

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Form C-104
Revised August 1, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit one copy to appropriate District Office

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address CHEVRON USA INC 1616 W. BENDER HOBBS, NM 88240		² OGRID Number 4323
		³ Reason for Filing Code/ Effective Date NEW COMPLETION 07/09/2014
⁴ API Number 30 - 015-41848	⁵ Pool Name COTTONWOOD DRAW; BONE SPRING	⁶ Pool Code 97494
⁷ Property Code 40281	⁸ Property Name HAYHURST 18 FEDERAL	⁹ Well Number 1H

II. ¹⁰ Surface Location

UL or lot no A	Section 18	Township 25S	Range 27E	Lot Idn	Feet from the 340	North/South Line NORTH	Feet from the 1040	East/West line EAST	County EDDY
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¹¹ Bottom Hole Location

UL or lot no P	Section 18	Township 25S	Range 27E	Lot Idn	Feet from the 250	North/South line SOUTH	Feet from the 855	East/West line EAST	County EDDY
¹² Lse Code F	¹³ Producing Method Code P	¹⁴ Gas Connection Date 07/12/2014	¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date	¹⁷ C-129 Expiration Date				

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
	KNOWLES TRUCKING COMPANY	O
	TRIPLE CROWN GAS COMPANY	G
	NM OIL CONSERVATION ARTESIA DISTRICT AUG 13 2014	
	RECEIVED	

IV. Well Completion Data

²¹ Spud Date 01/25/2014	²² Ready Date 07/09/2014	²³ TD 11875	²⁴ PBSD 11702	²⁵ Perforations 7802-11651	²⁶ DHC, MC
²⁷ Hole Size	²⁸ Casing & Tubing Size	²⁹ Depth Set	³⁰ Sacks Cement		
17 1/2	13 3/8	425	465 SACKS		
12 1/4	9 5/8	2033	760 SACKS		
8 3/4	5 1/2	11785	1693 SACKS		
TUBING	2 7/8				

V. Well Test Data

³¹ Date New Oil 07/09/2014	³² Gas Delivery Date 07/12/2014	³³ Test Date 07/14/2014	³⁴ Test Length 24 HRS	³⁵ Tbg. Pressure	³⁶ Csg. Pressure
³⁷ Choke Size	³⁸ Oil 780	³⁹ Water 748	⁴⁰ Gas 1412		⁴¹ Test Method P

⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: *Cindy Herrera-Murillo*

Printed name:
CINDY HERRERA-MURILLO

Title:
PERMITTING SPECIALIST

E-mail Address:
CHERRERAMURILLO@CHEVRON.COM

Date:
08/07/2014

Phone:

OIL CONSERVATION DIVISION

Approved by:

Title:

Approval Date:

Pending BLM approvals will
subsequently be reviewed
and scanned

3160-4
3160-5

Provide signature page for Directional Survey

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY 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.*5. Lease Serial No.
NMNM111530

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

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

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other8. Well Name and No.
HAYHURST 18 FEDERAL 1H2. Name of Operator
CHEVRON USA INCContact: CINDY H MURILLO
E-Mail: CHERRERAMURILLO@CHEVRON.COM9. API Well No.
30-015-418483a. Address
1616 W. BENDER BLVD
HOBBS, NM 882403b. Phone No. (include area code)
Ph: 575-263-0431
Fx: 575-263-044510. Field and Pool, or Exploratory
COTTONWOOD DRAW; BONE SPRI

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 18 T25S R27E Mer NMP NENE 340FNL 1040FEL

11. County or Parish, and State

EDDY COUNTY, NM

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
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Well Spud
	☐ 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 recompleat 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 recompleat 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.)

CHEVRON USA INC HAS COMPLETED THE FOLLOWING TO THE ABOVE WELL:

01/25/2014 SPUD 17 1/2 HOLE TO HOLE @ 425, 13 3/8 48# H-40 ST&C CSG. CEMENTED 465 SXS OF HAL CEMENT C W/ADDITIVES. CIRCULATED 2 HI-VIS SWEEPS TO CLEAN AND CONDITION HOLE FOR CASING AND CEMENT. DRILLED 12 1/4 INTERMEDIATE FROM 425-2033, 9 5/8 40# K-55, PUMPED 545 SXS OF EXTENDACEMAND THEN PUMPED 215 SXS OF HAL CEM-C, CIRCULATE HOLE 1.5 X BOTTOMS UP AND PUMP TWO HI-VIS SWEEPS TO CONDITION. HOLE CONTINUE DRILLING 2275 TO 6955. DRILLED 8 3/4 PRODUCTION CASING FROM 6955-11786, 5.5 17# P110, PRE-CEMENT CIRCULATION, RIG UP AND PUMP PRODUCTION CEMENT. MIX AND PUMP 1693-SXS OF CLASS H CEMENT, DROP PLUG AND DISPLACE CEMT W/24 BBL MSA, DISPLACE W/249 BBL OF FRESH WATER. BLEED OFF PRESSURE-FLOATS HELD, NO SPACER 0 SKX OF CEMENT TO SURFACE. CEMENT IN PLACE.

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 13 2014

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

Electronic Submission #256192 verified by the BLM Well Information System
For CHEVRON USA INC, sent to the Carlsbad**RECEIVED**

Name (Printed/Typed) CINDY H MURILLO

Title PERMITTING SPECIALIST

Signature (Electronic Submission)

Date 08/07/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

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

Pending BLM approvals will
subsequently be reviewed
and scannedTitle 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly
States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

Department or agency of the United States

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 13 2014

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.
NMNM111530

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other _____

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.

2. Name of Operator CHEVRON USA INC Contact: CINDY H MURILLO
E-Mail: CHERRERAMURILLO@CHEVRON.COM

8. Lease Name and Well No.
HAYHURST 18 FEDERAL 1H

3. Address 1616 W. BENDER BLVD
HOBBS, NM 88240

3a. Phone No. (include area code)
Ph: 575-263-0431

9. API Well No.
30-015-41848

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface NENE 340FNL 1040FEL

At top prod interval reported below NENE 340FNL 1040FEL

At total depth SESE 250FSL 855FEL

10. Field and Pool, or Exploratory
COTTONWOOD DRAW; BONE SPRI

11. Sec., T., R., M., or Block and Survey
or Area Sec 18 T25S R27E Mer NMP

12. County or Parish
EDDY

13. State
NM

14. Date Spudded
01/25/2014

15. Date T.D. Reached
06/30/2014

16. Date Completed
☐ D & A ☐ Ready to Prod.
07/09/2014

17. Elevations (DF, KB, RT, GL)*
3209 GL

18. Total Depth: MD
TVD 11875

19. Plug Back T.D.: MD
TVD 11702

20. Depth Bridge Plug Set: MD
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
ELECTRIC LOGS

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit analysis)
Directional Survey? ☐ No ☒ Yes (Submit analysis)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17.500	13.375 H-40	48.0		425		465			
12.250	9.625 K-55	40.0	425	2033		760			
8.750	5.500 P110	17.0	2033	11785		1693			

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.875	6880	6804						

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
T/2ND BONE SPRING SAND	7183	7399	7802 TO 11651	17.500	36	OPEN HOLE
B/2ND BONE SPRING SAND	7400	11662				
C)						
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
7802 TO 9008	7.5% FE ACID 3000 GALLONS; 20/40 PREMIUM WHITE 255,444 LBS
91112 TO 10332	7.5% FE ACID 3000 GALLONS, 20/40 PREMIUM WHITE 271,162 LBS
10333 TO 11212	7.5 FE ACID 3000 GALLONS; 20/40 PREMIUM WHITE 298,731 LBS

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
07/09/2014	07/14/2014	24	→	780.0	1412.0	478.0			ELECTRIC PUMPING UNIT
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
			→					POW	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Grav	
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
			→						

Pending BLM approvals will
subsequently be reviewed
and scanned

(See Instructions and spaces for additional data on reverse side)

ELECTRONIC SUBMISSION #256275 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL →	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL →	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL →	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL →	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	

29. Disposition of Gas(Sold, used for fuel, vented, etc.)
SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
CHERRY CANYON	2992	4073	WATER	CHERRY CANYON	2992
BRUSHY CANYON	4074	6524	OIL, GAS, WATER	BRUSHY CANYON	4074
T/1ST BONE SPRING SAND	6525	7182	OIL, GAS, WATER	T/1ST BONE SPRING SAND	6525
T/2ND BONE SPRING SAND	7183	7399	OIL, GAS, WATER	T/2ND BONE SPRING SAND	7183
B/2ND BONE SPRING SAND	7400	11662	OIL, GAS, WATER	B/2ND BONE SPRING SAND	7400

32. Additional remarks (include plugging procedure):

06/17/2014- 07/01/2014 NU BHA 29' TOTAL LENGTH. PRESSURE TEST BHA LOW 250 PSI HIGH OF 5100 PSI, FLOW TEST 2.8 BPW FRESH WATER OF SURFACE. NU COIL TO BOP STACK. PRESSURE TEST COIL, BOP AND STACK 250 PSI LOW 8,000 PSI HIGH. MIRU ARCHER WL, BAKER TOOLS, NABORS PUMP. NU WL LUBE AND TOOLS WITH 4 625 GAUGE RING, JUNK BASKET, AND WEIGHT BARS. PRESSURE TEST LUBE, BOP AND STACK TO 250 PSI LOW, 2000 PSI HIGH. RIH TO 7100 CCL CORRELATED AT MARKER JOINT @ 6735. NO ISSUES DURING RIH ROH.RDMO WL AND RELATED VENDORS. MONITOR WELL FOR PACKER LEAKING. NO LEAKS. SET DUAL FLOW SUB WITH 2 3/8 THREAD AND BACK PRESSURE VALVE. NO FRAC STACK. INSTALL BLANKSUB CAP. SISD. PACKER @ 6804. SET BPV, R/D FLOOR AND ND 7 1/8 5

33. Circle enclosed attachments:

- | | | | |
|---|--------------------|---------------|-----------------------|
| 1. Electrical/Mechanical Logs (1 full set req'd.) | 2. Geologic Report | 3. DST Report | 4. Directional Survey |
| 5. Sundry Notice for plugging and cement verification | 6. Core Analysis | 7 Other: | |

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

Electronic Submission #256275 Verified by the BLM Well Information System.
For CHEVRON USA INC, sent to the Carlsbad

Name (please print) CINDY H MURILLO

Title PERMITTING SPECIALIST

Signature (Electronic Submission)

Date 08/07/2014

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.

** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL **

Additional data for transaction #256275 that would not fit on the form

32. Additional remarks, continued

M BOPE. BACK IN D&L METER TRAILOR AND LOAD EQUIPMENT. PD PUMPS, LINES, ACCUMULATOR, REVERSE TANK, REVERSE UNIT, ACCUMULATOR, DOGHOUSE, PIPE RACKS, TELESCOPE DERRICK AND RDMO HAND OVER TO PRODUCTION.



Directional Survey

ARTESIA DISTRICT

Aug 15 2014

RECEIVED

Well Name HAYHURST 18 FEDERAL 001H		Lease Hayhurst 18 Federal		Field Name Cottonwood Draw		Business Unit Mid-Continent	
Ground Elevation (ft) 3,209.00	Original RKB (ft) 3,240.00	Current RKB Elevation 3,240.00, 1/15/2014				Mud Line Elevation (ft)	Water Depth (ft)

Wellbore Name Original Hole		Parent Wellbore Original Hole		Kick Off Depth (ftKB) 6,880		Vertical Section Direction (°) 178.92		
UTM Northing (Y) (ft)			UTM Easting (X) (ft)			UTM Grid Zone		
Date 1/28/2014		Definitive? Y		Description MWD		Planned? N		
MD Tie In (ftKB)	TVD Tie In (ftKB)		Inclination Tie In (°)		Azimuth Tie In (°)		NSTie In (ft)	EWTie In (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
512	3.61	285.52	511.66	4.31	-15.54	-4.61	0.71	Magn MWD	Halliburton	0.71	16.12	55.77	N
596	2.36	276.29	595.55	5.21	-19.80	-5.58	1.59	Magn MWD	Halliburton	-1.49	20.48	-10.99	N
689	1.96	269.12	688.48	5.40	-23.30	-5.84	0.52	Magn MWD	Halliburton	-0.43	23.91	-7.71	N
811	1.67	283.56	810.42	5.78	-27.11	-6.29	0.44	Magn MWD	Halliburton	-0.24	27.72	11.84	N
999	1.18	313.16	998.36	7.75	-31.19	-8.33	0.46	Magn MWD	Halliburton	-0.26	32.13	15.74	N
1,126	1.21	330.97	1,125.34	9.82	-32.79	-10.43	0.29	Magn MWD	Halliburton	0.02	34.23	14.02	N
1,316	2.22	50.23	1,315.27	13.92	-30.94	-14.50	1.22	Magn MWD	Halliburton	0.53	33.93	-147.76	N
1,506	3.45	61.43	1,505.03	19.01	-23.09	-19.44	0.71	Magn MWD	Halliburton	0.65	29.91	5.89	N
1,696	4.03	75.89	1,694.63	23.37	-11.59	-23.59	0.58	Magn MWD	Halliburton	0.31	26.09	7.61	N
1,789	3.76	86.14	1,787.42	24.38	-5.38	-24.47	0.80	Magn MWD	Halliburton	-0.29	24.96	11.02	N
1,881	2.81	88.86	1,879.27	24.62	-0.11	-24.62	1.05	Magn MWD	Halliburton	-1.03	24.62	2.96	N
1,967	2.28	86.49	1,965.18	24.77	3.70	-24.70	0.63	Magn MWD	Halliburton	-0.62	25.05	-2.76	N
2,067	2.11	95.09	2,065.11	24.73	7.52	-24.58	0.37	Magn MWD	Halliburton	-0.17	25.85	8.60	N
2,258	1.96	94.27	2,255.99	24.17	14.28	-23.90	0.08	Magn MWD	Halliburton	-0.08	28.08	-0.43	N
2,449	2.17	88.60	2,446.86	24.02	21.15	-23.62	0.15	Magn MWD	Halliburton	0.11	32.01	-2.97	N
2,639	2.16	89.47	2,636.73	24.14	28.33	-23.60	0.02	Magn MWD	Halliburton	-0.01	37.22	0.46	N
2,829	1.94	94.88	2,826.61	23.90	35.11	-23.23	0.15	Magn MWD	Halliburton	-0.12	42.48	2.85	N
3,019	1.82	92.32	3,016.51	23.50	41.33	-22.72	0.08	Magn MWD	Halliburton	-0.06	47.55	-1.35	N
3,210	2.01	90.82	3,207.40	23.33	47.71	-22.43	0.10	Magn MWD	Halliburton	0.10	53.11	-0.79	N
3,400	1.90	94.77	3,397.29	23.02	54.18	-22.00	0.09	Magn MWD	Halliburton	-0.06	58.87	2.08	N
3,591	1.86	93.57	3,588.19	22.57	60.43	-21.42	0.03	Magn MWD	Halliburton	-0.02	64.51	-0.63	N
3,780	2.07	90.86	3,777.07	22.32	66.91	-21.06	0.12	Magn MWD	Halliburton	0.11	70.53	-1.43	N
3,969	2.16	86.55	3,965.95	22.49	73.87	-21.09	0.10	Magn MWD	Halliburton	0.05	77.22	-2.28	N
4,159	1.70	83.46	4,155.84	23.02	80.25	-21.51	0.25	Magn MWD	Halliburton	-0.24	83.49	-1.63	N
4,349	1.28	94.41	4,345.77	23.18	85.16	-21.57	0.27	Magn MWD	Halliburton	-0.22	88.26	5.76	N
4,540	1.42	91.07	4,536.72	22.97	89.66	-21.28	0.08	Magn MWD	Halliburton	0.07	92.55	-1.75	N



Directional Survey

Well Name HAYHURST 18 FEDERAL 001H		Lease Hayhurst 18 Federal		Field Name Cottonwood Draw		Business Unit Mid-Continent	
Ground Elevation (ft) 3,209.00	Original RKB (ft) 3,240.00	Current RKB Elevation 3,240.00, 1/15/2014				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
4,730	1.23	87.11	4,726.67	23.03	94.05	-21.26	0.11	Magn MWD	Halliburton	-0.10	96.83	-2.08	N
4,920	1.31	89.67	4,916.62	23.15	98.26	-21.29	0.05	Magn MWD	Halliburton	0.04	100.95	1.35	N
5,108	1.13	95.57	5,104.58	22.98	102.25	-21.05	0.12	Magn MWD	Halliburton	-0.10	104.80	3.14	N
5,298	1.17	119.91	5,294.54	21.83	105.80	-19.83	0.26	Magn MWD	Halliburton	0.02	108.03	12.81	N
5,488	0.93	135.07	5,484.51	19.77	108.57	-17.72	0.19	Magn MWD	Halliburton	-0.13	110.35	7.98	N
5,678	0.57	199.18	5,674.50	17.79	109.35	-15.72	0.45	Magn MWD	Halliburton	-0.19	110.78	33.74	N
5,868	0.68	273.01	5,864.49	16.96	107.91	-14.92	0.40	Magn MWD	Halliburton	0.06	109.23	38.86	N
6,058	0.63	254.36	6,054.48	16.73	105.78	-14.74	0.11	Magn MWD	Halliburton	-0.03	107.09	-9.82	N
6,249	0.12	267.99	6,245.47	16.44	104.57	-14.47	0.27	Magn MWD	Halliburton	-0.27	105.85	7.14	N
6,440	0.75	195.20	6,436.47	15.23	104.04	-13.27	0.38	Magn MWD	Halliburton	0.33	105.15	-38.11	N
6,630	1.15	175.51	6,626.44	12.13	103.86	-10.17	0.27	Magn MWD	Halliburton	0.21	104.57	-10.36	N
6,820	1.32	207.73	6,816.40	8.29	102.99	-6.35	0.37	Magn MWD	Halliburton	0.09	103.33	16.96	N
6,981	23.80	194.01	6,972.55	-25.30	94.15	27.07	13.99	Magn MWD	Halliburton	13.96	97.49	-8.52	N
7,013	28.91	193.83	7,001.21	-39.09	90.74	40.79	15.97	Magn MWD	Halliburton	15.97	98.80	-0.56	N
7,044	32.91	193.44	7,027.80	-54.56	86.99	56.19	12.92	Magn MWD	Halliburton	12.90	102.68	-1.26	N
7,076	35.48	188.89	7,054.27	-72.20	83.53	73.76	11.32	Magn MWD	Halliburton	8.03	110.41	-14.22	N
7,108	38.37	181.70	7,079.86	-91.31	81.80	92.84	16.23	Magn MWD	Halliburton	9.03	122.59	-22.47	N
7,140	40.46	177.77	7,104.59	-111.62	81.91	113.14	10.17	Magn MWD	Halliburton	6.53	138.45	-12.28	N
7,171	42.27	175.62	7,127.85	-132.07	83.10	133.61	7.42	Magn MWD	Halliburton	5.84	156.04	-6.94	N
7,202	42.01	175.79	7,150.84	-152.81	84.65	154.38	0.92	Magn MWD	Halliburton	-0.84	174.69	0.55	N
7,235	44.58	175.29	7,174.86	-175.37	86.42	176.97	7.86	Magn MWD	Halliburton	7.79	195.50	-1.52	N
7,266	47.74	176.04	7,196.33	-197.66	88.10	199.29	10.34	Magn MWD	Halliburton	10.19	216.41	2.42	N
7,298	51.78	176.55	7,216.99	-222.03	89.68	223.68	12.68	Magn MWD	Halliburton	12.63	239.46	1.59	N
7,329	55.86	178.44	7,235.29	-247.02	90.76	248.69	14.05	Magn MWD	Halliburton	13.16	263.17	6.10	N
7,360	59.58	178.58	7,251.84	-273.22	91.44	274.90	12.01	Magn MWD	Halliburton	12.00	288.12	0.45	N
7,392	63.62	178.53	7,267.06	-301.35	92.15	303.04	12.63	Magn MWD	Halliburton	12.63	315.13	-0.16	N
7,424	66.89	177.89	7,280.45	-330.40	93.06	332.09	10.38	Magn MWD	Halliburton	10.22	343.25	-2.00	N
7,456	70.34	176.65	7,292.12	-360.16	94.48	361.87	11.37	Magn MWD	Halliburton	10.78	372.34	-3.87	N
7,487	73.59	175.79	7,301.72	-389.56	96.43	391.31	10.81	Magn MWD	Halliburton	10.48	401.32	-2.77	N



Directional Survey

Well Name HAYHURST 18 FEDERAL 001H		Lease Hayhurst 18 Federal		Field Name Cottonwood Draw		Business Unit Mid-Continent	
Ground Elevation (ft) 3,209.00	Original RKB (ft) 3,240.00	Current RKB Elevation 3,240.00, 1/15/2014				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
7,519	76.74	176.02	7,309.91	-420.41	98.64	422.20	9.87	Magn MWD	Halliburton	9.84	431.83	0.72	N
7,551	80.39	176.50	7,316.25	-451.71	100.68	453.52	11.50	Magn MWD	Halliburton	11.41	462.79	1.50	N
7,614	86.35	176.39	7,323.52	-514.14	104.56	516.02	9.46	Magn MWD	Halliburton	9.46	524.66	-0.17	N
7,646	87.19	176.60	7,325.33	-546.03	106.51	547.94	2.71	Magn MWD	Halliburton	2.63	556.32	0.66	N
7,741	90.40	178.71	7,327.32	-640.91	110.40	642.87	4.04	Magn MWD	Halliburton	3.38	650.35	2.22	N
7,800	90.00	179.00	7,327.12	-699.90	111.58	701.87	0.84	Magn MWD	Halliburton	-0.68	708.73	0.49	N
7,836	91.70	178.75	7,326.58	-735.88	112.28	737.87	4.77	Magn MWD	Halliburton	4.72	744.40	-0.69	N
7,930	89.72	178.00	7,325.42	-829.83	114.95	831.85	2.25	Magn MWD	Halliburton	-2.11	837.76	-0.80	N
8,026	89.88	178.35	7,325.75	-925.78	118.01	927.84	0.40	Magn MWD	Halliburton	0.17	933.27	0.36	N
8,122	90.68	188.81	7,325.28	-1,021.46	112.02	1,023.39	10.93	Magn MWD	Halliburton	0.83	1,027. 58	10.90	N
8,217	89.60	177.84	7,325.05	-1,116.15	106.52	1,117.96	11.60	Magn MWD	Halliburton	-1.14	1,121. 23	-11.55	N
8,312	89.82	177.52	7,325.53	-1,211.08	110.36	1,212.94	0.41	Magn MWD	Halliburton	0.23	1,216. 09	-0.34	N
8,406	91.29	177.13	7,324.62	-1,304.97	114.75	1,306.90	1.62	Magn MWD	Halliburton	1.56	1,310. 00	-0.41	N
8,501	88.89	176.42	7,324.47	-1,399.81	120.09	1,401.82	2.63	Magn MWD	Halliburton	-2.53	1,404. 95	-0.75	N
8,597	89.17	175.52	7,326.10	-1,495.56	126.84	1,497.68	0.98	Magn MWD	Halliburton	0.29	1,500. 92	-0.94	N
8,692	89.41	177.57	7,327.28	-1,590.37	132.56	1,592.59	2.17	Magn MWD	Halliburton	0.25	1,595. 89	2.16	N
8,787	90.00	178.07	7,327.76	-1,685.30	136.18	1,687.57	0.81	Magn MWD	Halliburton	0.62	1,690. 79	0.53	N
8,882	91.29	177.80	7,326.69	-1,780.23	139.60	1,782.54	1.39	Magn MWD	Halliburton	1.36	1,785. 69	-0.28	N
8,977	89.17	178.86	7,326.31	-1,875.18	142.37	1,877.53	2.49	Magn MWD	Halliburton	-2.23	1,880. 58	1.12	N
9,072	89.26	179.17	7,327.62	-1,970.16	144.00	1,972.52	0.34	Magn MWD	Halliburton	0.09	1,975. 41	0.33	N
9,167	90.06	178.82	7,328.18	-2,065.14	145.67	2,067.52	0.92	Magn MWD	Halliburton	0.84	2,070. 27	-0.37	N
9,263	89.66	180.19	7,328.41	-2,161.14	146.50	2,163.51	1.49	Magn MWD	Halliburton	-0.42	2,166. 09	1.43	N
9,358	90.65	181.04	7,328.16	-2,256.13	145.48	2,258.47	1.37	Magn MWD	Halliburton	1.04	2,260. 81	0.89	N
9,453	92.31	180.54	7,325.70	-2,351.08	144.17	2,353.38	1.82	Magn MWD	Halliburton	1.75	2,355. 50	-0.53	N
9,548	90.95	181.57	7,323.00	-2,446.02	142.42	2,448.27	1.80	Magn MWD	Halliburton	-1.43	2,450. 17	1.08	N
9,643	87.87	181.39	7,323.98	-2,540.98	139.97	2,543.16	3.25	Magn MWD	Halliburton	-3.24	2,544. 83	-0.19	N
9,738	87.85	181.81	7,327.53	-2,635.87	137.32	2,637.99	0.44	Magn MWD	Halliburton	-0.02	2,639. 45	0.44	N
9,833	87.87	181.67	7,331.07	-2,730.76	134.43	2,732.81	0.15	Magn MWD	Halliburton	0.02	2,734. 07	-0.15	N
9,929	87.50	182.25	7,334.95	-2,826.63	131.15	2,828.60	0.72	Magn MWD	Halliburton	-0.39	2,829. 67	0.60	N



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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
10,024	89.03	181.64	7,337.83	-2,921.53	127.93	2,923.42	1.73	Magn MWD	Halliburton	1.61	2,924. 33	-0.64	N
10,117	90.56	181.74	7,338.16	-3,014.48	125.19	3,016.31	1.65	Magn MWD	Halliburton	1.65	3,017. 08	0.11	N
10,212	91.60	180.34	7,336.37	-3,109.45	123.46	3,111.22	1.84	Magn MWD	Halliburton	1.09	3,111. 90	-1.47	N
10,307	90.34	180.42	7,334.76	-3,204.43	122.83	3,206.17	1.33	Magn MWD	Halliburton	-1.33	3,206. 78	0.08	N
10,402	90.59	181.05	7,333.99	-3,299.42	121.62	3,301.12	0.71	Magn MWD	Halliburton	0.26	3,301. 66	0.66	N
10,498	90.00	179.81	7,333.50	-3,395.41	120.89	3,397.09	1.43	Magn MWD	Halliburton	-0.61	3,397. 56	-1.29	N
10,592	90.83	179.18	7,332.82	-3,489.40	121.72	3,491.08	1.11	Magn MWD	Halliburton	0.88	3,491. 53	-0.67	N
10,687	90.03	177.98	7,332.10	-3,584.37	124.08	3,586.07	1.52	Magn MWD	Halliburton	-0.84	3,586. 52	-1.26	N
10,782	91.02	178.44	7,331.23	-3,679.32	127.04	3,681.06	1.15	Magn MWD	Halliburton	1.04	3,681. 51	0.48	N
10,878	91.88	178.29	7,328.80	-3,775.25	129.78	3,777.02	0.91	Magn MWD	Halliburton	0.90	3,777. 48	-0.16	N
10,973	90.62	177.25	7,326.73	-3,870.15	133.48	3,871.98	1.72	Magn MWD	Halliburton	-1.33	3,872. 45	-1.09	N
11,067	90.71	176.93	7,325.64	-3,964.02	138.25	3,965.92	0.35	Magn MWD	Halliburton	0.10	3,966. 43	-0.34	N
11,162	88.67	177.38	7,326.15	-4,058.90	142.97	4,060.87	2.20	Magn MWD	Halliburton	-2.15	4,061. 41	0.47	N
11,257	89.60	177.83	7,327.59	-4,153.80	146.93	4,155.83	1.09	Magn MWD	Halliburton	0.98	4,156. 40	0.47	N
11,352	91.54	177.62	7,326.64	-4,248.72	150.71	4,250.80	2.05	Magn MWD	Halliburton	2.04	4,251. 39	-0.22	N
11,447	90.68	177.06	7,324.80	-4,343.60	155.11	4,345.75	1.08	Magn MWD	Halliburton	-0.91	4,346. 37	-0.59	N
11,542	90.56	176.57	7,323.77	-4,438.44	160.39	4,440.68	0.53	Magn MWD	Halliburton	-0.13	4,441. 34	-0.52	N
11,637	91.60	176.33	7,321.98	-4,533.24	166.27	4,535.57	1.12	Magn MWD	Halliburton	1.09	4,536. 29	-0.25	N
11,733	93.02	176.33	7,318.11	-4,628.97	172.41	4,631.39	1.48	Magn MWD	Halliburton	1.48	4,632. 18	0.00	N