

**Phoenix Technology Services
SURVEY DATA CERTIFICATION**



PHOENIX JOB NUMBER 1610091

OPERATOR Chevron

WELL NAME SD EA 19 Fed P6 6H

COUNTY & STATE Lea County, NM

API WELL NUMBER 30-025-42798

PROPOSED DIRECTION 178.7

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
834.00 ft	833.82 ft	1.7°	40.4°	9.67 N	10.61 E	Wel Benders Surveys

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
22-Feb-16	962 ft	1.3°	39.4°

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
2-Mar-16	13,685 ft	90.5°	179.6°

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
2-Mar-16	13,742 ft	90.5°	179.6°

Michael Johnson
PRINT YOUR NAME ABOVE

Michael Johnson
SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.60°
DECLINATION OR GRID	GRID

3/2/2016
TODAY'S DATE

MWD SUPERVISOR 1

Michael Johnson

DIRECTIONAL DRILLER 1

Casey Tubbe

MWD SUPERVISOR 2

Lance Mosby

DIRECTIONAL DRILLER 2

Justin Jackson

12329 Cutten Rd., Houston, Texas 77066 (713)337-0600 (Voice), (713)337-0599 (Fax)



Chevron

Lea County, NM (NAD27 NME)

SD EA 19 Fed

P6 6H

OH / Job 1610091

Survey: Phoenix MWD Surveys

Standard Survey Report

03 March, 2016





Phoenix Technology Services

Survey Report



Company:	Chevron	Local Co-ordinate Reference:	Well P6 6H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3232.00usft (Pace X30)
Site:	SD EA 19 Fed	MD Reference:	RKB @ 3232.00usft (Pace X30)
Well:	P6 6H	North Reference:	Grid
Wellbore:	OH / Job 1610091	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pace X30)	Database:	Compass 5000 GCR

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	SD EA 19 Fed				
Site Position:		Northing:	377,402.00 usft	Latitude:	32° 2' 7.86475 N
From:	Map	Easting:	724,767.00 usft	Longitude:	103° 36' 28.78145 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	P6 6H					
Well Position	+N-S	0.00 usft	Northing:	377,422.00 usft	Latitude:	32° 2' 8.06160 N
	+E-W	0.00 usft	Easting:	724,783.00 usft	Longitude:	103° 36' 28.59402 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,205.00 usft	

Wellbore	OH / Job 1610091				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/27/2016	6.98	59.77	48,056

Design	Surveys (Pace X30)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.00	0.00	0.00	178.70	

Survey Program	Date	3/3/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
182.00	834.00	Wellbenders MWD Surveys (OH / Job 161	MWD	MWD - Standard	
962.00	13,742.00	Phoenix MWD Surveys (OH / Job 1610091	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	

Survey	Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	834.00	1.70	40.40	833.82	9.67	10.61	-9.43	0.00	0.00	0.00
Tie-In to Wellbenders										
	962.00	1.30	38.40	961.77	12.24	12.76	-11.95	0.31	-0.31	-0.78
First Phoenix MWD Survey										
	1,143.00	1.90	320.00	1,142.72	18.13	12.14	-15.85	1.18	0.33	-43.87
	1,321.00	2.30	312.60	1,320.60	20.81	7.61	-20.63	0.27	0.22	-4.16
	1,498.00	2.50	305.50	1,497.44	25.45	1.85	-25.40	0.20	0.11	-4.01
	1,675.00	1.10	218.60	1,674.38	28.33	-2.30	-28.38	1.53	-0.79	-50.23
	1,853.00	1.40	206.30	1,852.33	23.01	-4.28	-23.10	0.21	0.17	-5.79



Phoenix Technology Services

Survey Report



Company: Chevron
 Project: Lea County, NM (NAD27 NME)
 Site: SD EA 19 Fed
 Well: P6 6H
 Wellbore: OH / Job 1610091
 Design: Surveys (Pace X30)

Local Co-ordinate Reference: Well P6 6H
 TVD Reference: RKB @ 3232.00usft (Pace X30)
 MD Reference: RKB @ 3232.00usft (Pace X30)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,030.00	1.30	201.50	2,029.29	19.20	-5.98	-19.33	0.09	-0.06	-2.71
2,207.00	1.30	147.80	2,206.25	15.63	-5.64	-15.78	0.66	0.00	-30.34
2,384.00	1.30	146.20	2,383.20	12.27	-3.46	-12.34	0.02	0.00	-0.90
2,561.00	1.30	143.90	2,560.16	8.98	-1.16	-9.00	0.03	0.00	-1.30
2,738.00	1.30	145.20	2,737.11	5.71	1.17	-5.88	0.02	0.00	0.73
2,916.00	1.40	138.70	2,915.08	2.41	3.76	-2.33	0.10	0.06	-3.65
3,093.00	1.40	141.90	3,092.01	-0.91	6.52	1.06	0.04	0.00	1.81
3,270.00	1.50	139.20	3,268.95	-4.37	9.37	4.58	0.07	0.06	-1.53
3,448.00	1.90	133.30	3,448.87	-8.15	13.04	8.45	0.25	0.22	-3.31
3,625.00	1.90	138.40	3,623.78	-12.36	17.12	12.75	0.10	0.00	2.88
3,802.00	1.70	137.40	3,800.69	-16.49	20.85	16.96	0.11	-0.11	-0.56
3,980.00	1.30	119.50	3,978.63	-19.43	24.39	19.97	0.34	-0.22	-10.06
4,157.00	2.30	141.00	4,155.54	-23.17	28.37	23.81	0.67	0.56	12.15
4,335.00	2.40	135.00	4,333.39	-28.59	33.26	29.33	0.15	0.06	-3.37
4,512.00	3.40	134.80	4,510.16	-34.91	39.60	35.79	0.56	0.56	-0.11
4,682.00	3.40	136.30	4,679.88	-42.10	46.66	43.15	0.05	0.00	0.88
4,790.00	3.00	139.10	4,787.69	-46.55	50.73	47.69	0.40	-0.37	2.59
4,967.00	2.80	134.60	4,964.47	-53.09	56.84	54.37	0.17	-0.11	-2.54
5,144.00	2.80	133.30	5,141.26	-59.09	63.06	60.51	0.04	0.00	-0.73
5,322.00	1.90	160.40	5,319.11	-64.85	67.22	66.36	0.79	-0.51	15.22
5,499.00	0.60	196.30	5,496.07	-68.51	67.94	70.03	0.82	-0.73	20.28
5,677.00	0.50	197.90	5,674.06	-70.14	67.44	71.65	0.06	-0.06	0.90
5,854.00	0.50	227.10	5,851.05	-71.40	66.64	72.89	0.14	0.00	16.50
6,031.00	0.30	205.60	6,028.05	-72.34	65.87	73.82	0.14	-0.11	-12.15
6,208.00	0.30	216.00	6,205.04	-73.14	65.40	74.60	0.03	0.00	5.88
6,385.00	1.20	135.90	6,382.03	-74.84	66.42	76.33	0.67	0.51	-45.25
6,563.00	1.20	138.80	6,559.99	-77.58	68.94	79.13	0.03	0.00	1.63
6,740.00	1.10	149.30	6,736.96	-80.44	71.03	82.03	0.13	-0.06	5.93
6,917.00	1.80	155.30	6,913.90	-84.43	73.06	86.06	0.40	0.40	3.39
7,095.00	0.90	227.40	7,091.86	-87.91	73.20	89.55	0.98	-0.51	40.51
7,272.00	1.30	232.50	7,268.82	-90.07	70.58	91.65	0.23	0.23	2.88
7,450.00	0.20	283.50	7,446.81	-91.23	68.68	92.77	0.67	-0.62	28.65
7,628.00	0.30	261.10	7,624.80	-91.23	67.91	92.75	0.06	0.06	-12.58
7,805.00	0.40	185.90	7,801.80	-91.92	67.39	93.42	0.25	0.06	-42.49
7,982.00	0.70	128.80	7,978.80	-93.21	68.17	94.73	0.33	0.17	-32.26
8,160.00	1.50	195.70	8,156.77	-98.13	68.39	97.66	0.78	0.45	37.58
8,337.00	1.80	182.80	8,333.69	-101.14	67.63	102.65	0.27	0.17	-7.29
8,514.00	1.70	177.60	8,510.61	-106.54	67.80	108.05	0.11	-0.06	-2.94
8,639.00	1.50	184.20	8,635.56	-110.02	67.56	111.53	0.22	-0.16	5.28
8,707.00	3.00	152.00	8,703.51	-112.48	68.33	114.00	2.80	2.21	-47.35
8,751.00	9.10	135.60	8,747.25	-115.99	71.31	117.58	14.27	13.86	-37.27
8,795.00	18.70	136.60	8,789.91	-123.62	78.60	125.37	21.82	21.82	2.27
8,840.00	25.80	143.30	8,831.54	-136.73	89.43	138.72	16.73	15.78	14.89



Phoenix Technology Services

Survey Report



Company: Chevron
 Project: Lea County, NM (NAD27 NME)
 Site: SD EA 19 Fed
 Well: P6 6H
 Wellbore: OH / Job 1610091
 Design: Surveys (Pace X30)

Local Co-ordinate Reference: Well P6 6H
 TVD Reference: RKB @ 3232.00usft (Pace X30)
 MD Reference: RKB @ 3232.00usft (Pace X30)
 North Reference: Grd
 Survey Calculation Method: Minimum Curvature
 Database: Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,884.00	33.20	150.50	8,869.82	-154.92	101.10	157.18	18.62	18.82	16.38
8,928.00	36.80	159.90	8,905.88	-177.81	111.57	180.29	14.71	8.18	21.36
8,973.00	44.30	169.70	8,940.09	-205.99	119.03	208.64	21.83	16.67	21.78
9,017.00	46.00	179.60	8,971.15	-236.98	121.90	239.68	18.40	3.86	22.50
9,061.00	46.60	182.80	9,001.50	-268.83	121.22	271.51	5.57	1.82	7.27
9,106.00	49.20	184.10	9,031.81	-302.20	119.20	304.83	5.75	5.33	2.69
9,150.00	52.30	185.40	9,059.45	-336.15	116.37	338.71	7.41	7.05	2.95
9,194.00	58.00	185.60	9,085.21	-371.65	112.95	374.11	8.42	8.41	0.45
9,239.00	58.90	185.00	9,108.42	-409.41	108.45	411.79	6.54	6.44	-1.33
9,283.00	63.10	185.10	9,130.75	-447.74	106.07	450.03	9.55	9.55	0.23
9,327.00	65.60	184.90	9,149.79	-487.25	102.61	489.45	5.70	5.68	-0.45
9,371.00	70.80	184.00	9,166.13	-527.96	99.45	530.08	11.97	11.82	-2.05
9,410.00	77.60	183.50	9,178.74	-565.39	97.00	567.44	17.48	17.44	-1.28
9,488.00	86.20	182.60	9,187.72	-642.43	92.90	644.37	11.08	11.03	-1.15
9,576.00	86.30	182.40	9,193.48	-730.16	89.07	731.99	0.25	0.11	-0.23
9,665.00	88.90	182.20	9,197.20	-819.00	85.50	820.73	2.93	2.92	-0.22
9,754.00	90.20	182.30	9,197.90	-907.92	82.01	909.55	1.46	1.46	0.11
9,842.00	91.60	182.10	9,196.52	-995.85	78.63	997.37	1.81	1.59	-0.23
9,931.00	89.60	178.50	9,195.59	-1,084.82	78.16	1,086.32	4.63	-2.25	-4.04
10,019.00	90.80	179.20	9,195.28	-1,172.80	79.93	1,174.31	1.58	1.36	0.80
10,108.00	90.00	176.10	9,194.66	-1,261.71	83.58	1,263.28	3.60	-0.90	-3.48
10,197.00	93.00	177.80	9,192.33	-1,350.54	88.31	1,352.20	3.87	3.37	1.91
10,285.00	93.60	180.20	9,187.26	-1,438.38	89.65	1,440.04	2.81	0.68	2.73
10,374.00	92.80	180.40	9,182.30	-1,527.24	89.38	1,528.87	0.93	-0.90	0.22
10,463.00	92.50	181.10	9,178.18	-1,616.13	88.22	1,617.72	0.85	-0.34	0.79
10,552.00	93.50	181.80	9,173.52	-1,704.98	85.97	1,708.49	1.37	1.12	0.79
10,640.00	91.40	181.40	9,169.76	-1,792.86	83.51	1,794.29	2.43	-2.39	-0.45
10,729.00	92.10	181.50	9,167.04	-1,881.79	81.26	1,883.15	0.79	0.79	0.11
10,818.00	91.40	181.60	9,164.32	-1,970.72	78.86	1,972.00	0.79	-0.79	0.11
10,906.00	90.00	181.10	9,163.25	-2,058.68	76.78	2,059.89	1.69	-1.59	-0.57
10,995.00	90.00	180.60	9,163.25	-2,147.67	75.46	2,148.83	0.56	0.00	-0.58
11,083.00	92.60	181.10	9,161.25	-2,235.63	74.16	2,236.74	3.01	2.95	0.57
11,172.00	92.20	180.20	9,157.53	-2,324.55	73.15	2,325.61	1.11	-0.45	-1.01
11,260.00	88.80	179.80	9,156.76	-2,412.53	73.15	2,413.57	3.89	-3.86	-0.45
11,349.00	89.60	179.40	9,158.00	-2,501.52	73.77	2,502.55	1.00	0.90	-0.45
11,438.00	89.50	178.30	9,158.70	-2,590.50	75.56	2,591.54	1.24	-0.11	-1.24
11,526.00	90.30	178.90	9,158.85	-2,678.47	77.71	2,679.54	1.14	0.91	0.68
11,615.00	91.70	179.00	9,157.30	-2,767.44	79.34	2,768.53	1.58	1.57	0.11
11,703.00	89.80	178.40	9,156.07	-2,855.40	81.34	2,856.51	2.16	-2.05	-0.68
11,792.00	89.30	177.90	9,156.69	-2,944.35	84.21	2,945.51	0.88	-0.67	-0.58
11,880.00	90.00	176.80	9,157.23	-3,032.26	86.28	3,033.48	1.48	0.80	-1.25
11,969.00	91.40	175.70	9,156.14	-3,121.06	94.10	3,122.39	2.00	1.57	-1.24
12,057.00	91.50	176.90	9,153.92	-3,208.84	99.77	3,210.28	1.37	0.11	1.36
12,146.00	89.20	178.20	9,153.37	-3,297.75	103.58	3,299.25	2.97	-2.58	1.46



Phoenix Technology Services

Survey Report



Company: Chevron
 Project: Lea County, NM (NAD27 NME)
 Site: SD EA 19 Fed
 Well: P6 6H
 Wellbore: OH / Job 1610091
 Design: Surveys (Pace X30)

Local Co-ordinate Reference: Well P6 6H
 TVD Reference: RKB @ 3232.00usft (Pace X30)
 MD Reference: RKB @ 3232.00usft (Pace X30)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,235.00	89.10	177.80	9,154.69	-3,386.69	106.68	3,386.24	0.46	-0.11	-0.45
12,323.00	90.00	180.80	9,155.38	-3,474.67	107.76	3,476.22	3.56	1.02	3.41
12,412.00	91.20	180.50	9,154.45	-3,563.65	106.75	3,565.16	1.39	1.35	-0.34
12,500.00	91.10	180.20	9,152.69	-3,651.64	106.21	3,653.10	0.36	-0.11	-0.34
12,589.00	90.20	179.30	9,151.88	-3,740.63	106.60	3,742.08	1.43	-1.01	-1.01
12,677.00	90.40	177.90	9,151.22	-3,828.60	108.75	3,830.08	1.61	0.23	-1.59
12,766.00	92.50	178.50	9,148.96	-3,917.52	111.54	3,919.04	2.45	2.36	0.67
12,855.00	90.70	177.70	9,146.48	-4,006.43	114.49	4,008.00	2.21	-2.02	-0.90
12,943.00	88.50	177.40	9,147.09	-4,094.34	118.26	4,095.97	2.52	-2.50	-0.34
13,032.00	93.70	179.00	9,145.39	-4,183.25	121.05	4,184.92	6.11	5.84	1.80
13,121.00	91.50	177.90	9,141.35	-4,272.12	123.46	4,273.82	2.76	-2.47	-1.24
13,210.00	89.90	181.10	9,140.26	-4,361.09	124.23	4,362.79	4.02	-1.80	3.60
13,299.00	91.60	183.30	9,139.10	-4,450.01	120.82	4,451.61	3.12	1.91	2.47
13,387.00	90.60	182.60	9,137.41	-4,537.88	116.29	4,539.35	1.39	-1.14	-0.80
13,476.00	90.80	181.60	9,136.32	-4,626.81	113.03	4,628.18	1.15	0.22	-1.12
13,565.00	91.80	180.70	9,134.30	-4,715.77	111.24	4,717.08	1.51	1.12	-1.01
13,654.00	90.10	179.80	9,132.82	-4,804.75	110.85	4,806.03	2.16	-1.91	-1.01
13,685.00	90.50	179.60	9,132.66	-4,835.75	111.02	4,837.02	1.44	1.29	-0.65
Final Phoenix MWD Survey									
13,742.00	90.50	179.60	9,132.16	-4,892.75	111.41	4,894.01	0.00	0.00	0.00
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
834.00	833.82	9.67	10.61	Tie-in to Wellbenders
982.00	961.77	12.24	12.76	First Phoenix MWD Survey
13,685.00	9,132.66	-4,835.78	109.47	Final Phoenix MWD Survey
13,742.00	9,132.16	-4,892.77	109.87	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



Directional Survey

Well Name SALADO DRAW EA 19 FED P6 006H		Lease Salado Draw EA 19 Fed P6		Field Name WILDCAT (HOBBS)		Business Unit Mid-Continent	
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015			Mud Line Elevation (ft)	Water Depth (ft)	

Wellbore Name Original Hole		Parent Wellbore Original Hole		Min Kick Off Depth (ftKB) 8,697.0		Vertical Section Direction (°) 178.70	
Northing (Y) (ft)		Easting (X) (ft)		UTM Grid Zone			
Date 2/1/2016		Definitive? Y		Description MWD		Planned? N	
MD Tie In (ftKB) 0.00		TVDTie In (ftKB) 0.00		Inclination Tie In (°) 0.00		Azimuth Tie In (°) 0.00	
				NSTie In (ft) 0.00		EWTie In (ft) 0.00	

Survey Data

MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depth (ft)	Turn (°/100ft)	Unuse d data
182	0.40	93.30	182.00	-0.04	0.63	0.05	0.22	Magn MWD	Rig	0.22	0.64	51.26	N
275	0.40	57.30	275.00	0.12	1.23	-0.09	0.27	Magn MWD	Rig	0.00	1.24	-38.71	N
368	0.70	45.60	367.99	0.69	1.91	-0.65	0.34	Magn MWD	Rig	0.32	2.03	-12.58	N
461	1.20	44.50	460.98	1.79	3.00	-1.72	0.54	Magn MWD	Rig	0.54	3.49	-1.18	N
557	1.70	43.50	556.95	3.53	4.68	-3.43	0.52	Magn MWD	Rig	0.52	5.87	-1.04	N
649	1.70	46.80	648.91	5.46	6.62	-5.31	0.11	Magn MWD	Rig	0.00	8.58	3.59	N
742	1.90	43.30	741.86	7.53	8.68	-7.33	0.25	Magn MWD	Rig	0.22	11.49	-3.76	N
834	1.70	40.40	833.82	9.67	10.61	-9.43	0.24	Magn MWD	Rig	-0.22	14.36	-3.15	N
962	1.30	39.40	961.77	12.24	12.76	-11.95	0.31	Magn MWD	Phoenix Directional	-0.31	17.69	-0.78	N
1,143	1.90	320.00	1,142.72	16.13	12.14	-15.85	1.16	Magn MWD	Phoenix Directional	0.33	20.19	155.03	N
1,321	2.30	312.60	1,320.60	20.81	7.61	-20.63	0.27	Magn MWD	Phoenix Directional	0.22	22.15	-4.16	N
1,498	2.50	305.50	1,497.44	25.45	1.85	-25.40	0.20	Magn MWD	Phoenix Directional	0.11	25.52	-4.01	N
1,675	1.10	216.60	1,674.38	26.33	-2.30	-26.38	1.53	Magn MWD	Phoenix Directional	-0.79	26.43	-50.23	N
1,853	1.40	206.30	1,852.33	23.01	-4.28	-23.10	0.21	Magn MWD	Phoenix Directional	0.17	23.40	-5.79	N
2,030	1.30	201.50	2,029.29	19.20	-5.98	-19.33	0.09	Magn MWD	Phoenix Directional	-0.06	20.11	-2.71	N
2,207	1.30	147.80	2,206.25	15.63	-5.64	-15.76	0.66	Magn MWD	Phoenix Directional	0.00	16.62	-30.34	N
2,384	1.30	146.20	2,383.20	12.27	-3.46	-12.34	0.02	Magn MWD	Phoenix Directional	0.00	12.75	-0.90	N
2,561	1.30	143.90	2,560.16	8.98	-1.16	-9.00	0.03	Magn MWD	Phoenix Directional	0.00	9.05	-1.30	N
2,738	1.30	145.20	2,737.11	5.71	1.17	-5.68	0.02	Magn MWD	Phoenix Directional	0.00	5.82	0.73	N
2,916	1.40	138.70	2,915.06	2.41	3.76	-2.33	0.10	Magn MWD	Phoenix Directional	0.06	4.47	-3.65	N
3,093	1.40	141.90	3,092.01	-0.91	6.52	1.06	0.04	Magn MWD	Phoenix Directional	0.00	6.58	1.81	N
3,270	1.50	139.20	3,268.95	-4.37	9.37	4.58	0.07	Magn MWD	Phoenix Directional	0.06	10.34	-1.53	N
3,448	1.90	133.30	3,446.87	-8.15	13.04	8.45	0.25	Magn MWD	Phoenix Directional	0.22	15.38	-3.31	N
3,625	1.90	136.40	3,623.78	-12.36	17.12	12.75	0.10	Magn MWD	Phoenix Directional	0.00	21.12	2.88	N
3,802	1.70	137.40	3,800.69	-16.49	20.85	16.96	0.11	Magn MWD	Phoenix Directional	-0.11	26.58	-0.56	N
3,980	1.30	119.50	3,978.63	-19.43	24.39	19.97	0.34	Magn MWD	Phoenix Directional	-0.22	31.18	-10.06	N
4,157	2.30	141.00	4,155.54	-23.17	28.37	23.81	0.67	Magn MWD	Phoenix Directional	0.56	36.64	12.15	N



Directional Survey

Well Name SALADO DRAW EA 19 FED P6 006H		Lease Salado Draw EA 19 Fed P6		Field Name WILDCAT (HOBBS)		Business Unit Mid-Continent	
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015				Mud Line Elevation (ft)	Water Depth (ft)

Survey Data

MD (ftKB)	Incl (")	Azm (")	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS ("/100ft)	Method	Survey Company	Build ("/100ft)	Depart (ft)	Turn ("/100ft)	Unuse d data
4,335	2.40	135.00	4,333.39	-28.59	33.26	29.33	0.15	Magn MWD	Phoenix Directional	0.06	43.85	-3.37	N
4,512	3.40	134.80	4,510.18	-34.91	39.60	35.79	0.56	Magn MWD	Phoenix Directional	0.56	52.79	-0.11	N
4,682	3.40	136.30	4,679.86	-42.10	46.66	43.15	0.05	Magn MWD	Phoenix Directional	0.00	62.85	0.88	N
4,790	3.00	139.10	4,787.69	-46.55	50.73	47.69	0.40	Magn MWD	Phoenix Directional	-0.37	68.85	2.59	N
4,967	2.80	134.60	4,964.47	-53.09	56.84	54.37	0.17	Magn MWD	Phoenix Directional	-0.11	77.77	-2.54	N
5,144	2.80	133.30	5,141.26	-59.09	63.06	60.51	0.04	Magn MWD	Phoenix Directional	0.00	86.42	-0.73	N
5,322	1.90	160.40	5,319.11	-64.85	67.22	66.36	0.79	Magn MWD	Phoenix Directional	-0.51	93.40	15.22	N
5,499	0.60	196.30	5,496.07	-68.51	67.94	70.03	0.82	Magn MWD	Phoenix Directional	-0.73	96.48	20.28	N
5,677	0.50	197.90	5,674.06	-70.14	67.44	71.65	0.06	Magn MWD	Phoenix Directional	-0.06	97.30	0.90	N
5,854	0.50	227.10	5,851.05	-71.40	66.64	72.89	0.14	Magn MWD	Phoenix Directional	0.00	97.66	16.50	N
6,031	0.30	205.60	6,028.05	-72.34	65.87	73.82	0.14	Magn MWD	Phoenix Directional	-0.11	97.84	-12.15	N
6,208	0.30	216.00	6,205.04	-73.14	65.40	74.60	0.03	Magn MWD	Phoenix Directional	0.00	98.11	5.88	N
6,385	1.20	135.90	6,382.03	-74.84	66.42	76.33	0.67	Magn MWD	Phoenix Directional	0.51	100.06	-45.25	N
6,563	1.20	138.80	6,559.99	-77.58	68.94	79.13	0.03	Magn MWD	Phoenix Directional	0.00	103.79	1.63	N
6,740	1.10	149.30	6,736.96	-80.44	71.03	82.03	0.13	Magn MWD	Phoenix Directional	-0.06	107.31	5.93	N
6,917	1.80	155.30	6,913.90	-84.43	73.06	86.06	0.40	Magn MWD	Phoenix Directional	0.40	111.65	3.39	N
7,095	0.90	227.40	7,091.86	-87.91	73.20	89.55	0.98	Magn MWD	Phoenix Directional	-0.51	114.39	40.51	N
7,272	1.30	232.50	7,268.82	-90.07	70.58	91.65	0.23	Magn MWD	Phoenix Directional	0.23	114.43	2.88	N
7,450	0.20	283.50	7,446.81	-91.23	68.68	92.77	0.67	Magn MWD	Phoenix Directional	-0.62	114.19	28.65	N
7,628	0.30	261.10	7,624.80	-91.23	67.91	92.75	0.08	Magn MWD	Phoenix Directional	0.06	113.73	-12.58	N
7,805	0.40	185.90	7,801.80	-91.92	67.39	93.42	0.25	Magn MWD	Phoenix Directional	0.06	113.98	-42.49	N
7,982	0.70	128.80	7,978.79	-93.21	68.17	94.73	0.33	Magn MWD	Phoenix Directional	0.17	115.48	-32.26	N
8,160	1.50	195.70	8,156.77	-96.13	68.39	97.66	0.78	Magn MWD	Phoenix Directional	0.45	117.98	37.58	N
8,337	1.80	182.80	8,333.69	-101.14	67.63	102.65	0.27	Magn MWD	Phoenix Directional	0.17	121.67	-7.29	N
8,514	1.70	177.60	8,510.61	-106.54	67.60	108.05	0.11	Magn MWD	Phoenix Directional	-0.06	126.18	-2.94	N
8,639	1.50	184.20	8,635.56	-110.02	67.56	111.53	0.22	Magn MWD	Phoenix Directional	-0.16	129.11	5.28	N
8,707	3.00	152.00	8,703.51	-112.48	68.33	114.00	2.80	Magn MWD	Phoenix Directional	2.21	131.61	-47.35	N
8,751	9.10	135.60	8,747.25	-115.99	71.31	117.58	14.27	Magn MWD	Phoenix Directional	13.86	136.15	-37.27	N
8,795	18.70	136.60	8,789.91	-123.62	78.60	125.37	21.82	Magn MWD	Phoenix Directional	21.82	146.49	2.27	N
8,840	25.80	143.30	8,831.54	-136.73	89.43	138.72	16.73	Magn MWD	Phoenix Directional	15.78	163.38	14.89	N



Directional Survey

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Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.80	Current RKB Elevation 3,237.80, 12/15/2015		Mud Line Elevation (ft)		Water Depth (ft)	

Survey Data

MD (ft)	Incl (°)	Azm (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unuse d data
8,884	33.20	150.50	8,869.82	-154.92	101.10	157.18	18.62	Magn MWD	Phoenix Directional	16.82	184.99	16.36	N
8,928	36.80	159.90	8,905.88	-177.81	111.57	180.29	14.71	Magn MWD	Phoenix Directional	8.18	209.91	21.36	N
8,973	44.30	169.70	8,940.09	-205.99	119.03	208.64	21.83	Magn MWD	Phoenix Directional	16.67	237.91	21.78	N
9,017	46.00	179.60	8,971.15	-236.98	121.90	239.68	16.40	Magn MWD	Phoenix Directional	3.86	266.49	22.50	N
9,061	46.80	182.80	9,001.50	-268.83	121.22	271.51	5.57	Magn MWD	Phoenix Directional	1.82	294.89	7.27	N
9,106	49.20	184.10	9,031.61	-302.20	119.20	304.83	5.75	Magn MWD	Phoenix Directional	5.33	324.86	2.89	N
9,150	52.30	185.40	9,059.45	-336.15	116.37	338.71	7.41	Magn MWD	Phoenix Directional	7.05	355.73	2.95	N
9,194	56.00	185.60	9,085.21	-371.65	112.95	374.11	8.42	Magn MWD	Phoenix Directional	8.41	388.43	0.46	N
9,239	58.90	185.00	9,109.42	-409.41	109.45	411.79	6.54	Magn MWD	Phoenix Directional	6.44	423.79	-1.33	N
9,283	63.10	185.10	9,130.75	-447.74	106.07	450.03	9.55	Magn MWD	Phoenix Directional	9.55	460.13	0.23	N
9,327	65.60	184.90	9,149.79	-487.25	102.61	489.45	5.70	Magn MWD	Phoenix Directional	5.68	497.93	-0.45	N
9,371	70.80	184.00	9,166.13	-527.96	99.45	530.08	11.97	Magn MWD	Phoenix Directional	11.82	537.25	-2.05	N
9,410	77.60	183.50	9,176.74	-565.39	97.00	567.44	17.48	Magn MWD	Phoenix Directional	17.44	573.65	-1.28	N
9,488	86.20	182.60	9,187.72	-642.43	92.90	644.37	11.08	Magn MWD	Phoenix Directional	11.03	649.11	-1.15	N
9,576	86.30	182.40	9,193.48	-730.16	89.07	731.99	0.25	Magn MWD	Phoenix Directional	0.11	735.57	-0.23	N
9,665	88.90	182.20	9,197.20	-819.00	85.50	820.73	2.93	Magn MWD	Phoenix Directional	2.92	823.45	-0.22	N
9,754	90.20	182.30	9,197.90	-907.92	82.01	909.55	1.46	Magn MWD	Phoenix Directional	1.46	911.62	0.11	N
9,842	91.60	182.10	9,196.52	-995.85	78.63	997.37	1.61	Magn MWD	Phoenix Directional	1.59	998.95	-0.23	N
9,931	89.60	178.50	9,195.59	-1,084.82	78.16	1,086.32	4.63	Magn MWD	Phoenix Directional	-2.25	1,087.63	-4.04	N
10,019	90.80	179.20	9,195.28	-1,172.80	79.93	1,174.31	1.58	Magn MWD	Phoenix Directional	1.36	1,175.52	0.80	N
10,108	90.00	176.10	9,194.66	-1,261.71	83.58	1,263.28	3.60	Magn MWD	Phoenix Directional	-0.90	1,264.48	-3.48	N
10,197	93.00	177.80	9,192.33	-1,350.54	88.31	1,352.20	3.87	Magn MWD	Phoenix Directional	3.37	1,353.43	1.91	N
10,285	93.60	180.20	9,187.26	-1,438.38	89.85	1,440.04	2.81	Magn MWD	Phoenix Directional	0.68	1,441.18	2.73	N
10,374	92.80	180.40	9,182.29	-1,527.24	89.38	1,528.87	0.93	Magn MWD	Phoenix Directional	-0.90	1,529.85	0.22	N
10,463	92.50	181.10	9,178.18	-1,616.13	88.22	1,617.72	0.85	Magn MWD	Phoenix Directional	-0.34	1,618.54	0.79	N
10,552	93.50	181.80	9,173.52	-1,704.98	85.97	1,706.49	1.37	Magn MWD	Phoenix Directional	1.12	1,707.15	0.79	N
10,640	91.40	181.40	9,169.76	-1,792.86	83.51	1,794.29	2.43	Magn MWD	Phoenix Directional	-2.39	1,794.80	-0.45	N
10,729	92.10	181.50	9,167.04	-1,881.79	81.26	1,883.15	0.79	Magn MWD	Phoenix Directional	0.79	1,883.54	0.11	N
10,818	91.40	181.60	9,164.32	-1,970.72	78.86	1,972.00	0.79	Magn MWD	Phoenix Directional	-0.79	1,972.29	0.11	N
10,906	90.00	181.10	9,163.25	-2,058.68	76.78	2,059.89	1.69	Magn MWD	Phoenix Directional	-1.59	2,060.11	-0.57	N



Directional Survey

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Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015		Mud Line Elevation (ft)		Water Depth (ft)	

Survey Data

MD (ft)	Incl (°)	Azm (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depth (ft)	Turn (°/100ft)	Unuse d data
10,995	90.00	180.60	9,163.25	-2,147.67	75.46	2,148.83	0.56	Magn MWD	Phoenix Directional	0.00	2,149.00	-0.56	N
11,083	92.60	181.10	9,161.25	-2,235.63	74.16	2,236.74	3.01	Magn MWD	Phoenix Directional	2.95	2,236.86	0.57	N
11,172	92.20	180.20	9,157.53	-2,324.55	73.15	2,325.61	1.11	Magn MWD	Phoenix Directional	-0.45	2,325.70	-1.01	N
11,260	88.80	179.80	9,156.76	-2,412.53	73.15	2,413.57	3.89	Magn MWD	Phoenix Directional	-3.86	2,413.64	-0.45	N
11,349	89.60	179.40	9,158.00	-2,501.52	73.77	2,502.55	1.00	Magn MWD	Phoenix Directional	0.90	2,502.61	-0.45	N
11,438	89.50	178.30	9,158.70	-2,590.50	75.56	2,591.54	1.24	Magn MWD	Phoenix Directional	-0.11	2,591.60	-1.24	N
11,526	90.30	178.90	9,158.85	-2,678.47	77.71	2,679.54	1.14	Magn MWD	Phoenix Directional	0.91	2,679.60	0.68	N
11,615	91.70	179.00	9,157.30	-2,767.44	79.34	2,768.53	1.58	Magn MWD	Phoenix Directional	1.57	2,768.58	0.11	N
11,703	89.90	178.40	9,156.07	-2,855.40	81.34	2,856.51	2.16	Magn MWD	Phoenix Directional	-2.05	2,856.56	-0.68	N
11,792	89.30	177.90	9,156.69	-2,944.35	84.21	2,945.51	0.88	Magn MWD	Phoenix Directional	-0.67	2,945.56	-0.56	N
11,880	90.00	176.80	9,157.23	-3,032.26	88.28	3,033.48	1.48	Magn MWD	Phoenix Directional	0.80	3,033.54	-1.25	N
11,969	91.40	175.70	9,156.14	-3,121.06	94.10	3,122.39	2.00	Magn MWD	Phoenix Directional	1.57	3,122.47	-1.24	N
12,057	91.50	176.90	9,153.92	-3,208.84	99.77	3,210.28	1.37	Magn MWD	Phoenix Directional	0.11	3,210.39	1.36	N
12,146	89.20	178.20	9,153.37	-3,297.75	103.58	3,299.25	2.97	Magn MWD	Phoenix Directional	-2.58	3,299.38	1.46	N
12,235	89.10	177.80	9,154.69	-3,386.69	106.68	3,388.24	0.46	Magn MWD	Phoenix Directional	-0.11	3,388.37	-0.45	N
12,323	90.00	180.80	9,155.38	-3,474.67	107.76	3,476.22	3.56	Magn MWD	Phoenix Directional	1.02	3,476.34	3.41	N
12,412	91.20	180.50	9,154.45	-3,563.65	106.75	3,565.16	1.39	Magn MWD	Phoenix Directional	1.35	3,565.25	-0.34	N
12,500	91.10	180.20	9,152.69	-3,651.63	106.21	3,653.10	0.36	Magn MWD	Phoenix Directional	-0.11	3,653.18	-0.34	N
12,589	90.20	179.30	9,151.68	-3,740.63	106.60	3,742.08	1.43	Magn MWD	Phoenix Directional	-1.01	3,742.15	-1.01	N
12,677	90.40	177.90	9,151.22	-3,828.60	108.75	3,830.08	1.61	Magn MWD	Phoenix Directional	0.23	3,830.14	-1.59	N
12,766	92.50	178.50	9,148.96	-3,917.52	111.54	3,919.04	2.45	Magn MWD	Phoenix Directional	2.36	3,919.11	0.67	N
12,855	90.70	177.70	9,148.48	-4,006.43	114.49	4,008.00	2.21	Magn MWD	Phoenix Directional	-2.02	4,008.07	-0.90	N
12,943	88.50	177.40	9,147.09	-4,094.34	118.26	4,095.97	2.52	Magn MWD	Phoenix Directional	-2.50	4,096.05	-0.34	N
13,032	93.70	179.00	9,145.39	-4,183.25	121.05	4,184.92	6.11	Magn MWD	Phoenix Directional	5.84	4,185.00	1.80	N
13,121	91.50	177.90	9,141.35	-4,272.12	123.46	4,273.82	2.76	Magn MWD	Phoenix Directional	-2.47	4,273.90	-1.24	N
13,210	89.90	181.10	9,140.26	-4,361.09	124.23	4,362.79	4.02	Magn MWD	Phoenix Directional	-1.80	4,362.86	3.60	N
13,299	91.60	183.30	9,139.10	-4,450.01	120.82	4,451.61	3.12	Magn MWD	Phoenix Directional	1.91	4,451.65	2.47	N
13,387	90.60	182.60	9,137.41	-4,537.88	116.29	4,539.35	1.39	Magn MWD	Phoenix Directional	-1.14	4,539.37	-0.80	N
13,476	90.80	181.60	9,136.32	-4,626.81	113.03	4,628.18	1.15	Magn MWD	Phoenix Directional	0.22	4,628.19	-1.12	N
13,565	91.80	180.70	9,134.30	-4,715.77	111.24	4,717.08	1.51	Magn MWD	Phoenix Directional	1.12	4,717.08	-1.01	N



Directional Survey

Well Name SALADO DRAW EA 19 FED P6 006H		Lease Salado Draw EA 19 Fed P6	Field Name WILDCAT (HOBBS)	Business Unit Mid-Continent	
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015		Mud Line Elevation (ft)	Water Depth (ft)

Survey Data

MD (RKB)	Incl (°)	Azm (°)	TVD (RKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unused data
13,654	90.10	179.80	9,132.82	-4,804.75	110.85	4,806.03	2.16	Magn MWD	Phoenix Directional	-1.91	4,806.03	-1.01	N
13,685	90.50	179.60	9,132.66	-4,835.75	111.02	4,837.02	1.44	Magn MWD	Phoenix Directional	1.29	4,837.02	-0.65	N
13,742	90.50	179.60	9,132.16	-4,892.75	111.41	4,894.01	0.00	Extrap	Phoenix Directional	0.00	4,894.01	0.00	N



Casing Summary

Well Name SALADO DRAW EA 19 FED P6 006H		Lease Salado Draw EA 19 Fed P6		Field Name WILDCAT (HOBBS)		Business Unit Mid-Continent	
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015				Mud Line Elevation (ft)	Water Depth (ft)

Surface, Planned? -N, 840ftKB

Set Depth (MD) (ftKB) 840		Set Tension (kips)		String Nominal OD (in) 13 3/8		String Min Drift (in)		Centralizers 9		Scratchers	
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	Len (ft)	P Burst (psi)	P Collapse (psi)
1	Casing Joint	13 3/8	12.615	54.50	J-55	ST&C	-4	-4	0.00		1,130.0
1	Landing Joint	13 3/8	12.615	54.50	J-55	ST&C	-4	35	39.23		1,130.0
1	Wellhead	13 3/8	12.615	54.50	J-55	ST&C	35	38	2.87		1,130.0
1	Pup Joint	13 3/8	12.615	54.50	J-55	ST&C	38	43	4.36		1,130.0
18	Casing Joint	13 3/8	12.615	54.50	J-55	ST&C	43	796	753.28		1,130.0
1	Float Collar	13 3/8	12.615	54.50	J-55	ST&C	796	797	1.38		1,130.0
1	Casing Joint	13 3/8	12.615	54.50	J-55	ST&C	797	838	40.95		1,130.0
1	Texas Pattern Guide Shoe	13 3/8	12.615	54.50	J-55	ST&C	838	840	1.78		1,130.0

Intermediate Casing 1, Planned? -N, 4,729ftKB

Set Depth (MD) (ftKB) 4,729		Set Tension (kips)		String Nominal OD (in) 9 5/8		String Min Drift (in) 8.688		Centralizers 30		Scratchers	
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	Len (ft)	P Burst (psi)	P Collapse (psi)
1	Casing Joint	9 5/8	8.844	40.00	HCK-55	LT&C	-6	-8	0.00	3,950.0	4,230.0
1	Landing Joint	9 5/8	8.844	40.00	HCK-55	LT&C	-6	36	41.85	3,950.0	4,230.0
1	Hanger Joint	9 5/8	8.844	40.00	HCK-55	LT&C	36	37	0.80	3,950.0	4,230.0
1	Pup Joint	9 5/8	8.844	40.00	HCK-55	LT&C	37	41	4.05	3,950.0	4,230.0
11	Casing Joint	9 5/8	8.844	40.00	HCK-55	LT&C	41	4,642	4,601.15	3,950.0	4,230.0
0											
1	Float Collar	9 5/8	8.844	40.00	HCK-55	LT&C	4,642	4,644	1.42	3,950.0	4,230.0
2	Casing Joint	9 5/8	8.844	40.00	HCK-55	LT&C	4,644	4,727	83.70	3,950.0	4,230.0
1	Float Shoe	9 5/8	8.844	40.00	HCK-55	LT&C	4,727	4,729	1.66	3,950.0	4,230.0

Production Casing, Planned? -N, 13,730ftKB

Set Depth (MD) (ftKB) 13,730		Set Tension (kips)		String Nominal OD (in) 5 1/2		String Min Drift (in) 4.656		Centralizers 101		Scratchers	
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	Len (ft)	P Burst (psi)	P Collapse (psi)
1	Landing Joint	5 1/2	4.781	20.00	P-110	TXP BTC	-4	36	39.91	12,360.0	11,100.0
1	Hanger	5 1/2	4.781	20.00	P-110	TXP BTC	36	36	0.15	12,360.0	11,100.0
1	Pup Joint	5 1/2	4.781	20.00	P-110	TXP BTC	36	41	4.22	12,360.0	11,100.0
21	Casing Joint	5 1/2	4.781	20.00	P-110	TXP BTC	41	8,612	8,571.54	12,360.0	11,100.0
1											
1	Marker Joint	5 1/2	4.781	20.00	P-110	TXP BTC	8,612	8,618	5.46	12,360.0	11,100.0
12	Casing Joint	5 1/2	4.781	20.00	P-110	TXP BTC	8,618	13,564	4,946.08	12,360.0	11,100.0
2											
1	Pup Joint	5 1/2	4.781	20.00	P-110	TXP BTC	13,564	13,573	9.31	12,360.0	11,100.0
1	RSI Tool	5 1/2	4.781	20.00	P-110	TXP BTC	13,573	13,580	6.63	12,360.0	11,100.0
1	Pup Joint	5 1/2	4.781	20.00	P-110	TXP BTC	13,580	13,590	10.02	12,360.0	11,100.0
1	Casing Joint	5 1/2	4.781	20.00	P-110	TXP BTC	13,590	13,630	40.45	12,360.0	11,100.0
1	Pup Joint	5 1/2	4.781	20.00	P-110	TXP BTC	13,630	13,640	9.95	12,360.0	11,100.0
1	Landing Collar	5 1/2	4.781	20.00	P-110	TXP BTC	13,640	13,641	1.47	12,360.0	11,100.0
1	Casing Joint	5 1/2	4.781	20.00	P-110	TXP BTC	13,641	13,682	40.67	12,360.0	11,100.0
1	Float Collar	5 1/2	4.781	20.00	P-110	TXP BTC	13,682	13,685	2.43	12,360.0	11,100.0
1	XRV Tool	5 1/2	4.781	20.00	P-110	TXP BTC	13,685	13,687	2.18	12,360.0	11,100.0
1	Casing Joint	5 1/2	4.781	20.00	P-110	TXP BTC	13,687	13,727	40.58	12,360.0	11,100.0
1	Float Shoe	5 1/2	4.781	20.00	P-110	TXP BTC	13,727	13,730	2.69	12,360.0	11,100.0



Cement Summary

Surface Casing Cement

Well Name SALADO DRAW EA 19 FED P6 006H		Lease Salado Draw EA 19 Fed P6		Field Name WILDCAT (HOBBS)		Business Unit Mid-Continent	
Ground Elevation (ft)	Original RKB (ft)	Current RKB Elevation 3,237.60, 12/15/2015			Mud Line Elevation (ft)	Water Depth (ft)	
3,205.00	3,237.60						

Original Hole

Wellbore Name Original Hole		Directional Type Horizontal		Min Kick Off Depth (ftKB) 8,697.0		Vertical Section Direction (°) 178.70	
Hole Size (in)		Act Top (ftKB)		Act Btm (ftKB)			
17 1/2		32.6		850.0			
12 1/4		850.0		4,739.0			
8 3/4		4,739.0		13,742.0			

Multi-bowl, FMC on 2/21/2016 07:00

Sub-Type Multi-bowl				Install Date 2/21/2016			
Des	Make	Model	WP (psi)	Service	SN		
	FMC						

Surface, Planned?-N, 840ftKB

Casing Description	Wellbore	Run Date	Set Depth (MD) (ftKB)	Sick Up (ftKB)	Set Tension (kips)
Surface	Original Hole	2/1/2016	840	3.9	
Centralizers			Scratchers		
9					

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)
1	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	0.00	-4	-4
1	Landing Joint	13 3/8	12.615	54.50	J-55		ST&C	39.23	-4	35
1	Wellhead	13 3/8	12.615	54.50	J-55		ST&C	2.87	35	38
1	Pup Joint	13 3/8	12.615	54.50	J-55		ST&C	4.36	38	43
18	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	753.28	43	796
1	Float Collar	13 3/8	12.615	54.50	J-55		ST&C	1.38	796	797
1	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	40.95	797	838
1	Texas Pattern Guide Shoe	13 3/8	12.615	54.50	J-55		ST&C	1.78	838	840

Intermediate Casing 1, Planned?-N, 4,729ftKB

Casing Description Intermediate Casing 1	Wellbore Original Hole	Run Date 2/24/2016	Set Depth (MD) (ftKB) 4,729	Sick Up (ftKB) 5.6	Set Tension (kips)
Centralizers 30			Scratchers		

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)
1	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	0.00	-6	-6
1	Landing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	41.85	-6	36
1	Hanger Joint	9 5/8	8.844	40.00	HCK-55		LT&C	0.80	36	37
1	Pup Joint	9 5/8	8.844	40.00	HCK-55		LT&C	4.05	37	41
110	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	4,601.15	41	4,642
1	Float Collar	9 5/8	8.844	40.00	HCK-55		LT&C	1.42	4,642	4,644
2	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	83.70	4,644	4,727
1	Float Shoe	9 5/8	8.844	40.00	HCK-55		LT&C	1.66	4,727	4,729

Production Casing, Planned?-N, 13,730ftKB

Casing Description Production Casing	Wellbore Original Hole	Run Date 3/3/2016	Set Depth (MD) (ftKB) 13,730	Suck Up (ftKB) 3.7	Set Tension (kips)
Centralizers 101			Scratchers		

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)
1	Landing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	39.91	-4	36
1	Hanger	5 1/2	4.781	20.00	P-110		TXP BTC	0.15	36	36
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	4.22	36	41
211	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	8,571.54	41	8,612
1	Marker Joint	5 1/2	4.781	20.00	P-110		TXP BTC	5.46	8,612	8,618
122	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	4,946.08	8,618	13,564
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	9.31	13,564	13,573
1	RSI Tool	5 1/2	4.781	20.00	P-110		TXP BTC	6.63	13,573	13,580
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	10.02	13,580	13,590
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.45	13,590	13,630
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	9.95	13,630	13,640
1	Landing Collar	5 1/2	4.781	20.00	P-110		TXP BTC	1.47	13,640	13,641
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.67	13,641	13,682
1	Float Collar	5 1/2	4.781	20.00	P-110		TXP BTC	2.43	13,682	13,685
1	XRV Tool	5 1/2	4.781	20.00	P-110		TXP BTC	2.18	13,685	13,687
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.58	13,687	13,727



Cement Summary

Intermediate Casing Cement

Well Name SALADO DRAW EA 19 FED P6 006H	Lease Salado Draw EA 19 Fed P6	Field Name WILDCAT (HOBBS)	Business Unit Mid-Continent
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015	Mud Line Elevation (ft) Water Depth (ft)

Original Hole

Wellbore Name Original Hole	Directional Type Horizontal	Min Kick Off Depth (ftKB) 8,697.0	Vertical Section Direction (*) 178.70
Hole Size (in)	Act Top (ftKB)	Act Btm (ftKB)	
17 1/2	32.6	850.0	
12 1/4	850.0	4,739.0	
8 3/4	4,739.0	13,742.0	

Multi-bowl, FMC on 2/21/2016 07:00

Sub-Type Multi-bowl	Install Date 2/21/2016				
Des	Make	Model	WP (psi)	Service	SN
	FMC				

Surface, Planned?-N, 840ftKB

Casing Description Surface	Wellbore Original Hole	Run Date 2/1/2016	Set Depth (MD) (ftKB) 840	Slick Up (ftKB) 3.9	Set Tension (kips)
Centralizers 9	Scratchers				

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)
1	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	0.00	-4	-4
1	Landing Joint	13 3/8	12.615	54.50	J-55		ST&C	39.23	-4	35
1	Wellhead	13 3/8	12.615	54.50	J-55		ST&C	2.87	35	38
1	Pup Joint	13 3/8	12.615	54.50	J-55		ST&C	4.36	38	43
18	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	753.28	43	796
1	Float Collar	13 3/8	12.615	54.50	J-55		ST&C	1.38	796	797
1	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	40.95	797	838
1	Texas Pattern Guide Shoe	13 3/8	12.615	54.50	J-55		ST&C	1.78	838	840

Intermediate Casing 1, Planned?-N, 4,729ftKB

Casing Description Intermediate Casing 1	Wellbore Original Hole	Run Date 2/24/2016	Set Depth (MD) (ftKB) 4,729	Slick Up (ftKB) 5.6	Set Tension (kips)
Centralizers 30	Scratchers				

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)
1	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	0.00	-6	-6
1	Landing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	41.85	-6	36
1	Hanger Joint	9 5/8	8.844	40.00	HCK-55		LT&C	0.80	36	37
1	Pup Joint	9 5/8	8.844	40.00	HCK-55		LT&C	4.05	37	41
110	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	4,601.15	41	4,642
1	Float Collar	9 5/8	8.844	40.00	HCK-55		LT&C	1.42	4,642	4,644
2	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	83.70	4,644	4,727
1	Float Shoe	9 5/8	8.844	40.00	HCK-55		LT&C	1.66	4,727	4,729

Production Casing, Planned?-N, 13,730ftKB

Casing Description Production Casing	Wellbore Original Hole	Run Date 3/3/2016	Set Depth (MD) (ftKB) 13,730	Slick Up (ftKB) 3.7	Set Tension (kips)
Centralizers 101	Scratchers				

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)
1	Landing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	39.91	-4	36
1	Hanger	5 1/2	4.781	20.00	P-110		TXP BTC	0.15	36	36
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	4.22	36	41
211	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	8,571.54	41	8,612
1	Marker Joint	5 1/2	4.781	20.00	P-110		TXP BTC	5.46	8,612	8,618
122	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	4,946.08	8,618	13,564
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	9.31	13,564	13,573
1	RSI Tool	5 1/2	4.781	20.00	P-110		TXP BTC	6.63	13,573	13,580
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	10.02	13,580	13,590
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.45	13,590	13,630
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	9.95	13,630	13,640
1	Landing Collar	5 1/2	4.781	20.00	P-110		TXP BTC	1.47	13,640	13,641
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.67	13,641	13,682
1	Float Collar	5 1/2	4.781	20.00	P-110		TXP BTC	2.43	13,682	13,685
1	XRV Tool	5 1/2	4.781	20.00	P-110		TXP BTC	2.18	13,685	13,687
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.58	13,687	13,727



Cement Summary

Surface Casing Cement

Well Name SALADO DRAW EA 19 FED P6 006H		Lease Salado Draw EA 19 Fed P6		Field Name WILDCAT (HOBBS)		Business Unit Mid-Continent	
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015				Mud Line Elevation (ft)	Water Depth (ft)

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Bin Depth (MD) (ftKB)
1	Float Shoe	5 1/2	4.781	20.00	P-110		TXP BTC	2.69	13,727	13,730

Surface Casing Cement, Casing, 2/1/2016 13:34

Cementing Start Date 2/1/2016		Cementing End Date 2/1/2016		Wellbore Original Hole	
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Evaluation Method Returns to Surface	Cement Evaluation Results Full returns				
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Comment
Tested service lines to 2868psi. Pumped 40 bbl FW dyed spacer, 238 bbl (1006 sx) of tail cement, displaced with 123 bbl of 8.34 ppg FW. Did not bump plug. Floats held.

1, 32.6-850.0ftKB

Top Depth (ftKB) 32.6	Bottom Depth (ftKB) 850.0	Full Return? N	Vol Cement Ret (bbl) 113.0	Top Plug? N	Bottom Plug? N
Initial Pump Rate (bbl/min) 4.8	Final Pump Rate (bbl/min)	Avg Pump Rate (bbl/min) 2.4		Final Pump Pressure (psi) 317.0	
Pipe Reciprocated? N	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? N	
Depth Tagged (MD) (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	
				Drill Out Date	

Spacer

Fluid Type Spacer	Fluid Description Spacer	Quantity (sacks)	Class	Volume Pumped (bbl) 40.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.30	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives

Add	Type	Conc

Tail

Fluid Type Tail	Fluid Description Cement	Quantity (sacks) 1,006	Class C	Volume Pumped (bbl) 238.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%) 125.0	Yield (ft ³ /sack) 1.33	Fluid Mix Ratio (gal/sack) 6.37	
Free Water (%)	Density (lb/gal) 14.80	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives

Add	Type	Conc

Displacement

Fluid Type Displacement	Fluid Description Displacement	Quantity (sacks)	Class	Volume Pumped (bbl) 123.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)	
Free Water (%)	Density (lb/gal) 8.30	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)	

Cement Fluid Additives

Add	Type	Conc



Cement Summary

Intermediate Casing Cement

Well Name SALADO DRAW EA 19 FED P6 006H	Lease Salado Draw EA 19 Fed P6	Field Name WILDCAT (HOBBS)	Business Unit Mid-Continent
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015	Mud Line Elevation (ft) Water Depth (ft)

Jts	Item Des	OD (in)	ID (in)	WT (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ft)	Btm Depth (MD) (ft)
1	Float Shoe	5 1/2	4.781	20.00	P-110		TXP BTC	2.69	13,727	13,730

Intermediate Casing Cement, Casing, 2/24/2016 13:30

Cementing Start Date 2/24/2016	Cementing End Date 2/24/2016	Wellbore Original Hole
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Evaluation Method Returns to Surface	Cement Evaluation Results CMT to surface, bumped plug at calculated displacement, and floats held
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Comment
130 bbl (300 SX) CMT returned to surface.

1, 32.6-4,739.0ftKB					
Top Depth (ftKB) 32.6	Bottom Depth (ftKB) 4,739.0	Full Return? Y	Vol Cement Ret (bbl) 130.0	Top Plug? Y	Bottom Plug? N
Initial Pump Rate (bbl/min) 6.9	Final Pump Rate (bbl/min) 2.3	Avg Pump Rate (bbl/min) 6.5		Final Pump Pressure (psi) 1,250.0	Plug Bump Pressure (psi) 1,750.0
Pipe Reciprocated? N	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)		Pipe Rotated? N	Pipe RPM (rpm)
Depth Tagged (MD) (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)		Drill Out Diameter (in)	Drill Out Date

Spacer				
Fluid Type Spacer	Fluid Description Dyed Spacer	Quantity (sacks)	Class	Volume Pumped (bbl) 40.0
Estimated Top (ftKB) 32.6	Estimated Bottom Depth (ftKB) 32.6	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.30	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Lead				
Fluid Type Lead	Fluid Description 50:50 POZ/C	Quantity (sacks) 1,066	Class C	Volume Pumped (bbl) 461.0
Estimated Top (ftKB) 32.6	Estimated Bottom Depth (ftKB) 3,750.0	Percent Excess Pumped (%) 150.0	Yield (ft ³ /sack) 2.43	Fluid Mix Ratio (gal/sack) 13.98
Free Water (%)	Density (lb/gal) 11.90	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Tail				
Fluid Type Tail	Fluid Description C-Neat	Quantity (sacks) 461	Class C	Volume Pumped (bbl) 109.0
Estimated Top (ftKB) 3,750.0	Estimated Bottom Depth (ftKB) 4,739.0	Percent Excess Pumped (%) 85.0	Yield (ft ³ /sack) 1.33	Fluid Mix Ratio (gal/sack) 6.35
Free Water (%)	Density (lb/gal) 14.80	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc

Displacement				
Fluid Type Displacement	Fluid Description Displacement	Quantity (sacks)	Class	Volume Pumped (bbl) 352.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.30	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives		
Add	Type	Conc



Cement Summary

Production Casing Cement

Well Name SALADO DRAW EA 19 FED P6 006H	Lease Salado Draw EA 19 Fed P6	Field Name WILDCAT (HOBBS)	Business Unit Mid-Continent
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015	Mud Line Elevation (ft) Water Depth (ft)

Original Hole

Wellbore Name Original Hole	Directional Type Horizontal	Min Kick Off Depth (ftKB) 8,697.0	Vertical Section Direction (°) 178.70
Hole Size (in)	Act Top (ftKB)	Act Btm (ftKB)	
17 1/2	32.6	850.0	
12 1/4	850.0	4,739.0	
8 3/4	4,739.0	13,742.0	

Multi-bowl, FMC on 2/21/2016 07:00

Sub-Type Multi-bowl	Install Date 2/21/2016				
Des	Make	Model	WP (psi)	Service	SN
	FMC				

Surface, Planned?N, 840ftKB

Casing Description Surface	Wellbore Original Hole	Run Date 2/1/2016	Set Depth (MD) (ftKB) 840	Slick Up (ftKB) 3.9	Set Tension (kips)					
Centralizers 9	Scratchers									
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)
1	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	0.00	-4	-4
1	Landing Joint	13 3/8	12.615	54.50	J-55		ST&C	39.23	-4	35
1	Wellhead	13 3/8	12.615	54.50	J-55		ST&C	2.87	35	38
1	Pup Joint	13 3/8	12.615	54.50	J-55		ST&C	4.36	38	43
18	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	753.28	43	796
1	Float Collar	13 3/8	12.615	54.50	J-55		ST&C	1.38	796	797
1	Casing Joint	13 3/8	12.615	54.50	J-55		ST&C	40.95	797	838
1	Texas Pattern Guide Shoe	13 3/8	12.615	54.50	J-55		ST&C	1.78	838	840

Intermediate Casing 1, Planned?N, 4,729ftKB

Casing Description Intermediate Casing 1		Wellbore Original Hole		Run Date 2/24/2016		Set Depth (MD) (ftKB) 4,729		Slick Up (ftKB) 5.6		Set Tension (kips)	
Centralizers 30						Scratchers					
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	
1	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	0.00	-6	-6	
1	Landing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	41.85	-6	36	
1	Hanger Joint	9 5/8	8.844	40.00	HCK-55		LT&C	0.80	36	37	
1	Pup Joint	9 5/8	8.844	40.00	HCK-55		LT&C	4.05	37	41	
110	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	4,601.15	41	4,642	
1	Float Collar	9 5/8	8.844	40.00	HCK-55		LT&C	1.42	4,642	4,644	
2	Casing Joint	9 5/8	8.844	40.00	HCK-55		LT&C	83.70	4,644	4,727	
1	Float Shoe	9 5/8	8.844	40.00	HCK-55		LT&C	1.66	4,727	4,729	

Production Casing, Planned?N, 13,730ftKB

Casing Description Production Casing	Wellbore Original Hole	Run Date 3/3/2016	Set Depth (MD) (ftKB) 13,730	Slick Up (ftKB) 3.7	Set Tension (kips)					
Centralizers 101	Scratchers									
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)
1	Landing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	39.91	-4	36
1	Hanger	5 1/2	4.781	20.00	P-110		TXP BTC	0.15	36	36
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	4.22	36	41
211	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	8,571.54	41	8,612
1	Marker Joint	5 1/2	4.781	20.00	P-110		TXP BTC	5.46	8,612	8,618
122	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	4,946.08	8,618	13,564
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	9.31	13,564	13,573
1	RSI Tool	5 1/2	4.781	20.00	P-110		TXP BTC	6.63	13,573	13,580
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	10.02	13,580	13,590
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.45	13,590	13,630
1	Pup Joint	5 1/2	4.781	20.00	P-110		TXP BTC	9.95	13,630	13,640
1	Landing Collar	5 1/2	4.781	20.00	P-110		TXP BTC	1.47	13,640	13,641
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.67	13,641	13,682
1	Float Collar	5 1/2	4.781	20.00	P-110		TXP BTC	2.43	13,682	13,685
1	XRV Tool	5 1/2	4.781	20.00	P-110		TXP BTC	2.18	13,685	13,687
1	Casing Joint	5 1/2	4.781	20.00	P-110		TXP BTC	40.58	13,687	13,727



Cement Summary

Production Casing Cement

Well Name SALADO DRAW EA 19 FED P6 006H		Lease Salado Draw EA 19 Fed P6		Field Name WILDCAT (HOBBS)		Business Unit Mid-Continent	
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015				Mud Line Elevation (ft)	Water Depth (ft)

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btn Depth (MD) (ftKB)
1	Float Shoe	5 1/2	4.781	20.00	P-110		TXP BTC	2.69	13,727	13,730

Production Casing Cement, Casing, 3/3/2016 23:30

Cementing Start Date 3/3/2016		Cementing End Date 3/4/2016	Wellbore Original Hole
Evaluation Method Lift Pressure	Cement Evaluation Results Lost returns at 185 bbls into displacement Cement in place at 04:00 FCP 1800 psi		

Comment
Pump production cement job as follows:

Pressure Test 500 psi low 5000 psi high
Bleed off
Drop bottom plug
Pump 30 bbl Mudpush @ 10 ppg
Pump 308 bbl of lead 1 @ 5 bpm @ 11.5 ppg
-1.5 lb/bbl CemNET for 20-70 bbl and 120-170 bbl
Pump 246 bbl of lead 2 @ 5.2 bpm @ 12.5 ppg
Pump 47 bbl of tail @ 4.1 bpm @ 15 ppg
Drop plug and wiper balls
Pump 303 bbl of water displacement
-20 bbl Acid @ 6 bpm
-273 bbl Fresh water @ 6 bpm
-10 bbl Fresh water @ 4 bpm
Bump plug at 1800 psi
Hold 500 psi over FCP for 5 minutes
Bled back 2.5 bbl
Floats held

1, 3,900.0-13,742.0ftKB

Top Depth (ftKB)	Bottom Depth (ftKB)	Full Return?	Vol Cement Ret (bbl)	Top Plug?	Bottom Plug?
3,900.0	13,742.0	N	0.0	Y	Y
Initial Pump Rate (bbl/min)	Final Pump Rate (bbl/min)	Avg Pump Rate (bbl/min)	Final Pump Pressure (psi)	Plug Bump Pressure (psi)	
6	3	6	1,800.0	1,800.0	
Pipe Reciprocated?	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)	Pipe Rotated?	Pipe RPM (rpm)	
N			N		
Depth Tagged (MD) (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)	Drill Out Diameter (in)	Drill Out Date	

Spacer

Fluid Type Spacer	Fluid Description MUDPUSH Express Spacer	Quantity (sacks)	Class	Volume Pumped (bbl)	
				30.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)	
3,254.0	3,900.0				
Free Water (%)	Density (lb/gal)	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)	
	10.00				

Cement Fluid Additives

Add	Type	Conc

Lead

Fluid Type Lead	Fluid Description 50:50 Poz/H + .2% D046 + 6.5% D020 + 8% D154 + .2% D065 + 2lb/sk B288 + 2 lb/sk B289	Quantity (sacks) 653	Class H	Volume Pumped (bbl)	
				308.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)	
3,900.0	8,743.0	50.0	2.65	15.53	
Free Water (%)	Density (lb/gal)	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)	
	11.50				

Cement Fluid Additives

Add	Type	Conc

Lead

Fluid Type Lead	Fluid Description TXI + 4% D020 + .2% D046 + .2% D065 + .5% D112 + .4% D013 + .08% D208	Quantity (sacks) 861	Class H	Volume Pumped (bbl)	
				246.0	
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)	
8,743.0	12,954.0	35.0	1.60	8.63	
Free Water (%)	Density (lb/gal)	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)	
	12.50				



Cement Summary

Production Casing Cement

Well Name SALADO DRAW EA 19 FED P6 006H		Lease Salado Draw EA 19 Fed P6	Field Name WILDCAT (HOBBS)	Business Unit Mid-Continent	
Ground Elevation (ft) 3,205.00	Original RKB (ft) 3,237.60	Current RKB Elevation 3,237.60, 12/15/2015		Mud Line Elevation (ft)	Water Depth (ft)

Cement Fluid Additives

Add	Type	Conc
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Tail

Fluid Type Tail	Fluid Description Class H + 2% D046 + .2% D065 + 4% D167 + .2% D800 + 75% D151 + .1% D208	Quantity (sacks) 121	Class H	Volume Pumped (bbl) 47.0
Estimated Top (ftKB) 12,954.0	Estimated Bottom Depth (ftKB) 13,742.0	Percent Excess Pumped (%) 0.0	Yield (ft ³ /sack) 2.18	Fluid Mix Ratio (gal/sack) 9.55
Free Water (%)	Density (lb/gal) 15.00	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives

Add	Type	Conc
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Displacement

Fluid Type Displacement	Fluid Description 20 bbls Acetic Acid 283 bbls FW	Quantity (sacks)	Class	Volume Pumped (bbl) 303.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 8.33	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives

Add	Type	Conc
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