09-856

ATS-09-471

LM

OCD Artesia

RECEIVED
DEC 14 2009
NMOCD ARTESIA

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.: NM-26072

6. If Indian, Allotee or Tribe Name:

1a. Type of Work: ☒ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No:

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: Gizzard 18 Federal No. 3H

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

9. API Well No: 30-015- 37432

3a. Address: 5215 N. O'Connor Blvd., Ste. 1500; Irving, TX 75039

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

10 Field and Pool, or Exploratory: Ishee Lake; Abo

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At Surface: 720 FSL & 290 FEL

At proposed prod. Zone: 660 FSL & 1170 FWL

UNORTHODOX LOCATION

Horizontal Abo test

11. Sec , T R. M. or Blk. and Survey or Area: 18-16S-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
290	360	S2SE4, SESW 120
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 7300' MD 10965' TVD 6900'	NM-2575
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3646' GR	09.30.09	25-30 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	07.29.09

Title: Manager Operations Administration

Approved By *(Signature)*	Name (Printed/Typed)	Date
/s/ Don Peterson		DEC - 9 2009
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.

* *(Instructions on page 2)*

well becomes orthodox by 6971 TVD 6979 MD

Roswell Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & 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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-37432	97627	Ishee Lake; Abo ✓

Property Code	Property Name	Well Number
37943	GIZZARD "18" FEDERAL	3H

OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3646'

Surface Location

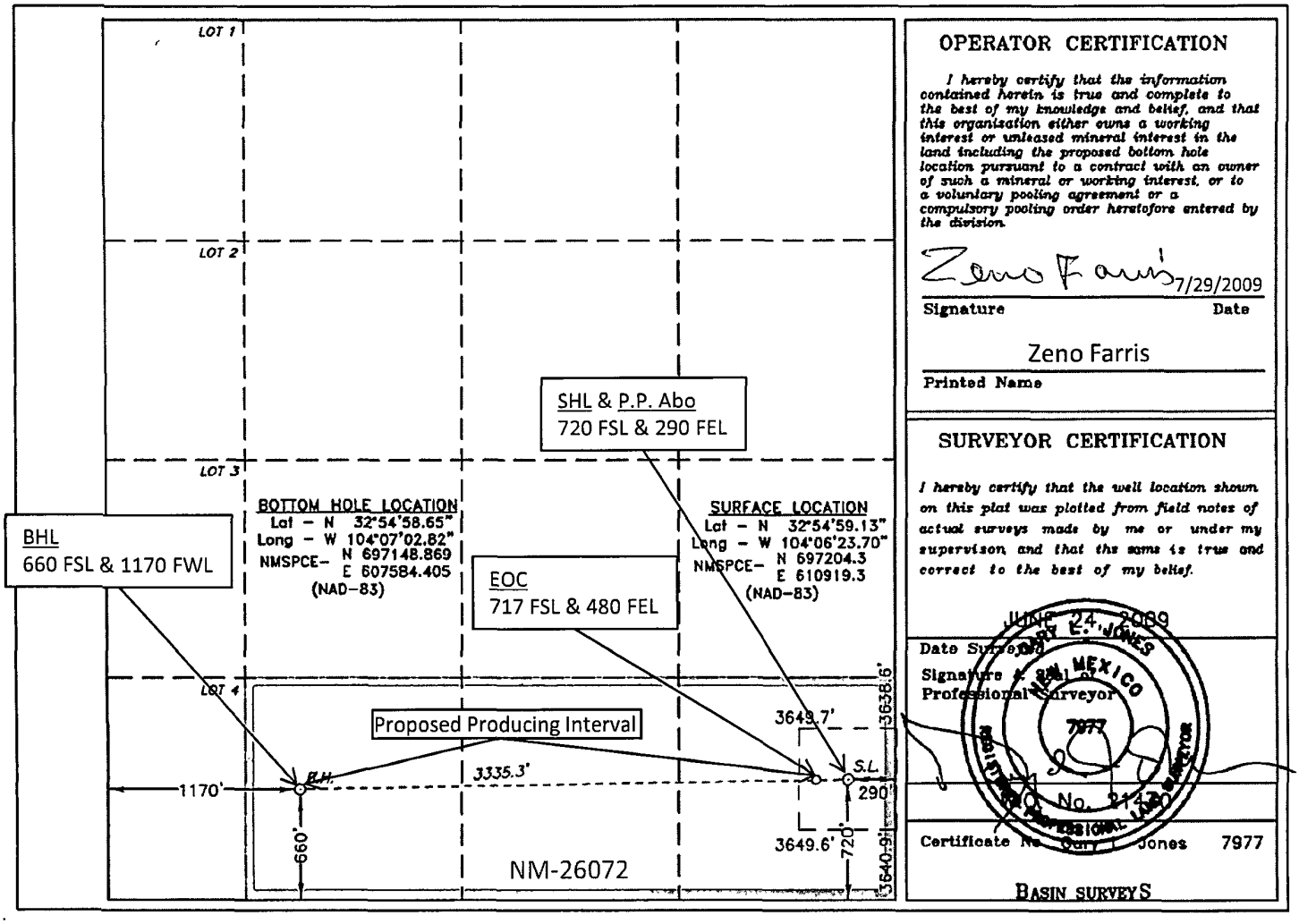
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	18	16 S	29 E		720	SOUTH	290	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	18	16 S	29 E		660	SOUTH	1170	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
120			NSL Pending

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.

Zeno Farris 7/29/2009
Signature Date

Zeno Farris
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

JUNE 24, 2009
Date Surveyed
Signature & Seal of Professional Surveyor
GARY L. JONES NEW MEXICO 7977 No. 21430 PROFESSIONAL SURVEYOR
Certificate No. Gary L. Jones 7977

BASIN SURVEYS

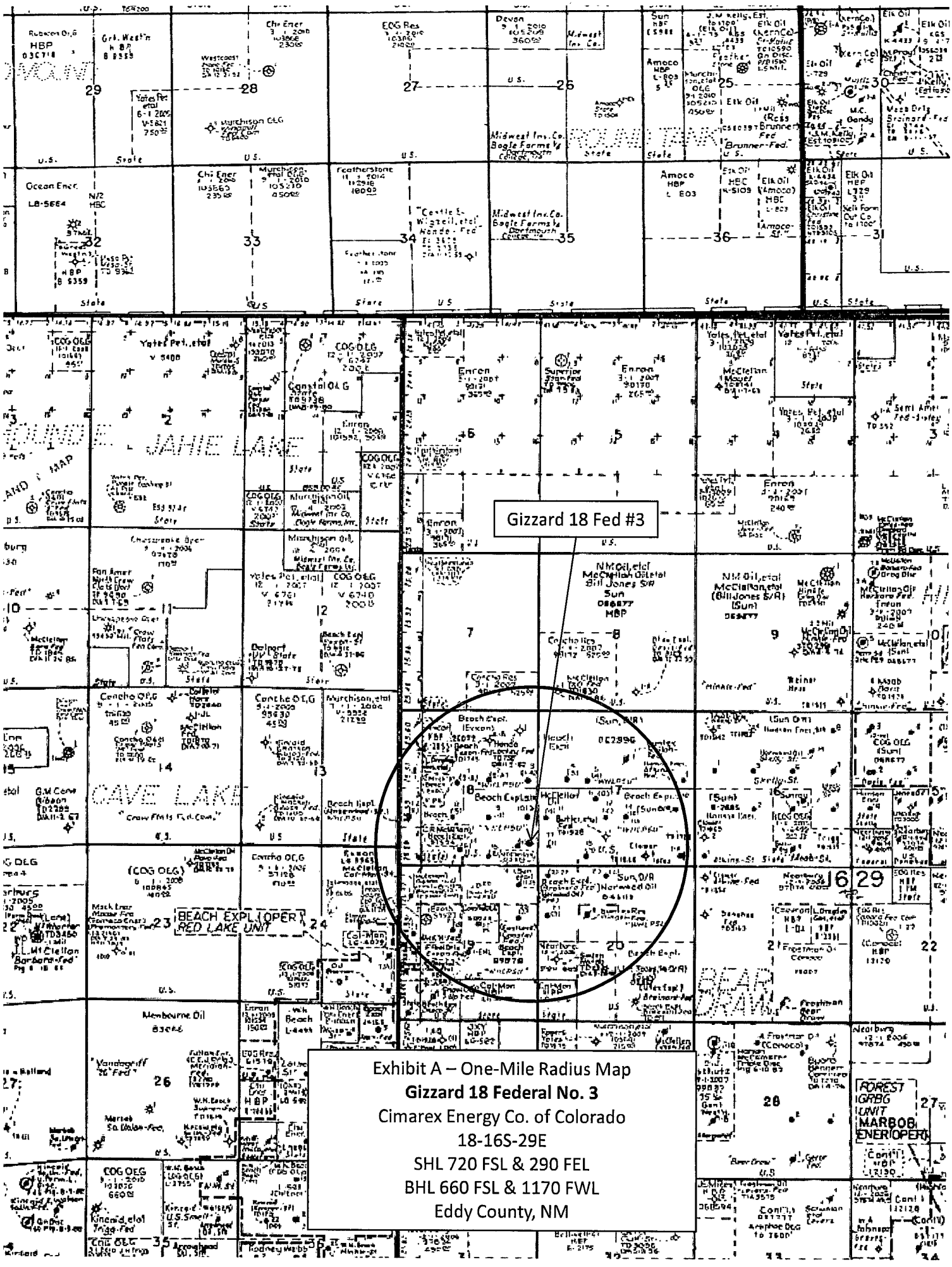


Exhibit A – One-Mile Radius Map

Gizzard 18 Federal No. 3

Cimarex Energy Co. of Colorado

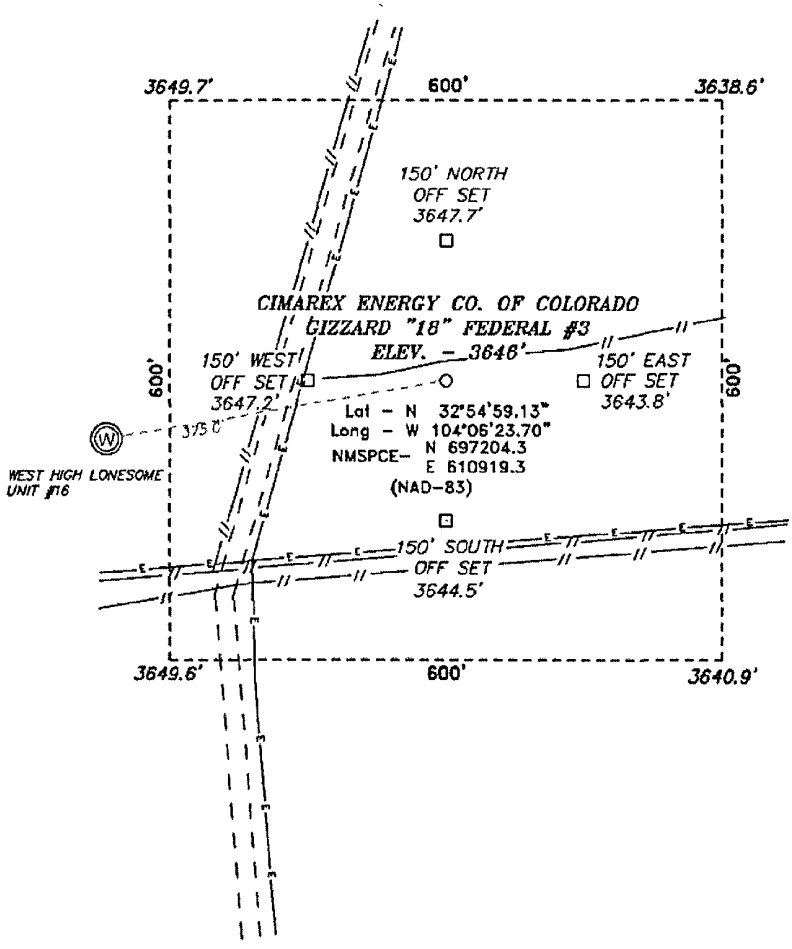
18-16S-29E

SHL 720 FSL & 290 FEL

BHL 660 FSL & 1170 FWL

Eddy County, NM

SECTION 18, 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 OF US HWY 82 AND BARNIVAL DRAW; TO NORTH ON BARNIVAL DRAW FOR 6.8 MILES TO LEASE ROAD, ON LEASE ROAD GO WEST 0.75 MILES TO LEASE ROAD, ON LEASE ROAD GO WESTERLY 1.1 MILES GOING NORTH TO PROPOSED LOCATION.

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

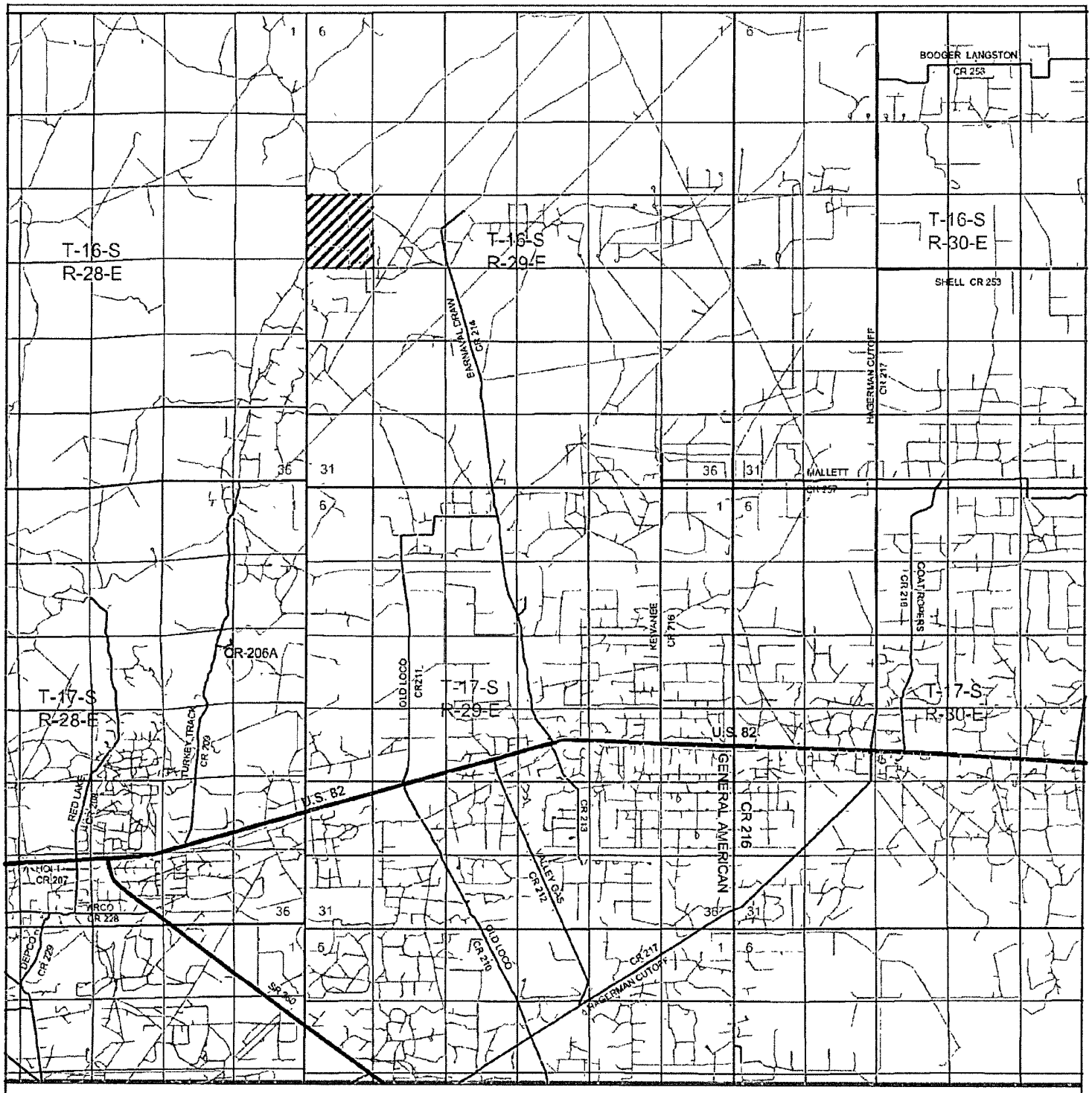
W.O. Number: 21470	Drawn By: J. SMALL
Date: 06-26-2009	Disk: JMS 21470

CIMAREX ENERGY CO. OF COLORADO

REF: GIZZARD "18" FEDERAL #3 / WELL PAD TOPO

THE GIZZARD "18" FEDERAL #3 LOCATED 720' FROM THE NORTH LINE AND 290' FROM THE EAST LINE OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 06-24-2009 | Sheet 1 of 1 Sheets



GIZZARD "18" FEDERAL #3
Located 720' FSL and 290' FEL
Section 18, Township 16 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

Basin Surveys
focused on excellence in the oilfield

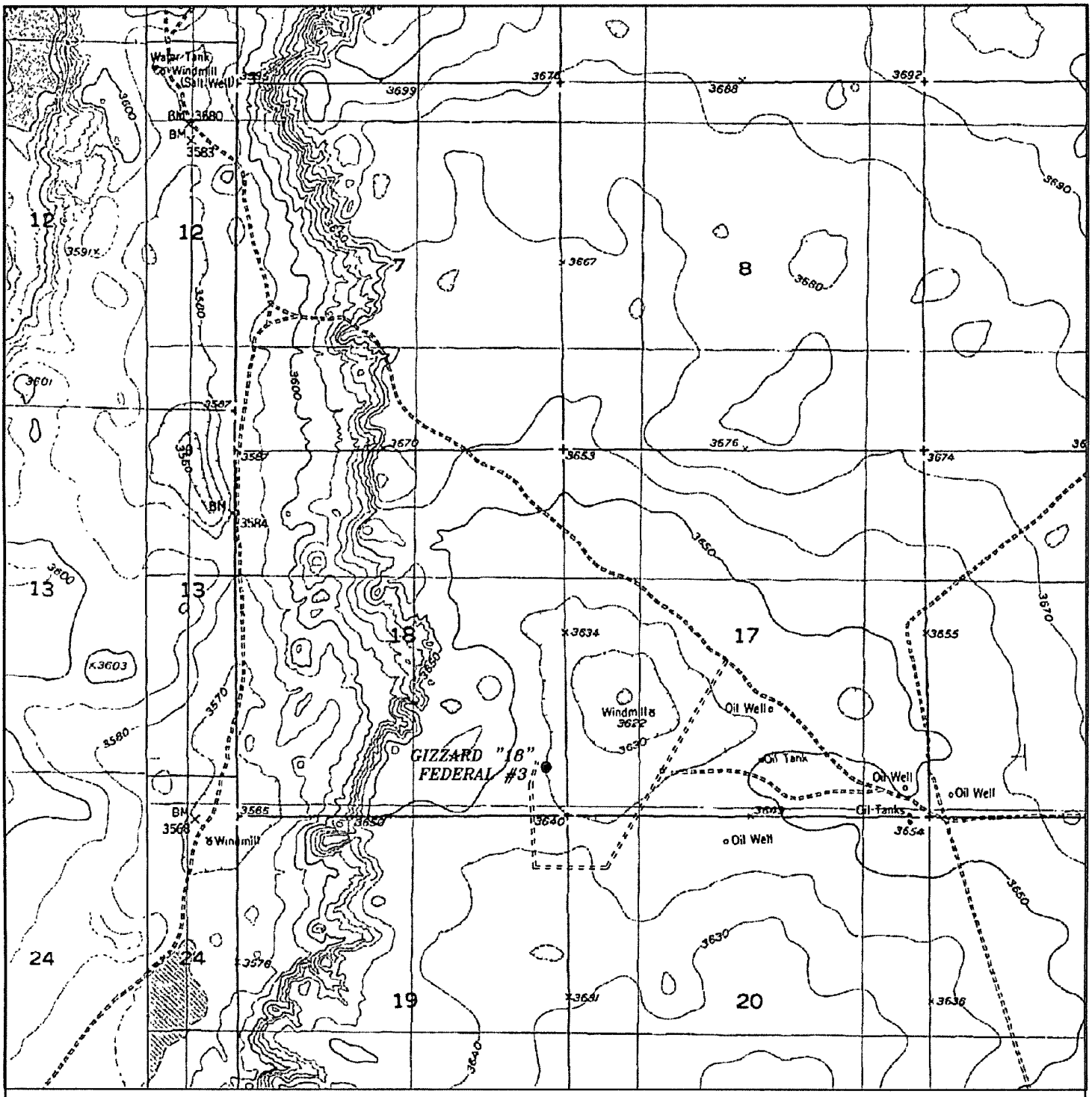
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number:	JMS 21470
Survey Date:	06-24-2009
Scale:	1" = 2 Miles
Date:	06-26-2009

N

CIMAREX ENERGY CO. OF COLORADO

Exhibit B



GIZZARD "18" FEDERAL #3
Located 720' FSL and 290' FEL
Section 18, 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 (575) 393-7316 - Office (575) 392-2206 - Fax basinsurveys.com	W.O. Number: JMS 21470 Survey Date: 06-24-2009 Scale: 1" = 2000' Date: 06-26-2009	N	CIMAREX ENERGY CO. OF COLORADO

Exhibit C

Application to Drill
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
Unit P, Section 18
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 720 FSL & 290 FEL
BHL 660 FSL & 1170 FWL

2 Elevation above sea level: 3,646 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 7300' MD 10965' TVD 6900'

6 Estimated tops of geological markers:

Queen	1486'	Base Anhydrite	6935'
Grayburg	1664'	Hueco (WC)	7049'
San Andres	2255'	Atoka	9758'
Glorieta	3767'		
L. Abo	6831'		

7 Possible mineral bearing formation:
Abo Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to ~~200'~~ 220	8.4 - 8.6	28	NC	FW
~~200'~~ 220 to 2500'	10.0	30-32	NC	Brine water
2500' to 7300'	8.4 - 9.5	30-32	NC	FW, brine
6520' to 10965'	9.0	28-32	May lose circ	Cut brine

See COA

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

Proposed drilling Plan
After drilling and setting surface and intermediate casing, drill to vertical TD 7300' and log. Set 7" casing to 6620' and cross over to 2⅞" 2000 psi IJ fiberglass tubing underneath and cement in place. Drill out of the bottom of the 7" with a 6⅛" bit and through cement and fiberglass tubing to KOP @ 6680' and kick off to drill the lateral. The fiberglass tubing effectively circulates cement to surface and plugs back the open hole.

Kick off 6⅛" hole @ 6680.' Drill to TD 10965.' Run 4½" PEAK completion liner from RSB packer @ 6520' to TD @ 10965.' Split the liner with LTC from TD to EOC (6979') and BTC from EOC to TOL (6520'). Frac as needed.

Application to Drill
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
Unit P, Section 18
T16S-R29E, Eddy County, NM

9 Casing & Cementing Program: See COA

String	Hole Size	Depth			Casing OD		Weight	Collar	Grade
Surface	17½"	0'	to	~~300'~~ 200'	New	13⅜"	48#	STC	H-40
Intermediate	12¼"	0'	to	2500'	New	9⅝"	40#	LTC	J-55
Pilot Hole	8¾"	0'	to	6620'	New	7"	26#	LTC	P-110
Fiberglass	8¾"	6620'	to	7300'	New	2⅞"	2.18#		IJ
Lateral Pt. 1	6⅛"	6520'	to	6979'	New	4½"	11.6#	**BTC**	P-110
Lateral Pt. 2	6⅛"	6979'	to	10965'	New	4½"	11.6#	**LTC**	P-110

10 Cementing:

Surface
Lead: 110 sx Premium Plus + 1% $CaCl_2$ + 0.125# Poly-e-flake (wt 12.5, yld 1.97)
Tail: 220 sx Premium Plus + 2% $CaCl_2$ (wt 14.8, yld 1.35)
TOC Surface

Intermediate
Lead: 415 sks Interfill C + 0.125# Poly-E-Flake (wt 11.9, yld 2.45)
Tail: 215 sks Premium Plus + 1% $CaCl_2$ (wt 14.8, yld 1.34)
TOC Surface

Pilot Hole
Lead: 370 sx Interfill H + 0.1% HR-7 + 0.125# Poly-e-flake (wt 11.9, yld 2.49)
Tail: 270 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 13.2, yld 1.61)
TOC 2300'

Lateral Pt. 1 No cement needed. Peak completion assembly.

Fresh water zones will be protected by setting 13⅜" casing at 200' and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 2500' and cementing to surface, and by setting 7" casing at 6620' and fiberglass to 7300' and cementing to 2300.'

Collapse Factor	*Burst Factor*	*Tension Factor*
1.125	1.125	1.6

11 Pressure control Equipment:
Exhibit "E". A 13⅜" 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.

See COA

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 3000 psi by an independent service company.

Application to Drill
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
Unit P, Section 18
T16S-R29E, Eddy County, NM

12 Testing, Logging and Coring Program: See COA
- A. Mud logging 2 man unit from 5000' 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 10-15 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.**

CIMAREX

BAKER HUGHES INTEQ

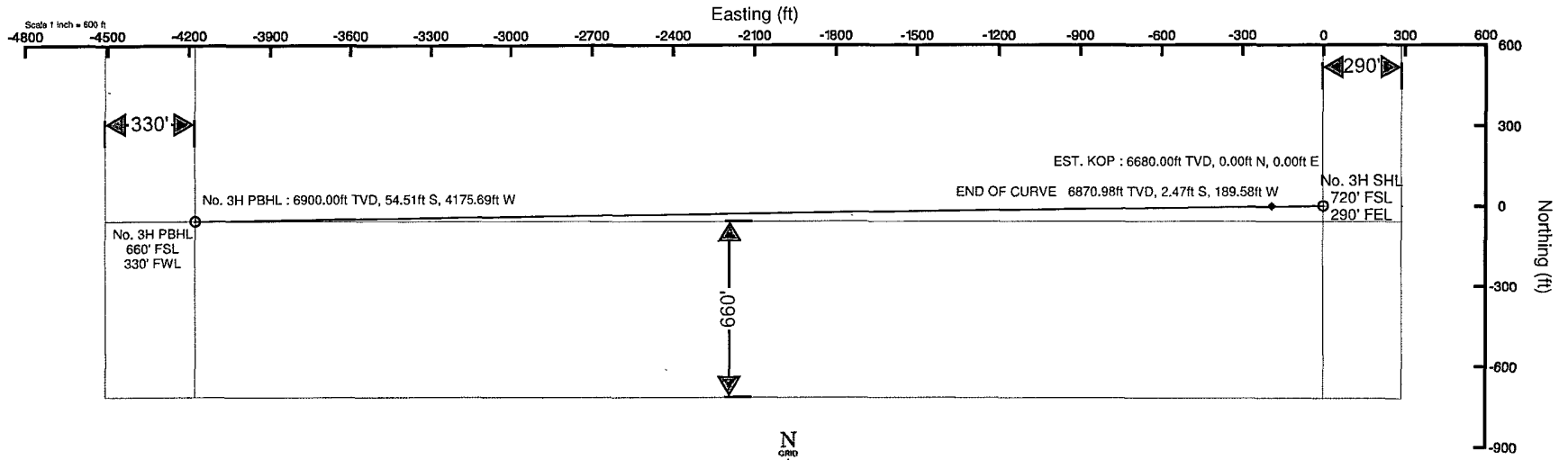
Cimarex Energy Co.

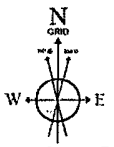
Location: Eddy County, NM
Field: (Gizzard) Sec 18, T16S, R29E
Facility: Gizzard 18 Fed No. 3H

Slot: No. 3H SHL
Well: No. 3H
Wellbore: No. 3H PWB

Well Profile Data

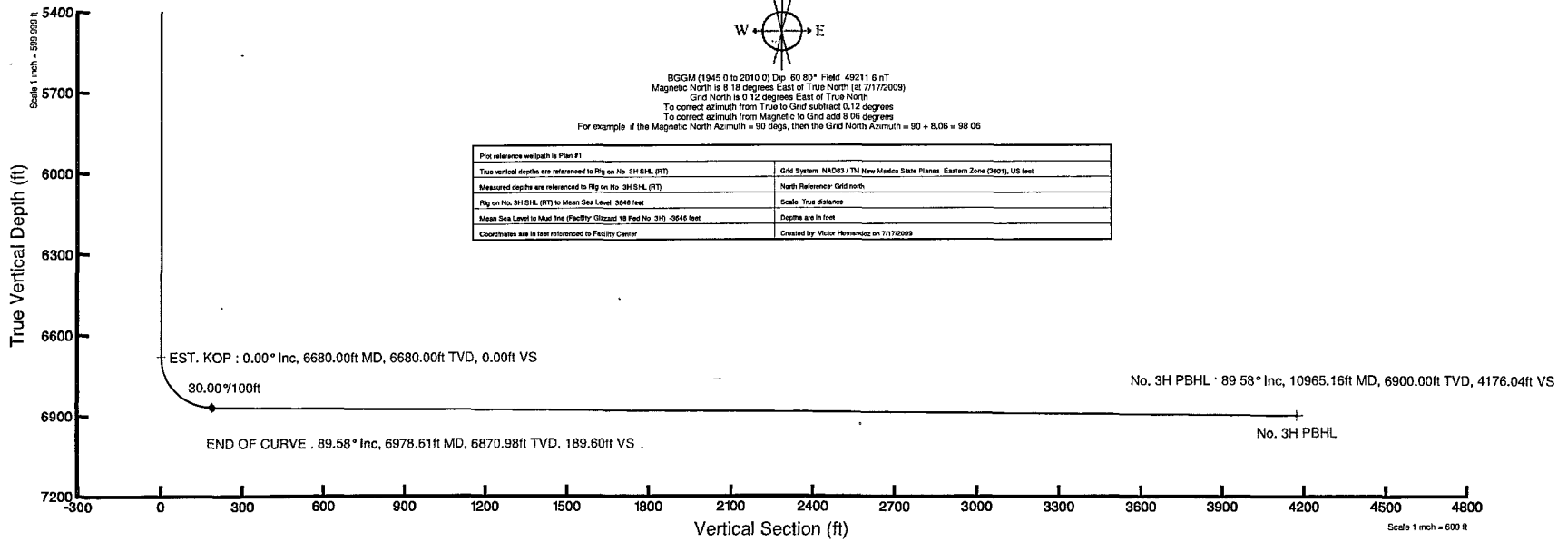
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	269.252	0.00	0.00	0.00	0.00	0.00
EST. KOP	6680.00	0.000	269.252	6680.00	0.00	0.00	0.00	0.00
END OF CURVE	6978.61	89.583	269.252	6870.98	-2.47	-189.58	30.00	189.60
No. 3H PBHL	10965.16	89.583	269.252	6900.00	-54.51	-4175.69	0.00	4176.04





BGGM (1945.0 to 2010.0) Dip 60.80° Field 49211.6 nT
Magnetic North is 8.18 degrees East of True North (at 7/17/2009)
Grid North is 0.12 degrees East of True North
To correct azimuth from True to Grid subtract 0.12 degrees
To correct azimuth from Magnetic to Grid add 8.06 degrees
For example, if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 8.06 = 98.06

Plot reference wellpath is Plan #1	
True vertical depths are referenced to Rig on No. 3H SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 3H SHL (RT)	North Reference: Grid north
Rig on No. 3H SHL (RT) to Mean Sea Level: 3646 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: Gizzard 18 Fed No. 3H): -3646 feet	Depths are in feet
Coordinates are in feet referenced to Facility Center	Created by: Victor Hernandez on 7/17/2009



Azimuth 269.25° with reference 0.00 N, 0.00 E

Planned Wellpath Report

Plan #1

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co.**	Slot	**No. 3H SHL**
Area	**Eddy County, NM**	Well	**No. 3H**
Field	**(Gizzard) Sec 18, T16S, R29E**	Wellbore	**No. 3H PWB**
Facility	**Gizzard 18 Fed No. 3H**		

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	**0.999915**	Report Generated	**7/17/2009** at **2:56:45 PM**
Convergence at slot	**0.12° East**	Database/Source file	**WA_Midland/No._3H_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**	610919.30	697204.30	32°54'59.126"N	104°06'23.700"W
Facility Reference Pt			**610919.30**	**697204.30**	32°54'59.126"N	104°06'23.700"W
Field Reference Pt			**610868.40**	**701434.90**	32°55'40.988"N	104°06'24.190"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on No. 3H SHL (RT) to Facility Vertical Datum	**0.00ft**
Horizontal Reference Pt	**Facility Center**	Rig on No. 3H SHL (RT) to Mean Sea Level	**3646.00ft**
Vertical Reference Pt	**Rig on No. 3H SHL (RT)**	Facility Vertical Datum to Mud Line (Facility)	**0.00ft**
MD Reference Pt	**Rig on No. 3H SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**269.25°**

Planned Wellpath Report

Plan #1

CIMAREX

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co.**	Slot	**No. 3H SHL**
Area	**Eddy County, NM**	Well	**No. 3H**
Field	**(Gizzard) Sec 18, T16S, R29E**	Wellbore	**No. 3H PWB**
Facility	**Gizzard 18 Fed No. 3H**		

WELLPATH DATA (46 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	269.252	0.00	0.00	0.00	0.00	610919.30	697204.30	32°54'59.126"N	104°06'23.700"W	0.00	Tie On
6680.00	0.000	269.252	6680.00	0.00	0.00	0.00	610919.30	697204.30	32°54'59.126"N	104°06'23.700"W	0.00	EST. KOP
6780.00†	30.000	269.252	6775.49	25.59	-0.33	-25.59	610893.72	697203.97	32°54'59.123"N	104°06'24.000"W	30.00	
6880.00†	60.000	269.252	6845.40	95.49	-1.25	-95.48	610823.82	697203.05	32°54'59.115"N	104°06'24.820"W	30.00	
6978.61	89.583	269.252	6870.98	189.60	-2.47	-189.58	610729.74	697201.83	32°54'59.105"N	104°06'25.924"W	30.00	END OF CURVE
6980.00†	89.583	269.252	6870.99	190.99	-2.49	-190.97	610728.35	697201.81	32°54'59.105"N	104°06'25.940"W	0.00	
7080.00†	89.583	269.252	6871.72	290.98	-3.80	-290.96	610628.37	697200.50	32°54'59.094"N	104°06'27.113"W	0.00	
7180.00†	89.583	269.252	6872.45	390.98	-5.10	-390.95	610528.39	697199.20	32°54'59.083"N	104°06'28.286"W	0.00	
7280.00†	89.583	269.252	6873.17	490.98	-6.41	-490.94	610428.41	697197.89	32°54'59.073"N	104°06'29.459"W	0.00	
7380.00†	89.583	269.252	6873.90	590.98	-7.71	-590.92	610328.43	697196.59	32°54'59.062"N	104°06'30.632"W	0.00	
7480.00†	89.583	269.252	6874.63	690.97	-9.02	-690.91	610228.45	697195.28	32°54'59.051"N	104°06'31.805"W	0.00	
7580.00†	89.583	269.252	6875.36	790.97	-10.33	-790.90	610128.47	697193.98	32°54'59.040"N	104°06'32.978"W	0.00	
7680.00†	89.583	269.252	6876.09	890.97	-11.63	-890.89	610028.49	697192.67	32°54'59.029"N	104°06'34.151"W	0.00	
7780.00†	89.583	269.252	6876.81	990.96	-12.94	-990.88	609928.51	697191.37	32°54'59.019"N	104°06'35.323"W	0.00	
7880.00†	89.583	269.252	6877.54	1090.96	-14.24	-1090.87	609828.53	697190.06	32°54'59.008"N	104°06'36.496"W	0.00	
7980.00†	89.583	269.252	6878.27	1190.96	-15.55	-1190.86	609728.55	697188.75	32°54'58.997"N	104°06'37.669"W	0.00	
8080.00†	89.583	269.252	6879.00	1290.96	-16.85	-1290.85	609628.57	697187.45	32°54'58.986"N	104°06'38.842"W	0.00	
8180.00†	89.583	269.252	6879.73	1390.95	-18.16	-1390.84	609528.59	697186.14	32°54'58.975"N	104°06'40.015"W	0.00	
8280.00†	89.583	269.252	6880.45	1490.95	-19.46	-1490.82	609428.61	697184.84	32°54'58.965"N	104°06'41.188"W	0.00	
8380.00†	89.583	269.252	6881.18	1590.95	-20.77	-1590.81	609328.63	697183.53	32°54'58.954"N	104°06'42.361"W	0.00	
8480.00†	89.583	269.252	6881.91	1690.95	-22.07	-1690.80	609228.65	697182.23	32°54'58.943"N	104°06'43.534"W	0.00	
8580.00†	89.583	269.252	6882.64	1790.94	-23.38	-1790.79	609128.67	697180.92	32°54'58.932"N	104°06'44.707"W	0.00	
8680.00†	89.583	269.252	6883.37	1890.94	-24.68	-1890.78	609028.69	697179.62	32°54'58.921"N	104°06'45.880"W	0.00	
8780.00†	89.583	269.252	6884.09	1990.94	-25.99	-1990.77	608928.71	697178.31	32°54'58.910"N	104°06'47.053"W	0.00	
8880.00†	89.583	269.252	6884.82	2090.94	-27.29	-2090.76	608828.73	697177.01	32°54'58.899"N	104°06'48.226"W	0.00	
8980.00†	89.583	269.252	6885.55	2190.93	-28.60	-2190.75	608728.75	697175.70	32°54'58.889"N	104°06'49.399"W	0.00	
9080.00†	89.583	269.252	6886.28	2290.93	-29.91	-2290.74	608628.77	697174.40	32°54'58.878"N	104°06'50.572"W	0.00	
9180.00†	89.583	269.252	6887.01	2390.93	-31.21	-2390.72	608528.78	697173.09	32°54'58.867"N	104°06'51.745"W	0.00	
9280.00†	89.583	269.252	6887.73	2490.92	-32.52	-2490.71	608428.80	697171.79	32°54'58.856"N	104°06'52.918"W	0.00	
9380.00†	89.583	269.252	6888.46	2590.92	-33.82	-2590.70	608328.82	697170.48	32°54'58.845"N	104°06'54.091"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co.**	Slot	**No. 3H SHL**
Area	**Eddy County, NM**	Well	**No. 3H**
Field	**(Gizzard) Sec 18, T16S, R29E**	Wellbore	**No. 3H PWB**
Facility	**Gizzard 18 Fed No. 3H**		

WELLPATH DATA (46 stations). † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
9480.00†	89.583	269.252	6889.19	2690.92	-35.13	-2690.69	608228.84	697169.18	32°54'58.834"N	104°06'55.263"W	0.00	
9580.00†	89.583	269.252	6889.92	2790.92	-36.43	-2790.68	608128.86	697167.87	32°54'58.823"N	104°06'56.436"W	0.00	
9680.00†	89.583	269.252	6890.64	2890.91	-37.74	-2890.67	608028.88	697166.57	32°54'58.813"N	104°06'57.609"W	0.00	
9780.00†	89.583	269.252	6891.37	2990.91	-39.04	-2990.66	607928.90	697165.26	32°54'58.802"N	104°06'58.782"W	0.00	
9880.00†	89.583	269.252	6892.10	3090.91	-40.35	-3090.65	607828.92	697163.96	32°54'58.791"N	104°06'59.955"W	0.00	
9980.00†	89.583	269.252	6892.83	3190.91	-41.65	-3190.63	607728.94	697162.65	32°54'58.780"N	104°07'01.128"W	0.00	
10080.00†	89.583	269.252	6893.56	3290.90	-42.96	-3290.62	607628.96	697161.35	32°54'58.769"N	104°07'02.301"W	0.00	
10180.00†	89.583	269.252	6894.28	3390.90	-44.26	-3390.61	607528.98	697160.04	32°54'58.758"N	104°07'03.474"W	0.00	
10280.00†	89.583	269.252	6895.01	3490.90	-45.57	-3490.60	607429.00	697158.73	32°54'58.747"N	104°07'04.647"W	0.00	
10380.00†	89.583	269.252	6895.74	3590.90	-46.87	-3590.59	607329.02	697157.43	32°54'58.736"N	104°07'05.820"W	0.00	
10480.00†	89.583	269.252	6896.47	3690.89	-48.18	-3690.58	607229.04	697156.12	32°54'58.725"N	104°07'06.993"W	0.00	
10580.00†	89.583	269.252	6897.20	3790.89	-49.49	-3790.57	607129.06	697154.82	32°54'58.715"N	104°07'08.166"W	0.00	
10680.00†	89.583	269.252	6897.92	3890.89	-50.79	-3890.56	607029.08	697153.51	32°54'58.704"N	104°07'09.339"W	0.00	
10780.00†	89.583	269.252	6898.65	3990.89	-52.10	-3990.55	606929.10	697152.21	32°54'58.693"N	104°07'10.512"W	0.00	
10880.00†	89.583	269.252	6899.38	4090.88	-53.40	-4090.53	606829.12	697150.90	32°54'58.682"N	104°07'11.685"W	0.00	
10965.16	89.583	269.252	6900.00[1]	4176.04	-54.51	-4175.69	606743.98	697149.79	32°54'58.673"N	104°07'12.684"W	0.00	No. 3H PBHL

Planned Wellpath Report

Plan #1

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co.**	Slot	**No. 3H SHL**
Area	**Eddy County, NM**	Well	**No. 3H**
Field	**(Gizzard) Sec 18, T16S, R29E**	Wellbore	**No. 3H PWB**
Facility	**Gizzard 18 Fed No. 3H**		

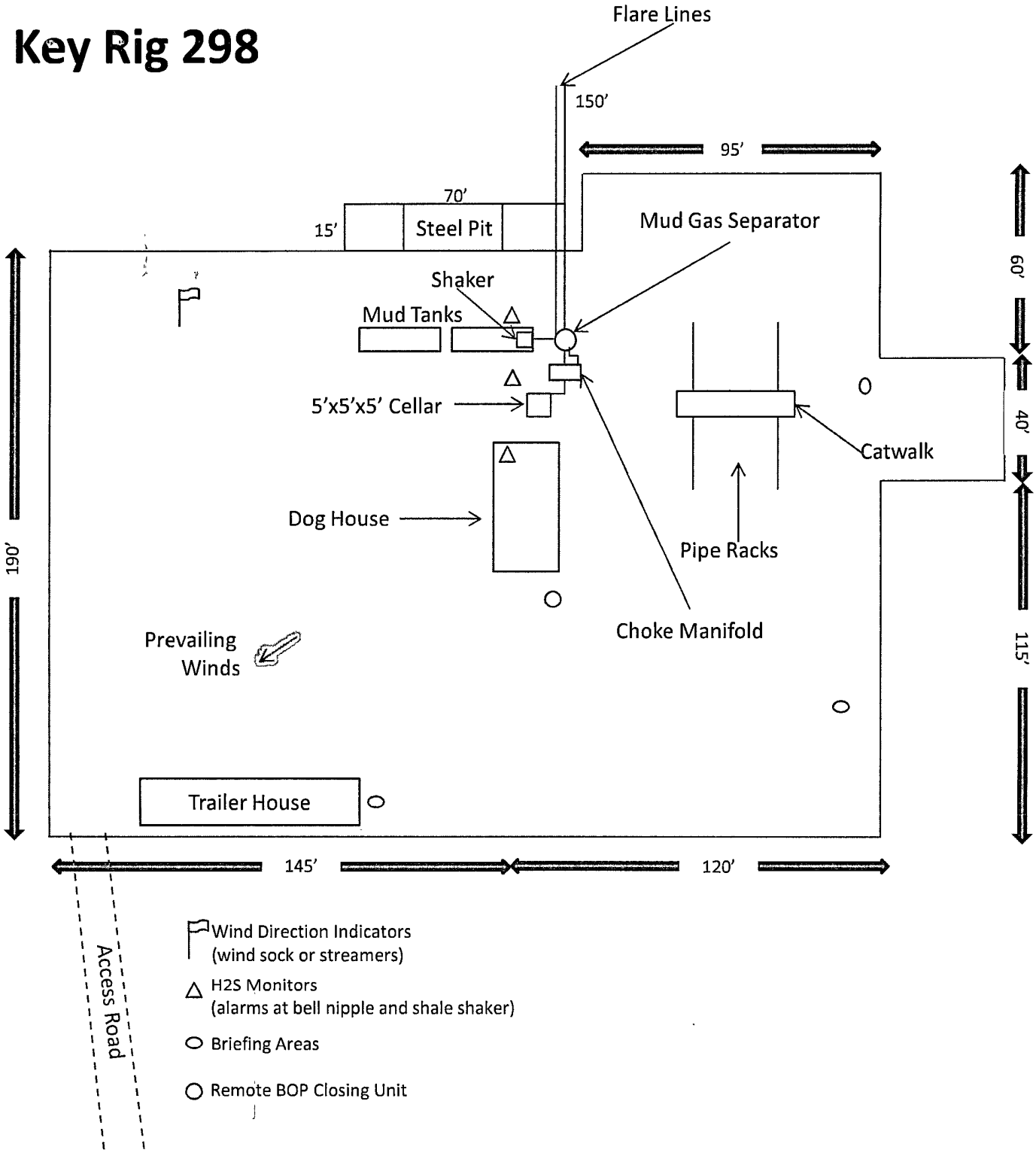
TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 3H PBHL	10965.16	6900.00	-54.51	-4175.69	**606743.98**	**697149.79**	32°54'58.673"N	104°07'12.684"W	point

SURVEY PROGRAM Ref Wellbore: No. 3H PWB Ref Wellpath: Plan #1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	10965.16	NaviTrak (Standard)		No. 3H PWB

Key Rig 298



Revised Rig Diagram
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
18-16S-29E
SHL 720 FSL & 290 FEL
BHL 660 FSL & 1170 FWL
Eddy County, NM

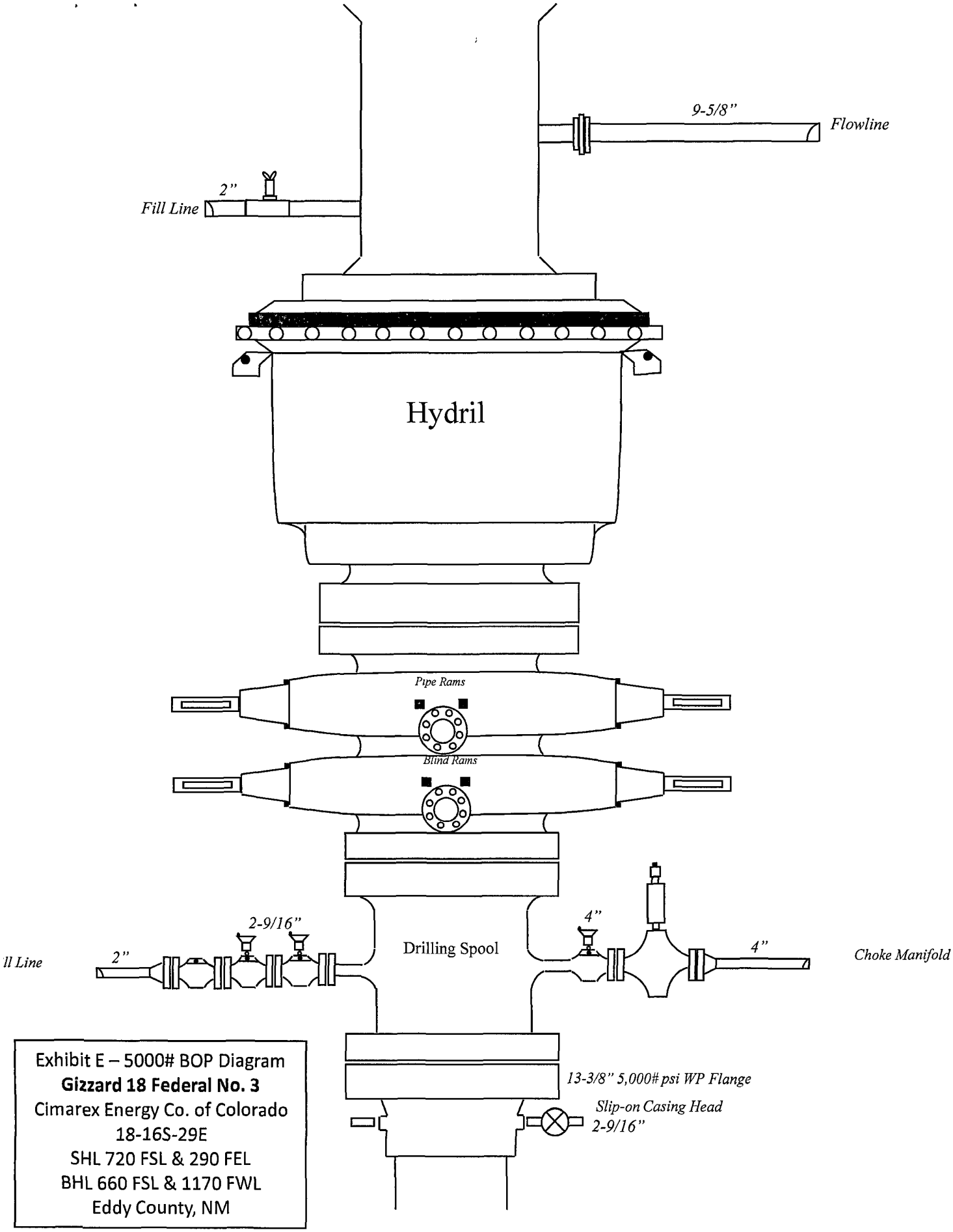


Exhibit E – 5000# BOP Diagram
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
18-16S-29E
SHL 720 FSL & 290 FEL
BHL 660 FSL & 1170 FWL
Eddy County, NM

DRILLING OPERATIONS
CHOKE MANIFOLD
5M SERVICE

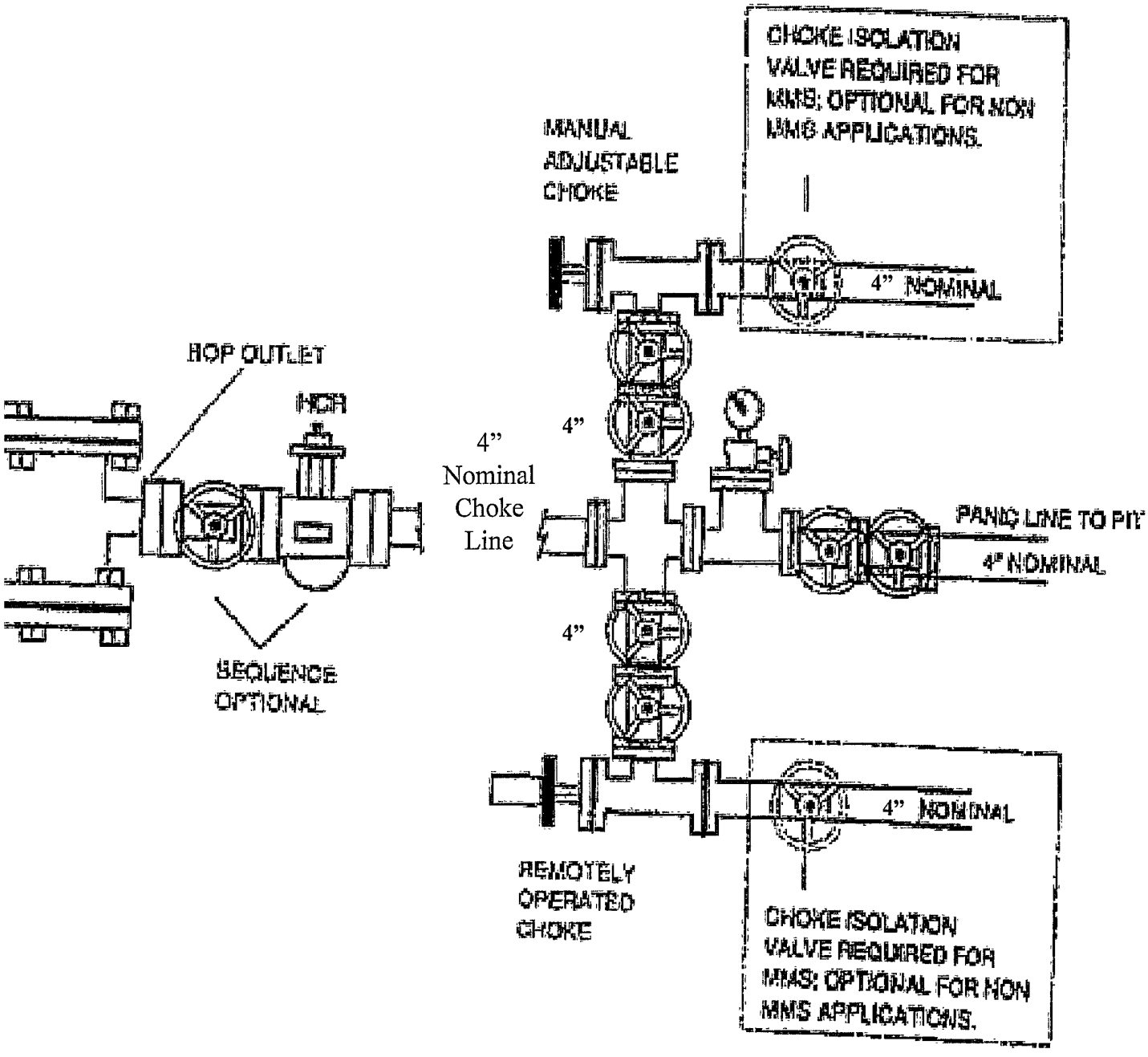


Exhibit E-1 – Choke Manifold Diagram
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
18-16S-29E
SHL 720 FSL & 290 FEL
BHL 660 FSL & 1170 FWL
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
Unit P, Section 18
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 No. 3
Cimarex Energy Co. of Colorado
Unit P, Section 18
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
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
Unit P, Section 18
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
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
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
Unit P, Section 18
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 US Hwy 82 and Barnival Draw, go North on Barnival Draw for 6.8 miles to lease road. On lease road, go West 0.75 miles to lease road. On lease road, go Westerly 1.1 miles going North to proposed location.

2 Planned Access Roads: No new lease roads will be constructed.

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"

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. In lieu of an archaeological survey report, Cimarex will be submitting an MOA application for this well pad and access road since they are within the MOA boundary.

D. There are no know dwellings within 1½ miles of this location.

Operator Certification Statement
Gizzard 18 Federal No. 3
Cimarex Energy Co. of Colorado
Unit P, Section 18
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: July 29, 2009

TITLE: Manager Operations Administration

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Co
LEASE NO.:	NM26072
WELL NAME & NO.:	3 Gizzard 18 Federal
SURFACE HOLE FOOTAGE:	720' FSL & 290' FEL
BOTTOM HOLE FOOTAGE	660' FSL & 1170' FWL
LOCATION:	Section 18, 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)

Due to the location of a playa approximately 720 feet to the northeast of the Gizzard 18 Federal #3, the well pad will be bermed on all sides with a three foot high berm.

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 (575) 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 6 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 (575) 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.

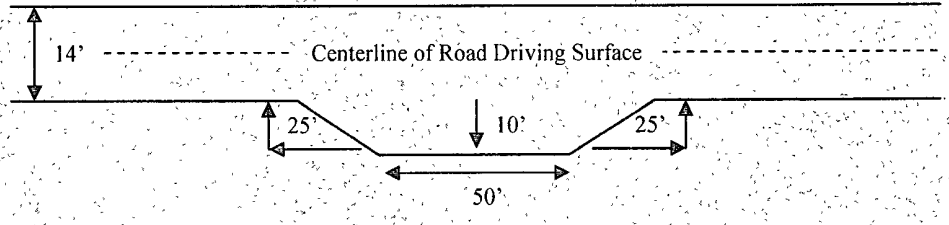
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

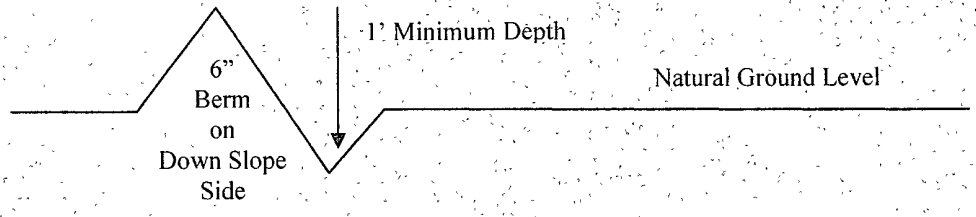


Drainage

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.

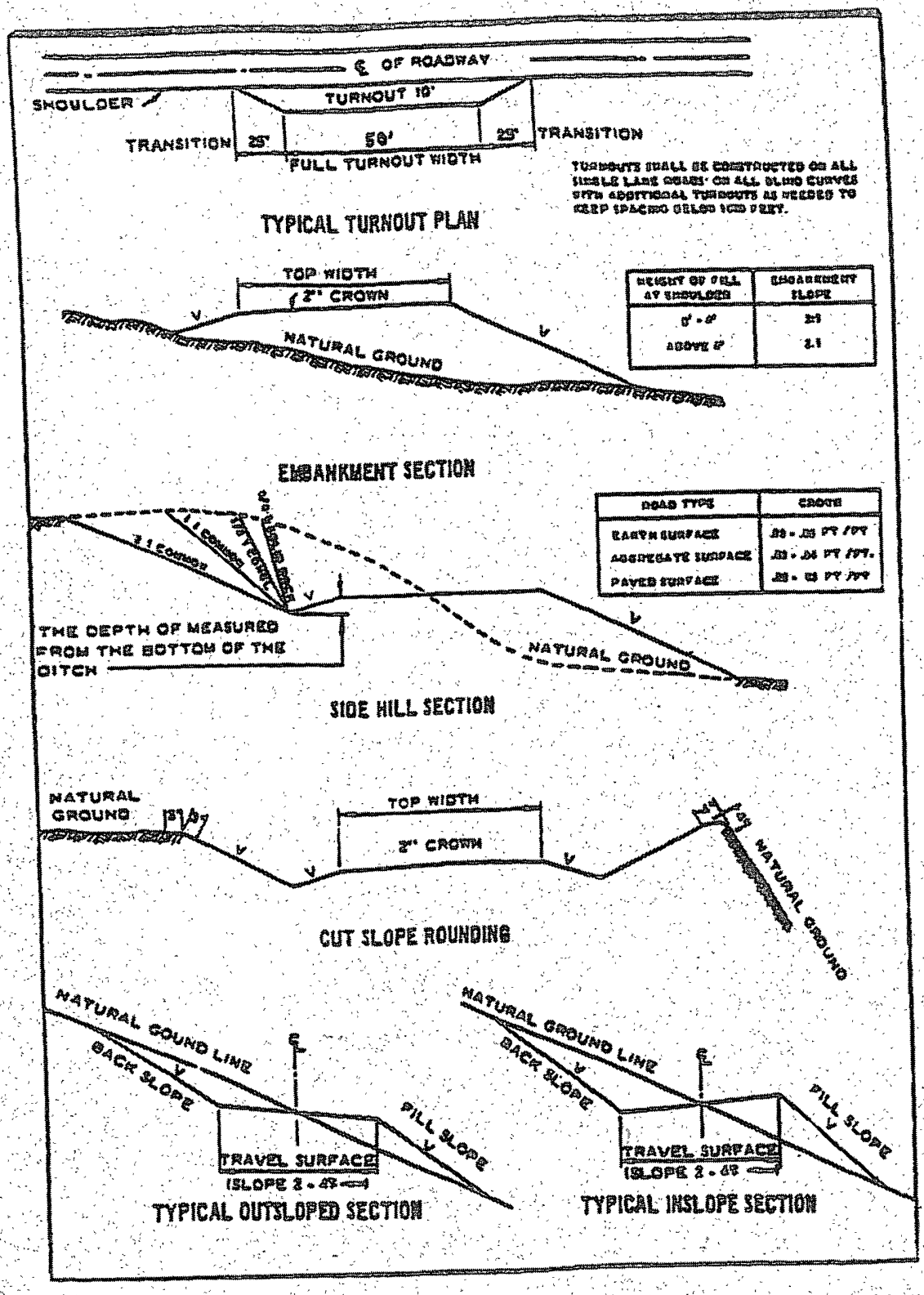
A gate shall be constructed and fastened securely to H-braces.

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 4 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 potential 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.

4. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

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.

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 for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

Possible loss of circulation in the Grayburg and San Andres formations.
Possible over pressure in the Wolfcamp (pilot hole).

1. The **13-3/8** inch surface casing shall be set at **approximately 220 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If salt is penetrated, set the casing shoe 25 feet above the top of salt.**

    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 is to include the lead cement slurry.

    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, c-d above.

3. The minimum required fill of cement behind the 7 inch pilot hole casing is:

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

Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

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

   ☒ No cement required. Peak completion assembly to be used.

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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi. Will be set up as a **5M**, but tested as a **3M**.

3. 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. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

   f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

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

DHW 102309

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 by 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 germination = 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.