

R-111-POTASH
OCD-ARTESIAForm 3160-B
(April 2004)

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NMOCD ARTESIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No NM114978	
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Cimarex Energy Co.		7. If Unit or CA Agreement, Name and No. <i>TC, 9/7/2002</i>	
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701	3b. Phone No. (include area code) 432-571-7800	8. Lease Name and Well No Forty Niner Ridge 23 Federal #2H <i><39406></i>	
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At Surface 390 FSL & 1980 FEL At proposed prod. Zone 330 FNL & 1980 FEL <i>Horizontal Bone Spring test</i>		9. API Well No. 30-015- <i>40649</i>	
14. Distance in miles and direction from nearest town or post office*		10. Field and Pool, or Exploratory <i>FORTY NINER RIDGE; B.S.</i>	
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 330'		11. Sec., T R M. or Blk. and Survey or Area 23-23S-30E	
16. No of acres in lease 960		12. County or Parish Eddy	
17. Spacing Unit dedicated to this well W2E2 160 acres		13. State NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1320'		20. BLM/BIA Bond No on File COB000011	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3270' GR		22. Approximate date work will start* 9.15.12	
		23. Estimated duration 30-35 days	
24. Attachments			

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form

- | | |
|---|--|
| 1 Well plat certified by a registered surveyor | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) |
| 2 A Drilling Plan | 5 Operator Certification |
| 3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) | 6 Such other site specific information and/or plans as may be required by the authorized officer |

25. Signature <i>Zeno Farris</i>	Name (Printed/Typed) Zeno Farris	Date 5.31.12
Title Manager Operations Administration		
Approved By (Signature) <i>/s/ Jesse J. Juen</i>	Name (Printed/Typed)	Date AUG 24 2012
Title STATE DIRECTOR	Office NM STATE OFFICE	

Application approval 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

Conditions of approval, if any, are attached.

Title 18 U.S.S. 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.

* (Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVALApproval Subject to General Requirements
& Special Stipulations Attached

Operator Certification Statement

Forty Niner Ridge 23 Federal #2H

Cimarex Energy Co.

Unit O, Section 23

T23S-R30E; Eddy County, NM

Operator's Representative

Cimarex Energy Co. of Colorado

600 N. Marienfeld St., Ste. 600

Midland, TX 79701

Office Phone: (432) 571-7800

Zeno Farris

CERTIFICATION: I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 31st day of May, 2012

NAME: Zeno Farris
Zeno Farris

TITLE: Manager Operations Administration

ADDRESS: 600 N. Marienfeld St., Ste. 600
Midland, TX 79701

TELEPHONE: (432) 620-1938

EMAIL: zfarris@cimarex.com

Field Representative: Same as above

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1203 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6176 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3463

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-40649	Pool Code 96053	Pool Name Forty Niner Ridge Bone Spring Wildcat
Property Code 39406	Property Name FORTY NINER RIDGE 23 FEDERAL	Well Number 2H
OGRID No. 215099	Operator Name CIMAREX ENERGY CO.	Elevation 3270'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	23	23 S	30 E		390	SOUTH	1980	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
B	23	23 S	30 E		330	NORTH	1980	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160.0			

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

PROPOSED BOTTOM HOLE LOCATION Lot - N 32°17'48.68" Long - W 103°50'57.75" NMSPCE- N 472066.1 E 690873.9 (NAD-83)	B.H. 330' 1980' NM 114978 4556.4'	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, or has a right to drill this well at this 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. 5/31/12 <i>Zeno Farris</i> Signature _____ Date _____ Printed Name: Zeno Farris Email Address: zfarris@cimarex.com
SURFACE LOCATION Lot - N 32°17'03.50" Long - W 103°50'57.65" NMSPCE- N 467500.8 E 690903.3 (NAD-83)	3280.2' 3286.7' 1980' S.L.	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. Date Surveyed: April 1, 2012 Signature and Seal of Professional Surveyor: <i>Gary L. Jones</i> Certificate No. Gary L. Jones 7977 BASIN SURVEYS 26645

Drilling Plan
Forty Niner Ridge 23 Federal #2H
Cimarex Energy Co.
Unit O, Section 23
T23S-R30E; Eddy County, NM

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

1 **Location:** SHL 390 FSL & 1980 FEL
 BHL 330 FNL & 1980 FEL

2 **Elevation above sea level:** 3270 GR

3 **Geologic name of surface formation:** Quaternary Alluvium Deposits

4 **Drilling tools and associated equipment:** Conventional rotary drilling rig using fluid as a circulating medium for solids removal.

5 **Proposed drilling depth:** MD 14313 TVD 9870

6 **Estimated tops of geological markers:**

Rustler	200
T. Salt	500
Castille	2260
B. Salt	3635
Delaware	3910
Bone Spring	7740
Avalon Shale	7900
2nd Bone Spring	9650
Wolfcamp	11140

7 **Possible mineral bearing formations:**

Bone Spring	Oil
Avalon Shale	Oil

8 **Proposed Mud Circulating System:**

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 225' 350'	8.4 - 8.6	28	NC	FW
225' to 3875'	10.0	30-32	NC	Brine water
3875' to 9584'	8.4	30-32	NC	2% KCL

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

Proposed Drilling Plan

Drill 8¾" hole with kickoff point @ 9584' TVD. Drill through curve to to TMD 14313', TVD 9870'. Run 5½" casing from 0-14313' and cement.

Drilling Plan
Forty Niner Ridge 23 Federal #2H
 Cimarex Energy Co.
 Unit O, Section 23
 T23S-R30E; Eddy County, NM

9 Casing & Cementing Program:

See COA

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	17 1/2"	0' to 225'	New 13 3/8"	48#	STC	H-40
Intermediate	12 1/4"	0' to 3875'	New 9 5/8"	40#	LTC	J-55
Production	7 7/8"	0' to 9584'	New 5 1/2"	17#	LTC	P-110
Production	7 7/8"	9584' to 14313'	New 5 1/2"	17#	BTC	P-110

10 Cementing:

Surface

Lead:340SKS Halcem C + 4% Bentomite + 2% CaCl 13.5ppg 1.75yield 100% Excess
 Tail:100SKS Halcem C + 2% CaCl 14.2ppg 1.34 yield 50% Excess
TOC Surface Centralizers per Onshorder 2.III.B.1.f

Intermediate

Lead:1050SKS EconoCem + 5% salt + 5 lbm gilsonite 14.6ppg 1.54yield 70% Excess
 Tail:250SKS HalCem + 1% CaCl 14.8ppg 1.34 yield 25% Excess
TOC Surface

Production

Lead:1580SKS EconoCem - H + 0.2 % HR-601 2.44 11.9ppg 2.44 yield 50% Excess
 Tail:1045SKS Versacem - H + 0.5% Halad(R)-344 + 0.4% CFR-3 + 1 lbm/sk salt + 0.1% HR-601 14.5ppg 1.22 yield 25% Excess
TOC Surface Centralizers every 3rd joint through the curve or legal location hardline to provide adequate cement coverage every 100' unless hole conditions require greater spacing between centralizers.

Depth to ground water is 200' according to the State Engineer. Fresh water zones will be protected by setting 13 3/8" casing at 225' and cementing to surface and 9 5/8" casing at 3875' and cementing to surface. Hydrocarbon zones will be protected by setting 5 1/2" casing at 14313' and cementing to surface.

<u>Collapse Factor</u>	<u>Burst Factor</u>	<u>Tension Factor</u>
1.125	1.125	1.6

11 Pressure control Equipment:

Exhibit "E". A 13 3/8" 5000 PSI working pressure BOP system consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Mud gas separator will be installed with BOP before drilling out of surface casing.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the 13 3/8" casing through the running of production casing, the well will be equipped with a 5000 psi BOP system.

Before drilling out of the surface casing BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high. Before drilling out of the intermediate casing BOPs will be tested to 250 psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 psi high.

Drilling Plan
Forty Niner Ridge 23 Federal #2H
Cimarex Energy Co.
Unit O, Section 23
T23S-R30E; Eddy County, NM

12 Testing, Logging and Coring Program:

See log

- A. Mud logging program: 2 man unit from 3875' to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR Surface to TD
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H₂S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H₂S Safety package on all wells, attached is an "H₂S Drilling Operations Plan." Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP **4441.5 psi** Estimated BHT **138°**

14 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take 30-35 days

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals.

Bone Spring pay will be perforated and stimulated.

The proposed well will be tested and potential as **an oil well.**



Cimarex Energy Co.

Location: Eddy County, NM

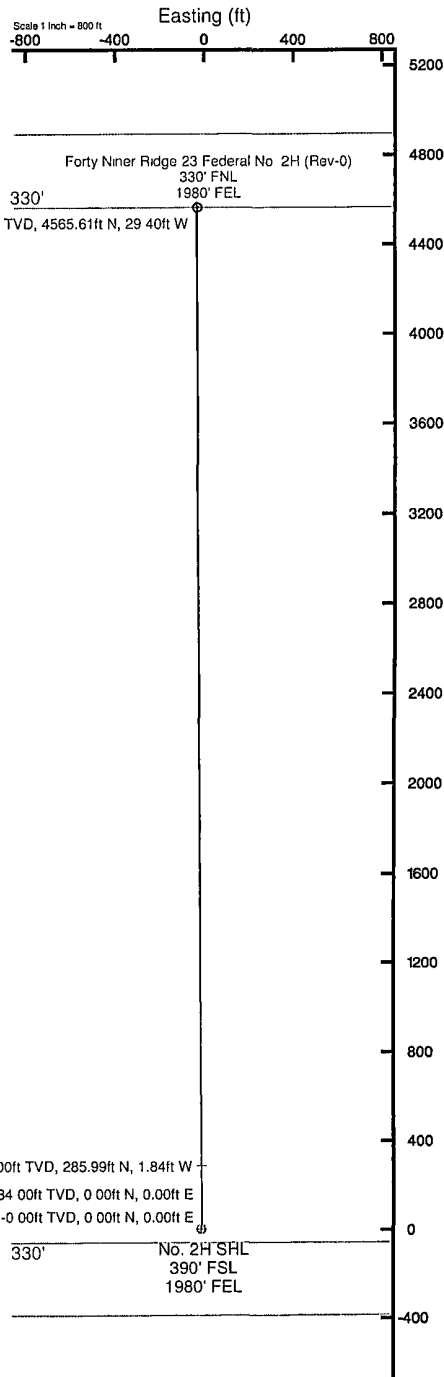
Field: (Forty Niner) Sec 23, T23S, R30E

Facility: Forty Niner Ridge 23 Federal No. 2H

Slot: No. 2H SHL

Well: No. 2H

Wellbore: No. 2H PWB

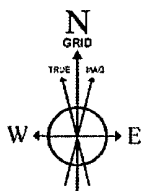


Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	359.631	0.00	0.00	0.00	0.00	0.00
Est KOP	9584.00	0.000	359.631	9584.00	0.00	0.00	0.00	0.00
EOC	10033.25	90.000	359.631	9870.00	285.99	-1.84	20.03	286.00
No. 2H PWB	14312.95	90.000	359.631	9870.00	4565.61	-29.40	0.00	4565.70

Plot reference wellpath is Rev-A 0

True vertical depths are referenced to Rig on No. 2H SHL (RT)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 2H SHL (RT)	North Reference: Grid north
Rig on No. 2H SHL (RT) to Mean Sea Level: 3270 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot No. 2H SHL): -3270 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: harrkol on 4/25/2012



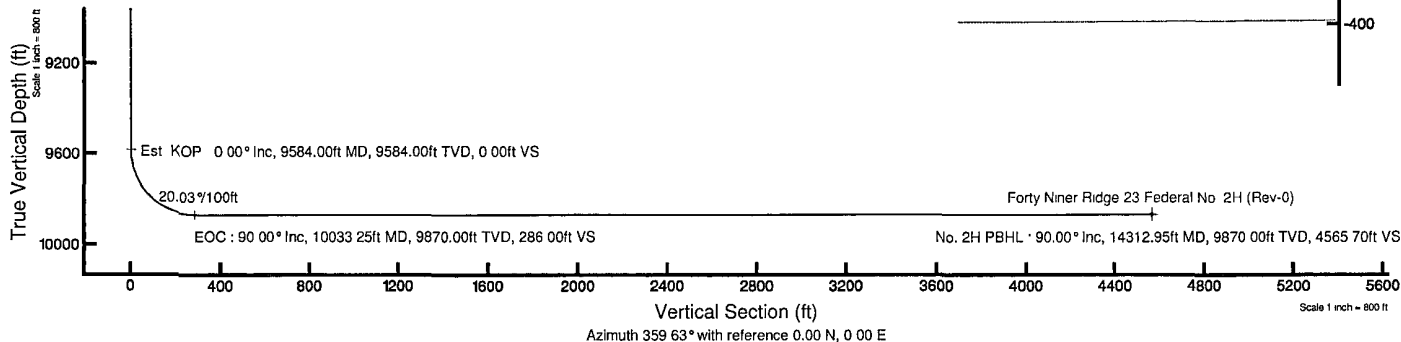
BGGM (1945 0 to 2013 0) Dip: 60 13° Field: 48537.3 nT
Magnetic North is 7.70 degrees East of True North (at 4/25/2012)

Grid North is 0.26 degrees East of True North

To correct azimuth from True to Grid subtract 0.26 degrees

To correct azimuth from Magnetic to Grid add 7.44 degrees

For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.44 = 97.44





Planned Wellpath Report

Rev-A.0

Page 1 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Forty Niner) Sec 23, T23S, R30E	Wellbore	No. 2H PWB
Facility	Forty Niner Ridge 23 Federal No. 2H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Harrkol
Scale	0.999935	Report Generated	4/25/2012 at 2:27:05 PM
Convergence at slot	0.26° East	Database/Source file	WA Midland/No. 2H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W
Facility Reference Pt			690903.30	467500.80	32°17'03.502"N	103°50'57.651"W
Field Reference Pt			692283.40	467446.60	32°17'02.904"N	103°50'41.577"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 2H SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No. 2H SHL (RT) to Mean Sea Level	3270.00ft
Vertical Reference Pt	Rig on No. 2H SHL (RT)	Rig on No. 2H SHL (RT) to Mud Line at Slot (No. 2H SHL)	0.00ft
MD Reference Pt	Rig on No. 2H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.63°



Planned Wellpath Report

Rev-A.0
Page 2 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Forty Niner) Sec 23, T23S, R30E	Wellbore	No. 2H PWB
Facility	Forty Niner Ridge 23 Federal No. 2H		

WELLPATH DATA (153 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	359.631	0.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Tie On
100.00†	0.000	359.631	100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
150.00†	0.000	359.631	150.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Rustler
200.00†	0.000	359.631	200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
300.00†	0.000	359.631	300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
400.00†	0.000	359.631	400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
500.00†	0.000	359.631	500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Salt
600.00†	0.000	359.631	600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
700.00†	0.000	359.631	700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
800.00†	0.000	359.631	800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
900.00†	0.000	359.631	900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1000.00†	0.000	359.631	1000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1100.00†	0.000	359.631	1100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1200.00†	0.000	359.631	1200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1300.00†	0.000	359.631	1300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1400.00†	0.000	359.631	1400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1500.00†	0.000	359.631	1500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1600.00†	0.000	359.631	1600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1700.00†	0.000	359.631	1700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1800.00†	0.000	359.631	1800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
1900.00†	0.000	359.631	1900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2000.00†	0.000	359.631	2000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2100.00†	0.000	359.631	2100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2200.00†	0.000	359.631	2200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2260.00†	0.000	359.631	2260.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Castille
2300.00†	0.000	359.631	2300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2400.00†	0.000	359.631	2400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2500.00†	0.000	359.631	2500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2600.00†	0.000	359.631	2600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2700.00†	0.000	359.631	2700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2800.00†	0.000	359.631	2800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
2900.00†	0.000	359.631	2900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3000.00†	0.000	359.631	3000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3100.00†	0.000	359.631	3100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3200.00†	0.000	359.631	3200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3300.00†	0.000	359.631	3300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3400.00†	0.000	359.631	3400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3500.00†	0.000	359.631	3500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3600.00†	0.000	359.631	3600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3635.00†	0.000	359.631	3635.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Base Salt
3700.00†	0.000	359.631	3700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3800.00†	0.000	359.631	3800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3900.00†	0.000	359.631	3900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
3910.00†	0.000	359.631	3910.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Delaware
4000.00†	0.000	359.631	4000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Forty Niner) Sec 23, T23S, R30E	Wellbore	No. 2H PWB
Facility	Forty Niner Ridge 23 Federal No. 2H		

WELLPATH DATA (153 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4100.00†	0.000	359.631	4100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
4200.00†	0.000	359.631	4200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
4300.00†	0.000	359.631	4300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
4400.00†	0.000	359.631	4400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
4500.00†	0.000	359.631	4500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
4600.00†	0.000	359.631	4600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
4700.00†	0.000	359.631	4700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
4800.00†	0.000	359.631	4800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
4900.00†	0.000	359.631	4900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5000.00†	0.000	359.631	5000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5100.00†	0.000	359.631	5100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5200.00†	0.000	359.631	5200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5300.00†	0.000	359.631	5300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5400.00†	0.000	359.631	5400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5500.00†	0.000	359.631	5500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5600.00†	0.000	359.631	5600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5700.00†	0.000	359.631	5700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5800.00†	0.000	359.631	5800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
5900.00†	0.000	359.631	5900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6000.00†	0.000	359.631	6000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6100.00†	0.000	359.631	6100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6200.00†	0.000	359.631	6200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6300.00†	0.000	359.631	6300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6400.00†	0.000	359.631	6400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6500.00†	0.000	359.631	6500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6600.00†	0.000	359.631	6600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6700.00†	0.000	359.631	6700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6800.00†	0.000	359.631	6800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
6900.00†	0.000	359.631	6900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7000.00†	0.000	359.631	7000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7100.00†	0.000	359.631	7100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7200.00†	0.000	359.631	7200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7300.00†	0.000	359.631	7300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7400.00†	0.000	359.631	7400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7500.00†	0.000	359.631	7500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7600.00†	0.000	359.631	7600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7700.00†	0.000	359.631	7700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7740.00†	0.000	359.631	7740.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Bone Spring
7800.00†	0.000	359.631	7800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
7900.00†	0.000	359.631	7900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Avalon Shale
8000.00†	0.000	359.631	8000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
8100.00†	0.000	359.631	8100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
8200.00†	0.000	359.631	8200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
8300.00†	0.000	359.631	8300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
8400.00†	0.000	359.631	8400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Forty Niner) Sec 23, T23S, R30E	Wellbore	No. 2H PWB
Facility	Forty Niner Ridge 23 Federal No. 2H		

WELLPATH DATA (153 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8500.00†	0.000	359.631	8500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
8600.00†	0.000	359.631	8600.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
8700.00†	0.000	359.631	8700.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
8800.00†	0.000	359.631	8800.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	1st BSS
8900.00†	0.000	359.631	8900.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
9000.00†	0.000	359.631	9000.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
9100.00†	0.000	359.631	9100.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
9200.00†	0.000	359.631	9200.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
9300.00†	0.000	359.631	9300.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
9400.00†	0.000	359.631	9400.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
9500.00†	0.000	359.631	9500.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	
9584.00	0.000	359.631	9584.00	0.00	0.00	0.00	690903.30	467500.80	32°17'03.502"N	103°50'57.651"W	0.00	Est KOP
9600.00†	3.205	359.631	9599.99	0.45	0.45	0.00	690903.30	467501.25	32°17'03.507"N	103°50'57.651"W	20.03	
9650.60†	13.342	359.631	9650.00	7.72	7.72	-0.05	690903.25	467508.52	32°17'03.579"N	103°50'57.651"W	20.03	2nd BSS
9700.00†	23.239	359.631	9696.85	23.20	23.20	-0.15	690903.15	467524.00	32°17'03.732"N	103°50'57.652"W	20.03	
9800.00†	43.272	359.631	9780.04	77.76	77.76	-0.50	690902.80	467578.56	32°17'04.272"N	103°50'57.653"W	20.03	
9900.00†	63.306	359.631	9839.52	157.52	157.52	-1.01	690902.29	467658.31	32°17'05.061"N	103°50'57.655"W	20.03	
10000.00†	83.339	359.631	9868.07	252.83	252.82	-1.63	690901.67	467753.60	32°17'06.004"N	103°50'57.657"W	20.03	
10033.25	90.000	359.631	9870.00	286.00	285.99	-1.84	690901.46	467786.77	32°17'06.332"N	103°50'57.658"W	20.03	EOC
10100.00†	90.000	359.631	9870.00	352.75	352.74	-2.27	690901.03	467853.52	32°17'06.993"N	103°50'57.659"W	0.00	
10200.00†	90.000	359.631	9870.00	452.75	452.74	-2.92	690900.38	467953.51	32°17'07.982"N	103°50'57.661"W	0.00	
10300.00†	90.000	359.631	9870.00	552.75	552.74	-3.56	690899.74	468053.50	32°17'08.972"N	103°50'57.664"W	0.00	
10400.00†	90.000	359.631	9870.00	652.75	652.74	-4.20	690899.10	468153.49	32°17'09.961"N	103°50'57.666"W	0.00	
10500.00†	90.000	359.631	9870.00	752.75	752.74	-4.85	690898.45	468253.49	32°17'10.951"N	103°50'57.668"W	0.00	
10600.00†	90.000	359.631	9870.00	852.75	852.73	-5.49	690897.81	468353.48	32°17'11.941"N	103°50'57.670"W	0.00	
10700.00†	90.000	359.631	9870.00	952.75	952.73	-6.14	690897.16	468453.47	32°17'12.930"N	103°50'57.673"W	0.00	
10800.00†	90.000	359.631	9870.00	1052.75	1052.73	-6.78	690896.52	468553.46	32°17'13.920"N	103°50'57.675"W	0.00	
10900.00†	90.000	359.631	9870.00	1152.75	1152.73	-7.42	690895.88	468653.45	32°17'14.909"N	103°50'57.677"W	0.00	
11000.00†	90.000	359.631	9870.00	1252.75	1252.73	-8.07	690895.23	468753.44	32°17'15.899"N	103°50'57.679"W	0.00	
11100.00†	90.000	359.631	9870.00	1352.75	1352.72	-8.71	690894.59	468853.43	32°17'16.888"N	103°50'57.681"W	0.00	
11200.00†	90.000	359.631	9870.00	1452.75	1452.72	-9.36	690893.95	468953.42	32°17'17.878"N	103°50'57.684"W	0.00	
11300.00†	90.000	359.631	9870.00	1552.75	1552.72	-10.00	690893.30	469053.42	32°17'18.867"N	103°50'57.686"W	0.00	
11400.00†	90.000	359.631	9870.00	1652.75	1652.72	-10.64	690892.66	469153.41	32°17'19.857"N	103°50'57.688"W	0.00	
11500.00†	90.000	359.631	9870.00	1752.75	1752.72	-11.29	690892.01	469253.40	32°17'20.846"N	103°50'57.690"W	0.00	
11600.00†	90.000	359.631	9870.00	1852.75	1852.71	-11.93	690891.37	469353.39	32°17'21.836"N	103°50'57.693"W	0.00	
11700.00†	90.000	359.631	9870.00	1952.75	1952.71	-12.58	690890.73	469453.38	32°17'22.825"N	103°50'57.695"W	0.00	
11800.00†	90.000	359.631	9870.00	2052.75	2052.71	-13.22	690890.08	469553.37	32°17'23.815"N	103°50'57.697"W	0.00	
11900.00†	90.000	359.631	9870.00	2152.75	2152.71	-13.86	690889.44	469653.36	32°17'24.804"N	103°50'57.699"W	0.00	
12000.00†	90.000	359.631	9870.00	2252.75	2252.71	-14.51	690888.79	469753.35	32°17'25.794"N	103°50'57.702"W	0.00	
12100.00†	90.000	359.631	9870.00	2352.75	2352.70	-15.15	690888.15	469853.35	32°17'26.783"N	103°50'57.704"W	0.00	
12200.00†	90.000	359.631	9870.00	2452.75	2452.70	-15.80	690887.51	469953.34	32°17'27.773"N	103°50'57.706"W	0.00	
12300.00†	90.000	359.631	9870.00	2552.75	2552.70	-16.44	690886.86	470053.33	32°17'28.762"N	103°50'57.708"W	0.00	
12400.00†	90.000	359.631	9870.00	2652.75	2652.70	-17.08	690886.22	470153.32	32°17'29.752"N	103°50'57.711"W	0.00	
12500.00†	90.000	359.631	9870.00	2752.75	2752.70	-17.73	690885.57	470253.31	32°17'30.741"N	103°50'57.713"W	0.00	
12600.00†	90.000	359.631	9870.00	2852.75	2852.69	-18.37	690884.93	470353.30	32°17'31.731"N	103°50'57.715"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Forty Niner) Sec 23, T23S, R30E	Wellbore	No. 2H PWB
Facility	Forty Niner Ridge 23 Federal No. 2H		

WELLPATH DATA (153 stations): † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12700.00†	90.000	359.631	9870.00	2952.75	2952.69	-19.01	690884.29	470453.29	32°17'32.720"N	103°50'57.717"W	0.00	
12800.00†	90.000	359.631	9870.00	3052.75	3052.69	-19.66	690883.64	470553.28	32°17'33.710"N	103°50'57.720"W	0.00	
12900.00†	90.000	359.631	9870.00	3152.75	3152.69	-20.30	690883.00	470653.27	32°17'34.699"N	103°50'57.722"W	0.00	
13000.00†	90.000	359.631	9870.00	3252.75	3252.68	-20.95	690882.35	470753.27	32°17'35.689"N	103°50'57.724"W	0.00	
13100.00†	90.000	359.631	9870.00	3352.75	3352.68	-21.59	690881.71	470853.26	32°17'36.678"N	103°50'57.726"W	0.00	
13200.00†	90.000	359.631	9870.00	3452.75	3452.68	-22.23	690881.07	470953.25	32°17'37.668"N	103°50'57.729"W	0.00	
13300.00†	90.000	359.631	9870.00	3552.75	3552.68	-22.88	690880.42	471053.24	32°17'38.657"N	103°50'57.731"W	0.00	
13400.00†	90.000	359.631	9870.00	3652.75	3652.68	-23.52	690879.78	471153.23	32°17'39.647"N	103°50'57.733"W	0.00	
13500.00†	90.000	359.631	9870.00	3752.75	3752.67	-24.17	690879.13	471253.22	32°17'40.636"N	103°50'57.735"W	0.00	
13600.00†	90.000	359.631	9870.00	3852.75	3852.67	-24.81	690878.49	471353.21	32°17'41.626"N	103°50'57.738"W	0.00	
13700.00†	90.000	359.631	9870.00	3952.75	3952.67	-25.45	690877.85	471453.20	32°17'42.615"N	103°50'57.740"W	0.00	
13800.00†	90.000	359.631	9870.00	4052.75	4052.67	-26.10	690877.20	471553.20	32°17'43.605"N	103°50'57.742"W	0.00	
13900.00†	90.000	359.631	9870.00	4152.75	4152.67	-26.74	690876.56	471653.19	32°17'44.594"N	103°50'57.744"W	0.00	
14000.00†	90.000	359.631	9870.00	4252.75	4252.66	-27.39	690875.92	471753.18	32°17'45.584"N	103°50'57.747"W	0.00	
14100.00†	90.000	359.631	9870.00	4352.75	4352.66	-28.03	690875.27	471853.17	32°17'46.573"N	103°50'57.749"W	0.00	
14200.00†	90.000	359.631	9870.00	4452.75	4452.66	-28.67	690874.63	471953.16	32°17'47.563"N	103°50'57.751"W	0.00	
14300.00†	90.000	359.631	9870.00	4552.75	4552.66	-29.32	690873.98	472053.15	32°17'48.552"N	103°50'57.753"W	0.00	
14312.95	90.000	359.631	9870.00†	4565.70	4565.61	-29.40	690873.90	472066.10	32°17'48.680"N	103°50'57.754"W	0.00	No. 2H PBHL

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) Forty Niner Ridge 23 Federal No. 2H (Rev-0)	14312.95	9870.00	4565.61	-29.40	690873.90	472066.10	32°17'48.680"N	103°50'57.754"W	point

SURVEY PROGRAM - Ref Wellbore: No. 2H PWB Ref Wellpath: Rev-A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	14312.95	NaviTrak (Standard)		No. 2H PWB

SR & A

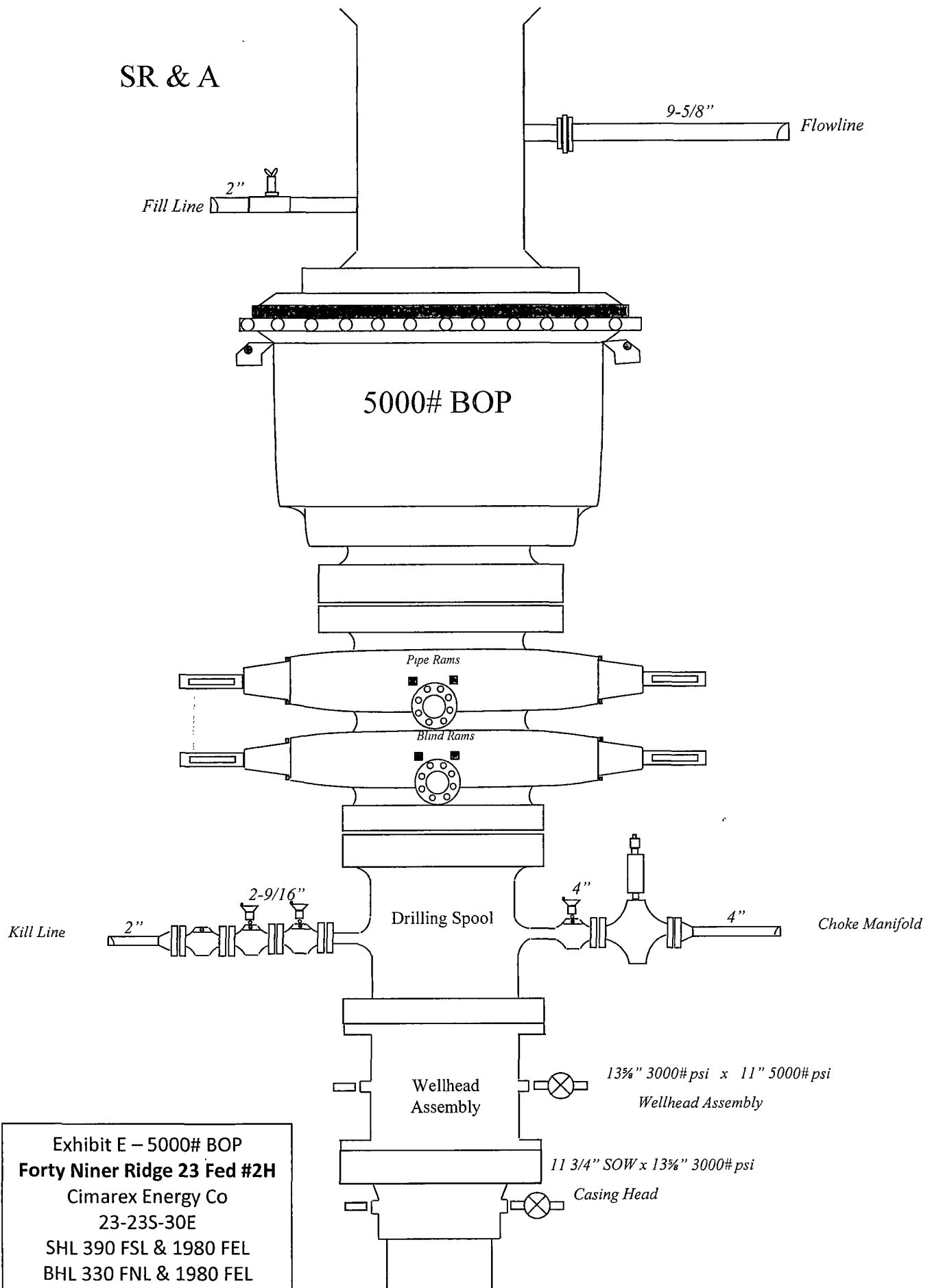
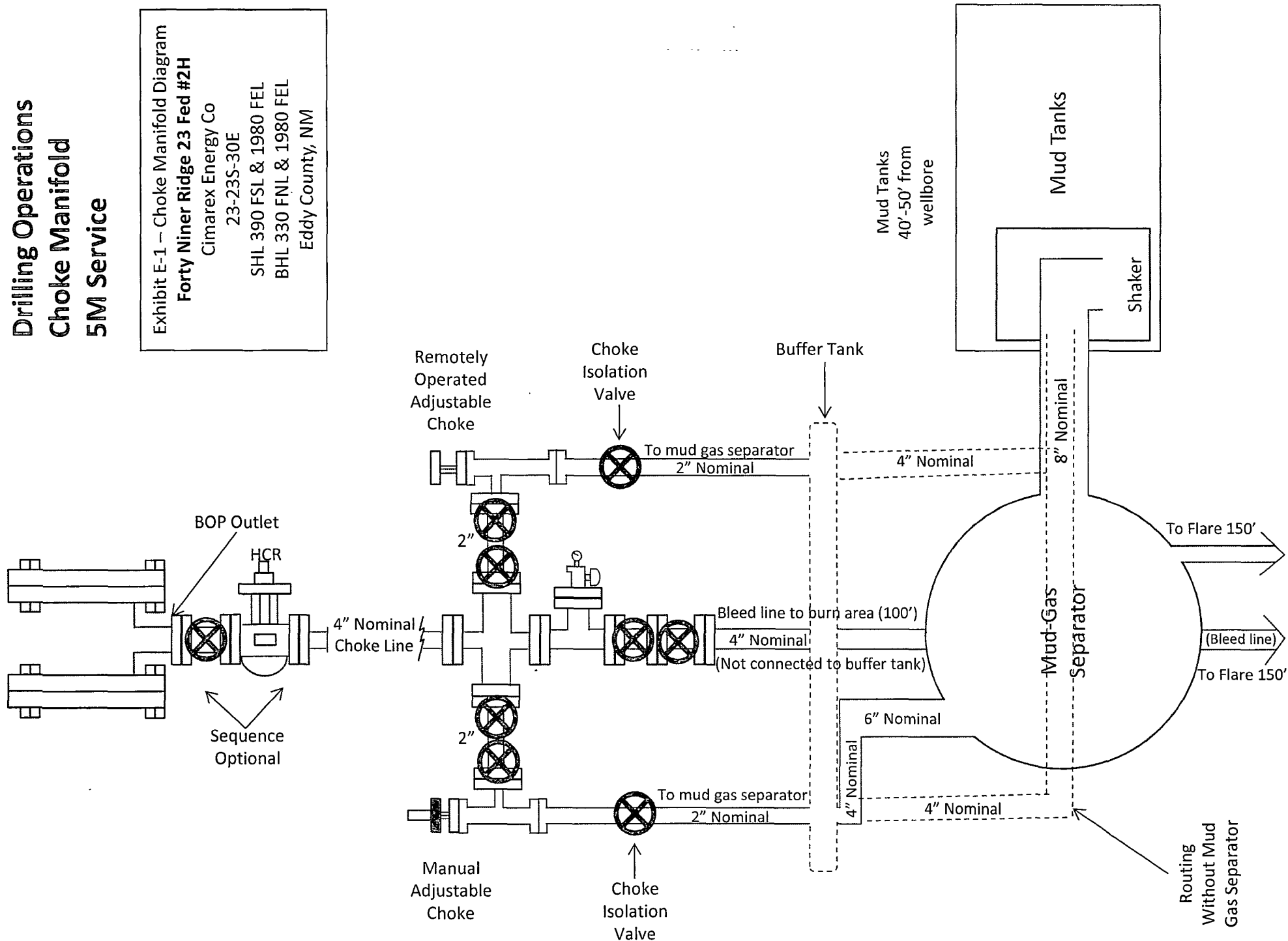


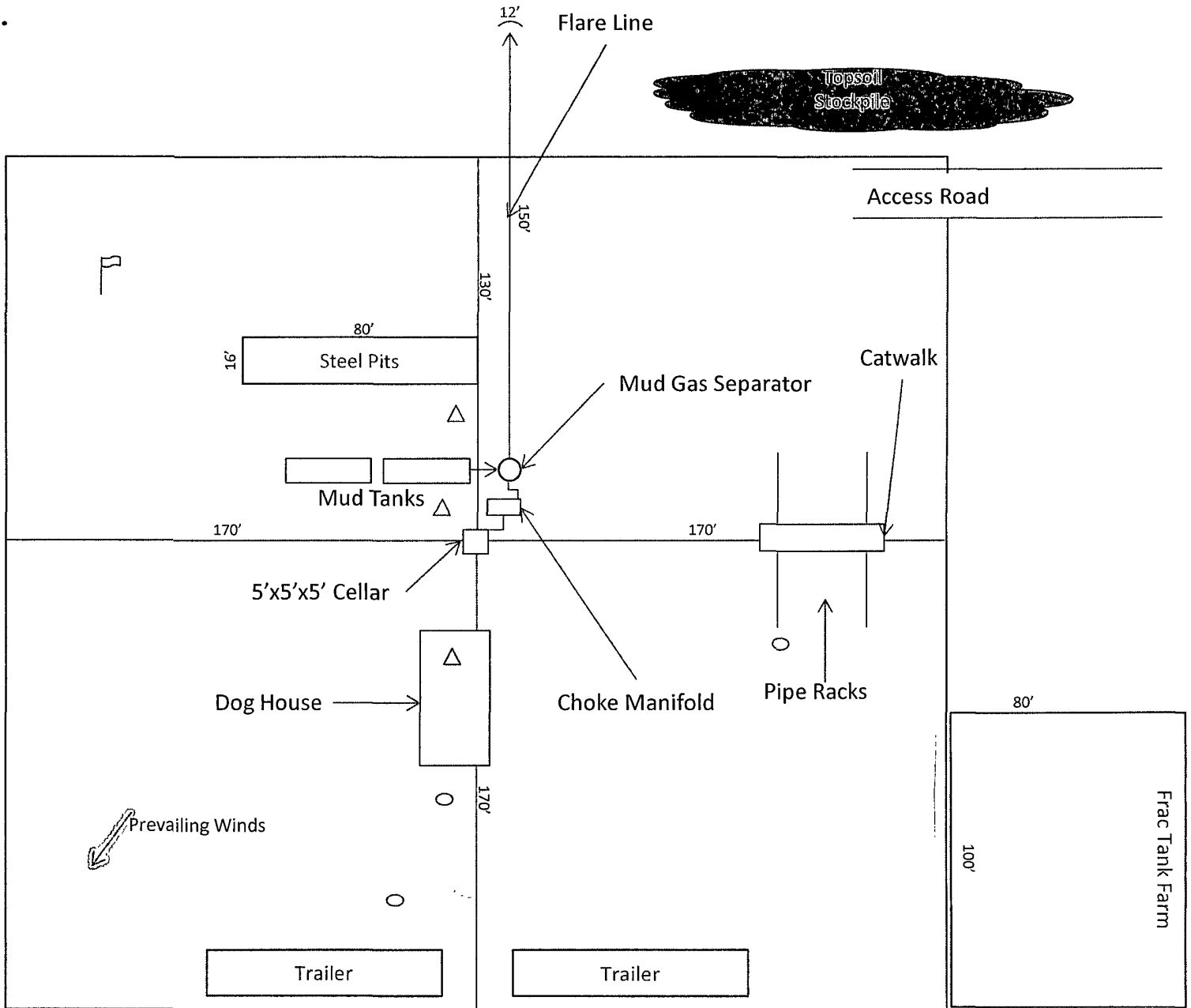
Exhibit E – 5000# BOP
Forty Niner Ridge 23 Fed #2H
Cimarex Energy Co
23-23S-30E
SHL 390 FSL & 1980 FEL
BHL 330 FNL & 1980 FEL
Eddy County, NM

Drilling Operations Choke Manifold 5M Service

Exhibit E-1 – Choke Manifold Diagram
Forty Niner Ridge 23 Fed #2H
 Cimarex Energy Co
 23-23S-30E
 SHL 390 FSL & 1980 FEL
 BHL 330 FNL & 1980 FEL
 Eddy County, NM



Patriot 4



1"=50'



-  Wind Direction Indicators (wind sock or streamers)
-  H2S Monitors (alarms at bell nipple and shale shaker)
-  Briefing areas

Exhibit D – Rig Diagram
Forty Niner Ridge 23 Fed #2H
 Cimarex Energy Co
 23-23S-30E
 SHL 390 FSL & 1980 FEL
 BHL 330 FNL & 1980 FEL
 Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan

Forty Niner Ridge 23 Federal #2H

Cimarex Energy Co.

Unit O, Section 23

T23S-R30E; Eddy County, NM

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:
 - A. Characteristics of H₂S
 - B. Physical effects and hazards
 - C. Proper use of safety equipment and life support systems.
 - D. Principle and operation of H₂S detectors, warning system and briefing areas.
 - E. Evacuation procedure, routes and first aid.
 - F. Proper use of 30 minute pressure demand air pack.
- 2 **H₂S Detection and Alarm Systems:**
 - A. H₂S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.
- 3 **Windsock and/or wind streamers:**
 - A. Windsock at mudpit area should be high enough to be visible.
 - B. Windsock at briefing area should be high enough to be visible.
- 4 **Condition Flags and Signs:**
 - A. Warning sign on access road to location.
 - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H₂S present in dangerous concentration). Only emergency personnel admitted to location.
- 5 **Well control equipment:**
 - A. See exhibit "E"
- 6 **Communication:**
 - A. While working under masks chalkboards will be used for communication.
 - B. Hand signals will be used where chalk board is inappropriate.
 - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 **Drillstem Testing:**

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
- 9 If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

H₂S Contingency Plan
Forty Niner Ridge 23 Federal #2H
Cimarex Energy Co.
Unit O, Section 23
T23S-R30E; Eddy County, NM

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- ★ Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- ★ Evacuate any public places encompassed by the 100 ppm ROE.
- ★ Be equipped with H₂S monitors and air packs in order to control the release.
- ★ Use the "buddy system" to ensure no injuries occur during the response.
- ★ Take precautions to avoid personal injury during this operation.
- ★ Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- ★ Have received training in the:
 - ◆ Detection of H₂S, and
 - ◆ Measures for protection against the gas,
 - ◆ Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S Contingency Plan Emergency Contacts

W. Bell Lake "26" Federal #1H

Cimarex Energy Co. of Colorado

Unit M, Section 26

T23S-R33E; Lea County, NM

Company Office

Cimarex Energy Co. of Colorado	800-969-4789
Co. Office and After-Hours Menu	

Key Personnel

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8285
Scott Lucas	Field Drilling Super		432-894-5572
Jeff Lajoie	Field Drilling Super		432-257-9889
Roy Shirley	Field Super		432-634-2136

Artesia

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-6544
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

Santa Fe

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

National

National Emergency Response Center (Washington, D.C.)	800-424-8802
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Medical

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other

Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		

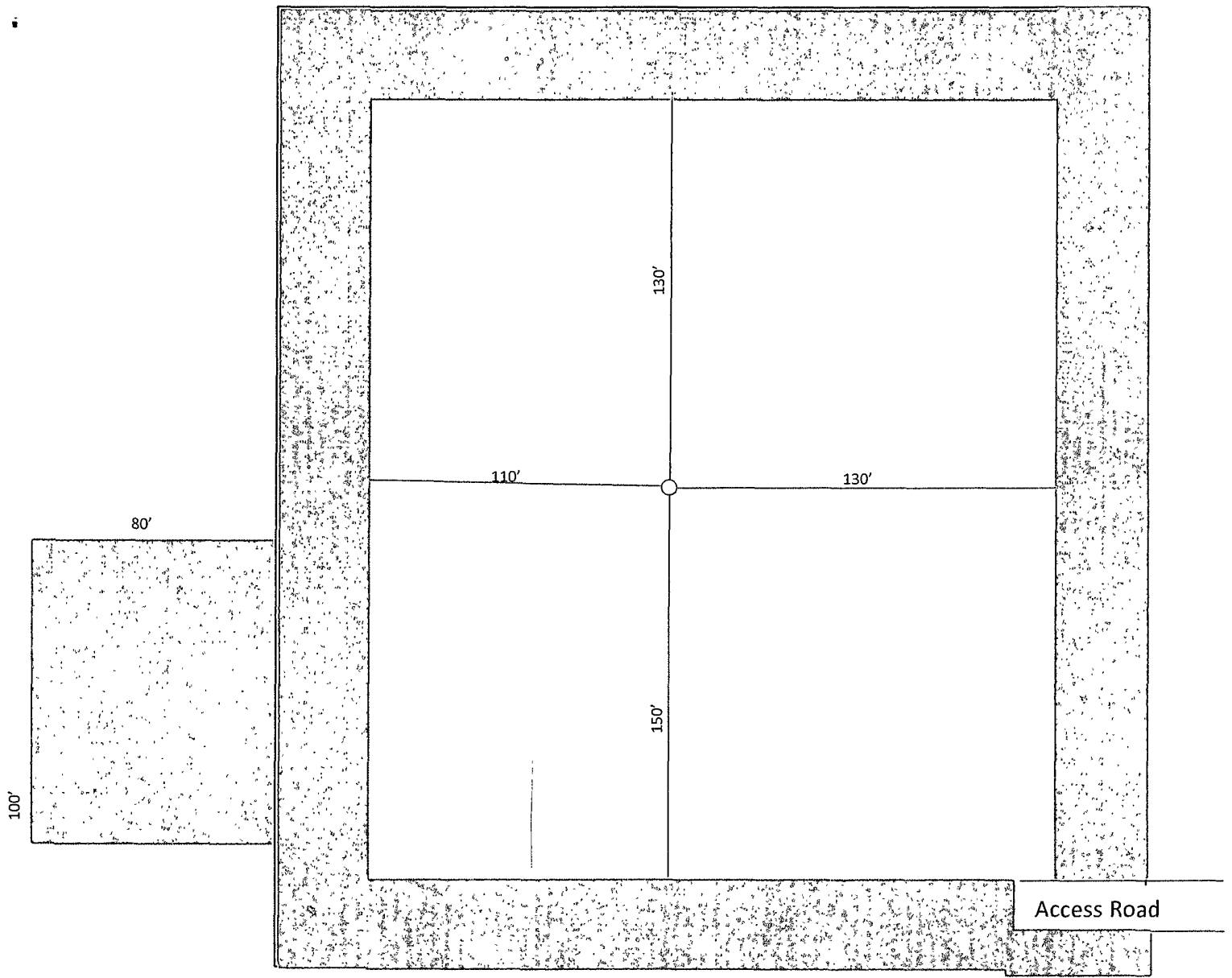
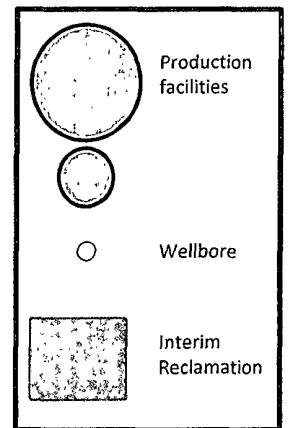


Exhibit D-1
Production Facilities Layout Diagram
Forty Niner Ridge 23 Fed #2H
Cimarex Energy Co
23-23S-30E
SHL 390 FSL & 1980 FEL
BHL 330 FNL & 1980 FEL
Eddy County, NM

1"=50'



PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CIMAREX ENERGY
LEASE NO.:	NM114978
WELL NAME & NO.:	2H-FORTY NINER RIDGE FEDERAL
SURFACE HOLE FOOTAGE:	0390'/S. & 1980'/E.
BOTTOM HOLE FOOTAGE:	0330'/N. & 1980'/E.
LOCATION:	Section 23, T. 23 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Cave/Karst
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - High Cave/Karst
 - Logging Requirements
 - R-111-Potash
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**