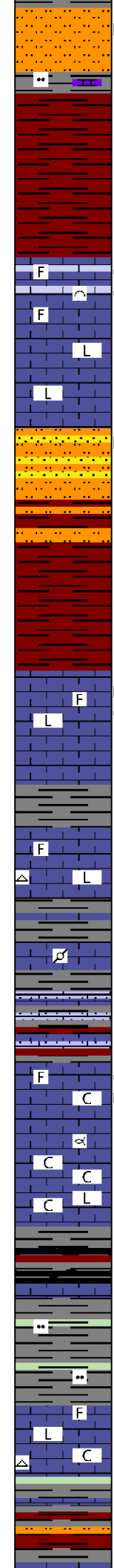
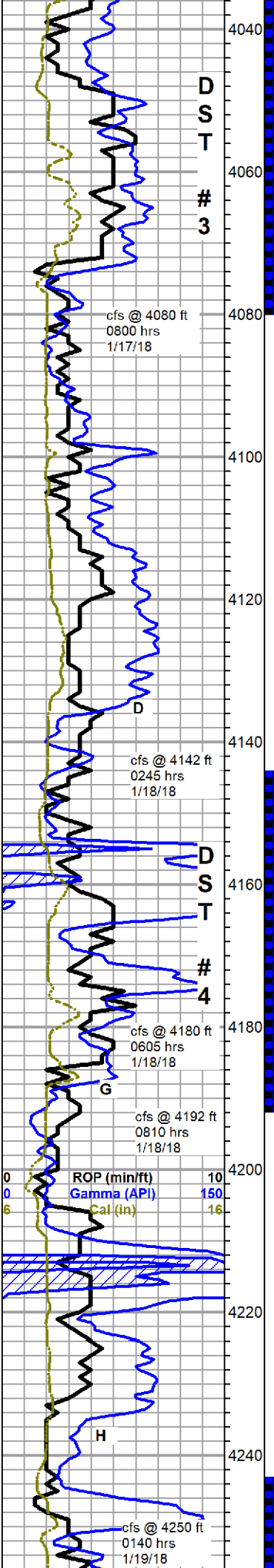
**Morgan Mud Chk**  
3933 ft  
0815 hrs 1/15/18  
Vis 56 Wt. 8.8  
PV 18 YP 18  
WL 6.4 Cake 2/32  
solids 3.5  
pH 11.5  
Chl 800 Ca 10  
LCM 4.0  
DMC -\$1205.00  
CMC \$11,235.00

**Morgan Mud Chk**  
3959 ft  
0845 hrs 1/16/18  
Vis 58 Wt. 9.0  
PV 18 YP 19  
WL 6.8 Cake 2/32  
solids 5.0  
pH 11.0  
Chl 1200 Ca 10  
LCM 3.0  
DMC -\$0.00  
CMC \$11,235.00

dst 2.JPG

0	<b>Total Gas (units)</b>	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100





snale, gray, silty, sort, very milky samples, with siltstone, light gray, scattered black dead stain, no odor or fluorescence, some yellow/gray limestone, cryptocrystalline, silty in part, few wormy vugs/tubes with dead black stain, no oil, good cut

grades to red mushy shale, heavy red wash

**Lansing 4072 -917**

● limestone, gray, mostly cryptocrystalline, dense recrystallized fossiliferous to grainy friable bioclastic, fair overall framework, scattered to good pinpoint and interclast solution vug porosity, heavy staining, slight show free oil, some slow bleeding, no odor, faint fluorescence, variable slow to instant blooming excellent cuts

○ limestone, variable gray, cryptocrystalline, dense to chalky lithographic, scattered black dead stain

● siltstone to very fine grain sandstone, light gray to lavender gray, well sorted, mostly well cemented, some friable, light to dark saturated stain, trace oil droplets on break, no odor, no fluorescence, no cut

grades to light gray soft shaley siltstone, barren

soft red shales, with orange to brick red dense shale, heavy red wash

● limestone, variable gray to reddish brown, micro-cryptocrystalline, fossiliferous to lithographic, some fractures and scattered vugs with black dead stain, no odor, no free oil, some fair mineral fluorescence, slight slow streaming cut

○ grades to limestone, blue/gray to pale green, arenaceous, dense, barren

● limestone, white to light gray, cryptocrystalline, lithographic to slightly fossiliferous, dense, some light gray chert, no shows

● limestone, brown, cryptocrystalline, pelletal, some recrystallized, some grainy, dense, no shows, with gray shales

cfs samples, limestone, maroon/gray mottled, pelletal to fossiliferous to sandy, grainy, dense to chalky, abundant chalk, no shows

● limestone, gray to light gray and white, mostly cryptocrystalline, dense recrystallized fossiliferous, some chalky, good to fair interclast and solution vug porosity, spotty to saturated stain, slight show bleeding oil with streaming sheen, no odor, some good mineral fluorescence, good cut with halo

● limestone, light gray to white, cryptocrystalline, lithographic to fossiliferous, poor visible porosity, barren, flood chalk

mixed gray, black carbonaceous and red shales, with limestone, gray to brown, grainy, fossiliferous, arenaceous, no shows

soft gray mushy shale and silty shale

● limestone, mixed gray, light gray, white and cream, mostly cryptocrystalline, lithographic to fossiliferous, fairly dense, poor visible porosity, no shows, some scattered chert, abundant chalk

cfs samples, a.a. with: influx brown and tan limestone, crypto-microcrystalline, fossiliferous, cherty, with: gray, green and red shales, some siltstones, red wash in samples

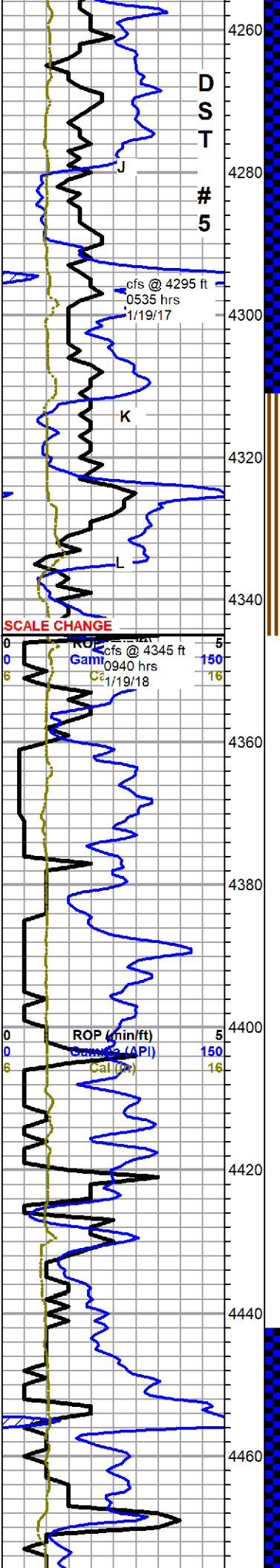
dst 3.JPG

deviation survey 1/4 deg

**Morgan Mud Chk**  
 4080 ft  
 1100 hrs 1/17/18  
 Vis 63 Wt. 9.0  
 PV 21 YP 22  
 WL 6.0 Cake 2/32  
 solids 5.0  
 pH 11.0  
 Chl 1800 Ca 10  
 LCM 2.0  
 DMC -\$1085.00  
 CMC \$12,320.00

dst 4.JPG

**Morgan Mud Chk**  
 4192 ft  
 0815 hrs 1/18/18  
 Vis 50 Wt. 9.2  
 PV 16 YP 16  
 WL 6.0 Cake 2/32  
 solids 6.4  
 pH 10.5  
 Chl 1800 Ca 10  
 LCM 3.0  
 DMC -\$1220.00  
 CMC \$13,540.00



soft mushy gray and pink shale, heavy gray wash

limestone, white to light gray, cryptocrystalline, fossiliferous, some recrystallized, some chalky, some surface etching with scattered to fair pin-point porosity, light spotty staining, fair show free oil and gassy oil on break, weak odor, fair fluorescence, variable degrees ct, light to very good with halo

dst 5.JPG

**Stark Shale 4290 -1135**

limestone, white to light gray to blue/gray, cryptocrystalline, fossiliferous to lithographic, poor visible porosity, some chalk, no shows

limestone, white to light gray, some tannish/brown mottling, microcrystalline, oolitic to fossiliferous, oolitic is recrystallized to flattened, poor visible porosity, fair scattered fluorescence, no shows, abundant chalk

**Base KC 4339 -1184**

mixed shale

limestone, white to light gray, cryptocrystalline, fossiliferous, chalky in part, no visible porosity, no show

mixed shale a.a with siltstone, stained black, dead asphaltic, no show free oil, no odor, no fluorescence, good cut

flood red silty shale

limestone a.a.

shale, mixed red, lavender, maroon, green, gray, with some lavender cryptocrystalline shaley limestone

lavender cryptocrystalline shaley limestone

shales a.a.

limestone, mixed gray to white to lavender, micro-cryptocrystalline, fossiliferous to lithographic and silty/argillaceous, trace staining, no show free oil, no odor

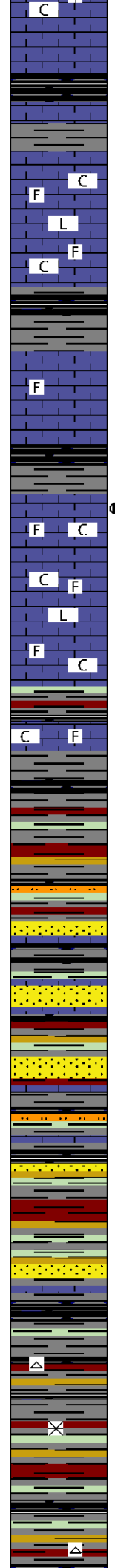
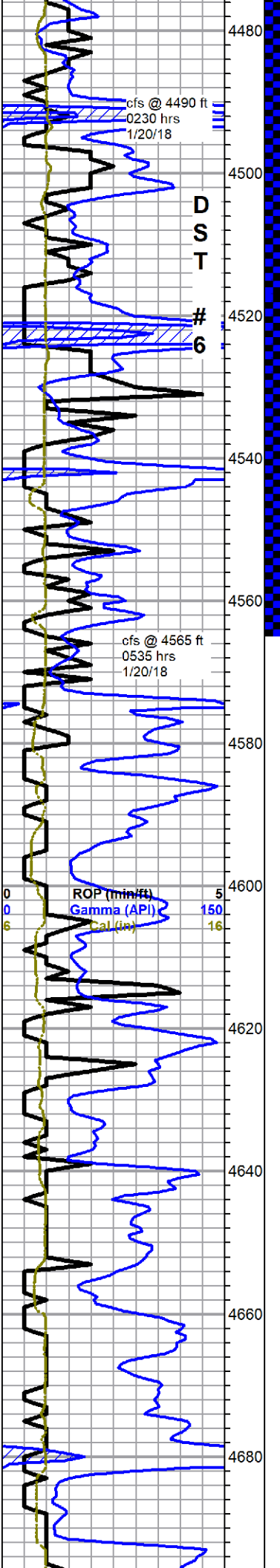
**Pawnee 4464 -1309**

limestone, white to light gray, cryptocrystalline, chalky, fossiliferous, trace chalky oolitic, scattered stain, few small specimens with good stain and interclast porosity, free oil droplets on break, no odor, good fluorescence in tray, not checked for cut (specimens too small)

**Morgan Mud Chk**  
4321 ft  
0810 hrs 1/19/18  
Vis 55 Wt. 9.1  
PV 17 YP 18  
WL 6.0 Cake 2/32  
solids 5.0  
pH 11.0  
Chl 1500 Ca 10  
LCM 4.0  
DMC \$0  
CMC \$13,540.00

Back in hole  
after DST #5  
with PDC bit

0	<b>Total Gas (units)</b>	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100



black carbonaceous shale

limestone, variable gray to white, mostly cryptocrystalline, fossiliferous, dense to chalky and grainy, with lithographic, dense, moderate chalk in samples, no shows

black carbonaceous shale

limestones, a.a.

**Cherokee 4538 -1383**

limestone, white to cream, chalky fossiliferous, weathered (spongy texture), fair pin-point porosity, spotty to saturated stain, show of free oil, some bleeding gassy oil, fair show on break, no odor, good fluorescence, excellent cut with halo

with, light gray to blue/gray, fossiliferous to lithographic, chalky to dense, barren

**start 20 ft. samples**

4610 sample, limestone, white, very chalky, fossiliferous, fine samples, no shows

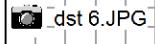
4630 sample, mixed shales, some red siltstone and dirty gray sandstone, silty, very fine grain, poorly sorted, poor porosity, medium cementing, no shows

4650 shale a.a. with some sandstone and abundant limestone a.a., some white sandstone, silty, very fine grain, poorly sorted, poor porosity, medium cementing, trace arkosic no shows

a.a.

mostly shale, decreasing sand and limestone, traces orange and frosted chert, some large loose quartz grains

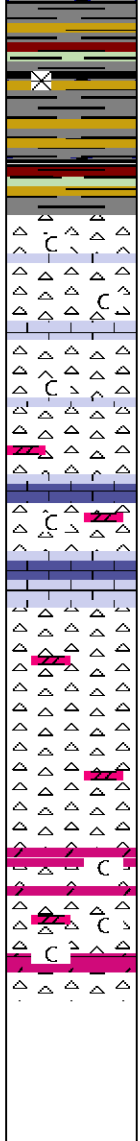
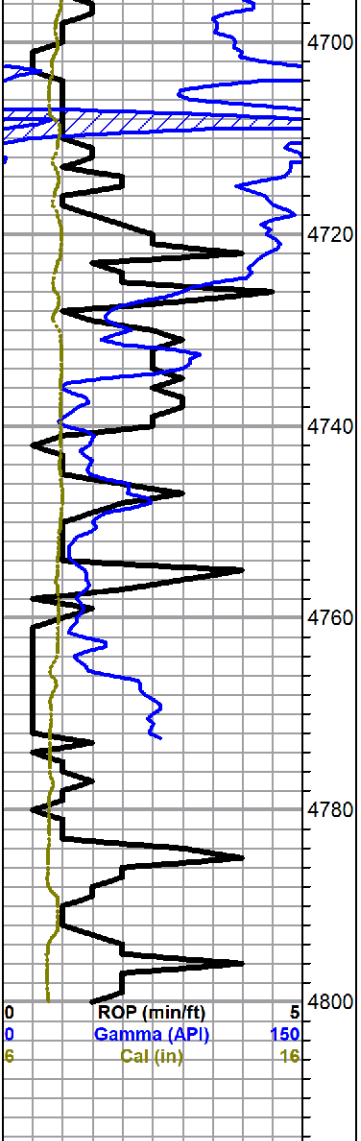
a.a.,



dst 6.JPG

**Morgan Mud Chk**  
 4565 ft  
 0830 hrs 1/20/18  
 Vis 64 Wt. 9.1  
 PV 20 YP 22  
 WL 6.0 Cake 2/32  
 solids 5.7  
 pH 11.5  
 Chi 1300 Ca 10  
 LCM 4.0  
 DMC \$1176.00  
 CMC \$13,4716.00

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



increasing yellow shales

**Mississippian 4718 -1563**

starting in 4740 sample, still mostly shale in samples, influx of white chalk, white to white/tan mottled fossiliferous and tripolitic chert, weathered oolitic chert, some glauconitic, some white soft flattened oolitic limestone, soft, chalky, abundant chalk in samples

begin 10 ft samples 4730 ft

a.a., shales dropping out, with limestone, gray to white fossiliferous, dense to very chalky, with dolomite, light gray, sucrosic, still abundant chalk, no shows

tripolitic chert a.a. with flood white and gray chert, fossiliferous, sharp, fresh,

chert a.a. with dolomite, white to cream, sucrosic, dense, poor visible porosity, flood chalk in samples

Rotary TD 4800 ft. @ 0315 hrs 1/21/18  
 ELI wireline TD 4805 ft.  
 Complete Logging Operations 1300 hrs 1/21/18

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

**dst 1.JPG**

<p><b>TRIOBITE TESTING, INC.</b></p>	<b>DRILL STEM TEST REPORT</b>	
	Deutsch Oil Co 8100 E 22nd St N Bldg 600 Wichita KS 67226 ATTN: Keith Reavis	32 2s 35w Rawlins KS VPR Unit 1-32 Job Ticket: 64163 Test Start: 2018.01.15 @ 06:44:00

GENERAL INFORMATION:		
Formation:	Topeka	
Deviated:	No Whipstock:	ft (KB)
Time Tool Opened:	09:39:31	
Time Test Ended:	17:02:00	
Test Type:	Conventional Bottom Hole (hita)	
Tester:	Jim Svaty	
Unit No:	69	

Interval: 3834.00 ft (KB) To 3933.00 ft (KB) (TVD)  
 Total Depth: 3933.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches -hole Condition: Fair

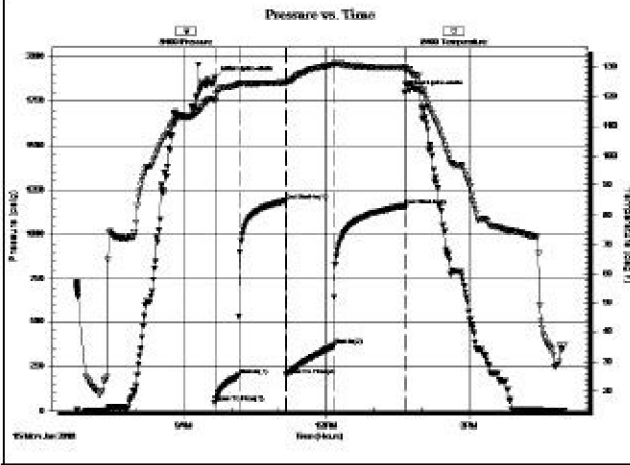
Reference Elevations: 3155.00 ft (KB)  
 3150.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8400**

**Outside**

Press@RunDepth: 364.70 psig @ 3835.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.01.15 End Date: 2018.01.15 Last Calib.: 2018.01.15  
 Start Time: 06:44:01 End Time: 17:01:31 Time On Btm: 2018.01.15 @ 09:39:16  
 Time Off Btm: 2018.01.15 @ 13:39:46

TEST COMMENT: 30-FP- BOB in 9min.  
 60-SIP- No Blow  
 60-FFP- BOB in 12min.  
 90-FSIP- No Blow



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1879.25	119.12	Initial Hydro-static
1	46.11	118.35	Open To Flow(1)
30	198.43	124.38	Shut-In(1)
90	1188.78	124.88	End Shut-In(1)
90	199.85	124.55	Open To Flow(2)
150	364.70	130.79	Shut-In(2)
240	1160.92	129.75	End Shut-In(2)
241	1798.87	129.97	Final Hydro-static

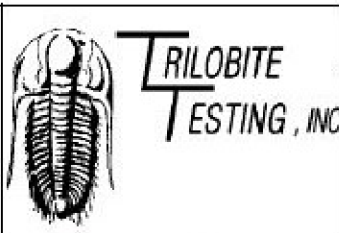
**Recovery**

Length (ft)	Description	Volume (bbl)
429.00	MCW 5% m 95% w	4.37
310.00	OWCM 5% o 35% w 60% m	4.35
50.00	OWCM 10% o 20% w 70% m	0.70

**Gas Rates**

Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/D)

dst 2.JPG



**DRILL STEM TEST REPORT**

Deutsch Oil Co 32 2s 35w Rawlins KS  
 8100 E 22nd St N Bldg 600 VPR Unit 1-32  
 Wichita KS 67226 Job Ticket 64164 DST#: 2  
 ATTN: Keth Reavis Test Start: 2018.01.16 @ 14:20:00

**GENERAL INFORMATION:**

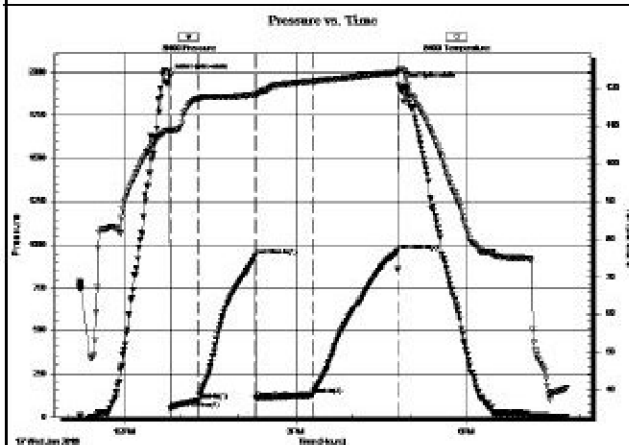
Formation: Oread  
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 16:38:16 Tester: JimSvaty  
 Time Test Ended: 23:23:00 Unit No: 69  
 Interval: 3954.00 ft (KB) To 3998.00 ft (KB) (TVD) Reference Elevations: 3155.00 ft (KB)  
 Total Depth: 3998.00 ft (KB) (TVD) 3150.00 ft (CF)





Press@RunDepth: 123.02 psig @ 4016.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.01.17 End Date: 2018.01.17 Last Calib.: 2018.01.17  
 Start Time: 11:12:01 End Time: 19:45:46 Time On Btm: 2018.01.17 @ 12:47:16  
 Time Off Btm: 2018.01.17 @ 16:48:16

**TEST COMMENT:** 30-FP- Surface Blow Building to 9in.  
 60-SIP- Surface Blow in 2 1/2min.. Blow Thru-Out  
 60-FPP- BOB in 59min.  
 90-FSIP- Surface Blow in 4 min. Died in 35min.



**PRESSURE SUMMARY**

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1971.09	108.88	Initial Hydro-static
1	41.63	108.43	Open To Flow (1)
31	93.12	117.15	Shut-In(1)
91	937.20	118.42	End Shut-In(1)
91	103.40	118.14	Open To Flow (2)
151	123.02	121.69	Shut-In(2)
241	963.29	124.05	End Shut-In(2)
241	1923.03	124.53	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
220.00	OCM 50%o 50%w	1.44
0.00	150 GIP	0.00

\* Recovery from multiple tests

**Gas Rates**

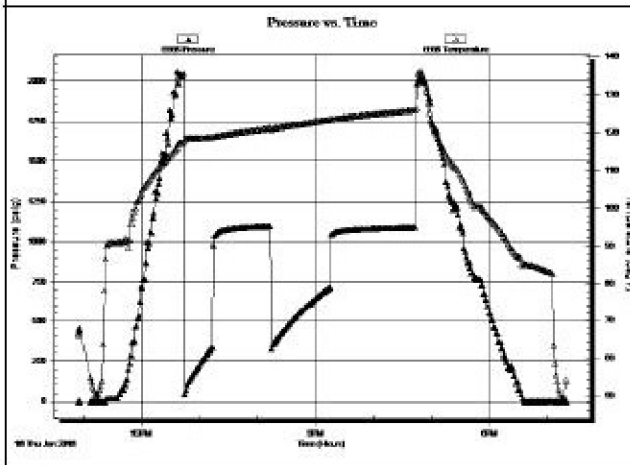
Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/D)

dst 4.JPG

	<b>DRILL STEM TEST REPORT</b>	
	Deutsch Oil Co 8100 E 22nd St N Bldg 600 Wichita KS 67226 ATTN: Keith Reavis	<b>32 2s 35w Rawlins KS</b> <b>VPR Unit 1-32</b> Job Ticket: 64166 <b>DST#: 4</b> Test Start: 2018.01.18 @ 10:55:00
<b>GENERAL INFORMATION:</b>		
Formation: <b>LKC " G "</b> Deviated: No Whipstock:      ft (KB) Time Tool Opened: 12:44:01 Time Test Ended: 19:19:00	Test Type: Conventional Bottom Hole (Reset) Tester: Jim Svaty Unit No: 69	Reference Elevations: 3155.00 ft (KB) 3150.00 ft (CF) KB to GR/CF: 5.00 ft
Interval: <b>4144.00 ft (KB) To 4192.00 ft (KB) (TVD)</b> Total Depth: 4192.00 ft (KB) (TVD) Hole Diameter: 7.88 inches -hole Condition: Fair	Serial #: <b>6668</b> <b>Inside</b> Press@RunDepth: psig @ 4154.00 ft (KB) Capacity: 8000.00 psig Start Date: 2018.01.18 End Date: 2018.01.18 Last Calib.: 2018.01.18	

Start Time: 10:55:01 End Time: 19:18:46 Time On Btm: Time Off Btm

TEST COMMENT: 30-FP- BOB in 4min.  
60-SIP- No Blow  
60-FFP- BOB in 5min.  
90-FSIP- No Blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery		
Length (ft)	Description	Volume (bbl)
1575.00	MCW 5%w 95%w	20.44

\* Recovery from multiple tests

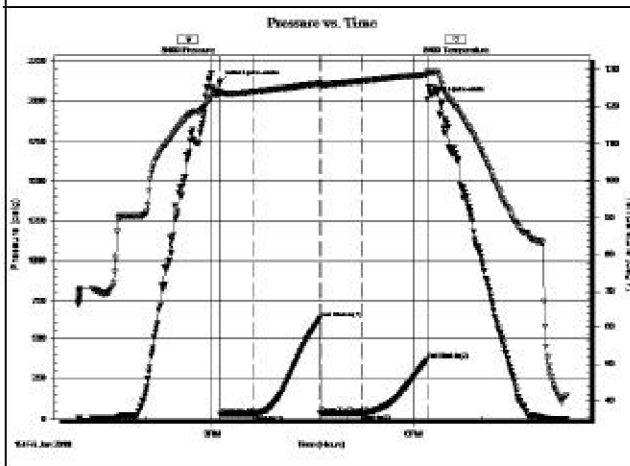
Gas Rates			
	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)

dst 5.JPG

	<b>DRILL STEM TEST REPORT</b>	
	Deutsch Oil Co 8100 E 22nd St N Bldg 600 Wichita KS 67226 ATTN: Keth Reavis	32 2s 35w Rawlins KS VPR Unit 1-32 Job Ticket: 64168 <b>DST#: 5</b> Test Start: 2018.01.19 @ 13:00:00
<b>GENERAL INFORMATION:</b>		
Formation: <b>LKC "J"</b> Deviated: No Whipstock:      ft (KB) Time Tool Opened: 15:07:01 Time Test Ended: 20:17:00	Test Type: Conventional Straddle (Reset) Tester: Jim Svaty Unit No: 69	
Interval: <b>4243.00 ft (KB) To 4310.00 ft (KB) (TVD)</b> Total Depth: 4345.00 ft (KB) (TVD) Hole Diameter: 7.88 inches -hole Condition: Fair	Reference Elevations: 3155.00 ft (KB) 3150.00 ft (CF) KB to GR/CF: 5.00 ft	
<b>Serial #: 8400      Inside</b>		
Press@RunDepth: 37.67 psig @ 4250.00 ft (KB) Start Date: 2018.01.19      End Date: 2018.01.19 Start Time: 13:00:01      End Time: 20:16:46	Capacity: 8000.00 psig Last Calib.: 2018.01.19 Time On Btm: 2018.01.19 @ 15:06:46 Time Off Btm: 2018.01.19 @ 18:12:01	



TEST COMMENT: 30-FP- 1/2in. Bbw  
 60-SIP- No Blow  
 30-FFP- No Blow  
 60-FSIP- No Blow




PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2122.44	124.09	Initial Hydro-static
1	31.78	123.51	Open To Flow (1)
30	33.84	124.04	Shut-In(1)
90	629.13	126.21	End Shut-In(1)
90	35.92	125.91	Open To Flow (2)
127	37.67	126.88	Shut-In(2)
185	372.06	128.66	End Shut-In(2)
186	2017.78	129.23	Final Hydro-static

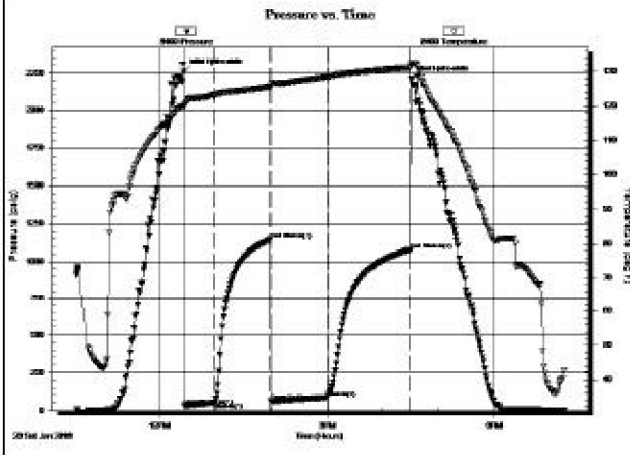
Recovery		
Length (ft)	Description	Volume (bbl)
5.00	Oil Speck Mud 100%	0.02

\* Recovery from multiple tests

Gas Rates			
	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)

dst 6.JPG

		DRILL STEM TEST REPORT	
		Deutsch Oil Co 8100 E 22nd St N Bldg 600 Wichita KS 67226 ATTN: Keth Reavis	32 2s 35w Rawlins KS VPR Unit 1-32 Job Ticket: 64169 Test Start: 2018.01.20 @ 10:30:00
<b>GENERAL INFORMATION:</b>			
Formation: <b>Pawnee &amp; Cherokee</b> Deviated: No Whipstock: ft (KB) Time Tool Opened: 12:25:31 Time Test Ended: 19:14:46	Test Type: Conventional Bottom Hole (Reset) Tester: Jim Svaty Unit No: 69	Reference Elevations: 3155.00 ft (KB) 3150.00 ft (CF)	
Interval: <b>4442.00 ft (KB) To 4565.00 ft (KB) (TVD)</b> Total Depth: 4565.00 ft (KB) (TVD) Hole Diameter: 7.88 inches Hole Condition: Fair	Reference Elevations: 3155.00 ft (KB) 3150.00 ft (CF) KB to GR/CF: 5.00 ft		
<b>Serial #: 8400</b> Outside Press@RunDepth: 85.19 psig @ 4443.00 ft (KB) Start Date: 2018.01.20 End Date: 2018.01.20 Start Time: 10:30:01 End Time: 19:14:46	Capacity: 8000.00 psig Last Calib.: 1999.12.30 Time On Btm: 2018.01.20 @ 12:25:16 Time Off Btm: 2018.01.20 @ 16:30:16		
<b>TEST COMMENT:</b> 30-FP- Surface Blow Building to 3 1/2in. 60-SIP- No Blow			



**PRESSURE SUMMARY**

Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	2259.47	119.96	Initial Hydro-static
1	32.76	119.74	Open To Flow (1)
33	54.31	123.18	Shut-In(1)
94	1145.46	125.53	End Shut-In(1)
94	60.28	125.20	Open To Flow (2)
154	85.19	128.55	Shut-In(2)
244	1078.05	131.21	End Shut-In(2)
245	2212.86	132.02	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bb)
105.00	OWCM 5%o 5%w 90%m	0.52
20.00	CO 100%	0.10

\* Recovery from multiple tests

**Gas Rates**

	Choke (inches)	Pressure (psig)	Gas Rate (MscfD)



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Deutsch Oil Co  
8100 E 22nd St N Bldg 600  
Wichita KS 67226  
ATTN: Keith Reavis

**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
Job Ticket: 64163 **DST#: 1**  
Test Start: 2018.01.15 @ 06:44:00

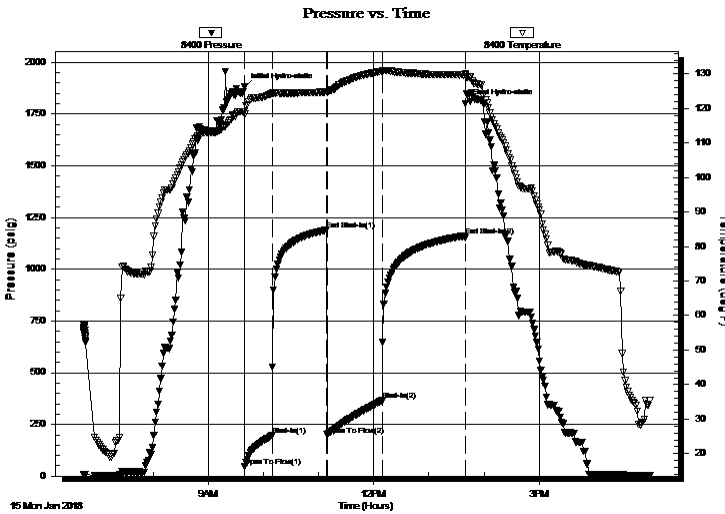
## GENERAL INFORMATION:

Formation: **Topeka**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 09:39:31  
Time Test Ended: 17:02:00  
Interval: **3834.00 ft (KB) To 3933.00 ft (KB) (TVD)**  
Total Depth: 3933.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Jim Svaty  
Unit No: 69  
Reference Elevations: 3155.00 ft (KB)  
3150.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 8400 Outside**  
Press@RunDepth: 364.70 psig @ 3835.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2018.01.15 End Date: 2018.01.15 Last Calib.: 2018.01.15  
Start Time: 06:44:01 End Time: 17:01:31 Time On Btm: 2018.01.15 @ 09:39:16  
Time Off Btm: 2018.01.15 @ 13:39:46

TEST COMMENT: 30-IFP- BOB in 9min.  
60-ISIP- No Blow  
60-FFP- BOB in 12min.  
90-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1879.25	119.12	Initial Hydro-static
1	46.11	118.35	Open To Flow (1)
30	198.43	124.38	Shut-In(1)
90	1188.78	124.88	End Shut-In(1)
90	199.85	124.55	Open To Flow (2)
150	364.70	130.79	Shut-In(2)
240	1160.92	129.75	End Shut-In(2)
241	1798.87	129.97	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
429.00	MCW 5% <sub>m</sub> 95% <sub>w</sub>	4.37
310.00	OWCM 5% <sub>o</sub> 35% <sub>w</sub> 60% <sub>m</sub>	4.35
50.00	OWCM 10% <sub>o</sub> 20% <sub>w</sub> 70% <sub>m</sub>	0.70

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Deutsch Oil Co

**32 2s 35w Rawlins KS**

8100 E 22nd St N Bldg 600  
Wichita KS 67226

**VPR Unit 1-32**

Job Ticket: 64163

**DST#: 1**

ATTN: Keith Reavis

Test Start: 2018.01.15 @ 06:44:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

125000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: in<sup>3</sup>

Gas Cushion Type:

Resistivity: 6.40 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 4.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
429.00	MCW 5% <sub>m</sub> 95% <sub>w</sub>	4.369
310.00	OWCM 5% <sub>o</sub> 35% <sub>w</sub> 60% <sub>m</sub>	4.348
50.00	OWCM 10% <sub>o</sub> 20% <sub>w</sub> 70% <sub>m</sub>	0.701

Total Length: 789.00 ft      Total Volume: 9.418 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

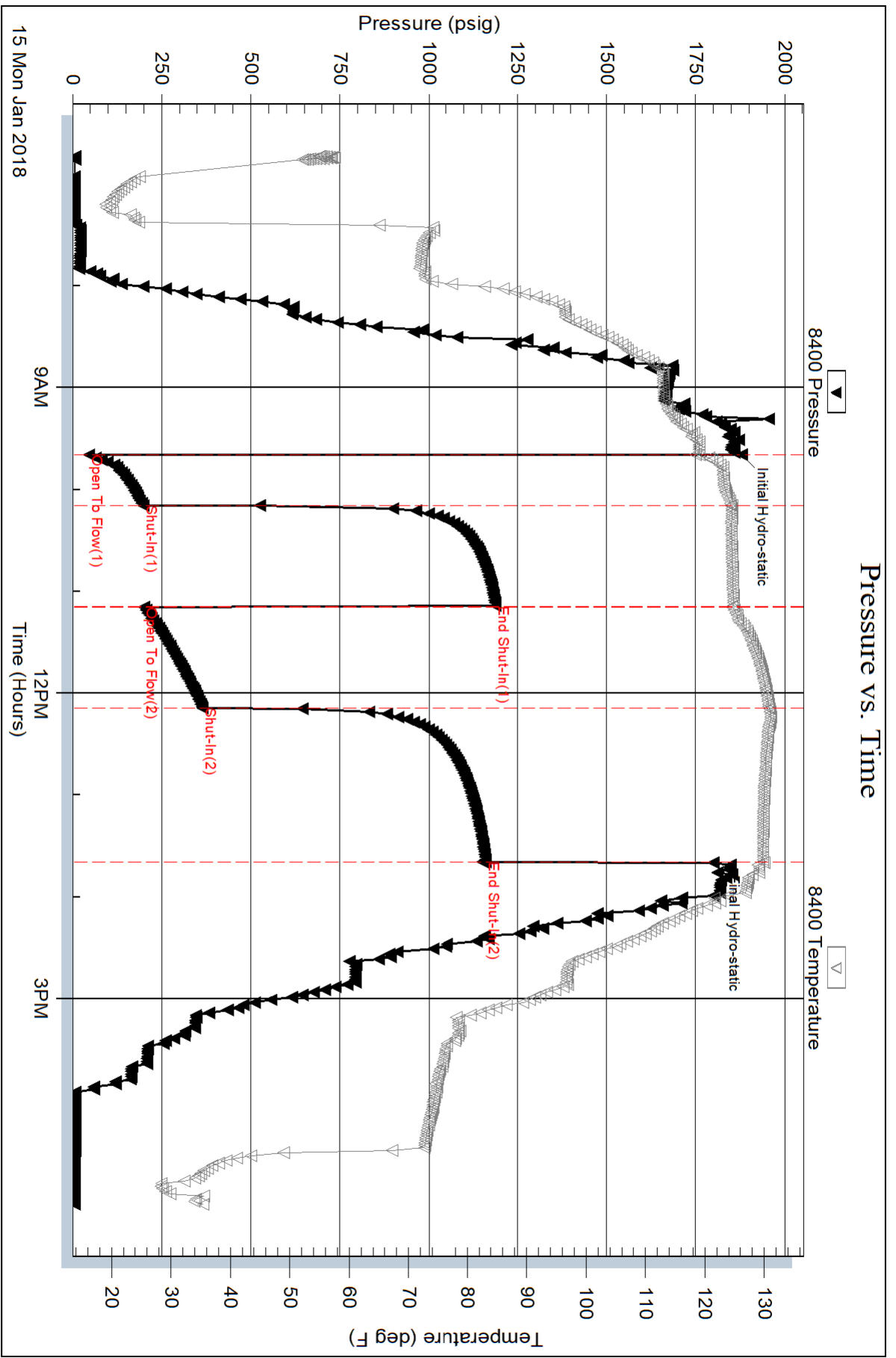
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW- .249 @ 11





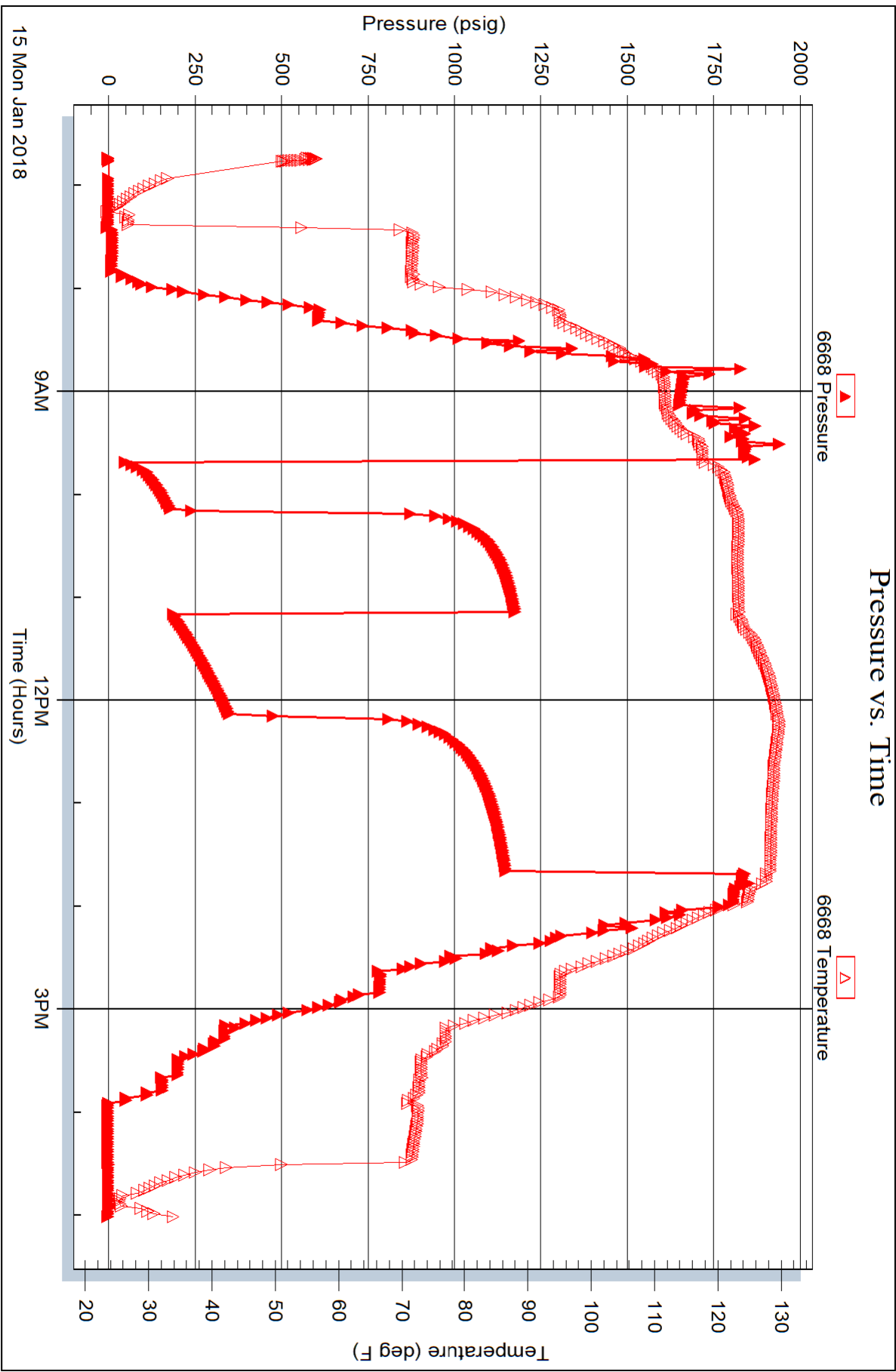
Serial #: 6668

Inside

Deutsch Oil Co

VPR Unit 1-32

DST Test Number: 1





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Deutsch Oil Co  
 8100 E 22nd St N Bldg 600  
 Wichita KS 67226  
 ATTN: Keith Reavis

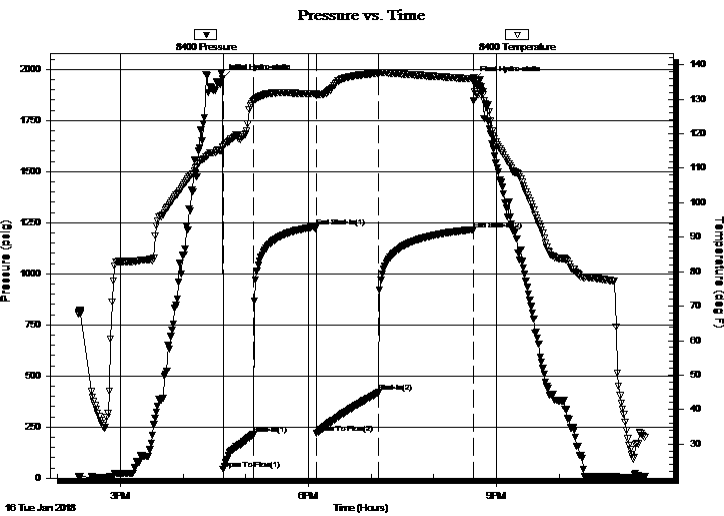
**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
 Job Ticket: 64164 **DST#: 2**  
 Test Start: 2018.01.16 @ 14:20:00

## GENERAL INFORMATION:

Formation: **Oread**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 16:38:16  
 Time Test Ended: 23:23:00  
 Interval: **3954.00 ft (KB) To 3998.00 ft (KB) (TVD)**  
 Total Depth: 3998.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Jim Svaty  
 Unit No: 69  
 Reference Elevations: 3155.00 ft (KB)  
 3150.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8400 Outside**  
 Press@RunDepth: 417.96 psig @ 3960.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.01.16 End Date: 2018.01.16 Last Calib.: 2018.01.16  
 Start Time: 14:20:01 End Time: 23:22:31 Time On Btm: 2018.01.16 @ 16:37:46  
 Time Off Btm: 2018.01.16 @ 20:38:31

**TEST COMMENT:** 30-IFP- BOB in 8min.  
 60-ISIP- Surace Blow in 3 1/2min. Died in 6min.  
 60-FFP- BOB in 9min.  
 90-FSIP- No Blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1955.15	116.32	Initial Hydro-static
1	41.77	116.17	Open To Flow (1)
30	214.06	129.52	Shut-In(1)
90	1230.41	131.56	End Shut-In(1)
90	219.17	131.10	Open To Flow (2)
150	417.96	137.52	Shut-In(2)
240	1215.91	135.94	End Shut-In(2)
241	1945.62	135.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
615.00	MCW 5%w 95%w	6.98
230.00	WCM 20%w 80%m	3.23

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Deutsch Oil Co

**32 2s 35w Rawlins KS**

8100 E 22nd St N Bldg 600  
Wichita KS 67226

**VPR Unit 1-32**

Job Ticket: 64164

**DST#: 2**

ATTN: Keith Reavis

Test Start: 2018.01.16 @ 14:20:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

135000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbf

Water Loss: in<sup>3</sup>

Gas Cushion Type:

Resistivity: 6.80 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 3.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
615.00	MCW 5% <sub>m</sub> 95% <sub>w</sub>	6.978
230.00	WCM 20% <sub>w</sub> 80% <sub>m</sub>	3.226

Total Length: 845.00 ft      Total Volume: 10.204 bbf

Num Fluid Samples: 0

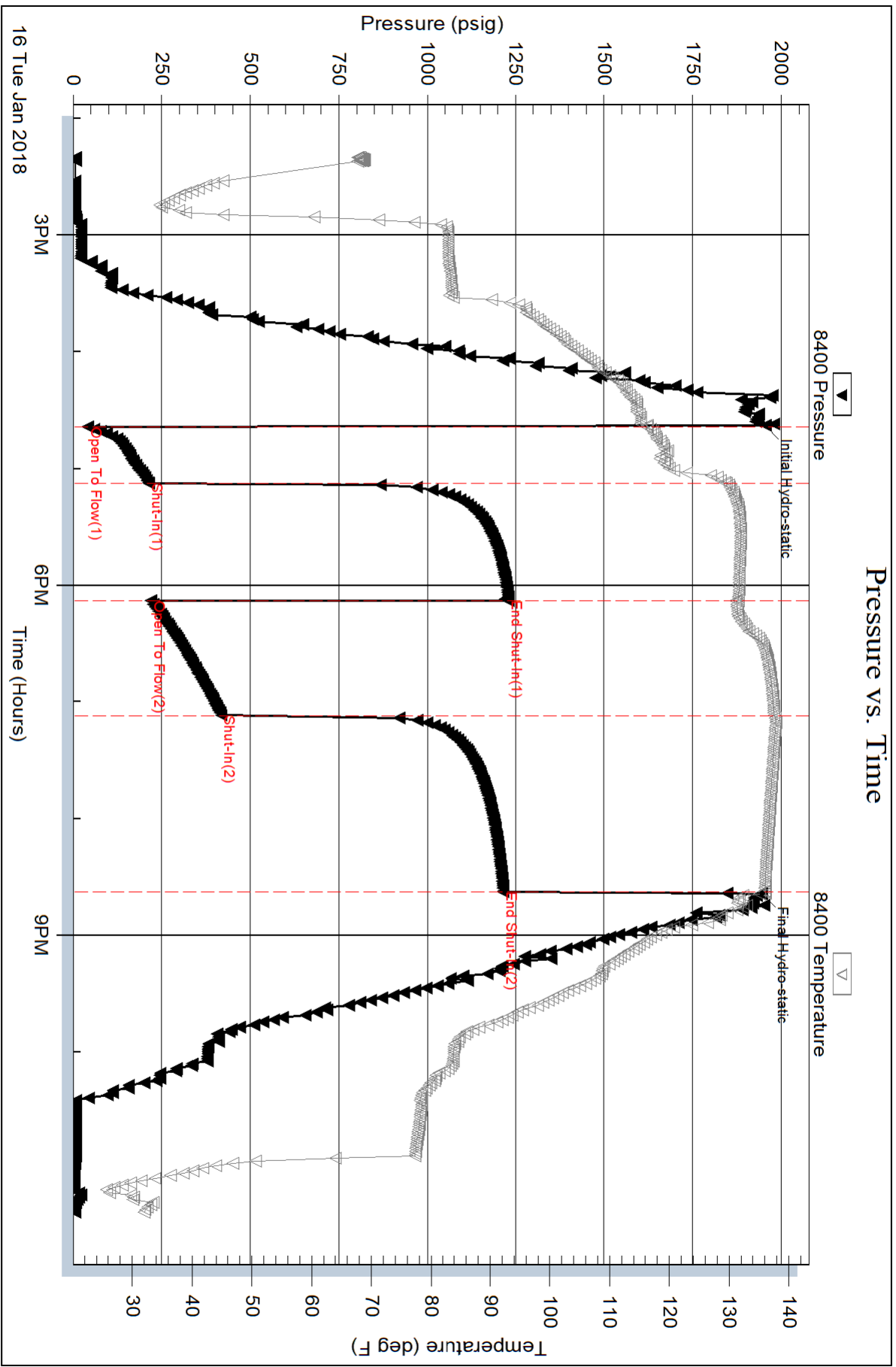
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .225 @ 20----RW



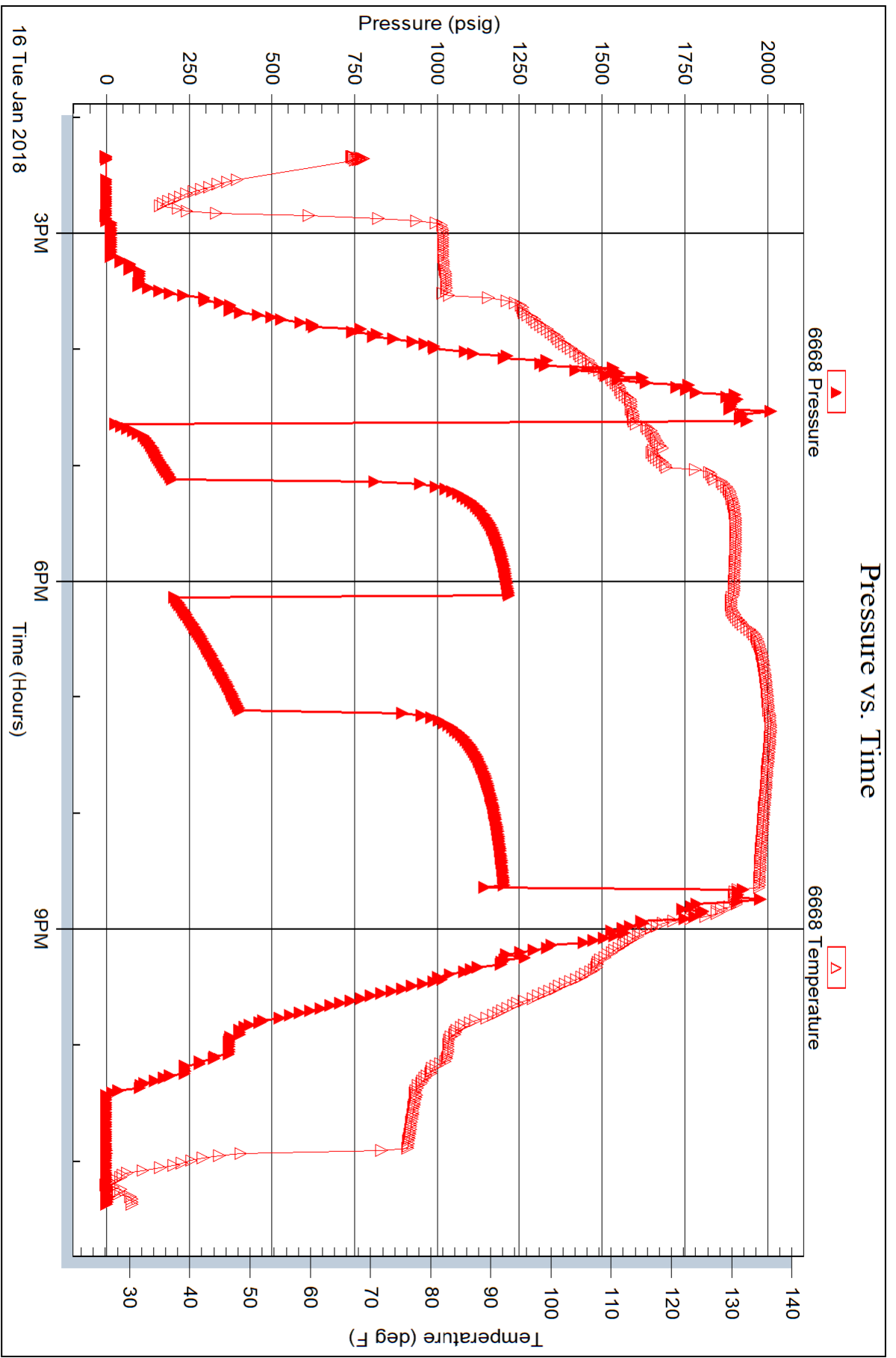
Serial #: 6668

Inside

Deutsch Oil Co

VPR Unit 1-32

DST Test Number: 2





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Deutsch Oil Co  
 8100 E 22nd St N Bldg 600  
 Wichita KS 67226  
 ATTN: Keith Reavis

**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
 Job Ticket: 64165 **DST#: 3**  
 Test Start: 2018.01.17 @ 11:12:00

## GENERAL INFORMATION:

Formation: **LKC " A "**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:47:31  
 Time Test Ended: 19:46:00  
 Interval: **4010.00 ft (KB) To 4080.00 ft (KB) (TVD)**  
 Total Depth: 4080.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Jim Svaty  
 Unit No: 69  
 Reference Elevations: 3155.00 ft (KB)  
 3150.00 ft (CF)  
 KB to GR/CF: 5.00 ft

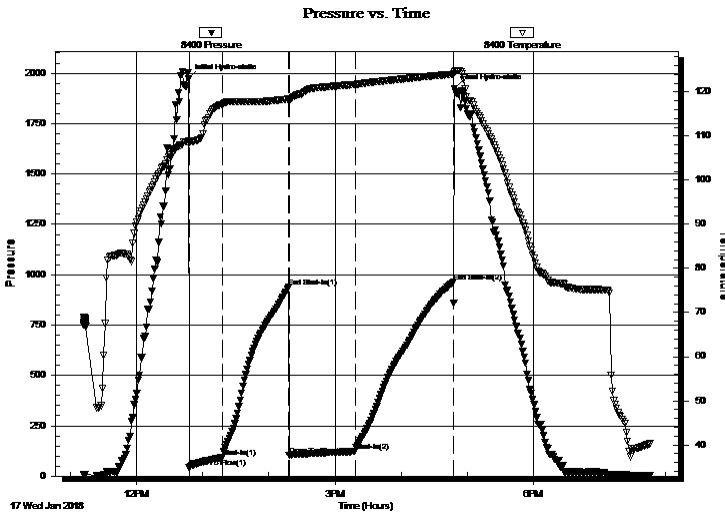
## Serial #: 8400

Outside

Press@RunDepth: 123.02 psig @ 4016.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.01.17 End Date: 2018.01.17 Last Calib.: 2018.01.17  
 Start Time: 11:12:01 End Time: 19:45:46 Time On Btm: 2018.01.17 @ 12:47:16  
 Time Off Btm: 2018.01.17 @ 16:48:16

TEST COMMENT: 30-IFP- Surface Blow Building to 9in.  
 60-ISIP- Surface Blow in 2 1/2min.. Blow Thru-Out  
 60-FFP- BOB in 59min.  
 90-FSIP- Surface Blow in 4min. Died in 35min.

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1971.09	108.88	Initial Hydro-static
1	41.63	108.43	Open To Flow (1)
31	93.12	117.15	Shut-In(1)
91	937.20	118.42	End Shut-In(1)
91	103.40	118.14	Open To Flow (2)
151	123.02	121.69	Shut-In(2)
241	963.29	124.05	End Shut-In(2)
241	1923.03	124.53	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
220.00	OCM 50%o 50%m	1.44
0.00	150 GIP	0.00

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Deutsch Oil Co

**32 2s 35w Rawlins KS**

8100 E 22nd St N Bldg 600  
Wichita KS 67226

**VPR Unit 1-32**

Job Ticket: 64165

**DST#: 3**

ATTN: Keith Reavis

Test Start: 2018.01.17 @ 11:12:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: in<sup>3</sup>

Gas Cushion Type:

Resistivity: 6.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
220.00	OCM 50%o 50%m	1.437
0.00	150 GIP	0.000

Total Length: 220.00 ft

Total Volume: 1.437 bbl

Num Fluid Samples: 0

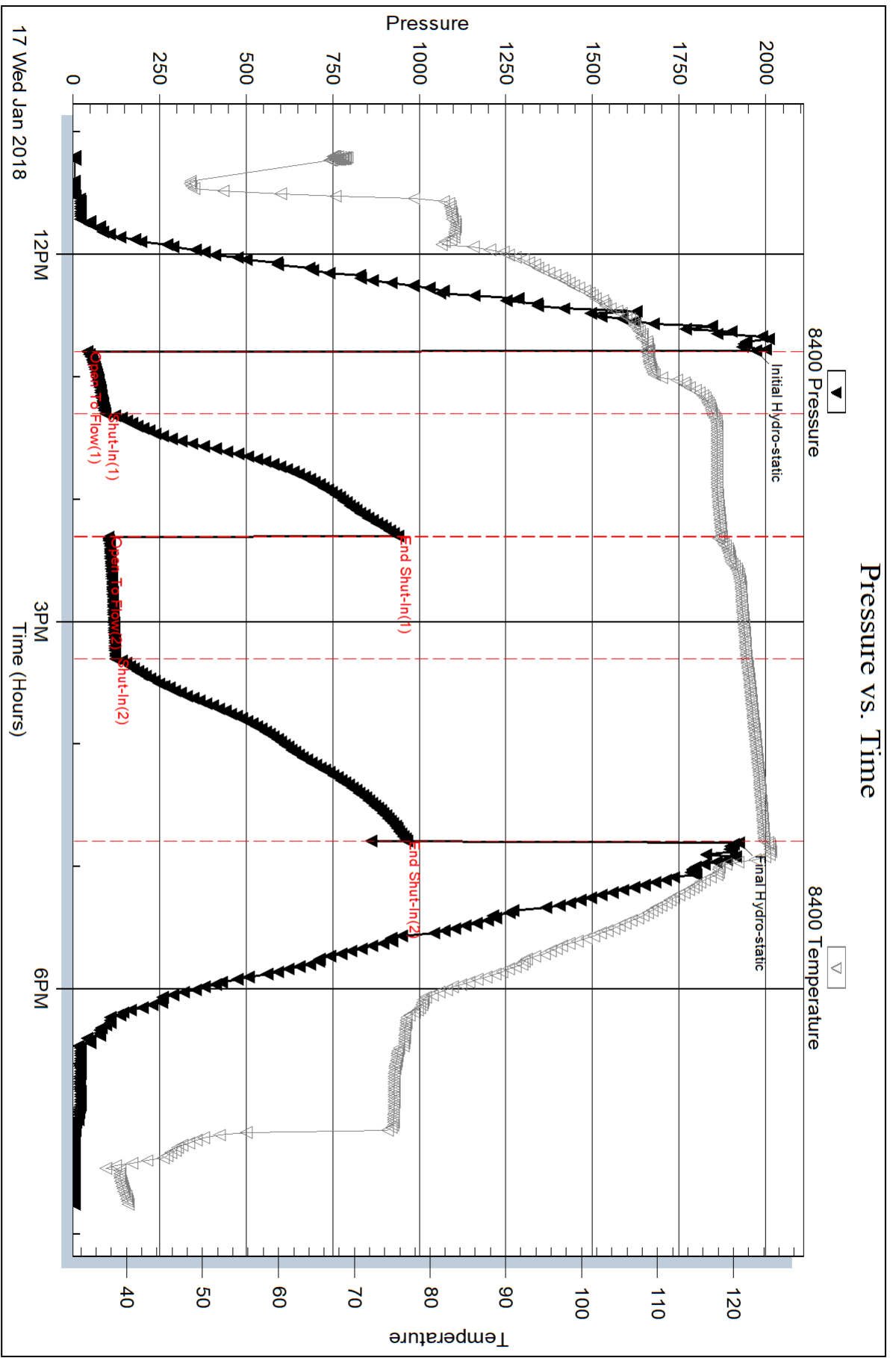
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



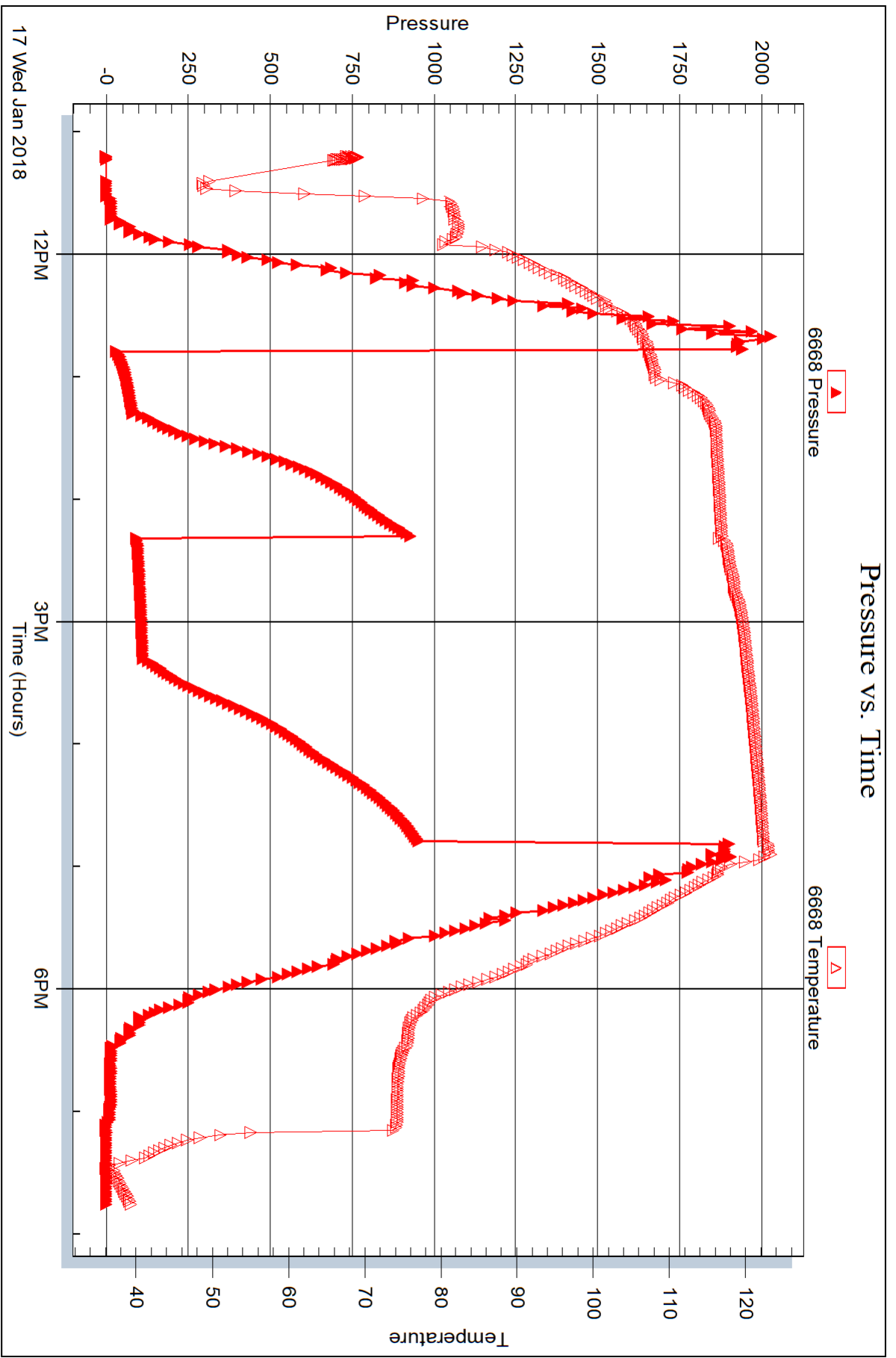
Serial #: 6668

Inside

Deutsch Oil Co

VPR Unit 1-32

DST Test Number: 3





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Deutsch Oil Co  
 8100 E 22nd St N Bldg 600  
 Wichita KS 67226  
 ATTN: Keith Reavis

**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
 Job Ticket: 64166 **DST#: 4**  
 Test Start: 2018.01.18 @ 10:55:00

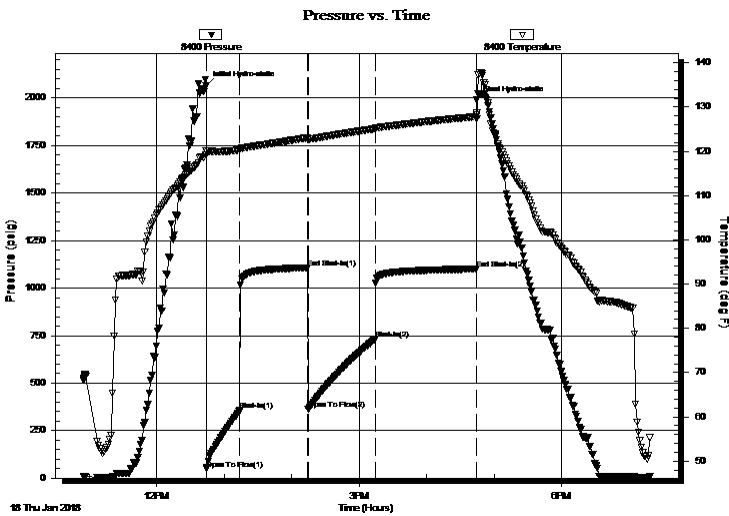
## GENERAL INFORMATION:

Formation: **LKC " G "**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:44:01  
 Time Test Ended: 19:19:00  
 Interval: **4144.00 ft (KB) To 4192.00 ft (KB) (TVD)**  
 Total Depth: 4192.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Jim Svaty  
 Unit No: 69  
 Reference Elevations: 3155.00 ft (KB)  
 3150.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8400 Outside**  
 Press@RunDepth: 730.53 psig @ 4154.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.01.18 End Date: 2018.01.18 Last Calib.: 2018.01.18  
 Start Time: 10:55:01 End Time: 19:18:31 Time On Btm: 2018.01.18 @ 12:43:46  
 Time Off Btm: 2018.01.18 @ 16:44:16

TEST COMMENT: 30-IFP- BOB in 4min.  
 60-ISIP- No Blow  
 60-FFP- BOB in 5min.  
 90-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2065.86	119.98	Initial Hydro-static
1	48.90	119.24	Open To Flow (1)
31	355.10	120.30	Shut-In(1)
91	1106.27	123.04	End Shut-In(1)
91	361.14	122.84	Open To Flow (2)
151	730.53	125.07	Shut-In(2)
241	1100.50	127.83	End Shut-In(2)
241	1988.53	128.12	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1575.00	MCW 5%w 95%w	20.44

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Deutsch Oil Co  
 8100 E 22nd St N Bldg 600  
 Wichita KS 67226  
 ATTN: Keith Reavis

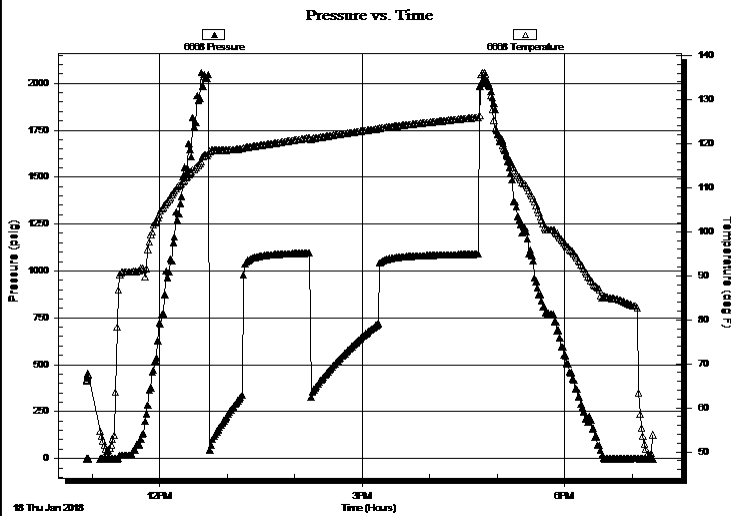
**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
 Job Ticket: 64166 **DST#: 4**  
 Test Start: 2018.01.18 @ 10:55:00

## GENERAL INFORMATION:

Formation: **LKC " G "**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:44:01  
 Time Test Ended: 19:19:00  
 Interval: **4144.00 ft (KB) To 4192.00 ft (KB) (TVD)**  
 Total Depth: 4192.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Jim Svaty  
 Unit No: 69  
 Reference Elevations: 3155.00 ft (KB)  
 3150.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 6668** Inside  
 Press@RunDepth: psig @ 4154.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.01.18 End Date: 2018.01.18 Last Calib.: 2018.01.18  
 Start Time: 10:55:01 End Time: 19:18:46 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 30-IFP- BOB in 4min.  
 60-ISIP- No Blow  
 60-FFP- BOB in 5min.  
 90-FSIP- No Blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
1575.00	MCW 5% m 95% w	20.44

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Deutsch Oil Co

**32 2s 35w Rawlins KS**

8100 E 22nd St N Bldg 600  
Wichita KS 67226

**VPR Unit 1-32**

Job Ticket: 64166

**DST#: 4**

ATTN: Keith Reavis

Test Start: 2018.01.18 @ 10:55:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

34000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: in<sup>3</sup>

Gas Cushion Type:

Resistivity: 6.40 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 3.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1575.00	MCW 5% <sub>m</sub> 95% <sub>w</sub>	20.444

Total Length: 1575.00 ft      Total Volume: 20.444 bbl

Num Fluid Samples: 0

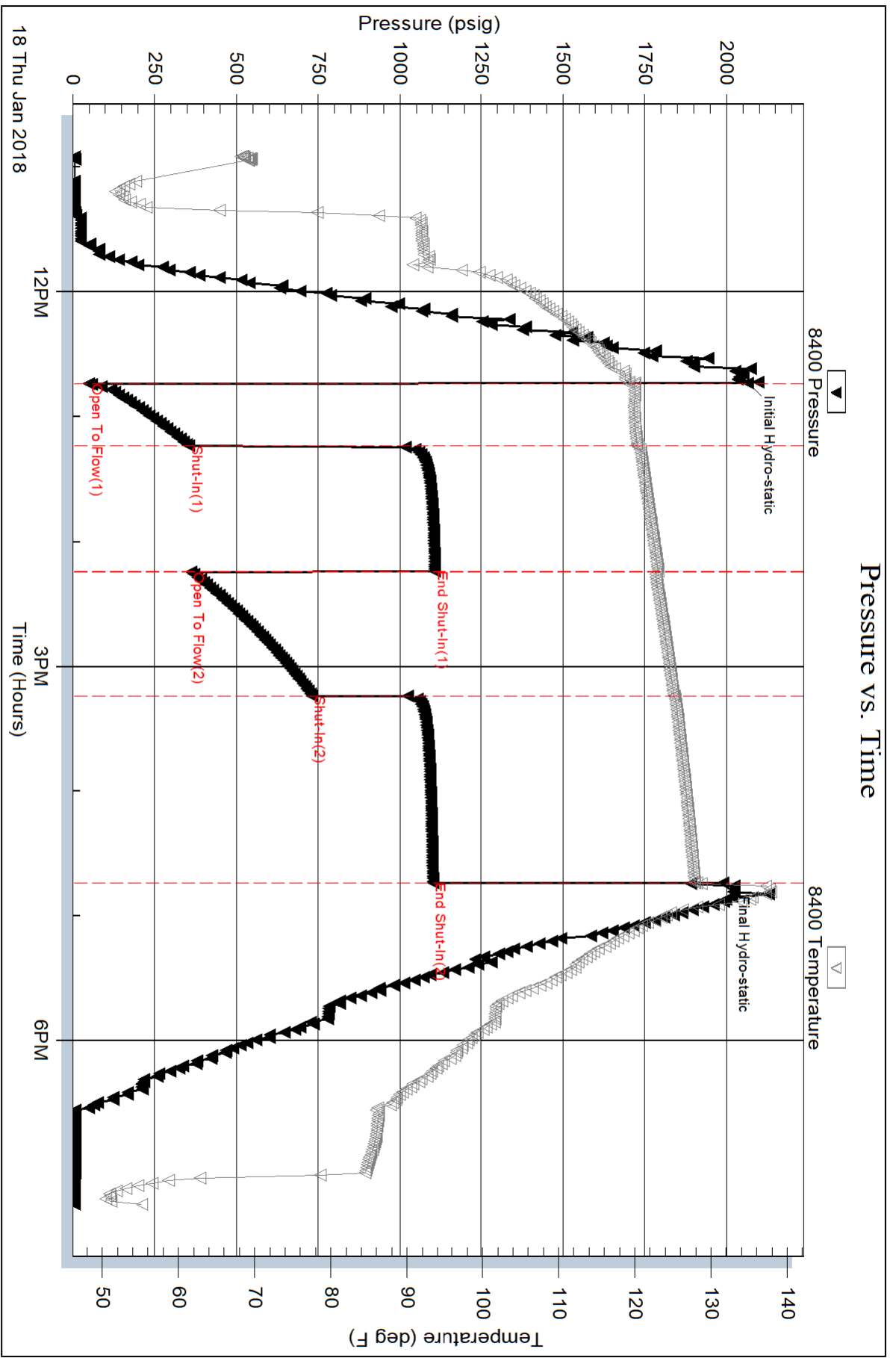
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .265 @ 55





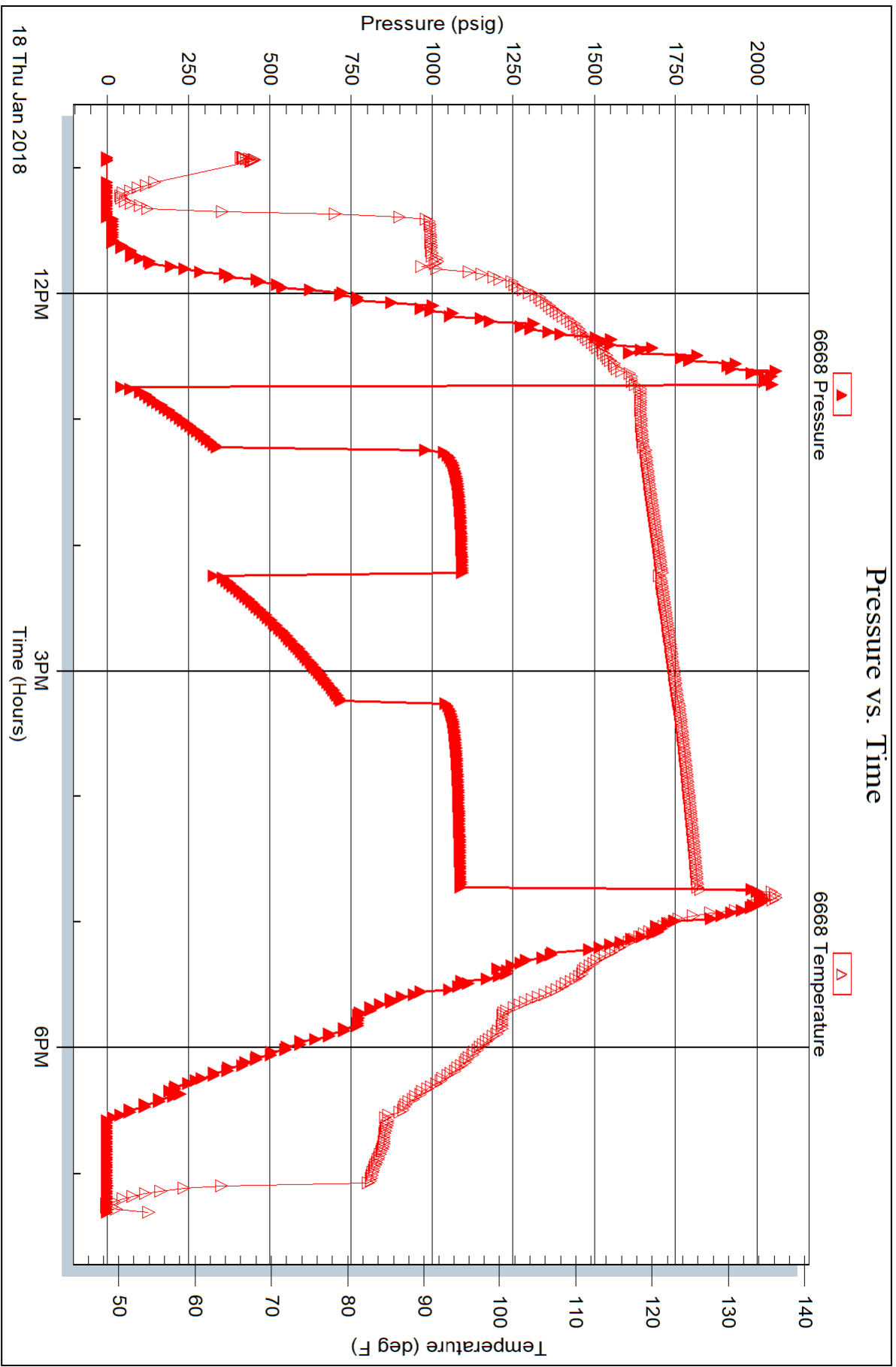
Serial #: 6668

Inside

Deutsch Oil Co

VPR Unit 1-32

DST Test Number: 4





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Deutsch Oil Co  
8100 E 22nd St N Bldg 600  
Wichita KS 67226  
ATTN: Keith Reavis

**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
Job Ticket: 64168      **DST#: 5**  
Test Start: 2018.01.19 @ 13:00:00

## GENERAL INFORMATION:

Formation: **LKC " J "**  
Deviated: No Whipstock: ft (KB)      Test Type: Conventional Straddle (Reset)  
Time Tool Opened: 15:07:01      Tester: Jim Svaty  
Time Test Ended: 20:17:00      Unit No: 69  
**Interval: 4243.00 ft (KB) To 4310.00 ft (KB) (TVD)**      Reference Elevations: 3155.00 ft (KB)  
Total Depth: 4345.00 ft (KB) (TVD)      3150.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair      KB to GR/CF: 5.00 ft

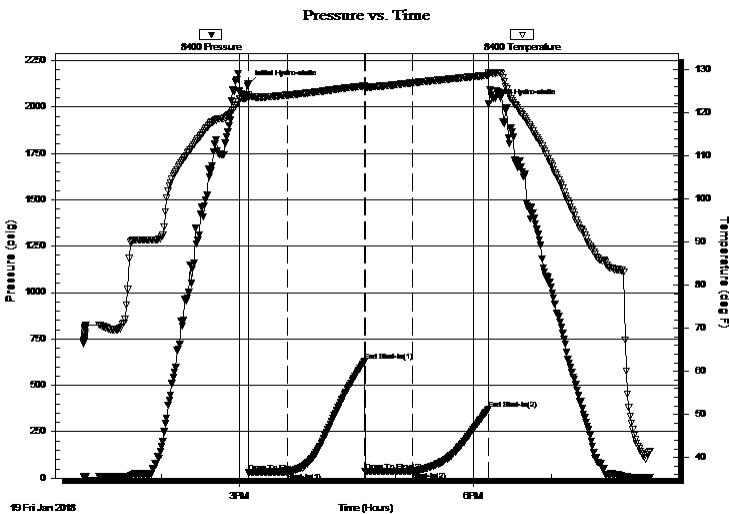
## Serial #: 8400

Inside

Press@RunDepth: 37.67 psig @ 4250.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2018.01.19      End Date: 2018.01.19      Last Calib.: 2018.01.19  
Start Time: 13:00:01      End Time: 20:16:46      Time On Btm: 2018.01.19 @ 15:06:46  
Time Off Btm: 2018.01.19 @ 18:12:01

TEST COMMENT: 30-IFP- 1/2in. Blow  
60-ISIP- No Blow  
30-FFP- No Blow  
60-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2122.44	124.09	Initial Hydro-static
1	31.78	123.51	Open To Flow (1)
30	33.84	124.04	Shut-In(1)
90	629.13	126.21	End Shut-In(1)
90	35.92	125.91	Open To Flow (2)
127	37.67	126.88	Shut-In(2)
185	372.06	128.66	End Shut-In(2)
186	2017.78	129.23	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Oil Speck Mud 100%	0.02

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Deutsch Oil Co  
 8100 E 22nd St N Bldg 600  
 Wichita KS 67226  
 ATTN: Keith Reavis

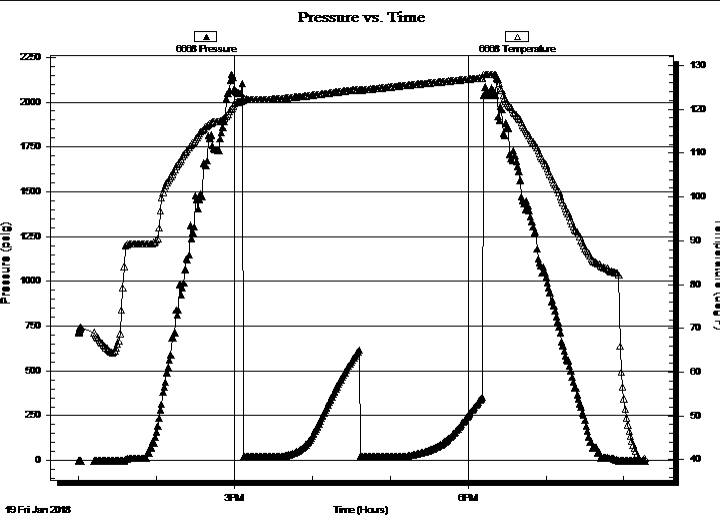
**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
 Job Ticket: 64168 **DST#: 5**  
 Test Start: 2018.01.19 @ 13:00:00

## GENERAL INFORMATION:

Formation: **LKC " J "**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 15:07:01  
 Time Test Ended: 20:17:00  
**Interval: 4243.00 ft (KB) To 4310.00 ft (KB) (TVD)**  
 Total Depth: 4345.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Straddle (Reset)  
 Tester: Jim Svaty  
 Unit No: 69  
 Reference Elevations: 3155.00 ft (KB)  
 3150.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 6668 Outside**  
 Press@RunDepth: psig @ 4250.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.01.19 End Date: 2018.01.19 Last Calib.: 2018.01.19  
 Start Time: 13:00:01 End Time: 20:16:46 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 30-IFP- 1/2in. Blow  
 60-ISIP- No Blow  
 30-FFP- No Blow  
 60-FSIP- No Blow



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Oil Speck Mud 100%	0.02

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Deutsch Oil Co  
8100 E 22nd St N Bldg 600  
Wichita KS 67226  
ATTN: Keith Reavis

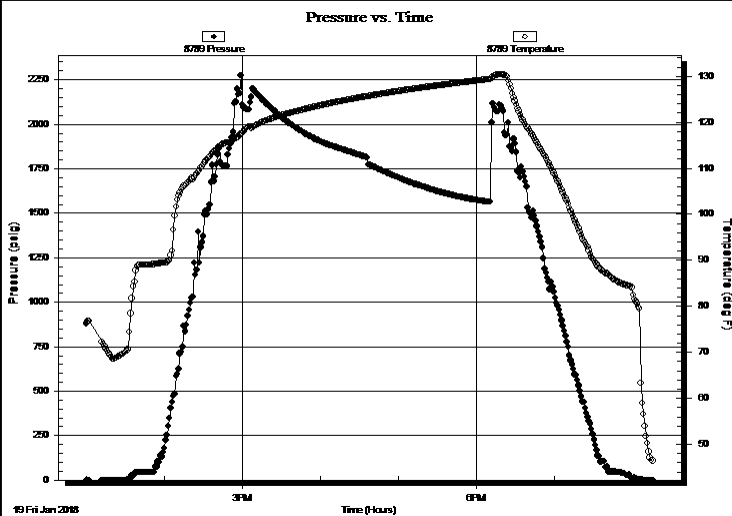
**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
Job Ticket: 64168      **DST#: 5**  
Test Start: 2018.01.19 @ 13:00:00

### GENERAL INFORMATION:

Formation: **LKC " J "**  
Deviated: No Whipstock: ft (KB)      Test Type: Conventional Straddle (Reset)  
Time Tool Opened: 15:07:01      Tester: Jim Svaty  
Time Test Ended: 20:17:00      Unit No: 69  
**Interval: 4243.00 ft (KB) To 4310.00 ft (KB) (TVD)**      Reference Elevations: 3155.00 ft (KB)  
Total Depth: 4345.00 ft (KB) (TVD)      3150.00 ft (CF)  
Hole Diameter: 7.88 inches      Hole Condition: Fair      KB to GR/CF: 5.00 ft

**Serial #: 8789 Below (Straddle)**  
Press@RunDepth:      psig @ 4314.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2018.01.19      End Date: 2018.01.19      Last Calib.: 2018.01.19  
Start Time: 13:00:01      End Time: 20:16:46      Time On Btm:  
Time Off Btm:

TEST COMMENT: 30-IFP- 1/2in. Blow  
60-ISIP- No Blow  
30-FFP- No Blow  
60-FSIP- No Blow



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

### Recovery

Length (ft)	Description	Volume (bbl)
5.00	Oil Speck Mud 100%	0.02

### Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Deutsch Oil Co

**32 2s 35w Rawlins KS**

8100 E 22nd St N Bldg 600  
Wichita KS 67226

**VPR Unit 1-32**

Job Ticket: 64168

**DST#: 5**

ATTN: Keith Reavis

Test Start: 2018.01.19 @ 13:00:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: in<sup>3</sup>

Gas Cushion Type:

Resistivity: 6.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 4.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
5.00	Oil Speck Mud 100%	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

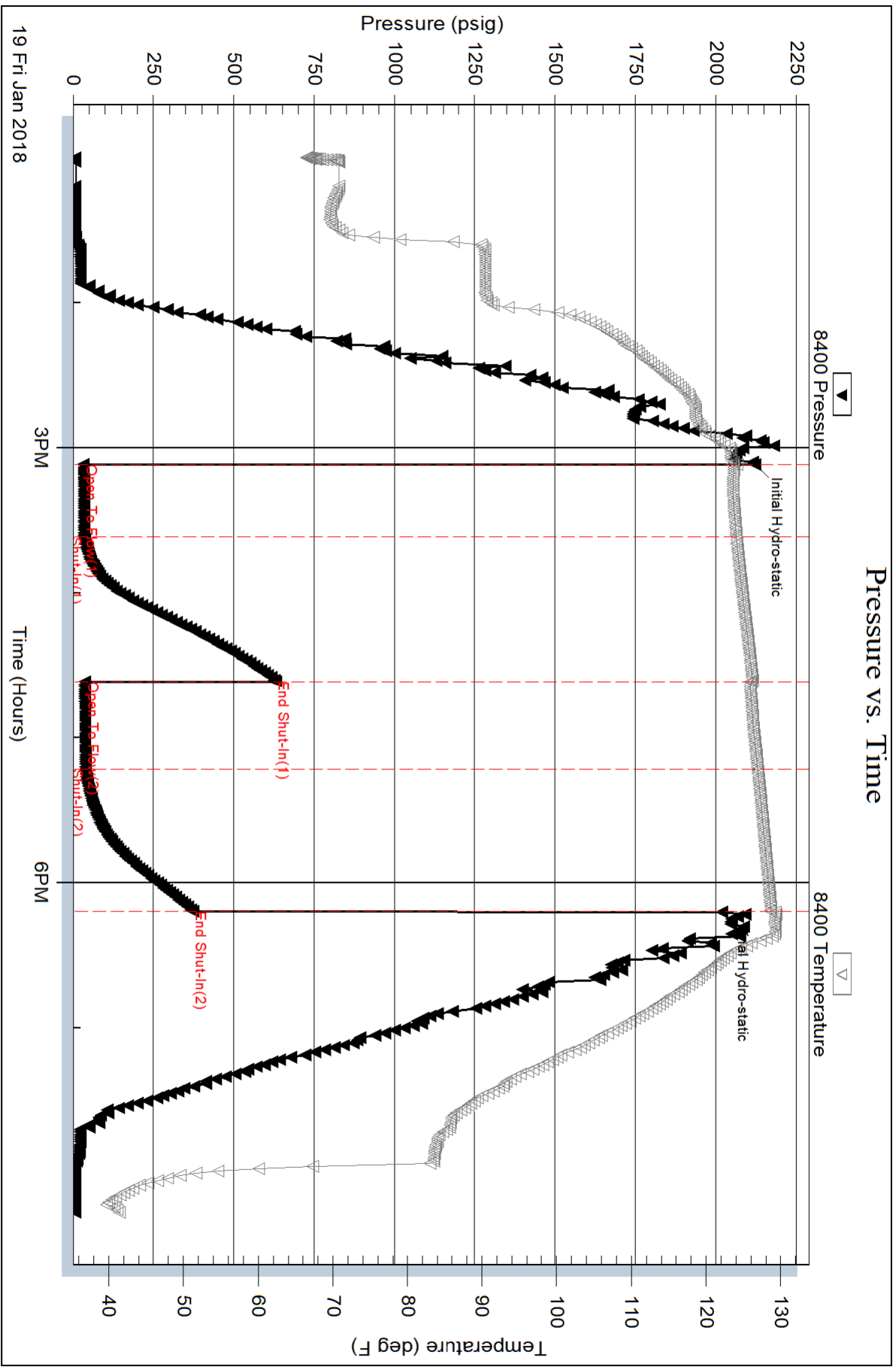
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

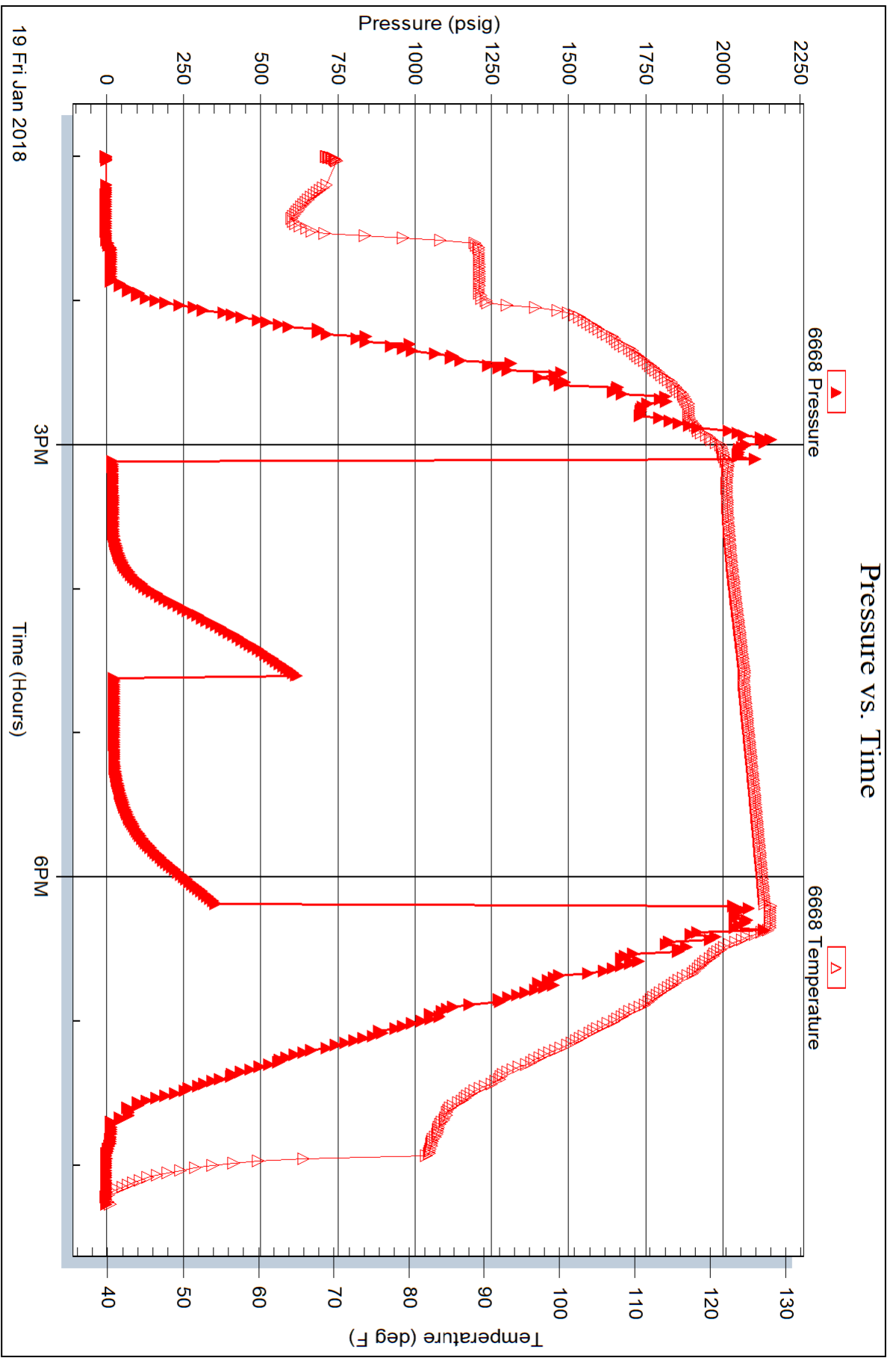


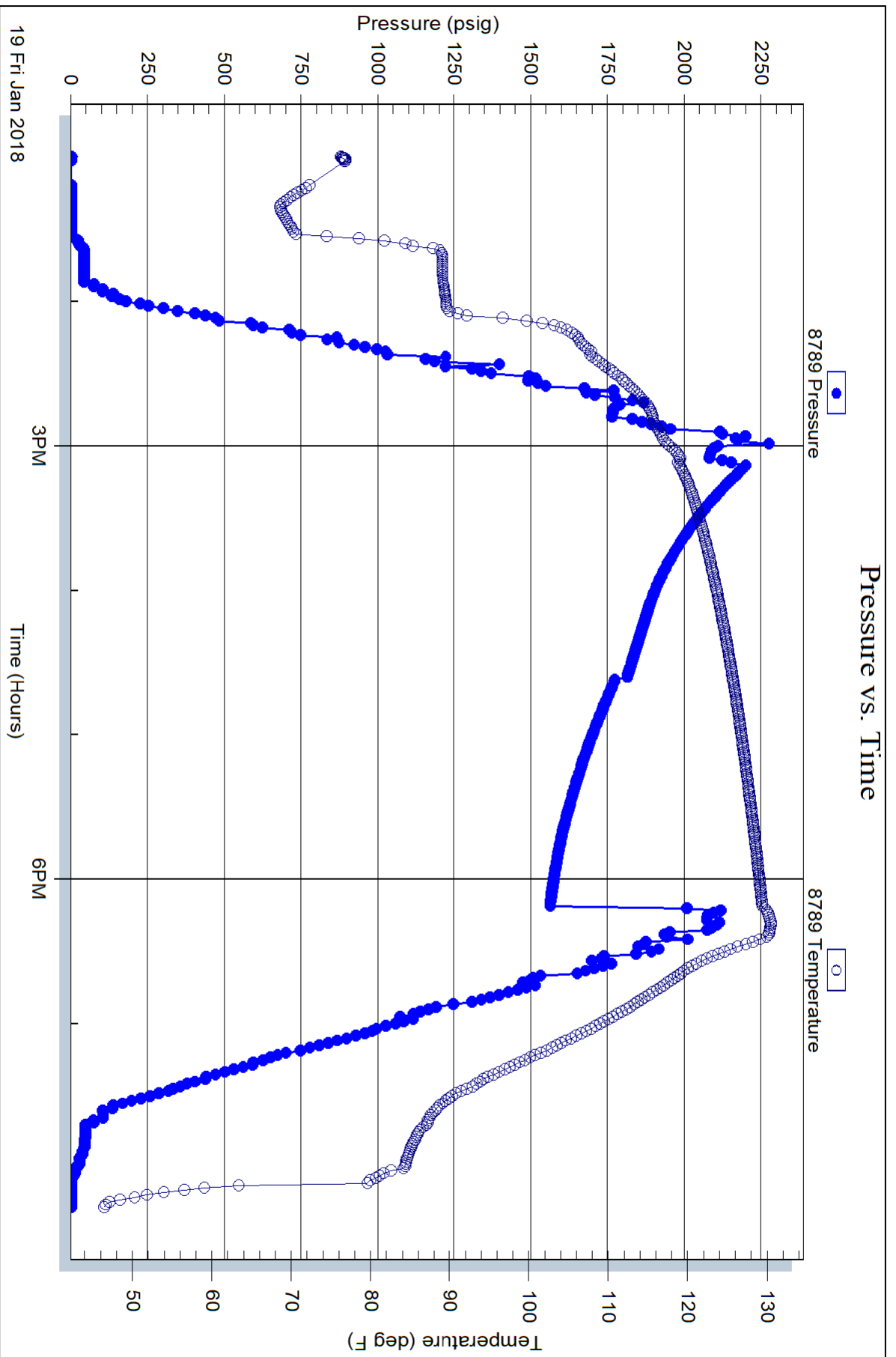
Serial #: 6668

Outside Deutsch Oil Co

VPR Unit 1-32

DST Test Number: 5









**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Deutsch Oil Co  
 8100 E 22nd St N Bldg 600  
 Wichita KS 67226  
 ATTN: Keith Reavis

**32 2s 35w Rawlins KS**  
**VPR Unit 1-32**  
 Job Ticket: 64169 **DST#: 6**  
 Test Start: 2018.01.20 @ 10:30:00

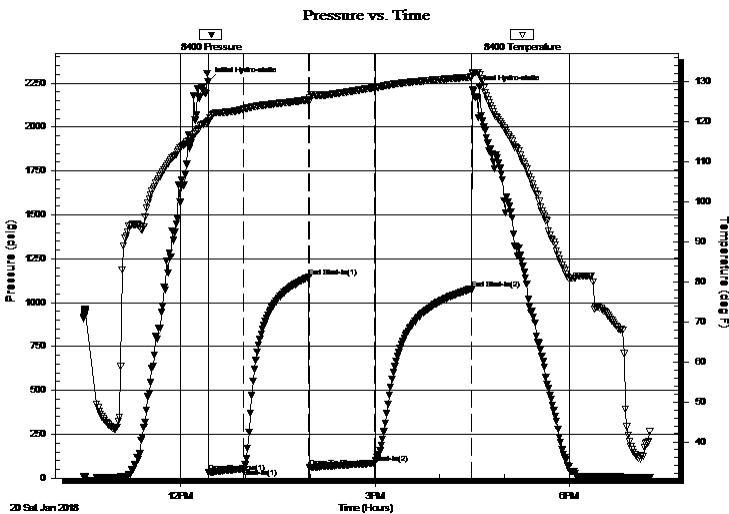
## GENERAL INFORMATION:

Formation: **Pawnee & Cherokee**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 12:25:31  
 Time Test Ended: 19:14:46  
 Interval: **4442.00 ft (KB) To 4565.00 ft (KB) (TVD)**  
 Total Depth: 4565.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Jim Svaty  
 Unit No: 69  
 Reference Elevations: 3155.00 ft (KB)  
 3150.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8400 Outside**  
 Press@RunDepth: 85.19 psig @ 4443.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2018.01.20 End Date: 2018.01.20 Last Calib.: 1899.12.30  
 Start Time: 10:30:01 End Time: 19:14:46 Time On Btm: 2018.01.20 @ 12:25:16  
 Time Off Btm: 2018.01.20 @ 16:30:16

**TEST COMMENT:** 30-IFP- Surface Blow Building to 3 1/2in.  
 60-ISIP- No Blow  
 60-FFP- Surface Blow Building to 3in.  
 90-FSIP- No Blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2259.47	119.96	Initial Hydro-static
1	32.76	119.74	Open To Flow (1)
33	54.31	123.18	Shut-In(1)
94	1145.46	125.53	End Shut-In(1)
94	60.28	125.20	Open To Flow (2)
154	85.19	128.55	Shut-In(2)
244	1078.05	131.21	End Shut-In(2)
245	2212.86	132.02	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
105.00	OWCM 5%o 5%w 90%m	0.52
20.00	CO 100%	0.10

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Deutsch Oil Co

**32 2s 35w Rawlins KS**

8100 E 22nd St N Bldg 600  
Wichita KS 67226

**VPR Unit 1-32**

Job Ticket: 64169

**DST#: 6**

ATTN: Keith Reavis

Test Start: 2018.01.20 @ 10:30:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 64.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.00 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: 4.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
105.00	OWCM 5%o 5%w 90%m	0.516
20.00	CO 100%	0.098

Total Length: 125.00 ft

Total Volume: 0.614 bbl

Num Fluid Samples: 0

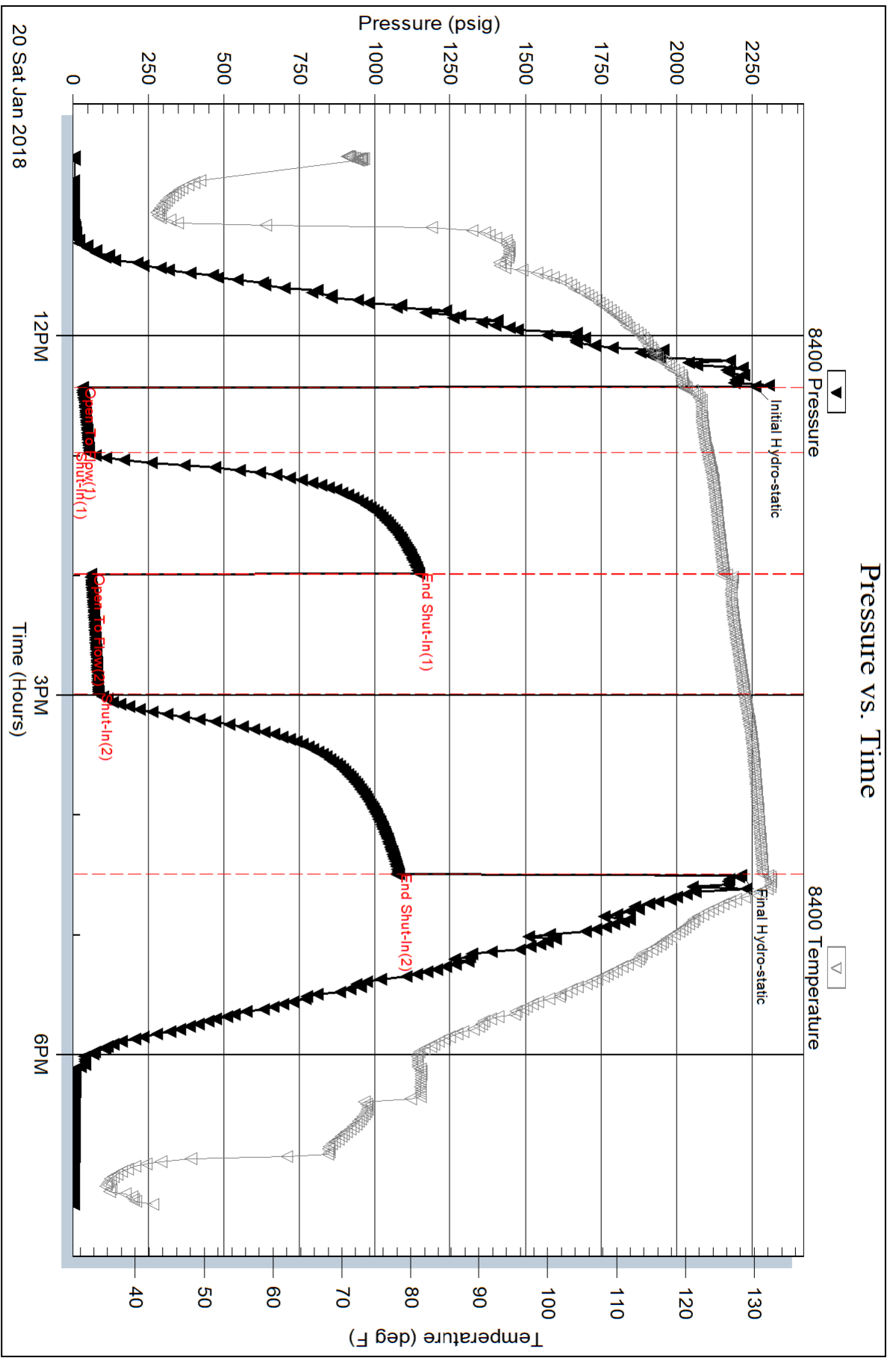
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





PRESSURE PUMPING LLC  
PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT  
CEMENT

TICKET NUMBER 54995  
LOCATION Corkley KS  
FOREMAN Jerry Y

Invoice # 812241

9879  
9771

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
1-11-18	2528	VRP 1-32	32	25	35W	Rear/nes
CUSTOMER			TRUCK #	DRIVER	TRUCK #	DRIVER
Deutsch Oil Co. (316)681-3567			731	Cory D		
MAILING ADDRESS			566	P.D.W		
8100 E 22nd St N Bldg 600						
CITY	STATE	ZIP CODE				
Wichita	KS	67226				

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 302 CASING SIZE & WEIGHT 8 5/8 23#  
 CASING DEPTH 302 DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 15.2 SLURRY VOL 1.24 WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING 20'  
 DISPLACEMENT 18 bbl DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety meeting + rig upon Martin 3 circulate casing mix 250 sks  
com 3% CL 2% gel wash up + displace with 18 bbl fresh H<sub>2</sub>O + shut in  
circulated approx 5661 to pit

Cement did  
Circulate  
Thank you  
Jerry & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0471	1	PUMP CHARGE	1150.00	1150.00
CE0002	60	MILEAGE	7.15	429.00
CE0710	11.75	ton mileage delivery	1.75	1233.75
CC5871	250 sks	surface blend II	24.00	6000.00
CP8556	2	8 5/8 centralizers	110.00	220.00
CC5326	100 #	salt	NC	NC
			subtotal	9052.75
			-30%	2709.83
			subtotal	6322.92
				326.55
			SALES TAX	359.22
			ESTIMATED TOTAL	6682.17

Ravin 3737

AUTHORIZATION [Signature] TITLE Tool Pusher DATE 1-12-18

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.





PRESSURE PUMPING LLC  
PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

9908  
9802

TICKET NUMBER 55035  
LOCATION Ogklay 45  
FOREMAN Miles Shaw

FIELD TICKET & TREATMENT REPORT  
CEMENT

Invoice # 812266

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
1-22-17	2528	VRP 1-32	32	25	35W	Rawlins
CUSTOMER Deutsch Oil Corp			Atwood Western N. T. CRT 600			
MAILING ADDRESS 8100 East 22nd Street North, Bldg.			TRUCK #	DRIVER	TRUCK #	DRIVER
CITY Wichita			753	Travis W		
STATE KS			1772/T-127	Paul W		
ZIP CODE 67226			566	Keith C		

JOB TYPE Long String HOLE SIZE 7 7/8" HOLE DEPTH 4800.00 CASING SIZE & WEIGHT 5.5" / 15.5#  
CASING DEPTH 4799 DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
SLURRY WEIGHT 11/19.8 SLURRY VOL 3/1.4 WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING \_\_\_\_\_  
DISPLACEMENT 114 bbls DISPLACEMENT PSI 150/200 MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety meeting and Rig up on Marlin drilling Rig #3 Floct Equipped  
Centralizers on Suts # 3, 5, 8, 9, 11, 13, 15, 19, 21, 23, 25, 43 Baskets on Suts # 10, 26, 44  
Run Suts Circulate casing hrs Pump mud flush mix 270 SX cement down  
Casing failed in with 200 SX cement w/ 5" Kalsol Shutdown Clear pump & line release  
Plug displace 114 bbl water - Plug landed & held 1500 ps. lift 2200 ps. / and  
Cement did Circulate 20 SX top it

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0453	1	PUMP CHARGE	1	2800.00
CE0007	6.5	MILEAGE	7.15	469.75
CE0710	23.5 Tons	Ton Mileage delivery	1.75	2673.12
CC5855	300 SX	Multidens. t. I	27.00	8100.00
CC5862	200 SX	Thixobond III	26.00	5200.00
CC6075	150 #	Cello Pak / Flo Seal	3.00	450.00
CC6079	1000 #	Kal Seal	1.50	500.00
CC6125	500 gal 15388	Mud Flush	1.65	325.00
CP8254	1	Latchdown plug & Assembly 5 1/2"	400.00	400.00
CP8485	1	5 1/2" Floct Shoe / AFU	585.00	585.00
CP8576	12	5 1/2" Turbo Lizer	110.00	1320.00
CP8629	3	5 1/2" Baskets	385.00	1155.00
CC5826	100 #	Salt	N/C	N/C
			Subtotal	23972.87
			less 30% discount	7191.86
			Subtotal	16781.01
			SALES TAX	1946.84

Ravin 3737

AUTHORIZATION

TITLE

DATE

ESTIMATED TOTAL

\$ 17,227.85

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.



JOB LOG

SWIFT Services, Inc.

DATE 03/09/18 PAGE NO. 1

CUSTOMER Deutch Oil WELL NO. 1-32 LEASE VRP Unit JOB TYPE Perf Squeeze TICKET NO. 30999

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0900							On location, set up truck. 2 3/8" x 5 1/2" - 15 1/2 # Perfs - 4074' - 4077' Spot Sand - 4221' Packer to Sqz - 3962'
	0915		35			1500		Test Packer & Plug, Held
						200		Spot Sand Roll hole
	0935		12					Spot Sand
	1000							Pull up
	1035	1 1/2				1000		Inj Rate
	1040	1 1/2				900		Start Cement, 100 SLS std Cmt
	1050	1 1/2	15			200		
	1055	1 1/2	21			Vac		Fin Cement, shut in Washout Pump & Lines
	1100	1/2						Start Displacement
	1106	1/2	4			500		
		1/2	5			600		
		1/2	6 1/2			700		
		1/2	7 3/4			850		
	1116	1/2	9			900		
		1/2	10			1000		
		1/2	11			1100		
		1/2	15.5			1600		Fin Displacement Shut in
	1135					1400		ISIP, wait 10 min
	1145							Release, coming back
	1150					1600		Pump back up
	1205							Release, held
	1215	1 3/4	22			250		Reverse Out Pull 10 Its
	1250					500		Pressure Up, shut in Wash up truck Rack up
	1300							Job Complete, Thanks, Jon, Austin, Zach