

# Covey

## The Well Watchers

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

Well Name: TUCKER B #5-H  
Location: Section 11 - Township 34 South - Range 11 West  
Licence Number: 15-007-23,787. 01-00 Region: Barber County, KS.  
Spud Date: 16 October 2011 Drilling Completed: 2 November 2011  
Surface Coordinates: 250' FNL & 425' FEL  
(Approximately NW NE NE NE)  
Bottom Hole Horizontal RTD (8,869'MD) reported to be  
Coordinates: 4,968.5' FNL & 434.8' FEL of surface coordinates.  
Ground Elevation (ft): 1,400' K.B. Elevation (ft): 1,416'  
Logged Interval (ft): 3,700' To: 8,869'MD Total Depth (ft): 8,869'MD  
Formation: Douglas Shale -----> MISS  
Type of Drilling Fluid: Chemical; Low Solids (non-dispersed)

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### OPERATOR

Company: WOOLSEY OPERATING COMPANY, LLC  
Address: 125 North Water, Suite 1000 Geologist:  
Wichita, Kansas 67202 Dean Patisson  
(316) 267-4379

### GEOLOGIST

Name: Curtis Covey  
Company: COVEY - The Well Watchers  
Address: 6548 Bedford Circle  
Derby, Kansas 67037  
Office: (316) 776 - 0367 Cell: (316) 258-9976

KB: 1,416'

### FORMATION TOPS

GL: 1,400'

Formation	Rotary Sample Depth (Datum)	E-log Depth (Datum)
Heebner SH .....	3,654' (-2,237') .....	No open hole logging.
Toronto LS .....	3,672' (-2,256') .....	
Douglas Gp .....	3,694' (-2,278') .....	
Haskell (Brown) .....	4,066' MD / TVD 4,047' (-2,631') .....	
Lansing .....	4,177' MD / TVD 4,144' (-2,728') .....	
Stark SH .....	4,471' MD / TVD 4,328' (-2,912') .....	
Hushpuckney SH .....	4,549' MD / TVD 4,360' (-2,944') .....	
B / KC .....	4,692' MD / TVD 4,412' (-2,996') .....	
Pawnee LS .....	4,947' MD / TVD 4,505' (-3,089') .....	
Mississippian Chert .....	5,169' MD / TVD 4,583' (-3,167') .....	

RTD: 8,869'MD

LTD: NA

ATD: NA

E-log is ? to rotary sample depth.

Loggers: NA

## 20" Hole

1 Oct --- Set Conductor @ 40' with 4 yds of grout.

## 17-1/2" Hole

16 Oct --- Spud @ 1am.  
7am @ 222'. Drill to 320'.  
Run 13-3/8" casing.  
Set casing @ 278'.  
Cemented w/ 300 sx  
60/40 Poz (3% CC). [Allied]  
Cement did circulate.  
Plug down @ 12:15pm. WOC.

## 6-1/8" Hole (Horizontal)

25 Oct --- Run 7" casing. Set @ 5,198'.  
275 sx Premium [Basic].  
Plug down @ 2am.  
7am @ 5,214'  
26 --- Resumed Drilling @ 2:45am.  
7am @ 5,315'. Start and ....  
27 --- Finish Bit/Motor Trip @ 5,769'MD.  
7am @ 5,769' MD.  
Resumed Drilling @ 8:05am.  
28 --- 7am @ 6,275'MD. Drill to 6,530'MD.  
Start and ....

## 8-3/4" Hole (Vertical &amp; Curve)

16 Oct --- Under surface casing @ 10pm.  
17 --- 7am @ 903'.  
18 --- 7am @ 1,561'.  
19 --- 7am @ 2,830'. Geolog 1.  
T/O for BHA @ 3,700'.  
20 --- 7am @ 3,700'.  
21 --- 7am @ 4,215'.  
22 --- 7am @ 4,575'. Bit Trip @ 4,662'.  
Resumed Drilling @ 11pm.  
23 --- 7am @ 4,825'.  
24 --- Drill to 5,214' MD. Prep hole.  
7am @ 5,214' MD.

## 6-1/8" Hole (Horizontal)

29 Oct --- Finish Bit Trip @ 6,530'MD.  
Resumed Drilling @ 5:35am.  
7am @ 6,560'MD.  
30 --- 7am @ 7,125'MD.  
Bit Trip @ 7,259'MD.  
Resumed Drilling @ 8:35pm.  
31 --- 7am @ 7,512'MD.  
Start and ....

## GEOLOG 1 - VERTICAL

## GEOLOG 2 - HORIZONTAL

## 6-1/8" Hole (Horizontal)

1 Nov --- 7am @ 7,861'MD.  
Finish Bit Trip @ 7,861'MD.  
Resumed Drilling @ 8:50am.  
2 --- 7am @ 8,837'MD.  
RMTD (8,869'MD) @ 7:35am.

### HOLE DEVIATION (320' - 3,620'MD)

DEPTH / TVD	INCLINATION	AZIMUTH	NORTH	SOUTH	EAST	WEST	DOGLEG deg/100'
320' /	1.00						
853' /	0.10						
1,230' /	0.40						
2,211' /	0.10						
3,118' /	0.60						
3,620' /	0.60						
KOP @ 3,700'							

### GEOLOG 2

### HOLE DEVIATION (3,712' - 5,214' MD)

### Selected Directional / MWD Surveys

3,712' / 3,711.9'	1.8	193.6	4.7'		10.5'	5.9
3,995' / 3,985.4'	22.9	180.6		61.5'	14.6'	5.0
4,121' / 4,097.5'	31.5	183.3		118.6'	18.6'	7.7
4,215' / 4,173.8'	39.9	180.8		173.4'	20.4'	9.4
4,310' / 4,240.4'	50.9	179.1		240.9'	19.7'	11.3
4,404' / 4,294.9'	58.2	180.1		317.4'	19.5'	8.4
4,499' / 4,340.4'	64.8	179.4		400.7'	19.3'	8.2
4,594' / 4,377.2'	69.4	178.6		488.3'	18.0'	6.4
4,690' / 4,410.9'	68.9	178.6		578.1'	16.0'	1.7
4,816' / 4,456.5'	68.8	179.1		695.6'	13.5'	2.1
4,910' / 4,526.7'	68.1	179.8		783.0'	11.6'	0.6
5,005' / 4,526.7'	68.1	179.9		871.0'	10.5'	2.1
5,100' / 4,572.3	69.1	180.4		989.6'	11.3'	6.9

Projection to 5,214' ---

5,214' / 4,595.3'	76.06	180.6	1'068.3'		12.5'	5.8
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7" casing set @ 5,198' MD / TVD TVD 4,592' (-3,176')

See Geolog 2 for Hole Deviation 5,214' MD to RTMD.

Calmena Energy Services ..... Oklahoma City, Oklahoma

### BIT RECORD

DATE	SIZE	TYPE	JET SIZE	DEPTH IN / OUT	CUM. FT.	HOURS	ROP
SURFACE ---							
16 Oct 2011	12-1/4"	VAREL L-117	3 / 18's	0' / 320'	280'	5.50	50.9
VERTICAL & CURVE ---							
17 Oct 2011	8-3/4"	REED DSX616MD	16 / 14's	320' / 3,700'	3,380'	60.00	56.6
20 Oct 2011	8-3/4"	REED R-22AP	13 / 14's	3,700' / 4,662'	962'	40.50	23.7
22 Oct 2011	8-3/4"	REED R-22AP	13 / 14's	4,662' / 5,214'	552'	17.00	32.5

SEE GEOLOG 2 FOR THE HORIZONTAL BIT RECORD.

## 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
  - Calc dol
  - 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
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- Brecfrag

- Calc
- Carb
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- Feldspar
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- Ferr
- Glau
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- Dark specks

### STRINGER

- Calc dol

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

## OTHER SYMBOLS

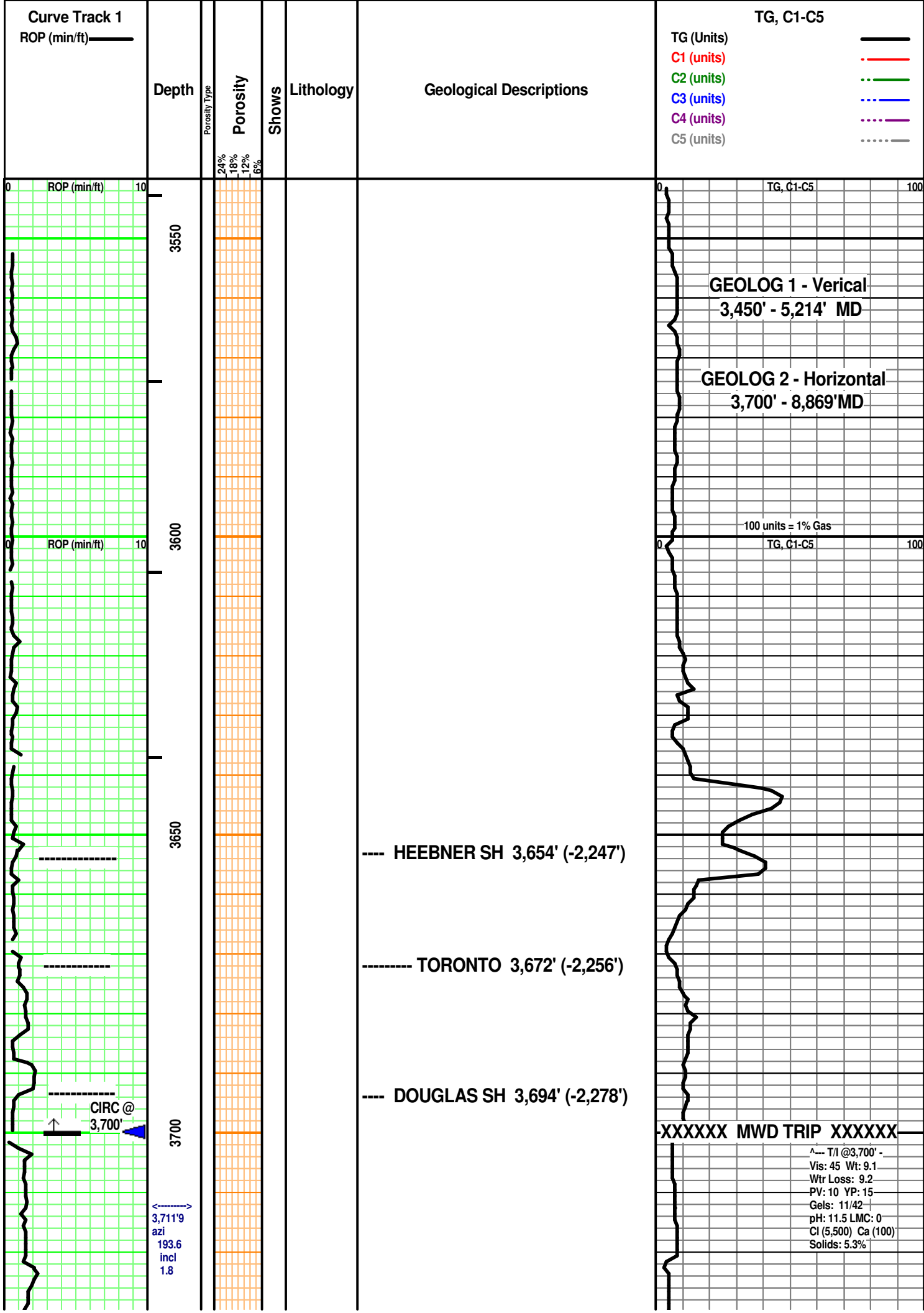
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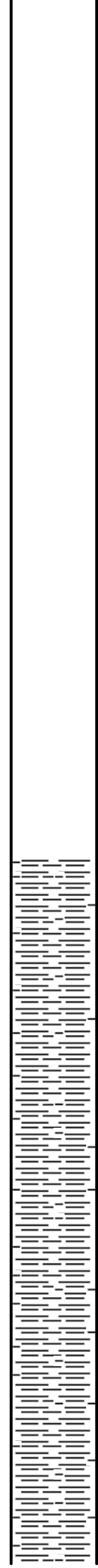
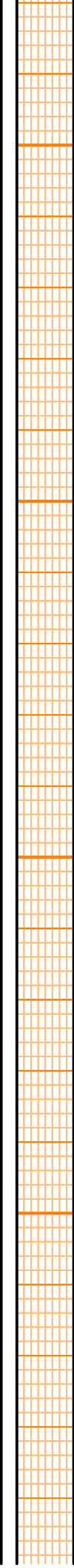
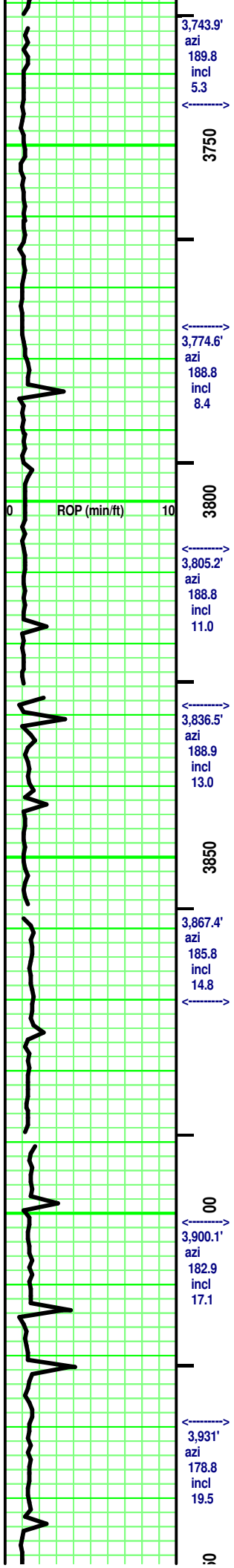
- Lost circluation
- Circulate for same

- Circulate for same
- Rtd
- Trip

- Connection
- Rft

- Sidewall

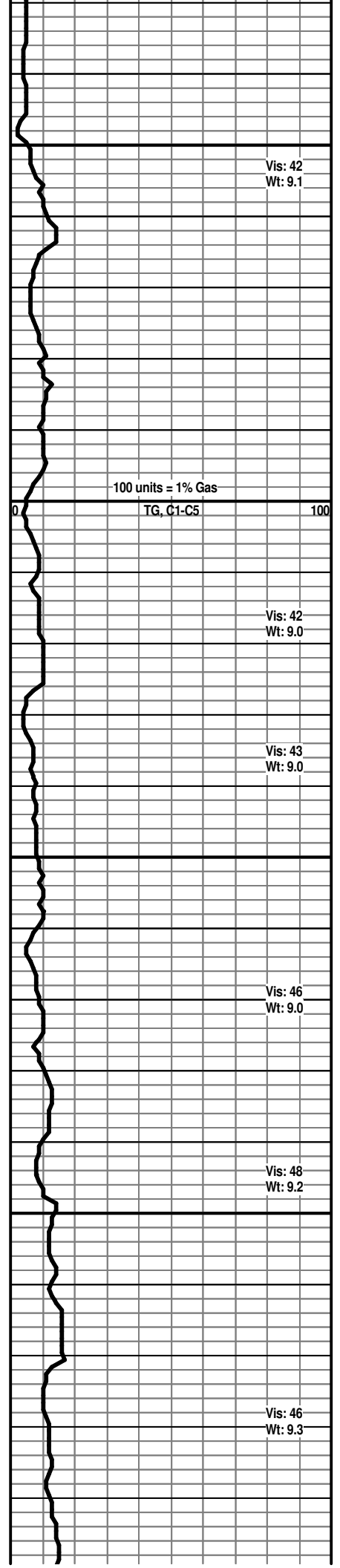


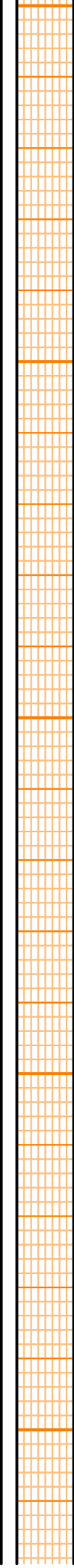
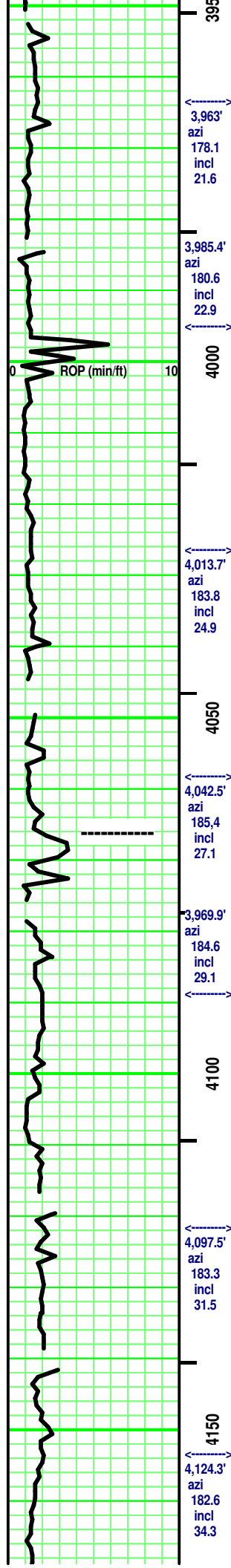


SH - Med/ Dark Gray. Sing. minute dark specks. Micaeous. tr Silty in part. Massive. Firm.

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SH - Med/ Dark Gray. Sing. minute dark specks.





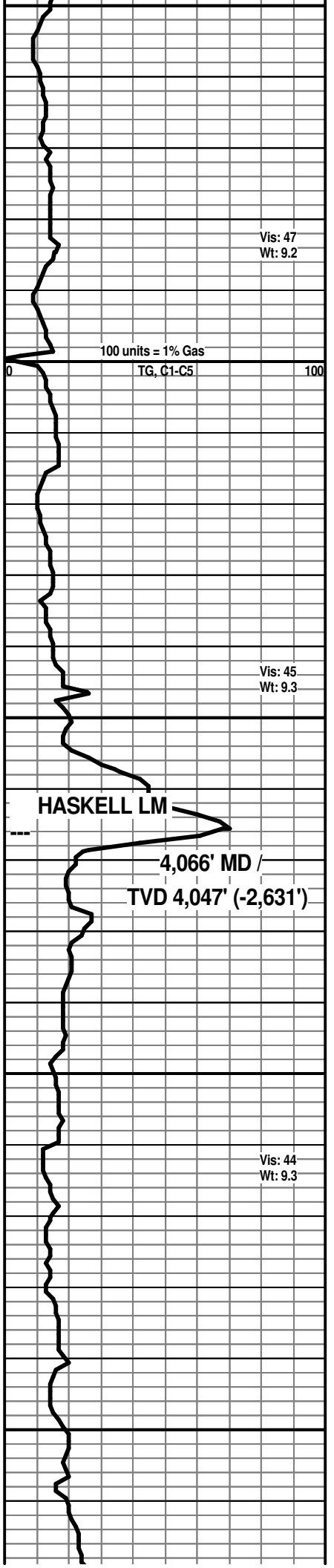
Micaeous. tr Silty in part. Massive. Firm.

SH - Med/ Dark Gray. Sing. minute dark specks. Micaeous. tr Silty in part. Massive. Firm.

LS - Tan/ Dark Tan. Sing. Crypto-/Micro-xln. xln por. tr Re-xln. Firm to Dense. No/ tr vis por.

SH - Med/ Dark Gray, Silver Gray/ tr Greenish Gray. Sing. Soft. Massive. misc minute inclusions. tr silty in part.

SH - Med/ Dark Gray, Silver Gray/ tr Greenish Gray. Sing. Soft. Massive. misc minute inclusions. tr silty in part.

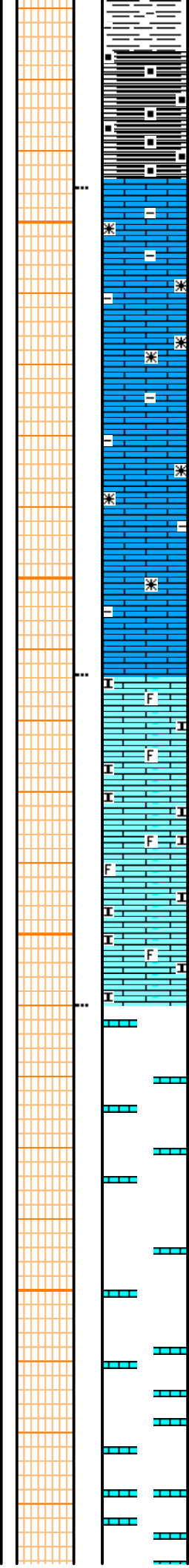
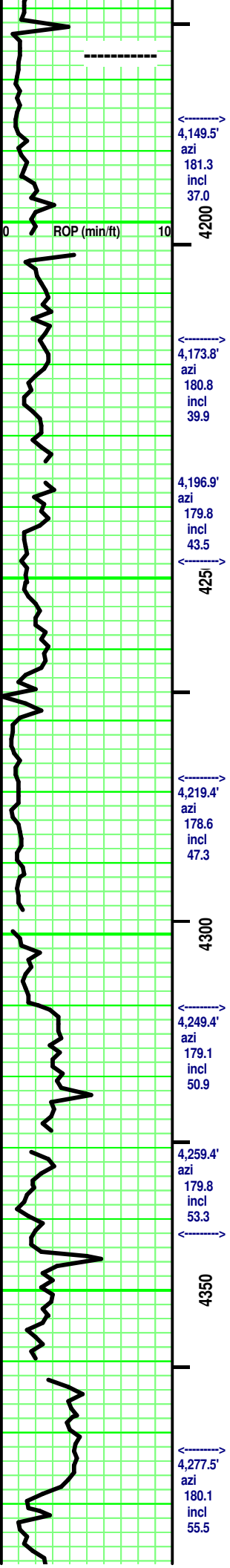


Vis: 47  
Wt: 9.2

Vis: 45  
Wt: 9.3

**HASKELL LM**  
4,066' MD /  
TVD 4,047' (-2,631')

Vis: 44  
Wt: 9.3



SH - Black. Sing. carb. soft.

LS - Grays/ tr Brown/ some Tan. Mot. Crypto-/  
mostly Micro-xln. xln por. argil in part. some  
Re-xln. tr ls frags. No/ tr vis por.

LS - Tans/ Off White/ some Lt Gray. Mottled.  
Micro- tr XF-xln. xln por. subchalky. tr argil.  
Friable. tr fossil frags. Tr/ Fair vis por.

LS - Tans/ tr Lt Gray. Sing. XF-/Micro-xln. xln por.  
some Re-xln. [tr CHERT - Tan/ Gray. Sing.  
Opaque. No tripolitic. No inclusions.] Firm. No/ tr  
vis por.

LS - Tan. Sing. Crypto- mostly Micro-xln. xln por.  
tr Re-xln. tr argil/ shaly stringer. Firm. No/ tr vis  
por.

4,149.5' azi  
181.3 incl  
37.0

4,173.8' azi  
180.8 incl  
39.9

4,196.9' azi  
179.8 incl  
43.5

425

4,219.4' azi  
178.6 incl  
47.3

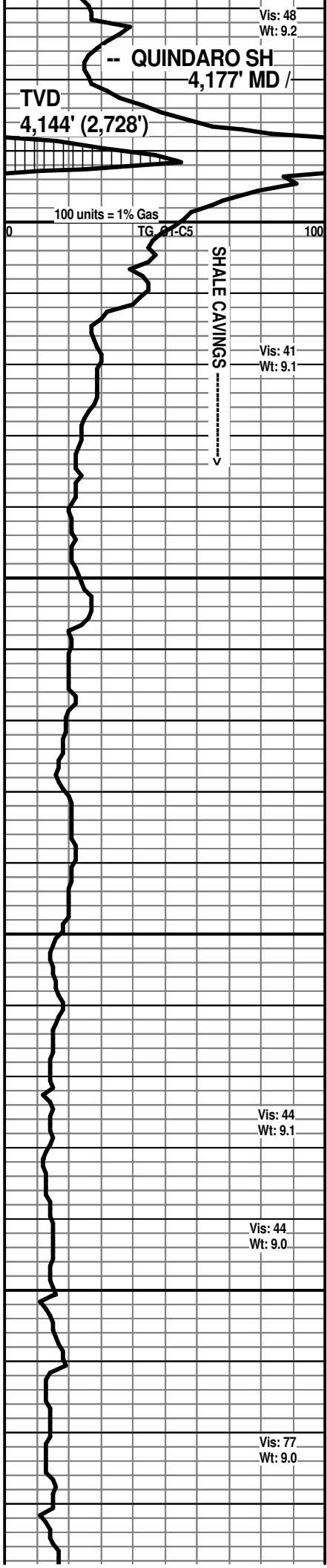
4300

4,249.4' azi  
179.1 incl  
50.9

4,259.4' azi  
179.8 incl  
53.3

4350

4,277.5' azi  
180.1 incl  
55.5



TVD  
4,144' (2,728')

QUINDARO SH  
4,177' MD /

100 units = 1% Gas  
TG 01-C5

SHALE CAVINGS

Vis: 48  
Wt: 9.2

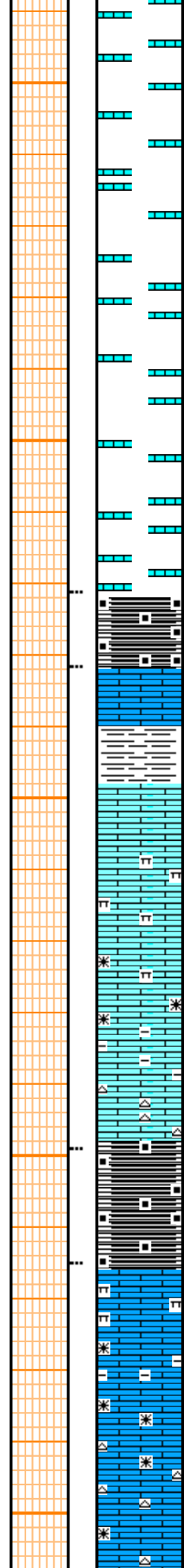
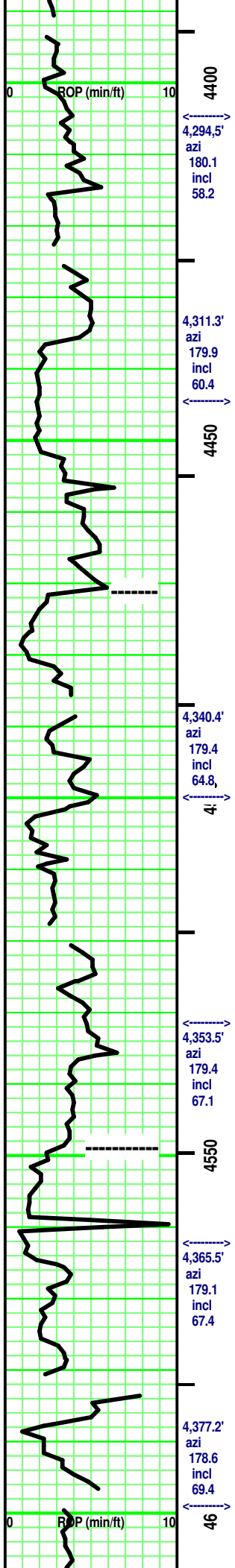
Vis: 41  
Wt: 9.1

Vis: 44  
Wt: 9.1

Vis: 44  
Wt: 9.0

Vis: 77  
Wt: 9.0





LS - Off White/ Tan VF Oolitest. some clear/ Tan matrix. Opaque to semitransparent. Friable. Tr vis por.

LS - Tans/ some Off White, tr Lt Gray. mostly Sing/ some Mot. some Crypto-/ mostly Micro-xln & XF-xln. xln por. some Re-xln. some argil in part. rare minute off white fossil frags. [some CHERT - Clear/Tan. Sing/ tr Mot. Opaque to semi-transparent. No inclusions. No tripolitic.] Firm. No/ tr vis por.

LS - Off White/ some Tan. Sing. Micro-xln. xln por. tr Re-xln. Subchalky. partly Friable. tr, irregular Med Gray shale streaks. Tr vis por.

--- STARK SH 4,471' MD / TVD 4,328' (-2,912')

SH - Black. Sing. Carb. Blocky.

LS - Tan. Sing. Micro-xln. xln por. Firm. No/ tr vis por.

SH - Med/ Dark Gray. Sing. soft. Massive.

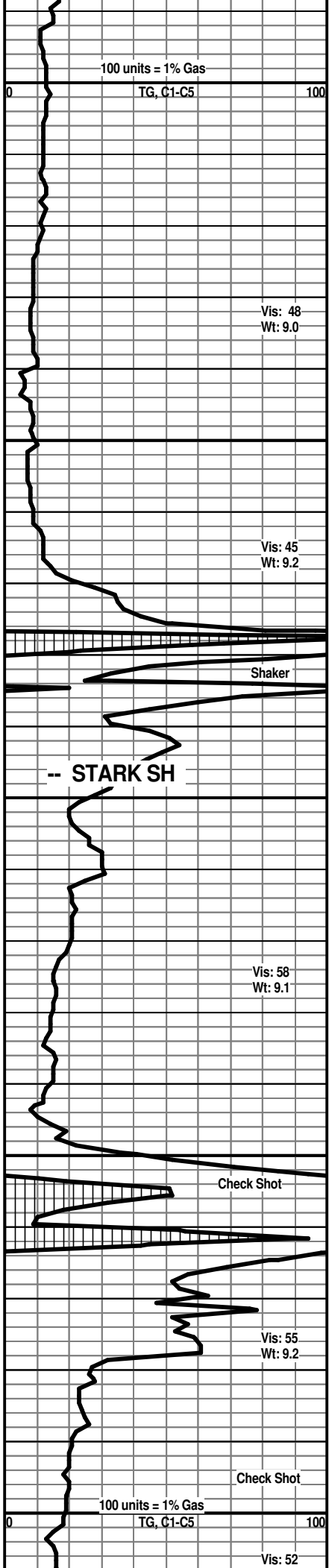
LS - Off White/ some Tan. Sing. Micro-xln. xln por. tr Re-xln. Subchalky. partly Friable. tr, irregular Med Gray shale streaks. Tr vis por.

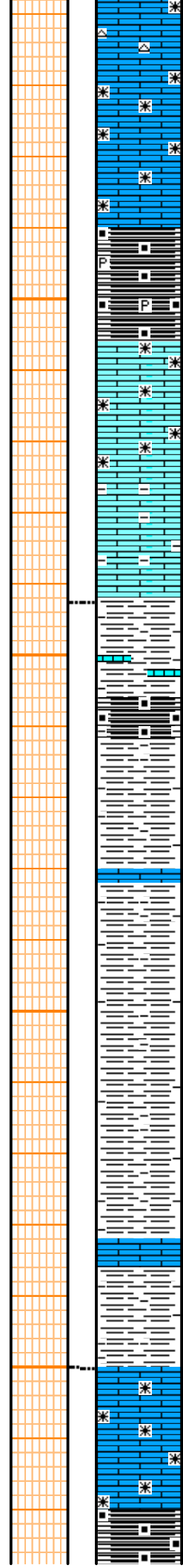
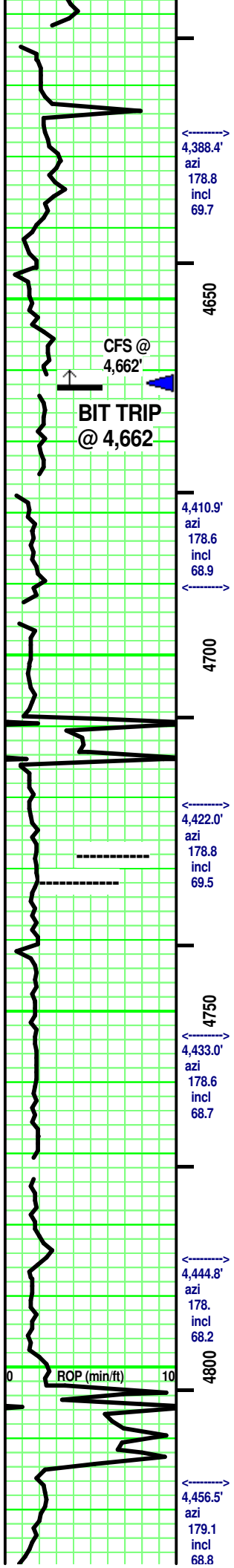
Add: few pcs CHERT - Tan/Gray. Sing/ tr Mot. Opaque. No inclusions. No tripolitic.

HUSHPUCKNEY SH 4,549' / TVD 4,360' (-2,944')

SH - Black. Sing. Carb. Soft.

LS - Lt Gray/ rare Brown/ Tan. Sing. Crypto-/ Micro-xln. xln por. Re-xln. some interbedded Lt Gray argil/ marl. [ few pcs CHERT - similar to above.] mostly Firm. No/ tr vis por.





SH - Black, Carb. rare pyritic. partly fissile. partly soft.

LS - Tans/ some Off White & Grays. Sing/ tr Mot. XF-/ Micro-xln. xln por. some argil/ shaly in part. some Re-xln. Firm. No/ tr vis por.

B/KC 4,692' / TVD 4,412' (-2,996')

Intermixed & interbedded SH & LS

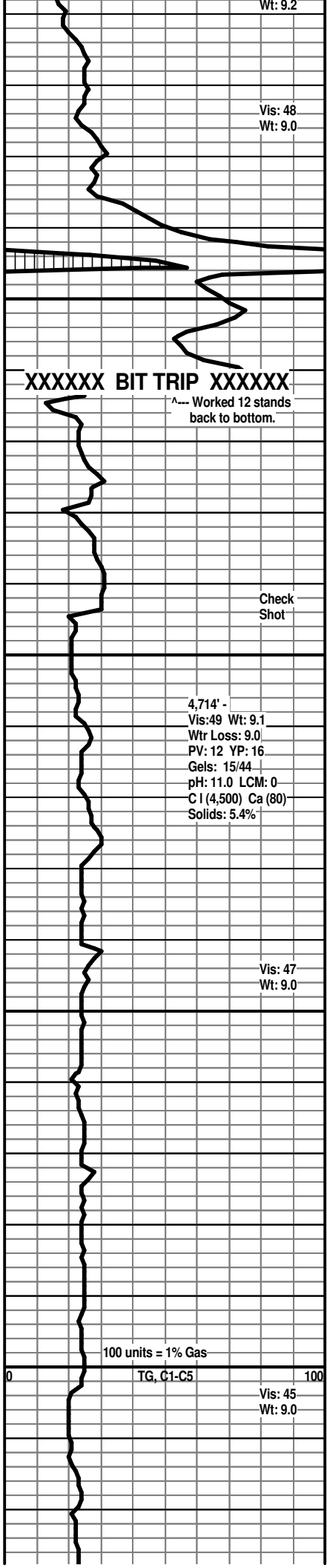
SH - Med/ Dark Grays, Black - carb. Sing. rare rubble.

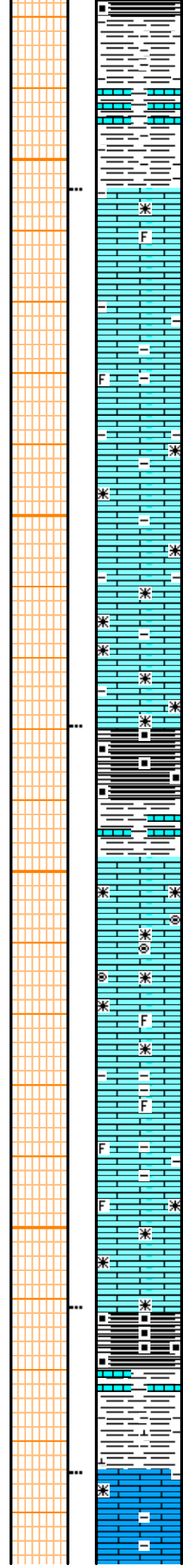
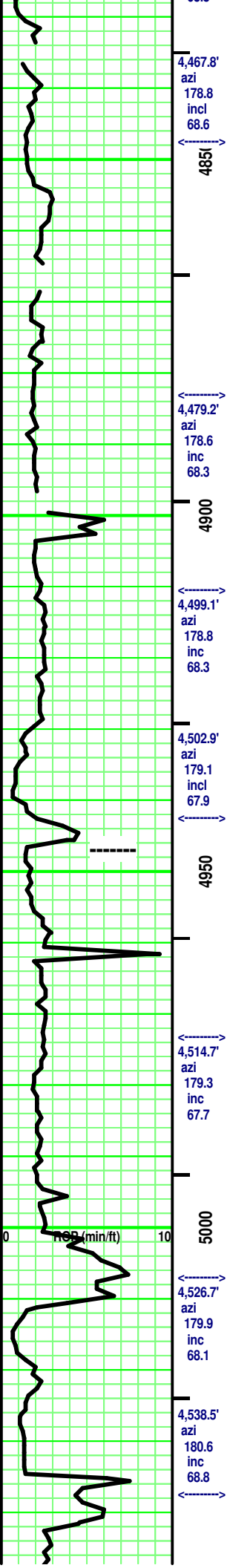
SH - Grays, Greenish Grays, Silverish Gray. Black & Carb. Sing. tr silty.

LS - Tan/ Grays, rare Off White. Sing. Micro-/ tr crypto-xln. xln por. some Re-xln. some argil. Firm. No/ tr vis por.

LS - Tan/ Pale Lt Gray. Sing. Micro-/ Crypto-xln. xln por. Firm/ Dense. No vis por.

SH - Black. Carb Soft. at top. Grays. Sing with limy streaks with depth.





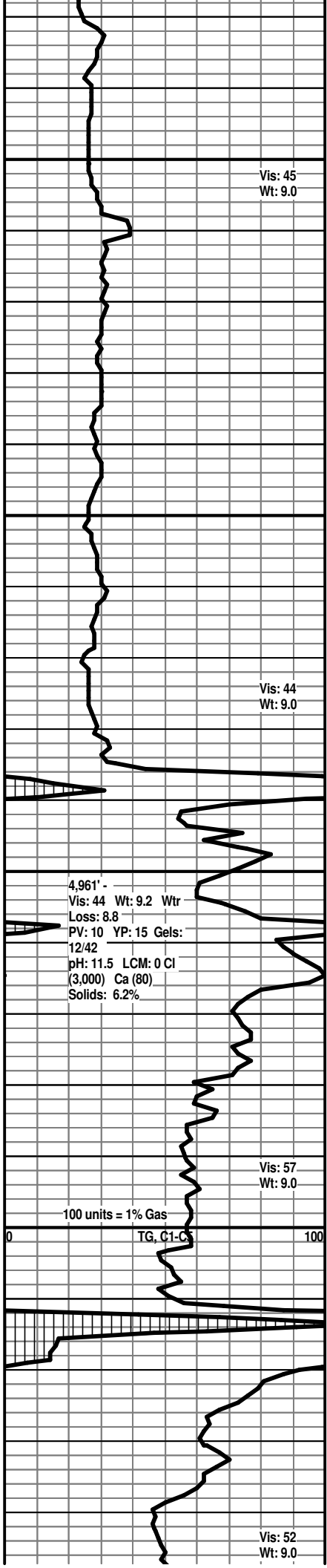
LS - Tans/ Grays. tr Off White. tr Sing/ mostly Mot. mostly Micro-xln, tr XF-xln. xln por. lots Re-xln. some argil/shaly in part. some marl at top. rare fossil frag. mostly Firm. No/ tr vis por.

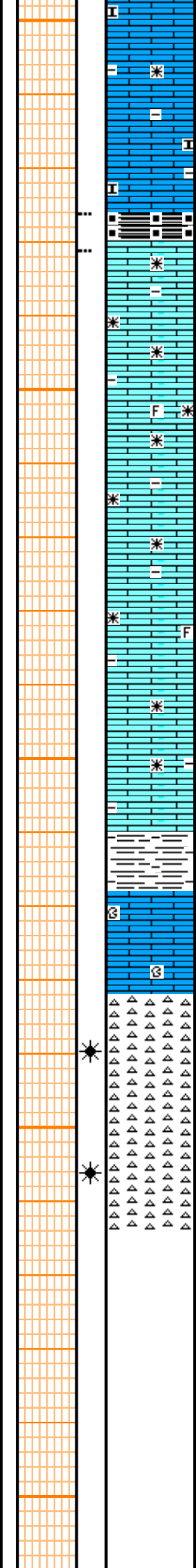
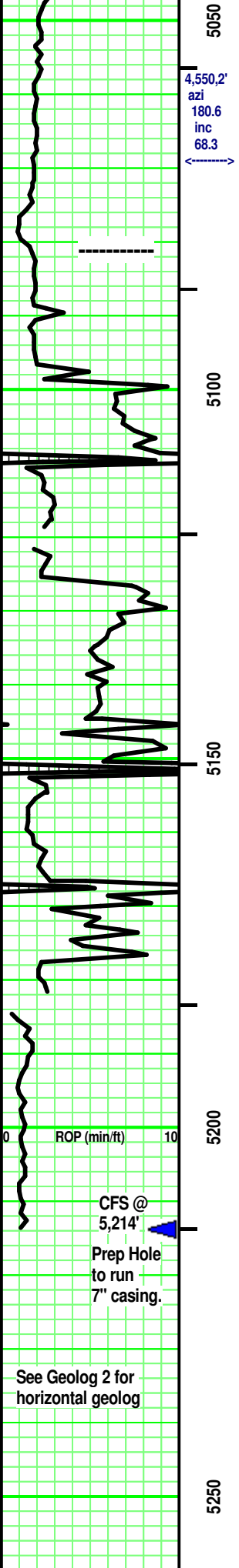
-- PAWNEE 4,947' MD /  
 LS - Tans/ some Off White. Sing/ tr Mot. some Crypto-/ mostly Micro- & XF-xln. xln por. some Re-xln. tr fossil frags. [rare Micro-Ooloid. Tan. in Off Whitish Tan Matrix. No vis por. Re-xln.] mostly Firm. No/ tr vis por.

SH - Black. Sing. Carb. Soft.

SH - Med/ Dark Gray. Sing. some highly LS stringers. tr/ some calc with depth.

LS - Tan/ some Lt & Med Gray. Sing/ some Mot. XF-/ Micro-xln. xln por. Re-xln. some argil/ shaly in part. mostly Firm. few pcs: subchalky. No/ tr vis por.





SH - Black. Sing. Carb. Soft.  
 CHEROKEE GP 5,081' MD / TVD 4,555' (-3,139')

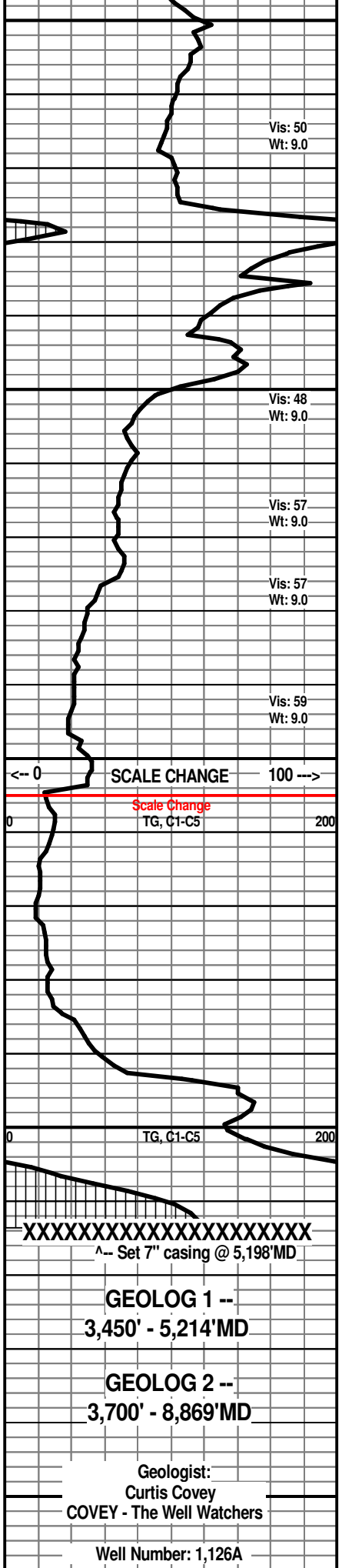
LS - Tans/ Lt & MedGray, Med Gray with depth.  
 Sing/ tr Mot. XF-/ Micro-xln. xln por. some Re-xln.  
 argil in part. tr fossil frags. some, minute limy  
 frags. mostly Firm. mostly No/ tr vis por.

SH - Med/ Dark Gray, some Greenish Gray. some Black, carb,  
 soft. tr pyritic. some limy streaks in part.

Rubble  
 ----- MISS 5,169' MD / TVD 4,583' (-3,167')

CHERT - Off White/ White/ Tan/ some Slivery Gray.  
 Mot. Opaque to semitransparent. some misc  
 fossil frags/hash Inclusions. Spotted/ some  
 Uniform Tripolitic with some Spotted/ uniform Lt/  
 Med Brown stain. rare Highly limy dol or dol /  
 frags in part. Tr/ fair vis por

Fair to Good odor. Spotted/ some Uniform Yellow  
 flourescence. tr free oil/ rare minute gas bubble.  
 Stain as above (30% - 80%) . Weak Pos/ Pos cut/  
 residual. Weak Pos/ Pos acid/ residual. few/ some  
 Oil spots on wash water.



GEOLOG 1 --  
 3,450' - 5,214' MD

GEOLOG 2 --  
 3,700' - 8,869' MD

Geologist:  
 Curtis Covey  
 COVEY - The Well Watchers

Well Number: 1,126A

See Geolog 2 for  
 horizontal geolog