

FORMATION LOG

Computer Inventoried

Deep Rock #11 Calbeck
NW/NE/NE; 33-260-13N

13" casing 215'; 400 sacks @ 400# c.c.
8 5/8" casing 906'; 400 sacks out bottom
350 sacks through perf.

Watt County, Kansas
Elevation: 1951 derrick floor

5 1/2" casing 4455'; 250 sacks cement

Note: 2' above derrick floor.

| <u>Depth</u> | <u>Formation Description</u> | <u>Remarks</u> |
|--------------|--|-------------------------|
| 0 - 40 | Surface | Drillers log 0 - 3100 |
| 40 - 205 | Sand | |
| 205 - 919 | Red bed | |
| 919 - 1280 | Red bed, shale & shells | |
| 1280 - 1365 | Shale | |
| 1365 - 1520 | Salt & shale | |
| 1520 - 1760 | Shale & shells | |
| 1760 - 1970 | Shale & sandy limestone | |
| 1970 - 2140 | Sandy limestone | |
| 2140 - 2480 | Limestone | |
| 2480 - 3100 | Limestone & shale | |
| 3100 - 3193 | Limestone, gray to tan, sub-crystal- line to dense, fossiliferous; streaks gray and brown shale; some soft black shale; trace chert, white, opaque to translucent, vitreous to earthy. | Sample log 3100 to T.D. |
| 3193 - 3216 | Shale, gray, silty & fine gray siltstone. | |
| 3216 - 3226 | Limestone, brown, dense, resinous, oolitic, | Topeka (?) 3216 |
| 3226 - 3242 | Sand, fine, gray, argillaceous, micaceous, streaks gray shale & siltstone | Porous on electric log. |
| 3242 - 3261 | Limestone, gray, sub-crystalline, argillaceous; shale, gray and gray-green. | Porous on electric log. |
| 3261 - 3283 | Limestone, cream, very finely sucrose; good oolitic porosity. | No show. |
| 3283 - 3300 | Limestone, brown, sub-crystalline to dense; trace tan opaque chert. | |
| 3300 - 3314 | Limestone, gray, sub-crystalline, oolitic; spotted vugular porosity. | No show. |
| 3314 - 3326 | Limestone, gray to brown, dense, mottled. | |
| 3326 - 3334 | Limestone, tan to brown, sub-crystalline, oolitic & oolitic; some vugular and oolitic porosity. | Possible trace stain |
| 3334 - 3341 | Limestone, tan to gray, sub-crystalline. | |
| 3341 - 3356 | Limestone, tan, sub-crystalline, oolitic and oolitic; good oolitic porosity | Fair trace stain |
| 3356 - 3374 | Limestone, gray to brown, sub-crystalline to dense, lithographic; chert, gray, opaque | |
| 3374 - 3382 | Limestone, gray to tan, mottled, sub- crystalline to dense, oolitic & oolitic; fair to good oolitic porosity. | Possible trace stain. |
| 3382 - 3390 | Limestone, gray to cream, dense | |
| 3390 - 3398 | Limestone, gray to cream, oolitic and oolitic; good vugular & oolitic porosity. | Trace stain |
| 3398 - 3404 | Limestone, dense, as above | |
| 3404 - 3411 | Limestone, gray-tan, sub-crystalline; fair vugular porosity | No show |

WENZELL G. JOHNS

(2) Formation log; Deep Rock #11 Calbeck.

| <u>Depth</u> | <u>Formation Description</u> | <u>Remarks</u> |
|--------------|--|---|
| 3411 - 3426 | Limestone, gray-brown, mottled, sub-crystalline to dense; streaks gray to black shale. | |
| 3426 - 3430 | Limestone, gray, sub-crystalline; some vugular porosity | Possible trace stain and slight odor |
| 3430 - 3454 | Limestone, sub-crystalline, as above; shale, gray-brown. | |
| 3454 - 3488 | Limestone, gray to brown, coarsely crystalline to dense. | Streaks spotted vugular porosity. |
| 3488 - 3514 | Limestone, as above; some brown, oolitic limestone; streaks gray & brown shale. | |
| 3514 - 3524 | Limestone, as above | Spotted pinpoint and vugular porosity, no show. |
| 3524 - 3586 | Limestone & shale, as above; streaks spotted pinpoint & vugular porosity 3528-37 and 3553-64. | No show. |
| 3586 - 3592 | Shale, soft, black | Heebner |
| 3592 - 3597 | Limestone, gray to brown, dense | Leavenworth |
| 3597 - 3607 | Shale, gray & gray green | Snyderville |
| 3607 - 3622 | Limestone, white to tan, crystalline fossiliferous, possibly oolitic | Toronto |
| 3622 - 3656 | Shale, gray and green-gray, some sandy sand, green-gray, medium to sub-medium angular, micaceous | Douglas |
| 3656 - 3690 | Shale, gray, some gray-green; probable sand streaks | |
| 3690 - 3752 | Shale, gray, some gray-green; probable sand streaks | |
| 3752 - 3777 | Limestone, dark gray to dark brown, dense shale streaks | Brown Lansing |
| 3777 - 3801 | Limestone, gray to tan, finely crystalline to dense; limestone, white to gray, sub-crystalline; chert, gray, opaque, with black oolites; shale, gray & brown. | Lansing |
| 3801 - 3817 | Limestone; white to light cream, finely crystalline, fair vugular porosity, trace gray, oolitic chert. | Trace free oil & odor; D.S.T. |
| 3817 - 3831 | Limestone, gray to brown, sub-crystalline to dense; streak gray and brown shale | |
| 3831 - 3843 | Limestone, gray to tan, sub-crystalline to finely sucrose; some good vugular porosity | Trace stain |
| 3843 - 3869 | Limestone, gray to brown, dense; chert, gray, opaque, earthy; streak gray-green shale | |
| 3869 - 3878 | Limestone, light gray, sub-crystalline; spotted fine pinpoint porosity. | Spotted stain |
| 3878 - 3892 | Limestone, dirty brown, sub-crystalline; some good pinpoint & fine vugular porosity. | Good stain |
| 3892 - 3929 | Limestone, tan to brown; dense; chert, gray to white, opaque, earthy; streaks porosity on electric log 3898 - 3908 and 3913 - 3918; streak gray-brown shale at bottom. | No show |
| 3929 - 3953 | Limestone, brown, sub-crystalline, fine pinpoint porosity. | Slight show free oil, good stain, no odor. D.S.T. |

(3) Formation log; Deep Rock #11 Calbeck.

| <u>Depth</u> | <u>Formation Description</u> | <u>Remarks</u> |
|--------------|--|--|
| 3933 - 3944 | Limestone, brown, sub-crystalline to dense, resinous; streak gray-brown shale. | |
| 3944 - 3949 | Limestone, light gray to tan, very finely sucrose; very fine pinpoint porosity. | Slight show free oil, no odor; D.S.T. |
| 3949 - 3964 | Limestone, tan to brown, dense; chert, gray, opaque | |
| 3964 - 3968 | Limestone, tan to brown, very finely sucrose; fine pinpoint porosity | Slight show free oil, good stain |
| 3968 - 3974 | Limestone, dense, as above | |
| 3974 - 3981 | Limestone, gray to brown, as above; fair vugular porosity | Fair odor; fair to good show free oil |
| 3981 - 3993 | Limestone, as above; no porosity | |
| 3993 - 3999 | Limestone, as above; some vugular porosity. | Fair odor and stain |
| 3999 - 4011 | Limestone; shale, gray-green to brown | |
| 4011 - 4013 | Limestone, gray, finely crystalline to sub-crystalline; fair vugular porosity | Fair stain |
| 4013 - 4051 | Limestone, gray to tan, sub-crystalline to dense; shale streaks as above. | |
| 4051 - 4058 | Limestone, light gray to tan, oolitic and oolitic; good oolitic porosity | Fair to good stain |
| 4058 - 4092 | Limestone and shale streaks, as above. | Probable Base Kansas City 4092. |
| 4092 - 4148 | Limestone, tan to gray, dense to finely crystalline; chert, white to gray, opaque streaks gray-green & brown shale. | Marmaton |
| 4148 - 4181 | Limestone, brown to red, oolitic; limestone, gray to brown, finely crystalline; chert, varicolored, opaque to translucent; streak red-brown shale. | |
| 4181 - 4198 | Chert, tan to white, sub-vitreous, opaque some oolitic; some white, semi-devitrified chert with brown dead stain; much gray-green shale. | Mississippi |
| 4198 - 4209 | Shale, dull green-gray; streaks limestone, brown-gray, sub-crystalline. | |
| 4209 - 4232 | Chert, white to tan to brown, vitreous to semi-vitreous, opaque to semi-translucent; some white, figured, translucent chert. | Viola; trace dead stain D.S.T. |
| 4232 - 4252 | Shale, gray, gray-green & green; possible streak gray-brown, dense, limestone at bottom. | |
| 4252 - 4296 | Chert, white to light tan china; some semi-vitreous chert, tan, opaque to translucent, some porous, vitreous chert. | Lower Viola Chert. Slight show free oil, no odor; D.S.T. |
| 4296 - 4300 | Limestone, blue-gray to dark gray, dense. | |
| 4300 - 4302 | Sand, hard, green, glassy; shale, green; sand, hard, green to white medium | Simpson; cored 4300-10 |
| 4302 - 4322 | mostly sand, brown to black medium, fairly tight; some white calcareous sand, thin streaks hard green shale. | Cored 4310-25; streaks saturation in sand |
| 4322 - 4329 | Limestone, light gray, dense, streaks hard amber to yellow, tight, finely crystalline dolomite, sandy throughout, a | Cored 4325-4333; show oil & odor |

(d) Formation log; Deep Rock #11 Calbeck:

| <u>Depth</u> | <u>Formation Description</u> | <u>Remarks</u> |
|--------------|---|----------------------------------|
| 4329 - 43 | few small vugs, some dolomite and limestone, as above with very large irregular vugs bleeding oil. | |
| 4329 - 4333 | Dolomite, dark brown, very tight, finely crystalline. | Slight odor. |
| 4333 - 4348 | Mostly shale, gray; sand, coarse, poorly sorted, much pyrite; some gray shale, very sandy, with many black phosphatic inclusions; some shaly sand with large rounded black phosphatic inclusions; one foot sandy shale or shaly sand, fair odor, very little porosity, some live black oil. | Cored 4333 - 4348 |
| 4348 - 4366 | Mostly tan, finely crystalline sandy limestone; some dolomitic limestone; some gray shale. | |
| 4366 - 4370 | Sandy shale & shaly gray sand, well rounded clear. | Fair dead stain |
| 4370 - 4377 | Dolomite, brown, finely crystalline, trace vugular porosity. | Trace stain |
| 4377 - 4382 | Dolomite, light gray to tan, sandy; sand, tan, as above. | Trace stain |
| 4382 - 4392 | Limestone, brown, dense, dolomitic | |
| 4392 - 4397 | Shale, gray & gray-green | |
| 4397 - 4402 | Dolomite, tan, medium to finely crystalline, rhombohedral; chert, white, opaque. | Arbuckle |
| 4402 - 4406 | Dolomite, tan to brown, as above | Possibly porous on electric log. |
| 4406 - 4411 | Dolomite, as above; streak light green shale. | |
| 4411 - 4414 | Dolomite, tan to brown, oolitic and oolitic; good oolitic porosity. | Fair odor, good show free oil. |
| 4414 - 4415 | Dolomite, no porosity | |
| 4415 - 4419 | Dolomite, tan, finely crystalline to sub-crystalline | Possibly porous |
| 4419 - 4428 | Dolomite, as above; streaks green shale | |
| 4428 - 4431 | Dolomite, tan, medium crystalline; good inter-crystalline porosity. | Fair show free oil |
| 4431 - 4436 | Dolomite & green shale | |
| 4436 - 4439 | Dolomite, light gray to tan, finely crystalline, oolitic & oolitic; fair oolitic porosity | Fair stain |
| 4439 - 4443 | Dolomite, white, crystalline, sandy | |
| 4443 - 4445 | Dolomite, as above, oolitic | No odor, spotted stain |
| 4445 - 4448 | Dolomite, as above | |
| 4448 - 4452 | Dolomite, tan, finely crystalline, fairly tight. | (Little or no show) |
| 4452 - 4455 | Dolomite, as above | |
| 4455 | Rotary total depth. | |

See electric log 10/22/51

4455 - 4455

DRILL STEM TEST:

The following drill stem tests were run on the #11 Calbeck:

(1) Lansing zone #1: (3802-20)

open 45 min.; recovered 135' gas cut mud; very slight show of oil
135' mud, possible trace gas
Bottom hole pressure 300# (15 min.)

(6) Formation log; Deep Rock #1 Calbeck.

(Drill stem tests cont'd.)

- (2) Lansing zones #6 and #7: (3925-50)
open 45 minutes; very good blow; gas to surface in 15 min.
Recovered 90' slightly oil cut mud; 210' oil mud and muddy oil
Initial flow pressure 0
Final flow pressure 110#
Bottom hole pressure 930# (15 min.)
- (3) Upper Viola Chert: (4209-30)
open 45 minutes; very good blow, gas to surface in 10 min.
Recovered 60' gas cut mud
Bottom hole pressure 1420# (15 min.)
- (4) Lower Viola Chert: (4252-85)
open 30 minutes; very good blow, gas to surface in 10 min.
Recovered 60' oil cut mud; 330' oil and muddy oil
Initial flowing pressure 45#
Final flowing pressure 130#
Bottom hole pressure 1400# (15 min.)
- (5) Simpson: (4295-4333)
open 1 hour; very good blow, gas in 8 min.
Recovered 1620' oil and muddy oil, no water
Initial flowing pressure 155#
Final flowing pressure 455#
Bottom hole pressure 1330# (15 min.)
- (6) Arbuckle: (4422-40)
Open 1 hour; good blow, gas in 1 hour
Recovered 390' oil and muddy oil
Initial flowing pressure 0
Final flowing pressure 140#
Bottom hole pressure 1100# (15 min.)
- (7) Arbuckle: (4440-55)
Open 1 hour; very good blow, gas in 50 min.
Recovered 1380' oil, 600' oil and water, 1140' water
Initial flowing pressure 155#
Final flowing pressure 1330#
Bottom hole pressure 1455# (15 min.)

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Core Summary:

The following cores were taken on the #1 Calbeck:

All cores were in the Simpson

- (1) 4300 - 10; recovered 9'
 - Top 6' hard green glassy sand, rounded, poorly sorted, quartzitic; streaks of green shale
 - 1' alternate thin streaks, green shale and hard, green to white sand, medium; trace dark stain in sand.
 - 6' green shale
 - 1' light green sand, shaly, slightly calcareous, fine to medium
 - 6' sand, brown, medium, poorly sorted, with streaks white calcareous sand, with small rounded sand grains, saturation in the brown sand.

(6) Geological report: Deep Rock Hill Calbeck.

(Core record cont'd.)

- 6" white calcareous sand to sandy limestone
- 5' sand brown, medium to coarse, poorly sorted, good odor and saturation, a few thin streaks white calcareous sand, some inter-calation of hard green sand in bottom part.

(2) 4310-25; recovered 15'

- 3' sand brown to black, medium, fairly tight, thin streaks of calcareous sand; traces of intercalated green shale, heavy black saturation in sand, good odor.
- 3½' alternate streaks sand, brown, black, and green, tight, heavy, black stain in brown and black sand, good odor. Thin streaks of green shale.
- 6' sand, as above, less green shale, a few streaks of very calcareous white sand.
- 2½' light gray, dense limestone, intercalated with amber to yellow dolomite, finely crystalline, very hard and tight, sandy throughout; many stylolites; a few small vugs showing oil.

(3) 4325-33; recovered 6'

- 3' dolomite and limestone, as above, very vugular, large irregular vugs bleeding oil; good odor
- 3' dark brown very tight dolomite, finely crystalline, slight odor.

(4) 4333 - 48; recovered 14'

- 3" sand and gray shale; sand coarse, poorly sorted, intercalated with gray shale, much pyrite, fair odor; very little porosity
- 8½' gray shale, scattered sand grains throughout, some pyrite; no odor.
- 2'3" gray shale, very sandy with many black, phosphatic inclusions, trace dead black oil; no odor.
- 1' sandy shale or shaly sand, fair odor; some live black oil, very little porosity or permeability
- 1'10" gray very sandy shale to shaly sand, much pyrite, and large rounded, black, phosphatic inclusions, no odor or show
- 2" green shale.

COMPLETION DATA:

After cement had set around the 5½" casing the following operations were performed:

Drilled out to the top of the float collar at 4420
Perforated 179 holes 4254-84 (lower Viola Chert)
Swabbed 2½ barrels oil per hour for first 2 hours
Swabbed 1½ barrels oil per hour for next 4 hours
Acidized with 500 gallons
Increased both gas and oil but no accurate measurements of either.
Hydrafrack.
Bomb potential 2418 barrels oil per day (corrected)

(Samples examined and log compiled by Wendell S. Johns and
Willis Jack Magathan)

Deep Rock Hill Salbeck
 11/21/48; 33-260-134
 Pratt County, Kansas
 Elevation: 1951 terrace floor

WENDELL C. ...

Note: All measurements were taken from the top of the rotary bushing which is two feet above the terrace floor.

| <u>Depth</u> | <u>Flow</u> | <u>Remarks</u> |
|--------------|---------------------|----------------|
| 3100 - 10 | 4-4-4-5-4-4-3-3-3-3 | |
| 20 | 3-3-2-2-2-3-3-3-2-2 | |
| 30 | 2-3-3-3-2-2-3-2-4-4 | |
| 40 | 3-4-2-3-3-4-3-3-4-3 | |
| 50 | 4-4-4-4-3-3-5-5-5-5 | |
| 60 | 5-3-4-4-3-5-5-5-5-5 | |
| 70 | 5-4-5-3-3-3-5-5-5-5 | |
| 80 | 4-4-4-4-4-5-4-3-4-5 | |
| 90 | 5-4-4-3-4-4-3-3-3-5 | |
| 90 - 3200 | 5-4-5-4-3-3-3-3-2-2 | |
| 3200 - 10 | 2-2-3-3-2-3-2-3-3-4 | |
| 20 | 3-3-3-2-3-3-4-5-4-4 | |
| 30 | 3-4-4-4-5-5-4-4-4-3 | |
| 40 | 3-4-3-4-3-5-5-5-5 | |
| 50 | 5-5-4-5-4-3-4-4-4-3 | |
| 60 | 3-3-3-4-3-5-5-6-2-2 | |
| 70 | 3-2-2-2-2-2-2-2-2-2 | |
| 80 | 2-2-2-3-3-3-3-3-3-3 | |
| 90 | 3-2-3-3-4-5-4-5-5 | |
| 90 - 3300 | 5-5-5-5-5-4-3-4-3-3 | |
| 3300 - 10 | 4-3-2-2-3-2-3-4-3-2 | |
| 20 | 2-2-3-3-4-5-3-4-5-5 | |
| 30 | 5-5-4-4-4-4-3-3-3-2 | |
| 40 | 2-3-3-3-5-5-7-5-6 | |
| 50 | 3-7-5-4-3-4-5-4-5-3 | |
| 60 | 2-3-3-3-3-4-5-5-5 | |
| 70 | 5-6-7-7-7-7-6-6-7 | |
| 80 | 6-6-5-5-3-3-2-2-2-2 | |
| 90 | 2-2-4-3-3-4-5-4-7-5 | |
| 90 - 3400 | 3-3-3-3-3-4-4-3-7 | |
| 3400 - 10 | 3-5-6-4-2-2-2-2-2-2 | |
| 20 | 3-5-5-5-4-6-7-6-5-3 | |
| 30 | 6-5-6-4-5-3-3-3-4 | |
| 40 | 4-4-5-4-5-5-5-5-5-6 | |
| 50 | 6-5-5-5-5-5-5-5-6 | |
| 60 | 6-6-7-5-3-7-5-5-3 | |
| 70 | 5-4-4-6-4-4-5-3-5-5 | |
| 80 | 5-3-2-5-4-4-4-3-3-3 | |
| 90 | 3-4-3-5-5-4-3-3-3-5 | |
| 90 - 3500 | 6-5-6-7-7-6-6-5-3-5 | |
| 3500 - 10 | 6-6-7-7-6-6-3-5-7-5 | |
| 20 | 6-5-5-5-4-5-3-4-3-4 | |
| 30 | 4-4-4-4-4-6-5-5-4-3 | |
| 40 | 5-3-3-3-3-3-3-4-5-5 | |
| 50 | 5-5-4-5-5-2-7-3-3-2 | |

Trip 3258

SR 3472 & 78

Trip 3547

(2) Trawl log; Deep Rock w/11 Salbeck:

| <u>Depth</u> | <u>Time</u> | <u>Result</u> |
|--------------|-----------------------------|------------------------------------|
| 3550 - 60 | 2-0-3-2-0-1-0-1-1-1 | |
| 70 | 2-1-2-0-3-3-3-5-4 | |
| 80 | 2-2-4-4-4-4-4-5-4-5 | |
| 90 | 2-3-2-4-5-6-4-2-2-2 | Heebner 3586 |
| 90 - 3600 | 1-1-2-1-3-6-5-3-1-3 | |
| 3700 - 10 | 3-3-3-4-6-4-4-5-5-4 | |
| 20 | 3-4-4-4-4-4-4-4-4-3 | |
| 30 | 3-3-3-3-2-3-2-2-2-2 | |
| 40 | 3-4-4-3-4-2-5-4-3-3 | |
| 50 | 4-4-3-5-4-4-4-3-3-2 | |
| 60 | 4-3-6-5-4-4-2-1-1-1 | |
| 70 | 1-1-1-1-1-1-1-1-1-1 | |
| 80 | 2-2-2-2-1-1-1-1-1-1 | |
| 90 | 1-1-1-1-1-1-1-1-1-1 | |
| 90 - 3750 | 2-3-3-3-2-3-2-4-4-4 | |
| 3700 - 10 | 4-3-4-4-4-4-4-4-2-3-3 | |
| 20 | 4-4-4-4-3-3-3-4-6-3 | |
| 30 | 4-5-4-5-4-4-4-5-4-3 | |
| 40 | 5-4-3-4-5-5-5-5-5-5 | |
| 50 | 5-5-3-4-2-3-5-5-5-6 | |
| 60 | 6-5-6-6-7-7-6-6-6-5 | Brown Lansing 3751 |
| 70 | 4-4-5-6-5-6-6-6-5-5 | |
| 80 | 4-4-5-6-6-5-4-6-6-3 | Lansing 3779 |
| 90 | 7-7-6-6-7-6-7-7-8-7 | |
| 90 - 3800 | 7-8-8-8-8-7-6-7-7-7 | |
| 3800 - 10 | 9-7-7-5-5-4-5-5-5-5 | |
| 20 | 5-4-2-5-5-6-4-5-7-7 | Circ. 1 1/2 hr. 3820; new nit 3820 |
| 30 | 5-7-5-7-7-7-5-4-4-5 | |
| 40 | 6-7-5-3-3-3-5-4-7-5 | |
| 50 | 4-5-2-3-5-6-6-7-7-9 | |
| 60 | 7-6-9-3-6-7-6-7-5-8 | |
| 70 | 10-10-10-10-10-10-10-9-11-7 | Trip 3867 |
| 80 | 7-7-7-7-4-5-7-6-3-4 | |
| 90 | 5-4-3-3-1-2-3-3-3-3 | |
| 90 - 3900 | 3-2-3-6-7-6-5-6-5-6 | |
| 3900 - 10 | 5-6-6-4-4-4-5-5-6-6 | |
| 20 | 9-3-5-6-6-6-6-6-8-10 | |
| 30 | 10-10-9-10-10-7-8-6-8-5 | |
| 40 | 4-5-6-9-10-10-10-10-11-9 | |
| 50 | 10-9-10-7-5-5-4-6-7-9 | Circ. 1 1/2 hr. 3950; trip 3950 |
| 60 | 11-10-7-8-7-7-8-6-6-6 | |
| 70 | 8-6-7-7-6-7-5-5-7-7 | |
| 80 | 6-8-6-4-2-1-2-1-3-4 | |
| 90 | 4-5-5-8-5-4-7-5-6-7 | |
| 90 - 4000 | 10-7-9-7-3-5-4-4-5-8 | |
| 4000 - 10 | 8-9-8-8-6-6-5-5-4-6 | |
| 20 | 7-4-5-8-7-7-6-7-10-9 | |
| 30 | 11-9-11-10-10-10-8-7-11-5 | |
| 40 | 5-8-8-10-8-9-8-10-7-9 | |
| 50 | 7-7-6-7-7-7-8-9-8-8 | |

(3) Tise log; Deep Rock - 11 outback:

| <u>Depth</u> | <u>Line</u> | <u>Remarks</u> |
|--------------|-------------------------------|---|
| 6550 - 60 | 7-4-4-8-7-5-5-5-8-10 | |
| 70 | 10-7-1-7-8-1-7-7-8-10 | |
| 80 | 9-8-5-8-9-7-8-8-8-8 | |
| 90 | 7-8-8-8-8-8-7-7-8-7 | |
| 90 - 1100 | 8-11-8-8-8-8-8-8-7-6 | |
| 1100 - 10 | 6-6-6-6-7-6-8-8-8-9 | |
| 20 | 5-9-7-8-7-7-8-6-6-6 | Trip 4112 |
| 30 | 6-8-8-8-6-6-5-8-7-6 | |
| 40 | 5-5-5-5-5-5-5-5-5-6 | |
| 50 | 5-5-5-5-6-6-6-7-4-3 | |
| 60 | 4-9-7-5-5-5-5-4-5-8 | |
| 70 | 6-5-8-7-8-10-12-10-10 | Trip 4170 |
| 80 | 6-6-6-6-5-8-8-8-5 | |
| 90 | 5-5-3-4-5-4-4-5-4-5 | Mississippi 4181 |
| 90 - 1200 | 4-5-5-5-5-6-5-5-9-7 | Hinderhook 4198; Circ. 1 1/2 hr. 4205 |
| 1200 - 10 | 6-6-8-8-10-11-8-10-10-5 | Upper Viola Chart 4209 |
| 20 | 5-7-5-5-4-6-6-6-4-6 | |
| 30 | 6-4-5-5-5-6-5-8-7-5 | Circ. 1 1/2 hr. 4230; new bit 4230 |
| 40 | 5-5-10-10-10-15-12-13-12-15 | |
| 50 | 15-16-11-11-11-11-10-11-13-9 | |
| 60 | 11-11-10-4-4-4-4-5-8-4 | Lower Viola Chart 4353 |
| 70 | 3-4-4-4-5-6-5-5-3-4 | |
| 80 | 3-3-5-4-5-6-6-6-6-6 | |
| 90 | 6-5-5-5-7-3-4-4-4-4 | Circ. 1 1/2 hr. 4285; new bit 4285; Circ. 1 1/2 hr. 4290; Simpson 4300 |
| 90 - 4300 | 5-5-4-5-7-6-8-9-10-13 | Circ. 1 1/2 hr. 4300; coring 4300-4348 |
| 4300 - 10 | 17-9-22-18-16-14-13-12-11-11 | Circ. 1 1/2 hrs. 4310 |
| 20 | 9-9-17-10-8-9-10-17-11-10 | |
| 30 | 13-13-14-17-16-17-17-24-23-23 | Circ. 1 1/2 hr. 4325 |
| 40 | 21-20-18-18-18-16-17-21-21-17 | Circ. 1 1/2 hr. 4333 |
| 50 | 22-16-13-15-15-15-25-30-3-3 | Circ. 1 1/2 hr. 4348 |
| 60 | 5-9-9-10-7-9-9-11-13-10 | |
| 70 | 10-8-9-12-9-10-7-8-7-6 | |
| 80 | 10-10-10-10-11-11-10-7-10-9 | |
| 90 | 8-8-8-8-7-7-8-9-10-10 | |
| 90 - 4400 | 12-10-9-8-8-9-10-13-13-13 | Arbuckle 4397; Hough 4398-99 |
| 4400 - 10 | 13-12-11-11-11-8-8-8-8-6 | Circ. 1 1/2 hr. 4405; Trip 4405 |
| 20 | 7-5-8-3-7-7-7-7-8-7 | |
| 30 | 9-8-8-7-8-6-6-5-6-6 | Circ. 1 1/2 hr. 4430 |
| 40 | 8-8-8-8-7-8-7-7-4-7 | Circ. 1 1/2 hr. 4440 |
| 50 | 8-8-7-5-6-7-6-6-6-6 | |
| 55 | 5-8-8-8-9 | Circ. 1 1/2 hr. 4455 |
| 4455 | | REMARK TOTAL DEPTH |