New Mexico Off Conservation Division, District I 1625 M. Everch Drive

Reality Hall assets

Form 3160-3 (April 2004)

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

UNITED STATES DEPARTMENT OF THE INTERIOR

APR 0 2 2008

LC-064900

BUREAU OF LAND N	ANAGEMEN	ARRS (6. If Indian, Allotee or 7	Tribe Name	
APPLICATION FOR PERMIT T	O DRILL OR R	EENTER				
1a. Type of Work X DRILL RE.	ENTER	3		7. If Unit or CA Agreen	nent, Name and No.	
_					/	
	[] a		7	8 Lease Name and Wel	1 No. 237086>	
1b. Type of Well X Oil Well Gas Well Other	X Sin	gle Zone Multiple	Zone	Midway 17 Federa	al No. 1	
2. Name of Operator		Lu - 10	<u>></u>	9. API Well No.	P0211	
Cimarex Energy Co. of Colorado 3a. Address	2h Phone No. (include area code)	<u> </u>	30-005- 7 10 Field and Pool, or E	Vyploratory	
PO Box 140907	, i	,	•	1	Apioratory	
Irving, TX 75014 4. Location of Well (Report location clearly and in accordance	972-401-31 with any State rea			Abo; Wildcat 11. Sec., T R M or Blk. a	nd Survey or Area	
At Surface 1980' FNL & 330' FW.					·	
At proposed prod. Zone 1980' FNL & 330' FEI	Lat HPro	oposed Horizontal Ab	oo Test	17-15S-31E		
14. Distance in miles and direction from nearest town or post of	fice*			12. County or Parish	13. State	
				Chaves	NM	
15 Distance from proposed*	16 No of acres	in lease	17. Spaci	ng Unit dedicated to this we	11	
location to nearest property or lease line, ft						
(Also to nearest drig unit line if				G0270 160		
any) 330'	19 Proposed I	760	20 BIM	S2N2 160 BIA Bond No. on File		
18 Distance from proposed location* to nearest well, drilling, completed,		t Hole 9075'	20. BEN	DET BOILD TVO. OH THO		
applied for, on this lease, ft.		ID 13132'				
NA		VD 8615'		NM-257:	5	
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22 Approxima	ite date work will start	*	23 Estimated duration		
4,446' GR		4/1/2008		35-45 days		
	24. <i>A</i>	Attachments		ROSWELL CONTROLLED WATER BASIN		
The following, completed in accordance with the requirements of	Onshore Oil and O	Gas Order No. 1, shall	be attached to		••	
1 Well plat certified by a registered surveyor		4. Bond to cover	the operation	ns unless covered by an exis	sting bond on file (see	
2. A Drilling Plan	To de de	Item 20 above	e).	·		
A Surface Use Plan (if the location is on National Forest Syste SUPO shall be filed with the appropriate Forest Service Office		5. Operator Cert 6 Such other sit authorized off	e specific int	formation and/or plans as ma	ay be required by the	
25 Signature	Name (F	Printed/Typed)		•	Date	
Zenotany	Zeno	Farris		•	01.28.08	
Title						
Manager Operations Administration						
Approved By (Signature) 1919 Angel Mayes	Name (F	Printed/Typed) /S/	Angel !	Mayes	Date	
Title Assistant Fleid Manager, Lands And Minerals	Office R	OSWELL FIELD	OFFICE	APPR	OVED FOR 2 YEARS	
Application approval does not warrant or certify that the applicant holds le	egal or equitable title	to those rights in the subj	ect lease whic	h would entitle the applicant to		

BECLARED WATER BASIN

CEMBUT BEHIND THE 133" CASING MUST BE CIRCULATED WITNESS

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, of fraudulent statements or representations as to any matter within its jurisdiction.

* (Instructions on page 2) (Instruct APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED DISTRICT I 1625 N. YRKNCH DR., HOBBS, NN 68240

State of New Mexico

WELL LOCATION AND ACREAGE DEDICATION PLAT

Revised October 12, 2005 Submit to Appropriate District Office

Form C-102

☐ AMENDED REPORT

DISTRICT II 1301 W. GRAND AVENUE, ARTESIA, NM 56210

DISTRICT IV

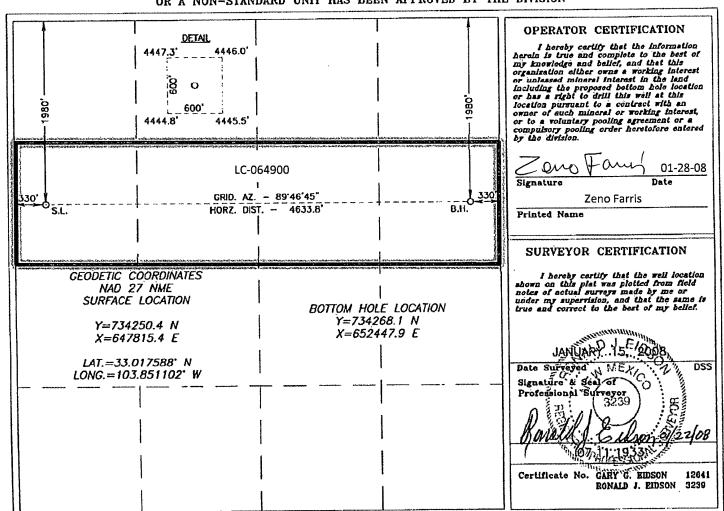
DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410

1230 S. ST. FRANCIS DR., SANTA PE, NW 87006

OIL CONSERVATION DIVISION 1220 SOUTH ST. FRANCIS DR.

State Lease - 4 Copies Pee Lease - 3 Copies Santa Fe, New Mexico 87505

1200 S. ST. PRANCIS D		ME 87000					Pool Name						
_	Number		1	ool Code		1							
30-00	5-29	034					Abo; Wildcat						
Property (Code				Property Nam	erty Name Well Number							
3178				MII	WAY 17 FE	DERAL		1					
OGRID No).				Operator Nam			Biovatio					
16268	3		CIMARE	EX ENE	RGY COMPA	NY OF COLO	RADO	4446	5°				
Surface Location													
	711 AF1 17	County											
VL or lat No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	1				
E	17	15-S	31-E 19		1980	NORTH	330	WEST	CHAVES				
			Bottom	Hole Loc	eation If Diffe	rent From Sur	face						
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County				
Н	17	15-S	31-E		1980	NORTH	330	EAST	CHAVES				
Dedicated Acre	s Joint o	r Infill Co	nsolidation (Code Or	der No.								
160													
NO ALLO	OWABLE Y	VILL DE A	SSIGNED ' NON-STAN	TO THIS	COMPLETION UNIT HAS BEEN	UNTIL ALL INTER APPROVED BY	RESTS HAVE BI THE DIVISION	EEN CONSOLID	ATED				
		ne:	·A11				OPERATO	OR CERTIFICA	TION				



Application to Drill Cimarex Energy Co. of Colorado Midway 17 Federal No. 1

Unit E

Section 17

T15S R31E

Chaves 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' FNL & 330' FWL

BHL 1980' FNL & 330' FEL

Proposed Horizontal Abo Test

2 Elevation above sea level:

4,446 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 9075' MD 13132' TVD 8615'

6 Estimated tops of geological markers:

Yates	2,312'
Queen	3,090'
SanAndres	3,940'
Abo Shale	7,340'
Lower Abo Dolomite	8,585'
Wolfcamp LS	8,675'

7 Possible mineral bearing formation:

Abo

Oil

8 Proposed Mud Circulating System:

	Depth	1	Mud Wt	Visc	Fluid Loss	Type Mud
0	to	340	8.4 - 8.6	30-32	May lose circ	Fresh water spud mud
340	to	3,950	10.0	28-29	May lose circ	Brine Water
3,950	to	9075'	8.6 - 9.5	28-29	NC	Fresh water and brine, use hi-vis sweeps to keep hole clean
0'	to	13132'	8.4 - 8.9	28	NC	2% KCI

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.

Ba Drill 7½" pilot hole to 9075.' Set KO Plug @ 8390.' Kick off horizontal leg @ 8385' and drill 3½" hole to 13132' MD & 8615' TVD. Run 2½" 6.5# L-80 EUE Peak Systems Iso-Pak Liner from 0'-13132.' No cement required fo Page Systems Liner.

Application to Drill Cimarex Energy Co. of Colorado Midway 17 Federal No. 1

Unit E

Section 17

T15S R31E Chaves County, NM

9 Casing & Cementing Program:

Hole Size	Depth			Casi	ng OD	Weight	Thread	Collar	Grade
17½"	0	to	340'	New	13¾"	48#	8-R	STC	H-40
12¼"	0	to	3,950¹	New	95%"	40#	8-R	LTC	J/K-55
7%") o	to	9075'	New	5½"	17#	8-R	LTC	P-110
3½"	lo	to	13132'	New	2¾"	6.5#	8-R	EUE	L-80/FX

10 <u>Cementing & Setting Depth:</u>

13%" Surface Set 340' of 13%" 48# H-40 STC

<u>Lead:</u> 110 sx Light Premium Plus + 0.125 lb/sk Poly-E-Flake + 1%

CaCl₂ (wt 14.2, yld 1.64)

Tail: 220 sx Premium Plus + 2% CaCl₂ (wt 14.8, yld 1.35)

TOC Surface

9%" Intermediate Set 3,950' of 9%" 40# J/K-55 LTC

<u>Lead:</u> 450 sx Interfill C + 0.125 lb/sk Poly-E-Flake (wt 11.9, yld

2.45)

Tail: 200 sx Premium Plus + 1% CaCl₂ (wt 14.8, yld 1.33)

TOC Surface

5½" Production Set 9075' of 5½" 17# P-110 LTC

615 sx Super H + 0.5% Halad-344 + 0.4% CFR-3 + 1lbm/sk Salt + 5 lb/sk Gilsonite + 0.125 lb/sk Poly-E-Flake + 0.35% HR-7 (wt 13.0,

yld 1.67)

TOC 3,700'

2¾" Liner Peak Systems Iso-Pack Liner will not require cementing.

Fresh water will be protected by setting 13%" casing at 340' and cementing to Surface Hydrocarbon zones will be protected by setting 9%" casing at 3,950' and cementing to Surface

and by setting 5½" casing at 9075' and cementing to 3700'

Cimarex uses the following minimum safety factors:

Burst Collapse Tension 1.125 1.125 1.80

Application to Drill Cimarex Energy Co. of Colorado Midway 17 Federal No. 1

Unit E

Section 17

T15S R31E

Chaves County, NM

Pressure control Equipment: 11

Exhibit "E-1" - Surface Casing - A 13 5/8" 3000 PSI working pressure B.O.P. consisting of a 3000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. 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. Annular preventor to be function-tested once per day. Annular preventor will be tested to 250 psi low and 2000 psi high.

Exhibit "E-2" - Intermediate & Production Casing - An 11" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000# hydril. 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. Below intermediate casing shoe, BOP will be 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.

The BOPs will be tested by an independent service company. Ram type BOPs to 250 psi low and 5000 psi high. Annular BOP 250 psi low and 3000 psi high.

12 Testing, Logging and Coring Program:

A. Mud logging

2 man unit from 3950' to TD

B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR

C. No DSTs or cores are planned at this time.

Potential Hazards: 13

No abnormal pressures or temperatures are expected. The area has a potiential H2S hazard. An H2S drilling plan is attached. 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

4000 psi

Estimated BHT 175

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

35-45 days Drilling expected to take

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.

Hydrogen Sulfide Drilling Operations Plan Cimarex Energy Co. of Colorado Midway 17 Federal No. 1

Unit E

Section 17

T15S R31E

Chaves County, NN

- 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 seperator will be brought into service along with H2S scavengers if necessary.

Surface Use Plan Cimarex Energy Co. of Colorado Midway 17 Federal No. 1

Unit E

Section 17

T15S R31E

Chaves 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 intersection of St Hwy 249 and St Hwy 172, go West on St Hwy 249 approx 3.0 miles. Turn right on caliche road and go North approx 0.13 miles. This location is approx 200' East.
- 2 PLANNED ACCESS ROADS: No new access roads are proposed.
- 3 LOCATION OF 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"

Surface Use Plan Cimarex Energy Co. of Colorado Midway 17 Federal No. 1

Unit E

Section 17

T15S R31E

Chaves County, NM

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 disposed of in the reserve pit and 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. Remaining drilling fluids will be hauled off by transports and be disposed of at a State approved disposal facility. Water produced during drilling will be put in reserve pit. 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.

Surface Use Plan Cimarex Energy Co. of Colorado Midway 17 Federal No. 1

Unit E

Section 17

T15S R31E

Chaves County, NM

9 Well Site Lavout:

- A. Exhibit "D" shows location and rig layout.
- B. This exhibit indicates proposed location of reserve and trash pits and living facilities.
- C. Mud pits in the active circulating system will be steel pits and the reserve pit is proposed to be lined with PVC or polyethylene liner. The pit liner will be 12 mils thick. Pit liner will extend a minimum, 2'00" over the reserve pits dikes where the liner will be anchored down.
- D. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and 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 and reserve pit 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.

However, in either event, fluid and cuttings will be removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. 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 $p \in \mathbb{R}^{n}$ $p \in \mathbb{R}^{n}$ 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 1 1/2 miles of this location.

Operator Certification Statement Cimarex Energy Co. of Colorado Midway 17 Federal No. 1

Unit E

Section 17

T15S R31E

Chaves 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 Fami
	Zeno Farris
DATE:	January 28, 2008
TITLE:	Manager Operations Administration



Cimarex Energy Co. of Colorado

5215 North O'Connor Blvd. ♦ Suite 1500 ♦ Irving, TX 75039 ♦ (972) 401-3111 ♦ Fax (972) 443-6486 Mailing Address: P.O. Box 140907 ♦ Irving, TX 75014-0907

A subsidiary of Cimarex Energy Co. • A NYSE Listed Company • "XEC"

January 28, 2008

Oil Conservation Division District II Office 1301 W. Grand Ave. Artesia, New Mexico 88210 Attn: Mr. Bryan Arrant

Re: Statewide Rule 118

Hydrogen Sulfide Gas Contingency Plan Proposed Midway 17 Federal No. 1 Well

Dear Mr. Arrant:

In accordance with NMAC 19.15.3.118 C. (1) governing the determination of the hydrogen sulfide concentration in gaseous mixtures in each of its operations, Cimarex Energy Co. of Colorado does not anticipate that there will be enough H2S from the surface to the Abo formations to meet the OCD's minimum requirements for the submission of a contingency plan for the drilling and completion of the following test(s):

Midway 17 Federal No. 1 17-15S-31E SHL 1980' FNL & 330' FWL BHL 1980' FNL & 330' FEL Chaves County, NM

If anything further is needed regarding this issue, or if you have any questions, please feel free to contact the undersigned at 972-443-6489.

Yours truly,

Zeno Farris

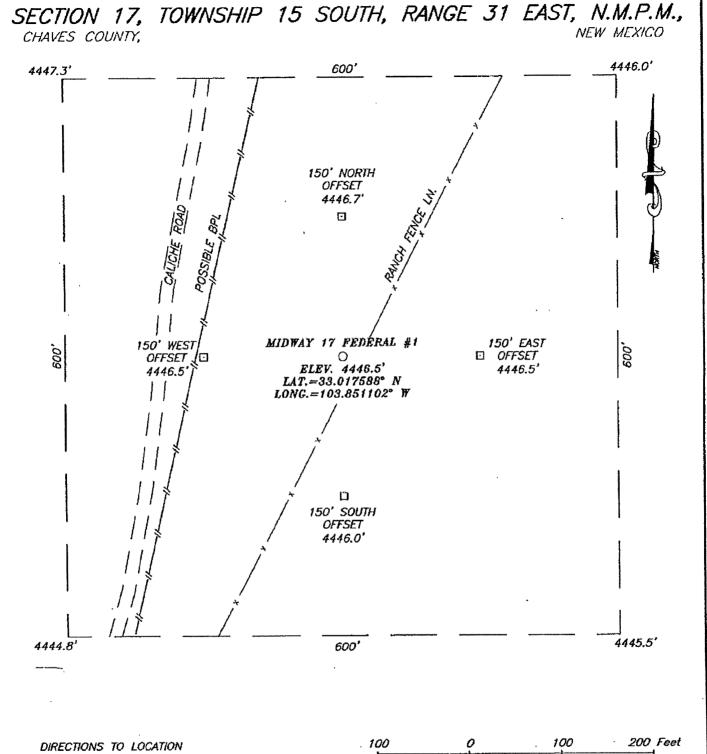
Manager Operations Administration

Zeno Fami

RECEIVED

FEB - 4 2008

HOBES CACO



FROM THE INTERSECTION OF STATE HIGHWAY 249 AND STATE HIGHWAY 172, GO WEST ON STATE ROAD 249 APPROX. 3.0 MILES. TURN RIGHT ON CALICHE ROAD AND GO NORTH APPROX. 0.13 MILES. THIS LOCATION IS APPROX. 200 FEET EAST.



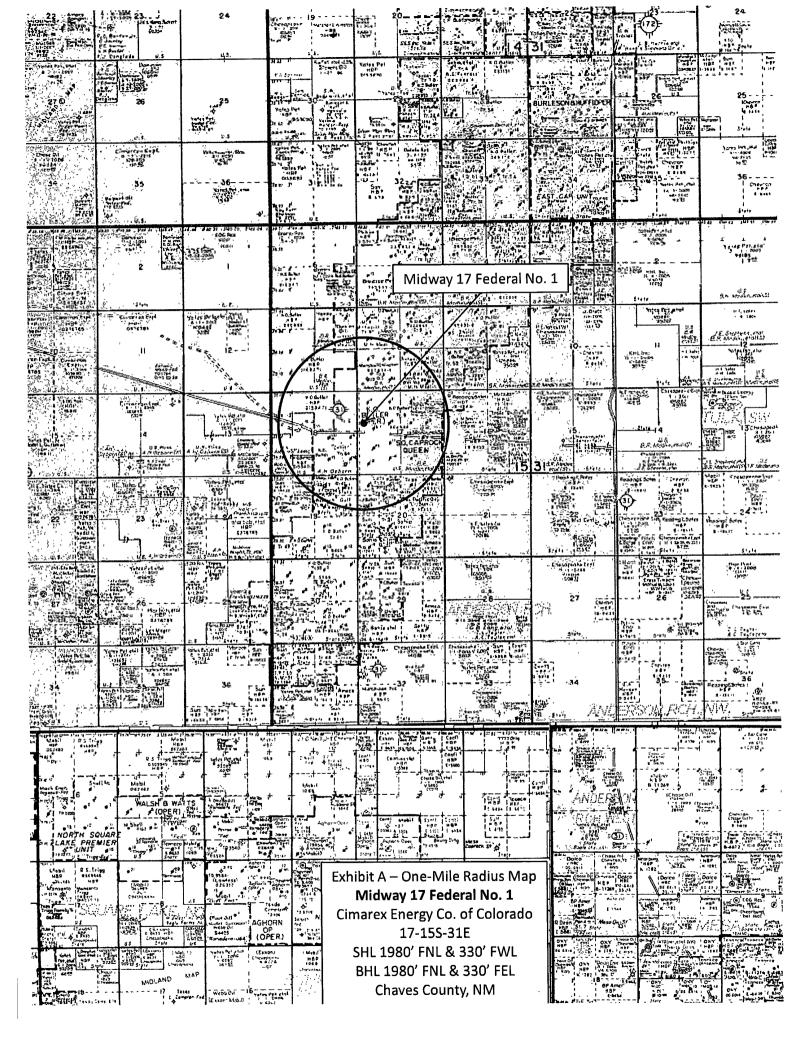
PROVIDING SURVEYING SERVICES SINCE 1948 JOHN WEST SURVEYING COMPANY 412 N. DAL PASO HOBBS, N.M. 88240 (505) 393-3117

100	o,	. 100	-	200	0 Feet
	Scale:1	=100°			

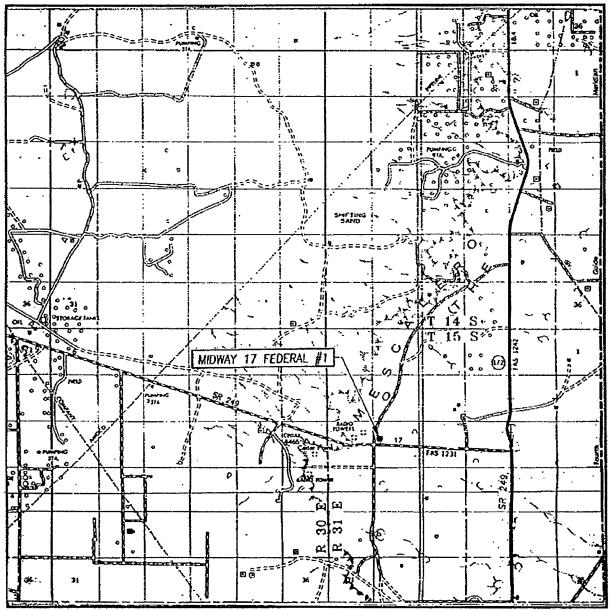
CIMAREX ENERGY COMPANY OF COLORADO

MIDWAY 17 FEDERAL #1 WELL LOCATED 1980 FEET FROM THE NORTH LINE AND 330 FEET FROM THE WEST LINE OF SECTION 17, TOWNSHIP 15 SOUTH, RANGE 31 EAST, N.M.P.M., CHAVES COUNTY, NEW MEXICO.

Survey Date: 01/15/08		Sheet	1	of	1	Sheets
W.O. Number: 07.11.1933	Dr	By: DSS			v 1:	
Date: 01/21/08 Disk: .		0711	193.	3 .	Scal	e:1"=100'

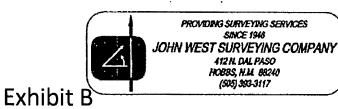


VICINITY MAP

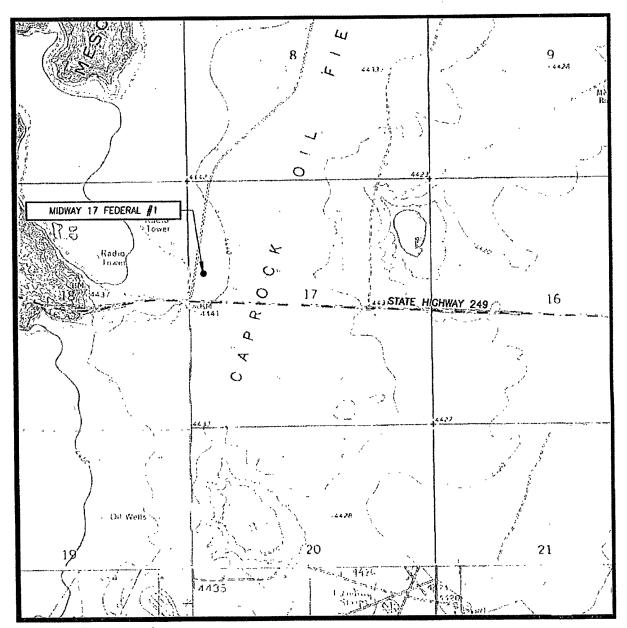


SCALE: 1" = 2 MILES

SEC. 17	TWP. 15-S RGE. 31-E
SURVEY	N.M.P.M.
COUNTY_CH	IAVES STATE NEW MEXICO
DESCRIPTION	1980' FNL & 330' FWL
ELEVATION_	4446'
OPERATOR_	CIMAREX ENERGY COMPANY OF COLORADO
LEASE	MIDWAY 17 FEDERAL



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

SEC. 17 TWP. 15-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY CHAVES STATE NEW MEXICO

DESCRIPTION 1980' FNL & 330' FWL

4446' **ELEVATION**

CIMAREX ENERGY COMPANY OF COLORADO

OPERATOR_ LEASE____

MIDWAY 17 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP

CEDAR POINT SE, N.M.

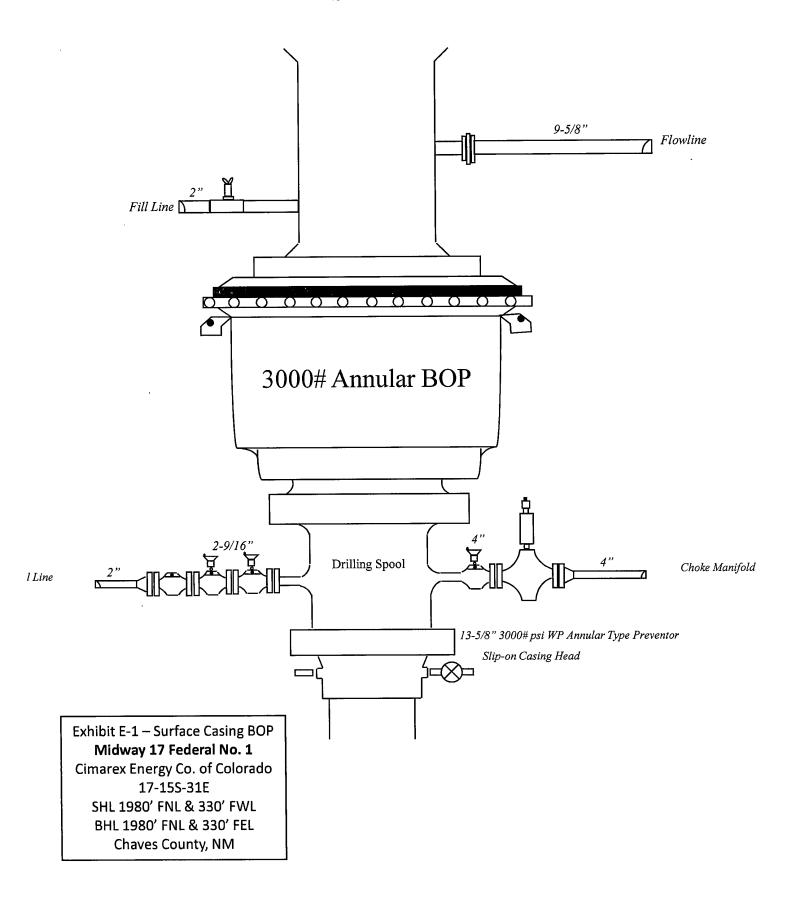
CONTOUR INTERVAL:

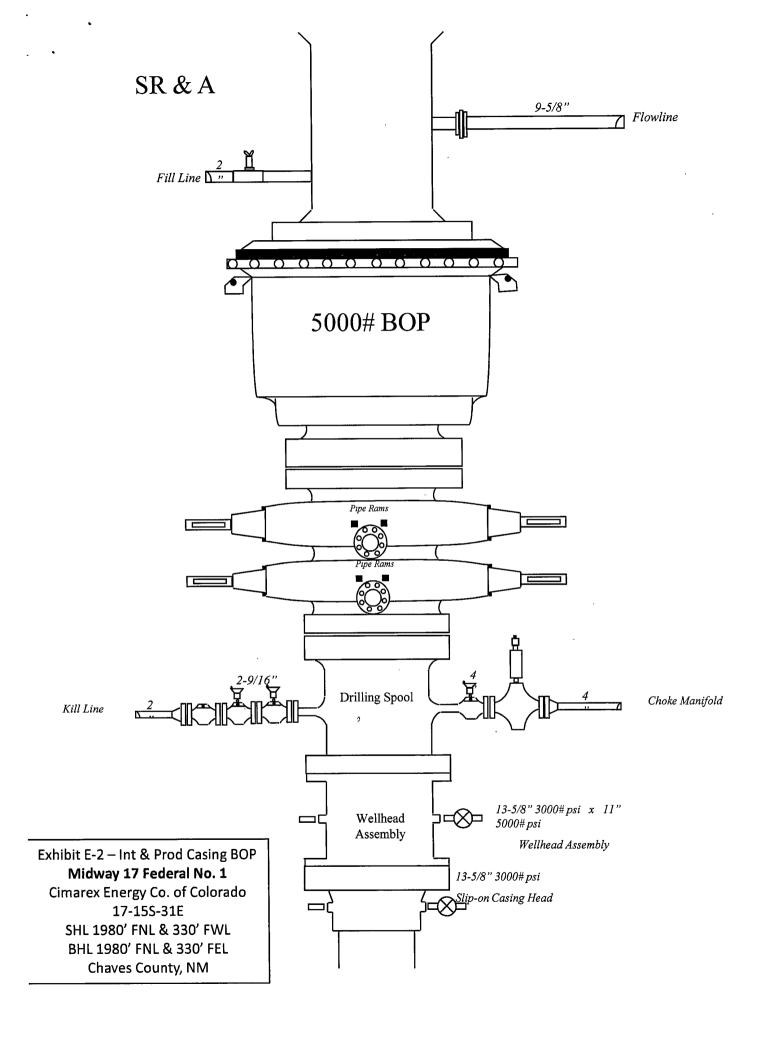
CEDAR POINT SE, N.M. — 10'
MALJAMAR NE, N.M. — 10'
SUPPLEMENTAL CONTOUR — 5' INTERVAL



PROVIDING SURVEYING SERVICES. SINCE 1948 JOHN WEST SURVEYING COMPANY 412 N. DAL PASO HOBBS, N.M. 88240 (505) 393-3117







ORILLING OPERATIONS CHOKE MANIFOLD 5M SERVICE

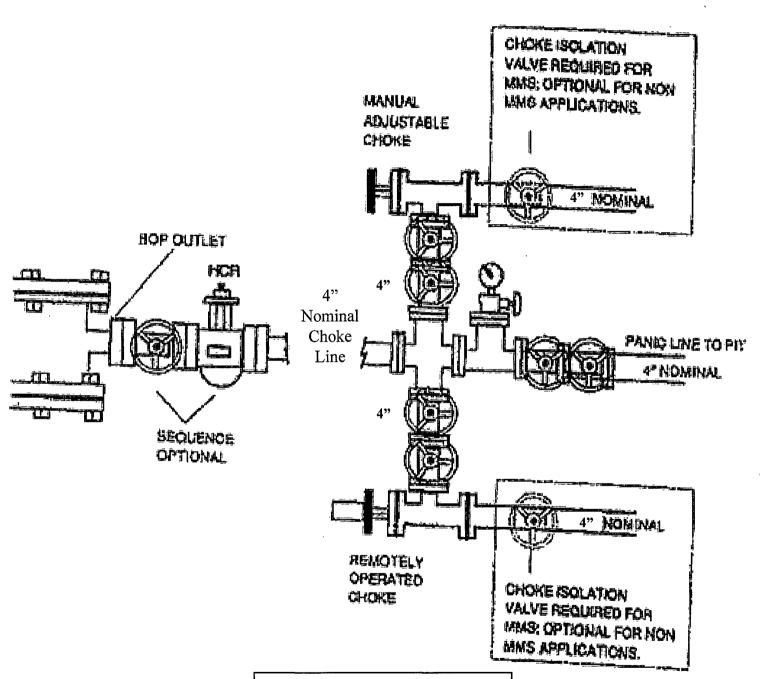


Exhibit E-1 – Choke Manifold Diagram

Midway 17 Federal No. 1

Cimarex Energy Co. of Colorado

17-15S-31E

SHL 1980' FNL & 330' FWL

BHL 1980' FNL & 330' FEL

Chaves County, NM

PROPOSED WELLPATH REPORT (CSV version)

Prepared by Baker Hughes INTEQ Software System: WellArchitect™1.2

REFERENCE WELLPATH IDENTIFICATION

Cimarex Energy Co. Operator Chavez County, NM Area

(Midway)Section 17 T15S R31E Field

Midway 17 Fed No.1H Facility

No.1H_SHL Slot No. 1H Well No. 1H PWB Wellbore Plan #1 Wellpath

No. 1H AWB at 0.00 MD Sidetrack

Grid

REPORT SETUP INFORMATION

NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet Projection System

North Reference Scale

0.999934 1/25/2008 Wellbore Last Revised Software System WellArchitect™ Victor Hernandez User

01/25/08 at 17:20:36 Report Generated WA Midland/ev23.xml DataBase/Source file

Grid East Grid North Latitude Longitude WELLPATH LOCATION Local North Local East [°] [ft] ſ°] [ft]

0 647815.4 734250.4 33 01 03.316N 103 51 03.968W 0 Slot Location 647815.4 734250.4 33 01 03.316N 103 51 03.968W Facility Reference Pt 647815.4 734250.4 33 01 03.316N 103 51 03.968W Field Reference Pt

WELLPATH DATUM

Calculation method Minimum curvature Horizontal Reference **Facility Center**

Point

Vertical Reference Point
MD Reference Point
Field Vertical Reference
Rig on No.1H_SHL (RT)
Rig on No.1H_SHL (RT)
Mean Sea Level

Rig on No.1H_SHL (RT) 18.00 feet to Facility Vertical Datum

Rig on No.1H_SHL (RT) 4464.00 feet to Mean Sea Level

Facility Vertical Datum to 0.00 feet

Mud Line (Facility)

Section Origin X Section Origin Y 0.00 feet 0.00 feet Section Azimuth 89.78°

WELLPATH	DATA Wellbore: No. 1H PV MD Inclination	n Azimu	h: Plan #1 th TVD feet	† = interpolated Vert Sect feet	i/extrapolated st North feet	tation East feet	DLS deg/100ft	Design Col Path Comment	Tgt#
	feet deg	deg	0	0	U	0	n acgricon	0 Tie On	
	100	0	0	100	0	ñ	Ô	0	
Ţ		0	-	200	0	0	ñ	0	
†	200	U	0		0	0	0	0	
†	300	0	0	300	Ü	U	0	0	
†	400	0	0	400	0	0	0	O	
÷	500	0	0	500	0	0	0	0	
,	600	0	0	600	0	0	0	0	
'	700	0	0	700	0	0	0	0	
<u>,</u>	800	0	0	800	0	0	0	0	
'	900	0	0	900	0	0	0	0	
÷	1000	0	0	1000	0	0	0	0	
÷	1100	0	0	1100	0	0	0	0	
÷	1200	0	0	1200	0	0	0	0	
÷	1300	0	0	1300	0	0	0	0	
÷	1400	0	0	1400	0	0	0	0	
†	1500	0	0	1500	0	0	0	0	

WELLPATH			Wellpath:		† = interpolated Vert Sect	extrapolated stat/ North	ion East	DLS	Dosian C	o Path Comment	Tgt#
	MD feet	inclination deg	Azimuth deg	feet	feet	feet	feet	deg/100ft	Design C	or Faur Comment	ı yu r
+	ieet	1600	0	0	1600	0	0	0	0		
+		1700	0	0	1700	Ö	Ö	Ö	Ö		
 		1800	0	0	1800	Ö	Ö	Ö	Ö		
+		1900	0	0	1900	Ō	Ō	0	0		
+		2000	0	Ö	2000	Ō	Ō	Ō	0		
+		2100	Ô	0	2100	Ō	Ō	0	0		
÷		2200	0	Ö	2200	Ō	Ō	Ō	0		
÷		2300	Ō	0	2300	0	0	0	0		
÷		2312	0	0	2312	0	0	0	0	Yates	
÷		2400	0	0	2400	0	0	0	0		
'		2500	0	0	2500	0	0	0	0		
÷		2600	0	0	2600	0	0	0	0		
÷		2700	0	0	2700	0	0	0	0		
÷		2800	0	0	2800	0	0	0	0		
†		2900	0	0	2900	0	0	0	0		
†		3000	0	0	3000	0	0	0	0		
†		3090	0	0	3090	0	0	0	0	Queen	
Ť		3100	0	0	3100	0	0	0	0		
†		3200	0	0	3200	0	0	0	0		
†		3300	0	0	3300	0	0	0	0		
†		3400	0	0	3400	0	0	0	0		
†		3500	0	0	3500	0	0	0	0		
†		3600	0	0	3600	0	0	0	0		
†		3700	0	0	3700	0	0	0	0		
†		3800	0	0	3800	0	0	0	0		
†		3900	0	0	3900	0	0	0	0		
†		3940	0	0	3940	0	0	0	0	SanAndres	
†		4000	0	0	4000	0	0	0	0		
†		4100	0	0	4100	0	0	0	0		
†		4200	0	0	4200	0	0	0	0		
Ţ		4300	0	0	4300	0	0	0	0		
Ţ		4400	0	0	4400	0	0	0	0		
Ť		4500	0	0	4500	0	0	0	_		
Ť		4600	0	0	4600	0 0	0 0	0 0	0 0		
T		4700	0	0	4700	U	U	U	U		

WELLPATH	DATA		e: No. 1H PWB	Wellpath:				trapolated station		51.6	5 · *0	D # 0	T-44
		MD	Inclination	Azimuth			/ert Sect	North	East	DLS	Design Co	Path Comment	Tgt#
		feet	deg	deg	feet		eet	feet	feet	deg/100ft	•		
Ť			800	0		4800			0	0	0		
†			900	0		4900			0	0	0		
†			000	0	0	5000			0	0	0		
†			100	0	0	5100			0	0	0		
†			200	0	0	5200		-	0	0	0		
†			300	0	0	5300		•	0	0	0		
†			400	0	0	5400		_	0	0	0		
†			500	0	0	5500		=	0	0	0		
†			600	0	0	5600		-	0	0	0		
†			700	0	0	5700		-	0	0	U		
†			800	0	0	5800		-	0	0	U		
†			900	0	0	5900		•	0	0	0		
†			000	0		6000		D	0	0	0		
†			100	0		6100		0	0	0	0		
†			200	0		6200		0	0	0	0		
†			300	0		6300		0	0	0	0		
†			400	0		6400		0	0	0	0		
†			500	0		6500		0	0	0	0		
†			600	0		6600		0	0	0	0		
†			700	0		6700		0	0	0	0		
†			800	0		6800		0	0	0	0		
†			900	0		6900		0	0	0	0		
†			000	0	0	7000		0	0	0	0		
†			'100	0	0	7100	(0	0	0	0		
†			200	0	0	7200		0	0	0	0		
†			300	0	0	7300	(0	0	0	0		
†		7	340	0	0	7340	(0	0	0	0	Abo Shale	
†			400	0	0	7400		0	0	0	0		
†			'500	0	0	7500		0	0	0	0		
t		7	600	0	0	7600	(0	0	0	0		
Ť		7	700	0	0	7700	(0	0	0	0		
t			800	0	0	7800		0	0	0	0		
Ť		7	900	0	0	7900	(0	0	0	0		
†		8	000	0	0	8000		0	0	0	0		
†		8	100	0	0	8100	(0	0	0	0		
-													

·WELLPATH	DATA Wellbore: No		Velipath: Pi			rapolated station North	East	DLS	Design Co: Path Comment	Tgt#
	******		Azimuth	TVD feet	Vert Sect feet		feet	deg/100ft	Design Corr aut Comment	'gur
	feet 8200	deg 0	deg 0				0	•		
†	8300	0	0			=	Ō	Ō		
†	8385	0	89.781					Ō	KOP	
+	8400	4.296	89.781					28.64		
 	8500	32.936	89.781	8493.77			32.15	28.64		
+	8600	61.576	89.781	8560.94			104.83	28.64		
+	8694.55	88.655	89.781				195.36	28.64	Lower Abo Dolon	nite
	8697.89	89.613	89.781	8585.05	198.7	0.76	198.7	28.64	EOC	
t	8700	89.613	89.781	8585.06	200.81	0.77		0		
'	8800	89.613	89.781	8585.74	300.81	1.15				
i	8900	89.613	89.781	8586.42						
i	9000	89.613	89.781	8587.09						
†	9100	89.613	89.781	8587.77						
Ť	9200	89.613	89.781						•	
Ť	9300	89.613	89.781							
t	9400	89.613	89.781							
†	9500	89.613	89.781							
†	9600	89.613	89.781							
†	9700	89.613	89.781							
†	9800	89.613	89.781							
†	9900	89.613	89.781							
†	10000	89.613	89.781							
†	10100	89.613	89.781							
†	10200	89.613	89.781					•		
ţ	10300	89.613	89.781							
ţ	10400		89.781							
ţ	10500		89.781					_		
Ť	10600		89.781 89.781							
Ť	10700									
Ţ	10800 10900	89.613 89.613								•
Ţ	11000									
<u> </u>	11100									
1	11200									
 	11300		89.781							
ı	11300	05.010	00.701	0002.00	2000.70	10.7		·		

WELLPATH DA	TA Wellbore:	No. 1H PWB	Wellpath: F	Plan #1 † =	interpolated/ext	rapolated station						
	MD	Inclination	Azimuth	TVD	Vert Sect	North	East	DLS	Design Co	Path Comment	Tgt#	
	feet	deg	deg	feet	feet	feet	feet	deg/100ft				
†	1140	0 89.6	13 89.78	1 8603.3	2900.75	11.08	2900.73	. ()			
÷	1150	0 89.6	13 89.78°	1 8603.98	3000.75	11.47	3000.72	: (כ			
÷	1160	0 89.6	13 89.78°	1 8604.65	3100.74	11.85	3100.72	: ()			
†	1170	0 89.6	13 89.78°	1 8605.33	3200.74	12.23	3200.72	. ()			
Ì	1180	0 89.6	13 89.78 ⁻	1 8606	3300.74	12.61	3300.71	()			
Ť	1190	0 89.6	13 89.78°	1 8606.68	3400.74	12.99	3400.71	(כ			
†	1200	0 89.6	13 89.78°	1 8607.35	3500.73	13.38	3500.71	(כ			
†	1210	0 89.6	13 89.78°	1 8608.03	3600.73	13.76	3600.71	(כ			
†	1220	0 89.6	13 89.78°	1 8608.7	3700.73	14.14	3700.7	(כ			
†	1230	0 89.6	13 89.78°	1 8609.38	3800.73	14.52	3800.7	. ()			
†	1240	0 89.6	13 89.78°	1 8610.06	3900.72	14.9	3900.7	. (ס			
Ť	1250	0 89.6	13 89.78°	1 8610.73	4000.72	15.29	4000.69	(ס			
†	1260	0 89.6	13 89.78°	1 8611.41	4100.72	15.67	4100.69	(כ			
†	1270	0 89.6	13 89.78°	1 8612.08	4200.72	16.05	4200.69	(כ			
Ť	1280	0 89.6	13 89.78°	1 8612.76	4300.72	16.43	4300.68	()			
t	1290	0 89.6	13 89.78°	1 8613.43	4400.71	16.81	4400.68		כ			
†	1300	0 89.6	13 89.78°	1 8614.11)			
†	1310	0 89.6	13 89.78°	1 8614.78					ס			,
	13132.1	4 89.6	13 89.78°	1 8615	4632.85	17.7	4632.81	() #1H BHL			1
HOLE AND CASING	SECTIONS Ref	Wellbore: No.	1H PWB	Ref Wellpath								
String/Diameter	Start MD	End MD	Interval	Start TVD		Start N/S	End N/S	Start E/W	End E/W			
	feet	feet	feet	feet	feet		_		_			
17.7in Open Hole		0	0 (_	0		0			
13.375in Casing Surfa	ice	0	0 (-			0	•	0			
9.625in Casing		0	0 (0	0		0			
5in Liner		0	0 (0 0	_	_	0		0			
3.5in Open Hole	835	0 13132.	14 4782.14	4 8350	8615	0	0	17.1	7 4632.81	•		
TADOUTE												
TARGETS	MD	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape	Comment	Design Com	ments
Name	feet	feet	feet	feet		us survey feet	DegMinSec	DegMinSec	Ollape	Commont	Design Com	
(1) #1H BHL	13132.1							103 50 09.562W	point			
(1)#1110116	10102.1	7 00	10 17.1	7002.01	0.02441.0	107200.1	00 01 00.21711	100 00 00.00244	Ponit			



Planned Wellpath Report

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सिभग्रभ	ENCE WELLPATH IDENTIFICATION		
Operator	Cimarex Energy Co.	Slot	No.1H_SHL
Area	Chavez County, NM	Well	No. 1H
Field	(Midway)Section 17 T15S R31E	Wellbore	No. 1H PWB
Facility	Midway 17 Fed No.1H	Sidetrack from	No. 1H AWB at 0.00 MD

REPORT SETUP	INFORMATION		
Projection System	NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect™ 1.2
North Reference	Grid	User	Victor Hernandez
Scale	0.999934	Report Generated	01/25/08 at 17:20:37
Wellbore last revised	01/25/08	Database/Source file	WA_Midland/No1H_PWB

WELLPATH LOCATION											
	Local coo	rdinates	Grid co	ordinates	Geographic coordinates						
	North [feet]	East [feet]	Easting [US feet]	Northing [US feet]	Latitude [°]	Longitude [°]					
Slot Location	0.00	0.00	647815.40	734250.40	33 01 03.316N	103 51 03.968W					
Facility Reference Pt			647815.40	734250.40	33 01 03.316N	103 51 03.968W					
Field Reference Pt			647815.40	734250.40	33 01 03.316N	103 51 03.968W					

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No.1H_SHL (RT) to Facility Vertical Datum	18.00 feet
Horizontal Reference Pt	Facility Center	Rig on No.1H_SHL (RT) to Mean Sea Level	4464.00 feet
Vertical Reference Pt	Rig on No.1H_SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00 feet
MD Reference Pt	Rig on No.1H_SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	89.78°



Planned Wellpath Report Plan #1 Page 2 of 5

BAKER HUGHES **INTEQ**

सम्बद्धाः	ENCE WELLPATH IDENTIFICATION		
Operator	Cimarex Energy Co.	Slot	No.1H_SHL
Area	Chavez County, NM	Well	No. 1H
Field	(Midway)Section 17 T15S R31E	Wellbore	No. 1H PWB
Facility	Midway 17 Fed No.1H	Sidetrack from	No. 1H AWB at 0.00 MD

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments	Path Comment
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	Tie On	
100.00†	0.000	0.000	100.00	0.00	0.00	0.00	0.00		
200.00†	0.000	0.000	200.00	0.00	0.00	0.00	0.00		
300.00†	0.000	0.000	300.00	0.00	0.00	0.00	0.00		
400.00†	0.000	0.000	400.00	0.00	0.00	0.00	0.00		
500.00†	0.000	0.000	500.00	0.00	0.00	0.00	0.00		
600.00†	0.000	0.000	600.00	0.00	0.00	0.00	0.00		
700.00†	0.000	0.000	700.00	0.00	0.00	0.00	0.00		
800.00†	0.000	0.000	800.00	0.00	0.00	0.00	0.00		
900.00+	0.000	0.000	900.00	0.00	0.00	0.00	0.00		图 [3.27
1000.00†	0.000	0.000	1000.00	0.00	0.00	0.00	0.00		
1100.00†	0.000	0.000	1100.00	0.00	0.00	0.00	0.00		
1200.00†	0.000	0.000	1200.00	0.00	0.00	0.00	0.00		
1300.00†	0.000	0.000	1300.00	0.00	0.00	0.00	0.00		
1400!00†					0.00	Annual property and the said	0.00		
1500.00†	0.000			0.00	0.00	0.00	0.00		
1600.00†	0.000	0.000	1600.00	0.00	0,00	0.00	0.00		
1700.00†	0.000	0.000		0.00	0.00	0.00	0.00		
1800.00†	1			0.00	0.00	0.00	0.00	,	
1900.00†	0.000	0.000	Annual Committee of the	0.00	1			a principal de la constitución d	A Charle
2000.00†	0,000	0.000	2000.00	0.00	0.00	0.00	0.00		
2100.00†		0.000	2100.00	0.00	0.00	0.00	0.00		
2200.00†			2200.00	0.00	0.00	0.00	0.00	1	
2300.00†			2300.00	0.00	0.00	0.00	0.00	_1	
2312.00	January Market Company of the Compan	0.000		<i>\$</i> ,		Lighters, marriage and a		A Description of the second second	Yates
2400.00†			2400.00	0.00	0.00	0.00	0.00		
2500.00†	1	ł		0.00	0.00	0.00	0.00	_ 1	
2600.00†			2600.00	0.00	0.00	0.00	0.00		
2700.00†				0.00	0.00	0.00	0.00		-
	0.000			The state of the s	Marie				
2900.00†		1	1	0.00	0.00	0.00	0.00		
3000.00†			1	0.00	0.00	0.00	0,00	1	
3090.00†	· · · · · · · · · · · · · · · · · · ·	1		0.00	0.00	0.00	0.00		Queen
3100.00†						,			
	0.000				1)		0.00		
3300.00†		J		0.00	0.00	0.00			
3400.00†				0.00	0.00	0.00	0.00		
3500.00†				0.00	0.00	0.00	0.00		
3600.00† 3700.00†				0.00 0.00	0.00	1	0.00		



Planned Wellpath Report Plan #1 Page 3 of 5



REFER	ENCE WELLPATH IDENTIFICATION		
Operator	Cimarex Energy Co.	Slot	No.1H_SHL
Area	Chavez County, NM	Well	No. 1H
Field	(Midway)Section 17 T15S R31E	Wellbore	No. 1H PWB
Facility	Midway 17 Fed No.1H	Sidetrack from	No. 1H AWB at 0.00 MD

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	DLS	Design	Path
[feet]	[°]	[°]	[feet]	[feet]	[feet]	[feet]	[°/100ft]	Comments	Comment
3800.00†	0.000	0.000	3800.00	0.00	0.00	0.00	0.00		
3900.00†	0.000	0.000	3900.00	0.00	0.00	0.00	0.00		
3940.00†	0.000	0.000	3940.00	0.00	0.00	0.00	0.00		SanAndres
4000.00†	0.000	0.000	4000.00	0.00	0.00	0.00	0.00	. ,	
4100.00†		0.000		0.00	0.00	0.00	0.00		
4200.00†	0.000	0.000	4200.00	0.00	0.00	0.00	0.00		
4300.00†	0.000	0.000	4300.00	0.00	0.00	0.00	0.00		
4400.00†	0.000	0.000	4400.00	0.00	0.00	0.00	0.00		
4500.00†	0.000	0.000	4500.00	0.00	0.00	0.00	0.00		
4600.00†	0.000	0.000	4600.00	0.00	0.00	0.00	0.00	(100 mg/s)	
4700.00†	0.000	0.000	4700.00	0.00	0.00	0.00	0.00		
4800.00†	0.000	0.000	4800.00	0.00	0.00	0.00	0.00		
4900.00†	0.000	0.000	4900.00	0.00	0.00	0.00	0.00		
5000.00†	0.000	0.000	5000.00	0.00	0.00	0.00	0.00	1	
5100.00†	0.000	0.000	5100.00	(0.00	0.00	- < 0.00	0.00	0.500	
5200.00†	0.000	0.000	5200.00	0.00	0.00	0.00	0.00		
5300.00†	0.000	0.000	5300.00	0.00	0.00	0.00	0.00		
5400.00†	0.000	0.000	5400.00	0.00	0.00	0.00	0.00		
5500.00†	0.000	0.000	5500.00	0.00	0.00	0.00	0.00		
5600.00†	0.000	÷ , = 0.000	5600.00	0.00	(0:00	0.00	0.00	1.0/1.0%	Banker kalika
5700.00†	0.000	0.000	5700.00	0.00	0.00	0.00	0.00		
5800.00†	0.000	0.000	5800.00	0.00	0.00	0.00	0.00		
5900.00†	0.000	0.000	5900.00	0.00	0.00	0.00	0.00		
6000.00†	0.000	0.000	6000.00	0.00	0.00	0.00	0.00		
6100.00	0.000	0.000	6100.00	0.00		0.00	0.00	ESERTIAL AND ADMINISTRATION OF THE PARTY OF	
6200.00†	0.000	0.000	6200.00	0.00	0.00	0.00	0.00		
6300.00†	0.000	0.000	6300.00	0.00	0.00	0.00	0.00		
6400.00†	0.000	0.000	6400.00	0.00	0.00	0.00	0.00		
6500.00†	0.000	0.000	6500.00	0.00	0.00	0.00	0.00		
6600.00†	0.000	0.000	6600.00	0.00	0.00	0.00	0.00		M vazivo de Pet
6700.00†	0.000	0.000	6700.00	0.00	0.00	0.00	0.00		
6800.00†	0.000	0.000	6800.00	0.00	0.00	0.00	0.00		
6900.00†	0.000	0.000	6900.00	0.00	0.00	0.00	0.00		
7000.00†	0.000	0.000	7000.00	0.00	0.00	0.00	0.00		
7100.00	0.000	0.000	7100.00	0.00	0.00	- 0.00	0.00		
7200.00†	0.000	0.000	7200.00	0.00	0.00	0.00	0.00		
7300.00†	0.000	0.000	7300.00	0.00	0.00	0.00	0.00		
7340.00†	0.000	0.000	7340.00	0.00	0.00	0.00	0.00		Abo Shale
7400.00†	0.000	0.000	7400.00	0.00	0.00	0.00	0.00		F-20-22-2
	0.000	1	7500.00						



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BAKER HUGHES INTEQ

RIDIDER	RENCE WELLPATH IDENTIFICATION		
	Cimarex Energy Co.	Slot	No.1H_SHL
	Chavez County, NM	Well	No. 1H
Field	(Midway)Section 17 T15S R31E	Wellbore	No. 1H PWB
ļ	Midway 17 Fed No.1H	Sidetrack fro	om No. 1H AWB at 0.00 MD

WELLPATH	DATA (140	stations)	† = interpo	lated/extra	polated	station			
MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]		Design Comments	Path Comment
7600.00†	0.000	0.000	7600.00	0.00	0.00	0.00	0.00		
7700.00†	0.000	0.000	7700.00	0.00	0.00	0.00	0.00		
7800.00†	0.000	0.000	7800.00	0.00	0.00	0.00	0.00		
7900.00†	0.000	0.000	7900.00	0.00	0.00	0.00	0.00		
8000.00#	0.000	0.000	8000.00	0.00	(0)00	0.00	0.00		
8100.00†	0.000	0.000	8100.00	0.00	0.00	0.00	0.00		
8200.00†	0.000	0.000	8200.00	0.00	0.00	0.00	0.00		
8300.00†	0.000	0.000	8300.00	0.00	0.00	0.00	0.00		
8385.00	0.000	89.781	8385.00	0.00	0.00	0.00		KOP	
8400.00#	4:296	89.781	8399.99	0.56	0.00	0.56	28.64	·*	
8500.00†	32.936	89.781	8493.77	32.15	0.12	32.15	28.64		
8600.00†	61.576	89.781	8560.94	104.83	0.40	104.83	28.64		
8694.55†	88.655	89.781	8585.00	195.36	0.75	195.36	28.64		Lower Abo Dolomite
8697.89	89.613	89.781	8585.05	198.70	0.76	198.70	28.64		
	89.613	89.781	8585:06	200.81	0.77	200.81	0.00		
8800.00†	89.613	89.781	8585.74	300.81	1.15	300.80	0.00		
8900.00†	89.613	89.781	8586.42	400.80	1.53	400.80	0.00		
9000.00†	89.613	89.781	8587.09	500.80	1.91	500.80	0.00		
9100.00†	89.613	89.781	8587.77	600.80	2.30	600.80	0.00		
9200.00†		89.781		700.80	2.68	700.79	0.00		
9300.00†	89.613	89.781	8589.12	800.80	3.06	800.79	0.00		
9400.00†	89.613	89.781	8589.79	900.79	3.44	900.79	0.00		
9500.00†	89.613	89.781	8590.47	1000.79	3.82	1000.78	0.00		
9600.00†	89.613	t	8591.14	1100.79	4.21	1100.78	0.00		
9700.00†	89.613	1		1200.79	4.59	1200.78	0.00		
9800.00†	89.613	89.781	8592.49	1300.78	4.97	1300.77	0.00		
9900.00†	89.613	1	8593.17	1400.78	5.35	1400.77	0.00	_ 1	
10000.00†	L		8593.85	1500.78	5.73	1500.77	0.00		
10100.00†	La company and the same and the		8594.52	1600.78	6.12	1600.77	0.00		
10200.00†			8595.20	1700.78	6.50	1700.76	0.00		
10300.00†	<u> </u>		8595.87	1800.77	6.88	1800.76	0.00		
10400.00†			8596.55	1900.77	7.26	1900.76			
10500.00†	1	89.781	8597.22	2000.77	7.64	2000.75	0.00		
10600.00†	1		8597.90	2100.77	8.03	2100.75	_1	1	
10700.00	1		8598.57	2200.76	8.41)]	
10800.00†]		8599.25	2300.76	8.79	2300.74			
10900.00†	3		8599.92	2400.76	9.17	2400.74	0.00)	
11000.00†				2500.76	9.55	2500.74	0.00)	
11100.00†			1	2600.75		2600.74	0.00)	
11200.00			,	2700.75	10.32	2700.73	0.00		The state of the s



Planned Wellpath Report Plan #1 Page 5 of 5



RIDIDIDIR	ENCE WELLPATH IDENTIFICATION		
Operator	Cimarex Energy Co.	Slot	No.1H_SHL
Area	Chavez County, NM	Well	No. 1H
Field	(Midway)Section 17 T15S R31E	Wellbore	No. 1H PWB
Facility	Midway 17 Fed No.1H	Sidetrack from	No. 1H AWB at 0.00 MD

MD	ATA (140 stat	Azimuth	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments	Path Comment
[feet]	[°]	[°]		2800.75	10.70	2800.73	0.00		
11300.00†	89.613	89.781	8602.63			2900.73	0.00		-
11400.00†	89.613	89.781	8603.30	2900.75	11.08				
11500.00†	89.613	89.781	8603.98	3000.75	11.47	3000.72	0.00		
11600.00†	89.613	89.781	8604.65	3100.74	11.85	3100.72	0.00		
11700.001	89.613	89.781	8605.33	3200.74	12.23	3200.72	0.00		
11800.00†	89.613	89.781	8606.00	3300.74	12.61	3300.71	0.00		
11900.00†	89.613	89.781	8606.68	3400.74	12.99	3400.71	0.00		
12000.00†	89.613	89.781	8607.35	3500.73	13.38	3500.71	0.00		
12100.00†	89.613	89.781	8608.03	3600.73	13.76	3600.71	0.00		
12200.00†	89.613	89.781	8608:70	3700.73	14:14	3700:70	, *0.00		
12300.00†	89.613	89.781	8609.38	3800.73	14.52	3800.70	0.00		
12400.00†	89.613	89.781	8610.06	3900.72	14.90	3900.70	0.00		
12500.00†	89.613	89.781	8610.73	4000.72	15.29	4000.69	0.00		
12600.00†	89.613	89.781	8611.41	4100.72	15.67	4100.69	0.00		
12700.00‡	89.613	89.781	8612:08	4200.72	16:05	4200.69	0.00		
12800.00†	89.613	89.781	8612.76	4300.72	16.43	4300.68	0.00)	
12900.00†	89.613	89.781	8613.43	4400.71	16.81	4400.68	0.00)	
13000.00†	89.613	89.781	8614.11	4500.71	17.20	4500.68	0.00)	
13100.00†	89.613	89.781	8614.78	4600.71	17.58	4600.68	0.00		
13132.14	The second secon		8615.00 ¹	4632.85	17.70	4632-81	0.00	#1H·BHL	

HOLE & CASING SECT	IONS Ref W	ellbore: No	o. 1H PWI	B Ref We	llpath: Plai	ı #1			
String/Diameter	Start MD [feet]	End MD [feet]	Interval [feet]	Start TVD [feet]	End TVD [feet]	Start N/S [feet]	Start E/W [feet]	End N/S [feet]	End E/W [feet]
17.7in Open Hole	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13.375in Casing Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.625in Casing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5in Liner	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.5in Open Hole	8350.00	13132.14	4782.14	8350.00	8615.00	0.00	0.00	17.70	4632.81

TARGETS	*********		., .,						<u> </u>
Name	MD [feet]	TVD [feet]	North [feet]	East [feet]	Grid East [us survey feet]			Longitude [°]	Shape
1) #1H BHL	13132.14	8615.00	17.70	4632:81	652447.90	734268.10	33 01 03 277N	103 5 <u>0</u> 09 562W	point



Cimarex Energy Co. Location: Chavez County, NM Field: (Midway)Section 17 T15S R31E Facility: Midway 17 Fed No.1H Cinarex Energy Co. Slot: No.1H_SHL Well: No. 1H Well: No. 1H Wellbore: No. 1H PWB



Well Profile Data								
Design Comment	MD (ft)	Inc (2	Az (9	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%100ft)	VS (ft)
Tie On	0.00	0.000	0 000	0.00	0.00	000	0,00	0 00
КОР	8385.00	0 000	89,781	8385.00	0.00	0 00	0 00	0.00
EOC	8697.89	89 613	89.781	8585 05	0 76	198.70	28.64	198.70
#1H BHL	13132 14	89 613	89 781	8615 00	17.70	4632.81	0 00	4632.85

Plot mierance wedpath is Plan #1	
True vertical depths are reterenced to Rig on No 1H_SHL (RT)	Ord System: NAD27 / TM New Montes State Planes: Eastern Zone (3001): US feet
Measured depths are referenced to Rig on No.1H_SHI. (RT)	North Reference: Grid north
Rig on No 1H_SHL (RT) to Mean Sea Level: 4484 feet	Scale True distance
Muses Sale Leviel to Must line (FacSty - Michaey 17 Fed No. 114) -4449 feet	Depths are in lest
Coordinates are in lest referenced to Facility Center	Created by Victor Hernandez on 1/25/2008

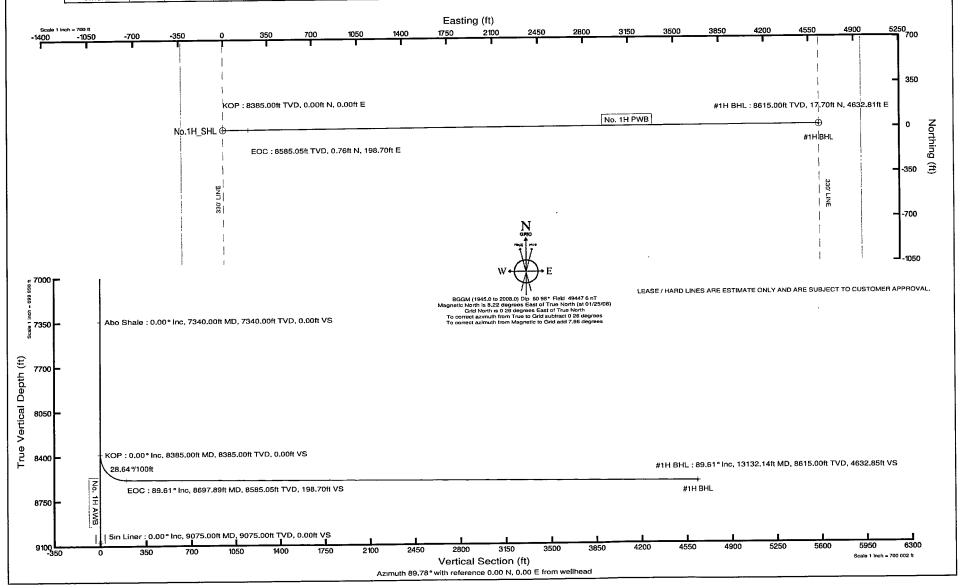


EXHIBIT A

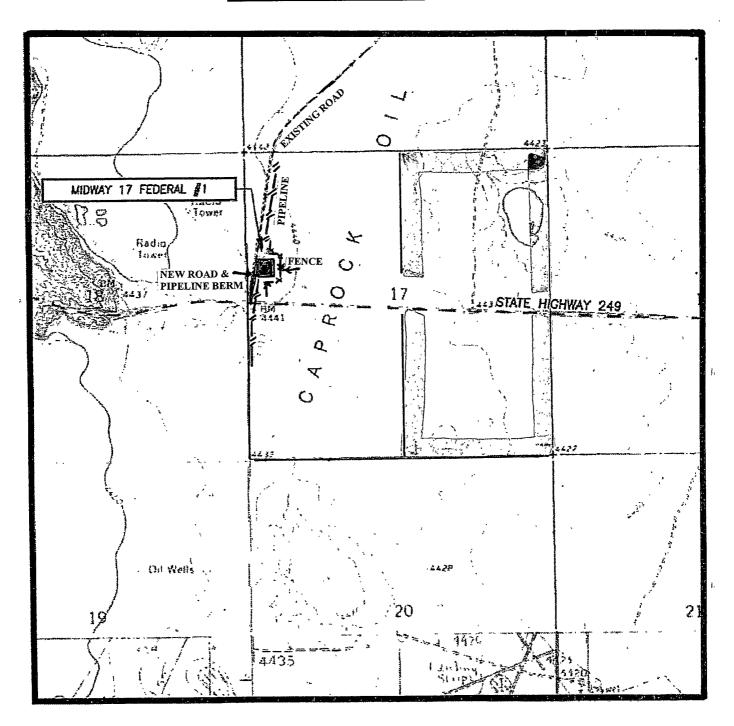
3/31/08

OPERATORS NAME: Cimarex Energy Company Of Colorado

LEASE NO.: **LC-064900**

WELL NAME & NO: Midway "17" Federal #1H
SURFACE HOLE FOOTAGE: 1980' FNL & 330' FWL
BOTTOM HOLE LOCATION: 1980' FNL & 330' FEL
LOCATION: Section 17, T. 15 S., R. 31 E., NMPM

COUNTY: Chaves County, New Mexico



PECOS DISTRICT - RFO CONDITIONS OF APPROVAL

3/31/08

OPERATORS NAME: Cimarex Energy Company Of Colorado

LEASE NO.: LC-064900

WELL NAME & NO: Midway "17" Federal #1H

SURFACE HOLE FOOTAGE: 1980' FNL & 330' FWL BOTTOM HOLE LOCATION: 1980' FNL & 330' FEL LOCATION: Section 17, T. 15 S., R. 31 E., NMPM

COUNTY: Chaves County, New Mexico

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.

I. 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).

II. 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.

III. NOXIOUS WEEDS

The operator shall be held-responsible if-noxious weeds become established within the areas of operations (access road and/or well pad). 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.

IV. CONSTRUCTION

A. NOTIFICATION:

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Roswell Field Office at (505) 627-0247 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 Application for Permit to Drill and Conditions of Approval 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 6 inches in depth. The topsoil shall be stockpiled in the south side of the well pad.

C. RESERVE PITS:

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 15' X 70' on the EAST side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

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 Roswell Field Office at (505) 627-0236.

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 need.

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.

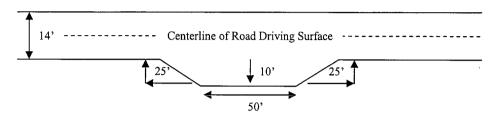
Crowning

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.

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

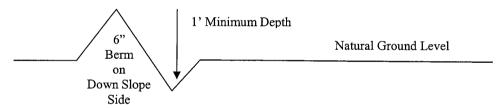


Drainage

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 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

Cattleguards

A cattleguard shall be constructed and installed at the fence crossing in the SW¼SW¼SW¼ of Sec. 17 - T. 15 S. -R. 31 E.. 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).

Fence Realignment Requirement Around The Well Pad

The well pad will extend approximately 120 feet across a fenceline on the eastern side of the well pad and a new temporary fenceline shall be reconstructed around the east side of the well pad. The temporary fenceline shall be built exactly to the specifications of the original fenceline.

Upon well completion, the fence shall be restored to its original alignment and the fence shall be reconstructed to a better condition then it was prior to the fenceline being cut.

Production facilities shall not be built near the fenceline that would hinder the reconstruction of the fenceline to its original alignment.

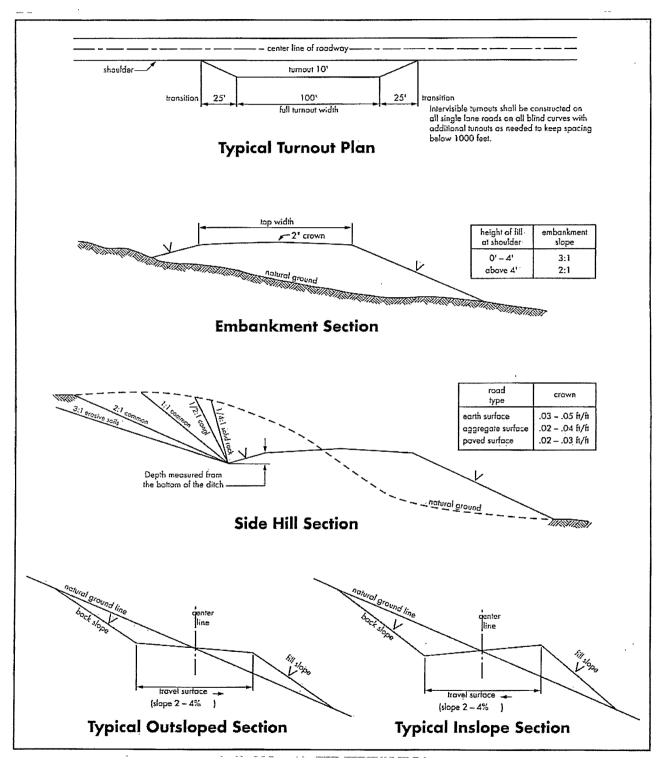
Public Access

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

Pipeline Protection Requirement

A. Precautionary measures shall be taken by the operator during construction of the access road to protect one (1) existing pipeline that the access road will cross over (See map - EXHIBIT A). An earthen berm; 2 feet high by 3 feet wide and 14 feet across the access road travelway (2' X 3' X 14'), shall be constructed over the existing pipeline. The operator shall be held responsible for any damage to the existing pipeline. If the pipeline is ruptured and/or damaged the operator shall immediately cease construction operations and repair the pipeline. The operator shall be held liable for any unsafe construction operations that threaten human life and/or cause the destruction of equipment.

Figure 1 - Cross Sections and Plans For Typical Road Sections



V. – DRILLING-

A. DRILLING OPERATIONS REQUIREMENTS

- 1. Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201. During office hours call (505) 627-0258. After office hours call (505) 627-0205. Engineer on call phone (after hours): (505) 626-5749.
- 2. The Roswell Field Office is to be notified a minimum of 4 hours in advance for a representative to witness:
- a. Spudding
- b. Cementing casing: 13-3/8 inch 9-5/8 inch 7 inch 4-1/2 inch
- c. BOPE Tests
- 3. 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.
- 4. Include the API No. assigned to well by NMOCD on the subsequent report of setting the first casing string.

B. CASING

- 1. The <u>13-3/8</u> inch surface casing shall be set <u>at approximately 340 feet</u> and cemented to the surface.
- a. If cement does not circulate to the surface, the Roswell Field 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 or 500 pounds compression strength, whichever is greater. (This is to include the lead cement).
- 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 compression strength, whichever is greater.
- d. If cement falls back, remedial action will be done prior to drilling out that string.
- 2. The minimum required fill of cement behind the <u>9-5/8</u> inch intermediate casing is <u>sufficient to circulate to the surface</u>. If cement does not circulate see B.1.a-d above.
- 3. The minimum required fill of cement behind the <u>7</u> inch production casing is <u>sufficient to tie back</u> <u>500 feet above the uppermost perforation in the pay zone</u>. If cement does not circulate, 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.

- 4. There is no required fill of cement behind the <u>4-1/2</u> inch-production casing since a Peak-Systems Iso-Pak liner will be used for lateral and will not require cementing.
- 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. Before drilling below the <u>13-3/8</u> inch surface casing shoe, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve. Before drilling below the <u>9-5/8</u> inch intermediate casing shoe, the blowout preventer assembly shall consist of a minimum of One Annular Preventer, Two Ram-Type Preventers, and a Kelly Cock/Stabbing Valve.
- 2. Before drilling below the <u>13-3/8</u> inch surface casing shoe, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be <u>2000</u> psi. Before drilling below the <u>9-5/8</u> inch intermediate casing shoe, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be <u>3000</u> psi.
- 3. The BOPE shall be installed before drilling below the <u>13-3/8</u> inch surface casing and the <u>9-5/8</u> inch intermediate casing and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
- a. The BLM Roswell Field office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
- b. The tests shall be done by an independent service company.
- c. 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.
- d. 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 BLM Roswell Field Office at 2909 West Second Street, Roswell, New Mexico 88201.
- e. Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- f. Testing must be done in a safe workman like manner. Hard line connections shall be required.

VI. PRODUCTION

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.

Production facilities shall not be placed anywhere along the fenceline location that would avert the fence from being reconstructed to its original alignment.

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, <u>Olive Drab</u>, <u>Munsell Soil Color Chart 18-0622 TPX</u>.

VRM Facility Requirement

Low-profile tanks not greater than eight-feet-high shall be used.

VII. 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.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used in road repairs, fire walls or for building other roads and locations. In addition, 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.

B. RESERVE PIT CLOSURE

At the time reserve pits are to be reclaimed, 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. The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

The following soil or soil associations may represent these ecological sites: Alama silt loam, dry, 0-3% Slope, Atoka, Bigetty-Pecos, Harkey fine sandy loam, Holloman, Holloman-Gypsum Land, Hollomex loam, 1-9% slope, dry, Largo loam, Milner loam, 0-2% slope, dry, Reagan loam, Reakor, Reakor-Bigetty, Reakor-Tencee, Reeves loam, 0-2% slope, dry, Russler, Shanta, Upton-Reakor.

Loamy, SD-3 Ecological Site; Loamy CP-2; Gyp Upland CP-2 (for Loamy HP-3)

Common Name		Pounds of Pure
and Preferred Variety	Scientific Name	Live Seed Per Acre
Blue grama,	(Bouteloua gracilis)	4.00 LBS.
Sideoats grama,	(Bouteloua curtipendula)	1.0 LB.
Sand dropseed	(Sporobolus cryptandrus)	0.5 LB.
Vine mesquite	(Panicum obtusum)	1.0 LB.
Plains bristlegrass	(Setaria macrostachya)	1.0 LB.
Indian blanketflower	(Gaillardia aristata)	0.5 LB.
Desert or Scarlet	(Sphaeralcea ambigua)	1.0 LB.
Globemallow or	(S. coccinea)	
Annual sunflower	(Helianthus annuus)	<u>0.75 LB.</u>
TOTAL POUNDS PURE LIVE SE	9.75 LBS.	

Certified Weed Free Seed. If one species is not available, increase ALL others proportionately. Use No Less than 4 species, including one forb. No less than 9.75 pounds lbs per acre shall be applied.

VIII. 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.