

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Operator Copy

FORM 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.

SUBMIT IN TRIPLICATE - Other Instructions on reverse side.

1. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other		5. Lease Serial No. NMNM19423
2. Name of Operator CIMAREX ENERGY CO OF COLORADO		6. If Indian, Allottee or Tribe Name
3a. Address 600 E MARIENFELD ST SUITE 600 MIDLAND, TX 79701		7. If Unit or C/A Agreement, Name and/or No.
3b. Phone No. (include area code) Ph: 432-620-1936 Fx: 432-620-1940		8. Well Name and No. HAYDUKE 34 FEDERAL 1
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 34 T25S R26E NENE Lot A 800FNL 860FEL 32.091372 N Lat, 104.274255 W Lon		9. API Well No. 30-015-36601-00-X1
		10. Field and Pool, or Exploratory WILDCAT
		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 recomplete 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 recompletion 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.)

12-28-10 Spudded 17.5 inch hole.

12-29-10 Ran 13.375 inch 48# H40 STC @ 215. Cmt with 500 sx C, circ 293 sx, WOC 26.5 hrs, tested to 1000# for 30 min, ok.

01-02-11 In 12.25 inch hole, ran 9.625 inch 40# J55 LTC @ 1899. Cmt with lead 360 sx Econocem HLC, tail 220 sx Halcem C, circ 3 sx, WOC 30.5 hrs, tested to 2000# for 30 min, ok.

01-17-11 TD'd 8.75 inch hole @ 10248.

01-18-11 Ran 7" 26# P110 LTC @ 9293. Cmt with lead 1570 sx Econocem H, tail 220 sx Halcem H, no circ, WOC 57 hrs, tested to 3000# for 30 min, ok.

01-19-11 TS TOC 1400. Drilled cmt to 9807.

01-22-11 Set cmt KO plug @ 9800 with 275 sx Halcem H.

01-23-11 Tagged plug @ 8910 and drilled through to KOP @ 9400.

01-24-11 Kicked off 6.125 inch lateral @ 9400.

14. I hereby certify that the foregoing is true and correct. Electronic Submission #105645 verified by the BLM Well Information System For CIMAREX ENERGY CO OF COLORADO, sent to the Carlsbad Committed to AFMSS for processing by KURT SIMMONS on 04/05/2011 (11KMS1312SE)	
Name (Printed/Typed) NATALIE E KRUEGER	Title REGULATORY
Signature (Electronic Submission)	Date 03/31/2011

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ACCEPTED	JAMES A AMOS Title SUPERVISOR EPS	Date 04/10/2011
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 Carlsbad

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 **

Additional data for EC transaction #105645 that would not fit on the form

32. Additional remarks, continued

02-11-11 TD'd lateral @ 13433 MD, 9523 TVD.

02-13-11 Ran 4.5 inch 11.6# P110 liner. BTC from 9072-10019, LTC from 10019-13430. Cemented liner with 470 sx Versacem.

02-14-11 Tested liner to 3000# for 30 min, ok.

02-16-11 RR.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0135
Expires July 31, 1996

HOBBS OCD
JAN 30 2012

OCD-ARTESIA

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.

RECEIVED
APR 19 2010
NMOCD ARTESIA

SUBMIT IN TRIPLICATE - Other Instructions on reverse side

Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

2 Name of Operator
Cimarex Energy Co. of Colorado

3a Address
600 N. Marienfeld St., Ste. 600; Midland, TX 79701

3b Phone No. (include area code)
432-571-7800

4 Location of Well (Footage, Sec., T., R., M., or Survey Description)
800 FNL & 660 FEL
34-25S-26E

8 Well Name and No.
Hayduke 34 Federal No. 1

9 API Well No.
30-015-36601

10 Field and Pool, or Exploratory Area
Cottonwood Draw; Morrow (G)

11 County or Parish, 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 <u>Drill as horizontal</u>
	☒ Change Plans ☐ Plug and Abandon ☐ Temporarily Abandon <u>Wolfcamp Instead of</u>
	☐ Convert to Injection ☐ Plug Back ☐ Water Disposal <u>vertical Morrow</u>

13. Describe Proposed or Completed Operation (clearly state all pertinent details, included 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.)

Cimarex has changed drilling plans on the Hayduke 34 Federal No. 1. Instead of drilling as a vertical Morrow well in N2 34-25S-26E, Cimarex will now drill the well as a horizontal Wolfcamp in N2N2 34-25S-26E. Revised drilling plans below. Preliminary directional survey and revised C-102 attached.

Casing Plan on APD

Surface 1: 17 1/2" hole, 13 3/4" 48# H-40 STC to 215'
Intermediate: 12 1/4" hole, 9 3/4" 40# J-55 LTC to 1900'
Production: 8 3/4" hole, 5 1/2" 17# P-110 LTC to 12675'

Proposed Casing Plan

Surface 1: 17 1/2" hole, 13 3/4" 48# H40 STC to 215'
Intermediate: 12 1/4" hole, 9 3/4" 40# J/K-55 LTC to 1900'
Production: 8 3/4" hole, 7" 26# P-110 LTC to 9336'
Fiberglass: 8 3/4" hole, 2 1/8" 11.6# BTC from 9336-10200'
Lateral Pt. 1: 6 1/2" hole, 4 1/2" 11.6# BTC from 9236-9854'
Lateral Pt. 2: 6 1/2" hole, 4 1/2" 11.6# BTC from 9854-13541'
PL10 LTC

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

After drilling and setting surface and intermediate casing, drill to vertical TD 10200' and log. Set 7" casing to 9280' and cross over to 2 1/2" 2000 psi 11 fiberglass tubing underneath to 10200' and cement in place. Drill out of the bottom of the 7" with a 6 1/2" bit and through cement and fiberglass to KOP @ 9396' and kick off to drill the lateral. The fiberglass effectively circulates cement to surface and plugs back the open hole.

Drill to lateral TD (13541' MD, 9579' TVD). Run 4 1/2" cemented liner from liner hanger @ 9236' to TD @ 13541'. Request a 100' tieback for lateral casing string in order to be able to set the pump as deep as possible. Cement liner with Lead 620 sx Interfill H + 0.3% HR-601 + 5# Gilsomite + 0.125# Poly-E-Flake (wt 11.9, yld 2.47) and Tail 480 sx Super H + 0.5% Halad + 344 + 0.25% D-Air 3000 + 0.4% CFR-3 + 1# Salt + 5# Gilsomite + 0.125# Poly-E-Flake + 0.35% HR-7 (wt 13.2, yld 1.61). Estimated TOC at 4000.'

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

Name (Printed/Typed)
Natalie Krueger

Signature
Natalie Krueger

Title
Regulatory

Date
March 22, 2010

Approved by
[Signature]

Title
Office

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
APR 16 2010
St. Myles Kristof
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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.

Title 18 U.S.C. Section 1001, makes 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.

(Instructions on reverse)

ML

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD - Artesia

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

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.
NMNM19423

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.

8. Lease Name and Well No.
HAYDUKE 34 FEDERAL 19. API Well No.
30-015-36601-00-S110. Field and Pool, or Exploratory
WILDCAT Sage Draw, Wolfcamp, East (GAS)11. Sec., T., R., M., or Block and Survey
or Area Sec 34 T25S R26E Mer NMP12. County or Parish
EDDY13. State
NM17. Elevations (DF, KB, RT, GL)*
3343 GL18. Total Depth: MD
TVD 13433
952319. Plug Back T.D.: MD
TVD20. Depth Bridge Plug Set: MD
TVD21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
POROSITY&RESIST22. 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 Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17.500	13.375 H-40	48.0	0	215		500		0	
12.250	9.625 J-55	40.0	0	1899		580		0	
8.750	7.000 P-110	26.0	0	9293		1790		1400	
6.125	4.500 P-110	11.6	9072	13430		470		9072	

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	9018	9012						

25. Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) WOLFCAMP	9631	13373	10020 TO 10282		48	Open, Wolfcamp
B)			10409 TO 10671		48	Open, Wolfcamp
C)			10797 TO 11057		48	Open, Wolfcamp
D)			11183 TO 11443		48	Open, Wolfcamp

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

Depth Interval	Amount and Type of Material
13373	Bradenhead squeeze intermediate csg.
9631 TO 9893	380,340 gal 15# XL Borate, 352,437# 30/70 White Sand
10020 TO 10282	352,858 gal 15# XL Borate, 301,788# 30/70 White Sand
10409 TO 10671	386,033 gal 15# XL Borate, 361,716# 30/70 White Sand

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
06/27/2011	07/16/2011	24	→	50.0	2644.0	1372.0	58.0	0.99	FLOWS FROM WELL
Choke Size	Tbg Press Flwg St	Csg Press	24 Hr Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
30/64	2500	2000.0	→	50	2644	1372	52880	ROW	

28a. Production - Interval B

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 St	Csg Press	24 Hr Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

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

ELECTRONIC SUBMISSION #116391 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

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

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
DELAWARE BONE SPRING WOLFCAMP	1894 5416 8610	5416 6506	SAND SAND LIMESTONE AND SHALE	TOP SALT BASE OF SALT DELAWARE BONE SPRING WOLFCAMP	1059 1700 1894 5416 8610

32. Additional remarks (include plugging procedure):

Additional Perf Intervals:

11569-11829 0.42 48 holes, frac with 405,219 gal 15# XL Borate & 377,014# 30/70 White Sand
11183-11443 0.42 48 holes, frac with 388,512 gal 15# XL Borate & 362,135# 30/70 White Sand
10797-11057 0.42 48 holes, frac with 412,810 gal 15# XL Borate & 359,979# 30/70 White Sand
10409-10671 0.42 48 holes, frac with 386,033 gal 15# XL Borate & 361,716# 30/70 White

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 #116391 Verified by the BLM Well Information System.

For CIMAREX ENERGY COMPANY OF CO, sent to the Carlsbad
Committed to AFMSS for processing by KURT SIMMONS on 08/30/2011 (11KMS2421SE)

Name (please print) NATALIE E KRUEGER

Title REGULATORY

Signature (Electronic Submission)

Date 08/29/2011

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.

**** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ****

Additional data for transaction #116391 that would not fit on the form

26. Perforation Record, continued

Perf Interval	Size	No. Holes	Perf Status
11569 TO 11829		48	Open, Wolfcamp
11955 TO 12215		48	Open, Wolfcamp
12341 TO 12601		48	Open, Wolfcamp
12727 TO 12987		48	Open, Wolfcamp
13104 TO 13373		48	Open, Wolfcamp

27. Acid, Fracture, Treatment, Cement Squeeze, etc., continued

Depth Interval	Amount and Type of Material
10797 TO 11057	412,810 gal 15# XL Borate, 359,979# 30/70 White Sand
11183 TO 11443	388,512 gal 15# XL Borate, 362,135# 30/70 White Sand
11569 TO 11829	405,219 gal 15# XL Borate, 377,014# 30/70 White Sand
11955 TO 12215	281,973 gal 15# XL Borate, 354,168# 30/70 White Sand
12341 TO 12601	387,009 gal 15# XL Borate, 364,791# 30/70 White Sand
12727 TO 12987	447,977 gal 15# XL Borate, 414,178# 30/70 White Sand
13104 TO 13373	376,781 gal 15# XL Borate, 300,850# 30/70 White Sand

32. Additional remarks, continued

Sand
10020-10282 0.42 48 holes, frac with 354,568 gal 15# XL Borate & 301,791# 30/70 White Sand

Sand
9631-9893 0.42 48 holes, frac with 380,340 gal 15# XL Borate & 352,437# 30/70 White Sand

Logs to be mailed to BLM.

DISTRICT I
1023 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Grande Blvd., Aztec, NM 87410

DISTRICT IV
1823 S. El. Francis Dr., Santa Fe, NM 87505

HOBBS OCD

JAN 30 2012

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease -- 4 Copies
Fee Lease -- 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-36601	Pool Code 96890	Pool Name Sage Draw Wolfcamp Wildcat - East (GAS)
Property Code 37376	Property Name HAYDUKE "34" FEDERAL	Well Number 1
UGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3343'

Surface Location

UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	34	25 S	26 E		800	NORTH	660	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	34	25 S	26 E		780	NORTH	671	WEST	EDDY

Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.
------------------------	-----------------	--------------------	-----------

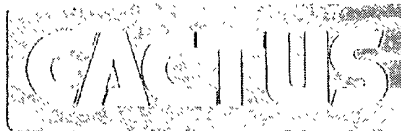
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	811L 780 FNL & 671 FWL Top Perf 949 FNL & 841 FEL		SURFACE LOCATION Lat - N32°05'28.82" Long - W104°16'27.49" NADSPCE - N 390971.0 E 659817.8 (NAD-83)	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or is a voluntary pooling agreement or a compulsory pooling order hereinafter entered by the division. <i>Natalie Krueger</i> 8/25/2011 Signature Date Natalie Krueger Printed Name
	NM-19423			SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same are true and correct to the best of my belief. JUNE 6, 2008 Date Surveyed <i>[Signature]</i> Signature Professional Surveyor Professional Seal Certificate No. Gory L. Jones, 7077 NASIN SURVEYS

HOBBS OGD

JAN 30 2012

RECEIVED



CACTUS DRILLING COMPANY, L.L.C.

REPORT OF PROOF OF APPARENT DEVIATION
NEW MEXICO

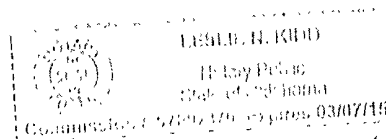
30-015-36601

OPERATOR CIMAREX CO OF COLORADO600 N. MARICFIELD ST
MIDLAND, TX 79701

FIELD NAME _____

COUNTY/PARISH EDDYWELL NAME & NO. HAYDUKE 34 FED 1HLEGAL SEC 34-25S-26E

MEASURED DEPTH (FT)	COURSE LENGTH (HUNDREDS OF FT)	ANGLE OF INCLINATION (DEGREES)	DISPLACEMENT PER HUNDRED FT (SINE OF ANGLE X 100)	COURSE DISPLACEMENT (FEET)	ACCUMULATIVE DISPLACEMENT (FEET)	REMARKS
200	2.00	5/7	1.2392	2.48	2.48	
380	1.80	2	3.4899	6.28	8.76	
515	1.35	1	1.7452	2.36	11.12	
760	2.45	1	1.7452	4.28	15.39	
1090	3.30	1	1.7452	5.76	21.15	
1382	2.92	1	1.7452	5.10	26.25	
1664	2.82	1	1.7452	4.92	31.17	
2105	4.41	1	1.7452	7.70	38.87	
2388	2.83	1	1.7452	4.94	43.80	
2671	2.83	1	1.7452	4.94	48.74	
2909	2.38	1	1.7452	4.15	52.90	
3192	2.83	1	1.7452	4.94	57.84	
3519	3.27	1	1.7452	5.71	63.54	
3802	2.83	1	1.7452	4.94	68.48	
4080	2.78	1	1.7452	4.85	73.33	
4364	2.84	1	1.7452	4.96	78.29	
4662	2.98	1	1.7452	5.20	83.49	
4943	2.81	1	1.7452	4.90	88.40	
5211	2.68	1	1.7452	4.68	93.07	
5489	2.78	1	1.7452	4.85	97.92	
5776	2.87	1	1.7452	5.01	102.93	
6070	2.94	1	1.7452	5.13	108.06	
6351	2.81	1	1.7452	4.90	112.97	
6621	2.70	1	1.7452	4.71	117.68	
6906	2.85	1	1.7452	4.97	122.65	
7205	2.90	1	1.7452	5.22	127.87	
7477	2.72	1	1.7452	4.75	132.62	
7766	2.89	1	1.7452	5.04	137.66	
8065	2.99	1	1.7452	5.22	142.88	
8351	2.66	1	1.7452	4.99	147.87	
8624	2.73	1	1.7452	4.76	152.64	
8906	2.82	1	1.7452	4.92	157.56	
9194	2.88	1	1.7452	5.03	162.59	
9761	5.67	1	1.7452	9.90	172.48	



LESLIE N. KIDEL
 Surveyor General
 Oklahoma
 Commission Expires 03/07/15

P.O. Box 270848 • Oklahoma City, OK 73137-0848
 (405) 577-5347 • Fax (405) 577-9306

8/25/2011



INTEQ

End of Well Report

Cimarex Energy Co.

Eddy County, NM

Hayduke 34 Fed No. 1H

Cactus 122

Well Specifications

Well Name: Hayduke 34 Fed No. 1H
Start Date: 1/26/2011
Client: Cimarex Energy Co.
Rig Name: Cactus 122
County: Eddy County, NM
Field: (Hayduke) Section 34, T25S, R26E

Well Location:

NAD83 / TM New Mexico State Planes, Eastern Zone (3001)

Grid Coordinates

Easting: 559617.19'
Northing: 396971.50'

Geographical Coordinates

Latitude: 32°05'28.825"N
Longitude: 104°16'27.501"W

RT: 3,371' above M.S.L.

Date TD Reached: 2/12/2011

Final Depth MD: 13,433'

Final Depth TVD: 9,522.88'



Cimarex Energy Co.

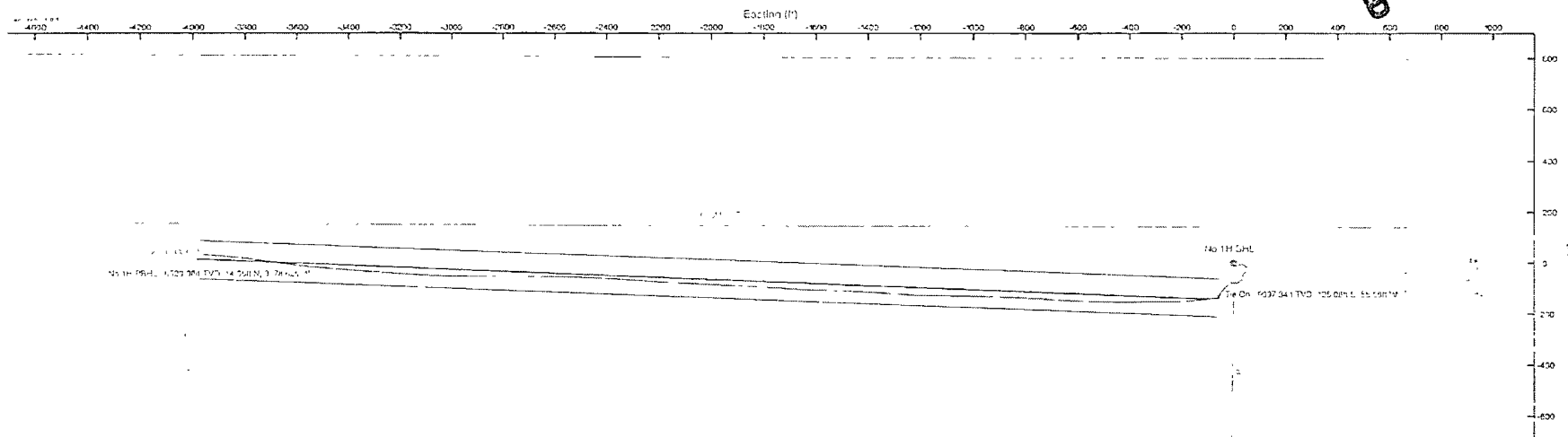
Location: East, County, NM
Field: (Hayden) Section 34 T25C, R26E
Block: (Hayden) 14 S, 34 E, 25 N, 14 E

Well: No 1H D-H
Well: No 1H
Wellbore: No 1H PWB

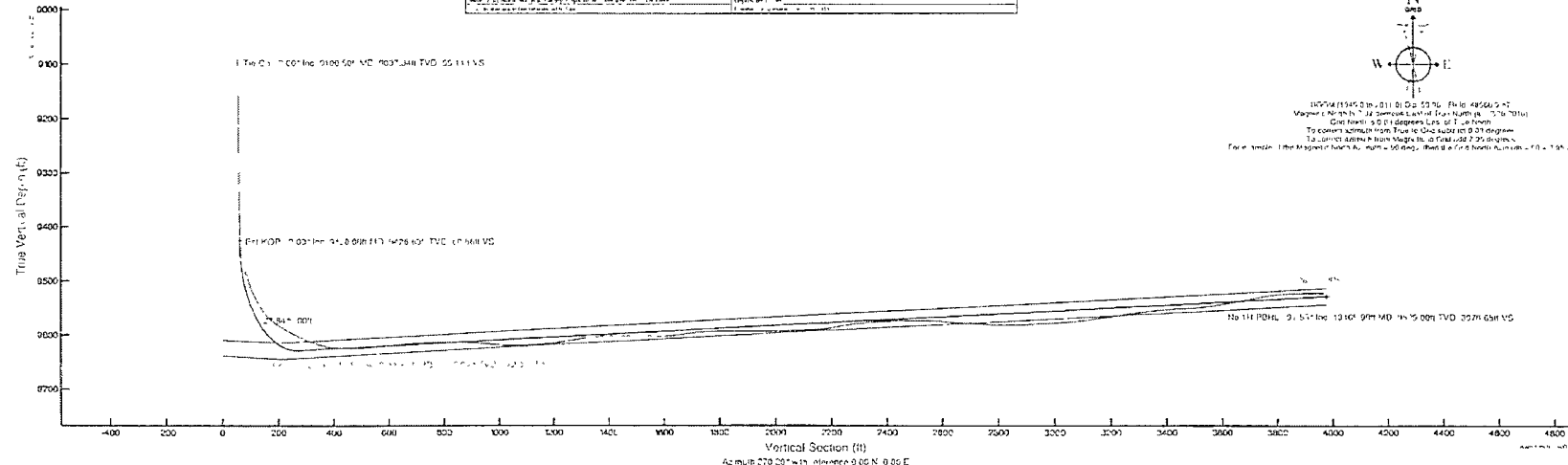
HAZARDOUS
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Well Profile Data								
Depth Comment	TD (ft)	Inc (°)	Δs (ft)	TVD (ft)	Local N (ft)	Local E (ft)	CLS (°1000)	VS (ft)
Tie On	9130.00	2.000	200.889	9097.04	-120.09	-52.58	0.09	55.14
Est hOP	9130.00	2.000	200.889	9097.04	-120.15	-52.14	0.03	60.60
End of Curve	9755.01	91.515	272.271	9623.04	-134.17	-272.55	27.81	272.08
No 1H PWB	12745.98	91.545	272.251	12271.00	-14.38	-3978.62	0.00	3978.65



1. Well Name: (250 ft)	2. Well Type: (250 ft)
3. Well Status: (250 ft)	4. Well Depth: (250 ft)
5. Well Orientation: (250 ft)	6. Well Completion: (250 ft)
7. Well Production: (250 ft)	8. Well Injection: (250 ft)
9. Well Flow Rate: (250 ft)	10. Well Pressure: (250 ft)
11. Well Temperature: (250 ft)	12. Well Corrosion: (250 ft)
13. Well Seismicity: (250 ft)	14. Well Seismicity: (250 ft)
15. Well Seismicity: (250 ft)	16. Well Seismicity: (250 ft)
17. Well Seismicity: (250 ft)	18. Well Seismicity: (250 ft)
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87. Well Seismicity: (250 ft)	88. Well Seismicity: (250 ft)
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91. Well Seismicity: (250 ft)	92. Well Seismicity: (250 ft)
93. Well Seismicity: (250 ft)	94. Well Seismicity: (250 ft)
95. Well Seismicity: (250 ft)	96. Well Seismicity: (250 ft)
97. Well Seismicity: (250 ft)	98. Well Seismicity: (250 ft)
99. Well Seismicity: (250 ft)	100. Well Seismicity: (250 ft)





Actual Wellpath Report

No.1H AWP

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REFERENCE WELL DATA IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.1H SHL
Area	Eddy County, NM	Well	No.1H
Field	(Hayduke) Section 34, T25S, R26E	Wellbore	No.1H AWB
Facility	Hayduke 34 Federal No.1H		

REPORTING INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect@ 2.0
North Reference	Grid	User	Calhphik
Scale	0.999909	Report Generated	2/18/2011 at 8:07:25 AM
Convergence at slot	0.03° East	Database/Source file	WA_Midland/No.1H_AWB_.xml

WELL PATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	559617.19	396971.50	32°05'28.825"N	104°16'27.501"W
Facility Reference Pt			559617.19	396971.50	32°05'28.825"N	104°16'27.501"W
Field Reference Pt			559617.80	396971.00	32°05'28.821"N	104°16'27.494"W

WELL PATH DATUM

Calculation method	Minimum curvature	Rig on No.1H SHL (RT) to Facility Vertical Datum	28.00ft
Horizontal Reference Pt	Slot	Rig on No.1H SHL (RT) to Mean Sea Level	3371.00ft
Vertical Reference Pt	Rig on No.1H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No.1H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	270.20°



Actual Wellpath Report

No.1H AWP

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Operator	Cimarex Energy Co.	Slot	No.1H SHL
Area	Eddy County, NM	Well	No.1H
Field	(Hayduke) Section 34, T25S, R26E	Wellbore	No.1H AWB
Facility	Hayduke 34 Federal No.1H		

WELLPATH DATA (165 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	154.620	0.00	0.00	0.00	0.00	559617.19	396971.50	32°05'28.825"N	104°16'27.501"W	0.00	
100.00	0.360	154.620	100.00	-0.14	-0.28	0.13	559617.33	396971.22	32°05'28.823"N	104°16'27.499"W	0.36	
200.00	0.360	167.180	200.00	-0.34	-0.57	0.34	559617.53	396970.63	32°05'28.817"N	104°16'27.497"W	0.08	
300.00	0.380	171.560	300.00	-0.46	-1.51	0.46	559617.65	396969.99	32°05'28.811"N	104°16'27.495"W	0.03	
400.00	0.420	156.820	399.99	-0.66	-2.17	0.65	559617.84	396969.33	32°05'28.804"N	104°16'27.493"W	0.11	
500.00	0.820	117.880	499.99	-1.44	-2.84	1.43	559618.62	396968.66	32°05'28.797"N	104°16'27.484"W	0.56	
600.00	1.230	103.150	599.97	-3.12	-3.42	3.10	559620.30	396968.08	32°05'28.792"N	104°16'27.465"W	0.48	
700.00	1.280	101.600	699.95	-5.26	-3.89	5.24	559622.44	396967.61	32°05'28.787"N	104°16'27.440"W	0.06	
800.00	1.100	102.900	799.93	-7.29	-4.33	7.27	559624.47	396967.17	32°05'28.783"N	104°16'27.416"W	0.18	
900.00	0.490	136.900	899.92	-8.52	-4.86	8.50	559625.69	396966.64	32°05'28.777"N	104°16'27.402"W	0.75	
1000.00	0.330	178.370	999.91	-8.82	-5.46	8.80	559625.99	396966.04	32°05'28.771"N	104°16'27.398"W	0.33	
1100.00	0.510	108.590	1099.91	-9.25	-5.89	9.23	559626.42	396965.61	32°05'28.767"N	104°16'27.393"W	0.50	
1200.00	1.090	96.030	1199.90	-10.62	-6.13	10.60	559627.79	396965.37	32°05'28.765"N	104°16'27.377"W	0.60	
1300.00	1.290	92.070	1299.88	-12.69	-6.27	12.67	559629.86	396965.23	32°05'28.763"N	104°16'27.353"W	0.22	
1400.00	1.820	84.870	1399.84	-15.40	-6.17	15.38	559632.57	396965.33	32°05'28.764"N	104°16'27.322"W	0.56	
1500.00	2.390	83.990	1499.77	-19.05	-5.81	19.03	559636.22	396965.69	32°05'28.768"N	104°16'27.279"W	0.57	
1600.00	2.900	82.250	1599.67	-23.63	-5.25	23.61	559640.80	396966.25	32°05'28.773"N	104°16'27.226"W	0.52	
1700.00	2.780	86.830	1699.55	-28.56	-4.77	28.54	559645.73	396966.73	32°05'28.778"N	104°16'27.169"W	0.26	
1800.00	1.780	96.120	1799.47	-32.52	-4.81	32.51	559649.70	396966.70	32°05'28.778"N	104°16'27.125"W	1.06	
1900.00	1.390	116.900	1899.43	-35.15	-5.52	35.13	559652.32	396965.98	32°05'28.771"N	104°16'27.092"W	0.69	
2000.00	1.360	119.970	1999.40	-37.27	-6.66	37.24	559654.43	396964.84	32°05'28.759"N	104°16'27.068"W	0.08	
2100.00	1.340	121.650	2099.37	-39.29	-7.87	39.27	559656.45	396963.63	32°05'28.747"N	104°16'27.044"W	0.04	
2200.00	1.170	125.250	2199.35	-41.13	-9.07	41.09	559658.28	396962.43	32°05'28.736"N	104°16'27.023"W	0.19	
2300.00	1.140	125.630	2299.33	-42.77	-10.24	42.74	559659.92	396961.26	32°05'28.724"N	104°16'27.004"W	0.03	
2400.00	1.180	132.350	2399.31	-44.35	-11.51	44.51	559661.49	396959.99	32°05'28.711"N	104°16'26.986"W	0.14	
2500.00	1.150	140.560	2499.29	-45.75	-12.98	45.70	559662.89	396958.52	32°05'28.697"N	104°16'26.969"W	0.17	
2600.00	1.120	144.270	2599.27	-46.96	-14.55	46.91	559664.10	396956.95	32°05'28.681"N	104°16'26.955"W	0.08	
2700.00	0.950	151.840	2699.25	-47.93	-16.07	47.87	559665.06	396955.43	32°05'28.666"N	104°16'26.944"W	0.22	
2800.00	0.900	166.110	2799.24	-48.52	-17.57	48.45	559665.64	396953.94	32°05'28.651"N	104°16'26.938"W	0.24	
2900.00	0.840	177.530	2899.23	-48.74	-19.06	48.67	559665.86	396952.44	32°05'28.637"N	104°16'26.935"W	0.18	

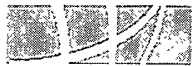


Actual Wellpath Report

No.1H AWP

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BAKER
HUGHES



Operator CIMAREX Energy Co.

Area Eddy County, NM

Field (Hayduke) Section 34, T25S, R26E

Facility Hayduke 34 Federal No.1H

WELLPATH DATA (165 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLG	Comments
3000.00	0.820	182.620	2999.21	-48.75	-20.51	48.67	559665.86	396950.99	32°05'28.622"N	104°16'26.935"W	0.08	
3100.00	0.880	187.160	3099.20	-48.62	-21.99	48.55	559665.73	396949.52	32°05'28.608"N	104°16'26.936"W	0.09	
3200.00	0.920	197.500	3199.19	-48.29	-23.51	48.21	559665.40	396947.99	32°05'28.593"N	104°16'26.940"W	0.17	
3300.00	0.960	204.640	3299.18	-47.71	-25.04	47.62	559664.80	396946.46	32°05'28.577"N	104°16'26.947"W	0.12	
3400.00	1.000	204.400	3399.16	-47.00	-26.60	46.91	559664.10	396944.91	32°05'28.562"N	104°16'26.956"W	0.04	
3500.00	1.040	204.640	3499.15	-46.27	-28.22	46.17	559663.36	396943.29	32°05'28.546"N	104°16'26.964"W	0.04	
3600.00	1.040	208.280	3599.13	-45.47	-29.84	45.36	559662.55	396941.66	32°05'28.530"N	104°16'26.974"W	0.07	
3700.00	1.010	209.740	3699.12	-44.60	-31.40	44.49	559661.68	396940.10	32°05'28.514"N	104°16'26.984"W	0.04	
3800.00	1.090	209.230	3799.10	-43.71	-33.00	43.59	559660.78	396938.50	32°05'28.499"N	104°16'26.994"W	0.08	
3900.00	1.140	209.020	3899.08	-42.77	-34.70	42.64	559659.83	396936.80	32°05'28.482"N	104°16'27.005"W	0.05	
4000.00	1.100	209.270	3999.06	-41.82	-36.41	41.69	559658.88	396935.10	32°05'28.465"N	104°16'27.016"W	0.04	
4100.00	1.160	207.460	4099.04	-40.89	-38.14	40.76	559657.94	396933.36	32°05'28.448"N	104°16'27.027"W	0.07	
4200.00	1.210	208.160	4199.02	-39.93	-39.97	39.79	559656.98	396931.53	32°05'28.430"N	104°16'27.038"W	0.05	
4300.00	1.320	210.860	4299.00	-38.85	-41.89	38.70	559655.89	396929.61	32°05'28.411"N	104°16'27.051"W	0.13	
4400.00	1.350	212.440	4398.97	-37.64	-43.86	37.49	559654.68	396927.65	32°05'28.391"N	104°16'27.065"W	0.04	
4500.00	1.320	213.070	4498.94	-36.40	-45.80	36.24	559653.43	396925.70	32°05'28.372"N	104°16'27.080"W	0.02	
4600.00	1.140	207.040	4598.92	-35.33	-47.65	35.16	559652.35	396923.85	32°05'28.354"N	104°16'27.092"W	0.22	
4700.00	1.190	204.050	4698.90	-34.46	-49.49	34.28	559651.47	396922.02	32°05'28.336"N	104°16'27.102"W	0.08	
4800.00	1.200	193.310	4798.88	-33.80	-51.46	33.62	559650.81	396920.05	32°05'28.316"N	104°16'27.110"W	0.22	
4900.00	1.250	193.030	4898.85	-33.32	-53.54	33.13	559650.32	396917.97	32°05'28.296"N	104°16'27.116"W	0.05	
5000.00	1.280	183.700	4998.83	-33.01	-55.72	32.81	559650.00	396915.79	32°05'28.274"N	104°16'27.120"W	0.21	
5100.00	1.230	185.650	5098.81	-32.84	-57.90	32.63	559649.82	396913.61	32°05'28.252"N	104°16'27.122"W	0.07	
5200.00	1.170	191.090	5198.78	-32.54	-59.97	32.33	559649.52	396911.54	32°05'28.232"N	104°16'27.125"W	0.13	
5300.00	1.310	210.290	5298.76	-31.78	-61.96	31.56	559648.75	396909.55	32°05'28.212"N	104°16'27.134"W	0.44	
5400.00	1.100	218.540	5398.74	-30.61	-63.69	30.39	559647.57	396907.81	32°05'28.195"N	104°16'27.148"W	0.27	
5500.00	0.640	214.460	5498.73	-29.70	-64.91	29.47	559646.66	396906.60	32°05'28.183"N	104°16'27.158"W	0.46	
5600.00	0.680	213.290	5598.72	-29.06	-65.86	28.83	559646.02	396905.64	32°05'28.174"N	104°16'27.166"W	0.04	
5700.00	1.010	230.040	5698.71	-28.06	-66.92	27.83	559645.02	396904.58	32°05'28.163"N	104°16'27.178"W	0.41	
5800.00	1.310	235.820	5798.69	-26.45	-68.13	26.21	559643.40	396903.37	32°05'28.151"N	104°16'27.196"W	0.32	
5900.00	2.730	225.050	5898.62	-23.82	-70.46	23.58	559640.77	396901.05	32°05'28.128"N	104°16'27.227"W	1.46	



Actual Wellpath Report

No.1H AWP

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Operator	Cimarex Energy Co.	Slot	No.1H SHL
Area	Eddy County, NM	Well	No.1H
Field	(Hayduke) Section 34, T25S, R26E	Wellbore	No.1H AWB
Facility	Hayduke 34 Federal No.1H		

WELLPATH DATA (165 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
6000.00	2.630	232.650	5998.51	-20.33	-73.53	20.07	559637.26	396897.97	32°05'28.098"N	104°16'27.268"W	0.37	
6100.00	2.250	256.570	6098.43	-16.60	-75.38	16.33	559633.52	396896.13	32°05'28.079"N	104°16'27.311"W	1.08	
6200.00	2.020	252.820	6198.36	-13.01	-76.36	12.74	559629.93	396895.15	32°05'28.070"N	104°16'27.353"W	0.27	
6300.00	2.310	263.470	6298.29	-9.33	-77.11	9.05	559626.25	396894.40	32°05'28.062"N	104°16'27.396"W	0.49	
6400.00	2.330	278.970	6398.21	-5.32	-77.02	5.04	559622.24	396894.49	32°05'28.063"N	104°16'27.442"W	0.63	
6500.00	2.330	279.660	6498.12	-1.30	-76.36	1.03	559618.22	396895.15	32°05'28.070"N	104°16'27.489"W	0.03	
6600.00	2.320	278.540	6598.04	2.71	-75.72	-2.97	559614.22	396895.79	32°05'28.076"N	104°16'27.536"W	0.05	
6700.00	2.260	274.320	6697.96	6.67	-75.27	-6.94	559610.25	396896.24	32°05'28.081"N	104°16'27.582"W	0.18	
6800.00	2.130	247.290	6797.89	10.35	-75.84	-10.62	559606.57	396895.67	32°05'28.075"N	104°16'27.625"W	1.03	
6900.00	1.940	225.740	6897.83	13.27	-77.74	-13.55	559603.65	396893.77	32°05'28.056"N	104°16'27.659"W	0.78	
7000.00	1.660	238.730	6997.78	15.72	-79.67	-16.00	559601.20	396891.84	32°05'28.037"N	104°16'27.687"W	0.49	
7100.00	1.530	237.000	7097.74	18.07	-81.15	-18.36	559598.84	396890.36	32°05'28.023"N	104°16'27.715"W	0.14	
7200.00	1.610	233.780	7197.70	20.32	-82.71	-20.61	559596.58	396888.80	32°05'28.007"N	104°16'27.741"W	0.12	
7300.00	1.760	224.870	7297.66	22.53	-84.63	-22.83	559594.37	396886.88	32°05'27.988"N	104°16'27.766"W	0.30	
7400.00	1.990	228.840	7397.61	24.91	-86.86	-25.22	559591.98	396884.65	32°05'27.966"N	104°16'27.794"W	0.26	
7500.00	2.320	225.360	7497.54	27.65	-89.42	-27.96	559589.23	396882.09	32°05'27.941"N	104°16'27.826"W	0.35	
7600.00	2.030	228.010	7597.46	30.40	-92.03	-30.72	559586.47	396879.48	32°05'27.915"N	104°16'27.858"W	0.31	
7700.00	1.860	236.540	7697.41	33.06	-94.11	-33.39	559583.80	396877.40	32°05'27.894"N	104°16'27.889"W	0.33	
7800.00	0.930	229.030	7797.37	35.02	-95.53	-35.36	559581.84	396875.98	32°05'27.880"N	104°16'27.912"W	0.95	
7900.00	1.350	201.760	7897.36	36.06	-97.16	-36.41	559580.79	396874.35	32°05'27.864"N	104°16'27.924"W	0.67	
8000.00	1.530	210.980	7997.32	37.18	-99.40	-37.53	559579.66	396872.11	32°05'27.842"N	104°16'27.938"W	0.29	
8100.00	1.980	218.990	8097.28	38.95	-101.89	-39.31	559577.89	396869.62	32°05'27.818"N	104°16'27.958"W	0.51	
8200.00	1.860	218.540	8197.22	41.03	-104.50	-41.40	559575.79	396867.01	32°05'27.792"N	104°16'27.983"W	0.12	
8300.00	1.600	224.840	8297.18	43.02	-106.76	-43.40	559573.80	396864.75	32°05'27.769"N	104°16'28.006"W	0.32	
8400.00	1.300	232.260	8397.14	44.90	-108.44	-45.28	559571.91	396863.07	32°05'27.753"N	104°16'28.028"W	0.35	
8500.00	1.330	201.030	8497.12	46.20	-110.22	-46.59	559570.60	396861.29	32°05'27.735"N	104°16'28.043"W	0.71	
8600.00	1.410	215.690	8597.09	47.33	-112.30	-47.73	559569.47	396859.21	32°05'27.714"N	104°16'28.056"W	0.36	
8700.00	1.720	216.440	8697.05	48.93	-114.51	-49.34	559567.86	396857.00	32°05'27.693"N	104°16'28.075"W	0.31	
8800.00	1.750	210.110	8797.01	50.58	-117.04	-51.00	559566.20	396854.47	32°05'27.668"N	104°16'28.094"W	0.19	
8900.00	1.940	204.830	8896.95	52.05	-119.89	-52.47	559564.72	396851.62	32°05'27.639"N	104°16'28.111"W	0.25	



Actual Wellpath Report

No.1H AWP

Page 5 of 8



REPORTING WELL PATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.1H SHL
Area	Eddy County, NM	Well	No.1H
Field	(Hayduke) Section 34, T25S, R26E	Wellbore	No.1H AWB
Facility	Hayduke 34 Federal No.1H		

WELLPATH DATA (165 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [serv ft]	Grid North [serv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
9000.00	1.990	206.450	8996.90	53.52	-122.98	-53.96	559563.24	396848.53	32°05'27.609"N	104°16'28.129"W	0.07	
9100.00	2.000	209.010	9096.84	55.13	-126.06	-55.58	559561.62	396845.45	32°05'27.578"N	104°16'28.147"W	0.09	
9100.50	2.000	208.880	9097.34	55.14	-126.08	-55.58	559561.61	396845.43	32°05'27.578"N	104°16'28.148"W	0.91	
9395.00	1.500	205.100	9391.70	59.23	-134.07	-59.70	559557.50	396837.44	32°05'27.499"N	104°16'28.195"W	0.17	
9426.00	9.200	258.200	9422.55	61.83	-134.95	-62.30	559554.89	396836.57	32°05'27.490"N	104°16'28.226"W	27.05	
9458.00	18.200	262.400	9453.61	69.30	-136.13	-69.78	559547.42	396835.38	32°05'27.479"N	104°16'28.313"W	28.28	
9490.00	27.900	260.400	9483.02	81.65	-138.05	-82.14	559535.06	396833.47	32°05'27.460"N	104°16'28.456"W	30.41	
9521.00	35.900	262.600	9509.31	97.84	-140.43	-98.33	559518.87	396831.08	32°05'27.436"N	104°16'28.645"W	26.07	
9553.00	44.800	262.800	9533.68	118.36	-143.06	-118.86	559498.34	396828.46	32°05'27.411"N	104°16'28.883"W	27.32	
9585.00	54.900	263.800	9554.28	142.61	-145.89	-143.13	559474.08	396825.62	32°05'27.383"N	104°16'29.165"W	31.65	
9617.00	63.300	266.800	9570.70	169.94	-148.11	-170.47	559446.74	396823.41	32°05'27.361"N	104°16'29.483"W	27.45	
9648.00	72.200	269.000	9582.43	198.58	-149.14	-199.11	559418.10	396822.37	32°05'27.351"N	104°16'29.816"W	29.45	
9680.00	73.800	269.300	9591.79	229.17	-149.59	-229.70	559387.51	396821.92	32°05'27.346"N	104°16'30.172"W	5.08	
9711.00	75.400	268.500	9600.02	259.05	-150.17	-259.59	559357.63	396821.35	32°05'27.341"N	104°16'30.519"W	5.73	
9743.00	76.300	268.700	9607.84	290.07	-150.93	-290.60	559326.61	396820.59	32°05'27.334"N	104°16'30.879"W	2.88	
9774.00	79.700	268.800	9614.29	320.38	-151.59	-320.92	559296.31	396819.93	32°05'27.327"N	104°16'31.232"W	10.97	
9806.00	82.500	268.800	9619.24	351.98	-152.25	-352.52	559264.70	396819.26	32°05'27.321"N	104°16'31.599"W	8.75	
9838.00	85.500	269.600	9622.58	383.80	-152.69	-384.34	559232.89	396818.82	32°05'27.317"N	104°16'31.969"W	9.70	
9900.00	89.700	270.300	9625.18	445.73	-152.75	-446.27	559170.96	396818.77	32°05'27.316"N	104°16'32.689"W	6.87	
9964.00	91.600	271.000	9624.45	509.72	-152.02	-510.26	559106.98	396819.49	32°05'27.324"N	104°16'33.433"W	3.16	
10027.00	93.500	272.600	9621.65	572.62	-150.04	-573.16	559044.09	396821.47	32°05'27.344"N	104°16'34.164"W	3.94	
10091.00	92.600	272.800	9618.24	636.47	-147.03	-637.00	558980.25	396824.48	32°05'27.374"N	104°16'34.906"W	1.44	
10154.00	92.900	274.000	9615.22	699.30	-143.30	-699.31	558917.44	396828.21	32°05'27.411"N	104°16'35.636"W	1.96	
10217.00	90.900	273.300	9613.13	762.15	-139.29	-762.65	558854.62	396832.22	32°05'27.451"N	104°16'36.366"W	3.36	
10281.00	88.800	272.100	9613.30	826.08	-136.28	-826.57	558790.70	396835.23	32°05'27.481"N	104°16'37.109"W	3.78	
10344.00	88.900	272.100	9614.56	889.04	-133.97	-889.52	558727.76	396837.54	32°05'27.505"N	104°16'37.841"W	0.16	
10408.00	87.300	272.100	9616.69	952.96	-131.63	-953.44	558663.84	396839.88	32°05'27.528"N	104°16'38.584"W	2.50	
10471.00	87.700	271.000	9619.43	1015.89	-129.93	-1016.35	558600.93	396841.59	32°05'27.545"N	104°16'39.315"W	1.86	
10534.00	91.200	270.900	9620.04	1078.87	-128.88	-1079.33	558537.96	396842.63	32°05'27.556"N	104°16'40.047"W	5.56	
10598.00	92.100	271.000	9618.20	1142.83	-127.82	-1143.29	558474.00	396843.69	32°05'27.567"N	104°16'40.791"W	1.41	



Actual Wellpath Report

No.1H AWP

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REFERENCE DATA IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.1H SHL
Area	Eddy County, NM	Well	No.1H
Field	(Hayduke) Section 34, T25S, R26E	Wellbore	No.1H AWB
Facility	Hayduke 34 Federal No.1H		

WELLPATH DATA (165 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10661.00	93.900	272.000	9614.90	1205.73	-126.17	-1206.18	558411.12	396845.34	32°05'27.583"N	104°16'41.522"W	3.27	
10725.00	95.100	273.200	9609.88	1269.47	-123.28	-1269.92	558347.39	396848.23	32°05'27.612"N	104°16'42.263"W	2.65	
10788.00	93.200	274.100	9605.32	1332.19	-119.28	-1332.62	558284.69	396852.23	32°05'27.652"N	104°16'42.991"W	3.34	
10852.00	91.300	274.000	9602.81	1395.99	-114.76	-1396.41	558220.91	396856.75	32°05'27.697"N	104°16'43.733"W	2.97	
10915.00	89.700	272.200	9602.26	1458.91	-111.36	-1459.31	558158.02	396860.15	32°05'27.731"N	104°16'44.464"W	3.82	
10978.00	90.000	272.400	9602.42	1521.86	-108.83	-1522.26	558095.07	396862.68	32°05'27.756"N	104°16'45.196"W	0.57	
11042.00	89.600	270.900	9602.64	1585.84	-106.99	-1586.23	558031.11	396864.52	32°05'27.775"N	104°16'45.939"W	2.43	
11105.00	94.900	273.100	9600.17	1648.74	-104.79	-1649.12	557968.23	396866.72	32°05'27.797"N	104°16'46.670"W	9.11	
11169.00	92.800	273.900	9595.87	1712.48	-100.89	-1712.85	557904.50	396870.62	32°05'27.836"N	104°16'47.411"W	3.51	
11232.00	90.700	273.300	9593.95	1775.34	-96.94	-1775.69	557841.66	396874.57	32°05'27.875"N	104°16'48.141"W	3.47	
11296.00	90.000	272.900	9593.56	1839.25	-93.48	-1839.60	557777.77	396878.03	32°05'27.910"N	104°16'48.884"W	1.26	
11359.00	90.000	272.900	9593.56	1902.18	-90.29	-1902.52	557714.85	396881.22	32°05'27.942"N	104°16'49.616"W	0.00	
11422.00	90.300	272.900	9593.39	1965.11	-87.10	-1965.43	557651.94	396884.40	32°05'27.974"N	104°16'50.347"W	0.48	
11486.00	91.000	272.800	9592.67	2029.04	-83.92	-2029.35	557588.03	396887.59	32°05'28.005"N	104°16'51.090"W	1.10	
11549.00	91.500	272.600	9591.29	2091.97	-80.96	-2092.27	557525.12	396890.55	32°05'28.035"N	104°16'51.821"W	-0.85	
11611.00	91.700	272.500	9589.56	2153.89	-78.20	-2154.18	557463.21	396893.31	32°05'28.063"N	104°16'52.541"W	0.36	
11675.00	95.400	275.000	9585.60	2217.63	-74.02	-2217.90	557399.49	396897.48	32°05'28.104"N	104°16'53.282"W	6.97	
11739.00	94.100	274.400	9580.30	2281.21	-68.80	-2281.47	557335.93	396902.71	32°05'28.156"N	104°16'54.020"W	2.24	
11801.00	91.500	273.300	9577.27	2343.01	-64.64	-2343.25	557274.16	396906.86	32°05'28.198"N	104°16'54.738"W	4.55	
11864.00	92.100	273.300	9575.29	2405.88	-61.02	-2406.11	557211.30	396910.49	32°05'28.234"N	104°16'55.469"W	0.95	
11928.00	90.900	272.000	9573.62	2469.80	-58.06	-2470.02	557147.40	396913.45	32°05'28.263"N	104°16'56.212"W	2.76	
11991.00	89.400	271.600	9573.45	2532.77	-56.08	-2532.99	557084.44	396915.42	32°05'28.283"N	104°16'56.944"W	2.46	
12055.00	87.700	271.000	9575.07	2596.74	-54.63	-2596.95	557020.48	396916.88	32°05'28.298"N	104°16'57.687"W	2.82	
12118.00	87.800	270.400	9577.55	2659.69	-53.86	-2659.89	556957.54	396917.65	32°05'28.306"N	104°16'58.419"W	0.96	
12182.00	88.400	270.500	9579.67	2723.65	-53.36	-2723.86	556893.59	396918.15	32°05'28.311"N	104°16'59.162"W	0.95	
12245.00	89.400	270.300	9580.88	2786.64	-52.92	-2786.84	556830.61	396918.59	32°05'28.316"N	104°16'59.895"W	1.62	
12309.00	89.700	269.900	9581.38	2850.64	-52.81	-2850.84	556766.62	396918.70	32°05'28.317"N	104°17'00.639"W	0.78	
12372.00	92.400	270.200	9580.23	2913.62	-52.75	-2913.82	556703.64	396918.75	32°05'28.318"N	104°17'01.371"W	4.31	
12435.00	91.500	270.900	9578.08	2976.58	-52.15	-2976.78	556640.68	396919.36	32°05'28.324"N	104°17'02.102"W	1.81	
12499.00	91.800	271.400	9576.24	3040.54	-50.86	-3040.74	556576.73	396920.64	32°05'28.337"N	104°17'02.846"W	0.91	



Actual Wellpath Report

No.1H AWP

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Operator	Cimarex Energy Co.	Slot	No.1H SHL
Area	Eddy County, NM	Well	No.1H
Field	(Hayduke) Section 34, T25S, R26E	Wellbore	No.1H AWB
Facility	Hayduke 34 Federal No.1H		

WELLPATH DATA (165 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [serv ft]	Grid North [serv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12562.00	93.300	273.300	9573.44	3103.43	-48.28	-3103.62	556513.86	396923.22	32°05'28.363"N	104°17'03.577"W	3.84	
12626.00	94.900	274.000	9568.86	3167.15	-44.22	-3167.33	556450.16	396927.28	32°05'28.404"N	104°17'04.317"W	2.73	
12689.00	94.300	274.000	9563.81	3229.81	-39.84	-3229.97	556387.52	396931.66	32°05'28.447"N	104°17'05.045"W	0.95	
12753.00	94.200	273.500	9559.06	3293.51	-35.66	-3293.66	556323.84	396935.84	32°05'28.489"N	104°17'05.786"W	0.79	
12816.00	93.300	274.300	9554.94	3356.25	-31.39	-3356.38	556261.13	396940.11	32°05'28.531"N	104°17'06.515"W	1.91	
12880.00	92.100	275.100	9551.93	3419.98	-26.15	-3420.09	556197.42	396945.35	32°05'28.584"N	104°17'07.255"W	2.25	
12943.00	90.700	274.400	9550.39	3482.76	-20.94	-3482.85	556134.66	396950.57	32°05'28.635"N	104°17'07.985"W	2.48	
13007.00	94.200	275.000	9547.65	3546.49	-15.70	-3546.57	556070.95	396955.80	32°05'28.688"N	104°17'08.725"W	5.55	
13070.00	95.200	277.000	9542.49	3608.95	-9.14	-3609.01	556008.52	396962.37	32°05'28.753"N	104°17'09.451"W	3.54	
13134.00	95.500	278.800	9536.52	3672.10	-0.38	-3672.12	555945.41	396971.12	32°05'28.840"N	104°17'10.185"W	2.84	
13197.00	95.200	278.500	9530.65	3734.14	9.06	-3734.13	555883.40	396980.56	32°05'28.933"N	104°17'10.905"W	0.67	
13260.00	93.800	277.300	9525.71	3796.38	17.69	-3796.34	555821.20	396989.19	32°05'29.019"N	104°17'11.628"W	2.92	
13324.00	90.400	275.200	9523.36	3859.97	24.65	-3859.91	555757.64	396996.15	32°05'29.088"N	104°17'12.367"W	6.24	
13381.00	90.200	274.700	9523.06	3916.77	29.57	-3916.69	555700.86	397001.06	32°05'29.137"N	104°17'13.027"W	0.94	
13433.00	90.200	274.700	9522.88	3968.61	33.83	-3968.52	555649.04	397005.32	32°05'29.179"N	104°17'13.630"W	0.00	Proj to Bit



Actual Wellpath Report

No.1H AWP

Page 8 of 8



REFERENCE WELLPATH INFORMATION			
Operator	Cimarex Energy Co.	Slot	No.1H SHL
Area	Eddy County, NM	Well	No.1H
Field	(Hayduke) Section 34, T25S, R26E	Wellbore	No.1H AWB
Facility	Hayduke 34 Federal No.1H		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No.1H PBHL	/	9529.00	14.08	-3978.62	555638.94	396985.57	32°05'28.984"N	104°17'13.747"W	point

WELLPATH COMPOSITION

Ref Wellbore: No.1H AWB

Ref Wellpath: No.1H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	13433.00	Generic gyro - northseeking (Standard)	Gyro	No.1H AWB



Cimarex Energy Company

8/24/2011
mkk

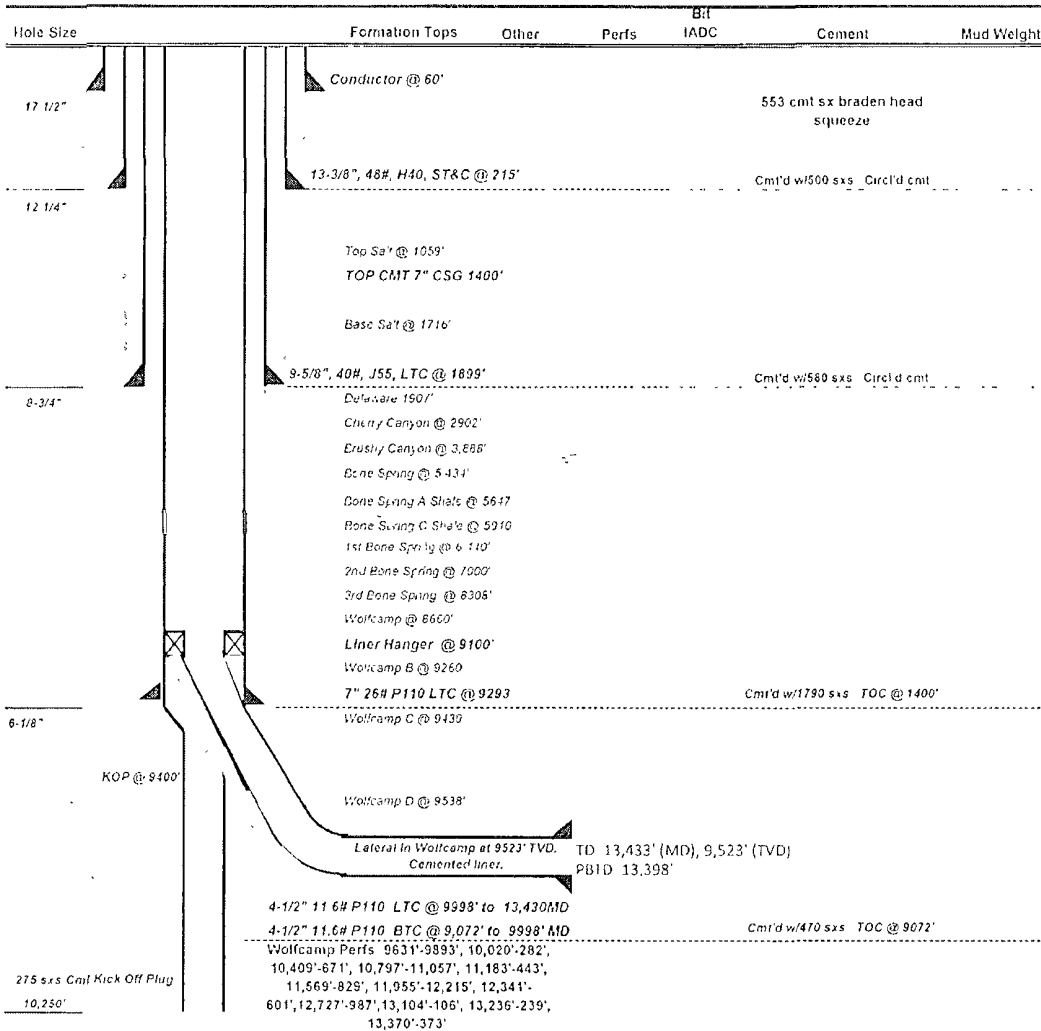
Well: Hayduke 34 Fed 1H
Location: Sec 34, 25S-26E
County, State: Eddy Co, NM
Surface Location: 800' FNL 660' FEL
Bottomhole Loc: 660' FNL 660' FWL

Co Well ID: 309588-340
AFE No.: 250073
API No.: 30-015-36601

Wellhead: Sec A 13 5/8" 3M BY 13 3/8" SOW
Sec B: 11" FM BY 13 5/8" 3m
Sec C 7 1/16" 10M BY 11" 5M

Field: Carlsbad South
Objective: Wolfcamp
TVD/MD: 13,433' / 9523'
Cementing:
Mud:
Motors:
OH Logs
Rig:
Offset Wells:

Xmas Tree
Tubing: 2 7/8"
Superintendent:
Engineer:



Quantity	Description	Length	Setting Depth
1	2-7/8" 1 R0 Bld Tbg	28	28
1	2-7/8" X 4" Sub	32.50	60.50
1	2-7/8" X 6" Sub	4.05	64.55
1	2-7/8" X 6" Sub	6.10	70.65
1	2-7/8" X 6" Sub	8.05	78.70
1	2-7/8" X 10" Sub	10.05	88.75
275	2-7/8" L80 Bld Tbg	8013.72	9002.47
1	2-7/8" On/Off Tool w/ 31 XN Profile	1.50	9003.97
1	2-7/8" As1-X Packer	7.80	9011.87
1	2-7/8" X 4" Sub	4.10	9015.97
1	2-7/8" XH 7 31 NoGo Landing Nipple	1.35	9017.32
1	2-7/8" Wireline Entry Guide	1.35	9018.67

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.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other		5. Lease Serial No. NMNM19423
2. Name of Operator CIMAREX ENERGY COMPANY OF CO		6. If Indian, Allottee or Tribe Name
3a. Address 600 NORTH MARIENFELD STREET SUITE 600 MIDLAND, TX 79701		7. If Unit or C/A Agreement, Name and/or No.
3b. Phone No. (include area code) Ph: 432-620-1936 Fx: 432-620-1940		8. Well Name and No. HAYDUKE 34 FEDERAL 1
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 34 T25S R26E NENE Lot A 800FNL 660FEL 32.091372 N Lat, 104.274255 W Lon		9. API Well No. 30-015-36601-00-X1
		10. Field and Pool, or Exploratory WILDCAT
		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
☒ Subsequent Report	☐ Deepen
☐ Final Abandonment Notice	☐ Fracture Treat
	☐ New Construction
	☐ Plug and Abandon
	☐ Plug Back
	☐ Production (Start/Resume)
	☐ Reclamation
	☐ Recomplete
	☐ Temporarily Abandon
	☐ Water Disposal
	☐ Water Shut-Off
	☐ Well Integrity
	☒ Other Drilling Operations

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 recomplete 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 recompletion 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.)

06-09-11 Perf Wolfcamp 13104-13373 6 jspl, 48 holes.
06-11-11 Bradenhead squeezed intermediate with 24.6 bbl Premium Plus and 196 bbl Econocem C.
06-13-11 Frac with 376,781 gal 15# XL Borate & 300,850# 30/70 White Sand. Set CBP @ 13050.
Perf Wolfcamp 12727-12987 6 jspl, 48 holes. Frac with 447,977 gal 15# XL Borate & 414,178# 30/70 White Sand. Set CBP @ 12664.
Perf Wolfcamp 12341-12601 6 jspl, 48 holes.
06-14-11 Frac with 387,009 gal 15# XL Borate & 364,791# 30/70 White Sand. Set CBP @ 12240
Perf Wolfcamp 11955-12215 6 jspl, 48 holes. Frac with 281,973 gal 15# XL Borate & 354,168# 30/70 White Sand. Set CBP @ 11896.
Perf Wolfcamp 11569-11829 6 jspl, 48 holes. Frac with 405,219 gal 15# XL Borate & 377,014# 30/70 White Sand. Set CBP @ 11506.
Perf Wolfcamp 11183-11443 6 jspl, 48 holes. Frac with 388,512 gal 15# XL Borate & 362,135# 30/70

Accepted for record - NMOCB
9-1-11

14. Thereby certify that the foregoing is true and correct.	
Electronic Submission #115920 verified by the BLM Well Information System For CIMAREX ENERGY COMPANY OF CO, sent to the Carlsbad Committed to AFMSS for processing by KURT SIMMONS on 08/24/2011 (11KMS2394SE)	
Name (Printed/Typed) NATALIE E KRUEGER	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 08/24/2011

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ACCEPTED	JAMES A AMOS Title SUPERVISOR EPS	Date 08/28/2011
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 Carlsbad

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 **

Additional data for EC transaction #115920 that would not fit on the form

32. Additional remarks, continued

White Sand. Set CBP @ 11057.

Perf Wolfcamp 10797-11057 6 jspl, 48 holes. Frac with 412,810 gal 15# XL Borate & 359,979# 30/70

White Sand. Set plug @ 10734.

Perf Wolfcamp 10409-10671 6 jspl, 48 holes. Frac with 386,033 gal 15# XL Borate & 361,716# 30/70

White Sand. Set CBP @ 10345.

Perf Wolfcamp 10020-10282 6 jspl, 48 holes.

06-16-11 Frac with 352,858 gal 15# XL Borate & 301,788# 30/70 White Sand. Set plug @ 9956.

Perf Wolfcamp 9631-9893 6 jspl, 48 holes. Frac with 380,340 gal 15# XL Borate & 352,437 30/70#

White Sand.

06-17-11 DO CBPs and CO to PBD @ 13398.

06-21-11 Installed production tubing string: 2.875 in tbg @ 9018, on-off tool @ 9004, pkr @ 9012.

06-22-11 Turned over to production.

06-27-11 First gas production.

06-30-11 First oil production.

HOBBS OCD

JAN 30 2012

RECEIVED

District I
1675 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Hondo Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Oil Conservation
1220 South

Form C-101
Revised June 10, 2003

Submit to Appropriate District Office
5 Copies

☐ AMENDED REPORT

I. REQUEST

This well has been placed in the pool designated below
If you do not concur notify the Hobbs OCD Geologist

AUTHORIZATION TO TRANSPORT

Operator name and Address Cimarex Energy Co. of Colorado 600 N. Maricopa St., Ste. 600 Midland, TX 79701		¹ OGRID Number 162683
⁴ API Number 30-015-36601		³ Reason for Filing Code/ Effective Date NW / 06/22/2011
⁵ Property Code 37376	⁶ Property Name Hayduke 34 Federal	⁷ Pool Code 96890
		⁸ Well Number 001

II. Surface Location

Utr lot no	Section	Township	Range	Lot 1dn	Feet from the	North/South Line	Feet from the	East/West line	County
A	34	25S	26E		800	North	660	East	Eddy

Bottom Hole Location

Utr lot no	Section	Township	Range	Lot 1dn	Feet from the	North/South Line	Feet from the	East/West line	County
D	34	25S	26E		660	North	660	West	Eddy

¹² Use Code	¹³ Producing Method Code	¹⁴ Gas Connection Date	¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date	¹⁷ C-129 Expiration Date
F	P	6/27/11			

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ POD	²¹ O/G	²² POD ULSR Location and Description
36785	DCP Midstream, LP 370 17 th St, Ste 2500 Denver, CO		G	Same as above
21778	Sunoco Inc R&M PO Box 2039 Tulsa, OK		O	

IV. Produced Water

²³ POD	²⁴ POD ULSR Location and Description
	Same as above

V. Well Completion Data

²⁵ Spud Date	²⁶ Ready Date	²⁷ TD MD 13433 TVD 9523	²⁸ PBD	²⁹ Perforations	³⁰ DHC, MIC
12/28/10	6/22/11			9631-13373	
³¹ Hole Size	³² Casing & Tubing Size	³³ Depth Set	³⁴ Sacks Cement		
17.5	13 3/8	215	500		
12 7/8	9 5/8	1899	580		
8 7/8	7	9293	1790 TOC 1400		
6 1/2	4.5	9072-13430	470 TOC 9072		
	2 3/8	9018			

VI. Well Test Data

³⁵ Date New Oil	³⁶ Gas Delivery Date	³⁷ Test Date	³⁸ Test Length	³⁹ Ibg. Pressure	⁴⁰ Csg. Pressure
06/21/11	6/27/11	7/16/11	24 hrs	2500	2000
⁴¹ Choke Size	⁴² Oil	⁴³ Water	⁴⁴ Gas	⁴⁵ AOF	⁴⁶ Test Method
30/64	50	1372	2644		Producing

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: *Natalie Krueger*

Printed Name: Natalie Krueger

Title: Regulatory Analyst

E-mail Address: nkrueger@cimarex.com

Date: 8/29/11

Phone: 432-620-1936

OIL CONSERVATION DIVISION

Approved by:

Title:

Approval Date:

JAN 30 2012

dm