

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

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 EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ 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: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

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: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Merit Energy Company, LLC
Well Name	MCWILLIAMS E 8
Doc ID	1482978

All Electric Logs Run

ANNULAR HOLE VOLUME
BOREHOLE SONIC ARRAY LOG
DUAL SPACED NEUTRON SPECTRAL DENSITY LOG
MICROLOG
QUAD COMBO

Form	ACO1 - Well Completion
Operator	Merit Energy Company, LLC
Well Name	MCWILLIAMS E 8
Doc ID	1482978

Tops

Name	Top	Datum
HEEBNER	3925	.
TORONTO	3941	.
LANSING	4018	.
KANSAS CITY	4330	.
MARMATON	4512	.
PAWNEE	4585	.
CHEROKEE	4629	.
ATOKA	4802	.
MORROW	4850	.
U MORROW	4879	.
L MORROW	4918	.
ST GENEVIEVE	4970	.



Liberal Yard #1717 - Phone 620-624-2277 - 1700 S. Country Estates Road, Liberal KS 67901

PRESSURE PUMPING Job Log

Customer:	Merit Energy	Cement Pump No.:	38750-19842 4 HRS	Operator TRK No.:	96815
Address:	gardencity.invoices@meritenergy.com	Ticket #:	1718-19732 L	Bulk TRK No.:	30464-37547
City, State, Zip:	AFE- 64323	Job Type:	Z-42 Cement Conductor Casing		
Service District:		Well Type:	OIL		
Well Name and No.:	McWilliams E # 8	Well Location:	21-24S-33W	County:	Finney
				State:	Kansas

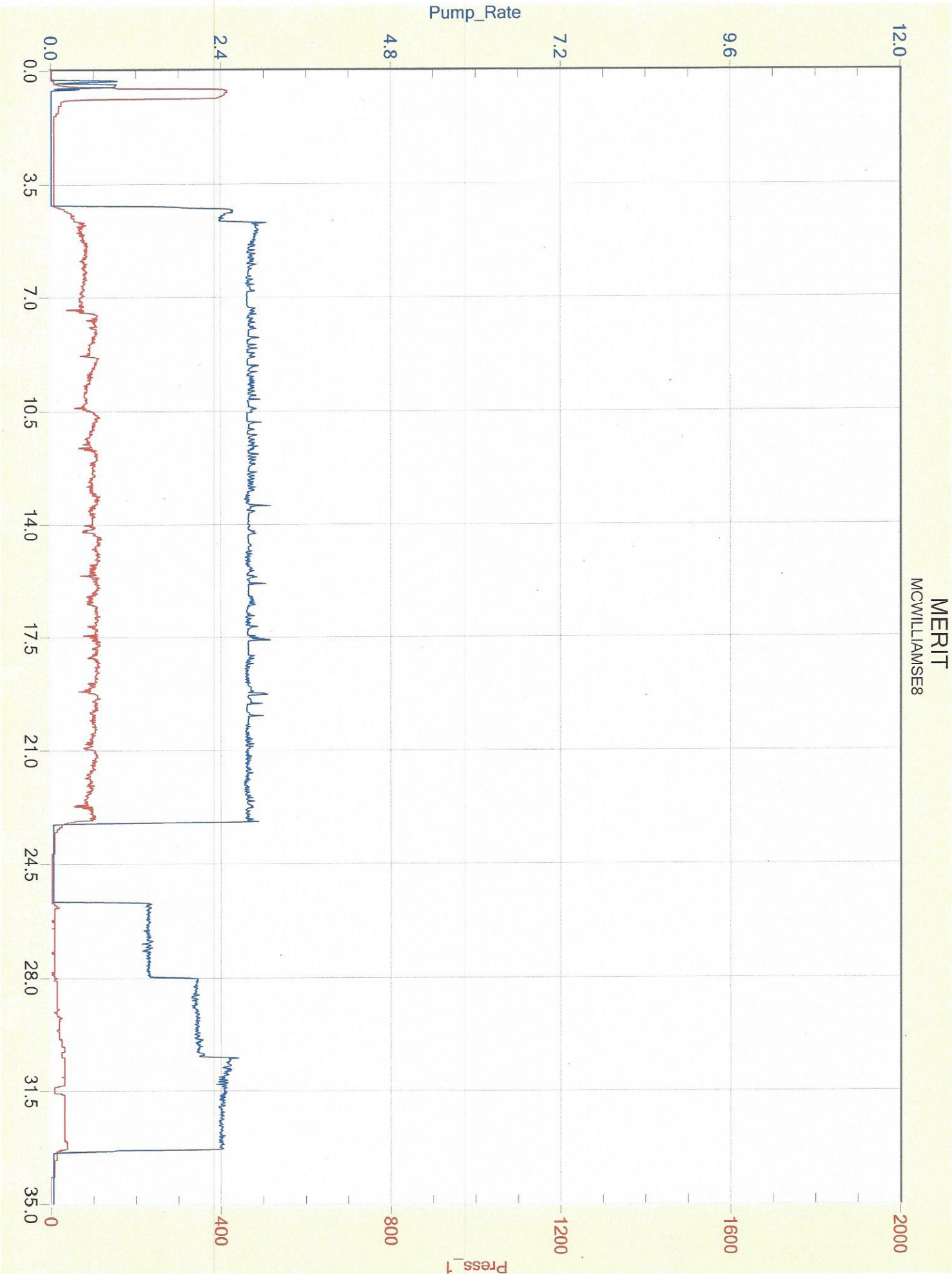
Type of Cmt	Sacks	Additives	Truck Loaded On		
CLASS C	200	3%CaCl, 1/2#POLYFLAKE	30464-37547	Front	Back
				Front	Back
				Front	Back

Lead/Tail:	Weight #1 Gal.	Cu/Ft/sk	Water Requirements	CU. FT.	Man Hours / Personnel	
Lead:	14.8	1.36	6.34	272	Man Hours:	23
Tail:					# of Men on Job:	3

Time (am/pm)	(BPM)	Volume (BBLs)	Pumps		Pressure(PSI)		Description of Operation and Materials
			T	C	Tubing	Casing	
21:30							ON LOC, SAFTEY MTG, R.U.
0:42						500	TEST LINES
12:45 AM	3					110	START MIXING @ 14.8#
1:08 AM	1.4	48.5				10	START DISPLACEMENT
1:17 AM		15				40	SHUT IN WELL, RELEASE PSI
							JOB COMPLETE
							THANK YOU FOR YOUR BUSINESS!!!
							5 BBL CEMENT TO PIT

Size Hole	17 1/2	Depth	122'		TYPE	
Size & Wt. Csg.	13 3/8	Depth	115'	New / Used	Packer	Depth
tbg.		Depth			Retainer	Depth
Top Plugs		Type			Perfs	CIBP

Customer Signature:	Basic Representative:	CHAD HINZ
	Basic Signature:	
	Date of Service:	9/4/2019





Liberal Yard #1717 - Phone 620-624-2277 - 1700 S. Country Estates Road, Liberal KS 67901

PRESSURE PUMPING

Job Log

Customer:	Merit Energy	Cement Pump No.:	38117, 19919 6Hrs.	Operator TRK No.:	96816
Address:	gardencity.invoices@meritenergy.com	Ticket #:	1718 19659 L	Bulk TRK No.:	14355, 37724 Cory 37712, 19883 Oscar
City, State, Zip:	AFE- 64323	Job Type:	Z-42 Cement Surface Casing		
Service District:	1718 - Liberal, Ks.	Well Type:	OIL		
Well Name and No.:	McWilliams E # 8	Well Location:	21-24S-33W	County:	Finney
				State:	Kansas

Type of Cmt	Sacks	Additives	Truck Loaded On		
A-Con' Blend	500	3% Calcium Chloride, 1/4# Polyflake, 1# Gilsonite	14355, 37724 Cory	Front	Back
Class C	165	2% Calcium Chloride, 1/4# Polyflake	37712, 19883 Oscar	Front	Back
				Front	Back

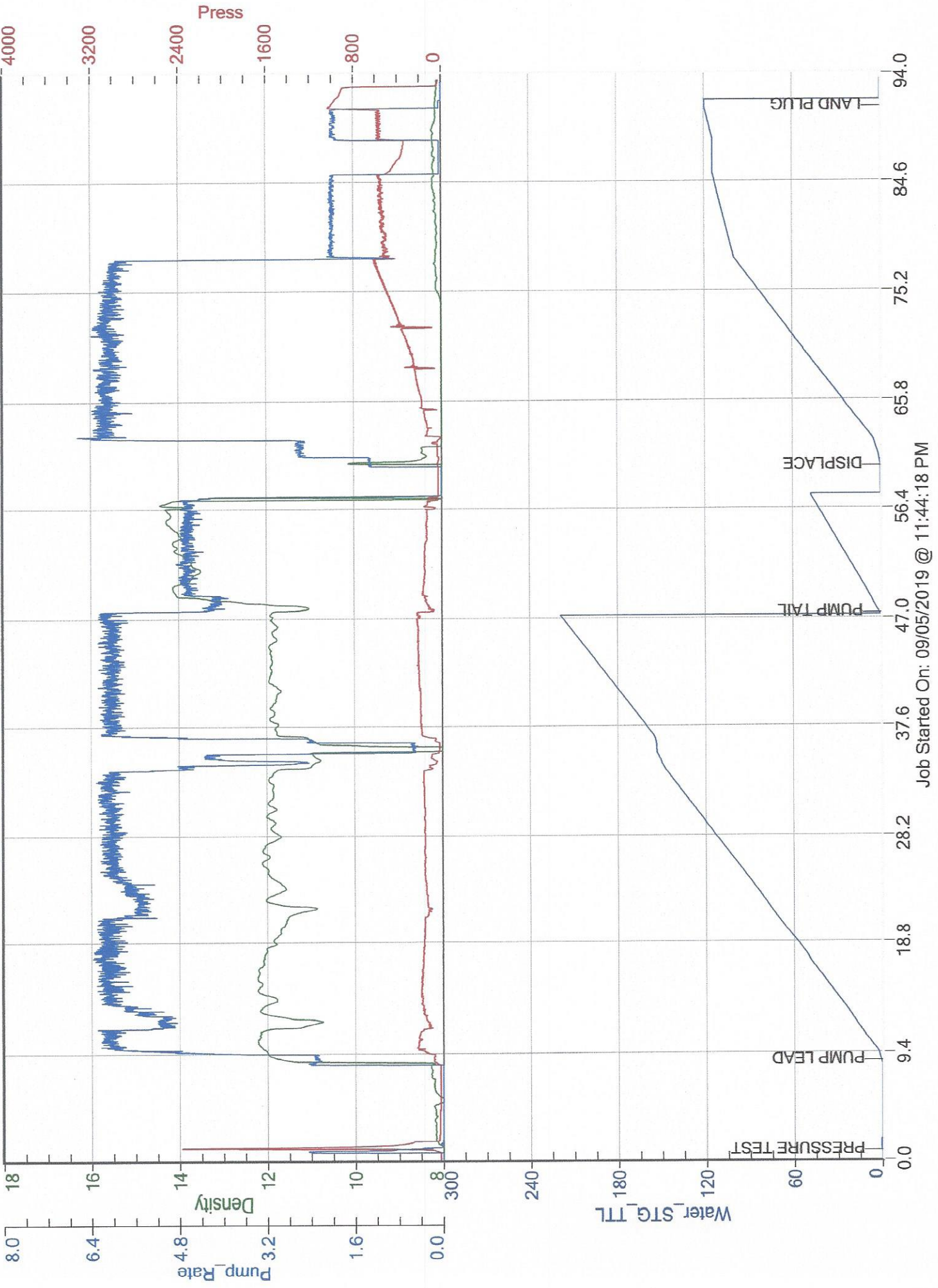
Lead/Tail:	Weight #1 Gal.	Cu/Ft/sk	Water Requirements	CU. FT.	Man Hours / Personnel	
Lead:	12.1	2.41	13.9	1205	TT Man Hours:	36.5
Tail:	14.8	1.34	6.33	221.1	# of Men on Job:	4

Time (am/pm)	(BPM)	Volume (BBLs)	Pumps		Pressure (PSI)		Description of Operation and Materials
			T	C	Tubing	Casing	
20:30							ON LOCATION
21:30							SAFETY MEETING
9:35 PM							RIG UP
11:40 PM							RIG TO CIRCULATE
11:41 PM							SAFETY MEETING
23:44							RIG TO PT
23:45							PRESSURE TEST TO 2300PSI
11:53 PM	6	214.6 slurry				230	PUMP 500SX LEAD @ 12.1#
0:34	4.6	39.3 slurry				180	PUMP 165SX TAIL @ 14.8#
0:42							SHUTDOWN / DROP PLUG
0:45	6.2	20				150	DISPLACE / CEMENT 20BBL IN
	6.2	30				180	
	6	40				220	
	6	50				250	
	6	60				310	
	6.2	70				390	
	5.9	80				470	
	6	90				550	
	5.8	99				610	SLOW RATE TO 2.0BPM @ 490PSI
	2	100				510	
	2	109.6				560	LAND PLUG / PRESSURE UP TO 1020PSI
							RELEASE BACK --- FLOAT HELD
							JOB COMPLETE

Size Hole	12 1/4"	Depth			TYPE	Plug Container	
Size & Wt. Csg.	8 5/8" 24#	Depth	1765.81'	New / Used	Packer	Depth	
Landing Press.	401.4psi	Depth			Retainer	Depth	
Shoe Jt.	41.65'	Type			Perfs	CIBP	

Customer Signature:	Basic Representative:	Daniel Beck
	Basic Signature:	<i>Daniel Beck</i>
	Date of Service:	9/5/2019

Merit Energy
McWilliamsE8



Job Started On: 09/05/2019 @ 11:44:18 PM



Liberal Yard #1717 - Phone 620-624-2277 - 1700 S. Country Estates Road, Liberal KS 67901

PRESSURE PUMPING

Job Log

Customer:	Merit Energy	Cement Pump No.:	37223 19572 10HRS	Operator TRK No.:	78868	
Address:	gardencity.invoices@meritenergy.com	Ticket #:	1718 19688 L	Bulk TRK No.:	14355 37724 Corey	14355 37724
City, State, Zip:	AFE # 64323	Job Type:	Z-42 Cement Production Casing			
Service District:	1718-Liberal KS	Well Type:	OIL			
Well Name and No.:	McWilliams E # 8	Well Location:	21-24S-33W	County:	Finney	State: Kansas

Type of Cmt	Sacks	Additives	Truck Loaded On		
Class C 50/50	230	6% Gypsum, 10% Salt, .5% C-17, 1/4# Defoamer, 5# Gilsonite, 1/4# Celloflake	14355 37724 Corey	Front	Back
			14355 37724	Front	Back
				Front	Back

Lead/Tail:	Weight #1 Gal.	Cu/Ft/sk	Water Requirements	CU. FT.	Man Hours / Personnel	
Lead:	13.6	1.57	7.18	361.1	TT Man Hours:	34
Tail:					# of Men on Job:	3

Time (am/pm)	(BPM)	Volume (BBLs)	Pumps		Pressure(Psi)		Description of Operation and Materials
			T	C	Tubing	Casing	
7:30am							Arrived at location
9:00am							Spot trucks/Rig up
10:00am							Safety meeting
10:31am						2500	Pressure test lines to 2500psi
10:33am	3	11.9				100	Pump 11.9bbls of Mud flush spacerr
10:45am	3	13.9				zero	Pump 13.9bbls of cement for rat and mouse hole from 50sks at 13.6lbs
11:10am	5	50				200	Pump 50bbls of cement from 180sks at 13.6lbs
11:27am							Shut down/Drop plug/Wash pump and lines
11:38am							Start displacement of 118bbls with H2O/4%KCL
11:42am	6	20				50	20bbls gone
11:45am	6	40				50	40bbls gone
11:48am	6	60				20	60bbls gone
11:52am	6	80				210	80bbls gone
11:55am	6	100				600	100bbls gone
11:57am	6	108				650	108bbls gone
12:00am	3	118				1650	Bump plu/Hold pressure for 5 minutes
12:05am							Release pressure to check if float holds
12:06am						1550	Pressure test casing for 15minutes with 1550psi
							Rig down/Job completed
							Thanked company man and rig crew

Size Hole	7 7/8	Depth	5146		TYPE	Float Collar	
Size & Wt. Csg.	5 1/2 17#	Depth	5146	New / Used	Float collar	5101.37	Depth
Landing Psi	1000+	Depth			Retainer		Depth
Shoe Joint	44.63	Type			Perfs		CIBP

Customer Signature:	Basic Representative:	Victor A. Corona
	Basic Signature:	<i>Victor A. Corona</i>
	Date of Service:	9/8/2019

Pumping Order / Mixture

Client: Merit Energy
Date: 9/8/2019
Job: 5 1/2 Production

Well Name & No: McWilliams E-8
Location Supervisor: Victor A. Corona
COMPANY REP. Rodney Gonzales

Differential Pressure 579 psi
Lift Pressure: 500 psi

Recipe

Pressure Test PSI: 2500

MAX PSI: 1500

12 BBLs OF MUD FLUSH SPACER

13 BBLs CEMENT R&M YIELD 1.57 13.6 LBS

50SKS 7.18G/SK

50 BBLs TAIL SLURRY YIEL 1.57 13.6 LBS

1800SKS 7.18G/SK

DROP PLUG/WASH PUMP ON TO PIT

118.0 BBLs OF DISPLACEMENT

108.0 BBLs @ 5 BPM

10.0 BBLs AT 2-3 BPM TO BUMP PLUG

DISP PLUG WITH 118 BBLs OF H2O/4%KCL

Cement Callsheet



Company	Merit Energy			Service Point	Liberal, Kansas		
Well Type	Contractor Duke 9			Contact Person	Tyce Davis		Ph # 620-388-3779
Lease	McWilliams E		Well # 8	Sec 21	County finney	State Kansas	Range 33W
Directions:							

Garden City: South to Jct 83 & BUS 83; North on Bus 83 to River Drive; West on River Drive 1.4 Miles to Sagebrush RD, 3 miles west on Sagbrush RD; South to rig

Job Type	Production			Casing Size	5 1/2	Thread	8 Rnd	Weight	17
Equipment	1 Pump Truck 1 Bulk Truck			Tubing/Drill Pipe Size			Thread		
				Hole Size	7 7/8		Packer		
AFE #:				Plug Container	Yes		Squeeze Manifold		

Production: Use 50sksof tail cement to plug Rat & Mouse; Cement Casing With 180 sks; Displace with 4% KCL

CEMENT DATA

LEAD 1	Weight PPG	Type	Additives	
Sacks	Excess	Yield Ft/sk	Water Gal/sk	
TAIL 1	Weight PPG	Type	Additives	
BC133	13.60	Class C 50/50	6% Gypsum, 10% Salt, .5% C-17, 1/4# Defoamer, 5# Gilsonite, 1/4# Celloflake	
Sacks 230	Excess 30%	Yield Ft/sk 1.57	Water Gal/sk 7.18	
LEAD 2	Weight PPG	Type	Additives	
Sacks	Excess	Yield Ft/sk	Water Gal/sk	
TAIL 2	Weight PPG	Type	Additives	
Sacks	Excess	Yield Ft/sk	Water Gal/sk	
Mouse/Rat	Weight PPG	Type	Additives	
Sacks	Excess	Yield Ft/sk	Water Gal/sk	
Plugs	Weight PPG	Type	Additives	
Sacks	Excess	Yield Ft/sk	Water Gal/sk	

Float Equipment

Part #	Quantity	Description	# Used	# Returned
CF851	1	5 1/2" Float Shoe(Blue)		
CF951	1	5 1/2" Float Collar(Blue)		
CF1751	20	Centralizer, 5 1/2" (Blue)		
CF103	1	Top Rubber Cement Plug, 5 1/2"		

Misc. Chemicals

CC151	500	Mud Flush		
C718	24	Clayplex 650		

Ordered By	Luke Lau	Phone 972-628-1680	Fax	Date of Job	
Call Taken By	Max Ball	Phone 620-675-5025	Email	Time Ready	
Operator or Driver Called				Call Out Time	

DATE

9-8-2019

COMPANY

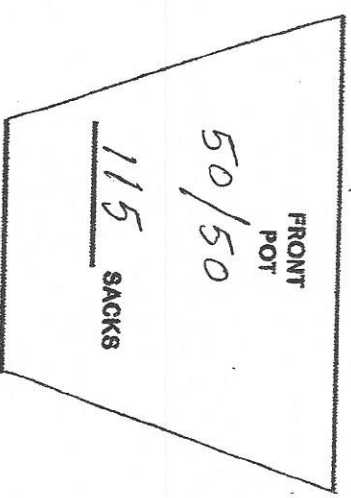
LEASE

Merit

McWilliams &

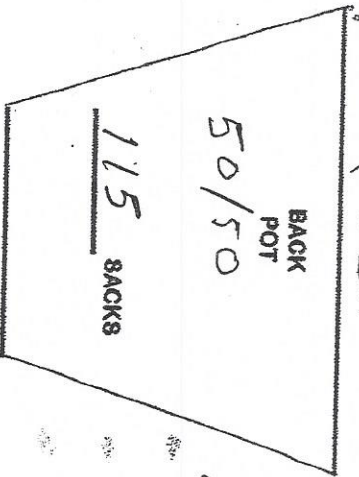
Allen #8

DIRECTIONS



P02

14355



P02

37724

Hours to Load Truck



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

Well Name: McWilliams E-8
 Well Id:
 Location: Sec. 21 T24S R33W, Finney Co., Kansas
 License Number: 15-055-22523-0100
 Spud Date: Sept. 3rd, 2019
 Surface Coordinates: SW SE SW NW
 Region: Wildcat
 Drilling Completed: Sept. 7th, 2019

Bottom Hole
 Coordinates:
 Ground Elevation (ft): 2921' K.B. Elevation (ft): 2933'
 Logged Interval (ft): 3900' To: 5146' Total Depth (ft): 5146'
 Formation: Morrow, Chester
 Type of Drilling Fluid: Natural Chemical

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: MERIT ENERGY CO.
 Address: 13727 NOEL ROAD, # 1200 Tower 2
 DALLAS, TX 75240
 Co. Geo: Martin Lange / Cameron Guthrie

GEOLOGIST

Name: Aaron Suelter
 Company: Earth Tech OGL, Inc
 Address: PO Box 683
 Hooker, Oklahoma 73945
 Off: 888-543-8378 Cell: 620-600-0777

SURVEYS

1785' INC 0.75 AZI 332.2
 1879' INC 1.44 AZI 178.1
 1973' INC 4.42 AZI 176.8
 2067' INC 6.10 AZI 172.2
 2161' INC 7.68 AZI 175.0
 2255' INC 9.19 AZI 167.5
 2349' INC 10.03 AZI 170.3
 2444' INC 10.25 AZI 163.99
 2537' INC 9.27 AZI 165.1
 2631' INC 10.57 AZI 154.7
 2725' INC 10.56 AZI 154.5
 2817' INC 10.30 AZI 155.3
 2912' INC 9.81 AZI 154.9
 3006' INC 10.85 AZI 158.5
 3101' INC 10.27 AZI 158.3
 3193' INC 9.99 AZI 157.9
 3287' INC 8.80 AZI 159.58
 3380' INC 10.31 AZI 153.5
 3474' INC 9.40 AZI 154.2
 3569' INC 10.35 AZI 154.7
 3663' INC 10.13 AZI 155.1
 3758' INC 9.96 AZI 154.6
 3852' INC 10.12 AZI 156.1
 3945' INC 9.90 AZI 155.0
 4038' INC 9.58 AZI 158.0
 4132' INC 11.49 AZI 155.2
 4225' INC 11.34 AZI 155.5
 4319' INC 11.12 AZI 153.7
 4414' INC 10.76 AZI 154.5
 4508' INC 10.24 AZI 152.9
 4601' INC 9.61 AZI 154.5
 4696' INC 8.96 AZI 162.3
 4788' INC 9.45 AZI 157.2
 4884' INC 10.64 AZI 164.4
 4977' INC 9.53 AZI 161.0
 5069' INC 9.22 AZI 163.2
 5101' INC 8.97 AZI 163.7

ROCK TYPES

Anhy	Gyp	Shgy	Sandylms
Bent	Igne	Slst	Shale
Brec	Lmst	Ss	Slstn
Cht	Meta	Till	Shlyslts
Clyst	Mrlst	Carb sh	Sltysh
Coal	Salt	Dol	Lms
Congl	Shale	Dtd	
Dol	Shcol	Gry sh	

ACCESSORIES

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr

- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Slty

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram

- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Slstrg
- Ssstrg
- Carbsh

- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Slstsn

TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY TYPE

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

SORTING

- Well
- Moderate
- Poor

ROUNDING

- Rounded
- Subrnd
- Subang

- Angular

OIL SHOWS

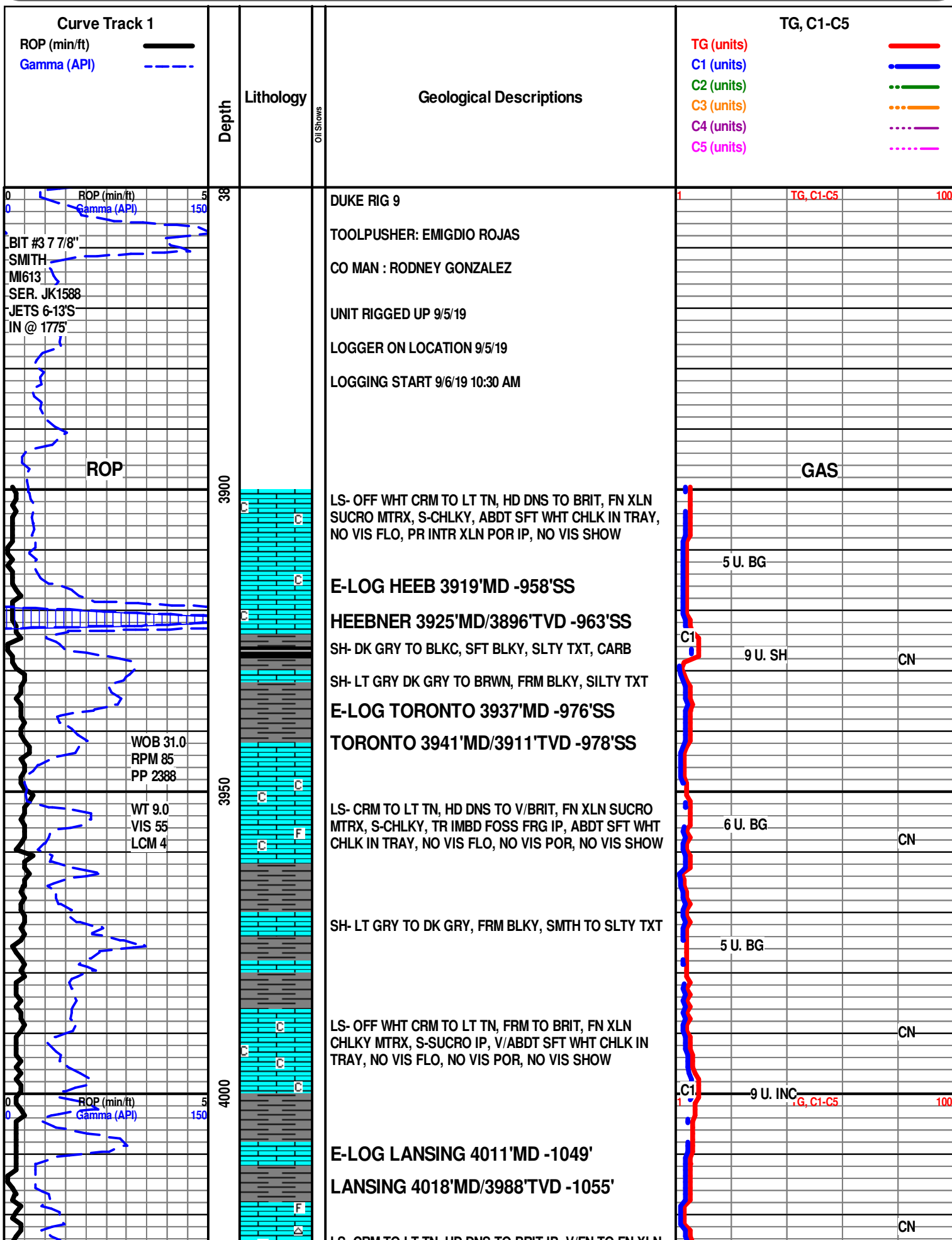
- Even
- Spotted
- Ques
- Dead
- Gas show

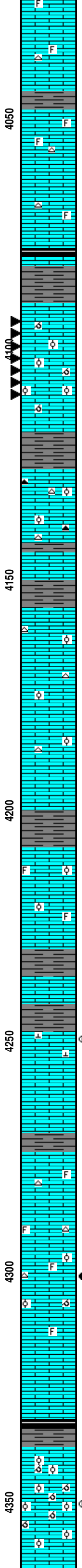
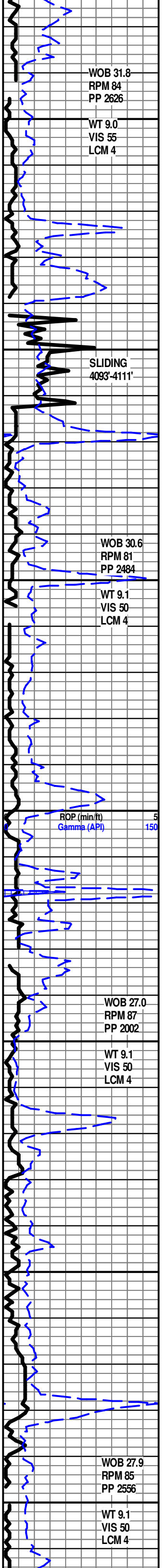
INTERVALS

- Core
- Dst
- Dst

EVENTS

- Rft
- Sidewall





LS- CRM TO LT TN, HD DNS TO BRIT IP, V/FN TO FN XLN SUCRO MTRX, S-CHLKY IP, IMBD FOSS FRG IP, TR LT TN CHRT IN TRAY, BRT YEL FLO IN 40%, NO VIS POR, NO VIS SHOW

LS- CRM TO LT TN, HD DNS TO BRIT, FN XLN SUCRO MTRX, S-CHLKY IP, IMBD FOSS FRG IP, TR FRSTY TO LT TN CHRT IN TRAY, SFT WHT CHLK IN TRAY, BRT YEL FLO IN 40%, PR INTR FOSS POR IP, NO VIS SHOW

SH- LT GRY DK GRY TO BLCK IP, FRM BLKY TO SPLNTY, SMTH TO SLTY TXT

LS- CRM TO LT TN, HD DNS TO BRIT IP, V/FN TO FN XLN SUCRO MTRX, ABDT IMBD OOL IP, OOLCST IP, DUL YEL FLO IN 60%, PR INTR OOL POR IP, PR TO FR OOLCST POR IP, NO VIS CUT OR SHOW

LS- LT TN TO TN, HD DNS, V/FN TO FN XLN MTRX, S-SUCRO, TR IMBD OOL IP, LT TN TO DK TN CHRT IN TRAY, BRT YEL FLO IN 40%, NO VIS POR, NO VIS SHOW

E-LOG IOLA 4152'MD -1187'SS

IOLA 4157'MD/4124'TVD -1191'SS

LS- CRM TO LT TN, HD DNS TO V/BRIT, FN XLN SUCRO MTRX, S-CHLKY, TR IMBD OOL IP, OFF WHT TO LT TN CHRT IN TRAY, SFT WHT CHLK IN TRAY, DUL YEL FLO IN 30%, PR INTR XLN POR IP, NO VIS CUT OR SHOW

SH- GRY TO DK GRY, FRM BLKY, GRNY TO SLTY TXT

LS- CRM TO LT TN, HD DNS TO BRIT, FN XLN SUCRO MTRX, S-CHLKY, TR IMBD FOSS FRG IP, TR IMBD OOL IP, TR SFT WHT CHLK IN TRAY, BRT YEL FLO IN 60%, NO VIS POR, NO VIS SHOW

LS - CRM LT TN TO TN (DUE TO OIL STN IN 40%), HD DNS TO BRIT IP, FN XLN SUCRO MTRX, CALC XLS ON ONE FACES, DUL YEL GLD FLO IN 50%, PR TO FR VUG POR IP, POSS FRCT POR, FR FLSH CUT IN 40%, FR TO GD MLKY BLU SLW STRM IN 50%, GD RNG CUT ON DISH, FR OIL ODOR, GD ODOR ON PITS

LS- CRM LT TN TO TN, HD DNS TO BRIT IP, V/FN TO FN XLN SUCRO MTRX, TR IMBD FOSS FRG IP, OFF WHT CHRT IN TRAY, DUL YEL FLO IN 40%, PR INTR FOSS POR IP, NO VIS CUT OR SHOW

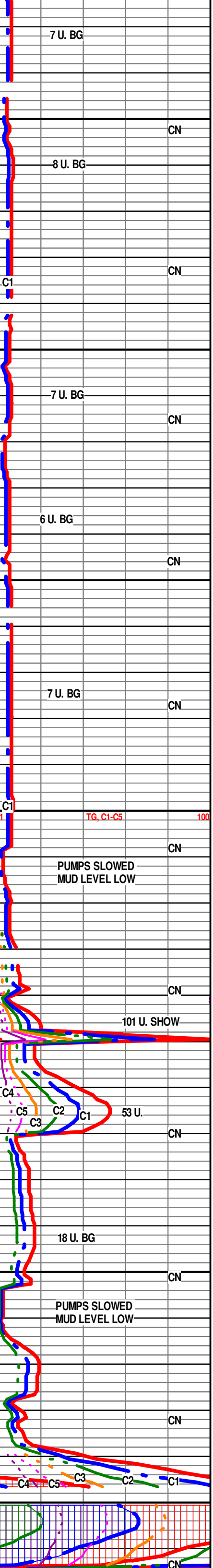
LS- CRM LT TN TO TN (DUE TO OIL STN IN 70%), HD DNS TO BRIT, FN XLN SUCRO MTRX, ABDT IMBD OOL THRU, TR IMBD FOSS FRG IP, TR OOLCST IP, DUL YEL GLD FLO IN 80%, PR TO FR INTR OOL/FOSS POR IP, PR OOLCST POR IP, TR FR TO GD VUG POR IP, GD FLSH CUT THRU, GD TO V/GD MLKY BLU SLW STRM THRU, V/GD RNG CUT ON DISH, TN LCH ON DISH, WK OIL ODOR

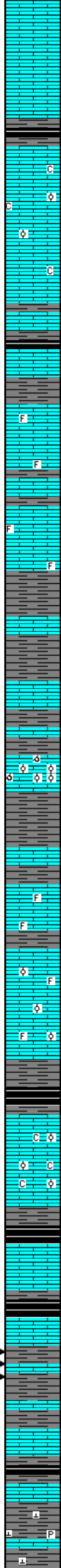
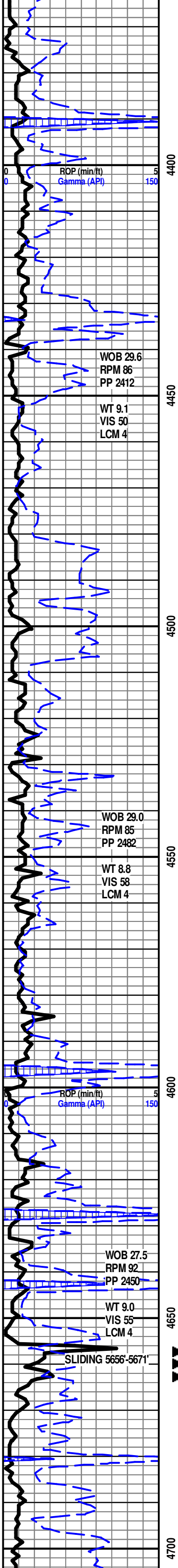
E-LOG STARK 4328'MD -1360'SS

STARK 4332'MD/4297'TVD -1364'SS

SH- BLCK, SFT BLKY TO SPLNTY, CARB

LS- LT TN TO TN (DUE TO OIL STN IN 30%), HD DNS TO V/BRIT, V/FN TO FN XLN SUCRO MTRX, ABDT IMBD OOL THRU, V/ OOLCST THRU, BRT YEL GLD FLO IN 20%, DUL YEL GLD FLO IN 20%, PR TO FR INTR OOL POR SCAT THRU, FR TO GD OOLCST POR THRU, PR FLSH CUT, PR TO FR FLSH CUT IN 30%, PR TO FR RING CUT, GD OIL ODOR





LS- LT TN TO TN, HD DNS, V/FN TO CRYPTO XLN, S-SUCRO IP, RE-XLN IP, BRT YEL FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

E-LOG HUSH 4389'MD -1420'SS

HUSH. 4391'MD/4354'TVD -1421'SS

LS- LT TN TN TO DK TN IP, HD DNS TO BRIT IP, FN XLN SUCRO MTRX, S-CHLK IP, TR IMBD OOL IP, SFT WHT CHLK IN TRAY, BRT YEL FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

SH- GRY BRWN TO TR BLCK, FRM BLKY, SLTY TXT, CARB IP

LS- CRM LT TN TO TN, HD DNS TO BRIT, V/FN TO FN XLN, S-CHLKY, S-SUCRO IP, TR IMBD FOSS FRG IP, TR SFT WHT CHLK IN TRAY, BRT YEL FLO IN 30%, NO VIS POR, NO VIS SHOW

LS- LT TN TN TO GRY IP, HD DNS TO BRIT, FN XLN SUCRO MTRX,IMBD FOSS FRG IP, BRT YEL FLO IN 30%, V/PR INTR FOSS POR IP, NO VIS SHOW

SH- LT GRY DK GRY TO TR GRN, FRM BLKY, SMTH TO SLTY TXT

E-LOG MARM 4507'MD -1536'SS

MARM. 4512'MD/ 4473'TVD -1540'SS

LS- LT TN TO TN (DUE TO OIL STN IN 30%), HD DNS TO BRIT IP, V/FN TO FN XLN SUCRO MTRX, IMBD OOL THRU, TR OOLCST IP, BRT YEL GLD FLO IN 10%, DUL YEL GLD FLO IN 30%, PR INTR OOL POR IP, PR TO FR OOLCST POR IP, PR MICRO PP POR IP, PR FLSH CUT, FR TO TR GD MLKY BLU SLW STRM IN 40%, GD RNG CUT ON DISH, NO OIL ODOR

LS - LT TN TO TN, HD DNS TO V/ BRIT, FN XLN SUCRO MTRX, TR IMBD FOSS FRG IP, BRT YEL FLO IN 20%, PR INTR XLN POR IP, NO VIS CUT OR SHOW

LS- TN TO DK TN, HD DNS TO BRIT IP, V/FN TO CRYPTO XLN, S-SUCRO IP, IMBD OOL IP, TR IMBD FOSS FRG IP, BRT YEL FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW

SH- DK GRY TO BLCK, SFT BLKY, SLTY TXT, CARB

E-LOG PAWNEE 4601'MD -1628'SS

PAWNEE

4604MD/ 4564'TVD -1631'SS

LS- TN TO DK TN, HD DNS TO V/BRIT, FN XLN CHLKY MTRX, S-SUCRO, IMBD OOL IP, SFT WHT CHLK IN TRAY, DUL YEL FLO IN 40%, NO VIS POR, NO VIS CUT OR SHOW

E-LOG CHEROKEE 4644'MD -1671'SS

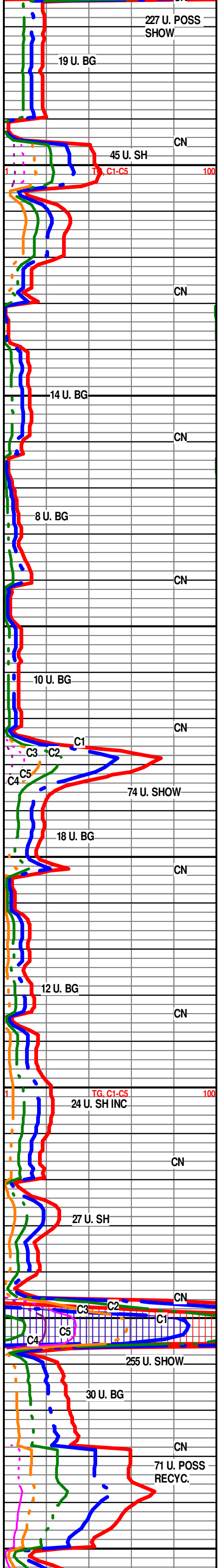
CHEROKEE

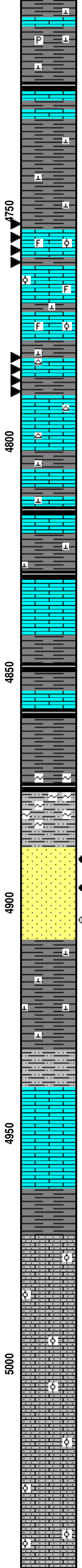
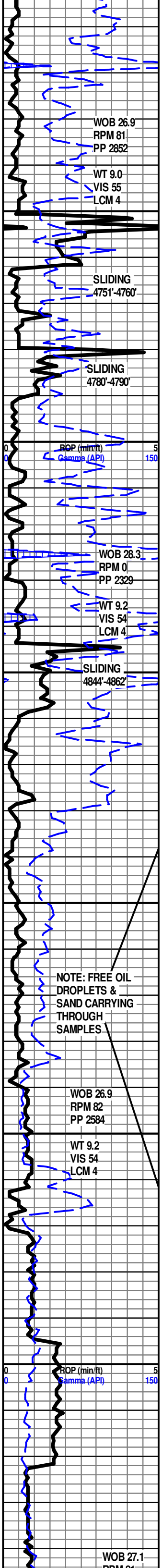
4650'MD/ 4610'TVD -1677'SS

LS- LT TN TO TN (DUE TO OIL STN IN 60%), HD DNS TO V/ BRIT, FN XLN SUCRO MTRX, ABTD IMBD FOSS FRG THRU, LG FREE FOSS W/ OIL STN IN TRAY, BRT YEL GLD FLO IN 80%, FR TO GD TO POSS V/GD INTR FOSS POR SCAT THRU, FR TO GD FLSH CUT THRU, V/GD TO EXL MLKY BLU SLW STRM THRU, V/GD RING CUT ON DISH, FR OIL ODOR

SH- DK GRY TO BLCK, FRM BLKY,

SH & LS INTRBDS- SH- GRY DK GRY TO LT GRN IP, FRM





BLKY, SMTH TO SLTY TXT, TR IMBD PYR IP, SLI CALC THRU; LS- TN TO DK TN, HD DNS TO V/ BRIT, FN XLN SUCRO MTRX, TR FRSTY OFF WHT TO LT TN CHRT IN TRAY, NO VIS FLO, PR INTR XLN POR SCAT THRU, NO VIS CUT OR SHOW

SH- GRY DK GRY TO BRWN, FRM BLKY TO SPLNTY IP, SMTH TO SLTY TXT, SLI CALC THRU

LS & SH INTRBD- LT TN TO TN, HD DNS TO BRIT, FN XLN SUCRO MTRX, RE-XLN IP, S-CHLKY IP, ABTD IMBD FOSS FRG IP, IMBD OOL IP, DUL YEL FLO IN 10%, PR TO FR INTR FOSS/OOL POR SCAT THRU, NO VIS CUT OR SHOW; SH- TN GRY TO DK GRY, FRM BLKY TO SFT GMMY IP, SLTY TXT, SLI CALC THRU

LS- LT TN TN TO DK TN, HD DNS, V/FN TO CRYPTO XLN MTRX, RE-XLN IP, S-CHLKY IP, TR TN CHRT IN TRAY, DUL YEL FLO IN 10%, NO VIS POR, NO VIS SHOW

E-LOG ATOKA 4798'MD -1823'SS
ATOKA SH 4802'MD/ 4760'TVD -1827'SS

SH- GRY DK GRY TO BLCK IP, FRM BLKY SMTH TO SLTY TXT, CALC IP

LS- CRM LT TN TO TN, HD DNS TO BRIT, FN XLN SUCRO MTRX, S-CHLKY IP, TR IMBD FOSS FRG IP, DUL YEL FLO IN 25%, PR INTR FOSS POR IP, NO VIS CUT OR SHOW

E-LOG MORROW 4851'MD -1875'SS
MORROW 4858'MD/ 4815'TVD -1882'SS

SH- GRN BRWN GRY TO DK GRY, FRM BLKY TO SFT GMMY

SLTSTN- GRY TO DK GRY, FRM TO BRIT, ABTD V/FN TO FN QRTZ GRNS, ABTD IMBD GLAUC SCAT THRU, NO VIS FLO, PR INTR GRN POR THRU, NO VIS CUT OR SHOW

SS- CLR LT TN TO DK TN (DUE TO OIL STN IN 75%) LOS IN 1%, FRM TT TO FRI, ABTD V/FN TO MD S-RND TO S-ANG QRTZ GRNS, WLL TO PR SRT, SIL TO SLI CALC CMNT, DUL YEL GLD FLO IN 80%, PR TO FR TO GD INTR GRN POR THRU GD FLSH CUT THRU, V/GD TO EXCL MLKY BLU SLW STRM THRU, V/GD RNG CUT ON DISH, TN LCH ON DISH, GD OIL ODOR, V/ ABTD FREE OIL SPOTS IN TRAY

SH- GRY TO DK GRY, FRM BLKY TO SFT GMMY, SLTY TXT, CALC THRU

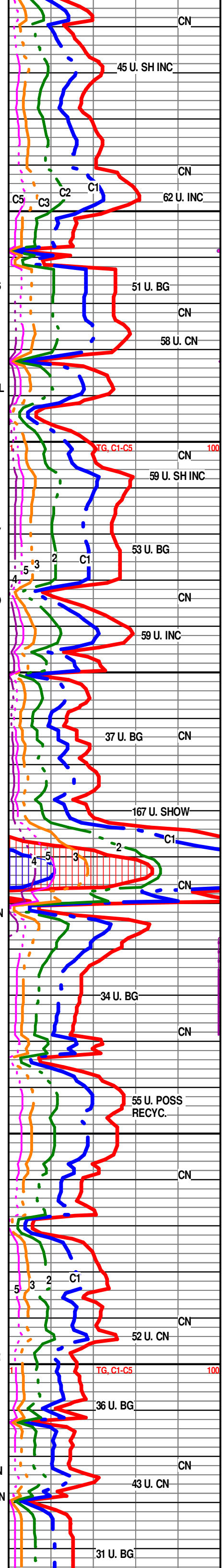
LS- CRM TO LT TN, HD DNS TO V/ BRIT, FN XLN SUCRO MTRX, S-CHLKY, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW

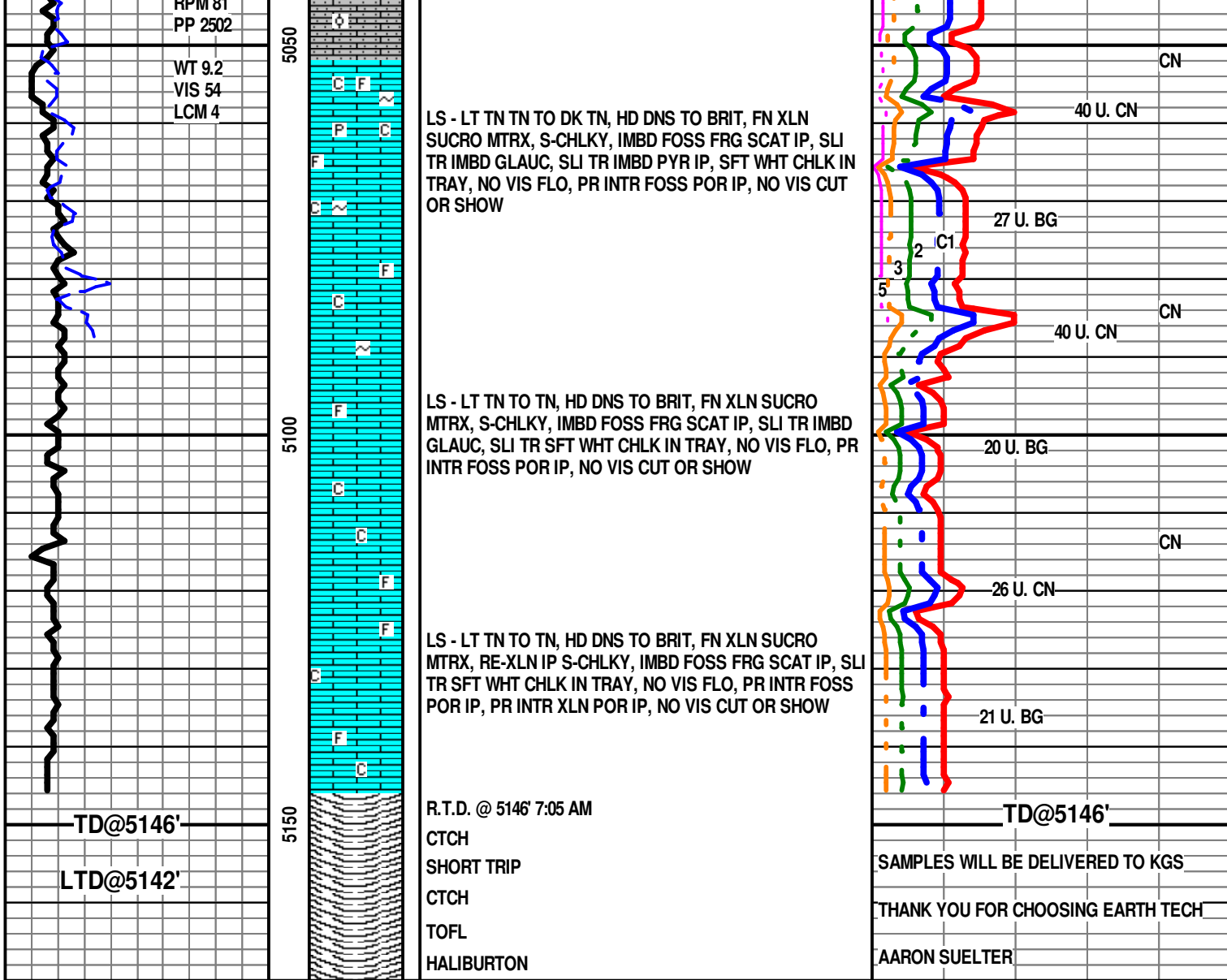
SH- GRY DK GRY BRWN TO GRN, FRM BLKY, SMTH TO SLTY TXT

E-LOG ST GEN 4968'MD -1990'SS
ST GEN 4971'MD/ 4926'TVD -1993'SS

LS- CRM TO LT TN, HD DNS TO V/ BRIT, FN XLN SUCRO MTRX, ABTD IMBD MICRO OOL THRU, IMBD FN QRTZ GRNS THRU, NO VIS FLO, PR TO FR INTR OOL/GRN POR THRU, NO VIS CUT OR SHOW

LS- OFF WHT CRM TO LT TN, HD DNS TO V/ BRIT, FN XLN SUCRO MTRX, ABTD IMBD MICRO OOL THRU, IMBD FN QRTZ GRNS THRU, NO VIS FLO, PR TO FR INTR OOL/GRN POR THRU, NO VIS CUT OR SHOW





Merit Energy
 Finney County, KS (NAD 27)
 McWilliam: E-8 - McWilliams E-8
 McWilliam: E-8

Measured Depth (ft)	Inc	Azimuth	Vertical Depth (ft)	Local Northing (ft)	Local Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0	0	0	0	0	0	0	0
296	0.1	273.2	296	0.01	-0.26	-0.11	0.03
416	0.1	334.2	416	0.11	-0.41	-0.27	0.08
563	0.2	355.2	563	0.49	-0.49	-0.64	0.08
720	0.4	35.2	720	1.21	-0.19	-1.19	0.18
878	0.6	26.2	877.99	2.4	0.49	-2.01	0.14
1036	1.2	21.1	1035.97	4.69	1.45	-3.74	0.38
1193	0.9	27.2	1192.95	7.32	2.61	-5.71	0.2
1321	0.9	27.2	1320.93	9.1	3.53	-6.99	0
1511	1.4	42.2	1510.89	12.15	5.77	-8.92	0.31
1708	1	10.2	1707.85	15.63	7.69	-11.36	0.39
1785	0.75	332.25	1784.84	16.73	7.57	-12.42	0.8
1879	1.44	178.1	1878.84	16.1	7.33	-11.93	2.28
1973	4.42	176.85	1972.7	11.3	7.56	-7.43	3.17
2067	6.1	172.27	2066.3	2.73	8.43	0.79	1.84
2161	7.68	175.05	2159.62	-8.48	9.65	11.58	1.72
2255	9.19	167.54	2252.61	-22.06	11.81	24.93	1.99
2349	10.03	170.36	2345.29	-37.46	14.8	40.27	1.02
2444	10.25	163.99	2438.81	-53.74	18.52	56.7	1.2
2537	9.27	165.17	2530.45	-68.94	22.72	72.33	1.08
2631	10.57	154.72	2623.05	-84.06	28.34	88.43	2.36
2725	10.56	154.53	2715.46	-99.63	35.72	105.66	0.04
2817	10.29	155.39	2805.94	-114.71	42.77	122.29	0.34
2912	9.81	154.99	2899.48	-129.76	49.72	138.86	0.51
3006	10.85	158.54	2991.96	-145.25	56.35	155.71	1.3
3101	10.27	158.36	3085.35	-161.44	62.74	173.12	0.61
3193	9.99	157.91	3175.92	-176.46	68.77	189.29	0.32
3287	8.8	159.58	3268.65	-190.75	74.34	204.63	1.3
3380	10.31	153.51	3360.36	-204.87	80.54	220.04	1.95
3474	9.4	154.28	3452.98	-219.32	87.62	236.11	0.98
3569	10.35	154.7	3546.57	-234.02	94.63	252.39	1
3663	10.13	155.16	3639.07	-249.16	101.72	269.09	0.25
3758	9.96	154.61	3732.61	-264.16	108.75	285.65	0.21
3852	10.12	156.1	3825.17	-279.05	115.58	302.03	0.32

3945	9.9	155.09	3916.76	-293.77	122.26	318.19	0.3
4038	9.58	158.01	4008.42	-308.2	128.52	333.91	0.63
4132	11.49	155.29	4100.83	-323.96	135.36	351.1	2.1
4225	11.34	155.58	4191.99	-340.7	143.02	369.5	0.17
4319	11.12	153.74	4284.19	-357.25	150.85	387.79	0.45
4414	10.76	154.55	4377.46	-373.47	158.71	405.79	0.41
4508	10.24	152.99	4469.89	-388.84	166.28	422.9	0.63
4601	9.61	154.59	4561.5	-403.21	173.36	438.9	0.74
4696	8.96	162.39	4655.26	-417.43	179	454.19	1.49
4788	9.45	157.27	4746.07	-431.22	184.09	468.87	1.04
4884	10.64	164.47	4840.6	-447.03	189.51	485.54	1.8
4977	9.53	161.01	4932.17	-462.58	194.31	501.73	1.36
5069	9.22	163.29	5022.94	-476.84	198.91	516.65	0.53
5101	8.97	163.72	5054.54	-481.69	200.35	521.68	0.81
5146	8.97	163.72	5098.99	-488.43	202.31	528.64	0

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North. Vertical depths are relative to RKB. Northings and eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet. Vertical Section is from Shot and calculated along Azimuth of 6.910° (Grid).

Coordinate System is NAD 1983 (NADCC CONUS) US State Plane 1983 North Central zone, Kansas South 1502 Central meridian is -98.500°. Grid Convergence at Surface is -1.508°.

Based upon Minimum Curvature type calculations, at a Measured Interval of 5146.00 ft., the Bottom Hole Displacement is 528.67 ft., in the Direction of 1.910° (Grid).

