



## Partner Drilling Report

### Well Name: UNIVERSITY 3-35 #104HB

Report Date: 7/28/2017  
Report #: 19.0, DFS: 8.29  
Time Log DFS: 8.29  
Depth Progress: 1,722.00

API/UWI No. 42461405810000	Surface Legal Location A-U47; SEC. 11; BLK 4; UL SURVEY	Well License/Permit No. 824982	State/Province TEXAS
Original Spud/Spud Rig Date 7/19/2017 23:00	Rig Release Date	KB to GL (ft) 25.00	KB-Casing Flange Distance (ft)
Original Spud/Spud Rig Date 7/19/2017	Weather CLEAR	Temperature (°F) 78.0	Road Condition GOOD
Current Status/OART ROTATE / SLIDE DRLG TO BUILD THE PRODUCTION CURVE		24 Hour Forecast DRILL AHEAD AS PER DRILLING PROG AND DIRECTIONAL PLAN IN PRODUCTION SECTION.	

Short Report  
ROTATE / SLIDE DRLG TO BUILD THE PRODUCTION CURVE, RIG SERVICE, ROTATE / SLIDE DRLG TO BUILD THE PRODUCTION CURVE.

#### Mud Volumes

Active Volume (bbl) 3,445.2	Var Active Vol (bbl) 238.4	Balance (bbl) 310.5	Tank Volume (bbl) 1,371.0	Additions (bbl) 239.4	Losses (bbl) 311.5	Hole Volume (bbl) 2,074.2
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#### Time Log

Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code	Operation Summary
06:00	22:00	16.00	22PHCD, Prod Hole Curve Drill	DR	b	O	ROTATE / SLIDE DRLG F/6434' TO 7962'  1528' @ 96 FPH AVG ROP.  NOTE: PUMPING LCM SWEEPS 10 BBLS EVERY STAND. SWEEPS CONSISTING OF: 1 CAN DRILL TREAT, 5PPB BARACARB 150, 5 PPB BARACARB 50, 5PPB MICA FINE 10 PPB STOPIT.  NOTE: PUMPED 25 BBL LCM SWEEPS F/ 6434' TO 6800' AT EVERY CONNECTION.
22:00	22:30	0.50	22PHCD, Prod Hole Curve Drill	RM	b	O	RIG SERVICE - C/O SWAB ON MP #1 POD #3.
22:30	06:00	7.50	22PHCD, Prod Hole Curve Drill	DR	b	O	ROTATE / SLIDE DRLG F/7962' TO 8110'  NOTE: KOP @ 7945'.  148' @ 20 FPH AVG ROP.  NOTE: PUMPING LCM SWEEPS 10 BBLS EVERY STAND. SWEEPS CONSISTING OF: 1 CAN DRILL TREAT, 5PPB BARACARB 150, 5 PPB BARACARB 50, 5PPB MICA FINE 10 PPB STOPIT.

#### Mud Checks

Time 15:00	Type INVERMUL	Depth (ftKB) 6,497.0	Density (kg/m³) (lb/g... 9.05	Funnel Viscosity (s/qt) 54	PV Calc (cP) 11.0	YP Calc (lb/100ft²) 10.004
Gel 10 sec (kPa) (lb... 9.004	Gell 10 min (kPa) (l... 13.005	Gel 30 min (kPa) (lb... 15.006	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%) 10.0
MBT (lb/bbl)	Percent Oil (%) 68.0	Percent Water (%) 22.0	Chlorides (kg/m³) (... 35,000.000	Calcium (kg/m³) (m... 14,800.000	Potassium (mg/L) 542.0	Electric Stab (V) 542.0
Time 05:00	Type INVERMUL	Depth (ftKB) 7,962.0	Density (kg/m³) (lb/g... 8.85	Funnel Viscosity (s/qt) 58	PV Calc (cP) 11.0	YP Calc (lb/100ft²) 10.004
Gel 10 sec (kPa) (lb... 9.004	Gell 10 min (kPa) (l... 14.006	Gel 30 min (kPa) (lb... 15.006	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%) 9.3
MBT (lb/bbl)	Percent Oil (%) 68.3	Percent Water (%) 22.5	Chlorides (kg/m³) (... 39,000.000	Calcium (kg/m³) (m... 16,000.000	Potassium (mg/L) 520.0	Electric Stab (V) 520.0

#### Mud Volumes

Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Hole	ANNULUS	397.8	
Hole	PIPE CAP	136.6	
Hole	TOTAL HOLE	534.4	
Tank	ACTIVE PITS	471.0	
Hole	TOTAL CIRC.	1,005.4	
Tank	RESERVE	900.0	
Addition	BASE	160.3	
Addition	DRILL WATER	65.0	
Addition	WHOLE MUD	0.0	
Addition	CHEMICALS	14.1	
Loss	SCE	95.0	

AFE Number DD.17.30781.CAP.DRL	AFE+Supp Amt (Cost) 2,331,000.00
Day Total (Cost) 74,053	Cum To Date (Cost) 1,119,945
Mud Field Est (Cost) 9,577	Cum Mud Field Est (Co... 36,289
Start Depth (ftKB) 6,434.0	End Depth (ftKB) 8,345.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,337.0

Last Casing String  
Surface Casing, 1,461.0ftKB

#### Daily Contacts

Job Contact	Mobile
BRIAN ALLEMAN, Engineer	214-978-8000
CHRISTOPHER ABSHIRE, Foreman	281-220-5828
MARTY ARREZOLA, Consultant	281-220-5828
DEAN DUFFY, Rig Clerk/Logistics	281-220-5829

#### Personnel Log

Head Count	19.0
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#### Rigs

##### HELMERICH & PAYNE DRILLING, 3

Contractor HELMERICH & PAYNE DRILLING	Rig Number 394
Rig Supervisor THOMAS PENDERGRASS, Toolpusher	Phone Mobile

##### 1, Gardner-Denver, PZ-11

Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter...
Liner Size (in) 5	Stroke (in) 11.00	Vol/Stk OR (b...
P (psi) 2,395.0	Slow Spd No	Strokes (s... 105
P (psi) 2,395.0	Slow Spd No	Strokes (s... 104

##### 2, Gardner-Denver, PZ-11

Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter...
Liner Size (in) 5	Stroke (in) 11.00	Vol/Stk OR (b...
P (psi) 2,395.0	Slow Spd No	Strokes (s... 105
P (psi) 2,395.0	Slow Spd No	Strokes (s... 104

#### Mud Additive Amounts

Mud Additive Description	Field Est (Cost/unit)	Consumed
12 HR MUD ENGINEER	700.00	1.0
BARABLOK 400	85.00	13.0
BARACARB 150	13.30	30.0
BARACARB 50	13.30	29.0
BARO-TROL PLUS	77.97	10.0
DRILTREAT	97.02	6.0
EZ-MUL	725.00	1.0
GELTONE V	65.00	15.0
MICA FINE	15.00	4.0
RM-63	1,618.23	1.0
STOPPIT	40.00	26.0
SUSPENTONE	134.10	9.0



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### Mud Volumes

Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Loss	DOWNHOLE	197.5	
Loss	EVAPORATION	4.0	
Loss	FILTRATION	15.0	

### Drill Strings

#### BHA #5, Curve

Bit Run 1	Drill Bit 8 3/4in, MMD55DM, 12929253	IADC Bit Dull -----	TFA (incl Noz) (in <sup>2</sup> ) 1.86
Nozzles (1/32") 22/22/22/22/22	BHA Length (ft) 12,106.14	String Wt (1000lbf) 85.0	Bit ROP (ft/hr) 85.0

### Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
HWDP	21	5	3.00	639.59	IF
Drill Pipe	306	5	4.28	9,638.80	IF
Agitator	1	6 9/16	2.50	23.77	IF
Drill Pipe	54	5	4.28	1,702.49	IF
Drill Collar - Non Mag	1	6 1/2	3.25	30.67	IF
Non-Mag Hangoff Sub	1	6 1/2	3.25	5.45	IF
Drill Collar - Non Mag	1	6 1/2	3.25	30.72	IF
Mud Motor - Bent Housing	1	6 1/2	2.50	33.65	IF

### Drilling Parameters

Wellbore UNIVERSITY 3-35 #104HB	Start Depth (ftKB) 6,434.0	End Depth (ftKB) 6,470.0	Cum Depth (ft) 1,340.00	Drilling Time (hr) 0.51	Cum Drill Time (hr) 12.25	Interval ROP (ft/hr) 70.6	Flow Rate (gpm) 557
WOB (1000lbf) 17	Rotary RPM (rpm) 70	SPP (psi) 2,646.0	Drill Str Wt (1000... 160	PU Str Wt (1000lbf) 164	SO Str Wt (1000lbf) 162	Drilling Torque 6.0	Off Btm Tq Q Gas Return (f...
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

### Hydraulic Calculations

Bit Hydraulic Power (hp) 24.4	HP/Area (hp/in <sup>2</sup> ) 0.4	Bit Jet Velocity (ft/s) 96.3	Bit Pressure Drop (psi) 75.2	% P @ bit (%) 3
Max Casing AV (ft/min) 390.2	Max Open Hole AV (ft/min) 51.7	Min Casing AV (ft/min) 99.8	Min Open Hole AV (ft/min) 48.5	ECD End (lb/gal) 9.08
Error				

Wellbore UNIVERSITY 3-35 #104HB	Start Depth (ftKB) 6,470.0	End Depth (ftKB) 6,484.0	Cum Depth (ft) 1,354.00	Drilling Time (hr) 0.58	Cum Drill Time (hr) 12.83	Interval ROP (ft/hr) 24.1	Flow Rate (gpm) 557
WOB (1000lbf) 10	Rotary RPM (rpm) 0	SPP (psi) 2,477.0	Drill Str Wt (1000... 160	PU Str Wt (1000lbf) 164	SO Str Wt (1000lbf) 162	Drilling Torque 0.0	Off Btm Tq 0.0
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

### Hydraulic Calculations

Bit Hydraulic Power (hp) 24.4	HP/Area (hp/in <sup>2</sup> ) 0.4	Bit Jet Velocity (ft/s) 96.3	Bit Pressure Drop (psi) 75.2	% P @ bit (%) 3
Max Casing AV (ft/min) 390.2	Max Open Hole AV (ft/min) 51.7	Min Casing AV (ft/min) 99.8	Min Open Hole AV (ft/min) 48.5	ECD End (lb/gal) 9.08
Error				

Wellbore UNIVERSITY 3-35 #104HB	Start Depth (ftKB) 6,484.0	End Depth (ftKB) 6,657.0	Cum Depth (ft) 1,527.00	Drilling Time (hr) 1.44	Cum Drill Time (hr) 14.27	Interval ROP (ft/hr) 120.1	Flow Rate (gpm) 557
WOB (1000lbf) 25	Rotary RPM (rpm) 70	SPP (psi) 2,687.0	Drill Str Wt (1000... 160	PU Str Wt (1000lbf) 164	SO Str Wt (1000lbf) 162	Drilling Torque 8.0	Off Btm Tq Q Gas Return (f...
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

### Hydraulic Calculations

Bit Hydraulic Power (hp) 24.4	HP/Area (hp/in <sup>2</sup> ) 0.4	Bit Jet Velocity (ft/s) 96.3	Bit Pressure Drop (psi) 75.2	% P @ bit (%) 3
Max Casing AV (ft/min) 390.2	Max Open Hole AV (ft/min) 51.7	Min Casing AV (ft/min) 99.8	Min Open Hole AV (ft/min) 48.5	ECD End (lb/gal) 9.07
Error				

Wellbore UNIVERSITY 3-35 #104HB	Start Depth (ftKB) 6,657.0	End Depth (ftKB) 6,679.0	Cum Depth (ft) 1,549.00	Drilling Time (hr) 0.85	Cum Drill Time (hr) 15.12	Interval ROP (ft/hr) 25.9	Flow Rate (gpm) 557
WOB (1000lbf) 11	Rotary RPM (rpm) 0	SPP (psi) 2,518.0	Drill Str Wt (1000... 160	PU Str Wt (1000lbf) 164	SO Str Wt (1000lbf) 162	Drilling Torque 0.0	Off Btm Tq 0.0
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

### Job Supplies

Supply Item Description DIESEL FOR OBM	Unit Label Gal
Total Received 16,805.0	Total Consumed 9,239.0 On Loc 7,566.0
Supply Item Description DRILLING CUTTINGS	Unit Label Cu. Yds
Total Received 120.0	Total Consumed 120.0 On Loc 0.0
Supply Item Description DRILLING WATER	Unit Label Bbl
Total Received 120.0	Total Consumed 120.0 On Loc 0.0
Supply Item Description FUEL	Unit Label Gal
Total Received 41,290.0	Total Consumed 17,041.0 On Loc 12,451.0
Supply Item Description POTABLE WATER	Unit Label Gal
Total Received 26,800.0	Total Consumed 26,800.0 On Loc 0.0
Supply Item Description SEWAGE	Unit Label Gal
Total Received 18,500.0	Total Consumed 18,500.0 On Loc 0.0
Supply Item Description THREAD PROTECTORS	Unit Label Box
Total Received 1.0	Total Consumed 1.0 On Loc 0.0
Supply Item Description TRASH/GENERAL WASTE	Unit Label Box
Total Received 0.0	Total Consumed 0.0 On Loc 0.0

### Safety Checks

Time	Type	Safety Topic
17:30	Pre-Tour	HYDRATION AND HEAT INJURIES
05:30	Pre-Tour	HYDRATION AND HEAT INJURIES

### Wellbores

Wellbore Name	
UNIVERSITY 3-35 #104HB	
Kick Offs & Key Depths	
Type	Top Depth (ftKB)





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### Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in <sup>2</sup> )	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.6	0.4	96.1	75.7	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
257.3	51.8	99.6	48.5	9.15

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #104HB	8,015.0	8,061.0	2,931.00	2.06	29.99	22.3	556
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
16	0	2,668.0	170	174	171	0.0	0.0
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

### Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in <sup>2</sup> )	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.6	0.4	96.1	75.7	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
257.3	51.8	99.6	48.5	9.15

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #104HB	8,061.0	8,110.0	2,980.00	3.10	33.09	15.8	556
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
9	0	2,670.0	181	189	184	0.0	0.0
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

### Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in <sup>2</sup> )	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.0	0.4	96.1	74.0	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
257.3	51.8	99.6	48.5	8.95

Error

### Kicks

Kick Date	Kick Depth (ftKB)	Control Date	Control Depth (ftKB)	Kick Class
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Kill Notes

### Lost Circulation

Start Date	Top Depth (ftKB)	Bottom Depth (ftKB)	Ops In Prog	Vol Lost Tot (bbl)	End Date
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### Interval Problems

Problem Type	Problem Subtype	Start Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost (Cost)	Est Lost Time (hr)
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Action Taken

### Interval Lessons

Lesson Type	Start Date	End Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost Saving (Co..)	Est Time Saving (hr)
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Comment

### Safety Incidents

Time	Category	Type	Subtype	Cause	Lost time?	Severity
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### Leak Off and Formation Integrity Tests

Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
7/20/2017	13 3/8	1,461.0	1,460.8	TEST ON CHART: GOOD TEST	500.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
7/21/2017	Casing Test	8.30	14.80		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
	9 5/8	5,058.0	4,973.7	TEST ON CHART: GOOD TEST	1,500.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
7/25/2017	Casing Test	9.90	15.71		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
	9 5/8	5,058.0	4,973.7	TEST ON CHART: GOOD TEST	96.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
7/26/2017	F.I.T.	9.90	10.27		

### Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,647.00	13.18	92.20	5,548.28	-4.88	-90.53	879.65	0.80



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MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,742.00	11.65	88.38	5,641.06	-3.04	-90.67	900.06	1.83
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
6,686.00	8.47	98.11	6,565.66	7.30	-98.52	1,087.49	0.76
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
6,781.00	7.15	98.09	6,659.77	6.73	-100.34	1,100.27	1.39
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
6,876.00	7.76	93.32	6,753.97	6.72	-101.55	1,112.52	0.91
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
6,970.00	7.10	81.41	6,847.19	8.39	-101.05	1,124.60	1.78
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,065.00	5.49	72.69	6,941.61	11.59	-98.82	1,134.75	1.97
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,159.00	4.26	68.40	7,035.27	14.93	-96.19	1,142.29	1.36
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,254.00	3.41	67.15	7,130.06	17.89	-93.80	1,148.17	0.90
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,348.00	3.11	64.88	7,223.91	20.52	-91.63	1,153.06	0.35
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,442.00	2.79	57.87	7,317.78	23.22	-89.33	1,157.30	0.51
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,537.00	2.17	48.39	7,412.69	25.95	-86.91	1,160.60	0.78
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,631.00	1.65	43.63	7,506.64	28.32	-84.75	1,162.87	0.58
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,726.00	1.38	35.49	7,601.61	30.39	-82.82	1,164.48	0.36
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,820.00	1.14	12.59	7,695.59	32.30	-80.99	1,165.34	0.59
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,914.00	0.78	15.69	7,789.57	33.86	-79.46	1,165.71	0.39
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
7,960.00	2.22	8.34	7,835.56	35.05	-78.28	1,165.93	3.15
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,009.00	5.67	4.94	7,884.43	38.42	-74.93	1,166.27	7.05
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,055.00	9.32	4.71	7,930.03	44.42	-68.95	1,166.78	7.94
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,103.00	12.41	6.68	7,977.17	53.47	-59.95	1,167.70	6.48



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Time Log DFS: 9.29

Depth Progress: 235.00

API/UWI No. 42461405810000		Surface Legal Location A-U47; SEC. 11; BLK 4; UL SURVEY		Well License/Permit No. 824982		State/Province TEXAS	
Original Spud/Spud Rig Date 7/19/2017 23:00		Rig Release Date		KB to GL (ft) 25.00		KB-Casing Flange Distance (ft)	
Original Spud/Spud Rig Date 7/19/2017		Weather CLEAR		Temperature (°F) 76.0		Road Condition GOOD	
						Hole Condition GOOD	
Current Status/OART ROTATE / SLIDE DRLG TO BUILD PRODUCTION CURVE AT REPORT TIME				24 Hour Forecast DRILL AHEAD AS PER DRILLING PROG AND DIRECTIONAL PLAN IN PRODUCTION SECTION.			
Short Report ROTATE / SLIDE DRLG TO BUILD THE PRODUCTION CURVE, CIRC BTMS UP, FLOW CHECK, PUMP SLUG, POOH DUE TO LOW BUILD RATES, FLOW CHECK, POOH, RIG SERVICE, C/O BIT AND MTR AND DIRECTIONAL BHA, TIH, P/U AGITATOR, INSTALL ROTATING HEAD, SLIP & CUT, TIH, ROTATE / SLIDE DRLG TO BUILD PRODUCTION CURVE.							
Mud Volumes							
Active Volume (bbl) 3,495.4		Var Active Vol (bbl) 50.2		Balance (bbl) 69.9		Tank Volume (bbl) 1,338.0	
				Additions (bbl) 36.1		Losses (bbl) 55.8	
						Hole Volume (bbl) 2,157.4	
Time Log							
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code	Operation Summary
06:00	08:30	2.50	22PHCD, Prod Hole Curve Drill	DR	b	O	ROTATE / SLIDE DRLG F/8110' TO 8155'  45' @ 18 FPH AVG ROP.  NOTE: PUMPING LCM SWEEPS 10 BBLS EVERY STAND. SWEEPS CONSISTING OF: 1 CAN DRILL TREAT, 5PPB BARACARB 150, 5 PPB BARACARB 50, 5PPB MICA FINE 10 PPB STOPIT.
08:30	09:30	1.00	22PHCD, Prod Hole Curve Drill	CI	d	O	CIRC BTMS UP, BUILD SLUG.
09:30	10:00	0.50	22PHCD, Prod Hole Curve Drill	CI	h	O	FLOW CHECK: WHILE BUILDING SLUG AND FILL TRIP TANK.
10:00	11:00	1.00	22PHCD, Prod Hole Curve Drill	TR	p	O	POOH DUE TO LOW BUILD RATES F/8155' TO 7043'. HOLE NOT TAKING PROPER FILL.
11:00	11:15	0.25	22PHCD, Prod Hole Curve Drill	CI	h	O	FLOW CHECK
11:15	12:15	1.00	22PHCD, Prod Hole Curve Drill	TP	c	O	CONTINUE TO POOH F/7043' TO 5380'. HOLE TAKING PROPER FILL.
12:15	12:45	0.50	22PHCD, Prod Hole Curve Drill	RM	b	O	RIG SERVICE- REPAIR ST-80 HOSE.
12:45	15:30	2.75	22PHCD, Prod Hole Curve Drill	TP	c	O	POOH F/5380' TO MOTOR  PULL ROTATING HEAD, L/D AGITATOR.
15:30	17:15	1.75	22PHCD, Prod Hole Curve Drill	TP	b	O	B/O 8 3/4" BIT, L/D OLD 2.0 DEGREE MOTOR, P/U NEW 2.12 DEGREE MOTOR, PULLED MWD TOOL, SCRIBE NEW TOOL, & TEST W/80 SPM, M/U NEW SECURTIY 8 1/2" PDC MMD55DM BIT.  BIT GRADE: 1-1-WT-T-0-WT-BHA.
17:15	20:00	2.75	22PHCD, Prod Hole Curve Drill	TP	a	O	TIH TO 5019' RUN 18 STDS AND P/U NEW AGITATOR, TEST AGITATOR BEFORE AND AFTER PICKING UP 500 PSI DIFF PSI.
20:00	20:30	0.50	22PHCD, Prod Hole Curve Drill	BO	g	O	INSTALL ROTATING HEAD
20:30	22:00	1.50	22PHCD, Prod Hole Curve Drill	RM	a	O	SLIP AND CUT DRILL LINE
22:00	23:30	1.50	22PHCD, Prod Hole Curve Drill	TP	a	O	TIH F/5019' TO 8155' @ 100 FPM.

AFE Number DD.17.30781.CAP.DRL		AFE+Supp Amt (Cost) 2,331,000.00	
Day Total (Cost) 100,125		Cum To Date (Cost) 1,220,070	
Mud Field Est (Cost) 12,503		Cum Mud Field Est (Co... 48,793	
Start Depth (ftKB) 8,110.0		End Depth (ftKB) 8,345.0	
Planned Formation WOLFCAMP B		Planned TMD (ftKB) 19,337.0	
Last Casing String Surface Casing, 1,461.0ftKB			
Daily Contacts			
Job Contact		Mobile	
BRIAN ALLEMAN, Engineer		214-978-8000	
CHRISTOPHER ABSHIRE, Foreman		281-220-5828	
MARTY ARREZOLA, Consultant		281-220-5828	
DEAN DUFFY, Rig Clerk/Logistics		281-220-5829	
Personnel Log			
Head Count		22.0	
Rigs			
HELMERICH & PAYNE DRILLING, 3			
Contractor HELMERICH & PAYNE DRILLING		Rig Number 394	
Rig Supervisor THOMAS PENDERGRASS, Toolpusher		Phone Mobile	
1, Gardner-Denver, PZ-11			
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter...	
Liner Size (in) 5	Stroke (in) 11.00	Vol/Stk OR (b...	
P (psi) 2,395.0	Slow Spd No	Strokes (s... 104	Eff (%) 87
P (psi) 2,681.0	Slow Spd No	Strokes (s... 105	Eff (%) 87
2, Gardner-Denver, PZ-11			
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter...	
Liner Size (in) 5	Stroke (in) 11.00	Vol/Stk OR (b...	
P (psi) 2,395.0	Slow Spd No	Strokes (s... 104	Eff (%) 87
P (psi) 2,681.0	Slow Spd No	Strokes (s... 105	Eff (%) 87
Mud Additive Amounts			
Mud Additive Description		Field Est (Cost/unit)	Consumed
12 HR MUD ENGINEER		700.00	1.0
BARABLOK 400		85.00	16.0
BARACARB 150		13.30	35.0
BARACARB 50		13.30	4.0
BARO-TROL PLUS		77.97	11.0
CALCIUM CHL 95 -98%		17.10	20.0
CON DET		59.00	7.0
DRILTREAT		97.02	4.0
EZ-MUL		725.00	1.0
GELTONE V		65.00	24.0
LIME		6.00	35.0
MICA FINE		15.00	18.0
PALLETES		10.00	10.0



## Partner Drilling Report

Well Name: UNIVERSITY 3-35 #104HB

Report Date: 7/29/2017

Report #: 20.0, DFS: 9.29

Time Log DFS: 9.29

Depth Progress: 235.00

### Time Log

Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code	Operation Summary
23:30	06:00	6.50	22PHCD, Prod Hole Curve Drill	DR	b	O	ROTATE / SLIDE DRLG F/8155' TO 8345'  190' @ 29 FPH AVG ROP  NOTE: PUMPING 10 BBL HI-VIS SWEEPS EVERY STAND.

### Mud Checks

Time	Type	Depth (ftKB)	Density (kg/m³) (lb/gal)	Funnel Viscosity (s/qt)	PV Calc (cP)	YP Calc (lb/100ft²)
15:00	INVERMUL	8,155.0	8.95	63	15.0	16.007
Gel 10 sec (kPa) (lb/100ft²)	Gell 10 min (kPa) (lb/100ft²)	Gel 30 min (kPa) (lb/100ft²)	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%)
13.005	18.007	21.009				9.5
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%)	Chlorides (kg/m³) (...)	Calcium (kg/m³) (m...)	Potassium (mg/L)	Electric Stab (V)
	66.5	24.0	40,000.000	16,400.000		540.0
Time	Type	Depth (ftKB)	Density (kg/m³) (lb/gal)	Funnel Viscosity (s/qt)	PV Calc (cP)	YP Calc (lb/100ft²)
05:00	INVERMUL	8,162.0	9.15	60	16.0	14.006
Gel 10 sec (kPa) (lb/100ft²)	Gell 10 min (kPa) (lb/100ft²)	Gel 30 min (kPa) (lb/100ft²)	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%)
13.005	18.007	20.008				10.0
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%)	Chlorides (kg/m³) (...)	Calcium (kg/m³) (m...)	Potassium (mg/L)	Electric Stab (V)
	68.3	21.8	38,000.000	16,000.000		575.0

### Mud Volumes

Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Hole	ANNULUS	407.7	
Hole	PIPE CAP	140.1	
Hole	TOTAL HOLE	547.8	
Tank	ACTIVE PITS	514.0	
Hole	TOTAL CIRC.	1,061.8	
Tank	RESERVE	824.0	
Addition	BASE	15.9	
Addition	DRILL WATER	0.0	
Addition	WHOLE MUD	0.0	
Addition	CHEMICALS	20.2	
Loss	SCE	15.0	
Loss	DOWNHOLE	28.8	
Loss	TRIPS	10.0	
Loss	FILTRATION	2.0	

### Drill Strings

#### BHA #5, Curve

Bit Run 1	Drill Bit 8 3/4in, MMD55DM, 12929253	IADC Bit Dull -----	TFA (incl Noz) (in²) 1.86
Nozzles (1/32")		BHA Length (ft) 12,106.14	String Wt (1000lbf) 85.0
22/22/22/22			Bit ROP (ft/hr) 85.0

### Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
HWDP	21	5	3.00	639.59	IF
Drill Pipe	306	5	4.28	9,638.80	IF
Agitator	1	6 9/16	2.50	23.77	IF
Drill Pipe	54	5	4.28	1,702.49	IF
Drill Collar - Non Mag	1	6 1/2	3.25	30.67	IF
Non-Mag Hangoff Sub	1	6 1/2	3.25	5.45	IF
Drill Collar - Non Mag	1	6 1/2	3.25	30.72	IF
Mud Motor - Bent Housing	1	6 1/2	2.50	33.65	IF

### Drilling Parameters

Wellbore UNIVERSITY 3-35 #104HB	Start Depth (ftKB) 8,110.0	End Depth (ftKB) 8,155.0	Cum Depth (ft) 3,025.00	Drilling Time (hr) 2.50	Cum Drill Time (hr) 35.59	Interval ROP (ft/hr) 18.0	Flow Rate (gpm) 556
WOB (1000lbf) 15	Rotary RPM (rpm) 0	SPP (psi) 2,681.0	Drill Str Wt (1000lbf) 181	PU Str Wt (1000lbf) 189	SO Str Wt (1000lbf) 184	Drilling Torque 0.0	Off Btm Tq 0.0
Q Gas Inj (ft³/min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

### Hydraulic Calculations

Bit Hydraulic Power (hp) 24.0	HP/Area (hp/in²) 0.4	Bit Jet Velocity (ft/s) 96.1	Bit Pressure Drop (psi) 74.0	% P @ bit (%) 3
Max Casing AV (ft/min) 257.3	Max Open Hole AV (ft/min) 51.8	Min Casing AV (ft/min) 99.6	Min Open Hole AV (ft/min) 48.5	ECD End (lb/gal) 8.95
Error				

### Mud Additive Amounts

Mud Additive Description	Field Est (Cost/unit)	Consumed
SHRINK WRAP	10.00	10.0
STOPPIT	40.00	18.0
SUSPENTONE	134.10	29.0
TRANSPORTATI ON	1.00	350.0

### Job Supplies

Supply Item Description DIESEL FOR OBM	Unit Label Gal
Total Received 16,805.0	Total Consumed 9,239.0 On Loc 7,566.0
Supply Item Description DRILLING CUTTINGS	Unit Label Cu. Yds
Total Received 120.0	Total Consumed 120.0 On Loc 0.0
Supply Item Description DRILLING WATER	Unit Label Bbl
Total Received 120.0	Total Consumed 120.0 On Loc 0.0
Supply Item Description FUEL	Unit Label Gal
Total Received 41,290.0	Total Consumed 17,041.0 On Loc 12,451.0
Supply Item Description POTABLE WATER	Unit Label Gal
Total Received 26,800.0	Total Consumed 26,800.0 On Loc 0.0
Supply Item Description SEWAGE	Unit Label Gal
Total Received 18,500.0	Total Consumed 18,500.0 On Loc 0.0
Supply Item Description THREAD PROTECTORS	Unit Label Box
Total Received 1.0	Total Consumed 1.0 On Loc 0.0
Supply Item Description TRASH/GENERAL WASTE	Unit Label Box
Total Received 0.0	Total Consumed 0.0 On Loc 0.0

### Safety Checks

Time	Type	Safety Topic

### Wellbores

Wellbore Name UNIVERSITY 3-35 #104HB

### Kick Offs & Key Depths

Type	Top Depth (ftKB)



## Partner Drilling Report

Report Date: 7/29/2017

Report #: 20.0, DFS: 9.29

Time Log DFS: 9.29

Depth Progress: 235.00

**Well Name: UNIVERSITY 3-35 #104HB**

Drill Strings							
BHA #6, Curve							
Bit Run	Drill Bit	IADC Bit Dull			TFA (incl Noz) (in <sup>2</sup> )		
1	8 1/2in, MMD55DM, 1287411	-----			1.86		
Nozzles (1/32")		BHA Length (ft)		String Wt (1000lbf)	Bit ROP (ft/hr)		
22/22/22/22/22		12,105.26			35.8		
Mud Motors							
Motor Bend		Bit to Bend		Rotor Nozzle Diameter (in)			
2.00 FIXED		0.0					
Drill String Components							
Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread		
HWDP	21	5	3.00	639.59	IF		
Drill Pipe	306	5	4.28	9,638.80	IF		
Agitator	1	6 9/16	2.50	23.78	IF		
Drill Pipe	54	5	4.28	1,702.49	IF		
Drill Collar - Non Mag	1	6 1/2	3.25	30.67	IF		
Non-Mag Hangoff Sub	1	6 1/2	3.25	5.45	IF		
Drill Collar - Non Mag	1	6 1/2	3.25	30.72	IF		
Mud Motor - Bent Housing	1	6 1/2	2.50	33.76	IF		
Drilling Parameters							
Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #104HB	8,155.0	8,205.0	50.00	1.64	1.64	30.5	556
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
25	0	2,736.0	180	184	180	0.0	0.0
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...
Hydraulic Calculations							
Bit Hydraulic Power (hp)	HP/Area (hp/in <sup>2</sup> )	Bit Jet Velocity (ft/s)		Bit Pressure Drop (psi)		% P @ bit (%)	
24.3	0.4	96.1		74.9		3	
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)		Min Open Hole AV (ft/min)		ECD End (lb/gal)	
257.3	51.8	99.6		48.5		9.06	
Error							
Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #104HB	8,205.0	8,252.0	97.00	1.40	3.04	33.6	556
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
29	0	2,724.0	180	184	180	0.0	0.0
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...
Hydraulic Calculations							
Bit Hydraulic Power (hp)	HP/Area (hp/in <sup>2</sup> )	Bit Jet Velocity (ft/s)		Bit Pressure Drop (psi)		% P @ bit (%)	
24.3	0.4	96.1		74.9		3	
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)		Min Open Hole AV (ft/min)		ECD End (lb/gal)	
257.3	51.8	99.6		48.5		9.06	
Error							
Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #104HB	8,252.0	8,287.0	132.00	1.02	4.06	34.3	556
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
30	0	2,730.0	180	184	180	0.0	0.0
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...
Hydraulic Calculations							
Bit Hydraulic Power (hp)	HP/Area (hp/in <sup>2</sup> )	Bit Jet Velocity (ft/s)		Bit Pressure Drop (psi)		% P @ bit (%)	
24.3	0.4	96.1		74.9		3	
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)		Min Open Hole AV (ft/min)		ECD End (lb/gal)	
257.3	51.8	99.6		48.5		9.06	
Error							
Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #104HB	8,287.0	8,299.0	144.00	0.21	4.27	57.1	556
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
31	43	2,870.0	180	184	180	3.0	
Q Gas Inj (ft <sup>3</sup> /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...



## Partner Drilling Report

Report Date: 7/29/2017

Report #: 20.0, DFS: 9.29

Time Log DFS: 9.29

Depth Progress: 235.00

Well Name: UNIVERSITY 3-35 #104HB

### Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in <sup>2</sup> )	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	96.1	74.9	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
257.3	51.8	99.6	48.5	9.06

Error

### Kicks

Kick Date	Kick Depth (ftKB)	Control Date	Control Depth (ftKB)	Kick Class
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Kill Notes

### Lost Circulation

Start Date	Top Depth (ftKB)	Bottom Depth (ftKB)	Ops In Prog	Vol Lost Tot (bbl)	End Date
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### Interval Problems

Problem Type	Problem Subtype	Start Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost (Cost)	Est Lost Time (hr)
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Action Taken

### Interval Lessons

Lesson Type	Start Date	End Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost Saving (Co...)	Est Time Saving (hr)
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Comment

### Safety Incidents

Time	Category	Type	Subtype	Cause	Lost time?	Severity
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### Leak Off and Formation Integrity Tests

Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
7/20/2017	13 3/8	1,461.0	1,460.8	TEST ON CHART: GOOD TEST	500.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
7/21/2017	Casing Test	8.30	14.80		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
7/25/2017	9 5/8	5,058.0	4,973.7	TEST ON CHART: GOOD TEST	1,500.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
7/25/2017	Casing Test	9.90	15.71		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
7/26/2017	9 5/8	5,058.0	4,973.7	TEST ON CHART: GOOD TEST	96.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
7/26/2017	F.I.T.	9.90	10.27		

### Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,149.00	15.99	9.64	8,021.75	64.73	-48.79	1,169.33	7.94
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,197.00	22.09	7.39	8,067.11	80.36	-33.31	1,171.60	12.80
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,243.00	28.97	3.59	8,108.59	100.17	-13.59	1,173.41	15.37
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,345.00	28.97	3.59	8,197.83	149.54	35.72	1,176.51	0.00