ATS-08-108
EA-08-886

S

OCD-ARTESIA

JUN 18 2008
OCD-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.
SHL NM-15007 | BHL LC-068677

6. If Indian, Allotee or Tribe Name

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

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

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

8. Lease Name and Well No.
Glycerin 10 Federal Com No. 3

2. Name of Operator
Cimarex Energy Co. of Colorado

9. API Well No.
30-015- 36407

3a. Address
PO Box 140907
Irving, TX 75014

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

10. Field and Pool, or Exploratory
Abo Wildcat

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At Surface 2020' FSL & 330' FEL
At proposed prod. Zone 1980' FSL & 330' FWL *Horizontal Abo test*

11. Sec., T. R. M. or Blk. and Survey or Area
10-16S-29E

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

12. County or Parish
Eddy

13. State
NM

15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any)	16. No of acres in lease	17 Spacing Unit dedicated to this well
330'	1680	N2S2 160
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19 Proposed Depth**	**20. BLM/BIA Bond No. on File**
N/A	Pilot Hole 7,500' MD 11,751' TVD 7,190'	NM-2575
21. Elevations (Show whether DF, KDB, RT, GL, etc)	**22. Approximate date work will start***	**23. Estimated duration**
3,724' GR	05.01.08	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	04.02.08

Title
Manager Operations Administration

Approved By *(Signature)*	Name (Printed/Typed)	Date
/s/ James Stovall	/s/ James Stovall	JUN 16 2008
Title	**Office**	
FIELD MANAGER	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)*

ENTERED AFMSS 1A

NOTE: NEW PIT RULE 19.15.17 NMAC.

Drilling pit must be constructed, operated and closed per above new rule.

Roswell Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

ENTERED

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
30-015-36407	97019	Abo Wildcat

Property Code	Property Name	Well Number
37195	GLYCERIN "10" FEDERAL COM	3

OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3724'

Surface Location

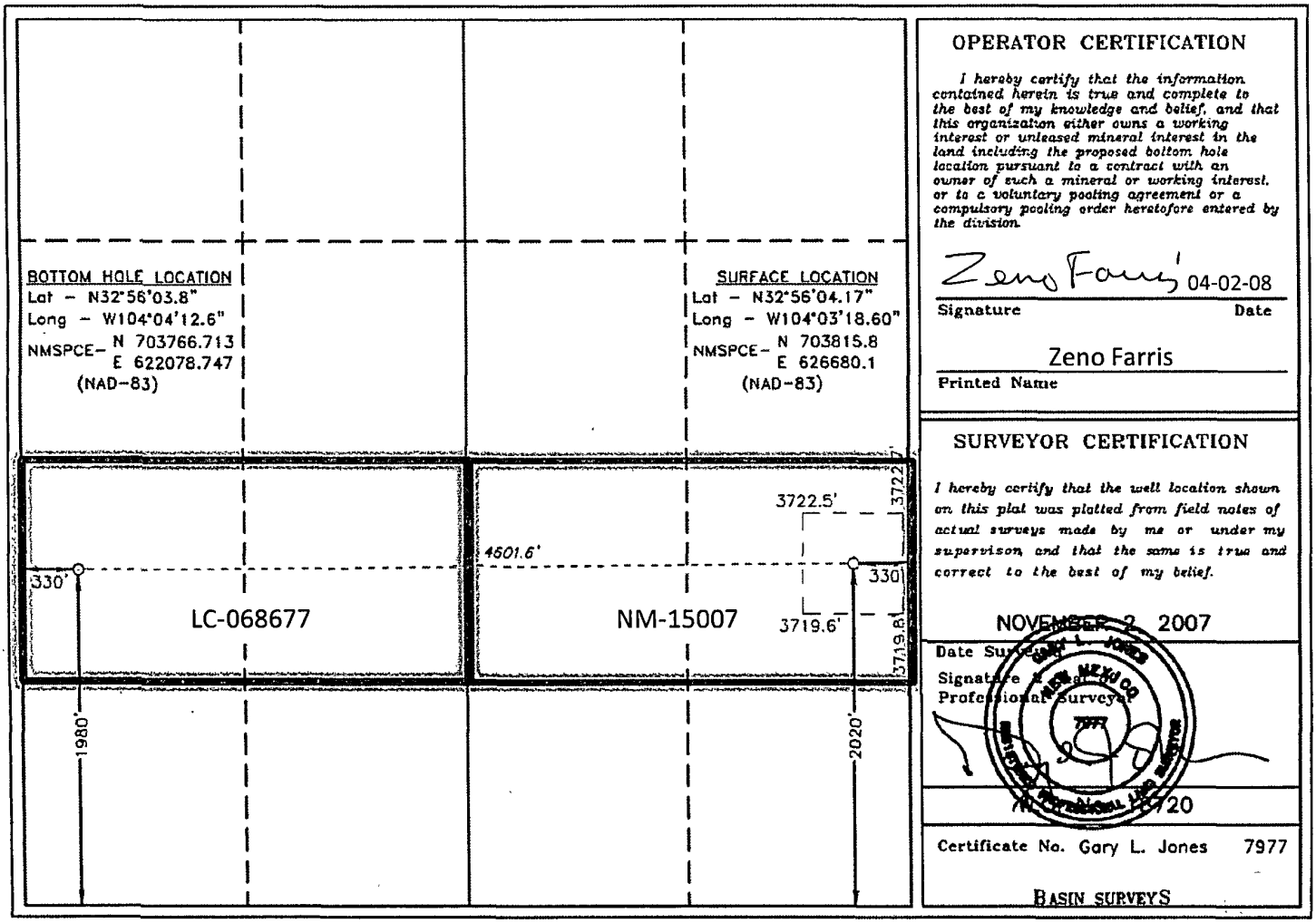
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	10	16 S	29 E		2020	SOUTH	330	EAST	EDDY

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
L	10	16 S	29 E		1980	SOUTH	330	WEST	EDDY

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

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Zeno Farris 04-02-08
Signature Date

Zeno Farris
Printed Name

SURVEYOR CERTIFICATION

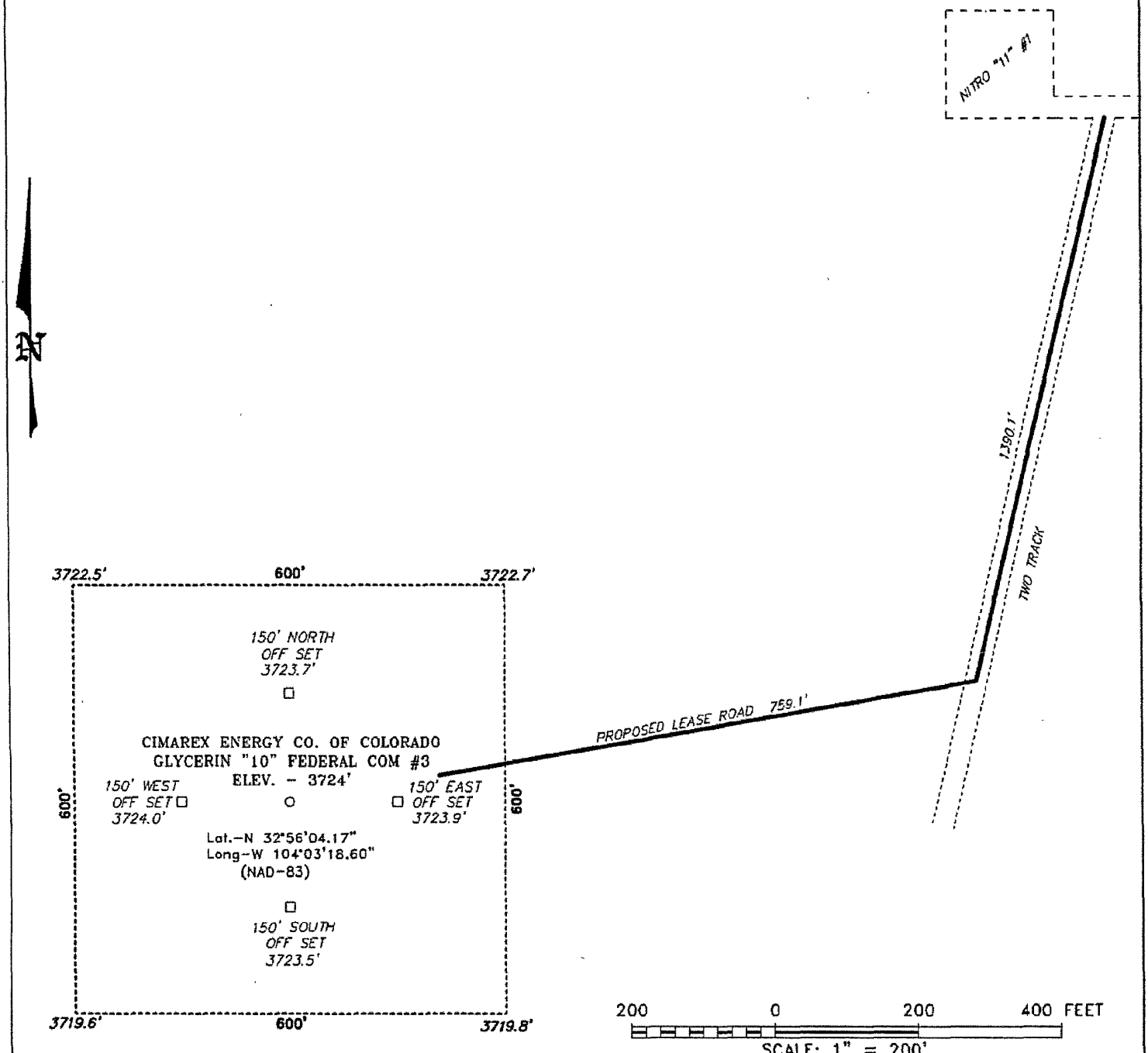
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

NOVEMBER 2, 2007
Date Surveyed
Signature & Seal of Professional Surveyor

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

SECTION 10, TOWNSHIP 16 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM JUNCTION OF US HWY 82 AND BARNIVAL DRAW ROAD, GO NORTH ON BARNIVAL DRAW FOR 6.8 MILES TO LEASE ROAD, ON LEASE ROAD CONTINUE NORTHWESTERLY 2.4 MIELS TO 2-TRACK AND PROPOSED LEASE ROAD.

CIMAREX ENERGY CO. OF COLORADO

REF: GLYCERIN "10" FEDERAL COM #3 / WELL PAD TOPO

THE GLYCERIN "10" FEDERAL COM #3 LOCATED 2020' FROM THE SOUTH LINE AND 330' FROM THE EAST LINE OF SECTION 10, TOWNSHIP 16 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 18721	Drawn By: J. SMALL		
Date: 11-07-2007	Disk: JMS 18721W	Survey Date: 11-02-2007	Sheet 1 of 1 Sheets

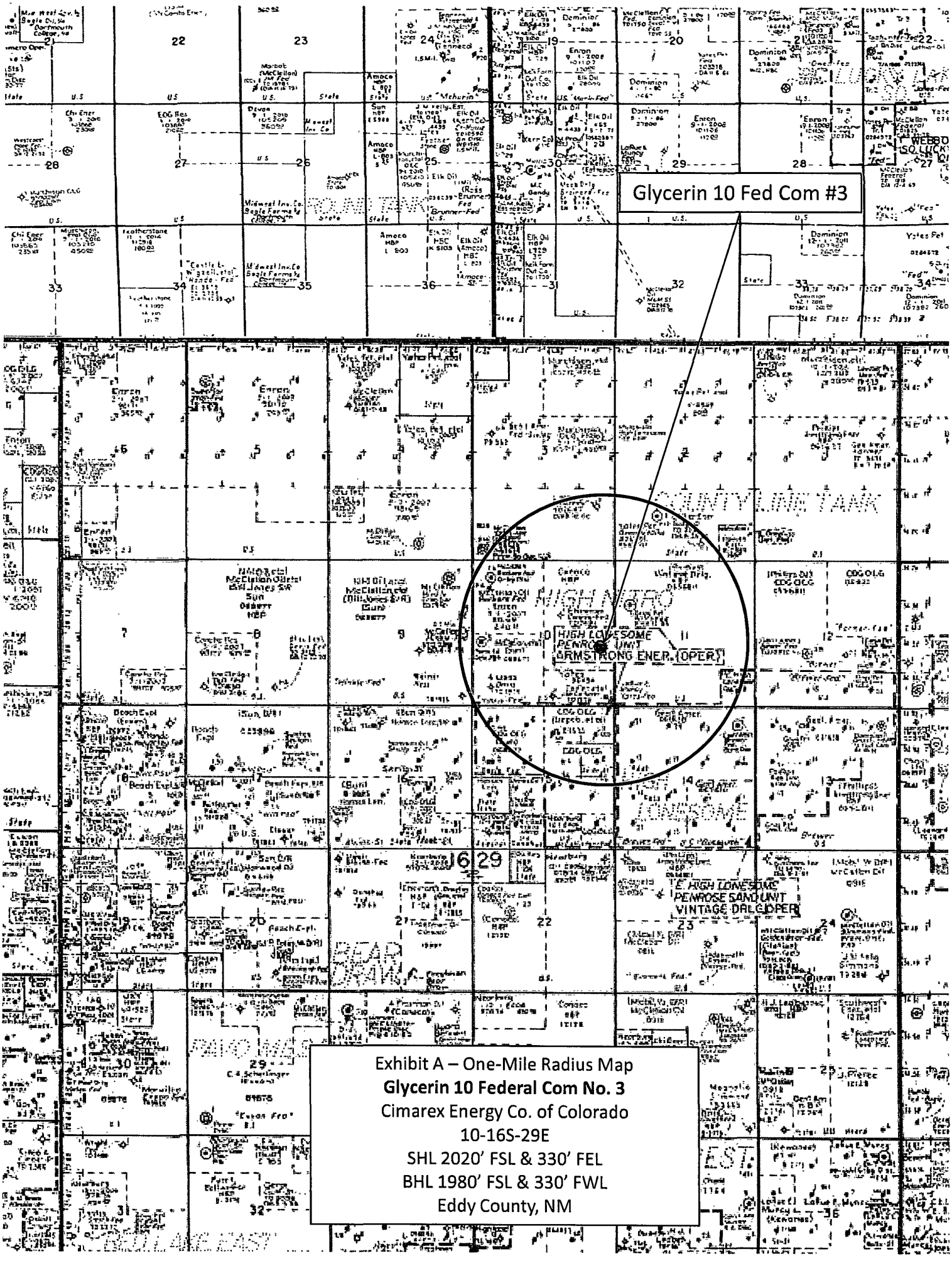
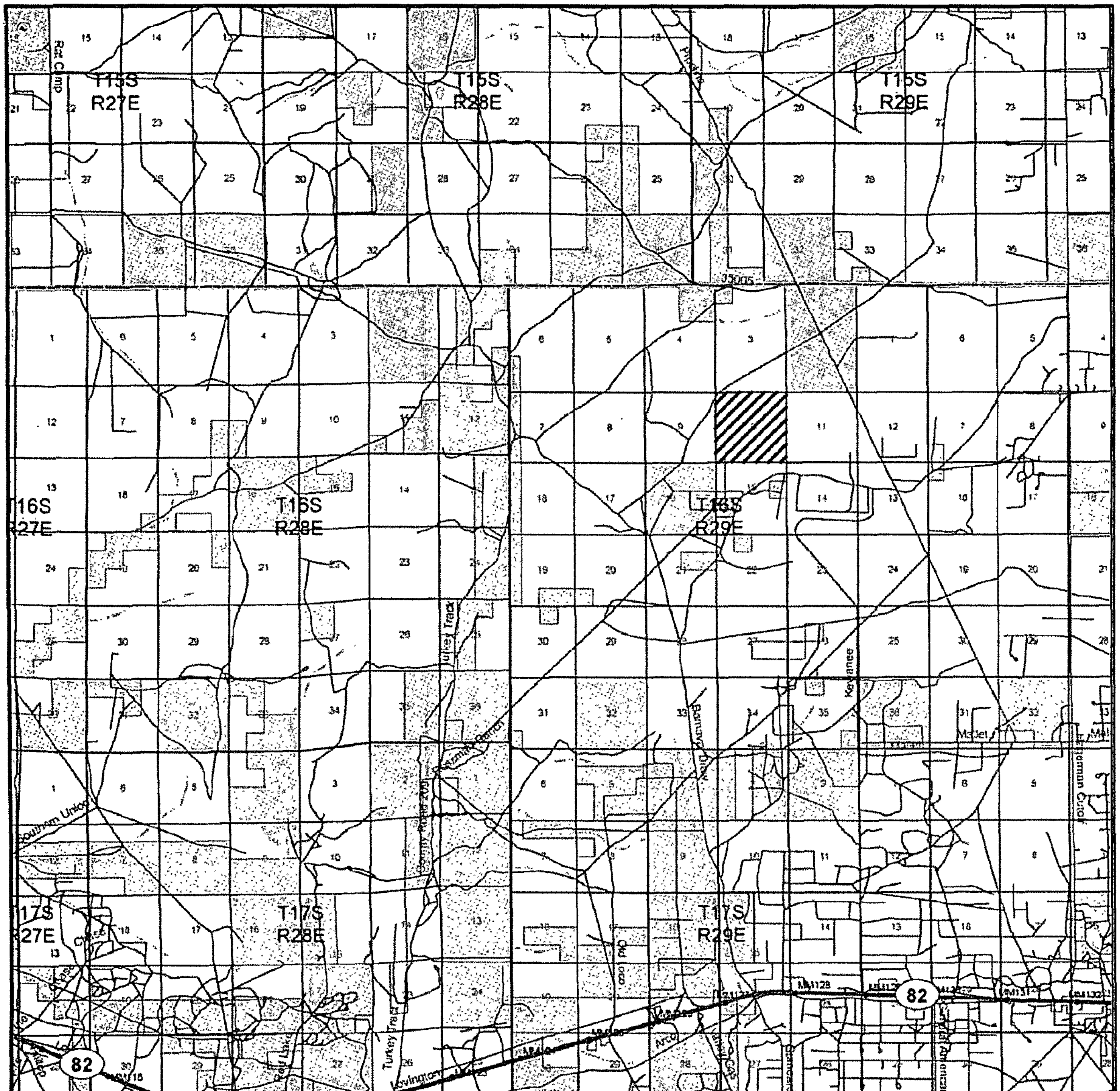


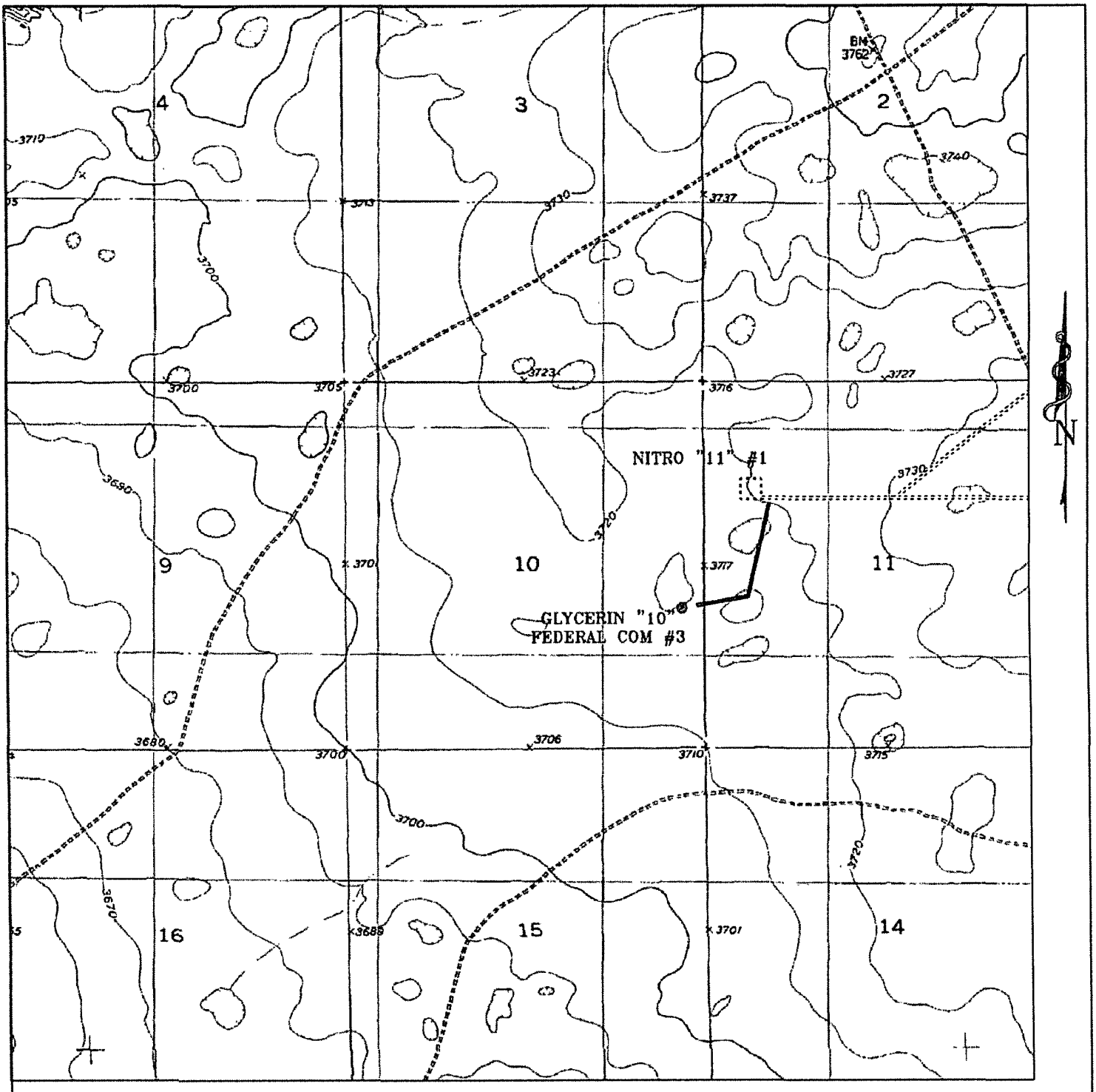
Exhibit A – One-Mile Radius Map
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
10-16S-29E
SHL 2020' FSL & 330' FEL
BHL 1980' FSL & 330' FWL
Eddy County, NM



GLYCERIN "10" FEDERAL COM #3
Located 2020' FSL and 330' FEL
Section 10, Township 16 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys focused on excellence in the oilfield P.O. Box 1786 1120 N. West County Rd. Hobbs, New Mexico 88241 (505) 393-7316 – Office (505) 392-3074 – Fax basinsurveys.com	W.O. Number: JMS 18720TR Survey Date: 11-02-2007 Scale: 1" = 2 MILES Date: 11-07-2007	CIMAREX ENERGY CO. OF COLORADO

Exhibit B



GLYCERIN "10" FEDERAL COM #3
Located 2020' FSL and 330' FEL
Section 10, Township 16 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield

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

W.O. Number:	JMS 18720T
Survey Date:	11-02-2007
Scale:	1" = 2000'
Date:	11-07-2007

CIMAREX ENERGY CO. OF COLORADO

Exhibit C

Application to Drill
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit I, Section 10
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 2020' FSL & 330' FEL
BHL 1980' FSL & 330' FWL

2 Elevation above sea level: 3,724 GR

3 Geologic name of surface formation: Quaternery Alluvium Deposits

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

5 Proposed drilling depth: Pilot Hole 7,500' MD 11,751' TVD 7,190'

6 Estimated tops of geological markers:

Abo Shale	6,195'
Lower Abo Dolomite	7,220'
Wolfcamp	7,320'

7 Possible mineral bearing formation:
Abo Oil

8 Proposed Mud Circulating System:

Depth			Mud Wt	Visc	Fluid Loss	Type Mud
0'	to	~~340'~~ 400'	8.4 - 8.6	28	NC	FW
~~340'~~ 400'	to	2,700'	10.0	30-32	NC	Brine water
2,700'	to	7,500'	8.4 - 9.5	30-32	NC	FW, brine
6,933'	to	7,533'	9.0	28-32	May lose circ	Cut brine
7,534'	to	11,751'	9.0	28-32	May lose circ	Cut brine

SEE COAs

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

Proposed drilling Plan
Drill 8¾" hole to 7,500' (pilot hole) and cement (see page 2 - Application to Drill). Set whipstock plug @ 7,050.' Mill window from 7,035' to 7,045.' Kick off 6⅛" lateral @ 7,040.' Drill 6⅛" hole to MD 11,751' and TVD 7,190.' Install 4½" **Peak Completion Assembly.** BTC 6,933' to 7,533.' LTC 7,534' to 11,751.' Liner length 4,818.' Lateral drill hole length 4,602.'

Application to Drill
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit I, Section 10
T16S-R29E, Eddy County, NM

9 Casing & Cementing Program:

See COAs

String	Hole Size		Depth	400'	Casing OD		Weight	Thread	Collar	Grade
Surface	17½"	0'	to	~~340'~~	New	13⅜"	48#	8-R	STC	H-40
Intermediate	12¼"	0'	to	2,700'	New	9⅝"	40#	8-R	LTC	J-55
Pilot Hole	8¾"	0'	to	7,500'	New	7"	26#	8-R	LTC	P-110
Lateral	6⅛"	6,933'	to	7,533'	New	4½"	11.6#	8-R	BTC	P-110
Lateral	6⅛"	7,534'	to	11,751'	New	4½"	11.6#	8-R	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: 270 sx Interfill H + 0.1% HR-7 + 0.125# Poly-e-flake (wt 11.9, yld 2.49)
Tail: 170 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
No cement needed. Peak completion assembly.

Fresh water zones will be protected by setting 13⅜" casing at 340' and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 2700' and cementing to surface, and by setting 7" casing at 7500' and cementing to 2300.'

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

11 Pressure control Equipment:
Exhibit "E". A 11" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 6000.' A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

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

We are requesting a variance for testing the 13⅜" surface casing from Onshore Order No. 2, which states that all casing strings below the conductor shall be pressure tested to 0.22 psi per foot or 1500 psi, whichever is greater, but not to exceed 70% of the manufacturer's stated maximum internal yield. We are requesting to test the 13⅜ casing to 1000 psi using rig pumps. The BOP will be tested to 3000 psi by an independent service company.

12 Testing, Logging and Coring Program:

A. Mud logging 2 man unit from 6000' 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.

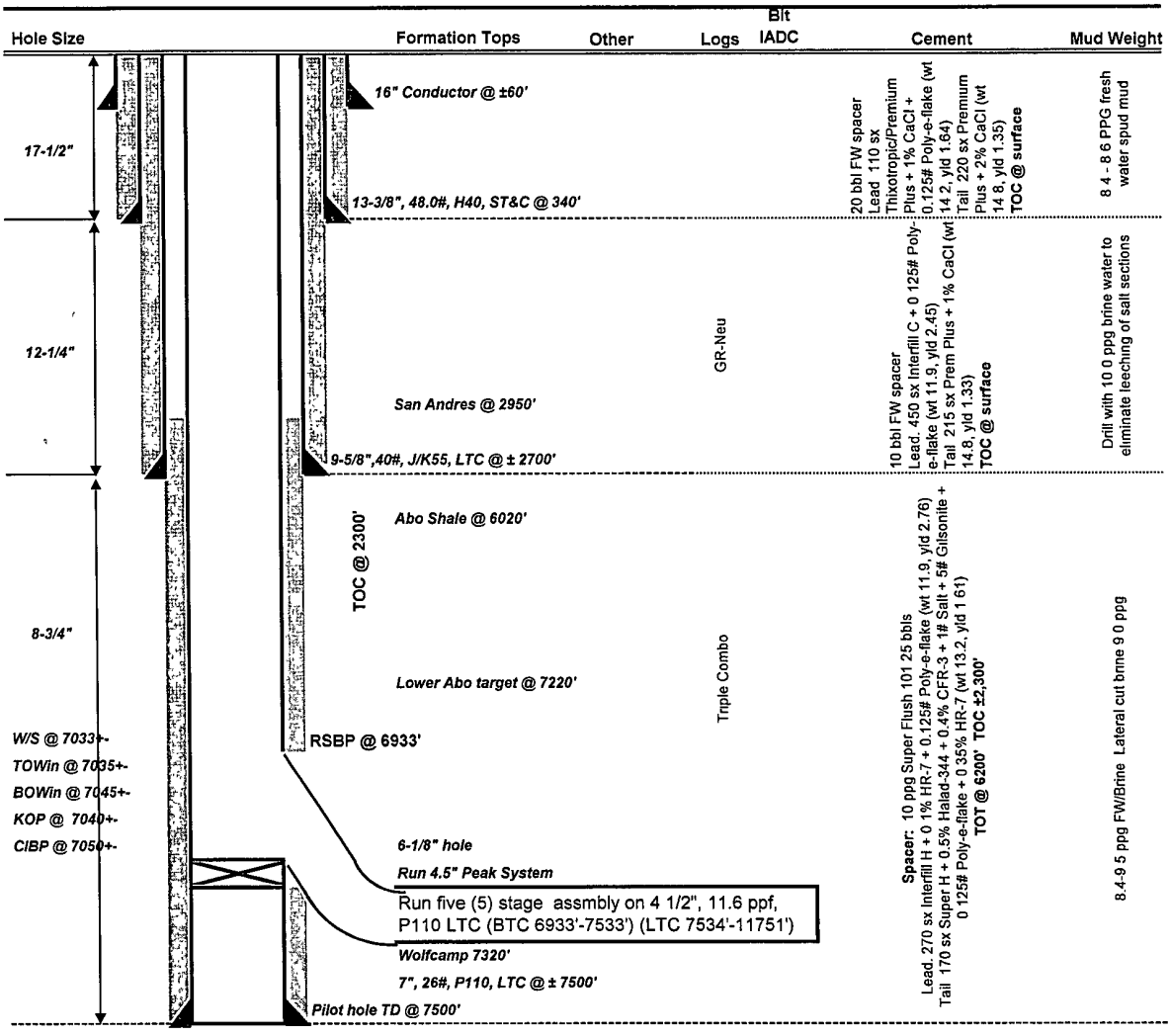
15 Other Facets of Operations:

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.**

DRILLING PROGNOSIS
Cimarex Energy Company

4/1/2008

Well:	Glycerin 10 Fed Com #3	Lse Serial #:	
Location:	10-16S-29E	Field:	
County, State	Eddy County, NM	Objective:	
Surface Location:	2020FS,330FE	TVD/MD:	7190 / 11800
Bottomhole Loc:	1980FS,330FW	Cementing:	Halliburton
E-Mail:		Mud:	
Wellhead:		Motors:	
		OH Logs	Halliburton
		Rig:	Key 880
Xmas Tree		Offset Wells:	
Tubing:	2 7/8" L80 EUE		
Superintendent:	Dee Smith		
Engineer:	Mark Audas		



NOTES:

Install wellhead on 13-3/8" and NU BOP. Test this installation to 1000 psi w/ rig pump. Then after setting 9-5/8" in slips and installing the csg spool, NU BOP (5M) w/ rotating head and test BOP to 5M w/ test unit. Test casing.

Cement volumes for surface csg include a 100% excess in the open hole section. If drilling conditions deem necessary, fluid caliper hole and adjust volumes.

Cement volumes for intermediate csg include a 70% excess in the open hole section. If drilling conditions deem necessary, fluid caliper hole and adjust volumes.

Cement volumes for production csg include a 25% excess in the open hole section. Adjust volumes after caliper + 25% excess.

ALL INVOICES ARE TO SHOW CIMAREX ENERGY AS OPERATOR AND USE CIMAREX ACCOUNTING CODES.

Planned Wellpath Report

Preliminary

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co.**	Slot	**No. 3 SHL**
Area	**Eddy County, NM**	Well	**No. 3**
Field	**(Glycerin) Sec. 10, T16S, R29E**	Wellbore	**No. 3 PWB**
Facility	**Glycerin 10 Fed Com No. 3**		

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	**0.999917**	Report Generated	**3/31/2008** at **8:22:42 AM**
Convergence at slot	**0.15° East**	Database/Source file	**WA_Midland/No._3_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**	626680.10	703815.80	32°56'04.172"N	104°03'18.599"W
Facility Reference Pt			**626680.10**	**703815.80**	32°56'04.172"N	104°03'18.599"W
Field Reference Pt			**626677.00**	**704899.90**	32°56'14.899"N	104°03'18.601"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on No. 3 SHL (RT) to Facility Vertical Datum	**18.00ft**
Horizontal Reference Pt	**Facility Center**	Rig on No. 3 SHL (RT) to Mean Sea Level	**3742.00ft**
Vertical Reference Pt	**Rig on No. 3 SHL (RT)**	Facility Vertical Datum to Mud Line (Facility)	**0.00ft**
MD Reference Pt	**Rig on No. 3 SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**269.39°**

Planned Wellpath Report

Preliminary

CIMAREX

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3 SHL
Area	Eddy County, NM	Well	No. 3
Field	(Glycerin) Sec. 10, T16S, R29E	Wellbore	No. 3 PWB
Facility	Glycerin 10 Fed Com No. 3		

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

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	269.389	0.00	0.00	0.00	0.00	0.00	Tie On
6195.00†	0.000	269.389	6195.00	0.00	0.00	0.00	0.00	ABO SHALE
7040.00	0.000	269.389	7040.00	0.00	0.00	0.00	0.00	KOP
7140.00†	30.000	269.389	7135.49	25.59	-0.27	-25.59	30.00	
7240.00†	60.000	269.389	7205.40	95.49	-1.02	-95.49	30.00	
7274.91†	70.472	269.389	7220.00	127.15	-1.36	-127.14	30.00	LOWER ABO DOLOMITE
7340.00†	90.000	269.389	7230.99	190.99	-2.04	-190.98	30.00	
7341.77	90.532	269.389	7230.98	192.76	-2.06	-192.75	30.00	EOC
7440.00†	90.532	269.389	7230.06	290.98	-3.10	-290.97	0.00	
7540.00†	90.532	269.389	7229.14	390.98	-4.17	-390.96	0.00	
7640.00†	90.532	269.389	7228.21	490.97	-5.24	-490.95	0.00	
7740.00†	90.532	269.389	7227.28	590.97	-6.30	-590.94	0.00	
7840.00†	90.532	269.389	7226.35	690.96	-7.37	-690.93	0.00	
7940.00†	90.532	269.389	7225.42	790.96	-8.44	-790.92	0.00	
8040.00†	90.532	269.389	7224.49	890.96	-9.50	-890.91	0.00	
8140.00†	90.532	269.389	7223.56	990.95	-10.57	-990.90	0.00	
8240.00†	90.532	269.389	7222.63	1090.95	-11.64	-1090.89	0.00	
8340.00†	90.532	269.389	7221.70	1190.94	-12.70	-1190.88	0.00	
8440.00†	90.532	269.389	7220.77	1290.94	-13.77	-1290.87	0.00	
8540.00†	90.532	269.389	7219.84	1390.93	-14.84	-1390.86	0.00	
8640.00†	90.532	269.389	7218.91	1490.93	-15.90	-1490.85	0.00	
8740.00†	90.532	269.389	7217.98	1590.93	-16.97	-1590.84	0.00	
8840.00†	90.532	269.389	7217.05	1690.92	-18.04	-1690.82	0.00	
8940.00†	90.532	269.389	7216.13	1790.92	-19.10	-1790.81	0.00	
9040.00†	90.532	269.389	7215.20	1890.91	-20.17	-1890.80	0.00	
9140.00†	90.532	269.389	7214.27	1990.91	-21.24	-1990.79	0.00	
9240.00†	90.532	269.389	7213.34	2090.90	-22.30	-2090.78	0.00	
9340.00†	90.532	269.389	7212.41	2190.90	-23.37	-2190.77	0.00	
9440.00†	90.532	269.389	7211.48	2290.90	-24.44	-2290.76	0.00	
9540.00†	90.532	269.389	7210.55	2390.89	-25.50	-2390.75	0.00	
9640.00†	90.532	269.389	7209.62	2490.89	-26.57	-2490.74	0.00	
9740.00†	90.532	269.389	7208.69	2590.88	-27.64	-2590.73	0.00	
9840.00†	90.532	269.389	7207.76	2690.88	-28.70	-2690.72	0.00	
9940.00†	90.532	269.389	7206.83	2790.87	-29.77	-2790.71	0.00	
10040.00†	90.532	269.389	7205.90	2890.87	-30.84	-2890.70	0.00	
10140.00†	90.532	269.389	7204.97	2990.87	-31.90	-2990.69	0.00	
10240.00†	90.532	269.389	7204.04	3090.86	-32.97	-3090.68	0.00	
10340.00†	90.532	269.389	7203.11	3190.86	-34.04	-3190.67	0.00	
10440.00†	90.532	269.389	7202.19	3290.85	-35.10	-3290.66	0.00	
10540.00†	90.532	269.389	7201.26	3390.85	-36.17	-3390.65	0.00	
10569.95†	90.532	269.389	7200.98	3420.79	-36.49	-3420.60	0.00	LOWER ABO DOLOMITE
10640.00†	90.532	269.389	7200.33	3490.84	-37.24	-3490.64	0.00	
10740.00†	90.532	269.389	7199.40	3590.84	-38.30	-3590.63	0.00	
10840.00†	90.532	269.389	7198.47	3690.83	-39.37	-3690.62	0.00	
10940.00†	90.532	269.389	7197.54	3790.83	-40.44	-3790.61	0.00	

Planned Wellpath Report

Preliminary

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3 SHL
Area	Eddy County, NM	Well	No. 3
Field	(Glycerin) Sec. 10, T16S, R29E	Wellbore	No. 3 PWB
Facility	Glycerin 10 Fed Com No. 3		

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

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
11040.00†	90.532	269.389	7196.61	3890.83	-41.50	-3890.60	0.00	
11140.00†	90.532	269.389	7195.68	3990.82	-42.57	-3990.59	0.00	
11240.00†	90.532	269.389	7194.75	4090.82	-43.64	-4090.58	0.00	
11340.00†	90.532	269.389	7193.82	4190.81	-44.70	-4190.57	0.00	
11440.00†	90.532	269.389	7192.89	4290.81	-45.77	-4290.56	0.00	
11540.00†	90.532	269.389	7191.96	4390.80	-46.84	-4390.55	0.00	
11640.00†	90.532	269.389	7191.03	4490.80	-47.90	-4490.54	0.00	
11740.00†	90.532	269.389	7190.10	4590.80	-48.97	-4590.53	0.00	
11751.21	90.532	269.389	7190.00[1]	4602.00	-49.09	-4601.74	0.00	No. 3H BHL

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 3 BHL	11751.21	7190.00	-49.09	-4601.74	**622078.75**	**703766.71**	32°56'03.803"N	104°04'12.591"W	point

SURVEY PROGRAM Ref Wellbore: No. 3H PWB Ref Wellpath: Preliminary

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.00	11751.21	NaviTrak (Standard)		No. 3 PWB

Cimarex Energy Co.

Location: Eddy County, NM
Field: (Glycerin) Sec. 10, T16S, R29E
Facility: Glycerin 10 Fed Com No. 3H

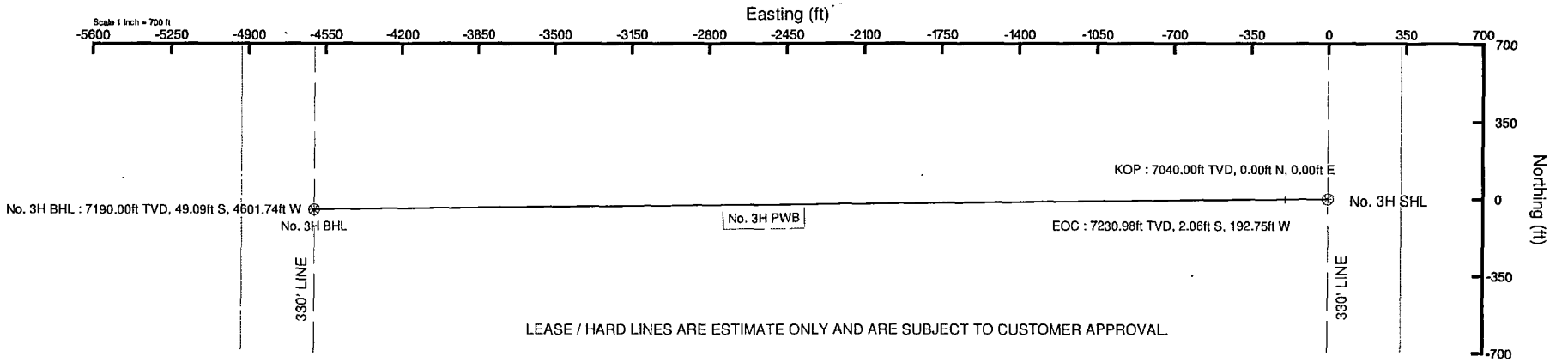
Slot: No. 3H SHL
Well: No. 3H
Wellbore: No. 3H PWB

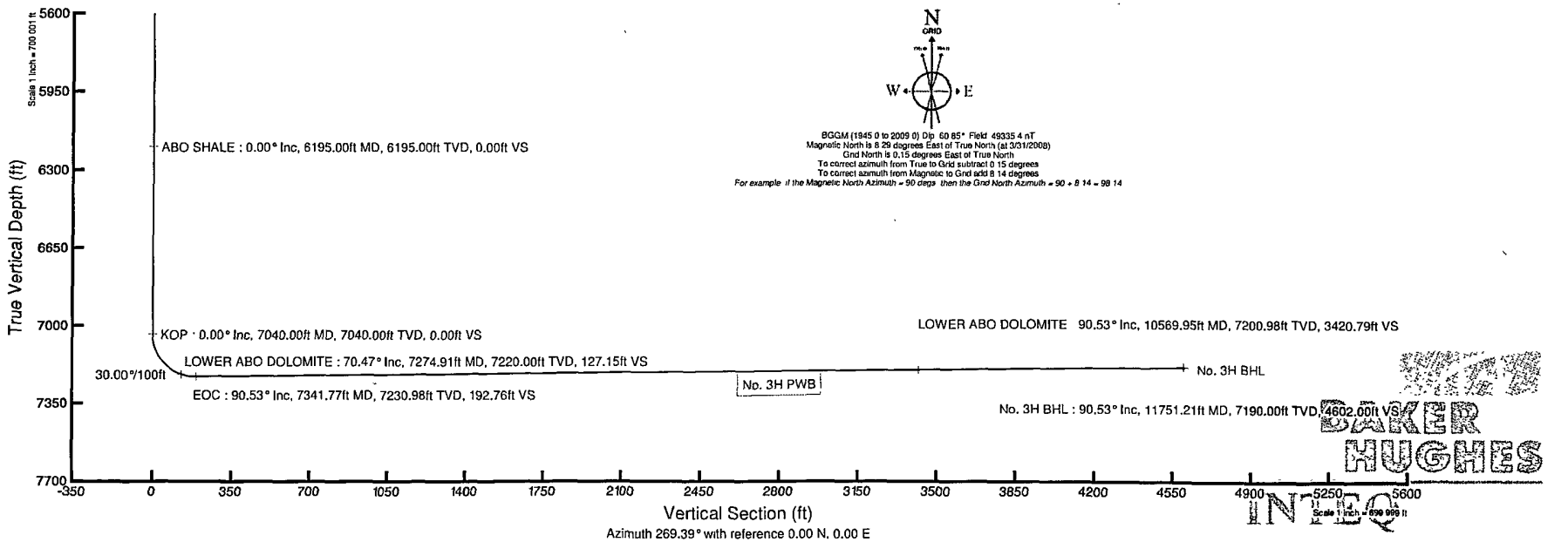
Plot reference wellpath is Preliminary	
True vertical depths are referenced to Rig on No. 3H SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 3H SHL (RT)	North Reference: Grid north
Rig on No. 3H SHL (RT) to Mean Sea Level: 3742 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: Glycerin 10 Fed Com No. 3H): -3724 feet	Depths are in feet
Coordinates are in feet referenced to Facility Center	Created by: Victor Hernandez on 3/31/2008

BAKER HUGHES INTEQ

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	269.389	0.00	0.00	0.00	0.00	0.00
KOP	7040.00	0.000	269.389	7040.00	0.00	0.00	0.00	0.00
EOC	7341.77	90.532	269.389	7230.98	-2.06	-192.75	30.00	192.76
No. 3H BHL	11751.21	90.532	269.389	7190.00	-49.09	-4601.74	0.00	4602.00





BAKER HUGHES INTEQ

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

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.
Area	Eddy County, NM
Field	(Glycerin) Sec. 10, T16S, R29E
Facility	Glycerin 10 Fed Com No. 3
Slot	No. 3 SHL
Well	No. 3
Wellbore	No. 3 PWB
Wellpath	Preliminary
Sidetrack	(none)

REPORT SETUP INFORMATION

Projection	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
North Refe	Grid
Scale	0.999917
Convergen	0.15° East
Software S	WellArchitect®
User	Victor Hernandez
Report Ge	3/31/2008 at 8:20:42 AM
DataBase/	WA_Midland/ev1415.xml

WELLPATI	Local Nortl [ft]	Local East [ft]	Grid East [ft]	Grid North [ft]	Latitude	Longitude
Slot Locati	0	0	626680.1	703815.8	32°56'04.1	104°03'18.599"W
Facility Ref			626680.1	703815.8	32°56'04.1	104°03'18.599"W
Field Refer			626677	704899.9	32°56'14.8	104°03'18.601"W

WELLPATH DATUM

Calculation	Minimum curvature
Horizontal	Facility Center
Vertical Re	Rig on No. 3 SHL (RT)
MD Refere	Rig on No. 3 SHL (RT)
Field Vertic	Mean Sea Level
Rig on No.	18.00ft
Rig on No.	3742.00ft
Facility Ver	0.00ft
Section Or	0.00ft
Section Or	0.00ft
Section Az	269.39°

WELLPATH DATA Wellbore: No. 3 PWB Wellpath: Preliminary † = interpolated/extrapolated station

	MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
	0	*0*	*269.389*	*0*	*0*	*0*	*0*	*0*	*Tie On*
†	100	0	269.389	100	0	0	0	0	
†	200	0	269.389	200	0	0	0	0	
†	300	0	269.389	300	0	0	0	0	
†	400	0	269.389	400	0	0	0	0	
†	500	0	269.389	500	0	0	0	0	
†	600	0	269.389	600	0	0	0	0	
†	700	0	269.389	700	0	0	0	0	
†	800	0	269.389	800	0	0	0	0	
†	900	0	269.389	900	0	0	0	0	
†	1000	0	269.389	1000	0	0	0	0	
†	1100	0	269.389	1100	0	0	0	0	
†	1200	0	269.389	1200	0	0	0	0	
†	1300	0	269.389	1300	0	0	0	0	
†	1400	0	269.389	1400	0	0	0	0	
†	1500	0	269.389	1500	0	0	0	0	
†	1600	0	269.389	1600	0	0	0	0	
†	1700	0	269.389	1700	0	0	0	0	
†	1800	0	269.389	1800	0	0	0	0	
†	1900	0	269.389	1900	0	0	0	0	
†	2000	0	269.389	2000	0	0	0	0	

†	2100	0	269.389	2100	0	0	0	0	
†	2200	0	269.389	2200	0	0	0	0	
†	2300	0	269.389	2300	0	0	0	0	
†	2400	0	269.389	2400	0	0	0	0	
†	2500	0	269.389	2500	0	0	0	0	
†	2600	0	269.389	2600	0	0	0	0	
†	2700	0	269.389	2700	0	0	0	0	
†	2800	0	269.389	2800	0	0	0	0	
†	2900	0	269.389	2900	0	0	0	0	
†	3000	0	269.389	3000	0	0	0	0	
†	3100	0	269.389	3100	0	0	0	0	
†	3200	0	269.389	3200	0	0	0	0	
†	3300	0	269.389	3300	0	0	0	0	
†	3400	0	269.389	3400	0	0	0	0	
†	3500	0	269.389	3500	0	0	0	0	
†	3600	0	269.389	3600	0	0	0	0	
†	3700	0	269.389	3700	0	0	0	0	
†	3800	0	269.389	3800	0	0	0	0	
†	3900	0	269.389	3900	0	0	0	0	
†	4000	0	269.389	4000	0	0	0	0	
†	4100	0	269.389	4100	0	0	0	0	
†	4200	0	269.389	4200	0	0	0	0	
†	4300	0	269.389	4300	0	0	0	0	
†	4400	0	269.389	4400	0	0	0	0	
†	4500	0	269.389	4500	0	0	0	0	
†	4600	0	269.389	4600	0	0	0	0	
†	4700	0	269.389	4700	0	0	0	0	
†	4800	0	269.389	4800	0	0	0	0	
†	4900	0	269.389	4900	0	0	0	0	
†	5000	0	269.389	5000	0	0	0	0	
†	5100	0	269.389	5100	0	0	0	0	
†	5200	0	269.389	5200	0	0	0	0	
†	5300	0	269.389	5300	0	0	0	0	
†	5400	0	269.389	5400	0	0	0	0	
†	5500	0	269.389	5500	0	0	0	0	
†	5600	0	269.389	5600	0	0	0	0	
†	5700	0	269.389	5700	0	0	0	0	
†	5800	0	269.389	5800	0	0	0	0	
†	5900	0	269.389	5900	0	0	0	0	
†	6000	0	269.389	6000	0	0	0	0	
†	6100	0	269.389	6100	0	0	0	0	
†	6195	0	269.389	6195	0	0	0	0	ABO SHALE
†	6200	0	269.389	6200	0	0	0	0	
†	6300	0	269.389	6300	0	0	0	0	
†	6400	0	269.389	6400	0	0	0	0	
†	6500	0	269.389	6500	0	0	0	0	
†	6600	0	269.389	6600	0	0	0	0	
†	6700	0	269.389	6700	0	0	0	0	
†	6800	0	269.389	6800	0	0	0	0	
†	6900	0	269.389	6900	0	0	0	0	
†	7000	0	269.389	7000	0	0	0	0	
	7040	0	269.389	7040	0	0	0	0	KOP
†	7100	18	269.389	7099.02	9.35	-0.1	-9.35	30	
†	7200	48	269.389	7181.93	63.19	-0.67	-63.19	30	
†	7274.91	70.472	269.389	7220	127.15	-1.36	-127.14	30	LOWER ABO DOLOMITE
†	7300	78	269.389	7226.81	151.28	-1.61	-151.27	30	
	7341.77	90.532	269.389	7230.98	192.76	-2.06	-192.75	30	EOC
†	7400	90.532	269.389	7230.44	250.98	-2.68	-250.97	0	
†	7500	90.532	269.389	7229.51	350.98	-3.74	-350.96	0	
†	7600	90.532	269.389	7228.58	450.97	-4.81	-450.95	0	
†	7700	90.532	269.389	7227.65	550.97	-5.88	-550.94	0	
†	7800	90.532	269.389	7226.72	650.97	-6.94	-650.93	0	
†	7900	90.532	269.389	7225.79	750.96	-8.01	-750.92	0	
†	8000	90.532	269.389	7224.86	850.96	-9.08	-850.91	0	
†	8100	90.532	269.389	7223.93	950.95	-10.14	-950.9	0	
†	8200	90.532	269.389	7223	1050.95	-11.21	-1050.89	0	
†	8300	90.532	269.389	7222.07	1150.94	-12.28	-1150.88	0	
†	8400	90.532	269.389	7221.14	1250.94	-13.34	-1250.87	0	
†	8500	90.532	269.389	7220.21	1350.94	-14.41	-1350.86	0	

†	8600	90.532	269.389	7219.28	1450.93	-15.48	-1450.85	0	
†	8700	90.532	269.389	7218.36	1550.93	-16.54	-1550.84	0	
†	8800	90.532	269.389	7217.43	1650.92	-17.61	-1650.83	0	
†	8900	90.532	269.389	7216.5	1750.92	-18.68	-1750.82	0	
†	9000	90.532	269.389	7215.57	1850.91	-19.74	-1850.81	0	
†	9100	90.532	269.389	7214.64	1950.91	-20.81	-1950.8	0	
†	9200	90.532	269.389	7213.71	2050.91	-21.88	-2050.79	0	
†	9300	90.532	269.389	7212.78	2150.9	-22.94	-2150.78	0	
†	9400	90.532	269.389	7211.85	2250.9	-24.01	-2250.77	0	
†	9500	90.532	269.389	7210.92	2350.89	-25.08	-2350.76	0	
†	9600	90.532	269.389	7209.99	2450.89	-26.14	-2450.75	0	
†	9700	90.532	269.389	7209.06	2550.88	-27.21	-2550.74	0	
†	9800	90.532	269.389	7208.13	2650.88	-28.28	-2650.73	0	
†	9900	90.532	269.389	7207.2	2750.88	-29.34	-2750.72	0	
†	10000	90.532	269.389	7206.27	2850.87	-30.41	-2850.71	0	
†	10100	90.532	269.389	7205.34	2950.87	-31.48	-2950.7	0	
†	10200	90.532	269.389	7204.42	3050.86	-32.54	-3050.69	0	
†	10300	90.532	269.389	7203.49	3150.86	-33.61	-3150.68	0	
†	10400	90.532	269.389	7202.56	3250.85	-34.68	-3250.67	0	
†	10500	90.532	269.389	7201.63	3350.85	-35.74	-3350.66	0	
†	10569.95	90.532	269.389	7200.98	3420.79	-36.49	-3420.6	0	LOWER ABO DOLOMITE
†	10600	90.532	269.389	7200.7	3450.85	-36.81	-3450.65	0	
†	10700	90.532	269.389	7199.77	3550.84	-37.88	-3550.64	0	
†	10800	90.532	269.389	7198.84	3650.84	-38.94	-3650.63	0	
†	10900	90.532	269.389	7197.91	3750.83	-40.01	-3750.62	0	
†	11000	90.532	269.389	7196.98	3850.83	-41.08	-3850.61	0	
†	11100	90.532	269.389	7196.05	3950.82	-42.14	-3950.6	0	
†	11200	90.532	269.389	7195.12	4050.82	-43.21	-4050.59	0	
†	11300	90.532	269.389	7194.19	4150.81	-44.28	-4150.58	0	
†	11400	90.532	269.389	7193.26	4250.81	-45.34	-4250.57	0	
†	11500	90.532	269.389	7192.33	4350.81	-46.41	-4350.56	0	
†	11600	90.532	269.389	7191.41	4450.8	-47.48	-4450.55	0	
†	11700	90.532	269.389	7190.48	4550.8	-48.54	-4550.54	0	
	11751.21	90.532	269.389	7190	4602	-49.09	-4601.74	0	No. 3 BHL 1

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape	Comment	Design Comments
(1) No. 3 B	11751.21	7190	-49.09	-4601.74	622078.8	703766.7	32°56'03.8	104°04'12.	point		

SURVEY PROGRAM Ref Wellbore: No. 3 PWB Ref Wellpath: Preliminary

Start MD [ft]	End MD [ft]	Pos Unc M	Log Name/ Wellbore
18	11751.21	NaviTrak (Standard)	No. 3 PWB

Patterson Rig 74

Cimarex Energy Co. of Colorado

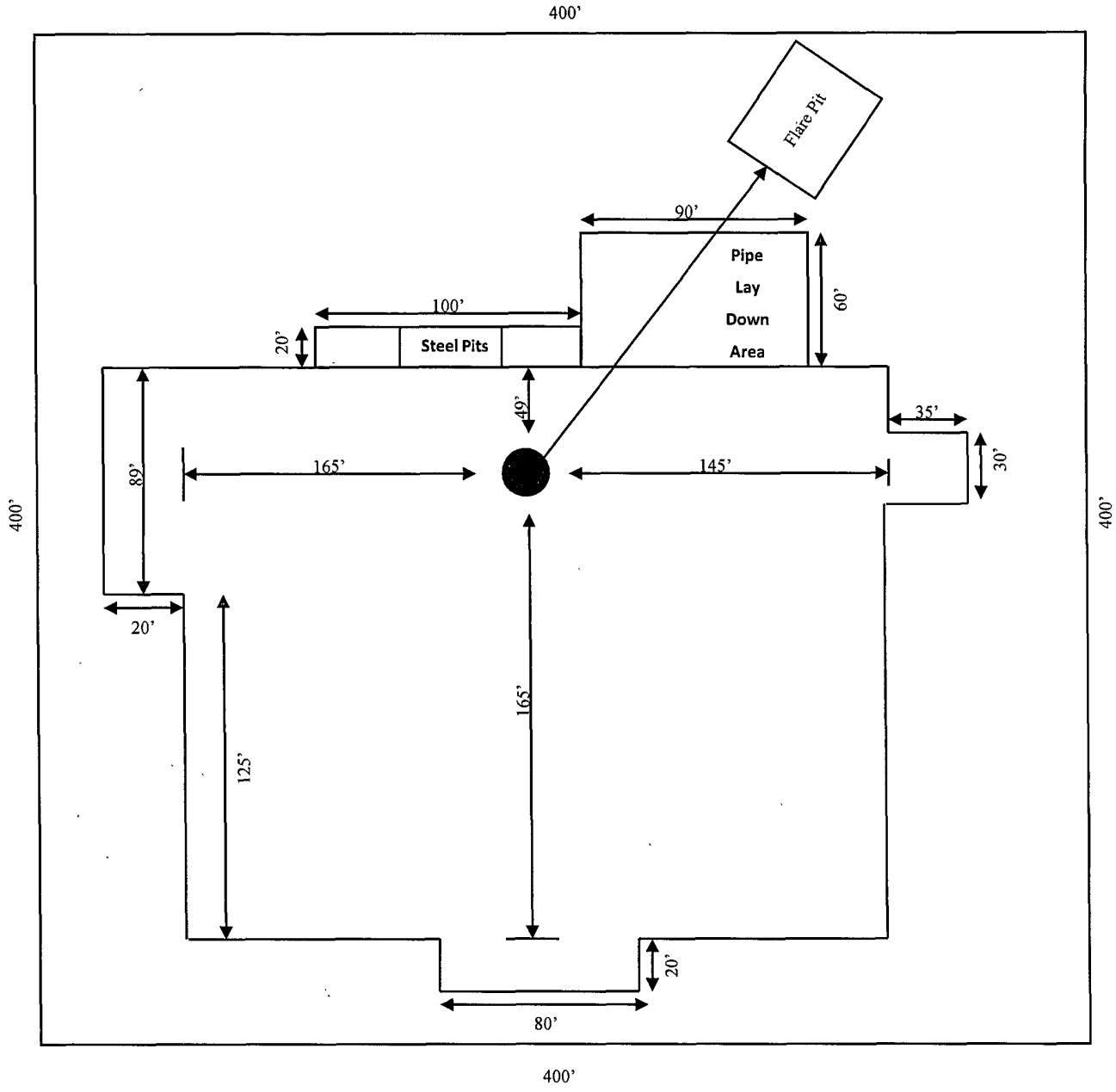


Exhibit D – Rig Layout
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
10-16S-29E
SHL 2020' FSL & 330' FEL
BHL 1980' FSL & 330' FWL
Eddy County, NM

SR & A

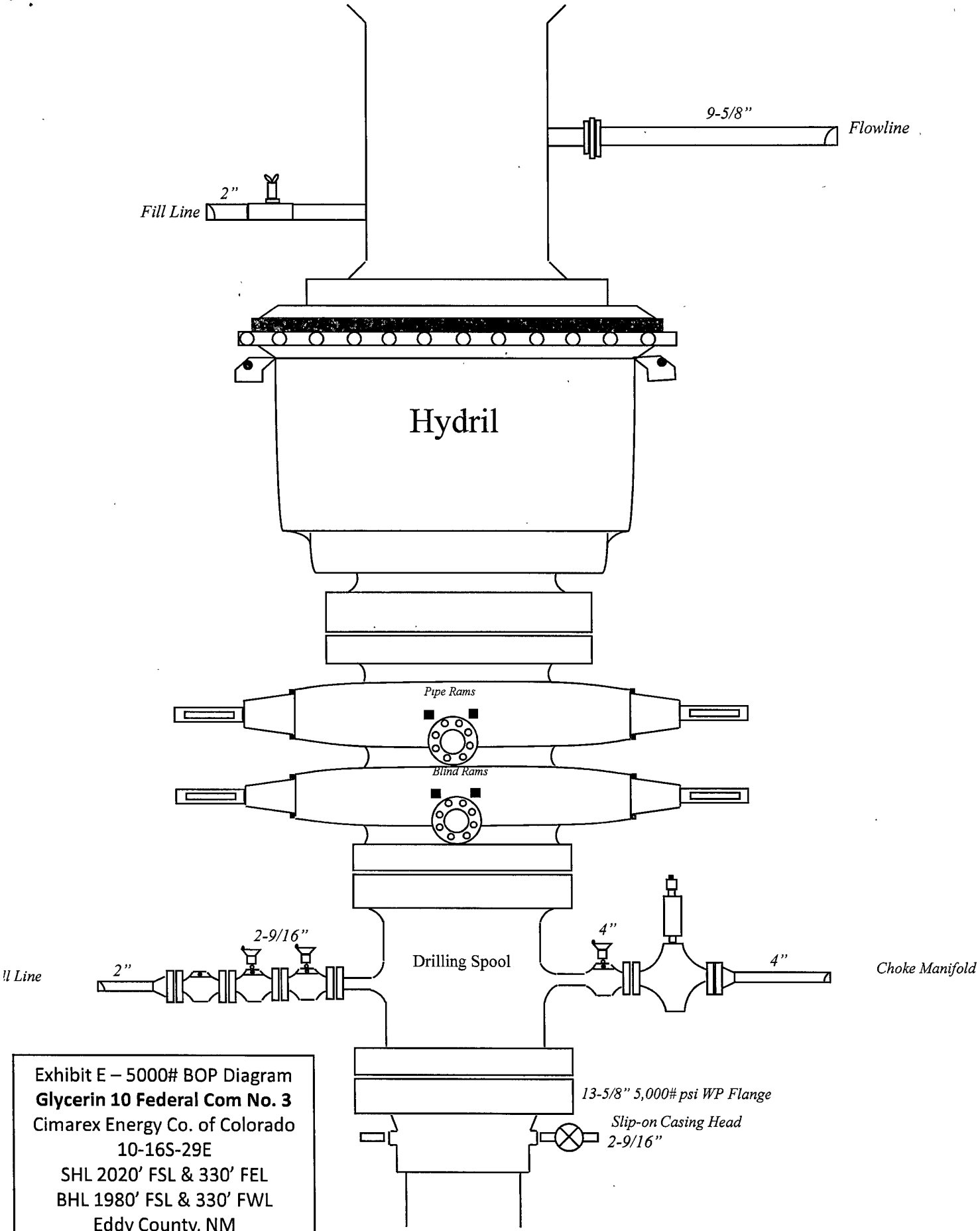


Exhibit E – 5000# BOP Diagram
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
10-16S-29E
SHL 2020' FSL & 330' FEL
BHL 1980' FSL & 330' FWL
Eddy County, NM

DRILLING OPERATIONS
CHOKE MANIFOLD
5M SERVICE

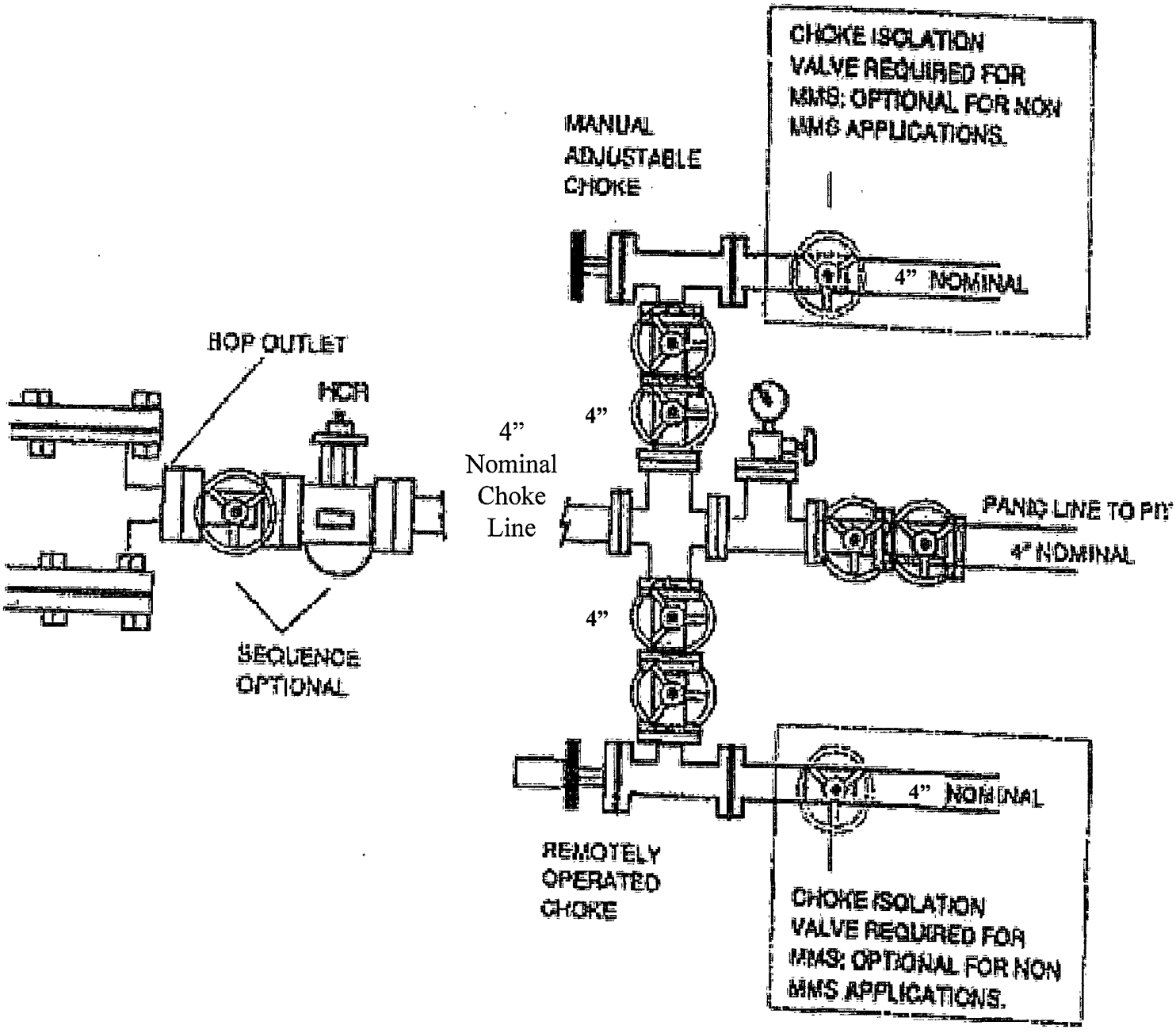


Exhibit E-1 – Choke Manifold Diagram
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
10-16S-29E
SHL 2020' FSL & 330' FEL
BHL 1980' FSL & 330' FWL
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit I, Section 10
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
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit I, Section 10
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
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit I, Section 10
T16S-R29E, Eddy County, NM

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

Key Personnel

Name	Title	Office	Mobile
Doug Park	Drilling Manager	972-443-6463	972-333-1407
Dee Smith	Drilling Super	972-443-6491	972-882-1010
Jim Evans	Drilling Super	972-443-6451	972-465-6564
Dorsey Rogers	Field Super		505-200-6105
Roy Shirley	Field Super		432-634-2136

Artesia		
Ambulance	911	
State Police	575-746-2703	
City Police	575-746-2703	
Sheriff's Office	575-746-9888	
Fire Department	**575-746-2701**	
Local Emergency Planning Committee	575-746-2122	
New Mexico Oil Conservation Division	575-748-1283	
Carlsbad		
Ambulance	911	
State Police	575-885-3137	
City Police	575-885-2111	
Sheriff's Office	575-887-7551	
Fire Department	**575-887-3798**	
Local Emergency Planning Committee	575-887-6544	
US Bureau of Land Management	575-887-6544	
Santa Fe		
New Mexico Emergency Response Commission (Santa Fe)	505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126	
New Mexico State Emergency Operations Center	505-476-9635	
National		
National Emergency Response Center (Washington, D.C.)	800-424-8802	
Medical		
Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911	
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923	
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433	
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949	
Other		
Boots & Coots IWC	800-256-9688	or 281-931-8884
Cudd Pressure Control	432-699-0139	or 432-563-3356
Halliburton	575-746-2757	
B.J. Services	575-746-3569	

Surface Use Plan
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit I, Section 10
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 Rd, go North on Barnival Draw for 6.8 miles to lease road. On lease road, continue Northwesterly 2.4 miles to 2-track and proposed lease road.

2 Planned Access Roads: 2149.2' of access road is proposed, 132' of which will be on-lease. BLM ROW will be acquired.

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 the Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.

C. An Archaeological survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Carlsbad BLM office.

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

Operator Certification Statement
Glycerin 10 Federal Com No. 3
Cimarex Energy Co. of Colorado
Unit I, Section 10
T16S-R29E, Eddy County, NM

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

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

NAME: Zeno Farris
Zeno Farris

DATE: April 2, 2008

TITLE: Manager Operations Administration

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Co. of Colorado
LEASE NO.:	NMLC068677
WELL NAME & NO.:	Glycerin 10 Federal Com No 3
SURFACE HOLE FOOTAGE:	2020' FSL & 330' FEL
BOTTOM HOLE FOOTAGE	1980' FSL & 330' FWL
LOCATION:	Section 10, 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)

Mitigation Measures: The mitigation measures include the Pecos District Conditions of Approval, the standard stipulation for permanent resource roads, and some basic mitigation for playas. In order to better protect the playas in the area the cuttings and fluids will need to be hauled off location to an approved disposal facility. Also the well pad locations themselves need to have berms placed around the tank batteries as well as the pads. This will help to prevent any contaminants from running off the pad location into the nearby playas.

Glycerin 10 Federal Com. # 3: Closed Loop V-Door Northeast

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

Closed Loop V-Door Northeast

Tanks are required for drilling operations: No Pits.

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

C. FEDERAL MINERAL MATERIALS PIT

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

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

D. 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.

E. 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.

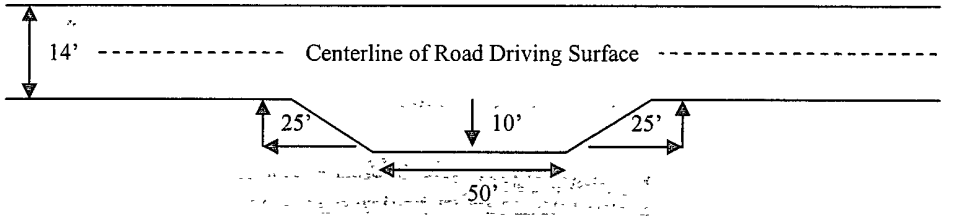
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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

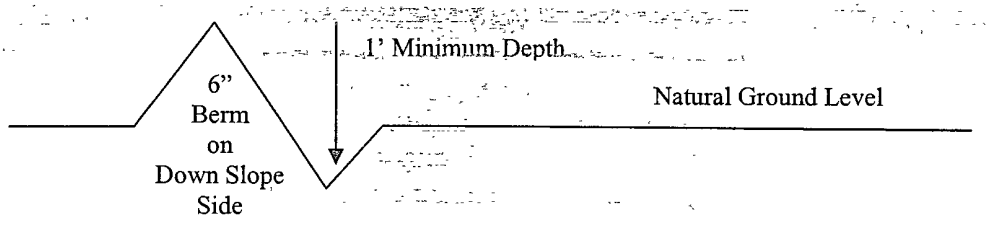


Drainage

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:

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

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.

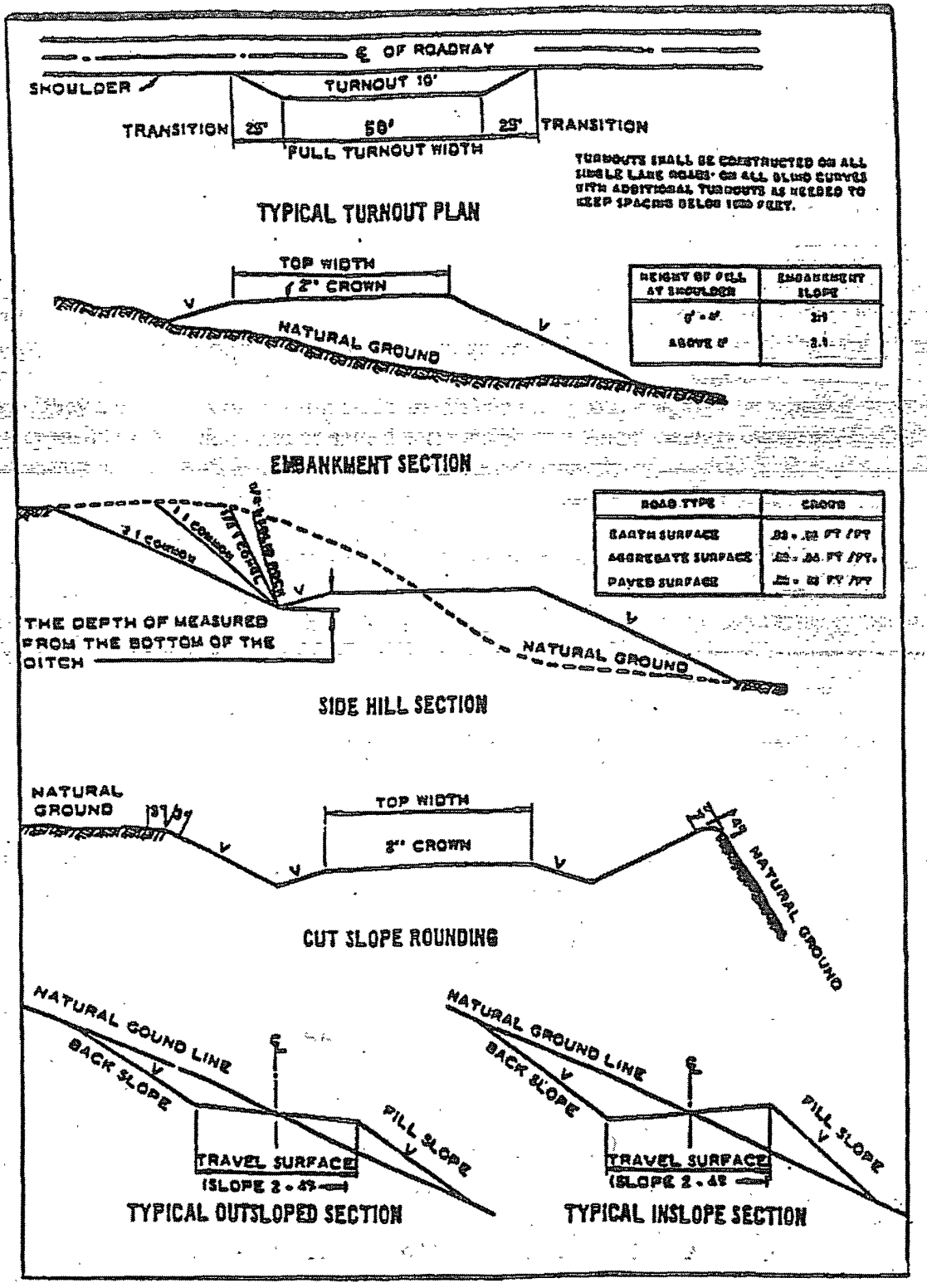
A gate shall be constructed and fastened securely to H-braces.

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. BOP/BOPE tests

☒ Chaves and Roosevelt Counties, T16S Eddy County
Call the Roswell Field Office, 2909 West Second St., Roswell, NM 88201
(575) 627-0205 and (575) 361-2822.

1. **Hydrogen Sulfide has been reported as a hazard in the area but there are no measured amounts recorded. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

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

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

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work.

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

H2S reported in area
Possible lost circulation in Grayburg, San Andres Formations
Possible high pressure gas bursts from the Wolfcamp Formation – applicable to pilot hole

1. The **13-3/8** inch surface casing shall be set at **approximately 400 feet** and cemented to the surface. **If salt is encountered at a depth less than 400 feet, surface casing should be set 25 feet above the top of the salt. Fresh water mud shall be used to setting depth.**

   Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing

   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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

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

   Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing

   Formation below the 9-5/8" shoe to be tested according to Onshore order 2.III.B.1.i

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.**

   Formation below the kick off point to be tested according to Onshore Order 2.III.B.1.i.

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

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

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

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

C. PRESSURE CONTROL

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

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

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

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

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

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

   e. 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. A variance to test only the surface casing to the reduced pressure of **1000** psi with the rig pumps is approved. **The BOP will be tested to 3000 psi by an independent service company.**

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.

LB 5/13/08

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

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.

At the time the well pad is 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.

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

Seed Mixture 1, for Loamy Sites

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

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

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

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

*Pounds of pure live seed:

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

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

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

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