



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 10/29/2019

Report #: 5.0, DFS: 4.50

Time Log DFS: 4.50

Depth Progress: 366.00

API/UWI No. 42461412550000	Surface Legal Location A-160; SEC. 51; GC&SF RR CO	Well License/Permit No. 855360	State/Province TEXAS	County UPTON
Original Spud/Spud Rig Date 10/24/2019 18:00	Large Rig Spud Date 10/24/2019 18:00	Rig Release Date	KB to GL (ft) 26.50	KB-CF (ft) 27.90
Weather Clear	Temperature (°F) 35.0	Road Condition Good	Hole Condition Good	
Current Status/OART Cementing 9 5/8" casing - pumping displacement		24 Hour Forecast Finsh pumping cement displacement. Install pack off and test. Install wearbushing. Pick up 8 3/4" BHA and trip in the hole. Test intermediate casing to 1500 psi. Drill shoe track and 10 ft new formation. Perform F.I.T Test to 12 ppg EMW. Drill ahead and displace to OBM. Drill ahead per directional plan.		

Short Report
Rotary drill in 12 1/4 in intermediate hole section F/ 4,905' T/ 5,271'. Perform clean up cycle. Trip out of hole from 5,271' to BHA. L/D BHA. Pull Wear Bushing. R/U Casing Crew. R/9 5/8" Casing T/5,256'. R/U Cementers. Circulate. Cement 9 5/8" casing.

Active Volume (bbl) 2,746.9	Var Active Vol (bbl) 511.1	Balance (bbl) 167.4	Tank Volume (bbl) 1,522.6	Additions (bbl) 343.7	Losses (bbl) 0.0	Hole Volume (bbl) 1,224.3
--------------------------------	-------------------------------	------------------------	------------------------------	--------------------------	---------------------	------------------------------

Time Log							Operation Summary
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code	
06:00	09:30	3.50	INT 1, VERT Drill	DR	DR L	O	Rotary drill in 12 1/4 in intermediate hole section F/ 4,905' T/ 5,271' 366' at 104 FPH ROP Pump 30 Bbl High Vis Sweeps every (2) Stds F/4,800'. Note: Notified TRRC for casing and cement operations. Spoke with Rachael of TRRC. Job # 199404
09:30	11:00	1.50	INT 1, VERT Post-Drill	CI	CIR C	O	Perform clean up cycle as follows- Pump (2) Hi-Vis sweeps and circulate to surface. Offline: Build Slug.
11:00	11:15	0.25	INT 1, VERT Post-Drill	CI	FL OW CH K	O	Flow Check. Well static. Pump slug.
11:15	15:00	3.75	INT 1, VERT Post-Drill	TP	TO H	O	Trip out of hole from 5,271' to BHA'. Max overpull off bottom 20K. Hole took proper fill
15:00	16:30	1.50	INT 1, VERT Post-Drill	TP	BH AL D	O	L/D 12 1/4" vertical intermediate directional tools. Bit, Motor, Stab, Shock sub & 3 x 8" Collars. Bit grade: 2-2-BT-N-X-2-CT-TD.
16:30	18:00	1.50	INT 1, VERT Post-Drill	WH	WB OU T	O	Pull Wear Bushing
18:00	18:30	0.50	INT 1, Case	SM	PR EJ OB	O	PJSM with Summit casing crew, HOC-Rep, and H&P rig crew on rigging up casing tools and running 9 5/8" intermediate 40# K-55HC BTC casing.
18:30	20:00	1.50	INT 1, Case	CS	CS GR U	O	Rig up Summit CRT and casing tools.
20:00	23:45	3.75	INT 1, Case	CS	CS GR UN	O	Make up shoe track and float equipment and run casing from surface to 5,222'. Make up landing joint and RIH and land at 5,256' verified by FMC and HOC reps. Notable depths: Casing shoe @ 5,256'. Float collar @ 5,177' Ran a total of 133 joints of 9 5/8" intermediate casing. Installed (17) 11" solid body centralizers. Note: Observed no tight spots while running casing.

AFE Number DD.19.31597.CAP.DRL	AFE+Supp Amt (Cost) 2,663,000.00
Day Total (Cost) 211,466	Cum To Date (Cost) 716,479
Mud Field Est (Cost) 1,110	Cum Mud Field Est (Co... 5,014
Start Depth (ftKB) 4,905.0	End Depth (ftKB) 5,271.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,297.0
Last Casing String Intermediate Casing, 5,256.0ftKB	

Daily Contacts	
Job Contact	Mobile
STEVE BIEREN, Engineer	972-207-9164
CHAD DORSEY, Consultant	432-241-0087
CURTIS THOMAS, Consultant	(318) 245-3261
JEFF POOLE, Foreman	432-241-0123

Personnel Log	
Head Count	19.0

Rigs	
Helmerich & Payne Drilling, 394	
Contractor Helmerich & Payne Drilling	Rig Number 394
Rig Supervisor AARON DUNAWAY, Toolpusher	Phone Mobile 601-248-1508

2, Gardner-Denver, pz11		
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097
P (psi) 2,730.0	Slow Spd No	Strokes (s... 97
		Eff (%) 95

1, Gardner-Denver, pz11		
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097
P (psi) 2,730.0	Slow Spd No	Strokes (s... 97
		Eff (%) 95

Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
24 HR MUD	700.00	1.0
ENGINEER		
BAROID (BULK)	205.00	2.0

Job Supplies	
Supply Item Description DIESEL FOR OBM	Unit Label Gal
Total Received 24,504.0	Total Consumed 7,854.0
On Loc 16,650.0	

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 0.0	Total Consumed 0.0
On Loc 0.0	

Supply Item Description FUEL	Unit Label Gal
Total Received 17,255.0	Total Consumed 7,802.0
On Loc 9,453.0	

Supply Item Description LIQUID DRILLING WASTE	Unit Label Bbl
Total Received 60.0	Total Consumed 60.0
On Loc 0.0	



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 10/29/2019

Report #: 5.0, DFS: 4.50

Time Log DFS: 4.50

Depth Progress: 366.00

Time Log

Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code	Operation Summary
23:45	03:00	3.25	INT 1, Case	CI	CIR C	O	Rig up circulating iron and cement head. Circulate 1.5 times casing volume. Full returns. Offline: Rig down casing equipment while circulating.
03:00	03:30	0.50	INT 1, Case	SM	PR EJ OB	O	Held PJSM with HOC, H&P and Schlumberger over rigging up and cement operations.
03:30	06:00	2.50	INT 1, Case	CE	CM T	O	Mix and pump intermediate cement job: Test lines to 4,000 psi. Pump 20 bbls of visc. water. -Lead slurry: Pump 390 bbls (783 sacks) of Class TXI cement @ 11 PPG, Yield 2.70, mix fluid 16.51 gal / sack. - Tail slurry: Pump 57 bbls (239 sacks) of class C cement @ 14.8 PPG, Yield 1.33, mix fluid 6.35 gal / sack. - Drop plug. -Pumping fresh water displacement at report time.

Mud Checks

Time	Type	Depth (ftKB)	Density (kg/m³) (lb/gal)	Funnel Viscosity (s/qt)	PV Calc (cP)	YP Calc (lb/100ft²)
05:00	Brine	5,271.0	9.90	29	1.0	3.000
Gel 10 sec (kPa) (lb/100ft²)	Gel 10 min (kPa) (lb/100ft²)	Gel 30 min (kPa) (lb/100ft²)	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%)
1.000	1.000	1.000	100.0		8.0	
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%)	Chlorides (kg/m³) (mEq/L)	Calcium (kg/m³) (mEq/L)	Potassium (mg/L)	Electric Stab (V)
		89.5	165,000.000			810.0

Mud Volumes

Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	ANNULUS	336.0	WBM
Hole	PIPE CAPACITY	444.1	WBM
Hole	TOTAL HOLE	780.2	WBM
Tank	ACTIVE PITS	371.2	WBM
Tank	TOTAL CRIC	1,151.4	WBM
Tank	RESERVE	0.0	WBM
Addition	BASE	0.0	WBM
Addition	DRILL WATER	4.9	Fresh water
Addition	BRINE	0.0	Salt Water
Addition	WHOLE MUD	0.0	WBM
Addition	BARITE	2.8	Weighting Agent
Addition	CHEMICALS	0.0	WBM
Loss	SCE	0.0	WBM
Loss	DOWNHOLE	0.0	WBM
Loss	TRIPS	0.0	WBM
Loss	TRANSFERED	0.0	WBM
Loss	MISC / OTHER	0.0	WBM

Drill Strings

BHA #2, Intermediate

Bit Run	Drill Bit	IADC Bit Dull	TFA (incl Noz) (in²)
1	12 1/4in, XS616S, JP7982	2-2-BT-N-X-2-CT-TD	1.17
Nozzles (1/32")	BHA Length (ft)	String Wt (1000lb)	Bit ROP (ft/hr)
13/13/13/13/13/13/13/13	5,271.00	173	96.8

Mud Motors

Motor Bend	Bit to Bend	Rotor Nozzle Diameter (in)
1.83 FIXED	5.4	

Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
Drill Pipe	118	5	2.88	3,746.25	IF
HWDP-Spiral	12	5	3.00	361.54	IF

Job Supplies

Supply Item Description	Unit Label
LIQUID DRILLING WASTE	Bbl
Total Received 0.0	Total Consumed 0.0 On Loc 0.0
Supply Item Description	Unit Label
POTABLE WATER	Gal
Total Received 4.0	Total Consumed 4.0 On Loc 0.0
Supply Item Description	Unit Label
SEWAGE	Gal
Total Received 4,800.0	Total Consumed 4,800.0 On Loc 0.0
Supply Item Description	Unit Label
THREAD PROTECTORS	Box
Total Received 0.0	Total Consumed 0.0 On Loc 0.0
Supply Item Description	Unit Label
TRASH/GENERAL WASTE	Cu. Yds
Total Received 0.0	Total Consumed 0.0 On Loc 0.0

Safety Checks

Time	Type	Safety Topic
17:45	Pre-Tour	Cementing Casing
05:45	Pre-Tour	P/U BHA Hand Placement

Wellbores

Wellbore Name	UNIVERSITY 1-2 40 #104HB
Kick Offs & Key Depths	
Type	Top Depth (ftKB)
Conductor Shoe	105.0
Surface Shoe	1,078.0
Intermediate 1 Shoe	5,256.0



Partner Drilling Report

Report Date: 10/29/2019

Report #: 5.0, DFS: 4.50

Time Log DFS: 4.50

Depth Progress: 366.00

Well Name: UNIVERSITY 1-2 40 #104HB**Drill String Components**

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
Drilling Jars - Hydraulic	1	6 1/2	2.50	27.70	IF
HWDP	30	5	3.00	909.41	IF
XO Sub	1	8	3.25	4.00	IF
Drill Collar	3	8	2.88	91.14	NC 56
XO Sub	1	8	3.25	3.93	NC 56
Drill Collar - Non Mag	1	8	3.75	30.85	Reg
Non-Mag Hangoff Sub	1	8	3.75	6.30	Reg
Drill Collar - Non Mag	1	8	3.75	28.00	Reg
Shock Sub	1	8	3.00	14.49	Reg
Stabilizer	1	11 3/4	2.75	7.94	Reg
Mud Motor	1	9.15	2.88	37.95	Reg

Variable Gauge Stabilizers

Blade Type	Max Gauge (in)	Blade Angle
	11.750	

Drilling Parameters

Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drill Time (hr)	Int ROP (ft/hr)	Q Flow (gpm)	WOB (1000lbf)	dP (SPP) (psi)	Rotary RPM (rpm)	Drill Tq	SPP (psi)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)
4,905.0	5,271.0	4,175.00	3.50	104.6	744	25	275.0	75	15.0	2,900.0	200	150	195

Hydraulic Calculations

Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in²)	P Drop Annular (psi)
4,905.0	5,271.0	9.88	133.3	133.3	1,519.6	48.6	162.3	1.4	7.7

Kicks

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

Kill Notes

Lost Circulation

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

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...
10/25/2019	13 3/8	1,078.0	1,077.9	Test Surface Casing to 500 psi for 30 Minutes. Good Test	500.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
10/26/2019	Casing Test	8.50	17.43		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
10/28/2019	9 5/8	5,256.0	5,189.5	Test Surface Casing to 1500 psi for 30 Minutes. Good Test	1,500.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
10/29/2019	Casing Test	8.50	14.06		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
10/28/2019	9 5/8	5,256.0	5,189.5	FIT 12.0 EMW 980 psi	980.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
10/29/2019	F.I.T.	8.40	12.03		

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
4,934.00	12.36	269.15	4,874.58	-15.32	-50.17	-589.61	0.15
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,028.00	12.29	269.36	4,966.41	-14.39	-50.43	-609.67	0.09
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,123.00	11.89	269.10	5,059.30	-13.49	-50.69	-629.57	0.42



Partner Drilling Report

Report Date: 10/29/2019

Report #: 5.0, DFS: 4.50

Time Log DFS: 4.50

Depth Progress: 366.00

Well Name: UNIVERSITY 1-2 40 #104HB

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,186.00	11.88	268.35	5,120.95	-13.01	-50.98	-642.54	0.25



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 10/30/2019

Report #: 6.0, DFS: 5.50

Time Log DFS: 5.50

Depth Progress: 789.00

API/UWI No. 42461412550000	Surface Legal Location A-160; SEC. 51; GC&SF RR CO	Well License/Permit No. 855360	State/Province TEXAS	County UPTON
Original Spud/Spud Rig Date 10/24/2019 18:00	Large Rig Spud Date 10/24/2019 18:00	Rig Release Date	KB to GL (ft) 26.50	KB-CF (ft) 27.90
Weather Drizzle / Mist	Temperature (°F) 34.0	Road Condition Good	Hole Condition Good	
Current Status/OART Drilling 8 3/4" vertical Section @ 6,060'		24 Hour Forecast Rotate / Slide drill in 8 3/4" vertical production section		

Short Report
Complete Cement Displacement. Install Pack Off & Test. Install Wear Bushing. P/U BHA. Trip in hole from BHA to 5,161'. Fill pipe and Circulate bottoms up. Perform casing integrity test. Drill out shoe track. Drill 10' new formation from 5,271' to 5,281'. Circulate clean up cycle. Spot pill. Perform F.I.T. to EMW of 12.0 ppg. Displace to OBM. Rotate / Slide drill in 8 3/4" vertical production section from 5,281' to 6,060' at report time.

Mud Volumes						
Active Volume (bbl) 2,782.6	Var Active Vol (bbl) 35.7	Balance (bbl) -366.1	Tank Volume (bbl) 2,381.1	Additions (bbl) 513.2	Losses (bbl) 111.4	Hole Volume (bbl) 401.5

Time Log							Operation Summary
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code	
06:00	06:30	0.50	INT 1, Case	CE	CM T	O	- Finish Pumping 392.9 bbls of fresh water displacement - Bump plug @ 06:10 hrs with 1,500 psi, 500 psi over final circulating pressure. Held for 5 min. - Bled back 2.5 bbls. - Floats held. Full returns throughout cement job.
06:30	07:00	0.50	INT 1, Case	CE	CM TR D	O	Rig down cement equipment. Note: Transfer 9.0 ppg OBM to active system.
07:00	08:00	1.00	INT 1, Case	WH	PK OI N	O	Lay down FMC landing joint. Rig down bails and elevators. Offline: Flush lines with sugar water.
08:00	09:00	1.00	INT 1, Case	WH	PK OI N	O	Rig up FMC wash down tool. Wash down over pack off seat in wellhead for 30 min. Lay down FMC wash tool.
09:00	10:00	1.00	INT 1, Case	WH	PK OI N	O	Pick up and set pack off and test to 5,000 psi. Perform pull test to 50K pull.
10:00	10:30	0.50	INT 1, Case	WH	WB IN	O	Install wear bushing.
10:30	11:30	1.00	PROD 1, VERT Pre-Drill	TP	BH AP U	O	Prep Rig Floor. Center BOP Stack. Layout BHA
11:30	11:45	0.25	PROD 1, VERT Pre-Drill	SM	PR EJ OB	O	PJSM on picking up & Make up BHA #3.
11:45	13:30	1.75	PROD 1, VERT Pre-Drill	TP	BH AP U	O	Make up 8 3/4" vertical BHA #3 consisting of : (1) 7" SDI 7/8 lobe / 9.4 stage/ 1.83 deg titan motor, (1) NMDC, (1) HOS, (1) NMDC, (1) 4.5" X 5.5" crossover sub. Install MWD and perform shallow test. Make up 8 3/4" GTD55DM Halliburton PDC bit S/N: 13244806.
13:30	16:30	3.00	PROD 1, VERT Pre-Drill	TP	TIH	O	Trip in hole with 8 3/4" Vertical production section F/BHA T/5,161'.
16:30	17:30	1.00	PROD 1, VERT Pre-Drill	PT	CS GT ST	O	Fill Pipe. Line up & conduct casing integrity test to 1,500 psi for 30 minutes. Good Test
17:30	19:15	1.75	PROD 1, VERT Pre-Drill	CS	CM TD RL	O	Drill out cement and shoe track From 5,177' to 5,256'. Wash From 5,256 to 5,271'. No tally correction needed.
19:15	19:30	0.25	PROD 1, VERT Drill	DR	DR L	O	Drill ahead 10' of new formation from 5,271' to 5,281'
19:30	20:30	1.00	PROD 1, VERT Drill	CI	CIR C	O	Spot Hi Vis Pill prior to FIT.

A/E Number DD.19.31597.CAP.DRL	A/E+Supp Amt (Cost) 2,663,000.00
Day Total (Cost) 140,277	Cum To Date (Cost) 856,757
Mud Field Est (Cost) 11,699	Cum Mud Field Est (Co... 16,713
Start Depth (ftKB) 5,271.0	End Depth (ftKB) 6,060.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,297.0

Last Casing String
Intermediate Casing, 5,256.0ftKB

Daily Contacts	
Job Contact	Mobile
STEVE BIEREN, Engineer	972-207-9164
CHAD DORSEY, Consultant	432-241-0087
CURTIS THOMAS, Consultant	(318) 245-3261
JEFF POOLE, Foreman	432-241-0123

Personnel Log	
Head Count	19.0

Rigs
Helmerich & Payne Drilling, 394

Contractor Helmerich & Payne Drilling	Rig Number 394
Rig Supervisor AARON DUNAWAY, Toolpusher	Phone Mobile 601-248-1508

2, Gardner-Denver, pz11		
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097
P (psi) 2,700.0	Slow Spd No	Strokes (s... 78
		Eff (%) 95

1, Gardner-Denver, pz11		
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097
P (psi) 2,730.0	Slow Spd No	Strokes (s... 78
		Eff (%) 95

Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
24 HR MUD ENGINEER	700.00	1.0
AQUAGEL	150.00	1.0
BARACARB 150	13.30	3.0
BARACARB 50	13.30	3.0
BAROID (BULK)	205.00	7.0
CALCIUM CHL 95 -98%	17.10	50.0
DRILTREAT	97.02	7.0
GELTONE V	65.00	10.0
INVERMUL	558.60	1.0
LIME	6.00	50.0
MICA FINE	15.00	4.0
OBM RENTAL ON RETURN MUD	1.00	1,859.0
RM-63	1,618.23	1.0
SKID	200.00	2.0
SODA ASH	13.25	1.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 10/30/2019

Report #: 6.0, DFS: 5.50

Time Log DFS: 5.50

Depth Progress: 789.00

Time Log										Mud Additive Amounts					
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code	Operation Summary			Mud Additive Description	Field Est (Cost/unit)	Consumed			
20:30	21:30	1.00	PROD 1, VERT Drill	PT	FIT	O	Pick up and space out.			SUSPENTONE	134.10	10.0			
							Perform F.I.T. to 12+ PPG with 8.4 PPG FW. Pressure up to 980 psi, Shut off pumps, pressure held for 5 minutes. Good Test.			TANK	500.00	2.0			
21:30	06:00	8.50	PROD 1, VERT Drill	DR	DR L	O	Rotate / Slide drill in 8 3/4" vertical production section from 5,281' to 6,060'.			Job Supplies					
							779' @ 91 FPH.			Supply Item Description					
							Note: Displace to OBM while drilling ahead. Dusting up mud system at report time.			DIESEL FOR OBM					
Mud Checks										Unit Label					
										Gal					
Time	Type	Depth (ftKB)	Density (kg/m³) (lb/g...	Funnel Viscosity (s/qt)	PV Calc (cP)	YP Calc (lb/100ft²)									
17:00	Fresh Water	5,271.0	8.40	28	1.0	3.000									
Gel 10 sec (kPa) (lb...	Gell 10 min (kPa) (l...	Gel 30 min (kPa) (lb...	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%)									
1.000	1.000	1.000	100.0		8.0										
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%)	Chlorides (kg/m³) (...)	Calcium (kg/m³) (m...	Potassium (mg/L)	Electric Stab (V)									
		99.3	1,100.000												
Time	Type	Depth (ftKB)	Density (kg/m³) (lb/g...	Funnel Viscosity (s/qt)	PV Calc (cP)	YP Calc (lb/100ft²)									
05:00	INVERMUL	5,961.0	8.50	50	7.0	9.000									
Gel 10 sec (kPa) (lb...	Gell 10 min (kPa) (l...	Gel 30 min (kPa) (lb...	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%)									
1.000	1.000	1.000				7.0									
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%)	Chlorides (kg/m³) (...)	Calcium (kg/m³) (m...	Potassium (mg/L)	Electric Stab (V)									
	74.0	19.0	32,000.000	22,000.000		890.0									
Mud Volumes										Supply Item Description					
										DRILLING WATER					
										Unit Label					
										Bbl					
										Total Received					
										0.0					
										Total Consumed					
										0.0					
										On Loc					
										0.0					
										Supply Item Description					
										FUEL					
										Unit Label					
										Gal					
										Total Received					
										17,255.0					
										Total Consumed					
										7,802.0					
										On Loc					
										9,453.0					
										Supply Item Description					
										LIQUID DRILLING WASTE					
										Unit Label					
										Bbl					
										Total Received					
										60.0					
										Total Consumed					
										60.0					
										On Loc					
										0.0					
										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					
										4.0					
										Total Consumed					
										4.0					
										On Loc					
										0.0					
										Supply Item Description					
										SEWAGE					
										Unit Label					
										Gal					
										Total Received					
										4,800.0					
										Total Consumed					
										4,800.0					
										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					
										Cu. Yds					
										Total Received					
										0.0					
										Total Consumed					
										0.0					
										On Loc					
										0.0					
Safety Checks															
Time	Type		Safety Topic												
17:45	Pre-Tour		Proper PPE												
05:45	Pre-Tour		LOT												
Wellbores															
Wellbore Name										UNIVERSITY 1-2 40 #104HB					
Kick Offs & Key Depths															
Type										Top Depth (ftKB)					
Conductor Shoe										105.0					
Surface Shoe										1,078.0					
Intermediate 1 Shoe										5,256.0					
										</					



Partner Drilling Report

Report Date: 10/30/2019

Report #: 6.0, DFS: 5.50

Time Log DFS: 5.50

Depth Progress: 789.00

Well Name: UNIVERSITY 1-2 40 #104HB**Drilling Parameters**

Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drill Time (hr)	Int ROP (ft/hr)	Q Flow (gpm)	WOB (1000lbf)	dP (SPP) (psi)	Rotary RPM (rpm)	Drill Tq	SPP (psi)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)
5,556.0	5,572.0	301.00	0.50	32.0	593	25	250.0	0	0.0	2,400.0	196	140	185
5,572.0	5,653.0	382.00	0.43	188.4	593	30	350.0	70	9.0	2,650.0	195	145	186
5,653.0	5,672.0	401.00	0.25	76.0	593	30	275.0	0	0.0	2,450.0	198	150	186
5,672.0	6,060.0	789.00	3.45	112.5	593	30	350.0	70	9.3	2,700.0	195	155	188

Hydraulic Calculations

Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in²)	P Drop Annular (psi)
5,271.0	5,556.0	8.47	274.4	106.2	143.8	38.8	27.8	0.5	19.1
5,556.0	5,572.0	8.47	274.4	106.2	143.8	38.8	27.8	0.5	19.1
5,572.0	5,653.0	8.47	274.4	106.2	143.8	38.8	27.8	0.5	19.1
5,653.0	5,672.0	8.47	274.4	106.2	143.8	38.8	27.8	0.5	19.1
5,672.0	6,060.0	8.62	274.4	106.2	143.8	38.8	28.2	0.5	37.1

Kicks

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

Kill Notes

Lost Circulation

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

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...
10/25/2019	13 3/8	1,078.0	1,077.9	Test Surface Casing to 500 psi for 30 Minutes. Good Test	500.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
10/26/2019	Casing Test	8.50	17.43		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
10/28/2019	9 5/8	5,256.0	5,189.5	Test Surface Casing to 1500 psi for 30 Minutes. Good Test	1,500.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
10/29/2019	Casing Test	8.50	14.06		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
10/28/2019	9 5/8	5,256.0	5,189.5	FIT 12.0 EMW 980 psi	980.0
Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)		
10/29/2019	F.I.T.	8.40	12.03		

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,282.00	11.14	268.89	5,215.02	-12.34	-51.45	-661.69	0.78
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,377.00	9.38	268.34	5,308.50	-11.75	-51.85	-678.61	1.86
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,471.00	8.85	265.91	5,401.31	-11.61	-52.59	-693.48	0.70
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,566.00	8.12	263.48	5,495.27	-12.07	-53.87	-707.43	0.86
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,660.00	9.19	264.35	5,588.20	-12.73	-55.36	-721.50	1.15
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,754.00	9.42	259.10	5,680.97	-14.03	-57.56	-736.52	0.94
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,849.00	8.37	262.92	5,774.82	-15.50	-59.88	-751.02	1.27
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,943.00	7.97	257.26	5,867.87	-17.00	-62.16	-764.16	0.96
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
6,060.00	7.97	257.26	5,983.74	-19.64	-65.74	-779.99	0.00



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 10/31/2019

Report #: 7.0, DFS: 6.50

Time Log DFS: 6.50

Depth Progress: 1,812.00

API/UWI No. 42461412550000	Surface Legal Location A-160; SEC. 51; GC&SF RR CO	Well License/Permit No. 855360	State/Province TEXAS	County UPTON
Original Spud/Spud Rig Date 10/24/2019 18:00	Large Rig Spud Date 10/24/2019 18:00	Rig Release Date	KB to GL (ft) 26.50	KB-CF (ft) 27.90
Weather Clear	Temperature (°F) 20.0	Road Condition Good	Hole Condition Good	
Current Status/OART TIH W/BHA #4		24 Hour Forecast TIH W/8 1/2" Curve BHA #4. Build Curve.		

Short Report
Rotate / Slide drill in 8 3/4" vertical production section from 6,060' to 7,872'. Circulate clean up cycle. 2 x 20 Bbl Sweeps. Check Flow. TOH to BHA. L/D BHA #3. P/U 8 1/2" Curve BHA #4.

Mud Volumes						
Active Volume (bbl) 2,344.7	Var Active Vol (bbl) -437.9	Balance (bbl) -428.2	Tank Volume (bbl) 1,752.1	Additions (bbl) 76.8	Losses (bbl) 86.5	Hole Volume (bbl) 592.6

Time Log						
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code
06:00	17:00	11.00	PROD 1, VERT Drill	DR	DR L	O
Rotate / Slide drill in 8 3/4" vertical production section from 6,060' to 7,336'. 1276' @ 116 FPH.						
17:00	17:30	0.50	PROD 1, VERT Drill	RM	MA IN	O
Rig service - Lubricate rig, Grease TDS, Blocks, Check oil in TDS., Grease grabber, IBOP and swivel packing. Grease / inspect elevators. Grease tongs. Inspect pull lines and snub lines. Grease / inspect ST-80.						
17:30	21:15	3.75	PROD 1, VERT Drill	DR	DR L	O
Rotate / Slide drill in 8 3/4" vertical production section from 7,336' to 7,872'. 536' @ 142 FPH. 24 hrs losses: 86.5 bbl's Surface: 86.5 bbl's. Down Hole: 0 bbl's. Total OBM losses: 86.5 bbl's.						
21:15	22:30	1.25	PROD 1, VERT Post-Drill	CI	CIR C	O
Circulate clean up cycle. 2 x 20 Bbl Sweeps.						
22:30	22:45	0.25	PROD 1, VERT Post-Drill	CI	FL OW CH K	O
Flow check. No Flow. Pump Slug.						
22:45	03:30	4.75	PROD 1, VERT Post-Drill	TP	TO H	O
Trip out of hole from 7,872' to BHA'. Hole took proper fill						
03:30	04:30	1.00	PROD 1, VERT Post-Drill	TP	BH AH DL	O
L/D 8 3/4" Bha #3 vertical production directional tools. Bit, Motor. 8 3/4" GTD55DM Halliburton PDC bit S/N: 13244806. Bit grade: 1-2-CT-S-X-1-WT-TD.						
04:30	06:00	1.50	PROD 1, CURVE Pre-Drill	TP	BH AH DL	O
Make up 8 1/2" Curve / Lateral BHA #4 consisting of : (1) 7" SDI 7/8 lobe / 9.4 stage/ 1.83 deg titan motor, (1) NMDC, (1) HOS, (1) NMDC, (1) 4.5" X 5.5" crossover sub. Install MWD and perform shallow test. Make up 8 1/2" DD506TX Baker PDC bit S/N: 5304951.						

Mud Checks						
Time 05:00	Type INVERMUL	Depth (ftKB) 7,872.0	Density (kg/m³) (lb/gal) 8.80	Funnel Viscosity (s/qt) 51	PV Calc (cP) 9.0	YP Calc (lb/100ft²) 9.000
Gel 10 sec (kPa) (lb... 11.000	Gell 10 min (kPa) (l... 15.000	Gel 30 min (kPa) (lb... 19.000	Filtrate (mL/30min) 9.0	Filter Cake (1/32") pH	Solids (%) 8.5	
MBT (lb/bbl)	Percent Oil (%) 73.0	Percent Water (%) 18.5	Chlorides (kg/m³) (... 33,000.000	Calcium (kg/m³) (m... 21,600.000	Potassium (mg/L) 901.0	Electric Stab (V) 901.0

Mud Volumes			
Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	ANNULUS	3.4	WBM
Hole	PIPE CAPACITY	0.7	WBM
Hole	TOTAL HOLE	591.9	WBM
Tank	ACTIVE PITS	472.0	WBM
Tank	TOTAL CRIC	476.1	WBM
Tank	RESERVE	804.0	WBM
Addition	BASE	52.1	WBM

AFE Number DD.19.31597.CAP.DRL	AFE+Supp Amt (Cost) 2,663,000.00
Day Total (Cost) 64,378	Cum To Date (Cost) 928,194
Mud Field Est (Cost) 4,862	Cum Mud Field Est (Co... 20,235
Start Depth (ftKB) 6,060.0	End Depth (ftKB) 7,872.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,297.0
Last Casing String Intermediate Casing, 5,256.0ftKB	

Daily Contacts	
Job Contact	Mobile
STEVE BIEREN, Engineer	972-207-9164
BRANDON CHUMLEY, Foreman	701-500-7112
CURTIS THOMAS, Consultant	(318) 245-3261
JEFF POOLE, Foreman	432-241-0123

Personnel Log	
Head Count	19.0

Rigs	
Helmerich & Payne Drilling, 394	
Contractor Helmerich & Payne Drilling	Rig Number 394
Rig Supervisor AARON DUNAWAY, Toolpusher	Phone Mobile 601-248-1508

2, Gardner-Denver, pz11			
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2	
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097	
P (psi) 2,950.0	Slow Spd No	Strokes (s... 78	Eff (%) 95

1, Gardner-Denver, pz11			
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2	
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097	
P (psi) 2,950.0	Slow Spd No	Strokes (s... 78	Eff (%) 95

Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
24 HR MUD ENGINEER	700.00	1.0
BAROID (BULK)	205.00	6.0
CALCIUM CHL 95 -98%	17.10	40.0
DRILTREAT	97.02	14.0
GELTONE V	65.00	10.0
LIME	6.00	40.0

Job Supplies		
Supply Item Description DIESEL FOR OBM	Unit Label Gal	
Total Received 26,153.0	Total Consumed 12,261.0	On Loc 13,892.0
Supply Item Description DRILLING CUTTINGS	Unit Label Cu. Yds	
Total Received 75.0	Total Consumed 75.0	On Loc 0.0
Supply Item Description DRILLING WATER	Unit Label Bbl	
Total Received 0.0	Total Consumed 0.0	On Loc 0.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 10/31/2019

Report #: 7.0, DFS: 6.50

Time Log DFS: 6.50

Depth Progress: 1,812.00

Mud Volumes

Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	DRILL WATER	0.0	Fresh water
Addition	BRINE	0.0	Salt Water
Addition	WHOLE MUD	0.0	WBM
Addition	BARITE	8.4	Weighting Agent
Addition	CHEMICALS	12.9	WBM
Loss	SCE	86.5	WBM
Loss	DOWNHOLE	0.0	WBM
Loss	TRIPS	0.0	WBM
Loss	TRANSFERED	0.0	WBM
Loss	MISC / OTHER	0.0	WBM

Drill Strings

BHA #3, Vertical

Bit Run 1	Drill Bit 8 3/4in, GTD55DM, 13244806	IADC Bit Dull 1-2-CT-S-X-1-WT-TD	TFA (incl Noz) (in²) 1.85
Nozzles (1/32") 22/22/22/22/22		BHA Length (ft) 7,872.00	String Wt (1000lbf) 197
			Bit ROP (ft/hr) 119.9

Mud Motors

Motor Bend 1.83 FIXED	Bit to Bend 4.32	Rotor Nozzle Diameter (in)
--------------------------	---------------------	----------------------------

Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
Drill Pipe	205	5	2.88	6,484.41	IF
HWDP	42	5	3.00	1,273.73	IF
XO Sub	1	6 3/4	3.50	3.18	IF
Drill Collar - Non Mag	1	6 3/4	3.50	30.78	FH
Non-Mag Hangoff Sub	1	7	3.50	6.30	FH
Drill Collar - Non Mag	1	6 3/4	3.50	30.64	FH
Mud Motor - Bent Housing	1	7	3.50	41.46	FH

Drilling Parameters

Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drill Time (hr)	Int ROP (ft/hr)	Q Flow (gpm)	WOB (1000lbf)	dP (SPP) (psi)	Rotary RPM (rpm)	Drill Tq	SPP (psi)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)
6,060.0	6,220.0	949.00	1.17	136.8	593	30	400.0	70	9.1	2,770.0	199	160	190
6,220.0	6,254.0	983.00	0.50	68.0	593	30	225.0	0	0.0	2,500.0	198	160	192
6,254.0	6,320.0	1,049.00	0.50	132.0	593	30	400.0	70	10.0	2,800.0	200	165	193
6,320.0	6,354.0	1,083.00	0.45	75.6	593	25	250.0	0	0.0	2,700.0	205	165	195
6,354.0	6,424.0	1,153.00	0.30	233.3	593	30	425.0	70	9.5	2,800.0	210	165	196
6,424.0	6,438.0	1,167.00	0.55	25.5	593	25	225.0	0	0.0	2,500.0	210	170	197
6,438.0	6,603.0	1,332.00	0.55	300.0	574	30	450.0	70	9.6	2,750.0	210	165	200
6,603.0	6,633.0	1,362.00	0.70	42.9	574	25	250.0	0	0.0	2,500.0	208	175	201
6,633.0	6,694.0	1,423.00	0.54	113.0	574	30	450.0	70	9.8	2,750.0	215	178	202
6,694.0	6,709.0	1,438.00	0.42	35.7	574	28	220.0	0	0.0	2,500.0	214	180	202
6,709.0	7,872.0	2,601.00	8.38	138.8	575	27	480.0	70	11.0	2,950.0	178	198	220

Hydraulic Calculations

Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in²)	P Drop Annular (psi)
6,060.0	6,220.0	8.64	274.4	106.2	625.1	38.8	28.2	0.5	45.7
6,220.0	6,254.0	8.64	274.4	106.2	625.1	38.8	28.2	0.5	46.0
6,254.0	6,320.0	8.64	274.4	106.2	625.1	38.8	28.2	0.5	46.6
6,320.0	6,354.0	8.64	274.4	106.2	625.1	38.8	28.2	0.5	46.8
6,354.0	6,424.0	8.64	274.4	106.2	625.1	38.8	28.2	0.5	47.4
6,424.0	6,438.0	8.64	274.4	106.2	625.1	38.8	28.2	0.5	47.5
6,438.0	6,603.0	8.64	265.6	102.8	605.1	37.5	25.5	0.4	46.8
6,603.0	6,633.0	8.64	265.6	102.8	605.1	37.5	25.5	0.4	47.0
6,633.0	6,694.0	8.64	265.6	102.8	605.1	37.5	25.5	0.4	47.5
6,694.0	6,709.0	8.64	265.6	102.8	605.1	37.5	25.5	0.4	47.6
6,709.0	7,872.0	8.64	266.1	103.0	606.2	37.6	25.7	0.4	56.9

Kicks

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

Job Supplies

Supply Item Description	Unit Label
FUEL	Gal
Total Received 22,764.0	Total Consumed 11,658.0
On Loc 11,106.0	
Supply Item Description	Unit Label
LIQUID DRILLING WASTE	Bbl
Total Received 60.0	Total Consumed 60.0
On Loc 0.0	
Supply Item Description	Unit Label
LIQUID DRILLING WASTE	Bbl
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	
Supply Item Description	Unit Label
POTABLE WATER	Gal
Total Received 4.0	Total Consumed 4.0
On Loc 0.0	
Supply Item Description	Unit Label
SEWAGE	Gal
Total Received 8,800.0	Total Consumed 8,800.0
On Loc 0.0	
Supply Item Description	Unit Label
THREAD PROTECTORS	Box
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	
Supply Item Description	Unit Label
TRASH/GENERAL WASTE	Cu. Yds
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	

Safety Checks

Time	Type	Safety Topic
17:45	Pre-Tour	Good relief notes
05:45	Pre-Tour	Housekeeping

Wellbores

Wellbore Name UNIVERSITY 1-2 40 #104HB	
Kick Offs & Key Depths	
Type	Top Depth (ftKB)
Conductor Shoe	105.0
Surface Shoe	1,078.0
Intermediate 1 Shoe	5,256.0
Curve Kick Off Point	7,887.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 10/31/2019
Report #: 7.0, DFS: 6.50
Time Log DFS: 6.50
Depth Progress: 1,812.00

Lost Circulation							
Start Date	Top Depth (ftKB)	Bottom Depth (ftKB)	Ops In Prog	Vol Lost Tot (bbl)	End Date		
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...		
10/25/2019	13 3/8	1,078.0	1,077.9	Test Surface Casing to 500 psi for 30 Minutes. Good Test	500.0		
Test Date	Test Type		Fluid Density (lb/gal)		EMW (lb/gal)		
10/26/2019	Casing Test		8.50		17.43		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...		
10/28/2019	9 5/8	5,256.0	5,189.4	Test Surface Casing to 1500 psi for 30 Minutes. Good Test	1,500.0		
Test Date	Test Type		Fluid Density (lb/gal)		EMW (lb/gal)		
10/29/2019	Casing Test		8.50		14.06		
Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...		
10/28/2019	9 5/8	5,256.0	5,189.4	FIT 12.0 EMW 980 psi	980.0		
Test Date	Test Type		Fluid Density (lb/gal)		EMW (lb/gal)		
10/29/2019	F.I.T.		8.40		12.03		
Survey Data							
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
6,132.00	8.57	256.34	6,054.70	-22.11	-68.92	-791.83	0.17
6,226.00	7.98	258.33	6,147.73	-24.30	-71.89	-805.03	0.70
6,320.00	8.16	258.33	6,240.79	-26.21	-74.56	-817.95	0.19
6,415.00	8.21	257.34	6,334.83	-28.27	-77.41	-831.17	0.16
6,509.00	6.99	253.00	6,428.00	-30.70	-80.55	-843.19	1.43
6,604.00	5.62	255.59	6,522.42	-32.95	-83.40	-853.23	1.47
6,698.00	6.80	265.55	6,615.87	-33.94	-84.98	-863.23	1.70
6,793.00	6.07	263.54	6,710.27	-34.31	-85.98	-873.83	0.80
6,887.00	3.86	268.11	6,803.92	-34.50	-86.65	-881.93	2.39
6,981.00	3.35	263.98	6,897.73	-34.54	-87.04	-887.83	0.61
7,076.00	2.95	259.24	6,992.59	-34.98	-87.78	-892.99	0.50
7,171.00	1.89	264.33	7,087.50	-35.36	-88.40	-896.95	1.14
7,265.00	1.78	259.86	7,181.45	-35.59	-88.81	-899.93	0.19
7,360.00	0.98	257.96	7,276.42	-35.89	-89.24	-902.18	0.84
7,454.00	0.97	313.62	7,370.41	-35.43	-88.85	-903.54	0.97
7,549.00	0.84	319.22	7,465.40	-34.29	-87.77	-904.58	0.17
7,644.00	0.80	350.99	7,560.39	-33.07	-86.59	-905.13	0.47
7,738.00	0.69	315.32	7,654.38	-32.00	-85.54	-905.63	0.50
7,801.00	0.54	340.71	7,717.38	-31.43	-84.99	-906.00	0.49



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/1/2019

Report #: 8.0, DFS: 7.50

Time Log DFS: 7.50

Depth Progress: 443.00

API/UWI No. 42461412550000	Surface Legal Location A-160; SEC. 51; GC&SF RR CO	Well License/Permit No. 855360	State/Province TEXAS	County UPTON
Original Spud/Spud Rig Date 10/24/2019 18:00	Large Rig Spud Date 10/24/2019 18:00	Rig Release Date	KB to GL (ft) 26.50	KB-CF (ft) 27.90
Weather Clear	Temperature (°F) 32.0	Road Condition Good	Hole Condition Good	
Current Status/OART Building Curve section @ 8,315		24 Hour Forecast Continue Building Curve Section. Drill ahead in Lateral Production Section.		

Short Report
Install New MWD and perform shallow test. Make up 8 1/2" DD506TX Baker PDC bit. Trip in hole from BHA' to 5,200'. Slip and cut drill line. Trip in hole from 5,200' to 7,872'. Slide / Rotate drill in 8 1/2" production Curve section from 7,872' to 8,315'.

Mud Volumes

Active Volume (bbl)	Var Active Vol (bbl)	Balance (bbl)	Tank Volume (bbl)	Additions (bbl)	Losses (bbl)	Hole Volume (bbl)
2,882.4	537.7	186.7	2,324.8	481.7	130.7	557.6

Time Log

Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code	Operation Summary
06:00	07:00	1.00	PROD 1, CURVE Pre-Drill	TP	BH AH DL	O	BHA #4: Install New MWD and perform shallow test. Make up 8 1/2" DD506TX Baker PDC bit S/N: 5304951.
07:00	10:30	3.50	PROD 1, CURVE Pre-Drill	TP	TIH	O	Trip in hole from BHA' to 5,200' Pick up Scout vibe tool / agitator @ 2,384'. Test at 500 GPM, test before: 1,490 psi, test after: 1,990 psi.
10:30	11:00	0.50	PROD 1, CURVE Pre-Drill	BO	RH	O	Pull trip nipple, and install rotating head.
11:00	12:30	1.50	PROD 1, CURVE Pre-Drill	RM	SLI PC UT	O	Slip and cut 42.5' (5 wraps) of drill line.
12:30	13:30	1.00	PROD 1, CURVE Pre-Drill	TP	TIH	O	Trip in hole from 5,200' to 7,872'. Wash last stand to bottom for safety.
13:30	06:00	16.50	PROD 1, CURVE Drill	DR	DR L	O	Build Curve: Slide / Rotate drill in 8 1/2" production Curve section from 7,872' to 8,315'. 443' @ 27 FPH. Note: 24 hrs losses: 130 bbl's Surface: 130 bbl's. Down Hole: 0 bbl's. Total OBM losses: 130 bbl's.

Mud Checks

Time 17:00	Type INVERMUL	Depth (ftKB) 7,979.0	Density (kg/m³) (lb/gal) 8.85	Funnel Viscosity (s/qt) 56	PV Calc (cP) 12.0	YP Calc (lb/100ft²) 10.000
Gel 10 sec (kPa) (lb... 10.000	Gell 10 min (kPa) (l... 14.000	Gel 30 min (kPa) (lb... 17.000	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%) 9.0
MBT (lb/bbl)	Percent Oil (%) 72.5	Percent Water (%) 18.5	Chlorides (kg/m³) (... 32,000.000	Calcium (kg/m³) (m... 21,800.000	Potassium (mg/L) 581.0	Electric Stab (V) 581.0
Time 05:00	Type INVERMUL	Depth (ftKB) 8,276.0	Density (kg/m³) (lb/gal) 8.80	Funnel Viscosity (s/qt) 58	PV Calc (cP) 12.0	YP Calc (lb/100ft²) 9.000
Gel 10 sec (kPa) (lb... 10.000	Gell 10 min (kPa) (l... 14.000	Gel 30 min (kPa) (lb... 18.000	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%) 9.0
MBT (lb/bbl)	Percent Oil (%) 72.5	Percent Water (%) 18.5	Chlorides (kg/m³) (... 35,000.000	Calcium (kg/m³) (m... 21,600.000	Potassium (mg/L) 531.0	Electric Stab (V) 531.0

Mud Volumes

Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	ANNULUS	412.1	WBM
Hole	PIPE CAPACITY	72.8	WBM
Hole	TOTAL HOLE	484.8	WBM
Tank	ACTIVE PITS	518.0	WBM
Tank	TOTAL CRIC	1,002.8	WBM
Tank	RESERVE	804.0	WBM
Addition	BASE	52.9	WBM
Addition	DRILL WATER	0.0	Fresh water
Addition	BRINE	0.0	Salt Water
Addition	WHOLE MUD	0.0	WBM

AFE Number DD.19.31597.CAP.DRL	AFE+Supp Amt (Cost) 2,663,000.00
Day Total (Cost) 97,147	Cum To Date (Cost) 1,025,341
Mud Field Est (Cost) 8,858	Cum Mud Field Est (Co... 29,093
Start Depth (ftKB) 7,872.0	End Depth (ftKB) 8,315.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,297.0

Last Casing String
Intermediate Casing, 5,256.0ftKB

Daily Contacts

Job Contact	Mobile
STEVE BIEREN, Engineer	972-207-9164
BRANDON CHUMLEY, Foreman	701-500-7112
CURTIS THOMAS, Consultant	(318) 245-3261
JEFF POOLE, Foreman	432-241-0123

Personnel Log

Head Count	19.0
------------	------

Rigs

Helmerich & Payne Drilling, 394

Contractor Helmerich & Payne Drilling	Rig Number 394
Rig Supervisor AARON DUNAWAY, Toolpusher	Phone Mobile 601-248-1508

2, Gardner-Denver, pz11

Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097
P (psi) 2,700.0	Slow Spd No	Strokes (s... Eff (%) 69 95

1, Gardner-Denver, pz11

Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097
P (psi) 2,700.0	Slow Spd No	Strokes (s... Eff (%) 69 95

Mud Additive Amounts

Mud Additive Description	Field Est (Cost/unit)	Consumed
24 HR MUD ENGINEER	700.00	1.0
CALCIUM CHL 95 -98%	17.10	50.0
DRILTREAT	97.02	8.0
GELTONE V	65.00	15.0
INVERMUL	558.60	1.0
LIME	6.00	50.0
SUSPENTONE	134.10	35.0

Job Supplies

Supply Item Description DIESEL FOR OBM	Unit Label Gal
Total Received 26,153.0	Total Consumed 14,009.0
On Loc 12,144.0	
Supply Item Description DRILLING CUTTINGS	Unit Label Cu. Yds
Total Received 105.0	Total Consumed 105.0
On Loc 0.0	
Supply Item Description DRILLING WATER	Unit Label Bbl
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/1/2019

Report #: 8.0, DFS: 7.50

Time Log DFS: 7.50

Depth Progress: 443.00

Mud Volumes

Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	BARITE	0.0	Weighting Agent
Addition	CHEMICALS	16.7	WBM
Loss	SCE	130.7	WBM
Loss	DOWNHOLE	0.0	WBM
Loss	TRIPS	0.0	WBM
Loss	TRANSFERED	0.0	WBM
Loss	MISC / OTHER	0.0	WBM

Drill Strings

BHA #4, Curve

Bit Run 1	Drill Bit 8 1/2in, DD506TX, 5304951	IADC Bit Dull -----	TFA (incl Noz) (in²) 1.84
--------------	--	------------------------	------------------------------

Nozzles (1/32") 20/20/20/20/20/20	BHA Length (ft) 9,990.00	String Wt (1000lbf) 206	Bit ROP (ft/hr) 43.7
--------------------------------------	-----------------------------	----------------------------	-------------------------

Mud Motors

Motor Bend 1.83 FIXED	Bit to Bend 4.31	Rotor Nozzle Diameter (in)
--------------------------	---------------------	----------------------------

Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
Drill Pipe	240	5	2.88	7,579.75	IF
Agitator	1	7	3.00	25.83	IF
Drill Pipe	72	5	2.88	2,266.47	IF
XO Sub	1	7 1/16	3.50	3.96	IF
Drill Collar - Non Mag	1	7	3.50	30.78	FH
Non-Mag Hangoff Sub	1	7	3.50	6.30	FH
Drill Collar - Non Mag	1	6 1/2	3.50	30.64	FH
Float Sub	1	7	2.75	3.47	FH
Mud Motor - Bent Housing	1	7	3.50	41.30	FH

Drilling Parameters

Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drill Time (hr)	Int ROP (ft/hr)	Q Flow (gpm)	WOB (1000lbf)	dP (SPP) (psi)	Rotary RPM (rpm)	Drill Tq	SPP (psi)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)
7,872.0	7,887.0	15.00	0.50	30.0	530	20	200.0	50	9.2	2,700.0	215	185	199
7,887.0	7,927.0	55.00	1.23	32.5	530	20	150.0	0	0.0	2,600.0	210	180	200
7,927.0	7,933.0	61.00	10.00	0.6	530	20	225.0	50	9.2	2,700.0	215	182	200
7,933.0	7,972.0	100.00	1.13	34.5	530	11	220.0	0	0.0	2,600.0	210	180	200
7,972.0	7,979.0	107.00	0.20	35.0	530	20	350.0	50	9.5	2,700.0	214	180	202
7,979.0	8,315.0	443.00	12.55	26.8	530	15	250.0	0	0.0	2,600.0	210	180	202

Hydraulic Calculations

Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in²)	P Drop Annular (psi)
7,872.0	7,887.0	8.90	245.2	95.0	580.7	34.6	21.0	0.4	41.3
7,887.0	7,927.0	8.90	245.2	95.0	580.7	34.6	21.0	0.4	41.6
7,927.0	7,933.0	8.90	245.2	95.0	580.7	34.6	21.0	0.4	41.6
7,933.0	7,972.0	8.90	245.2	95.0	580.7	34.6	21.0	0.4	41.8
7,972.0	7,979.0	9.01	245.2	95.0	580.7	34.6	21.2	0.4	63.7
7,979.0	8,315.0	8.94	245.2	95.0	580.7	34.6	21.0	0.4	60.0

Kicks

Kick Date	Kick Depth (ftKB)	Control Date	Control Depth (ftKB)	Kick Class
-----------	-------------------	--------------	----------------------	------------

Kill Notes

Lost Circulation

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

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

Job Supplies

Supply Item Description	Unit Label
FUEL	Gal
Total Received 22,764.0	Total Consumed 13,883.0
On Loc 8,881.0	
Supply Item Description	Unit Label
LIQUID DRILLING WASTE	Bbl
Total Received 60.0	Total Consumed 60.0
On Loc 0.0	
Supply Item Description	Unit Label
LIQUID DRILLING WASTE	Bbl
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	
Supply Item Description	Unit Label
POTABLE WATER	Gal
Total Received 6.0	Total Consumed 6.0
On Loc 0.0	
Supply Item Description	Unit Label
SEWAGE	Gal
Total Received 8,800.0	Total Consumed 8,800.0
On Loc 0.0	
Supply Item Description	Unit Label
THREAD PROTECTORS	Box
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	
Supply Item Description	Unit Label
TRASH/GENERAL WASTE	Cu. Yds
Total Received 0.0	Total Consumed 0.0
On Loc 0.0	

Safety Checks

Time	Type	Safety Topic
17:45	Pre-Tour	Making Connection
05:30	BOP Drill	BOP Drill
05:45	Pre-Tour	Cold Weather/PPE

Wellbores

Wellbore Name UNIVERSITY 1-2 40 #104HB

Kick Offs & Key Depths

Type	Top Depth (ftKB)
Conductor Shoe	105.0
Surface Shoe	1,078.0
Intermediate 1 Shoe	5,256.0
Curve Kick Off Point	7,872.0
Curve Landing Point	8,830.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/1/2019

Report #: 8.0, DFS: 7.50

Time Log DFS: 7.50

Depth Progress: 443.00

Safety Incidents

Time	Category	Type	Subtype	Cause	Lost time?	Severity

Leak Off and Formation Integrity Tests

Run Date 10/25/2019	OD (in) 13 3/8	Set Depth (ft... 1,078.0	Set Depth (T... 1,077.9	Comment Test Surface Casing to 500 psi for 30 Minutes. Good Test	MACP Press... 500.0
Test Date 10/26/2019	Test Type Casing Test			Fluid Density (lb/gal) 8.50	EMW (lb/gal) 17.43
Run Date 10/28/2019	OD (in) 9 5/8	Set Depth (ft... 5,256.0	Set Depth (T... 5,189.4	Comment Test Surface Casing to 1500 psi for 30 Minutes. Good Test	MACP Press... 1,500.0
Test Date 10/29/2019	Test Type Casing Test			Fluid Density (lb/gal) 8.50	EMW (lb/gal) 14.06
Run Date 10/28/2019	OD (in) 9 5/8	Set Depth (ft... 5,256.0	Set Depth (T... 5,189.4	Comment FIT 12.0 EMW 980 psi	MACP Press... 980.0
Test Date 10/29/2019	Test Type F.I.T.			Fluid Density (lb/gal) 8.40	EMW (lb/gal) 12.03

Survey Data

MD (ftKB) 7,907.00	Inclination (°) 3.40	Azimuth (°) 349.29	TVD (ftKB) 7,823.31	VS (ft) -27.83	NS (ft) -81.43	EW (ft) -906.75	DLS (°/100ft) 2.70
MD (ftKB) 7,954.00	Inclination (°) 7.80	Azimuth (°) 351.99	TVD (ftKB) 7,870.07	VS (ft) -23.26	NS (ft) -76.90	EW (ft) -907.45	DLS (°/100ft) 9.38
MD (ftKB) 8,002.00	Inclination (°) 10.75	Azimuth (°) 353.65	TVD (ftKB) 7,917.44	VS (ft) -15.54	NS (ft) -69.22	EW (ft) -908.40	DLS (°/100ft) 6.17
MD (ftKB) 8,049.00	Inclination (°) 14.69	Azimuth (°) 351.48	TVD (ftKB) 7,963.28	VS (ft) -5.23	NS (ft) -58.97	EW (ft) -909.77	DLS (°/100ft) 8.44
MD (ftKB) 8,096.00	Inclination (°) 19.26	Azimuth (°) 350.35	TVD (ftKB) 8,008.22	VS (ft) 8.42	NS (ft) -45.43	EW (ft) -911.95	DLS (°/100ft) 9.75
MD (ftKB) 8,143.00	Inclination (°) 23.99	Azimuth (°) 351.30	TVD (ftKB) 8,051.90	VS (ft) 25.65	NS (ft) -28.33	EW (ft) -914.70	DLS (°/100ft) 10.09
MD (ftKB) 8,191.00	Inclination (°) 29.01	Azimuth (°) 352.52	TVD (ftKB) 8,094.84	VS (ft) 46.99	NS (ft) -7.13	EW (ft) -917.69	DLS (°/100ft) 10.52
MD (ftKB) 8,238.00	Inclination (°) 33.86	Azimuth (°) 353.28	TVD (ftKB) 8,134.93	VS (ft) 71.44	NS (ft) 17.19	EW (ft) -920.71	DLS (°/100ft) 10.35
MD (ftKB) 8,285.00	Inclination (°) 38.60	Azimuth (°) 354.30	TVD (ftKB) 8,172.83	VS (ft) 99.18	NS (ft) 44.80	EW (ft) -923.70	DLS (°/100ft) 10.17



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/2/2019
Report #: 9.0, DFS: 8.50
Time Log DFS: 8.50
Depth Progress: 1,675.00

API/UWI No. 42461412550000	Surface Legal Location A-160; SEC. 51; GC&SF RR CO	Well License/Permit No. 855360	State/Province TEXAS	County UPTON
Original Spud/Spud Rig Date 10/24/2019 18:00	Large Rig Spud Date 10/24/2019 18:00	Rig Release Date	KB to GL (ft) 26.50	KB-CF (ft) 27.90
Weather Clear	Temperature (°F) 35.0	Road Condition Good	Hole Condition Good	
Current Status/OART Drilling Lateral Production Section @9,990'		24 Hour Forecast Drill Lateral Production Section		

Short Report
Slide / Rotate drill in 8 1/2" production Curve section from 8,315' to 8,830'. Slide / Rotate drill in 8 1/2" production section from 8,830' to 9,990'.

Mud Volumes						
Active Volume (bbl) 2,903.4	Var Active Vol (bbl) 21.0	Balance (bbl) -421.5	Tank Volume (bbl) 2,236.7	Additions (bbl) 544.1	Losses (bbl) 101.6	Hole Volume (bbl) 666.7

Time Log						
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code
06:00	16:00	10.00	PROD 1, CURVE Drill	DR	DR L	O
Build Curve: Slide / Rotate drill in 8 1/2" production Curve section from 8,315' to 8830'. 515' @ 51 FPH.						
16:00	16:30	0.50	PROD 1, LAT Drill	RM	MA IN	O
Rig service - Lubricate rig, Grease TDS, Blocks, Check oil in TDS,, Grease grabber, IBOP and swivel packing. Grease / inspect elevators. Grease tongs. Inspect pull lines and snub lines. Grease / inspect ST-80.						
16:30	06:00	13.50	PROD 1, LAT Drill	DR	DR L	O
Slide / Rotate drill in 8 1/2" production section from 8,830' to 9,990'. 1,160' @ 86 FPH. Note: 24 hrs losses: 101 bbl's Surface: 101 bbl's. Down Hole: 0 bbl's. Total OBM losses: 231 bbl's.						

Mud Checks						
Time 17:00	Type INVERMUL	Depth (ftKB) 8,847.0	Density (kg/m³) (lb/g... 8.80	Funnel Viscosity (s/qt) 58	PV Calc (cP) 12.0	YP Calc (lb/100ft²) 13.000
Gel 10 sec (kPa) (lb... 12.000	Gell 10 min (kPa) (l... 16.000	Gel 30 min (kPa) (lb... 20.000	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%) 9.0
MBT (lb/bbl)	Percent Oil (%) 72.5	Percent Water (%) 18.5	Chlorides (kg/m³) (... 32,000.000	Calcium (kg/m³) (m... 21,400.000	Potassium (mg/L) 581.0	Electric Stab (V) 581.0
Time 05:00	Type INVERMUL	Depth (ftKB) 9,899.0	Density (kg/m³) (lb/g... 8.90	Funnel Viscosity (s/qt) 60	PV Calc (cP) 13.0	YP Calc (lb/100ft²) 13.000
Gel 10 sec (kPa) (lb... 12.000	Gell 10 min (kPa) (l... 17.000	Gel 30 min (kPa) (lb... 21.000	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%) 9.5
MBT (lb/bbl)	Percent Oil (%) 72.5	Percent Water (%) 18.0	Chlorides (kg/m³) (... 31,000.000	Calcium (kg/m³) (m... 22,000.000	Potassium (mg/L) 512.0	Electric Stab (V) 512.0

Mud Volumes			
Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	ANNULUS	492.7	WBM
Hole	PIPE CAPACITY	87.0	WBM
Hole	TOTAL HOLE	579.7	WBM
Tank	ACTIVE PITS	480.0	WBM
Tank	TOTAL CRIC	1,059.7	WBM
Tank	RESERVE	697.0	WBM
Addition	BASE	41.6	WBM
Addition	DRILL WATER	0.0	Fresh water
Addition	BRINE	0.0	Salt Water
Addition	WHOLE MUD	0.0	WBM
Addition	BARITE	0.0	Weighting Agent
Addition	CHEMICALS	9.8	WBM
Loss	SCE	101.6	WBM
Loss	DOWNHOLE	0.0	WBM
Loss	TRIPS	0.0	WBM
Loss	TRANSFERED	0.0	WBM
Loss	MISC / OTHER	0.0	WBM

AFE Number DD.19.31597.CAP.DRL	AFE+Supp Amt (Cost) 2,663,000.00
Day Total (Cost) 67,628	Cum To Date (Cost) 1,092,969
Mud Field Est (Cost) 4,653	Cum Mud Field Est (Co... 33,746
Start Depth (ftKB) 8,315.0	End Depth (ftKB) 9,990.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,297.0
Last Casing String Intermediate Casing, 5,256.0ftKB	

Daily Contacts	
Job Contact	Mobile
STEVE BIEREN, Engineer	972-207-9164
BRANDON CHUMLEY, Foreman	701-500-7112
CURTIS THOMAS, Consultant	(318) 245-3261
JEFF POOLE, Foreman	432-241-0123

Personnel Log	
Head Count	19.0

Rigs	
Helmerich & Payne Drilling, 394	
Contractor Helmerich & Payne Drilling	Rig Number 394
Rig Supervisor AARON DUNAWAY, Toolpusher	Phone Mobile 601-248-1508

2, Gardner-Denver, pz11			
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2	
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097	
P (psi) 700.0	Slow Spd Yes	Strokes (s... 50	Eff (%) 95
P (psi) 3,400.0	Slow Spd No	Strokes (s... 76	Eff (%) 95

1, Gardner-Denver, pz11			
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2	
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097	
P (psi) 500.0	Slow Spd Yes	Strokes (s... 30	Eff (%) 95
P (psi) 3,400.0	Slow Spd No	Strokes (s... 76	Eff (%) 95

Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
24 HR MUD ENGINEER	700.00	1.0
CALCIUM CHL 95 -98%	17.10	25.0
DRILTREAT	97.02	4.0
EZ-MUL	725.00	1.0
GELTONE V	65.00	10.0
LIME	6.00	24.0
RM-63	1,618.2 3	1.0

Job Supplies		
Supply Item Description DIESEL FOR OBM	Unit Label Gal	
Total Received 33,454.0	Total Consumed 18,428.0	On Loc 15,026.0
Supply Item Description DRILLING CUTTINGS	Unit Label Cu. Yds	
Total Received 165.0	Total Consumed 165.0	On Loc 0.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/2/2019

Report #: 9.0, DFS: 8.50

Time Log DFS: 8.50

Depth Progress: 1,675.00

Drill Strings													
BHA #4, Curve													
Bit Run	Drill Bit	IADC Bit Dull				TFA (incl Noz) (in ²)							
1	8 1/2in, DD506TX, 5304951	-----				1.84							
Nozzles (1/32")		BHA Length (ft)		String Wt (1000lbf)		Bit ROP (ft/hr)							
20/20/20/20/20/20		12,275.00		261		61.1							
Mud Motors													
Motor Bend		Bit to Bend		Rotor Nozzle Diameter (in)									
1.83 FIXED		4.31											
Drill String Components													
Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread								
HWDP	11	5	2.75	349.89	IF								
Drill Pipe	302	5	2.88	9,514.86	IF								
Agitator	1	7	3.00	25.83	IF								
Drill Pipe	72	5	2.88	2,266.47	IF								
XO Sub	1	7 1/16	3.50	3.96	IF								
Drill Collar - Non Mag	1	7	3.50	30.78	FH								
Non-Mag Hangoff Sub	1	7	3.50	6.30	FH								
Drill Collar - Non Mag	1	6 1/2	3.50	30.64	FH								
Float Sub	1	7	2.75	3.47	FH								
Mud Motor - Bent Housing	1	7	3.50	41.30	FH								
Drilling Parameters													
Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drill Time (hr)	Int ROP (ft/hr)	Q Flow (gpm)	WOB (1000lbf)	dP (SPP) (psi)	Rotary RPM (rpm)	Drill Tq	SPP (psi)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)
8,315.0	8,783.0	911.00	9.26	50.5	530	20	350.0	0	0.0	2,850.0	215	181	202
8,783.0	8,846.0	974.00	1.79	35.2	528	22	300.0	37	11.0	2,820.0	215	181	202
8,846.0	8,862.0	990.00	0.30	53.3	528	20	250.0	0	0.0	2,750.0	213	198	209
8,862.0	8,944.0	1,072.00	1.03	79.6	530	25	350.0	63	12.5	2,863.0	202	193	196
8,944.0	8,966.0	1,094.00	0.68	32.4	582	15	250.0	0	0.0	3,010.0	213	200	205
8,966.0	9,040.0	1,168.00	0.59	125.4	580	26	390.0	65	12.3	3,232.0	208	194	195
9,040.0	9,055.0	1,183.00	0.39	38.5	582	15	190.0	0	0.0	3,005.0	212	196	203
9,055.0	9,322.0	1,450.00	1.85	144.3	582	28	485.0	68	12.2	3,297.0	213	190	206
9,322.0	9,341.0	1,469.00	0.54	35.2	583	16	190.0	0	0.0	3,034.0	213	200	206
9,341.0	9,511.0	1,639.00	1.56	109.0	583	28	500.0	69	13.0	3,315.0	215	195	205
9,511.0	9,531.0	1,659.00	0.60	33.3	582	14	210.0	0	0.0	3,039.0	211	197	207
9,531.0	9,990.0	2,118.00	4.31	106.5	582	30	500.0	65	13.4	3,400.0	215	180	207
Hydraulic Calculations													
Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	P Drop Annular (psi)				
8,315.0	8,783.0	8.95	245.2	95.0	580.7	34.6	21.0	0.4	63.6				
8,783.0	8,846.0	8.95	244.3	94.6	578.5	34.5	20.8	0.4	67.3				
8,846.0	8,862.0	8.95	244.3	94.6	578.5	34.5	20.8	0.4	67.5				
8,862.0	8,944.0	8.96	245.2	95.0	580.7	34.6	21.0	0.4	68.5				
8,944.0	8,966.0	8.98	269.3	104.3	637.6	38.0	27.9	0.5	78.0				
8,966.0	9,040.0	8.98	268.4	103.9	635.5	37.9	27.6	0.5	78.3				
9,040.0	9,055.0	8.98	269.3	104.3	637.6	38.0	27.9	0.5	78.8				
9,055.0	9,322.0	8.99	269.3	104.3	637.6	38.0	27.9	0.5	81.3				
9,322.0	9,341.0	8.99	269.8	104.5	638.7	38.1	28.0	0.5	81.7				
9,341.0	9,511.0	8.99	269.8	104.5	638.7	38.1	28.0	0.5	83.2				
9,511.0	9,531.0	8.99	269.3	104.3	637.6	38.0	27.9	0.5	83.2				
9,531.0	9,990.0	9.09	269.3	104.3	637.6	38.0	28.2	0.5	84.6				
Kicks													
Kick Date	Kick Depth (ftKB)	Control Date	Control Depth (ftKB)	Kick Class									
Kill Notes													
Lost Circulation													
Start Date	Top Depth (ftKB)	Bottom Depth (ftKB)	Ops In Prog	Vol Lost Tot (bbl)	End Date								
Interval Problems													
Problem Type	Problem Subtype	Start Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost (Cost)	Est Lost Time (hr)							
Action Taken													

Job Supplies		
Supply Item Description		Unit Label
DRILLING WATER		Bbl
Total Received	Total Consumed	On Loc
0.0	0.0	0.0
Supply Item Description		Unit Label
FUEL		Gal
Total Received	Total Consumed	On Loc
22,764.0	16,402.0	6,362.0
Supply Item Description		Unit Label
LIQUID DRILLING WASTE		Bbl
Total Received	Total Consumed	On Loc
100.0	100.0	0.0
Supply Item Description		Unit Label
LIQUID DRILLING WASTE		Bbl
Total Received	Total Consumed	On Loc
0.0	0.0	0.0
Supply Item Description		Unit Label
POTABLE WATER		Gal
Total Received	Total Consumed	On Loc
6.0	6.0	0.0
Supply Item Description		Unit Label
SEWAGE		Gal
Total Received	Total Consumed	On Loc
8,800.0	8,800.0	0.0
Supply Item Description		Unit Label
THREAD PROTECTORS		Box
Total Received	Total Consumed	On Loc
0.0	0.0	0.0
Supply Item Description		Unit Label
TRASH/GENERAL WASTE		Cu. Yds
Total Received	Total Consumed	On Loc
0.0	0.0	0.0
Safety Checks		
Time	Type	Safety Topic
17:45	Pre-Tour	PPE/Hand placement
05:45	Pre-Tour	Fork Lift Operation
Wellbores		
Wellbore Name		
UNIVERSITY 1-2 40 #104HB		
Kick Offs & Key Depths		
Type	Top Depth (ftKB)	
Conductor Shoe	105.0	
Surface Shoe	1,078.0	
Intermediate 1 Shoe	5,256.0	
Curve Kick Off Point	7,872.0	
Curve Landing Point	8,830.0	



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/2/2019
Report #: 9.0, DFS: 8.50
Time Log DFS: 8.50
Depth Progress: 1,675.00

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 10/25/2019	OD (in) 13 3/8	Set Depth (ft... 1,078.0	Set Depth (T... 1,077.9	Comment Test Surface Casing to 500 psi for 30 Minutes. Good Test	MACP Press... 500.0
Test Date 10/26/2019	Test Type Casing Test		Fluid Density (lb/gal) 8.50	EMW (lb/gal) 17.43	
Run Date 10/28/2019	OD (in) 9 5/8	Set Depth (ft... 5,256.0	Set Depth (T... 5,189.4	Comment Test Surface Casing to 1500 psi for 30 Minutes. Good Test	MACP Press... 1,500.0
Test Date 10/29/2019	Test Type Casing Test		Fluid Density (lb/gal) 8.50	EMW (lb/gal) 14.06	
Run Date 10/28/2019	OD (in) 9 5/8	Set Depth (ft... 5,256.0	Set Depth (T... 5,189.4	Comment FIT 12.0 EMW 980 psi	MACP Press... 980.0
Test Date 10/29/2019	Test Type F.I.T.		Fluid Density (lb/gal) 8.40	EMW (lb/gal) 12.03	

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,332.00	43.85	354.35	8,208.17	130.12	75.61	-926.76	11.17
8,380.00	48.66	352.42	8,241.35	164.72	110.04	-930.78	10.43
8,427.00	53.20	353.66	8,270.97	201.13	146.25	-935.19	9.87
8,474.00	57.87	356.09	8,297.56	239.85	184.83	-938.62	10.81
8,521.00	63.52	359.98	8,320.56	280.79	225.76	-939.99	14.02
8,568.00	66.11	2.36	8,340.56	323.18	268.28	-939.11	7.17
8,615.00	70.63	4.05	8,357.88	366.57	311.89	-936.66	10.18
8,663.00	76.67	5.06	8,371.39	412.16	357.78	-933.00	12.74
8,710.00	82.42	2.25	8,379.92	458.01	403.88	-930.06	13.57
8,757.00	88.25	358.71	8,383.74	504.72	450.70	-929.68	14.50
8,852.00	90.30	358.72	8,384.94	599.65	545.66	-931.81	2.16
8,946.00	90.70	0.42	8,384.12	693.52	639.65	-932.51	1.86
9,041.00	90.47	2.01	8,383.15	788.20	734.62	-930.50	1.69
9,135.00	89.83	3.72	8,382.90	881.64	828.50	-925.80	1.94
9,229.00	88.35	1.65	8,384.40	975.09	922.38	-921.40	2.71
9,324.00	89.80	2.37	8,385.93	1,069.66	1,017.30	-918.06	1.70
9,418.00	90.64	2.08	8,385.57	1,163.21	1,111.23	-914.42	0.95
9,513.00	90.94	2.67	8,384.26	1,257.72	1,206.14	-910.48	0.70
9,607.00	91.01	3.53	8,382.66	1,351.10	1,299.99	-905.40	0.92
9,702.00	90.84	2.63	8,381.13	1,445.49	1,394.83	-900.29	0.96
9,796.00	89.40	0.84	8,380.93	1,539.11	1,488.79	-897.45	2.44
9,891.00	90.10	0.80	8,381.34	1,633.85	1,583.77	-896.09	0.74
9,985.00	90.64	2.76	8,380.74	1,727.46	1,677.72	-893.17	2.16



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/3/2019
Report #: 10.0, DFS: 9.50
Time Log DFS: 9.50
Depth Progress: 2,285.00

API/UWI No. 42461412550000	Surface Legal Location A-160; SEC. 51; GC&SF RR CO	Well License/Permit No. 855360	State/Province TEXAS	County UPTON
Original Spud/Spud Rig Date 10/24/2019 18:00	Large Rig Spud Date 10/24/2019 18:00	Rig Release Date	KB to GL (ft) 26.50	KB-CF (ft) 27.90
Weather Clear	Temperature (°F) 44.0	Road Condition Good	Hole Condition Good	
Current Status/OART Drilling Lateral Production Section @12,275'		24 Hour Forecast Drill Lateral Production Section		
Short Report Slide / Rotate drill in 8 1/2" production section from 9,990' to 12,275'.				
Mud Volumes				
Active Volume (bbl) 2,927.7	Var Active Vol (bbl) 24.3	Balance (bbl) -442.9	Tank Volume (bbl) 2,103.6	Additions (bbl) 755.2
Losses (bbl) 288.0		Hole Volume (bbl) 824.1		
Time Log				
Start Time	End Time	Dur (hr)	Phase	Ops Code
06:00	16:45	10.75	PROD 1, LAT Drill	DR
16:45	17:15	0.50	PROD 1, LAT Drill	RM
17:15	06:00	12.75	PROD 1, LAT Drill	DR
Operation Summary				
Slide / Rotate drill in 8 1/2" production section from 9,990' to 11,003'. 1,013' @ 94 FPH.				
Rig service - Lubricate rig, Grease TDS, Blocks, Check oil in TDS., Grease grabber, IBOP and swivel packing. Grease / inspect elevators. Grease tongs. Inspect pull lines and snub lines. Grease / inspect ST-80.				
Slide / Rotate drill in 8 1/2" production section from 11,003' to 12,275'. 1,272' @ 100FPH.				
Note: 24 hrs losses: 288 bbl's Surface: 193 bbl's. Down Hole: 95 bbl's. Total OBM losses: 519 bbl's.				
Mud Checks				
Time 17:00	Type INVERMUL	Depth (ftKB) 11,147.0	Density (kg/m³) (lb/g... 8.75	Funnel Viscosity (s/qt) 58
Gel 10 sec (kPa) (lb... 10.000	Gell 10 min (kPa) (l... 14.000	Gel 30 min (kPa) (lb... 19.000	Filtrate (mL/30min)	Filter Cake (1/32")
MBT (lb/bbl)	Percent Oil (%) 70.0	Percent Water (%) 21.5	Chlorides (kg/m³) (... 36,000.000	Calcium (kg/m³) (m... 24,000.000
Time 05:00	Type INVERMUL	Depth (ftKB) 12,229.0	Density (kg/m³) (lb/g... 8.75	Funnel Viscosity (s/qt) 59
Gel 10 sec (kPa) (lb... 11.000	Gell 10 min (kPa) (l... 14.000	Gel 30 min (kPa) (lb... 18.000	Filtrate (mL/30min)	Filter Cake (1/32")
MBT (lb/bbl)	Percent Oil (%) 70.0	Percent Water (%) 21.5	Chlorides (kg/m³) (... 37,000.000	Calcium (kg/m³) (m... 24,400.000
Mud Volumes				
Tank/Addition/Loss	Type	Volume (bbl)	Subtype	
Addition	ANNULUS	609.0	WBM	
Hole	PIPE CAPACITY	107.5	WBM	
Hole	TOTAL HOLE	716.6	WBM	
Tank	ACTIVE PITS	489.0	WBM	
Tank	TOTAL CRIC	1,205.6	WBM	
Tank	RESERVE	409.0	WBM	
Addition	BASE	105.2	WBM	
Addition	DRILL WATER	30.0	Fresh water	
Addition	BRINE	0.0	Salt Water	
Addition	WHOLE MUD	0.0	WBM	
Addition	BARITE	0.0	Weighting Agent	
Addition	CHEMICALS	11.0	WBM	
Loss	SCE	193.0	WBM	
Loss	DOWNHOLE	95.0	WBM	
Loss	TRIPS	0.0	WBM	
Loss	TRANSFERED	0.0	WBM	
Loss	MISC / OTHER	0.0	WBM	

AFE Number DD.19.31597.CAP.DRL	AFE+Supp Amt (Cost) 2,663,000.00	
Day Total (Cost) 62,942	Cum To Date (Cost) 1,155,911	
Mud Field Est (Cost) 3,997	Cum Mud Field Est (Co... 37,743	
Start Depth (ftKB) 9,990.0	End Depth (ftKB) 12,275.0	
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,297.0	
Last Casing String Intermediate Casing, 5,256.0ftKB		
Daily Contacts		
Job Contact	Mobile	
STEVE BIEREN, Engineer	972-207-9164	
BRANDON CHUMLEY, Foreman	701-500-7112	
CURTIS THOMAS, Consultant	(318) 245-3261	
JEFF POOLE, Foreman	432-241-0123	
Personnel Log		
Head Count 19.0		
Rigs		
Helmerich & Payne Drilling, 394		
Contractor Helmerich & Payne Drilling	Rig Number 394	
Rig Supervisor AARON DUNAWAY, Toolpusher	Phone Mobile 601-248-1508	
2, Gardner-Denver, pz11		
Pump Number 2	Pwr (hp) 1,300.0	
Liner Size (in) 6	Stroke (in) 11.00	
P (psi) 3,200.0	Slow Spd No	
Strokes (s... 72	Eff (%) 95	
1, Gardner-Denver, pz11		
Pump Number 1	Pwr (hp) 1,300.0	
Liner Size (in) 6	Stroke (in) 11.00	
P (psi) 3,200.0	Slow Spd No	
Strokes (s... 72	Eff (%) 95	
Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
24 HR MUD ENGINEER	700.00	1.0
CALCIUM CHL 95 -98%	17.10	30.0
EZ-MUL	725.00	1.0
GELTONE V	65.00	10.0
INVERMUL	558.60	1.0
LIME	6.00	30.0
SUSPENTONE	134.10	5.0
Job Supplies		
Supply Item Description DIESEL FOR OBM	Unit Label Gal	
Total Received 34,814.0	Total Consumed 20,540.0	On Loc 14,274.0
Supply Item Description DRILLING CUTTINGS	Unit Label Cu. Yds	
Total Received 165.0	Total Consumed 165.0	On Loc 0.0
Supply Item Description DRILLING WATER	Unit Label Bbl	
Total Received 0.0	Total Consumed 0.0	On Loc 0.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/3/2019
Report #: 10.0, DFS: 9.50
Time Log DFS: 9.50
Depth Progress: 2,285.00

Drill Strings

BHA #4, Curve

Bit Run	Drill Bit	IADC Bit Dull		TFA (incl Noz) (in²)	
1	8 1/2in, DD506TX, 5304951	1-1-CT-S-X-1-PN-DMF		1.84	
Nozzles (1/32")			BHA Length (ft)	String Wt (1000lbf)	Bit ROP (ft/hr)
20/20/20/20/20/20			12,998.00	298	65.0

Mud Motors

Motor Bend	Bit to Bend	Rotor Nozzle Diameter (in)
1.83 FIXED	4.31	

Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
HWDP	35	5	2.75	1,072.89	IF
Drill Pipe	302	5	2.88	9,514.86	IF
Agitator	1	7	3.00	25.83	IF
Drill Pipe	72	5	2.88	2,266.47	IF
XO Sub	1	7 1/16	3.50	3.96	IF
Drill Collar - Non Mag	1	7	3.50	30.78	FH
Non-Mag Hangoff Sub	1	7	3.50	6.30	FH
Drill Collar - Non Mag	1	6 1/2	3.50	30.64	FH
Float Sub	1	7	2.75	3.47	FH
Mud Motor - Bent Housing	1	7	3.50	41.30	FH

Drilling Parameters

Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drill Time (hr)	Int ROP (ft/hr)	Q Flow (gpm)	WOB (1000lbf)	dP (SPP) (psi)	Rotary RPM (rpm)	Drill Tq	SPP (psi)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)
9,990.0	10,196.0	2,324.00	1.56	132.1	582	15	350.0	0	0.0	3,250.0	215	177	205
10,196.0	10,266.0	2,394.00	0.92	76.1	582	30	500.0	65	13.6	3,500.0	212	175	205
10,266.0	10,277.0	2,405.00	0.17	64.7	582	20	300.0	0	0.0	3,200.0	216	174	205
10,277.0	10,557.0	2,685.00	2.15	130.2	552	30	450.0	60	14.0	3,350.0	214	175	205
10,557.0	10,570.0	2,698.00	0.26	50.0	552	25	275.0	0	0.0	3,200.0	210	170	205
10,570.0	10,740.0	2,868.00	1.13	150.4	552	30	475.0	60	15.0	3,450.0	216	172	205
10,740.0	10,755.0	2,883.00	1.25	12.0	552	20	280.0	0	0.0	3,250.0	215	170	206
10,755.0	10,929.0	3,057.00	2.06	84.5	552	30	475.0	55	15.0	3,350.0	222	170	205
10,929.0	10,953.0	3,081.00	0.45	53.3	552	30	320.0	0	0.0	3,200.0	220	160	205
10,953.0	11,493.0	3,621.00	5.50	98.2	552	30	450.0	60	15.7	3,300.0	212	165	205
11,493.0	11,508.0	3,636.00	0.26	57.7	552	30	300.0	0	0.0	3,150.0	225	160	205
11,508.0	11,680.0	3,808.00	2.22	77.5	552	30	475.0	60	16.0	3,300.0	225	165	205
11,680.0	11,694.0	3,822.00	0.27	51.9	552	30	275.0	0	0.0	3,200.0	226	168	205
11,694.0	12,275.0	4,403.00	5.32	109.2	552	30	450.0	65	15.0	3,300.0	221	165	205

Hydraulic Calculations

Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	P Drop Annular (psi)
9,990.0	10,196.0	9.10	269.3	104.3	637.6	38.0	28.2	0.5	86.5
10,196.0	10,266.0	9.10	269.3	104.3	637.6	38.0	28.2	0.5	87.1
10,266.0	10,277.0	9.10	269.3	104.3	637.6	38.0	28.2	0.5	87.2
10,277.0	10,557.0	9.09	255.4	98.9	604.8	36.1	24.0	0.4	83.5
10,557.0	10,570.0	9.09	255.4	98.9	604.8	36.1	24.0	0.4	83.6
10,570.0	10,740.0	9.09	255.4	98.9	604.8	36.1	24.0	0.4	85.0
10,740.0	10,755.0	9.10	255.4	98.9	604.8	36.1	24.0	0.4	85.1
10,755.0	10,929.0	9.10	255.4	98.9	604.8	36.1	24.0	0.4	86.6
10,929.0	10,953.0	9.10	255.4	98.9	604.8	36.1	24.0	0.4	86.8
10,953.0	11,493.0	8.97	255.4	98.9	604.8	36.1	23.6	0.4	93.9
11,493.0	11,508.0	8.97	255.4	98.9	604.8	36.1	23.6	0.4	94.0
11,508.0	11,680.0	8.97	255.4	98.9	604.8	36.1	23.6	0.4	95.5
11,680.0	11,694.0	8.97	255.4	98.9	604.8	36.1	23.6	0.4	95.6
11,694.0	12,275.0	9.00	255.4	98.9	604.8	36.1	23.6	0.4	109.6

Kicks

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

Kill Notes

Lost Circulation

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

Job Supplies

Supply Item Description	Unit Label
FUEL	Gal
Total Received	Total Consumed
28,904.0	17,798.0
On Loc	
11,106.0	
Supply Item Description	Unit Label
LIQUID DRILLING WASTE	Bbl
Total Received	Total Consumed
100.0	100.0
On Loc	
0.0	
Supply Item Description	Unit Label
POTABLE WATER	Gal
Total Received	Total Consumed
6.0	6.0
On Loc	
0.0	
Supply Item Description	Unit Label
SEWAGE	Gal
Total Received	Total Consumed
12,800.0	12,800.0
On Loc	
0.0	
Supply Item Description	Unit Label
THREAD PROTECTORS	Box
Total Received	Total Consumed
0.0	0.0
On Loc	
0.0	
Supply Item Description	Unit Label
TRASH/GENERAL WASTE	Cu. Yds
Total Received	Total Consumed
50.0	50.0
On Loc	
0.0	

Safety Checks

Time	Type	Safety Topic
13:30	Pit Drill	Held Pit Drill. Applied By HOC company Men
17:45	Pre-Tour	Mixing Chemicals
05:45	Pre-Tour	Proper Lifting

Wellbores

Wellbore Name
UNIVERSITY 1-2 40 #104HB

Kick Offs & Key Depths

Type	Top Depth (ftKB)
Conductor Shoe	105.0
Surface Shoe	1,078.0
Intermediate 1 Shoe	5,256.0
Curve Kick Off Point	7,872.0
Curve Landing Point	8,830.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/3/2019
Report #: 10.0, DFS: 9.50
Time Log DFS: 9.50
Depth Progress: 2,285.00

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 10/25/2019	OD (in) 13 3/8	Set Depth (ft... 1,078.0	Set Depth (T... 1,077.9	Comment Test Surface Casing to 500 psi for 30 Minutes. Good Test	MACP Press... 500.0
Test Date 10/26/2019	Test Type Casing Test		Fluid Density (lb/gal) 8.50	EMW (lb/gal) 17.43	
Run Date 10/28/2019	OD (in) 9 5/8	Set Depth (ft... 5,256.0	Set Depth (T... 5,189.4	Comment Test Surface Casing to 1500 psi for 30 Minutes. Good Test	MACP Press... 1,500.0
Test Date 10/29/2019	Test Type Casing Test		Fluid Density (lb/gal) 8.50	EMW (lb/gal) 14.06	
Run Date 10/28/2019	OD (in) 9 5/8	Set Depth (ft... 5,256.0	Set Depth (T... 5,189.4	Comment FIT 12.0 EMW 980 psi	MACP Press... 980.0
Test Date 10/29/2019	Test Type F.I.T.		Fluid Density (lb/gal) 8.40	EMW (lb/gal) 12.03	

Survey Data

MD (ftKB) 9,985.00	Inclination (°) 90.64	Azimuth (°) 2.76	TVD (ftKB) 8,380.74	VS (ft) 1,727.47	NS (ft) 1,677.73	EW (ft) -893.15	DLS (°/100ft) 2.16
MD (ftKB) 10,079.00	Inclination (°) 90.91	Azimuth (°) 2.72	TVD (ftKB) 8,379.47	VS (ft) 1,820.92	NS (ft) 1,771.61	EW (ft) -888.66	DLS (°/100ft) 0.29
MD (ftKB) 10,174.00	Inclination (°) 89.97	Azimuth (°) 1.75	TVD (ftKB) 8,378.74	VS (ft) 1,915.46	NS (ft) 1,866.53	EW (ft) -884.95	DLS (°/100ft) 1.42
MD (ftKB) 10,268.00	Inclination (°) 87.45	Azimuth (°) 1.36	TVD (ftKB) 8,380.85	VS (ft) 2,009.08	NS (ft) 1,960.47	EW (ft) -882.40	DLS (°/100ft) 2.71
MD (ftKB) 10,362.00	Inclination (°) 86.87	Azimuth (°) 1.07	TVD (ftKB) 8,385.51	VS (ft) 2,102.66	NS (ft) 2,054.33	EW (ft) -880.41	DLS (°/100ft) 0.69
MD (ftKB) 10,457.00	Inclination (°) 87.68	Azimuth (°) 0.94	TVD (ftKB) 8,390.03	VS (ft) 2,197.28	NS (ft) 2,149.21	EW (ft) -878.75	DLS (°/100ft) 0.86
MD (ftKB) 10,551.00	Inclination (°) 88.19	Azimuth (°) 1.64	TVD (ftKB) 8,393.41	VS (ft) 2,290.90	NS (ft) 2,243.12	EW (ft) -876.63	DLS (°/100ft) 0.92
MD (ftKB) 10,645.00	Inclination (°) 87.32	Azimuth (°) 1.24	TVD (ftKB) 8,397.10	VS (ft) 2,384.50	NS (ft) 2,337.02	EW (ft) -874.27	DLS (°/100ft) 1.02
MD (ftKB) 10,740.00	Inclination (°) 87.95	Azimuth (°) 0.98	TVD (ftKB) 8,401.02	VS (ft) 2,479.12	NS (ft) 2,431.92	EW (ft) -872.43	DLS (°/100ft) 0.72
MD (ftKB) 10,834.00	Inclination (°) 88.96	Azimuth (°) 1.18	TVD (ftKB) 8,403.55	VS (ft) 2,572.80	NS (ft) 2,525.87	EW (ft) -870.66	DLS (°/100ft) 1.10
MD (ftKB) 10,929.00	Inclination (°) 89.77	Azimuth (°) 1.18	TVD (ftKB) 8,404.60	VS (ft) 2,667.50	NS (ft) 2,620.84	EW (ft) -868.70	DLS (°/100ft) 0.85
MD (ftKB) 11,023.00	Inclination (°) 91.04	Azimuth (°) 3.09	TVD (ftKB) 8,403.94	VS (ft) 2,761.05	NS (ft) 2,714.77	EW (ft) -865.20	DLS (°/100ft) 2.44
MD (ftKB) 11,118.00	Inclination (°) 90.64	Azimuth (°) 2.11	TVD (ftKB) 8,402.55	VS (ft) 2,855.52	NS (ft) 2,809.66	EW (ft) -860.89	DLS (°/100ft) 1.11
MD (ftKB) 11,212.00	Inclination (°) 90.24	Azimuth (°) 1.25	TVD (ftKB) 8,401.82	VS (ft) 2,949.15	NS (ft) 2,903.61	EW (ft) -858.14	DLS (°/100ft) 1.01
MD (ftKB) 11,307.00	Inclination (°) 90.50	Azimuth (°) 1.28	TVD (ftKB) 8,401.21	VS (ft) 3,043.84	NS (ft) 2,998.59	EW (ft) -856.04	DLS (°/100ft) 0.28
MD (ftKB) 11,401.00	Inclination (°) 90.20	Azimuth (°) 0.33	TVD (ftKB) 8,400.64	VS (ft) 3,137.59	NS (ft) 3,092.57	EW (ft) -854.72	DLS (°/100ft) 1.06
MD (ftKB) 11,495.00	Inclination (°) 91.04	Azimuth (°) 0.77	TVD (ftKB) 8,399.62	VS (ft) 3,231.36	NS (ft) 3,186.56	EW (ft) -853.82	DLS (°/100ft) 1.01
MD (ftKB) 11,590.00	Inclination (°) 91.48	Azimuth (°) 1.90	TVD (ftKB) 8,397.53	VS (ft) 3,326.01	NS (ft) 3,281.51	EW (ft) -851.61	DLS (°/100ft) 1.28
MD (ftKB) 11,684.00	Inclination (°) 89.83	Azimuth (°) 2.16	TVD (ftKB) 8,396.46	VS (ft) 3,419.59	NS (ft) 3,375.44	EW (ft) -848.28	DLS (°/100ft) 1.78
MD (ftKB) 11,779.00	Inclination (°) 89.19	Azimuth (°) 1.86	TVD (ftKB) 8,397.27	VS (ft) 3,514.16	NS (ft) 3,470.38	EW (ft) -844.94	DLS (°/100ft) 0.74
MD (ftKB) 11,873.00	Inclination (°) 89.46	Azimuth (°) 1.57	TVD (ftKB) 8,398.38	VS (ft) 3,607.78	NS (ft) 3,564.33	EW (ft) -842.13	DLS (°/100ft) 0.42
MD (ftKB) 11,968.00	Inclination (°) 89.66	Azimuth (°) 1.03	TVD (ftKB) 8,399.11	VS (ft) 3,702.46	NS (ft) 3,659.31	EW (ft) -839.98	DLS (°/100ft) 0.61
MD (ftKB) 12,059.00	Inclination (°) 89.46	Azimuth (°) 0.62	TVD (ftKB) 8,399.80	VS (ft) 3,793.22	NS (ft) 3,750.29	EW (ft) -838.67	DLS (°/100ft) 0.50



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/3/2019
Report #: 10.0, DFS: 9.50
Time Log DFS: 9.50
Depth Progress: 2,285.00

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
12,149.00	90.17	0.40	8,400.09	3,883.01	3,840.29	-837.86	0.83
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
12,241.00	89.73	0.61	8,400.17	3,974.80	3,932.28	-837.05	0.53



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/4/2019
Report #: 11.0, DFS: 10.50
Time Log DFS: 10.50
Depth Progress: 723.00

API/UWI No. 42461412550000	Surface Legal Location A-160; SEC. 51; GC&SF RR CO	Well License/Permit No. 855360	State/Province TEXAS	County UPTON
Original Spud/Spud Rig Date 10/24/2019 18:00	Large Rig Spud Date 10/24/2019 18:00	Rig Release Date	KB to GL (ft) 26.50	KB-CF (ft) 27.90
Weather Clear	Temperature (°F) 52.0	Road Condition Good	Hole Condition Good	
Current Status/OART Slip & Cut Drill Line		24 Hour Forecast Slip & cut Drill Line. TIH T/12,998'. Drill 8 1/2" Lateral Production Hole		

Short Report
Slide / Rotate drill in 8 1/2" production section F/12,275' T/12,998'. TOH F/12,998' T/BHA. Change Motor & BIT. TIH T/5,146'. Slip & Cut Drill Line.

Mud Volumes						
Active Volume (bbl) 2,421.4	Var Active Vol (bbl) -506.3	Balance (bbl) -834.7	Tank Volume (bbl) 1,483.1	Additions (bbl) 328.4	Losses (bbl) 0.0	Hole Volume (bbl) 938.3

Time Log						
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code
06:00	14:00	8.00	PROD 1, LAT Drill	DR	DR L	O
Slide / Rotate drill in 8 1/2" production section F/12,275' T/12,998'. 723' @ 90FPH. Note: 24 hrs losses: 0 bbl's Surface: 0 bbl's. Down Hole: 0 bbl's. Total OBM losses: 519 bbl's.						
14:00	15:00	1.00	PROD 1, LAT Drill	CI	CIR C	O
Pressure spike noticed while attempting to drilling. Motor stalling. Circulate While Mixing Slug @ Reduced Rate. Prepare for TOH.						
15:00	15:30	0.50	PROD 1, LAT Drill	CI	FL OW CH K	O
Check Flow. Pump Slug.						
15:30	19:00	3.50	PROD 1, LAT Drill	TP	TO H	O
TOH F/12,998' T/4,100' Hole Taking Proper Fill						
19:00	19:30	0.50	PROD 1, LAT Drill	BO	RH	O
Pull rotating head and install trip nipple						
19:30	22:30	3.00	PROD 1, LAT Drill	TP	TO H	O
TOH F/4,100' T/117' Hole Taking Proper Fill						
22:30	22:45	0.25	PROD 1, LAT Drill	SM	PR EJ OB	O
Hold prejob safety meeting on changing out BHA.						
22:45	23:45	1.00	PROD 1, LAT Drill	TP	BH AH DL	O
BHA #4: Drain motor break bit 8 1/2" DD506TX Baker PDC bit S/N: 5304951. Lay down motor. Note: all but 1 bit jet plugged with stator rubber. Bit grade: 1-1-CT-S-X-1-PN-DMF						
23:45	02:30	2.75	PROD 1, LAT Drill	TP	BH AH DL	O
BHA #5: Pick up 7" SDI 7/8 lobe 9.4 stage 1.83 fixed bend motor and make up 8 1/2" FY616P-F Varel bit SN: 4011598. Note: Unable to break set screws in hang off sub. Break hang off sub. Break connection on pulser under hang off sub and lay down in 2 pieces. P/U new Hang off sub. Pick up pulser and scribe motor.						
02:30	05:00	2.50	PROD 1, LAT Drill	TP	TIH	O
TIH F/115' T/5,146' Pick up Scout vibe tool / agitator @ 2,384'. Test at 400 GPM, test before: 1,161 psi, test after: 1,431 psi.						
05:00	05:30	0.50	PROD 1, LAT Drill	BO	RH	O
Remove Trip Nipple & Install Rotating Head						
05:30	06:00	0.50	PROD 1, LAT Drill	RM	SLI PC UT	O
Slip and cut 42.5' (5 wraps) of drill line.						

AFE Number DD.19.31597.CAP.DRL	AFE+Supp Amt (Cost) 2,663,000.00
Day Total (Cost) 64,661	Cum To Date (Cost) 1,220,292
Mud Field Est (Cost) 4,768	Cum Mud Field Est (Co... 42,511
Start Depth (ftKB) 12,275.0	End Depth (ftKB) 12,998.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,297.0
Last Casing String Intermediate Casing, 5,256.0ftKB	

Daily Contacts	
Job Contact	Mobile
STEVE BIEREN, Engineer	972-207-9164
BRANDON CHUMLEY, Foreman	701-500-7112
CURTIS THOMAS, Consultant	(318) 245-3261
JEFF POOLE, Foreman	432-241-0123

Personnel Log	
Head Count	19.0

Rigs	
Helmerich & Payne Drilling, 394	
Contractor Helmerich & Payne Drilling	Rig Number 394
Rig Supervisor AARON DUNAWAY, Toolpusher	Phone Mobile 601-248-1508

2, Gardner-Denver, pz11			
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2	
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097	
P (psi) 3,650.0	Slow Spd No	Strokes (s... 72	Eff (%) 95

1, Gardner-Denver, pz11			
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2	
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097	
P (psi) 3,650.0	Slow Spd No	Strokes (s... 72	Eff (%) 95

Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
24 HR MUD ENGINEER	700.00	1.0
BAROID (BULK)	205.00	7.0
CALCIUM CHL 95 -98%	17.10	12.0
DRILTREAT	97.02	2.0
GELTONE V	65.00	2.0
LIME	6.00	18.0
PALLETS	10.00	10.0
RIG WASH	786.59	1.0
SUSPENTONE	134.10	3.0
TRANSPORTATI ON	1.00	707.15

Job Supplies		
Supply Item Description DIESEL FOR OBM	Unit Label Gal	
Total Received 42,123.0	Total Consumed 26,911.0	On Loc 15,212.0
Supply Item Description DRILLING CUTTINGS	Unit Label Cu. Yds	
Total Received 255.0	Total Consumed 255.0	On Loc 0.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/4/2019
Report #: 11.0, DFS: 10.50
Time Log DFS: 10.50
Depth Progress: 723.00

Mud Checks

Time 17:00	Type INVERMUL	Depth (ftKB) 12,998.0	Density (kg/m³) (lb/gal) 8.80	Funnel Viscosity (s/qt) 62	PV Calc (cP) 12.0	YP Calc (lb/100ft²) 12.000
Gel 10 sec (kPa) (lb/100.000)	Gell 10 min (kPa) (lb/100.000)	Gel 30 min (kPa) (lb/100.000)	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%)
10.000	14.000	19.000	36,000.000	20,000.000		9.0
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%)	Chlorides (kg/m³) (...)	Calcium (kg/m³) (m...)	Potassium (mg/L)	Electric Stab (V)
	70.0	21.0	37,000.000	20,400.000		581.0
Time 05:00	Type INVERMUL	Depth (ftKB) 12,998.0	Density (kg/m³) (lb/gal) 8.85	Funnel Viscosity (s/qt) 64	PV Calc (cP) 12.0	YP Calc (lb/100ft²) 13.000
Gel 10 sec (kPa) (lb/100.000)	Gell 10 min (kPa) (lb/100.000)	Gel 30 min (kPa) (lb/100.000)	Filtrate (mL/30min)	Filter Cake (1/32")	pH	Solids (%)
10.000	15.000	18.000	37,000.000	20,400.000		8.5
MBT (lb/bbl)	Percent Oil (%)	Percent Water (%)	Chlorides (kg/m³) (...)	Calcium (kg/m³) (m...)	Potassium (mg/L)	Electric Stab (V)
	70.5	21.0	37,000.000	20,400.000		601.0

Mud Volumes

Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	ANNULUS	249.9	WBM
Hole	PIPE CAPACITY	44.2	WBM
Hole	TOTAL HOLE	894.1	WBM
Tank	ACTIVE PITS	390.0	WBM
Tank	TOTAL CRIC	684.1	WBM
Tank	RESERVE	409.0	WBM
Addition	BASE	50.3	WBM
Addition	DRILL WATER	14.6	Fresh water
Addition	BRINE	0.0	Salt Water
Addition	WHOLE MUD	0.0	WBM
Addition	BARITE	9.7	Weighting Agent
Addition	CHEMICALS	3.9	WBM
Loss	SCE	0.0	WBM
Loss	DOWNHOLE	0.0	WBM
Loss	TRIPS	0.0	WBM
Loss	TRANSFERED	0.0	WBM
Loss	MISC / OTHER	0.0	WBM

Drill Strings

BHA #4, Curve

Bit Run 1	Drill Bit 8 1/2in, DD506TX, 5304951	IADC Bit Dull 1-1-CT-S-X-1-PN-DMF	TFA (incl Noz) (in²) 1.84
Nozzles (1/32") 20/20/20/20/20/20	BHA Length (ft) 12,998.00	String Wt (1000lbf) 298	Bit ROP (ft/hr) 65.0

Mud Motors

Motor Bend 1.83 FIXED	Bit to Bend 4.31	Rotor Nozzle Diameter (in)
--------------------------	---------------------	----------------------------

Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
HWDP	35	5	2.75	1,072.89	IF
Drill Pipe	302	5	2.88	9,514.86	IF
Agitator	1	7	3.00	25.83	IF
Drill Pipe	72	5	2.88	2,266.47	IF
XO Sub	1	7 1/16	3.50	3.96	IF
Drill Collar - Non Mag	1	7	3.50	30.78	FH
Non-Mag Hangoff Sub	1	7	3.50	6.30	FH
Drill Collar - Non Mag	1	6 1/2	3.50	30.64	FH
Float Sub	1	7	2.75	3.47	FH
Mud Motor - Bent Housing	1	7	3.50	41.30	FH

Drilling Parameters

Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drill Time (hr)	Int ROP (ft/hr)	Q Flow (gpm)	WOB (1000lbf)	dP (SPP) (psi)	Rotary RPM (rpm)	Drill Tq	SPP (psi)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)
12,275.0	12,614.0	4,742.00	2.53	134.0	552	30	450.0	65	17.0	3,550.0	230	161	206
12,614.0	12,637.0	4,765.00	0.45	51.1	552	28	275.0	0	0.0	3,400.0	240	165	208
12,637.0	12,882.0	5,010.00	2.45	100.0	552	30	450.0	65	16.0	3,700.0	234	160	212
12,882.0	12,902.0	5,030.00	0.40	50.0	552	30	275.0	0	0.0	3,450.0	240	160	212
12,902.0	12,998.0	5,126.00	1.04	92.3	552	30	450.0	65	16.0	3,650.0	245	155	212

Hydraulic Calculations

Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in²)	P Drop Annular (psi)
12,275.0	12,614.0	9.01	255.4	98.9	604.8	36.1	23.6	0.4	112.7
12,614.0	12,637.0	9.01	255.4	98.9	604.8	36.1	23.6	0.4	113.0

Job Supplies

Supply Item Description	Unit Label
DRILLING WATER	Bbl
Total Received 0.0	Total Consumed 0.0 On Loc 0.0
Supply Item Description	Unit Label
FUEL	Gal
Total Received 28,904.0	Total Consumed 20,215.0 On Loc 8,689.0
Supply Item Description	Unit Label
LIQUID DRILLING WASTE	Bbl
Total Received 100.0	Total Consumed 100.0 On Loc 0.0
Supply Item Description	Unit Label
POTABLE WATER	Gal
Total Received 8.0	Total Consumed 8.0 On Loc 0.0
Supply Item Description	Unit Label
SEWAGE	Gal
Total Received 12,800.0	Total Consumed 12,800.0 On Loc 0.0
Supply Item Description	Unit Label
THREAD PROTECTORS	Box
Total Received 0.0	Total Consumed 0.0 On Loc 0.0
Supply Item Description	Unit Label
TRASH/GENERAL WASTE	Cu. Yds
Total Received 50.0	Total Consumed 50.0 On Loc 0.0

Safety Checks

Time	Type	Safety Topic
17:45	Pre-Tour	Making Connections
05:45	Pre-Tour	LOT/Fork Lift

Wellbores

Wellbore Name

UNIVERSITY 1-2 40 #104HB

Kick Offs & Key Depths

Type	Top Depth (ftKB)
Conductor Shoe	105.0
Surface Shoe	1,078.0
Intermediate 1 Shoe	5,256.0
Curve Kick Off Point	7,872.0
Curve Landing Point	8,830.0



Partner Drilling Report

Report Date: 11/4/2019
Report #: 11.0, DFS: 10.50
Time Log DFS: 10.50
Depth Progress: 723.00

Well Name: UNIVERSITY 1-2 40 #104HB

Hydraulic Calculations

Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in²)	P Drop Annular (psi)
12,637.0	12,882.0	9.01	255.4	98.9	604.8	36.1	23.6	0.4	115.2
12,882.0	12,902.0	9.01	255.4	98.9	604.8	36.1	23.6	0.4	115.4
12,902.0	12,998.0	9.02	255.4	98.9	604.8	36.1	23.6	0.4	116.3

Kicks

Kick Date	Kick Depth (ftKB)	Control Date	Control Depth (ftKB)	Kick Class
-----------	-------------------	--------------	----------------------	------------

Kill Notes

Lost Circulation

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

Interval Problems

Problem Type	Problem Subtype	Start Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost (Cost)	Est Lost Time (hr)
DIRECTIONAL	MOTOR	11/3/2019	12,998.0	12,998.0	51,250.00	20.50

Action Taken

TOH Replace Motor

Problem Type	Problem Subtype	Start Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost (Cost)	Est Lost Time (hr)
DIRECTIONAL	MWD	11/3/2019	12,998.0	12,998.0	6,125.00	2.75

Action Taken

Break hang off sub. Break connection on pulser under hanger. Replace

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...
10/25/2019	13 3/8	1,078.0	1,077.9	Test Surface Casing to 500 psi for 30 Minutes. Good Test	500.0

Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)
10/26/2019	Casing Test	8.50	17.43

Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
10/28/2019	9 5/8	5,256.0	5,189.4	Test Surface Casing to 1500 psi for 30 Minutes. Good Test	1,500.0

Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)
10/29/2019	Casing Test	8.50	14.06

Run Date	OD (in)	Set Depth (ft...)	Set Depth (T...)	Comment	MACP Press...
10/28/2019	9 5/8	5,256.0	5,189.4	FIT 12.0 EMW 980 psi	980.0

Test Date	Test Type	Fluid Density (lb/gal)	EMW (lb/gal)
10/29/2019	F.I.T.	8.40	12.03

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
12,331.00	88.66	1.77	8,401.44	4,064.50	4,022.25	-835.18	1.75
12,422.00	88.56	1.23	8,403.65	4,155.14	4,113.20	-832.80	0.60
12,513.00	88.25	0.63	8,406.18	4,245.85	4,204.15	-831.33	0.74
12,604.00	88.02	0.17	8,409.14	4,336.60	4,295.10	-830.69	0.56
12,695.00	88.69	2.02	8,411.75	4,427.28	4,386.04	-828.95	2.16
12,786.00	88.66	1.17	8,413.86	4,517.91	4,476.98	-826.42	0.93
12,877.00	88.96	1.50	8,415.75	4,608.59	4,567.93	-824.30	0.49
12,967.00	89.13	2.65	8,417.25	4,698.16	4,657.86	-821.04	1.29



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/5/2019
Report #: 12.0, DFS: 11.50
Time Log DFS: 11.50
Depth Progress: 1,492.00

API/UWI No. 42461412550000	Surface Legal Location A-160; SEC. 51; GC&SF RR CO	Well License/Permit No. 855360	State/Province TEXAS	County UPTON
Original Spud/Spud Rig Date 10/24/2019 18:00	Large Rig Spud Date 10/24/2019 18:00	Rig Release Date	KB to GL (ft) 26.50	KB-CF (ft) 27.90
Weather Clear	Temperature (°F) 50.0	Road Condition Good	Hole Condition Good	
Current Status/OART Drilling Lateral Production Section @14,490'		24 Hour Forecast Drill 8 1/2" Lateral Production Section		
Short Report Slip & cut Drill Line. TIH T/12,998'. Slide / Rotate drill in 8 1/2" production section F/12,998' T/14,490'.				
Mud Volumes				
Active Volume (bbl) 3,017.3	Var Active Vol (bbl) 595.9	Balance (bbl) -76.8	Tank Volume (bbl) 2,049.0	Additions (bbl) 871.6
Losses (bbl) 198.9	Hole Volume (bbl) 968.3			
Time Log				
Start Time	End Time	Dur (hr)	Phase	Ops Code
06:00	07:00	1.00	PROD 1, LAT Drill	RM
07:00	10:30	3.50	PROD 1, LAT Drill	TP
10:30	06:00	19.50	PROD 1, LAT Drill	DR
Sub Code PC UT				
Time Code O				
Operation Summary Slip and cut 42.5' (5 wraps) of drill line.				
TIH F/5,146' T/12,998'				
Slide / Rotate drill in 8 1/2" production section F/12,998' T/14,490'.				
1,492' @ 76 FPH.				
Note: 24 hrs losses: 198.9 bbl's Surface: 198.9 bbl's. Down Hole: 0 bbl's. Total OBM losses: 717.9 bbl's.				
Mud Checks				
Time 16:30	Type INVERMUL	Depth (ftKB) 13,381.0	Density (kg/m³) (lb/g... 8.85	Funnel Viscosity (s/qt) 55
Gel 10 sec (kPa) (lb... 13.000	Gell 10 min (kPa) (l... 17.000	Gel 30 min (kPa) (lb... 22.000	Filtrate (mL/30min) 34,000.000	Filter Cake (1/32") 20,000.000
MBT (lb/bbl) 66.5	Percent Oil (%) 25.0	Percent Water (%) 25.0	Chlorides (kg/m³) (... 34,000.000	Calcium (kg/m³) (m... 20,000.000
Potassium (mg/L) 447.0	Electric Stab (V) 12.000			
Time 05:00	Type INVERMUL	Depth (ftKB) 14,369.0	Density (kg/m³) (lb/g... 9.00	Funnel Viscosity (s/qt) 55
Gel 10 sec (kPa) (lb... 13.000	Gell 10 min (kPa) (l... 17.000	Gel 30 min (kPa) (lb... 21.000	Filtrate (mL/30min) 32,000.000	Filter Cake (1/32") 19,000.000
MBT (lb/bbl) 68.5	Percent Oil (%) 22.0	Percent Water (%) 22.0	Chlorides (kg/m³) (... 32,000.000	Calcium (kg/m³) (m... 19,000.000
Potassium (mg/L) 494.0	Electric Stab (V) 11.000			
Mud Volumes				
Tank/Addition/Loss	Type	Volume (bbl)	Subtype	
Addition	ANNULUS	715.7	WBM	
Hole	PIPE CAPACITY	126.3	WBM	
Hole	TOTAL HOLE	842.0	WBM	
Tank	ACTIVE PITS	399.0	WBM	
Tank	TOTAL CRIC	1,241.0	WBM	
Tank	RESERVE	409.0	WBM	
Addition	BASE	151.7	WBM	
Addition	DRILL WATER	0.0	Fresh water	
Addition	BRINE	0.0	Salt Water	
Addition	WHOLE MUD	0.0	WBM	
Addition	BARITE	0.0	Weighting Agent	
Addition	CHEMICALS	4.2	WBM	
Loss	SCE	198.9	WBM	
Loss	DOWNHOLE	0.0	WBM	
Loss	TRIPS	0.0	WBM	
Loss	TRANSFERED	0.0	WBM	
Loss	MISC / OTHER	0.0	WBM	
Drill Strings				
BHA #5, Lateral				
Bit Run 1	Drill Bit 8 1/2in, FY616F, 4011598	IADC Bit Dull -----	TFA (incl Noz) (in²) 1.84	
Nozzles (1/32") 20/20/20/20/20/20	BHA Length (ft) 14,490.00	String Wt (1000lb) 333	Bit ROP (ft/hr) 78.1	

AFE Number DD.19.31597.CAP.DRL	AFE+Supp Amt (Cost) 2,663,000.00	
Day Total (Cost) 84,771	Cum To Date (Cost) 1,305,063	
Mud Field Est (Cost) 3,227	Cum Mud Field Est (Co... 45,738	
Start Depth (ftKB) 12,998.0	End Depth (ftKB) 14,490.0	
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,297.0	
Last Casing String Intermediate Casing, 5,256.0ftKB		
Daily Contacts		
Job Contact	Mobile	
STEVE BIEREN, Engineer	972-207-9164	
BRANDON CHUMLEY, Foreman	701-500-7112	
CURTIS THOMAS, Consultant	(318) 245-3261	
JEFF POOLE, Foreman	432-241-0123	
Personnel Log		
Head Count	19.0	
Rigs		
Helmerich & Payne Drilling, 394		
Contractor Helmerich & Payne Drilling	Rig Number 394	
Rig Supervisor AARON DUNAWAY, Toolpusher	Phone Mobile 601-248-1508	
2, Gardner-Denver, pz11		
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097
P (psi) 4,000.0	Slow Spd No	Strokes (s... 72
Eff (%) 95		
1, Gardner-Denver, pz11		
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter... 2 1/2
Liner Size (in) 6	Stroke (in) 11.00	Vol/Stk OR (b... 0.097
P (psi) 4,000.0	Slow Spd No	Strokes (s... 72
Eff (%) 95		
Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
24 HR MUD ENGINEER	700.00	1.0
BARABLOK 400	85.00	20.0
INVERMUL	558.60	1.0
SUSPENTONE	134.10	2.0
Job Supplies		
Supply Item Description	Unit Label	
DIESEL FOR OBM	Gal	
Total Received 42,123.0	Total Consumed 26,911.0	On Loc 15,212.0
Supply Item Description	Unit Label	
DRILLING CUTTINGS	Cu. Yds	
Total Received 255.0	Total Consumed 255.0	On Loc 0.0
Supply Item Description	Unit Label	
DRILLING WATER	Bbl	
Total Received 0.0	Total Consumed 0.0	On Loc 0.0
Supply Item Description	Unit Label	
FUEL	Gal	
Total Received 28,904.0	Total Consumed 20,215.0	On Loc 8,689.0



Partner Drilling Report

Well Name: UNIVERSITY 1-2 40 #104HB

Report Date: 11/5/2019
Report #: 12.0, DFS: 11.50
Time Log DFS: 11.50
Depth Progress: 1,492.00

Mud Motors

Motor Bend 1.83 FIXED	Bit to Bend 4.31	Rotor Nozzle Diameter (in)
--------------------------	---------------------	----------------------------

Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
Drill Pipe	41	5	2.88	1,291.16	IF
HWDP	42	5	2.75	1,275.88	IF
Drill Pipe	302	5	2.88	9,514.86	IF
Agitator	1	7	3.00	25.83	IF
Drill Pipe	72	5	2.88	2,266.47	IF
XO Sub	1	7 1/16	3.50	3.18	IF
Drill Collar - Non Mag	1	7	3.50	30.78	FH
Non-Mag Hangoff Sub	1	7	3.50	5.22	FH
Drill Collar - Non Mag	1	6 1/2	3.50	30.64	FH
Float Sub	1	7	2.75	3.47	FH
Mud Motor - Bent Housing	1	7	3.50	41.51	FH

Drilling Parameters

Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drill Time (hr)	Int ROP (ft/hr)	Q Flow (gpm)	WOB (1000lbf)	dP (SPP) (psi)	Rotary RPM (rpm)	Drill Tq	SPP (psi)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Off-Btm Str Wt (1000lbf)
12,998.0	13,382.0	384.00	5.90	65.1	553	30	400.0	60	18.0	3,902.0	245	189	220
13,382.0	13,390.0	392.00	0.58	13.8	553	30	200.0	0	0.0	3,500.0	265	185	222
13,390.0	13,616.0	618.00	3.03	74.6	555	30	450.0	65	19.0	3,840.0	244	215	224
13,616.0	13,632.0	634.00	0.60	26.7	554	20	215.0	0	0.0	3,497.0	266	233	245
13,632.0	14,370.0	1,372.00	7.50	98.4	554	30	450.0	65	18.0	4,016.0	265	220	240
14,370.0	14,380.0	1,382.00	0.50	20.0	554	25	250.0	0	0.0	3,800.0	260	210	240
14,380.0	14,490.0	1,492.00	1.00	110.0	554	30	450.0	65	18.0	4,020.0	258	205	240

Hydraulic Calculations

Start Depth (ftKB)	End Depth (ftKB)	ECD End (lb/gal)	Max Casing AV (ft/min)	Min Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Open Hole AV (ft/min)	Bit Hydraulic Power (hp)	HP/Area (hp/in²)	P Drop Annular (psi)
12,998.0	13,382.0	9.13	255.9	99.1	605.9	36.1	24.0	0.4	121.0
13,382.0	13,390.0	9.13	255.9	99.1	605.9	36.1	24.0	0.4	121.1
13,390.0	13,616.0	9.13	256.8	99.4	608.1	36.3	24.3	0.4	123.8
13,616.0	13,632.0	9.13	256.3	99.3	607.0	36.2	24.2	0.4	123.7
13,632.0	14,370.0	9.15	256.3	99.3	607.0	36.2	24.2	0.4	130.6
14,370.0	14,380.0	9.28	256.3	99.3	607.0	36.2	24.6	0.4	121.3
14,380.0	14,490.0	9.28	256.3	99.3	607.0	36.2	24.6	0.4	122.2

Kicks

Kick Date	Kick Depth (ftKB)	Control Date	Control Depth (ftKB)	Kick Class
-----------	-------------------	--------------	----------------------	------------

Kill Notes

Lost Circulation

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

Interval Problems

Problem Type DIRECTIONAL	Problem Subtype MOTOR	Start Date 11/3/2019	Start Depth (ftKB) 12,998.0	End Depth (ftKB) 12,998.0	Est Cost (Cost) 51,250.00	Est Lost Time (hr) 20.50
-----------------------------	--------------------------	-------------------------	--------------------------------	------------------------------	------------------------------	-----------------------------

Action Taken
TOH Replace Motor

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 10/25/2019	OD (in) 13 3/8	Set Depth (ft...) 1,078.0	Set Depth (T...) 1,077.9	Comment Test Surface Casing to 500 psi for 30 Minutes. Good Test	MACP Press... 500.0
Test Date 10/26/2019	Test Type Casing Test	Fluid Density (lb/gal) 8.50	EMW (lb/gal) 17.43		

Job Supplies

Supply Item Description LIQUID DRILLING WASTE	Unit Label Bbl
Total Received 100.0	Total Consumed 100.0
On Loc 0.0	

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 8.0	Total Consumed 8.0
On Loc 0.0	

Supply Item Description SEWAGE	Unit Label Gal
Total Received 12,800.0	Total Consumed 12,800.0
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 Cu. Yds
Total Received 50.0	Total Consumed 50.0
On Loc 0.0	

Safety Checks

Time	Type	Safety Topic
17:45	Pre-Tour	Keeping V-Door Gate Closed
05:45	Pre-Tour	Proper fall restraint equipment

Wellbores

Wellbore Name
UNIVERSITY 1-2 40 #104HB

Kick Offs & Key Depths

Type	Top Depth (ftKB)
Conductor Shoe	105.0
Surface Shoe	1,078.0
Intermediate 1 Shoe	5,256.0
Curve Kick Off Point	7,872.0
Curve Landing Point	8,830.0



Partner Drilling Report

Report Date: 11/5/2019
Report #: 12.0, DFS: 11.50
Time Log DFS: 11.50
Depth Progress: 1,492.00

Well Name: UNIVERSITY 1-2 40 #104HB

Leak Off and Formation Integrity Tests

Run Date 10/28/2019	OD (in) 9 5/8	Set Depth (ft... 5,256.0	Set Depth (T... 5,189.4	Comment Test Surface Casing to 1500 psi for 30 Minutes. Good Test	MACP Press... 1,500.0
Test Date 10/29/2019	Test Type Casing Test	Fluid Density (lb/gal) 8.50	EMW (lb/gal) 14.06		
Run Date 10/28/2019	OD (in) 9 5/8	Set Depth (ft... 5,256.0	Set Depth (T... 5,189.4	Comment FIT 12.0 EMW 980 psi	MACP Press... 980.0
Test Date 10/29/2019	Test Type F.I.T.	Fluid Density (lb/gal) 8.40	EMW (lb/gal) 12.03		

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,059.00	89.33	2.92	8,418.48	4,789.62	4,749.74	-816.57	0.37
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,150.00	89.46	2.63	8,419.45	4,880.09	4,840.63	-812.17	0.35
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,240.00	89.63	2.75	8,420.16	4,969.59	4,930.53	-807.94	0.23
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,334.00	89.16	3.28	8,421.15	5,063.00	5,024.39	-803.00	0.75
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,523.00	86.78	4.31	8,427.85	5,250.38	5,212.84	-790.50	1.37
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,617.00	87.71	3.60	8,432.37	5,343.50	5,306.51	-784.03	1.24
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,712.00	89.09	3.51	8,435.02	5,437.77	5,401.29	-778.14	1.46
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,806.00	89.06	3.52	8,436.54	5,531.08	5,495.10	-772.38	0.03
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,901.00	89.16	3.97	8,438.01	5,625.33	5,589.88	-766.17	0.49
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
13,995.00	88.92	3.18	8,439.59	5,718.63	5,683.69	-760.31	0.88
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
14,090.00	88.45	3.07	8,441.77	5,812.99	5,778.52	-755.13	0.51
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
14,184.00	88.12	1.60	8,444.58	5,906.48	5,872.40	-751.30	1.60
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
14,279.00	87.58	1.61	8,448.14	6,001.05	5,967.29	-748.65	0.57
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
14,373.00	87.78	1.12	8,451.95	6,094.65	6,061.19	-746.41	0.56
MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
14,490.00	87.78	1.12	8,456.48	6,211.20	6,178.08	-744.12	0.00