

ATS-11-543

OCD-HOBBS

Form 3160-3
(April 2004)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

HOBBS OCD

AUG 10 2011

RECEIVED

1a. Type of Work: ☒ DRILL ☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator

Cimarex Energy Co. of Colorado

3a. Address

600 N. Marienfeld St., Ste. 600; Midland, TX 79701

3b. Phone No. (include area code)

432-571-7800

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

At Surface 2160 FNL & 1033 FWL

At proposed prod Zone 1650 FNL & 330 FWL

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

15. Distance from proposed*

location to nearest
property or lease line, ft
(Also to nearest drig unit line if
any)

287

16. No of acres in lease

323.76

17. Spacing Unit dedicated to this well

SWNW 40.93

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

156'

19. Proposed Depth

MD 6932

TVD 6850

20. BLM/BIA Bond No. on File

NM-2575

21. Elevations (Show whether DF, KDB, RT, GL, etc)

3953' GR

22. Approximate date work will start*

06.01.11

23. Estimated duration

10-15 days

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

- Well plat certified by a registered surveyor
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)

- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
- Operator Certification
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature

Zeno Farris

Name (Printed/Typed)

Zeno Farris

Date

03.23.11

Title

Manager Operations Administration

Approved By (Signature)

/s/ Don Peterson

Name (Printed/Typed)

Date

AUG - 5 2011

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)

Roswell Controlled Water Basin

Ka 08/11/11

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

AUG 15 2011

Approval Subject to General Requirements
& Special Stipulations Attached

Application to Drill
HT 18 Federal No. 6
Cimarex Energy Co. of Colorado
Lot 2, Section 18
T17S R32E, Lea County, NM

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

- 1 Location: SHL 2160 FNL & 1033 FWL
BHL 1650 FNL & 330 FWL
- 2 Elevation above sea level: 3953' GR
- 3 Geologic name of surface formation: Quaternary Alluvium Deposits
- 4 Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 Proposed drilling depth: MD 6932 TVD 6850
- 6 Estimated tops of geological markers:

Rustler	740'
T. Salt	900'
B. Salt	1600'
Yates	2025'
7 Rivers	2340'
Queen	2960'
San Andres	3690'
Glorieta	5235'
Paddock	5290'
Blaine	5875'
Tubb	6715'
- 7 Possible mineral bearing formation:

Paddock	Oil
Blaine	Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 740'	8.4 - 8.8	40-45	NC	FW
740' to 1970'	9.9 - 10.1	28-32	NC	Brine
1970' to 6932'	9.1	28-32	NC	Cut Brine

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.

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9 Directional Plan:

With 7½" bit, drill out of bottom of 8½" casing shoe to KOP of 2100. Build and hold to TD @ 6932. Set 5½" casing to TD and cement to 1740.

10 Casing Plan:

See COA

String	Hole Size	Depth	Casing OD	Weight	Thread	Collar	Grade
Surface	16"	0' to 740' 765'	New 11¾"	42#	8-R	STC	H-40
Intermediate	11"	0' to 1970' 1950'	New 8¾"	24#	8-R	STC	K-55
Production	7½"	0' to 6932'	New 5½"	17#	8-R	LTC	J-55

11 Cementing Plan:

Surface Lead: 450 sx Class C + 4% D-20 + 0.2% D-46 + 0.125 ppg D-130 (wt 12.9 ppg, yield 1.99)
100% Excess Tail: 200 sx Class C + 0.125 pps D130 (wt 14.80, yield 1.34)
 TOC **Surface** **Centralizers per Onshorder 2.III.B.1.f**

Intermediate Lead: 270 sx 35:65 Poz: Class C + 0.2% Defoamer (D046) + 5% D044 (Salt) + 6% D020 (Extender Gel) + 1/8 pps Polyflake (D130)
70% Excess + 2 pps Gilsonite (D042) (wt 12.6, yld 2.07)
 Tail: 200 sx Class C + 0.2% D-13 (wt 14.8, yld 1.33)
 TOC **Surface**

Production Lead: 575 sacks 35:65 POZC + 0.2% Defoamer (D046) + 0.6% Fluid Loss (D167) + 1 lb/sx Extender (D042) + 0.02% Retarder
25% Excess (D013) + 23 lbs/sx Silica (D178) + 40 lbs/sx Extender (D124) (wt 9.9, yield 2.35)
 Tail: 450 sacks PVL + 1.3% NaCl (D044) + 0.2% Fluid Loss (D167) + 0.2% Cement Retarder (D013) + 0.2% Dispersant (D065) (wt 13, yld 1.4)
 TOC **1750'** **Centralizers bottom 10 joints, then every other joint above zone of interest (Blinebry / Paddock)**

According to the State Engineer, depth to groundwater is 200.' Fresh water zones will be protected by setting 11¾" casing at 765' and cementing to surface. Hydrocarbon zones will be protected by setting 8¾" casing at 1950' and cementing to surface and by setting 5½" casing at 6932' and cementing to 1750.'

1970

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

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12 Pressure control Equipment: ✓

A 13½" 3000 PSI working pressure B.O.P. consisting of a one set of blind rams and one set of pipe rams and a 3000 psi annular-type preventor. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Test BOP equipment and choke manifold to 250 psi low and 3000 psi high and annular BOP to 250 psi low and 1500 psi high by an independent service company. Mud gas separator will be available if drilling in H2S areas.

BOP unit will be hydraulically operated. Below intermediate casing shoe, BOP will be operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the surface pipe through the running of production casing, the well will be equipped with a 3000 psi BOP system.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high.

13 Testing, Logging and Coring Program: * See COA

- A. Mud logging No mud logging program.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs or cores are planned at this time.

14 Potential Hazards:

No abnormal pressures or temperatures are expected. The area has a potential H2S hazard. An H2S drilling plan is attached. Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP **2300 psi** Estimated BHT **110°**

15 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.

16 Other Facets of Operations:

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

Blinberry pay will be perforated and stimulated.

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



Planned Wellpath Report

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 6 SHL
Area	Lea County, NM	Well	No. 6
Field	(HT) Sec 18, T17S, R32E	Wellbore	No. 6 PWB
Facility	HT 18 Fed No. 6		

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	Calhphik
Scale	0.999939	Report Generated	3/16/2011 at 11:51:05 AM
Convergence at slot	0.28° East	Database/Source file	WA Midland/No. 6_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	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W
Facility Reference Pt			701725.90	668268.30	32°50'09.622"N	103°48'40.107"W
Field Reference Pt			701281.80	665775.50	32°49'44.978"N	103°48'45.456"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 6 SHL (RT) to GL	0.00ft
Horizontal Reference Pt	Slot	Rig on No. 6 SHL (RT) to Mean Sea Level	3953.00ft
Vertical Reference Pt	Rig on No. 6 SHL (RT)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 6 SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	305.73°



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INTEQ

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WELLPATH DATA (72 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	305.725	0.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	Tie On
100.00†	0.000	305.725	100.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
200.00†	0.000	305.725	200.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
300.00†	0.000	305.725	300.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
400.00†	0.000	305.725	400.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
500.00†	0.000	305.725	500.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
600.00†	0.000	305.725	600.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
700.00†	0.000	305.725	700.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
800.00†	0.000	305.725	800.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
900.00†	0.000	305.725	900.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1000.00†	0.000	305.725	1000.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1100.00†	0.000	305.725	1100.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1200.00†	0.000	305.725	1200.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1300.00†	0.000	305.725	1300.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1400.00†	0.000	305.725	1400.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1500.00†	0.000	305.725	1500.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1600.00†	0.000	305.725	1600.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1700.00†	0.000	305.725	1700.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1800.00†	0.000	305.725	1800.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
1900.00†	0.000	305.725	1900.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
2000.00†	0.000	305.725	2000.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	
2100.00	0.000	305.725	2100.00	0.00	0.00	0.00	701725.90	668268.30	32°50'09.622"N	103°48'40.107"W	0.00	Est KOP
2200.00†	2.000	305.725	2199.98	1.75	1.02	-1.42	701724.48	668269.32	32°50'09.632"N	103°48'40.124"W	2.00	
2300.00†	4.000	305.725	2299.84	6.98	4.07	-5.67	701720.24	668272.37	32°50'09.662"N	103°48'40.173"W	2.00	
2400.00†	6.000	305.725	2399.45	15.69	9.16	-12.74	701713.16	668277.46	32°50'09.713"N	103°48'40.256"W	2.00	
2500.00†	8.000	305.725	2498.70	27.88	16.28	-22.63	701703.27	668284.58	32°50'09.784"N	103°48'40.371"W	2.00	
2600.00†	10.000	305.725	2597.47	43.52	25.41	-35.33	701690.57	668293.71	32°50'09.875"N	103°48'40.520"W	2.00	
2649.69	10.994	305.725	2646.32	52.57	30.70	-42.68	701683.22	668299.00	32°50'09.927"N	103°48'40.606"W	2.00	EOC
2700.00†	10.994	305.725	2695.71	62.17	36.30	-50.47	701675.43	668304.60	32°50'09.983"N	103°48'40.696"W	0.00	
2800.00†	10.994	305.725	2793.87	81.24	47.44	-65.95	701659.95	668315.73	32°50'10.094"N	103°48'40.877"W	0.00	
2900.00†	10.994	305.725	2892.04	100.31	58.57	-81.43	701644.47	668326.87	32°50'10.205"N	103°48'41.058"W	0.00	
3000.00†	10.994	305.725	2990.20	119.38	69.71	-96.92	701628.99	668338.00	32°50'10.316"N	103°48'41.239"W	0.00	
3100.00†	10.994	305.725	3088.37	138.45	80.84	-112.40	701613.51	668349.14	32°50'10.427"N	103°48'41.420"W	0.00	
3200.00†	10.994	305.725	3186.53	157.52	91.98	-127.88	701598.03	668360.27	32°50'10.538"N	103°48'41.600"W	0.00	
3300.00†	10.994	305.725	3284.70	176.59	103.11	-143.36	701582.55	668371.40	32°50'10.649"N	103°48'41.781"W	0.00	
3400.00†	10.994	305.725	3382.86	195.66	114.25	-158.84	701567.07	668382.54	32°50'10.760"N	103°48'41.962"W	0.00	
3500.00†	10.994	305.725	3481.03	214.73	125.38	-174.32	701551.59	668393.67	32°50'10.871"N	103°48'42.143"W	0.00	
3600.00†	10.994	305.725	3579.19	233.80	136.52	-189.80	701536.11	668404.81	32°50'10.982"N	103°48'42.324"W	0.00	
3700.00†	10.994	305.725	3677.36	252.87	147.65	-205.29	701520.63	668415.94	32°50'11.093"N	103°48'42.504"W	0.00	
3800.00†	10.994	305.725	3775.52	271.94	158.79	-220.77	701505.15	668427.08	32°50'11.203"N	103°48'42.685"W	0.00	
3900.00†	10.994	305.725	3873.69	291.01	169.92	-236.25	701489.67	668438.21	32°50'11.314"N	103°48'42.866"W	0.00	
4000.00†	10.994	305.725	3971.85	310.08	181.06	-251.73	701474.18	668449.35	32°50'11.425"N	103°48'43.047"W	0.00	
4100.00†	10.994	305.725	4070.02	329.15	192.19	-267.21	701458.70	668460.48	32°50'11.536"N	103°48'43.228"W	0.00	
4200.00†	10.994	305.725	4168.18	348.22	203.33	-282.69	701443.22	668471.61	32°50'11.647"N	103°48'43.408"W	0.00	
4300.00†	10.994	305.725	4266.35	367.29	214.46	-298.18	701427.74	668482.75	32°50'11.758"N	103°48'43.589"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 6 SHL
Area	Lea County, NM	Well	No. 6
Field	(HT) Sec 18, T17S, R32E	Wellbore	No. 6 PWB
Facility	HT 18 Fed No. 6		

WELLPATH DATA (72 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
4400.00†	10.994	305.725	4364.51	386.36	225.60	-313.66	701412.26	668493.88	32°50'11.869"N	103°48'43.770"W	0.00	
4500.00†	10.994	305.725	4462.68	405.43	236.73	-329.14	701396.78	668505.02	32°50'11.980"N	103°48'43.951"W	0.00	
4600.00†	10.994	305.725	4560.84	424.50	247.87	-344.62	701381.30	668516.15	32°50'12.091"N	103°48'44.132"W	0.00	
4700.00†	10.994	305.725	4659.01	443.57	259.00	-360.10	701365.82	668527.29	32°50'12.202"N	103°48'44.312"W	0.00	
4800.00†	10.994	305.725	4757.17	462.64	270.14	-375.58	701350.34	668538.42	32°50'12.313"N	103°48'44.493"W	0.00	
4900.00†	10.994	305.725	4855.34	481.71	281.27	-391.07	701334.86	668549.55	32°50'12.424"N	103°48'44.674"W	0.00	
5000.00†	10.994	305.725	4953.50	500.78	292.41	-406.55	701319.38	668560.69	32°50'12.535"N	103°48'44.855"W	0.00	
5100.00†	10.994	305.725	5051.67	519.85	303.54	-422.03	701303.90	668571.82	32°50'12.646"N	103°48'45.036"W	0.00	
5200.00†	10.994	305.725	5149.83	538.92	314.68	-437.51	701288.42	668582.96	32°50'12.756"N	103°48'45.216"W	0.00	
5300.00†	10.994	305.725	5248.00	557.99	325.81	-452.99	701272.94	668594.09	32°50'12.867"N	103°48'45.397"W	0.00	
5400.00†	10.994	305.725	5346.16	577.06	336.95	-468.47	701257.46	668605.23	32°50'12.978"N	103°48'45.578"W	0.00	
5500.00†	10.994	305.725	5444.32	596.13	348.08	-483.96	701241.98	668616.36	32°50'13.089"N	103°48'45.759"W	0.00	
5600.00†	10.994	305.725	5542.49	615.20	359.22	-499.44	701226.49	668627.50	32°50'13.200"N	103°48'45.940"W	0.00	
5700.00†	10.994	305.725	5640.65	634.27	370.35	-514.92	701211.01	668638.63	32°50'13.311"N	103°48'46.120"W	0.00	
5800.00†	10.994	305.725	5738.82	653.34	381.49	-530.40	701195.53	668649.76	32°50'13.422"N	103°48'46.301"W	0.00	
5900.00†	10.994	305.725	5836.98	672.41	392.62	-545.88	701180.05	668660.90	32°50'13.533"N	103°48'46.482"W	0.00	
6000.00†	10.994	305.725	5935.15	691.48	403.76	-561.36	701164.57	668672.03	32°50'13.644"N	103°48'46.663"W	0.00	
6100.00†	10.994	305.725	6033.31	710.55	414.89	-576.84	701149.09	668683.17	32°50'13.755"N	103°48'46.844"W	0.00	
6200.00†	10.994	305.725	6131.48	729.62	426.03	-592.33	701133.61	668694.30	32°50'13.866"N	103°48'47.024"W	0.00	
6300.00†	10.994	305.725	6229.64	748.69	437.16	-607.81	701118.13	668705.44	32°50'13.977"N	103°48'47.205"W	0.00	
6400.00†	10.994	305.725	6327.81	767.76	448.30	-623.29	701102.65	668716.57	32°50'14.088"N	103°48'47.386"W	0.00	
6500.00†	10.994	305.725	6425.97	786.83	459.43	-638.77	701087.17	668727.70	32°50'14.198"N	103°48'47.567"W	0.00	
6600.00†	10.994	305.725	6524.14	805.90	470.57	-654.25	701071.69	668738.84	32°50'14.309"N	103°48'47.748"W	0.00	
6700.00†	10.994	305.725	6622.30	824.97	481.70	-669.73	701056.21	668749.97	32°50'14.420"N	103°48'47.928"W	0.00	
6800.00†	10.994	305.725	6720.47	844.04	492.84	-685.22	701040.73	668761.11	32°50'14.531"N	103°48'48.109"W	0.00	
6900.00†	10.994	305.725	6818.63	863.11	503.97	-700.70	701025.25	668772.24	32°50'14.642"N	103°48'48.290"W	0.00	
6931.95	10.994	305.725	6850.00†	869.21	507.53	-705.64	701020.30	668775.80	32°50'14.678"N	103°48'48.348"W	0.00	No. 6 PBHL

HOLE & CASING SECTIONS Ref Wellbore: No. 6 PWB Ref Wellpath: Prelim_1									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
16in Open Hole	0.00	775.00	775.00	0.00	775.00	0.00	0.00	0.00	0.00
11.75in Casing	0.00	775.00	775.00	0.00	775.00	0.00	0.00	0.00	0.00
11in Open Hole	775.00	1940.00	1165.00	775.00	1940.00	0.00	0.00	0.00	0.00
8.625in Casing	0.00	1940.00	1940.00	0.00	1940.00	0.00	0.00	0.00	0.00
7.875in Open Hole	1940.00	6932.00	4992.00	1940.00	NA	0.00	0.00	NA	NA
5.5in Casing	0.00	6932.00	6932.00	0.00	NA	0.00	0.00	NA	NA



Planned Wellpath Report

Prelim_1
Page 4 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 6 SHL
Area	Lea County, NM	Well	No. 6
Field	(HT) Sec 18, T17S, R32E	Wellbore	No. 6 PWB
Facility	HT 18 Fed No. 6		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 6 PBHL	6931.95	6850.00	507.53	-705.64	701020.30	668775.80	32°50'14.678"N	103°48'48.348"W	point

SURVEY PROGRAM Ref Wellbore: No. 6 PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	6931.95	NaviTrak (Standard)		No. 6 PWB

SR & A

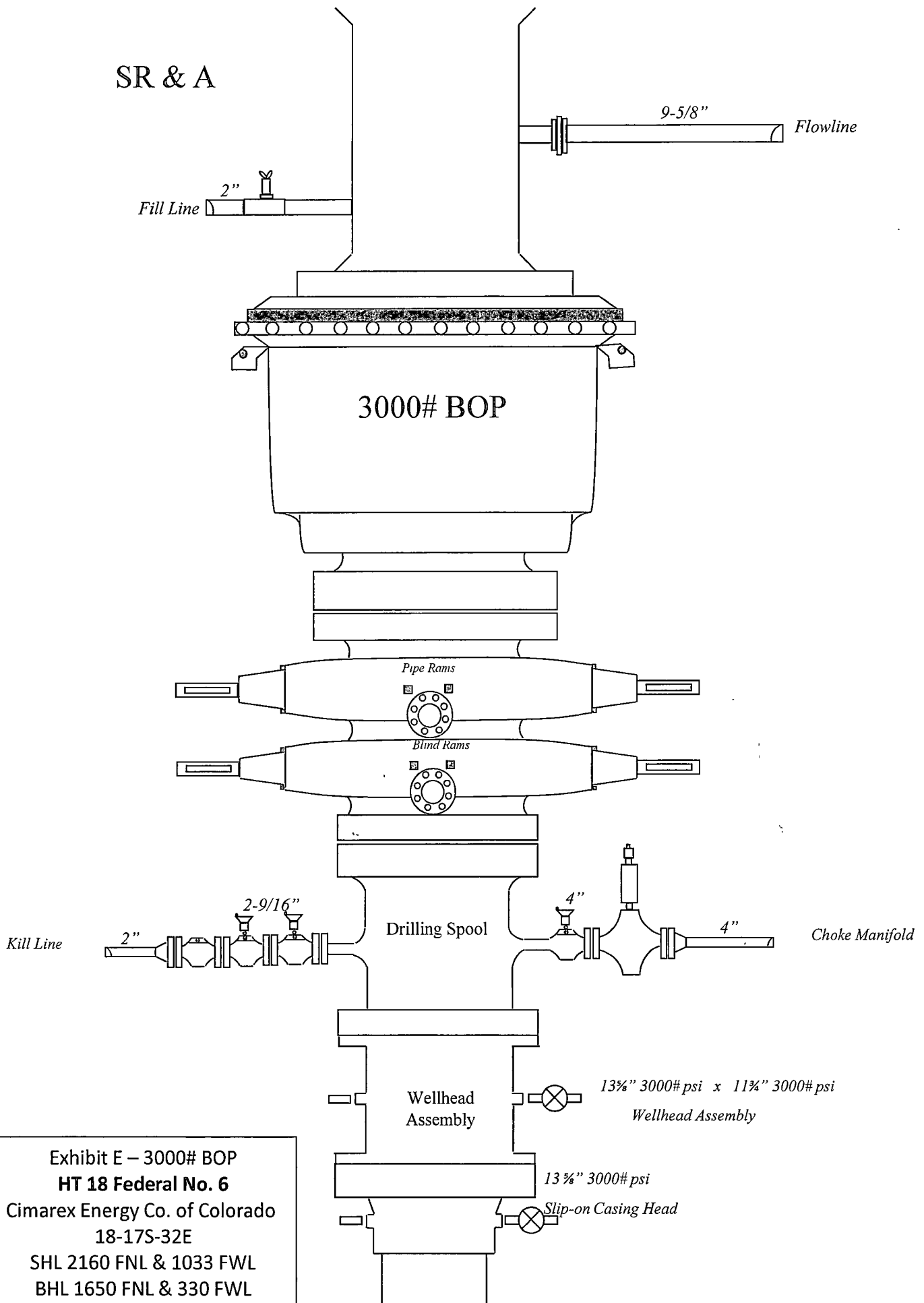
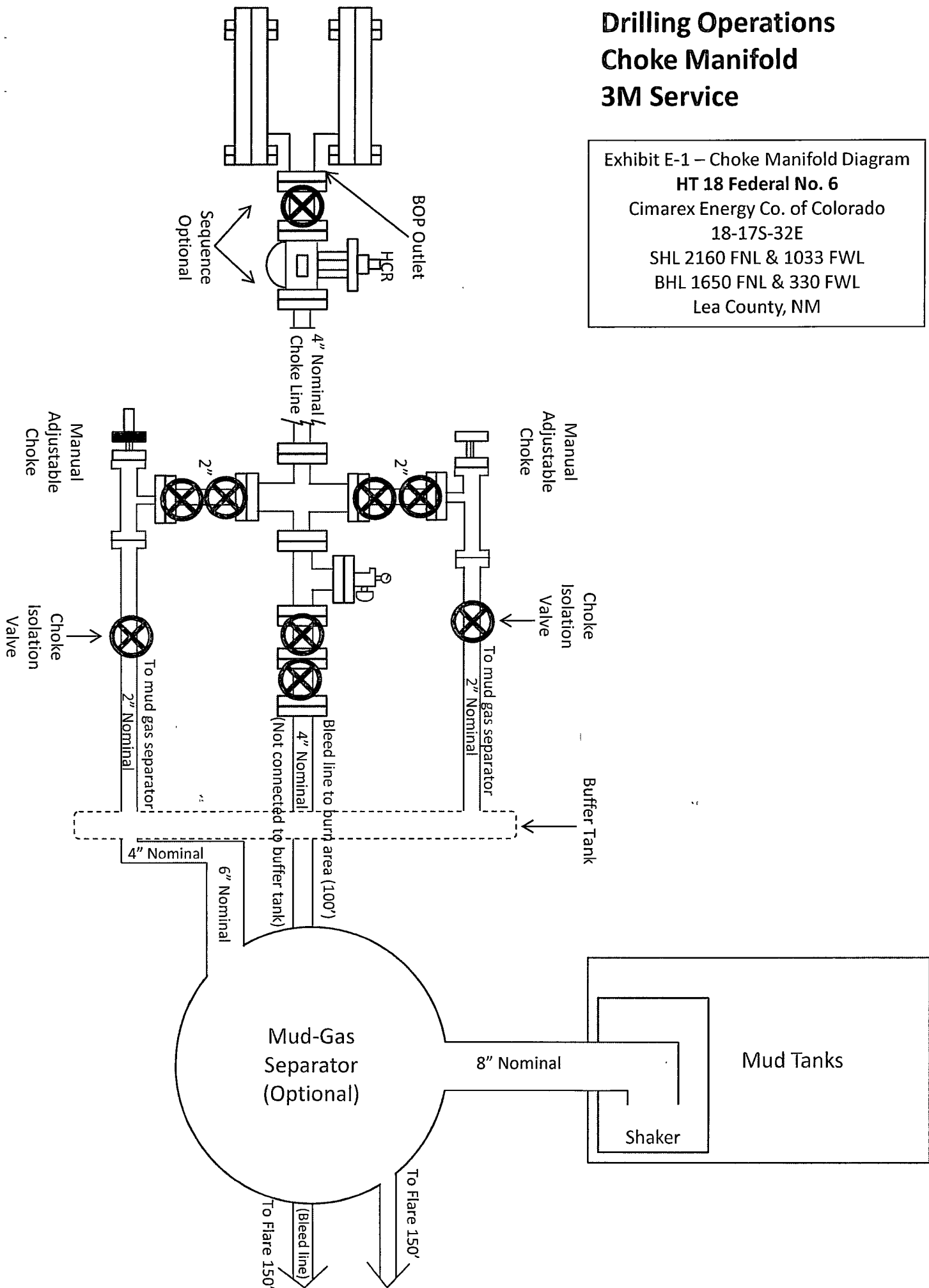


Exhibit E – 3000# BOP
HT 18 Federal No. 6
Cimarex Energy Co. of Colorado
18-17S-32E
SHL 2160 FNL & 1033 FWL
BHL 1650 FNL & 330 FWL
Lea County, NM

Drilling Operations
Choke Manifold
3M Service

Exhibit E-1 – Choke Manifold Diagram
HT 18 Federal No. 6
Cimarex Energy Co. of Colorado
18-17S-32E
SHL 2160 FNL & 1033 FWL
BHL 1650 FNL & 330 FWL
Lea County, NM



Silver Oak #3

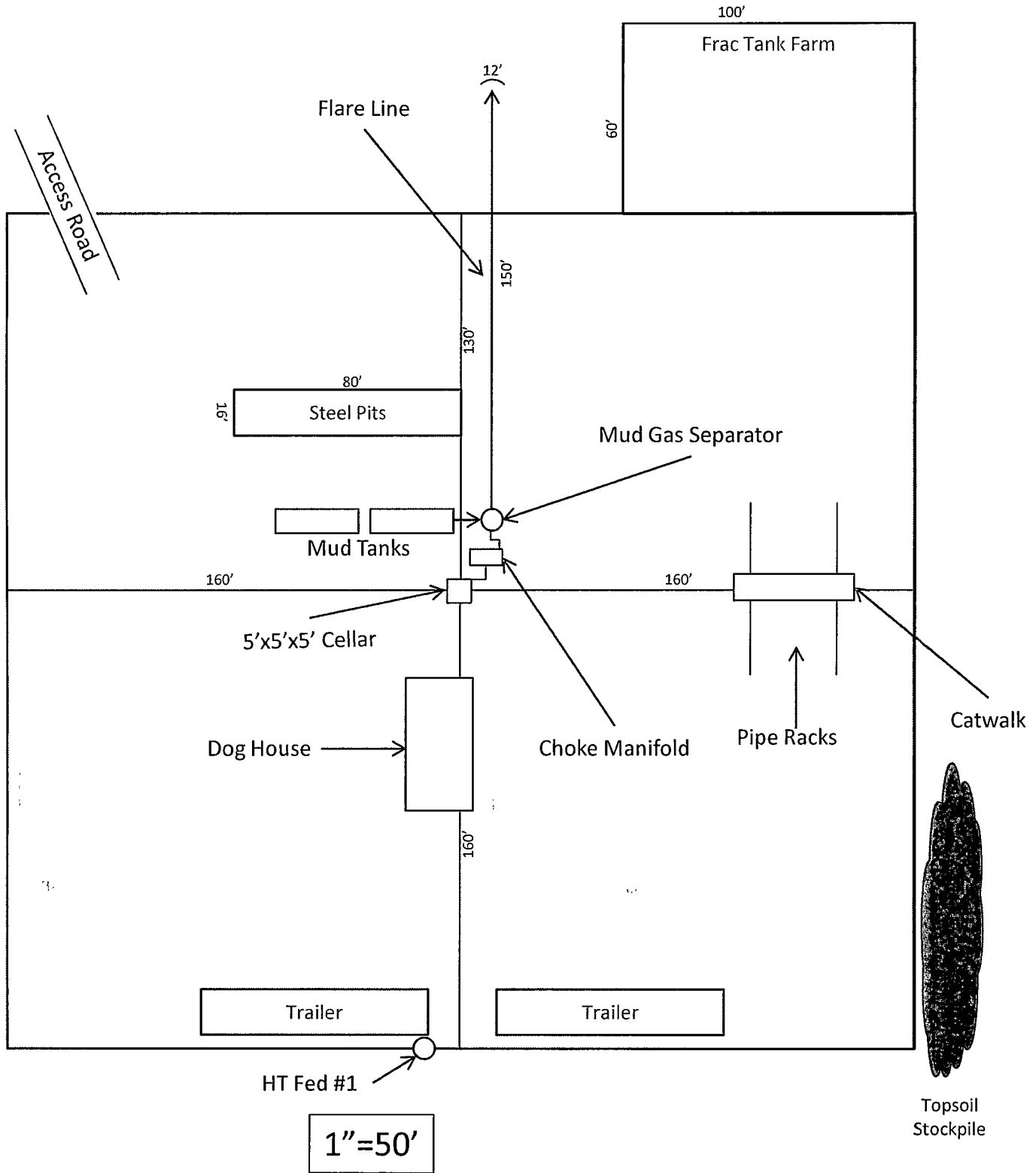


Exhibit D – Rig Diagram
HT 18 Federal No. 6
Cimarex Energy Co. of Colorado
18-17S-32E
SHL 2160 FNL & 1033 FWL
BHL 1650 FNL & 330 FWL
Lea County, NM