Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1092836

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 32811
Name: OSAGE Resources, LLC
Address 1: 6209 N K61 HWY
Address 2:
City: HUTCHINSON State: KS Zip: 67502 + 8608
Contact Person: Brooke Walter
Phone: (620) 860-2224
CONTRACTOR: License # 5929
Name: Duke Drilling Co., Inc.
Wellsite Geologist: Curtis Covey
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
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

8/19/2012 — Spud Date or Recompletion Date
8/30/2012 — Date Reached TD
09/19/2012 — Completion Date or Recompletion Date

API No. 15 - 15-007-23917-00-00
Spot Description:
NE - SE - NW - SE Sec. 13 Twp. 33 S. R. 14 ☐ East ☑ West
1670 Feet from ☐ North / ☑ South Line of Section
1450 Feet from ☑ East / ☐ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☐ NE ☐ NW ☑ SE ☐ SW

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

Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84

County: Barber
Lease Name: Osage No. 3314 Well #: 13-09 SWD
Field Name: Medicine Lodge Boggs
Producing Formation: Mississippian
Elevation: Ground: 1873 Kelly Bushing: 1892
Total Vertical Depth: 5814 Plug Back Total Depth: 5197
Amount of Surface Pipe Set and Cemented at: 208 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: 39000 ppm Fluid volume: 1800 bbls
Dewatering method used: Evaporated

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: 10/04/2012
☑ **Confidential Release Date:** 10/04/2014
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☑ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 10/09/2012

1092836

Operator Name: OSAGE Resources, LLC Lease Name: Osage No. 3314 Well #: 13-09 SWD

Sec. 13 Twp. 33 S. R. 14 ☐ East ☑ West County: Barber

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 ☐ Yes ☑ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:
Attached

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Emporia	3414	-1522
Douglas	4074	-2182
BKC	4660	-2768
Mississippian	4780	-2888
Arbuckle	5300	-3408

CASING RECORD ☑ New ☐ 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
surface	17.5	13.375	54.5	208	Common	250	2% CaCl, .25 lbs/sx celloflake
production	12.25	7	26	5305	Serv Lite, AA2	200	6% gel, .25 lbs/sx celloflake

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	-			
	-			

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 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)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth
4	Perfs		5003-5015

TUBING RECORD: Size: 2.8750 Set At: 5136 Packer At: Liner Run: ☐ Yes ☑ No

Date of First, Resumed Production, SWD or ENHR. 09/22/2012

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: ☑ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION: ☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)* ☐ Other *(Specify)*

PRODUCTION INTERVAL:

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	OSAGE Resources, LLC
Well Name	Osage No. 3314 13-09 SWD
Doc ID	1092836

All Electric Logs Run

Porosity
Microlog
Sonic
Resistivity
Mudlog

BASIC energy services, L.P.

TREATMENT REPORT

Customer: Osage Resources, LLC	Lease No.		Date: 8-19-12		
Lease: Osage # 3,314	Well #: 13-09 S.W.D.				
Field Order #: 6,744	Station: Pratt, Kansas	Casing: 13 3/8 54.5 Lb.	Depth: 210 Feet	County: Barber	State: Kansas
Type Job: C.N.W. - Surface	Formation		Legal Description: 13-33S-14W		

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size: 13 3/8 54.5 Lb./Ft.	Tubing Size	Shots/Ft		Acid: 250 sacks Commoncement with	RATE	PRESS	ISIP
Depth: 210 Feet	Depth	From	To	Pre Pad: 2% Calcium Chloride, 2	Max		5 Min.
Volume: 32.4 Bbl.	Volume	From	To	Pad: 15.6 Lb./Gal., 5.23 Gal./Sk., 1.20 CU. FT./Sk.	Min		10 Min.
Max Press: 200 P.S.I.	Max Press	From	To	Frac	Avg		15 Min.
Well Connection: Swedge and 2 Valves	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth: 200 Feet	Packer Depth	From	To	Flush: 31 Bbl. Fresh Water	Gas Volume		Total Load

Customer Representative: Scott | Station Manager: David Scott | Treater: Clarence R. Messick

Service Units	37,216	19,903	19,905	19,960	21,010						
Driver Names	Messick	Mattal		Young							

Time A.M.	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
5:00					Trucks on location and hold safety meeting.
8:45	Duke Drilling	start to run	5 Joints new 54.5 Lb./Ft. 13 3/8"		casing.
9:45					Casing in well. Circulate for 5 minutes.
10:10	200			5	Start mixing 250 sacks commoncement.
10:28	200		53	5	Start Fresh water Displacement.
10:35	200		84		Stop pumping. Shut in well.
					Circulated 15 sacks cement to the pit.
					Wash up pump truck.
11:00					Job Complete.
					Thank You.
					Clarence, Mike, Steve

Taylor Printing, Inc. 620-672-3656

BASIC energy services, L.P.

TREATMENT REPORT

Customer OSAGE Resources	Lease No.			Date 9-1-17	
Lease OSAGE 3314	Well # 13-GA SWD				
Field Order # 6995	Station Pratt	Casing 7"	Depth 3305	County Barber	State KS
Type Job CNW-7" L.S	Formation			Legal Description 13-33-14	

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft	100sk AA2 Lite	Acid	RATE	PRESS	ISIP
Depth	Depth	From	To 100sk AA2 Cmt	Pre Pad	Max		5 Min.
Volume	Volume	From	To 50sk AA2 Cmt	Pad	Min		10 Min.
Max Press	Max Press	From	To	Frac RH/MH	Avg		15 Min.
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth	Packer Depth	From	To	Flush 102	Gas Volume		Total Load

Customer Representative Josh | Station Manager Dave Scott | Treater Steve Ortega

Service Units	27283	27463	19960	31010								
Driver Names	Ortega	McCoy	McCoy	Law								

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
2:00 AM					On location Safety Meeting
11:30 AM					Cir. for Bottom
					Circulate 2-6-11-14-21
					Basket 3-15
			0	4	Break Circ w/Rig
	300		17	4	Pressure up & Set packer w/Fluid
	300		17	5	Mud Flush
	300		5	5	H2O Spacer
	350		29.6	5	Mix 100sks AA2 Lite @ 13.2#
	300		25.5	5	Mix 100sks AA2 Cmt @ 15#
					Shut Down Clean Pump & Lines
					Release Plug
	0		0	6	Start H2O Displacement
	1000		170	5	Lift pressure
	1500		120	4	Slow Rate
6:30 AM	1500		202	4	Plug Down - Held
			6/11		Mix 50sks AA2 RH/MH
					Job Complete
					Thank you Steve

Taylor Printing, Inc. 620-672-3656

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802

Kansas
Corporation Commission

Phone: 316-337-6200
Fax: 316-337-6211
http://kcc.ks.gov/

October 03, 2012

Brooke Walter
OSAGE Resources, LLC
6209 N K61 HWY
HUTCHINSON, KS 67502-8608

Re: ACO1
API 15-007-23917-00-00
Osage No. 3314 13-09 SWD
SE/4 Sec.13-33S-14W
Barber County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1, logs, and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Brooke Walter
Osage Resources, LLC

Covey

The Well Watchers

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

Well Name:	OSAGE # 13 - 09 SWD
Location:	Section 13 - Township 33 South - Range 14 West
Licence Number:	15-007-23,917. 00-00 Region: Barber County, KS.
Spud Date:	19 August 2012 Drilling Completed: 30 August 2012
Surface Coordinates:	1,670' FSL & 1,450' FEL (Approximately NE SE NW SE)
Bottom Hole Coordinates:	
Ground Elevation (ft):	1,875' K.B. Elevation (ft): 1,892'
Logged Interval (ft):	4,300' MD To: 5,832' MD Total Depth (ft): 5,832'
Formation:	Kansas City ------> Arbuckle
Type of Drilling Fluid:	Chemical Low Solids Non-dispersed (Vertical/Curve) --> Poly Plus (Horizontal)

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

OPERATOR

Company: OSAGE RESOURCES, LLC
Address: 6209 North State Road 61
Hutchinson, Kansas 67502
(620) 664-9622

POC:
Jeff Dale
Dan Sellers

GEOLOGIST

Name: Curtis Covey
Company: COVEY - The Well Watchers
Address: 6548 Bedford Circle
Derby,Kansas 67037
Office: (316) 776 - 0367 Cell: (316) 217-4679

KB: 1,892'

FORMATION TOPS

GL: 1,875'

Formation	Rotary Sample Depth (Datum)	E-log Depth (Datum)
Kanwaka SH	NC	3,852' (-1,960')
Heebner SH	NC	4,034' (-2,142')
Toronto LS	NC	4,050' (-2,158')
Douglas Gp	NC	4,074' (-2,182')
Haskell (Brown)	NC	4,222' (-2,330')
Lansing	4,369' (-2,237')	4,230' (-2,338')
Stark SH	4,630' (-2,738')	4,583' (-2,691')
B / KC	4,698' (-2,806')	4,654' (-2,762')
Marmaton	4,707' (-2,815')	4,662' (-2,770')
Mississippian Chert (Erosional)	4,804' (-2,912')	4,762' (-2,870')
Mississippian (Lithological)	4,828' (-2,936')	4,780' (-2,888')
Woodford SH	5,038' (-3,146')	5,000' (-3,105')
Viola	5,098' (-3,206')	5,046' (-3,154')
Wilcox Ss	NC	5,206' (-3,314')
McLish Ss	5,337' (-3,445')	5,292' (-3,400')
Arbuckle	5,355' (-3,463')	5,300' (-3,408')

RTD: 5,832' LTD: 5,787' ATD: 5,786'

The elog depths are 44' - 46' high to rotary depth.

E-Loggers: Halliburton

2012

DAILY DRILLING STATUS - AUGUST

2012

26 " Hole

--- Set 40" Conductor @ 60'
with 6 yds of grout.

17-1/2" Hole

19 Aug --- Spud @ 2am.
Drill 205'.
Run 13-3/8" casing.
Set casing @ 205'.
Cemented w/ 300 sx
A-Common (3% CC). [Basic]
Plug down. Circ. WOC.

12-1/4" Hole (Vertical)

20 Aug --- Under Surface Casing @ 9:15am.
Drill to 1,200'. Bit Trip.
21 --- 6am @ 1,200'.

8-3/4" Hole (Vertical)

21 Aug --- Resumed Drilling @ 10:50pm.
22 --- 6am @ 1,500'.
23 --- 6am @ 2,600'.
Displace Mud @ 2,838'.
24 --- 6am @ 3,020'.
25 --- 6am @ 3,800'.
26 --- 6am @ 4,380'.
27 --- 6am @ 4,915'.

8-3/4" Hole (Vertical)

28 Aug --- Bit Trip @ 5,156'.
6am @ 5,156'.
Resumed Drilling @ noon.
29 --- 6am @ 5,440'.
30 --- 6am @ 5,740'.
RTD (5,832') @ 1:45pm.

E-Log.
[Halliburton]

HOLE DEVIATION (407' - 5,832')

DEPTH / TVD	---	INCLINATION	AZIMUTH	NORTH	SOUTH	EAST	WEST	DOGLEG deg/100'
No Surafce Casing Survey			0	0'	0'	0'	0'	0'
350' /	---	0.50						
730' /	---	0.75						
1,160' /	---	2.25						
2,390' /	---	1.70						
3,200' /	---	1.05						
3,600' /	---	3.00						
3,800' /	---	3.10						
4,200' /	---	1.20						
4,636' /	---	3.00						
4,791' /	---	4.00						
5,007' /	---	3.32						
5,396' /	---	1.86						
5,832' /	---	NA (RTD)						

Surveys - Duke Rig #21

CONTRACTOR

Duke Drilling --- Rig #21

100 South Main, Suite 410
Wichita, Kansas 67202
Office: (316) 267-1331

Rig #21 - NA

Ray Schneider - (620) 786-9500

Pump: Weatherford DW - 10
6" x 10" @ 108 SPM.
1,000 PSI @ Standpipe.

12M - 26M on bit @ 125 RPM
while drilling main hole.

Drill Collars: 5.5" x 2.25" --- 629'. (68.5#/ft)
Dry Collar Weight: 43,087#
(@ 9.2 ppg / Buoyancy Factor 0.86)
Bouyancy Collar Weight: 37,054#
Design Factor: 15%, therefore:
available WOB is 31,496#
Drill Pipe: 4" FH. 12 jts Wt Pipe - 370'

BIT RECORD

DATE	SIZE	TYPE	JET SIZE	DEPTH IN / OUT	CUM. FT.	HOURS	ROP
SURFACE ---							
19 Aug 2012	17-1/2"	JZ GJ-1PC	16 - 16 - 16 - 16	60' / 205'	205'	2.50	82.0'
VERTICAL ---							
20 Aug 2012	12-1/4"	JZ GA-1PC	16 - 16 - 16 - 16	205' / 1,200'	995'	14.00	71.1'
21 Aug 2012	8-3/4"	JZ PLT 516S5	5 - 16's	1,200' / 5,156'	3,956'	123.50	32.0'
28 Aug 2012	8-3/4"	JZ PLT 516S5	5 - 16's	5,156' / 5,832'	676'	54.00	12.5'

ROCK TYPES

POROSITY

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

LITHOLOGY

- Anhy
- Bent
- Brec
- Cht
- Clyst
- Coal
- Granite wash
- Congl
- Dol lmst
- Silty dol
- Calc dol
- Dol 2
- Dol
- Gyp
- Igne
- Lmst 2
- Lmst
- Meta
- Mrlst
- Salt
- Shale 3
- Shale 3
- Shale
- Shcol
- Shgy
- Sltst
- Ss
- Till
- Ss 2

MINERAL

- Mica
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Copper
- Ooliticastic
- Ooloid
- Oolite
- Sucrosic
- Dark specks

STRINGER

- Calc dol
- Silty dol
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Dol ls
- Sltstrg
- Ssstrg
- Chalk
- New symbol

SHOW

- Oil
- Spotted
- Ques
- Dead
- Gas
- Oil/gas
- Bed contact

ACCESSORIES

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Spore
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

MINERAL

- Mica
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Copper
- Ooliticastic
- Ooloid
- Oolite
- Sucrosic
- Dark specks

STRINGER

- Calc dol
- Silty dol
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Dol ls
- Sltstrg
- Ssstrg
- Chalk
- New symbol

OTHER SYMBOLS

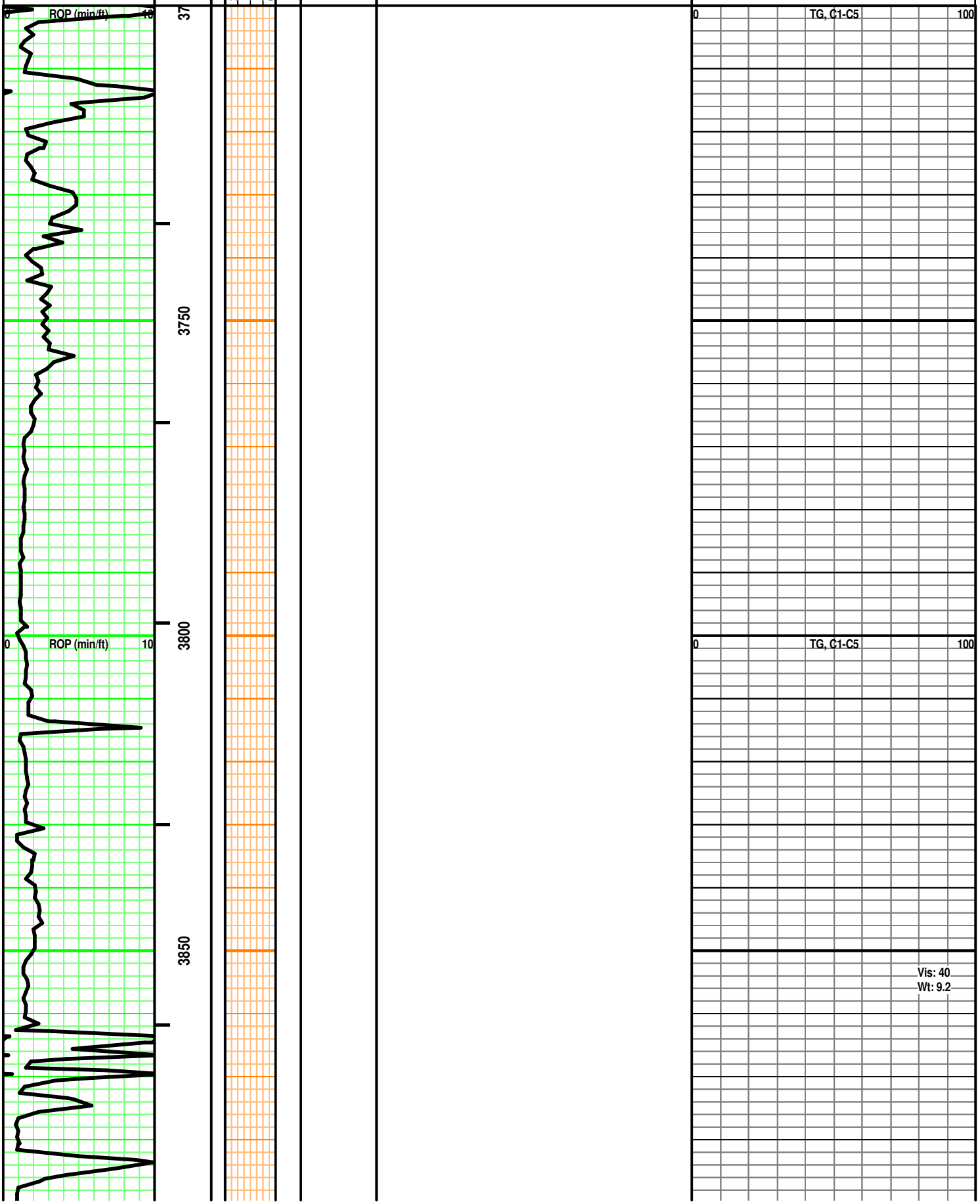
ACTIVITY

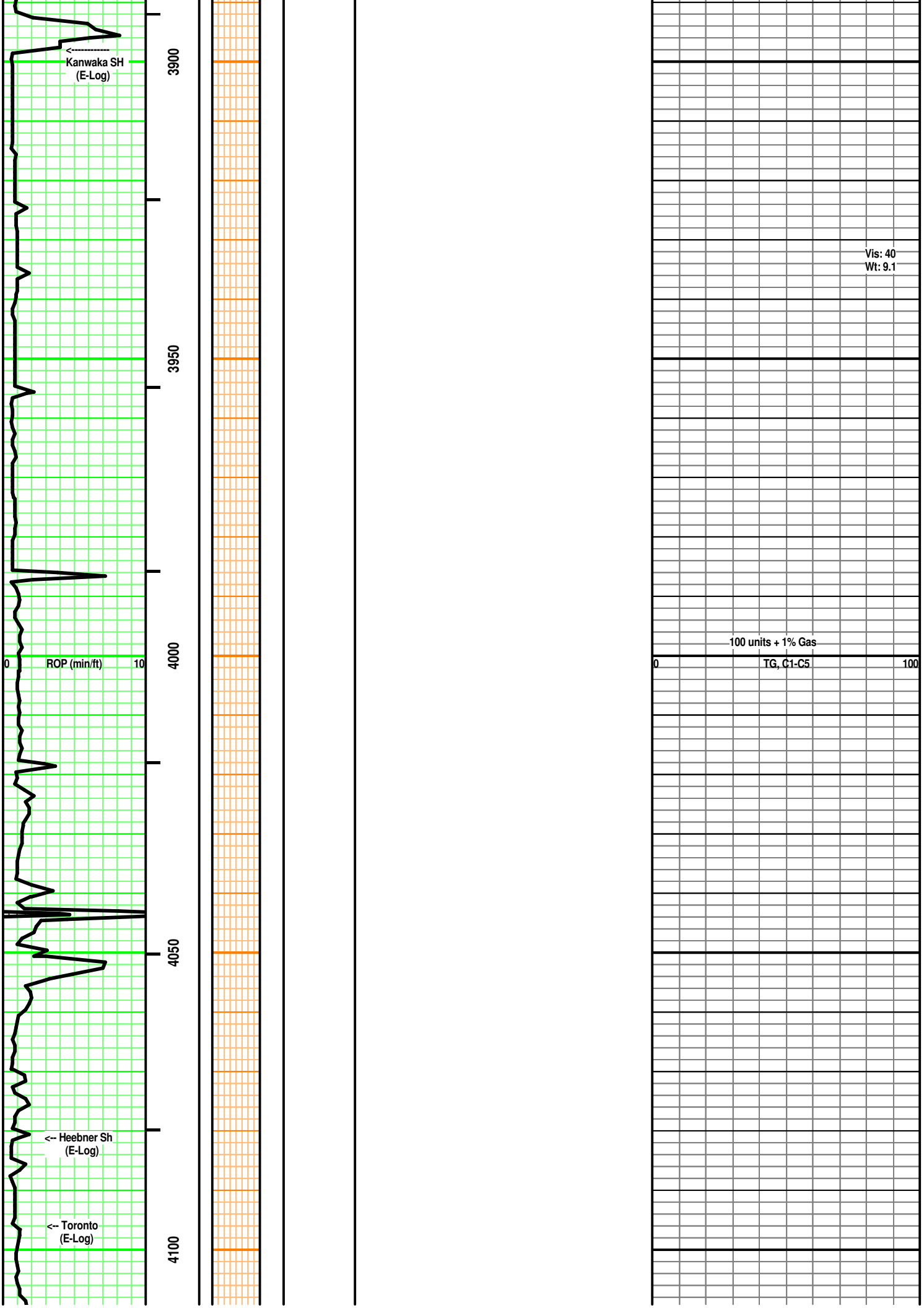
- Lost circluation
- Circulate for sam
- Circulate for sam
- Rtd
- Trip

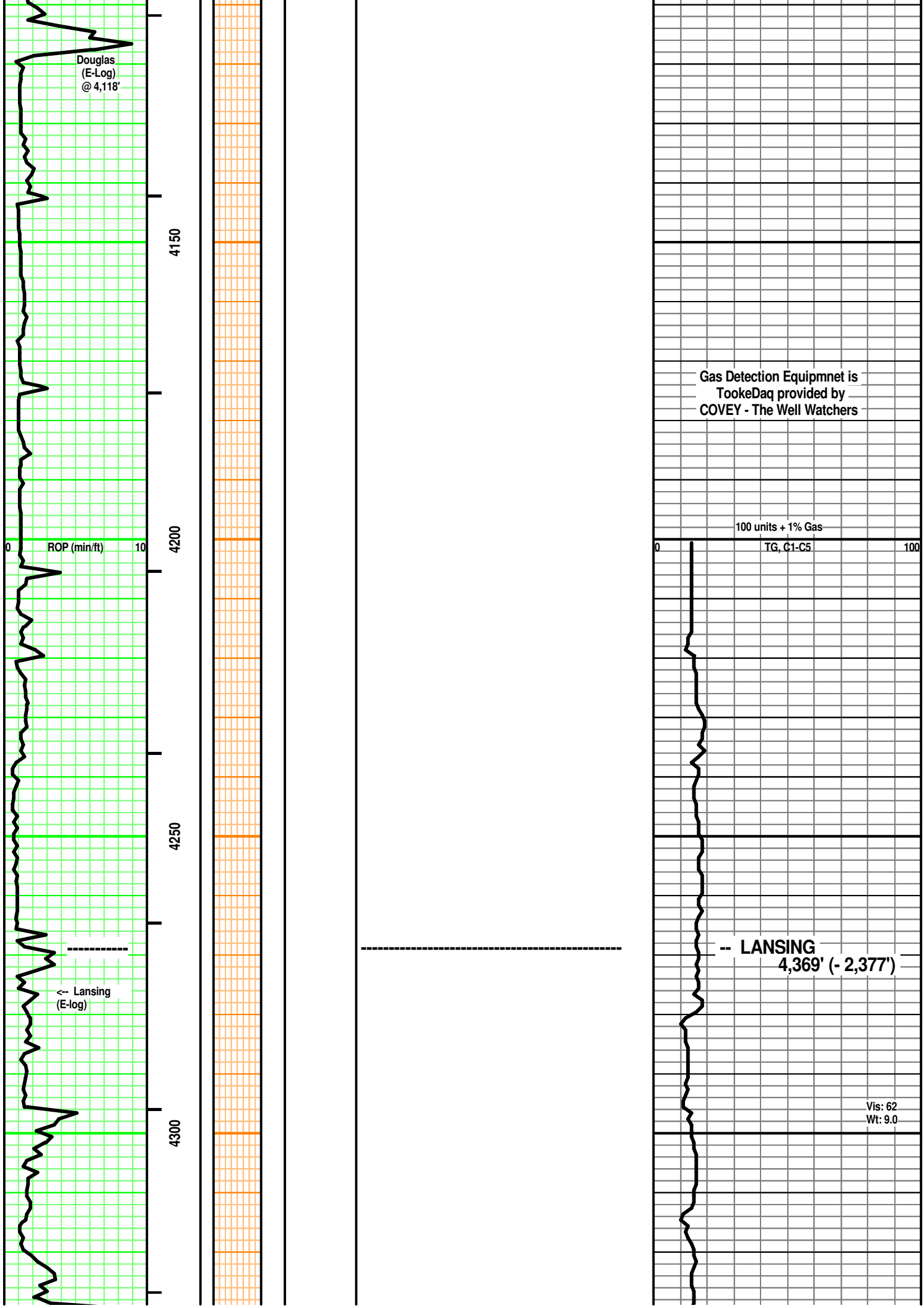
EVENT

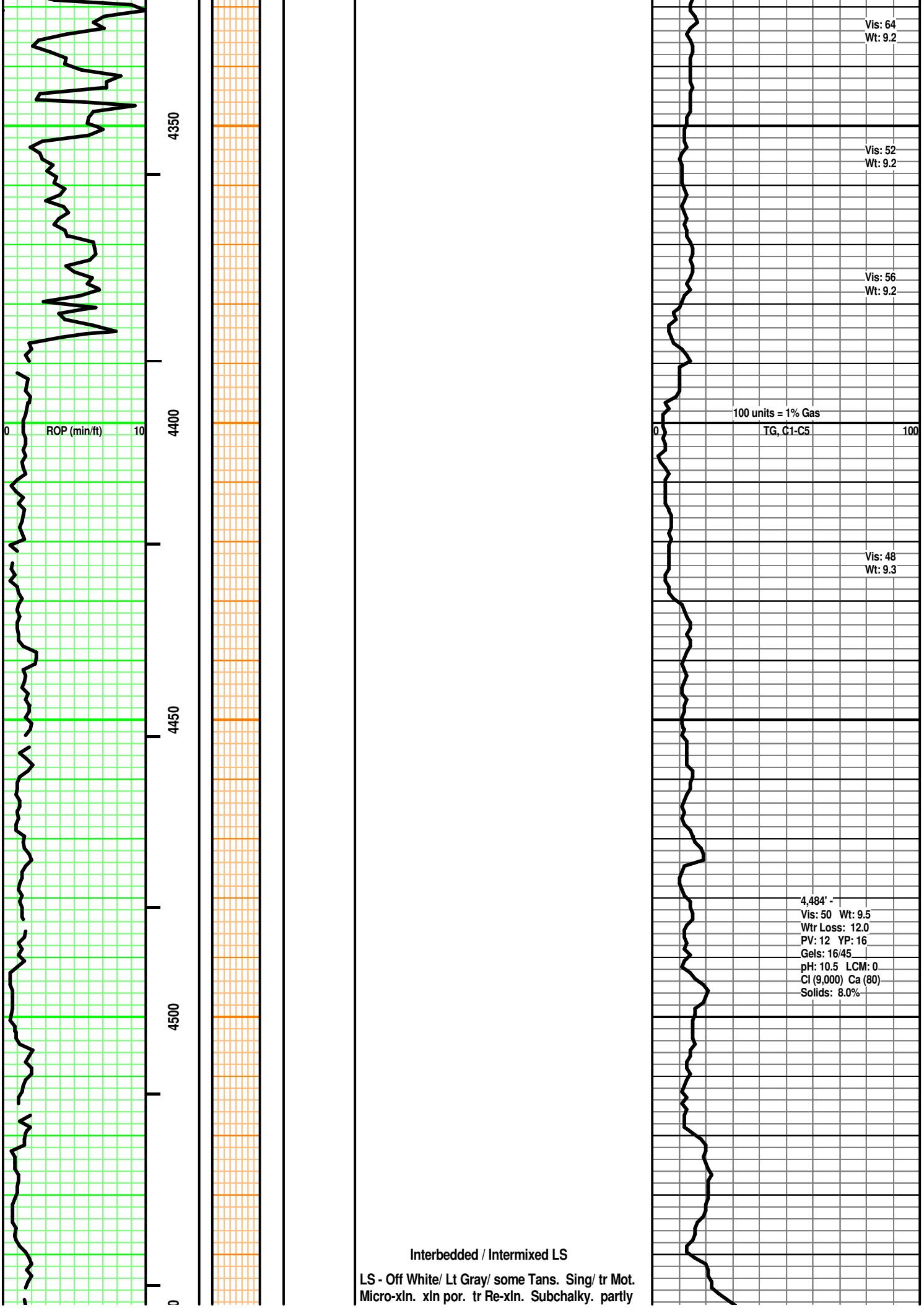
- Connection
- Rft

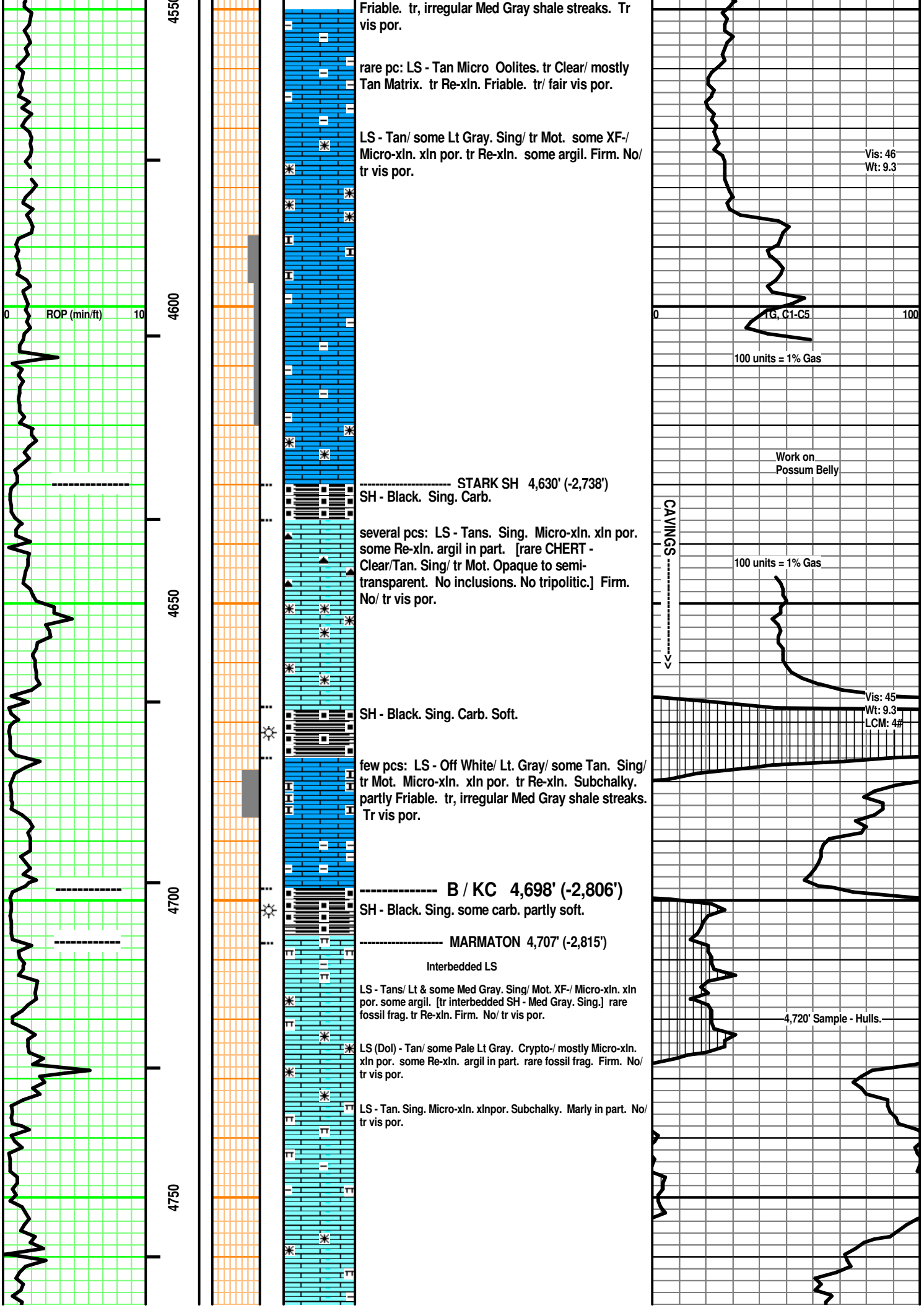
- Sidewall

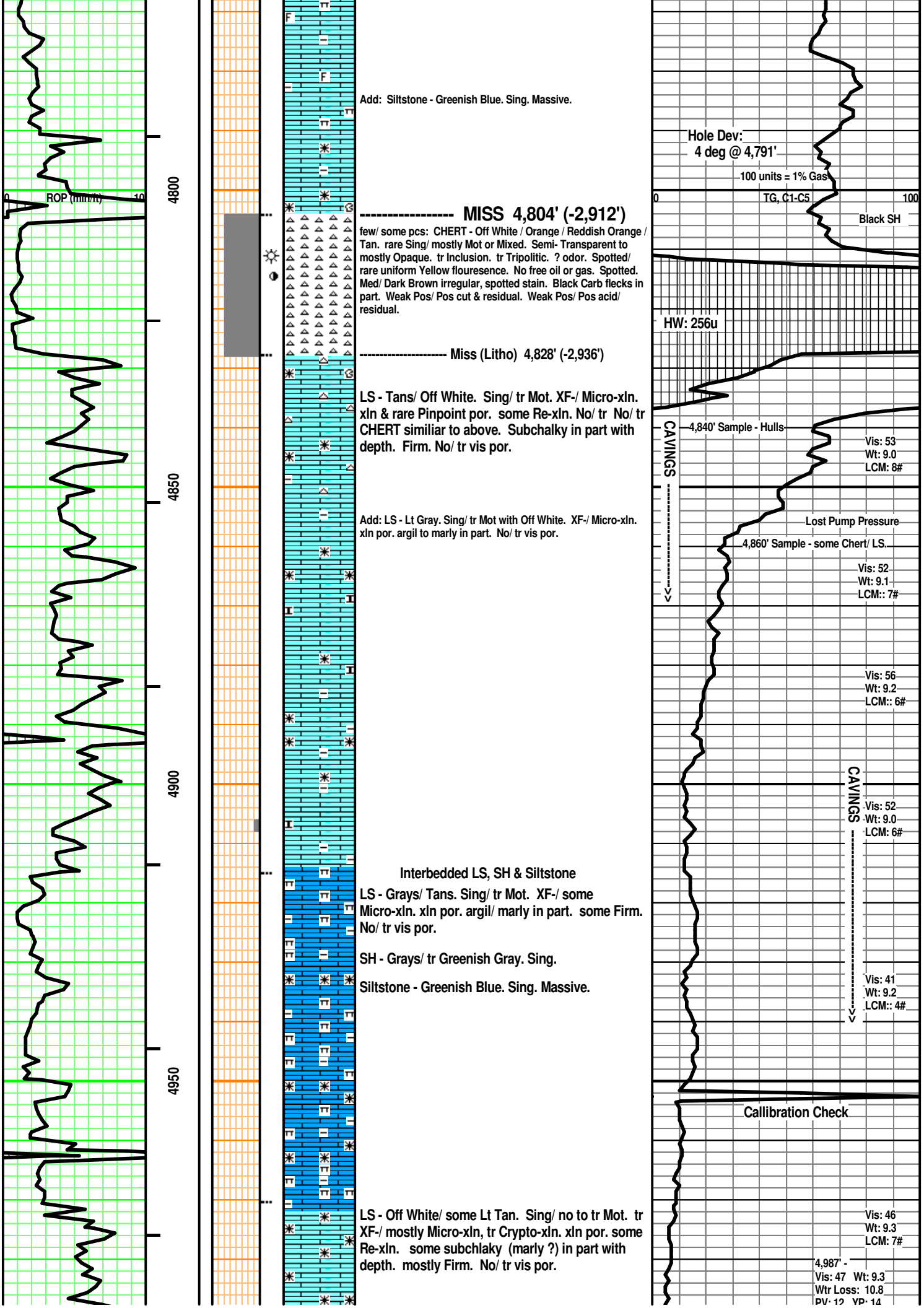

Curve Track 1
ROP (min/ft)
Depth
Porosity Type
Porosity
24%
18%
12%
6%
Shows
Lithology
Geological Descriptions
TG, C1-C5
TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)
0
ROP (min/ft)
10
37
3750
3800
3850
0
TG, C1-C5
100
Vis: 40
Wt: 9.2

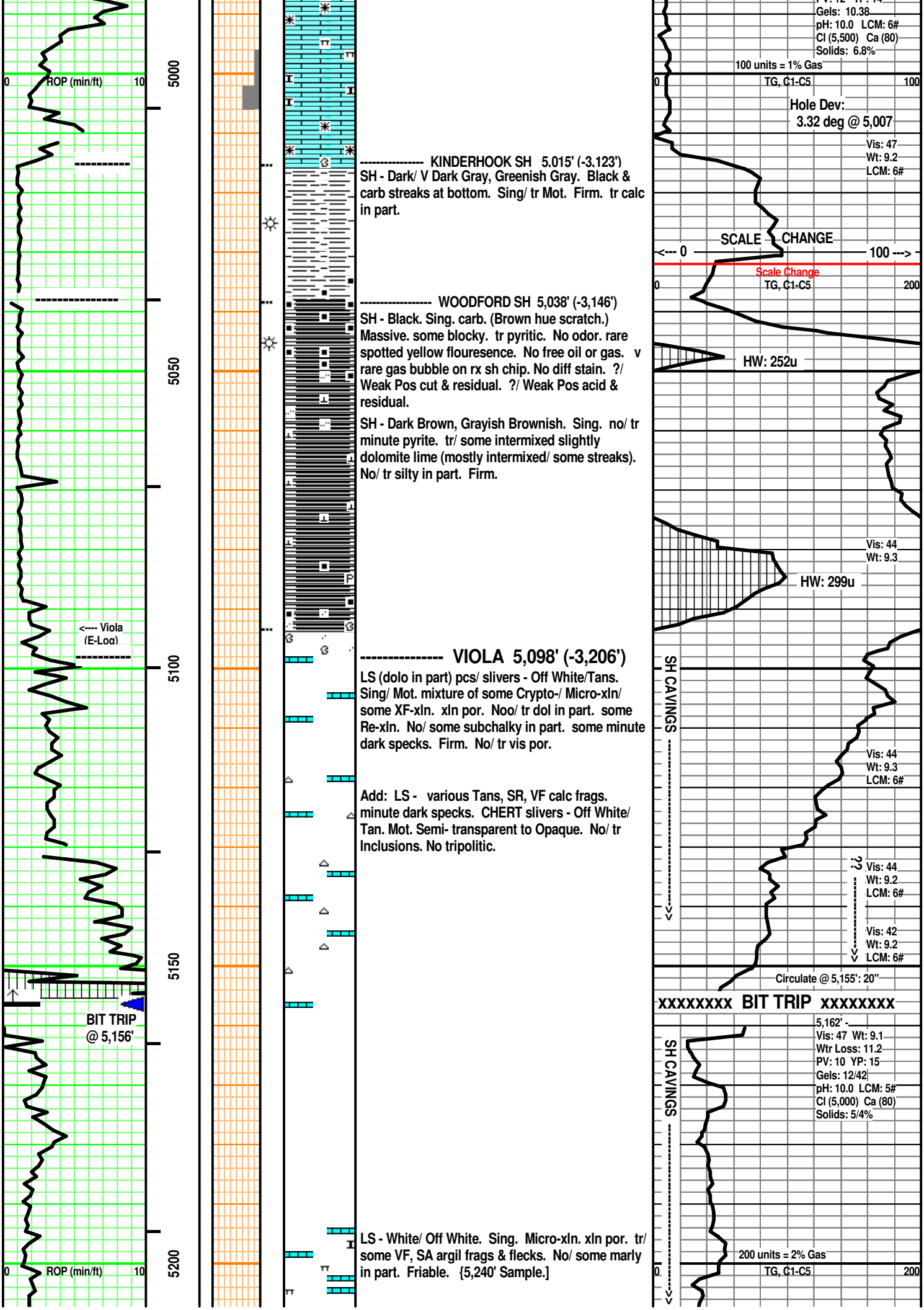

<-----------
Kanwaka SH
(E-Log)
3900
3950
4000
4050
4100
0
ROP (min/ft)
10
<-- Heebner Sh
(E-Log)
<-- Toronto
(E-Log)
Vis: 40
Wt: 9.1
100 units + 1% Gas
0
TG, C1-C5
100

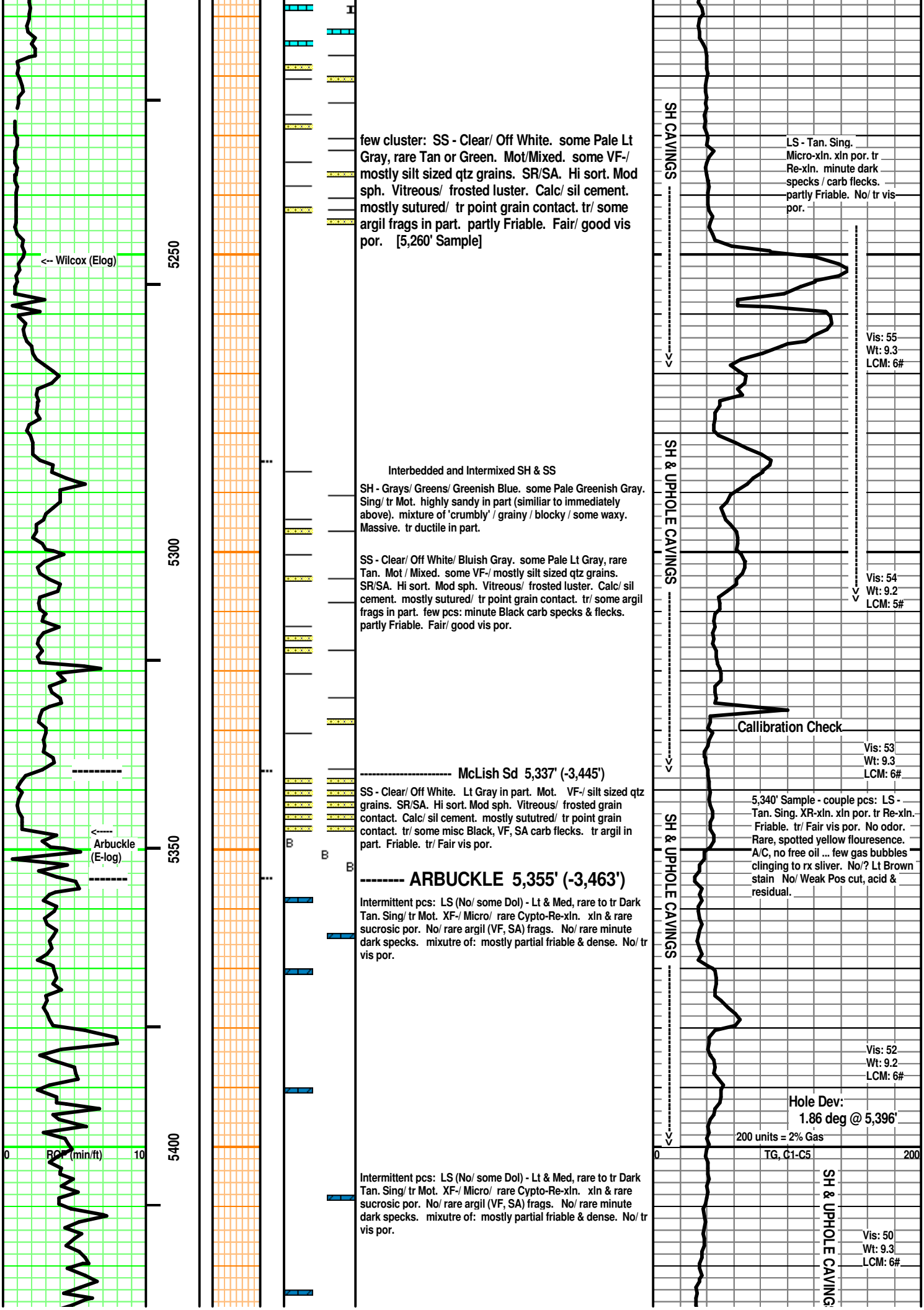

Douglas
(E-Log)
@ 4,118'
4150
4200
0
ROP (min/ft)
10
4250
<-- Lansing
(E-log)
4300
Gas Detection Equipmnet is
TookeDaq provided by
COVEY - The Well Watchers
100 units + 1% Gas
0
TG, C1-C5
100
-- LANSING
4,369' (- 2,377')
Vis: 62
Wt: 9.0

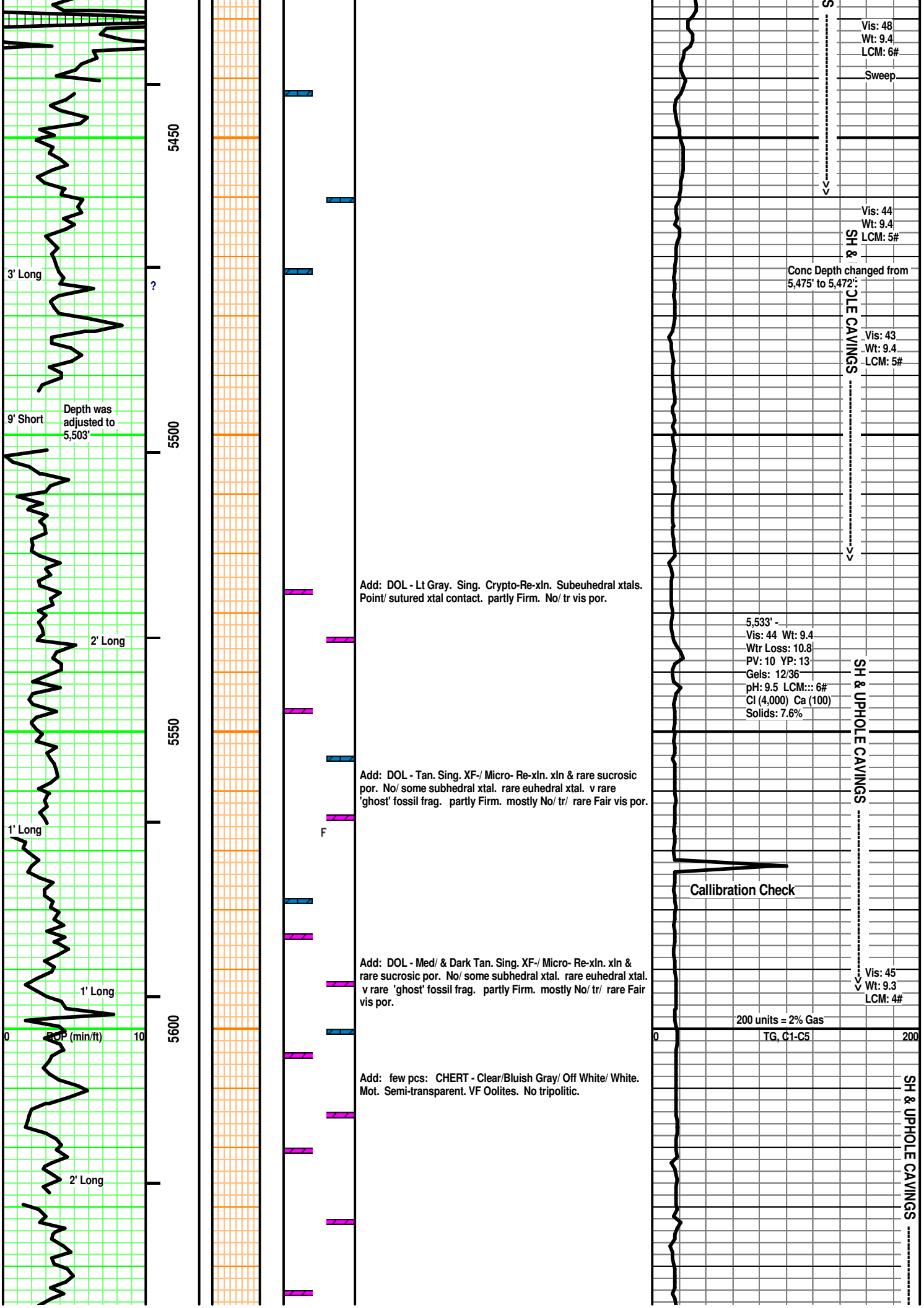

4350
4400
4450
4500
0
ROP (min/ft)
10
Vis: 64
Wt: 9.2
Vis: 52
Wt: 9.2
Vis: 56
Wt: 9.2
100 units = 1% Gas
0
TG, C1-C5
100
Vis: 48
Wt: 9.3
4,484' -
Vis: 50 Wt: 9.5
Wtr Loss: 12.0
PV: 12 YP: 16
Gels: 16/45
pH: 10.5 LCM: 0
Cl (9,000) Ca (80)
Solids: 8.0%
Interbedded / Intermixed LS
LS - Off White/ Lt Gray/ some Tans. Sing/ tr Mot.
Micro-xln. xln por. tr Re-xln. Subchalky. partly

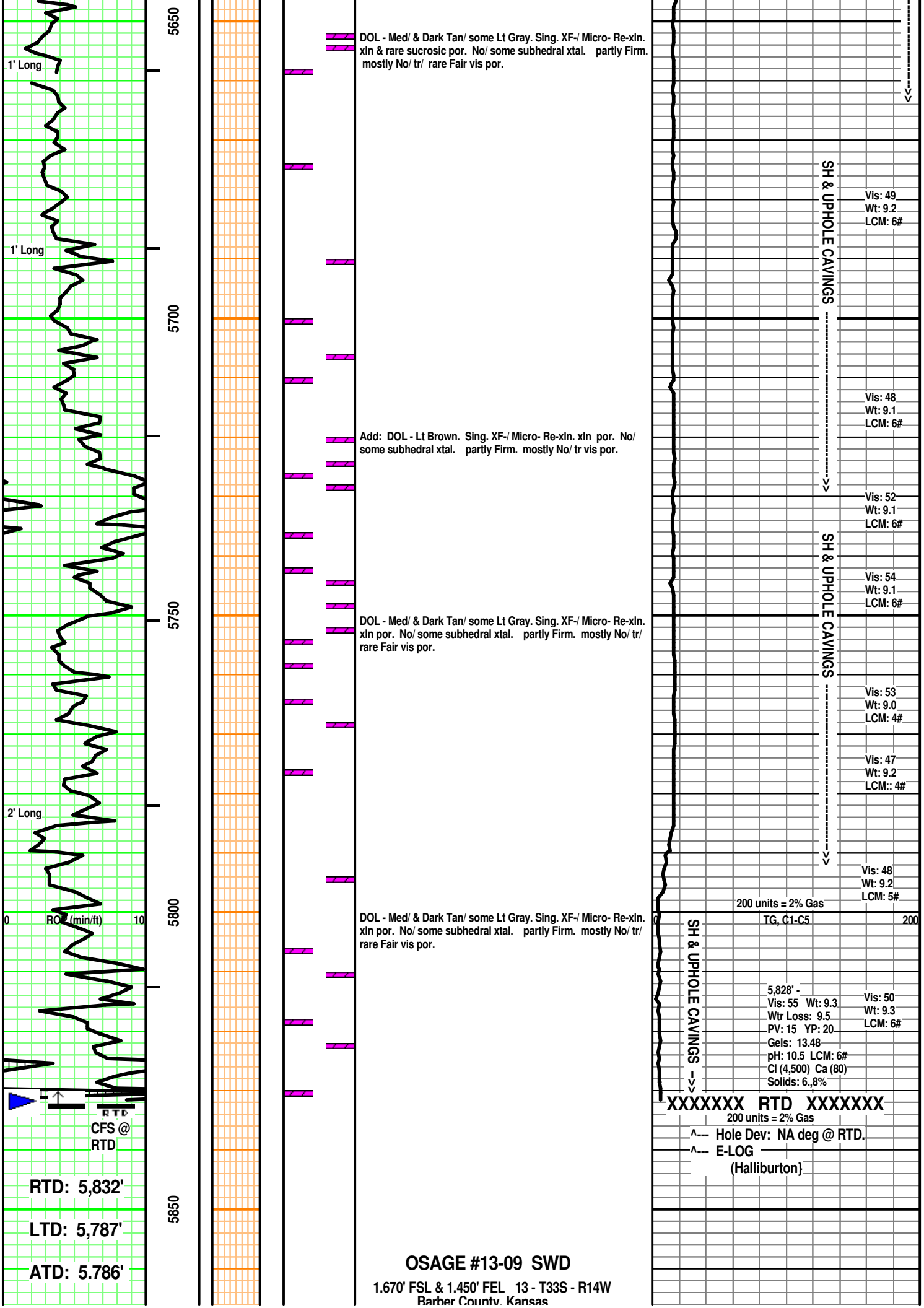

4550
4600
4650
4700
4750
0
ROP (min/ft)
10
Friable. tr, irregular Med Gray shale streaks. Tr vis por.
rare pc: LS - Tan Micro Oolites. tr Clear/ mostly Tan Matrix. tr Re-xln. Friable. tr/ fair vis por.
LS - Tan/ some Lt Gray. Sing/ tr Mot. some XF-/ Micro-xln. xln por. tr Re-xln. some argil. Firm. No/ tr vis por.
---------- STARK SH 4,630' (-2,738')
SH - Black. Sing. Carb.
several pcs: LS - Tans. Sing. Micro-xln. xln por. some Re-xln. argil in part. [rare CHERT - Clear/Tan. Sing/ tr Mot. Opaque to semi-transparent. No inclusions. No tripolitic.] Firm. No/ tr vis por.
SH - Black. Sing. Carb. Soft.
few pcs: LS - Off White/ Lt. Gray/ some Tan. Sing/ tr Mot. Micro-xln. xln por. tr Re-xln. Subchalky. partly Friable. tr, irregular Med Gray shale streaks. Tr vis por.
---------- B / KC 4,698' (-2,806')
SH - Black. Sing. some carb. partly soft.
---------- MARMATON 4,707' (-2,815')
Interbedded LS
LS - Tans/ Lt & some Med Gray. Sing/ Mot. XF-/ Micro-xln. xln por. some argil. [tr interbedded SH - Med Gray. Sing.] rare fossil frag. tr Re-xln. Firm. No/ tr vis por.
LS (Dol) - Tan/ some Pale Lt Gray. Crypto-/ mostly Micro-xln. xln por. some Re-xln. argil in part. rare fossil frag. Firm. No/ tr vis por.
LS - Tan. Sing. Micro-xln. xlnpor. Subchalky. Marly in part. No/ tr vis por.
Vis: 46
Wt: 9.3
0
TG, C1-C5
100
100 units = 1% Gas
Work on
Possum Belly
CAVINGS
100 units = 1% Gas
Vis: 45
Wt: 9.3
LCM: 4#
4,720' Sample - Hulls.


ROP (min/ft)
0
10
4800
4850
4900
4950
Add: Siltstone - Greenish Blue. Sing. Massive.
Hole Dev:
4 deg @ 4,791'
100 units = 1% Gas
0
TG, C1-C5
100
Black SH
---------- MISS 4,804' (-2,912')
few/ some pcs: CHERT - Off White / Orange / Reddish Orange / Tan. rare Sing/ mostly Mot or Mixed. Semi- Transparent to mostly Opaque. tr Inclusion. tr Tripolitic. ? odor. Spotted/ rare uniform Yellow flouresence. No free oil or gas. Spotted. Med/ Dark Brown irregular, spotted stain. Black Carb flecks in part. Weak Pos/ Pos cut & residual. Weak Pos/ Pos acid/ residual.
HW: 256u
---------- Miss (Litho) 4,828' (-2,936')
LS - Tans/ Off White. Sing/ tr Mot. XF-/ Micro-xln. xln & rare Pinpoint por. some Re-xln. No/ tr No/ tr CHERT similiar to above. Subchalky in part with depth. Firm. No/ tr vis por.
CAVINGS
4,840' Sample - Hulls
Vis: 53
Wt: 9.0
LCM: 8#
Add: LS - Lt Gray. Sing/ tr Mot with Off White. XF-/ Micro-xln. xln por. argil to marly in part. No/ tr vis por.
Lost Pump Pressure
4,860' Sample - some Chert/ LS.
Vis: 52
Wt: 9.1
LCM:: 7#
Vis: 56
Wt: 9.2
LCM:: 6#
CAVINGS
Vis: 52
Wt: 9.0
LCM: 6#
Interbedded LS, SH & Siltstone
LS - Grays/ Tans. Sing/ tr Mot. XF-/ some Micro-xln. xln por. argil/ marly in part. some Firm. No/ tr vis por.
SH - Grays/ tr Greenish Gray. Sing.
Siltstone - Greenish Blue. Sing. Massive.
Vis: 41
Wt: 9.2
LCM:: 4#
Callibration Check
LS - Off White/ some Lt Tan. Sing/ no to tr Mot. tr XF-/ mostly Micro-xln, tr Crypto-xln. xln por. some Re-xln. some subchlaky (marly ?) in part with depth. mostly Firm. No/ tr vis por.
Vis: 46
Wt: 9.3
LCM: 7#
4,987' -
Vis: 47 Wt: 9.3
Wtr Loss: 10.8
PV: 12 YP: 14


0
ROP (min/ft)
10
5000
5050
5100
5150
5200
<---- Viola
(E-Log)
BIT TRIP
@ 5,156'
---------- KINDERHOOK SH 5,015' (-3,123')
SH - Dark/ V Dark Gray, Greenish Gray. Black & carb streaks at bottom. Sing/ tr Mot. Firm. tr calc in part.
---------- WOODFORD SH 5,038' (-3,146')
SH - Black. Sing. carb. (Brown hue scratch.) Massive. some blocky. tr pyritic. No odor. rare spotted yellow flouresence. No free oil or gas. v rare gas bubble on rx sh chip. No diff stain. ?/ Weak Pos cut & residual. ?/ Weak Pos acid & residual.
SH - Dark Brown, Grayish Brownish. Sing. no/ tr minute pyrite. tr/ some intermixed slightly dolomite lime (mostly intermixed/ some streaks). No/ tr silty in part. Firm.
---------- VIOLA 5,098' (-3,206')
LS (dolo in part) pcs/ slivers - Off White/Tans. Sing/ Mot. mixture of some Crypto-/ Micro-xln/ some XF-xln. xln por. Noo/ tr dol in part. some Re-xln. No/ some subchalky in part. some minute dark specks. Firm. No/ tr vis por.
Add: LS - various Tans, SR, VF calc frags. minute dark specks. CHERT slivers - Off White/ Tan. Mot. Semi- transparent to Opaque. No/ tr Inclusions. No tripolitic.
LS - White/ Off White. Sing. Micro-xln. xln por. tr/ some VF, SA argil frags & flecks. No/ some marly in part. Friable. {5,240' Sample.]
Gels: 10.38
pH: 10.0 LCM: 6#
Cl (5,500) Ca (80)
Solids: 6.8%
100 units = 1% Gas
0
TG, C1-C5
100
Hole Dev:
3.32 deg @ 5,007
Vis: 47
Wt: 9.2
LCM: 6#
SCALE CHANGE
<--- 0
100 --->
Scale Change
0
TG, C1-C5
200
HW: 252u
Vis: 44
Wt: 9.3
HW: 299u
SH CAVINGS
Vis: 44
Wt: 9.3
LCM: 6#
??
Vis: 44
Wt: 9.2
LCM: 6#
Vis: 42
Wt: 9.2
LCM: 6#
Circulate @ 5,155': 20"
xxxxxxxx BIT TRIP xxxxxxxx
5,162' -
Vis: 47 Wt: 9.1
Wtr Loss: 11.2
PV: 10 YP: 15
Gels: 12/42
pH: 10.0 LCM: 5#
Cl (5,000) Ca (80)
Solids: 5/4%
SH CAVINGS
200 units = 2% Gas
0
TG, C1-C5
200


5250
5300
5350
5400
<-- Wilcox (Elog)
<-----
Arbuckle
(E-log)
0
ROP (min/ft)
10
few cluster: SS - Clear/ Off White. some Pale Lt Gray, rare Tan or Green. Mot/Mixed. some VF-/ mostly silt sized qtz grains. SR/SA. Hi sort. Mod sph. Vitreous/ frosted luster. Calc/ sil cement. mostly sutured/ tr point grain contact. tr/ some argil frags in part. partly Friable. Fair/ good vis por. [5,260' Sample]
Interbedded and Intermixed SH & SS
SH - Grays/ Greens/ Greenish Blue. some Pale Greenish Gray. Sing/ tr Mot. highly sandy in part (similiar to immediately above). mixture of 'crumbly' / grainy / blocky / some waxy. Massive. tr ductile in part.
SS - Clear/ Off White/ Bluish Gray. some Pale Lt Gray, rare Tan. Mot / Mixed. some VF-/ mostly silt sized qtz grains. SR/SA. Hi sort. Mod sph. Vitreous/ frosted luster. Calc/ sil cement. mostly sutured/ tr point grain contact. tr/ some argil frags in part. few pcs: minute Black carb specks & flecks. partly Friable. Fair/ good vis por.
---------- McLish Sd 5,337' (-3,445')
SS - Clear/ Off White. Lt Gray in part. Mot. VF-/ silt sized qtz grains. SR/SA. Hi sort. Mod sph. Vitreous/ frosted grain contact. Calc/ sil cement. mostly sututred/ tr point grain contact. tr/ some misc Black, VF, SA carb flecks. tr argil in part. Friable. tr/ Fair vis por.
B
B
B
-------- ARBUCKLE 5,355' (-3,463')
Intermittent pcs: LS (No/ some Dol) - Lt & Med, rare to tr Dark Tan. Sing/ tr Mot. XF-/ Micro/ rare Cypto-Re-xln. xln & rare sucrosic por. No/ rare argil (VF, SA) frags. No/ rare minute dark specks. mixutre of: mostly partial friable & dense. No/ tr vis por.
Intermittent pcs: LS (No/ some Dol) - Lt & Med, rare to tr Dark Tan. Sing/ tr Mot. XF-/ Micro/ rare Cypto-Re-xln. xln & rare sucrosic por. No/ rare argil (VF, SA) frags. No/ rare minute dark specks. mixutre of: mostly partial friable & dense. No/ tr vis por.
SH CAVINGS
LS - Tan. Sing. Micro-xln. xln por. tr Re-xln. minute dark specks / carb flecks. partly Friable. No/ tr vis por.
Vis: 55
Wt: 9.3
LCM: 6#
SH & UPHOLE CAVINGS
Vis: 54
Wt: 9.2
LCM: 5#
Callibration Check
Vis: 53
Wt: 9.3
LCM: 6#
SH & UPHOLE CAVINGS
5,340' Sample - couple pcs: LS - Tan. Sing. XR-xln. xln por. tr Re-xln. Friable. tr/ Fair vis por. No odor. Rare, spotted yellow flouresence. A/C, no free oil ... few gas bubbles clinging to rx sliver. No/? Lt Brown stain No/ Weak Pos cut, acid & residual.
Vis: 52
Wt: 9.2
LCM: 6#
Hole Dev:
1.86 deg @ 5,396'
200 units = 2% Gas
0
TG, C1-C5
200
SH & UPHOLE CAVINGS
Vis: 50
Wt: 9.3
LCM: 6#


5450
5500
5550
5600
3' Long
?
9' Short
Depth was adjusted to 5,503'
2' Long
1' Long
1' Long
2' Long
0
ROP (min/ft)
10
F
Add: DOL - Lt Gray. Sing. Crypto-Re-xln. Subeuhedral xtals. Point/ sutured xtal contact. partly Firm. No/ tr vis por.
Add: DOL - Tan. Sing. XF-/ Micro- Re-xln. xln & rare sucrosic por. No/ some subhedral xtal. rare euhedral xtal. v rare 'ghost' fossil frag. partly Firm. mostly No/ tr/ rare Fair vis por.
Add: DOL - Med/ & Dark Tan. Sing. XF-/ Micro- Re-xln. xln & rare sucrosic por. No/ some subhedral xtal. rare euhedral xtal. v rare 'ghost' fossil frag. partly Firm. mostly No/ tr/ rare Fair vis por.
Add: few pcs: CHERT - Clear/Bluish Gray/ Off White/ White. Mot. Semi-transparent. VF Oolites. No tripolitic.
Vis: 48
Wt: 9.4
LCM: 6#
Sweep
Vis: 44
Wt: 9.4
LCM: 5#
SH &
Conc Depth changed from 5,475' to 5,472'
CLE CAVINGS
Vis: 43
Wt: 9.4
LCM: 5#
5,533' -
Vis: 44 Wt: 9.4
Wtr Loss: 10.8
PV: 10 YP: 13
Gels: 12/36
pH: 9.5 LCM::: 6#
Cl (4,000) Ca (100)
Solids: 7.6%
SH & UPHOLE CAVINGS
Callibration Check
Vis: 45
Wt: 9.3
LCM: 4#
200 units = 2% Gas
0
TG, C1-C5
200
SH & UPHOLE CAVINGS


1' Long
1' Long
2' Long
5650
5700
5750
5800
5850
0
ROP (min/ft)
10
RTD
CFS @ RTD
RTD: 5,832'
LTD: 5,787'
ATD: 5.786'
DOL - Med/ & Dark Tan/ some Lt Gray. Sing. XF-/ Micro- Re-xln. xln & rare sucrosic por. No/ some subhedral xtal. partly Firm. mostly No/ tr/ rare Fair vis por.
Add: DOL - Lt Brown. Sing. XF-/ Micro- Re-xln. xln por. No/ some subhedral xtal. partly Firm. mostly No/ tr vis por.
DOL - Med/ & Dark Tan/ some Lt Gray. Sing. XF-/ Micro- Re-xln. xln por. No/ some subhedral xtal. partly Firm. mostly No/ tr/ rare Fair vis por.
DOL - Med/ & Dark Tan/ some Lt Gray. Sing. XF-/ Micro- Re-xln. xln por. No/ some subhedral xtal. partly Firm. mostly No/ tr/ rare Fair vis por.
SH & UPHOLE CAVINGS
Vis: 49
Wt: 9.2
LCM: 6#
Vis: 48
Wt: 9.1
LCM: 6#
Vis: 52
Wt: 9.1
LCM: 6#
Vis: 54
Wt: 9.1
LCM: 6#
Vis: 53
Wt: 9.0
LCM: 4#
Vis: 47
Wt: 9.2
LCM:: 4#
Vis: 48
Wt: 9.2
LCM: 5#
200 units = 2% Gas
0
TG, C1-C5
200
5,828' -
Vis: 55 Wt: 9.3
Wtr Loss: 9.5
PV: 15 YP: 20
Gels: 13.48
pH: 10.5 LCM: 6#
Cl (4,500) Ca (80)
Solids: 6.,8%
Vis: 50
Wt: 9.3
LCM: 6#
XXXXXXX RTD XXXXXXX
200 units = 2% Gas
^---- Hole Dev: NA deg @ RTD.
^---- E-LOG
(Halliburton}
OSAGE #13-09 SWD
1.670' FSL & 1.450' FEL 13 - T33S - R14W
Barber County, Kansas

Barber County, Kansas

OSAGE RESOURCES LLC

Hutchinson, Kansas

Wellsite Geologist:
Curtis Covey
COVEY - The Well Watchers

Well Number: 1,140