ATS-08-588
EA-08-1140

AUG - 8 2008
OCD-ARTESIA

OCD-ARTESIA

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Form 3160-3
(April 2004)

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SHL LC-037777-A | BHL LC-058594-A

6. If Indian, Allotee or Tribe Name

1a. Type of Work [X] DRILL [ ] REENTER

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

1b. Type of Well [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No. 37342
Sword 33 Federal Com No. 1

2. Name of Operator
Cimarex Energy Co. of Colorado 162683

9. API Well No.
30-015- 36550

3a. Address
PO Box 140907; Irving, TX 75014

3b. Phone No *(include area code)*
972-401-3111

10 Field and Pool, or Exploratory
Pavo Mesa; Abo

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At Surface 1980' FSL & 330' FWL
At proposed prod Zone 1980' FSL & 330' FEL *Horizontal Abo Test*

11. Sec , T. R. M. or Blk and Survey or Area
33-16S-29E

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
Eddy

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
330'	LC-058594-A 120 acres LC-037777-A 400 acres	N2S2 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on File
N/A	Pilot Hole 7,500' MD 11,752' TVD 7,225'	NM-2575
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23 Estimated duration
3,599' GR	5/15/2008	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
2. A Drilling Plan
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5. Operator Certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
Zeno Farris	Zeno Farris	04.18.08

Title
Manager Operations Administration

Approved By *(Signature)*	Name (Printed/Typed)	Date
/s/ James Stovall	/s/ James Stovall	AUG 07 2008
Title FIELD MANAGER	Office CARLSBAD FIELD 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

APPROVAL FOR TWO YEARS

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.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

ROSWELL CONTROLLED WATER BASIN

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

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

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

AUG 19 2008
OCD-ARTESIA

X AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
		Pavo Mesa; Abo

Property Code	Property Name	Well Number
	SWORD "33" FEDERAL COM	1

OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3599'

Surface Location

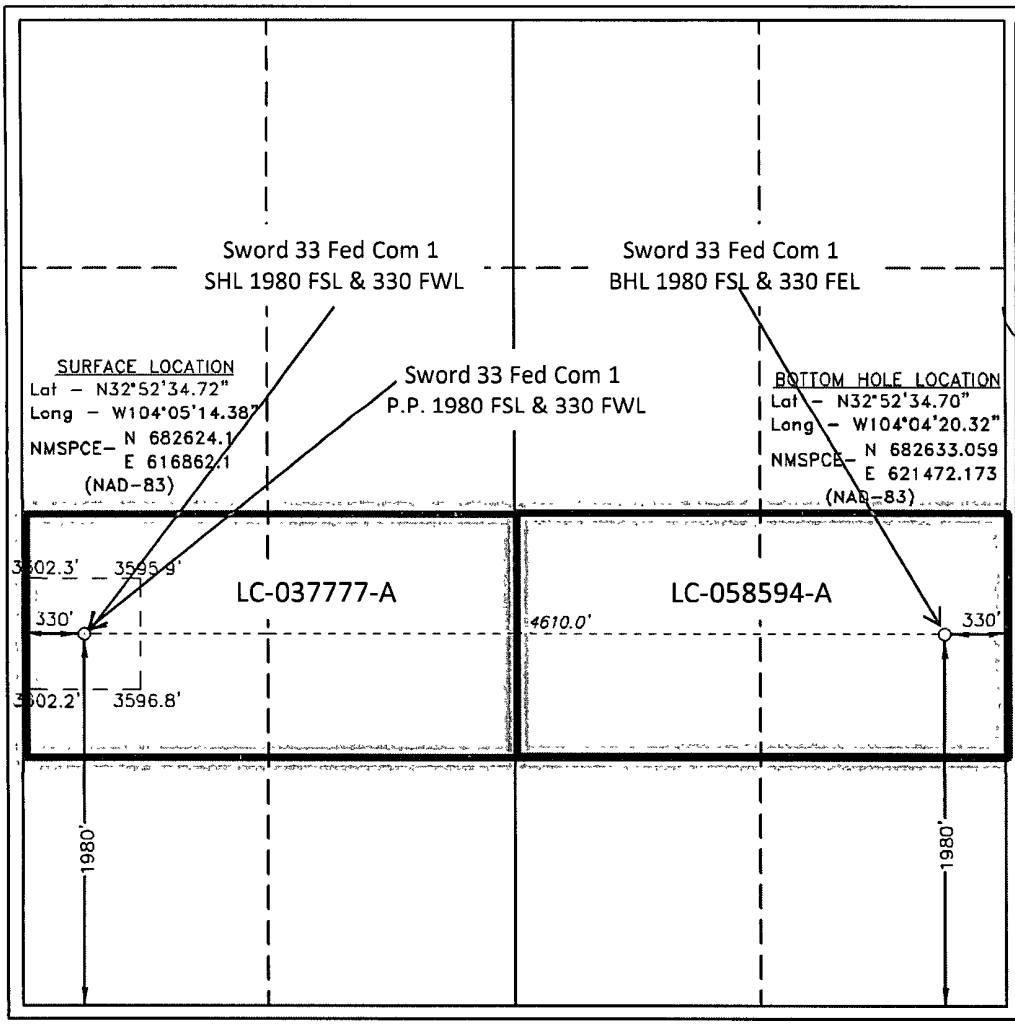
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	33	16 S	29 E		1980	SOUTH	330	WEST	EDDY

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
I	33	16 S	29 E		1980	SOUTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160		P	

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



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 to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division

Natalie Krueger 08-18-08
Signature Date

Natalie Krueger
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 supervison, and that the same is true and correct to the best of my belief.

MARCH 10, 2008
Date Surveyed

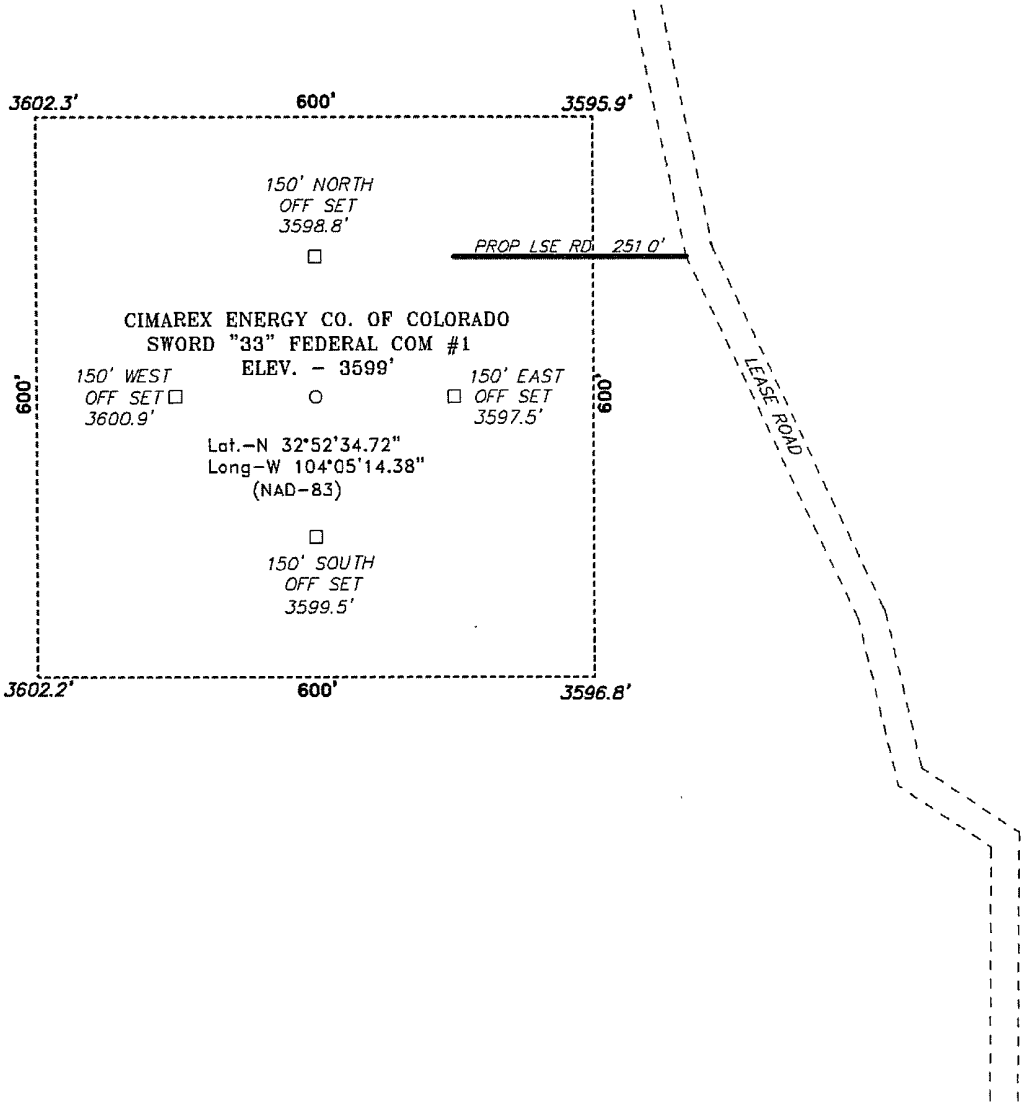
Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL SURVEYOR

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

SECTION 33, TOWNSHIP 16 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF BARNIVAL DRAW AND OLD LOCO, GO WEST ON OLD LOCO FOR 0.6 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH 0.9 MILES TO PROPOSED LEASE ROAD.

CIMAREX ENERGY CO. OF COLORADO

REF: SWORD "33" FEDERAL COM #1 / WELL PAD TOPO

THE SWORD "33" FEDERAL COM #1H LOCATED 1980' FROM THE SOUTH LINE AND 330' FROM THE WEST LINE OF SECTION 33, TOWNSHIP 17 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 -HOBBS, NEW MEXICO

W.O. Number: 19337	Drawn By: J. SMALL		
Date: 03-11-2008	Disk: JMS 19337W	Survey Date: 03-10-2008	Sheet 1 of 1 Sheets

Application to Drill
Sword 33 Federal Com No. 1
Cimarex Energy Co. of Colorado
Unit L, Section 33
T16S-R29E, 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 1980' FSL & 330' FWL
   BHL 1980' FNL & 330' FEL

2. Elevation above sea level: 3599' GR

3. Geologic name of surface formation: Quaternery 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: Pilot Hole 7,500' MD 11,752' TVD 7,225'

6. Estimated tops of geological markers:

Queen-Gbg-SA	1,600' - 2,500'
Lower Abo	6,930'
Atoka	9,980'
Morrow	10,100'

7. Possible mineral bearing formation:
   Abo Oil Primary

8. Proposed Mud Circulating System:

Depth			Mud Wt	Visc	Fluid Loss	Type Mud
0'	to	~~340'~~ 260'	8.4 - 8.6	28-29	May lose circ	Fresh water gel spud mud
~~340'~~ 260'	to	2,650'	10.0	28-29	May lose circ	Brine Water
2,650'	to	7,500'	8.4 - 9.5	29-32	NC	Fresh water and brine, use hi-vis sweeps to keep hole clean
KOP 7,030'	to	7,423'	8.4 - 9.5	29-33	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. Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until production casing is run and cemented.

8a. Proposed drilling Plan
Drill 8¾" hole to 7,500' (pilot hole) and cement (see page 2 - Application to Drill). Set whipstock plug @ 7,040.' Mill window from 7,025' to 7,035.' Kick off 6⅛" lateral @ 7,030.' Drill 6⅛" hole to MD 11,752' and TVD 7,225.' Install 4½" **Peak Completion Assembly**, 500' of BTC from TOL through the curve (6,923' to 7,423') and LTC to TD (7,424' to 11,752'). Liner length 4,829.' Lateral length 4,611.' Strata-Pak RSBP @ 6,923' (TOL).

9. Casing & Cementing Program: Sec 10A

String	Hole Size	Depth			Type	Casing OD	Casing ID	Weight	Grade	Thread	Collar
Surface	17½"	0	to	~~340'~~ 360	New	13⅜"	12.715"	48#	H-40	8-R	STC
Intermediate	12¼"	0	to	2,650'	New	9⅝"	8.835"	40#	J/K-55	8-R	LTC
Pilot Hole	8¾"	0	to	7,500'	New	7"	6.276"	26#	P-110	8-R	LTC
Liner	6⅛"	6,923'	to	7,423'	New	4½"	4"	11.6#	P-110	8-R	BTC
Liner	6⅛"	7,424'	to	MD 11,754' TVD 7,225'	New	4½"	4"	11.6#	P-110	8-R	LTC

10. Cementing:

Surface Lead: 110 sx Light Premium Plus + 0.125# Poly-e-flake + 1% $CaCl_2$ (wt 14.2, yld 1.34)
Tail: 220 sx Premium Plus + 2% $CaCl_2$ (wt 14.8, yld 1.34)
TOC Surface

Intermediate Lead: 450 sx Interfill C + 0.125# Poly-e-flake (wt 11.9, yld 2.46)
Tail: 215 sx Premium Plus + 1% $CaCl_2$ (wt 14.8, yld 1.34)
TOC Surface

Pilot Hole 615 sx Super H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 5# Gilsonite + 0.125# Poly-e-flake + 0.35% HR-7 (wt 13.0, yld 1.67)
TOC 2,450'

Liner No cement needed. Peak completion assembly.
BTC from 6,923' to 7,423' and LTC from 7,424' to 11,754'

Cimarex will protect fresh water by setting surface casing at 340' and cementing to 0.'
Cimarex will protect hydrocarbon zones by setting intermediate casing at 2,650' and cementing to 0' and by setting production casing to 7,500' and cementing to 2,450.'

Cimarex uses the following minimum safety factors:

Burst	1.125
Collapse	1.125
Tension	1.800

11. Pressure control Equipment:
Exhibit "E". A 13⅝" 5000 PSI working pressure B.O.P. 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 below 6000'. 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.

BOP unit will be hydraulically operated. BOP will be nippled 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 surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system.

We are requesting a variance for testing the 13⅜" surface casing from Onshore Order No. 2, which states that all casing strings below the conductor shall be pressure tested to 0.22 psi per foot or 1500 psi, whichever is greater, but not to exceed 70% of the manufacturer's stated maximum internal yield. We are requesting to test the 13⅜" casing to 1000 psi using rig pumps. The BOP will be tested to 5000 PSI by an independent service company.

12. Testing, Logging and Coring Program:
    A. Mud logging program: 2 man unit from 3,100' to TD
    B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
    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 H_2S from the surface to the Abo formations to meet the BLM's minimum requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H_2S Safety package on all wells, attached is an "H_2S 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 **2300 psi** Estimated BHT **110°**

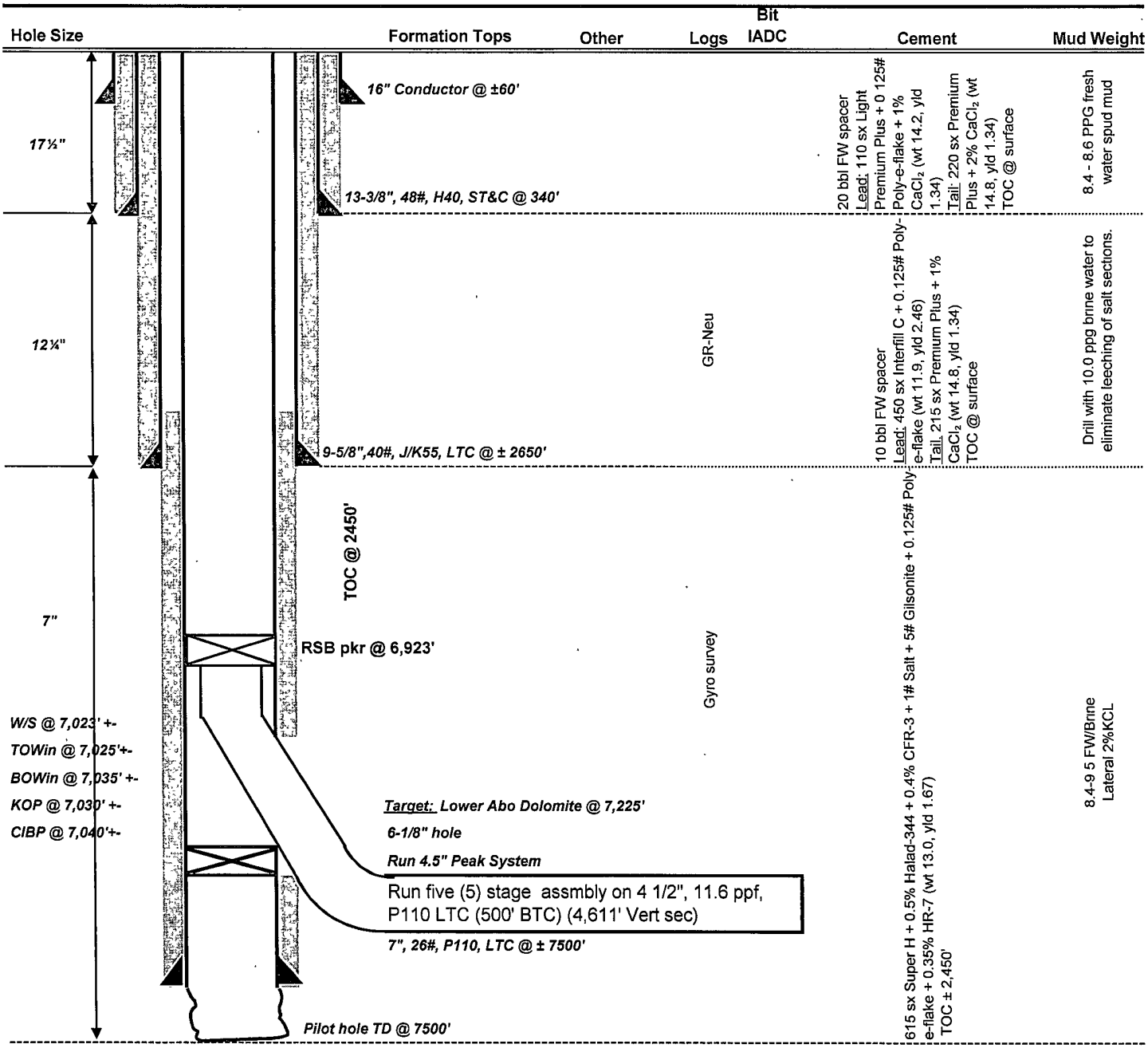
14. Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.
Drilling expected to take 30-35 days
If production casing is run an additional 30 days will be required to complete and construct surface facilities.

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.
Abo pay will be perforated and stimulated.
The proposed well will be tested and potentialed as **an oil well.**

DRILLING PROGNOSIS
Cimarex Energy Company

4/3/2008

Well:	**Sword 33 Fed Com #1**	**Lse Serial #:**	
Location:	33-16S-29E	**Field:**	
County, State	**Eddy County, NM**	**Objective:**	
Surface Location:	1980FSL,330FWL	**TVD/MD:**	Proposed 7225 TVD/11752 MD
Bottomhole Loc:	1980FSL,330FEL	**Cementing:**	Halliburton
E-Mail:		**Mud:**	
Wellhead:		**Motors:**	
		OH Logs	Halliburton
		Rig:	Key 880
Xmas Tree		**Offset Wells:**	
Tubing:	2 7/8" L80 EUE		
Superintendent:	**Dee Smith**		
Engineer:	**Mark Audas**		



Planned Wellpath Report

Preliminary

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co.**	Slot	**No. 1 SHL**
Area	**Eddy County, NM**	Well	**No. 1**
Field	**(Sword) Sec. 33, T16S, R29E**	Wellbore	**No. 1 PWB**
Facility	**Sword 33 Fed Com No. 1**		

REPORT SETUP INFORMATION			
Projection System	**NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 2.0**
North Reference	**Grid**	User	**Victor Hernandez**
Scale	**0.999916**	Report Generated	**4/1/2008** at **4:14:45 PM**
Convergence at slot	**0.13° East**	Database/Source file	**WA_Midland/No._1 _PWB.xml**

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	**East[ft]**	**Easting[USft]**	**Northing[USft]**	**Latitude**	**Longitude**
Slot Location	**0.00**	**0.00**	616862.10	682624.10	32°52'34.724"N	104°05'14.381"W
Facility Reference Pt			**616862.10**	**682624.10**	32°52'34.724"N	104°05'14.381"W
Field Reference Pt			**616862.10**	**682624.10**	32°52'34.724"N	104°05'14.381"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on No. 1H SHL (RT) to Facility Vertical Datum	**18.00ft**
Horizontal Reference Pt	**Facility Center**	Rig on No. 1H SHL (RT) to Mean Sea Level	**3617.00ft**
Vertical Reference Pt	**Rig on No. 1 SHL (RT)**	Facility Vertical Datum to Mud Line (Facility)	**0.00ft**
MD Reference Pt	**Rig on No. 1 SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**89.89°**

Planned Wellpath Report

Preliminary

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1 3HL
Area	Eddy County, NM	Well	No. 1
Field	(Sword) Sec. 33, T16S, R29E	Wellbore	No. 1 PWB
Facility	Sword 33 Fed Com No. 1		

WELLPATH DATA (54 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	89.889	0.00	0.00	0.00	0.00	0.00	Tie On
2070.00†	0.000	89.889	2070.00	0.00	0.00	0.00	0.00	GRAYBURG
2530.00†	0.000	89.889	2530.00	0.00	0.00	0.00	0.00	SAN ANDRES
5970.00†	0.000	89.889	5970.00	0.00	0.00	0.00	0.00	ABO
7030.00	0.000	89.889	7030.00	0.00	0.00	0.00	0.00	KOP
7130.00†	29.382	89.889	7125.67	25.08	0.05	25.08	29.38	
7230.00†	58.765	89.889	7196.73	93.88	0.18	93.88	29.38	
7330.00†	88.147	89.889	7224.90	188.70	0.37	188.70	29.38	
7336.31	90.000	89.889	7225.00	195.00	0.38	195.00	29.38	EOC
7430.00†	90.000	89.889	7225.00	288.69	0.56	288.69	0.00	
7530.00†	90.000	89.889	7225.00	388.69	0.76	388.69	0.00	
7630.00†	90.000	89.889	7225.00	488.69	0.95	488.69	0.00	
7730.00†	90.000	89.889	7225.00	588.69	1.14	588.69	0.00	
7830.00†	90.000	89.889	7225.00	688.69	1.34	688.69	0.00	
7930.00†	90.000	89.889	7225.00	788.69	1.53	788.69	0.00	
8030.00†	90.000	89.889	7225.00	888.69	1.73	888.69	0.00	
8130.00†	90.000	89.889	7225.00	988.69	1.92	988.69	0.00	
8230.00†	90.000	89.889	7225.00	1088.69	2.12	1088.69	0.00	
8330.00†	90.000	89.889	7225.00	1188.69	2.31	1188.69	0.00	
8430.00†	90.000	89.889	7225.00	1288.69	2.50	1288.69	0.00	
8530.00†	90.000	89.889	7225.00	1388.69	2.70	1388.69	0.00	
8630.00†	90.000	89.889	7225.00	1488.69	2.89	1488.69	0.00	
8730.00†	90.000	89.889	7225.00	1588.69	3.09	1588.69	0.00	
8830.00†	90.000	89.889	7225.00	1688.69	3.28	1688.69	0.00	
8930.00†	90.000	89.889	7225.00	1788.69	3.48	1788.69	0.00	
9030.00†	90.000	89.889	7225.00	1888.69	3.67	1888.69	0.00	
9130.00†	90.000	89.889	7225.00	1988.69	3.86	1988.69	0.00	
9230.00†	90.000	89.889	7225.00	2088.69	4.06	2088.69	0.00	
9330.00†	90.000	89.889	7225.00	2188.69	4.25	2188.69	0.00	
9430.00†	90.000	89.889	7225.00	2288.69	4.45	2288.69	0.00	
9530.00†	90.000	89.889	7225.00	2388.69	4.64	2388.69	0.00	
9630.00†	90.000	89.889	7225.00	2488.69	4.84	2488.69	0.00	
9730.00†	90.000	89.889	7225.00	2588.69	5.03	2588.69	0.00	
9830.00†	90.000	89.889	7225.00	2688.69	5.23	2688.69	0.00	
9930.00†	90.000	89.889	7225.00	2788.69	5.42	2788.69	0.00	
10030.00†	90.000	89.889	7225.00	2888.69	5.61	2888.69	0.00	
10130.00†	90.000	89.889	7225.00	2988.69	5.81	2988.69	0.00	
10230.00†	90.000	89.889	7225.00	3088.69	6.00	3088.69	0.00	
10330.00†	90.000	89.889	7225.00	3188.69	6.20	3188.69	0.00	
10430.00†	90.000	89.889	7225.00	3288.69	6.39	3288.69	0.00	
10530.00†	90.000	89.889	7225.00	3388.69	6.59	3388.69	0.00	
10630.00†	90.000	89.889	7225.00	3488.69	6.78	3488.69	0.00	
10730.00†	90.000	89.889	7225.00	3588.69	6.97	3588.69	0.00	
10830.00†	90.000	89.889	7225.00	3688.69	7.17	3688.69	0.00	
10930.00†	90.000	89.889	7225.00	3788.69	7.36	3788.69	0.00	

Planned Wellpath Report

Preliminary

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1 SHL
Area	Eddy County, NM	Well	No. 1
Field	(Sword) Sec. 33, T16S, R29E	Wellbore	No. 1 PWB
Facility	Sword 33 Fed Com No. 1		

WELLPATH DATA (54 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
11030.00†	90.000	89.889	7225.00	3888.69	7.56	3888.69	0.00	
11130.00†	90.000	89.889	7225.00	3988.69	7.75	3988.69	0.00	
11230.00†	90.000	89.889	7225.00	4088.69	7.95	4088.69	0.00	
11330.00†	90.000	89.889	7225.00	4188.69	8.14	4188.69	0.00	
11430.00†	90.000	89.889	7225.00	4288.69	8.33	4288.69	0.00	
11530.00†	90.000	89.889	7225.00	4388.69	8.53	4388.69	0.00	
11630.00†	90.000	89.889	7225.00	4488.69	8.72	4488.69	0.00	
11730.00†	90.000	89.889	7225.00	4588.69	8.92	4588.69	0.00	
11751.79	90.000	89.889	7225.00†	4610.48	8.96	4610.47	0.00	No. 1H BHL

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 1 BHL	11751.79	7225.00	8.96	4610.47	621472.17	682633.06	32°52'34.703"N	104°04'20.322"W	point

SURVEY PROGRAM Ref Wellbore: No. 1H PWB Ref Wellpath: Preliminary

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	11751.79	NaviTrak (Standard)		No. 1 PWB

Cimarex Energy Co.

Location: Eddy County, NM
Field: (Sword) Sec. 33, T16S, R29E
Facility: Sword 33 Fed Com No. 1

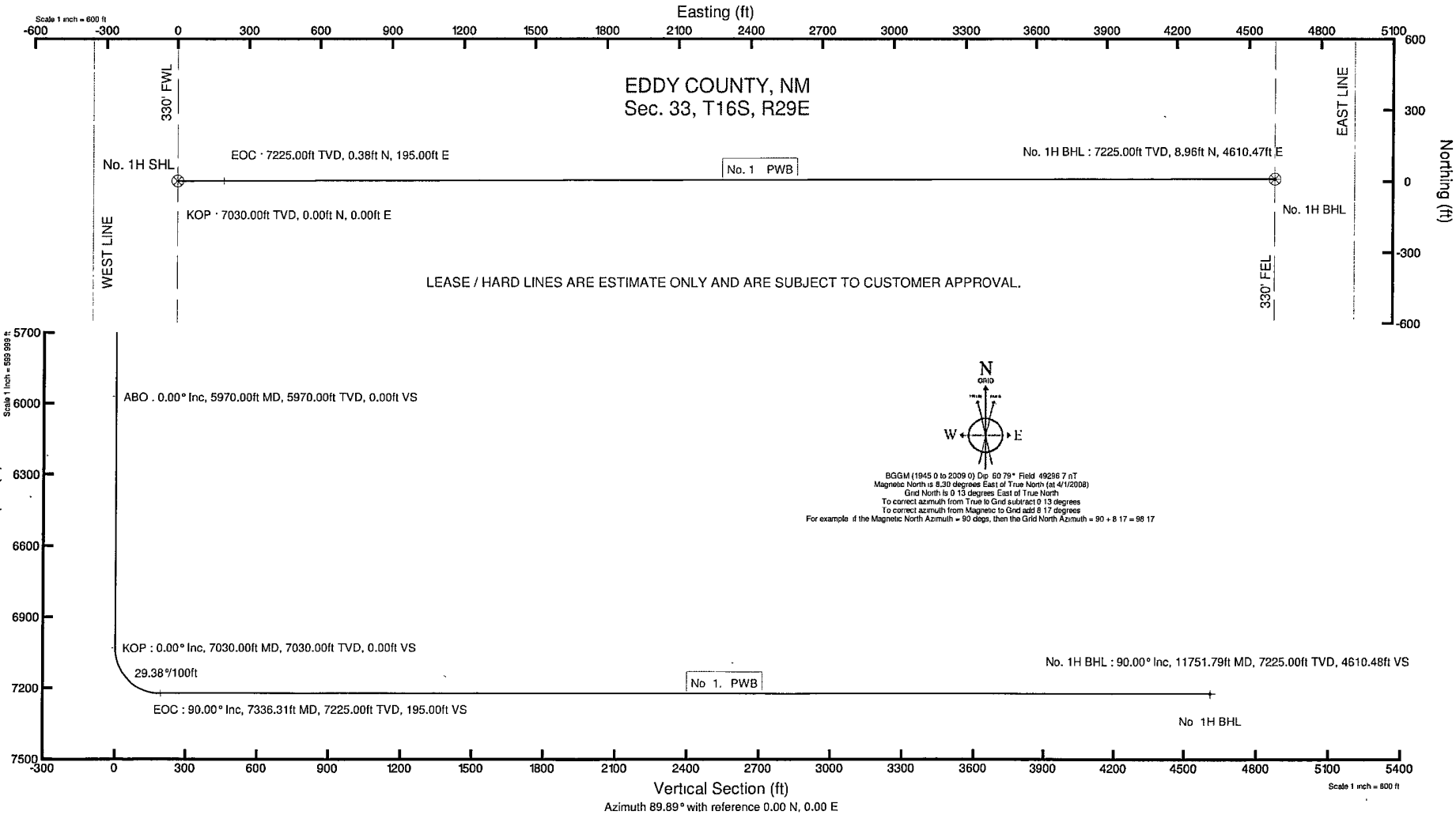
Slot: No. 1 SHL
Well: No. 1
Wellbore: No. 1 PWB

Plot reference wellpath is Preliminary	
True vertical depths are referenced to Rig on No 1H SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes Eastern Zone (3001) US feet
Measured depths are referenced to Rig on No 1H SHL (RT)	North Reference: Grid north
Rig on No 1H SHL (RT) to Mean Sea Level: 3617 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: Sword 33 Fed Com No 1H): -3599 feet	Depths are in feet
Coordinates are in feet referenced to Facility Center	Created by: Victor Hernandez on 4/1/2008

BAKER HUGHES INTEQ

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	89.889	0.00	0.00	0.00	0.00	0.00
KOP	7030.00	0.000	89.889	7030.00	0.00	0.00	0.00	0.00
EOC	7336.31	90.000	89.889	7225.00	0.38	195.00	29.38	195.00
No. 1 BHL	11751.79	90.000	89.889	7225.00	8.96	4610.47	0.00	4610.48



PROPOSED WELLPATH REPORT (CSV version)
Prepared by Baker Hughes INTEQ
Software System: WellArchitect®2.0

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.
Area	Eddy County, NM
Field	(Sword) Sec. 33, T16S, R29E
Facility	Sword 33 Fed Com No. 1
Slot	No. 1 SHL
Well	No. 1
Wellbore	No. 1 PWB
Wellpath	Preliminary
Sidetrack	(none)

REPORT SETUP INFORMATION

Projection	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
North Refe	Grid
Scale	0.999916
Convergen	0.13° East
Software S	WellArchitect®
User	Victor Hernandez
Report Ge	4/1/2008 at 3:56:45 PM
DataBase/	WA_Midland/ev1617.xml

WELLPATI	Local North [ft]	Local East [ft]	Grid East [ft]	Grid North [ft]	Latitude	Longitude
Slot Locati	0	0	616862.1	682624.1	32°52'34.7	104°05'14.381"W
Facility Ref			616862.1	682624.1	32°52'34.7	104°05'14.381"W
Field Refer			616862.1	682624.1	32°52'34.7	104°05'14.381"W

WELLPATH DATUM

Calculation	Minimum curvature
Horizontal	Facility Center
Vertical Re	Rig on No. 1 SHL (RT)
MD Refere	Rig on No. 1 SHL (RT)
Field Vertic	Mean Sea Level
Rig on No.	18.00ft
Rig on No.	3617.00ft
Facility Ver	0.00ft
Section Or	0.00ft
Section Or	0.00ft
Section Az	89.89°

WELLPATH DATA Wellbore: No. 1 PWB Wellpath: Preliminary † = interpolated/extrapolated station

	MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
	0	0	89.889	0	0	0	0	0	Tie On
†	100	0	89.889	100	0	0	0	0	
†	200	0	89.889	200	0	0	0	0	
†	300	0	89.889	300	0	0	0	0	
†	400	0	89.889	400	0	0	0	0	
†	500	0	89.889	500	0	0	0	0	
†	600	0	89.889	600	0	0	0	0	
†	700	0	89.889	700	0	0	0	0	
†	800	0	89.889	800	0	0	0	0	
†	900	0	89.889	900	0	0	0	0	
†	1000	0	89.889	1000	0	0	0	0	
†	1100	0	89.889	1100	0	0	0	0	
†	1200	0	89.889	1200	0	0	0	0	
†	1300	0	89.889	1300	0	0	0	0	
†	1400	0	89.889	1400	0	0	0	0	
†	1500	0	89.889	1500	0	0	0	0	
†	1600	0	89.889	1600	0	0	0	0	
†	1700	0	89.889	1700	0	0	0	0	
†	1800	0	89.889	1800	0	0	0	0	
†	1900	0	89.889	1900	0	0	0	0	
†	2000	0	89.889	2000	0	0	0	0	

†	2070	0	89.889	2070	0	0	0	0	GRAYBURG
†	2100	0	89.889	2100	0	0	0	0	
†	2200	0	89.889	2200	0	0	0	0	
†	2300	0	89.889	2300	0	0	0	0	
†	2400	0	89.889	2400	0	0	0	0	
†	2500	0	89.889	2500	0	0	0	0	
†	2530	0	89.889	2530	0	0	0	0	SAN ANDRES
†	2600	0	89.889	2600	0	0	0	0	
†	2700	0	89.889	2700	0	0	0	0	
†	2800	0	89.889	2800	0	0	0	0	
†	2900	0	89.889	2900	0	0	0	0	
†	3000	0	89.889	3000	0	0	0	0	
†	3100	0	89.889	3100	0	0	0	0	
†	3200	0	89.889	3200	0	0	0	0	
†	3300	0	89.889	3300	0	0	0	0	
†	3400	0	89.889	3400	0	0	0	0	
†	3500	0	89.889	3500	0	0	0	0	
†	3600	0	89.889	3600	0	0	0	0	
†	3700	0	89.889	3700	0	0	0	0	
†	3800	0	89.889	3800	0	0	0	0	
†	3900	0	89.889	3900	0	0	0	0	
†	4000	0	89.889	4000	0	0	0	0	
†	4100	0	89.889	4100	0	0	0	0	
†	4200	0	89.889	4200	0	0	0	0	
†	4300	0	89.889	4300	0	0	0	0	
†	4400	0	89.889	4400	0	0	0	0	
†	4500	0	89.889	4500	0	0	0	0	
†	4600	0	89.889	4600	0	0	0	0	
†	4700	0	89.889	4700	0	0	0	0	
†	4800	0	89.889	4800	0	0	0	0	
†	4900	0	89.889	4900	0	0	0	0	
†	5000	0	89.889	5000	0	0	0	0	
†	5100	0	89.889	5100	0	0	0	0	
†	5200	0	89.889	5200	0	0	0	0	
†	5300	0	89.889	5300	0	0	0	0	
†	5400	0	89.889	5400	0	0	0	0	
†	5500	0	89.889	5500	0	0	0	0	
†	5600	0	89.889	5600	0	0	0	0	
†	5700	0	89.889	5700	0	0	0	0	
†	5800	0	89.889	5800	0	0	0	0	
†	5900	0	89.889	5900	0	0	0	0	
†	5970	0	89.889	5970	0	0	0	0	ABO
†	6000	0	89.889	6000	0	0	0	0	
†	6100	0	89.889	6100	0	0	0	0	
†	6200	0	89.889	6200	0	0	0	0	
†	6300	0	89.889	6300	0	0	0	0	
†	6400	0	89.889	6400	0	0	0	0	
†	6500	0	89.889	6500	0	0	0	0	
†	6600	0	89.889	6600	0	0	0	0	
†	6700	0	89.889	6700	0	0	0	0	
†	6800	0	89.889	6800	0	0	0	0	
†	6900	0	89.889	6900	0	0	0	0	
†	7000	0	89.889	7000	0	0	0	0	
	7030	0	89.889	7030	0	0	0	0	KOP
†	7100	20.568	89.889	7098.51	12.43	0.02	12.43	29.38	
†	7200	49.95	89.889	7179.27	69.53	0.14	69.53	29.38	
†	7300	79.333	89.889	7221.63	158.9	0.31	158.9	29.38	
	7336.31	90	89.889	7225	195	0.38	195	29.38	EOC
†	7400	90	89.889	7225	258.69	0.5	258.69	0	
†	7500	90	89.889	7225	358.69	0.7	358.69	0	
†	7600	90	89.889	7225	458.69	0.89	458.69	0	
†	7700	90	89.889	7225	558.69	1.09	558.69	0	
†	7800	90	89.889	7225	658.69	1.28	658.69	0	
†	7900	90	89.889	7225	758.69	1.47	758.69	0	
†	8000	90	89.889	7225	858.69	1.67	858.69	0	
†	8100	90	89.889	7225	958.69	1.86	958.69	0	
†	8200	90	89.889	7225	1058.69	2.06	1058.69	0	
†	8300	90	89.889	7225	1158.69	2.25	1158.69	0	
†	8400	90	89.889	7225	1258.69	2.45	1258.69	0	

†	8500	90	89.889	7225	1358.69	2.64	1358.69	0		
†	8600	90	89.889	7225	1458.69	2.83	1458.69	0		
†	8700	90	89.889	7225	1558.69	3.03	1558.69	0		
†	8800	90	89.889	7225	1658.69	3.22	1658.69	0		
†	8900	90	89.889	7225	1758.69	3.42	1758.69	0		
†	9000	90	89.889	7225	1858.69	3.61	1858.69	0		
†	9100	90	89.889	7225	1958.69	3.81	1958.69	0		
†	9200	90	89.889	7225	2058.69	4	2058.69	0		
†	9300	90	89.889	7225	2158.69	4.2	2158.69	0		
†	9400	90	89.889	7225	2258.69	4.39	2258.69	0		
†	9500	90	89.889	7225	2358.69	4.58	2358.69	0		
†	9600	90	89.889	7225	2458.69	4.78	2458.69	0		
†	9700	90	89.889	7225	2558.69	4.97	2558.69	0		
†	9800	90	89.889	7225	2658.69	5.17	2658.69	0		
†	9900	90	89.889	7225	2758.69	5.36	2758.69	0		
†	10000	90	89.889	7225	2858.69	5.56	2858.69	0		
†	10100	90	89.889	7225	2958.69	5.75	2958.69	0		
†	10200	90	89.889	7225	3058.69	5.94	3058.69	0		
†	10300	90	89.889	7225	3158.69	6.14	3158.69	0		
†	10400	90	89 889	7225	3258.69	6.33	3258.69	0		
†	10500	90	89.889	7225	3358.69	6.53	3358.69	0		
†	10600	90	89.889	7225	3458.69	6.72	3458.69	0		
†	10700	90	89.889	7225	3558.69	6.92	3558.69	0		
†	10800	90	89.889	7225	3658.69	7.11	3658.69	0		
†	10900	90	89.889	7225	3758.69	7.3	3758.69	0		
†	11000	90	89.889	7225	3858.69	7.5	3858.69	0		
†	11100	90	89.889	7225	3958.69	7.69	3958.69	0		
†	11200	90	89.889	7225	4058.69	7.89	4058.69	0		
†	11300	90	89.889	7225	4158.69	8.08	4158.69	0		
†	11400	90	89.889	7225	4258.69	8.28	4258.69	0		
†	11500	90	89.889	7225	4358.69	8.47	4358.69	0		
†	11600	90	89.889	7225	4458.69	8.66	4458.69	0		
†	11700	90	89.889	7225	4558.69	8.86	4558.69	0		
	11751.79	90	89.889	7225	4610.48	8.96	4610.47	0	No. 1 BHL	1

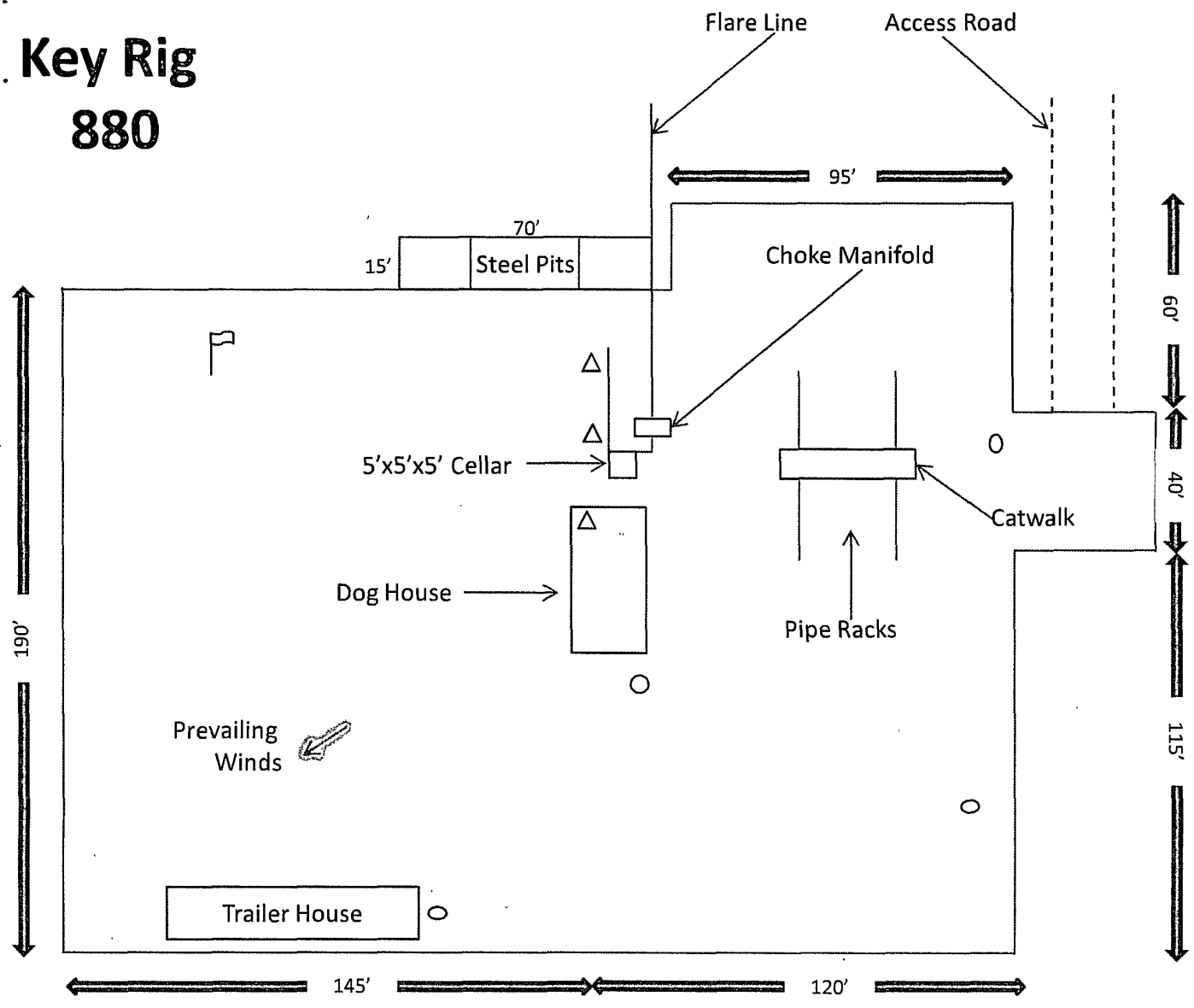
TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape	Comment	Design Comments
(1) No. 1 B	11751.79	7225	8.96	4610.47	621472.2	682633.1	32°52'34.7	104°04'20.	point		

SURVEY PROGRAM Ref Wellbore: No. 1 PWB Ref Wellpath: Preliminary

Start MD [ft]	End MD [ft]	Pos Unc M	Log Name/ Wellbore
18	11751.79	NaviTrak (Standard)	No. 1 PWB

Key Rig 880



Wind Direction Indicators
(wind sock or streamers)

△ H2S Monitors
(alarms at bell nipple and shale shaker)

○ Briefing Areas

○ Remote BOP Closing Unit

Exhibit D – Rig Diagram
Sword 33 Federal Com No. 1
Cimarex Energy Co. of Colorado
33-16S-29E
SHL 1980' FSL & 330' FWL
BHL 1980' FSL & 330' FEL
Eddy County, NM

SR & A

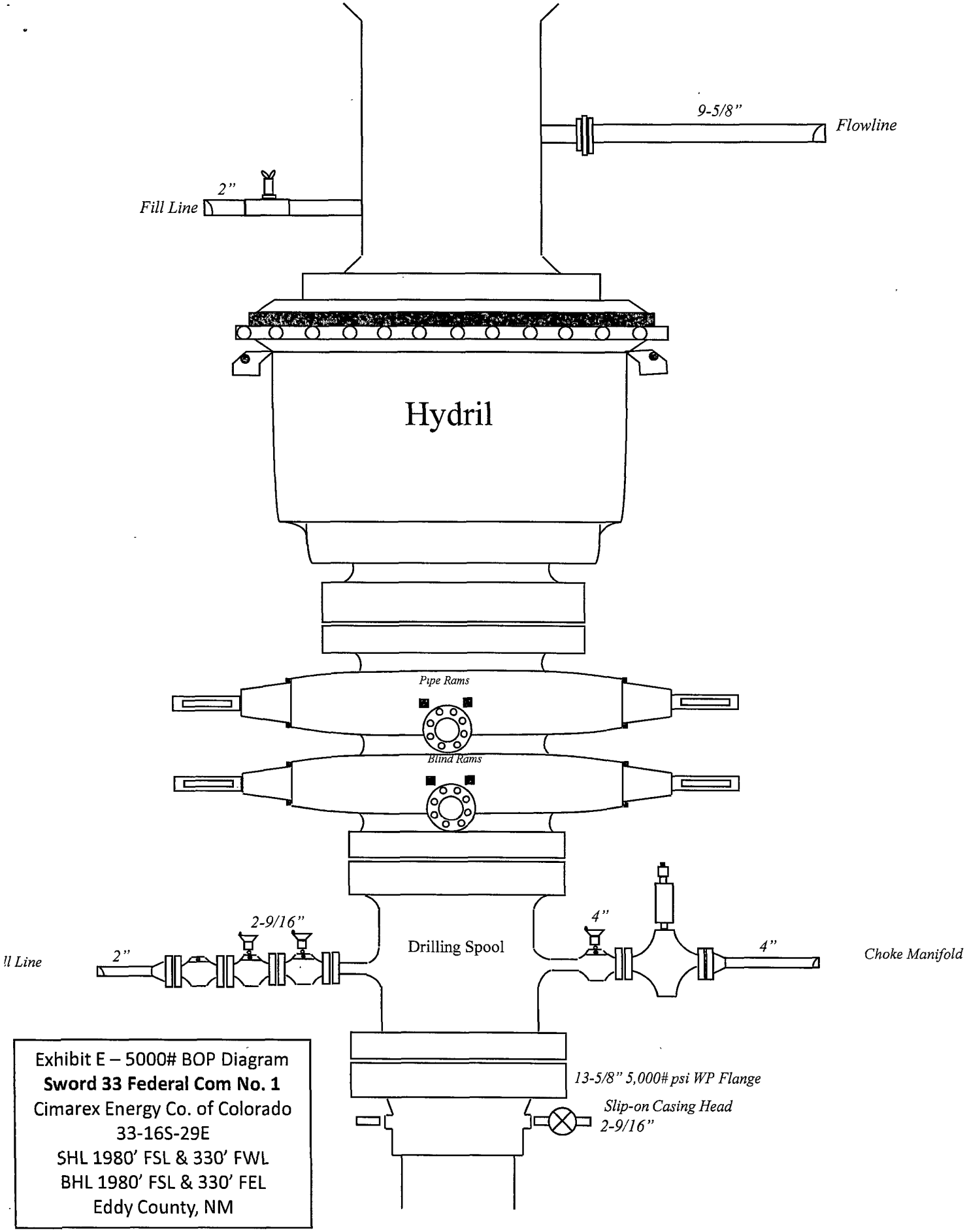


Exhibit E – 5000# BOP Diagram
Sword 33 Federal Com No. 1
Cimarex Energy Co. of Colorado
33-16S-29E
SHL 1980' FSL & 330' FWL
BHL 1980' FSL & 330' FEL
Eddy County, NM

DRILLING OPERATIONS
CHOKE MANIFOLD
5M SERVICE

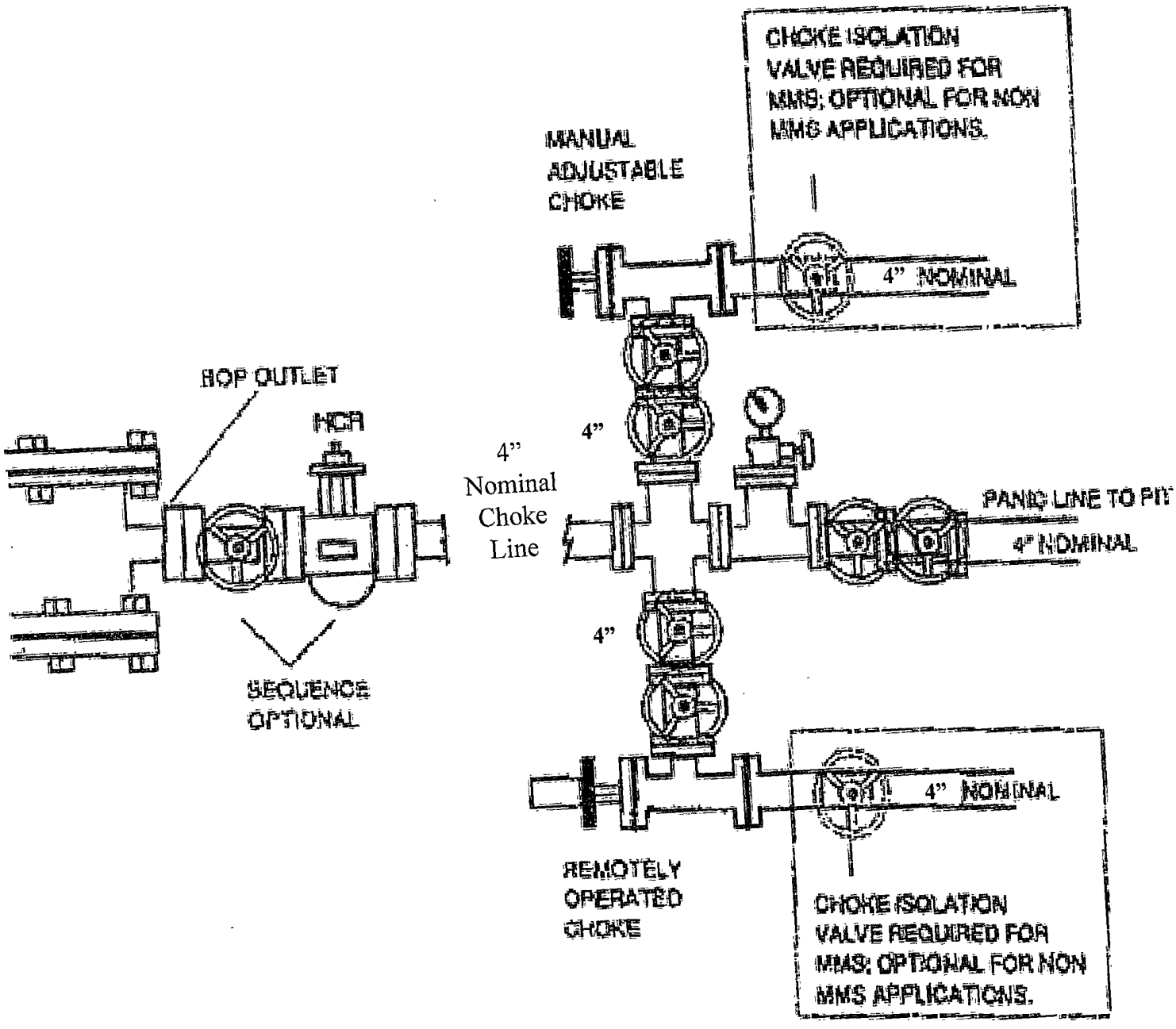


Exhibit E-1 – Choke Manifold Diagram
Sword 33 Federal Com No. 1
Cimarex Energy Co. of Colorado
33-16S-29E
SHL 1980' FSL & 330' FWL
BHL 1980' FSL & 330' FEL
Eddy County, NM

H_2S Drilling Operations Plan
Sword 33 Federal Com No. 1
Cimarex Energy Co. of Colorado
Unit L, Section 33
T16S-R29E, Eddy County, NM

1. All Company and Contract personnel admitted on location must be trained by a qualified H_2S safety instructor to the following:
   A. Characteristics of H_2S
   B. Physical effects and hazards
   C. Proper use of safety equipment and life support systems.
   D. Principle and operation of H_2S detectors, warning system and briefing areas.
   E. Evacuation procedure, routes and first aid.
   F. Proper use of 30 minute pressure demand air pack.

2. H_2S Detection and Alarm Systems
   A. H_2S 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 (H_2S 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 H_2S has on tubular goods and other mechanical equipment.

9. If H_2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas seperator will be brought into service along with H_2S scavengers if necessary.

H_2S Contingency Plan
Gizzard 18 Federal Com No. 1
Cimarex Energy Co. of Colorado
Unit L, Section 33
T16S-R29E, Eddy County, NM

Emergency Procedures

In the event of a release of gas containing H_2S, 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 H_2S 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 H_2S, 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 (SO_2). 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 H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	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).

H_2S Contingency Plan Emergency Contacts
Sword 33 Federal Com No. 1
Cimarex Energy Co. of Colorado
Unit L, Section 33
T16S-R29E, Eddy County, NM

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

Key Personnel

Name	**Title**	**Office**	**Mobile**
Doug Park	Drilling Manager	972-443-6463	972-333-1407
Dee Smith	Drilling Super	972-443-6491	972-882-1010
Jim Evans	Drilling Super	972-443-6451	972-465-6564
Dorsey Rogers	Field Super		505-200-6105
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	**575-887-3798**	
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	

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		

Surface Use Plan
Sword 33 Federal Com No. 1
Cimarex Energy Co. of Colorado
Unit L, Section 33
T16S-R29E, Eddy County, NM

1. Existing Roads: Area maps, Exhibit "B" is a reproduction of Eddy Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.
   A. Exhibit "A" shows the proposed well site as staked.
   B. From the junction of Barnival Draw and Old Loco, go West on Old Loco for 0.6 miles to lease road. On lease road, go North 0.9 miles to proposed lease road.

2. Planned Access Roads: 251' of on-lease access road is proposed.

3. Location od Existing Wells in a One-Mile Radius - Exhibit A
   A. Water wells - None known
   B. Disposal wells - None known
   C. Drilling wells - None known
   D. Producing wells - As shown on Exhibit "A"
   E. Abandoned wells - As shown on Exhibit "A"

4. If on completion this well is a producer, Cimarex Energy Co. of Colorado will furnish maps and/or plats showing on site facilities or off site facilities if needed. This will be accompanied by a Sundry Notice.

5. Location and Type of Water Supply:
   Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.

6. Source of Construction Material:
   If possible, construction will be obtained from the excavation of drill site. If additional material is needed, it will be purchased from a local source and transported over the access route as shown on Exhibit "C".

7. Methods of Handling Waste Material:
   A. Drill cuttings will be seperated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state-approved disposal facility.
   B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
   C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
   D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.

   E. Drilling fluids will be contained in steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8. Ancillary Facilities:
   A. No camps or airstrips to be constructed.

9. Well Site Layout:
   A. Exhibit "D" shows location and rig layout.
   C. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
   D. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
   E. If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

10. Plans for Restoration of Surface:
    Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

    Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

    If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

    Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

11. Other Information
    A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
    B. The wellsite is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
    C. An Archaeological survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Carlsbad BLM office.
    D. There are no know dwellings within 1½ miles of this location.

Operator Certification Statement
Sword 33 Federal Com No. 1
Cimarex Energy Co. of Colorado
Unit L, Section 33
T16S-R29E, Eddy County, NM

Operator's Representative

Cimarex Energy Co. of Colorado
P.O. Box 140907
Irving, TX 75014
Office Phone: (972) 443-6489
Zeno Farris

CERTIFICATION: I hereby certify that the statements and plans made in this APD are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Cimarex Energy Co. of Colorado and/or its contractors/subcontractors and is in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

NAME: Zeno Farris
Zeno Farris

DATE: April 18, 2008

TITLE: Manager Operations Administration

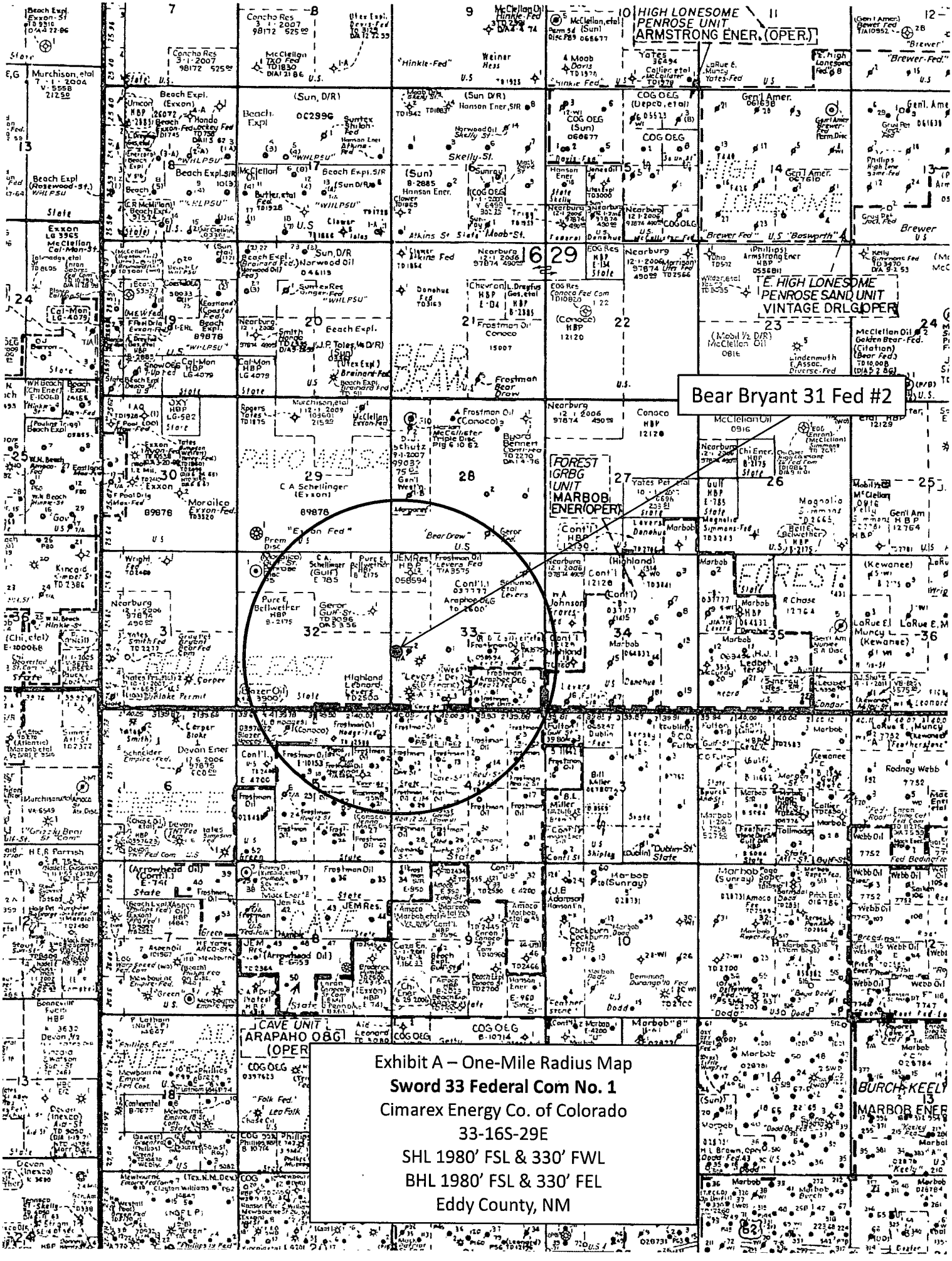


Exhibit A – One-Mile Radius Map

Sword 33 Federal Com No. 1

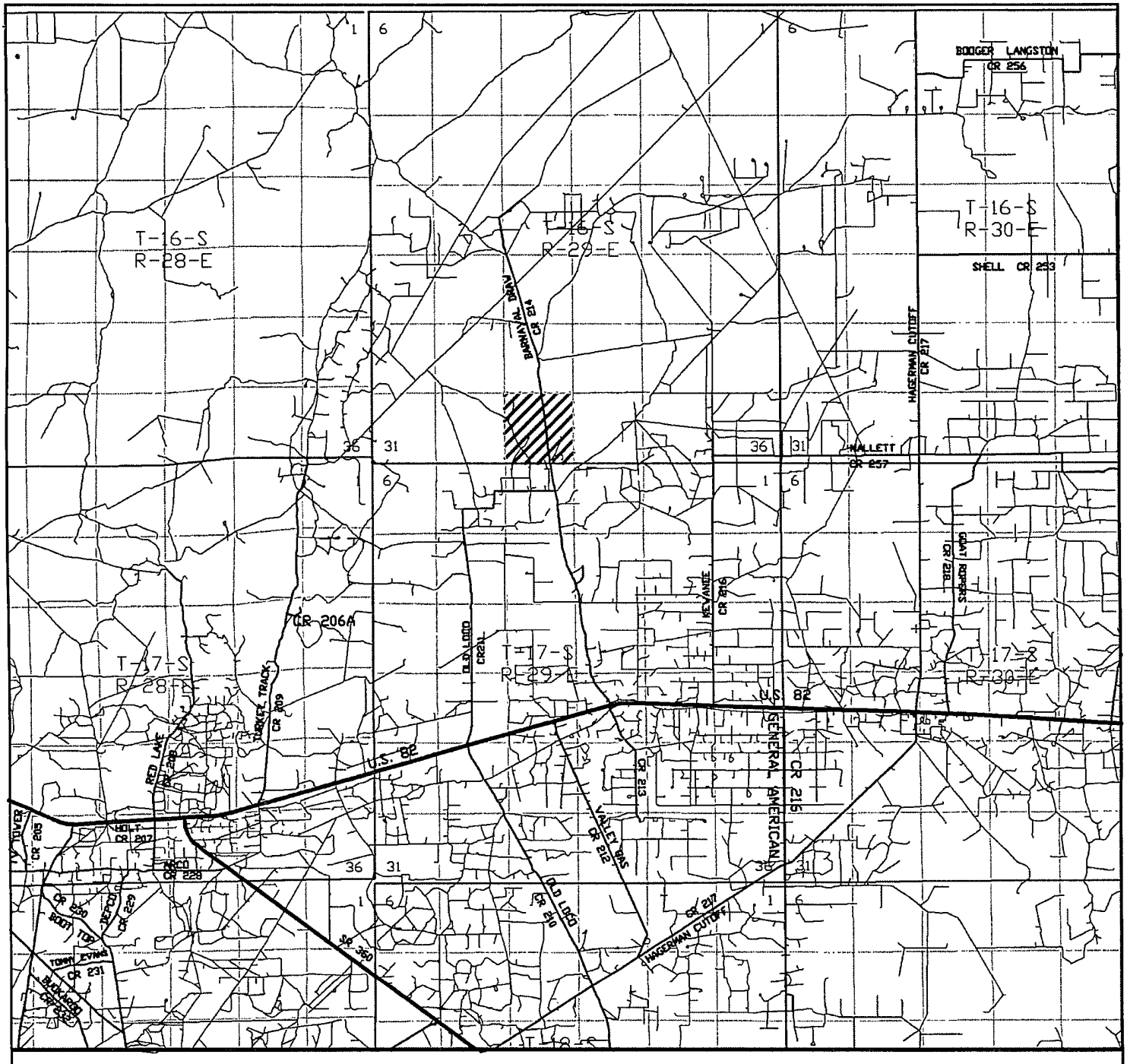
Cimarex Energy Co. of Colorado

33-16S-29E

SHL 1980' FSL & 330' FWL

BHL 1980' FSL & 330' FEL

Eddy County, NM



SWORD "33" FEDERAL COM #1
Located 1980' FSL and 330' FWL
Section 33, Township 16 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

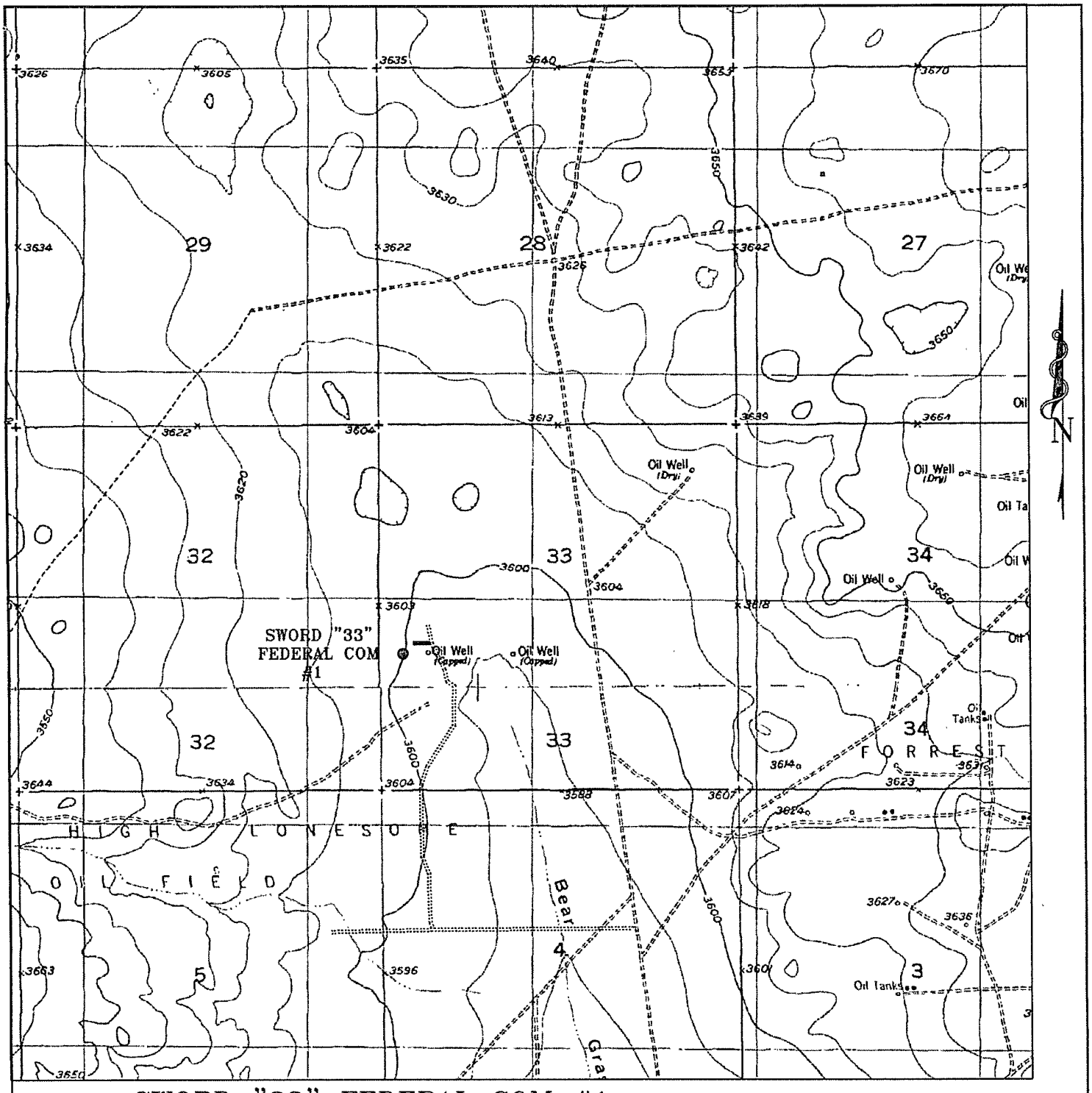
basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	JMS 19337TR
Survey Date:	03-10-2008
Scale:	1" = 2 MILES
Date:	03-12-2008

CIMAREX ENERGY CO. OF COLORADO

Exhibit B



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(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	JMS 19337T
Survey Date:	03-10-2008
Scale:	1" = 2000'
Date:	03-11-2008

CIMAREX ENERGY CO. OF COLORADO

Exhibit C

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CIMAREX ENERGY CO OF COLORADO
LEASE NO.:	LC-058594-A
WELL NAME & NO.:	Sword 33 Fed. Com. No. 1
SURFACE HOLE FOOTAGE:	1980'FSL & 330'FWL
BOTTOM HOLE FOOTAGE	1980'FSL & 330' FEL
LOCATION:	Section33 , T. 16 S., R. 29 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.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 4 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. Closed Loop System

Closed Loop System-V-Door East

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the
Carlsbad Field Office at (505) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

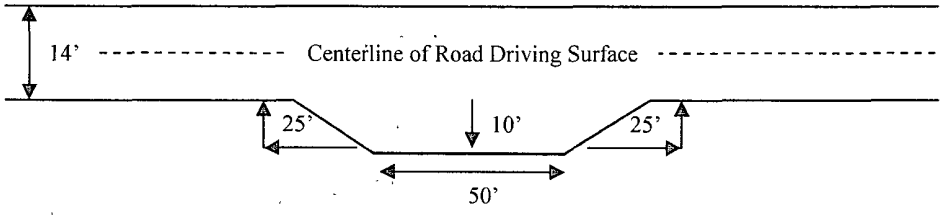
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

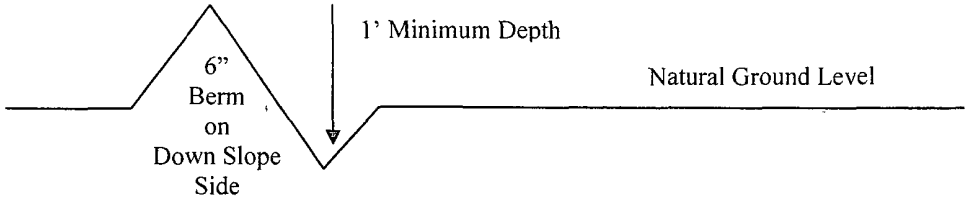
Standard Turnout – Plan View



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

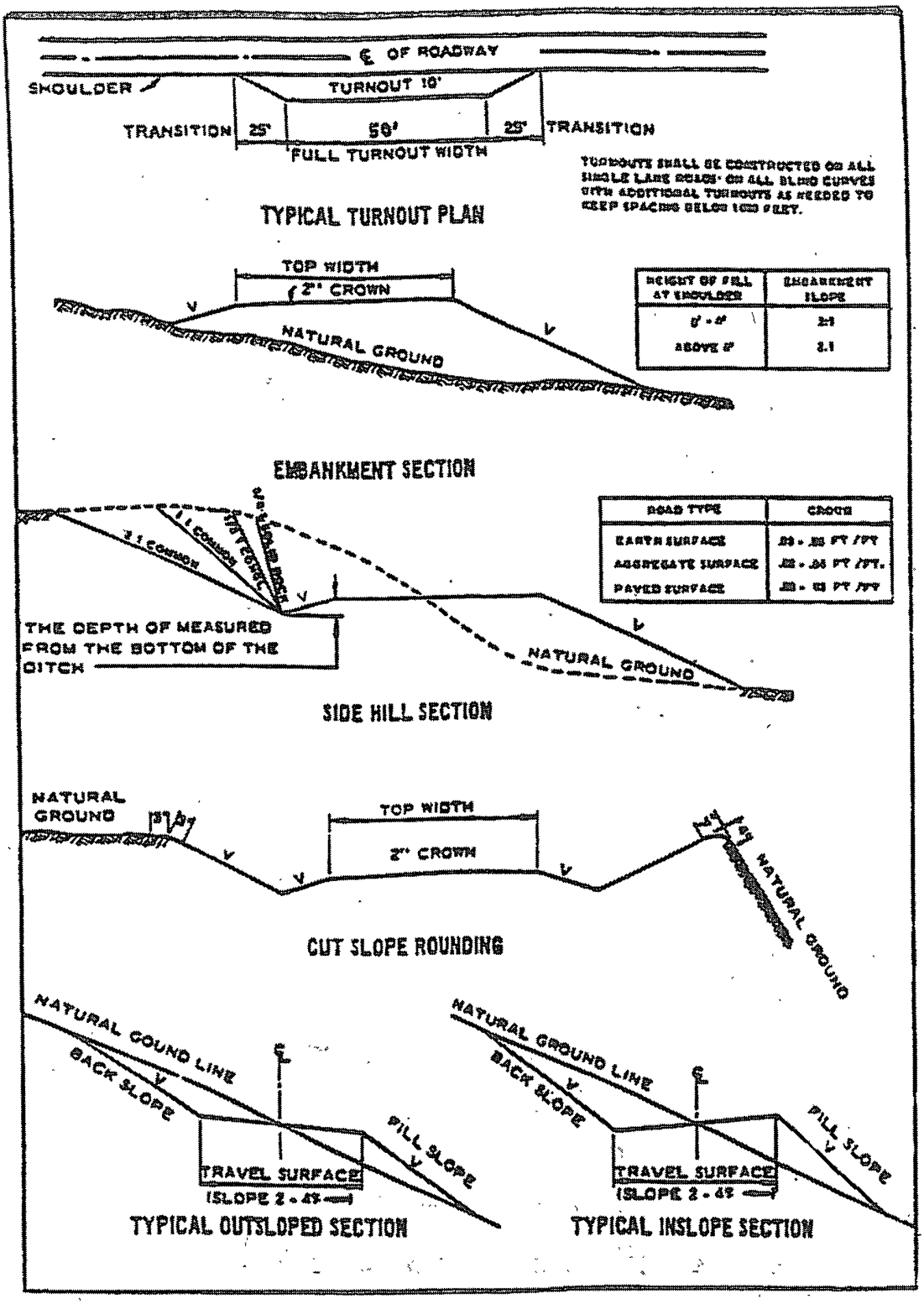
Fence Requirement

Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a possible hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Lead slurry does not have to reach 500 pounds, but information still required to show compressive strength within 18-24 hours depending on water basin or potash. WOC for water basin or potash applies to entire wellbore.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible lost circulation in the Grayburg and San Andres formations.
Possible high pressure gas bursts from the Wolfcamp formation – applicable to pilot hole.

1. The **13-3/8** inch surface casing shall be set **at approximately 260 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a-d above.

3. The minimum required fill of cement behind the **7** inch production casing is:

    ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

Tag cement at bottom of pilot hole and report on subsequent report.
NOTE: Pilot hole will require proper plug when well is plugged.

4. The minimum required fill of cement behind the **4-1/2** inch production casing is:

    ☒ Not required as operator is using Peak Iso-Pak liner. **Seal on Peak Systems Iso-Pack liner is to be tested per Onshore Oil and Gas Order 2.III.B.1.b. Please call BLM for witness of seal test.**

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. The tests shall be done by an independent service company.

    b. The results of the test shall be reported to the appropriate BLM office.

    c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

    d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

    e. A variance to test only the surface casing to the reduced pressure of **1000** psi with the rig pumps is approved. **The BOP will be tested to 5000 psi by an independent service company.**

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

WWI 080508

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

C. ELECTRIC LINES

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection bye the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent gemination = pounds pure live seed

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.