

OPERATOR

Company: TDI, INC
Address: 1310 BISON ROAD
HAYS, KANSAS 67601

Contact Geologist: TOM DENNING
Contact Phone Nbr: 785-628-2593
Well Name: RATTLESNAKE # 1
Location: SW NW SE SE SEC.12-T12S-R19W
API: 15-051-26,834-00-00
Pool:
State: KANSAS

Field: HYACINTH NORTHWEST
Country: USA



Scale 1:240 Imperial

Well Name: RATTLESNAKE # 1
Surface Location: SW NW SE SE SEC.12-T12S-R19W
Bottom Location:
API: 15-051-26,834-00-00
License Number: 4787
Spud Date: 6/24/2016 Time: 7:45 AM
Region: ELLIS COUNTY
Drilling Completed: 6/29/2016 Time: 1:39 PM
Surface Coordinates: 915' FSL & 1030' FEL
Bottom Hole Coordinates:
Ground Elevation: 2183.00ft
K.B. Elevation: 2191.00ft
Logged Interval: 0.00ft To: 0.00ft
Total Depth: 3810.00ft
Formation: LANSING-KANSAS
Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -99.3746252
Latitude: 39.0183912
N/S Co-ord: 915' FSL
E/W Co-ord: 1030' FEL

LOGGED BY

Company: SOLUTIONS CONSULTING, INC.
Address: 108 W 35TH
HAYS, KS 67601

Phone Nbr: (785) 639-1337
Logged By: GEOLOGIST

Name: HERB DEINES

CONTRACTOR

Contractor: SOUTHWIND DRILLING, INC.
Rig #: 3
Rig Type: MUD ROTARY
Spud Date: 6/24/2016
TD Date: 6/29/2016

Time: 7:45 AM
Time: 1:39 PM

ELEVATIONS

K.B. Elevation: 2191.00ft
K.B. to Ground: 8.00ft

Ground Elevation: 2183.00ft

NOTES

ALL PRIMARY ZONES WITH OIL SHOWS WERE TESTED WITH NEGATIVE RESULTS. RECOMMENDATION TO PLUG AND ABANDON TEST.

NO OPEN HOLE LOGS WERE RAN ON THIS WELL.

DRILL STEM TESTING BY TRILOBITE TESTING INC: TWO (2) CONVENTIONAL TESTS

RATTLESNAKE # 1
SW NW SE SE
SEC.12-12S-19W
2183'GL 2191'KB

STACKHOUSE RANCH 1
SW SE NE NE
SEC.13-12-19W
KB 2208'

KEITH # 1
S2 SW SW NE
SEC.12-12-19W
KB 2197'

FORMATION

SPL TOPS

LOG TOPS

LOG TOPS

Anhydrite	1534 +657	+ 674	+ 667
B-Anhydrite	1574 +617	+ 644	+ 627
Topeka	3214-1023	-1011	-1031
Heebner Sh.	3442-1251	-1241	-1261
Toronto	3459-1268	-1260	-1279
LKC	3484-1293	-1286	-1303
BKC	3721-1530	-1518	-1537
Arbuckle	3798-1607	-1610	NR
RTD	3810-1619	-1677	-1705

SUMMARY OF DAILY ACTIVITY

6-24-16 Spud 7:45 AM, set 8 5/8" surface casing to 221' w/150 sxs 70/30
Pos 2%Gel 3%CC, slope 1/4 degree, plug down 12:30PM

6-25-16 1000', drilling

6-26-16 2406', drilling

6-27-16 3110', drilling, displaced 2965' to 2998'

6-28-16 3550', drilling, CFS 3475', short trip, DST #1 3501' to 3550' "C" to
"D" LKC, TIWB, drilling, CFS 3670', CFS 3693'

6-29-16 3693', DST # 2 3593' to 3693' "H" to "K" LKC, TIWB, RTD 3810' @
12:39PM, P&A, no logs, LDDP, RD



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TDI Inc
1310 Bison Rd
Hays KS 67601-9696

ATTN: Herb Deines

12 12s 19w Ellis

Rattlesnake 1

Job Ticket: 64935

DST#: 1

Test Start: 2016.06.28 @ 07:02:00

GENERAL INFORMATION:

Formation: **LKC "C & D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:29:45

Time Test Ended: 11:46:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Jim Svaty

Unit No: 76

Interval: **3501.00 ft (KB) To 3550.00 ft (KB) (TVD)**

Total Depth: 3550.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2187.00 ft (KB)

2179.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8289 Inside

Press@RunDepth: 35.46 psig @ 3515.00 ft (KB)

Start Date: 2016.06.28

End Date:

2016.06.28

Start Time: 07:02:02

End Time:

11:46:15

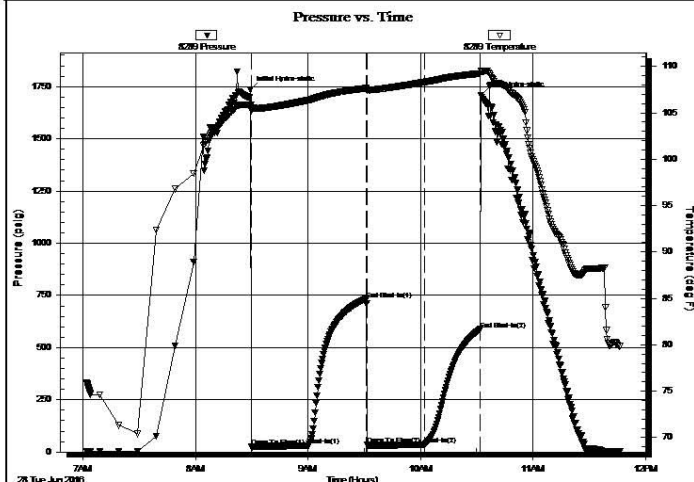
Capacity: 8000.00 psig

Last Calib.: 2016.06.28

Time On Btm: 2016.06.28 @ 08:29:30

Time Off Btm: 2016.06.28 @ 10:32:15

TEST COMMENT: 30-IFP- 1/4in. Blow
30-ISIP- No Blow
30-FFP- Weak Surface Blow in 18min.
30-FSIP- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1734.02	105.88	Initial Hydro-static
1	24.34	105.21	Open To Flow (1)
31	29.60	106.35	Shut-In(1)
62	729.98	107.64	End Shut-In(1)
62	33.30	107.39	Open To Flow (2)
93	35.46	108.30	Shut-In(2)
123	587.49	109.23	End Shut-In(2)
123	1709.85	109.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	WCM 45%w 55%w Oil Specks in Tool	0.35

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.****DRILL STEM TEST REPORT**TDL Inc
1310 Bison Rd
Hays KS 67601-9696
ATTN: Herb Deines**12 12s 19w Ellis****Rattlesnake 1**

Job Ticket: 64936

DST#: 2

Test Start: 2016.06.28 @ 22:37:00

GENERAL INFORMATION:Formation: **LKC "H - K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:39:30

Time Test Ended: 05:22:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Jim Svaty

Unit No: 76

Interval: 3593.00 ft (KB) To 3693.00 ft (KB) (TVD)

Total Depth: 3693.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2187.00 ft (KB)

2179.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8289**Inside**

Press@RunDepth: 156.91 psig @ 3607.00 ft (KB)

Start Date: 2016.06.28

End Date:

2016.06.29

Capacity: 8000.00 psig

Last Calib.: 2016.06.29

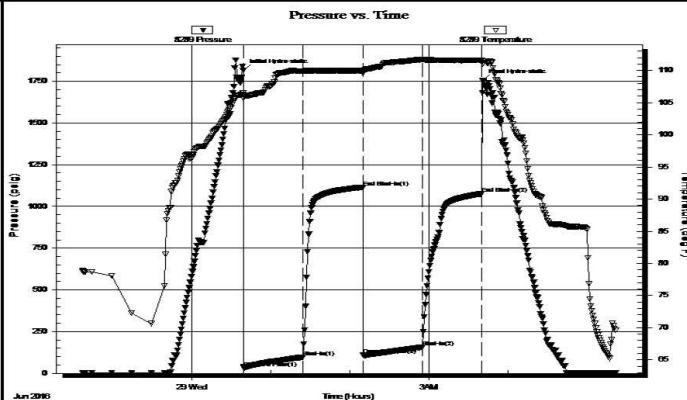
Start Time: 22:37:02

End Time:

05:22:00

Time On Btm: 2016.06.29 @ 00:39:00

Time Off Btm: 2016.06.29 @ 03:41:15

TEST COMMENT: 45-IFP- BOB in 39min.
45-ISIP- No Blow
45-FFP- BOB in 45min.
45-FSIP- No Blow**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1814.43	106.55	Initial Hydro-static
1	33.75	106.12	Open To Flow (1)
46	97.12	109.93	Shut-In(1)
91	1113.42	109.96	End Shut-In(1)
91	109.24	109.57	Open To Flow (2)
136	156.91	111.71	Shut-In(2)
181	1075.88	111.58	End Shut-In(2)
183	1753.24	111.04	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
287.00	Oil Speck WCM 1%o 49%w 50%m	4.03

* Recovery from multiple tests

Gas Rates

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

Dolprim

Lscongl

shale, gry

shale, red

Chtcongl

Lmst fw7>

shale, grn

Carbon Sh

ROCK TYPES

ACCESSORIES

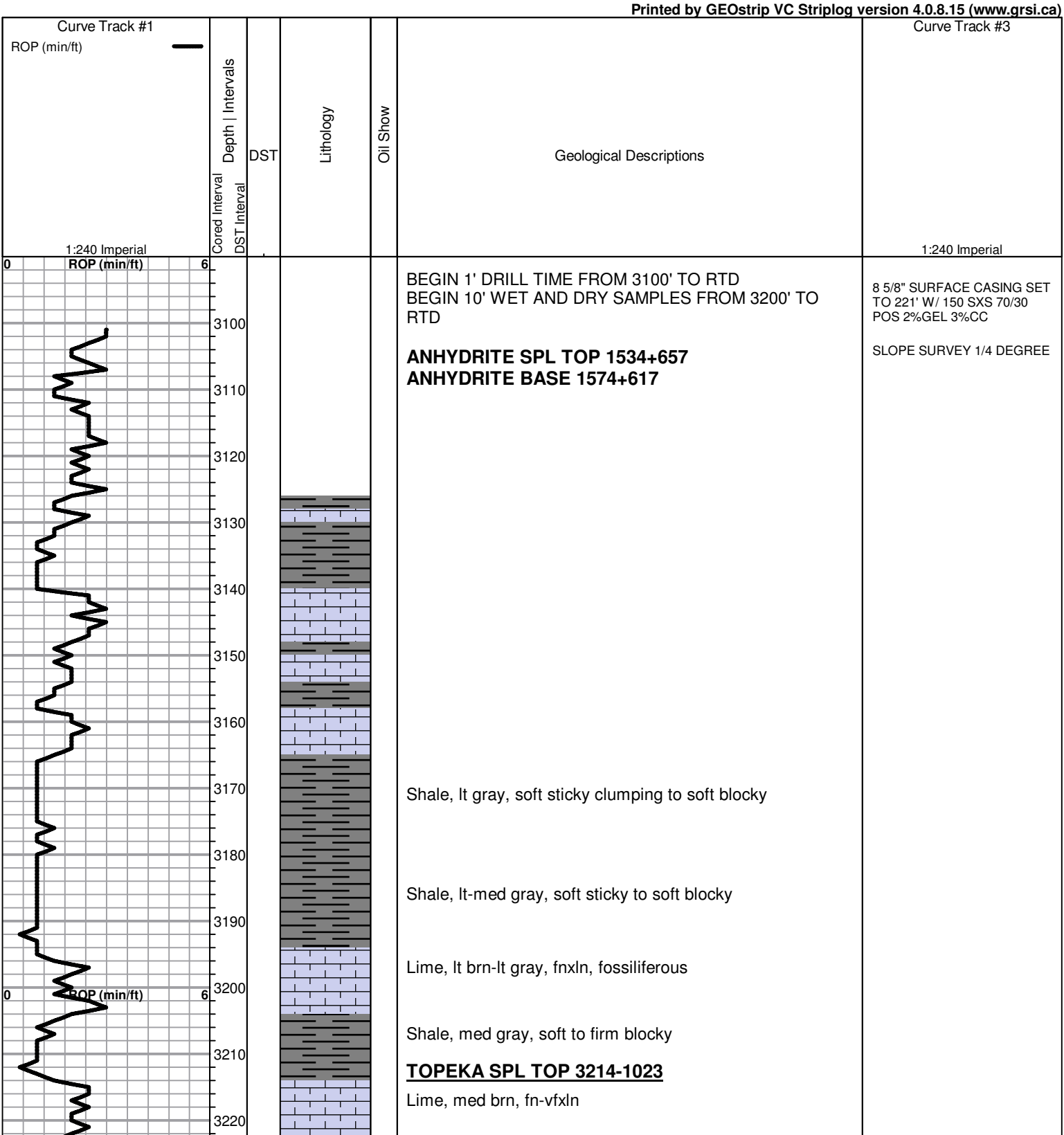
MINERAL

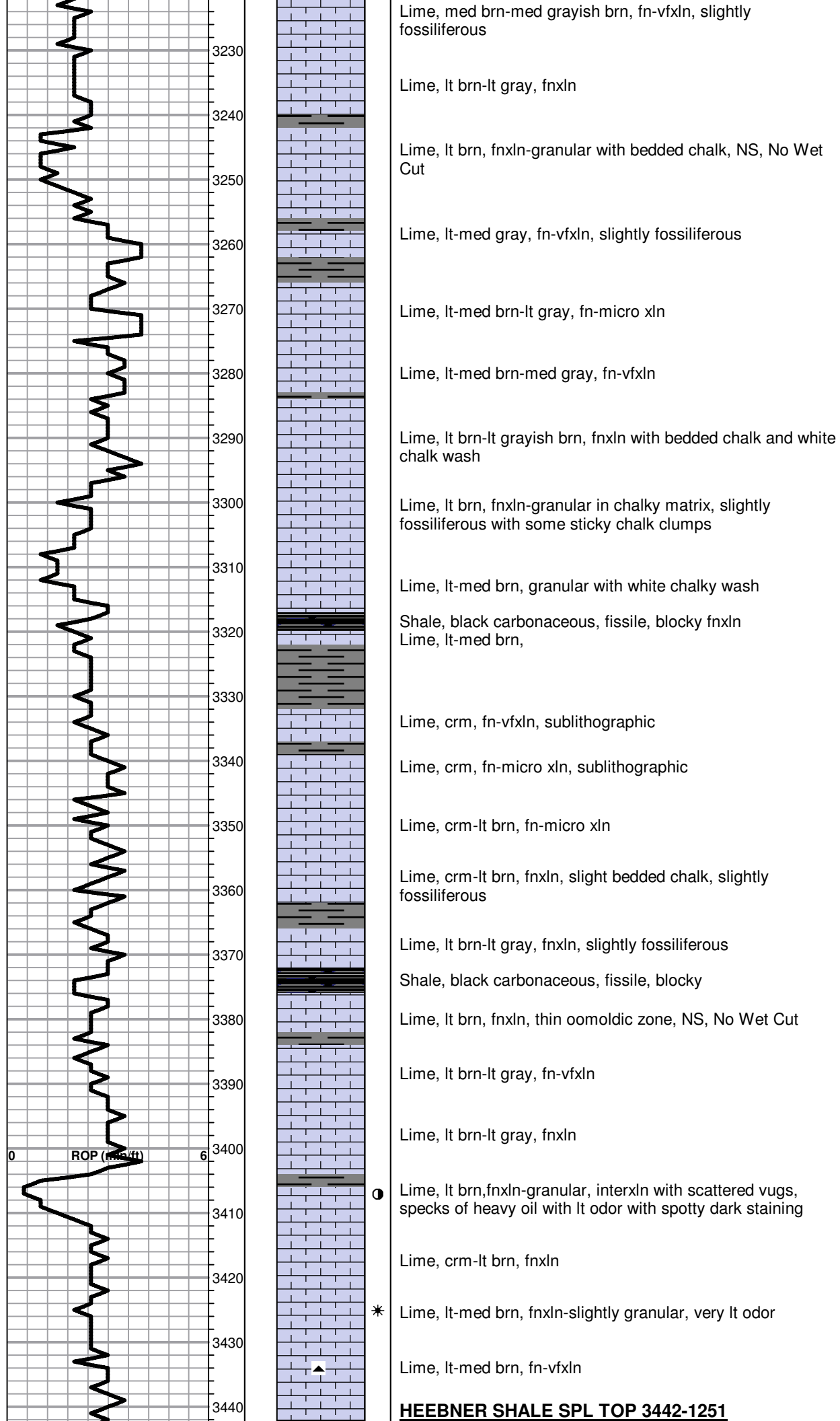
FOSSIL

▲ Chert, dark

○ Oolite

⚙ Oomoldic





HEEBNER SHALE SPL TOP 3442-1251

