

Preliminary Report

WR-35
Rev (9-11)

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: 7-9-2013
API #: 47-051-01606

Farm name: Fork Ridge MSH 201H Operator Well No.: 836575

LOCATION: Elevation: 1,391' Quadrangle: Glen Easton

District: Cameron County: Marshall
Latitude: 7,217' Feet South of 39 Deg. 52 Min. 30 Sec.
Longitude 11,598' Feet West of 80 Deg. 37 Min. 30 Sec.

Company: Chesapeake Appalachia, L.L.C.

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
P.O. Box 18496 Oklahoma City, OK 73154-0496	20"	120'	120'	365 Cu. Ft.
Agent: Eric Gillespie	13 3/8"	780'	780'	859 Cu. Ft.
Inspector: Derek Haught	9 5/8"	2,450'	2,450'	1,077 Cu. Ft.
Date Permit Issued: 12-19-2012	5 1/2"	12,337'	12,337'	2,817 Cu. Ft.
Date Well Work Commenced: 3-16-2013				
Date Well Work Completed: 4-1-2013(Rig release date)				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 6769				
Total Measured Depth (ft): 12337				
Fresh Water Depth (ft.): 661'				
Salt Water Depth (ft.): 1,047'				
Is coal being mined in area (N/Y)? Y				
Coal Depths (ft.): 961'				
Void(s) encountered (N/Y) Depth(s) N				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) Completing* *8-7-2013

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

Received

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Marlene Williams
Signature

Office of Oil and Gas
WV Dept of Environmental Protection
Date

Were core samples taken? Yes _____ No N

Were cuttings caught during drilling? Yes Y No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list MWD Gamma from 6416-12337'

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

TIL 6/1/2014

Plug Back Details Including Plug Type and Depth(s):

<u>Formations Encountered:</u>	<u>Top Depth</u>	<u>Bottom Depth</u>
<u>Surface:</u>	/	

See attached

Received

23

51-01606

LATERAL WELLBORE (no vertical pilot hole associated with this well)**Maximum TVD of wellbore: 6769 ft TVD @ 12337 ft MD**

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
LS/SHALE	0	0	943	943
PITTSBURG COAL	943	943	953	953
SHALE W/ SS	953	953	1490	1490
SS W/SHALE & LS	1490	1490	2010	2010
BIG LIME	2010	2010	2068	2068
BIG INJUN (SS)	2068	2068	2316	2316
SHALE W/ SILTSTONE	2316	2316	6882	6641
GENESEO (SH)	6882	6641	6910	6659
TULLY (LS)	6910	6659	6951	6984
HAMILTON (SH)	6951	6984	7179	6780
MARCELLUS (SH)	7179	6780		
TD OF LATERAL			12337	6769

Received

2 2 11



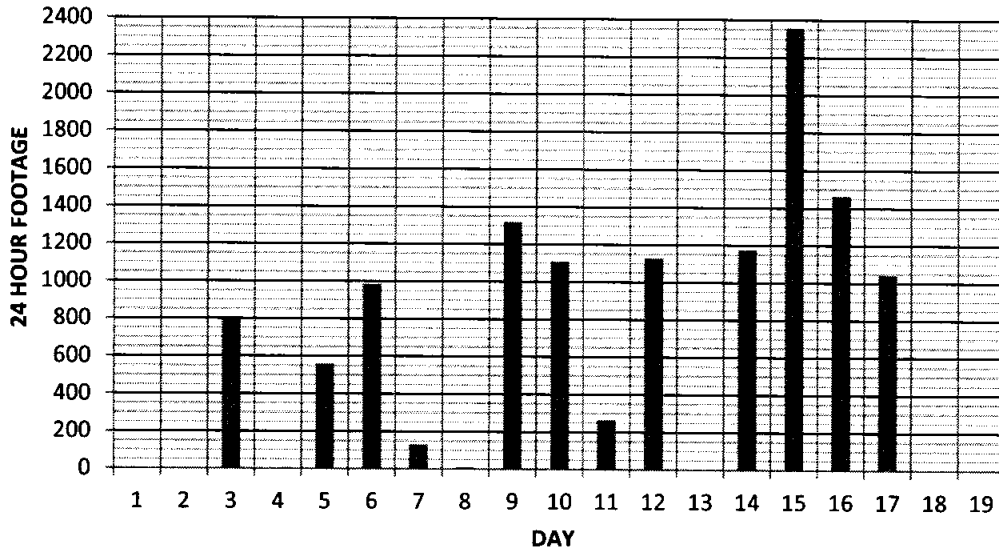
DAYS vs DEPTH



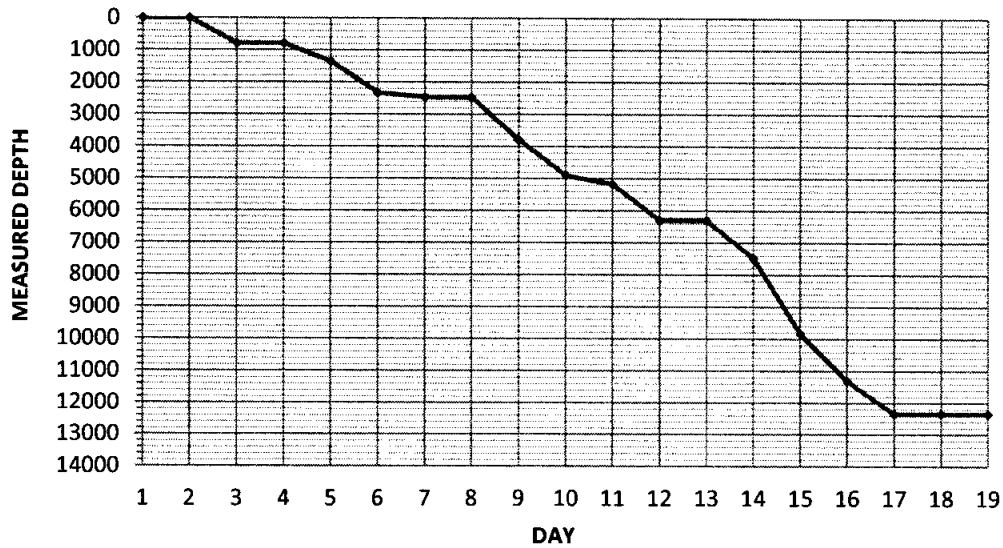
CHESAPEAKE
FORK RIDGE MSH 201H
MARSHALL COUNTY, WV



DAYS VS FEET DRILLED /24 HOURS



DAYS VS DEPTH





DAILY ACTIVITY



Daily Activity Report

Drilling Services
v4.2.2674

Day 1 - 2013/03/14

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
DIR Supervisor: Bradd Smith, Brandon Wells, John Nix
MWD Supervisor: Jeff Magoon, Robert Cochran, Sam Obrian

GROUND ELEV: 1391 ft START DEPTH: 0.0 ft PROGRESS: 0.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 0.0 ft AVG. ROP.: 0.0 ft/hr PREVIOUS COST: USD\$0.00
WORK STATUS: Standby (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-07:00	Wait On Cement - Nipple Down	7.00	0	n/a	07:00-24:00	Other - See Comments - Nipple Down	17.00	0	n/a

TIME SUMMARY (hrs):				DRILLING PARAMETERS:			
MOTOR DRILL:	0.00	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	
TIME DRILL:	0.00	ROTATING HRS:	0.00	MOTOR HRS:	0.00	WOB SLIDING (HI):	0 lbf
MOTOR REAM:	0.00	TRIP:	0.00	WOB SLIDING (LO):	0 lbf	WOB ROTATE (HI):	0 lbf
CIRC:	0.00	ROTARY DRILL:	0.00	OTHER:	24.00	WOB ROTATE (LO):	0 lbf
MOTOR HRS:	0.00	DRILL HRS:	0.00	TOTAL HRS:	24.00	RPM (ROTARY):	
						RPM (MOTOR):	
						DRAG UP:	0 lbf
						DRAG DN:	0 lbf

— BHA / MOTOR / BIT INFORMATION: —

BHA:	HOLE SIZE:	SECTION TYPE:	SURVEY TYPE:
MANFCT.:	STABILIZER:	SERIAL#:	MODEL:
SETTING:	KICKPAD:	SIZE:	MTR HRS THIS DAY:
MANFCT.:	BIT TYPE:	TYPE:	NOZZLES:
IADC BIT GRADE:			LOBE CFG.:
			MTR HRS TO DATE:

— PUMP PARAMETERS —

PRESSURE ON BTM: 0	PRESSURE OFF BTM: 0	TOTAL FLOW RATE: 0.00 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0%	SPM: 0.00
PUMP 2: TYPE: B 1600	EFF.: 95.0%	SPM: 0.00
PUMP 3: TYPE:	EFF.: 100.0%	SPM: 0.00
	LINER: 0.00 in	STROKE VOL: 0.0000 gal/stk
	LINER: 0.00 in	STROKE VOL: 0.0000 gal/stk
	LINER: 0.00 in	STROKE VOL: 0.0000 gal/stk

— MUD RECORD —

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:	LIQUID RATE: 0 gal/min	GAS TYPE:	GAS RATE: 0 cu ft/min		

— COMMENTS: —
Cementing and Waiting on Cement.

Nipple Down

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Day 2 - 2013/03/15

Drilling Services
v4.2.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, Sam Obrian

GROUND ELEV: 1391 ft START DEPTH: 0.0 ft PROGRESS: 0.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 0.0 ft AVG. ROP.: 0.0 ft/hr PREVIOUS COST: USD\$0.00
WORK STATUS: Standby (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-09:00	Move Rig - Skid Rig	9.00	0	n/a	20:30-24:00	RIH - See Comments - Make up BHA	3.50	0	n/a
09:00-20:30	Nipple Up BOPs	11.50	0	n/a			0.00		

TIME SUMMARY (hrs):				DRILLING PARAMETERS:				
MOTOR DRILL:	0.00	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	STRING WEIGHT	0 lbs
TIME DRILL:	0.00	ROTATING HRS:	0.00	MOTOR HRS:	0.00	WOB SLIDING (HI):	WOB ROTATE (HI):	0 lbf
MOTOR REAM:	0.00	TRIP:	3.50	OTHER:	20.50	WOB SLIDING (LO):	WOB ROTATE (LO):	0 lbf
CIRC:	0.00	ROTARY DRILL:	0.00	RPM (ROTARY):		DRAG UP:	DRAG DN:	0 lbf
MOTOR HRS:	0.00	DRILL HRS:	0.00	TOTAL HRS:	24.00	RPM (MOTOR):		

— BHA / MOTOR / BIT INFORMATION:

BHA:	HOLE SIZE:	SECTION TYPE:	SURVEY TYPE:
MANFCT.:	STABILIZER:	SERIAL#:	MODEL:
SETTING:	KICKPAD:	SIZE:	MTR HRS THIS DAY:
MANFCT:	BIT TYPE:	TYPE:	NOZZLES:
IADC BIT GRADE:			LOBE CFG.:
			MTR HRS TO DATE:

— PUMP PARAMETERS

PRESSURE ON BTM: 0	PRESSURE OFF BTM: 0	TOTAL FLOW RATE: 0.00 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 2: TYPE: B 1600	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— MUD RECORD

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

— COMMENTS:

Skid Rig.

Nipple up BOP's.
Slip and Cut Drilling Line

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Drilling Services
v4.2.2674

Day 3 - 2013/03/16

FILE #: 4028985	WELL NAME: Fork Ridge MSH-201H	SERVICE CO.: Weatherford Drilling Services
JOB TYPE: Horizontal	COMPANY: Chesapeake Energy	SURVEY TYPE: Electromagnetic MWD
RIG & NO: Nomac 337	SURFACE LOCATION: Marshall County, WV	FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, Sam Obrian

GROUND ELEV: 1391 ft	START DEPTH: 0.0 ft	PROGRESS: 792.0 ft	DAILY COST: USD\$0.00
KB ELEV: 1413 ft	END DEPTH: 792.0 ft	AVG. ROP.: 42.8 ft/hr	PREVIOUS COST: USD\$0.00
WORK STATUS: Standby			TOTAL COST: USD\$0.00

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:30	Rig Service	0.50	0	n/a	15:00-15:30	Rig Service	0.50	526	n/a
00:30-07:30	Rotary Drill	7.00	242	n/a	15:30-18:00	Rotary Drill	2.50	642	n/a
07:30-08:00	Wireline Survey - @ 191	0.50	242	n/a	18:00-18:30	Wireline Survey - @ 602	0.50	642	n/a
08:00-09:30	Rotary Drill	1.50	318	n/a	18:30-21:30	Rotary Drill	3.00	792	n/a
09:30-10:00	Wireline Survey - @ 280	0.50	318	n/a	21:30-22:00	Wireline Survey - @ 750	0.50	792	n/a
10:00-12:00	Rotary Drill	2.00	408	n/a	22:00-22:30	Circ & Condition Hole	0.50	792	n/a
12:00-12:30	Wireline Survey - @ 365	0.50	408	n/a	22:30-24:00	POOH To Run Casing	1.50	792	n/a
12:30-15:00	Rotary Drill	2.50	526	n/a			0.00		

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	0.00	ORIENTING HRS:	0.00	ROTARY DRILL:	18.50	ROTARY TORQUE:	1000 ft-lb	STRING WEIGHT:	100000 lbs
TIME DRILL:	0.00	ROTATING HRS:	0.00	MOTOR HRS:	0.00	WOB SLIDING (HI):	0 lbf	WOB ROTATE (HI):	15000 lbf
MOTOR REAM:	0.00	TRIP:	1.50	OTHER:	4.00	WOB SLIDING (LO):	0 lbf	WOB ROTATE (LO):	5000 lbf
CIRC:	0.00	ROTARY DRILL:	18.50	RPM (ROTARY):	35 rpm	DRAG UP:	100000 lbf		
MOTOR HRS:	0.00	DRILL HRS:	18.50	TOTAL HRS:	24.00	RPM (MOTOR):	0 rpm	DRAG DN:	100000 lbf

— BHA / MOTOR / BIT INFORMATION: —

BHA:	HOLE SIZE:	SECTION TYPE:	SURVEY TYPE:
MANFCT.:	STABILIZER:	SERIAL#:	MODEL:
SETTING:	KICKPAD:	SIZE:	MTR HRS THIS DAY:
MANFCT:	BIT TYPE:	TYPE:	NOZZLES:
IADC BIT GRADE:			LOBE CFG.:
			MTR HRS TO DATE:

— PUMP PARAMETERS —

PRESSURE ON BTM: 650	PRESSURE OFF BTM: 450	TOTAL FLOW RATE: 0.00 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0%	SPM: 0.00
PUMP 2: TYPE: B 1600	EFF.: 95.0%	SPM: 0.00
PUMP 3: TYPE:	EFF.: 100.0%	SPM: 0.00

— MUD RECORD —

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:	LIQUID RATE: 0 gal/min	GAS TYPE: Air	GAS RATE: 0 cu ft/min		

— COMMENTS: —

Chesapeake picked up our shock-sub and one of our NMDC for the 17.5 section.

Shock-sub- ST S/N- 800-068
NMDC-S/N - 775-600

Drilling 17.5 section taking surveys every 100 ft' until 365 feet and then every 250 feet till TD which is 792 MD.

Running Anti- Collision every survey.

ANTI COLLISION @ TD of the 17.5 Section



Daily Activity Report

Day 3 - 2013/03/16

Drilling Services
v4.2.2674

Survey Depth-750'
Inc-1.01
Azm- 37.99

PTB-792'
Inc-1.01
Azm-37.99

44.64' 10-H
13.08' 1-H
26.70' 3-H
41.42' 5-H

CUSTOMER SIGNATURE: _____



Daily Activity Report

Drilling Services
v4.2.2674

Day 4 - 2013/03/17

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Nomac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, Sam Obrian, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 792.0 ft PROGRESS: 0.0 ft DAILY COST: USD\$0.00
 KB ELEV: 1413 ft END DEPTH: 792.0 ft AVG. ROP.: 0.0 ft/hr PREVIOUS COST: USD\$0.00
 WORK STATUS: Standby (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-01:00	POOH To Run Casing	1.00	792	n/a	07:30-14:00	Wait On Cement	6.50	792	n/a
01:00-01:30	Rig Up - casing crew	0.50	792	n/a	14:00-20:00	Other - See Comments - Install Wellhead	6.00	792	n/a
01:30-02:00	Rig Service - Run casing	0.50	792	n/a	20:00-21:00	Logging - Bond Log	1.00	792	n/a
02:00-04:30	Run Casing	2.50	792	n/a	21:00-24:00	Nipple Up BOPs	3.00	792	n/a
04:30-07:30	Cement Casing	3.00	792	n/a			0.00		

TIME SUMMARY (hrs):			DRILLING PARAMETERS:		
MOTOR DRILL: 0.00	ORIENTING HRS: 0.00	ROTARY DRILL: 0.00	ROTARY TORQUE:	STRING WEIGHT	0 lbs
TIME DRILL: 0.00	ROTATING HRS: 0.00	MOTOR HRS: 0.00	WOB SLIDING (HI): 0 lbf	WOB ROTATE (HI): 0 lbf	
MOTOR REAM: 0.00		TRIP: 1.00	WOB SLIDING (LO): 0 lbf	WOB ROTATE (LO): 0 lbf	
CIRC: 0.00	ROTARY DRILL: 0.00	OTHER: 23.00	RPM (ROTARY):	DRAG UP:	0 lbf
MOTOR HRS: 0.00	DRILL HRS: 0.00	TOTAL HRS: 24.00	RPM (MOTOR):	DRAG DN:	0 lbf

BHA / MOTOR / BIT INFORMATION:

BHA:	HOLE SIZE:	SECTION TYPE:	SURVEY TYPE:
MANFCT.:	STABILIZER:	SERIAL#:	MODEL:
SETTING:	KICKPAD:	SIZE:	MTR HRS THIS DAY:
MANFCT.:	BIT TYPE:	TYPE:	NOZZLES:
IADC BIT GRADE:			LOBE CFG.:
			MTR HRS TO DATE:

PUMP PARAMETERS

PRESSURE ON BTM: 0	PRESSURE OFF BTM: 0	TOTAL FLOW RATE: 0.00 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 2: TYPE: B 1600	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:	LIQUID RATE: 0 gal/min	GAS TYPE:	GAS RATE: 0 cu ft/min		

COMMENTS:

13.375 casing shoe set at 782 MD.

Cement

W/O Cement

Nipple up BOP's

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Day 5 - 2013/03/18

Drilling Services
v4.2.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 792.0 ft PROGRESS: 559.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 1351.0 ft AVG. ROP.: 74.5 ft/hr PREVIOUS COST: USD\$0.00
WORK STATUS: Operating (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-02:30	Nipple Up BOPs	2.50	792	n/a	16:45-17:00	EM MWD Surveys - @ 817 Az no Good	0.25	881	1
02:30-05:00	Pressure Test - BOPE	2.50	792	n/a	17:00-17:15	Rotating With Motor	0.25	913	1
05:00-05:30	Other - See Comments - Install Wearbushing	0.50	792	n/a	17:15-17:30	EM MWD Surveys - @ 849	0.25	913	1
05:30-06:00	Rig Service	0.50	792	n/a	17:30-18:30	Rotating With Motor	1.00	976	1
06:00-06:30	Safety Meeting	0.50	792	n/a	18:30-18:45	EM MWD Surveys - @912	0.25	976	1
06:30-07:00	Other - See Comments - W/O Returns Valves	0.50	792	n/a	18:45-19:15	Orienting With Motor - 145 mag	0.50	1006	1
07:00-07:15	Handle Directional Tools - Surface Test MTR	0.25	792	1	19:15-19:45	Rig Repair - Diff Sensor on pason	0.50	1006	1
07:15-08:30	Handle Directional Tools - P/U BHA # 1	1.25	792	1	19:45-20:45	Rotating With Motor	1.00	1069	1
08:30-08:45	Shallow Test Tools	0.25	792	1	20:45-21:00	EM MWD Surveys - @ 1005	0.25	1069	1
08:45-10:45	RIH With New BHA	2.00	792	1	21:00-22:00	Rotating With Motor	1.00	1163	1
10:45-13:00	Drill Out Fit, Shoe & Cmnt	2.25	792	1	22:00-22:15	EM MWD Surveys - @ 1099	0.25	1163	1
13:00-13:30	Rotating With Motor	0.50	802	1	22:15-23:00	Rotating With Motor	0.75	1258	1
13:30-14:00	Circ & Condition Hole	0.50	802	1	23:00-23:15	EM MWD Surveys - @1194	0.25	1258	1
14:00-15:00	Pressure Test - FIT Test	1.00	802	1	23:15-24:00	Rotating With Motor	0.75	1351	1
15:00-16:45	Rotating With Motor	1.75	881	1			0.00		

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	7.50	ORIENTING HRS:	0.50	ROTARY DRILL:	0.00	ROTARY TORQUE:	8000 ft-lb	STRING WEIGHT	93000 lbs
TIME DRILL:	0.00	ROTATING HRS:	7.00	MOTOR HRS:	10.25	WOB SLIDING (HI):	40000 lbf	WOB ROTATE (HI):	50000 lbf
MOTOR REAM:	0.00	TRIP:	2.00	WOB SLIDING (LO):	10000 lbf	WOB ROTATE (LO):	20000 lbf	DRAG UP:	96000 lbf
CIRC:	2.75	ROTARY DRILL:	0.00	OTHER:	11.75	RPM (ROTARY):	40-60 rpm	DRAG DN:	91000 lbf
MOTOR HRS:	10.25	DRILL HRS:	7.50	TOTAL HRS:	24.00	RPM (MOTOR):	96 rpm		

— BHA / MOTOR / BIT INFORMATION: —

BHA: 1 HOLE SIZE: 12.25 in SECTION TYPE: 12.25 Air Section SURVEY TYPE: Electromagnetic MWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 800-4118 MODEL: 7/8 4.0 LOBE CFG.: 7/8
 SETTING: 1.5 ° KICKPAD: No SIZE: 8" (203mm) MTR HRS THIS DAY: 10.25 MTR HRS TO DATE: 10.25
 MANFCT: Hughes BIT TYPE: 12.5 Hybrid TYPE: KG533X NOZZLES: 0.78 in² TFA
 IADC BIT GRADE: 2 / 5 / LT / G / X / I / BU / TD

— PUMP PARAMETERS —

PRESSURE ON BTM: 2450 PRESSURE OFF BTM: 1950 TOTAL FLOW RATE: 600.00 gal/min
 PUMP 1: TYPE: D-125 EFF.: 95.0% SPM: 85.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 2: TYPE: B 1600 EFF.: 95.0% SPM: 85.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— MUD RECORD —

MUD TYPE: Brine or Salt VISC: 0 sec/qt WTR LOSS: 0 cc/30min PV: 0 cP YP: 0 lb/100 ft² pH: 0
 DENSITY: 0 lb/gal GEL 0/10: 0.00 lb/100 ft² SAND: 0 SOLIDS: 0 OIL: 0 TEMP: 0 °F
 LIQUID BASE: Water LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

— COMMENTS: —

M/U BHA # 1.



Daily Activity Report

Day 5 - 2013/03/18

Drilling Services
v4.2.2674

Surface test Mtr----- Good
TIH
Tag Cement @ 734 MD.

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Drilling Services
v4.2.2674

Day 6 - 2013/03/19

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 1351.0 ft PROGRESS: 984.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 2335.0 ft AVG. ROP.: 65.6 ft/hr PREVIOUS COST: USD\$0.00
WORK STATUS: Operating (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:15	EM MWD Surveys - @ 1287	0.25	1351	1	12:15-13:15	Rotating With Motor	1.00	1823	1
00:15-01:15	Rotating With Motor	1.00	1445	1	13:15-13:30	EM MWD Surveys - @ 1759	0.25	1823	1
01:15-01:30	EM MWD Surveys - @ 1381	0.25	1445	1	13:30-14:45	Rotating With Motor	1.25	1917	1
01:30-02:30	Rotating With Motor	1.00	1540	1	14:45-15:00	EM MWD Surveys - @ 1853	0.25	1917	1
02:30-02:45	EM MWD Surveys - @ 1476	0.25	1540	1	15:00-16:00	Rotating With Motor	1.00	2011	1
02:45-04:00	Rotating With Motor	1.25	1616	1	16:00-16:15	EM MWD Surveys - @ 1947	0.25	2011	1
04:00-07:45	Work on Top Drive - Wash Pipe	3.75	1616	1	16:15-18:00	Rotating With Motor	1.75	2105	1
07:45-08:00	Rotating With Motor	0.25	1634	1	18:00-18:15	EM MWD Surveys - @ 2041	0.25	2105	1
08:00-08:15	EM MWD Surveys - @ 1570	0.25	1634	1	18:15-19:45	Rotating With Motor	1.50	2200	1
08:15-08:30	Rotating With Motor	0.25	1651	1	19:45-20:00	EM MWD Surveys - @ 2136	0.25	2200	1
08:30-10:30	Work on Top Drive - C/O Swivel Packing	2.00	1651	1	20:00-22:15	Rotating With Motor	2.25	2294	1
10:30-11:30	Rotating With Motor	1.00	1728	1	22:15-22:30	EM MWD Surveys - @ 2230	0.25	2294	1
11:30-11:45	EM MWD Surveys - @ 1664	0.25	1728	1	22:30-23:00	Rig Service - and slow pump rates	0.50	2294	1
11:45-12:15	Orienting With Motor - 30' 84 MAG	0.50	1758	1	23:00-24:00	Rotating With Motor	1.00	2335	1

TIME SUMMARY (hrs):			DRILLING PARAMETERS:						
MOTOR DRILL:	15.00	ORIENTING HRS:	0.50	ROTARY DRILL:	0.00	ROTARY TORQUE:	8000 ft-lb	STRING WEIGHT:	130000 lbs
TIME DRILL:	0.00	ROTATING HRS:	14.50	MOTOR HRS:	15.00	WOB SLIDING (HI):	45000 lbf	WOB ROTATE (HI):	60000 lbf
MOTOR REAM:	0.00	ROTARY DRILL:	0.00	TRIP:	0.00	WOB SLIDING (LO):	20000 lbf	WOB ROTATE (LO):	30000 lbf
CIRC:	0.00	OTHER:	9.00	RPM (ROTARY):	40-60 rpm	DRAG UP:	135000 lbf		
MOTOR HRS:	15.00	DRILL HRS:	15.00	TOTAL HRS:	24.00	RPM (MOTOR):	96 rpm	DRAG DN:	127000 lbf

— BHA / MOTOR / BIT INFORMATION:

BHA: 1 HOLE SIZE: 12.25 in SECTION TYPE: 12.25 Air Section SURVEY TYPE: Electromagnetic MWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 800-4118 MODEL: 7/8 4.0 LOBE CFG.: 7/8
 SETTING: 1.5 ° KICKPAD: No SIZE: 8" (203mm) MTR HRS THIS DAY: 15 MTR HRS TO DATE: 25.25
 MANFCT: Hughes BIT TYPE: 12.5 Hybrid TYPE: KG533X NOZZLES: 0.78 in² TFA
 IADC BIT GRADE: 2 1/5 / LT / G / X / I / BU / TD

— PUMP PARAMETERS

PRESSURE ON BTM: 2600 PRESSURE OFF BTM: 2300 TOTAL FLOW RATE: 600.00 gal/min
 PUMP 1: TYPE: D-125 EFF.: 95.0% SPM: 85.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 2: TYPE: B 1600 EFF.: 95.0% SPM: 85.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— MUD RECORD

MUD TYPE: Brine or Salt VISC: 83 sec/qt WTR LOSS: 0 cc/30min PV: 16 cP YP: 11 lb/100 ft² pH: 8.8
 DENSITY: 11 lb/gal GEL 0/10: 7.00 lb/100 ft² SAND: 0 SOLIDS: 3 OIL: 0 TEMP: 104 °F
 LIQUID BASE: Water LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

— COMMENTS:

Drilling 12.25 Section . Have had down time due to changing out swivel packing.

Drilling ROP slowed to 50 ft/hr due to sandstone formation. (Big Injun)



Daily Activity Report

Drilling Services
v4.2.2674

Day 6 - 2013/03/19

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Drilling Services
v4.2.2674

Day 7 - 2013/03/20

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Nomac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 Field Superinte: Ronnie Truelove
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 2335.0 ft PROGRESS: 130.0 ft DAILY COST: USD\$0.00
 KB ELEV: 1413 ft END DEPTH: 2465.0 ft AVG. ROP.: 57.8 ft/hr PREVIOUS COST: USD\$0.00
 TOTAL COST: USD\$0.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:45	Rotating With Motor	0.75	2389	1	08:00-09:30	Lay Down Directional Tools - BHA # 1	1.50	2465	1
00:45-01:00	EM MWD Surveys - @ 2325	0.25	2389	1	09:30-11:00	Rig Up - Casing crew	1.50	2465	n/a
01:00-02:30	Rotating With Motor - TD OF 12.5	1.50	2465	1	11:00-15:00	Run Casing	4.00	2465	n/a
02:30-02:45	EM MWD Surveys - @ 2401	0.25	2465	1	15:00-19:30	Circ & Condition Hole - Drug Testing	4.50	2465	n/a
02:45-04:30	Circ & Condition Hole	1.75	2465	1	19:30-23:00	Cement Casing	3.50	2465	n/a
04:30-08:00	POOH To Run Casing	3.50	2465	1	23:00-24:00	Wait On Cement	1.00	2465	n/a

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	2.25	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	9000 ft-lb	STRING WEIGHT:	130000 lbs
TIME DRILL:	0.00	ROTATING HRS:	2.25	MOTOR HRS:	4.00	WOB SLIDING (HI):	45000 lbf	WOB ROTATE (HI):	60000 lbf
MOTOR REAM:	0.00	TRIP:	3.50	OTHER:	16.50	WOB SLIDING (LO):	20000 lbf	WOB ROTATE (LO):	30000 lbf
CIRC:	1.75	ROTARY DRILL:	0.00	TOTAL HRS:	24.00	RPM (ROTARY):	40-60 rpm	DRAG UP:	135000 lbf
MOTOR HRS:	4.00	DRILL HRS:	2.25			RPM (MOTOR):	96 rpm	DRAG DN:	127000 lbf

— BHA / MOTOR / BIT INFORMATION: —

BHA: 1 HOLE SIZE: 12.25 in SECTION TYPE: 12.25 Air Section SURVEY TYPE: Electromagnetic MWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 800-4118 MODEL: 7/8 4.0 LOBE CFG.: 7/8
 SETTING: 1.5 ° KICKPAD: No SIZE: 8" (203mm) MTR HRS THIS DAY: 4 MTR HRS TO DATE: 29.25
 MANFCT: Hughes BIT TYPE: 12.5 Hybrid TYPE: KG533X NOZZLES: 0.78 in² TFA
 IADC BIT GRADE: 2 / 5 / LT / G / X / I / BU / TD

— PUMP PARAMETERS —

PRESSURE ON BTM: 2800 PRESSURE OFF BTM: 2400 TOTAL FLOW RATE: 600.00 gal/min
 PUMP 1: TYPE: D-125 EFF.: 95.0% SPM: 85.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 2: TYPE: B 1600 EFF.: 95.0% SPM: 85.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— MUD RECORD —

MUD TYPE: Brine or Salt VISC: 54 sec/qt WTR LOSS: 0 cc/30min PV: 16 cP YP: 12 lb/100 ft² pH: 9.9
 DENSITY: 11 lb/gal GEL 0/10: 8.00 lb/100 ft² SAND: 0 SOLIDS: 2.9 OIL: 0 TEMP: 121 °F
 LIQUID BASE: Water LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

— COMMENTS: —

2465' MD -TD of 12.5 section

Circ: longer than normal before landing casing due to Chesapeake pad wide drug test and search of living quarters and vehicles.

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Drilling Services
v4.2.2674

Day 8 - 2013/03/21

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
Field Superinte: Ronnie Truelove
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 2465.0 ft PROGRESS: 10.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 2475.0 ft AVG. ROP.: 40.0 ft/hr PREVIOUS COST: USD\$0.00
TOTAL COST: USD\$0.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-06:00	Wait On Cement	6.00	2465	n/a	18:00-18:30	Circulating - See Comments - Blow Hole	0.50	2465	2
06:00-10:00	Other - See Comments - Install Pack off Ass	4.00	2465	n/a	18:30-21:15	RIH With New BHA	2.75	2465	2
10:00-14:30	Logging - CBL LOG	4.50	2465	n/a	21:15-22:45	Drill Out Flt, Shoe & Cmnt	1.50	2465	2
14:30-17:00	Handle Directional Tools - P/U BHA # 2	2.50	2465	2	22:45-23:00	Rotating With Motor	0.25	2475	2
17:00-17:15	Shallow Test Tools	0.25	2465	2	23:00-24:00	Circulating - See Comments - Fill hole for FIT	1.00	2475	2
17:15-18:00	RIH With New BHA	0.75	2465	2			0.00		

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	0.25	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	35000 ft-lb	STRING WEIGHT:	100000 lbs
TIME DRILL:	0.00	ROTATING HRS:	0.25	MOTOR HRS:	3.25	WOB SLIDING (HI):	5000 lbf	WOB ROTATE (HI):	5000 lbf
MOTOR REAM:	0.00	TRIP:	3.50	WOB SLIDING (LO):	1000 lbf	WOB ROTATE (LO):	1000 lbf	DRAG UP:	110000 lbf
CIRC:	3.00	ROTARY DRILL:	0.00	OTHER:	17.25	RPM (ROTARY):	5 rpm	DRAG DN:	95000 lbf
MOTOR HRS:	3.25	DRILL HRS:	0.25	TOTAL HRS:	24.00	RPM (MOTOR):	65 rpm		

— BHA / MOTOR / BIT INFORMATION:

BHA: 2	HOLE SIZE: 8.75 in	SECTION TYPE: AIR_Nudge 1	SURVEY TYPE: Electromagnetic MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-43606	MODEL: 7/8 3.0
SETTING: 0.85 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Atlas	BIT TYPE: Hammer Bit 8.75	TYPE: Hammer bit	MTR HRS THIS DAY: 3.25
IADC BIT GRADE: 2 / 8 / RG / G / X / 16 / BT / PR			MTR HRS TO DATE: 3.25
			NOZZLES: 2.69 in ² TFA

— PUMP PARAMETERS

PRESSURE ON BTM: 350	PRESSURE OFF BTM: 250	TOTAL FLOW RATE: 400.00 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0%	SPM: 0.00
PUMP 2: TYPE: B 1600	EFF.: 95.0%	SPM: 0.00
PUMP 3: TYPE:	EFF.: 100.0%	SPM: 0.00
		LINER: 0.00 in
		LINER: 0.00 in
		LINER: 0.00 in
		STROKE VOL.: 0.0000 gal/stk
		STROKE VOL.: 0.0000 gal/stk
		STROKE VOL.: 0.0000 gal/stk

— MUD RECORD

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:		LIQUID RATE: 0 gal/min	GAS TYPE: Air		GAS RATE: 0 cu ft/min

— COMMENTS:

Tag Cement @ 2399' MD
Drilling with hammer and motor assembly with a max RPM of 5 and 5000 WOB.

Using ROCKIT to rotate at 5 RPM.

CUSTOMER SIGNATURE: _____



Daily Activity Report

Drilling Services
v4.2.2674

Day 9 - 2013/03/22

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
Field Superinte: Ronnie Truelove
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 2475.0 ft PROGRESS: 1319.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 3794.0 ft AVG. ROP.: 94.2 ft/hr PREVIOUS COST: USD\$0.00
TOTAL COST: USD\$0.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-02:30	Circulating - See Comments - Load hole for FIT	2.50	2475	2	13:00-13:30	Rig Service	0.50	3103	2
02:30-03:30	Pressure Test - FIT TEST	1.00	2475	2	13:30-14:15	Rotating With Motor	0.75	3197	2
03:30-04:15	Rotating With Motor	0.75	2576	2	14:15-14:30	EM MWD Surveys - @ 3121	0.25	3197	2
04:15-04:45	Work On EM MWD - No Signal	0.50	2576	2	14:30-15:30	Orienting With Motor - 220M	1.00	3291	2
04:45-05:15	Rotating With Motor	0.50	2599	2	15:30-15:45	EM MWD Surveys - @ 3215	0.25	3291	2
05:15-06:15	Work On EM MWD - Troubleshoot MWD	1.00	2599	2	15:45-16:45	Rotating With Motor	1.00	3386	2
06:15-06:30	Orienting With Motor	0.25	2631	2	16:45-17:00	EM MWD Surveys - @ 3310	0.25	3386	2
06:30-07:00	EM MWD Surveys - No Survey	0.50	2631	2	17:00-17:30	Orienting With Motor - 245M	0.50	3480	2
07:00-08:00	Orienting With Motor - 94' 246 MAG	1.00	2725	2	17:30-17:45	EM MWD Surveys - @ 3404	0.25	3480	2
08:00-08:15	EM MWD Surveys - @ 2649	0.25	2725	2	17:45-18:15	Orienting With Motor - 93' 246 MAG	0.50	3573	2
08:15-09:15	Orienting With Motor - 92' 246 Mag	1.00	2817	2	18:15-18:30	EM MWD Surveys - @ 3497	0.25	3573	2
09:15-09:30	EM MWD Surveys - @ 2741	0.25	2817	2	18:30-19:00	Rig Service	0.50	3573	2
09:30-10:15	Orienting With Motor	0.75	2912	2	19:00-19:30	Rotating With Motor	0.50	3617	2
10:15-10:30	EM MWD Surveys - @ 2836	0.25	2912	2	19:30-20:00	Rig Repair - W/O Pason	0.50	3617	2
10:30-11:00	Orienting With Motor - 95' 230 MAG	0.50	3007	2	20:00-21:30	Rotating With Motor - Pason Problems	1.50	3668	2
11:00-11:15	EM MWD Surveys - @ 2931	0.25	3007	2	21:30-21:45	EM MWD Surveys - @ 3592	0.25	3668	2
11:15-11:45	Orienting With Motor - 250 M	0.50	3057	2	21:45-23:15	Rotating With Motor	1.50	3762	2
11:45-12:45	Rotating With Motor	1.00	3103	2	23:15-23:30	EM MWD Surveys - @ 3686	0.25	3762	2
12:45-13:00	Circ & Condition Hole	0.25	3103	2	23:30-24:00	Rotating With Motor	0.50	3794	2

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	14.00	ORIENTING HRS:	6.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	3500 ft-lb	STRING WEIGHT:	125000 lbs
TIME DRILL:	0.00	ROTATING HRS:	8.00	MOTOR HRS:	16.75	WOB SLIDING (HI):	5000 lbf	WOB ROTATE (HI):	5000 lbf
MOTOR REAM:	0.00	TRIP:	0.00	OTHER:	7.25	WOB SLIDING (LO):	1000 lbf	WOB ROTATE (LO):	1000 lbf
CIRC:	2.75	ROTARY DRILL:	0.00	RPM (ROTARY):	5 rpm	DRAG UP:	130000 lbf	DRAG DN:	120000 lbf
MOTOR HRS:	16.75	DRILL HRS:	14.00	TOTAL HRS:	24.00	RPM (MOTOR):	65 rpm		

— BHA / MOTOR / BIT INFORMATION:

BHA: 2 HOLE SIZE: 8.75 in SECTION TYPE: AIR_Nudge 1 SURVEY TYPE: Electromagnetic MWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 675-43606 MODEL: 7/8 3.0 LOBE CFG.: 7/8
 SETTING: 0.85 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 16.75 MTR HRS TO DATE: 20
 MANFCT: Atlas BIT TYPE: Hammer Bit 8.75 TYPE: Hammer bit NOZZLES: 2.69 in² TFA
 IADC BIT GRADE: 2 / 8 / RG / G / X / 16 / BT / PR



Weatherford

Daily Activity Report

Drilling Services
v4.2.2674

Day 9 - 2013/03/22

— PUMP PARAMETERS

PRESSURE ON BTM: 425	PRESSURE OFF BTM: 250	TOTAL FLOW RATE: 500.00 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 2: TYPE: B 1600	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— MUD RECORD

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:		LIQUID RATE: 3 gal/min	GAS TYPE: Air		GAS RATE: 0 cu ft/min

— COMMENTS:

During FIT test, the testing truck had to replace a bad valve.

Lost signal after duing fit test and blowing down.

Having trouble getting signal from EM tool.
C/O Transceiver Running more ground lines.
Found gound wire pinch at the gasbuster causing problem.

String Float in @ 3007*MD

PASON PSI transducer failed while Drilling @ 3617M
OSR had driller recalibrate Hookload @ 21:45 hrs

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Drilling Services
v4.2.674

Day 10 - 2013/03/23

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
Field Superinte: Ronnie Truelove
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 3794.0 ft PROGRESS: 1109.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 4903.0 ft AVG. ROP.: 79.2 ft/hr PREVIOUS COST: USD\$0.00
TOTAL COST: USD\$0.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:45	Orienting With Motor - 150M	0.75	3825	2	09:30-09:45	EM MWD Surveys - @ 4442	0.25	4518	2
00:45-01:15	Rotating With Motor	0.50	3857	2	09:45-10:30	Orienting With Motor - 60' 230 MAG	0.75	4578	2
01:15-01:30	EM MWD Surveys - @ 3781	0.25	3857	2	10:30-11:00	Rotating With Motor	0.50	4613	2
01:30-02:15	Rotating With Motor	0.75	3953	2	11:00-11:15	EM MWD Surveys - @ 4537	0.25	4613	2
02:15-02:30	EM MWD Surveys - @ 3877	0.25	3953	2	11:15-12:00	Orienting With Motor - 60' 220 MAG	0.75	4673	2
02:30-03:00	Rotating With Motor	0.50	4048	2	12:00-12:30	Rotating With Motor	0.50	4708	2
03:00-03:15	EM MWD Surveys - @ 3972	0.25	4048	2	12:30-12:45	EM MWD Surveys - @ 4632	0.25	4708	2
03:15-03:45	Orienting With Motor - 250M	0.50	4068	2	12:45-13:30	Orienting With Motor - 60' 220MAG	0.75	4768	2
03:45-04:30	Rotating With Motor	0.75	4142	2	13:30-13:45	Rotating With Motor	0.25	4803	2
04:30-04:45	EM MWD Surveys - @ 4066	0.25	4142	2	13:45-14:00	EM MWD Surveys - @ 4727	0.25	4803	2
04:45-05:00	Orienting With Motor - 285M	0.25	4187	2	14:00-14:30	Rig Service	0.50	4803	2
05:00-05:45	Rotating With Motor	0.75	4235	2	14:30-15:45	Orienting With Motor - 60' 230 MAG	1.25	4863	2
05:45-06:00	EM MWD Surveys - @ 4159	0.25	4235	2	15:45-16:30	Rotating With Motor	0.75	4898	2
06:00-07:00	Orienting With Motor - 95' 280 MAG	1.00	4330	2	16:30-16:45	EM MWD Surveys - @ 4822	0.25	4898	2
07:00-07:15	EM MWD Surveys - @ 4254	0.25	4330	2	16:45-17:30	Orienting With Motor - 5' 250 MAG	0.75	4903	2
07:15-08:00	Rotating With Motor	0.75	4424	2	17:30-20:00	POOH To Change BHA	2.50	4903	2
08:00-08:15	EM MWD Surveys - @ 4348	0.25	4424	2	20:00-21:00	Handle Directional Tools - L/D BHA #2	1.00	4903	3
08:15-09:00	Orienting With Motor - 60' 200 MAG	0.75	4484	2	21:00-22:00	Handle Directional Tools - P/U BHA #3	1.00	4903	3
09:00-09:30	Rotating With Motor	0.50	4518	2	22:00-24:00	RIH With New BHA	2.00	4903	3

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	14.00	ORIENTING HRS:	7.50	ROTARY DRILL:	0.00	ROTARY TORQUE:	5500 ft-lb	STRING WEIGHT:	135000 lbs
TIME DRILL:	0.00	ROTATING HRS:	6.50	MOTOR HRS:	14.00	WOB SLIDING (HI):	8000 lbf	WOB ROTATE (HI):	8000 lbf
MOTOR REAM:	0.00	TRIP:	4.50	WOB SLIDING (LO):	1000 lbf	WOB ROTATE (LO):	1000 lbf	DRAG UP:	145000 lbf
CIRC:	0.00	ROTARY DRILL:	0.00	OTHER:	5.50	RPM (ROTARY):	5 rpm	DRAG DN:	125000 lbf
MOTOR HRS:	14.00	DRILL HRS:	14.00	TOTAL HRS:	24.00	RPM (MOTOR):	65 rpm		

— BHA / MOTOR / BIT INFORMATION: —

BHA: 2 HOLE SIZE: 8.75 in SECTION TYPE: AIR_Nudge 1 SURVEY TYPE: Electromagnetic MWD
MANFCT.:Weatherford STABILIZER: No SERIAL#: 675-43606 MODEL: 7/8 3.0 LOBE CFG.: 7/8
SETTING: 0.85 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 14 MTR HRS TO DATE: 34
MANFCT: Atlas BIT TYPE: Hammer Bit 8.75 TYPE: Hammer bit NOZZLES: 2.69 in² TFA
IADC BIT GRADE: 2 / 8 / RG / G / X / 16 / BT / PR

BHA: 3 HOLE SIZE: 8.5 in SECTION TYPE: AIR_Nudge 1 SURVEY TYPE: Electromagnetic MWD
MANFCT.:Weatherford STABILIZER: No SERIAL#: 675-43653 MODEL: 7/8 3.0 LOBE CFG.: 7/8
SETTING: 0.85 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 0 MTR HRS TO DATE: 0
MANFCT: Hughes BIT TYPE: Tri-Cone Bit TYPE: XL-30A NOZZLES: 1.767 in² TFA
IADC BIT GRADE: 1 / 1 / NO / A / E / 1 / NO / DMF



Daily Activity Report

Drilling Services
v4.2.2674

Day 10 - 2013/03/23

PUMP PARAMETERS

PRESSURE ON BTM: 700	PRESSURE OFF BTM: 350	TOTAL FLOW RATE: 500.00 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 2: TYPE: B 1600	EFF.: 95.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:	LIQUID RATE: 3 gal/min	GAS TYPE: Air	GAS RATE: 0 cu ft/min		

COMMENTS:

String Float added on STD #32 (2.05).

While rotating and sliding the pressure has increased from 500-700 psi.
The torque has increased from 10000-14000.

Unable to put 4-5K WOB without the motor stalling consistently.

Bit was under guage by 1". There were no guage row cutters remaining. The housing of the hammer assembly appeared to have a crack in it.

There was significant wear and wash on the motor at the adjustable housing area.

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Drilling Services
v4.2.2574

Day 11 - 2013/03/24

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
Field Superinte Ronnie Truelove
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 4903.0 ft PROGRESS: 265.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 5168.0 ft AVG. ROP.: 39.3 ft/hr PREVIOUS COST: USD\$0.00
TOTAL COST: USD\$0.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-01:00	RIH With New BHA	1.00	4903	3	14:00-14:30	Rotating With Motor	0.50	5128	3
01:00-08:00	Ream Hole - 4124-4903	7.00	4903	3	14:30-15:00	Orienting With Motor - Attempt to Slide	0.50	5130	3
08:00-08:30	Rotating With Motor	0.50	4948	3	15:00-15:45	Rotating With Motor	0.75	5168	3
08:30-09:30	Orienting With Motor - Attempted Slide	1.00	4956	3	15:45-16:00	EM MWD Surveys - @ 5096	0.25	5168	3
09:30-10:15	Rotating With Motor	0.75	4980	3	16:00-16:30	Circ & Condition Hole - POOH	0.50	5168	3
10:15-10:30	EM MWD Surveys - @ 4908	0.25	4980	3	16:30-18:30	POOH For Motor	2.00	5168	3
10:30-11:30	Orienting With Motor - Attempt Slide 8'	1.00	4988	3	18:30-19:15	Lay Down Directional Tools - L/D Motor & Bit	0.75	5168	3
11:30-12:30	Rotating With Motor	1.00	5074	3	19:15-20:00	Change Bit And Motor - P/U Motor & Bit	0.75	5168	4
12:30-13:00	Rig Service	0.50	5074	3	20:00-20:15	Shallow Test Tools - EM & Motor	0.25	5168	4
13:00-13:15	EM MWD Surveys - @ 5002	0.25	5074	3	20:15-21:30	Rig Service	1.25	5168	4
13:15-14:00	Orienting With Motor - Attempt to slide	0.75	5077	3	21:30-24:00	RIH - See Comments - new mtr and bit	2.50	5168	4

TIME SUMMARY (hrs):			DRILLING PARAMETERS:						
MOTOR DRILL:	6.75	ORIENTING HRS:	3.25	ROTARY DRILL:	0.00	ROTARY TORQUE:	6000 ft-lb	STRING WEIGHT:	155000 lbs
TIME DRILL:	0.00	ROTATING HRS:	3.50	MOTOR HRS:	14.25	WOB SLIDING (HI):	35000 lbf	WOB ROTATE (HI):	20000 lbf
MOTOR REAM:	7.00	TRIP:	5.50	OTHER:	4.25	WOB SLIDING (LO):	25000 lbf	WOB ROTATE (LO):	15000 lbf
CIRC:	0.50	ROTARY DRILL:	0.00	TOTAL HRS:	24.00	RPM (ROTARY):	40 rpm	DRAG UP:	185000 lbf
MOTOR HRS:	14.25	DRILL HRS:	6.75			RPM (MOTOR):	70 rpm	DRAG DN:	125000 lbf

— BHA / MOTOR / BIT INFORMATION:

BHA: 3	HOLE SIZE: 8.5 in	SECTION TYPE: AIR_Nudge 1	SURVEY TYPE: Electromagnetic MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-43653	MODEL: 7/8 3.0
SETTING: 0.85 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Hughes	BIT TYPE: Tri-Cone Bit	TYPE: XL-30A	MTR HRS THIS DAY: 14.25
IADC BIT GRADE: 1 / 1 / NO / A / E / 1 / NO / DMF			MTR HRS TO DATE: 14.25
			NOZZLES: 1.767 in ² TFA

BHA: 4	HOLE SIZE: 8.5 in	SECTION TYPE: AIR_Nudge 1	SURVEY TYPE: Electromagnetic MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-3854	MODEL: 7/8 3.0
SETTING: 1.5 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Hughes	BIT TYPE: Tri-Cone Bit	TYPE: VG30A	MTR HRS THIS DAY: 0
IADC BIT GRADE: 1 / 1 / NO / A / E / 1 / NO / BHA			MTR HRS TO DATE: 0
			NOZZLES: 1.767 in ² TFA

— PUMP PARAMETERS

PRESSURE ON BTM: 650	PRESSURE OFF BTM: 300	TOTAL FLOW RATE: 470.00 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0%	SPM: 0.00
PUMP 2: TYPE: B 1600	EFF.: 95.0%	SPM: 0.00
PUMP 3: TYPE:	EFF.: 100.0%	SPM: 0.00
		LINER: 0.00 in
		LINER: 0.00 in
		LINER: 0.00 in
		STROKE VOL.: 0.0000 gal/stk
		STROKE VOL.: 0.0000 gal/stk
		STROKE VOL.: 0.0000 gal/stk

— MUD RECORD

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:		LIQUID RATE: 25 gal/min	GAS TYPE: Air		GAS RATE: 3510 cu ft/min



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Day 11 - 2013/03/24

— **COMMENTS:** _____

RIH with BHA #3 to 4124 MD and then ream to bottom.

Starting taking weight @ 4124 MD so started reaming.

Attempted to slide at MD 4948 with 30-60 K on bit and rockit 3 revs left and right and couldnt get ant weight to the bit.

Decision was made to start misting with 25 gal/min and Attempt to continue sliding f- 4980-4988 stacking weight, and sporadic toolfaces due to rockit. Tried rockit several different procedures and had no luck.

Rotated the rest of the stand down and wait on orders.

Attempt to slide F/5074-5077 unable to get weight to bit. Rockit was 35 rpm and 3 revolutions right and left, Weight continued to stack, no luck sliding.

POOH

CUSTOMER SIGNATURE: _____



Daily Activity Report

Drilling Services
v4.2.2674

Day 12 - 2013/03/25

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Nomac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 Field Superinte: Ronnie Truelove
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 5168.0 ft PROGRESS: 1131.0 ft DAILY COST: USD\$0.00
 KB ELEV: 1413 ft END DEPTH: 6299.0 ft AVG. ROP.: 119.0 ft/hr PREVIOUS COST: USD\$0.00
 WORK STATUS: Operating (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:15	Wash To Bottom	0.25	5169	4	08:15-08:30	EM MWD Surveys - @ 5753	0.25	5827	4
00:15-00:45	Orienting With Motor - 285M	0.50	5200	4	08:30-09:00	Orienting With Motor - 40' 250 MAG	0.50	5867	4
00:45-01:30	Rotating With Motor	0.75	5262	4	09:00-09:30	Rotating With Motor	0.50	5923	4
01:30-01:45	EM MWD Surveys - @ 5188	0.25	5262	4	09:30-09:45	EM MWD Surveys - @ 5849	0.25	5923	4
01:45-02:15	Orienting With Motor - 315M	0.50	5302	4	09:45-10:00	Orienting With Motor - 30 220 MAG	0.25	5983	4
02:15-02:45	Rotating With Motor	0.50	5356	4	10:00-10:15	Rotating With Motor	0.25	6016	4
02:45-03:00	EM MWD Surveys - @ 5282	0.25	5356	4	10:15-10:30	EM MWD Surveys - @ 5942	0.25	6016	4
03:00-03:15	Rotating With Motor	0.25	5390	4	10:30-11:00	Rotating With Motor	0.50	6110	4
03:15-03:45	Orienting With Motor - 250 Mtf	0.50	5410	4	11:00-11:15	EM MWD Surveys - @ 6036	0.25	6110	4
03:45-04:00	Rotating With Motor	0.25	5450	4	11:15-11:45	Rotating With Motor	0.50	6205	4
04:00-04:15	Circ & Accumulate Surveys - Survey @ 5376	0.25	5450	4	11:45-12:00	EM MWD Surveys - @ 6131	0.25	6205	4
04:15-05:00	Orienting With Motor - 250 MTF	0.75	5510	4	12:00-12:30	Rotating With Motor	0.50	6299	4
05:00-05:15	Rotating With Motor	0.25	5545	4	12:30-12:45	EM MWD Surveys - @ 6225	0.25	6299	4
05:15-05:30	Circ & Accumulate Surveys - Survey @ 5471	0.25	5545	4	12:45-13:30	Circ Bottoms Up	0.75	6299	4
05:30-06:15	Rotating With Motor	0.75	5638	4	13:30-14:00	Rig Service	0.50	6299	4
06:15-06:30	EM MWD Surveys - 250M	0.25	5638	4	14:00-16:30	Displace Hole - OBM	2.50	6299	4
06:30-07:00	Rotating With Motor	0.50	5733	4	16:30-18:30	Wireline Survey	2.00	6299	4
07:00-07:15	EM MWD Surveys - @ 5659	0.25	5733	4	18:30-21:30	POOH To Change BHA	3.00	6299	4
07:15-07:45	Orienting With Motor - 30' 270 MAG	0.50	5763	4	21:30-23:30	Circulating - See Comments - @ 3536, RU Kelly	2.00	6299	4
07:45-08:15	Rotating With Motor	0.50	5827	4	23:30-24:00	POOH To Change BHA	0.50	6299	4

TIME SUMMARY (hrs):			DRILLING PARAMETERS:						
MOTOR DRILL:	9.50	ORIENTING HRS:	3.50	ROTARY DRILL:	0.00	ROTARY TORQUE:	7500 ft-lb	STRING WEIGHT:	162000 lbs
TIME DRILL:	0.00	ROTATING HRS:	6.00	MOTOR HRS:	15.50	WOB SLIDING (HI):	15000 lbf	WOB ROTATE (HI):	20000 lbf
MOTOR REAM:	0.00	TRIP:	3.50	OTHER:	5.00	WOB SLIDING (LO):	8000 lbf	WOB ROTATE (LO):	10000 lbf
CIRC:	6.00	ROTARY DRILL:	0.00	RPM (ROTARY):	40 rpm	DRAG UP:	200000 lbf		
MOTOR HRS:	15.50	DRILL HRS:	9.50	TOTAL HRS:	24.00	RPM (MOTOR):	75 rpm	DRAG DN:	145000 lbf

— BHA / MOTOR / BIT INFORMATION: —

BHA: 4 HOLE SIZE: 8.5 in SECTION TYPE: AIR_Nudge 1 SURVEY TYPE: Electromagnetic MWD
 MANFCT.:Weatherford STABILIZER: No SERIAL#: 675-3854 MODEL: 7/8 3.0 LOBE CFG.: 7/8
 SETTING: 1.5 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 15.5 MTR HRS TO DATE: 15.5
 MANFCT: Hughes BIT TYPE: Tri-Cone Bit TYPE: VG30A NOZZLES: 1.767 in² TFA
 ADC BIT GRADE: 1 / 1 / NO / A / E / 1 / NO / BHA



Weatherford

Daily Activity Report

Day 12 - 2013/03/25

Drilling Services
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— PUMP PARAMETERS

PRESSURE ON BTM: 480		PRESSURE OFF BTM: 450		TOTAL FLOW RATE: 470.00 gal/min	
PUMP 1:	TYPE: D-125	EFF.: 95.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk
PUMP 2:	TYPE: B 1600	EFF.: 95.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk
PUMP 3:	TYPE:	EFF.: 100.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk

— MUD RECORD

MUD TYPE:	VISC: 0 sec/qt	WTR LOSS: 0 cc/30min	PV: 0 cP	YP: 0 lb/100 ft ²	pH: 0
DENSITY: 0 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0	OIL: 0	TEMP: 0 °F
LIQUID BASE:		LIQUID RATE: 3 gal/min	GAS TYPE: Air		GAS RATE: 3510 cu ft/min

— COMMENTS:

Trip back to bottom with BHA #4 and started sliding.
Sliding and rotating with no problem.

After displacing the hole with OBM the Gyro tool could not get to bottom due to a broken flapper from a string float.
Found Float flapper while POOH. There was still one small piece of the flapper not recovered.

CUSTOMER SIGNATURE: _____



Daily Activity Report

Drilling Services
v4.2.2674

Day 13 - 2013/03/26

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Nomac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 Field Superinte: Ronnie Truelove
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 6299.0 ft PROGRESS: 0.0 ft DAILY COST: USD\$0.00
 KB ELEV: 1413 ft END DEPTH: 6299.0 ft AVG. ROP.: 0.0 ft/hr PREVIOUS COST: USD\$0.00
 TOTAL COST: USD\$0.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-02:00	POOH To Change BHA	2.00	6299	4	09:30-10:30	Rig Service	1.00	6299	5
02:00-03:00	Handle Directional Tools - L/D BHA #4	1.00	6299	4	10:30-13:45	Work on Top Drive	3.25	6299	5
03:00-04:00	Handle Directional Tools - P/U BHA #5	1.00	6299	5	13:45-18:15	Ream Hole - 4064-5123	4.50	6299	5
04:00-06:00	RIH With New BHA - Curve and Lateral	2.00	6299	5	18:15-19:00	RIH With New BHA	0.75	6299	5
06:00-08:00	Slip And Cut - At Shoe	2.00	6299	5	19:00-20:00	Circ & Condition Hole - R/U Gyro	1.00	6299	5
08:00-08:15	Shallow Test Tools - Test MWD and MTR	0.25	6299	5	20:00-23:00	Wireline Survey	3.00	6299	5
08:15-09:00	RIH With New BHA - Curve & Lateral Ass	0.75	6299	5	23:00-24:00	Wash To Bottom - 6242-6299	1.00	6299	5
09:00-09:30	Work Tight Hole & Circ - @ 4064	0.50	6299	5			0.00		

TIME SUMMARY (hrs):				DRILLING PARAMETERS:			
MOTOR DRILL:	0.00	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	
TIME DRILL:	0.00	ROTATING HRS:	0.00	MOTOR HRS:	7.00	WOB SLIDING (HI):	0 lbf
MOTOR REAM:	4.50	TRIP:	5.50	WOB SLIDING (LO):	0 lbf	WOB ROTATE (HI):	0 lbf
CIRC:	2.50	ROTARY DRILL:	0.00	OTHER:	11.50	WOB ROTATE (LO):	0 lbf
MOTOR HRS:	7.00	DRILL HRS:	0.00	TOTAL HRS:	24.00	RPM (ROTARY):	40 rpm
						RPM (MOTOR):	140 rpm
						STRING WEIGHT:	120000 lbs
						WOB ROTATE (HI):	0 lbf
						WOB ROTATE (LO):	0 lbf
						DRAG UP:	125000 lbf
						DRAG DN:	105000 lbf

— BHA / MOTOR / BIT INFORMATION: —

BHA: 4 HOLE SIZE: 8.5 in SECTION TYPE: AIR_Nudge 1 SURVEY TYPE: Electromagnetic MWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 675-3854 MODEL: 7/8 3.0 LOBE CFG.: 7/8
 SETTING: 1.5 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 0 MTR HRS TO DATE: 15.5
 MANFCT: Hughes BIT TYPE: Tri-Cone Bit TYPE: VG30A NOZZLES: 1.767 in² TFA
 IADC BIT GRADE: 1 / 1 / NO / A / E / / NO / BHA

BHA: 5 HOLE SIZE: 8.5 in SECTION TYPE: Curve and Lateral SURVEY TYPE: Electromagnetic MWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 675-43597 MODEL: 7/8 5.0 LOBE CFG.: 7/8
 SETTING: 1.73 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 7 MTR HRS TO DATE: 7
 MANFCT: Ulterra BIT TYPE: PDC Bit TYPE: U 513 S NOZZLES: 2.148 in² TFA
 IADC BIT GRADE: 2 / 2 / BT / G / X / / WT / TD

— PUMP PARAMETERS —

PRESSURE ON BTM: 1700 PRESSURE OFF BTM: 1500 TOTAL FLOW RATE: 501.60 gal/min
 PUMP 1: TYPE: D-125 EFF.: 95.0% SPM: 75.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 2: TYPE: B 1600 EFF.: 95.0% SPM: 75.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— MUD RECORD —

MUD TYPE: Synthetic VISC: 61 sec/qt WTR LOSS: 22 cc/30min PV: 15 cP YP: 8 lb/100 ft² pH: 0
 DENSITY: 12.5 lb/gal GEL 0/10: 6.00 lb/100 ft² SAND: 0 SOLIDS: 3.7 OIL: 62.3 TEMP: 0 °F
 LIQUID BASE: Synthetic LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

— COMMENTS: —

Pick up curve and Lateral assembly,
 Reamed the hole from 4064-5123 MD.



Daily Activity Report

Day 13 - 2013/03/26

Drilling Services
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While reaming it was noticed that the pressure did not look normal, after discussing it with the tool pusher we went and listened to the pumps ourselves and Ronnie found Pump 1 had a washed out popoff. After fixing it pressure became normal, and it was easier to ream and had no other issues.

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Day 14 - 2013/03/27

Drilling Services

v4.2.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
Field Superinte: Ronnie Truelove
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 6299.0 ft PROGRESS: 1175.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 7474.0 ft AVG. ROP.: 69.1 ft/hr PREVIOUS COST: USD\$0.00
WORK STATUS: Operating (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-01:45	Orienting With Motor - 90L 1 PUMP	1.75	6348	5	12:30-12:45	Orienting With Motor - H.S	0.25	6900	5
01:45-02:00	EM MWD Surveys - @ 6290	0.25	6348	5	12:45-13:00	Rotating With Motor	0.25	6909	5
02:00-02:30	Rotating With Motor	0.50	6379	5	13:00-13:15	Orienting With Motor - H.S	0.25	6929	5
02:30-02:45	EM MWD Surveys - @ 6321	0.25	6379	5	13:15-13:30	Rotating With Motor	0.25	6940	5
02:45-03:00	Orienting With Motor - 45R	0.25	6410	5	13:30-13:45	EM MWD Surveys - Survey @ 6882	0.25	6940	5
03:00-03:15	EM MWD Surveys - @ 6352	0.25	6410	5	13:45-14:15	Orienting With Motor - 15R	0.50	6971	5
03:15-03:30	Orienting With Motor - 90L	0.25	6441	5	14:15-14:30	EM MWD Surveys - Survey @ 6913	0.25	6971	5
03:30-03:45	EM MWD Surveys - @ 6383	0.25	6441	5	14:30-14:45	Orienting With Motor - 20R	0.25	6991	5
03:45-04:00	Orienting With Motor	0.25	6472	5	14:45-15:00	Rotating With Motor	0.25	7003	5
04:00-04:15	EM MWD Surveys - @ 6414	0.25	6472	5	15:00-15:15	EM MWD Surveys - Survey @ 6945	0.25	7003	5
04:15-04:30	Orienting With Motor - 60R	0.25	6504	5	15:15-15:45	Rig Service	0.50	7003	5
04:30-04:45	EM MWD Surveys - @ 6446	0.25	6504	5	15:45-16:15	Orienting With Motor - H.S	0.50	7034	5
04:45-05:00	Orienting With Motor - 50R	0.25	6523	5	16:15-16:30	EM MWD Surveys - Survey @ 6976	0.25	7034	5
05:00-05:15	Rotating With Motor	0.25	6535	5	16:30-16:45	Orienting With Motor - 20R	0.25	7059	5
05:15-05:30	Orienting With Motor - 50R	0.25	6550	5	16:45-17:00	Rotating With Motor	0.25	7066	5
05:30-05:45	Rotating With Motor	0.25	6565	5	17:00-17:15	EM MWD Surveys - Survey @ 7008	0.25	7066	5
05:45-06:00	EM MWD Surveys - Survey @ 6507	0.25	6565	5	17:15-17:30	Orienting With Motor - H.S	0.25	7091	5
06:00-06:15	Orienting With Motor - 45R	0.25	6576	5	17:30-17:45	Rotating With Motor	0.25	7098	5
06:15-06:30	Rotating With Motor	0.25	6597	5	17:45-18:00	Orienting With Motor - 10R	0.25	7123	5
06:30-06:45	EM MWD Surveys - Survey @ 6539	0.25	6597	5	18:00-18:15	Rotating With Motor	0.25	7129	5
06:45-07:00	Orienting With Motor - 50R	0.25	6627	5	18:15-18:30	EM MWD Surveys - Survey @ 7071	0.25	7129	5
07:00-07:15	EM MWD Surveys - Survey @ 6569	0.25	6627	5	18:30-18:45	Orienting With Motor - H.S	0.25	7149	5
07:15-07:30	Orienting With Motor - 45R	0.25	6647	5	18:45-19:00	Rotating With Motor	0.25	7161	5
07:30-07:45	Rotating With Motor	0.25	6658	5	19:00-19:15	Orienting With Motor - H.S	0.25	7181	5
07:45-08:00	EM MWD Surveys - Survey @ 6600	0.25	6658	5	19:15-19:30	Rotating With Motor	0.25	7192	5
08:00-08:15	Orienting With Motor - 45R	0.25	6689	5	19:30-19:45	EM MWD Surveys - Survey @ 7134	0.25	7192	5
08:15-08:30	EM MWD Surveys - Survey @ 6631	0.25	6689	5	19:45-20:00	Orienting With Motor - H.S	0.25	7217	5
08:30-08:45	Orienting With Motor - 45R	0.25	6709	5	20:00-20:15	Rotating With Motor	0.25	7223	5
08:45-09:00	Rotating With Motor	0.25	6721	5	20:15-20:30	Orienting With Motor - 15L	0.25	7248	5
09:00-09:15	EM MWD Surveys - Survey @ 6663	0.25	6721	5	20:30-20:45	Rotating With Motor	0.25	7255	5
09:15-09:30	Orienting With Motor - 40R	0.25	6741	5	20:45-21:00	EM MWD Surveys - Survey @ 7197	0.25	7255	5
09:30-09:45	Rotating With Motor	0.25	6752	5	21:00-21:15	Orienting With Motor - HS	0.25	7270	5
09:45-10:00	EM MWD Surveys - Survey @ 6694	0.25	6752	5	21:15-21:30	Rotating With Motor	0.25	7286	5
10:00-10:15	Orienting With Motor - 20R	0.25	6775	5	21:30-21:45	EM MWD Surveys - @ 7228	0.25	7286	5
10:15-10:30	Rotating With Motor	0.25	6784	5	21:45-22:00	Orienting With Motor - 60L	0.25	7317	5
10:30-10:45	Orienting With Motor - 20R	0.25	6807	5	22:00-22:15	Rotating With Motor	0.25	7349	5
10:45-11:00	Rotating With Motor	0.25	6815	5	22:15-22:30	EM MWD Surveys - @ 7291	0.25	7349	5
11:00-11:15	EM MWD Surveys - Survey @ 6757	0.25	6815	5	22:30-22:45	Orienting With Motor - 90L	0.25	7364	5
11:15-11:30	Orienting With Motor - H.S	0.25	6838	5	22:45-23:00	Rotating With Motor	0.25	7380	5



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11:30-11:45	Rotating With Motor	0.25	6846	5	23:00-23:15	Orienting With Motor - 40L	0.25	7400	5
11:45-12:00	Orienting With Motor - 20R	0.25	6868	5	23:15-23:45	Rotating With Motor	0.50	7474	5
12:00-12:15	Rotating With Motor	0.25	6878	5	23:45-24:00	EM MWD Surveys - @ 7416	0.25	7474	5
12:15-12:30	EM MWD Surveys - Survey @ 6820	0.25	6878	5			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL:	17.00	ORIENTING HRS:	10.25
TIME DRILL:	0.00	ROTATING HRS:	6.75
MOTOR REAM:	0.00	ROTARY DRILL:	0.00
CIRC:	0.00	DRILL HRS:	17.00
MOTOR HRS:	17.00	TOTAL HRS:	24.00

DRILLING PARAMETERS:

ROTARY DRILL:	0.00	ROTARY TORQUE:	5000 ft-lb	STRING WEIGHT:	155000 lbs
MOTOR HRS:	17.00	WOB SLIDING (HI):	20000 lbf	WOB ROTATE (HI):	20000 lbf
TRIP:	0.00	WOB SLIDING (LO):	10000 lbf	WOB ROTATE (LO):	10000 lbf
OTHER:	7.00	RPM (ROTARY):	50 rpm	DRAG UP:	180000 lbf
		RPM (MOTOR):	140 rpm	DRAG DN:	130000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 5 **HOLE SIZE:** 8.5 in **SECTION TYPE:** Curve and Lateral **SURVEY TYPE:** Electromagnetic MWD
MANFCT.: Weatherford **STABILIZER:** No **SERIAL#:** 675-43597 **MODEL:** 7/8 5.0 **LOBE CFG.:** 7/8
SETTING: 1.73 ° **KICKPAD:** No **SIZE:** 6 3/4" (171mm) **MTR HRS THIS DAY:** 17 **MTR HRS TO DATE:** 24
MANFCT: Ulterra **BIT TYPE:** PDC Bit **TYPE:** U 513 S **NOZZLES:** 2.148 in² TFA
IADC BIT GRADE: 2 / 2 / BT / G / X / I / WT / TD

PUMP PARAMETERS

PRESSURE ON BTM: 3200 **PRESSURE OFF BTM:** 2700 **TOTAL FLOW RATE:** 501.60 gal/min
PUMP 1: TYPE: D-125 **EFF.:** 95.0% **SPM:** 75.00 **LINER:** 5.50 in **STROKE VOL.:** 3.5200 gal/stk
PUMP 2: TYPE: B 1600 **EFF.:** 95.0% **SPM:** 75.00 **LINER:** 5.50 in **STROKE VOL.:** 3.5200 gal/stk
PUMP 3: TYPE: **EFF.:** 100.0% **SPM:** 0.00 **LINER:** 0.00 in **STROKE VOL.:** 0.0000 gal/stk

MUD RECORD

MUD TYPE: Synthetic **VISC:** 62 sec/qt **WTR LOSS:** 22 cc/30min **PV:** 15 cP **YP:** 10 lb/100 ft² **pH:** 0
DENSITY: 12.7 lb/gal **GEL 0/10:** 6.00 lb/100 ft² **SAND:** 0 **SOLIDS:** 3.78 **OIL:** 61.4 **TEMP:** 105 °F
LIQUID BASE: Synthetic **LIQUID RATE:** 0 gal/min **GAS TYPE:** **GAS RATE:** 0 cu ft/min

COMMENTS:

Rig was still working on Pump 1 when we got to bottom and started to slide.
 Could only put 7K WOB otherwise Motor would stall.

Two pumps back on the hole and sliding good.
 Motor is strong, drilling with 450 Differential PSI.

Top of Curve is @ 6379 MD

CUSTOMER SIGNATURE: _____



Daily Activity Report

Drilling Services
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Day 15 - 2013/03/28

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Nomac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 Field Superinte: Ronnie Truelove
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 7474.0 ft PROGRESS: 2360.0 ft DAILY COST: USD\$0.00
 KB ELEV: 1413 ft END DEPTH: 9834.0 ft AVG. ROP.: 136.8 ft/hr PREVIOUS COST: USD\$0.00
 WORK STATUS: Operating (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:15	Orienting With Motor - 130L	0.25	7489	5	11:45-12:00	Orienting With Motor - 18' 130R	0.25	8719	5
00:15-00:45	Rotating With Motor	0.50	7569	5	12:00-12:15	Rotating With Motor	0.25	8796	5
00:45-01:00	EM MWD Surveys - @ 7511	0.25	7569	5	12:15-12:30	EM MWD Surveys - @ 8738	0.25	8796	5
01:00-01:45	Orienting With Motor - 120R	0.75	7589	5	12:30-13:00	Rig Service	0.50	8796	5
01:45-02:00	Rotating With Motor	0.25	7664	5	13:00-13:30	Rotating With Motor	0.50	8890	5
02:00-02:15	EM MWD Surveys - @ 7606	0.25	7664	5	13:30-13:45	EM MWD Surveys - @ 8832	0.25	8890	5
02:15-03:00	Rotating With Motor	0.75	7759	5	13:45-14:00	Orienting With Motor - 20' 70R	0.25	8910	5
03:00-03:15	EM MWD Surveys - @ 7701	0.25	7759	5	14:00-14:15	Rotating With Motor	0.25	8985	5
03:15-03:45	Rig Service	0.50	7759	5	14:15-14:30	EM MWD Surveys - @ 8927	0.25	8985	5
03:45-04:15	Orienting With Motor - 90R	0.50	7779	5	14:30-15:00	Orienting With Motor - 20' 40R	0.50	8905	5
04:15-04:45	Rotating With Motor	0.50	7853	5	15:00-15:45	Rotating With Motor	0.75	9079	5
04:45-05:00	EM MWD Surveys - @ 7795	0.25	7853	5	15:45-16:00	EM MWD Surveys - @ 9021	0.25	9079	5
05:00-05:15	Orienting With Motor - HS	0.25	7873	5	16:00-16:30	Rotating With Motor	0.50	9174	5
05:15-05:45	Rotating With Motor	0.50	7948	5	16:30-16:45	EM MWD Surveys - @ 9116	0.25	9174	5
05:45-06:00	EM MWD Surveys - @ 7890	0.25	7948	5	16:45-18:00	Orienting With Motor - 40L	1.25	9194	5
06:00-06:45	Rotating With Motor	0.75	8043	5	18:00-18:15	Rotating With Motor - @ 9210	0.25	9268	5
06:45-07:00	EM MWD Surveys - @ 7985	0.25	8043	5	18:15-18:30	EM MWD Surveys - @9210	0.25	9268	5
07:00-07:15	Orienting With Motor - 100R	0.25	8053	5	18:30-19:15	Rotating With Motor	0.75	9363	5
07:15-07:30	Rotating With Motor	0.25	8138	5	19:15-19:30	EM MWD Surveys - @ 9305	0.25	9363	5
07:30-07:45	EM MWD Surveys - @ 8080	0.25	8138	5	19:30-20:00	Rotating With Motor	0.50	9457	5
07:45-08:15	Rotating With Motor	0.50	8232	5	20:00-20:15	EM MWD Surveys - @ 9399	0.25	9457	5
08:15-08:30	EM MWD Surveys - @ 8174	0.25	8232	5	20:15-20:30	Orienting With Motor - 100L	0.25	9472	5
08:30-09:00	Rotating With Motor	0.50	8327	5	20:30-21:15	Rotating With Motor	0.75	9552	5
09:00-09:15	EM MWD Surveys - @ 8269	0.25	8327	5	21:15-21:30	EM MWD Surveys - @9494	0.25	9552	5
09:15-09:30	Rotating With Motor	0.25	8422	5	21:30-22:00	Orienting With Motor - 160L	0.50	9577	5
09:30-09:45	EM MWD Surveys - @8364	0.25	8422	5	22:00-22:30	Rotating With Motor	0.50	9647	5
09:45-10:15	Rotating With Motor	0.50	8514	5	22:30-22:45	EM MWD Surveys - @ 9589	0.25	9647	5
10:15-10:30	EM MWD Surveys - @ 8456	0.25	8514	5	22:45-23:15	Rotating With Motor	0.50	9741	5
10:30-10:45	Rotating With Motor	0.25	8606	5	23:15-23:30	EM MWD Surveys - @ 9683	0.25	9741	5
10:45-11:00	EM MWD Surveys - @ 8548	0.25	8606	5	23:30-24:00	Rotating With Motor	0.50	9834	5
11:00-11:45	Rotating With Motor	0.75	8701	5			0.00		

TIME SUMMARY (hrs):			DRILLING PARAMETERS:		
MOTOR DRILL: 17.25	ORIENTING HRS: 5.00	ROTARY DRILL: 0.00	ROTARY TORQUE: 12000 ft-lb	STRING WEIGHT	155000 lbs
TIME DRILL: 0.00	ROTATING HRS: 12.25	MOTOR HRS: 17.25	WOB SLIDING (HI): 20000 lbf	WOB ROTATE (HI):	20000 lbf
MOTOR REAM: 0.00		TRIP: 0.00	WOB SLIDING (LO): 10000 lbf	WOB ROTATE (LO):	10000 lbf
CIRC: 0.00	ROTARY DRILL: 0.00	OTHER: 6.75	RPM (ROTARY): 90 rpm	DRAG UP:	180000 lbf
MOTOR HRS: 17.25	DRILL HRS: 17.25	TOTAL HRS: 24.00	RPM (MOTOR): 140 rpm	DRAG DN:	120000 lbf

— BHA / MOTOR / BIT INFORMATION: _____



Weatherford

Daily Activity Report

Drilling Services

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Day 15 - 2013/03/28

BHA: 5 **HOLE SIZE:** 8.5 in **SECTION TYPE:** Curve and Lateral **SURVEY TYPE:** Electromagnetic MWD
MANFCT.: Weatherford **STABILIZER:** No **SERIAL#:** 675-43597 **MODEL:** 7/8 5.0 **LOBE CFG.:** 7/8
SETTING: 1.73 ° **KICKPAD:** No **SIZE:** 6 3/4" (171mm) **MTR HRS THIS DAY:** 17.25 **MTR HRS TO DATE:** 41.25
MANFCT: Ulterra **BIT TYPE:** PDC Bit **TYPE:** U 513 S **NOZZLES:** 2.148 in² TFA
IADC BIT GRADE: 2 / 2 / BT / G / X / I / WT / TD

— **PUMP PARAMETERS** —

PRESSURE ON BTM: 3200	PRESSURE OFF BTM: 2700	TOTAL FLOW RATE: 501.60 gal/min
PUMP 1: TYPE: D-125	EFF.: 95.0% SPM: 75.00	LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
PUMP 2: TYPE: B 1600	EFF.: 95.0% SPM: 75.00	LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— **MUD RECORD** —

MUD TYPE: Synthetic **VISC:** 64 sec/qt **WTR LOSS:** 12 cc/30min **PV:** 17 cP **YP:** 10 lb/100 ft² **pH:** 0
DENSITY: 12.5 lb/gal **GEL 0/10:** 7.00 lb/100 ft² **SAND:** 0 **SOLIDS:** 5.2 **OIL:** 62 **TEMP:** 131 °F
LIQUID BASE: Synthetic **LIQUID RATE:** 0 gal/min **GAS TYPE:** **GAS RATE:** 0 cu ft/min

— **COMMENTS:** —

Landed Curve @ 7400 MD
 Drilling Lateral (Plan 2), Sliding as needed

We had some trouble with MWD signal between 9268-9552 MD. (18:30-21:30 hrs). It is working good again.

CUSTOMER SIGNATURE: _____



Daily Activity Report

Drilling Services
v4.2.2674

Day 16 - 2013/03/29

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Nomac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 Field Superinte: Ronnie Truelove
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 9834.0 ft PROGRESS: 1466.0 ft DAILY COST: USD\$0.00
 KB ELEV: 1413 ft END DEPTH: 11300.0 ft AVG. ROP.: 82.6 ft/hr PREVIOUS COST: USD\$0.00
 WORK STATUS: Operating (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:15	EM MWD Surveys - @ 9776	0.25	9834	5	13:30-13:45	EM MWD Surveys - @ 10530	0.25	10587	5
00:15-00:45	Rotating With Motor	0.50	9929	5	13:45-14:30	Rotating With Motor	0.75	10681	5
00:45-01:00	EM MWD Surveys - @ 9871	0.25	9929	5	14:30-14:45	EM MWD Surveys - @ 10623	0.25	10681	5
01:00-01:30	Orienting With Motor - 90R (slide w 1 pump)	0.50	9941	5	14:45-15:15	Rotating With Motor	0.50	10776	5
01:30-03:00	Work on Pumps - Pumps #1 and #2	1.50	9941	5	15:15-15:30	EM MWD Surveys - @ 10718	0.25	10776	5
03:00-03:45	Rotating With Motor - Pump #1 120 spm	0.75	10022	5	15:30-16:00	Rotating With Motor	0.50	10868	5
03:45-04:00	EM MWD Surveys - @ 9964	0.25	10022	5	16:00-16:15	EM MWD Surveys - @ 10810	0.25	10868	5
04:00-04:30	Rotating With Motor	0.50	10116	5	16:15-16:30	Orienting With Motor - 12' 170L	0.25	10880	5
04:30-04:45	EM MWD Surveys - @10058	0.25	10116	5	16:30-17:15	Rotating With Motor	0.75	10963	5
04:45-05:30	Rotating With Motor	0.75	10211	5	17:15-17:30	EM MWD Surveys - @ 10905	0.25	10963	5
05:30-05:45	EM MWD Surveys - @ 10153	0.25	10211	5	17:30-18:30	Rotating With Motor	1.00	11057	5
05:45-06:30	Orienting With Motor - 10'90R	0.75	10221	5	18:30-18:45	EM MWD Surveys - @ 10999	0.25	11057	5
06:30-08:15	Rotating With Motor	1.75	10305	5	18:45-19:00	Orienting With Motor - 150L	0.25	11068	5
08:15-08:30	EM MWD Surveys - @ 10247	0.25	10305	5	19:00-19:15	Rotating With Motor	0.25	11080	5
08:30-09:30	Orienting With Motor - 6' 120R	1.00	10311	5	19:15-19:45	Rig Service	0.50	11080	5
09:30-10:15	Rotating With Motor	0.75	10399	5	19:45-20:00	Work on Top Drive	0.25	11080	5
10:15-10:30	EM MWD Surveys - @ 10341	0.25	10399	5	20:00-21:15	Rotating With Motor	1.25	11151	5
10:30-10:45	Orienting With Motor - 15' 140R	0.25	10414	5	21:15-21:30	EM MWD Surveys - @ 11093	0.25	11151	5
10:45-11:45	Rotating With Motor	1.00	10493	5	21:30-22:00	Orienting With Motor - 170L	0.50	11161	5
11:45-12:00	EM MWD Surveys - @ 10435	0.25	10493	5	22:00-23:15	Rotating With Motor	1.25	11246	5
12:00-12:30	Orienting With Motor - 10 90R	0.50	10503	5	23:15-23:30	EM MWD Surveys - @ 11188	0.25	11246	5
12:30-13:30	Rotating With Motor	1.00	10587	5	23:30-24:00	Rotating With Motor	0.50	11300	5

TIME SUMMARY (hrs):			DRILLING PARAMETERS:		
MOTOR DRILL: 17.75	ORIENTING HRS: 4.00	ROTARY DRILL: 0.00	ROTARY TORQUE: 16000 ft-lb	STRING WEIGHT: 150000 lbs	
TIME DRILL: 0.00	ROTATING HRS: 13.75	MOTOR HRS: 17.75	WOB SLIDING (HI): 20000 lbf	WOB ROTATE (HI): 23000 lbf	
MOTOR REAM: 0.00		TRIP: 0.00	WOB SLIDING (LO): 5000 lbf	WOB ROTATE (LO): 10000 lbf	
CIRC: 0.00	ROTARY DRILL: 0.00	OTHER: 6.25	RPM (ROTARY): 80 rpm	DRAG UP: 200000 lbf	
MOTOR HRS: 17.75	DRILL HRS: 17.75	TOTAL HRS: 24.00	RPM (MOTOR): 112 rpm	DRAG DN: 100000 lbf	

BHA / MOTOR / BIT INFORMATION:

BHA: 5 HOLE SIZE: 8.5 in SECTION TYPE: Curve and Lateral SURVEY TYPE: Electromagnetic MWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 675-43597 MODEL: 7/8 5.0 LOBE CFG.: 7/8
 SETTING: 1.73 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 17.75 MTR HRS TO DATE: 59
 MANFCT: Ulterra BIT TYPE: PDC Bit TYPE: U 513 S NOZZLES: 2.148 in² TFA
 IADC BIT GRADE: 2 / 2 / BT / G / X / I / WT / TD



Weatherford

Daily Activity Report

Day 16 - 2013/03/29

Drilling Services

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— PUMP PARAMETERS

PRESSURE ON BTM: 3850		PRESSURE OFF BTM: 3350		TOTAL FLOW RATE: 401.28 gal/min	
PUMP 1:	TYPE: D-125	EFF.: 95.0%	SPM: 120.00	LINER: 5.50 in	STROKE VOL.: 3.5200 gal/stk
PUMP 2:	TYPE: B 1600	EFF.: 95.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 3.5200 gal/stk
PUMP 3:	TYPE:	EFF.: 100.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk

— MUD RECORD

MUD TYPE: Synthetic	VISC: 62 sec/qt	WTR LOSS: 6 cc/30min	PV: 18 cP	YP: 13 lb/100 ft ²	pH: 0
DENSITY: 12.5 lb/gal	GEL 0/10: 12.00 lb/100 ft ²	SAND: 0	SOLIDS: 6.7	OIL: 61.2	TEMP: 146 °F
LIQUID BASE: Synthetic		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

— COMMENTS:

Drilling Lateral, Sliding as needed.

Liner gasket leaking on pump #2, OSR decided to continue to slide and rotate with 1 pump @ 120 SPM. (9940 MD 01:00 hrs).
 Pump #2 lost a swab @ 01:30.
 Both pumps down, no circulation till 03:00.

OSR decided to continue to drill after getting #1 pump back on the hole.

Rotating 80 RPMS, 120 SPM, 420 GPM's 15K WOB. As per chesapeake, with one pump. Average rop with one pump is 75-90 ft/hr.

Getting tuff to slide with one pump and low GPM's motor stalls out regular and hangs up regular while sliding.

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Day 17 - 2013/03/30

Drilling Services
v4.2.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
Field Superinte Ronnie Truelove
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 11300.0 ft PROGRESS: 1042.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 12342.0 ft AVG. ROP.: 80.2 ft/hr PREVIOUS COST: USD\$0.00
TOTAL COST: USD\$0.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:30	Rotating With Motor	0.50	11341	5	14:45-15:15	Rotating With Motor	0.50	11814	5
00:30-00:45	EM MWD Surveys - @ 11283	0.25	11341	5	15:15-15:30	EM MWD Surveys - @ 11756	0.25	11814	5
00:45-01:45	Orienting With Motor - 180	1.00	11361	5	15:30-16:00	Orienting With Motor - 15' 130R	0.50	11829	5
01:45-03:00	Rotating With Motor	1.25	11435	5	16:00-16:30	Rotating With Motor	0.50	11908	5
03:00-03:15	EM MWD Surveys - @ 11377	0.25	11435	5	16:30-16:45	EM MWD Surveys - @ 11850	0.25	11908	5
03:15-04:15	Rotating With Motor	1.00	11530	5	16:45-17:15	Rotating With Motor	0.50	12003	5
04:15-04:30	EM MWD Surveys - @ 11472	0.25	11530	5	17:15-17:30	EM MWD Surveys - @ 11945	0.25	12003	5
04:30-05:45	Rotating With Motor	1.25	11624	5	17:30-18:00	Rotating With Motor	0.50	12097	5
05:45-06:00	EM MWD Surveys - @ 11566	0.25	11624	5	18:00-18:15	EM MWD Surveys - @ 12039	0.25	12097	5
06:00-06:15	Rotating With Motor	0.25	11638	5	18:15-18:45	Rotating With Motor	0.50	12191	5
06:15-06:45	Orienting With Motor - 10' @ 135R	0.50	11648	5	18:45-19:00	EM MWD Surveys - @ 1222	0.25	12191	5
06:45-11:00	Work on Pumps - #1 liner, # 2 swab	4.25	11648	5	19:00-19:30	Orienting With Motor - 10	0.50	12201	5
11:00-11:45	Circ & Condition Hole	0.75	11648	5	19:30-20:00	Rotating With Motor	0.50	12286	5
11:45-12:00	Orienting With Motor - 6' 135R	0.25	11654	5	20:00-20:15	EM MWD Surveys - @ 12228	0.25	12286	5
12:00-13:00	Rotating With Motor	1.00	11719	5	20:15-20:45	Rotating With Motor - PBHL	0.50	12342	5
13:00-13:15	EM MWD Surveys - @ 11661	0.25	11719	5	20:45-21:00	EM MWD Surveys - @ 12284	0.25	12342	5
13:15-14:45	Orienting With Motor - 22' 135R	1.50	11741	5	21:00-24:00	Circ & Condition Hole	3.00	12342	5

TIME SUMMARY (hrs):			DRILLING PARAMETERS:						
MOTOR DRILL:	13.00	ORIENTING HRS:	4.25	ROTARY DRILL:	0.00	ROTARY TORQUE:	15000 ft-lb	STRING WEIGHT:	150000 lbs
TIME DRILL:	0.00	ROTATING HRS:	8.75	MOTOR HRS:	16.75	WOB SLIDING (HI):	20000 lbf	WOB ROTATE (HI):	20000 lbf
MOTOR REAM:	0.00	TRIP:	0.00	OTHER:	7.25	WOB SLIDING (LO):	5000 lbf	WOB ROTATE (LO):	10000 lbf
CIRC:	3.75	ROTARY DRILL:	0.00	RPM (ROTARY):	90 rpm	DRAG UP:	275000 lbf		
MOTOR HRS:	16.75	DRILL HRS:	13.00	TOTAL HRS:	24.00	RPM (MOTOR):	150 rpm	DRAG DN:	100000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 5 HOLE SIZE: 8.5 in SECTION TYPE: Curve and Lateral SURVEY TYPE: Electromagnetic MWD
 MANFCT.: Weatherford STABILIZER: No SERIAL#: 675-43597 MODEL: 7/8 5.0 LOBE CFG.: 7/8
 SETTING: 1.73 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 16.75 MTR HRS TO DATE: 75.75
 MANFCT: Ulterra BIT TYPE: PDC Bit TYPE: U 513 S NOZZLES: 2.148 in² TFA
 IADC BIT GRADE: 2 / 2 / BT / G / X / I / WT / TD

PUMP PARAMETERS

PRESSURE ON BTM: 3950 PRESSURE OFF BTM: 3500 TOTAL FLOW RATE: 530.00 gal/min
 PUMP 1: TYPE: D-125 EFF.: 95.0% SPM: 75.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 2: TYPE: B 1600 EFF.: 95.0% SPM: 75.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Synthetic VISC: 59 sec/qt WTR LOSS: 6 cc/30min PV: 19 cP YP: 12 lb/100 ft² pH: 0
 DENSITY: 12.2 lb/gal GEL 0/10: 8.00 lb/100 ft² SAND: 0 SOLIDS: 7.1 OIL: 63.5 TEMP: 147 °F
 LIQUID BASE: Synthetic LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min



Daily Activity Report

Day 17 - 2013/03/30

Drilling Services
v4.2.2674

COMMENTS:

Drilling Lateral, Sliding as needed. (Plan 2)

Drilling ahead with one pump. Sliding is slow due to dirty hole and lower GPM to motor.

While sliding from 11638-11648

Both pumps down @ 06:30 HRS. Blew a swab on #1 pump while sliding @ 11648 MD. Driller managed to get 5' off bottom before pulling 300K. Unable to circulate because both pumps are down, unable to rack a couple stands back because its pulling 300,000. We were down from 6:30-11:00 working on pumps unable to circulate. Circulated from 11:00-11:45 and continued sliding from 11648-11654 picked up several times during that six foot slide due to pump problems.

At 11:50 pump # 2 is down.

At 14:45 MD 11741 Both pumps on hole.

PBHL-12342 MD
TVD-6765.25
INC-91.82
AZM-342.05
VS-5530.43

CUSTOMER SIGNATURE: _____



Weatherford

Daily Activity Report

Day 18 - 2013/03/31

Drilling Services

v4.2.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
Field Superinte: Ronnie Truelove
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 12342.0 ft PROGRESS: 0.0 ft DAILY COST: USD\$0.00
KB ELEV: 1413 ft END DEPTH: 12342.0 ft AVG. ROP.: 0.0 ft/hr PREVIOUS COST: USD\$0.00
WORK STATUS: Operating (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPH	BHA	TIME	DAILY ACTIVITY	HRS	DPH	BHA
00:00-02:00	Circ & Condition Hole	2.00	12342	5	09:00-11:00	Lay Down Directional Tools - BHA # 5	2.00	12342	5
02:00-09:00	POOH To Run Casing	7.00	12342	5	11:00-24:00	Run Casing	13.00	12342	n/a

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	0.00	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	10000 ft-lb	STRING WEIGHT:	150000 lbs
TIME DRILL:	0.00	ROTATING HRS:	0.00	MOTOR HRS:	2.00	WOB SLIDING (HI):	0 lbf	WOB ROTATE (HI):	0 lbf
MOTOR REAM:	0.00	TRIP:	7.00	OTHER:	15.00	WOB SLIDING (LO):	0 lbf	WOB ROTATE (LO):	0 lbf
CIRC:	2.00	ROTARY DRILL:	0.00	RPM (ROTARY):	90 rpm	DRAG UP:	275000 lbf	DRAG DN:	0 lbf
MOTOR HRS:	2.00	DRILL HRS:	0.00	TOTAL HRS:	24.00	RPM (MOTOR):	150 rpm		

BHA / MOTOR / BIT INFORMATION:

BHA: 5 HOLE SIZE: 8.5 in SECTION TYPE: Curve and Lateral SURVEY TYPE: Electromagnetic MWD
MANFCT.: Weatherford STABILIZER: No SERIAL#: 675-43597 MODEL: 7/8 5.0 LOBE CFG.: 7/8
SETTING: 1.73 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 2 MTR HRS TO DATE: 77.75
MANFCT: Ulterra BIT TYPE: PDC Bit TYPE: U 513 S NOZZLES: 2.148 in² TFA
IADC BIT GRADE: 2 / 2 / BT / G / X / I / WT / TD

PUMP PARAMETERS

PRESSURE ON BTM: 0 PRESSURE OFF BTM: 3750 TOTAL FLOW RATE: 501.60 gal/min
PUMP 1: TYPE: D-125 EFF.: 95.0% SPM: 75.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
PUMP 2: TYPE: B 1600 EFF.: 95.0% SPM: 75.00 LINER: 5.50 in STROKE VOL.: 3.5200 gal/stk
PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Synthetic VISC: 70 sec/qt WTR LOSS: 6 cc/30min PV: 21 cP YP: 11 lb/100 ft² pH: 0
DENSITY: 12.2 lb/gal GEL 0/10: 8.00 lb/100 ft² SAND: 0 SOLIDS: 3.61 OIL: 64.2 TEMP: 150 °F
LIQUID BASE: Synthetic LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

COMMENTS:

Circulating and conditioning hole. POOH
Lay down directional tools and Run casing

CUSTOMER SIGNATURE: _____



Daily Activity Report

Day 19 - 2013/04/01

Drilling Services
v4.2.2674

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Nomac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 Field Superinte: Ronnie Truelove
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

GROUND ELEV: 1391 ft START DEPTH: 12342.0 ft PROGRESS: 0.0 ft DAILY COST: USD\$0.00
 KB ELEV: 1413 ft END DEPTH: 12342.0 ft AVG. ROP.: 0.0 ft/hr PREVIOUS COST: USD\$0.00
 WORK STATUS: Standby (All units are imperial.) TOTAL COST: USD\$0.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-04:30	Run Casing	4.50	12342	n/a	10:00-18:00	Wait On Cement	8.00	12342	n/a
04:30-10:00	Cement Casing	5.50	12342	n/a	18:00-24:00	Other - See Comments - Nipple Down	6.00	12342	n/a

TIME SUMMARY (hrs):				DRILLING PARAMETERS:			
MOTOR DRILL:	0.00	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	
TIME DRILL:	0.00	ROTATING HRS:	0.00	MOTOR HRS:	0.00	WOB SLIDING (HI):	0 lbf
MOTOR REAM:	0.00			TRIP:	0.00	WOB SLIDING (LO):	0 lbf
CIRC:	0.00	ROTARY DRILL:	0.00	OTHER:	24.00	RPM (ROTARY):	
MOTOR HRS:	0.00	DRILL HRS:	0.00	TOTAL HRS:	24.00	RPM (MOTOR):	
						STRING WEIGHT:	0 lbs
						WOB ROTATE (HI):	0 lbf
						WOB ROTATE (LO):	0 lbf
						DRAG UP:	0 lbf
						DRAG DN:	0 lbf

— BHA / MOTOR / BIT INFORMATION: —

BHA: HOLE SIZE: SECTION TYPE: SURVEY TYPE:
 MANFCT.: STABILIZER: SERIAL#: MODEL: LOBE CFG.:
 SETTING: KICKPAD: SIZE: MTR HRS THIS DAY: MTR HRS TO DATE:
 MANFCT.: BIT TYPE: TYPE: NOZZLES:
 IADC BIT GRADE:

— PUMP PARAMETERS —

PRESSURE ON BTM: 0 PRESSURE OFF BTM: 0 TOTAL FLOW RATE: 0.00 gal/min

PUMP 1: TYPE: D-125 EFF.: 95.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
 PUMP 2: TYPE: B 1600 EFF.: 95.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

— MUD RECORD —

MUD TYPE: VISC: 0 sec/qt WTR LOSS: 0 cc/30min PV: 0 cP YP: 0 lb/100 ft² pH: 0
 DENSITY: 0 lb/gal GEL 0/10: 0.00 lb/100 ft² SAND: 0 SOLIDS: 0 OIL: 0 TEMP: 0 °F
 LIQUID BASE: LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

— COMMENTS: —

Cement

Wait on Cement and nipple down

CUSTOMER SIGNATURE: _____



BHA REPORTS



BHA Report

Drilling Services
v4.2.2574

BHA 1 - 12.25 Air Section Section

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Normac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD HOLE SIZE: 12.25 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	12.5 Hybrid	Hughes	7028893	KG533X	12.5	0	0		6 5/8" REG Pin	1.00 ft	1.00 ft
1	Drilling Motor 1.5	Weatherford	800-4118	7/8 4.0	8	0	3.37	6 5/8" REG Box	6 5/8" REG Box	29.81 ft	30.81 ft
1	Shock Sub	Weatherford	ST800-068		8.0626	3.125	0	6 5/8" REG Pin	6 5/8" REG Box	12.61 ft	43.42 ft
1	Double Pin	Weatherford	39473		8	2.625	0	6 5/8" REG Pin	6 5/8" REG Pin	1.97 ft	45.39 ft
1	MWD Tool Carrier	Weatherford	800-19370		8	3.25	0	6 5/8" REG Box	6 5/8" REG Box	19.24 ft	64.63 ft
1	MWD Emitter Sub	Weatherford	775-18185		7.75	2.9375	0	6 5/8" REG Pin	6 5/8" REG Box	11.18 ft	75.81 ft
1	NMDC	Weatherford	775-600		7.75	3.5	0	6 5/8" REG Pin	6 5/8" REG Box	30.96 ft	106.77 ft
1	(3) Drill Collar 8	Rig	RIG		7.75	2.75	0	6 5/8" REG Pin	6 5/8" REG Box	86.36 ft	193.13 ft
1	X/O Sub	Rig	RIG		8	2.75	0	6 5/8" REG Pin	4 1/2" XH Box	2.60 ft	195.73 ft
1	(20) Drill Collar 6	Rig	Rig		6.5	2.75	0	4 1/2" XH Pin	4 1/2" XH Box	589.02 ft	784.75 ft
1	X/O Sub	Rig	Rig		6.5	2.75	0	4 1/2" XH Pin	4 1/2" IF Box	3.02 ft	787.77 ft
54	Drill Pipe	Rig			5	4.3266	0	4 1/2" IF Pin	4 1/2" IF Box	1677.23	2465.00 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

— GENERAL INFORMATION —

DATES RUN: 2013/03/18 TO 2013/03/20
 DEPTH IN: 792.00 ft ANGLE IN: 0.00 °
 DEPTH OUT: 2465.00 ft ANGLE OUT: 1.20 °
 DRILL HRS: 24.75 BUILD: 1.20 °
 ORIENTING HRS: 1.00 HOLE MADE: 1673.00 ft
 ROTATING HRS: 23.75 AVG R.O.P.: 67.60 ft/hr

— MOTOR INFORMATION —

MANFCT: Weatherford SETTING: 1.50 °
 SERIAL #: 800-4118 KICK PAD: No
 MODEL: 7/8 4.0 STABILIZER: No
 LOBE CFG: 7/8 MOTOR HRS: 29.25
 BIT TO BEND: 6.9

— PUMP INFORMATION —

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	85	85	0
STROKE VOLUME:	3.52 gal/stk	3.52 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	600 gal/min		
PUMP PRESSURE:	OFF BTM: 2400 psi	ON BTM: 2800 psi	

— MUD INFORMATION —

MUD TYPE: Brine or Salt LIQUID BASE: Water
 DENSITY: 11 lb/gal TEMP: 121 °F
 VISCOSITY: 54 sec/qt pH: 9.9
 WTR LOSS: 0 cc/30min SAND: 0 LIQUID RATE: 0 gal/min
 PLAST VISC: 16 cP SOLIDS: 2.9 GAS TYPE:
 YIELD PT: 12 lb/100 ft² OIL: 0 GAS RATE: 0 cu ft/min

— BIT INFORMATION —

MANFCT: Hughes TYPE: KG533X IADC BIT GRADE: 2 / 5 / LT / G / X / I / BU / TD
 NOZZLES: 0.78 in² TFA

— REASON FOR BHA CHANGE —

Run Casing
 TD section at 2465 MD

— FORMATION CHARACTERISTICS —

Formation was ratty, lots of stringers of sandstone.
 Average rop for this run was 67.60 ft/hr.
 While rotating we ran 50-65K on bit along with 500-600 differential.



BHA Report

Drilling Services
v4.2.2674

BHA 1 - 12.25 Air Section Section

—MWD COMMENTS

MWD did well with no issues.
Signal- 2mV
Noise- .01
Tool-amperage .5
Battery consumption- 9 amp hours
Tempt downhole 109.97

—SIDETRACKING PROCEDURE COMMENTS

N/A

—RUN SUMMARY

Motor drained on surface with very little axial or radial play. Average motor yeild was 2/100.

Circulating Hours- 4.5
Orienting Hours-1.00
Rotating hours- 23.75
Total Hours- 29.25



BHA Report

BHA 2 - AIR Nudge 1 Section

Drilling Services
v4.2.2674

FILE #: 4028985	WELL NAME: Fork Ridge MSH-201H	SERVICE CO.: Weatherford Drilling Services
JOB TYPE: Horizontal	COMPANY: Chesapeake Energy	SURVEY TYPE: Electromagnetic MWD
RIG & NO: Nomac 337	SURFACE LOCATION: Marshall County, WV	FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD HOLE SIZE: 8.75 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Hammer Bit 8.75	Atlas	2047207-07	Hammer bit	8.75	0	0		4 1/2" REG Pin	5.35 ft	5.35 ft
1	Drilling Motor .85	Weatherford	675-43606	7/8 3.0	6.75	0	3.33	4 1/2" REG Box	4 1/2" IF Box	25.88 ft	31.23 ft
1	Shock Sub	Wenzel	650-053		6.5	2.3125	1.83	4 1/2" IF Pin	4 1/2" IF Box	11.27 ft	42.50 ft
1	Pony NMDC	Weatherford	675-31727		6.3125	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	10.70 ft	53.20 ft
1	Muleshoe Sub	Weatherford	675-16867		6.5625	3.125	0	4 1/2" IF Pin	4 1/2" IF Box	3.21 ft	56.41 ft
1	Double Pin	Weatherford	675-37113	Non Mag	6.625	3.25	0	4 1/2" IF Pin	4 1/2" IF Pin	1.81 ft	58.22 ft
1	MWD Tool Carrier	Weatherford	675-365		6.5	3.25	0	4 1/2" IF Box	4 1/2" IF Box	18.78 ft	77.00 ft
1	MWD Emitter Sub	Weatherford	675-317	Non Mag	6.5	2.875	0	4 1/2" IF Pin	4 1/2" IF Box	11.66 ft	88.66 ft
1	Flex NMDC	Weatherford	675-21828	Non Mag	6.5	3.3125	2.8	4 1/2" IF Pin	4 1/2" IF Box	28.93 ft	117.59 ft
1	Flex NMDC	Weatherford	675-11364	Non Mag	6.5625	2.875	6.3	4 1/2" IF Pin	4 1/2" IF Box	30.22 ft	147.81 ft
1	X/O Sub	Weatherford	39647		6.3125	2.8125	0	4 1/2" IF Pin	4 1/2" XH Box	2.97 ft	150.78 ft
1	Jet Sub	Rig	201		6.4375	2.375	0	4 1/2" XH Pin	4 1/2" XH Box	2.17 ft	152.95 ft
1	X/O Sub	Weatherford	39654		6.3125	2.8125	0	4 1/2" XH Pin	4 1/2" IF Box	3.02 ft	155.97 ft
1	HWDP	Rig			6.625	3	0	4 1/2" IF Pin	4 1/2" IF Box	779.48 ft	935.45 ft
102	Drill Pipe	Rig			5	4.3266	0	4 1/2" IF Pin	4 1/2" IF Box	3206.55	4142.00 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

— GENERAL INFORMATION —

DATES RUN:	2013/03/21 TO 2013/03/23
DEPTH IN:	2465.00 ft
DEPTH OUT:	4903.00 ft
DRILL HRS:	28.25
ORIENTING HRS:	13.50
ROTATING HRS:	14.75
ANGLE IN:	0.00 °
ANGLE OUT:	17.87 °
BUILD:	17.87 °
HOLE MADE:	2438.00 ft
AVG R.O.P.:	86.30 ft/hr

— MOTOR INFORMATION —

MANFCT.	Weatherford	SETTING:	0.85 °
SERIAL #:	675-43606	KICK PAD:	No
MODEL:	7/8 3.0	STABILIZER:	No
LOBE CFG:	7/8	MOTOR HRS:	34.00
BIT TO BEND:	3.84		

— PUMP INFORMATION —

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	0	0	0
STROKE VOLUME:	0.0 gal/stk	0.0 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	500 gal/min		
PUMP PRESSURE:	OFF BTM: 350 psi	ON BTM: 700 psi	

— MUD INFORMATION —

MUD TYPE:	Brine or Salt	LIQUID BASE:	Water
DENSITY:	11 lb/gal	TEMP:	121 °F
VISCOSITY:	54 sec/qt	pH:	9.9
WTR LOSS:	0 cc/30min	SAND:	0
PLAST VISC:	16 cP	SOLIDS:	2.9
YIELD PT:	12 lb/100 ft ²	OIL:	0
		LIQUID RATE:	0 gal/min
		GAS TYPE:	
		GAS RATE:	0 cu ft/min

— BIT INFORMATION —

MANFCT:	Atlas	TYPE:	Hammer bit	IADC BIT GRADE:	2 1/8 / RG / G / X / 16 / BT / PR
NOZZLES: 2.69 in ² TFA					

— REASON FOR BHA CHANGE —

Was not able to slide or rotate without motor stalling. Gauge row of bit was completely missing. Three nozzels in jet sub ring were plugged.



—FORMATION CHARACTERISTICS—

Formation had a tendency to drop angle and walk right during rotation.

—MWD COMMENTS—

Battery Consumption: 69%
Signal: 0.44mV
Tool-amperage:6
Noise:0.03
Downhole Temp:85

—SIDETRACKING PROCEDURE COMMENTS—

N/A

—RUN SUMMARY—

Bit was .5" under gauge. Body of hammer assembly appeared to have a crack in it. Body also had alot of wear to it.
Motor was strong during the run but hammer bit was under gauge by .5" and was causing motor to stall
There was significant wear and wash on the motor at the adjustable housing. Some wear on wear pad.
The motor drained good on surface with 1/4th slack in bit box.
Avg build rate: 3/100
Avg ROP: 86.30 HR
Orienting Hrs: 13.5
Rotating Hrs: 14.75
Circ Hrs: 5.75
Total Hrs: 34



BHA Report

BHA 3 - AIR Nudge 1 Section

Drilling Services
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—MWD COMMENTS—

Battery Consumption: 2 Amp hours
Signal: 4mV
Tool-amperage: 1/2 amp
Noise: .05
Downhole Temp: 172

—SIDETRACKING PROCEDURE COMMENTS—

N/A

—RUN SUMMARY—

Attempted to slide at MD 4948 with 30-60 K on bit and rockit 3 revs left and right and couldnt get ant weight to the bit. Decision was made to start misting with 25 gal/min and Attempt to continue sliding f- 4980-4988 stacking weight, and sporadic toolfaces due to rockit. Tried rockit several different procedures and had no luck.

Rotated the rest of the stand down and wait on orders.

Attempt to slide F/5074-5077 unable to get weight to bit. Rockit was 35 rpm and 3 revolutions right and left, Weight continued to stack, no luck sliding.

Pressure was 450 Psi as we started drilling and it ended up to 650 Psi with 1310 CFM's.



BHA Report

BHA 4 - AIR Nudge 1 Section

Drilling Services
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FILE #: 4028985	WELL NAME: Fork Ridge MSH-201H	SERVICE CO.: Weatherford Drilling Services
JOB TYPE: Horizontal	COMPANY: Chesapeake Energy	SURVEY TYPE: Electromagnetic MWD
RIG & NO: Nomac 337	SURFACE LOCATION: Marshall County, WV	FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD HOLE SIZE: 8.5 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Tri-Cone Bit	Hughes	5214616	VG30A	8.5	0	0		4 1/2" REG Pin	1.00 ft	1.00 ft
1	Drilling Motor 1.5 F	Weatherford	675-3854	7/8 3.0	6.75	0	2.83	4 1/2" REG Box	4 1/2" IF Box	27.87 ft	28.87 ft
1	Shock Sub	Wenzel	650-053		6.5	2.3125	1.83	4 1/2" IF Pin	4 1/2" IF Box	11.27 ft	40.14 ft
1	Pony NMDC	Weatherford	675-31727		6.3125	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	10.70 ft	50.84 ft
1	Muleshoe Sub	Weatherford	675-16867		6.5625	3.125	0	4 1/2" IF Pin	4 1/2" IF Box	3.21 ft	54.05 ft
1	Double Pin	Weatherford	675-37113	Non Mag	6.625	3.25	0	4 1/2" IF Pin	4 1/2" IF Pin	1.81 ft	55.86 ft
1	MWD Tool Carrier	Weatherford	675-365		6.5	3.25	0	4 1/2" IF Box	4 1/2" IF Box	18.78 ft	74.64 ft
1	MWD Emitter Sub	Weatherford	675-317	Non Mag	6.5	2.875	0	4 1/2" IF Pin	4 1/2" IF Box	11.66 ft	86.30 ft
1	Flex NMDC	Weatherford	675-21828	Non Mag	6.5	3.3125	2.8	4 1/2" IF Pin	4 1/2" IF Box	28.93 ft	115.23 ft
1	Flex NMDC	Weatherford	675-11364	Non Mag	6.5625	2.875	6.3	4 1/2" IF Pin	4 1/2" IF Box	30.22 ft	145.45 ft
1	HMDP	Rig			6.625	3	0	4 1/2" IF Pin	4 1/2" IF Box	779.48 ft	924.93 ft
171	Drill Pipe	Rig			5	4.3266	0	4 1/2" IF Pin	4 1/2" IF Box	5374.07	6299.00 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

— GENERAL INFORMATION —

DATES RUN: 2013/03/24 TO 2013/03/26
DEPTH IN: 5168.00 ft **ANGLE IN:** 16.09 °
DEPTH OUT: 6299.00 ft **ANGLE OUT:** 21.71 °
DRILL HRS: 9.50 **BUILD:** 5.62 °
ORIENTING HRS: 3.50 **HOLE MADE:** 1131.00 ft
ROTATING HRS: 6.00 **AVG R.O.P.:** 119.05 ft/hr

— MOTOR INFORMATION —

MANFCT. Weatherford **SETTING:** 1.50 °
SERIAL #: 675-3854 **KICK PAD:** No
MODEL: 7/8 3.0 **STABILIZER:** No
LOBE CFG: 7/8 **MOTOR HRS:** 15.50
BIT TO BEND: 6.52

— PUMP INFORMATION —

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	75	75	0
STROKE VOLUME:	3.52 gal/stk	3.52 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	501.6 gal/min		
PUMP PRESSURE:	OFF BTM: 1500 psi	ON BTM: 1700 psi	

— MUD INFORMATION —

MUD TYPE: Synthetic **LIQUID BASE:** Synthetic
DENSITY: 12.5 lb/gal **TEMP:** 0 °F
VISCOSITY: 61 sec/qt **pH:** 0
WTR LOSS: 22 cc/30min **SAND:** 0 **LIQUID RATE:** 0 gal/min
PLAST VISC: 15 cP **SOLIDS:** 3.7 **GAS TYPE:**
YIELD PT: 8 lb/100 ft² **OIL:** 62.3 **GAS RATE:** 0 cu ft/min

— BIT INFORMATION —

MANFCT: Hughes **TYPE:** VG30A **IADC BIT GRADE:** 1 1/1 / NO / A / E / 1 / NO / BHA
NOZZLES: 1.767 in² TFA

— REASON FOR BHA CHANGE —

POOH to pick up Curve Assembly

— FORMATION CHARACTERISTICS —

Had a tendency to drop angle and walk left during Rotation.
 Average rop was 119 ft/hr.



BHA Report

BHA 4 - AIR Nudge 1 Section

Drilling Services
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—MWD COMMENTS

MWD work well for the entire run
Battery Consumption: 7 Ahr
Signal: 5mV
Tool-amperage: 1 amp
Noise: .01
Downhole Temp: 107

—SIDETRACKING PROCEDURE COMMENTS

N/A

—RUN SUMMARY

The motor was strong and there were no visual problems with the motor.
Motor drained good on surface with 1/8 slack in the bit box.
Circulating Hours- 6
Orienting Hours- 3.5
Rotating Hours- 6
Total Motor Hours-15.5
AVG ROP-119.05
AVG Build 7/100



BHA Report

Drilling Services
v4.2.2574

BHA 5 - Curve and Lateral Section

FILE #: 4028985 WELL NAME: Fork Ridge MSH-201H SERVICE CO.: Weatherford Drilling Services
 JOB TYPE: Horizontal COMPANY: Chesapeake Energy SURVEY TYPE: Electromagnetic MWD
 RIG & NO: Nomac 337 SURFACE LOCATION: Marshall County, WV FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
 DIR Supervisor: Bradd Smith, John Nix
 MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD HOLE SIZE: 8.5 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	PDC Bit	Ulterra	18924	U 513 S	8.5	0	0		4 1/2" REG Pin	1.00 ft	1.00 ft
1	Drilling Motor 1.73	Weatherford	675-43597	7/8 5.0	6.75	0	3.85	4 1/2" REG Box	4 1/2" IF Box	25.87 ft	26.87 ft
1	Pony NMDC	Weatherford	675-31727		6.3125	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	10.70 ft	37.57 ft
1	Double Pin	Weatherford	675-37113	Non Mag	6.625	3.25	0	4 1/2" IF Pin	4 1/2" IF Pin	1.81 ft	39.38 ft
1	MWD Tool Carrier	Weatherford	675-365		6.5	3.25	0	4 1/2" IF Box	4 1/2" IF Box	18.78 ft	58.16 ft
1	MWD Emitter Sub	Weatherford	675-8793	Non Mag	6.625	2.875	0	4 1/2" IF Pin	4 1/2" IF Box	11.09 ft	69.25 ft
1	Flex NMDC	Weatherford	675-21828	Non Mag	6.5	3.3125	2.8	4 1/2" IF Pin	4 1/2" IF Box	28.93 ft	98.18 ft
1	Flex NMDC	Weatherford	675-11364	Non Mag	6.5625	2.875	6.3	4 1/2" IF Pin	4 1/2" IF Box	30.22 ft	128.40 ft
195	Drill Pipe	Rig			5	4.3266	0	4 1/2" IF Pin	4 1/2" IF Box	6126.82	6255.22 ft
24	HWDP	Rig			6.625	3	0	4 1/2" IF Pin	4 1/2" IF Box	748.14 ft	7003.36 ft
170	Drill Pipe	Rig			5	4.3266	0	4 1/2" IF Pin	4 1/2" IF Box	5338.64	12342.00 ft

(O.D. units are in; I.D. units are in; FNeck units are ft)

GENERAL INFORMATION

DATES RUN: 2013/03/26 TO 2013/03/31
 DEPTH IN: 6299.00 ft ANGLE IN: 21.18 °
 DEPTH OUT: 12342.00 ft ANGLE OUT: 91.82 °
 DRILL HRS: 65.00 BUILD: 70.64 °
 ORIENTING HRS: 23.50 HOLE MADE: 6043.00 ft
 ROTATING HRS: 41.50 AVG R.O.P.: 92.97 ft/hr

MOTOR INFORMATION

MANFCT: Weatherford SETTING: 1.73 °
 SERIAL #: 675-43597 KICK PAD: No
 MODEL: 7/8 5.0 STABILIZER: No
 LOBE CFG: 7/8 MOTOR HRS: 77.75
 BIT TO BEND: 3.83

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	95.0%	95.0%	100.0%
S.P.M.:	75	75	0
STROKE VOLUME:	3.52 gal/stk	3.52 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	501.6 gal/min		
PUMP PRESSURE:	OFF BTM: 3750 psi	ON BTM: 0 psi	

MUD INFORMATION

MUD TYPE: Synthetic LIQUID BASE: Synthetic
 DENSITY: 12.2 lb/gal TEMP: 150 °F
 VISCOSITY: 70 sec/qt pH: 0
 WTR LOSS: 6 cc/30min SAND: 0 LIQUID RATE: 0 gal/min
 PLAST VISC: 21 cP SOLIDS: 3.61 GAS TYPE:
 YIELD PT: 11 lb/100 ft² OIL: 64.2 GAS RATE: 0 cu ft/min

BIT INFORMATION

MANFCT: Ulterra TYPE: U 513 S IADC BIT GRADE: 2/2/BT/G/X/II/WT/TD
 NOZZLES: 2.148 in² TFA

REASON FOR BHA CHANGE

TD Well@ 12342 MD

FORMATION CHARACTERISTICS

Formation had a tendency to build angle and walk left during rotation.
 Average rop was 92.97
 Drilled 95% of the lateral with one pump and our paramters were 120 Strks, 420 GPM 15 WOB as per Chesapeake. Average rop with these parameters was 70-85 ft/hr.



BHA 5 - Curve and Lateral Section

—MWD COMMENTS

MWD work well for the entire run
Battery Consumption: 31 Amp hours
Signal: .5
Tool-amperage: 3 Amp
Noise: .02
Downhole Temp: 153

—SIDETRACKING PROCEDURE COMMENTS

N/A

—RUN SUMMARY

Motor was very strong for entire curve and lateral.
Had lots of stalls during our reaming section and when sliding in the lateral with one pump. Approximately 400 GPM.
Average motor yeild was 11/100 until around 60 degrees and then it was 14-15/100.
Motor drained on surface with very minimal radial or axial play. There was a little wear on the wear pad.
Rotating Hours- 41.5
Orienting Hours 23.5
Circulating Hours 8.25
Reaming Hours 4.50
Total Motor hours- 77.75



MOTOR REPORTS



Weatherford

Motor / RSS Evaluation Report

Drilling Services
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BHA 1 - 12.25 Air Section Section, Motor #800-4118

FILE #: 4028985	WELL NAME: Fork Ridge MSH-201H	SERVICE CO.: Weatherford Drilling Services
JOB TYPE: Horizontal	COMPANY: Chesapeake Energy	SURVEY TYPE: Electromagnetic MWD
RIG & NO: Nomac 337	SURFACE LOCATION: Marshall County, WV	FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD **HOLE SIZE:** 12.25 in

GENERAL INFORMATION:

BHA #: 1	START DEPTH: 792.00 ft
DATE IN: 2013/03/18	END DEPTH: 2465.00 ft
DATE OUT: 2013/03/20	HOLE MADE: 1673.00 ft
ANGLE IN: 0.00 °	AVG ROP: 67.60 ft/hr
ANGLE OUT: 1.20 °	
ORIENTING HRS: 1.00	ROTATING HRS: 23.75

MOTOR INFORMATION:

MANFCT: Weatherford	
SERIAL #: 800-4118	
MODEL: 7/8 4.0	
LOBE: 7/8	BIT TO BEND: 6.9 ft
SETTING: 1.50 °	KICKPAD: No
	STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: KG533X	IADC BIT GRADE: 2 / 5 / LT / G / X / I / BU / TD	
BIT PRESS DROP: 0.00 psi	TOTAL FLOW RATE: 600.00 gal/min	PUMP PRESS: (OFF) 2400.00 psi
MTR PRESS DROP: 0.00 psi	NOZZLES: 0.78 in ² TFA	(ON) 2800.00 psi

MUD INFORMATION:

MUD TYPE: Brine or Salt	LIQUID BASE: Water	(All units are imperial.)
DENSITY: 11 lb/gal	VISCOSITY: 54 sec/qt	
SAND: 0.000	WATER LOSS: 0.00 cc/30min	LIQUID RATE: 0.00 gal/min
SOLIDS: 2.900	PLASTIC VISC: 16.0 cP	GAS TYPE:
OIL: 0.000	YIELD POINT: 12.0 lb/100 ft ²	GAS RATE: 0.00 cu ft/min
TEMP: 121 °F	pH: 9.9	

TIME INFORMATION:

CIRCULATING HOURS:	4.50
REAMING HOURS:	0.00
TIME DRILL HOURS:	0.00
MOTOR DRILL HOURS:	24.75
MOTOR HOURS THIS RUN:	29.25
PREVIOUS HOURS:	0.00
TOTAL MOTOR HOURS:	29.25
TOTAL BRT HOURS:	29.25

MOTOR EVALUATION COMMENTS:

Motor drained on surface with very little axial or radial play.
 Circulating Hours- 4.5
 Orienting Hours-1.00
 Rotating hours- 23.75
 Total Hours- 29.25

REASON FOR BHA CHANGE:

Run Casing
 TD section at 2465 MD



Weatherford

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 1 - 12.25 Air Section Section, Motor #800-4118

COMMENTS FROM LAST DAY RAN:

2465' MD -TD of 12.5 section

Circ longer than normal before landing casing due to Chesapeake pad wide drug test and search of living quarters and vehicles.



Weatherford

Motor / RSS Evaluation Report

Drilling Services
v4.2.2574

BHA 2 - AIR_Nudge 1 Section, Motor #675-43606

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD

HOLE SIZE: 8.75 in

GENERAL INFORMATION:

BHA #:	2	START DEPTH:	2465.00 ft
DATE IN:	2013/03/21	END DEPTH:	4903.00 ft
DATE OUT:	2013/03/23	HOLE MADE:	2438.00 ft
ANGLE IN:	0.00 °	AVG ROP:	86.30 ft/hr
ANGLE OUT:	17.87 °		
ORIENTING HRS:	13.50	ROTATING HRS:	14.75

MOTOR INFORMATION:

MANFCT:	Weatherford		
SERIAL #:	675-43606		
MODEL:	7/8 3.0		
LOBE:	7/8	BIT TO BEND:	3.84 ft
SETTING:	0.85 °	KICKPAD:	No
		STABILIZER:	No

DRILLING INFORMATION:

BIT TYPE:	Hammer bit	IADC BIT GRADE:	2 / 8 / RG / G / X / 16 / BT / PR	
BIT PRESS DROP:	0.00 psi	TOTAL FLOW RATE:	500.00 gal/min	PUMP PRESS: (OFF) 350.00 psi
MTR PRESS DROP:	0.00 psi	NOZZLES:	2.69 in ² TFA	(ON) 700.00 psi

MUD INFORMATION:

MUD TYPE:	Brine or Salt	LIQUID BASE:	Water	(All units are imperial.)	
DENSITY:	11 lb/gal	VISCOSITY:	54 sec/qt		
SAND:	0.000	WATER LOSS:	0.00 cc/30min	LIQUID RATE:	0.00 gal/min
SOLIDS:	2.900	PLASTIC VISC:	16.0 cP	GAS TYPE:	
OIL:	0.000	YIELD POINT:	12.0 lb/100 ft ²	GAS RATE:	0.00 cu ft/min
TEMP:	121 °F	pH:	9.9		

TIME INFORMATION:

CIRCULATING HOURS:	5.75
REAMING HOURS:	0.00
TIME DRILL HOURS:	0.00
MOTOR DRILL HOURS:	28.25
MOTOR HOURS THIS RUN:	34.00
PREVIOUS HOURS:	0.00
TOTAL MOTOR HOURS:	34.00
TOTAL BRT HOURS:	34.00

MOTOR EVALUATION COMMENTS:

Bit was .5" under gauge. Body of hammer assembly appeared to have a crack in it. Body also had alot of wear to it. Three nozzles were plugged in the jet sub ring, the rubber seal was also brokje. Motor was strong during the run but hammer bit was under gauge by .5" and was causing motor to stall. There was significant wear and wash on the motor at the adjustable housing. Some wear on wear pad. The motor drained good on surface with 1/4th slack in bit box.

Avg build rate: 3/100
Avg ROP: 86.30 HR
Orienting Hrs: 13.5
Rotating Hrs: 14.75
Circ Hrs: 5.75
Total Hrs: 34



Weatherford

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 2 - AIR_Nudge 1 Section, Motor #675-43606

REASON FOR BHA CHANGE:

Was not able to slide or rotate without motor stalling. Gauge row of bit was completely missing.
Three nozzels in jet sub ring were plugged.

COMMENTS FROM LAST DAY RAN:

String Float added on STD #32 (2.05).

While rotating and sliding the pressure has increased from 500-700 psi.
The torque has increased from 10000-14000.

Unable to put 4-5K WOB without the motor stalling consistently.

Bit was under guage by 1". There were no guage row cutters remaining. The housing of the hammer assembly appeared to have a crack in it.

There was significant wear and wash on the motor at the adjustable housing area.



Weatherford

Motor / RSS Evaluation Report

Drilling Services
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BHA 3 - AIR_Nudge 1 Section, Motor #675-43653

FILE #: 4028985	WELL NAME: Fork Ridge MSH-201H	SERVICE CO.: Weatherford Drilling Services
JOB TYPE: Horizontal	COMPANY: Chesapeake Energy	SURVEY TYPE: Electromagnetic MWD
RIG & NO: Nomac 337	SURFACE LOCATION: Marshall County, WV	FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD **HOLE SIZE:** 8.5 in

GENERAL INFORMATION:

BHA #: 3	START DEPTH: 4903.00 ft
DATE IN: 2013/03/23	END DEPTH: 5168.00 ft
DATE OUT: 2013/03/24	HOLE MADE: 265.00 ft
ANGLE IN: 0.00 °	AVG ROP: 39.26 ft/hr
ANGLE OUT: 16.24 °	
ORIENTING HRS: 3.25	ROTATING HRS: 3.50

MOTOR INFORMATION:

MANFCT: Weatherford	
SERIAL #: 675-43653	
MODEL: 7/8 3.0	
LOBE: 7/8	BIT TO BEND: 3.84 ft
SETTING: 0.85 °	KICKPAD: No
	STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: XL-30A	IADC BIT GRADE: 1/1/NO/A/E/1/NO/DMF	
BIT PRESS DROP: 0.00 psi	TOTAL FLOW RATE: 470.00 gal/min	PUMP PRESS: (OFF) 300.00 psi
MTR PRESS DROP: 0.00 psi	NOZZLES: 1.767 in ² TFA	(ON) 650.00 psi

MUD INFORMATION:

MUD TYPE: Brine or Salt	LIQUID BASE: Water	(All units are imperial.)
DENSITY: 11 lb/gal	VISCOSITY: 54 sec/qt	
SAND: 0.000	WATER LOSS: 0.00 cc/30min	LIQUID RATE: 0.00 gal/min
SOLIDS: 2.900	PLASTIC VISC: 16.0 cP	GAS TYPE:
OIL: 0.000	YIELD POINT: 12.0 lb/100 ft ²	GAS RATE: 0.00 cu ft/min
TEMP: 121 °F	pH: 9.9	

TIME INFORMATION:

CIRCULATING HOURS:	0.50
REAMING HOURS:	7.00
TIME DRILL HOURS:	0.00
MOTOR DRILL HOURS:	6.75
MOTOR HOURS THIS RUN:	14.25
PREVIOUS HOURS:	0.00
TOTAL MOTOR HOURS:	14.25
TOTAL BRT HOURS:	14.25

MOTOR EVALUATION COMMENTS:

Attempted to slide at MD 4948 with 30-60 K on bit and rockit 3 revs left and right and couldnt get ant weight to the bit.
Reaming Hours-7
Circulating Hours .50
Orienting Hours- 3.25
Rotating ours- 3.50
Total Motor Hours 14.25

Decision was made to start misting with 25 gal/min and Attempt to continue sliding f- 4980-4988 stacking weight, and sporadic toolfaces due to rockit. Tried rockit several different procedures and had no luck.

Rotated the rest of the stand down and wait on orders.



Motor / RSS Evaluation Report

Drilling Services
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BHA 3 - AIR_Nudge 1 Section, Motor #675-43653

Attempt to slide F/5074-5077 unable to get weight to bit. Rockit was 35 rpm and 3 revolutions right and left, Weight continued to stack, no luck sliding.
Pressure was 450 Psi as we started drilling and it ended up to 650 Psi with 1310 CFM's.

REASON FOR BHA CHANGE:

Not able to slide.
Motor bit box was locked up and bit under gauge 1/16.

COMMENTS FROM LAST DAY RAN:

RIH with BHA #3 to 4124 MD and then ream to bottom.

Starting taking weight @ 4124 MD so started reaming.

Attempted to slide at MD 4948 with 30-60 K on bit and rockit 3 revs left and right and couldnt get ant weight to the bit.

Decision was made to start misting with 25 gal/min and Attempt to continue sliding f- 4980-4988 stacking weight, and sporadic toolfaces due to rockit. Tried rockit several different procedures and had no luck.



Weatherford

Motor / RSS Evaluation Report

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BHA 3 - AIR_Nudge 1 Section, Motor #675-43653

Rotated the rest of the stand down and wait on orders.

Attempt to slide F/5074-5077 unable to get weight to bit. Rokit was 35 rpm and 3 revolutions right and left, Weight continued to stack, no luck sliding.

POOH



Weatherford

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 4 - AIR_Nudge 1 Section, Motor #675-3854

FILE #: 4028985	WELL NAME: Fork Ridge MSH-201H	SERVICE CO.: Weatherford Drilling Services
JOB TYPE: Horizontal	COMPANY: Chesapeake Energy	SURVEY TYPE: Electromagnetic MWD
RIG & NO: Nomac 337	SURFACE LOCATION: Marshall County, WV	FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD **HOLE SIZE:** 8.5 in

GENERAL INFORMATION:

BHA #: 4	START DEPTH: 5168.00 ft
DATE IN: 2013/03/24	END DEPTH: 6299.00 ft
DATE OUT: 2013/03/26	HOLE MADE: 1131.00 ft
ANGLE IN: 16.09 °	AVG ROP: 119.05 ft/hr
ANGLE OUT: 21.71 °	
ORIENTING HRS: 3.50	ROTATING HRS: 6.00

MOTOR INFORMATION:

MANFCT: Weatherford	
SERIAL #: 675-3854	
MODEL: 7/8 3.0	
LOBE: 7/8	BIT TO BEND: 6.52 ft
SETTING: 1.50 °	KICKPAD: No
	STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: VG30A	IADC BIT GRADE: 1 / 1 / NO / A / E / I / NO / BHA	
BIT PRESS DROP: 0.00 psi	TOTAL FLOW RATE: 501.60 gal/min	PUMP PRESS: (OFF) 1500.00 psi
MTR PRESS DROP: 0.00 psi	NOZZLES: 1.767 in ² TFA	(ON) 1700.00 psi

MUD INFORMATION:

MUD TYPE: Synthetic	LIQUID BASE: Synthetic	(All units are imperial.)
DENSITY: 13 lb/gal	VISCOSITY: 61 sec/qt	
SAND: 0.000	WATER LOSS: 22.00 cc/30min	LIQUID RATE: 0.00 gal/min
SOLIDS: 3.700	PLASTIC VISC: 15.0 cP	GAS TYPE:
OIL: 62.300	YIELD POINT: 8.0 lb/100 ft ²	GAS RATE: 0.00 cu ft/min
TEMP: 0 °F	pH: 0.0	

TIME INFORMATION:

CIRCULATING HOURS:	6.00
REAMING HOURS:	0.00
TIME DRILL HOURS:	0.00
MOTOR DRILL HOURS:	9.50
MOTOR HOURS THIS RUN:	15.50
PREVIOUS HOURS:	0.00
TOTAL MOTOR HOURS:	15.50
TOTAL BRT HOURS:	15.50

MOTOR EVALUATION COMMENTS:

The motor was strong and there were no visual problems with the motor.
 Motor drained good on surface with 1/8 slack in the bit box.
 Circulating Hours- 6
 Orienting Hours- 3.5
 Rotating Hours- 6
 Total Motor Hours-15.5

REASON FOR BHA CHANGE:

POOH to pick up Curve Assembly



— COMMENTS FROM LAST DAY RAN: —

Pick up curve and Lateral assembly,

Reamed the hole from 4064-5123 MD.

While reaming it was noticed that the pressure did not look normal, after discussing it with the tool pusher we went and listened to the pumps ourselves and Ronnie found Pump 1 had a washed out popoff. After fixing it pressure became normal, and it was easier to ream and had no other issues.



Weatherford

Motor / RSS Evaluation Report

Drilling Services

v4.2.2674

BHA 5 - Curve and Lateral Section, Motor #675-43597

FILE #: 4028985	WELL NAME: Fork Ridge MSH-201H	SERVICE CO.: Weatherford Drilling Services
JOB TYPE: Horizontal	COMPANY: Chesapeake Energy	SURVEY TYPE: Electromagnetic MWD
RIG & NO: Nomac 337	SURFACE LOCATION: Marshall County, WV	FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA SURVEY TYPE: Electromagnetic MWD **HOLE SIZE:** 8.5 in

GENERAL INFORMATION:

BHA #: 5	START DEPTH: 6299.00 ft
DATE IN: 2013/03/26	END DEPTH: 12342.00 ft
DATE OUT: 2013/03/31	HOLE MADE: 6043.00 ft
ANGLE IN: 21.18 °	AVG ROP: 92.97 ft/hr
ANGLE OUT: 91.82 °	
ORIENTING HRS: 23.50	ROTATING HRS: 41.50

MOTOR INFORMATION:

MANFCT: Weatherford	
SERIAL #: 675-43597	
MODEL: 7/8 5.0	
LOBE: 7/8	BIT TO BEND: 3.83 ft
SETTING: 1.73 °	KICKPAD: No
	STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: U 513 S	IADC BIT GRADE: 2 / 2 / BT / G / X / I / WT / TD	
BIT PRESS DROP: 0.00 psi	TOTAL FLOW RATE: 501.60 gal/min	PUMP PRESS: (OFF) 3750.00 psi
MTR PRESS DROP: 0.00 psi	NOZZLES: 2.148 in ² TFA	(ON) 0.00 psi

MUD INFORMATION:

MUD TYPE: Synthetic	LIQUID BASE: Synthetic	(All units are imperial.)
DENSITY: 12 lb/gal	VISCOSITY: 70 sec/qt	
SAND: 0.000	WATER LOSS: 6.00 cc/30min	LIQUID RATE: 0.00 gal/min
SOLIDS: 3.610	PLASTIC VISC: 21.0 cP	GAS TYPE:
OIL: 64.200	YIELD POINT: 11.0 lb/100 ft ²	GAS RATE: 0.00 cu ft/min
TEMP: 150 °F	pH: 0.0	

TIME INFORMATION:

CIRCULATING HOURS:	8.25
REAMING HOURS:	4.50
TIME DRILL HOURS:	0.00
MOTOR DRILL HOURS:	65.00
MOTOR HOURS THIS RUN:	77.75
PREVIOUS HOURS:	0.00
TOTAL MOTOR HOURS:	77.75
TOTAL BRT HOURS:	77.75

MOTOR EVALUATION COMMENTS:

Motor was very strong for entire curve and lateral.
 Had lots of stalls during our reaming section and when sliding in the lateral with one pump.
 Motor drained good on surface and had 1/4" slack in bit box. There were no visual problems with the motor, Approximately 400 GPM.
 Average motor yeild was 11/100 until around 60 degrees and then it was 14-15/100.
 Rotating Hours- 41.5
 Orienting Hours 23.5
 Circulating Hours 8.25
 Reaming Hours 4.50
 Total Motor hours- 77.75



Weatherford

Motor / RSS Evaluation Report

Drilling Services
v4.2.2574

BHA 5 - Curve and Lateral Section, Motor #675-43597

— REASON FOR BHA CHANGE: _____

TD Well@ 12342 MD

— COMMENTS FROM LAST DAY RAN: _____

Circulating and conditioning hole. POOH

Lay down directional tools and Run casing



SLIDE REPORT



Slide Sheet Report

BHA 1 - 2013/03/18 TO 2013/03/20

Drilling Services
W4.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Larry Henry, Kevin Slater
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA NO: 1 **DATES RUN:** 2013/03/18 TO 2013/03/20 **SECTION:** 12.25 Air **TOOLFACE OFFSET:** 30 ° **SURVEY OFFSET:** 64 ft
MOTOR SETTING: 1.50 ° **KICKPAD:** No **STABILIZER:** No **MODEL:** 7/8 4.0 **SERIAL NO:** 800-4118 **BHA SURVEY TYPE:** Electromagnetic MWD

(Distances are shown in feet.)

BIT	SURVEY			ORIENTING			ROTATING			SLIDE			BUR			
	DEPTH DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	BUR /ft	BUR /100ft	COMMENTS	
792.00	89.00	728.00	0.00	0.00	0.00	792.00	792.00	0.00	792.00	881.00	89.00	0.00	0.00	0.00	0.00	
881.00	32.00	817.00	0.94	0.00	No Good	881.00	881.00	0.00	881.00	913.00	32.00	0.00	0.00	1.06	Azimuth was No Good	
913.00	63.00	849.00	1.10	55.70	ROT	913.00	913.00	0.00	913.00	976.00	63.00	0.00	0.00	0.50		
976.00	93.00	912.00	1.15	63.15	245M	976.00	1006.00	30.00	1006.00	1069.00	63.00	0.00	0.00	0.08		
1069.00	94.00	1005.00	0.38	106.27	ROT	1069.00	1069.00	0.00	1069.00	1163.00	94.00	29.00	-0.03	-0.83		
1163.00	95.00	1099.00	0.53	199.03	ROT	1163.00	1163.00	0.00	1163.00	1258.00	95.00	1.00	0.15	0.16		
1258.00	93.00	1194.00	0.36	204.15	ROT	1258.00	1258.00	0.00	1258.00	1351.00	93.00	0.00	0.00	-0.18		
1351.00	94.00	1287.00	0.32	245.62	ROT	1351.00	1351.00	0.00	1351.00	1445.00	94.00	0.00	0.00	-0.04		
1445.00	95.00	1381.00	0.42	251.24	ROT	1445.00	1445.00	0.00	1445.00	1540.00	95.00	0.00	0.00	0.11		
1540.00	94.00	1476.00	0.64	252.09	ROT	1540.00	1540.00	0.00	1540.00	1634.00	94.00	0.00	0.00	0.23		
1634.00	94.00	1570.00	0.66	273.06	ROT	1634.00	1634.00	0.00	1634.00	1728.00	94.00	0.00	0.00	0.02		
1728.00	95.00	1664.00	1.00	264.68	84 MAG	1728.00	1758.00	30.00	1758.00	1823.00	65.00	0.00	0.00	0.36		
1823.00	94.00	1759.00	0.63	293.08	ROT	1823.00	1823.00	0.00	1823.00	1917.00	94.00	30.00	-0.01	-0.39		
1917.00	94.00	1853.00	0.73	32.05	ROT	1917.00	1917.00	0.00	1917.00	2011.00	94.00	0.00	0.00	0.11		
2011.00	94.00	1947.00	0.73	68.28	ROT	2011.00	2011.00	0.00	2011.00	2105.00	94.00	0.00	0.00	0.00		
2105.00	95.00	2041.00	0.38	75.71	ROT	2105.00	2105.00	0.00	2105.00	2200.00	95.00	0.00	0.00	-0.37		
2200.00	94.00	2136.00	0.59	273.10	ROT	2200.00	2200.00	0.00	2200.00	2294.00	94.00	0.00	0.00	0.22		
2294.00	95.00	2230.00	1.35	253.34	ROT	2294.00	2294.00	0.00	2294.00	2389.00	95.00	0.00	0.00	0.81		
2389.00	76.00	2325.00	1.38	222.49	ROT	2389.00	2389.00	0.00	2389.00	2465.00	76.00	0.00	0.00	0.03		
2465.00	0.00	2401.00	1.20	210.96	TD	2465.00	2465.00	0.00	2465.00	2465.00	0.00	0.00	0.00	-0.24	TD of 12.5 section	

Totals: 60.00 ft 1613.00 ft
Percentages: 3.6% 96.4%
Time: 1.00 hrs 23.75 hrs
Percentages: 4.0% 96.0%



Slide Sheet Report

BHA 2 - 2013/03/21 TO 2013/03/23

Drilling Services
v4.2.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA NO: 2 DATES RUN: 2013/03/21 TO 2013/03/23 SECTION: AIR_Nudge TOOLFACE OFFSET: 288 ° SURVEY OFFSET: 76 ft
MOTOR SETTING: 0.85 ° KICKPAD: No STABILIZER: No MODEL: 7/8 3.0 SERIAL NO: 675-43606 BHA SURVEY TYPE: Electromagnetic MWD

(Distances are shown in feet.)

BIT	SURVEY			ORIENTING			ROTATING			SLIDE			BUR					
	DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	BUR	/ft	BUR	/100ft	COMMENTS
2465.00	260.00	2389.00	0.00	0.00	0.00		2465.00	2465.00	0.00	2465.00	2725.00	260.00	0.00	0.00	0.00	0.00	0.00	
2725.00	92.00	2649.00	2.49	246.37	246	Mag	2725.00	2817.00	92.00	2817.00	2817.00	0.00	0.00	0.00	0.00	0.00	0.96	
2817.00	95.00	2741.00	5.11	248.21	246	MAG	2817.00	2912.00	95.00	2912.00	2912.00	0.00	16.00	0.16	2.85	2.85		
2912.00	95.00	2836.00	7.74	249.45	230	Mag	2912.00	3007.00	95.00	3007.00	3007.00	0.00	95.00	0.03	2.77	2.77		
3007.00	96.00	2931.00	10.37	251.51	230	MAG	3007.00	3057.00	50.00	3057.00	3103.00	46.00	95.00	0.03	2.77	2.77		
3103.00	94.00	3027.00	13.20	252.35	ROT		3103.00	3103.00	0.00	3103.00	3197.00	94.00	96.00	0.03	2.95	2.95		
3197.00	94.00	3121.00	13.14	250.71	220	M	3197.00	3291.00	94.00	3291.00	3291.00	0.00	30.00	0.00	-0.06	-0.06		
3291.00	95.00	3215.00	13.66	248.00	ROT		3291.00	3291.00	0.00	3291.00	3386.00	95.00	18.00	0.03	0.55	0.55		
3386.00	94.00	3310.00	15.02	245.27	245	M	3386.00	3480.00	94.00	3480.00	3480.00	0.00	76.00	0.02	1.43	1.43		
3480.00	93.00	3404.00	14.86	245.30	245	M	3480.00	3573.00	93.00	3573.00	3573.00	0.00	18.00	-0.01	-0.17	-0.17		
3573.00	95.00	3497.00	17.11	247.96	ROT		3573.00	3573.00	0.00	3573.00	3668.00	95.00	93.00	0.02	2.42	2.42		
3668.00	94.00	3592.00	18.91	248.73	ROT		3668.00	3668.00	0.00	3668.00	3762.00	94.00	76.00	0.02	1.89	1.89		
3762.00	95.00	3686.00	18.56	249.28	150	M	3762.00	3793.00	31.00	3793.00	3857.00	64.00	0.00	0.00	-0.37	-0.37		
3857.00	96.00	3781.00	18.40	247.61	ROT		3857.00	3857.00	0.00	3857.00	3953.00	96.00	19.00	-0.01	-0.17	-0.17		
3953.00	95.00	3877.00	18.21	242.84	ROT		3953.00	3953.00	0.00	3953.00	4048.00	95.00	12.00	-0.02	-0.20	-0.20		
4048.00	94.00	3972.00	17.39	243.17	250	M	4048.00	4068.00	20.00	4068.00	4142.00	74.00	0.00	0.00	-0.86	-0.86		
4142.00	93.00	4066.00	16.74	241.92	285	M	4142.00	4187.00	45.00	4187.00	4235.00	48.00	18.00	-0.04	-0.69	-0.69		
4235.00	95.00	4159.00	16.22	242.83	270	mag	4235.00	4330.00	95.00	4330.00	4330.00	0.00	19.00	-0.03	-0.56	-0.56		
4330.00	94.00	4254.00	16.54	246.93	ROT		4330.00	4330.00	0.00	4330.00	4424.00	94.00	47.00	0.01	0.34	0.34		
4424.00	94.00	4348.00	18.12	253.45	200	MAG	4424.00	4484.00	60.00	4484.00	4518.00	34.00	76.00	0.02	1.68	1.68		
4518.00	95.00	4442.00	17.39	250.58	230	MAG	4518.00	4578.00	60.00	4578.00	4613.00	35.00	18.00	-0.04	-0.78	-0.78		
4613.00	95.00	4537.00	18.27	247.37	230	MAG	4613.00	4673.00	60.00	4673.00	4708.00	35.00	61.00	0.01	0.93	0.93		
4708.00	95.00	4632.00	18.38	246.48	220	MAG	4708.00	4768.00	60.00	4768.00	4803.00	35.00	60.00	0.00	0.12	0.12		
4803.00	95.00	4727.00	18.23	244.64	230	MAG	4803.00	4863.00	60.00	4863.00	4898.00	35.00	60.00	0.00	-0.16	-0.16		



Weatherford

(Distances are shown in feet.)

Slide Sheet Report

BHA 2 - 2013/03/21 TO 2013/03/23

Drilling Services
V4.2.2674

BIT		SURVEY		ORIENTING		ROTATING		SLIDE		BUR		BUR				
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	SEEN	/ft	COMMENTS
4898.00	94.00	4822.00	17.87	243.24	240	MAG	4898.00	4992.00	94.00	4992.00	4992.00	60.00	-0.01	60.00	-0.01	-0.38 POOH to change out bit

Totals: 1198.00 ft 1329.00 ft
 Percentages: 47.4% 52.6%
 Time: 13.50 hrs 14.75 hrs
 Percentages: 47.8% 52.2%



Slide Sheet Report

BHA 3 - 2013/03/23 TO 2013/03/24

Drilling Services
v4.2.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomatic 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA NO: 3 DATES RUN: 2013/03/23 TO 2013/03/24 SECTION: AIR_Nudge TOOLFACE OFFSET: 337 ° SURVEY OFFSET: 72 ft
MOTOR SETTING: 0.85 ° KICKPAD: No STABILIZER: No MODEL: 7/8 3.0 SERIAL NO: 675-43653 BHA SURVEY TYPE: Electromagnetic MWD

(Distances are shown in feet.)

BIT	SURVEY				ORIENTING				ROTATING				SLIDE				BUR			
	DEPTH DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	FROM	TO	FEET	SEEN	BUR	/ft	BUR	/100ft	COMMENTS
4903.00	77.00	4831.00	0.00	0.00	0.00	4903.00	4903.00	0.00	4903.00	4980.00	77.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4980.00	94.00	4908.00	17.37	241.95	ROT Notes	4980.00	4980.00	0.00	4980.00	5074.00	94.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.56	Attempt Slide unable to slide stacking weight
5074.00	94.00	5002.00	16.76	238.97	ROT	5074.00	5074.00	0.00	5074.00	5168.00	94.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.65	Attempt to Slide
5168.00	95.00	5096.00	16.24	233.55	POOH	5168.00	5168.00	0.00	5168.00	5263.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.55	

Totals: 0.00 ft 360.00 ft
 Percentages: 0.0% 100.0%
 Time: 3.25 hrs 3.50 hrs
 Percentages: 48.1% 51.9%



Slide Sheet Report

BHA 4 - 2013/03/24 TO 2013/03/26

Drilling Services
v4.2.2674

FILE #: 4028985

JOB TYPE: Horizontal

RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H

COMPANY: Chesapeake Energy

SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services

SURVEY TYPE: Electromagnetic MWD

FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields

DIR Supervisor: Bradd Smith, John Nix

MWD Supervisor: Jeff Magoon, James Trippett

BHA NO: 4 DATES RUN: 2013/03/24 TO 2013/03/26 SECTION: AIR_Nudge TOOLFACE OFFSET: 213° SURVEY OFFSET: 74 ft
 MOTOR SETTING: 1.50° KICKPAD: No STABILIZER: No MODEL: 7/8 3.0 SERIAL NO: 675-3854 BHA SURVEY TYPE: Electromagnetic MWD

(Distances are shown in feet.)

BIT	DEPTH DRILLED	SURVEY DEPTH	INC	AZM	TF	ORIENTING		ROTATING		SLIDE		BUR /100ft	BUR /ft	COMMENTS
						FROM	TO	FEET	FEET	SEEN	FEET			
5262.00	94.00	5188.00	16.09	237.34	315M	5262.00	5302.00	40.00	5302.00	5356.00	54.00	0.00	0.00	0.00
5356.00	94.00	5282.00	15.17	248.22	250M	5356.00	5376.00	20.00	5376.00	5450.00	74.00	20.00	-0.05	-0.98
5450.00	95.00	5376.00	14.97	251.45	250M	5450.00	5510.00	60.00	5510.00	5545.00	35.00	40.00	0.00	-0.21
5545.00	93.00	5471.00	19.21	249.69	ROT	5545.00	5545.00	0.00	5545.00	5638.00	93.00	21.00	0.20	4.46
5638.00	95.00	5564.00	21.33	248.84	ROT	5638.00	5638.00	0.00	5638.00	5733.00	95.00	39.00	0.05	2.28
5733.00	94.00	5659.00	19.42	245.29	270M	5733.00	5763.00	30.00	5763.00	5827.00	64.00	0.00	0.00	-2.01
5827.00	96.00	5753.00	18.58	249.41	250 MAG	5827.00	5867.00	40.00	5867.00	5923.00	56.00	20.00	-0.04	-0.89
5923.00	93.00	5849.00	19.65	254.74	220 MAG	5923.00	5953.00	30.00	5953.00	6016.00	63.00	32.00	0.03	1.11
6016.00	94.00	5942.00	22.45	256.37	ROT	6016.00	6016.00	0.00	6016.00	6110.00	94.00	37.00	0.08	3.01
6110.00	95.00	6036.00	22.02	251.00	ROT	6110.00	6110.00	0.00	6110.00	6205.00	95.00	11.00	-0.04	-0.46
6205.00	94.00	6131.00	21.62	246.30	ROT	6205.00	6205.00	0.00	6205.00	6299.00	94.00	0.00	0.00	-0.42
6299.00	0.00	6225.00	21.71	239.11	POOH	6299.00	6299.00	0.00	6299.00	6299.00	0.00	0.00	0.00	0.10

Totals:	220.00 ft	817.00 ft
Percentages:	21.2%	78.8%
Time:	3.50 hrs	6.00 hrs
Percentages:	36.8%	63.2%



Slide Sheet Report

BHA 5 - 2013/03/26 TO 2013/03/31

Drilling Services
v4.2.2674

FILE #: 4028985
JOB TYPE: Horizontal
RIG & NO: Nomac 337

WELL NAME: Fork Ridge MSH-201H
COMPANY: Chesapeake Energy
SURFACE LOCATION: Marshall County, WV

SERVICE CO.: Weatherford Drilling Services
SURVEY TYPE: Electromagnetic MWD
FIELD / LOCATION: Marcellus / WV / USA

Company Man: Steve Mackey, Tim Fields
DIR Supervisor: Bradd Smith, John Nix
MWD Supervisor: Jeff Magoon, James Trippett

BHA NO: 5 DATES RUN: 2013/03/26 TO 2013/03/31 SECTION: Curve and TOOLFACE OFFSET: 197 ° SURVEY OFFSET: 58 ft
MOTOR SETTING: 1.73 ° KICKPAD: No STABILIZER: No MODEL: 7/8 5.0 SERIAL NO: 675-43597 BHA SURVEY TYPE: Electromagnetic MWD

(Distances are shown in feet.)

BIT	SURVEY			ORIENTING			ROTATING			SLIDE			BUR			
	DEPTH	DRILLED	INC	AZM	TF	ROT	FROM	TO	FEET	FROM	TO	FEET	SEEN	BUR	/ft	COMMENTS
6348.00	31.00	6290.00	21.18	235.28	45R	ROT	6348.00	6348.00	0.00	6348.00	6379.00	31.00	0.00	0.00	0.00	0.00
6379.00	31.00	6321.00	20.30	241.26	45R		6379.00	6410.00	31.00	6410.00	6410.00	0.00	0.00	0.00	0.00	-2.84
6410.00	31.00	6352.00	19.37	247.48	90R		6410.00	6441.00	31.00	6441.00	6441.00	0.00	0.00	0.00	0.00	-3.00
6441.00	31.00	6383.00	20.10	251.73	80R		6441.00	6472.00	31.00	6472.00	6472.00	0.00	4.00	0.18	2.35	
6472.00	32.00	6414.00	20.67	261.35	60R		6472.00	6504.00	32.00	6504.00	6504.00	0.00	31.00	0.02	1.84	
6504.00	31.00	6446.00	20.29	272.41	50R		6504.00	6521.00	17.00	6521.00	6535.00	14.00	32.00	-0.01	-1.19	
6535.00	30.00	6477.00	21.38	281.99	50R		6535.00	6550.00	15.00	6550.00	6565.00	15.00	31.00	0.04	3.52	
6565.00	32.00	6507.00	23.21	289.30	45R		6565.00	6576.00	11.00	6576.00	6597.00	21.00	30.00	0.06	6.10	
6597.00	30.00	6539.00	24.64	293.13	50R		6597.00	6627.00	30.00	6627.00	6627.00	0.00	18.00	0.08	4.47	
6627.00	31.00	6569.00	25.44	296.43	45R		6627.00	6647.00	20.00	6647.00	6658.00	11.00	15.00	0.05	2.67	
6658.00	31.00	6600.00	26.78	299.98	45R		6658.00	6689.00	31.00	6689.00	6689.00	0.00	10.00	0.13	4.32	
6689.00	32.00	6631.00	29.24	303.43	45R		6689.00	6709.00	20.00	6709.00	6721.00	12.00	31.00	0.08	7.94	
6721.00	31.00	6663.00	31.22	307.23	30R		6721.00	6741.00	20.00	6741.00	6752.00	11.00	21.00	0.09	6.19	
6752.00	32.00	6694.00	33.23	312.46	20R		6752.00	6775.00	23.00	6775.00	6784.00	9.00	31.00	0.06	6.48	
6784.00	31.00	6726.00	35.08	315.52	20R		6784.00	6807.00	23.00	6807.00	6815.00	8.00	20.00	0.09	5.78	
6815.00	31.00	6757.00	37.33	317.81	HIS		6815.00	6838.00	23.00	6838.00	6846.00	8.00	20.00	0.11	7.26	
6846.00	32.00	6788.00	39.99	319.96	20R		6846.00	6868.00	22.00	6868.00	6878.00	10.00	22.00	0.12	8.58	
6878.00	31.00	6820.00	42.87	322.12	HIS		6878.00	6900.00	22.00	6900.00	6909.00	9.00	24.00	0.12	9.00	
6909.00	31.00	6851.00	45.44	323.68	HIS		6909.00	6929.00	20.00	6929.00	6940.00	11.00	23.00	0.11	8.29	
6940.00	31.00	6882.00	47.17	325.46	15R		6940.00	6971.00	31.00	6971.00	6971.00	0.00	21.00	0.08	5.58	
6971.00	32.00	6913.00	50.07	326.33	20R		6971.00	6991.00	20.00	6991.00	7003.00	12.00	22.00	0.13	9.35	
7003.00	31.00	6945.00	52.71	326.81	HIS		7003.00	7034.00	31.00	7034.00	7034.00	0.00	21.00	0.13	8.25	
7034.00	32.00	6976.00	56.40	328.45	20R		7034.00	7059.00	25.00	7059.00	7066.00	7.00	31.00	0.12	11.90	
7066.00	32.00	7008.00	58.93	330.10	HIS		7066.00	7091.00	25.00	7091.00	7098.00	7.00	20.00	0.13	7.91	



Weatherford

(Distances are shown in feet.)

Slide Sheet Report

BHA 5 - 2013/03/26 TO 2013/03/31

Drilling Services
v4.2.2674

BIT	SURVEY				ORIENTING				ROTATING				SLIDE		BUR		COMMENTS
	DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	FT	/100ft		
7098.00	31.00	7040.00	62.58	331.97	10R	7098.00	7123.00	25.00	7123.00	7129.00	6.00	32.00	0.11	11.41			
7129.00	32.00	7071.00	66.06	333.56	HS	7129.00	7149.00	20.00	7149.00	7161.00	12.00	24.00	0.15	11.23			
7161.00	31.00	7103.00	69.18	335.02	HS	7161.00	7181.00	20.00	7181.00	7192.00	11.00	25.00	0.12	9.75			
7192.00	31.00	7134.00	71.72	336.70	HS	7192.00	7217.00	25.00	7217.00	7223.00	6.00	25.00	0.10	8.19			
7223.00	32.00	7165.00	74.78	337.62	15L	7223.00	7248.00	25.00	7248.00	7255.00	7.00	19.00	0.16	9.87			
7255.00	31.00	7197.00	78.01	338.46	HS	7255.00	7270.00	15.00	7270.00	7286.00	16.00	21.00	0.15	10.09			
7286.00	31.00	7228.00	80.88	339.61	60L	7286.00	7317.00	31.00	7317.00	7317.00	0.00	25.00	0.11	9.26			
7317.00	32.00	7259.00	83.25	340.81	ROT	7317.00	7317.00	0.00	7317.00	7349.00	32.00	24.00	0.10	7.65			
7349.00	31.00	7291.00	85.73	340.63	90L	7349.00	7364.00	15.00	7364.00	7380.00	16.00	16.00	0.16	7.75			
7380.00	94.00	7322.00	87.20	339.38	40L	7380.00	7400.00	20.00	7400.00	7474.00	74.00	26.00	0.06	4.74			
7474.00	95.00	7416.00	91.57	337.27	130L	7474.00	7489.00	15.00	7489.00	7569.00	80.00	35.00	0.12	4.65			
7569.00	95.00	7511.00	91.38	335.67	120R	7569.00	7589.00	20.00	7589.00	7664.00	75.00	15.00	-0.01	-0.20			
7664.00	95.00	7606.00	88.95	336.70	ROT	7664.00	7664.00	0.00	7664.00	7759.00	95.00	20.00	-0.12	-2.56			
7759.00	94.00	7701.00	89.21	337.11	90R	7759.00	7779.00	20.00	7779.00	7853.00	74.00	0.00	0.00	0.27			
7853.00	95.00	7795.00	87.78	339.26	HS	7853.00	7873.00	20.00	7873.00	7948.00	75.00	20.00	-0.07	-1.52			
7948.00	95.00	7890.00	90.63	340.18	ROT	7948.00	7948.00	0.00	7948.00	8043.00	95.00	20.00	0.14	3.00			
8043.00	95.00	7985.00	91.14	339.93	110R	8043.00	8053.00	10.00	8053.00	8138.00	85.00	0.00	0.00	0.54			
8138.00	94.00	8080.00	90.24	341.08	ROT	8138.00	8138.00	0.00	8138.00	8232.00	94.00	10.00	-0.09	-0.95			
8232.00	95.00	8174.00	90.38	340.84	ROT	8232.00	8232.00	0.00	8232.00	8327.00	95.00	0.00	0.00	0.15			
8327.00	95.00	8269.00	90.82	340.72	ROT	8327.00	8327.00	0.00	8327.00	8422.00	95.00	0.00	0.00	0.46			
8422.00	92.00	8364.00	91.19	340.31	ROT	8422.00	8422.00	0.00	8422.00	8514.00	92.00	0.00	0.00	0.39			
8514.00	92.00	8456.00	91.17	340.22	ROT	8514.00	8514.00	0.00	8514.00	8606.00	92.00	0.00	0.00	-0.02			
8606.00	95.00	8548.00	91.31	340.13	ROT	8606.00	8606.00	0.00	8606.00	8701.00	95.00	0.00	0.00	0.15			
8701.00	95.00	8643.00	91.78	340.01	130R	8701.00	8719.00	18.00	8719.00	8796.00	77.00	0.00	0.00	0.49			
8796.00	94.00	8738.00	90.02	340.65	ROT	8796.00	8796.00	0.00	8796.00	8890.00	94.00	18.00	-0.10	-1.85			
8890.00	95.00	8832.00	89.49	339.21	70R	8890.00	8910.00	20.00	8910.00	8985.00	75.00	0.00	0.00	-0.56			
8985.00	94.00	8927.00	88.92	340.45	40R	8985.00	9005.00	20.00	9005.00	9079.00	74.00	20.00	-0.03	-0.60			
9079.00	95.00	9021.00	90.31	342.24	ROT	9079.00	9079.00	0.00	9079.00	9174.00	95.00	20.00	0.07	1.48			
9174.00	94.00	9116.00	89.95	342.24	40L	9174.00	9189.00	15.00	9189.00	9268.00	79.00	0.00	0.00	-0.38			
9268.00	95.00	9210.00	0.00	0.00	ROT	9268.00	9268.00	0.00	9268.00	9363.00	95.00	15.00	-6.00	-95.69			
9363.00	94.00	9305.00	0.00	0.00	ROT	9363.00	9363.00	0.00	9363.00	9457.00	94.00	0.00	0.00	0.00			
9457.00	95.00	9399.00	91.13	341.57	100L	9457.00	9472.00	15.00	9472.00	9552.00	80.00	0.00	0.00	96.95			
9552.00	95.00	9494.00	91.63	340.07	160L	9552.00	9567.00	15.00	9567.00	9647.00	80.00	15.00	0.03	0.53			
9647.00	94.00	9589.00	89.44	338.10	ROT	9647.00	9647.00	0.00	9647.00	9741.00	94.00	15.00	-0.15	-2.31			
9741.00	93.00	9683.00	89.35	337.88	ROT	9741.00	9741.00	0.00	9741.00	9834.00	93.00	0.00	0.00	-0.10			



Weatherford

(Distances are shown in feet.)

Slide Sheet Report

BHA 5 - 2013/03/26 TO 2013/03/31

Drilling Services
V4.2.26/4

BIT DEPTH	DRILLED	SURVEY DEPTH	INC	AZM	TF	ORIENTING		ROTATING		SLIDE SEEN	BUR /ft	BUR /100ft	COMMENTS
						FROM	TO	FEET	FEET				
9834.00	95.00	9776.00	89.88	338.03	ROT	9834.00	9834.00	9929.00	9929.00	95.00	0.00	0.57	
9929.00	93.00	9871.00	90.02	337.92	90R	9929.00	9941.00	10022.00	10022.00	81.00	0.00	0.15	
10022.00	94.00	9964.00	89.86	339.32	ROT	10022.00	10022.00	10116.00	10116.00	94.00	12.00	-0.17	
10116.00	94.00	10058.00	90.07	339.21	ROT	10116.00	10116.00	10210.00	10210.00	94.00	0.00	0.22	
10210.00	95.00	10152.00	90.58	338.79	90R	10210.00	10220.00	10305.00	10305.00	85.00	0.00	0.54	
10305.00	94.00	10247.00	91.20	339.62	120R	10305.00	10311.00	10399.00	10399.00	88.00	0.06	0.65	
10399.00	94.00	10341.00	91.68	340.00	150R	10399.00	10414.00	10493.00	10493.00	79.00	0.08	0.51	
10493.00	95.00	10435.00	90.17	339.86	90R	10493.00	10503.00	10588.00	10588.00	85.00	15.00	-1.61	
10588.00	93.00	10530.00	90.59	341.12	ROT	10588.00	10588.00	10681.00	10681.00	93.00	0.04	0.44	
10681.00	95.00	10623.00	90.94	341.12	ROT	10681.00	10681.00	10776.00	10776.00	95.00	0.00	0.38	
10776.00	93.00	10718.00	90.93	341.26	ROT	10776.00	10776.00	10869.00	10869.00	93.00	0.00	-0.01	
10869.00	94.00	10811.00	91.27	341.14	170L	10869.00	10881.00	10963.00	10963.00	82.00	0.00	0.37	
10963.00	94.00	10905.00	90.17	341.26	ROT	10963.00	10963.00	11057.00	11057.00	94.00	0.00	-1.17	
11057.00	94.00	10999.00	91.07	341.62	150L	11057.00	11068.00	11151.00	11151.00	83.00	0.00	0.96	
11151.00	95.00	11093.00	90.75	340.61	170L	11151.00	11161.00	11246.00	11246.00	85.00	-0.03	-0.34	
11246.00	95.00	11188.00	90.75	340.11	ROT	11246.00	11246.00	11341.00	11341.00	95.00	0.00	0.00	
11341.00	94.00	11283.00	91.56	339.91	180	11341.00	11361.00	11435.00	11435.00	74.00	0.00	0.85	
11435.00	95.00	11377.00	89.39	338.21	ROT	11435.00	11435.00	11530.00	11530.00	95.00	-0.11	-2.31	
11530.00	94.00	11472.00	90.07	338.66	ROT	11530.00	11530.00	11624.00	11624.00	94.00	0.00	0.72	
11624.00	95.00	11566.00	90.66	338.24	135R	11624.00	11640.00	11719.00	11719.00	79.00	0.00	0.63	
11719.00	95.00	11661.00	91.21	338.70	135R	11719.00	11741.00	11814.00	11814.00	73.00	0.03	0.58	
11814.00	94.00	11756.00	89.93	339.15	130R	11814.00	11829.00	11908.00	11908.00	79.00	-0.06	-1.35	
11908.00	95.00	11850.00	88.71	340.33	ROT	11908.00	11908.00	12003.00	12003.00	95.00	-0.08	-1.30	
12003.00	94.00	11945.00	88.85	340.25	ROT	12003.00	12003.00	12097.00	12097.00	94.00	0.00	0.15	
12097.00	94.00	12039.00	89.35	340.11	ROT	12097.00	12097.00	12191.00	12191.00	94.00	0.00	0.53	
12191.00	95.00	12133.00	89.44	340.16	45R	12191.00	12201.00	12286.00	12286.00	85.00	0.00	0.10	
12286.00	56.00	12228.00	91.82	342.05	ROT	12286.00	12286.00	12342.00	12342.00	56.00	0.00	2.51	
12342.00	0.00	12284.00	91.82	342.05	PBHL	12342.00	12342.00	12342.00	12342.00	0.00	0.00	0.00	

Totals:	1107.00 ft	4887.00 ft
Percentages:	18.5%	81.5%
Time:	23.50 hrs	41.50 hrs
Percentages:	36.2%	63.8%

Preliminary Report

WR-35
Rev (9-11)

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: 3-21-2013
API #: 47-051-01563

Farm name: Michael Dunn MSH 8H Operator Well No.: 833797

LOCATION: Elevation: 1,260' Quadrangle: Majorsville, WV

District: Webster County: Marshall
Latitude: 3,530' Feet South of 39 Deg. 55 Min. 00 Sec.
Longitude 7,160' Feet West of 80 Deg. 32 Min. 30 Sec.

Company: Chesapeake Appalachia, L.L.C.

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
P.O. Box 18496 Oklahoma City, OK 73154-0496	20"	117'	117'	214 Cu. Ft.
Agent: Eric Gillespie	13 3/8"	428'	428'	454 Cu. Ft.
Inspector: Gene Smith	9 5/8"	2,245'	2,245'	988 Cu. Ft.
Date Permit Issued: 9-27-2012	5 1/2"	12,985'	12,985'	1,263 Cu. Ft.
Date Well Work Commenced: 12-29-2012				
Date Well Work Completed: 1-16-2013(Rig release date)				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 6,877'				
Total Measured Depth (ft): 12,987'				
Fresh Water Depth (ft.): 330'				
Salt Water Depth (ft.): 1156'				
Is coal being mined in area (N/Y)? Y				
Coal Depths (ft.): 770'				
Void(s) encountered (N/Y) Depth(s) N				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) (n/a-not frac'd)

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow N/A* MCF/d Final open flow _____ Bbl/d *Estimated TIL: 1-1-2014
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Marlene Williams
Signature

3-22-2013
Date

Were core samples taken? Yes _____ No X

Were cuttings caught during drilling? Yes X No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Yes
MWD GR in curve and lateral.

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Estimated fracturing date 7-23-2013

Plug Back Details Including Plug Type and Depth(s):

Formations Encountered: _____ Top Depth _____ / _____ Bottom Depth
Surface: _____

See attachment

LATERAL WELLBORE

Maximum TVD of wellbore: 6877 ft TVD @ 12249 ft MD

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
SS	0	0	140	140
SHALE/SS	140	140	200	200
SS/LS	200	200	230	230
SLTSTNE/SS	230	230	290	290
SS/LS	290	290	320	320
SHALE/SS	320	320	350	350
SS/SHALE	350	350	380	380
SHALE/SS	380	380	410	410
SS/SHALE	410	410	440	440
SLTSTNE/SS	440	440	530	530
SLTSTNE/LS	530	530	590	590
LS/SLTSTNE	590	590	650	650
LS	650	650	667	667
PITTSBURGH COAL	667	667	674	674
LS	674	674	770	770
LS/SLTSTNE	770	770	800	800
SLTSTNE/LS	800	800	830	830
SLTSTNE	830	830	920	920
SHALE	920	920	1160	1160
SS/SHALE	1160	1160	1220	1220
SS	1220	1220	1280	1280
SS/SHALE	1280	1280	1460	1460
SHALE/SS	1460	1460	1580	1580
SS/SHALE	1580	1580	1640	1640
SHALE/SS	1640	1640	1670	1670
SLTSTNE/SS	1670	1670	1864	1864
BIG LIME	1864	1864	1936	1936
BIG INJUN	1936	1936	2134	2134
SHALE/SLTSTNE	2134	2134	2255	2255
SHALE	2255	2255	2300	2300
SLTSTNE	2300	2300	2400	2400
SLTSTNE/SHALE	2400	2400	2450	2450
SHALE	2450	2450	2800	2800
SHALE/SS	2800	2800	2850	2850
SHALE	2850	2850	2900	2900
SHALE/SS	2900	2900	3050	3050
SHALE/SLTSTNE	3050	3050	3100	3100

SLTSTNE/SHALE	3100	3100	3500	3500
SHALE/SLTSTNE	3500	3500	3650	3650
SLTSTNE/SHALE	3650	3650	3750	3750
SHALE/SLTSTNE	3750	3750	3800	3800
SLTSTNE/SHALE	3800	3800	3900	3900
SHALE/SLTSTNE	3900	3900	4550	4550
SHALE	4550	4550	6674	6642
GENESEO	6674	6642	6692	6656
TULLY	6692	6656	6731	6684
HAMILTON	6731	6684	6937	6795
MARCELLUS	6937	6795	12987	6861
TD	12987	6861		0



Regulatory Department

March 22, 2013

VIA UPS NEXT DAY AIR

Mr. Gene Smith
West Virginia Department of Environmental Protection
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

Re: Preliminary WR-35 – Michael Dunn MSH 8H (API #051-01563)

Dear Mr. Smith:

Chesapeake Appalachia, L.L.C. submits the *Operator's Preliminary Report of Well Work* for the above captioned well(s) located in Marshall County. If you have any questions or require additional information please feel free to contact me at (405)935-4158 or marlene.williams@chk.com.

Sincerely,

Chesapeake Appalachia, L.L.C

Marlene Williams

Marlene Williams
Regulatory Analyst II

Enclosure(s)

cc: West Virginia Geological and Economic Survey



WR-35
Rev (9-11)

Preliminary Report
State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: 7-29-2013
API #: 47-051-01608

Farm name: Fork Ridge MSH 206H Operator Well No.: 836611

LOCATION: Elevation: 1,391' Quadrangle: Glen Easton 7.5

District: Cameron County: Marshall
Latitude: 4.026' Feet South of 39 Deg. 52 Min. 30 Sec.
Longitude 8.097' Feet West of 80 Deg. 37 Min. 30 Sec.

Company: Chesapeake Appalachia, L.L.C.

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
P.O. Box 18496 Oklahoma City, OK 73154-0496	20"	122'	122'	482 Cu. Ft.
Agent: Eric Gillespie	13 3/8"	772'	772'	856 Cu. Ft.
Inspector: Bill Hendershot	9 5/8"	2,442'	2,442'	1,233 Cu. Ft.
Date Permit Issued: 12-19-2012	5 1/2"	13,744'	13,744'	3,205 Cu. Ft.
Date Well Work Commenced: 4-3-2013				
Date Well Work Completed: 7-28-2013(last frac date)				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 6,858'				
Total Measured Depth (ft): 13,753'				
Fresh Water Depth (ft.): 663'				
Salt Water Depth (ft.): 1,047'				
Is coal being mined in area (N/Y)? Y				
Coal Depths (ft.): 952'				
Void(s) encountered (N/Y) Depth(s) N				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) ^(7,660-13,582) *
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d *Completing
Final open flow Not Tested MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

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I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Marlene Williams
Signature

8-10-2013 Date
Office of Oil and Gas
Department of Environmental Protection

Were core samples taken? Yes _____ No **N**

Were cuttings caught during drilling? Yes **Y** No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list GRMWD 5,893' - 13,753'

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

See attachment

Plug Back Details Including Plug Type and Depth(s):

Formations Encountered:	Top Depth	/	Bottom Depth
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Surface:

See attachment

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PERFORATION RECORD ATTACHMENT

Well Number and Name: 836611 Fork Ridge MSH 206H

PERFORATION RECORD			STIMULATION RECORD							
Date	Interval Perforated		Date	Interval Treated	Treated	Fluid		Propping Agent		Average Injection
	From	To				Type	Amount	Type	Amount	
7/24/2013	13,314	13,582	7/23/2013	13,314	13,582	Sik wtr	7,469	Sand	400,184	81
7/24/2013	12,982	13,249	7/24/2013	12,982	13,249	Sik wtr	7,365	Sand	401,387	81
7/24/2013	12,649	12,916	7/24/2013	12,649	12,916	Sik wtr	7,579	Sand	403,516	80
7/24/2013	12,317	12,584	7/24/2013	12,317	12,584	Sik wtr	7,704	Sand	398,092	83
7/24/2013	11,984	12,251	7/25/2013	11,984	12,251	Sik wtr	7,466	Sand	401,516	80
7/25/2013	11,651	11,919	7/25/2013	11,651	11,919	Sik wtr	7,538	Sand	400,282	79
7/25/2013	11,319	11,586	7/25/2013	11,319	11,586	Sik wtr	7,687	Sand	403,169	82
7/25/2013	10,986	11,253	7/25/2013	10,986	11,253	Sik wtr	7,557	Sand	402,642	82
7/26/2013	10,654	10,921	7/26/2013	10,654	10,921	Sik wtr	7,516	Sand	398,480	80
7/26/2013	10,321	10,588	7/26/2013	10,321	10,588	Sik wtr	7,598	Sand	400,454	82
7/26/2013	9,988	10,255	7/26/2013	9,988	10,255	Sik wtr	7,437	Sand	398,646	80
7/26/2013	9,656	9,923	7/26/2013	9,656	9,923	Sik wtr	7,421	Sand	400,329	81
7/27/2013	9,323	9,590	7/27/2013	9,323	9,590	Sik wtr	7,428	Sand	400,110	81
7/27/2013	8,990	9,258	7/27/2013	8,990	9,258	Sik wtr	7,383	Sand	400,208	80.4
7/27/2013	8,658	8,925	7/27/2013	8,658	8,925	Sik wtr	7,382	Sand	399,064	81
7/27/2013	8,325	8,592	7/27/2013	8,325	8,592	Sik wtr	7,427	Sand	402,338	84
7/27/2013	7,993	8,260	7/28/2013	7,993	8,260	Sik wtr	7,360	Sand	400,733	81.7
7/28/2013	7,660	7,927	7/28/2013	7,660	7,927	Sik wtr	7,270	Sand	402,376	80.7

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LATERAL WELLBORE (no vertical pilot hole associated with this well)

Maximum TVD of wellbore: 6858 ft TVD @ 13753 ft MD

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
SS W/ SHALE	0	0	750	750
LS W/ SILTSTONE	750	750	941	941
PITTSBURG COAL	941	941	951	951
SS W/ SHALE	951	951	2030	2030
BIG LIME	2030	2030	2110	2100
BIG INJUN (SS)	2110	2100	2325	2314
SHALE W/ SILTSTONE	2325	2314	7114	6649
GENESEO (SH)	7114	6649	7139	6659
TULLY (LS)	7139	6659	7214	6688
HAMILTON (SH)	7214	6688	7510	6773
MARCELLUS (SH)	7510	6773		
TD OF LATERAL			13753	6858

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Office of Oil and Gas
WV Dept. of Environmental Protection