

HOBBS OCD

13-187

Form 3160-3 SEP 19 2013
(March 2012)

OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

RECEIVED UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

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. <309501> Thyme APY Federal No. 84	
2. Name of Operator Cimarex Energy Co. of Colorado <215099>		9. API Well No. 30-025- 41423	
3a. Address 600 N. Marienfeld, Ste 600 Midland, TX 79701	3b. Phone No. (include area code) 432-571-7800	10. Field and Pool, or Exploratory Bone Spring <51683>	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 330' FNL & 2130' FEL Unit B At proposed prod. zone 330' FSL & 2310' FEL Horizontal Bone Spring test Unit B		11. Sec., T. R. M. or Blk. and Survey or Area 1-23S-32E	
14. Distance in miles and direction from nearest town or post office* 28 miles WSW of Eunice, NM		12. County or Parish Lea County	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'	16. No. of acres in lease 479.25	17. Spacing Unit dedicated to this well 159.65	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 100' from #9	19. Proposed Depth MD 14097' TVD 9600' Pilot Hole 10200'	20. BLM/BIA Bond No. on file NM2575; NMB000835	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3757' GR	22. Approximate date work will start* 04/15/2013	23. Estimated duration 25-30 days	

24. Attachments

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

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature Paula Brunson	Name (Printed/Typed) Paula Brunson	Date 10/31/2012
Title Regulatory Analyst		
Approved by (Signature) /s/ STEPHEN J. CAFFEY	Name (Printed/Typed)	Date SEP 17 2013
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.C. 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.

(Continued on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEP 25 2013

Application to Drill
Thyme APY Federal 8
 Cimarex Energy Co. of Colorado
 Lot 2, Section 1
 T23S-R32E; Lea 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 330 FNL & 2130 FEL
 BHL 330 FSL & 2310 FEL
- 2 Elevation above sea level: 3757 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 14097' TVD 9600' Pilot hole 10200'
- 6 Estimated tops of geological markers:

Groundwater per OSE	515	
Rustler	1220	
T. Salt	1295	
B. Salt	4680	
Bell Canyon	5000	Possible Hydrocarbons
Cherry Canyon	5875	
Brushy Canyon	7150	
Basal Brushy Canyon	8500	
Bone Spring	8600	
Upper Bone Spring Shale	9250	
1st Bone Spring SS	9975	Possible Hydrocarbons
TD Pilot Hole	10200	

7 Possible mineral bearing formation:

Shown above

See COA

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1270' <i>1315'</i>	8.4 - 8.6	28	NC	FW
1270' to 4980'	10.0	30-32	NC	Brine water
4980' to 14097'	8.4	30-32	NC	FW and brine, 2% KCL in the lateral

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.

The Mud Monitoring System is an electronic Pason System satisfying requirements of Onshore Order 1.

Proposed Drilling Plan

After drilling and setting surface and intermediate casing, drill 7 7/8" or 8 3/4" hole to 10200' and log. Pump 30 bbls MUDPUSHII 12 ppg, followed by 230 sks Type H Cement, + 0.5% Halad-322 + 0.2% HR-601; 15.6 ppg, 1.2 yield from 10200' to 9314'. Set whipstock and kick off 7 7/8" or 8 3/4" lateral @ 9314' and drill to TD @ 14097' MD, 9600' TVD. Run 5 1/2" casing and cement per plan.

see COA

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See COA

8 Casing & Cementing Program:

String	Hole Size	Depth	1345'	Casing OD	Weight	Collar	Grade
Surface	17 1/2"	0' to	1270'	New 13 3/8"	48#	STC	H-40
Intermediate	12 1/4"	0' to	3400'	New 9 5/8"	36#	LTC	J-55
Intermediate	12 1/4"	3400' to	4980'	New 9 5/8"	40#	LTC	J-55
Production	7 7/8" or 8 3/4"	0' to	9314'	New 5 1/2"	17#	LTC	P-110
Production	7 7/8" or 8 3/4"	9314' to	14097'	New 5 1/2"	17#	BTC	P-110

9 Cementing:

Surface	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	807	1.75	13.5	1412	Class C + Bentonite + Calcium Chloride + LCM
Tail	165	1.34	14.8	221	Class C + LCM

TOC: Surface 85% Excess Centralizers per Onshore Order 2.III.B.1f

Intermediate	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	1068	1.88	12.9	2008	35:65 (poz/C) + Salt + Bentonite + LCM + retarder
Tail	280	1.34	14.8	376	Class C + retarder + LCM

TOC: Surface 80% Excess

Production	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	564	2.4	11.9	1353	35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder
Tail	1349	1.24	14.5	1673	- 50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder

Cement volumes will be adjusted depending on hole size.

TOC: 4,400' 25% Excess No centralizers planned in the lateral section. 1 every jt from EOC to KOP. 1 every 4th joint from KOP to 500' inside previous casing.

See COA

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

10 Pressure Control Equipment:

Exhibit "E". A 13 3/8" 5000 PSI working pressure BOP, tested to 3000 psi on the surface casing and 5000 psi on the intermediate, 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 as needed. 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 installed 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.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high on the surface casing and 250 psi low and 5000 psi high on the intermediate. Hydril will be tested to 250 psi low and 2500 psi high on the surface and intermediate casings.

Cimarex Energy Co. of Colorado requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

See COA

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Cimarex Energy Co. of Colorado
Lot 2, Section 1
T23S-R32E; Lea County, NM

12 Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 4980 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / GR - Inter. Csg to TD
CNL/GR - Surf Csg to Inter. Csg *See COA*
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:

See COA
No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H₂S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H₂S Safety package on all wells, attached is an "H₂S 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 **4320 psi** Estimated BHT **138°**

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

Drilling expected to take 30-35 days

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15 Other Facets of Operations:

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

Bone Spring pay will be perforated and stimulated.

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



Cimarex Energy Co.

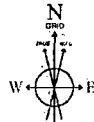
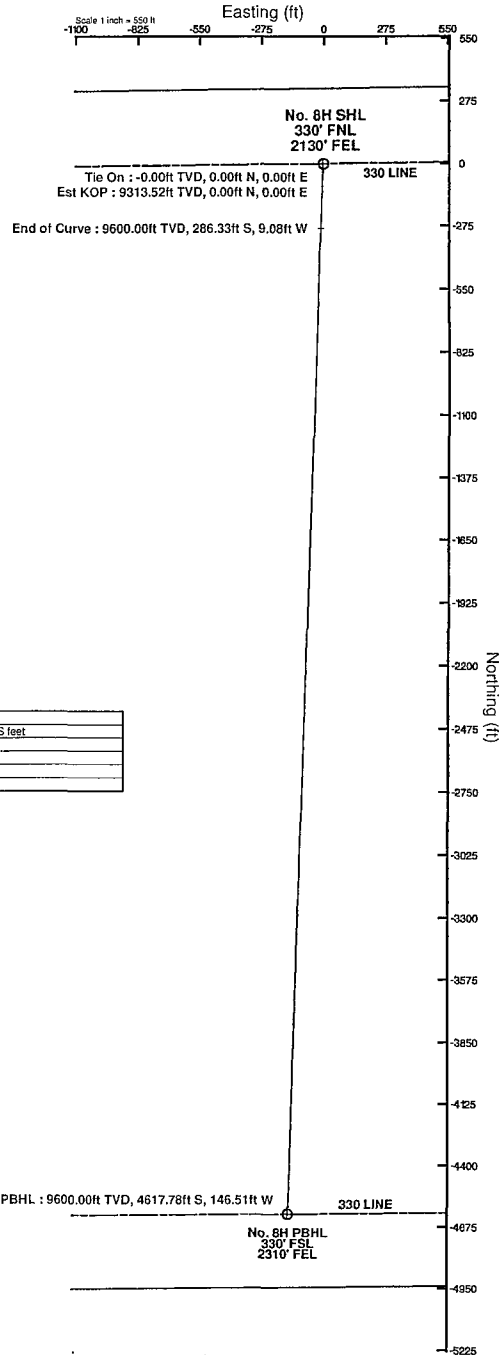
Location: Lea County, NM
Field: (Thyme) Sec. 1, T23S, R32E
Facility: Thyme "APY" Federal

Slot: No. 8H SHL
Well: No. 8H
Wellbore: No. 8H PWB



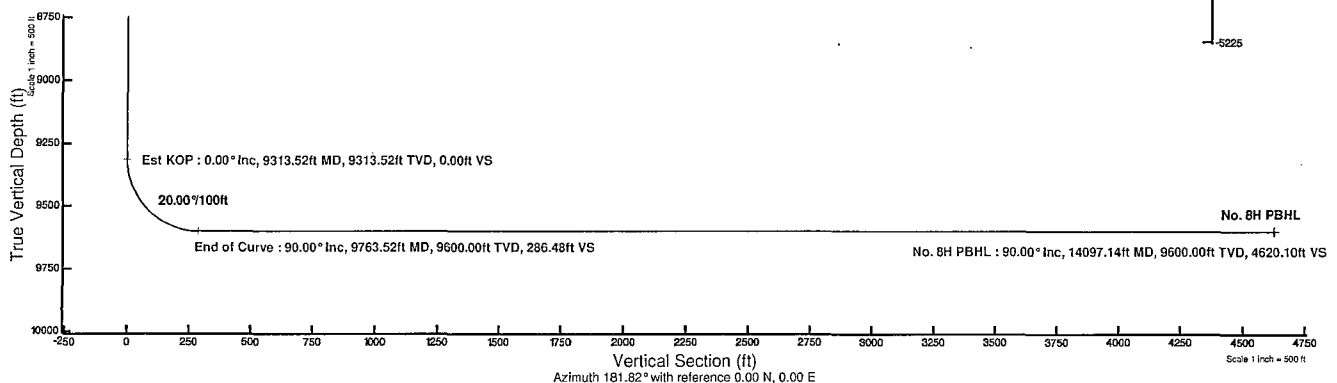
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%/100ft)	VS (ft)
Tie On	0.00	0.000	181.817	0.00	0.00	0.00	0.00	0.00
Est KOP	9313.52	0.000	181.817	9313.52	0.00	0.00	0.00	0.00
End of Curve	9763.52	90.000	181.817	9600.00	-286.33	-9.08	20.00	286.48
No. 8H PBHL	14097.14	90.000	181.817	9600.00	-4617.78	-146.51	0.00	4620.10



BGGM (1945.0 to 2012.0) Dip: 60.28° Field: 48660.7 nT
Magnetic North is 7.59 degrees East of True North (at 11/28/2011)
Grid North is 0.59 degrees East of True North
To correct azimuth from True to Grid subtract 0.38 degrees
To correct azimuth from Magnetic to Grid add 7.23 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.23 = 97.23

Plot reference wellpath is Prelim 1	
True vertical depths are referenced to Rig on No. 8H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 8H SHL (KB)	North Reference: Grid north
Rig on No. 8H SHL (KB) to Mean Sea Level: 3737 feet	Scale: True distance
Mean Sea Level to Mud line (AT Slot: No. 8H SHL): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: calphik on 11/28/2011





Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Lea County, NM	Well	No. 8H
Field	(Thyme) Sec 1, T23S, R32E	Wellbore	No. 8H PWB
Facility	Thyme "APY" Federal		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Calhphik
Scale	0.999964	Report Generated	11/29/2011 at 2:12:50 PM
Convergence at slot	0.38° East	Database/Source file	WA_Midland/No. 8H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	33.30	2778.31	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W
Facility Reference Pt			756813.30	488171.10	32°20'24.448"N	103°38'08.315"W
Field Reference Pt			756813.30	488171.10	32°20'24.448"N	103°38'08.315"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 8H SHL (KB) to GL	3757.00ft
Horizontal Reference Pt	Slot	Rig on No. 8H SHL (KB) to Mean Sea Level	3757.00ft
Vertical Reference Pt	Rig on No. 8H SHL (KB)	Rig on No. 8H SHL (KB) to Mud Line at Slot (No. 8H SHL)	3757.00ft
MD Reference Pt	Rig on No. 8H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	181.82°



Planned Wellpath Report

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Field	(Thyme) Sec 1, T23S, R32E	Wellbore	No. 8H PWB
Facility	Thyme "APY" Federal		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	181.817	0.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	Tie On
100.00†	0.000	181.817	100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
200.00†	0.000	181.817	200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
300.00†	0.000	181.817	300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
400.00†	0.000	181.817	400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
500.00†	0.000	181.817	500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
600.00†	0.000	181.817	600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
700.00†	0.000	181.817	700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
800.00†	0.000	181.817	800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
900.00†	0.000	181.817	900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1000.00†	0.000	181.817	1000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1100.00†	0.000	181.817	1100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1200.00†	0.000	181.817	1200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1300.00†	0.000	181.817	1300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1400.00†	0.000	181.817	1400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1500.00†	0.000	181.817	1500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1600.00†	0.000	181.817	1600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1700.00†	0.000	181.817	1700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1800.00†	0.000	181.817	1800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
1900.00†	0.000	181.817	1900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2000.00†	0.000	181.817	2000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2100.00†	0.000	181.817	2100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2200.00†	0.000	181.817	2200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2300.00†	0.000	181.817	2300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2400.00†	0.000	181.817	2400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2500.00†	0.000	181.817	2500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2600.00†	0.000	181.817	2600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2700.00†	0.000	181.817	2700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2800.00†	0.000	181.817	2800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
2900.00†	0.000	181.817	2900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3000.00†	0.000	181.817	3000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3100.00†	0.000	181.817	3100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3200.00†	0.000	181.817	3200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3300.00†	0.000	181.817	3300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3400.00†	0.000	181.817	3400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3500.00†	0.000	181.817	3500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3600.00†	0.000	181.817	3600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3700.00†	0.000	181.817	3700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3800.00†	0.000	181.817	3800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
3900.00†	0.000	181.817	3900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4000.00†	0.000	181.817	4000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4100.00†	0.000	181.817	4100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4200.00†	0.000	181.817	4200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4300.00†	0.000	181.817	4300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4400.00†	0.000	181.817	4400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Lea County, NM	Well	No. 8H
Field	(Thyme) Sec 1, T23S, R32E	Wellbore	No. 8H PWB
Facility	Thyme "APY" Federal		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4500.00†	0.000	181.817	4500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4600.00†	0.000	181.817	4600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4700.00†	0.000	181.817	4700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4800.00†	0.000	181.817	4800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
4900.00†	0.000	181.817	4900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5000.00†	0.000	181.817	5000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	Delaware
5100.00†	0.000	181.817	5100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5200.00†	0.000	181.817	5200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5300.00†	0.000	181.817	5300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5400.00†	0.000	181.817	5400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5500.00†	0.000	181.817	5500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5600.00†	0.000	181.817	5600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5700.00†	0.000	181.817	5700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5800.00†	0.000	181.817	5800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
5900.00†	0.000	181.817	5900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6000.00†	0.000	181.817	6000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6100.00†	0.000	181.817	6100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6200.00†	0.000	181.817	6200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6300.00†	0.000	181.817	6300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6400.00†	0.000	181.817	6400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6500.00†	0.000	181.817	6500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6600.00†	0.000	181.817	6600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6700.00†	0.000	181.817	6700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6800.00†	0.000	181.817	6800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
6900.00†	0.000	181.817	6900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7000.00†	0.000	181.817	7000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7100.00†	0.000	181.817	7100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7200.00†	0.000	181.817	7200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7300.00†	0.000	181.817	7300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7400.00†	0.000	181.817	7400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7500.00†	0.000	181.817	7500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7600.00†	0.000	181.817	7600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7700.00†	0.000	181.817	7700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7800.00†	0.000	181.817	7800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
7900.00†	0.000	181.817	7900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
8000.00†	0.000	181.817	8000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
8100.00†	0.000	181.817	8100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
8200.00†	0.000	181.817	8200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
8300.00†	0.000	181.817	8300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
8400.00†	0.000	181.817	8400.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
8500.00†	0.000	181.817	8500.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	Basal Brushy Canyon
8600.00†	0.000	181.817	8600.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	Bone Spring
8700.00†	0.000	181.817	8700.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
8800.00†	0.000	181.817	8800.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
8900.00†	0.000	181.817	8900.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Lea County, NM	Well	No. 8H
Field	(Thyme) Sec 1, T23S, R32E	Wellbore	No. 8H PWB
Facility	Thyme "APY" Federal		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
9000.00†	0.000	181.817	9000.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
9100.00†	0.000	181.817	9100.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
9200.00†	0.000	181.817	9200.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
9250.00†	0.000	181.817	9250.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	Upper Bone Spring Shale
9300.00†	0.000	181.817	9300.00	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	
9313.52	0.000	181.817	9313.52	0.00	0.00	0.00	759591.50	488204.40	32°20'24.597"N	103°37'35.930"W	0.00	Est KOP
9400.00†	17.296	181.817	9398.69	12.95	-12.95	-0.41	759591.09	488191.45	32°20'24.469"N	103°37'35.936"W	20.00	
9500.00†	37.296	181.817	9487.11	58.58	-58.55	-1.86	759589.64	488145.85	32°20'24.018"N	103°37'35.956"W	20.00	
9600.00†	57.296	181.817	9554.58	131.69	-131.63	-4.18	759587.32	488072.78	32°20'23.295"N	103°37'35.989"W	20.00	
9700.00†	77.296	181.817	9592.99	223.48	-223.36	-7.09	759584.41	487981.04	32°20'22.388"N	103°37'36.030"W	20.00	
9763.52	90.000	181.817	9600.00	286.48	-286.33	-9.08	759582.42	487918.08	32°20'21.765"N	103°37'36.058"W	20.00	End of Curve
9800.00†	90.000	181.817	9600.00	322.96	-322.80	-10.24	759581.26	487881.62	32°20'21.404"N	103°37'36.074"W	0.00	
9900.00†	90.000	181.817	9600.00	422.96	-422.75	-13.41	759578.09	487781.67	32°20'20.415"N	103°37'36.119"W	0.00	
10000.00†	90.000	181.817	9600.00	522.96	-522.69	-16.58	759574.92	487681.73	32°20'19.426"N	103°37'36.164"W	0.00	
10100.00†	90.000	181.817	9600.00	622.96	-622.64	-19.75	759571.75	487581.78	32°20'18.438"N	103°37'36.208"W	0.00	
10200.00†	90.000	181.817	9600.00	722.96	-722.59	-22.93	759568.58	487481.83	32°20'17.449"N	103°37'36.253"W	0.00	
10300.00†	90.000	181.817	9600.00	822.96	-822.54	-26.10	759565.40	487381.89	32°20'16.460"N	103°37'36.298"W	0.00	
10400.00†	90.000	181.817	9600.00	922.96	-922.49	-29.27	759562.23	487281.94	32°20'15.471"N	103°37'36.342"W	0.00	
10500.00†	90.000	181.817	9600.00	1022.96	-1022.44	-32.44	759559.06	487182.00	32°20'14.483"N	103°37'36.387"W	0.00	
10600.00†	90.000	181.817	9600.00	1122.96	-1122.39	-35.61	759555.89	487082.05	32°20'13.494"N	103°37'36.431"W	0.00	
10700.00†	90.000	181.817	9600.00	1222.96	-1222.34	-38.78	759552.72	486982.10	32°20'12.505"N	103°37'36.476"W	0.00	
10800.00†	90.000	181.817	9600.00	1322.96	-1322.29	-41.95	759549.55	486882.16	32°20'11.516"N	103°37'36.521"W	0.00	
10900.00†	90.000	181.817	9600.00	1422.96	-1422.24	-45.12	759546.38	486782.21	32°20'10.528"N	103°37'36.565"W	0.00	
11000.00†	90.000	181.817	9600.00	1522.96	-1522.19	-48.29	759543.21	486682.27	32°20'09.539"N	103°37'36.610"W	0.00	
11100.00†	90.000	181.817	9600.00	1622.96	-1622.14	-51.46	759540.04	486582.32	32°20'08.550"N	103°37'36.655"W	0.00	
11200.00†	90.000	181.817	9600.00	1722.96	-1722.09	-54.64	759536.87	486482.37	32°20'07.561"N	103°37'36.699"W	0.00	
11300.00†	90.000	181.817	9600.00	1822.96	-1822.04	-57.81	759533.70	486382.43	32°20'06.572"N	103°37'36.744"W	0.00	
11400.00†	90.000	181.817	9600.00	1922.96	-1921.99	-60.98	759530.52	486282.48	32°20'05.584"N	103°37'36.789"W	0.00	
11500.00†	90.000	181.817	9600.00	2022.96	-2021.94	-64.15	759527.35	486182.54	32°20'04.595"N	103°37'36.833"W	0.00	
11600.00†	90.000	181.817	9600.00	2122.96	-2121.89	-67.32	759524.18	486082.59	32°20'03.606"N	103°37'36.878"W	0.00	
11700.00†	90.000	181.817	9600.00	2222.96	-2221.84	-70.49	759521.01	485982.65	32°20'02.617"N	103°37'36.922"W	0.00	
11800.00†	90.000	181.817	9600.00	2322.96	-2321.79	-73.66	759517.84	485882.70	32°20'01.629"N	103°37'36.967"W	0.00	
11900.00†	90.000	181.817	9600.00	2422.96	-2421.74	-76.83	759514.67	485782.75	32°20'00.640"N	103°37'37.012"W	0.00	
12000.00†	90.000	181.817	9600.00	2522.96	-2521.69	-80.00	759511.50	485682.81	32°19'59.651"N	103°37'37.056"W	0.00	
12100.00†	90.000	181.817	9600.00	2622.96	-2621.64	-83.18	759508.33	485582.86	32°19'58.662"N	103°37'37.101"W	0.00	
12200.00†	90.000	181.817	9600.00	2722.96	-2721.59	-86.35	759505.16	485482.92	32°19'57.673"N	103°37'37.146"W	0.00	
12300.00†	90.000	181.817	9600.00	2822.96	-2821.54	-89.52	759501.99	485382.97	32°19'56.685"N	103°37'37.190"W	0.00	
12400.00†	90.000	181.817	9600.00	2922.96	-2921.49	-92.69	759498.82	485283.02	32°19'55.696"N	103°37'37.235"W	0.00	
12500.00†	90.000	181.817	9600.00	3022.96	-3021.44	-95.86	759495.64	485183.08	32°19'54.707"N	103°37'37.280"W	0.00	
12600.00†	90.000	181.817	9600.00	3122.96	-3121.39	-99.03	759492.47	485083.13	32°19'53.718"N	103°37'37.324"W	0.00	
12700.00†	90.000	181.817	9600.00	3222.96	-3221.34	-102.20	759489.30	484983.19	32°19'52.730"N	103°37'37.369"W	0.00	
12800.00†	90.000	181.817	9600.00	3322.96	-3321.29	-105.37	759486.13	484883.24	32°19'51.741"N	103°37'37.414"W	0.00	
12900.00†	90.000	181.817	9600.00	3422.96	-3421.24	-108.54	759482.96	484783.29	32°19'50.752"N	103°37'37.458"W	0.00	
13000.00†	90.000	181.817	9600.00	3522.96	-3521.19	-111.71	759479.79	484683.35	32°19'49.763"N	103°37'37.503"W	0.00	
13100.00†	90.000	181.817	9600.00	3622.96	-3621.14	-114.89	759476.62	484583.40	32°19'48.775"N	103°37'37.547"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 8H SHL
Area	Lea County, NM	Well	No. 8H
Field	(Thyme) Sec 1, T23S, R32E	Wellbore	No. 8H PWB
Facility	Thyme "APY" Federal		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13200.00†	90.000	181.817	9600.00	3722.96	-3721.09	-118.06	759473.45	484483.46	32°19'47.786"N	103°37'37.592"W	0.00	
13300.00†	90.000	181.817	9600.00	3822.96	-3821.04	-121.23	759470.28	484383.51	32°19'46.797"N	103°37'37.637"W	0.00	
13400.00†	90.000	181.817	9600.00	3922.96	-3920.98	-124.40	759467.11	484283.57	32°19'45.808"N	103°37'37.681"W	0.00	
13500.00†	90.000	181.817	9600.00	4022.96	-4020.93	-127.57	759463.93	484183.62	32°19'44.819"N	103°37'37.726"W	0.00	
13600.00†	90.000	181.817	9600.00	4122.96	-4120.88	-130.74	759460.76	484083.67	32°19'43.831"N	103°37'37.771"W	0.00	
13700.00†	90.000	181.817	9600.00	4222.96	-4220.83	-133.91	759457.59	483983.73	32°19'42.842"N	103°37'37.815"W	0.00	
13800.00†	90.000	181.817	9600.00	4322.96	-4320.78	-137.08	759454.42	483883.78	32°19'41.853"N	103°37'37.860"W	0.00	
13900.00†	90.000	181.817	9600.00	4422.96	-4420.73	-140.25	759451.25	483783.84	32°19'40.864"N	103°37'37.904"W	0.00	
14000.00†	90.000	181.817	9600.00	4522.96	-4520.68	-143.43	759448.08	483683.89	32°19'39.876"N	103°37'37.949"W	0.00	
14097.14	90.000	181.817	9600.00	4620.10	-4617.78	-146.51	759445.00	483586.80	32°19'38.915"N	103°37'37.992"W	0.00	No. 8H PBHL

HOLE & CASING SECTIONS - Ref Wellbore: No. 8H PWB Ref Wellpath: Prelim_1

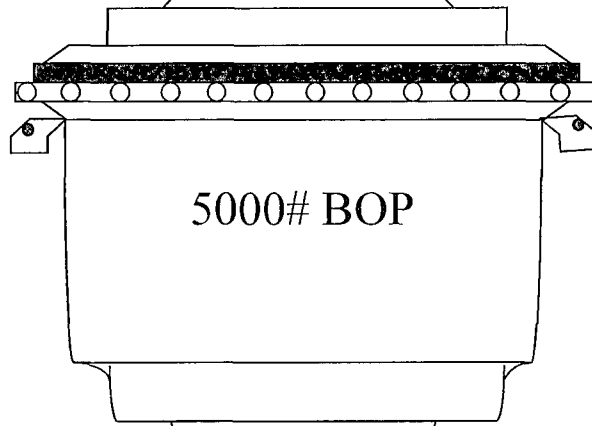
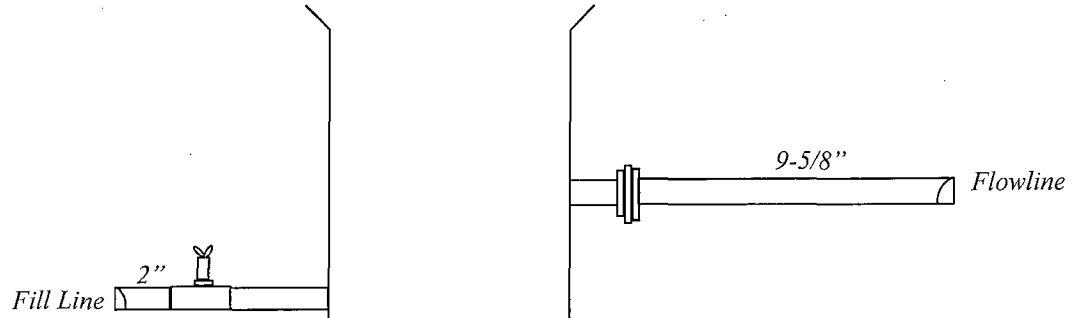
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
12.25in Open Hole	0.00	4500.00	4500.00	0.00	4500.00	0.00	0.00	0.00	0.00
9.625in Casing	0.00	4500.00	4500.00	0.00	4500.00	0.00	0.00	0.00	0.00
8.75in Open Hole	4500.00	14097.14	9597.14	4500.00	9600.00	0.00	0.00	-4617.77	-146.51
5.5in Casing	0.00	14097.14	14097.14	0.00	9600.00	0.00	0.00	-4617.77	-146.51

TARGETS

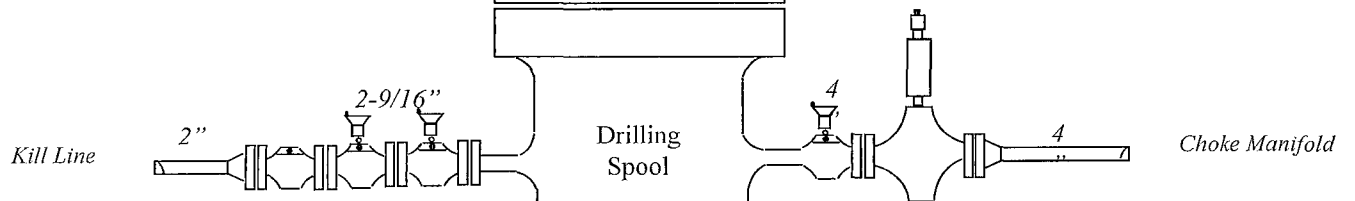
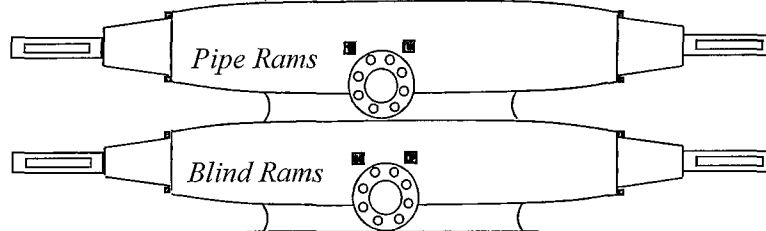
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No. 8H PBHL	14097.14	9600.00	-4617.78	-146.51	759445.00	483586.80	32°19'38.915"N	103°37'37.992"W	point

SURVEY PROGRAM - Ref Wellbore: No. 8H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
3757.00	14097.14	NaviTrak (Standard)		No. 8H PWB



SRR & A

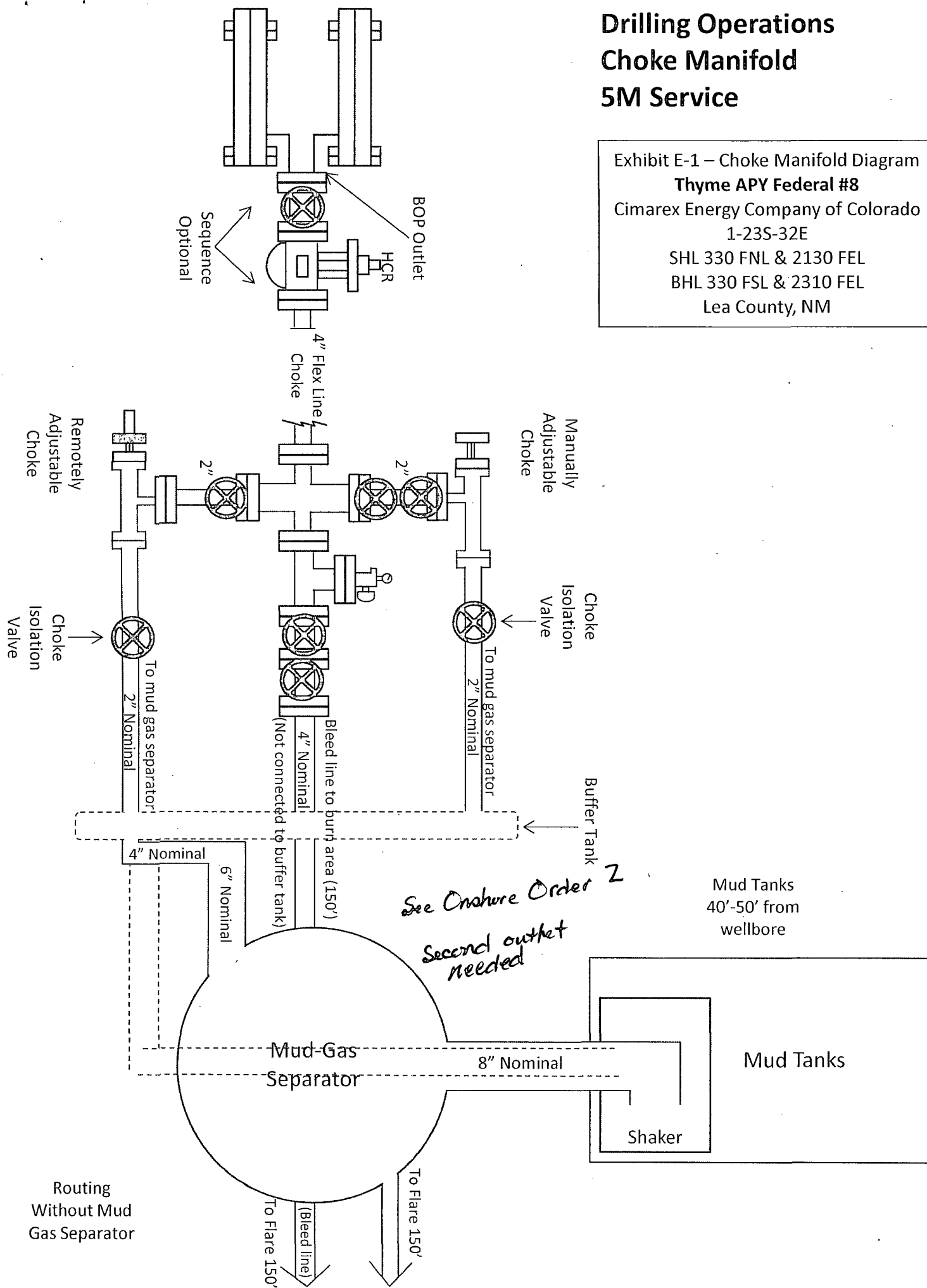


13-5/8" 3000 psi x 11" 5000 psi
Wellhead Assembly

13-5/8" 3000# psi x 13-3/8" SOW Slip-on Casing
Head

Exhibit E – 5000# BOP
Thyme APY Federal #8
Cimarex Energy Company of Colorado
1-23S-32E
SHL 330 FNL & 2130 FEL
BHL 330 FSL & 2310 FEL
Lea County, NM

Exhibit E-1 – Choke Manifold Diagram
Thyme APY Federal #8
 Cimarex Energy Company of Colorado
 1-23S-32E
 SHL 330 FNL & 2130 FEL
 BHL 330 FSL & 2310 FEL
 Lea County, NM





Midwest Hose
& Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: Oderco Inc		P.O. Number: odyd-271
HOSE SPECIFICATIONS		
Type: Stainless Steel Armor Choke & Kill Hose		Hose Length: 45'ft.
I.D. 4 INCHES	O.D. 9 INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI	BURST PRESSURE 0 PSI
COUPLINGS		
Stem Part No. OKC OKC		Ferrule No. OKC OKC
Type of Coupling: Swage-It		
PROCEDURE		
<u>Hose assembly pressure tested with water at ambient temperature.</u>		
TIME HELD AT TEST PRESSURE 15 MIN.		ACTUAL BURST PRESSURE: 0 PSI
Hose Assembly Serial Number: 79793		Hose Serial Number: OKC
Comments:		
Date: 3/8/2011	Tested: <i>A. Joins</i>	Approved: <i>Kevin</i>



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

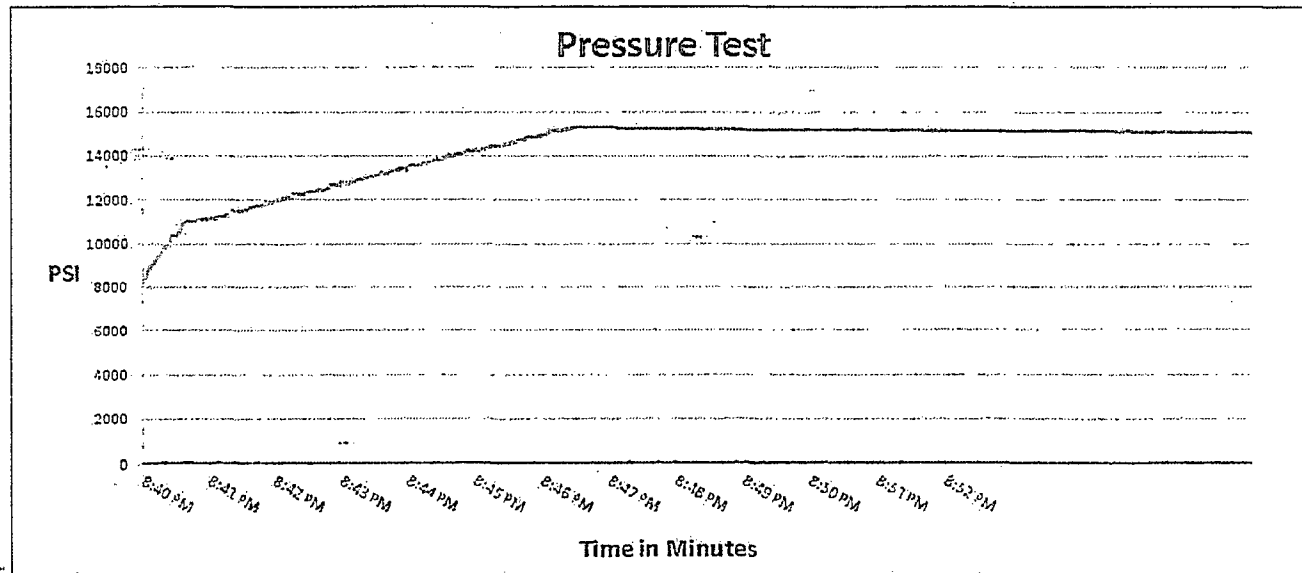
Pick Ticket #: 94260

Hose Specifications

<u>Hose Type</u>	<u>Length</u>
C & K	45'
<u>I.D.</u>	<u>O.D.</u>
4"	6.09"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiplier Applies

Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
4 1/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
6.38"	6.25"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
5544	79793



Test Pressure
15000 PSI

Time Held at Test Pressure
11 Minutes

Actual Burst Pressure

Peak Pressure
15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Zac McConnell

Approved By: Kim Thomas

[Signature]

[Signature]



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer:

DEM

PO

ODYD-271

SPECIFICATIONS

Sales Order

79793

Dated:

3/8/2011

We hereby certify that the material supplied
for the referenced purchase order to be true
according to the requirements of the purchase
order and current industry standards

Supplier:
Midwest Hose & Specialty, Inc.
10640 Tanner Road
Houston, Texas 77041

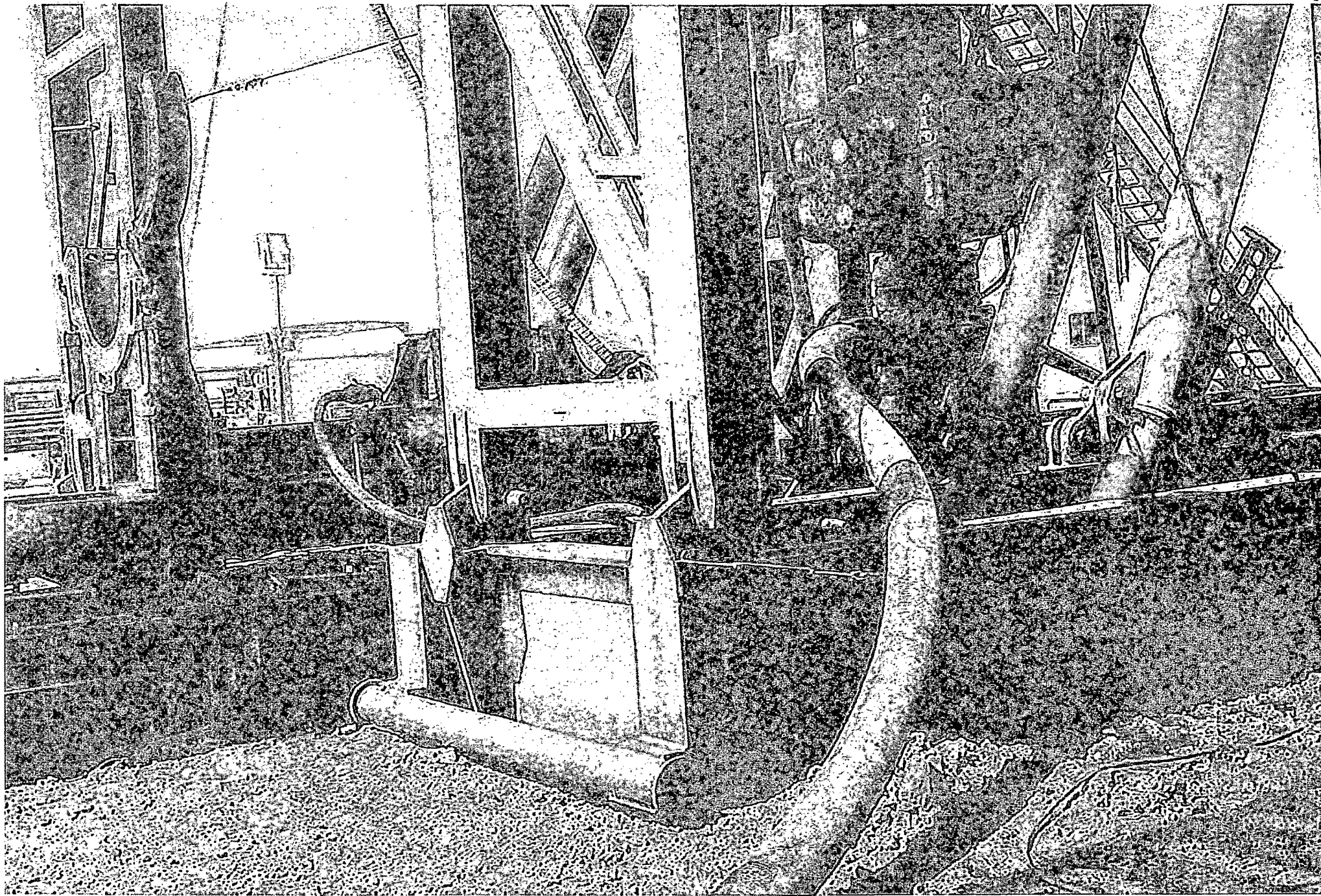
Comments:

Approved:

David Garcia

Date:

3/8/2011



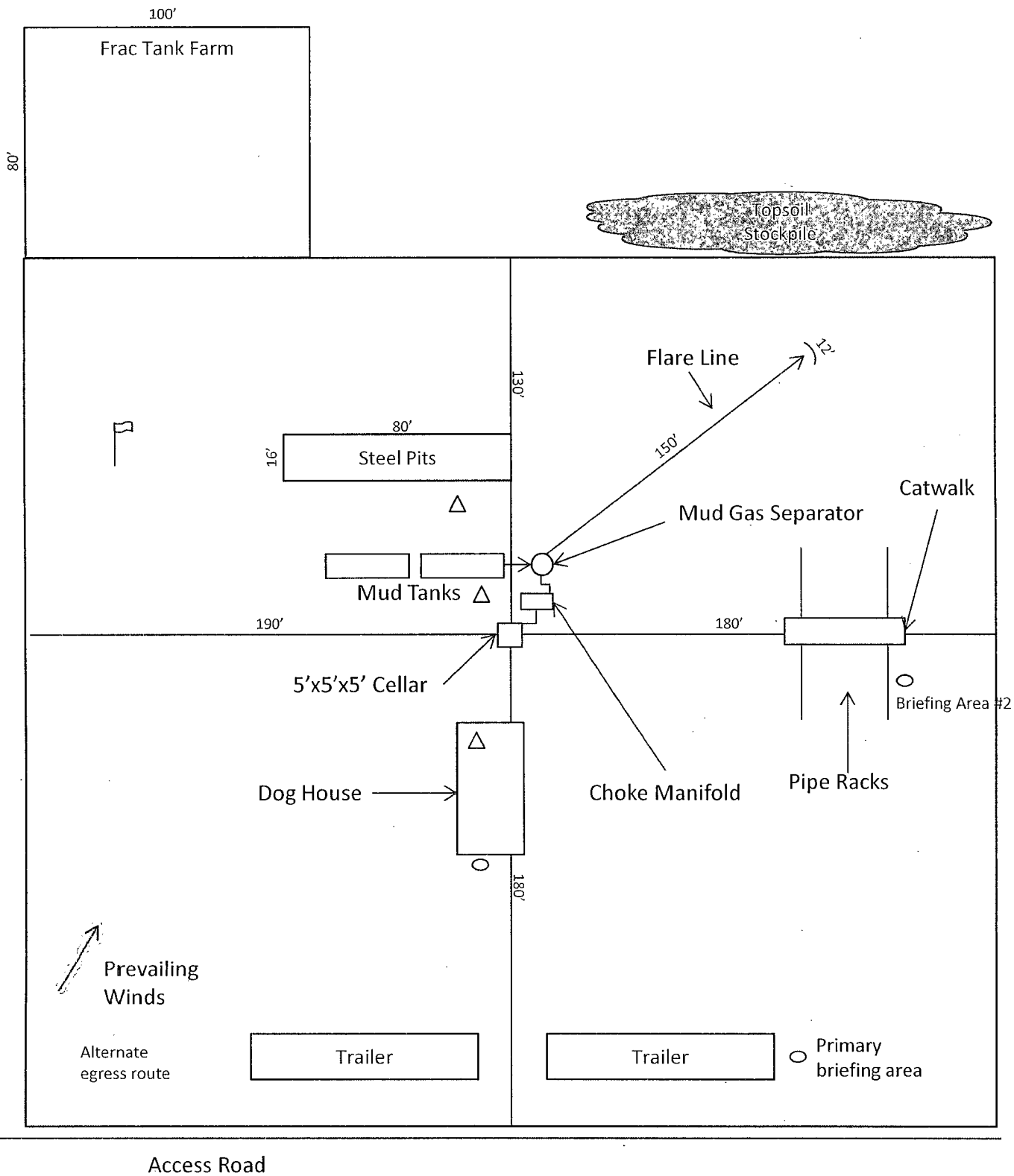


Exhibit D – Rig Diagram
Thyme APY Federal #8
 Cimarex Energy Company of Colorado
 1-23S-32E
 SHL 330 FNL & 2130 FEL
 BHL 330 FSL & 2310 FEL
 Lea County, NM



Wind Direction Indicators
 (wind sock or streamers)



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



Briefing Areas