

Form	ACO1 - Well Completion
Operator	Darrah Oil Company, LLC
Well Name	KELTZ 1-8
Doc ID	1711089

All Electric Logs Run

dual induction
micro
sonic
porosity

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Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	347	h-325	275	-
Production	7.875	5.5	15.5	5014	60/40	695	-



Remit To: Hurricane Services, Inc.
250 N. Water, Suite 200
Wichita, KS 67202
316-303-9515

Customer:

DARRAH OIL
C/O JOHN JAY DARRAH JR
PO BOX 2786
WICHITA, KS 67201-2786

Invoice Date: 1/2/2023
Invoice #: 0365652
Lease Name: Keltz
Well #: 1-8 (New)
County: Cheyenne, Ks
Job Number: WP3785
District: Oakley

Date/Description	HRS/QTY	Rate	Total
Surface	0.000	0.000	0.00
H-325	275.000	22.500	6,187.50
Light Eq Mileage	65.000	2.000	130.00
Heavy Eq Mileage	130.000	4.000	520.00
Ton Mileage	842.000	1.500	1,263.00
Depth Charge 0'-500'	1.000	1,000.000	1,000.00
Cement Blending & Mixing	275.000	1.400	385.00
Service Supervisor	1.000	275.000	275.00

Total 9,760.50

TERMS: Net 30 days. Interest may be charged on past due invoice at rate of 1 ½% per month or maximum allowed by applicable state or federal laws. HSI has right to revoke any discounts applied in arriving at net invoice price if invoice is past due. If revoked, full invoice price without discount plus additional sales tax, as applicable, is due immediately and subject to interest charges. Customer agrees to pay all collection costs directly or indirectly incurred by HSI in the event HSI engages a third party to pursue collection of past due invoice.

SALES TAX: Services performed on oil, gas and water wells in Kansas are subject to sales tax, with certain exceptions. HSI relies on the well information provided by the customer in identifying whether the services performed on wells qualify for exemption.

WE APPRECIATE YOUR BUSINESS!

TERMS: Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts shall pay interest on the balance past due at the rate of 1 1/2 % per month or the maximum allowable by applicable state or federal laws. In the event it is necessary to employ an agency and/or attorney to affect the collection, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount is immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Any discount is based on 30 days net payment terms or cash. **DISCLAIMER NOTICE:** Technical data is presented in good faith, but no warranty is stated or implied. HSI assumes no liability for advice or recommendations made concerning the results from the use of any product or service. The information presented is a best estimate of the actual results that may be achieved and should be used for comparison purposes and HSI makes no guarantee of future production performance. Customer represents and warrants that well and all associated equipment in acceptable condition to receive services by HSI. Likewise, the customer guarantees proper operational care of all customer owned equipment and property while HSI is on location performing services. The authorization below acknowledges the receipt and acceptance of all terms/conditions stated above, and Hurricane has been provided accurate well information in determining taxable services.

ftv: 15-2021/01/25
mplv: 339-2022/10/05

CEMENT TREATMENT REPORT



416 Main Street
P.O. Box 225
Victoria, KS 67671
Office (785) 639-3949
24 Hour Service Line (785) 639-7269

Invoice

Date	Invoice #
1/12/2023	0837

Please Pay from this Invoice.
Remit Payment to:
416 Main Street PO BOX 225
Victoria, KS 67671
Billing Questions-Call Tianna at
(785) 639-3949
Email: franksoilfield@yahoo.com

KCC License Number
35469

Bill To
Darrah Oil Will Darrah P.O. Box 2786 Wichita, KS 67201

County/State	Lease/Well#	Terms	Job Type
Cheyenne County, KS	Keltz 1-8	Net 30	Top to Bottom

Description	Quantity	Rate	Amount
Pump Charge	1	2,500.00	2,500.00
Mileage	86	6.50	559.00
35.94 tons at 86 miles	3,090.84	1.50	4,636.26
Head & Manifold Charge	1	200.00	200.00T
Thixo blend OWC	225	29.55	6,648.75T
60/40 8% gel 1/4# Flo-Seal	500	17.95	8,975.00T
5-1/2" Guide Shoe AFU	1	600.00	600.00T
5-1/2" Latchdown Plug & Assembly	1	695.00	695.00T
5-1/2" Turbalizer Centralizers	8	108.00	864.00T
5-1/2" Basket	3	385.00	1,155.00T
51/2 Stop Ring	3	35.00	105.00T
Salt	100	0.50	50.00T
Mud Flush	500	1.00	500.00T
KCL	5	30.00	150.00T
Discount		-1,381.90	-1,381.90

Thank you!

Accounts Due Net 10th. 1-1/2% Per Month on all Past Due Accounts. 18% Annual Rate.

We appreciate your business and look forward to serving you again!

Subtotal	\$26,256.11
Sales Tax (8.5%)	\$1,610.38
Balance Due	\$27,866.49

FRANKS Oilfield Service

♦ 815 Main Street Victoria, KS 67671 ♦ 24 Hour Phone (785) 639-7269
♦ Office Phone (785) 639-3949 ♦ Email: franksoilfield@yahoo.com

TICKET NUMBER 0837
LOCATION Tom Hottel
FOREMAN Tom Williams

FIELD TICKET & TREATMENT REPORT CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
1-12-23	35615	Keltz 1-8	8	5	37	Cherokee
CUSTOMER <u>Durrah Oil Company LLC</u>			TRUCK # DRIVER TRUCK # DRIVER			
MAILING ADDRESS <u>125 Market Suite 1425</u>			<u>102 Tom W</u>			
CITY STATE ZIP CODE <u>Wichita KS 67202</u>			<u>201 Jack T</u>			
			<u>41301 Cain S</u>			
			<u>Chase M</u>			

JOB TYPE Top to Bottom HOLE SIZE _____ HOLE DEPTH _____ CASING SIZE & WEIGHT 5 1/2" 14#
CASING DEPTH _____ DRILL PIPE _____ TUBING _____ OTHER _____
SLURRY WEIGHT _____ SLURRY VOL _____ WATER gal/sk _____ CEMENT LEFT in CASING _____
DISPLACEMENT _____ DISPLACEMENT PSI _____ MIX PSI _____ RATE _____

REMARKS: Safety meeting & set up on Marlin 112 (9pm 1-11).
Ran Flow equipment at 5pm. Hooked up head & circulated
2hr. Pump 500gal Mad Flush followed by 20 Bbl KCl water.
Mix 500yr line 30RH 470 down hole. Mix 2.25 sf grt. Wash up
& displace plug. land plug 2000psi at 1:30pm. Rank up make a/c

Thanks Tom & Crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
P004	1	PUMP CHARGE <u>Top to Bottom</u>	\$2500.00	\$2500.00
M001	86	MILEAGE	\$6.50	\$559.00
M002	35.946015	<u>Tan Mileage Delivery</u>	\$4631.94	\$4631.24
CE003	1	<u>head & man: fold</u>	\$200.00	\$200.00
CB030	2255x	<u>Class A 10/64x 6/9 plus 29 gal 5#</u>	\$1.48	\$1,448.75
CB021	540 sf	<u>60/40 8/9 gal 1/4" 5/8" gal</u>	\$17.95	\$8,975.00
FE0033	1	<u>5 1/2" AFU guide shoe</u>	\$100.00	\$100.00
FE051	1	<u>5 1/2" latch down Plug asse.</u>	\$195.00	\$195.00
FE014	8	<u>5 1/2" Turbolizer</u>	\$108.00	\$864.00
FE022	3	<u>5 1/2" basket</u>	\$385.00	\$1155.00
FE102	3	<u>5 1/2" stop ring</u>	\$35.00	\$105.00
CP005	100 lbs	<u>SA/B</u>	\$1.50	\$150.00
CP013	500 gal	<u>Mad Flus</u>	\$1.00	\$500.00
CP014	5 gal	<u>KCH</u>	\$30.00	\$150.00
			sub total	\$27,138.01
			less 5% disc.	\$1,381.90
			sub total	\$25,756.11
			SALES TAX	\$1,610.38
			ESTIMATED TOTAL	\$27,366.49

AUTHORIZATION _____ TITLE _____ DATE _____

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.



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Keltz 1-8
Well Id: 15-023-21592
Location: SE NW SE SE
License Number: 35615
Spud Date: 1/2/2023
Surface Coordinates: 39.62904, -101.489884

Region: Cheyene
Drilling Completed:

Bottom Hole
Coordinates:
Ground Elevation (ft): 3407' K.B. Elevation (ft): 3415'
Logged Interval (ft): 3800 To: 5029' Total Depth (ft): 5029'
Formation: Mississippian
Type of Drilling Fluid: Chemical based mud

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Darrah Oil Company, LLC
Address: 125 N Market St, Ste. 1425
Wichita, Ks 67202

GEOLOGIST

Name: Chad Counts
Company: MG Oil Inc.
Address: P.O. Box 162
Russell, Ks 67665

Comments

The Keltz 1-8 was drilled with Murfin 112 Drilling tools commencing 1/2/23 and reached a total depth on 1/11/23.

Owing to positive results of DST #1 over the KC J; it was recommended by all parties to further test the well through 5 1/2" casing.

Respectfully Submitted,

Chad Counts

1/2/23: MIRT and spud at 2:00 PM.

1/3/23: (Depth at 7 am: 357'): Drilled down to surface casing point and set 8 5/8" at 347' w/275 sks
Common 2% cc, 3% gel (cement did circulate).

1/4/23: (Depth at 7 am: 1,450'): Continued drilling throughout the day.

1/5/23: (Depth at 7 am: 2,801'): Continued drilling throughout the day.

1/6/23: (Depth at 7 am: 3,899'): Continued drilling throughout the day, conducted mud displacement at 3,525'.

1/7/23: (Depth at 7 am: 4,456') Conducted DST #1 in the LKC H-J from 4,403' to 4,491' and recovered 1,200' of gas in pipe, 1,260' of clean gassy oil, 1,441' of mud cut gassy oil, 116' of slight mud cut gassy oil and 58' of mud cut oil. (Pipe Strap: 4465.69' Board:4501.11')

1/8/23: (Depth at 7 am: 4,491'): Finished tripping back in and resumed drilling and evaluating samples.

1/9/23: (Depth at 7 am: 4,675') Conducted DST #2 in the Pawnee from 4,640' to 4,675' and recovered 1' of mud with oil spots.

1/10/23: (Depth at 7 am: 4,700') Continued drilling throughout the day while evaluating samples.

1/11/23: (Depth at 7 am: 5,029') Currently tripping out to run open hole logs.

GENERAL INFORMATION:

Formation: LKC "H - J"

Deviated: No Whipstock

ft (KB)

Test Type: Conventional Bottom Hole (Initial)

Time Tool Opened: 23:15:51

Tester: James Winder

Unit No: 73

Time Test Ended: 08:55:50

Interval: 4403.00 ft (KB) To 4491.00 ft (KB) (TVD)

Reference Elevations: 3415.00 ft (KB)

Total Depth: 4491.00 ft (KB) (TVD)

3407.00 ft (CF)

Hole Diameter: 7.88 inches

Hole Condition: Fair

KB to GRVCF: 8.00 ft

Serial #: 6771

Inside

Press@RunDepth: 1058.33 psig @ 4404.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2023.01.07

End Date: 2023.01.08

Last Calib.: 2023.01.08

Start Time: 18:05:01

End Time: 08:55:50

Time On Btm: 2023.01.07 @ 23:15:21

Time Off Btm: 2023.01.08 @ 02:04:51

TEST COMMENT:

20 - IF: Blow built to BOB (11" Diesel) at 50 sec., built to 238"

30 - IS: Bled off for 7 min., Blow back built to BOB in 3 min., built to 58"

45 - FF: Blow built to BOB at 45 sec., built to 430"

60 - FS: Bled off for 5 min., Blow back built to BOB in 2 1/2 min., built to 41"

Pressure vs. Time

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2286.29	122.87	Initial Hydro-static
1	425.82	125.16	Open To Flow (1)
20	647.48	144.52	Shut-In(1)
50	1248.20	142.26	End Shut-In(1)
51	705.98	140.02	Open To Flow (2)
95	1058.33	143.87	Shut-In(2)
169	1255.95	141.31	End Shut-In(2)
170	2104.24	140.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
58.00	MCO 70%o, 25%w, 5%g	0.29
116.00	SMGO 77%o, 20%g, 3%w	0.57
1441.00	MCO 61%o, 27%g, 12%w	20.21
1260.00	CGO 72%o, 28%g	17.67
0.00	GP = 1200'	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:09:21

Time Test Ended: 18:24:51

Interval: **4640.00 ft (KB) To 4675.00 ft (KB) (TVD)**

Total Depth: 4675.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 73

Reference Elevations: 3415.00 ft (KB)

3407.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: **6771**

Inside

Press@RunDepth: 17.47 psig @ 4641.00 ft (KB)

Start Date: 2023.01.09 End Date: 2023.01.09

Start Time: 10:00:01 End Time: 18:24:51

Capacity: 8000.00 psig

Last Calib.: 2023.01.09

Time On Btm: 2023.01.09 @ 13:09:06

Time Off Btm: 2023.01.09 @ 15:46:21

TEST COMMENT: 30 - IF: Blow built to 1/4", died back to 1/8"

45 - IS: No blow

15 - FF: No blow

60 - FS: No blow

Pressure vs. Time

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2326.36	126.38	Initial Hydro-static
1	15.90	125.18	Open To Flow (1)
30	17.58	126.55	Shut-In(1)
76	30.43	128.38	End Shut-In(1)
77	15.73	128.36	Open To Flow (2)
90	17.47	128.90	Shut-In(2)
156	33.72	131.20	End Shut-In(2)
158	2322.55	133.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud w/oil spots 99%sm, 1%-o	0.00

Gas Rates

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

ROCK TYPES

LITHOLOGY

Anhy

Bent

Brec

Cht

Clyst

Coal

Oolitic limestone

Congl

Dol

Gyp

Igne

Dark grey shale

Black shale

Bioclastic grainstone

Lmst

Meta

Mrlst

Salt

New symbol

Shale

Shcol

Shgy

Sltst

Ss

Till

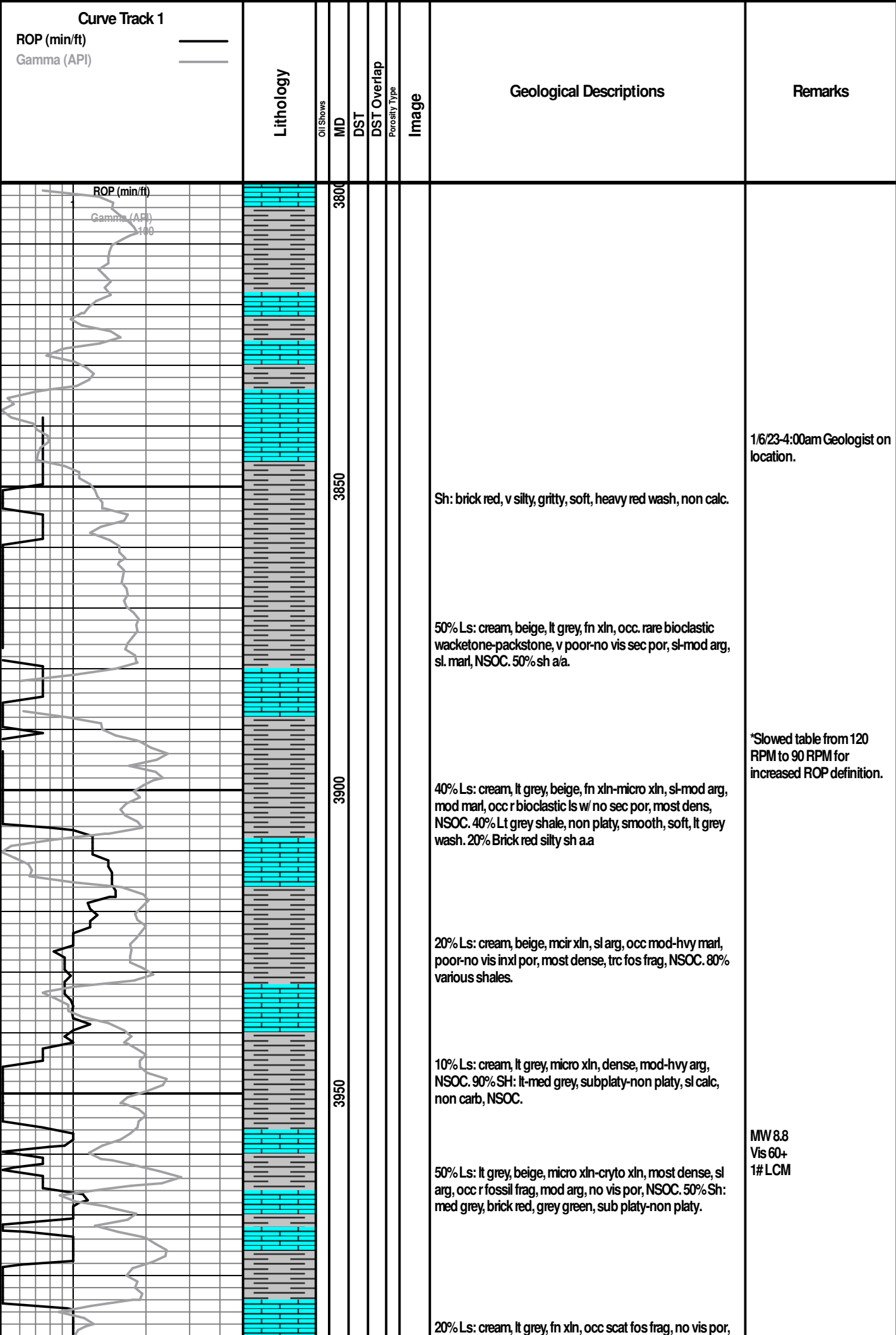
OIL SHOW

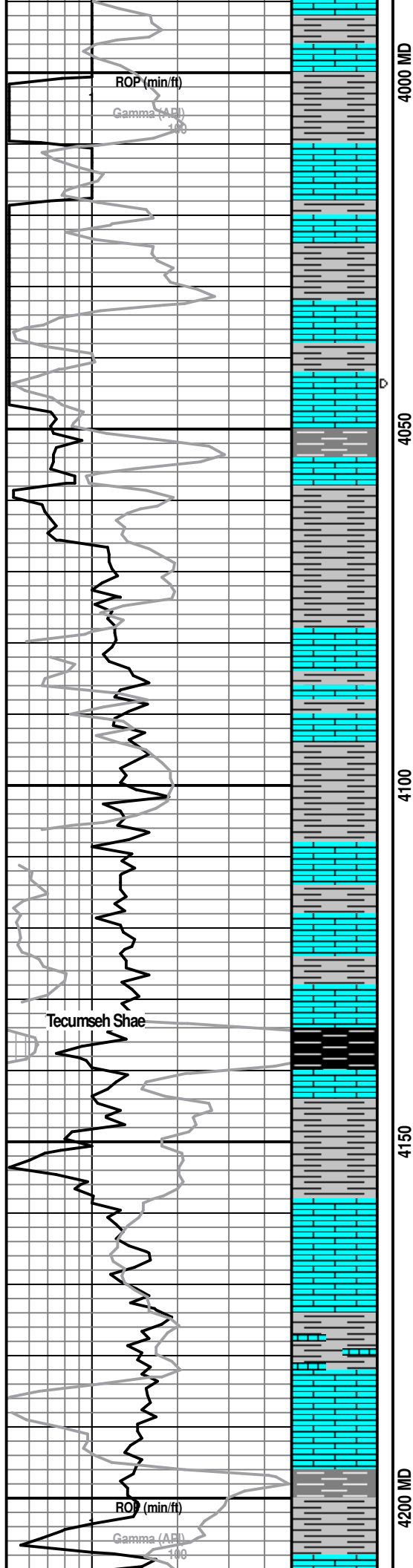
Even

Spotted

Ques

Dead





most lithographic, mod marl. 80% sh: med grey, light blue grey, sub platy, mod firm. Abndt red soft shale, non platy, soft.

Ls: cream, off white, fn xln, occ friable, few w/lithographic tex, no vis por, mod-hvy marl, NSOC.

Driller increased RPM.

Ls: cream-off white, micro xln-fn xln, occ granular-litho tex, no vis por, occ fusulinids, sl-mod marl, NSOC.

MW 8.8
VIS 60
1# LCM

Ls: cream, beige, lt grey, micro xln, dense, no vis por, 5 cuttings w/ partial scat vuggy por (75% micro xln matrix), heavy dead black stain, no free oil or odor.

Start stop watch time and slow down to 80 RPM.

Ls: cream, off white, lt grey, micro xln, litho tex, no vis por, 1 cutting w/dead stain a/a, no free oil or odor. 5-10% shale: Light green, turquoise, lavender, sub platy, non calc.

Andy's Mud Check
MW 8.7
Vis 61
WL 8
Chlorides 2000ppm
LCM 1#

Ls: cream, white, micro xln, dense, occ scat foss frag, mod marl, NSOC. 5% bioclastic grainsone, 250-300microns, w std, poor-no vis sec por. 2 cuttings w/hvy asphaltic stain, NSOC, no odor.

Ls: off white, lt grey, cream, micro xln, litho tex, desne, mod marl, non arg, r fos frag, no vis por, NSOC.

MW 8.8
Vis 61
2# LCM

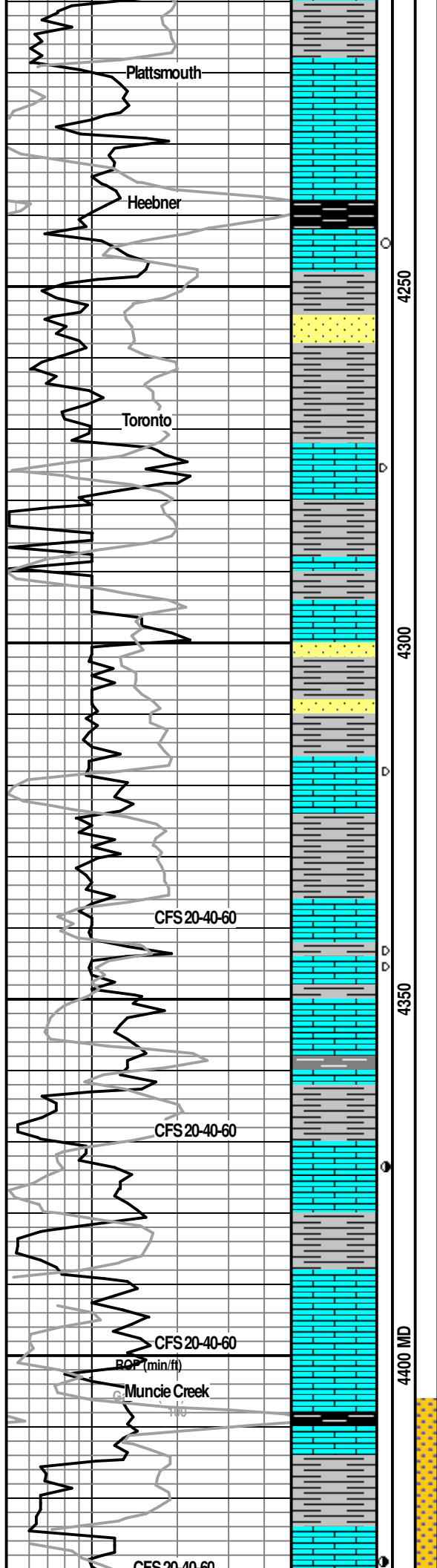
65% red-brown shale, blocky, mod firm, sl red wash, non calc. 10% light grey sh: silty, block, non platy, non calc. 10% dk grey-black shale 15% Limestone: cream, dense micritic.

Ls: light grey, cream, micro xln-fn xln, few very fraible, mostly dense, poor vis inxl por, occ sact pp vugs, trc fossil frag, NSOC. 30% red brown silty shale, firm, blocky, sl wash. 5% Black shale: firm, platy, carb.

Ls: light grey, beige, micro xln, v dense, occ r fos frag, no vis por, NSOC.

Sh: grey, dk grey, beige, platy-sub platy, mod calcareous, no silty-sl silty. Sh Ls: cream, beige, micro xln, mod-hvy marl, scat granular tex, poor inxl por, few cutting with dead stain.

Ls: off-white, fat, friable, little friable, no vis por, occ shale



Ls: off white, friable/brittle, fair inxl por, occ sl shaly, abndt marl, NSOC. Abndt red blocky shale.

Start 10' samples

Flood dk grey-blk sh: platy, firm, sub carb-carb, dense, brittle. 20% light grey calc shale.

Ls: cream, lt grey, beige, micro xln, porr vis por, occ fn xln, friable, w few vugs, NSOC. 25% light grey soft shale, non platy, gummy, hvy grey wash. 5% Black shale firm platy carb.

Flood brick red shale: silty-sandy, blocky, mod firm, sl red wash. 10% sand, red, fn grain, w std, w cons, arg, no show. 5% Oolitic limestone, 350-500microns, mod std, v poor-no vis sec por, scat dead asphaltic stain, one cutting w ssfo, no odor or cut.



Ls: cream, off white, fn xln, occ oolitic 150-250 microns, w std, few w sec xln overgrowth, poor-fair inxl por, on cutting w/dead asphaltic stain, NSOC.

Ls: beige, lt grey, cream, micro xln, v dense, no vis por, litho tex, NSOC.

Sh: red-brown, blocky, sl red wash, firm, v gritty, silty-sandy, w std, sl calc.

Ls: white, vfg, well cons, w. std, poor vis por, few friable, brittle, NSOC. Flood red silty-sandy shale a/a.



15% Ls: cream, lt grey, off white, micro xln, occ r scat pp por, most litho tex, ms, tight, occ scat fossil frag, NSOC, no odor. 2 cuttings wasphaltic stn 85% Shale a/a

Ls: off white, cream, micro xln, dense, scat vuggy pp por, very poor connectivity, hvy asphaltic stain in pores, NSOC, no odor.



Ls: cream-off white, micro xln, dense, litho tex, few w scat pp xln vugs, r spotty asphaltic stain.

Sh: blue grey, red, sub platy-blocky, non calc-sl calc. Ls: grey-micro xln, dns, r indv scat vug, r fos frag, NSOC.

Ls: cream, fn xln, brittle, poor-no vis inxl por, mod-hvy marl, NSOC.



Ls: grey, off white, micro-fn xln, mod marl cont, poor scat pp por, very scat oil stain, ssfo on crush, no nat cut, no odor.

Ls: cream, grey, micro xln, no vis por, dense, few cuttings w/ show a/a. Abndt red shale, red wash. Med grey blue shale, sub platy, firm.

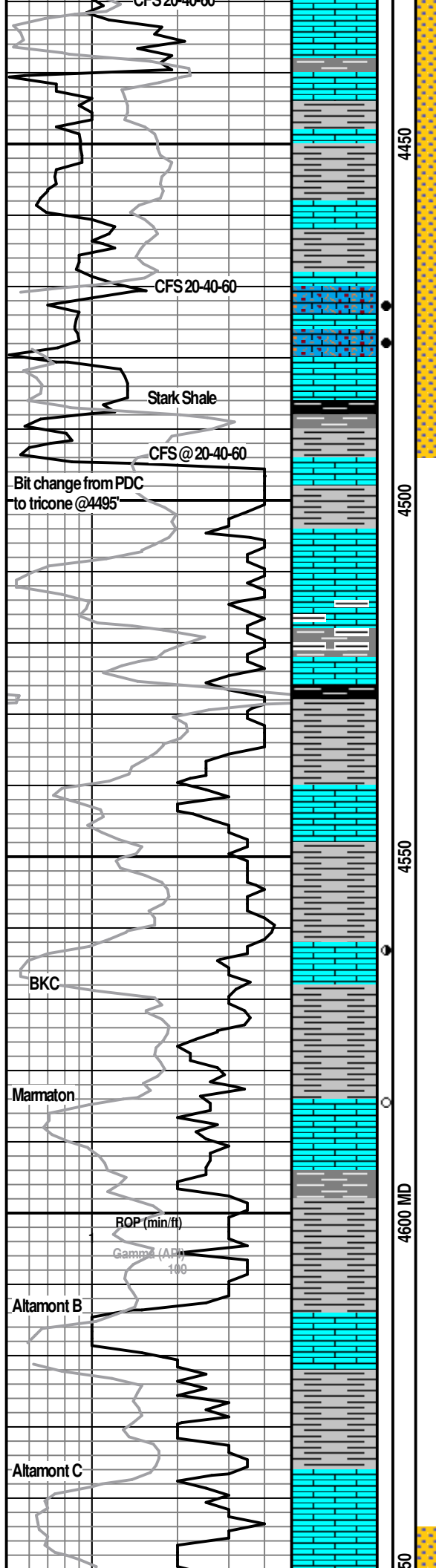
Ls: cream, light grey, dense, micritic, no vis por, sl-mod marl, NSOC.

Andys Mud Check
MW 9.3
VIS 52
WL 8
Chlorides 2000ppm
LCM 1.5#

80% Shale: med-dk grey, 10% red brown, sub platy- blocky, sl. calcareous-calc, firm. 20% Ls: beige, grey, micro xln-fn xln, occ very arg, 3 cutting w/ hvy black free oil upon crush, no odor or cut.

Ls: light grey, beige, micritic, poor por. 2% oolitic

DST#1
KC H-KC J



grainstone, 350-500 micron clasts, poor-fair intra oolitic dissolution, scat hvy black stn, ssfo upon crush, no odor.

80% shale: light green-grey, calcareous, firm, sub platy-blocky. 20% Ls: cream, micritic, v dense, no vis por.

Ls: grey, micro xln, dense, occ. scat bioclasts, r scat pp por, occ rexln por, NSOC.

Sh: red-brown, lavender/purple, green grey, sub platy, waxy, calc-non calc. 5% Ls: creamy white, micro xln, no vis por, NSOC.

95% shale: a.a. 5% Ls: cream, white, micro xln, NSOC.

J porosity: Bioclastic grainstone, fossil hash, fair-good sec por, occ larg pore throats, widely distributed, GSFO, light brown oil profusely bleeding, sweet gassy odor. Show carries through 20". 100% dry stain.

Ls: cream micro xln, dense, mudstone.

Black shale: platy, firm, fissile, mod carb.

Ls: cream, grey, micro xln, dense, mod-hvy arg, very shly, no vis por, NSOC. Sh: light grey, turquoise, brown-red, sub platy, mod firm.

Ls: cream, beige, fn xln-micro xln, litho tex, dense, few brittle w/scat marl, non arg, r indv pp vug, NSOC.

Ls: grey-beige, micro xln, mod-hvy arg, dnse, v sl marl, no vis por, NSOC.

10% Ls: grey-brown, micro xln, dense, v arg, no vis por, NSOC. 10% Black shale: soft, subplaty-blocky, mod carb. 80% sh: brick red, grey, green grey, sl. red wash.

Ls: light grey-cream, micro xln, dense, sl arg, no vis por. 10% oolitic ls: cream, 250-300microns, w std, dense, micro xln mtrx, no vis sec por, r scat pp vug, NSOC.

40% Ls: cream, lt grey, micro xln, dense, no vis por, mod arg, 10% oolitic a/a. 50% sh: grey, brick red, light green grey, teal.

Ls: cream-lt grey, micro xln, dense, litho tex, no show. 5% sub oolitic, dense, vf xln matrix, poor sec por, <250microns, spotted patchy dk stn, 1 ctng vssfo after crush, no odor.

Sh: pred dk grey, subplaty-blocky, smooth, sl carb. Svrl maroons, teal, lt grey. Ls: beige, cream, dense, micritic.

Ls: cream, micro xln, dense, no vis por, <1% w scat fine xln matrix, very patch scat stn, no free oil, no odor. Abdnt teal shale, very platy, brittle, waxy, smooth.

Intrbd sh & ls. Ls: cm lt grey, sl-mod arg, very dns, occ mottled, NSOC. Sh: grey, light gm, maroon, teal.

Sh: light-dk grey, sup platy, firm & soft, occ. calcareous, dense, non carb. <5% Ls cream, beige, micro xln, no vis por.

Various colored shales. Red wash.

10% Oolitic-bioclastic limestone: cream-white, 350-400 microns, fair-good sec castic por, pos bryozoan frag, well std, barren, abdnt marl clusters, no shows or odor. Var sh in smpl. Remaining ls dense.

Sh: red-brown, sl silty, firm, non platy. Various other shales. Ls: ms, lt grey-grey, micro xln, dense, v argillaceous, litho tex, r pp vug, no vis mtrx por, NSOC..

Ls: lt grey-grey, micro xln, mod arg, no vis por, NSOC.

Ls: cream, lt grey-grey, micro xln, mod-hvy arg, no vis por, f. fract, no vis por, NSOC.

Flood black shale: firm, platy, vev carbonaceous. sl calc.

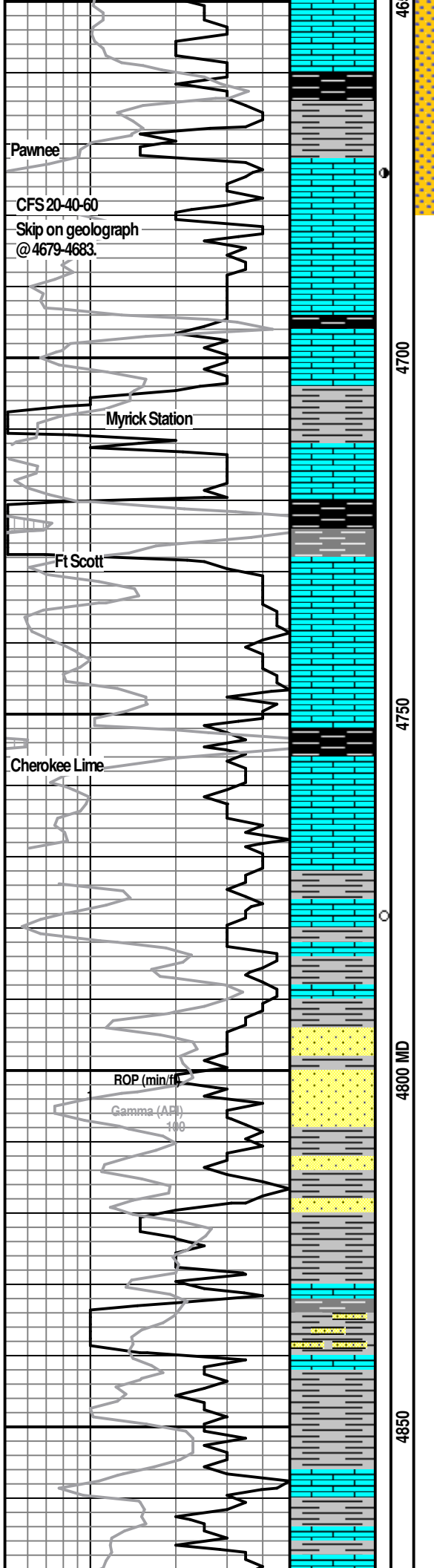
4403-4491
20-30-45-60
IFP: 425-647psi
ISIP: 1248psi
FFP: 705-1058psi
FSIP: 1256psi
Recovered:
58' MCO
(70%O, 5%G)
116' MCGO (77%O, 20%G)
1441' MCGO
(61%O, 27%G)
1260' CGO (72%O, 28%G)
1200' GIP
BHT: 141 fahrenheit
Gravity: 39.2

Andy's mud check
MW 9.0
VIS 50
WL 6.0
Solids 5%
Chlorides 2200ppm
LCM 1#

*Pipe strap was 35' long to board. Shift all data 35'.

MW 9.0
Vis 52
3# lcm

DST #2
Pawnee
4640-4675'



Abdnt dk grey shale. Ls: grey-dk grey, micro xln, no vis por, v arg, NSOC.

Shly Ls-calc shale: light grey-beige, brittle-w cemented, v arg, dense, mod marl, no vis por, NSOC.

Pawnee (20" smpl): Ls: grey-off white, micro xln matr, occ bioclastic, wckstn-pckstn, p std, scat r to ptchy pp vugs, scat stn in pore throats and edge, ssfo-fsfo, faint-fair odor.

40" sample: Ls grey-cream, micro xln, few cutting w/ scat stain in rar pp vugs, very faint odor, no free oil.

Ls: cream, lt grey, tan, micro xln, r scat pp vug, no vis por. Trc coral frag.

Black shale: mod soft, sub platy-non plty, v carb.

Lag to 4696' Ls: cream, off white, micro xln, mod-hvy marl, brittle, NSOC. 5% Grey Chert, abdnt fusulinids & spicules.

Lag to 4707': Ls: cream-off white, micro xln, v hvy marl, soft, no vis por, trc scat fossil frag, NSOC.

Lag to 4730' Ls: lt grey, cream, micro xln, mod marl, dnse, litho tex, few bioclastic gs, no sec por, NSOC. 20% Blk and dk shale, soft, platy-subplaty, very carb, mod card.

Lag to 4742': 95% Ls, lt grey-cream, micro xln, dense, v hard, litho-glassy tex, sl arg, r scat clats, r isolated pp vug, NSOC.

Lag to 4754' Flood black shale (25%): firm, platy, carb. Ls: brown, grey, cream, micro xln, litho tex, v dense, occ bioclasts w/no vis sec por, mod-hvy arg, NSOC.

Lag to 4764': Ls: cream, lt grey, brwn, occ mtld, very dense, micro xln, mod arg, occ r fos clast, no vis por, sl marl, NSOC.

Lag to 4771': Ls: cream-lt grey, sl motld, dense, sl arg, micro xln, r scat pp vugs, trc bioclastic gs, no vis sec por, NSOC.

Lag 4784': Ls: cream-lt grey, micro xln, dense-brittle w/hvy marl, no vis por, sl cherty (light grey-off white, sim translucent), one cutting w/dead asphaltic stain. No free oil or odor. Sh: med-lt grey, waxy, sub platy.

Lag 4791': Ls: cream, lt grey, micro xln dense, no vis por, NSOC. 50% Sh: light grey, soft, non platy, gry wash. Med-dk grey, subplaty, mod firm.

Lag 4800': 10% ss: red-brown, coarse gm, 500microns, mod std, shly, fair-good ingl por, NSOC. Ls: cm, gry, fn xln-micro xln, dns, NSOC. 30% various shales.

Lag to 4810': 50% ss: cream-white, occ omg tint, fine-med gm, w. cons, p std, sub ang, poor ingl por, sl glauconitic, NSOC. 50% sh: med grey-grey, sub platy, smooth waxy.

50% ss cream, off white, lt grey, w cons, fn grain, mod std, calc cement, poor vis ingl por, NSOC. 50% sh: grey, green, maroon.

30% ss a.a, 30% Ls: cream, beige, motteld w/red shale, dense, micro xln, no vis por. 40% sh: various colored

Lag 4838': 40% ss, rd bm, white, gry, 250-350 micron gm, sub md-sub ang, most w std, w cons, occ friable, pr-fr ingl por, occ hvy arg, NSOC. 40% Sh: gry, gm, wxy, soft, sub play. 20% Ls: cm, mtld, micro xln, r pp vug, NSOC.

Lag 4851' 20% ss a/a. 40% Ls: lt gry, cm, micro xln, occ scat pp vug, mod-hvy marl, no vis mtrx por, mod arg, f fos frag, NSOC. 40% Sh: maroon, rd-brwn, gry, green.

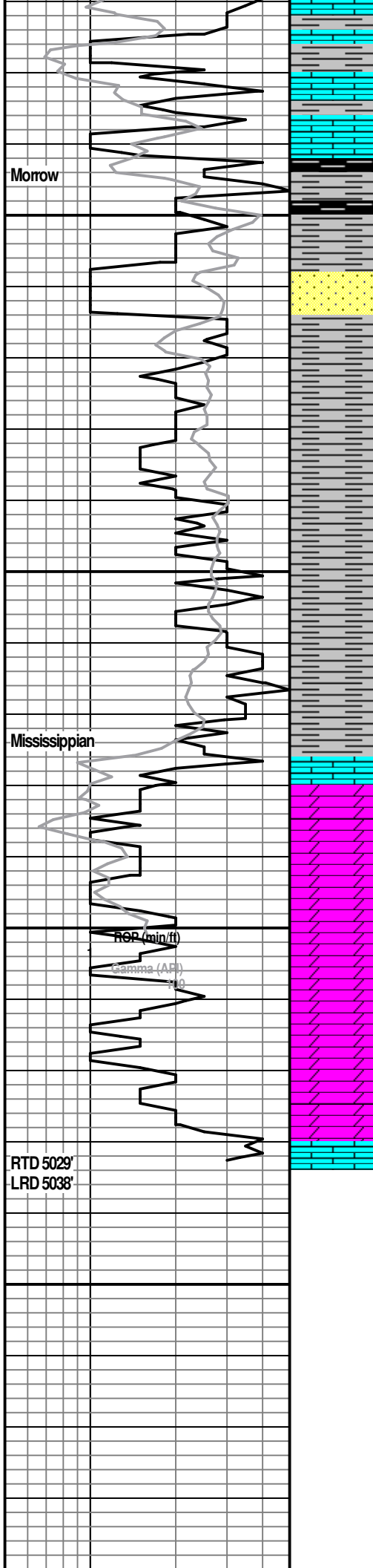
Lag 4861'-25% Ls: cream, beige, org tint, fn xl-micro xln, occ hvy mtld, occ sndy, dense, r scat pp vugs. 75% var sh. predominately red, sandy well cons

30-45-15-60
IFP:16-17psi
ISIP:30.4psi
FFP:16-17psi
ISIP:34psi
Rec: 1' OSM

Andys Mud Check
MW 9.4
VIS 56
WL 6.0
Chlorides 2800ppm
2# LCM

MW 9.4
Vis 44

Andy's mud check:
MW 9.5
Vis 49
WL 8.0
Chlorides 2000ppm
2# LCM



4900

4950

5000 MD

5050

Lag 4868'-80% Ls: Light grey-off white, micro xln, litho-glossy tex, no vis por, v dns, r pp vug, NSOC. 20% shale:lavender, lt gry, gm.

Lag 4874'-Sh: mst red, sndy, fn gm, firm, w. cons. Others mustard, grey, lavender. Few lse crse frstd sd gms in try.

Lag 4888'-75% Ls: lt grey, micro xln, earth tex, mod-hvy arg, no vis por, NSOC. 25% Sh:lt-med grey, sub platy, calc, most firm.

Lag 4894'-50% Ls: lt gry, cream, brown, micro xln, mod agr, hvy marl, dense, no vis por, NSOC. 50% various shales. Trc dkgrey-blk

Lag 4902'-Sh: grey,dk grey, mustard, turquoise, maroon, soft smooth, sub platy-platy, abdnt pyrite.

Lag 4914' 20% sand: off white-white, vfg, well std, very friable, fair ingl por, occ shaly. Few glaucnitic ss, well std, well cons, vfg. NS 80% SH: v colors.

Lag 4922'-Sh: grey, mustard, light gm, platy, smooth, non calc. Trc sand a/a

Lag 4939'-Sh: lt grey green, platy-subplaty, soft smooth, non calc.

Lag 4950'-Sh: grey-green, platy, soft, non silty, non calc.

Lag 4962'-10% Ls: oolitic, cream, 150-200microns, w std, part silica cmnt, dense, no vis sec por. 20% chert: orange, semi translucent, 70% shale: a/a

Lag 4967'-Ls: cream, lt grey, beige, few oolitic a/a, micro xln, dense, no vis por, litho glassy tex, sl cherty, NSOC. Abdnt teal shale.

Dolomite: grey brown, fn xln, sl. sucrosic, mod marl, poor incl por, NSOC.

Shly dolomitic ls: grey, fn xln-micro xln, v arg, poor-no vis inxl por, dense, NSOC.

Dolomite: grey-beige, micro xln-fn xln, dense. poor inxl por, mod-hvy arg, trc orange opaque chert, NSOC.

Dolomite:A.A

Dolomitic Ls: lt grey, cream, off white, dense, micro xln, occ fn spary, no vis inxl por, increase chert: white, grey opaque, few spicules. NSOC

Dolomite: creamy white, fn xln, mod marl, fair inxl por, fn spary tex, sl cherty, NSOC.

Dolo ls: cream, micro xln dense, no vis por, mod marl, NSOC.

MW 9.5
Vis 44
2# LCM

MW 9.3
Vis 53
2# LCM

*Shift all data by 4' to wireline log.

[illegible]



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Darrah Oil Co., LLC

125 N Market STE 1425
Wichita, KS 67202

ATTN: Chad Counts

8/5s/37w Cheyenne KS

Keltz #1-8

Job Ticket: 68843

DST#: 1

Test Start: 2023.01.07 @ 18:05:00

GENERAL INFORMATION:

Formation: **LKC "H - J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:15:51

Time Test Ended: 08:55:50

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 73

Interval: 4403.00 ft (KB) To 4491.00 ft (KB) (TVD)

Total Depth: 4491.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3415.00 ft (KB)

3407.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6771 Inside

Press@RunDepth: 1058.33 psig @ 4404.00 ft (KB)

Start Date: 2023.01.07

End Date:

2023.01.08

Start Time: 18:05:01

End Time:

08:55:50

Capacity: 8000.00 psig

Last Calib.: 2023.01.08

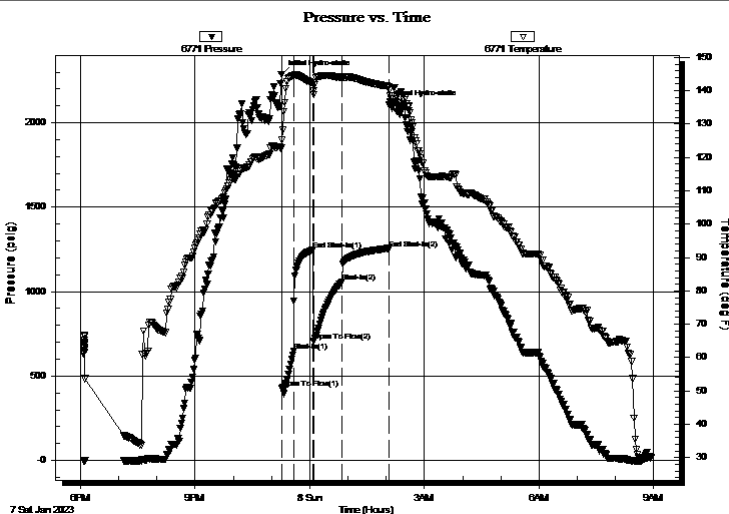
Time On Btm: 2023.01.07 @ 23:15:21

Time Off Btm: 2023.01.08 @ 02:04:51

TEST COMMENT: 20 - IF: Blow built to BOB (11" Diesel) at 50 sec., built to 238"
30 - IS: Bled off for 7 min., Blow back built to BOB in 3 min., built to 58"
45 - FF: Blow built to BOB at 45 sec., built to 430"
60 - FSI: Bled off for 5 min., Blow back built to BOB in 2 1/2 min., built to 41"

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2286.29	122.87	Initial Hydro-static
1	425.82	125.16	Open To Flow (1)
20	647.48	144.52	Shut-In(1)
50	1248.20	142.26	End Shut-In(1)
51	705.98	140.02	Open To Flow (2)
95	1058.33	143.87	Shut-In(2)
169	1255.95	141.31	End Shut-In(2)
170	2104.24	140.21	Final Hydro-static



Recovery

Length (ft)	Description	Volume (bbl)
58.00	MCO 70%o, 25%m, 5%g	0.29
116.00	SMCO 77%o, 20%g, 3%m	0.57
1441.00	MCO 61%o, 27%g, 12%m	20.21
1260.00	CGO 72%o, 28%g	17.67
0.00	GIP = 1200'	0.00

Gas Rates

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

DRILL STEM TEST REPORT

Darrah Oil Co., LLC

125 N Market STE 1425
Wichita, KS 67202

ATTN: Chad Counts

8/5s/37w Cheyenne KS

Keltz #1-8

Job Ticket: 68843

DST#: 1

Test Start: 2023.01.07 @ 18:05:00

GENERAL INFORMATION:

Formation: **LKC "H - J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:15:51

Time Test Ended: 08:55:50

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 73

Interval: 4403.00 ft (KB) To 4491.00 ft (KB) (TVD)

Total Depth: 4491.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3415.00 ft (KB)

3407.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8367 Outside

Press@RunDepth: psig @ 4404.00 ft (KB)

Start Date: 2023.01.07

End Date:

2023.01.08

Start Time: 18:05:01

End Time:

08:55:50

Capacity: 8000.00 psig

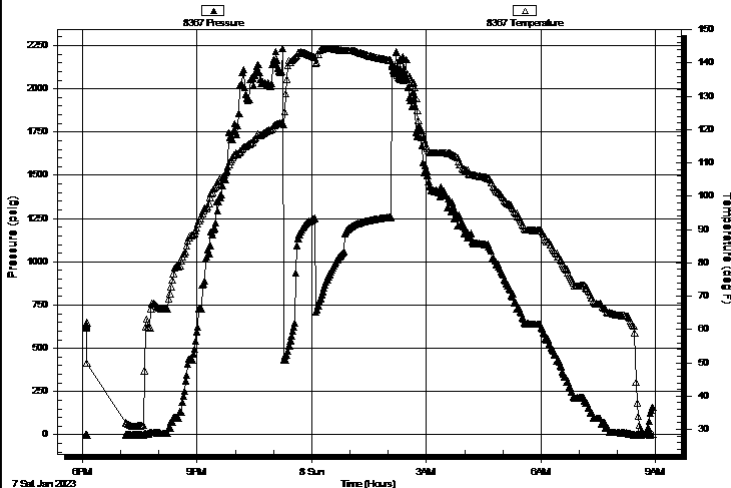
Last Calib.: 2023.01.08

Time On Btm:

Time Off Btm:

TEST COMMENT: 20 - IF: Blow built to BOB (11" Diesel) at 50 sec., built to 238"
30 - IS: Bled off for 7 min., Blow back built to BOB in 3 min., built to 58"
45 - FF: Blow built to BOB at 45 sec., built to 430"
60 - FS: Bled off for 5 min., Blow back built to BOB in 2 1/2 min., built to 41"

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
58.00	MCO 70%o, 25%m, 5%g	0.29
116.00	SMCO 77%o, 20%g, 3%m	0.57
1441.00	MCO 61%o, 27%g, 12%m	20.21
1260.00	CGO 72%o, 28%g	17.67
0.00	GIP = 1200'	0.00

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Darrah Oil Co., LLC

8/5s/37w Cheyenne KS

125 N Market STE 1425
Wichita, KS 67202

Keltz #1-8

Job Ticket: 68843

DST#: 1

ATTN: Chad Counts

Test Start: 2023.01.07 @ 18:05:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 52.00 sec/qt

Water Loss: 7.99 in³

Resistivity: ohm.m

Salinity: 2000.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

39.2 deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
58.00	MCO 70%o, 25%m, 5%g	0.285
116.00	SMCGO 77%o, 20%g, 3%m	0.570
1441.00	MCGO 61%o, 27%g, 12%m	20.213
1260.00	CGO 72%o, 28%g	17.674
0.00	GIP = 1200'	0.000

Total Length: 2875.00 ft

Total Volume: 38.742 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 36.4 api @ 32 deg F Corrected Gravity = 39.2 api



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Darrah Oil Co., LLC

125 N Market STE 1425
Wichita, KS 67202

ATTN: Chad Counts

8/5s/37w Cheyenne KS

Keltz #1-8

Job Ticket: 68844

DST#: 2

Test Start: 2023.01.09 @ 10:00:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:09:21

Time Test Ended: 18:24:51

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 73

Interval: 4640.00 ft (KB) To 4675.00 ft (KB) (TVD)

Total Depth: 4675.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3415.00 ft (KB)

3407.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6771 Inside

Press@RunDepth: 17.47 psig @ 4641.00 ft (KB)

Start Date: 2023.01.09

End Date:

2023.01.09

Start Time: 10:00:01

End Time:

18:24:51

Capacity: 8000.00 psig

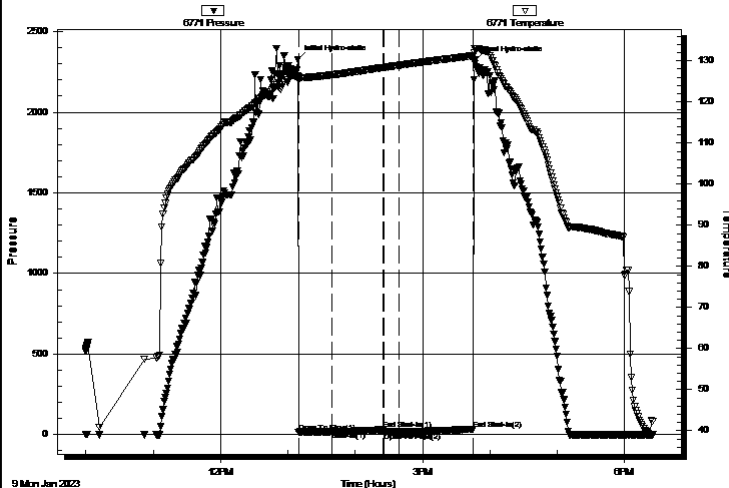
Last Calib.: 2023.01.09

Time On Btm: 2023.01.09 @ 13:09:06

Time Off Btm: 2023.01.09 @ 15:46:21

TEST COMMENT: 30 - IF: Blow built to 1/4", died back to 1/8"
45 - IS: No blow
15 - FF: No blow
60 - FSI: No blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2326.36	126.38	Initial Hydro-static
1	15.90	125.18	Open To Flow (1)
30	17.58	126.55	Shut-In(1)
76	30.43	128.36	End Shut-In(1)
77	15.73	128.36	Open To Flow (2)
90	17.47	128.90	Shut-In(2)
156	33.72	131.20	End Shut-In(2)
158	2322.55	133.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Mud w/oil spots 99%m, 1%o	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Darrah Oil Co., LLC

125 N Market STE 1425
Wichita, KS 67202

ATTN: Chad Counts

8/5s/37w Cheyenne KS

Keltz #1-8

Job Ticket: 68844

DST#: 2

Test Start: 2023.01.09 @ 10:00:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:09:21

Time Test Ended: 18:24:51

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 73

Interval: 4640.00 ft (KB) To 4675.00 ft (KB) (TVD)

Total Depth: 4675.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3415.00 ft (KB)

3407.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8367 Outside

Press@RunDepth: psig @ 4641.00 ft (KB)

Start Date: 2023.01.09

End Date:

2023.01.09

Start Time: 10:00:01

End Time:

18:24:51

Capacity: 8000.00 psig

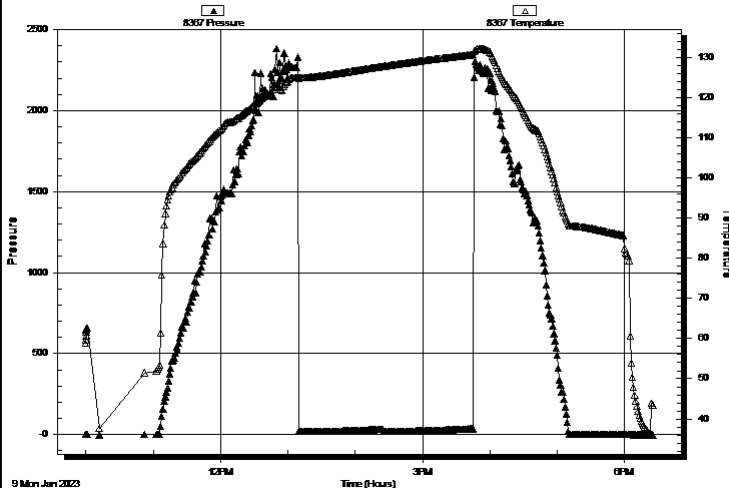
Last Calib.: 2023.01.09

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF: Blow built to 1/4", died back to 1/8"
45 - IS: No blow
15 - FF: No blow
60 - FSI: No blow

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
1.00	Mud w/oil spots 99%m, 1%o	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Darrah Oil Co., LLC

8/5s/37w Cheyenne KS

125 N Market STE 1425
Wichita, KS 67202

Keltz #1-8

Job Ticket: 68844

DST#: 2

ATTN: Chad Counts

Test Start: 2023.01.09 @ 10:00:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 56.00 sec/qt

Water Loss: 6.00 in³

Resistivity: ohm.m

Salinity: 2800.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

ft

bbl

psig

Oil API:

Water Salinity:

deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Mud w /oil spots 99%m, 1%o	0.005

Total Length: 1.00 ft Total Volume: 0.005 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6771

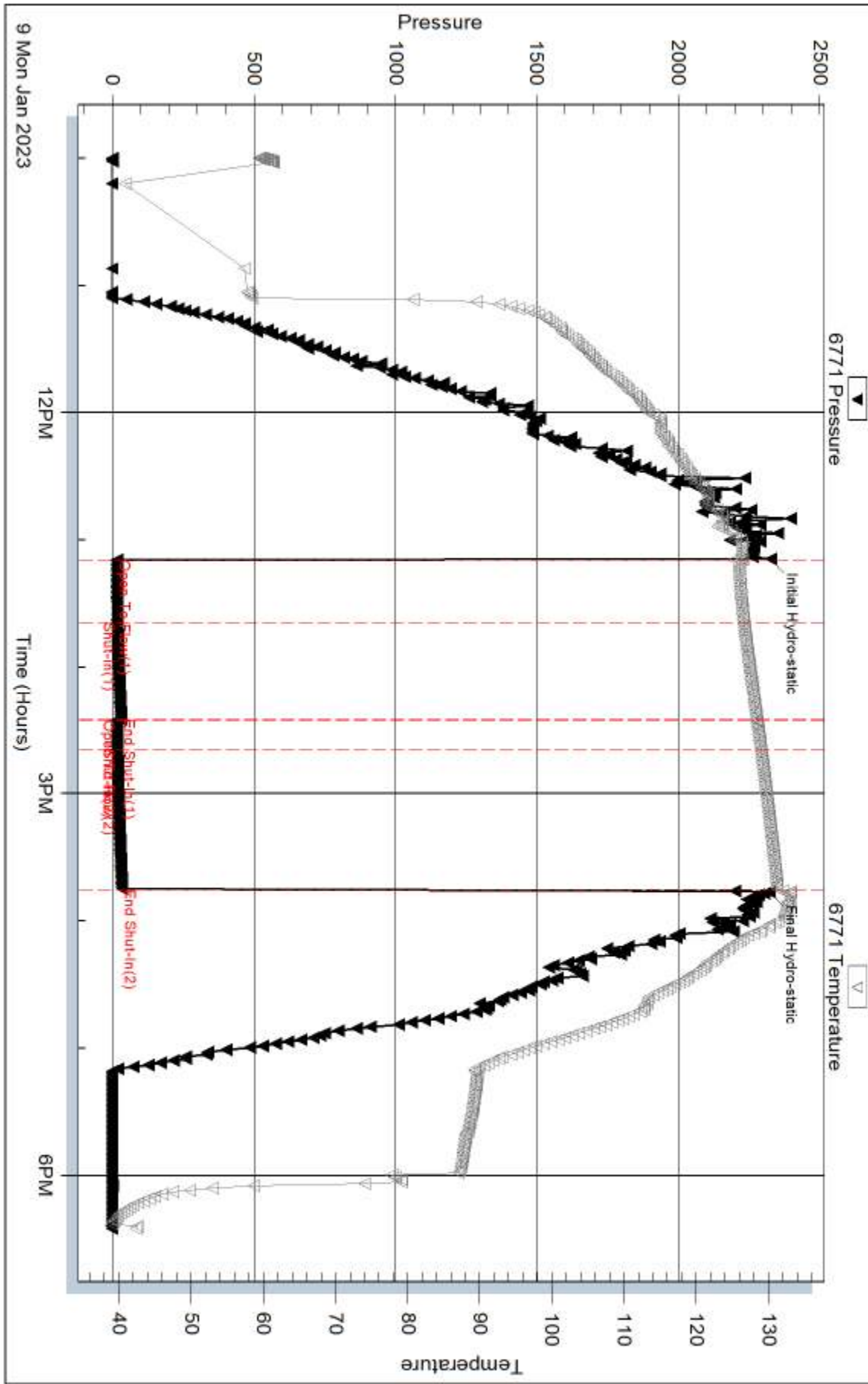
Inside

Darrah Oil Co., LLC

Keitz #1-8

DST Test Number: 2

Pressure vs. Time



Serial #: 8367

Outside Darrah Oil Co., LLC

Kelz #1-8

DST Test Number: 2

