



KANSAS CORPORATION COMMISSION 1158710
OIL & GAS CONSERVATION DIVISION

Form ACO-1

June 2009

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 SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- 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 ENHR Conv. to SWD
- Conv. to GSW
- Plug Back: _____ Plug Back Total Depth _____
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date Date Reached TD Completion Date or Recompletion Date

API No. 15 - _____

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

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total 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

- Letter of Confidentiality Received
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report 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 and base 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. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

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 Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i> 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
_____ Perforate _____ Protect Casing _____ Plug Back TD _____ Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method: Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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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> <input type="checkbox"/> Other <i>(Specify)</i> _____ <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	H & D Exploration LLC
Well Name	Walrafen 1
Doc ID	1158710

Tops

Name	Top	Datum
Heebner	3425	-1524
Toronto	3439	-1538
Douglas	3471	-1570
Brown Lime	3583	-1682
Lansing	3606	-1705
Base KC	3895	-1994
Mississippi	4016	-2115
Viola	4058	-2157
Simpson Shale	4147	-2246
Simpson Sand	4178	-2277
Arbuckle	4125	-2314



Musgrove

**PETROLEUM
CORPORATION**
Clatlin, Kansas

COMPANY: H&D Exploration LLC

LEASE: Walrafen #1

FIELD: wildcat

LOCATION: SW-NW-NE-NW 358' FNL & 1331' FWL

SEC: 20 **TWSP:** 25s **RGE:** 12w

COUNTY: Stafford **STATE:** Kansas

KB: 1901 **GL:** 1891

API # 15-185-23817-00-00

CONTRACTOR: Southwind Drilling Company (Rig #8)

Spud: 07-09-2013 **Comp:** 07-27-2013

RTD: 4270' **LTD:** 4274'

Mud Up: 2800' **Type Mud:** Chemical was displaced

Samples Saved From: 3200'to RTD
Drilling Time Kept From: 3200'to RTD
Samples Examined From: 3200'to RTD
Geological Supervision From: 3300'to RTD
Geologist on Well: Josh Austin

Surface Casing: 8 5/8" @ 717'
Production Casing: none D&A

Electronic Surveys: By Pioneer Energy Services

NOTES

On the basis of the poor structural position, lack of shows and after reviewing the electric log, it was recommended by all parties involved in the Walrafen #1 that it be plugged and abandoned at the rotary total depth 4270

H&D Exploration, LLC

Sample and Log Tops

DRILLING WELL				
Walrafen #1				
SW-NW-NE-NW				
Sec: 20 Twp:25s Rge: 12w				
1901 KB				
Formation	Sample	Sub-Sea	Log	Sub-Sea
Heebner	3419	-1518	3425	-1524
Toronto	3442	-1541	3439	-1538
Douglas	3466	-1565	3471	-1570
Brown Lime	3579	-1678	3583	-1682
Lansing	3601	-1700	3606	-1705
Base KC	3892	-1991	3895	-1994
Mississippi	4007	-2106	4016	-2115
Viola	4056	-2155	4058	-2157
Simpson Shale	4143	-2242	4147	-2246
Simpson Sand	4173	-2272	4178	-2277
Arbuckle	4210	-2309	4215	-2314
Total Depth	4270	-2369	4274	-2373



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: WLRFN1DST1

TIME ON: 2025 (7/24)
TIME OFF: 0525 (7/25)

Company H & D EXPLORATION LLC Lease & Well No. WALRAFEN #1

Contractor SOUTHWIND DRILLING, INC. RIG 8 Charge to H & D EXPLORATION LLC

Elevation 1901 KB Formation LANSING B-F Effective Pay _____ Ft. Ticket No. M525

Date 7/24/2013 Sec. 20 Twp. 25 S Range 12 W County STAFFORD State KANSAS

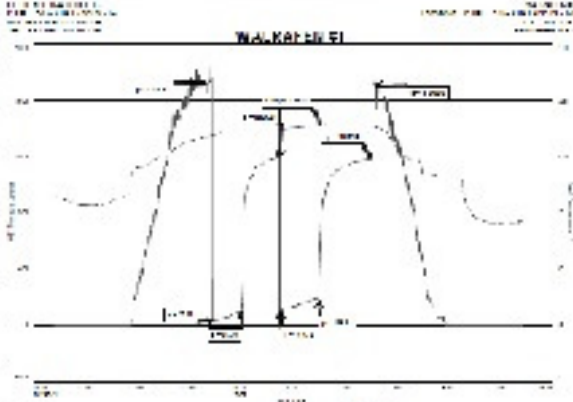
Test Approved By JOSH AUSTIN

Diamond Representative

MIKE COCHRAN

Formation Test No. 1 Interval Tested from 3616 ft. to 3704 ft. Total Depth 3704 ft.
Packer Depth 3611 ft. Size 6 3/4 in. Packer depth N/A ft. Size 6 3/4 in.
Packer Depth 3616 ft. Size 6 3/4 in. Packer depth NA ft. Size 6 3/4 in.
Depth of Selective Zone Set _____
Top Recorder Depth (Inside) 3603 ft. Recorder Number 0063 Cap. 3603 P.S.I.
Bottom Recorder Depth (Outside) 3701 ft. Recorder Number 6884 Cap. 6,275 P.S.I.
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.
Mud Type CHEM Viscosity 51 Drill Collar Length 0 ft. I.D. 2 1/4 in.
Weight 9.3 Water Loss 8.8 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
Chlorides 2,900 P.P.M. Drill Pipe Length 3501 ft. I.D. 3 1/2 in.
Jars: Make STERLING Serial Number N/A Test Tool Length 25 ft. Tool Size 3 1/2-IF in.
Did Well Flow? NO Reversed Out NO Anchor Length 88 ft. Size 4 1/2-FH in.
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.
Blow: 1st Open: WSB, BOB 3 MIN (2"BB)
2nd Open: WSB, BOB 11 MIN (2"BB)

Recovered 1375 ft. of GIP
Recovered 60 ft. of GWM 20% GAS, 1% WTR, 79% MUD W/ A THIN SCUM OF OIL
Recovered 315 ft. of GMW 2% GAS, 98% WTR, 2% MUD
Recovered 375 ft. of TOTAL FLUID
Recovered _____ ft. of CHLOR: 49,000 PPM
Recovered _____ ft. of RW: 0.14 @ 72 DEG
Remarks: PH: 7.0



TOOL SAMPLE: 100% WTR W/ A FEW SPOTS OF OIL & GASSY BUBBLES

Time Set Packer(s) 11:30 P.M. A.M. P.M. Time Started Off Bottom 2:30 A.M. P.M. Maximum Temperature 114
Initial Hydrostatic Pressure _____ (A) 1726 P.S.I.
Initial Flow Period _____ Minutes 30 (B) 26 P.S.I. to (C) 96 P.S.I.
Initial Closed In Period _____ Minutes 45 (D) 1200 P.S.I.
Final Flow Period _____ Minutes 45 (E) 102 P.S.I. to (F) 185 P.S.I.
Final Closed In Period _____ Minutes 60 (G) 1187 P.S.I.
Final Hydrostatic Pressure _____ (H) 1709 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

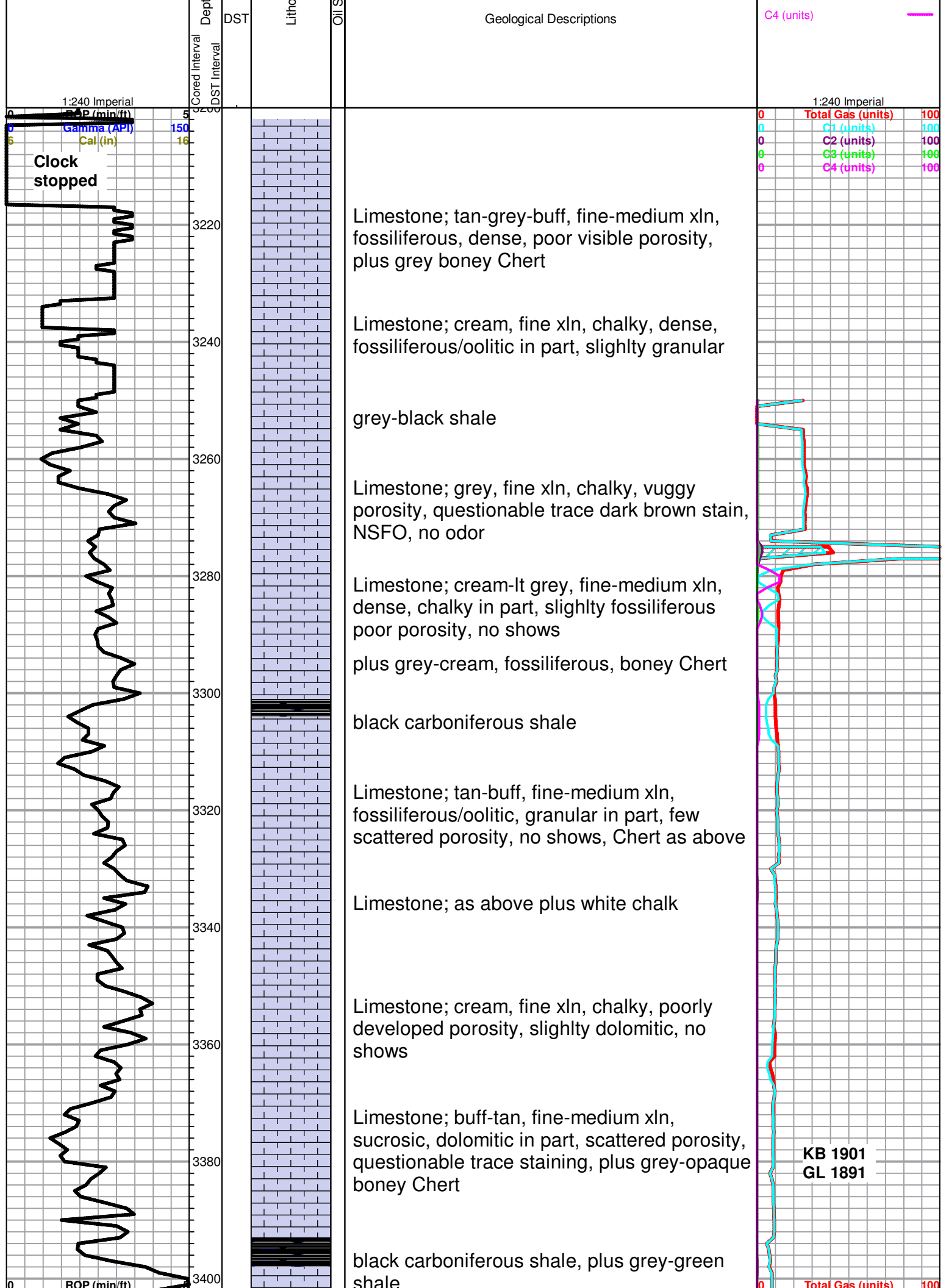
ROCK TYPES

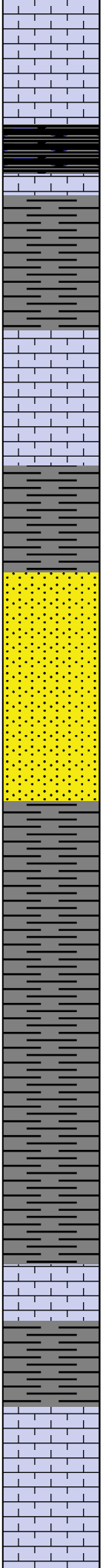
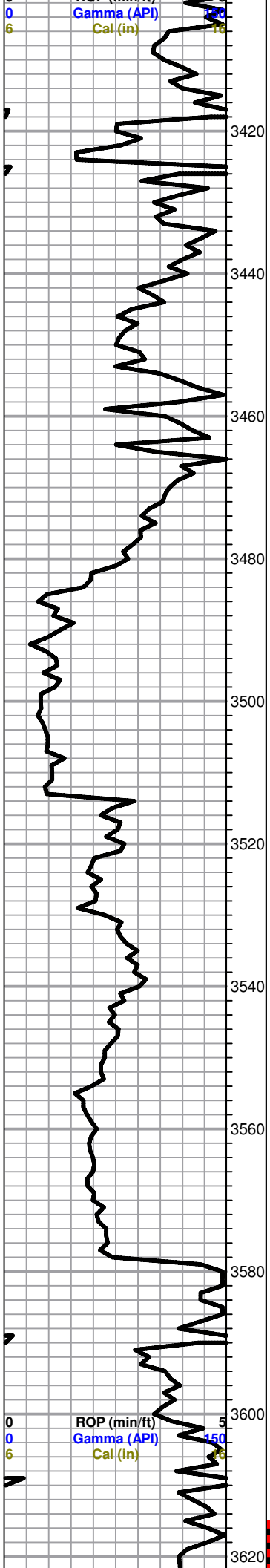
Cht	Chtcong	Lmst fw7>	Carbon Sh
Cht vari	Dolsec	shale, gry	Ss

OTHER SYMBOLS

Oil Show	DST
● Even Stn	■ DST Int
● Spotted Stn 50-75	■ DST alt
● Spotted Stn 25-50	■ Core
● Spotted Stn 1-25	■ tail pipe
○ Questionable Stn	
■ Dead Oil Stn	
■ Fluorescence	
* Gas	

Curve Track #1					TG, C1 - C5
ROP (min/ft)		h Intervals	logy	show	Total Gas (units)
Gamma (API)					C1 (units)
Cal (in)					C2 (units)
					C3 (units)





HEEBNER 3419 (-1518)

black carboniferous shale

grey-green shale

TORONTO 3442 (-1541)

Limestone; cream-white, fine xln, chalky, few pin point porosity, no shows

DOUGLAS 3466 (-1565)

Shale; grey-green-maroon, soft, silty in part, few micaceous pieces

DOUGLAS SAND

Sand; grey, micaceous, silty, dense, few sub angular, sub rounded, poor porosity

Sand and Shale; as above

Shale; grey, micaceous, soft, few silty pieces

Shale; grey-dark grey

BROWN LIME 3579 (-1678)

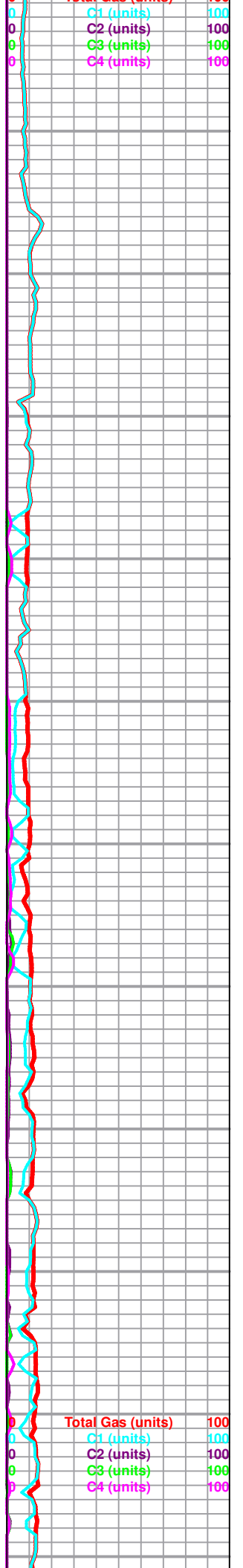
Limestone; tan-brown, fine xln, dense, cherty, fossiliferous in part

grey shale

LANSING 3601 (-1700)

Limestone; cream-grey, fossiliferous, dense, cherty in part, poor porosity, no shows

Limestone as above, tan-cream, cherty



CFS

3640
3660
3680
3700
3720
3740
3760
3780
3800
3820
3840

Limestone; cream-grey, fine-medium xln, slightly oolitic, dense in part, chalky, trace dark brown stain, trace spotty free oil, faint odor

Limestone; grey-cream, oolitic, chalky, trace oolitic porosity, golden brown-grey stain, lt. rainbow SFO, faint odor

Limestone; tan-grey-cream, fine xln, dense, cherty in part, few sparry calcite, plus grey-white-opaque chert, no shows

Limestone; grey-buff, fine-medium xln, finely fossiliferous-oolitic, fair inter xln type porosity, brown stain, trace free oil, faint-fair odor

Limestone; cream-tan, fine xln, fossiliferous in part, chalky, dense, poorly developed porosity, trace brown stain, NSFO, no odor

Limestone; cream-lt. grey-buff, fine xln, dense, cherty, finely oolitic-fossiliferous, cherty, plus Chert; grey-smokey grey, boney

Limestone; cream, fine xln, chalky, oomoldic, fair oomoldic porosity, barren

Limestone; cream, fine xln, dense, cherty, plus Chert; white-grey, boney

Limestone; cream, fine xln, chalky, highly oolitic, trace black-dark brown stain, NSFO, no odor

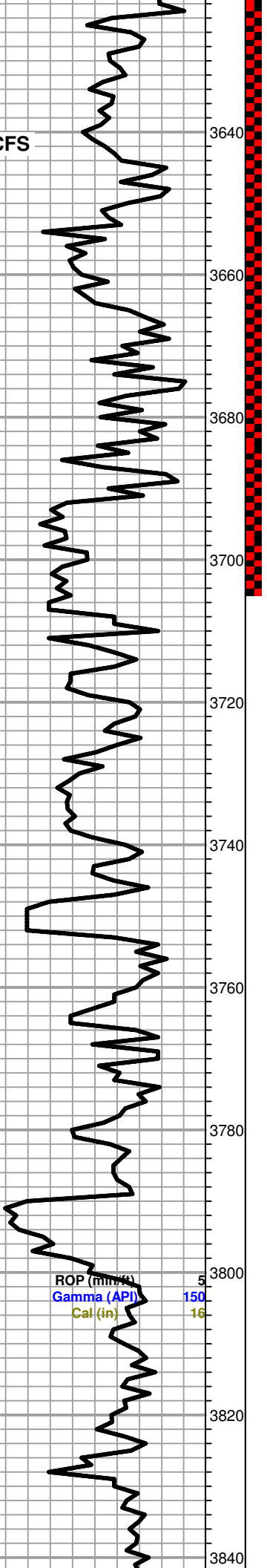
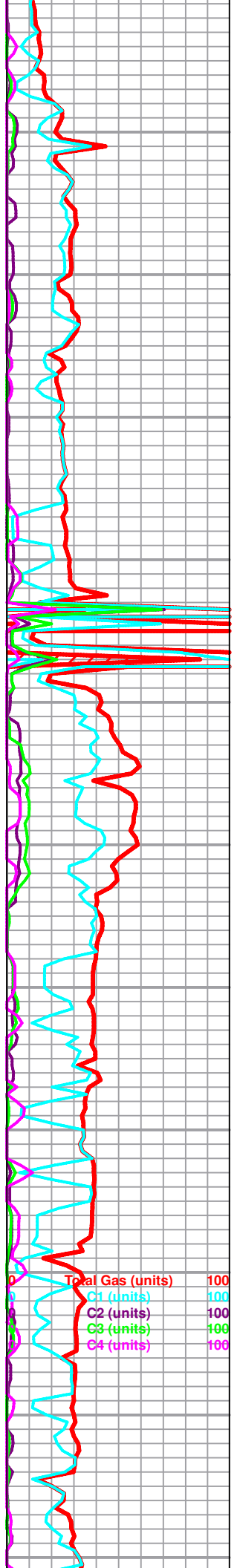
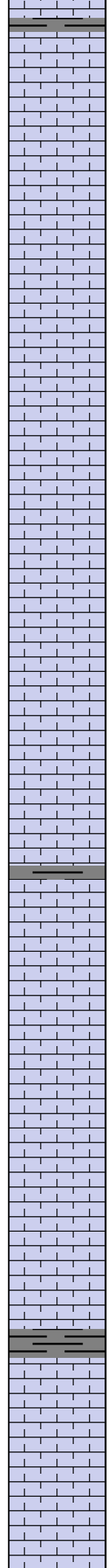
Limestone; cream, chalky, oomoldic porosity, (barren)

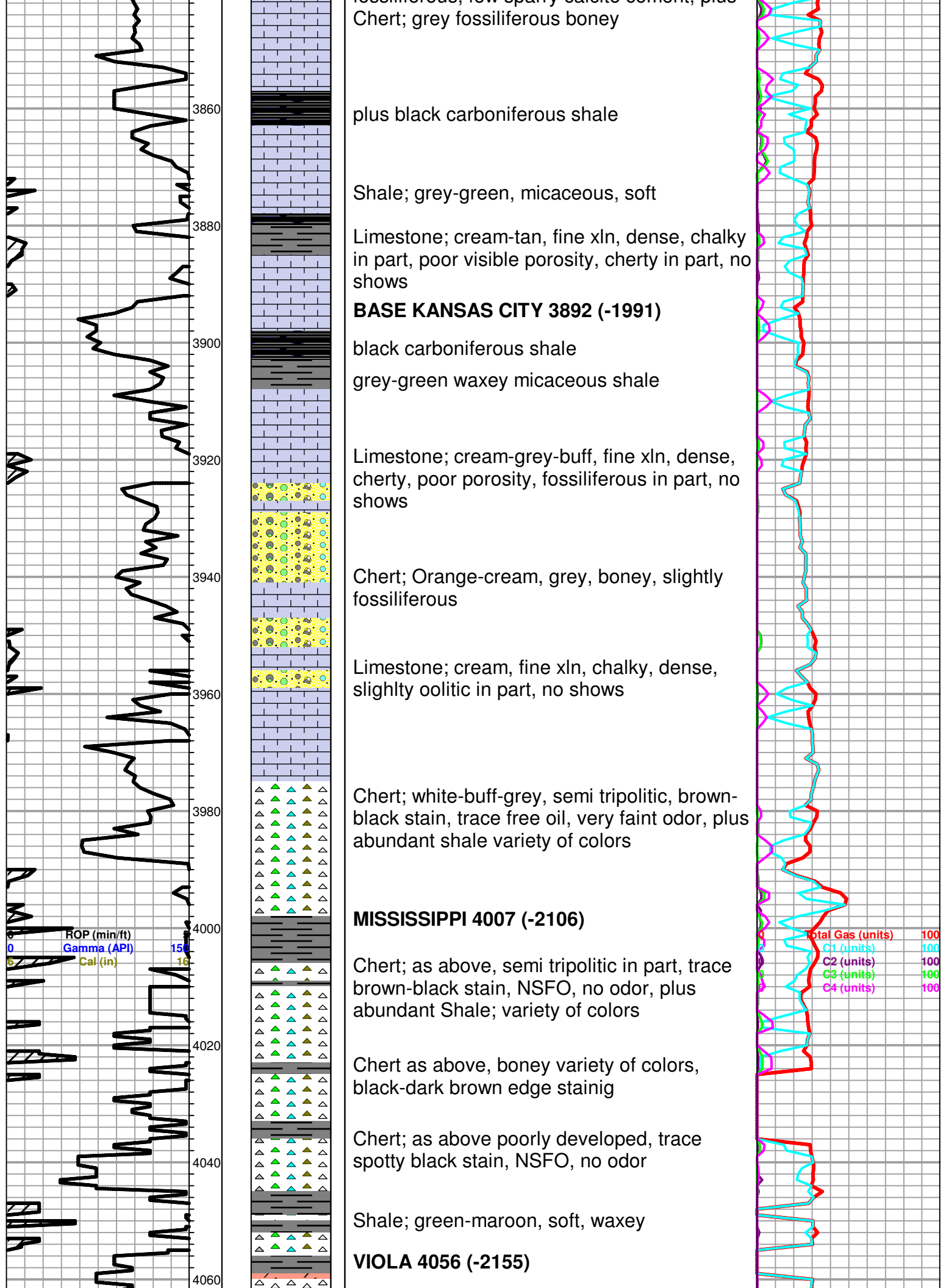
Limestone; cream-grey, fine xln, fossiliferous, dense, chalky in part, poor visible porosity, no shows, plus Chert; grey, boney, fossiliferous

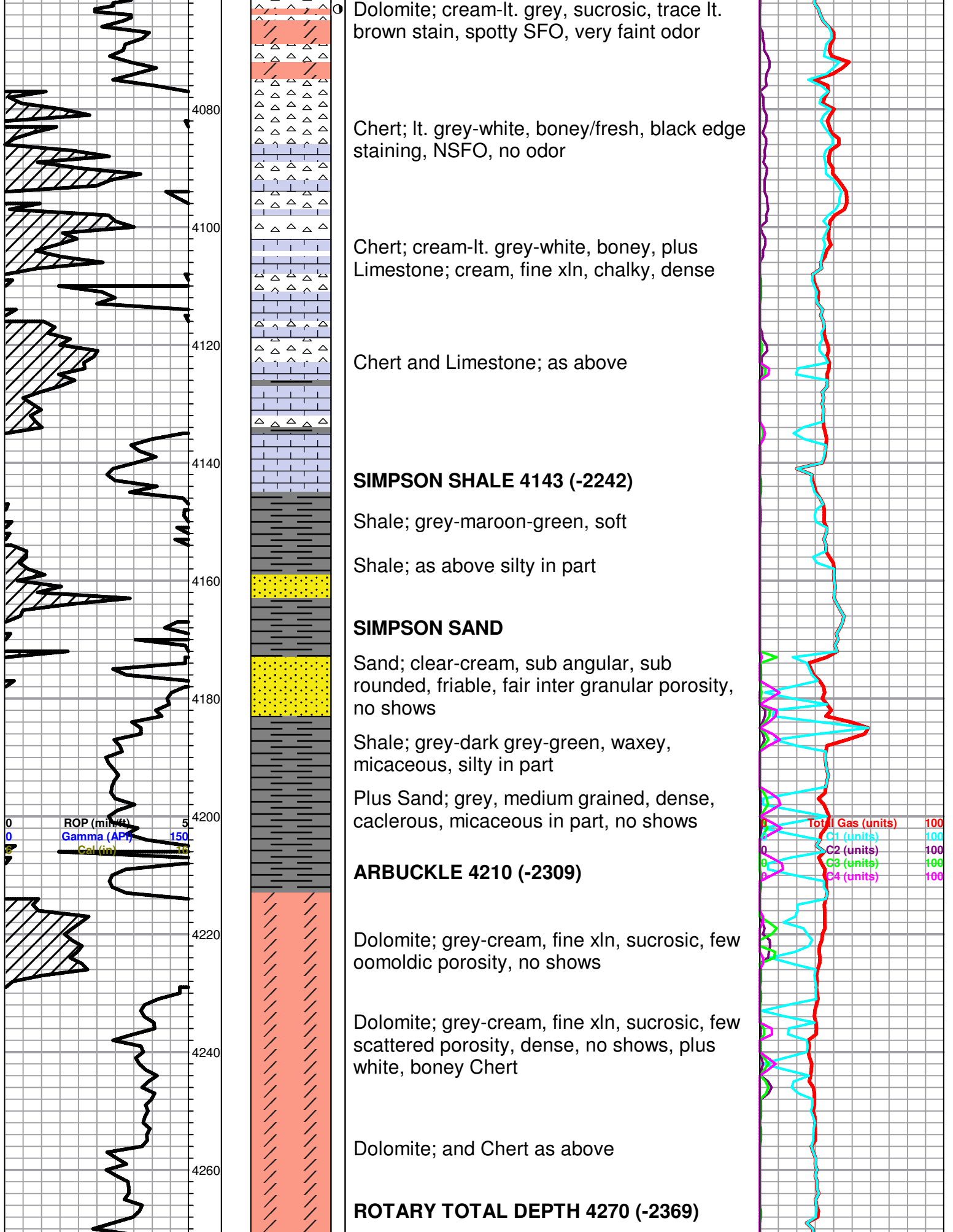
Limestone; cream-tan, fine xln, slightly fossiliferous, few sparry calcite cement, plus

0 ROP (min/ft) 5
0 Gamma (API) 150
6 Cal (in) 16

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







DIAMOND TESTING

Pressure Survey Report

General Information

Company Name	H & D EXPLORATION LLC	Job Number	M525
Well Name	WALRAFEN #1	Representative	MIKE COCHRAN
Unique Well ID	DST#1 3616-3704 LANSING B-F	Well Operator	H & D EXPLORATION LLC
Surface Location	SEC.20-25S-12W STAFFORD CO.KS.	Report Date	2013/07/25
Field	WILDCAT	Prepared By	MIKE COCHRAN
Well Type	Vertical	Qualified By	JOSH AUSTIN
		Test Unit	NO. 1

Test Information

Test Type	CONVENTIONAL		
Formation	DST#1 3616-3704 LANSING B-F		
Test Purpose (AEUB)	Initial Test		
Start Test Date	2013/07/24	Start Test Time	20:25:00
Final Test Date	2013/07/25	Final Test Time	05:25:00
		Well Fluid Type	01 Oil
Gauge Name	0063		
Gauge Serial Number			

Test Results

Remarks RECOVERED:

1375' GIP
60' GWM 20% GAS, 1% WTR, 79% MUD W/ A THIN SCUM OF OIL
315' GMW 2% GAS, 96% WTR, 2% MUD
375' TOTAL FLUID

CHLOR: 49,000 PPM
PH:7.0
RW: 0.14 @ 72 DEG

TOOL SAMPLE: 100% WTR W/ A FEW SPOTS OF OIL & GASSY BUBBLES



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: WLRFN1DST1

TIME ON: 2025 (7/24)
TIME OFF: 0525 (7/25)

Company H & D EXPLORATION LLC Lease & Well No. WALRAFEN #1
Contractor SOUTHWIND DRILLING, INC. RIG 8 Charge to H & D EXPLORATION LLC
Elevation 1901 KB Formation LANSING B-F Effective Pay _____ Ft. Ticket No. M525
Date 7/24/2013 Sec. 20 Twp. _____ 25 S Range _____ 12 W County STAFFORD State KANSAS
Test Approved By JOSH AUSTIN Diamond Representative MIKE COCHRAN

Formation Test No. 1 Interval Tested from 3616 ft. to 3704 ft. Total Depth 3704 ft.
Packer Depth 3611 ft. Size 6 3/4 in. Packer depth N/A ft. Size 6 3/4 in.
Packer Depth 3616 ft. Size 6 3/4 in. Packer depth NA ft. Size 6 3/4 in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3603 ft. Recorder Number 0063 Cap. 3603 P.S.I.
Bottom Recorder Depth (Outside) 3701 ft. Recorder Number 6884 Cap. 6,275 P.S.I.
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEM Viscosity 51 Drill Collar Length 0 ft. I.D. 2 1/4 in.
Weight 9.3 Water Loss 8.8 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
Chlorides 2,900 P.P.M. Drill Pipe Length 3591 ft. I.D. 3 1/2 in.
Jars: Make STERLING Serial Number N/A Test Tool Length 25 ft. Tool Size 3 1/2-IF in.
Did Well Flow? NO Reversed Out NO Anchor Length 88 ft. Size 4 1/2-FH in.
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. (63'DP) Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: WSB, BOB 3 MIN (2"BB)
2nd Open: WSB, BOB 11 MIN (2"BB)

Recovered <u>1375</u> ft. of <u>GIP</u>	
Recovered <u>60</u> ft. of <u>GWM 20% GAS, 1% WTR, 79% MUD W/ A THIN SCUM OF OIL</u>	
Recovered <u>315</u> ft. of <u>GMW 2% GAS, 96% WTR, 2% MUD</u>	
Recovered <u>375</u> ft. of <u>TOTAL FLUID</u>	
Recovered _____ ft. of <u>CHLOR: 49,000 PPM</u>	Price Job
Recovered _____ ft. of <u>RW: 0.14 @ 72 DEG</u>	Other Charges
Remarks: <u>PH: 7.0</u>	Insurance
<u>TOOL SAMPLE: 100% WTR W/ A FEW SPOTS OF OIL & GASSY BUBBLES</u>	Total

Time Set Packer(s) 11:30 P.M. ^{A.M.} P.M. Time Started Off Bottom 2:30 A.M. ^{A.M.} P.M. Maximum Temperature 114

Initial Hydrostatic Pressure..... (A) 1726 P.S.I.
Initial Flow Period..... Minutes 30 (B) 26 P.S.I. to (C) 96 P.S.I.
Initial Closed In Period..... Minutes 45 (D) 1200 P.S.I.
Final Flow Period..... Minutes 45 (E) 102 P.S.I. to (F) 185 P.S.I.
Final Closed In Period..... Minutes 60 (G) 1187 P.S.I.
Final Hydrostatic Pressure..... (H) 1709 P.S.I.

Diamond Testing shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statement or opinion concerning the result of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

WALRAFEN #1

