

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD

Hobbs

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

HOBBS OGD

SUDDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

DEC 02 2016

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMNM27506

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.
SD EA 18 FEDERAL P6 5H9. API Well No.
30-025-42795-00-X110. Field and Pool, or Exploratory
WC025G06S263319P-BONE SPRING11. County or Parish, and State
LEA COUNTY, NM1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
CHEVRON USA INCORPORATED Contact: DENISE PINKERTON
E-Mail: leakejd@chevron.com3a. Address
15 SMITH ROAD
MIDLAND, TX 797053b. Phone No. (include area code)
Ph: 432-687-73754. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 19 T26S R33E NWNE 266FNL 1778FEL

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Drilling Operations
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

01/27/2016: SPUD WELL @ 12:00 HRS.DRILL SURFACE HOLE 112-375, 435, 650, 861.

01/28/2016: RUN 13 3/8", 54.5#, J-55 STC CSG @ 851'. TAG BTM @ 861. CSG SHOE @ 851. TOP OF FC @ 810'. NOTIFIED PAUL FLOWERS, BLM, @ 19:51 HRS OF INTENT TO RUN CSG. PRESSURE TEST LINES TO 3500 PSI. PMP 40 BBLS SPACER @ 8.3 PPG. MIX & PUMP 1066 SX CMT @ 14.8PPG. FULL RETURNS THROUGHOUT JOB. FINAL CIRC PRESS PRIOR TO BUMPING PLUG 332 PSI @ 2.2 BPM. 110 BBLS CMT TO SURFACE.

03/30/2016: TEST BOPE TO 250 PSI LOW/5000 PSI HIGH. TAG LC @ 810'.
DRILL INTERMEDIATE HOLE 871-1490, 2109, 2564, 3616, 3800, 4605, 4612, 4731.

04/01/2016: RAN 9 5/8", HCK-55,40# CSG @ 4721'. FS @ 4721. FC @ 4636.
PRESS TEST LINES TO 500 PSI LOW & 5000 PSI HIGH. PMP 40 BBLS DYED FW SPACER. MIX & PUMP 1066 SX

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #350212 verified by the BLM Well Information System

For CHEVRON USA INCORPORATED, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 09/08/2016 (16PP1087SE)

Name (Printed/Typed) DENISE PINKERTON

Title REGULATORY SPECIALIST

Signature (Electronic Submission)

Date 09/07/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

ACCEPTED FOR RECORD
/S/ DAVID R. GLASS
NOV 08 2016
DAVID R. GLASS
PRODUCTION ENGINEER

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

Kz

Additional data for EC transaction #350212 that would not fit on the form

32. Additional remarks, continued

LEAD CMT @ 11.9PPG. MIX & PUMP 461 SX TAIL CMT @ 14.8PPG. FULL RETURNS THROUGHOUT JOB. FINAL CIRC PRESS PRIOR TO BUMPING PLUG 1197 PSI @ 2.5BPM. 230 BBLS/524 SX OF CMT RETURNED TO SURF. CMT IN PLACE @ 20:30 HRS.WOC. TAG CMT @ 4625. PRESS TEST CSG TO 2800 PSI FOR 30 MINS. DRILL 10'NEW FORMATION TO 4741.

DRILL 4741-5470, 7116, 7689, 8219, 8589, 8752, 8933, 9114, 9232, 9379, 9476,9744, 10021, 10360, 10717, 11247, 11605, 12147, 12679, 13139, 13463, 13656, 14009, 14214. (TD REACHED ON 04/09/2016)

04/10/2016: RAN 5 1/2", P-110, 20# CSG @ 14204'. LC @ 14115.

PRESS TEST 500 PSI LOW, 6500 PSI HIGH. CMT W/1691 SX CMT.

FINAL CIRC PRESS 1550 PSI @ 3 BPM. LOST RETURNS @ 220 BBLS INTO DISPL. TOC @ 4035'. CMT IN PLACE @ 11:30. RELEASE RIG 04/11/2016.

ATTACHMENTS: DIRECTIONAL SURVEY, CSG & CMT SUMMARY

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1610088

OPERATOR

Chevron

WELL NAME SD EA 18 Fed P6 5H

COUNTY & STATE

Lea County, NM

API WELL NUMBER

30-025-42795

PROPOSED DIRECTION

354.12

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
.00 ft	.00 ft	0.0°	0.0°	0.00 N	0.00 E	Surface

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
27-Jan	183 ft	0.5°	78.4°

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
9-Apr-16	14,156 ft	91.3°	359.1°

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

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
9-Apr-16	14,214 ft	91.3°	359.1°

Lance Mosby

PRINT YOUR NAME ABOVE

Lance Mosby

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.60°
DECLINATION OR GRID	GRID

Saturday, April 09, 2016

TODAY'S DATE

MWD SUPERVISOR 1

Robert Brewer

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 18 Fed

P6 5H

OH / Job 1610088

Survey: Phoenix MWD Surveys

Standard Survey Report

11 April, 2016





Phoenix Technology Services

Survey Report



Company: Chevron
 Project: Lea County, NM (NAD27 NME)
 Site: SD EA 18 Fed
 Well: P6 5H
 Wellbore: OH / Job 1610088
 Design: Surveys (Pace X30)

Local Co-ordinate Reference: Well P6 5H
 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

Project Lea County, NM (NAD27 NME)

Map System: US State Plane 1927 (Exact solution)

Geo Datum: NAD 1927 (NADCON CONUS)

Map Zone: New Mexico East 3001

System Datum:

Mean Sea Level

Site SD EA 18 Fed

Site Position: Northing: 377,363.00 usft Latitude: 32° 2' 7.48080 N
 From: Map Easting: 724,737.00 usft Longitude: 103° 36' 29.13299 W
 Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.38 °

Well P6 5H

Well Position: +N/-S 0.00 usft Northing: 377,363.00 usft Latitude: 32° 2' 7.48080 N
 +E/-W 0.00 usft Easting: 724,737.00 usft Longitude: 103° 36' 29.13299 W
 Position Uncertainty 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 3,205.00 usft

Wellbore OH / Job 1610088

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	354.12

Survey Program Date 4/11/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
183.00	14,214.00	Phoenix MWD Surveys (OH / Job 1610088)	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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
183.00	0.50	78.40	183.00	0.16	0.78	0.08	0.27	0.27	0.00
First Phoenix Survey									
369.00	1.10	64.40	368.98	1.10	3.19	0.76	0.34	0.32	-7.53
492.00	1.60	60.00	491.94	2.46	5.74	1.86	0.41	0.41	-3.58
676.00	1.90	60.60	675.86	5.25	10.62	4.13	0.16	0.16	0.33
798.00	2.30	65.60	797.78	7.25	14.61	5.72	0.36	0.33	4.10
969.00	2.30	70.80	968.64	9.80	20.98	7.60	0.12	0.00	3.04
1,154.00	0.80	310.80	1,153.59	11.86	23.51	9.39	1.51	-0.81	-64.86
1,339.00	2.40	279.30	1,338.52	13.33	18.71	11.35	0.96	0.86	-17.03
1,520.00	5.00	284.80	1,519.12	15.96	7.34	15.12	1.45	1.44	3.04



Phoenix Technology Services

Survey Report



Company: Chevron
 Project: Lea County, NM (NAD27 NME)
 Site: SD EA 18 Fed
 Well: P6 5H
 Wellbore: OH / Job 1610088
 Design: Surveys (Pace X30)

Local Co-ordinate Reference: Well P6 5H
 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)
1,697.00	5.50	285.70	1,695.38	20.22	-8.29	20.97	0.29	0.28	0.51
1,874.00	6.10	284.20	1,871.47	24.83	-25.57	27.31	0.35	0.34	-0.85
2,051.00	6.80	285.00	2,047.35	29.85	-44.81	34.28	0.40	0.40	0.45
2,228.00	5.40	291.50	2,223.35	35.61	-62.68	41.84	0.88	-0.79	3.67
2,406.00	5.10	294.40	2,400.60	41.95	-77.68	49.68	0.22	-0.17	1.63
2,583.00	4.00	289.30	2,577.04	47.24	-90.67	56.27	0.66	-0.62	-2.88
2,760.00	4.00	286.60	2,753.61	51.04	-102.41	61.26	0.11	0.00	-1.53
2,938.00	4.80	290.00	2,931.09	55.36	-115.36	66.88	0.47	0.45	1.91
3,115.00	4.00	298.50	3,107.56	60.84	-127.74	73.60	0.58	-0.45	4.80
3,292.00	3.90	295.30	3,284.14	66.36	-138.61	80.20	0.14	-0.06	-1.81
3,470.00	2.80	304.00	3,461.84	71.38	-147.69	86.13	0.68	-0.62	4.89
3,647.00	1.70	308.90	3,638.70	75.45	-153.32	90.75	0.63	-0.62	2.77
3,825.00	4.20	298.20	3,816.45	80.18	-161.12	96.26	1.43	1.40	-6.01
4,002.00	5.10	296.90	3,992.87	86.81	-173.85	104.15	0.51	0.51	-0.73
4,179.00	4.60	301.00	4,169.23	94.02	-186.94	112.67	0.34	-0.28	2.32
4,356.00	4.30	304.80	4,345.70	101.46	-198.48	121.25	0.24	-0.17	2.15
4,534.00	3.60	299.90	4,523.27	108.06	-208.80	128.87	0.44	-0.39	-2.75
4,670.00	4.30	300.90	4,658.95	112.81	-216.88	134.42	0.52	0.51	0.74
4,793.00	4.00	297.60	4,781.63	117.16	-224.64	139.55	0.31	-0.24	-2.68
4,970.00	4.20	297.60	4,958.18	123.02	-235.85	146.53	0.11	0.11	0.00
5,147.00	4.50	296.40	5,134.67	129.11	-247.82	153.81	0.18	0.17	-0.68
5,325.00	4.30	293.50	5,312.14	134.88	-260.19	160.81	0.17	-0.11	-1.63
5,502.00	4.40	293.00	5,488.63	140.18	-272.52	167.35	0.06	0.06	-0.28
5,679.00	4.20	291.50	5,665.13	145.21	-284.81	173.60	0.13	-0.11	-0.85
5,856.00	4.10	294.10	5,841.67	150.17	-296.61	179.75	0.12	-0.06	1.47
6,034.00	4.30	293.90	6,019.19	155.47	-308.52	186.24	0.11	0.11	-0.11
6,211.00	4.30	293.50	6,195.69	160.80	-320.67	192.79	0.02	0.00	-0.23
6,389.00	4.20	292.20	6,373.20	165.93	-332.83	199.13	0.08	-0.06	-0.73
6,566.00	4.10	290.60	6,549.74	170.60	-344.75	205.00	0.09	-0.06	-0.90
6,743.00	3.90	286.40	6,726.31	174.53	-356.45	210.11	0.20	-0.11	-2.37
6,921.00	4.00	292.50	6,903.89	178.61	-367.99	215.35	0.24	0.06	3.43
7,098.00	3.30	291.90	7,080.53	182.88	-378.42	220.66	0.40	-0.40	-0.34
7,275.00	3.90	302.10	7,257.18	187.97	-388.25	226.74	0.49	0.34	5.76
7,453.00	3.70	300.50	7,434.79	194.11	-398.33	233.87	0.13	-0.11	-0.90
7,630.00	3.60	284.30	7,611.43	198.38	-408.63	239.17	0.58	-0.06	-9.15
7,807.00	3.50	297.90	7,788.10	202.28	-418.79	244.09	0.48	-0.06	7.68
7,985.00	3.90	301.00	7,965.72	207.94	-428.78	250.75	0.25	0.22	1.74
8,162.00	3.00	296.60	8,142.40	213.11	-438.08	256.85	0.53	-0.51	-2.49
8,340.00	2.80	316.50	8,320.18	218.35	-445.24	262.79	0.57	-0.11	11.18
8,517.00	2.50	303.40	8,496.99	223.61	-451.44	268.66	0.38	-0.17	-7.40
8,695.00	3.30	295.10	8,674.76	227.92	-459.32	273.75	0.51	0.45	-4.66
8,796.00	6.70	333.80	8,775.39	234.45	-464.56	280.78	4.56	3.37	38.32
8,840.00	11.80	346.00	8,818.81	241.12	-466.78	287.64	12.36	11.59	27.73



Phoenix Technology Services

Survey Report



Company: Chevron
 Project: Lea County, NM (NAD27 NME)
 Site: SD EA 18 Fed
 Well: P6 5H
 Wellbore: OH / Job 1610088
 Design: Surveys (Pace X30)

Local Co-ordinate Reference: Well P6 5H
 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)
8,885.00	16.90	353.90	8,862.39	252.10	-468.59	298.75	12.11	11.33	17.56
8,929.00	22.00	353.00	8,903.87	266.65	-470.27	313.39	11.61	11.59	-2.05
8,973.00	25.90	351.80	8,944.07	284.34	-472.65	331.24	8.93	8.86	-2.73
9,018.00	28.50	347.60	8,984.09	304.56	-476.36	351.73	7.18	5.78	-9.33
9,062.00	30.30	347.00	9,022.43	325.63	-481.11	373.18	4.15	4.09	-1.36
9,106.00	31.20	345.60	9,060.24	347.49	-486.44	395.46	2.61	2.05	-3.18
9,151.00	35.50	348.10	9,097.82	371.57	-492.04	420.00	10.03	9.56	5.56
9,195.00	40.60	349.70	9,132.46	398.18	-497.24	447.00	11.80	11.59	3.64
9,239.00	47.30	351.20	9,164.12	428.28	-502.27	477.45	15.41	15.23	3.41
9,284.00	53.50	352.70	9,192.79	462.59	-507.11	512.08	14.01	13.78	3.33
9,328.00	61.10	356.00	9,216.55	499.41	-510.70	549.07	18.39	17.27	7.50
9,372.00	68.20	359.00	9,235.38	539.10	-512.41	588.73	17.27	16.14	6.82
9,424.00	78.60	359.10	9,250.22	588.86	-513.23	638.32	20.00	20.00	0.19
9,504.00	89.10	359.20	9,258.77	668.28	-514.41	717.44	13.13	13.13	0.13
9,593.00	90.80	359.90	9,258.85	757.27	-515.11	806.04	2.07	1.91	0.79
9,682.00	91.40	359.70	9,257.14	846.26	-515.42	894.58	0.71	0.67	-0.22
9,770.00	92.50	359.50	9,254.15	934.20	-516.03	982.13	1.27	1.25	-0.23
9,859.00	93.20	359.30	9,249.72	1,023.09	-516.96	1,070.64	0.82	0.79	-0.22
9,948.00	93.90	359.50	9,244.21	1,111.91	-517.89	1,159.09	0.82	0.79	0.22
10,037.00	93.70	0.00	9,238.31	1,200.71	-518.28	1,247.47	0.60	-0.22	0.56
10,125.00	94.10	359.60	9,232.33	1,288.51	-518.59	1,334.83	0.64	0.45	-0.45
10,214.00	95.60	359.40	9,224.81	1,377.19	-519.36	1,423.12	1.70	1.69	-0.22
10,302.00	95.40	0.00	9,216.37	1,464.78	-519.82	1,510.30	0.72	-0.23	0.68
10,391.00	94.30	0.80	9,208.85	1,553.46	-519.20	1,598.45	1.53	-1.24	0.90
10,481.00	93.00	0.70	9,203.12	1,643.26	-518.02	1,687.67	1.45	-1.44	-0.11
10,570.00	92.80	1.10	9,198.61	1,732.14	-516.63	1,775.93	0.50	-0.22	0.45
10,659.00	92.90	1.10	9,194.19	1,821.01	-514.92	1,864.16	0.11	0.11	0.00
10,748.00	88.90	359.00	9,192.79	1,909.98	-514.84	1,952.65	5.08	-4.49	-2.36
10,836.00	88.60	359.10	9,194.71	1,997.94	-516.30	2,040.31	0.36	-0.34	0.11
10,925.00	89.60	359.30	9,196.11	2,086.92	-517.54	2,128.95	1.15	1.12	0.22
11,014.00	90.80	359.70	9,195.80	2,175.92	-518.32	2,217.55	1.42	1.35	0.45
11,103.00	92.00	359.90	9,193.62	2,264.89	-518.63	2,306.09	1.37	1.35	0.22
11,192.00	92.10	0.20	9,190.44	2,353.83	-518.55	2,394.55	0.36	0.11	0.34
11,281.00	91.70	359.70	9,187.49	2,442.78	-518.63	2,483.05	0.72	-0.45	-0.56
11,370.00	90.40	0.10	9,185.86	2,531.77	-518.79	2,571.58	1.53	-1.46	0.45
11,458.00	90.50	359.50	9,185.17	2,619.76	-519.09	2,659.14	0.69	0.11	-0.68
11,547.00	90.30	358.20	9,184.55	2,708.74	-520.88	2,747.84	1.48	-0.22	-1.46
11,635.00	90.10	357.90	9,184.24	2,796.69	-523.88	2,835.63	0.41	-0.23	-0.34
11,725.00	91.30	359.30	9,183.14	2,886.65	-526.07	2,925.34	2.05	1.33	1.56
11,813.00	90.50	357.50	9,181.76	2,974.60	-528.53	3,013.08	2.24	-0.91	-2.05
11,902.00	90.70	358.30	9,180.82	3,063.54	-531.79	3,101.88	0.93	0.22	0.90
11,990.00	91.70	2.10	9,178.98	3,151.50	-531.49	3,189.35	4.46	1.14	4.32
12,079.00	93.40	2.60	9,175.02	3,240.33	-527.84	3,277.35	1.99	1.91	0.56



Phoenix Technology Services

Survey Report



Company: Chevron
 Project: Lea County, NM (NAD27 NME)
 Site: SD EA 18 Fed
 Well: P6 5H
 Wellbore: OH / Job 1610088
 Design: Surveys (Pace X30)

Local Co-ordinate Reference: Well P6 5H
 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)
12,167.00	92.20	1.60	9,170.72	3,328.17	-524.62	3,364.39	1.77	-1.36	-1.14
12,256.00	91.10	0.40	9,168.16	3,417.11	-523.07	3,452.71	1.83	-1.24	-1.35
12,345.00	88.20	359.30	9,168.70	3,506.10	-523.30	3,541.25	3.48	-3.26	-1.24
12,434.00	89.10	358.60	9,170.80	3,595.06	-524.93	3,629.91	1.28	1.01	-0.79
12,522.00	87.90	357.30	9,173.10	3,682.97	-528.08	3,717.68	2.01	-1.36	-1.48
12,611.00	88.20	358.80	9,176.13	3,771.86	-531.10	3,806.42	1.72	0.34	1.69
12,700.00	89.70	2.70	9,177.76	3,860.82	-529.94	3,894.79	4.69	1.69	4.38
12,788.00	91.60	4.50	9,176.77	3,948.63	-524.41	3,981.57	2.97	2.16	2.05
12,877.00	91.60	2.60	9,174.28	4,037.42	-518.91	4,069.33	2.13	0.00	-2.13
12,966.00	91.20	0.40	9,172.11	4,126.36	-516.58	4,157.57	2.51	-0.45	-2.47
13,055.00	91.70	0.10	9,169.85	4,215.33	-516.19	4,246.03	0.66	0.56	-0.34
13,144.00	91.90	359.50	9,167.06	4,304.29	-516.50	4,334.55	0.71	0.22	-0.67
13,232.00	90.90	359.70	9,164.91	4,392.26	-517.11	4,422.12	1.16	-1.14	0.23
13,321.00	91.20	359.00	9,163.28	4,481.24	-518.12	4,510.73	0.86	0.34	-0.79
13,410.00	90.50	359.10	9,161.96	4,570.21	-519.60	4,599.39	0.79	-0.79	0.11
13,499.00	90.00	358.00	9,161.57	4,659.18	-521.85	4,688.13	1.36	-0.56	-1.24
13,588.00	92.20	358.80	9,159.86	4,748.12	-524.33	4,776.86	2.63	2.47	0.90
13,677.00	91.50	357.90	9,156.99	4,837.04	-526.90	4,865.57	1.28	-0.79	-1.01
13,766.00	88.70	358.30	9,156.83	4,925.98	-529.85	4,954.34	3.18	-3.15	0.45
13,854.00	90.10	359.30	9,157.75	5,013.95	-531.69	5,042.04	1.96	1.59	1.14
13,943.00	91.30	358.20	9,156.67	5,102.92	-533.63	5,130.74	1.83	1.35	-1.24
14,032.00	90.20	359.10	9,155.50	5,191.89	-535.73	5,219.46	1.60	-1.24	1.01
14,121.00	90.80	359.00	9,154.72	5,280.87	-537.20	5,308.12	0.68	0.67	-0.11
14,156.00	91.30	359.10	9,154.08	5,315.86	-537.78	5,342.99	1.46	1.43	0.29
Final Phoenix MWD Survey									
14,214.00	91.30	359.10	9,152.77	5,373.84	-538.69	5,400.75	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)	
183.00	183.00	0.16	0.78	First Phoenix Survey
14,156.00	9,154.08	5,315.86	-537.78	Final Phoenix MWD Survey
14,214.00	9,152.77	5,373.84	-538.69	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



Casing Summary

Well Name SALADO DRAW EA 18 FED P6 005H		Lease Salado Draw EA 18 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, 851ftKB

Set Depth (MD) (ftKB) 851		Set Tension (kips)		String Nominal OD (in) 13 3/8		String Min Drift (in) 12.469		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	Wellhead	13 3/8	12.625	54.50	J-55		32	35	2.90	2,730.0	1,130.0
1	Pup Joint	13 3/8	12.625	54.50	J-55		35	41	5.53	2,730.0	1,130.0
18	Casing Joint	13 3/8	12.625	54.50	J-55		41	810	769.13	2,730.0	1,130.0
1	Float Collar	13 3/8	12.625	54.50	J-55		810	811	1.39	2,730.0	1,130.0
1	Casing Joint	13 3/8	12.625	54.50	J-55		811	850	38.94	2,730.0	1,130.0
1	Float Shoe	13 3/8	12.625	54.50	J-55		850	851	0.68	2,730.0	1,130.0

Intermediate Casing 1, Planned?N, 4,721ftKB

Set Depth (MD) (ftKB) 4,721		Set Tension (kips)		String Nominal OD (in) 9 5/8		String Min Drift (in)		Centralizers 31		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	Hanger	9 5/8	8.835	40.00	HCK-55	LT&C	33	35	1.95		2,570.0
1	Pup Jt	9 5/8	8.835	40.00	HCK-55	LT&C	35	38	3.26		2,570.0
11	Casing Joint	9 5/8	8.835	40.00	HCK-55	LT&C	38	4,636	4,598.03		2,570.0
1	Float Collar	9 5/8	8.835	40.00	HCK-55	LT&C	4,636	4,637	1.49		2,570.0
2	Casing Joint	9 5/8	8.835	40.00	HCK-55	LT&C	4,637	4,719	82.07		2,570.0
1	Float Shoe	9 5/8	8.835	40.00	HCK-55	LT&C	4,719	4,721	1.63		

Production Casing, Planned?N, 14,204ftKB

Set Depth (MD) (ftKB) 14,204		Set Tension (kips)		String Nominal OD (in) 5 1/2		String Min Drift (in)		Centralizers 105		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 Hanger	5 1/2	4.778	20.00			33	33	0.70		11,100.0
1	Casing Pup Joint	5 1/2	4.778	20.00			33	38	4.27		11,100.0
20	Casing Joint	5 1/2	4.778	20.00	P-110		38	8,712	8,674.38		11,100.0
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110		8,712	8,723	10.92		
83	Casing Joint	5 1/2	4.778	20.00	P-110		8,723	12,132	3,409.23		11,100.0
46	Casing Joint	5 1/2	4.778	20.00	P-110		12,132	14,033	1,900.48		
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110		14,033	14,043	10.38		
1	RSI	5 1/2	4.778	20.00			14,043	14,050	6.67		
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110		14,050	14,060	10.20		
1	Casing Joint	5 1/2	4.778	20.00	P-110		14,060	14,103	42.96		
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110		14,103	14,113	10.19		
1	Landing Collar	5 1/2	4.778	20.00	P-110		14,113	14,115	1.48		
1	Casing Joint	5 1/2	4.778	20.00	P-110		14,115	14,154	39.17		
1	Float Collar	5 1/2	4.778	20.00	P-110		14,154	14,156	2.45		
1	XRV	5 1/2	4.778	20.00			14,156	14,158	2.19		
1	Casing Joint	5 1/2	4.778	20.00	P-110		14,158	14,201	42.90		
1	Float Shoe	5 1/2	4.778	20.00	P-110		14,201	14,204	2.70		



Cement Summary

Surface Casing Cement

Well Name SALADO DRAW EA 18 FED P6 005H	Lease Salado Draw EA 18 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) 354.12

Original Hole

Wellbore Name Original Hole	Directional Type Horizontal	Min Kick Off Depth (ftKB) 8,752.0	Vertical Section Direction (°) 354.12
Hole Size (in)	Act Top (ftKB)	Act Btm (ftKB)	
17 1/2	32.6	861.0	
12 1/4	861.0	4,731.0	
8 3/4	4,731.0	14,214.0	

Multi-bowl, FMC on <dtmstart>

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

Surface, Planned?N, 851ftKB

Casing Description Surface		Wellbore Original Hole		Run Date 1/28/2016		Set Depth (MD) (ftKB) 851		Stick Up (ftKB) -32.4		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	Wellhead	13 3/8	12.625	54.50	J-55			2.90	32	35	
1	Pup Joint	13 3/8	12.625	54.50	J-55			5.53	35	41	
18	Casing Joint	13 3/8	12.625	54.50	J-55			769.13	41	810	
1	Float Collar	13 3/8	12.625	54.50	J-55			1.39	810	811	
1	Casing Joint	13 3/8	12.625	54.50	J-55			38.94	811	850	
1	Float Shoe	13 3/8	12.625	54.50	J-55			0.68	850	851	

Intermediate Casing 1, Planned?N, 4,721ftKB

Casing Description Intermediate Casing 1	Wellbore Original Hole	Run Date 4/1/2016	Set Depth (MD) (ftKB) 4,721	Stick Up (ftKB) -32.6	Set Tension (kips)					
Centralizers 31			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	Hanger	9 5/8	8.835	40.00	HCK-55		LT&C	1.95	33	35
1	Pup Jt	9 5/8	8.835	40.00	HCK-55		LT&C	3.26	35	38
110	Casing Joint	9 5/8	8.835	40.00	HCK-55		LT&C	4,598.03	38	4,636
1	Float Collar	9 5/8	8.835	40.00	HCK-55		LT&C	1.49	4,636	4,637
2	Casing Joint	9 5/8	8.835	40.00	HCK-55		LT&C	82.07	4,637	4,719
1	Float Shoe	9 5/8	8.835	40.00	HCK-55		LT&C	1.63	4,719	4,721

Production Casing, Planned?N, 14,204ftKB

Casing Description Production Casing	Wellbore Original Hole	Run Date 4/10/2016	Set Depth (MD) (ftKB) 14,204		Stick Up (ftKB) -32.7	Set Tension (kips)				
Centralizers 105			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 Hanger	5 1/2	4.778	20.00				0.70	33	33
1	Casing Pup Joint	5 1/2	4.778	20.00				4.27	33	38
209	Casing Joint	5 1/2	4.778	20.00	P-110			8,674.38	38	8,712
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.92	8,712	8,723
83	Casing Joint	5 1/2	4.778	20.00	P-110			3,409.23	8,723	12,132
46	Casing Joint	5 1/2	4.778	20.00	P-110			1,900.48	12,132	14,033
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.36	14,033	14,043
1	RSI	5 1/2	4.778	20.00				6.67	14,043	14,050
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.20	14,050	14,060
1	Casing Joint	5 1/2	4.778	20.00	P-110			42.96	14,060	14,103
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.19	14,103	14,113
1	Landing Collar	5 1/2	4.778	20.00	P-110			1.48	14,113	14,115
1	Casing Joint	5 1/2	4.778	20.00	P-110			39.17	14,115	14,154
1	Float Collar	5 1/2	4.778	20.00	P-110			2.45	14,154	14,156
1	XRV	5 1/2	4.778	20.00				2.19	14,156	14,158
1	Casing Joint	5 1/2	4.778	20.00	P-110			42.90	14,158	14,201
1	Float Shoe	5 1/2	4.778	20.00	P-110			2.70	14,201	14,204



Cement Summary

Surface Casing Cement

Well Name SALADO DRAW EA 18 FED P6 005H		Lease Salado Draw EA 18 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 Casing Cement, Casing, 1/28/2016 16:17

Cementing Start Date 1/28/2016		Cementing End Date 1/28/2016		Wellbore Original Hole	
Evaluation Method Returns to Surface		Cement Evaluation Results Full returns			

Comment
Tested service lines to 3,500 psi. Pumped 40 bbl FW dyed spacer, 238 bbl (1006 sx) of tail cement, displaced with 125 bbl of 8.34 ppg FW. Bumped plug with 500 over final circulating pressure. Bled back 1 bbl. Floats held.

1, 32.6-861.0ftKB

Top Depth (ftKB) 32.6	Bottom Depth (ftKB) 861.0	Full Return? Y	Vol Cement Ret (bbl) 105.0	Top Plug? Y	Bottom Plug? N
Initial Pump Rate (bbl/min) 4.8	Final Pump Rate (bbl/min) 2.2	Avg Pump Rate (bbl/min) 3.5	Final Pump Pressure (psi) 338.0	Plug Bump Pressure (psi) 880.0	
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	Quantity (sacks) 0	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

Tail

Fluid Type Tail	Fluid Description Cement	Quantity (sacks) 1,006	Class C	Volume Pumped (bbl) 238.0	
Estimated Top (ftKB) 32.6	Estimated Bottom Depth (ftKB) 861.0	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) 4.50	1st Compressive Strength (psi)	

Cement Fluid Additives

Add	Type	Conc



Cement Summary

Intermediate Casing Cement

Well Name SALADO DRAW EA 18 FED P6 005H	Lease Salado Draw EA 18 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) 8,752.0	Vertical Section Direction (°) 354.12
Hole Size (in)	Act Top (ftKB)	Act Btm (ftKB)	
17 1/2	32.6	861.0	
12 1/4	861.0	4,731.0	
8 3/4	4,731.0	14,214.0	

Multi-bowl, FMC on <dtmstart>

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

Surface, Planned?N, 851ftKB

Casing Description Surface	Wellbore Original Hole	Run Date 1/28/2016	Set Depth (MD) (ftKB) 851	Suck Up (ftKB) -32.4	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	Wellhead	13 3/8	12.625	54.50	J-55			2.90	32	35
1	Pup Joint	13 3/8	12.625	54.50	J-55			5.53	35	41
18	Casing Joint	13 3/8	12.625	54.50	J-55			769.13	41	810
1	Float Collar	13 3/8	12.625	54.50	J-55			1.39	810	811
1	Casing Joint	13 3/8	12.625	54.50	J-55			38.94	811	850
1	Float Shoe	13 3/8	12.625	54.50	J-55			0.68	850	851

Intermediate Casing 1, Planned?N, 4,721ftKB

Casing Description Intermediate Casing 1		Wellbore Original Hole		Run Date 4/1/2016		Set Depth (MD) (ftKB) 4,721		Sack Up (ftKB) -32.6		Set Tension (kips)	
Centralizers 31						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	Hanger	9 5/8	8.835	40.00	HCK-55		LT&C	1.95	33	35	
1	Pup Jt	9 5/8	8.835	40.00	HCK-55		LT&C	3.26	35	38	
110	Casing Joint	9 5/8	8.835	40.00	HCK-55		LT&C	4,598.03	38	4,636	
1	Float Collar	9 5/8	8.835	40.00	HCK-55		LT&C	1.49	4,636	4,637	
2	Casing Joint	9 5/8	8.835	40.00	HCK-55		LT&C	82.07	4,637	4,719	
1	Float Shoe	9 5/8	8.835	40.00	HCK-55		LT&C	1.63	4,719	4,721	

Production Casing, Planned?N, 14,204ftKB

Casing Description Production Casing	Wellbore Original Hole	Run Date 4/10/2016	Set Depth (MD) (ftKB) 14,204	Sack Up (ftKB) -32.7	Set Tension (kips)					
Centralizers 105			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 Hanger	5 1/2	4.778	20.00				0.70	33	33
1	Casing Pup Joint	5 1/2	4.778	20.00				4.27	33	38
209	Casing Joint	5 1/2	4.778	20.00	P-110			8,674.38	38	8,712
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.92	8,712	8,723
83	Casing Joint	5 1/2	4.778	20.00	P-110			3,409.23	8,723	12,132
46	Casing Joint	5 1/2	4.778	20.00	P-110			1,900.48	12,132	14,033
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.36	14,033	14,043
1	RSI	5 1/2	4.778	20.00				6.67	14,043	14,050
*1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.20	14,050	14,060
1	Casing Joint	5 1/2	4.778	20.00	P-110			42.96	14,060	14,103
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.19	14,103	14,113
1	Landing Collar	5 1/2	4.778	20.00	P-110			1.48	14,113	14,115
1	Casing Joint	5 1/2	4.778	20.00	P-110			39.17	14,115	14,154
1	Float Collar	5 1/2	4.778	20.00	P-110			2.45	14,154	14,156
1	XRV	5 1/2	4.778	20.00				2.19	14,156	14,158
1	Casing Joint	5 1/2	4.778	20.00	P-110			42.90	14,158	14,201
1	Float Shoe	5 1/2	4.778	20.00	P-110			2.70	14,201	14,204



Cement Summary

Intermediate Casing Cement

Well Name SALADO DRAW EA 18 FED P6 005H	Lease Salado Draw EA 18 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)

Intermediate Casing Cement, Casing, 4/1/2016 17:30

Cementing Start Date 4/1/2016	Cementing End Date 4/1/2016	Wellbore Original Hole
Evaluation Method Returns to Surface	Cement Evaluation Results Full returns	

Comment
Perform cmt job as follows:

- Load lines with 10 BBL dyed FW
- Pressure test lines to 500 psi low & 5,000 psi high
- Pump 40 bbls dyed FW spacer
- Mix and pump 1066 sx (461 bbls) of Lead at 11.9 ppg.
- Mix and pump 461 sx (109 bbl) of Tail at 14.8 ppg
- Drop wiper plug and displace cmt w/353 bbl FW
- Bump plug with 500 psi over final circulating pressure at 1700 psi.
- Held pressure for 5 min.
- Bled back 2.3 bbl. Floats holding.

Details:

- Full returns throughout job.
- Final circulating pressure prior to bumping plug 1197 psi at 2.5 bpm - 230 bbls/524 sks of cmt returned to surface
- Cmt in place at 20:30 hrs 4/1/2016

1, 32.6-4,731.0ftKB

Top Depth (ftKB) 32.6	Bottom Depth (ftKB) 4,731.0	Full Return? Y	Vol Cement Ret (bbl) 230.0	Top Plug? N	Bottom Plug? Y
Initial Pump Rate (bbl/min) 6.6	Final Pump Rate (bbl/min) 2.5	Avg Pump Rate (bbl/min) 6	Final Pump Pressure (psi) 1,197.0	Plug Bump Pressure (psi) 1,700.0	
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) 463.0
Estimated Top (ftKB) 32.6	Estimated Bottom Depth (ftKB) 3,587.0	Percent Excess Pumped (%) 150.0	Yield (ft ³ /sack) 2.46	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) 3,587.0	Estimated Bottom Depth (ftKB) 4,587.0	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

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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)

Original Hole

Wellbore Name Original Hole	Directional Type Horizontal	Min Kick Off Depth (ftKB) 8,752.0	Vertical Section Direction (°) 354.12
Hole Size (in)	Act Top (ftKB)	Act Btm (ftKB)	
17 1/2	32.6	861.0	
12 1/4	861.0	4,731.0	
8 3/4	4,731.0	14,214.0	

Multi-bowl, FMC on <dtmstart>

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

Surface, Planned?N, 851ftKB

Casing Description Surface		Wellbore Original Hole		Run Date 1/28/2016		Set Depth (MD) (ftKB) 851		Slick Up (ftKB) -32.4		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	Wellhead	13 3/8	12.625	54.50	J-55			2.90	32	35	
1	Pup Joint	13 3/8	12.625	54.50	J-55			5.53	35	41	
18	Casing Joint	13 3/8	12.625	54.50	J-55			769.13	41	810	
1	Float Collar	13 3/8	12.625	54.50	J-55			1.39	810	811	
1	Casing Joint	13 3/8	12.625	54.50	J-55			38.94	811	850	
1	Float Shoe	13 3/8	12.625	54.50	J-55			0.68	850	851	

Intermediate Casing 1, Planned?N, 4,721ftKB

Casing Description Intermediate Casing 1		Wellbore Original Hole		Run Date 4/1/2016		Set Depth (MD) (ftKB) 4,721		Slick Up (ftKB) -32.6		Set Tension (kips)	
Centralizers 31						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	Hanger	9 5/8	8.835	40.00	HCK-55		LT&C	1.95	33	35	
1	Pup Jt	9 5/8	8.835	40.00	HCK-55		LT&C	3.26	35	38	
110	Casing Joint	9 5/8	8.835	40.00	HCK-55		LT&C	4,598.03	38	4,636	
1	Float Collar	9 5/8	8.835	40.00	HCK-55		LT&C	1.49	4,636	4,637	
2	Casing Joint	9 5/8	8.835	40.00	HCK-55		LT&C	82.07	4,637	4,719	
1	Float Shoe	9 5/8	8.835	40.00	HCK-55		LT&C	1.63	4,719	4,721	

Production Casing, Planned?N, 14,204ftKB

Casing Description Production Casing	Wellbore Original Hole	Run Date 4/10/2016	Set Depth (MD) (ftKB) 14,204	Slick Up (ftKB) -32.7	Set Tension (kips)					
Centralizers 105			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 Hanger	5 1/2	4.778	20.00				0.70	33	33
1	Casing Pup Joint	5 1/2	4.778	20.00				4.27	33	38
209	Casing Joint	5 1/2	4.778	20.00	P-110			8,674.38	38	8,712
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.92	8,712	8,723
83	Casing Joint	5 1/2	4.778	20.00	P-110			3,409.23	8,723	12,132
46	Casing Joint	5 1/2	4.778	20.00	P-110			1,900.48	12,132	14,033
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.36	14,033	14,043
1	RSI	5 1/2	4.778	20.00				6.67	14,043	14,050
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.20	14,050	14,060
1	Casing Joint	5 1/2	4.778	20.00	P-110			42.96	14,060	14,103
1	Casing Pup Joint	5 1/2	4.778	20.00	P-110			10.19	14,103	14,113
1	Landing Collar	5 1/2	4.778	20.00	P-110			1.48	14,113	14,115
1	Casing Joint	5 1/2	4.778	20.00	P-110			39.17	14,115	14,154
1	Float Collar	5 1/2	4.778	20.00	P-110			2.45	14,154	14,156
1	XRV	5 1/2	4.778	20.00				2.19	14,156	14,158
1	Casing Joint	5 1/2	4.778	20.00	P-110			42.90	14,158	14,201
1	Float Shoe	5 1/2	4.778	20.00	P-110			2.70	14,201	14,204



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Production Casing Cement, Casing, 4/11/2016 08:00

Cementing Start Date 4/11/2016	Cementing End Date 4/11/2016	Wellbore Original Hole
Evaluation Method Lift Pressure	Cement Evaluation Results Lost returns 220 bbl into displacement. Estimated TOC 2,570'	

Comment

Pump production cement job as follows:

Pressure test 500 psi low 6500 psi high

Bleed off

Drop bottom plug

Pump 30 bbl 10 ppg Mudpush spacer

Pump 310 bbl 11.5 ppg lead 1 at 5 bpm

20 bbl of lead 1

50 bbl of lead 1 w/ CemNET

50 bbl of lead 1

40 bbl of lead 1 w/ CemNET

140 bbl of lead 1

Pump 266.6 bbl 12.5 ppg lead 2 at 6 bpm

Pump 46.6 bbl 15 ppg tail at 4 bpm

Drop top plug

Pump 311 bbl fresh water displacement

20 bbl with acid at 4 bpm

291 bbl fresh water at 3 bpm

Final circulating pressure 1550 psi at 3 bpm

Bump plug pressure 2277 psi

Hold 500 psi over FCP for 5 min

Bled back 2.5 bbl - floats held

Lost returns at 220 bbl into displacement

Estimated TOC 2570 ft

Cement in place at 11:30

1, 2,570.0-14,214.0ftKB

Top Depth (ftKB) 2,570.0	Bottom Depth (ftKB) 14,214.0	Full Return? N	Vol Cement Ret (bbl) 0.0	Top Plug? Y	Bottom Plug? Y
Initial Pump Rate (bbl/min) 5	Final Pump Rate (bbl/min) 3.3	Avg Pump Rate (bbl/min) 5.5	Final Pump Pressure (psi) 1,550.0	Plug Bump Pressure (psi) 2,270.0	
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 MUDPUSH Express Spacer	Quantity (sacks)	Class	Volume Pumped (bbl) 30.0
Estimated Top (ftKB) 1,923.0	Estimated Bottom Depth (ftKB) 2,570.0	Percent Excess Pumped (%)	Yield (ft ³ /sack)	Fluid Mix Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 10.00	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/H + .2% D046 + 6.5% D020 + 8% D154 + .2% D065 + 2lb/sk B288 + 2 lb/sk B289	Quantity (sacks) 647	Class H	Volume Pumped (bbl) 310.0
Estimated Top (ftKB) 2,570.0	Estimated Bottom Depth (ftKB) 8,759.0	Percent Excess Pumped (%) 50.0	Yield (ft ³ /sack) 2.69	Fluid Mix Ratio (gal/sack) 15.77
Free Water (%)	Density (lb/gal) 11.50	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)

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) <u>924</u>	Class H	Volume Pumped (bbl) 266.6
Estimated Top (ftKB) 8,759.0	Estimated Bottom Depth (ftKB) 13,204.0	Percent Excess Pumped (%) 35.0	Yield (ft ³ /sack) 1.62	Fluid Mix Ratio (gal/sack) 8.70
Free Water (%)	Density (lb/gal) 12.50	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)



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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) 120	Class H	Volume Pumped (bbl) 46.6
Estimated Top (ftKB) 13,204.0	Estimated Bottom Depth (ftKB) 14,214.0	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 291 bbls FW	Quantity (sacks)	Class	Volume Pumped (bbl) 311.0
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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