

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

DEC 17 2007
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.

\$

5. Lease Serial No.

NM-19423

6. If Indian, Allottee or Tribe Name

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

Pending

8. Well Name and No.

Pintail 23 Federal Com No. 2

9. API Well No.

30-015-35757

10. Field and Pool, or Exploratory Area

Cottonwood Draw; Morrow

11. County or Parish, State

Eddy County, NM

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Cimarex Energy Co. of Colorado

3a. Address

PO Box 140907; Irving, TX 75014-0907

3b. Phone No. (include area code)

972-401-3111

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

1250' FSL & 660' FWL
23-25S-26E

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

TYPE OF SUBMISSION

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

TYPE OF ACTION

☐ Acidize

☐ Alter Casing

☐ Casing Repair

☒ Change Plans

☐ Convert to Injection

☐ Deepen

☐ Fracture Treat

☐ New Construction

☐ Plug and Abandon

☐ Plug Back

☐ Production (Start/Resume)

☐ Reclamation

☐ Recomplete

☐ Temporarily Abandon

☐ Water Disposal

☐ Water Shut-Off

☐ Well Integrity

☒ Other Propose to

complete in Delaware zone

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.)

Surface casing set @ 312' on 10-17-07, intermediate casing set @ 2742' on 10-22-07. Reached TD on 11-15-07 and logged. Received approval from Wesley Ingram @ BLM to plug back. Set 6 cement plugs - last plug @ 3365' - 2699.'

Request approval to perform the following horizontal operations for Delaware completion:

Drill 8-3/4" hole through cement to 2800.' Kick off open-hole @ 2816' with a 6-3/4" hole and build curve to 3073' MD and 2980' TVD.

Drill horizontal hole to BHL 330' FSL & 330' FWL, MD 3887' and TVD 2980.'

Run 5-1/2" 17# N-80 8rd LTC casing to 2600.'

Run 5-1/2" 17# N-80 flush-joint casing from 2600' to TD. Cement with 400 SKS (119 bbls) of Permian Basin Super H + Halad-344 + D-Air 3000 + CFR-3 + Salt + Gilsontite + Poly-E-Flake + HR-7 Fresh Water Mixed @ 13.0 Lb/Gal, 1.68 Cuft/sk, 8-22 Gal/sk. Circulate to surface.

All drill cuttings and fluids will be contained in steel pits and hauled off to CRI disposal.

A 3M BOP system will be used during horizontal operations.

Perf and acidize, then turn to sales as Cottonwood Draw; Delaware, North oil well.

C-102, Rig Diagram, BOP Diagram, and preliminary directional survey attached.

APPROVED

DEC 11 2007

LES BABYAK

PETROLEUM ENGINEER

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Natalie Krueger

Signature

Title

Reg Analyst 1

Date

December 10, 2007

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

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, 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)

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, 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 and Natural Resources Department

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-35757	Pool Code 96720	Pool Name Cottonwood Draw; Delaware, North
Property Code	Property Name PINTAIL "23" FEDERAL COM	Well Number 2
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3270'

Surface Location

UL or lot No. M	Section 23	Township 25 S	Range 26 E	Lot Idn	Feet from the 1250	North/South line SOUTH	Feet from the 660	East/West line WEST	County EDDY
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Bottom Hole Location If Different From Surface

UL or lot No. M	Section 23	Township 25 S	Range 26 E	Lot Idn	Feet from the 330	North/South line SOUTH	Feet from the 330	East/West line WEST	County EDDY
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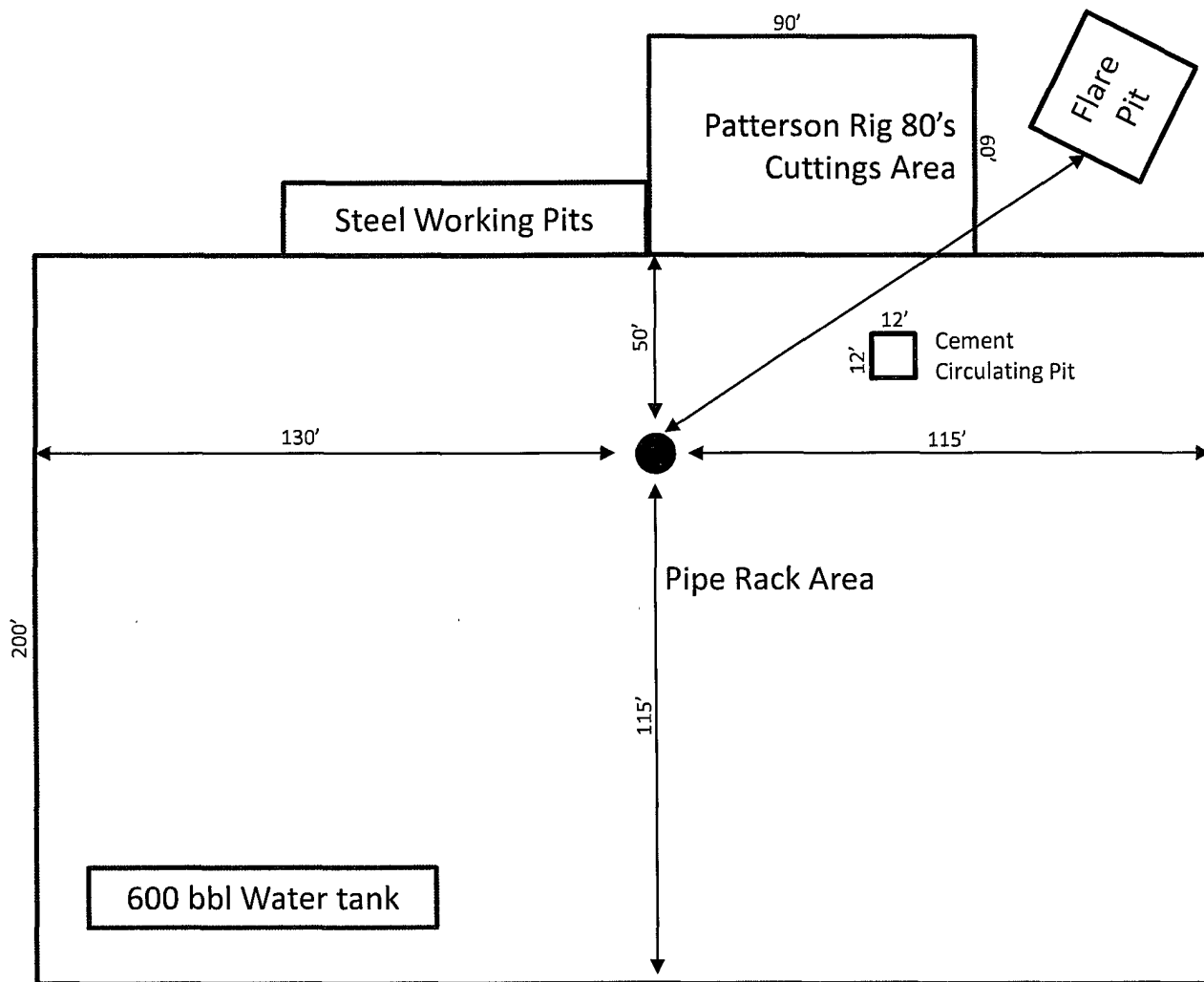
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No. NSL Pending
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION Lat - N32°06'41.37" Long - W104°16'11.48" NMSPC- N 404300.516 E 560994.267 (NAD-83) NM-019423	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 released 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 to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Zeno Farris</i> 12-10-07 Signature Date Zeno Farris Printed Name 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 is true and correct to the best of my belief. JULY 09 2007 Date Surveyed <i>GARY L. JONES</i> Signature Professional Surveyor Certificate No. Gary L. Jones 7977 Basin Surveys
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United Rig 41

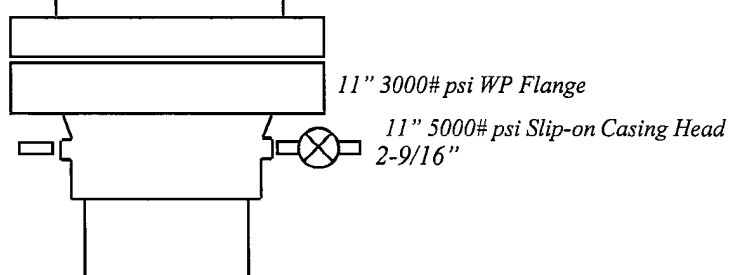
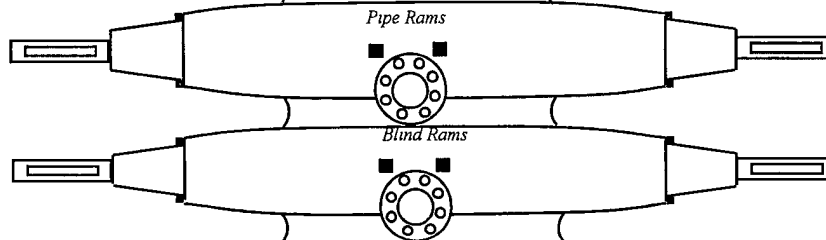
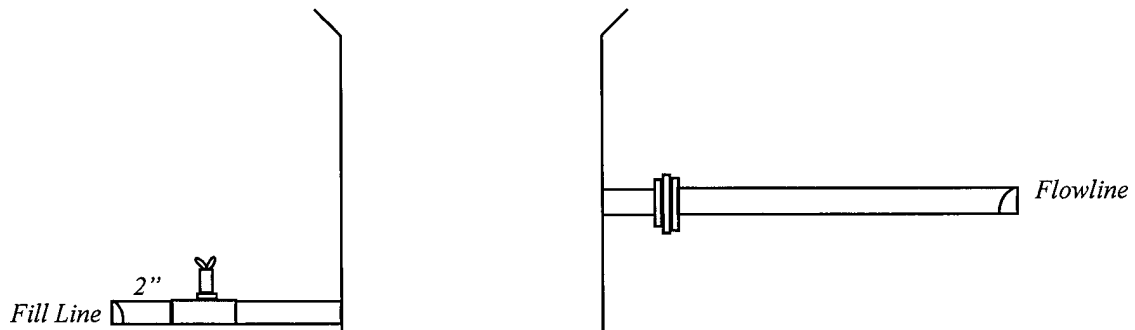
Cimarex Energy Co. of Colorado
Irving, TX



(Existing location much larger...built for Patterson Rig 80)

Rig Layout
Pintail 23 Federal Com No. 2
Cimarex Energy Co. of Colorado
23-25S-26E
SHL 1250' FSL & 660' FWL
BHL 330' FSL & 660' FWL
Eddy County, NM

SR & A



BOP Diagram

Pintail 23 Federal Com No. 2

Cimarex Energy Co. of Colorado

23-25S-26E

SHL 1250' FSL & 660' FWL

BHL 330' FSL & 660' FWL

Eddy County, NM



Cimarex Energy Co., Inc.

Eddy Co., New Mexico

Pintail '23' Federal Com #2H

Pintail '23' Federal Com #2H

Lateral

Plan: Plan #1

Standard Survey Report

10 December, 2007





Black Viper Energy
Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003 14.1.0 Server DB

Project	Eddy Co., New Mexico		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Pintail '23' Federal Com #2H		
Site Position:	Northing:	560,994.27 ft	Latitude: 32° 32' 29 189 N
From: Map	Easting:	404,300.52 ft	Longitude: 104° 46' 40.940 W
Position Uncertainty:	0.00 ft	Slot Radius: "	Grid Convergence: -0.24 °

Well	Pintail '23' Federal Com #2H		
Well Position	+N/-S	0.00 ft	Northing: 560,994.27 ft
	+E/-W	0.00 ft	Easting: 404,300.52 ft
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,289.00 ft
			Ground Level: 3,270.00 ft

Wellbore	Lateral		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	11/26/2007	8 56
			Dip Angle 60.36
			Field Strength 49,069

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 2,816.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0 00	0.00	0.00
			Direction 199.73
			(°)

Survey Tool Program	Date: 12/10/2007		
From	To	Survey, (Wellbore)	Tool Name
(ft)	(ft)		Description
2,816.00	3,887.13	Plan #1 (Lateral)	MWD
			MWD - Standard

Planned Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Rate	
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)	(°/100ft)	
2,742.00	0 00	0.00	0 00	0.00	0 00	0.00	0.00	0 00	0.00	
9 5/8" Casing										
2,816 00	0.00	360.00	2,816.00	0.00	0 00	0.00	0.00	0 00	0.00	
2,816 30	0.00	0.00	2,816.30	0.00	0.00	0.00	0.00	0.00	0.00	
KOP - Build 35.0° / 100										
2,820 00	1.30	199.73	2,820.00	-0.04	-0.01	0.04	35.00	35.00	0.00	
2,850 00	11.80	199 73	2,849.76	-3.25	-1.17	3.46	35.00	35 00	0.00	
2,880.00	22 30	199.73	2,878.40	-11.52	-4.13	12.24	35.00	35.00	0.00	
2,910.00	32.80	199.73	2,904.97	-24.56	-8.81	26 09	35 00	35.00	0 00	
2,940.00	43.30	199 73	2,928 56	-41.94	-15 04	44.56	35.00	35.00	0 00	
2,949.09	46 48	199.73	2,935 00	-47.98	-17.21	50.97	35.00	35.00	0.00	
Cherry Canyon M3										
2,970.00	53.80	199.73	2,948.39	-63 07	-22.62	67.01	35 00	35.00	0 00	



Black Viper Energy
Survey Report



Company:	Cimarex Energy Co., Inc	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.14.1.0 Server DB

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,000.00	64.30	199.73	2,963.80	-87.26	-31.30	92.70	35.00	35.00	0.00
3,030.00	74.80	199.73	2,974.27	-113.68	-40.78	120.77	35.00	35.00	0.00
3,060.00	85.30	199.73	2,979.45	-141.45	-50.74	150.28	35.00	35.00	0.00
3,073.44	90.00	199.73	2,980.00	-154.09	-55.27	163.70	35.00	35.00	0.00
EOC - Hold 90.0° Inc. :: 199.73° Azi.									
3,090.00	90.00	199.73	2,980.00	-169.68	-60.86	180.26	0.00	0.00	0.00
3,120.00	90.00	199.73	2,980.00	-197.91	-70.99	210.26	0.00	0.00	0.00
3,150.00	90.00	199.73	2,980.00	-226.15	-81.12	240.26	0.00	0.00	0.00
3,180.00	90.00	199.73	2,980.00	-254.39	-91.25	270.26	0.00	0.00	0.00
3,210.00	90.00	199.73	2,980.00	-282.63	-101.38	300.26	0.00	0.00	0.00
3,240.00	90.00	199.73	2,980.00	-310.87	-111.51	330.26	0.00	0.00	0.00
3,270.00	90.00	199.73	2,980.00	-339.11	-121.64	360.26	0.00	0.00	0.00
3,300.00	90.00	199.73	2,980.00	-367.34	-131.76	390.26	0.00	0.00	0.00
3,330.00	90.00	199.73	2,980.00	-395.58	-141.89	420.26	0.00	0.00	0.00
3,360.00	90.00	199.73	2,980.00	-423.82	-152.02	450.26	0.00	0.00	0.00
3,390.00	90.00	199.73	2,980.00	-452.06	-162.15	480.26	0.00	0.00	0.00
3,420.00	90.00	199.73	2,980.00	-480.30	-172.28	510.26	0.00	0.00	0.00
3,450.00	90.00	199.73	2,980.00	-508.54	-182.41	540.26	0.00	0.00	0.00
3,480.00	90.00	199.73	2,980.00	-536.77	-192.54	570.26	0.00	0.00	0.00
3,510.00	90.00	199.73	2,980.00	-565.01	-202.67	600.26	0.00	0.00	0.00
3,540.00	90.00	199.73	2,980.00	-593.25	-212.80	630.26	0.00	0.00	0.00
3,570.00	90.00	199.73	2,980.00	-621.49	-222.93	660.26	0.00	0.00	0.00
3,600.00	90.00	199.73	2,980.00	-649.73	-233.05	690.26	0.00	0.00	0.00
3,630.00	90.00	199.73	2,980.00	-677.97	-243.18	720.26	0.00	0.00	0.00
3,660.00	90.00	199.73	2,980.00	-706.20	-253.31	750.26	0.00	0.00	0.00
3,690.00	90.00	199.73	2,980.00	-734.44	-263.44	780.26	0.00	0.00	0.00
3,720.00	90.00	199.73	2,980.00	-762.68	-273.57	810.26	0.00	0.00	0.00
3,750.00	90.00	199.73	2,980.00	-790.92	-283.70	840.26	0.00	0.00	0.00
3,780.00	90.00	199.73	2,980.00	-819.16	-293.83	870.26	0.00	0.00	0.00
3,810.00	90.00	199.73	2,980.00	-847.40	-303.96	900.26	0.00	0.00	0.00
3,840.00	90.00	199.73	2,980.00	-875.63	-314.09	930.26	0.00	0.00	0.00
3,870.00	90.00	199.73	2,980.00	-903.87	-324.22	960.26	0.00	0.00	0.00
3,887.13	90.00	199.73	2,980.00	-920.00	-330.00	977.39	0.00	0.00	0.00



Black Viper Energy
Survey Report



Company:	Cimarex Energy Co., Inc	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co , New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.14.1.0 Server DB

Targets									
Target Name	hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	
Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	
									Latitude Longitude
PBHL#1[P23FedCom#2	- plan hits target	0.00	360.00	2,980.00	-920.00	-330.00	560,074.27	403,970.52	32° 32' 20.072 N 104° 46' 44.751 W
	- Point								

Casing Points				
Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
(ft)	(ft)	Name	(")	(")
2,742.00		9 5/8" Casing	9-5/8	12-1/4

Formations					
Measured Depth	Vertical Depth			Dip	Dip Direction
(ft)	(ft)	Name	Lithology	(°)	(°)
	2,797.00	T/ Cherry Canyon		0.00	0.48
2,949.09	2,935.00	Cherry Canyon M3		0.00	0.48

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
2,816.30	2,816.30	0.00	0.00	KOP - Build 35.0° / 100
3,073.44	2,980.00	-154.09	-55.27	EOC - Hold 90.0° Inc :: 199.73° Azi.

Checked By: _____ Approved By: _____ Date: _____



Cimarex Energy Co., Inc.

Eddy Co., New Mexico

Pintail '23' Federal Com #2H

Pintail '23' Federal Com #2H

Lateral

Plan: Plan #1

Standard Survey Report

10 December, 2007





Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.14.1.0 Server DB

Project:	Eddy Co., New Mexico		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Pintail '23' Federal Com #2H		
Site Position:	From:	Map	
From:	Map		
Position Uncertainty:	0.00 ft		
Northing:	560,994.27 ft	Latitude:	32° 32' 29.189 N
Easting:	404,300.52 ft	Longitude:	104° 46' 40.940 W
Slot Radius:	"	Grid Convergence:	-0.24 °

Well:	Pintail '23' Federal Com #2H		
Well Position	+N/-S	0.00 ft	
	+E/-W	0.00 ft	
Position Uncertainty	0.00 ft		
Northing:	560,994.27 ft	Latitude:	32° 32' 29.189 N
Easting:	404,300.52 ft	Longitude:	104° 46' 40.940 W
Wellhead Elevation:	3,289.00 ft	Ground Level:	3,270.00 ft

Wellbore:	Lateral		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF200510	11/26/2007	8.56
			Dip Angle (°)
			60.36
			Field Strength (nT)
			49,069

Design:	Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 2,816.00
Vertical Section:	Depth/From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction (°)
			199.73

Survey Tool Program	Date: 12/10/2007		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
2,816.00	3,887.13	Plan #1 (Lateral)	MWD
			Description
			MWD - Standard

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
2,742.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9 5/8" Casing										
2,816.00	0.00	360.00	2,816.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,816.30	0.00	0.00	2,816.30	0.00	0.00	0.00	0.00	0.00	0.00	
KOP - Build 35.0° / 100										
2,820.00	1.30	199.73	2,820.00	-0.04	-0.01	0.04	35.00	35.00	0.00	
2,850.00	11.80	199.73	2,849.76	-3.25	-1.17	3.46	35.00	35.00	0.00	
2,880.00	22.30	199.73	2,878.40	-11.52	-4.13	12.24	35.00	35.00	0.00	
2,910.00	32.80	199.73	2,904.97	-24.56	-8.81	26.09	35.00	35.00	0.00	
2,940.00	43.30	199.73	2,928.56	-41.94	-15.04	44.56	35.00	35.00	0.00	
2,949.09	46.48	199.73	2,935.00	-47.98	-17.21	50.97	35.00	35.00	0.00	
Cherry Canyon M3										
2,970.00	53.80	199.73	2,948.39	-63.07	-22.62	67.01	35.00	35.00	0.00	



Black Viper Energy
Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co , New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.14.1.0 Server DB

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,000.00	64.30	199.73	2,963.80	-87.26	-31.30	92.70	35.00	35.00	0.00
3,030.00	74.80	199.73	2,974.27	-113.68	-40.78	120.77	35.00	35.00	0.00
3,060.00	85.30	199.73	2,979.45	-141.45	-50.74	150.28	35.00	35.00	0.00
3,073.44	90.00	199.73	2,980.00	-154.09	-55.27	163.70	35.00	35.00	0.00
EOC - Hold 90.0° Inc. :: 199.73° Azi.									
3,090.00	90.00	199.73	2,980.00	-169.68	-60.86	180.26	0.00	0.00	0.00
3,120.00	90.00	199.73	2,980.00	-197.91	-70.99	210.26	0.00	0.00	0.00
3,150.00	90.00	199.73	2,980.00	-226.15	-81.12	240.26	0.00	0.00	0.00
3,180.00	90.00	199.73	2,980.00	-254.39	-91.25	270.26	0.00	0.00	0.00
3,210.00	90.00	199.73	2,980.00	-282.63	-101.38	300.26	0.00	0.00	0.00
3,240.00	90.00	199.73	2,980.00	-310.87	-111.51	330.26	0.00	0.00	0.00
3,270.00	90.00	199.73	2,980.00	-339.11	-121.64	360.26	0.00	0.00	0.00
3,300.00	90.00	199.73	2,980.00	-367.34	-131.76	390.26	0.00	0.00	0.00
3,330.00	90.00	199.73	2,980.00	-395.58	-141.89	420.26	0.00	0.00	0.00
3,360.00	90.00	199.73	2,980.00	-423.82	-152.02	450.26	0.00	0.00	0.00
3,390.00	90.00	199.73	2,980.00	-452.06	-162.15	480.26	0.00	0.00	0.00
3,420.00	90.00	199.73	2,980.00	-480.30	-172.28	510.26	0.00	0.00	0.00
3,450.00	90.00	199.73	2,980.00	-508.54	-182.41	540.26	0.00	0.00	0.00
3,480.00	90.00	199.73	2,980.00	-536.77	-192.54	570.26	0.00	0.00	0.00
3,510.00	90.00	199.73	2,980.00	-565.01	-202.67	600.26	0.00	0.00	0.00
3,540.00	90.00	199.73	2,980.00	-593.25	-212.80	630.26	0.00	0.00	0.00
3,570.00	90.00	199.73	2,980.00	-621.49	-222.93	660.26	0.00	0.00	0.00
3,600.00	90.00	199.73	2,980.00	-649.73	-233.05	690.26	0.00	0.00	0.00
3,630.00	90.00	199.73	2,980.00	-677.97	-243.18	720.26	0.00	0.00	0.00
3,660.00	90.00	199.73	2,980.00	-706.20	-253.31	750.26	0.00	0.00	0.00
3,690.00	90.00	199.73	2,980.00	-734.44	-263.44	780.26	0.00	0.00	0.00
3,720.00	90.00	199.73	2,980.00	-762.68	-273.57	810.26	0.00	0.00	0.00
3,750.00	90.00	199.73	2,980.00	-790.92	-283.70	840.26	0.00	0.00	0.00
3,780.00	90.00	199.73	2,980.00	-819.16	-293.83	870.26	0.00	0.00	0.00
3,810.00	90.00	199.73	2,980.00	-847.40	-303.96	900.26	0.00	0.00	0.00
3,840.00	90.00	199.73	2,980.00	-875.63	-314.09	930.26	0.00	0.00	0.00
3,870.00	90.00	199.73	2,980.00	-903.87	-324.22	960.26	0.00	0.00	0.00
3,887.13	90.00	199.73	2,980.00	-920.00	-330.00	977.39	0.00	0.00	0.00



Black Viper Energy
Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Well Pintail '23' Federal Com #2H
Project:	Eddy Co., New Mexico	TVD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Site:	Pintail '23' Federal Com #2H	MD Reference:	Rig KB @ 3289.00ft (Rig KB Elevation)
Well:	Pintail '23' Federal Com #2H	North Reference:	Grid
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 2003.14.1.0 Server DB

Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
PBHL#1[P23FedCom#2	- plan hits target	0.00	360.00	2,980.00	-920.00	-330.00	560,074.27	403,970.52	32° 32' 20.072 N 104° 46' 44.751 W
	- Point								

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
2,742.00		9 5/8" Casing	9-5/8	12-1/4

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	2,797.00	T/ Cherry Canyon		0.00	0.48
2,949.09	2,935.00	Cherry Canyon M3		0.00	0.48

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,816.30	2,816.30	0.00	0.00	KOP - Build 35.0° / 100	
3,073.44	2,980.00	-154.09	-55.27	EOC - Hold 90.0° Inc. :: 199 73° Azi.	

Checked By: _____ Approved By: _____ Date: _____

Pintail '23' Federal Com #2H Lateral Plan #1 Report 12-10-07.txt
 Cimarex Energy Co., Inc.
 Pintail '23' Federal Com #2H - Plan #1

Eddy Co., New Mexico
 Pintail '23' Federal Com #2H

Measured Dogleg Depth Rate (ft) (°/100ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)
2820.00	1.296	199.733	2820.00	0.04 S	0.01 W	0.04
0.00						
2830.00	4.796	199.733	2829.98	0.54 S	0.19 W	0.57
35.00						
2840.00	8.296	199.733	2839.92	1.61 S	0.58 W	1.71
35.00						
2850.00	11.796	199.733	2849.76	3.25 S	1.17 W	3.46
35.00						
2860.00	15.296	199.733	2859.48	5.46 S	1.96 W	5.80
35.00						
2870.00	18.796	199.733	2869.04	8.22 S	2.95 W	8.73
35.00						
2880.00	22.296	199.733	2878.40	11.52 S	4.13 W	12.24
35.00						
2890.00	25.796	199.733	2887.54	15.35 S	5.51 W	16.31
35.00						
2900.00	29.296	199.733	2896.40	19.71 S	7.07 W	20.94
35.00						
2910.00	32.796	199.733	2904.97	24.56 S	8.81 W	26.09
35.00						
2920.00	36.296	199.733	2913.20	29.90 S	10.72 W	31.76
35.00						
2930.00	39.796	199.733	2921.08	35.70 S	12.80 W	37.92
35.00						
2940.00	43.296	199.733	2928.56	41.94 S	15.04 W	44.56
35.00						
2950.00	46.796	199.733	2935.62	48.60 S	17.43 W	51.63
35.00						
2960.00	50.296	199.733	2942.24	55.65 S	19.96 W	59.13
35.00						
2970.00	53.796	199.733	2948.39	63.07 S	22.62 W	67.01
35.00						
2980.00	57.296	199.733	2954.05	70.83 S	25.41 W	75.25
35.00						
2990.00	60.796	199.733	2959.19	78.91 S	28.30 W	83.83
35.00						
3000.00	64.296	199.733	2963.80	87.26 S	31.30 W	92.70
35.00						
3010.00	67.796	199.733	2967.86	95.86 S	34.38 W	101.84
35.00						
3020.00	71.296	199.733	2971.35	104.68 S	37.55 W	111.21
35.00						
3030.00	74.796	199.733	2974.27	113.68 S	40.78 W	120.77
35.00						
3040.00	78.296	199.733	2976.60	122.83 S	44.06 W	130.49
35.00						
3050.00	81.796	199.733	2978.32	132.10 S	47.38 W	140.34
35.00						
3060.00	85.296	199.733	2979.45	141.45 S	50.74 W	150.28
35.00						

	Pintail '23'	Federal	Com #2H	Lateral Plan #1	Report 12-10-07.txt	
3070.00	88.796	199.733	2979.96	150.85 S	54.11 W	160.26
35.00						
3080.00	90.000	199.733	2980.00	160.26 S	57.49 W	170.26
12.04						
3090.00	90.000	199.733	2980.00	169.68 S	60.86 W	180.26
0.00						
3100.00	90.000	199.733	2980.00	179.09 S	64.24 W	190.26
0.00						
3110.00	90.000	199.733	2980.00	188.50 S	67.61 W	200.26
0.00						
3120.00	90.000	199.733	2980.00	197.91 S	70.99 W	210.26
0.00						
3130.00	90.000	199.733	2980.00	207.33 S	74.37 W	220.26
0.00						
3140.00	90.000	199.733	2980.00	216.74 S	77.74 W	230.26
0.00						
3150.00	90.000	199.733	2980.00	226.15 S	81.12 W	240.26
0.00						
3160.00	90.000	199.733	2980.00	235.57 S	84.50 W	250.26
0.00						
3170.00	90.000	199.733	2980.00	244.98 S	87.87 W	260.26
0.00						
3180.00	90.000	199.733	2980.00	254.39 S	91.25 W	270.26
0.00						
3190.00	90.000	199.733	2980.00	263.80 S	94.63 W	280.26
0.00						
3200.00	90.000	199.733	2980.00	273.22 S	98.00 W	290.26
0.00						
3210.00	90.000	199.733	2980.00	282.63 S	101.38 W	300.26
0.00						
3220.00	90.000	199.733	2980.00	292.04 S	104.75 W	310.26
0.00						
3230.00	90.000	199.733	2980.00	301.46 S	108.13 W	320.26
0.00						
3240.00	90.000	199.733	2980.00	310.87 S	111.51 W	330.26
0.00						
3250.00	90.000	199.733	2980.00	320.28 S	114.88 W	340.26
0.00						
3260.00	90.000	199.733	2980.00	329.69 S	118.26 W	350.26
0.00						
3270.00	90.000	199.733	2980.00	339.11 S	121.64 W	360.26
0.00						
3280.00	90.000	199.733	2980.00	348.52 S	125.01 W	370.26
0.00						
3290.00	90.000	199.733	2980.00	357.93 S	128.39 W	380.26
0.00						
3300.00	90.000	199.733	2980.00	367.34 S	131.76 W	390.26
0.00						
3310.00	90.000	199.733	2980.00	376.76 S	135.14 W	400.26
0.00						
3320.00	90.000	199.733	2980.00	386.17 S	138.52 W	410.26
0.00						
3330.00	90.000	199.733	2980.00	395.58 S	141.89 W	420.26
0.00						
3340.00	90.000	199.733	2980.00	405.00 S	145.27 W	430.26
0.00						
3350.00	90.000	199.733	2980.00	414.41 S	148.65 W	440.26
0.00						
3360.00	90.000	199.733	2980.00	423.82 S	152.02 W	450.26
0.00						
3370.00	90.000	199.733	2980.00	433.23 S	155.40 W	460.26
0.00						
3380.00	90.000	199.733	2980.00	442.65 S	158.78 W	470.26

Pintail '23' Federal Com #2H Lateral Plan #1 Report 12-10-07.txt

0.00							
3390.00	90.000	199.733	2980.00	452.06 S	162.15 W	480.26	
0.00							
3400.00	90.000	199.733	2980.00	461.47 S	165.53 W	490.26	
0.00							
3410.00	90.000	199.733	2980.00	470.89 S	168.90 W	500.26	
0.00							
3420.00	90.000	199.733	2980.00	480.30 S	172.28 W	510.26	
0.00							
3430.00	90.000	199.733	2980.00	489.71 S	175.66 W	520.26	
0.00							
3440.00	90.000	199.733	2980.00	499.12 S	179.03 W	530.26	
0.00							
3450.00	90.000	199.733	2980.00	508.54 S	182.41 W	540.26	
0.00							
3460.00	90.000	199.733	2980.00	517.95 S	185.79 W	550.26	
0.00							
3470.00	90.000	199.733	2980.00	527.36 S	189.16 W	560.26	
0.00							
3480.00	90.000	199.733	2980.00	536.77 S	192.54 W	570.26	
0.00							
3490.00	90.000	199.733	2980.00	546.19 S	195.92 W	580.26	
0.00							
3500.00	90.000	199.733	2980.00	555.60 S	199.29 W	590.26	
0.00							
3510.00	90.000	199.733	2980.00	565.01 S	202.67 W	600.26	
0.00							
3520.00	90.000	199.733	2980.00	574.43 S	206.04 W	610.26	
0.00							
3530.00	90.000	199.733	2980.00	583.84 S	209.42 W	620.26	
0.00							
3540.00	90.000	199.733	2980.00	593.25 S	212.80 W	630.26	
0.00							
3550.00	90.000	199.733	2980.00	602.66 S	216.17 W	640.26	
0.00							
3560.00	90.000	199.733	2980.00	612.08 S	219.55 W	650.26	
0.00							
3570.00	90.000	199.733	2980.00	621.49 S	222.93 W	660.26	
0.00							
3580.00	90.000	199.733	2980.00	630.90 S	226.30 W	670.26	
0.00							
3590.00	90.000	199.733	2980.00	640.32 S	229.68 W	680.26	
0.00							
3600.00	90.000	199.733	2980.00	649.73 S	233.05 W	690.26	
0.00							
3610.00	90.000	199.733	2980.00	659.14 S	236.43 W	700.26	
0.00							
3620.00	90.000	199.733	2980.00	668.55 S	239.81 W	710.26	
0.00							
3630.00	90.000	199.733	2980.00	677.97 S	243.18 W	720.26	
0.00							
3640.00	90.000	199.733	2980.00	687.38 S	246.56 W	730.26	
0.00							
3650.00	90.000	199.733	2980.00	696.79 S	249.94 W	740.26	
0.00							
3660.00	90.000	199.733	2980.00	706.20 S	253.31 W	750.26	
0.00							
3670.00	90.000	199.733	2980.00	715.62 S	256.69 W	760.26	
0.00							
3680.00	90.000	199.733	2980.00	725.03 S	260.07 W	770.26	
0.00							
3690.00	90.000	199.733	2980.00	734.44 S	263.44 W	780.26	
0.00							

Pintail '23' Federal Com #2H Lateral Plan #1 Report 12-10-07.txt						
3700.00	90.000	199.733	2980.00	743.86 S	266.82 W	790.26
0.00						
3710.00	90.000	199.733	2980.00	753.27 S	270.19 W	800.26
0.00						
3720.00	90.000	199.733	2980.00	762.68 S	273.57 W	810.26
0.00						
3730.00	90.000	199.733	2980.00	772.09 S	276.95 W	820.26
0.00						
3740.00	90.000	199.733	2980.00	781.51 S	280.32 W	830.26
0.00						
3750.00	90.000	199.733	2980.00	790.92 S	283.70 W	840.26
0.00						
3760.00	90.000	199.733	2980.00	800.33 S	287.08 W	850.26
0.00						
3770.00	90.000	199.733	2980.00	809.75 S	290.45 W	860.26
0.00						
3780.00	90.000	199.733	2980.00	819.16 S	293.83 W	870.26
0.00						
3790.00	90.000	199.733	2980.00	828.57 S	297.20 W	880.26
0.00						
3800.00	90.000	199.733	2980.00	837.98 S	300.58 W	890.26
0.00						
3810.00	90.000	199.733	2980.00	847.40 S	303.96 W	900.26
0.00						
3820.00	90.000	199.733	2980.00	856.81 S	307.33 W	910.26
0.00						
3830.00	90.000	199.733	2980.00	866.22 S	310.71 W	920.26
0.00						
3840.00	90.000	199.733	2980.00	875.63 S	314.09 W	930.26
0.00						
3850.00	90.000	199.733	2980.00	885.05 S	317.46 W	940.26
0.00						
3860.00	90.000	199.733	2980.00	894.46 S	320.84 W	950.26
0.00						
3870.00	90.000	199.733	2980.00	903.87 S	324.22 W	960.26
0.00						
3880.00	90.000	199.733	2980.00	913.29 S	327.59 W	970.26
0.00						
3887.13	90.000	199.733	2980.00	920.00 S	330.00 W	977.39
0.00						

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to Rig KB. Northings and Eastings are relative to well.

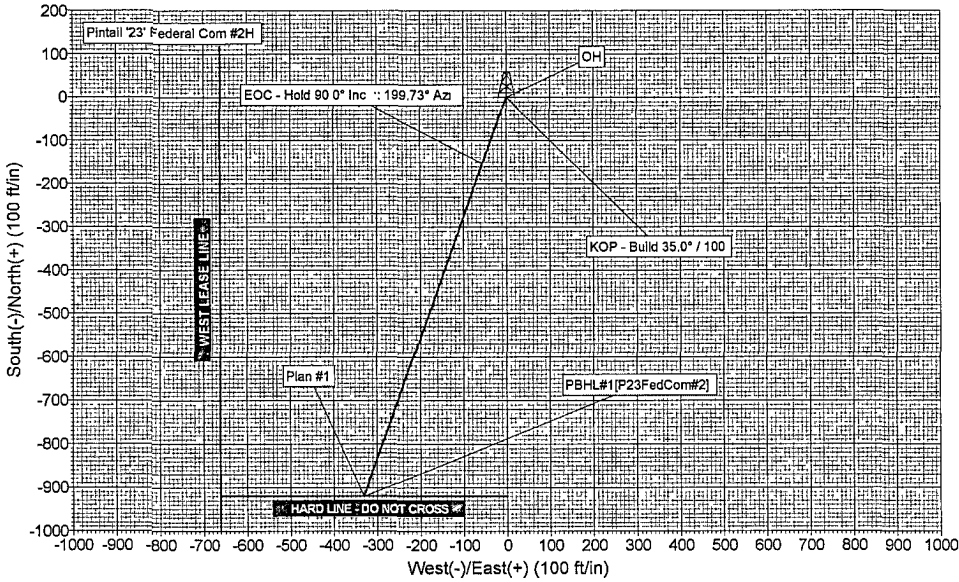
The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Site and calculated along an Azimuth of 199.733° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.
Central meridian is -104.333°.
Grid Convergence at Surface is -0.239°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 3887.13ft., the Bottom Hole Displacement is 977.39ft., in the Direction of 199.733° (Grid).



Project: Eddy Co, New Mexico
 Site: Pintail '23' Federal Com #2H
 Well: Pintail '23' Federal Com #2H
 Wellbore: Lateral
 Plan: Plan #1 (Pintail '23' Federal Com #2H/Lateral)



PROJECT DETAILS Eddy Co, New Mexico

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level



Azimuths to Grid North
 True North 0 24°
 Magnetic North 6 80°
 Magnetic Field
 Strength 49069 3nT
 Dip Angle 60 36°
 Date 11/26/2007
 Model: IGRF200510

ANNOTATIONS

TVD	MD	Annotation
2816 30	2816 30	KOP - Build 35 0° / 100
2980 00	3073 44	EOC - Hold 90 0° Inc 199 73° Azi.

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	2816 00	0 00	360 00	2816 00	0 00	0 00	0 00	0 00	0 00	
2	2816 30	0 00	0 00	2816 30	0 00	0 00	0 00	0 00	0 00	
3	3073 44	90 00	199 73	2980 00	-154 09	-55 27	35.00	199.73	163 70	
4	3867 13	90 00	199 73	2980 00	-920 00	-330.00	0 00	0 00	977 39	PBHL#1[P23FedCom#2]

