Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1134236

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 # 34715
Name: Dorado E&P Partners, LLC
Address 1: 1401 17TH ST., STE 1500
Address 2:
City: DENVER State: CO Zip: 80202 + ____
Contact Person: Tina Miller
Phone: ( 720 ) 402-3693
CONTRACTOR: License # 5929
Name: Duke Drilling Co., Inc.
Wellsite Geologist: Hembros Hydrocarbons
Purchaser: NCRA / West Wichita Gas Gathering

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 #:

| 03/05/2013 | 03/17/2013 | 5/4/2013 |
|---|---|---|
| Spud Date or Recompletion Date | Date Reached TD | Completion Date or Recompletion Date |

API No. 15 - 15-155-21644-01-00
Spot Description:
S2 - S2 - SW - SE Sec. 29 Twp. 24 S. R. 9 ☐ East ☑ West
180 Feet from ☐ North / ☑ South Line of Section
1980 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: Reno
Lease Name: Fesler Well #: 24-9-29 1H
Field Name:
Producing Formation: Mississippian
Elevation: Ground: 1710 Kelly Bushing: 1717
Total Vertical Depth: 8496 Plug Back Total Depth: 8458
Amount of Surface Pipe Set and Cemented at: 250 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: 49000 ppm Fluid volume: 2960 bbls
Dewatering method used: Hauled to Disposal
Location of fluid disposal if hauled offsite:
Operator Name: Dorado E&P Partners, LLC
Lease Name: Dealy SWD 2-31 License #: 34715
Quarter NE Sec. 31 Twp. 24 S. R. 9 ☐ East ☑ West
County: Reno Permit #: D.31428.0

**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: 06/10/2013
☑ **Confidential Release Date:** 06/10/2015
☐ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
**ALT** ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 06/11/2013

1134236

Operator Name: Dorado E&P Partners, LLC Lease Name: Fesler Well #: 24-9-29 1H

Sec. 29 Twp. 24 S. R. 9 ☐ East ☑ West County: Reno

**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:

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

| Name | Top | Datum |
|---|---|---|
| Lansing | 3361'MD, 3356'TVD | -1639 |
| Stark | 3665'MD, 3634'TVD | -1917 |
| Cherokee | 3967'MD, 3817'TVD | -2100 |
| Mississippian | 4065'MD, 3851'TVD | -2134 |

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 | 12.25 | 9.625 | 36 | 250 | Common | 305 | |
| Production | 8.75 | 7 | 26 | 4192 | A Con | 160 | |
| Liner | 6.125 | 4.5 | 11.6 | 8463 | Class H | 530 | |

ADDITIONAL CEMENTING / SQUEEZE RECORD

| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|
| ___ Perforate<br>___ Protect Casing<br>___ Plug Back TD<br>___ 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 |
|---|---|---|---|
| Attached | Attached | Attached | Attached |
| | | | |
| | | | |
| | | | |
| | | | |

TUBING RECORD: Size: 4.5 Set At: 8463 Packer At:

Liner Run: ☑ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. 05/04/2013

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

| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|---|---|---|---|---|---|
| | 240 | 361 | 3442 | 1507 | 35 |

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: 4120-8350

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

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Dorado E&P Partners, LLC |
| Well Name | Fesler 24-9-29 1H |
| Doc ID | 1134236 |

Perforations

| Shots Per Foot | Perforation Record | Material Record | Depth |
|---|---|---|---|
| 4 | STG 1, 4 2' CLUSTERS, 36 SHOTS TOTAL | 333207 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 8150-8352 |
| 4 | STG 2, 4 2' CLUSTERS, 32 SHOTS TOTAL | 342484 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24600# 20/40 SLC, 122480# 30/50 PREM WHT | 7770-8040 |
| 4 | STG 3, 4 2' CLUSTERS, 32 SHOTS TOTAL | 339781 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 7405-7677 |
| 4 | STG 4, 4 2' CLUSTERS, 32 SHOTS TOTAL | 337155 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 22150# 20/40 SLC, 122500# 30/50 PREM WHT | 7040-7312 |
| 4 | STG 5, 4 2' CLUSTERS, 32 SHOTS TOTAL | 337177 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 6675-6947 |

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Dorado E&P Partners, LLC |
| Well Name | Fesler 24-9-29 1H |
| Doc ID | 1134236 |

Perforations

| Shots Per Foot | Perforation Record | Material Record | Depth |
|---|---|---|---|
| 4 | STG 6, 4 2' CLUSTERS, 32 SHOTS TOTAL | 332004 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 6310-6582 |
| 4 | STG 7, 4 2' CLUSTERS, 32 SHOTS TOTAL | 339629 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 5940-6217 |
| 4 | STG 8, 4 2' CLUSTERS, 32 SHOTS TOTAL | 331730 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 5580-5852 |
| 4 | STG 9, 4 2' CLUSTERS, 32 SHOTS TOTAL | 331136 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 5215-5487 |
| 4 | STG 10, 4 2' CLUSTERS, 32 SHOTS TOTAL | 330993 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 4856-5122 |

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | Dorado E&P Partners, LLC |
| Well Name | Fesler 24-9-29 1H |
| Doc ID | 1134236 |

Perforations

| Shots Per Foot | Perforation Record | Material Record | Depth |
|---|---|---|---|
| 4 | STG 11, 4 2' CLUSTERS, 32 SHOTS TOTAL | 331599 GAL CLEAN FLUID, 2500 GAL 15% FE ACID, 24000# 20/40 SLC, 122500# 30/50 PREM WHT | 4482-4744 |
| 4 | STG 12, 4 2' CLUSTERS, 32 SHOTS TOTAL | 340483 GAL CLEAN FLUID, 2517 GAL 15% FE ACID, 27050# 20/40 SLC, 122500# 30/50 PREM WHT | 4120-4392 |

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/



May 20, 2013

Tina Miller
Dorado E&P Partners, LLC
1401 17TH ST., STE 1500
DENVER, CO 80202

Re: ACO1
API 15-155-21644-01-00
Fesler 24-9-29 1H
SE/4 Sec.29-24S-09W
Reno County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 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,
Tina Miller

# BASIC energy services, L.P.

## TREATMENT REPORT

| | | | | | |
|---|---|---|---|---|---|
| Customer: DORADO E&P PARTNERS LLC | | Lease No. | | Date: 3-5-2013 | |
| Lease: FESLER 24-9-29 | Well #: 1H | | | | |
| Field Order #: 17620 | Station: PRATT, KS. | Casing: 9 5/8" | Depth | County: RENO | State: KS. |
| Type Job: CNW - 9 5/8" S.P. | | Formation: TD - 2600' | | Legal Description: 29-24S-9W | |

| PIPE DATA | | PERFORATING DATA | | FLUID USED | TREATMENT RESUME .0773 | | |
|---|---|---|---|---|---|---|---|
| Casing Size: 9 7/8 x 36 | Tubing Size | Shots/Ft | CMT - | Acid: 180 SKS. COMMON | RATE | PRESS | ISIP |
| Depth: 252' | Depth | From | To | Pre Pad: @1.20 CUFT³ | Max: 81 = | 42.14' | 5 Min. |
| Volume: 19.47 BBL | Volume | From | To | Pad | Min | | 10 Min. |
| Max Press: 500 | Max Press | From | To | Frac | Avg | | 15 Min. |
| Well Connection: P.C. | Annulus Vol. | From | To | | HHP Used | | Annulus Pressure |
| Plug Depth: 209.06' | Packer Depth | From | To | Flush: 16.2 BBL | Gas Volume | | Total Load |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Customer Representative: JAMES FLOD | | Station Manager: D. SCOTT | | | | | Treater | | | | |
| Service Units | 37586 | 19889 | 19843 | 19960 | 21010 | 70959 | 19918 | | | | |
| Driver Names | LESLEY | MARQUEZ | — | GIBSON | — | PHYE | | | | | |

| Time | Casing Pressure | Tubing Pressure | Bbls. Pumped | Rate | Service Log |
|---|---|---|---|---|---|
| 9:30AM | | | | | ON LOCATION - SAFETY MEETING |
| 1:00PM | | | | | RUN 6 JTS. 9 5/8" x 36# CSG. |
| | | | | | CENT. - 1, 3, 5 |
| 1:40PM | | | | | CSG. ON BOTTOM |
| 1:50PM | | | | | HOOKUP TO CSG. / BREAK CIRC. W/ RIG |
| 2:10PM | 200 | | 5 | 6 | H20 AHEAD |
| 2:14PM | 75 | | 38.5 | 6 | MIX 180 SKS. COMMON @ 15.6#/GAL |
| 2:20PM | | | | | DROP T.R. PLUG |
| 2:25PM | 0 | | 0 | 4 | START DISPLACEMENT |
| 2:27PM | 100 | | 10 | 2 | SLOW RATE |
| 2:30PM | 350 | | 16.2 | 2 | PLUG DOWN - HELD |
| | | | | | CIRC. THRU JOB |
| | | | | | CIRC. 10 BBL CMT TO PIT |
| | | | | | |
| | | | | | JOB COMPLETE - |
| | | | | | THANKS - |
| | | | | | KEVEN LESLEY |
| 8:30PM | | | | | ON LOC. - SAFETY MEETING |
| | | | | | RUN 4 JTS. 1" |
| 9:45PM | | | 26.5 | 2 | MIX 85 SKS. COMMON @ 15.6 PPG |
| 10:00PM | | | | | CMT. TO SURFACE / HELD |

# BASiC energy services, L.P.

## TREATMENT REPORT

| | | | | | |
|---|---|---|---|---|---|
| Customer EL DORADO E&P PARTNERS, LLC | Lease No. | | | Date 3-13-2013 | |
| Lease FESLER 24-9-29 | Well # 1H | | | | |
| Field Order # 016023 | Station PRATT, KS. | Casing 7" | Depth | County RENO | State KS. |
| Type Job CNW - 7" INTERMEDIATE | | Formation ~~TD~~ = 4193' | | Legal Description 24-24S-9W | |

| PIPE DATA | | PERFORATING DATA | | FLUID USED | TREATMENT RESUME | | |
|---|---|---|---|---|---|---|---|
| Casing Size 7" x 26# | Tubing Size | Shots/Ft | CMT - | Acid 135SK. A-CON | RATE | PRESS | ISIP |
| Depth 2116' | Depth | From | To | Pre-Pad @ 3.16 CUFT³ | Max S1 = | 412.15' | 5 Min. |
| Volume 1.59.23BBL | Volume | From | CMT - | Pad 160SK. AA2 | Min | | 10 Min. |
| Max Press 1500 | Max Press | From | To | Frac @ 1.36 CUFT³ | Avg | | 15 Min. |
| Well Connection T.C. | Annulus Vol. | From | To | | HHP Used | | Annulus Pressure |
| Plug Depth 4188.35' | Packer Depth | From | To | Flush 158.6 BBL | Gas Volume | | Total Load |

Customer Representative LEONARD | Station Manager D. SCOTT | Treater K. LESLEY

| Service Units | 37586 | 19959 | 19843 | 19826 | 19860 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Driver Names | LESLEY | NELSON | — | LAWRENCE | — | | | | | | |

| Time | Casing Pressure | Tubing Pressure | Bbls. Pumped | Rate | Service Log |
|---|---|---|---|---|---|
| 4:30 AM | | | | | ON LOCATION - SAFETY MEETING |
| 8:15AM | | | | | HOOK UP TO 7" x 26# CSG. |
| 8:30AM | | | | | BREAK CIRC. W/RIG PUMP. |
| 9:15AM | 300 | | 12 | 6 | MUD FLUSH |
| 9:21AM | 300 | | 5 | 6 | H20 SPACER |
| 9:22AM | 200 | | 76 | 6 | MIX 135 SKS. A-CON @ 11.2 PPG |
| 9:34AM | 100 | | 39 | 6 | MIX 160 SKS. AA2 @ 15.3 PPG |
| 9:40AM | | | | | CLEAR PUMP & LINE/DROP T.R. PLUG |
| 9:45AM | 0 | | 0 | 6 | START DISPLACEMENT |
| 10:00AM | 500 | | 97 | 5 | LIFT PRESSURE |
| 10:12AM | 800 | | 150 | 2 | SLOW RATE |
| 10:15AM | 1100 | | 158.6 | 2. | PLUG DOWN - HELD |
| | | | | | CIRC. THRU. JOB |
| | | | | | JOB COMPLETE. |
| | | | | | THANKS - |
| | | | | | KEVEN/LESLEY |



Taylor Printing, Inc. 620-672-3656

# BASIC energy services, L.P.

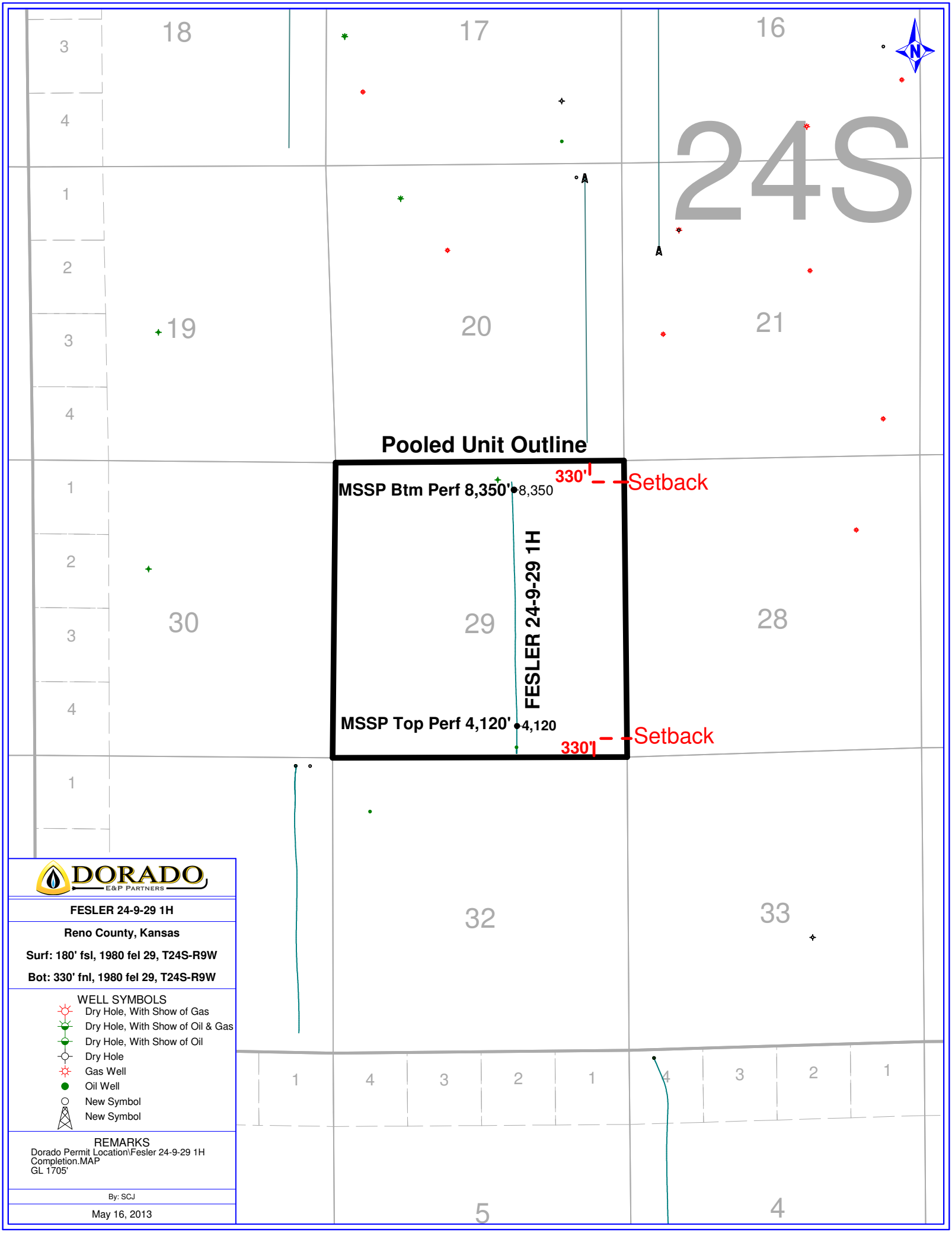
## TREATMENT REPORT

| | | | |
|---|---|---|---|
| Customer: Dorado E&P Partners, LLC | Lease No.: | Date: 3-19-13 | |
| Lease: Fesler 24-9-29 | Well #: 1H | | |
| Field Order #: 6,066 | Station: Pratt, Kansas | Casing: 4.5 11.6Lb | Depth: 8,465Feet |
| County: Reno | State: Kansas | | |
| Type Job: C.N.W. - Longstring | Formation: | Legal Description: 29-24S-9W | |

| PIPE DATA | | PERFORATING DATA | | USED | TREATMENT RESUME | | |
|---|---|---|---|---|---|---|---|
| Casing Size: 4½ 11.6Lb/Ft. | Tubing Size: | Shots/Ft: | | 530 sacks Premium Cement with .75% Friction Reducer, | RATE | PRESS | ISIP |
| Depth: 5103.38Feet | Depth | From | To .25% Defoamer, .1% Free | Max: Water control, 10% Salt | | 5 Min. | |
| Volume: 79.31 Bbl | Volume | From | To | 15.6 Lb. 1 Gal. | Min: 5.43 Gal. 1.1% F., 1.24 CU. FT. 15% | | 10 Min. |
| Max Press: 3000 P.S.I. | Max Press | From | To | | Avg | | 15 Min. |
| Well Connection: 2 1502 Thread | Annulus Vol. | From | To | | HHP Used | | Annulus Pressure |
| Plug Depth: 8465Feet | Packer Depth | From | To | Flush 111.02 Bbl. 2% KCL | Gas Volume | | Total Load |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Customer Representative: Eric Giles | | Station Manager: David Scott | | | Treater: Clarence R. Messick | | |
| Service Units | 37,216 | 19,903 | 19,905 | 77,686 | 73,768 | 19,826 | 19,860 |
| Driver Names | Messick | Mattal | | Young | | Lawrence | |

| Time PM | Casing Pressure | Tubing Pressure | Bbls. Pumped | Rate | Service Log |
|---|---|---|---|---|---|
| 12:30 | | | | | Trucks on location and hold safety meeting. |
| | | | | | Liner being run upon arrival. |
| 3:00 | | | | | Liner in well. Circulate with Drilling rig. |
| | | | | | Hook up to Weatherford Plug Container. |
| 4:42 | | 4,000 | | | Shut in well. Pressure Test. Open well. |
| 4:48 | 800 | | | 5 | Start mud Flush. |
| | 800 | | 12 | 5 | Start Freshwater spacer. |
| 4:53 | 600 | | 17 | 5 | Start mixing 15 sacks scavenger cement. |
| | | | 20 | 5 | Start mixing 515 sacks premium cement. |
| 5:18 | -0- | | 134 | | Stop pumping. Shut in well. Wash pump and lines |
| | | | | | with sugar water. Release Drill Pipe plug. Open Well. |
| 5:28 | 800 | | | 5 | Start 2% KCL Displacement with Sugar in 1st 10 Bbl. |
| 5:41 | 1,200 | | | 5 | Land Drill Pipe plug. Release Liner Plug. |
| 5:52 | 900 | | 111 | | Plug down. |
| | | | | | Open release Float held. |
| 5:55 | 3,000 | | | | Burst Bottom plug. |
| | | | | | Release Drill pipe from liner. Pull up to 1st Joint. |
| 6:02 | 1,000 | | | 6 | Circulate well Clean. |
| | | | 150 | | Wash up pump truck. |
| 7:15 | | | | | Job Complete. |
| | | | | | Thank You. |
| | | | | | Clarence, Mike, Steve, Mike |




PETRA 5/16/2013 5:04:30 PM

# DORADO E&P PARTNERS

**RENO COUNTY, KANSAS (NAD 27)**
**SE 1/4 SECTION 29 T24S R9W**
**FESLER 24-9-29 1H**
**JOB # 2009-159**

**24 April, 2013**

**Survey: FINAL SURVEYS**

Project: RENO COUNTY, KANSAS (NAD 27)
Site: SE 1/4 SECTION 29 T24S R9W
Well: FESLER 24-9-29 1H
Wellbore: JOB # 2009-159
Design: FINAL SURVEYS

**ANNOTATIONS**

| TVD | MD | Inc | Azi | +N/-S | +E/-W | VSect | Dep | Annotation |
|---|---|---|---|---|---|---|---|---|
| 250.0 | 250.0 | 0.33 | 50.10 | 0.5 | 0.5 | 0.5 | 0.9 | SURFACE CASING |
| 3349.6 | 3355.0 | 1.91 | 11.68 | -108.4 | 1.0 | -108.4 | 118.4 | KOP |
| 3813.8 | 3958.0 | 66.08 | 3.13 | 226.6 | 6.3 | 226.6 | 453.7 | BEGIN TANGENT |
| 3825.5 | 3988.0 | 67.66 | 0.19 | 254.2 | 7.3 | 254.2 | 481.3 | END TANGENT |
| 3869.5 | 4215.0 | 90.35 | 359.34 | 475.1 | 9.9 | 475.1 | 702.2 | HZ LANDING POINT |
| 3883.0 | 8496.0 | 89.43 | 357.05 | 4754.7 | -50.4 | 4754.7 | 4982.9 | EXTRAPOLATION TO TD |

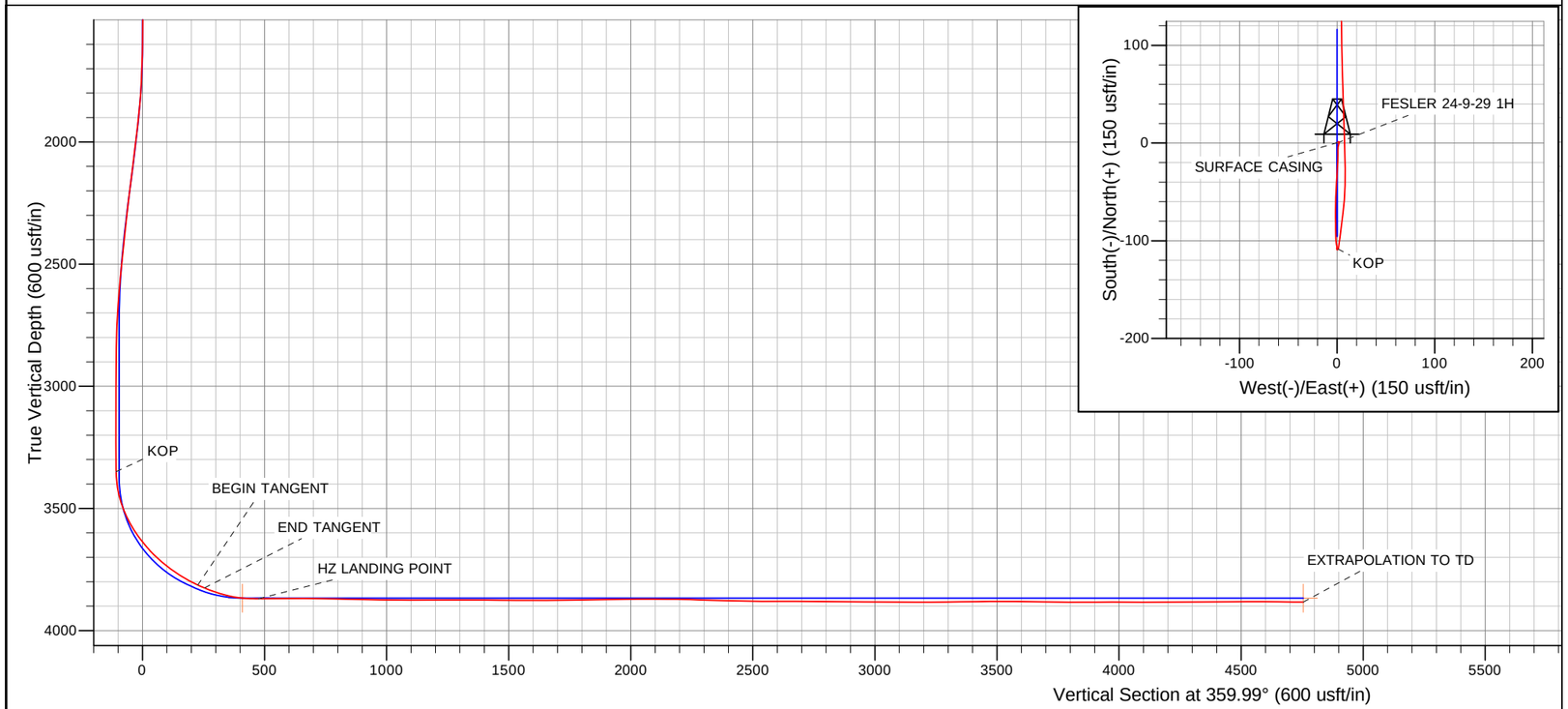
T M

Azimuths to True North
Magnetic North: 4.70°

Magnetic Field
Strength: 52211.0snT
Dip Angle: 65.87°
Date: 07/02/2013
Model: IGRF2010

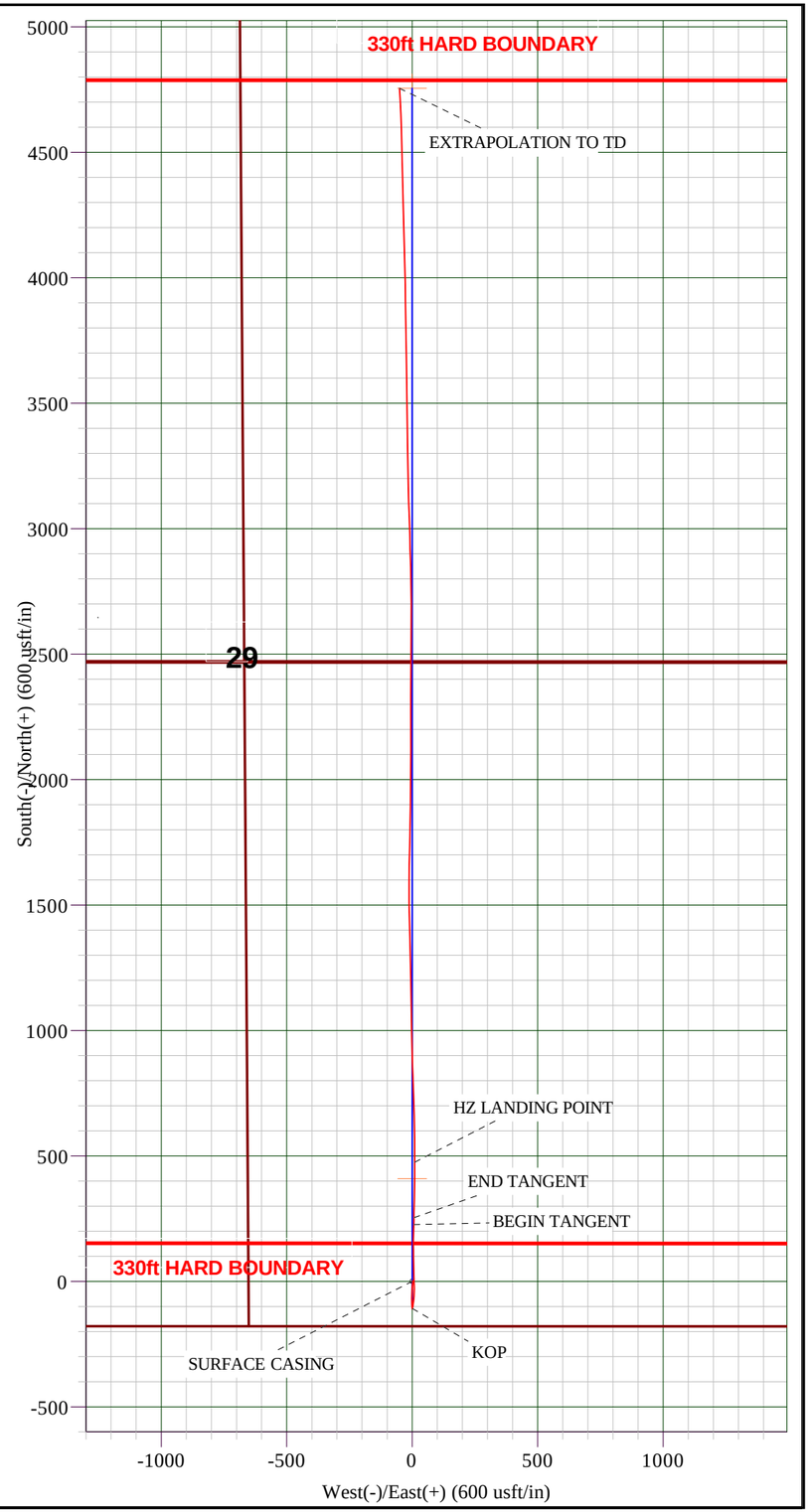
**PROPOSED LOCAL COORDINATES:**
**SURF (SEC.29) 180' FSL 1980' FEL**
**HZ LANDING PNT (SEC 29) 589.2' FSL 1980' FEL**
**BHL (SEC 29) 360' FNL 1980' FEL**

**HARD BOUNDARIES:**
**BHL FALLS 30ft S of the 330ft HARD BOUNDARY**









| | | | |
|---|---|---|---|
| **Company:** | DORADO E&P PARTNERS | **Local Co-ordinate Reference:** | Well FESLER 24-9-29 1H |
| **Project:** | RENO COUNTY, KANSAS (NAD 27) | **TVD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Site:** | SE 1/4 SECTION 29 T24S R9W | **MD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Well:** | FESLER 24-9-29 1H | **North Reference:** | True |
| **Wellbore:** | JOB # 2009-159 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | FINAL SURVEYS | **Database:** | EDM 5000.1 Single User Db |

**Project** RENO COUNTY, KANSAS (NAD 27)

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Kansas South 1502 | | Using geodetic scale factor |

**Site** SE 1/4 SECTION 29 T24S R9W

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 458,800.98 usft | **Latitude:** | 37° 55' 35.737 N |
| **From:** | Lat/Long | **Easting:** | 2,048,425.26 usft | **Longitude:** | 98° 19' 55.606 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.10 ° |

**Well** FESLER 24-9-29 1H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 458,800.98 usft | **Latitude:** | 37° 55' 35.737 N |
| | **+E/-W** | 0.0 usft | **Easting:** | 2,048,425.26 usft | **Longitude:** | 98° 19' 55.606 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | usft | **Ground Level:** | 1,705.0 usft |

**Wellbore** JOB # 2009-159

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 07/02/2013 | 4.70 | 65.87 | 52,211 |

**Design** FINAL SURVEYS

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | 1.0 | **Phase:** | ACTUAL | **Tie On Depth:** | 0.0 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 359.99 |

**Survey Program** **Date** 24/04/2013

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 306.0 | 8,496.0 | FINAL SURVEYS (JOB # 2009-159) | MWD | MWD - Standard |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Subsea Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 1,717.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **SURFACE CASING** | | | | | | | | | | |
| ***250.0*** | ***0.33*** | ***50.10*** | ***250.0*** | ***1,467.0*** | ***0.5*** | ***0.5*** | ***0.5*** | ***0.13*** | ***0.13*** | ***0.00*** |
| 306.0 | 0.40 | 50.10 | 306.0 | 1,411.0 | 0.7 | 0.8 | 0.7 | 0.13 | 0.13 | 0.00 |
| 462.0 | 0.10 | 299.50 | 462.0 | 1,255.0 | 1.1 | 1.1 | 1.1 | 0.29 | -0.19 | -70.90 |
| 649.0 | 0.10 | 25.35 | 649.0 | 1,068.0 | 1.3 | 1.0 | 1.3 | 0.07 | 0.00 | 45.91 |
| 836.0 | 0.18 | 137.85 | 836.0 | 881.0 | 1.3 | 1.3 | 1.3 | 0.13 | 0.04 | 60.16 |
| 1,022.0 | 0.22 | 305.11 | 1,022.0 | 695.0 | 1.2 | 1.2 | 1.2 | 0.21 | 0.02 | 89.92 |
| 1,208.0 | 0.48 | 94.70 | 1,208.0 | 509.0 | 1.4 | 1.7 | 1.4 | 0.37 | 0.14 | 80.42 |
| 1,394.0 | 0.22 | 221.50 | 1,394.0 | 323.0 | 1.1 | 2.2 | 1.1 | 0.34 | -0.14 | 68.17 |
| 1,610.0 | 0.44 | 184.79 | 1,610.0 | 107.0 | -0.1 | 1.9 | -0.1 | 0.14 | 0.10 | -17.00 |
| 1,672.0 | 2.07 | 194.37 | 1,672.0 | 45.0 | -1.4 | 1.6 | -1.4 | 2.64 | 2.63 | 15.45 |
| 1,734.0 | 2.59 | 190.32 | 1,733.9 | -16.9 | -3.9 | 1.1 | -3.9 | 0.88 | 0.84 | -6.53 |

| | | | |
|---|---|---|---|
| **Company:** | DORADO E&P PARTNERS | **Local Co-ordinate Reference:** | Well FESLER 24-9-29 1H |
| **Project:** | RENO COUNTY, KANSAS (NAD 27) | **TVD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Site:** | SE 1/4 SECTION 29 T24S R9W | **MD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Well:** | FESLER 24-9-29 1H | **North Reference:** | True |
| **Wellbore:** | JOB # 2009-159 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | FINAL SURVEYS | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Subsea Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,796.0 | 3.56 | 180.39 | 1,795.8 | -78.8 | -7.2 | 0.8 | -7.2 | 1.78 | 1.56 | -16.02 |
| 1,858.0 | 5.49 | 178.99 | 1,857.6 | -140.6 | -12.1 | 0.8 | -12.1 | 3.12 | 3.11 | -2.26 |
| 1,920.0 | 6.55 | 182.59 | 1,919.3 | -202.3 | -18.6 | 0.7 | -18.6 | 1.81 | 1.71 | 5.81 |
| 1,982.0 | 6.99 | 185.05 | 1,980.9 | -263.9 | -25.8 | 0.2 | -25.8 | 0.85 | 0.71 | 3.97 |
| 2,043.0 | 6.28 | 182.85 | 2,041.5 | -324.5 | -32.9 | -0.2 | -32.9 | 1.24 | -1.16 | -3.61 |
| 2,105.0 | 7.16 | 183.29 | 2,103.0 | -386.0 | -40.1 | -0.6 | -40.1 | 1.42 | 1.42 | 0.71 |
| 2,167.0 | 7.25 | 183.82 | 2,164.5 | -447.5 | -47.9 | -1.1 | -47.9 | 0.18 | 0.15 | 0.85 |
| 2,229.0 | 6.90 | 180.39 | 2,226.1 | -509.1 | -55.5 | -1.4 | -55.5 | 0.88 | -0.56 | -5.53 |
| 2,290.0 | 6.68 | 180.74 | 2,286.6 | -569.6 | -62.7 | -1.5 | -62.7 | 0.37 | -0.36 | 0.57 |
| 2,352.0 | 6.15 | 181.71 | 2,348.2 | -631.2 | -69.6 | -1.6 | -69.6 | 0.87 | -0.85 | 1.56 |
| 2,414.0 | 6.20 | 178.99 | 2,409.9 | -692.9 | -76.3 | -1.7 | -76.3 | 0.48 | 0.08 | -4.39 |
| 2,476.0 | 5.41 | 178.81 | 2,471.6 | -754.6 | -82.6 | -1.5 | -82.6 | 1.27 | -1.27 | -0.29 |
| 2,538.0 | 5.58 | 179.95 | 2,533.3 | -816.3 | -88.5 | -1.5 | -88.5 | 0.33 | 0.27 | 1.84 |
| 2,600.0 | 5.23 | 178.46 | 2,595.0 | -878.0 | -94.4 | -1.4 | -94.4 | 0.61 | -0.56 | -2.40 |
| 2,661.0 | 4.13 | 176.00 | 2,655.8 | -938.8 | -99.3 | -1.2 | -99.3 | 1.83 | -1.80 | -4.03 |
| 2,723.0 | 3.25 | 171.08 | 2,717.7 | -1,000.7 | -103.3 | -0.7 | -103.3 | 1.51 | -1.42 | -7.94 |
| 2,785.0 | 1.54 | 171.34 | 2,779.6 | -1,062.6 | -105.9 | -0.3 | -105.9 | 2.76 | -2.76 | 0.42 |
| 2,847.0 | 1.05 | 191.91 | 2,841.6 | -1,124.6 | -107.2 | -0.3 | -107.2 | 1.08 | -0.79 | 33.18 |
| 2,909.0 | 0.40 | 165.89 | 2,903.6 | -1,186.6 | -108.0 | -0.4 | -108.0 | 1.15 | -1.05 | -41.97 |
| 2,971.0 | 0.62 | 168.53 | 2,965.6 | -1,248.6 | -108.5 | -0.3 | -108.5 | 0.36 | 0.35 | 4.26 |
| 3,032.0 | 0.66 | 154.20 | 3,026.6 | -1,309.6 | -109.2 | -0.1 | -109.2 | 0.27 | 0.07 | -23.49 |
| 3,094.0 | 0.26 | 10.32 | 3,088.6 | -1,371.6 | -109.4 | 0.1 | -109.4 | 1.42 | -0.65 | -232.06 |
| 3,156.0 | 0.18 | 41.44 | 3,150.6 | -1,433.6 | -109.1 | 0.2 | -109.1 | 0.23 | -0.13 | 50.19 |
| 3,218.0 | 0.31 | 52.95 | 3,212.6 | -1,495.6 | -109.0 | 0.4 | -109.0 | 0.22 | 0.21 | 18.56 |
| 3,280.0 | 0.22 | 94.70 | 3,274.6 | -1,557.6 | -108.9 | 0.7 | -108.9 | 0.33 | -0.15 | 67.34 |
| 3,311.0 | 0.48 | 73.87 | 3,305.6 | -1,588.6 | -108.9 | 0.8 | -108.9 | 0.92 | 0.84 | -67.19 |
| 3,344.0 | 0.62 | 3.82 | 3,338.6 | -1,621.6 | -108.6 | 1.0 | -108.6 | 1.94 | 0.42 | -212.27 |
| **KOP** | | | | | | | | | | |
| ***3,355.0*** | ***1.91*** | ***11.68*** | ***3,349.6*** | ***-1,632.6*** | ***-108.4*** | ***1.0*** | ***-108.4*** | ***11.78*** | ***11.70*** | ***71.42*** |
| 3,375.0 | 4.26 | 13.75 | 3,369.6 | -1,652.6 | -107.3 | 1.3 | -107.3 | 11.78 | 11.77 | 10.37 |
| 3,406.0 | 7.21 | 8.74 | 3,400.4 | -1,683.4 | -104.3 | 1.8 | -104.3 | 9.64 | 9.52 | -16.16 |
| 3,437.0 | 11.25 | 7.78 | 3,431.0 | -1,714.0 | -99.4 | 2.5 | -99.4 | 13.04 | 13.03 | -3.10 |
| 3,468.0 | 15.82 | 6.19 | 3,461.1 | -1,744.1 | -92.2 | 3.4 | -92.2 | 14.79 | 14.74 | -5.13 |
| 3,499.0 | 19.95 | 7.51 | 3,490.6 | -1,773.6 | -82.7 | 4.6 | -82.7 | 13.39 | 13.32 | 4.26 |
| 3,530.0 | 23.20 | 7.34 | 3,519.4 | -1,802.4 | -71.4 | 6.0 | -71.4 | 10.49 | 10.48 | -0.55 |
| 3,561.0 | 27.29 | 4.35 | 3,547.5 | -1,830.5 | -58.3 | 7.4 | -58.3 | 13.82 | 13.19 | -9.65 |
| 3,592.0 | 30.37 | 1.89 | 3,574.6 | -1,857.6 | -43.4 | 8.1 | -43.4 | 10.65 | 9.94 | -7.94 |
| 3,624.0 | 34.19 | 358.64 | 3,601.7 | -1,884.7 | -26.3 | 8.2 | -26.3 | 13.11 | 11.94 | -10.16 |
| 3,655.0 | 38.94 | 358.28 | 3,626.6 | -1,909.6 | -7.8 | 7.7 | -7.8 | 15.34 | 15.32 | -1.16 |
| 3,685.0 | 39.46 | 358.64 | 3,649.8 | -1,932.8 | 11.1 | 7.2 | 11.1 | 1.89 | 1.73 | 1.20 |
| 3,716.0 | 42.28 | 358.46 | 3,673.3 | -1,956.3 | 31.4 | 6.7 | 31.4 | 9.10 | 9.10 | -0.58 |
| 3,746.0 | 47.64 | 357.76 | 3,694.5 | -1,977.5 | 52.6 | 6.0 | 52.6 | 17.94 | 17.87 | -2.33 |
| 3,777.0 | 48.65 | 358.64 | 3,715.2 | -1,998.2 | 75.7 | 5.2 | 75.7 | 3.88 | 3.26 | 2.84 |
| 3,808.0 | 51.02 | 358.72 | 3,735.2 | -2,018.2 | 99.3 | 4.7 | 99.3 | 7.65 | 7.65 | 0.26 |
| 3,839.0 | 54.32 | 359.87 | 3,754.0 | -2,037.0 | 124.0 | 4.4 | 124.0 | 11.05 | 10.65 | 3.71 |
| 3,870.0 | 57.39 | 359.87 | 3,771.4 | -2,054.4 | 149.6 | 4.3 | 149.6 | 9.90 | 9.90 | 0.00 |
| 3,901.0 | 59.28 | 1.18 | 3,787.6 | -2,070.6 | 176.0 | 4.6 | 176.0 | 7.08 | 6.10 | 4.23 |
| 3,932.0 | 62.80 | 1.80 | 3,802.6 | -2,085.6 | 203.1 | 5.3 | 203.1 | 11.49 | 11.35 | 2.00 |
| **BEGIN TANGENT** | | | | | | | | | | |
| ***3,958.0*** | ***66.08*** | ***3.13*** | ***3,813.8*** | ***-2,096.8*** | ***226.6*** | ***6.3*** | ***226.6*** | ***13.43*** | ***12.61*** | ***5.12*** |
| 3,963.0 | 66.71 | 3.38 | 3,815.9 | -2,098.9 | 231.1 | 6.6 | 231.1 | 13.43 | 12.64 | 4.96 |
| **END TANGENT** | | | | | | | | | | |
| ***3,988.0*** | ***67.66*** | ***0.19*** | ***3,825.5*** | ***-2,108.5*** | ***254.2*** | ***7.3*** | ***254.2*** | ***12.37*** | ***3.81*** | ***-12.76*** |

| | | | |
|---|---|---|---|
| **Company:** | DORADO E&P PARTNERS | **Local Co-ordinate Reference:** | Well FESLER 24-9-29 1H |
| **Project:** | RENO COUNTY, KANSAS (NAD 27) | **TVD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Site:** | SE 1/4 SECTION 29 T24S R9W | **MD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Well:** | FESLER 24-9-29 1H | **North Reference:** | True |
| **Wellbore:** | JOB # 2009-159 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | FINAL SURVEYS | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Subsea Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 3,994.0 | 67.90 | 359.43 | 3,827.8 | -2,110.8 | 259.7 | 7.3 | 259.7 | 12.37 | 3.96 | -12.65 |
| 4,025.0 | 71.02 | 1.27 | 3,838.7 | -2,121.7 | 288.7 | 7.5 | 288.7 | 11.50 | 10.06 | 5.94 |
| 4,056.0 | 73.08 | 0.83 | 3,848.2 | -2,131.2 | 318.2 | 8.0 | 318.2 | 6.78 | 6.65 | -1.42 |
| 4,087.0 | 75.89 | 1.71 | 3,856.5 | -2,139.5 | 348.1 | 8.7 | 348.1 | 9.47 | 9.06 | 2.84 |
| 4,118.0 | 80.38 | 1.18 | 3,862.9 | -2,145.9 | 378.4 | 9.4 | 378.4 | 14.58 | 14.48 | -1.71 |
| 4,148.0 | 84.99 | 0.66 | 3,866.7 | -2,149.7 | 408.1 | 9.9 | 408.1 | 15.46 | 15.37 | -1.73 |
| **HZ LANDING POINT** | | | | | | | | | | |
| ***4,215.0*** | ***90.35*** | ***359.34*** | ***3,869.5*** | ***-2,152.5*** | ***475.1*** | ***9.9*** | ***475.1*** | ***8.24*** | ***8.00*** | ***-1.97*** |
| 4,246.0 | 90.57 | 0.40 | 3,869.2 | -2,152.2 | 506.1 | 9.8 | 506.1 | 3.49 | 0.71 | 3.42 |
| 4,277.0 | 90.62 | 359.51 | 3,868.9 | -2,151.9 | 537.1 | 9.8 | 537.1 | 2.88 | 0.16 | -2.87 |
| 4,339.0 | 89.91 | 359.16 | 3,868.6 | -2,151.6 | 599.1 | 9.1 | 599.1 | 1.28 | -1.15 | -0.56 |
| 4,401.0 | 90.40 | 358.72 | 3,868.4 | -2,151.4 | 661.0 | 7.9 | 661.0 | 1.06 | 0.79 | -0.71 |
| 4,463.0 | 88.51 | 358.02 | 3,869.0 | -2,152.0 | 723.0 | 6.2 | 723.0 | 3.25 | -3.05 | -1.13 |
| 4,525.0 | 88.73 | 358.37 | 3,870.5 | -2,153.5 | 785.0 | 4.2 | 785.0 | 0.67 | 0.35 | 0.56 |
| 4,587.0 | 88.90 | 358.02 | 3,871.8 | -2,154.8 | 846.9 | 2.3 | 846.9 | 0.63 | 0.27 | -0.56 |
| 4,649.0 | 89.03 | 357.93 | 3,872.9 | -2,155.9 | 908.9 | 0.1 | 908.9 | 0.26 | 0.21 | -0.15 |
| 4,711.0 | 88.81 | 358.28 | 3,874.1 | -2,157.1 | 970.8 | -2.0 | 970.8 | 0.67 | -0.35 | 0.56 |
| 4,773.0 | 89.25 | 0.04 | 3,875.1 | -2,158.1 | 1,032.8 | -2.9 | 1,032.8 | 2.93 | 0.71 | 2.84 |
| 4,835.0 | 90.48 | 358.72 | 3,875.3 | -2,158.3 | 1,094.8 | -3.6 | 1,094.8 | 2.91 | 1.98 | -2.13 |
| 4,896.0 | 90.62 | 359.25 | 3,874.7 | -2,157.7 | 1,155.8 | -4.6 | 1,155.8 | 0.90 | 0.23 | 0.87 |
| 4,958.0 | 90.00 | 358.72 | 3,874.4 | -2,157.4 | 1,217.8 | -5.7 | 1,217.8 | 1.32 | -1.00 | -0.85 |
| 5,020.0 | 89.96 | 358.72 | 3,874.4 | -2,157.4 | 1,279.8 | -7.1 | 1,279.8 | 0.06 | -0.06 | 0.00 |
| 5,082.0 | 89.74 | 358.55 | 3,874.5 | -2,157.5 | 1,341.7 | -8.6 | 1,341.7 | 0.45 | -0.35 | -0.27 |
| 5,144.0 | 89.65 | 358.64 | 3,874.9 | -2,157.9 | 1,403.7 | -10.1 | 1,403.7 | 0.21 | -0.15 | 0.15 |
| 5,205.0 | 89.17 | 358.37 | 3,875.5 | -2,158.5 | 1,464.7 | -11.7 | 1,464.7 | 0.90 | -0.79 | -0.44 |
| 5,271.0 | 89.30 | 359.51 | 3,876.4 | -2,159.4 | 1,530.7 | -12.9 | 1,530.7 | 1.74 | 0.20 | 1.73 |
| 5,333.0 | 90.62 | 0.74 | 3,876.4 | -2,159.4 | 1,592.7 | -12.8 | 1,592.7 | 2.91 | 2.13 | 1.98 |
| 5,395.0 | 90.26 | 0.92 | 3,875.9 | -2,158.9 | 1,654.7 | -11.9 | 1,654.7 | 0.65 | -0.58 | 0.29 |
| 5,457.0 | 89.87 | 1.36 | 3,875.9 | -2,158.9 | 1,716.7 | -10.7 | 1,716.7 | 0.95 | -0.63 | 0.71 |
| 5,519.0 | 91.23 | 1.18 | 3,875.3 | -2,158.3 | 1,778.6 | -9.3 | 1,778.6 | 2.21 | 2.19 | -0.29 |
| 5,581.0 | 91.41 | 1.01 | 3,873.9 | -2,156.9 | 1,840.6 | -8.1 | 1,840.6 | 0.40 | 0.29 | -0.27 |
| 5,644.0 | 91.19 | 1.01 | 3,872.4 | -2,155.4 | 1,903.6 | -7.0 | 1,903.6 | 0.35 | -0.35 | 0.00 |
| 5,707.0 | 90.66 | 1.10 | 3,871.4 | -2,154.4 | 1,966.6 | -5.8 | 1,966.6 | 0.85 | -0.84 | 0.14 |
| 5,769.0 | 90.31 | 359.69 | 3,870.9 | -2,153.9 | 2,028.6 | -5.4 | 2,028.6 | 2.34 | -0.56 | -2.27 |
| 5,830.0 | 89.52 | 359.95 | 3,871.0 | -2,154.0 | 2,089.6 | -5.6 | 2,089.6 | 1.36 | -1.30 | 0.43 |
| 5,892.0 | 89.74 | 0.13 | 3,871.4 | -2,154.4 | 2,151.6 | -5.6 | 2,151.6 | 0.46 | 0.35 | 0.29 |
| 5,953.0 | 88.68 | 0.13 | 3,872.2 | -2,155.2 | 2,212.6 | -5.4 | 2,212.6 | 1.74 | -1.74 | 0.00 |
| 5,984.0 | 88.51 | 359.95 | 3,873.0 | -2,156.0 | 2,243.5 | -5.4 | 2,243.5 | 0.80 | -0.55 | -0.58 |
| 6,015.0 | 88.29 | 0.13 | 3,873.8 | -2,156.8 | 2,274.5 | -5.4 | 2,274.5 | 0.92 | -0.71 | 0.58 |
| 6,046.0 | 87.89 | 359.95 | 3,874.9 | -2,157.9 | 2,305.5 | -5.3 | 2,305.5 | 1.41 | -1.29 | -0.58 |
| 6,076.0 | 87.67 | 359.78 | 3,876.0 | -2,159.0 | 2,335.5 | -5.4 | 2,335.5 | 0.93 | -0.73 | -0.57 |
| 6,107.0 | 88.46 | 0.22 | 3,877.1 | -2,160.1 | 2,366.5 | -5.4 | 2,366.5 | 2.92 | 2.55 | 1.42 |
| 6,138.0 | 89.17 | 0.66 | 3,877.7 | -2,160.7 | 2,397.5 | -5.2 | 2,397.5 | 2.69 | 2.29 | 1.42 |
| 6,169.0 | 89.03 | 0.31 | 3,878.2 | -2,161.2 | 2,428.5 | -4.9 | 2,428.5 | 1.22 | -0.45 | -1.13 |
| 6,230.0 | 88.46 | 0.22 | 3,879.5 | -2,162.5 | 2,489.4 | -4.6 | 2,489.4 | 0.95 | -0.93 | -0.15 |
| 6,292.0 | 90.22 | 0.66 | 3,880.3 | -2,163.3 | 2,551.4 | -4.2 | 2,551.4 | 2.93 | 2.84 | 0.71 |
| 6,353.0 | 90.00 | 0.39 | 3,880.1 | -2,163.1 | 2,612.4 | -3.6 | 2,612.4 | 0.57 | -0.36 | -0.44 |
| 6,415.0 | 89.96 | 359.60 | 3,880.2 | -2,163.2 | 2,674.4 | -3.6 | 2,674.4 | 1.28 | -0.06 | -1.27 |
| 6,476.0 | 89.60 | 359.43 | 3,880.4 | -2,163.4 | 2,735.4 | -4.1 | 2,735.4 | 0.65 | -0.59 | -0.28 |
| 6,537.0 | 89.47 | 358.72 | 3,880.9 | -2,163.9 | 2,796.4 | -5.1 | 2,796.4 | 1.18 | -0.21 | -1.16 |
| 6,599.0 | 89.30 | 358.55 | 3,881.6 | -2,164.6 | 2,858.4 | -6.6 | 2,858.4 | 0.39 | -0.27 | -0.27 |
| 6,661.0 | 89.17 | 358.46 | 3,882.4 | -2,165.4 | 2,920.4 | -8.2 | 2,920.4 | 0.26 | -0.21 | -0.15 |
| 6,722.0 | 90.26 | 358.64 | 3,882.7 | -2,165.7 | 2,981.4 | -9.7 | 2,981.4 | 1.81 | 1.79 | 0.30 |

| | | | |
|---|---|---|---|
| **Company:** | DORADO E&P PARTNERS | **Local Co-ordinate Reference:** | Well FESLER 24-9-29 1H |
| **Project:** | RENO COUNTY, KANSAS (NAD 27) | **TVD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Site:** | SE 1/4 SECTION 29 T24S R9W | **MD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Well:** | FESLER 24-9-29 1H | **North Reference:** | True |
| **Wellbore:** | JOB # 2009-159 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | FINAL SURVEYS | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Subsea Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 6,784.0 | 90.04 | 358.11 | 3,882.5 | -2,165.5 | 3,043.3 | -11.5 | 3,043.3 | 0.93 | -0.35 | -0.85 |
| 6,846.0 | 89.38 | 357.93 | 3,882.8 | -2,165.8 | 3,105.3 | -13.6 | 3,105.3 | 1.10 | -1.06 | -0.29 |
| 6,908.0 | 89.65 | 358.81 | 3,883.4 | -2,166.4 | 3,167.3 | -15.4 | 3,167.3 | 1.48 | 0.44 | 1.42 |
| 6,970.0 | 90.48 | 359.34 | 3,883.3 | -2,166.3 | 3,229.3 | -16.4 | 3,229.3 | 1.59 | 1.34 | 0.85 |
| 7,032.0 | 90.22 | 358.72 | 3,882.9 | -2,165.9 | 3,291.2 | -17.5 | 3,291.2 | 1.08 | -0.42 | -1.00 |
| 7,094.0 | 90.66 | 359.16 | 3,882.4 | -2,165.4 | 3,353.2 | -18.6 | 3,353.2 | 1.00 | 0.71 | 0.71 |
| 7,156.0 | 90.83 | 358.72 | 3,881.6 | -2,164.6 | 3,415.2 | -19.8 | 3,415.2 | 0.76 | 0.27 | -0.71 |
| 7,217.0 | 91.27 | 358.72 | 3,880.5 | -2,163.5 | 3,476.2 | -21.1 | 3,476.2 | 0.72 | 0.72 | 0.00 |
| 7,279.0 | 89.17 | 359.69 | 3,880.3 | -2,163.3 | 3,538.2 | -22.0 | 3,538.2 | 3.73 | -3.39 | 1.56 |
| 7,341.0 | 89.30 | 359.69 | 3,881.1 | -2,164.1 | 3,600.2 | -22.3 | 3,600.2 | 0.21 | 0.21 | 0.00 |
| 7,403.0 | 89.17 | 359.60 | 3,881.9 | -2,164.9 | 3,662.2 | -22.7 | 3,662.2 | 0.26 | -0.21 | -0.15 |
| 7,465.0 | 88.73 | 358.72 | 3,883.1 | -2,166.1 | 3,724.1 | -23.6 | 3,724.1 | 1.59 | -0.71 | -1.42 |
| 7,527.0 | 90.00 | 358.99 | 3,883.8 | -2,166.8 | 3,786.1 | -24.8 | 3,786.1 | 2.09 | 2.05 | 0.44 |
| 7,589.0 | 90.09 | 358.64 | 3,883.7 | -2,166.7 | 3,848.1 | -26.1 | 3,848.1 | 0.58 | 0.15 | -0.56 |
| 7,650.0 | 90.53 | 359.60 | 3,883.4 | -2,166.4 | 3,909.1 | -27.1 | 3,909.1 | 1.73 | 0.72 | 1.57 |
| 7,712.0 | 89.87 | 358.72 | 3,883.2 | -2,166.2 | 3,971.1 | -28.0 | 3,971.1 | 1.77 | -1.06 | -1.42 |
| 7,774.0 | 89.60 | 358.11 | 3,883.4 | -2,166.4 | 4,033.1 | -29.7 | 4,033.1 | 1.08 | -0.44 | -0.98 |
| 7,836.0 | 89.96 | 358.90 | 3,883.7 | -2,166.7 | 4,095.1 | -31.3 | 4,095.1 | 1.40 | 0.58 | 1.27 |
| 7,898.0 | 89.87 | 358.64 | 3,883.8 | -2,166.8 | 4,157.0 | -32.6 | 4,157.0 | 0.44 | -0.15 | -0.42 |
| 7,960.0 | 90.66 | 358.99 | 3,883.5 | -2,166.5 | 4,219.0 | -33.9 | 4,219.0 | 1.39 | 1.27 | 0.56 |
| 8,021.0 | 90.48 | 358.46 | 3,882.9 | -2,165.9 | 4,280.0 | -35.3 | 4,280.0 | 0.92 | -0.30 | -0.87 |
| 8,083.0 | 90.26 | 358.37 | 3,882.5 | -2,165.5 | 4,342.0 | -37.0 | 4,342.0 | 0.38 | -0.35 | -0.15 |
| 8,145.0 | 89.38 | 358.02 | 3,882.7 | -2,165.7 | 4,403.9 | -38.9 | 4,404.0 | 1.53 | -1.42 | -0.56 |
| 8,207.0 | 90.83 | 359.16 | 3,882.6 | -2,165.6 | 4,465.9 | -40.5 | 4,465.9 | 2.97 | 2.34 | 1.84 |
| 8,269.0 | 90.22 | 358.72 | 3,882.0 | -2,165.0 | 4,527.9 | -41.6 | 4,527.9 | 1.21 | -0.98 | -0.71 |
| 8,331.0 | 89.96 | 358.55 | 3,881.9 | -2,164.9 | 4,589.9 | -43.1 | 4,589.9 | 0.50 | -0.42 | -0.27 |
| 8,392.0 | 89.65 | 357.40 | 3,882.1 | -2,165.1 | 4,650.9 | -45.2 | 4,650.9 | 1.95 | -0.51 | -1.89 |
| 8,454.0 | 89.43 | 357.05 | 3,882.6 | -2,165.6 | 4,712.8 | -48.2 | 4,712.8 | 0.67 | -0.35 | -0.56 |
| **EXTRAPOLATION TO TD** | | | | | | | | | | |
| ***8,496.0*** | ***89.43*** | ***357.05*** | ***3,883.0*** | ***-2,166.0*** | ***4,754.7*** | ***-50.4*** | ***4,754.7*** | ***0.00*** | ***0.00*** | ***0.00*** |

| | | | |
|---|---|---|---|
| **Company:** | DORADO E&P PARTNERS | **Local Co-ordinate Reference:** | Well FESLER 24-9-29 1H |
| **Project:** | RENO COUNTY, KANSAS (NAD 27) | **TVD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Site:** | SE 1/4 SECTION 29 T24S R9W | **MD Reference:** | KB @ 1717.0usft (DUKE #20) |
| **Well:** | FESLER 24-9-29 1H | **North Reference:** | True |
| **Wellbore:** | JOB # 2009-159 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | FINAL SURVEYS | **Database:** | EDM 5000.1 Single User Db |

**Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| HZ LANDING POINT (P | 0.00 | 0.00 | 3,867.0 | 678.6 | -0.6 | 459,479.52 | 2,048,423.42 | 37° 55' 42.446 N | 98° 19' 55.614 W |
| - survey misses target center by 8.2usft at 4418.8usft MD (3868.4 TVD, 678.8 N, 7.5 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| HZ LANDING POINT (P: | 0.00 | 0.00 | 3,867.0 | 409.3 | -0.1 | 459,210.20 | 2,048,424.45 | 37° 55' 39.783 N | 98° 19' 55.607 W |
| - survey misses target center by 10.0usft at 4149.1usft MD (3866.8 TVD, 409.3 N, 9.9 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| HZ LANDING POINT (P: | 0.00 | 0.00 | 3,867.0 | 409.3 | -0.1 | 459,210.20 | 2,048,424.45 | 37° 55' 39.783 N | 98° 19' 55.607 W |
| - survey misses target center by 10.0usft at 4149.1usft MD (3866.8 TVD, 409.3 N, 9.9 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| HZ LANDING POINT (P: | 0.00 | 0.00 | 3,867.0 | 379.0 | -0.6 | 459,179.94 | 2,048,423.96 | 37° 55' 39.484 N | 98° 19' 55.614 W |
| - survey misses target center by 10.8usft at 4118.9usft MD (3863.1 TVD, 379.3 N, 9.4 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| BHL - FESLER 24-9-29 | 0.00 | 0.00 | 3,867.0 | 4,754.7 | -0.6 | 463,555.36 | 2,048,416.08 | 37° 56' 22.742 N | 98° 19' 55.614 W |
| - survey misses target center by 52.2usft at 8493.2usft MD (3883.0 TVD, 4752.0 N, -50.3 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| HZ LANDING POINT (P- | 0.00 | 0.00 | 3,867.0 | 409.3 | -0.1 | 459,210.20 | 2,048,424.45 | 37° 55' 39.783 N | 98° 19' 55.607 W |
| - survey misses target center by 10.0usft at 4149.1usft MD (3866.8 TVD, 409.3 N, 9.9 E) | | | | | | | | | |
| - Point | | | | | | | | | |

**Survey Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 250.0 | 250.0 | 0.5 | 0.5 | SURFACE CASING |
| 3,355.0 | 3,349.6 | -108.4 | 1.0 | KOP |
| 3,958.0 | 3,813.8 | 226.6 | 6.3 | BEGIN TANGENT |
| 3,988.0 | 3,825.5 | 254.2 | 7.3 | END TANGENT |
| 4,215.0 | 3,869.5 | 475.1 | 9.9 | HZ LANDING POINT |
| 8,496.0 | 3,883.0 | 4,754.7 | -50.4 | EXTRAPOLATION TO TD |

Checked By: _____ Approved By: _____ Date: _____

**Scale:** 5" / 100'
**Measured Depth Log**

| | | | |
|---|---|---|---|
| **Well Name** | Fesler 24-9-29 1H | | |
| **Location** | S/2 S/2 SW SE, Section 29, T24S-R9W | | |
| **State** | KS | **County** | Reno |
| **Country** | United States | **Rig Number** | Duke 20 |
| **API Number** | 15-155-21644-01-0( | | |
| **Spud Date** | 3/4/2013 | | |

| | | | |
|---|---|---|---|
| **Ground Elevation** | 1,705 | **K.B. Elevation** | 1,717 |
| **Logged Interval** | 3,100 **To** 8,500 | | |
| **Formation** | Osage | | |

## Operator

**Company** Dorado E&P Partners, LLC

**Address** 1401 17th Street
Suite 1500
Denver, CO 80202

## Geologist

**Name** Dave Wheeler

**Company** Dorado E&P Partners, LLC

1401 17th Street
Suite 1500
Denver, CO 80202

## Other

Mudloggers Chris Spencer - Unit Supervisor - 512-638-1324

## Rock Types

# Accessories

## Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC
- BRACHOIPOD
- BRYOZOA
- CEPHALOPOD
- CORAL
- CRINOID
- ECHINOID
- FISH
- FORAMINIFERA
- FOSSIL
- GASTROPOD
- OOLITE
- OSTRACOD
- PELECYPOD
- PELLET
- PISOLITE
- PLANT REMAINS
- PLANT SPORES
- SCAPHOPOD
- STROMATOPOROID

## Minerals

- ANHYDRITIC
- ARGILLACEOUS
- ARGILLITE GRAIN
- BENTONITE
- BITUMENOUS SUBSTANCE
- BRECCIA FRAGMENTS
- CALCAREOUS
- CARBONACEOUS FLAKES
- CHTDK
- CHTLT
- COAL - THIN BEDS
- DOLOMITIC
- FELDSPAR
- FERRUGINOUS PELLET
- FERRUGINOUS
- GLAUCONITE
- GYPSIFEROUS
- HEAVY MINERAL
- KAOLIN
- MARLSTONE
- MINERAL CRYSTALS
- NODULES
- PHOSPHATE PELLETS
- PYRITE
- SALT CAST
- SANDY
- SILICEOUS
- SILTY
- TUFFACEOUS

## Stringer

- ANHYDRITE STRINGER
- BENTONITE STRINGER
- COAL STRINGER
- DOLOMITE STRINGER
- GYPSUM STRINGER
- LIMESTONE STRINGER
- MARLSTONE (CALC) STRG
- MARLSTONE (DOL) STRG
- SANDSTONE STRINGER
- SHALE STRINGER
- SILTSTONE STRINGER

# Other Symbols

## Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

## Porosity

- EARTHY
- FENESTRAL
- FRACTURE
- INTERCRYSTALLINE
- INTEROOLITIC
- MOLDIC
- ORGANIC
- PINPOINT
- VUGGY

## Engineering

- BIT
- CONNECTION (LEFT)
- CONNECTION (RIGHT)
- CONNECTION GAS
- CORE - LOST
- CORE - RECOVERED
- DST INTERVAL
- FAULT
- FORMATION TOP
- GAS SHOW
- MN DEPTH
- NORMAL FAULT
- OIL SHOW
- OVERTURNED STRATA
- REVERSE FAULT
- SIDEWALL CORE (LEFT)
- SIDEWALL CORE (RIGHT)
- SLIDE
- SURVEY
- TRIP GAS
- WIRELINE TESTED - LEFT
- WIRELINE TESTED - RT

## Rounding

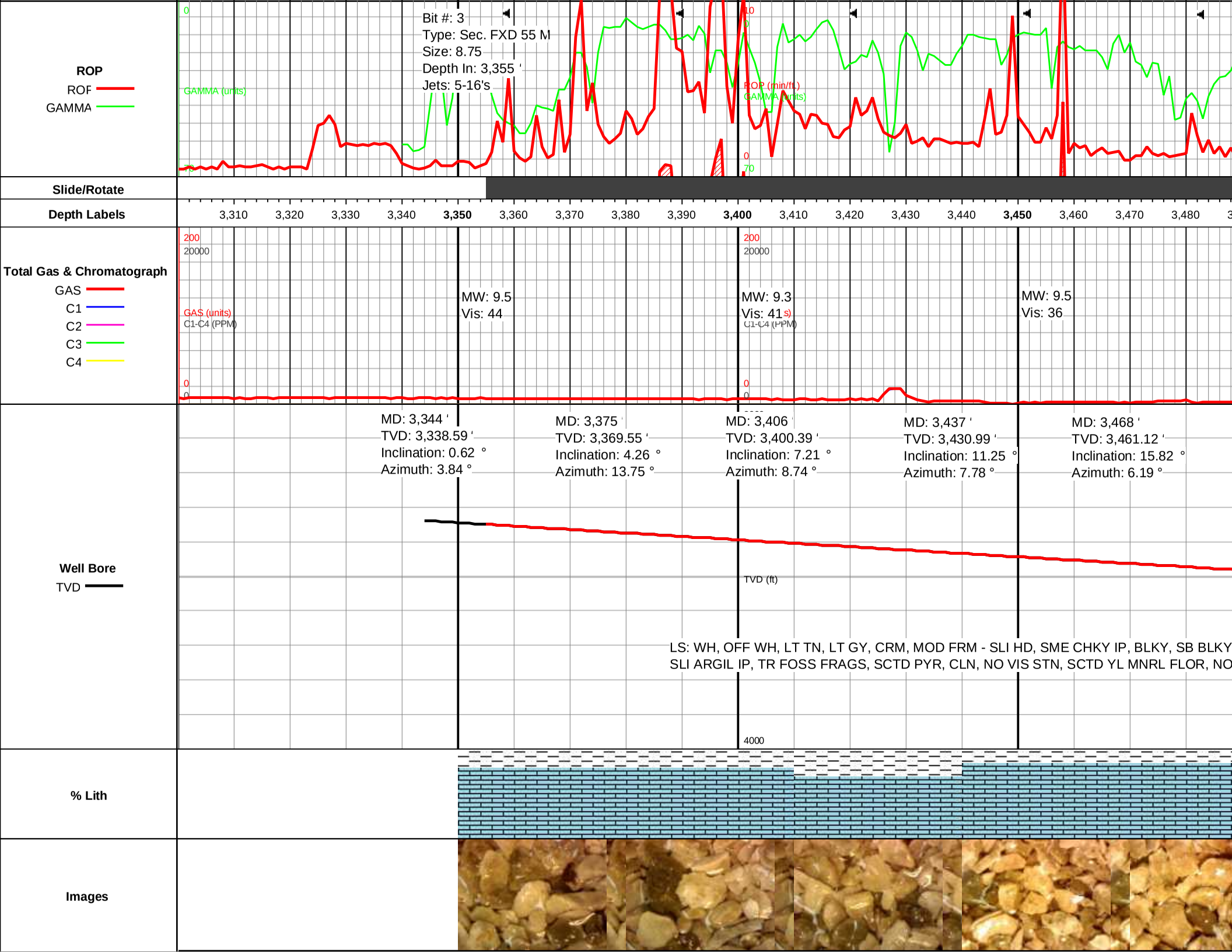
- ANGULAR
- ROUNDED
- SUBANG
- SUBRND

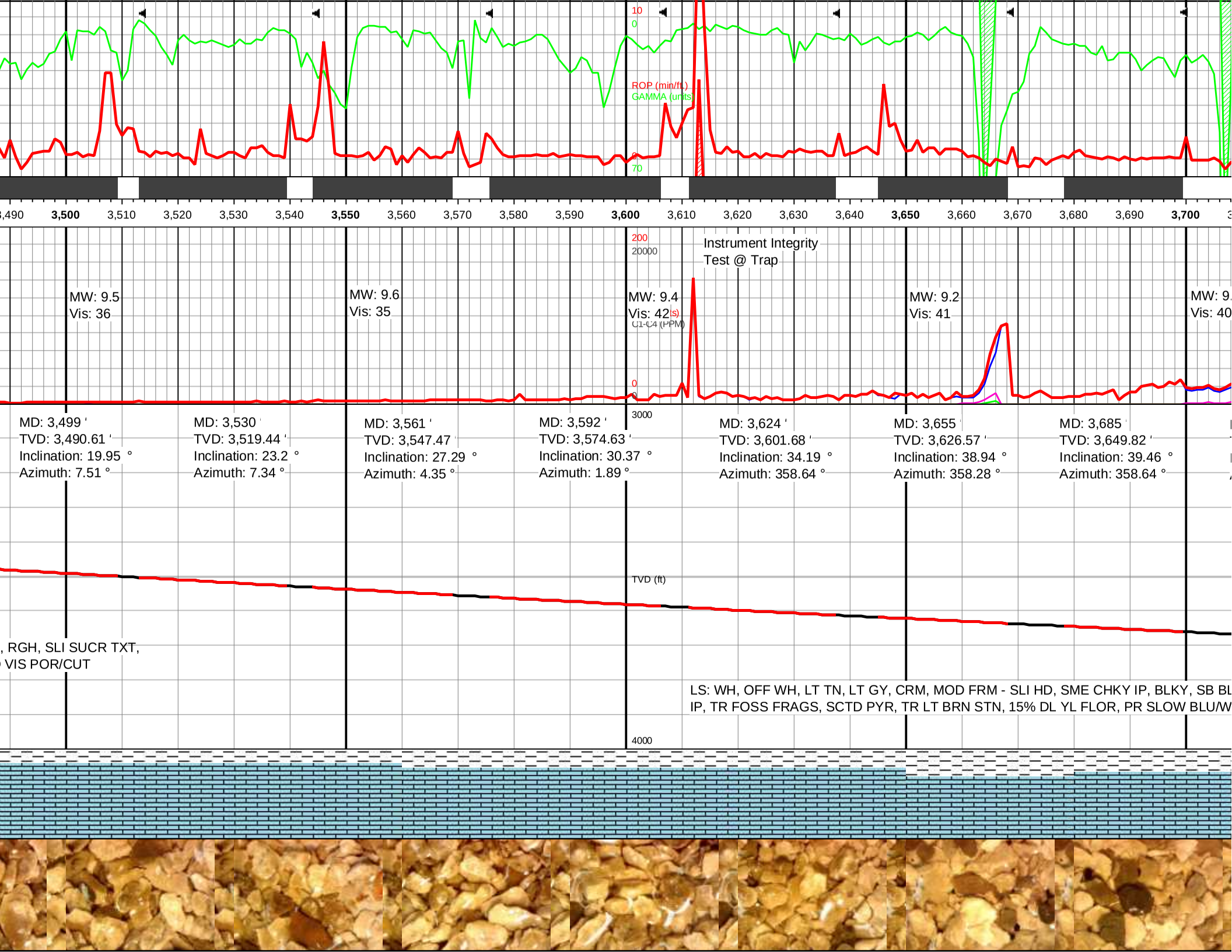
## Textures

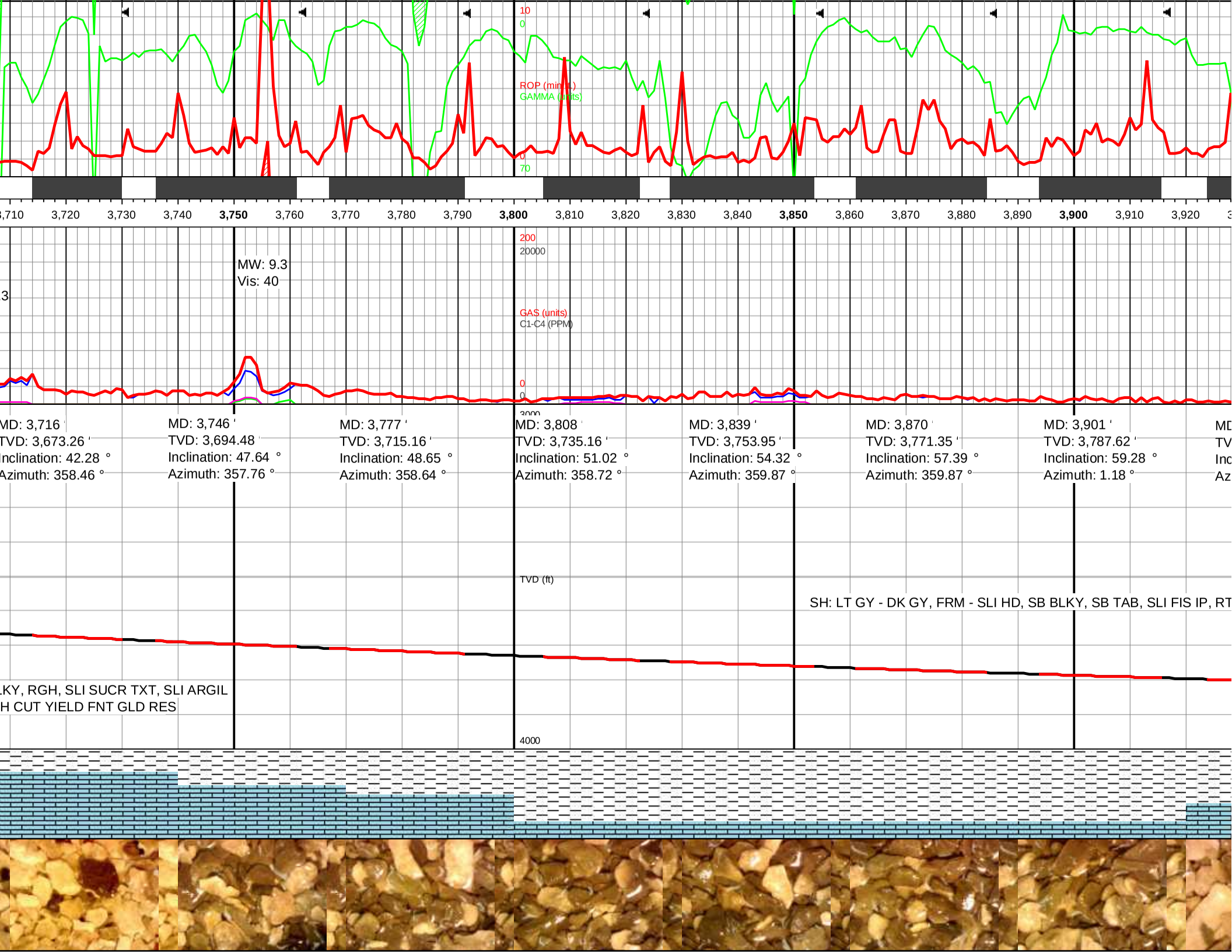
- BOUNDSTONE
- CHALKY
- CRYPTOXLN
- EARTHY
- FINELYXLN
- GRAINSTONE
- LITHOGRAPHIC
- MICROXLN
- MUDSTONE
- PACKSTONE
- WACKESTONE

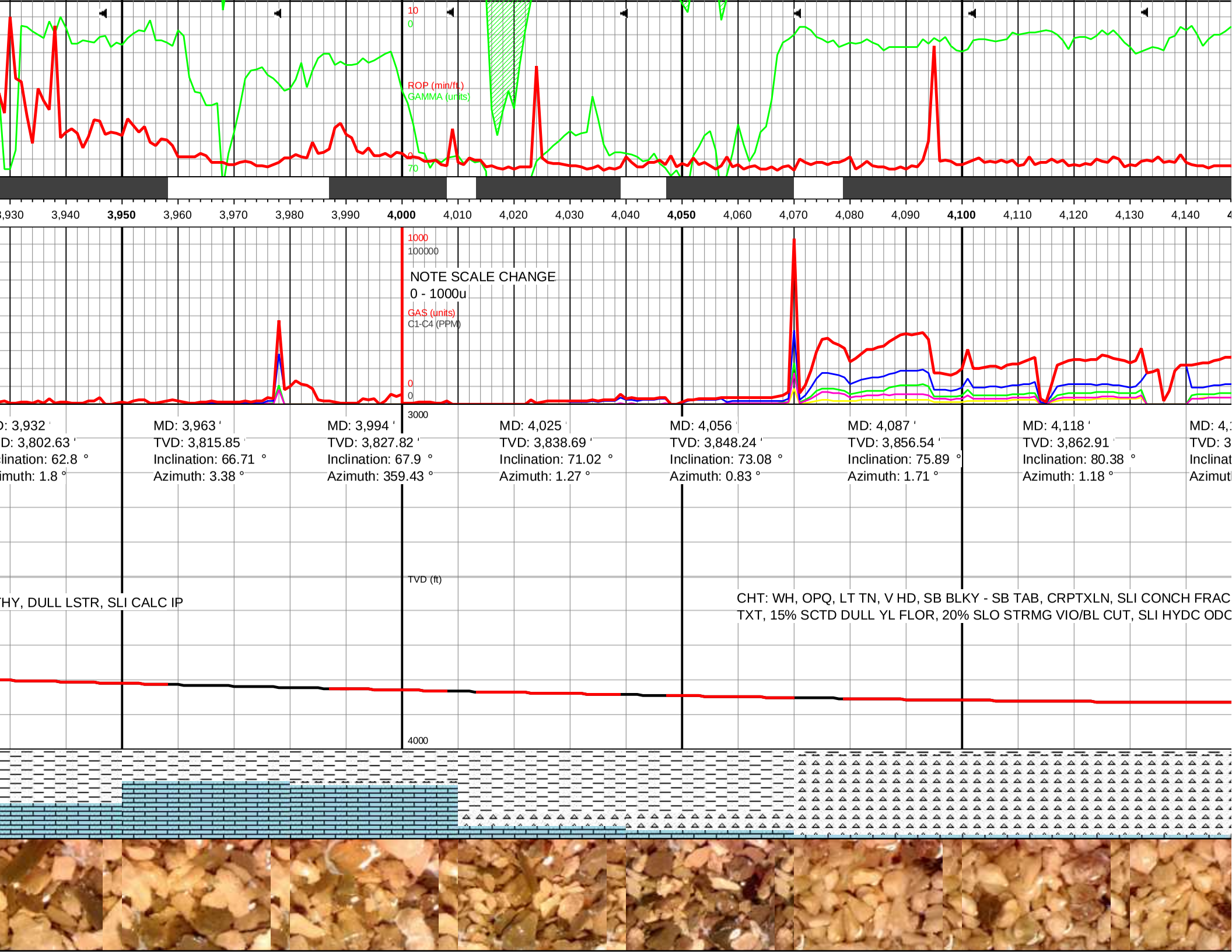
## Sorting

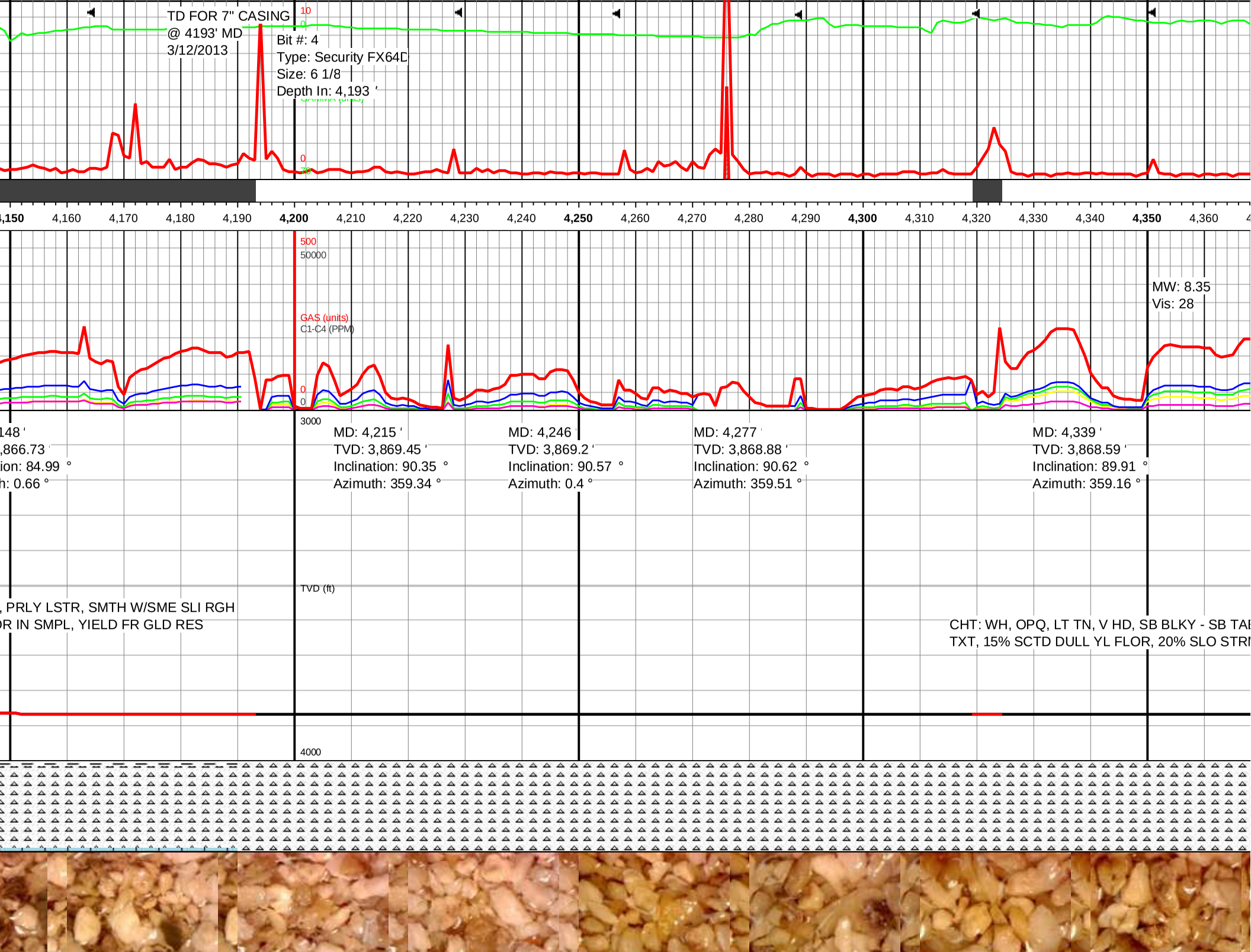
- MODERATE
- POOR
- WELL

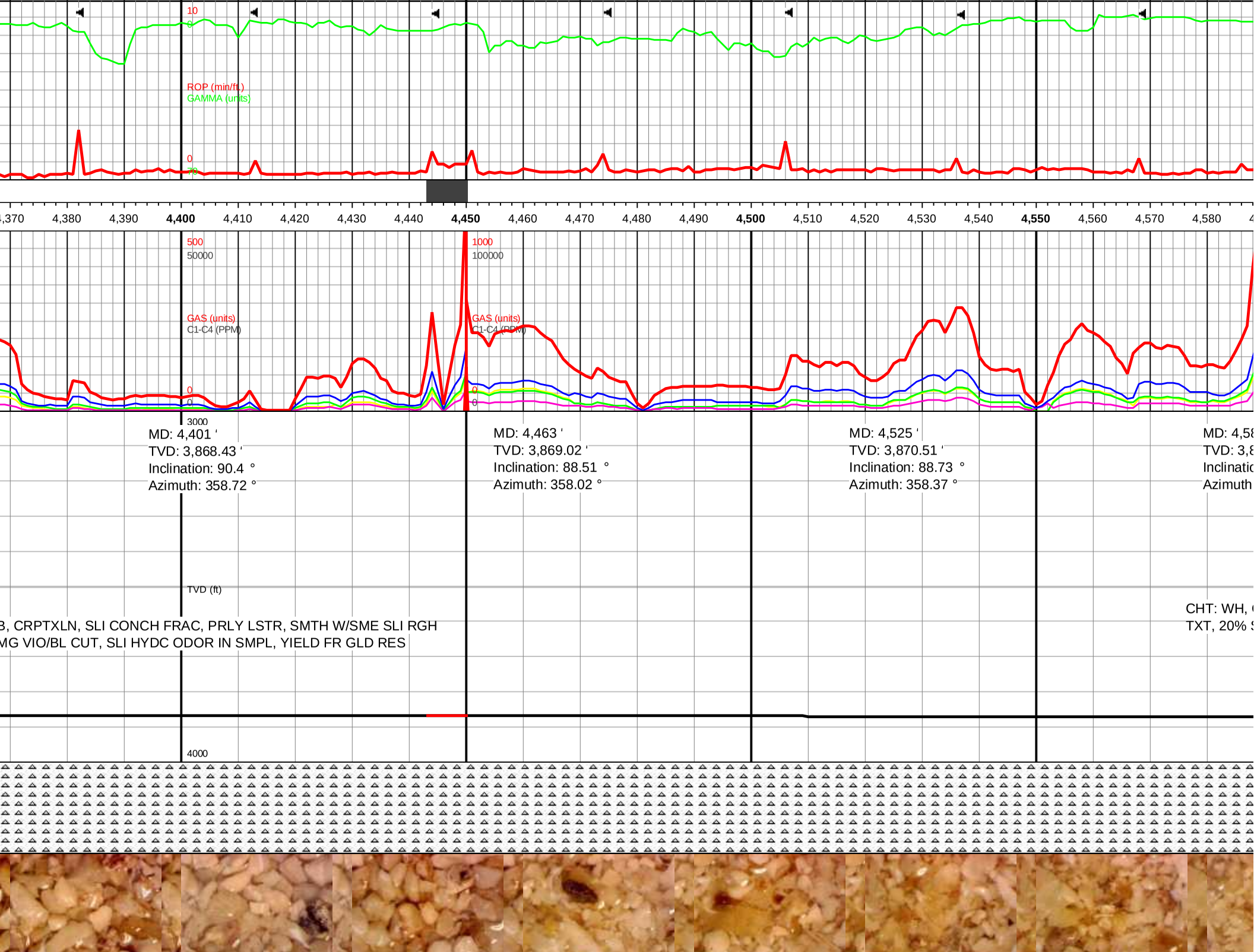

ROP
ROF
GAMMA
0
GAMMA (units)
150
Bit #: 3
Type: Sec. FXD 55 M
Size: 8.75
Depth In: 3,355 '
Jets: 5-16's
10
0
ROP (min/ft)
GAMMA (units)
0
70
Slide/Rotate
Depth Labels
3,310
3,320
3,330
3,340
3,350
3,360
3,370
3,380
3,390
3,400
3,410
3,420
3,430
3,440
3,450
3,460
3,470
3,480
Total Gas & Chromatograph
GAS
C1
C2
C3
C4
200
20000
GAS (units)
C1-C4 (PPM)
0
0
MW: 9.5
Vis: 44
MW: 9.3
Vis: 41s)
MW: 9.5
Vis: 36
Well Bore
TVD
MD: 3,344 '
TVD: 3,338.59 '
Inclination: 0.62 °
Azimuth: 3.84 °
MD: 3,375 '
TVD: 3,369.55 '
Inclination: 4.26 °
Azimuth: 13.75 °
MD: 3,406 '
TVD: 3,400.39 '
Inclination: 7.21 °
Azimuth: 8.74 °
MD: 3,437 '
TVD: 3,430.99 '
Inclination: 11.25 °
Azimuth: 7.78 °
MD: 3,468 '
TVD: 3,461.12 '
Inclination: 15.82 °
Azimuth: 6.19 °
TVD (ft)
LS: WH, OFF WH, LT TN, LT GY, CRM, MOD FRM - SLI HD, SME CHKY IP, BLKY, SB BLKY
SLI ARGIL IP, TR FOSS FRAGS, SCTD PYR, CLN, NO VIS STN, SCTD YL MNRL FLOR, NO
4000
% Lith
Images

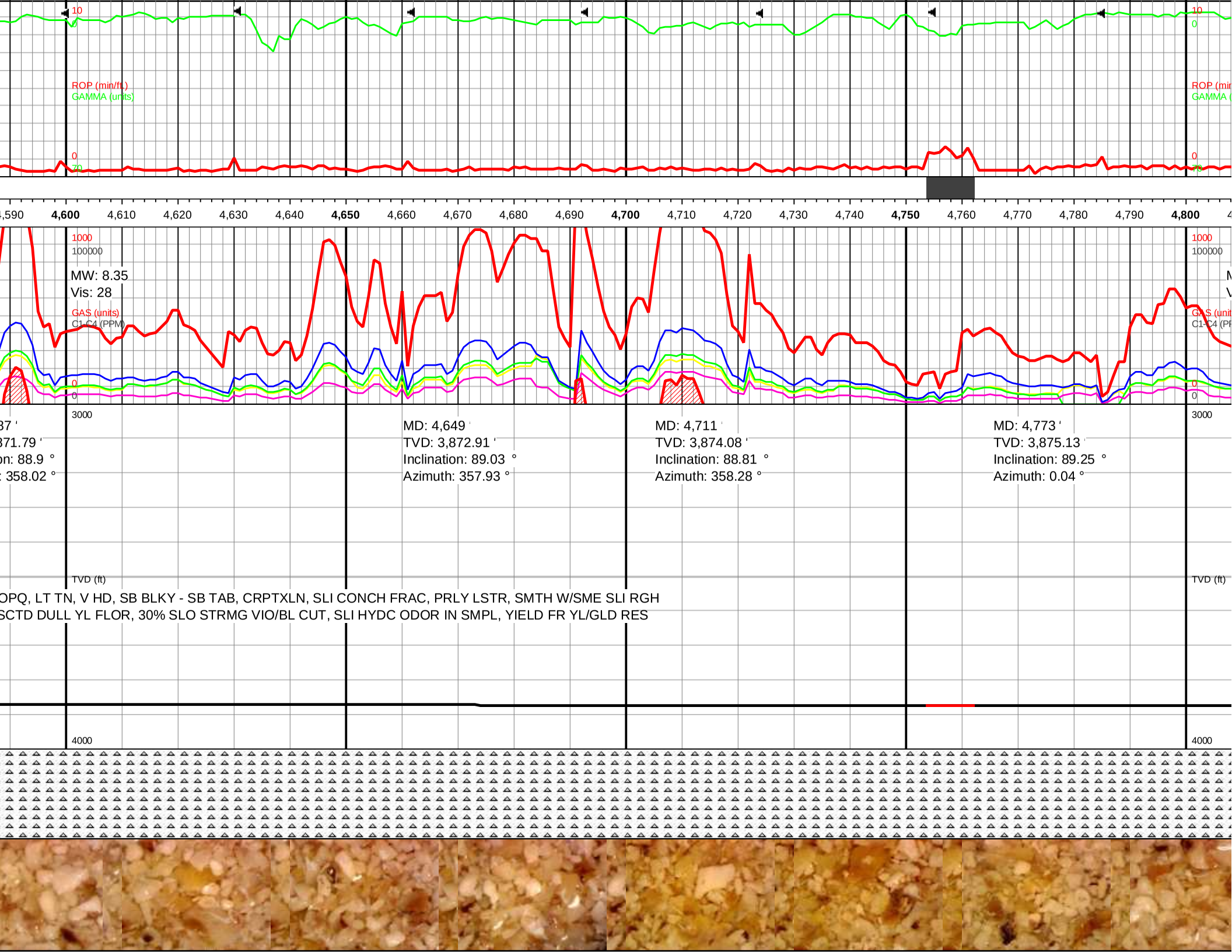

10
0
ROP (min/ft)
GAMMA (units)
0
70
3,490
3,500
3,510
3,520
3,530
3,540
3,550
3,560
3,570
3,580
3,590
3,600
3,610
3,620
3,630
3,640
3,650
3,660
3,670
3,680
3,690
3,700
200
20000
Instrument Integrity
Test @ Trap
MW: 9.5
Vis: 36
MW: 9.6
Vis: 35
MW: 9.4
Vis: 42
MW: 9.2
Vis: 41
MW: 9.
Vis: 40
C1-C4 (PPM)
0
3000
MD: 3,499 '
TVD: 3,490.61 '
Inclination: 19.95 °
Azimuth: 7.51 °
MD: 3,530 '
TVD: 3,519.44 '
Inclination: 23.2 °
Azimuth: 7.34 °
MD: 3,561 '
TVD: 3,547.47 '
Inclination: 27.29 °
Azimuth: 4.35 °
MD: 3,592 '
TVD: 3,574.63 '
Inclination: 30.37 °
Azimuth: 1.89 °
MD: 3,624 '
TVD: 3,601.68 '
Inclination: 34.19 °
Azimuth: 358.64 °
MD: 3,655 '
TVD: 3,626.57 '
Inclination: 38.94 °
Azimuth: 358.28 °
MD: 3,685 '
TVD: 3,649.82 '
Inclination: 39.46 °
Azimuth: 358.64 °
TVD (ft)
, RGH, SLI SUCR TXT,
VIS POR/CUT
LS: WH, OFF WH, LT TN, LT GY, CRM, MOD FRM - SLI HD, SME CHKY IP, BLKY, SB BL
IP, TR FOSS FRAGS, SCTD PYR, TR LT BRN STN, 15% DL YL FLOR, PR SLOW BLU/W
4000


10
0
ROP (min/ft)
GAMMA (units)
0
70
3,710
3,720
3,730
3,740
3,750
3,760
3,770
3,780
3,790
3,800
3,810
3,820
3,830
3,840
3,850
3,860
3,870
3,880
3,890
3,900
3,910
3,920
MW: 9.3
Vis: 40
200
20000
GAS (units)
C1-C4 (PPM)
0
0
MD: 3,716 '
TVD: 3,673.26 '
Inclination: 42.28 °
Azimuth: 358.46 °
MD: 3,746 '
TVD: 3,694.48 '
Inclination: 47.64 °
Azimuth: 357.76 °
MD: 3,777 '
TVD: 3,715.16 '
Inclination: 48.65 °
Azimuth: 358.64 °
MD: 3,808 '
TVD: 3,735.16 '
Inclination: 51.02 °
Azimuth: 358.72 °
MD: 3,839 '
TVD: 3,753.95 '
Inclination: 54.32 °
Azimuth: 359.87 °
MD: 3,870 '
TVD: 3,771.35 '
Inclination: 57.39 °
Azimuth: 359.87 °
MD: 3,901 '
TVD: 3,787.62 '
Inclination: 59.28 °
Azimuth: 1.18 °
TVD (ft)
SH: LT GY - DK GY, FRM - SLI HD, SB BLKY, SB TAB, SLI FIS IP, RT
LKY, RGH, SLI SUCR TXT, SLI ARGIL
H CUT YIELD FNT GLD RES
4000


10
0
ROP (min/ft)
GAMMA (units)
0
70
3,930
3,940
3,950
3,960
3,970
3,980
3,990
4,000
4,010
4,020
4,030
4,040
4,050
4,060
4,070
4,080
4,090
4,100
4,110
4,120
4,130
4,140
1000
100000
NOTE SCALE CHANGE
0 - 1000u
GAS (units)
C1-C4 (PPM)
0
0
3000
D: 3,932 '
D: 3,802.63 '
clination: 62.8 °
imuth: 1.8 °
MD: 3,963 '
TVD: 3,815.85 '
Inclination: 66.71 °
Azimuth: 3.38 °
MD: 3,994 '
TVD: 3,827.82 '
Inclination: 67.9 °
Azimuth: 359.43 °
MD: 4,025 '
TVD: 3,838.69 '
Inclination: 71.02 °
Azimuth: 1.27 °
MD: 4,056 '
TVD: 3,848.24 '
Inclination: 73.08 °
Azimuth: 0.83 °
MD: 4,087 '
TVD: 3,856.54 '
Inclination: 75.89 °
Azimuth: 1.71 °
MD: 4,118 '
TVD: 3,862.91 '
Inclination: 80.38 °
Azimuth: 1.18 °
TVD (ft)
THY, DULL LSTR, SLI CALC IP
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC
TXT, 15% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, SLI HYDC ODC
4000

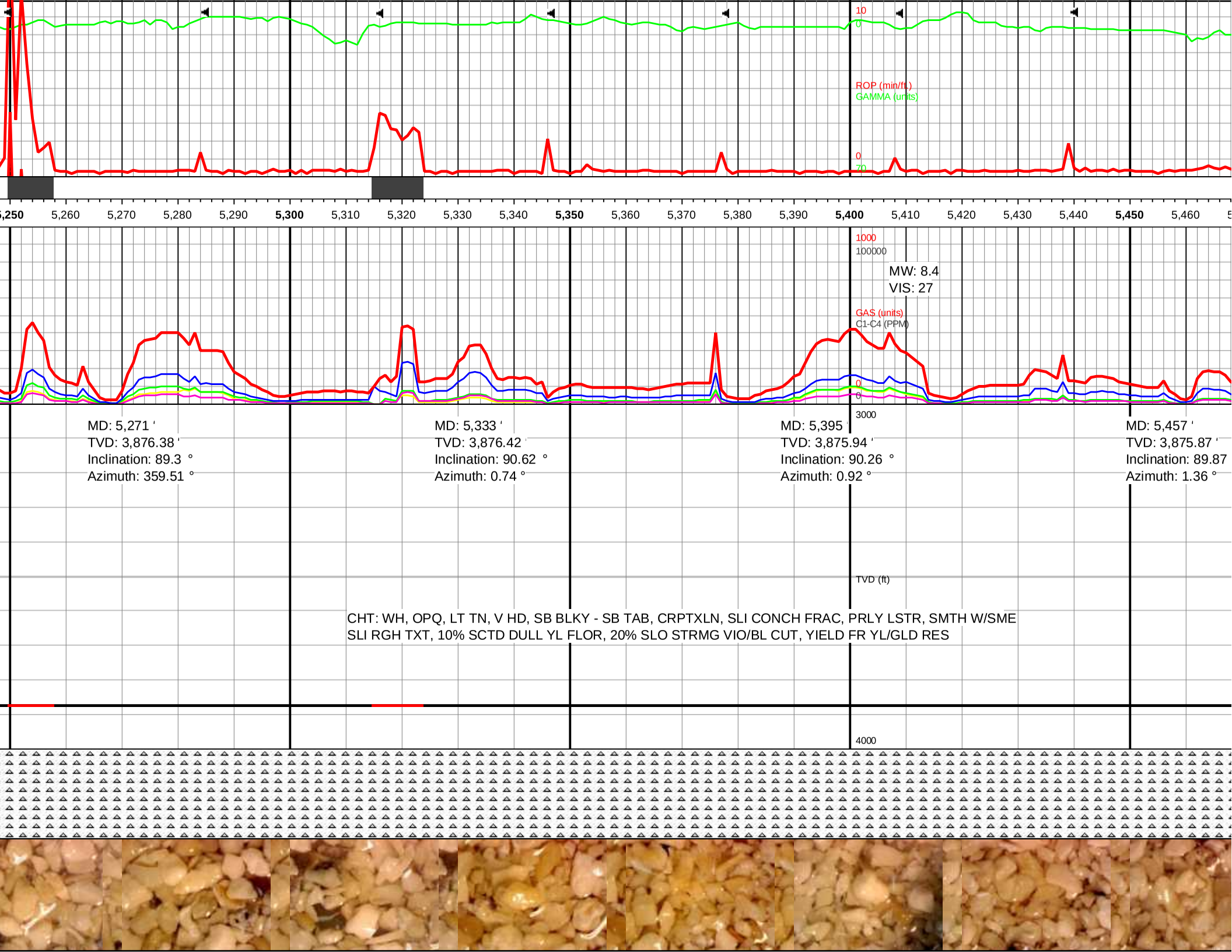

TD FOR 7" CASING
@ 4193' MD
3/12/2013
Bit #: 4
Type: Security FX64D
Size: 6 1/8
Depth In: 4,193 '
10
0
0
4,150
4,160
4,170
4,180
4,190
4,200
4,210
4,220
4,230
4,240
4,250
4,260
4,270
4,280
4,290
4,300
4,310
4,320
4,330
4,340
4,350
4,360
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
MW: 8.35
Vis: 28
148 '
,866.73 '
ion: 84.99 °
h: 0.66 °
MD: 4,215 '
TVD: 3,869.45 '
Inclination: 90.35 °
Azimuth: 359.34 °
MD: 4,246 '
TVD: 3,869.2 '
Inclination: 90.57 °
Azimuth: 0.4 °
MD: 4,277 '
TVD: 3,868.88 '
Inclination: 90.62 °
Azimuth: 359.51 °
MD: 4,339 '
TVD: 3,868.59 '
Inclination: 89.91 °
Azimuth: 359.16 °
TVD (ft)
, PRLY LSTR, SMTH W/SME SLI RGH
OR IN SMPL, YIELD FR GLD RES
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAI
TXT, 15% SCTD DULL YL FLOR, 20% SLO STRI
4000

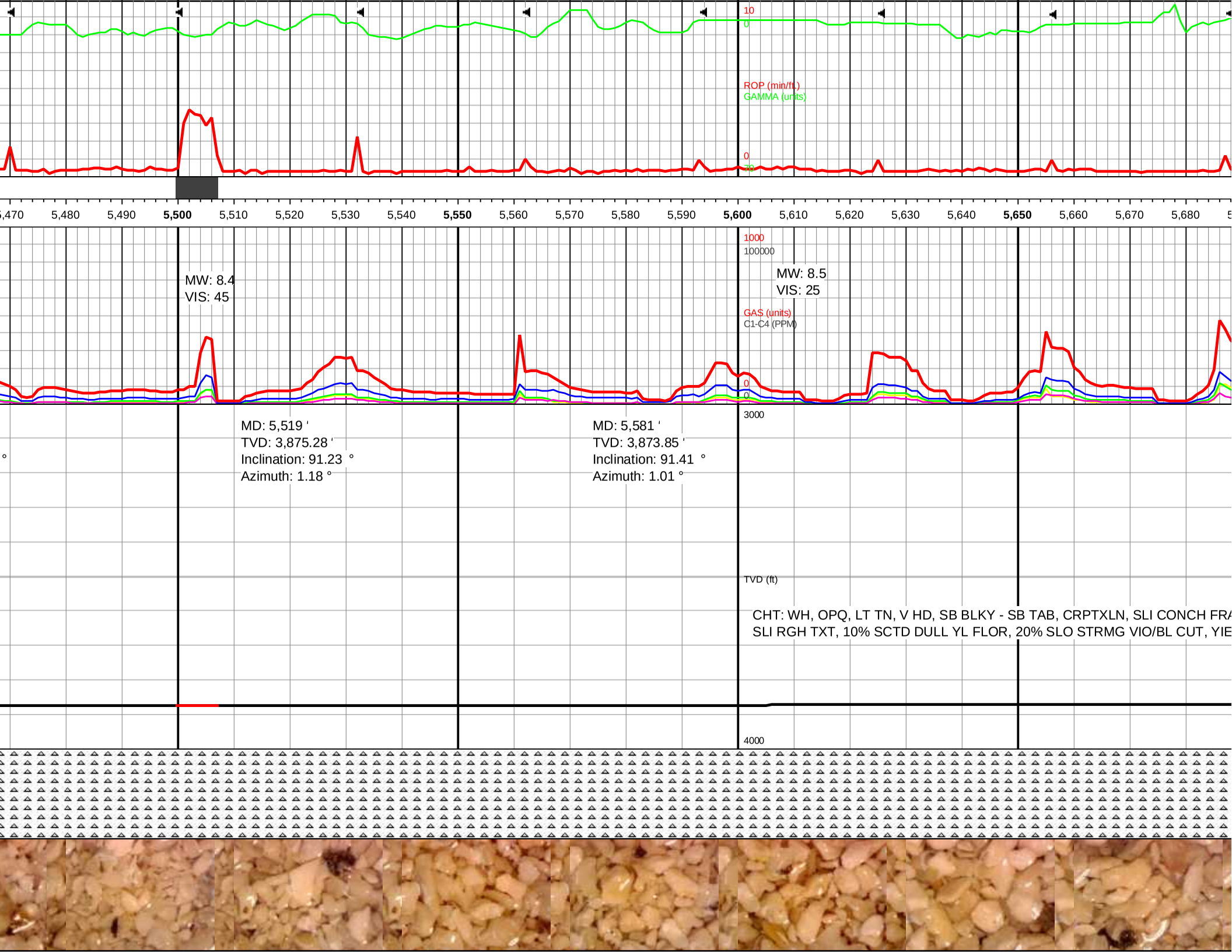

10
0
ROP (min/ft)
GAMMA (units)
0
70
4,370
4,380
4,390
4,400
4,410
4,420
4,430
4,440
4,450
4,460
4,470
4,480
4,490
4,500
4,510
4,520
4,530
4,540
4,550
4,560
4,570
4,580
500
50000
GAS (units)
C1-C4 (PPM)
0
0
1000
100000
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 4,401 '
TVD: 3,868.43 '
Inclination: 90.4 °
Azimuth: 358.72 °
MD: 4,463 '
TVD: 3,869.02 '
Inclination: 88.51 °
Azimuth: 358.02 °
MD: 4,525 '
TVD: 3,870.51 '
Inclination: 88.73 °
Azimuth: 358.37 °
MD: 4,58
TVD: 3,8
Inclinatio
Azimuth
TVD (ft)
B, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME SLI RGH
MG VIO/BL CUT, SLI HYDC ODOR IN SMPL, YIELD FR GLD RES
CHT: WH,
TXT, 20% S
4000

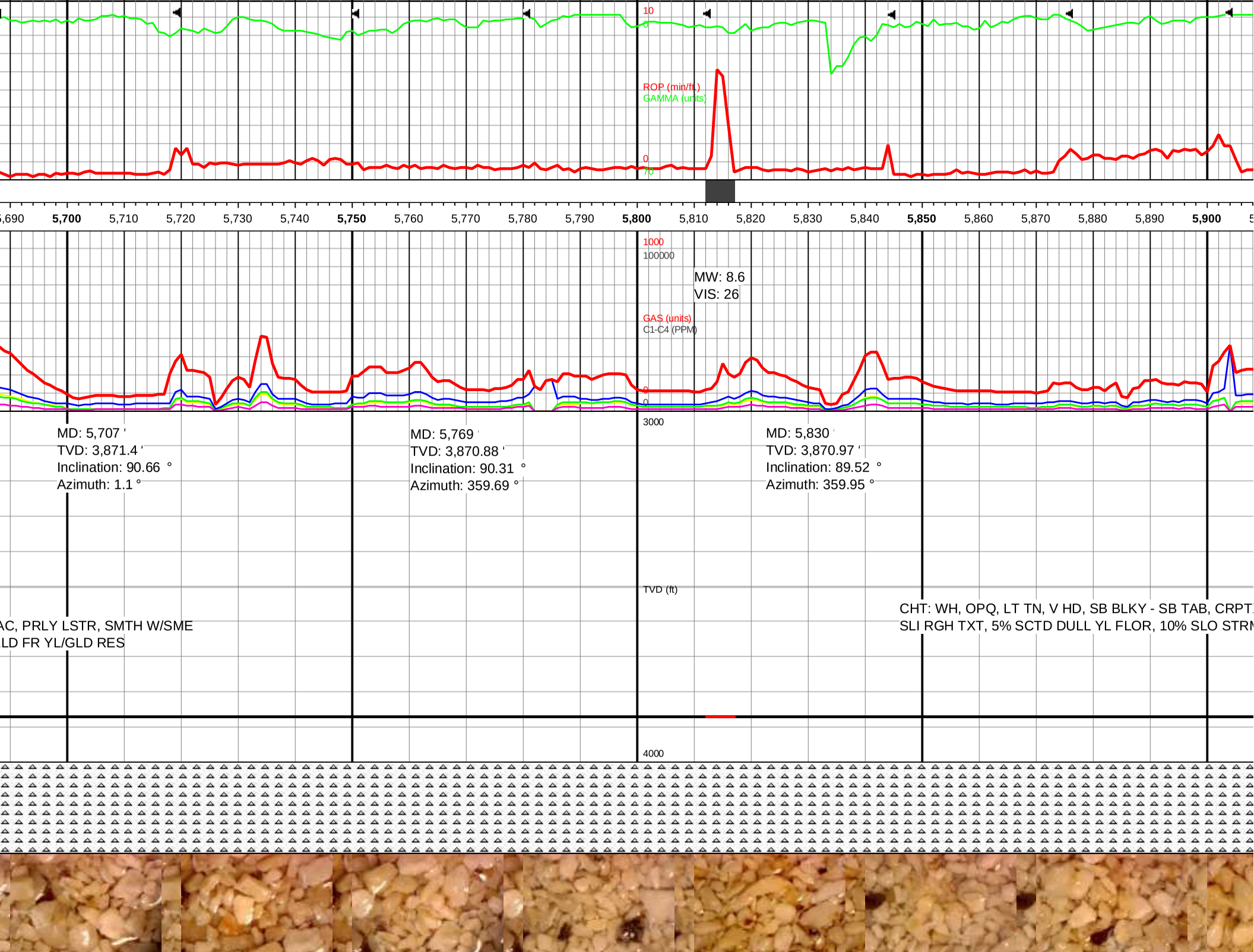

10
0
ROP (min/ft)
GAMMA (units)
0
70
4,590
4,600
4,610
4,620
4,630
4,640
4,650
4,660
4,670
4,680
4,690
4,700
4,710
4,720
4,730
4,740
4,750
4,760
4,770
4,780
4,790
4,800
1000
100000
MW: 8.35
Vis: 28
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 4,649 '
TVD: 3,872.91 '
Inclination: 89.03 °
Azimuth: 357.93 °
MD: 4,711 '
TVD: 3,874.08 '
Inclination: 88.81 °
Azimuth: 358.28 °
MD: 4,773 '
TVD: 3,875.13 '
Inclination: 89.25 °
Azimuth: 0.04 °
TVD (ft)
OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME SLI RGH
SCTD DULL YL FLOR, 30% SLO STRMG VIO/BL CUT, SLI HYDC ODOR IN SMPL, YIELD FR YL/GLD RES
4000


ROP (min/ft)
GAMMA (units)
0
0
4,810
4,820
4,830
4,840
4,850
4,860
4,870
4,880
4,890
4,900
4,910
4,920
4,930
4,940
4,950
4,960
4,970
4,980
4,990
5,000
5,010
5,020
MW: 8.35
VIS: 28
MW: 8.35
VIS: 28
1000
100000
GAS (units)
C1-C4 (PPM)
3000
MD: 4,835 '
TVD: 3,875.27 '
Inclination: 90.48 °
Azimuth: 358.72 °
MD: 4,896 '
TVD: 3,874.69 '
Inclination: 90.62 °
Azimuth: 359.25 °
MD: 4,958 '
TVD: 3,874.35 '
Inclination: 90 °
Azimuth: 358.72 °
MD: 5,020 '
TVD: 3,874.38
Inclination: 89.
Azimuth: 358.7
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME SLI RGH
TXT, 20% SCTD DULL YL FLOR, 30% SLO STRMG VIO/BL CUT, SLI HYDC ODOR IN SMPL, YIELD FR YL/GLD RES
4000

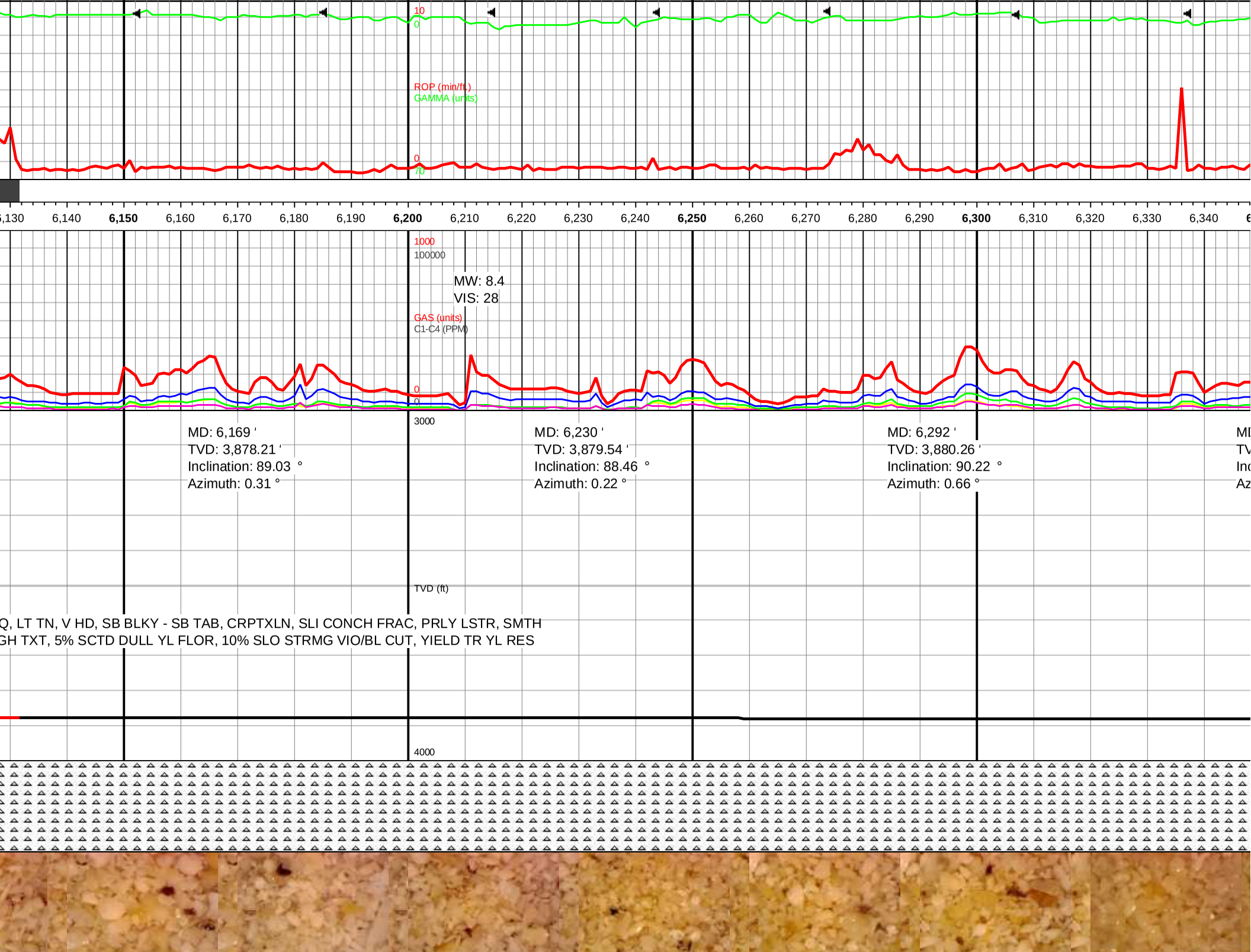

10
0
ROP (min/ft)
GAMMA (units)
0
70
5,030
5,040
5,050
5,060
5,070
5,080
5,090
5,100
5,110
5,120
5,130
5,140
5,150
5,160
5,170
5,180
5,190
5,200
5,210
5,220
5,230
5,240
1000
100000
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 5,144 '
TVD: 3,874.87 '
Inclination: 89.65 °
Azimuth: 358.64 °
MD: 5,205 '
TVD: 3,875.5 '
Inclination: 89.17 °
Azimuth: 358.37 °
96 °
72 °
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME
SLI RGH TXT, 15% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
4000

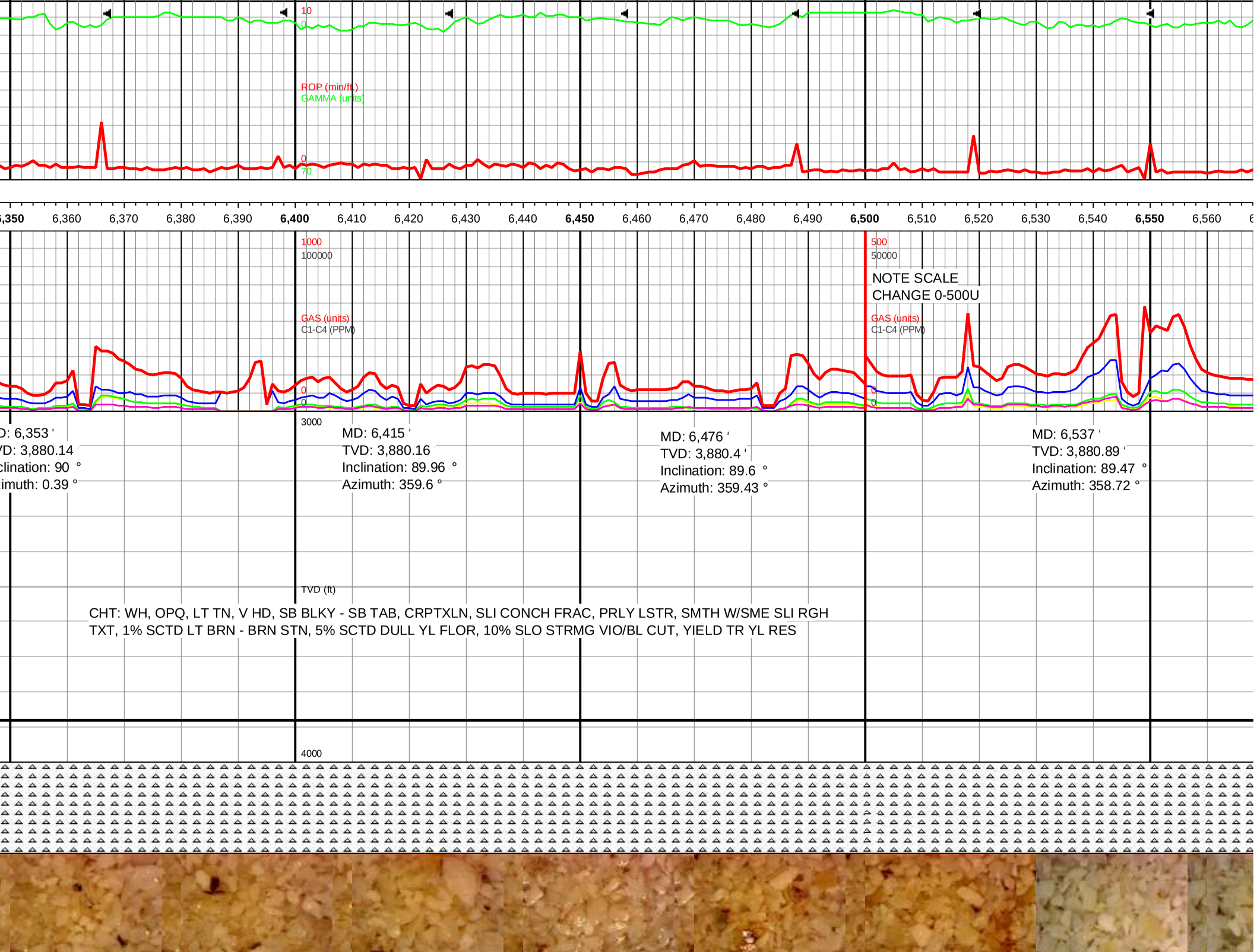

10
0
ROP (min/ft)
GAMMA (units)
0
70
5,250
5,260
5,270
5,280
5,290
5,300
5,310
5,320
5,330
5,340
5,350
5,360
5,370
5,380
5,390
5,400
5,410
5,420
5,430
5,440
5,450
5,460
1000
100000
MW: 8.4
VIS: 27
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 5,271 '
TVD: 3,876.38 '
Inclination: 89.3 °
Azimuth: 359.51 °
MD: 5,333 '
TVD: 3,876.42 '
Inclination: 90.62 °
Azimuth: 0.74 °
MD: 5,395 '
TVD: 3,875.94 '
Inclination: 90.26 °
Azimuth: 0.92 °
MD: 5,457 '
TVD: 3,875.87 '
Inclination: 89.87 °
Azimuth: 1.36 °
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME
SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
4000

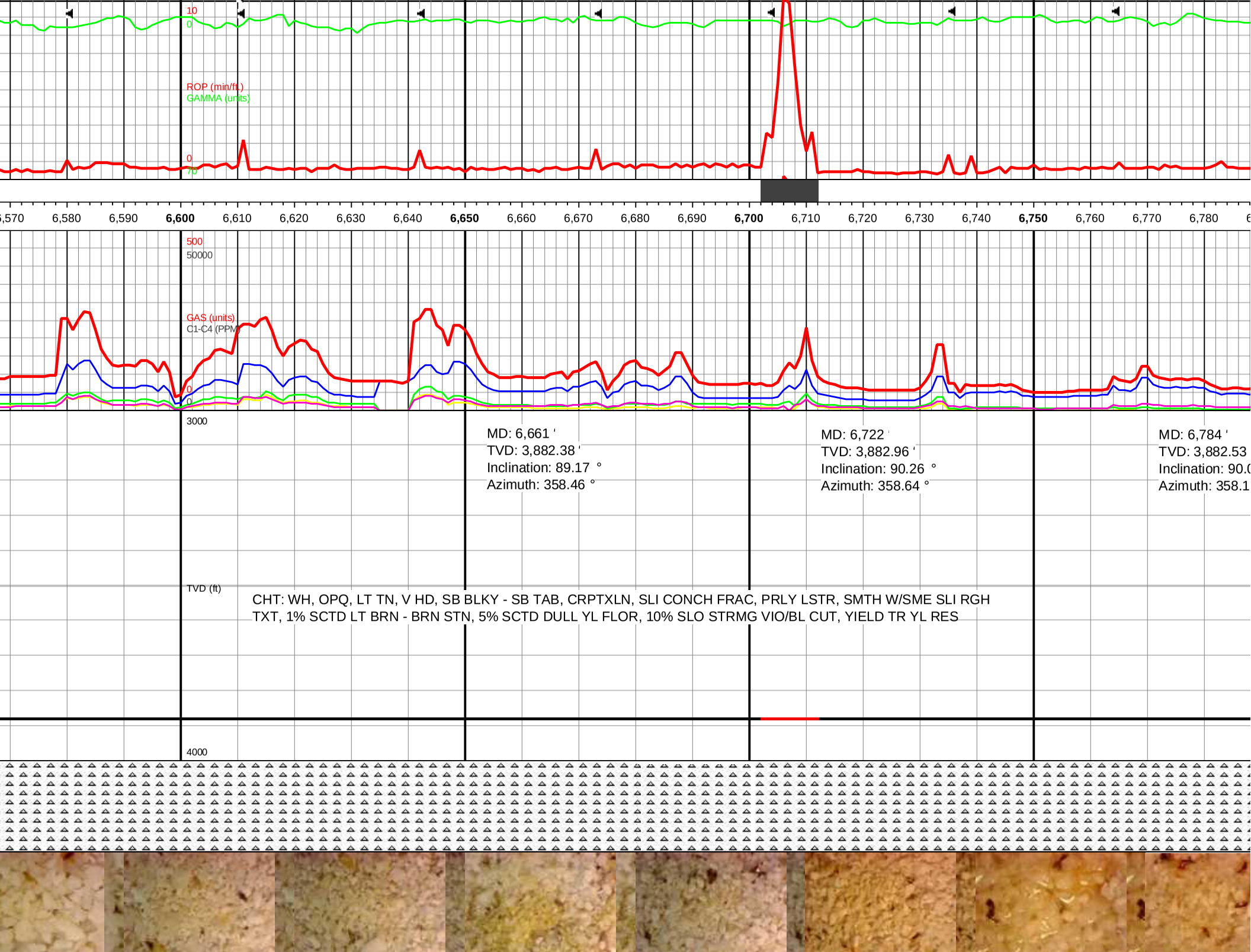

10
0
ROP (min/ft)
GAMMA (units)
0
70
5,470
5,480
5,490
5,500
5,510
5,520
5,530
5,540
5,550
5,560
5,570
5,580
5,590
5,600
5,610
5,620
5,630
5,640
5,650
5,660
5,670
5,680
1000
100000
MW: 8.4
VIS: 45
MW: 8.5
VIS: 25
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 5,519 '
TVD: 3,875.28 '
Inclination: 91.23 °
Azimuth: 1.18 °
MD: 5,581 '
TVD: 3,873.85 '
Inclination: 91.41 °
Azimuth: 1.01 °
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRA
SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIE
4000

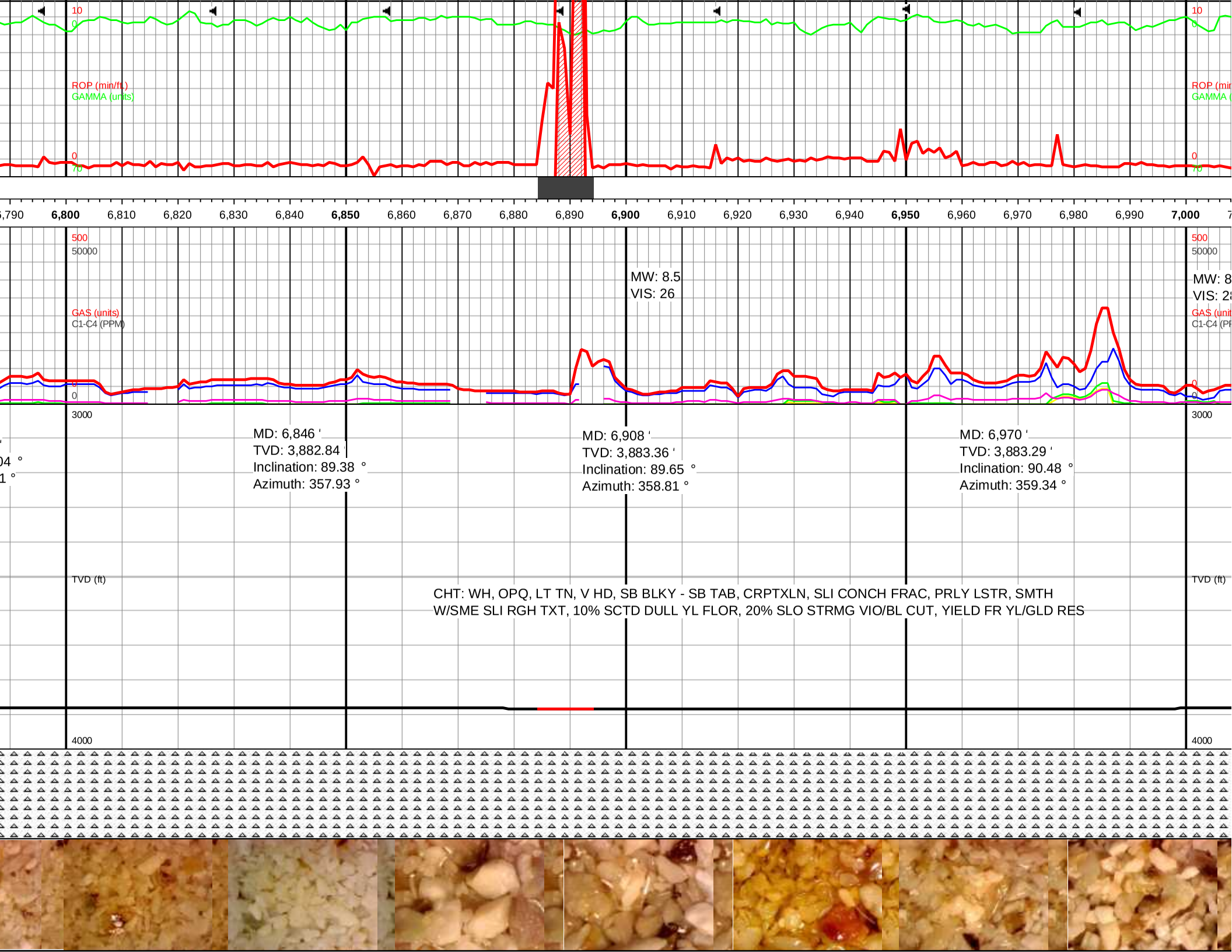

10
0
ROP (min/ft)
GAMMA (units)
0
70
5,690
5,700
5,710
5,720
5,730
5,740
5,750
5,760
5,770
5,780
5,790
5,800
5,810
5,820
5,830
5,840
5,850
5,860
5,870
5,880
5,890
5,900
1000
100000
MW: 8.6
VIS: 26
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 5,707 '
TVD: 3,871.4 '
Inclination: 90.66 °
Azimuth: 1.1 °
MD: 5,769 '
TVD: 3,870.88 '
Inclination: 90.31 °
Azimuth: 359.69 °
MD: 5,830 '
TVD: 3,870.97 '
Inclination: 89.52 °
Azimuth: 359.95 °
TVD (ft)
AC, PRLY LSTR, SMTH W/SME
LD FR YL/GLD RES
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPT
SLI RGH TXT, 5% SCTD DULL YL FLOR, 10% SLO STRM
4000

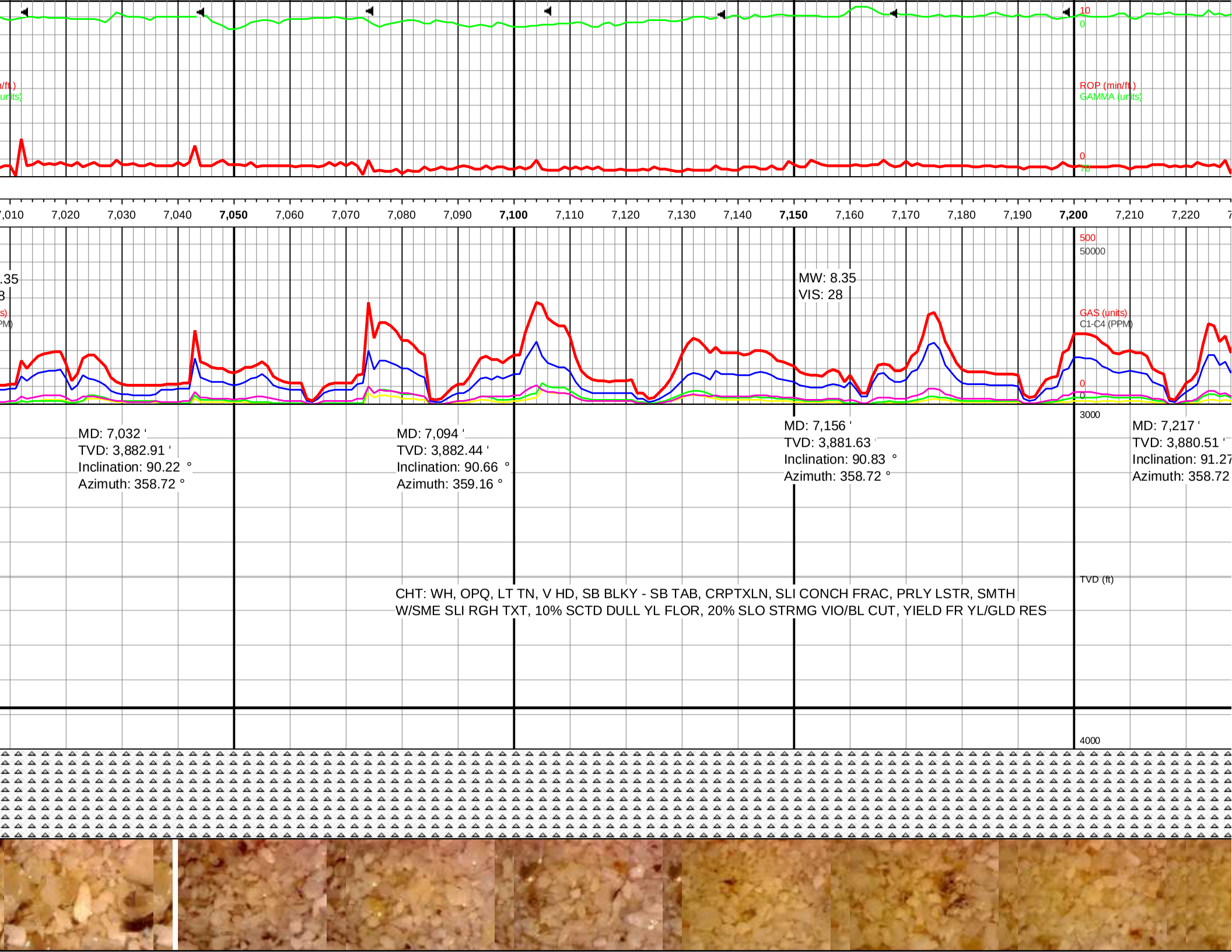

10
0
ROP (min/ft)
GAMMA (units)
0
70
5,910
5,920
5,930
5,940
5,950
5,960
5,970
5,980
5,990
6,000
6,010
6,020
6,030
6,040
6,050
6,060
6,070
6,080
6,090
6,100
6,110
6,120
1000
100000
MW: 8.35
VIS: 28
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 5,953 '
TVD: 3,872.21 '
Inclination: 88.68 °
Azimuth: 0.13 °
MD: 5,984 '
TVD: 3,872.97 '
Inclination: 88.51 °
Azimuth: 359.95 °
MD: 6,015 '
TVD: 3,873.84 '
Inclination: 88.29 °
Azimuth: 0.13 °
MD: 6,046 '
TVD: 3,874.87 '
Inclination: 87.89 °
Azimuth: 359.95 °
TVD (ft)
XLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME
MG VIO/BL CUT, YIELD FNT YL/GLD RES
CHT: WH, OP
W/SME SLI R
4000

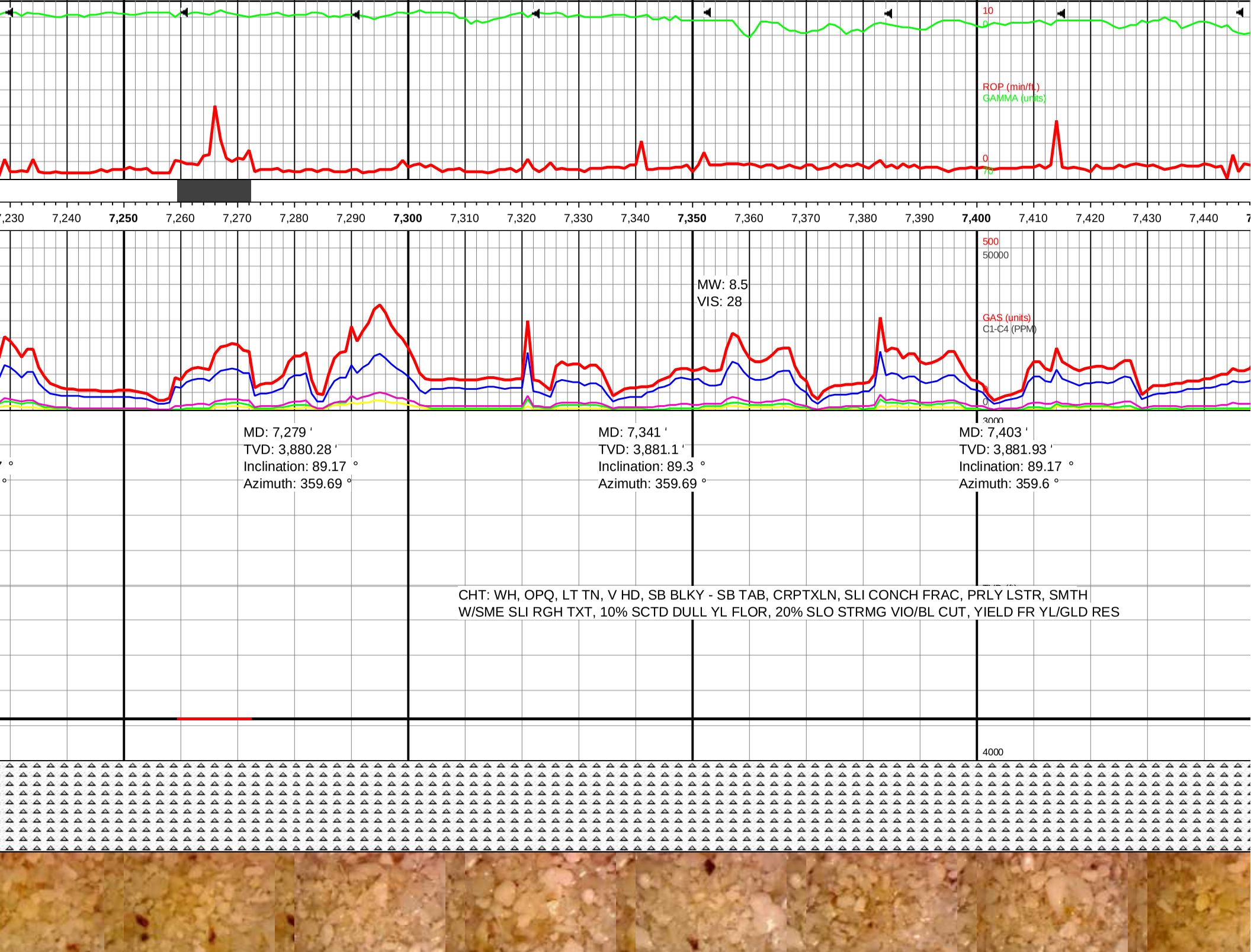

10
0
ROP (min/ft)
GAMMA (units)
0
70
6,130
6,140
6,150
6,160
6,170
6,180
6,190
6,200
6,210
6,220
6,230
6,240
6,250
6,260
6,270
6,280
6,290
6,300
6,310
6,320
6,330
6,340
1000
100000
MW: 8.4
VIS: 28
GAS (units)
C1-C4 (PPM)
0
3000
MD: 6,169 '
TVD: 3,878.21 '
Inclination: 89.03 °
Azimuth: 0.31 °
MD: 6,230 '
TVD: 3,879.54 '
Inclination: 88.46 °
Azimuth: 0.22 °
MD: 6,292 '
TVD: 3,880.26 '
Inclination: 90.22 °
Azimuth: 0.66 °
TVD (ft)
Q, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH
GH TXT, 5% SCTD DULL YL FLOR, 10% SLO STRMG VIO/BL CUT, YIELD TR YL RES
4000


10
0
ROP (min/ft)
GAMMA (units)
0
70
6,350
6,360
6,370
6,380
6,390
6,400
6,410
6,420
6,430
6,440
6,450
6,460
6,470
6,480
6,490
6,500
6,510
6,520
6,530
6,540
6,550
6,560
1000
100000
GAS (units)
C1-C4 (PPM)
0
0
500
50000
NOTE SCALE
CHANGE 0-500U
GAS (units)
C1-C4 (PPM)
0
0
3000
D: 6,353 '
VD: 3,880.14 '
clination: 90 °
imuth: 0.39 °
MD: 6,415 '
TVD: 3,880.16 '
Inclination: 89.96 °
Azimuth: 359.6 °
MD: 6,476 '
TVD: 3,880.4 '
Inclination: 89.6 °
Azimuth: 359.43 °
MD: 6,537 '
TVD: 3,880.89 '
Inclination: 89.47 °
Azimuth: 358.72 °
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME SLI RGH
TXT, 1% SCTD LT BRN - BRN STN, 5% SCTD DULL YL FLOR, 10% SLO STRMG VIO/BL CUT, YIELD TR YL RES
4000

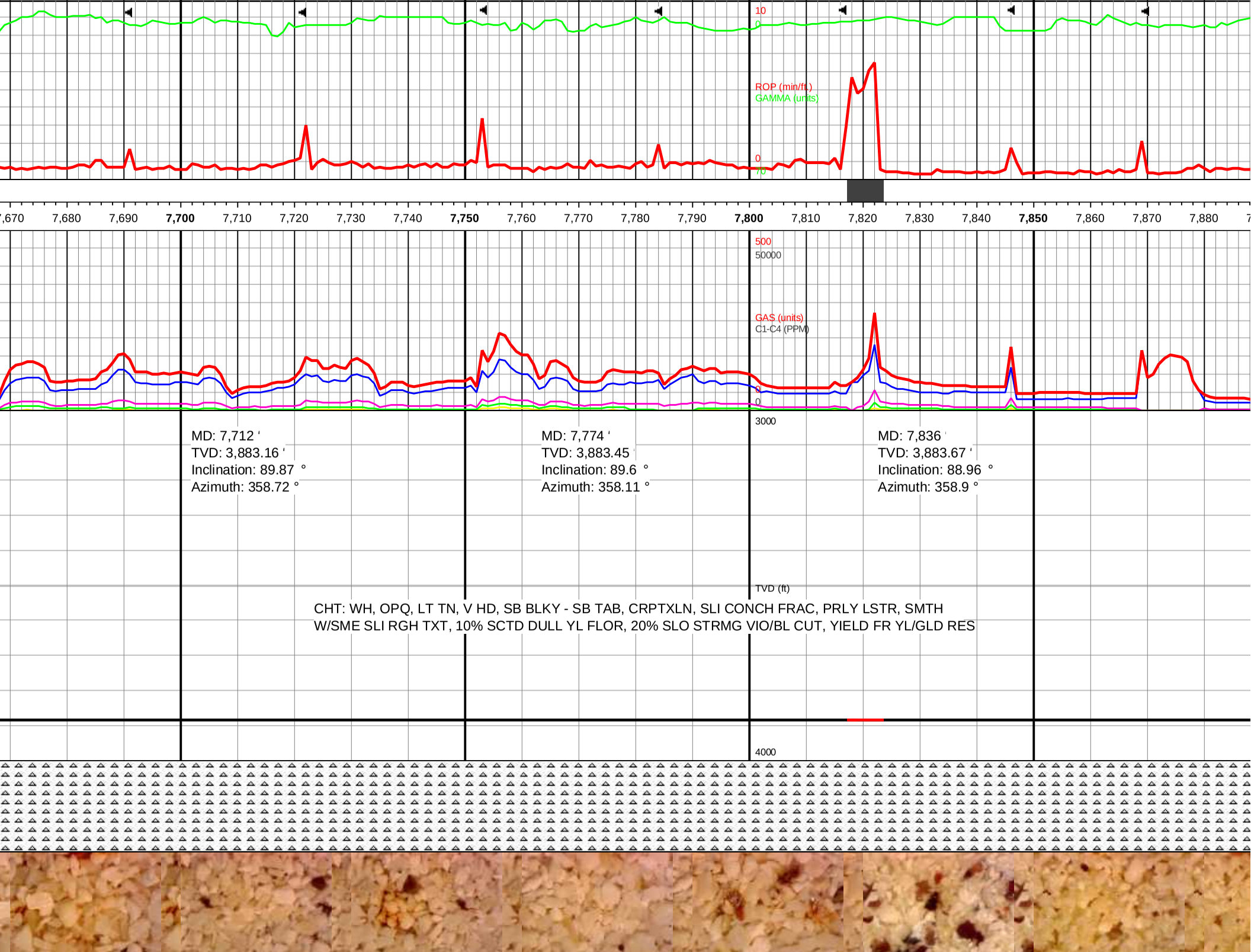

10
0
ROP (min/ft)
GAMMA (units)
0
70
6,570
6,580
6,590
6,600
6,610
6,620
6,630
6,640
6,650
6,660
6,670
6,680
6,690
6,700
6,710
6,720
6,730
6,740
6,750
6,760
6,770
6,780
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 6,661 '
TVD: 3,882.38 '
Inclination: 89.17 °
Azimuth: 358.46 °
MD: 6,722 '
TVD: 3,882.96 '
Inclination: 90.26 °
Azimuth: 358.64 °
MD: 6,784 '
TVD: 3,882.53
Inclination: 90.0
Azimuth: 358.1
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME SLI RGH
TXT, 1% SCTD LT BRN - BRN STN, 5% SCTD DULL YL FLOR, 10% SLO STRMG VIO/BL CUT, YIELD TR YL RES
4000

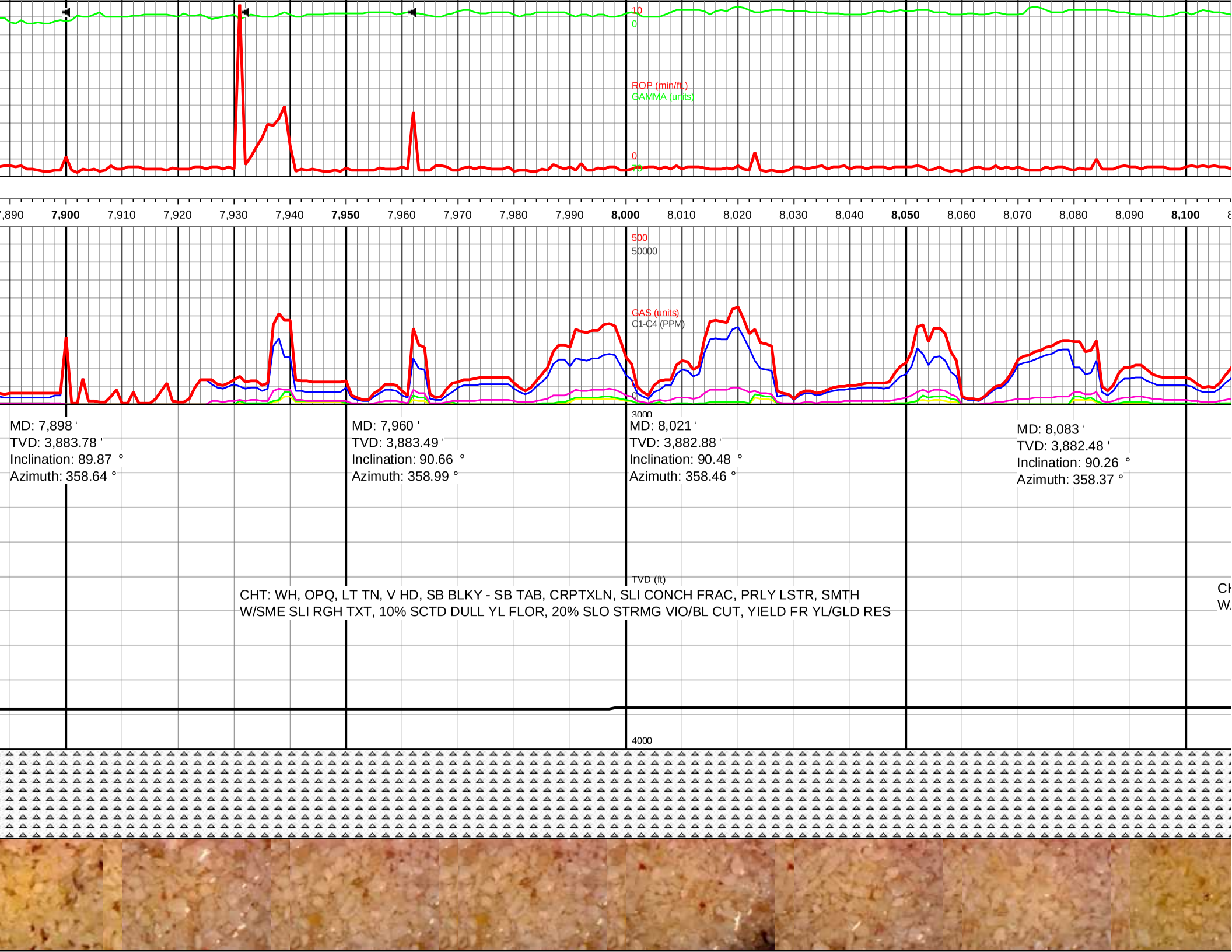

10
0
ROP (min/ft)
GAMMA (units)
0
70
6,790
6,800
6,810
6,820
6,830
6,840
6,850
6,860
6,870
6,880
6,890
6,900
6,910
6,920
6,930
6,940
6,950
6,960
6,970
6,980
6,990
7,000
500
50000
GAS (units)
C1-C4 (PPM)
3000
MW: 8.5
VIS: 26
MD: 6,846 '
TVD: 3,882.84 '
Inclination: 89.38 °
Azimuth: 357.93 °
MD: 6,908 '
TVD: 3,883.36 '
Inclination: 89.65 °
Azimuth: 358.81 °
MD: 6,970 '
TVD: 3,883.29 '
Inclination: 90.48 °
Azimuth: 359.34 °
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH
W/SME SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
4000

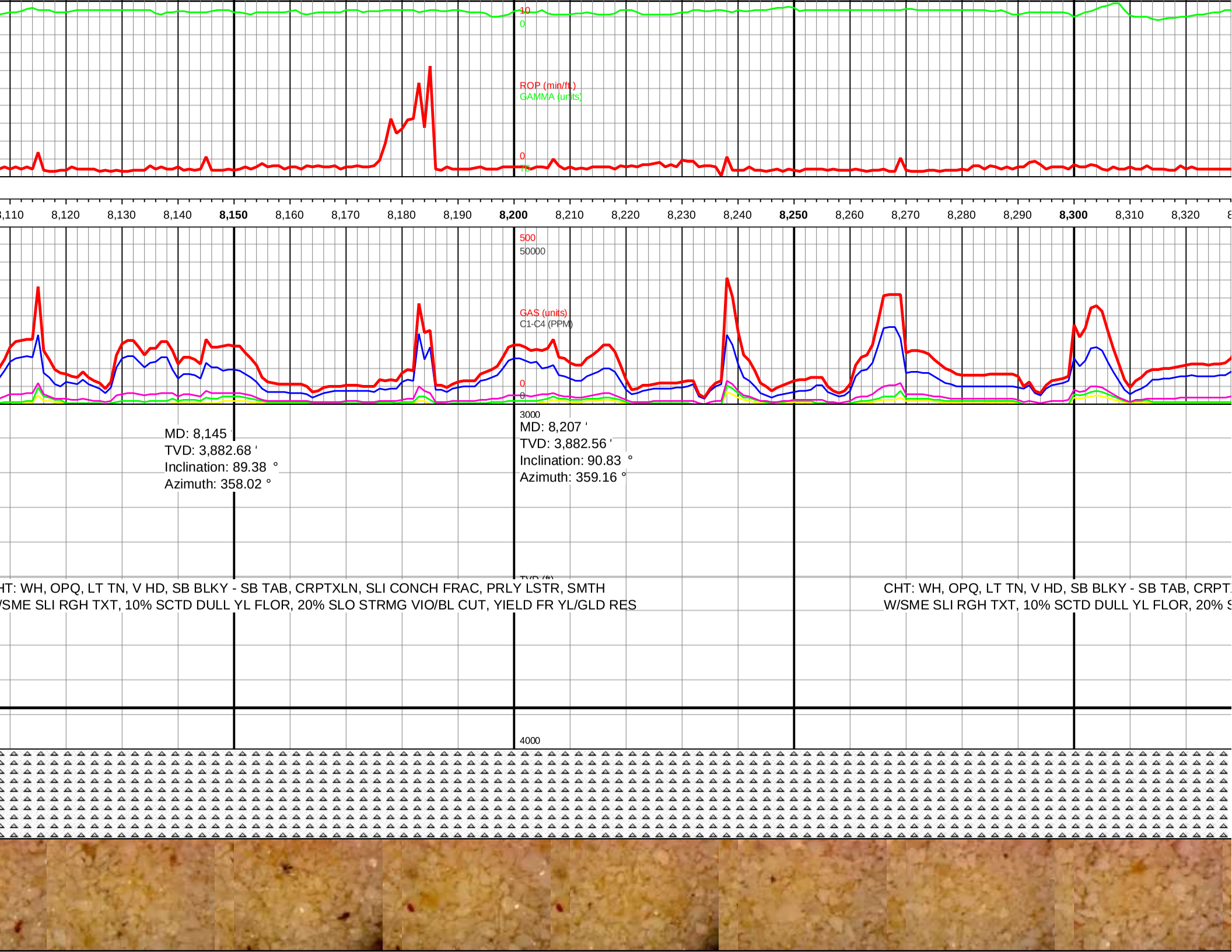

10
0
ROP (min/ft)
GAMMA (units)
0
70
7,010
7,020
7,030
7,040
7,050
7,060
7,070
7,080
7,090
7,100
7,110
7,120
7,130
7,140
7,150
7,160
7,170
7,180
7,190
7,200
7,210
7,220
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
MW: 8.35
VIS: 28
MD: 7,032 '
TVD: 3,882.91 '
Inclination: 90.22 °
Azimuth: 358.72 °
MD: 7,094 '
TVD: 3,882.44 '
Inclination: 90.66 °
Azimuth: 359.16 °
MD: 7,156 '
TVD: 3,881.63 '
Inclination: 90.83 °
Azimuth: 358.72 °
MD: 7,217 '
TVD: 3,880.51 '
Inclination: 91.27
Azimuth: 358.72
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH
W/SME SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
4000

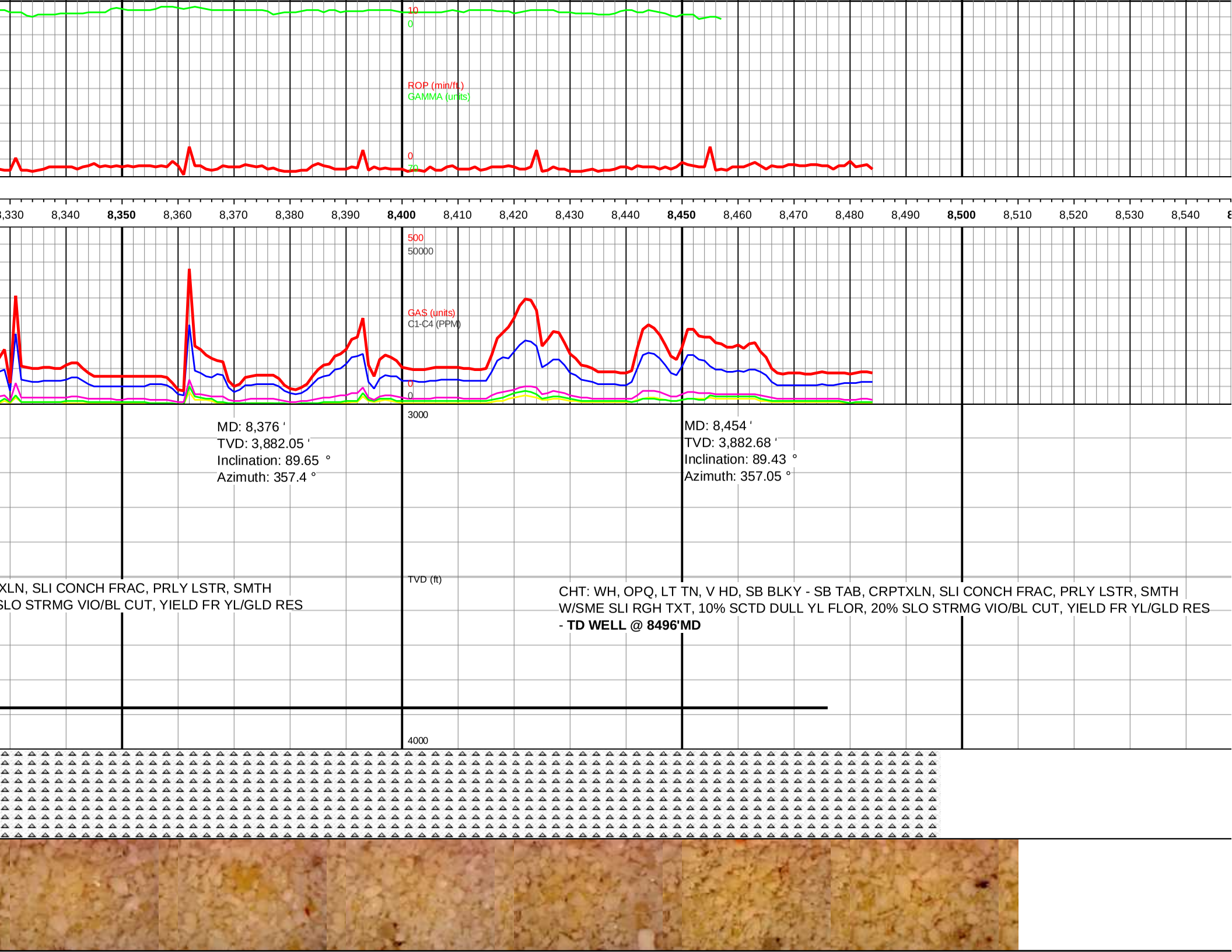

10
0
ROP (min/ft)
GAMMA (units)
0
70
7,230
7,240
7,250
7,260
7,270
7,280
7,290
7,300
7,310
7,320
7,330
7,340
7,350
7,360
7,370
7,380
7,390
7,400
7,410
7,420
7,430
7,440
500
50000
GAS (units)
C1-C4 (PPM)
0
3000
MW: 8.5
VIS: 28
MD: 7,279 '
TVD: 3,880.28 '
Inclination: 89.17 °
Azimuth: 359.69 °
MD: 7,341 '
TVD: 3,881.1 '
Inclination: 89.3 °
Azimuth: 359.69 °
MD: 7,403 '
TVD: 3,881.93 '
Inclination: 89.17 °
Azimuth: 359.6 °
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH
W/SME SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
4000

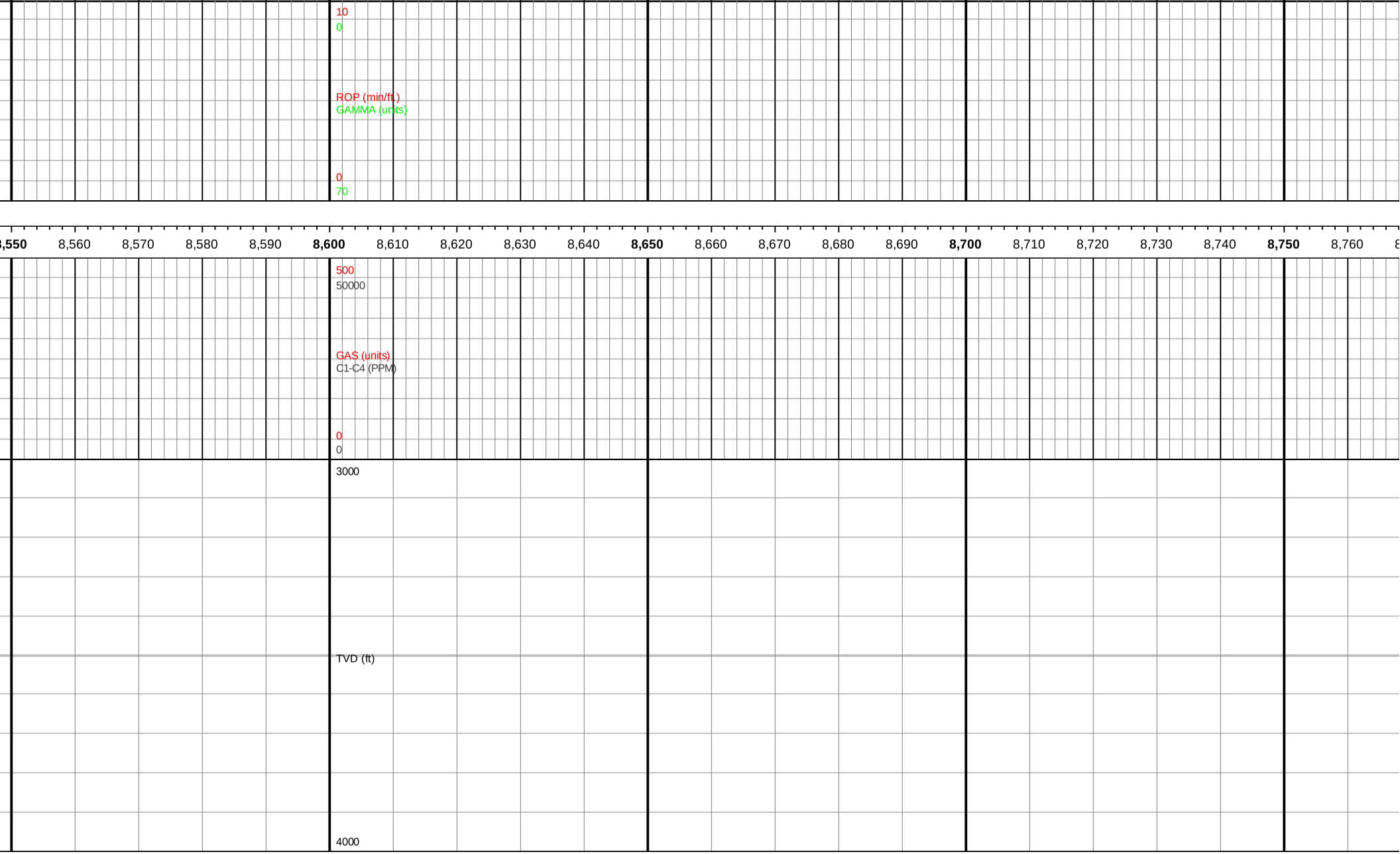

10
0
ROP (min/ft)
GAMMA (units)
0
7,450
7,460
7,470
7,480
7,490
7,500
7,510
7,520
7,530
7,540
7,550
7,560
7,570
7,580
7,590
7,600
7,610
7,620
7,630
7,640
7,650
7,660
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 7,465 '
TVD: 3,883.07 '
Inclination: 88.73 °
Azimuth: 358.72 °
MD: 7,527 '
TVD: 3,883.76 '
Inclination: 90 °
Azimuth: 358.99 °
MD: 7,589 '
TVD: 3,883.71 '
Inclination: 90.09 °
Azimuth: 358.64 °
MD: 7,650 '
TVD: 3,883.38 '
Inclination: 90.53 °
Azimuth: 359.6 °
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH W/SME
SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
4000

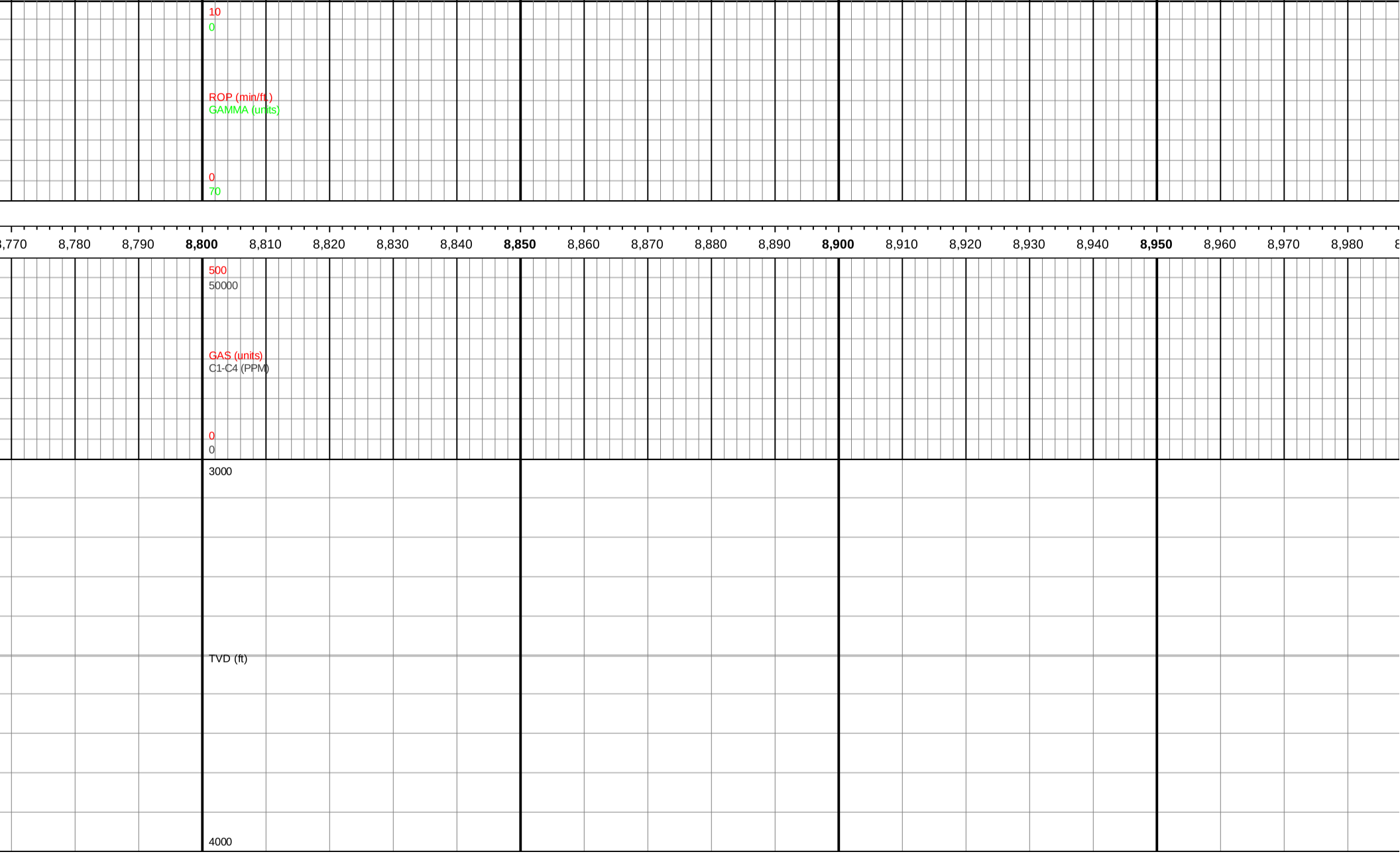

10
0
ROP (min/ft)
GAMMA (units)
0
70
7,670
7,680
7,690
7,700
7,710
7,720
7,730
7,740
7,750
7,760
7,770
7,780
7,790
7,800
7,810
7,820
7,830
7,840
7,850
7,860
7,870
7,880
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 7,712 '
TVD: 3,883.16 '
Inclination: 89.87 °
Azimuth: 358.72 °
MD: 7,774 '
TVD: 3,883.45 '
Inclination: 89.6 °
Azimuth: 358.11 °
MD: 7,836 '
TVD: 3,883.67 '
Inclination: 88.96 °
Azimuth: 358.9 °
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH
W/SME SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
4000

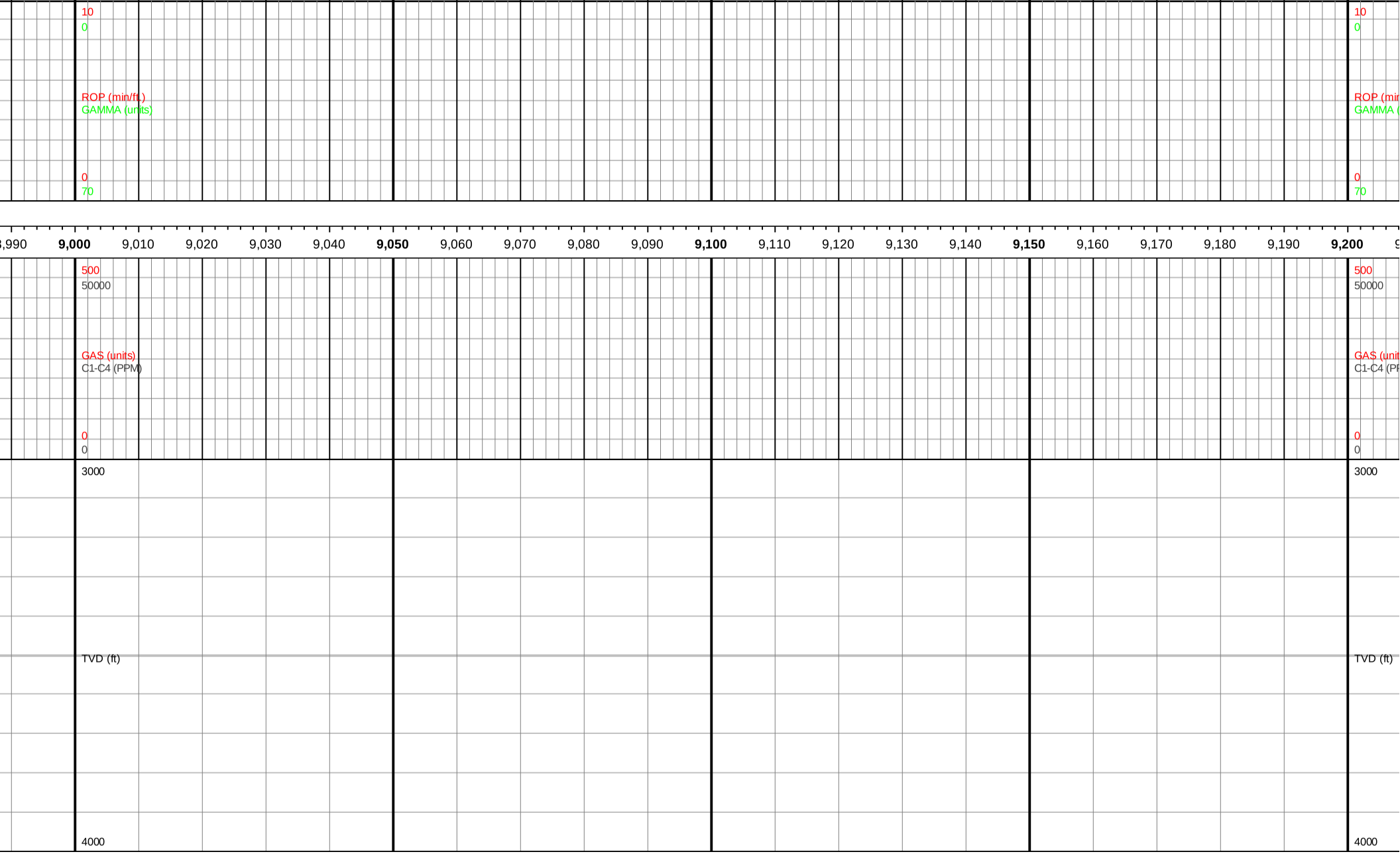

10
0
ROP (min/ft)
GAMMA (units)
0
7,890
7,900
7,910
7,920
7,930
7,940
7,950
7,960
7,970
7,980
7,990
8,000
8,010
8,020
8,030
8,040
8,050
8,060
8,070
8,080
8,090
8,100
500
50000
GAS (units)
C1-C4 (PPM)
0
3000
MD: 7,898 '
TVD: 3,883.78 '
Inclination: 89.87 °
Azimuth: 358.64 °
MD: 7,960 '
TVD: 3,883.49 '
Inclination: 90.66 °
Azimuth: 358.99 °
MD: 8,021 '
TVD: 3,882.88 '
Inclination: 90.48 °
Azimuth: 358.46 °
MD: 8,083 '
TVD: 3,882.48 '
Inclination: 90.26 °
Azimuth: 358.37 °
TVD (ft)
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH
W/SME SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
4000

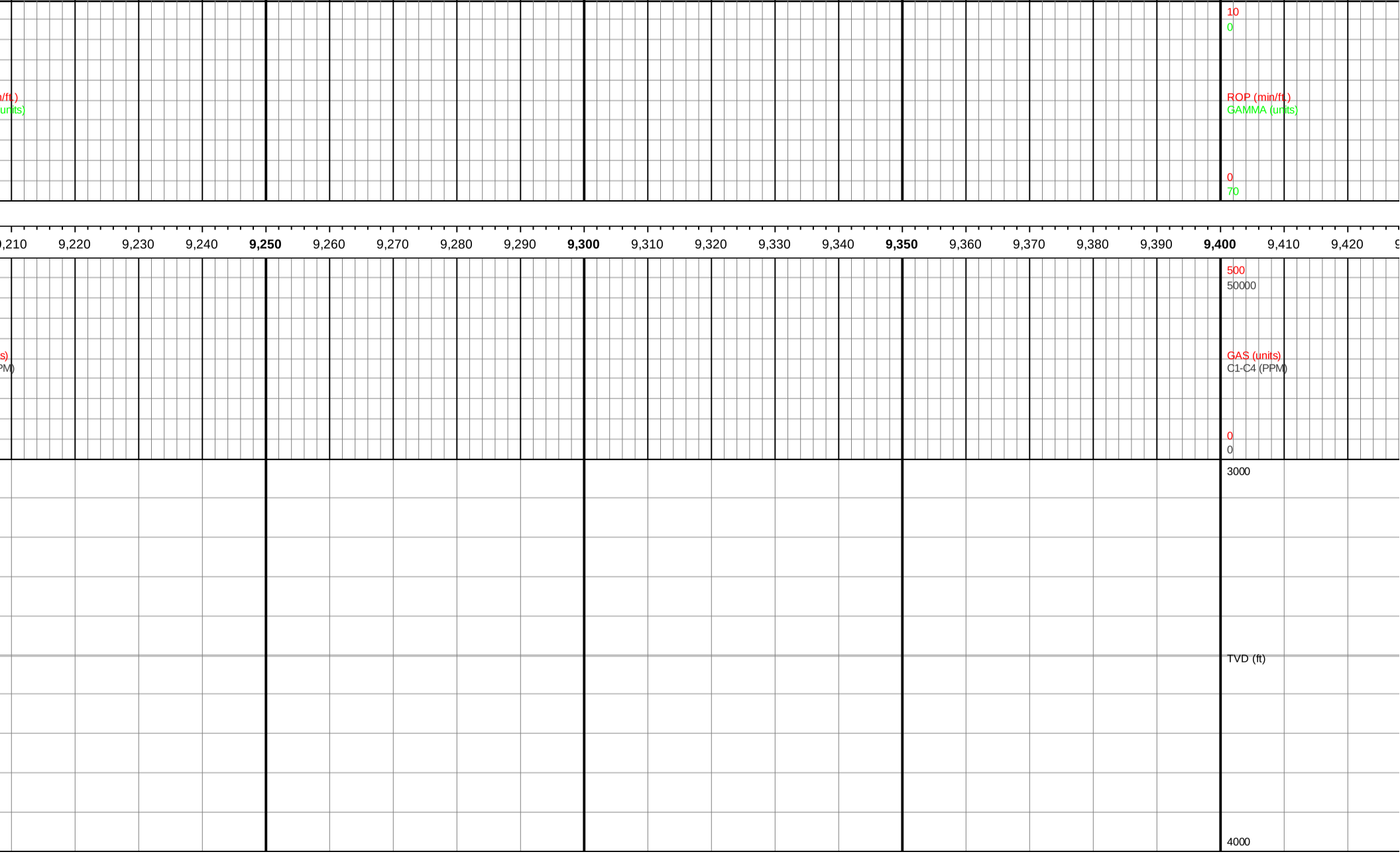

10
0
ROP (min/ft)
GAMMA (units)
0
8,110
8,120
8,130
8,140
8,150
8,160
8,170
8,180
8,190
8,200
8,210
8,220
8,230
8,240
8,250
8,260
8,270
8,280
8,290
8,300
8,310
8,320
500
50000
GAS (units)
C1-C4 (PPM)
0
3000
MD: 8,145 '
TVD: 3,882.68 '
Inclination: 89.38 °
Azimuth: 358.02 °
MD: 8,207 '
TVD: 3,882.56 '
Inclination: 90.83 °
Azimuth: 359.16 °
HT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH
/SME SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPT
W/SME SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% S
4000

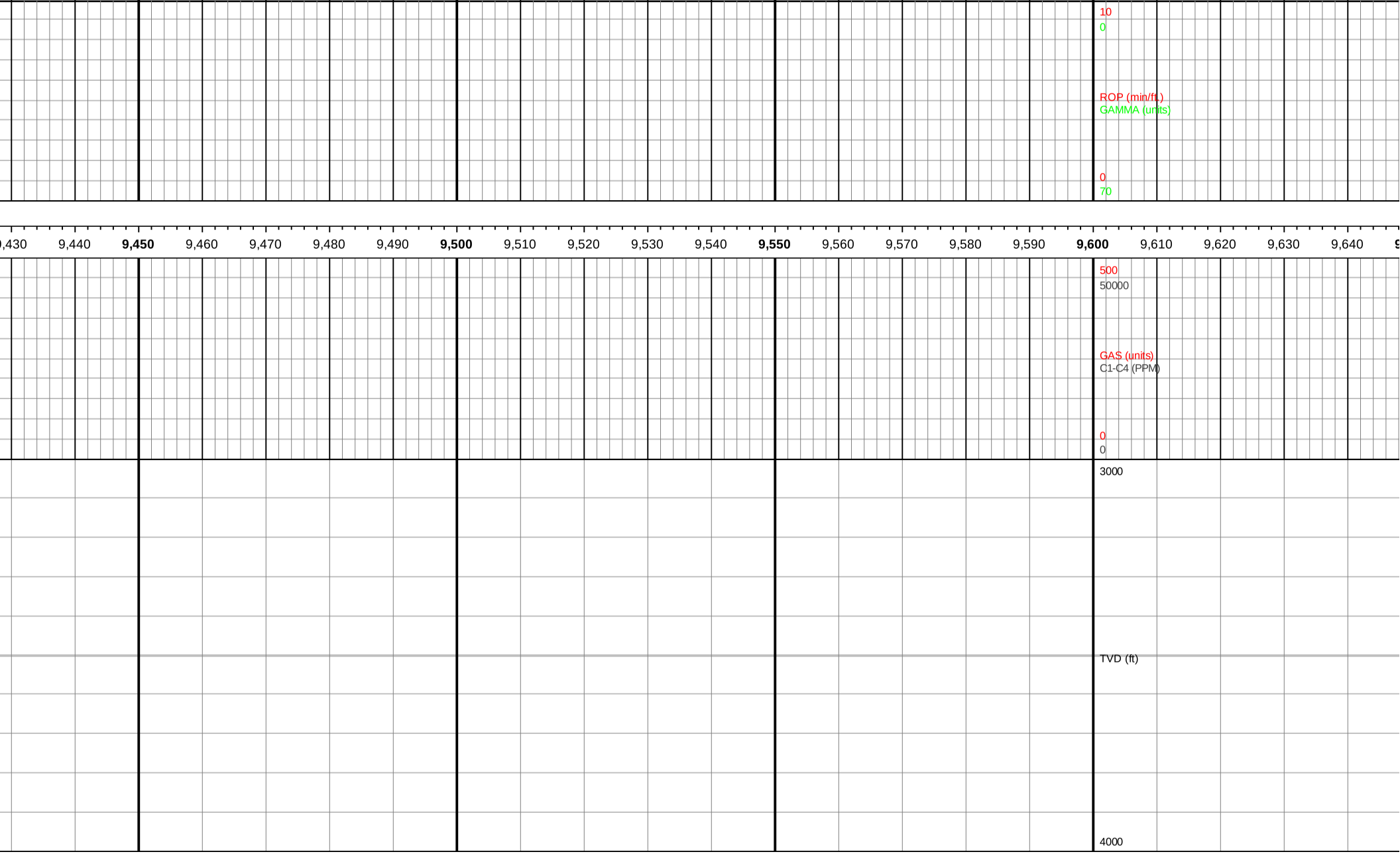

10
0
ROP (min/ft)
GAMMA (units)
0
70
8,330
8,340
8,350
8,360
8,370
8,380
8,390
8,400
8,410
8,420
8,430
8,440
8,450
8,460
8,470
8,480
8,490
8,500
8,510
8,520
8,530
8,540
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
MD: 8,376 '
TVD: 3,882.05 '
Inclination: 89.65 °
Azimuth: 357.4 °
MD: 8,454 '
TVD: 3,882.68 '
Inclination: 89.43 °
Azimuth: 357.05 °
TVD (ft)
XLN, SLI CONCH FRAC, PRLY LSTR, SMTH
SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
CHT: WH, OPQ, LT TN, V HD, SB BLKY - SB TAB, CRPTXLN, SLI CONCH FRAC, PRLY LSTR, SMTH
W/SME SLI RGH TXT, 10% SCTD DULL YL FLOR, 20% SLO STRMG VIO/BL CUT, YIELD FR YL/GLD RES
- TD WELL @ 8496'MD
4000

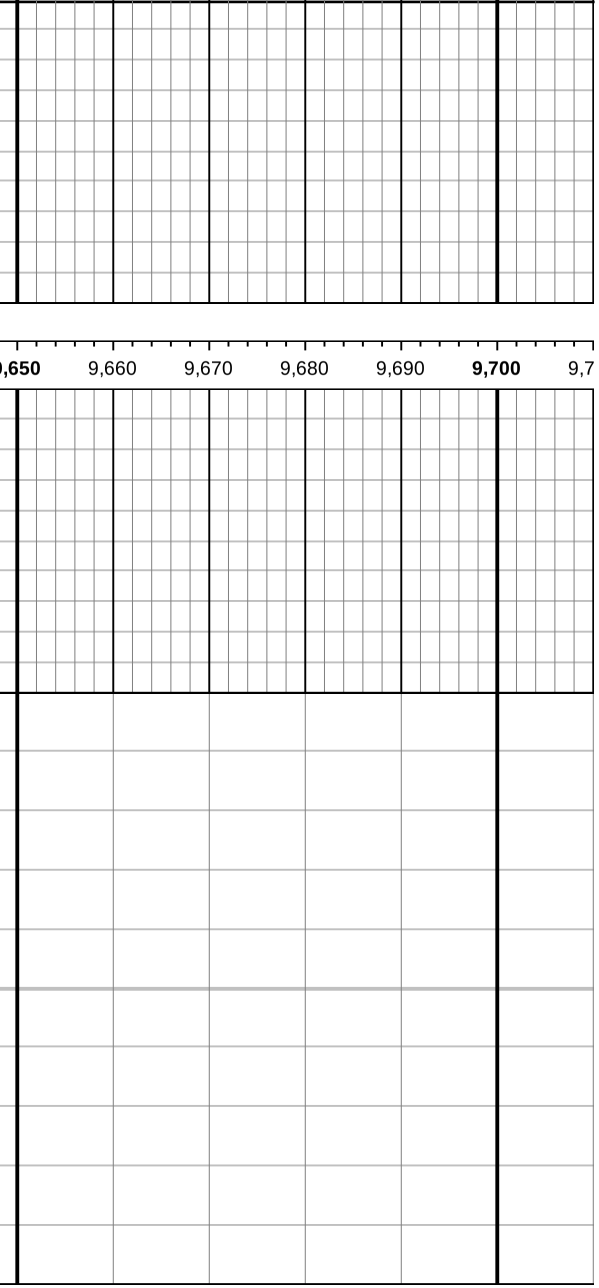

10
0
ROP (min/ft)
GAMMA (units)
0
70
8,550
8,560
8,570
8,580
8,590
8,600
8,610
8,620
8,630
8,640
8,650
8,660
8,670
8,680
8,690
8,700
8,710
8,720
8,730
8,740
8,750
8,760
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
TVD (ft)
4000


10
0
ROP (min/ft)
GAMMA (units)
0
70
8,770
8,780
8,790
8,800
8,810
8,820
8,830
8,840
8,850
8,860
8,870
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
TVD (ft)
4000


10
0
ROP (min/ft)
GAMMA (units)
0
70
10
0
ROP (min
GAMMA (
0
70
,990
9,000
9,010
9,020
9,030
9,040
9,050
9,060
9,070
9,080
9,090
9,100
9,110
9,120
9,130
9,140
9,150
9,160
9,170
9,180
9,190
9,200
500
50000
GAS (units)
C1-C4 (PPM)
0
0
500
50000
GAS (unit
C1-C4 (PP
0
0
3000
TVD (ft)
4000
3000
TVD (ft)
4000


10
0
ROP (min/ft)
GAMMA (units)
0
70
9,210
9,220
9,230
9,240
9,250
9,260
9,270
9,280
9,290
9,300
9,310
9,320
9,330
9,340
9,350
9,360
9,370
9,380
9,390
9,400
9,410
9,420
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
TVD (ft)
4000


10
0
ROP (min/ft)
GAMMA (units)
0
70
9,430
9,440
9,450
9,460
9,470
9,480
9,490
9,500
9,510
9,520
9,530
9,540
9,550
9,560
9,570
9,580
9,590
9,600
9,610
9,620
9,630
9,640
500
50000
GAS (units)
C1-C4 (PPM)
0
0
3000
TVD (ft)
4000


9,650
9,660
9,670
9,680
9,690
9,700
9,7