

Sean Deenihan & Saman Sharifaie

Petroleum Geologists

15-055-22120

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GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG

COMPANY Atlas Operating LLC
 LEASE Garden City #14-20 R
 FIELD Damme
 LOCATION 990' FNL & 370' FWL
 SEC 20 TWSP 22S RGE 33W
 COUNTY Finney STATE Kansas
 CONTRACTOR Val Energy Rig #7
 SPUD 3/07/12 COMP 3/14/12
 RTD 4900' LTD 4898'
 MUD UP 3500' TYPE MUD Chemical

ELEVATIONS

KB 2910'

DF _____

GL 2900'

Measurements Are All
From Kelly Bushing

CASING

CONDUCTOR _____
 SURFACE 8-5/8" @ 337'
 PRODUCTION 4.5" @ 4890'

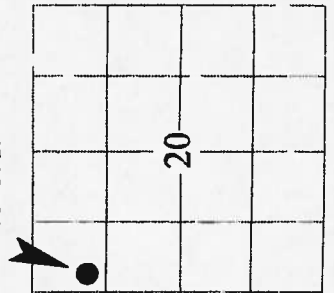
ELECTRICAL SURVEYS

CND DIL, _____
 MICRO _____
 Superior _____

SAMPLES SAVED FROM 3700' TO RTD
 DRILLING TIME KEPT FROM 3700' TO RTD
 SAMPLES EXAMINED FROM 3700' TO RTD
 GEOLOGICAL SUPERVISION FROM 2400'
 REFERENCE WELL GC# 10-20

Formation	Sample Tops	E-log Tops	Struct Pos.
Krider	2552 (+358)	2540 (+370)	
Heebner Shale	3810 (-900)	3808 (-898)	
Lansing	3856 (-946)	3859 (-949)	
Stark Sh.	4196 (-1286)	4194 (-1284)	
Cherokee Sh.	4466 (-1556)	4484 (-1564)	
St. Genevieve	4720 (-1810)	4718 (-1808)	
St. Louis	4760 (-1850)	4764 (-1854)	

Atlas - GC #14-20



REMARKS The Garden City #14-20 will be further evaluated through casing based on sample and log analysis.

Respectfully Submitted,

Sean Deenihan

Saman Sharifaie

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Geological Descriptions

Sh, rd, GY gummy soft

Sh, rd, GY br

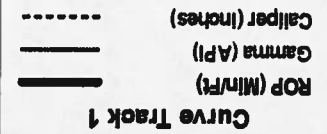
Sh, rd, GY br, fm

Lithology

Depth

2300

2350



Sh, rd, GY brn

Sh, rd, GY brn, firm

LS, wh, vf gr, vp Intgran For, sil chily, hd, n/s

Sh, rd, GY brn,

LS, om, wh, vf gr, p Intgran For, rr p.p. vug For, n/s

Sh, GY

LS, om, wh, GY vf gr, p Intgran For, rr cong, NVP, n/s

LS, aa

Se, GY vf gr, p Intgran For, abd acc min, shaly, n/s

Se, GY wh, vf gr, p Intgran For, silty, firm, rr unconsolidated sd, n/s

LS, wh, vf gr, sil chily, firm, n/s

Sh, GY fle, rr LS, aa

Sh, GY rd

Kridler 2552 (+358)

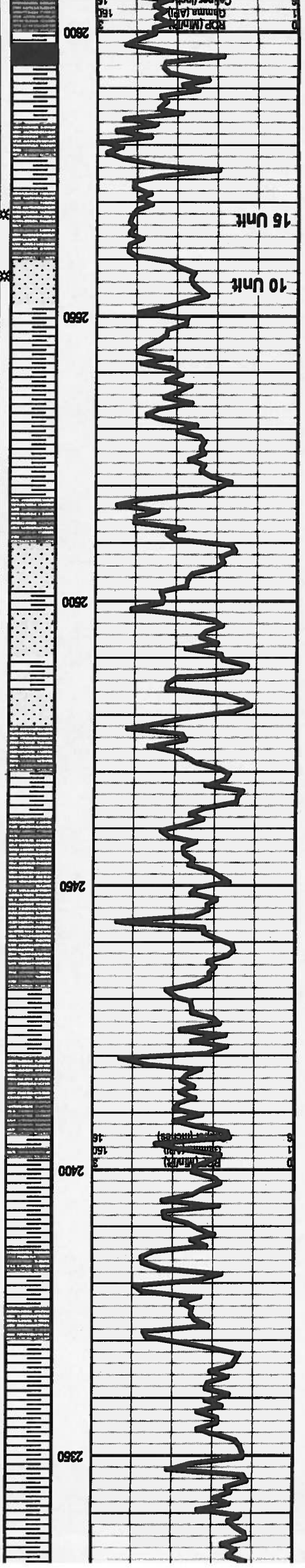
Se, GY, arm, vf gr, silty, Sil show gas upon crush, slow bubble, rr dd O str, v fr odor

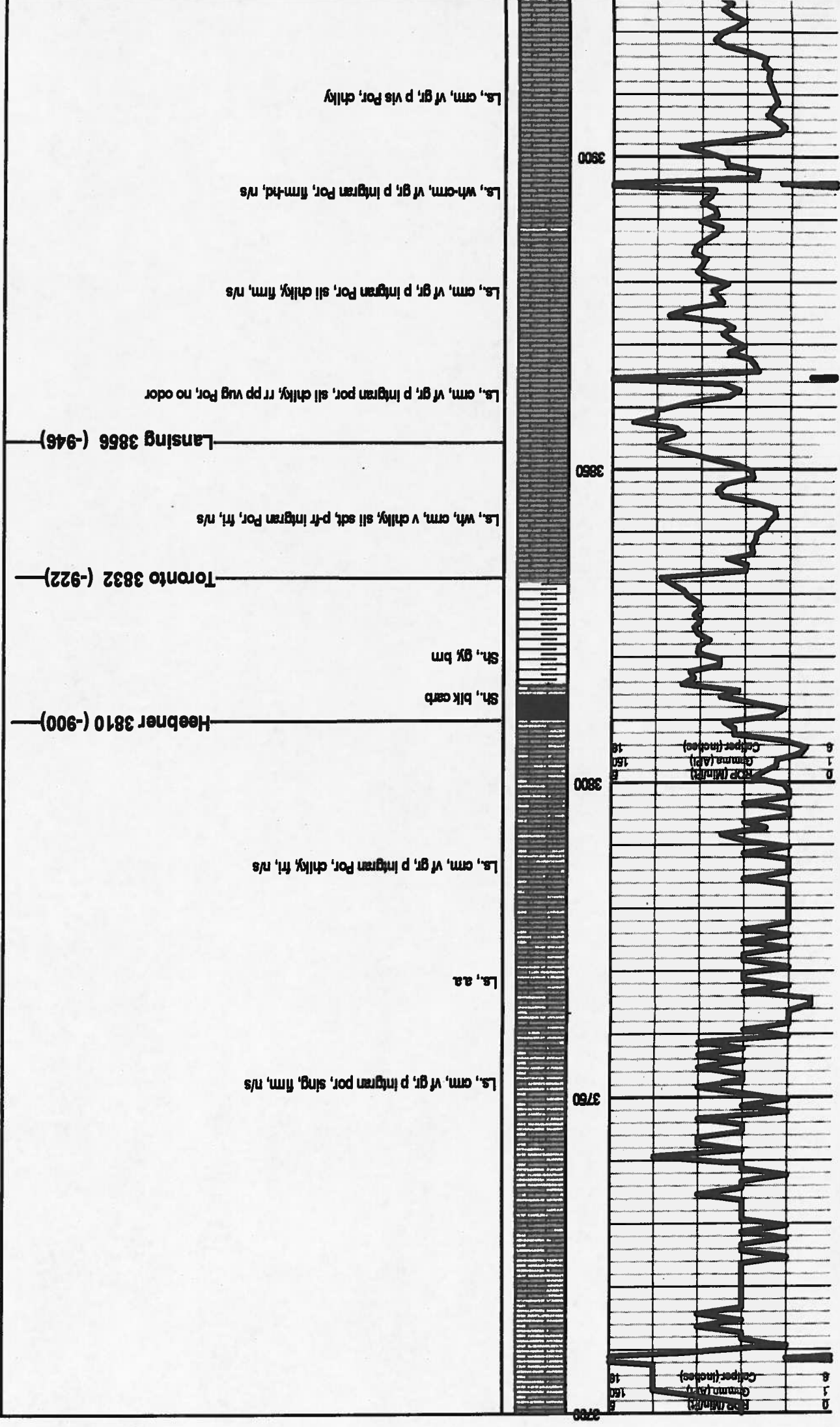
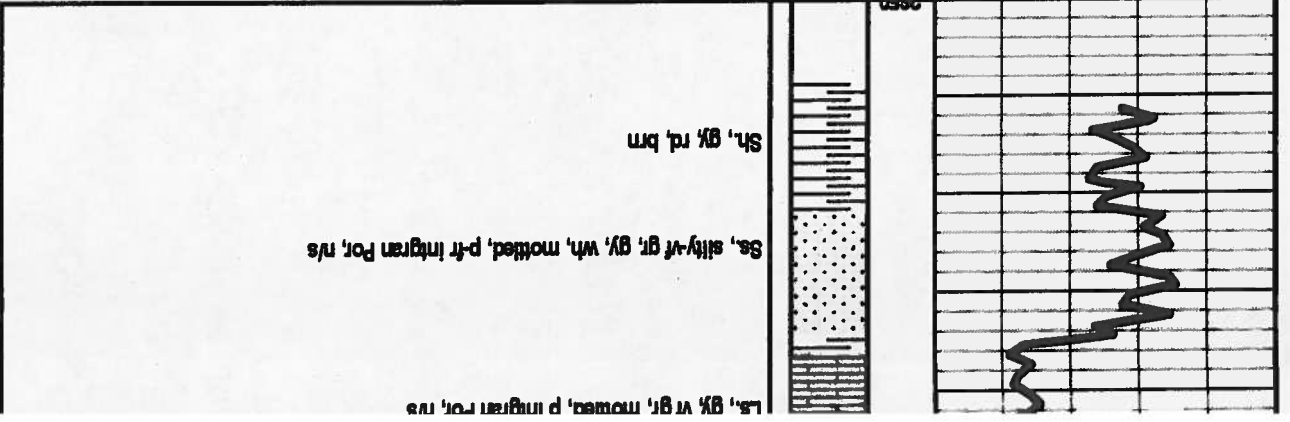
LS, GY, med gr, vf matrix, rr fr Intgran For, sil show of gas, no odor

Sh, GY brn, soft

LS, GY, mottled, vf-gr, p Intgran For, hd, n/s

Sh, rd, GY brn, dk GY





MUDCO
Mud @ 3948'
WT: 9.0
Vis: 44
Chl: 2300
LCM #

LS, wh-cm, vf gr, p Intgran For, firm-hd, n/s

LS, cm, vf gr, p vis For, chily

LS, cm, vf gr, p Intgran For, sll chily, slng, fti n/s

LS, s.s.

LS, cm, vf gr, p Intgran For, fos frag, sll mottled, n/s

LS, cm, vf gr, p Intgran For, firm-hd n/s

LS, wh, v chily, p vis For, soft, n/s

LS, cm, tn, xt gr, p For, hd, n/s

LS, cm, wh, vf gr, v chily, slng, sll dollc, soft, n/s

LS, cm, gy, xt-vf gr, p Intgran For, firm, n/s

LS, cm, wh, vf gr, sll chily, p Intgran For, n/s

LS, cm, vf gr, p Intgran For, sme fos Frag, sll cherty, n/s

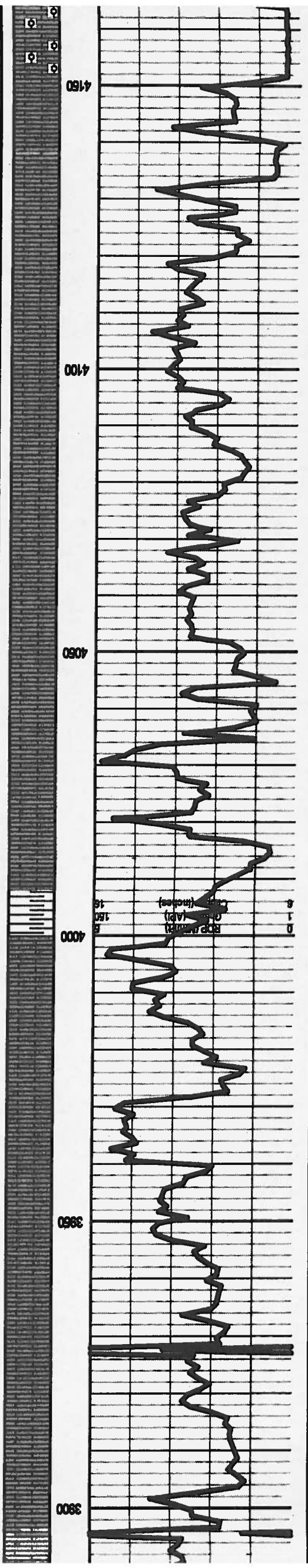
LS, s.s.

LS, cm, vf gr, p Intgran For, firm, n/s

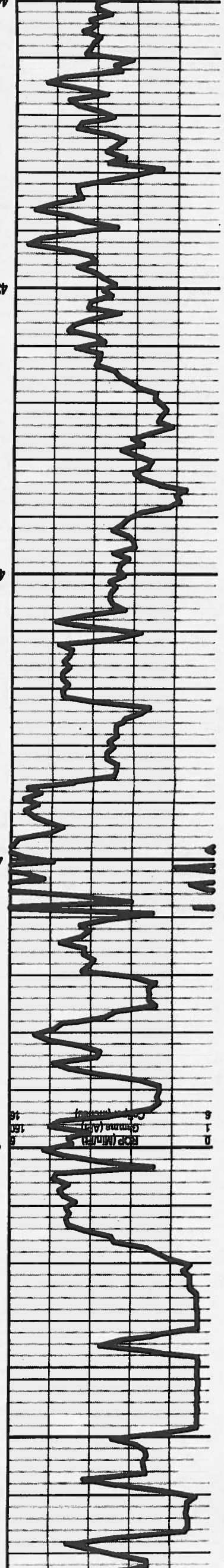
LS, s.s. Inc. Chl, n/s

LS, wh, chily, r Ool, Fr Om For, n/s

LS, cm, tn, Ool, fr-gd Om For, fti, bright Fluor, sll gassy Odr?, no stain



4400
4350
4300
4250
4200
4150



ls., wh, chily, r Ool, Fr Oom Por, n/s

ls., cm, tn, Ool., fr-gd Oom Por, trl, bright Fluor, all gassy Od? no stain

ls. arm, Ool., fr-gd Oom Por, trl, all dollc, brittle, fluor, no odor

ls., wh, cm, vf gr, sing, p Intgran Por, firm-hd,

Stark Sh 4196 (-1286)

Sh., blk

ls., tn, Ool, fr-gd Ool Por, trl, n/s

ls., cm, vf gr, tr Intgran Por, all chily, shaly, n/s

Hushpuckney Sh 4239 (-1329)

Sh., blk

ls., cm, vf, gr, p Por, hd, n/s

ls., cm, wh, f gr, gran, p Por, chily, n/s

ls., cm, wh, vf gr, p Intgran por, dnse, n/s

ls., sa

ls., cm, vf gr, p Intgran Por, p-occc tr vug Por, all show free Oil, fr odor

Chl, gy, sharp

ls., cm, vf gr, chily, p Intgran Por, trl, n/s

ls., cm, vf gr, all chily, v all str, NSFO, no odor

BKC 4342 (-1432)

Sh., gy firm

ls., cm, xl gr, fos Frag, NVP hd

ls., cm, tn, vf gr, fos frag, tr Intos Por, p Intgran Por, all chily, all Pyr, no fluor, no odor

ls., cm, vf gr, all sdy, ooc fos, firm, n/s



Ls., crm, v/ gr, all sdy, occ fos, firm, n/s

Sh., gy

Ls., tr, gy v shaly, mottled, firm-hd, n/s

Sh., gy-dk gy, brn

Ls., GryTan-Sing-Crypto-xn-cherly, n/s

Sh., Bk

Ls., crm-tan, v/ gr, all fluor, all show, no odor

Sh., blk-dk gry, v/ gr, all show, no odor

Ls., wht to crm, orange blk, cryto-xn, no odor

Sh., Dk Gry; Gry, Argill and Bk

Ls., gy/tr, Sing, Dense, Firm, all chily, n/s

Sh., Dk Gry to Bk, Abund. of vert-color

Ls., Lt crm to Gry, v/ gr, p For, n/s

Ls., gy-Tan, Sing, Dense, f gr, p For, n/s

MUDCO
Mud @ 4443'
WT: 9.0
Vis: 59
Chl: 2000
LCM 5#

RTD: 4900'
ITD: 4898'

Ls., orn to gry and green, Cryto-xln, Trc. of poor Fssil to sill-ool Por. Chalky-Scatt
Abund. of vari-color Sh.

Chert-Wht to Clr

Chert-Gry/Tan-Fresh to all weath. Lt. Gry to Gry Chalky Ls. No show

Ls., orn, vt gr, sll Pyr, P Intgran Por, sll chily, frac, no odor

Ls., orn, vt gr, firm, dnse, scaly, p Por, n/s

Ls., sa

Ls., orn, xt gr, firm-hd, p Por, chily lP, n/s

Ls., orn, bn, vt gr, p Intgran Por, firm, rr Ostr, NSFO, no fluor

Ls., orn, vt gr, micro fos, fos frags, p-fr Intos Por, SSFO, rr str, sll odt, sll fluor

Ls., orn, gy, sme chry, p Intgran Por, pred chily, firm, n/s

Ls., wh, gy, sme chry, p Intgran Por, firm, SSFO, v ft odt, sll fluor

St. Louis 4764 (-1864)

Ls., orn, wh, chily, vt gr, p Intgran Por, n/s

Ls., wh-gy, silty, frt, p Intgran Por, ooc gas bubble, rr sdy Cong-NVR, no fluor

Ls., wh, lt gm, silty, sll glauc lP, frt, n/s

St. Gen 4720 (-1810)

Sh., blk bm, gm, gy

Sh., blk bm, gy

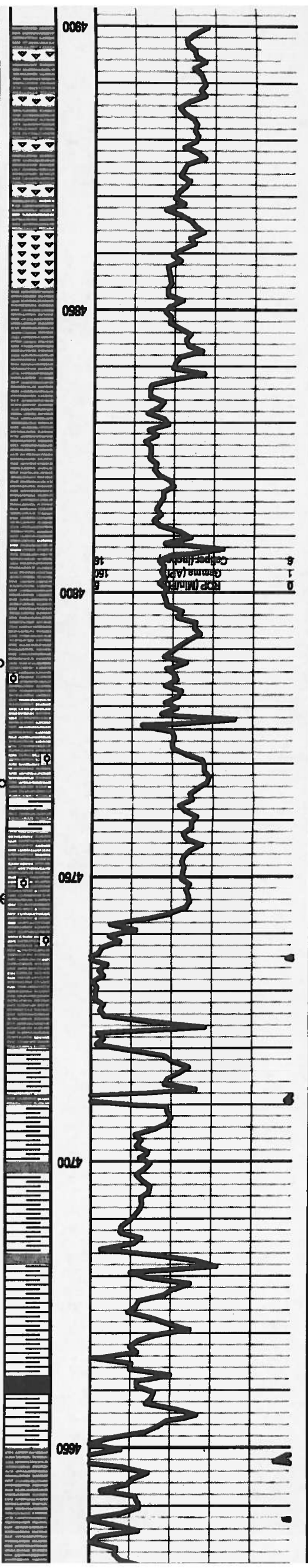
Sh., blk bm, gy

Sh., gy, blk, bm

Morrow Sh. 4670 (-1760)

Sh., gy, blk

Ls., gy-Tan, Sing, Dense, f gr, p Por, n/s



MUDCO
Mud @ 4865'
WT: 9.1
Vis: 62
Chl: 1800
LCM 7#