



Partner Drilling Report

Well Name: UNIVERSITY 3-35 #102HB

Report Date: 6/10/2017
Report #: 8.0, DFS: 6.48
Time Log DFS: 6.48
Depth Progress: 2,720.00

API/UWI No. 42461405920000	Surface Legal Location A-U47; SEC. 11; BLK. 4 CCSD&RGNG RR CO	Well License/Permit No. 826301	State/Province TEXAS
Original Spud/Spud Rig Date 6/3/2017 18:30	Rig Release Date	KB to GL (ft) 25.00	KB-Casing Flange Distance (ft)
Original Spud/Spud Rig Date 6/3/2017	Weather CLEAR/WINDY	Temperature (°F) 78.0	Road Condition GOOD
Current Status/OART DRILL AND SURVEY INTERMEDIATE HOLE	24 Hour Forecast DRILL 12 1/4" INTERMEDIATE HOLE.	Hole Condition GOOD	

Short Report
DRILL AND SURVEY 12 1/4" INTERMEDIATE HOLE F/ 2275' TO 4995'. DISPACE HOLE WITH WBM WHILE DRILLING.

Mud Volumes						
Active Volume (bbl) 1,000.9	Var Active Vol (bbl) 492.6	Balance (bbl) 490.3	Tank Volume (bbl) 454.0	Additions (bbl) 2.3	Losses (bbl) 0.0	Hole Volume (bbl) 546.9

Time Log						
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code
06:00	16:30	10.50	10IHVD, Int Hole Vert Drill	DR	b	O
DRILL AND SURVEY 12 1/4" INTERMEDIATE F/ 2275' TO 3708'. AVG ROP: 136.5 FT/HR						
16:30	17:00	0.50	10IHVD, Int Hole Vert Drill	RM	b	O
PERFORM RIG SERVICE.						
17:00	06:00	13.00	10IHVD, Int Hole Vert Drill	DR	b	O
DRILL AND SURVEY 12 1/4" INTERMEDIATE F/ 3708' TO 4995'. DISPLACE BRINE WATER WITH WBM WHILE DRILLING F/4883' TO 4936'. AVG ROP: 99 FT/HR						

Mud Checks						
Time 17:00	Type Brine	Depth (ftKB) 3,900.0	Density (kg/m³) (lb/g... 9.90	Funnel Viscosity (s/qt) 29	PV Calc (cP) 2.0	YP Calc (lb/100ft²) 1.000
Gel 10 sec (kPa) (lb... 2.001	Gell 10 min (kPa) (l... 2.001	Gel 30 min (kPa) (lb... 2.001	Filtrate (mL/30min) 90.0	Filter Cake (1/32") 10.0	pH 10.0	Solids (%)
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%) 92.0	Chlorides (kg/m³) (... 90,000.000	Calcium (kg/m³) (m... 10.0	Potassium (mg/L) 10.0	Electric Stab (V)
Time 05:00	Type Brine	Depth (ftKB) 2,140.0	Density (kg/m³) (lb/g... 9.60	Funnel Viscosity (s/qt) 29	PV Calc (cP) 2.0	YP Calc (lb/100ft²) 1.000
Gel 10 sec (kPa) (lb... 1.000	Gell 10 min (kPa) (l... 1.000	Gel 30 min (kPa) (lb... 1.000	Filtrate (mL/30min) 100.0	Filter Cake (1/32") 10.0	pH 10.0	Solids (%)
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%) 92.0	Chlorides (kg/m³) (... 77,000.000	Calcium (kg/m³) (m... 10.0	Potassium (mg/L) 10.0	Electric Stab (V)

Mud Volumes			
Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	Water		
Hole	Hole	546.9	
Tank	Reserve		
Loss	SURFACE EQUIPMENT		
Tank	TOTAL CIRC	454.0	
Tank	INVERMUL		
Addition	CHEMICALS	2.3	

Drill Strings			
BHA #2, Intermediate			
Bit Run 1	Drill Bit 12 1/4in, XS616S, JM9343	IADC Bit Dull -----	TFA (incl Noz) (in²) 0.78
Nozzles (1/32") 13/13/13/13/13/13		BHA Length (ft) 875.18	String Wt (1000lb) 119.5

Mud Motors		
Motor Bend 1.83 FIXED	Bit to Bend 6.21	Rotor Nozzle Diameter (in)

Drill String Components					
Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
XO Sub	1	7 5/8	3.88	2.81	IF
Drill Collar	7	6 1/2	2.50	213.97	NC46
Drilling Jars - Mechanical	1	6 1/2	2.25	31.78	NC46
Drill Collar	14	6 1/2	2.50	425.45	NC46
XO Sub	1	8	2.75	2.90	NC46
Drill Collar	3	8	2.81	93.21	NC56

AFE Number DD.17.30779.CAP.DRL	AFE+Supp Amt (Cost) 2,177,000.00
Day Total (Cost) 37,576	Cum To Date (Cost) 623,988
Mud Field Est (Cost) 1,955	Cum Mud Field Est (Co... 33,913
Start Depth (ftKB) 2,275.0	End Depth (ftKB) 4,995.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,216.0
Last Casing String Surface Casing, 684.0ftKB	

Daily Contacts	
Job Contact	Mobile
BRIAN ALLEMAN, Engineer	214-978-8000
CHRISTOPHER ABSHIRE, Foreman	281-220-5828
KEVIN GOTTE, Consultant	281-220-5828
TRAVIS PERSCHE, Rig Clerk/Logistics	281-220-5829

Personnel Log	
Head Count	19.0

Rigs	
HELMERICH & PAYNE DRILLING, 3	
Contractor HELMERICH & PAYNE DRILLING	Rig Number 394
Rig Supervisor THOMAS PENDERGRASS, Toolpusher	Phone Mobile 918-936-7394

1, Gardner-Denver, PZ-11			
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter...	
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.091	
P (psi)	Slow Spd	Strokes (s... Eff (%)	

2, Gardner-Denver, PZ-11			
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter...	
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.091	
P (psi)	Slow Spd	Strokes (s... Eff (%)	

Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
12 HR MUD ENGINEER	700.00	1.0
EZ MUD	85.03	3.0
LIME	6.00	25.0
MF-55	89.00	3.0
SCALE CHARGE	10.00	1.0
TRANSPORTATI ON	1.00	572.95

Job Supplies		
Supply Item Description DIESEL FOR OBM	Unit Label Gal	
Total Received 4,003.9	Total Consumed 0.0	On Loc 4,003.9
Supply Item Description DRILLING CUTTINGS	Unit Label Cu. Yds	
Total Received 0.0	Total Consumed 0.0	On Loc 0.0
Supply Item Description DRILLING WATER	Unit Label Bbl	
Total Received 346.0	Total Consumed 346.0	On Loc 0.0



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Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
XO Sub	1	7 15/16	3.13	2.99	NC56
Drill Collar - Non Mag	1	8 1/16	3.75	30.15	REG
Non-Mag Hangoff Sub	1	8 1/16	3.75	5.51	REG
Drill Collar - Non Mag	1	8	3.75	29.33	REG
Stabilizer	1	8 1/16	2.88	7.34	REG
Mud Motor - Bent Housing	1	8	2.88	28.44	REG

Drilling Parameters

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 2,275.0	End Depth (ftKB) 3,708.0	Cum Depth (ft) 2,988.00	Drilling Time (hr) 10.50	Cum Drill Time (hr) 22.50	Interval ROP (ft/hr) 136.5	Flow Rate (gpm) 795
WOB (1000lbf) 25	Rotary RPM (rpm) 70	SPP (psi) 3,038.0	Drill Str Wt (1000... 136	PU Str Wt (1000lbf) 169	SO Str Wt (1000lbf) 164	Drilling Torque 11.7	Off Btm Tq
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) 411.9	HP/Area (hp/in²) 3.5	Bit Jet Velocity (ft/s) 328.3	Bit Pressure Drop (psi) 888.3	% P @ bit (%) 29
Max Casing AV (ft/min) 188.2	Max Open Hole AV (ft/min) 229.1	Min Casing AV (ft/min) 188.0	Min Open Hole AV (ft/min) 78.5	ECD End (lb/gal) 9.15
Error				

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 3,708.0	End Depth (ftKB) 4,844.0	Cum Depth (ft) 4,124.00	Drilling Time (hr) 10.13	Cum Drill Time (hr) 32.63	Interval ROP (ft/hr) 112.1	Flow Rate (gpm) 795
WOB (1000lbf) 33	Rotary RPM (rpm) 70	SPP (psi) 3,274.0	Drill Str Wt (1000... 143	PU Str Wt (1000lbf) 162	SO Str Wt (1000lbf) 175	Drilling Torque 14.0	Off Btm Tq
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) 448.1	HP/Area (hp/in²) 3.8	Bit Jet Velocity (ft/s) 328.3	Bit Pressure Drop (psi) 966.4	% P @ bit (%) 30
Max Casing AV (ft/min) 188.2	Max Open Hole AV (ft/min) 229.1	Min Casing AV (ft/min) 188.0	Min Open Hole AV (ft/min) 78.5	ECD End (lb/gal) 9.96
Error				

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 4,844.0	End Depth (ftKB) 4,939.0	Cum Depth (ft) 4,219.00	Drilling Time (hr) 2.80	Cum Drill Time (hr) 35.43	Interval ROP (ft/hr) 33.9	Flow Rate (gpm) 400
WOB (1000lbf) 18	Rotary RPM (rpm) 70	SPP (psi) 1,470.0	Drill Str Wt (1000... 162	PU Str Wt (1000lbf) 189	SO Str Wt (1000lbf) 182	Drilling Torque 13.0	Off Btm Tq
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) 55.4	HP/Area (hp/in²) 0.5	Bit Jet Velocity (ft/s) 165.2	Bit Pressure Drop (psi) 237.2	% P @ bit (%) 16
Max Casing AV (ft/min) 94.7	Max Open Hole AV (ft/min) 115.3	Min Casing AV (ft/min) 94.6	Min Open Hole AV (ft/min) 39.5	ECD End (lb/gal) 9.62
Error				

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 4,939.0	End Depth (ftKB) 4,995.0	Cum Depth (ft) 4,275.00	Drilling Time (hr) 0.33	Cum Drill Time (hr) 35.76	Interval ROP (ft/hr) 169.7	Flow Rate (gpm) 795
WOB (1000lbf) 35	Rotary RPM (rpm) 70	SPP (psi) 3,320.0	Drill Str Wt (1000... 162	PU Str Wt (1000lbf) 189	SO Str Wt (1000lbf) 182	Drilling Torque 12.0	Off Btm Tq
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) 434.6	HP/Area (hp/in²) 3.7	Bit Jet Velocity (ft/s) 328.3	Bit Pressure Drop (psi) 937.1	% P @ bit (%) 28
Max Casing AV (ft/min) 188.2	Max Open Hole AV (ft/min) 229.1	Min Casing AV (ft/min) 188.0	Min Open Hole AV (ft/min) 78.5	ECD End (lb/gal) 9.65
Error				

Kicks

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

Job Supplies

Supply Item Description DRILLING WATER	Unit Label Bbl
Total Received 9,718.0	Total Consumed 9,718.0
On Loc 0.0	
Supply Item Description FUEL	Unit Label Gal
Total Received 17,016.5	Total Consumed 9,684.5
On Loc 7,332.0	
Supply Item Description LIQUID DRILLING WASTE	Unit Label Bbl
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	
Supply Item Description POTABLE WATER	Unit Label Gal
Total Received 5,300.0	Total Consumed 5,300.0
On Loc 0.0	
Supply Item Description SEWAGE	Unit Label Gal
Total Received 9,900.0	Total Consumed 9,900.0
On Loc 0.0	
Supply Item Description THREAD PROTECTORS	Unit Label Box
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	
Supply Item Description TRASH/GENERAL WASTE	Unit Label Ea
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	

Safety Checks

Time	Type	Safety Topic
17:30	Pre-Tour	HAND PLACEMENT
05:30	Pre-Tour	PRESSURE WASHER USAGE

Wellbores

Wellbore Name	
UNIVERSITY 3-35 #102HB	
Kick Offs & Key Depths	
Type	Top Depth (ftKB)



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Lost Circulation

Start Date	Top Depth (ftKB)	Bottom Depth (ftKB)	Ops In Prog	Vol Lost Tot (bbl)	End Date
6/3/2017 20:30	192.0				

Interval Problems

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

Action Taken

Interval Lessons

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

Comment

Safety Incidents

Time	Category	Type	Subtype	Cause	Lost time?	Severity

Leak Off and Formation Integrity Tests

Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
6/4/2017	13 3/8	684.0	684.0		500.0

Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)
6/8/2017	Casing Test	9.10	23.17

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
2,236.00	4.52	243.41	2,234.59	-19.00	-18.83	-28.00	0.73
2,331.00	4.43	245.52	2,329.30	-22.23	-22.03	-34.69	0.20
2,426.00	3.99	245.01	2,424.04	-25.19	-24.95	-41.02	0.46
2,520.00	3.99	242.10	2,517.81	-28.14	-27.86	-46.88	0.22
2,615.00	4.36	245.03	2,612.56	-31.24	-30.93	-53.07	0.45
2,709.00	4.29	244.58	2,706.29	-34.30	-33.95	-59.48	0.08
2,804.00	3.94	247.70	2,801.05	-37.10	-36.71	-65.71	0.44
2,898.00	3.65	241.30	2,894.84	-39.80	-39.37	-71.33	0.55
2,993.00	3.80	243.66	2,989.64	-42.68	-42.22	-76.80	0.23
3,087.00	3.20	247.09	3,083.47	-45.11	-44.62	-82.01	0.68
3,181.00	3.07	239.69	3,177.33	-47.43	-46.92	-86.60	0.45
3,276.00	2.89	235.80	3,272.20	-50.08	-49.55	-90.77	0.28
3,371.00	2.32	237.75	3,367.10	-52.48	-51.92	-94.38	0.61
3,466.00	2.59	233.40	3,462.01	-54.80	-54.22	-97.73	0.35
3,560.00	2.42	235.80	3,555.92	-57.21	-56.61	-101.08	0.21
3,654.00	1.88	237.11	3,649.86	-59.18	-58.56	-104.01	0.58
3,749.00	1.66	237.83	3,744.81	-60.77	-60.14	-106.49	0.23
3,844.00	1.58	238.93	3,839.77	-62.19	-61.55	-108.77	0.09
3,939.00	1.39	244.86	3,934.74	-63.37	-62.71	-110.94	0.26
4,033.00	1.43	247.67	4,028.71	-64.31	-63.64	-113.06	0.08
4,127.00	1.48	247.44	4,122.68	-65.24	-64.55	-115.26	0.05
4,222.00	1.72	246.48	4,217.65	-66.29	-65.59	-117.70	0.25
4,316.00	1.61	245.67	4,311.61	-67.41	-66.70	-120.20	0.12
4,411.00	1.67	245.10	4,406.57	-68.56	-67.83	-122.67	0.07
4,505.00	1.63	242.73	4,500.53	-69.76	-69.02	-125.10	0.08
4,599.00	1.88	243.52	4,594.48	-71.08	-70.32	-127.67	0.27



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MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
4,693.00	1.79	240.49	4,688.44	-72.50	-71.73	-130.33	0.14
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
4,788.00	1.83	244.71	4,783.39	-73.90	-73.11	-132.99	0.15
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
4,883.00	1.75	239.12	4,878.34	-75.31	-74.50	-135.61	0.20
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
4,995.00	1.75	239.12	4,990.29	-77.08	-76.26	-138.54	0.00