

13-45

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

OCD Hobbs
HOBBS

MAR 18 2013

RECEIVED

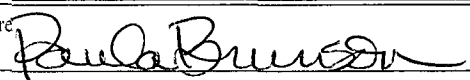
FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM-0392082A
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Cimarex Energy Co. of Colorado		7. If Unit or CA Agreement, Name and No.
3a. Address 600 N. Marienfeld, Ste 600 Midland, TX 79701	3b. Phone No. (include area code) 432-571-7800	8. Lease Name and Well No. Hallertau 4 Federal 5H <39100>
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 330' FNL & 710' FWL Unit D At proposed prod. zone 330' FSL & 970' FWL Unit M		9. API Well No. 30-025-41062
14. Distance in miles and direction from nearest town or post office* 29 miles west of Jal, NM		10. Field and Pool, or Exploratory Wildcat Bone Spring <97903>
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 1400.49	11. Sec., T. R. M. or Blk. and Survey or Area 4-26S-32E
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 150' from #1H	19. Proposed Depth MD 15136' TVD 10679' Pilot Hole 11200'	12. County or Parish Lea County
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3310' GR	22. Approximate date work will start* 02/15/2013	13. State NM
17. Spacing Unit dedicated to this well 160		
20. BLM/BIA Bond No. on file NM2575; NMB000835		
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 	Name (Printed/Typed) Paula Brunson	Date 10/04/2012
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Title
Regulatory Analyst

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date MAR 15 2013
Title CARLSBAD FIELD OFFICE	Office FOR FIELD MANAGER	

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)

Carlsbad Controlled Water Basin

LA
03/19/13

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

MAR 20 2013

Drilling Plan
Hallertau 4 Federal 5H
 Cimarex Energy Co. of Colorado
 Unit D, Section 4
 T26S-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 & 710' FWL
 BHL 330' FSL & 970' FWL
- 2 **Elevation above sea level:** 3310' 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 15136' TVD 10679' Pilot Hole 11200'
- 6 **Estimated tops of geological markers:**

Water	275'	
Rustler	1054'	
Top Salt	1451'	
Base Salt	4308	
Bell Canyon	4520'	Possible hydrocarbons
Cherry Canyon	5495'	
Brushy Canyon	7249'	
Bone Spring	8572'	
Bone Spring "A" Shale	8676'	Possible hydrocarbons
Bone Spring "B" Carb	9126'	Possible hydrocarbons
Bone Spring "C" Shale	9255'	Possible hydrocarbons
1st Bone Spring SS	9548'	
2nd Bone Spring Carb	9985'	
2nd Bone Spring SS	10180'	Possible hydrocarbons
3rd Bone Spring Carb	10811'	
Pilot Hole TD	11200'	
Wolfcamp	11788'	

7 **Proposed Mud Circulating System:**

Depth			Mud Wt	Visc	Fluid Loss	Type Mud
0'	to	1100'	8.4 - 8.6	28	NC	FW
1100'	to	4500'	10	30-32	NC	Brine water
4500'	to	15136'	8.4-9.5	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.

Proposed Drilling Plan

After drilling and setting surface and intermediate casing, drill 7 7/8" or 8 3/4" hole to 11200' and log. Pump 30 bbls MUDPUSHII 12 ppg, followed by 495 sks Type H cement, D080 (Dispersant) 0.080 gal/sk, D177 (Retarder) 0.045 gal/sk 17.5 ppg yield 0.95 & 0% excess from 11200' to 10172'. Set whipstock and kick off 7 7/8" or 8 3/4" lateral @ 10172' and drill to TD @ 15136' MD, 10679' TVD. Run 5 1/2" casing and cement as per plan.

Drilling Plan
Hallertau 4 Federal 5H
Cimarex Energy Co. of Colorado
Unit D, Section 4
T26S-R32E, Lea County, NM

8 Casing & Cementing Program:

see COA

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	17 1/2"	0' to 1180'	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 4500'	New 9 5/8"	40#	LTC	J-55
Production	8 3/4" or 7 7/8"	0' to 10172'	New 5 1/2"	17#	LTC	P-110
Production	8 3/4" or 7 7/8"	10172' to 15136'	New 5 1/2"	17#	BTC	P-110

9 Cementing:

Surface	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	699	1.75	13.5	1223	Class C + Bentonite + Calcium Chloride + LCM
Tail	143	1.34	14.8	191	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	1016	1.88	12.9	1911	35:65 (poz/C) + Salt + Bentonite + LCM + retarder
Tail	263	1.34	14.8	352	Class C + retarder + LCM

TOC: Surface 73% Excess

Note: Casing will be kept filled with liquid/mud while running casing in hole

see COA

Production	Sacks	Yield (cuft/sx)	Weight (ppg)	Cubic Feet	Cement Blend
Lead	503	2.4	11.9	1207	35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder
Tail	954	1.24	14.5	1183	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder

Cement volumes will be adjusted depending on hole size.

TOC: 4,000' 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.

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

see COA

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 1500 psi high on the surface and 250 psi low and 2500 psi high on the intermediate casing.

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.

Drilling Plan
Hallertau 4 Federal 5H
Cimarex Energy Co. of Colorado
Unit D, Section 4
T26S-R32E, Lea County, NM

11 Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 4720 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR Surface to TD
- C. No DSTs or cores are planned at this time.

12 Potential Hazards:

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 5040 psi Estimated BHT 130°

13 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.

14 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.

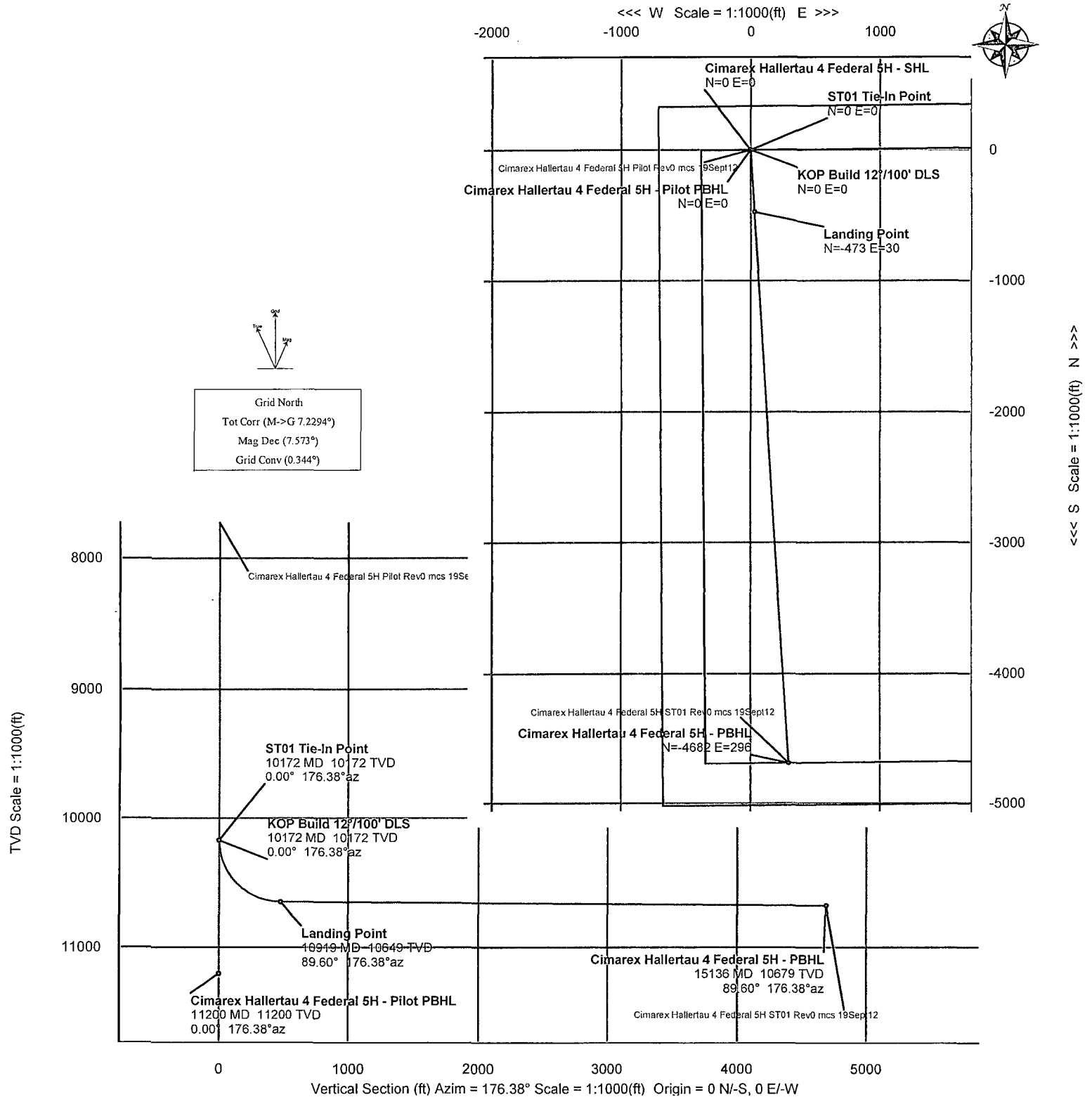


Cimarex Energy Co.

PATHFINDER
A Schlumberger Company

WELL	Hallertau 4 Federal 5H	FIELD	NM Lea County	STRUCTURE	TBD
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Magnetic Parameters	Dip: 59.959°	Date: September 19, 2012	Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Miscellaneous
Model: BGM 2012	Mag Dec: 7.573°	FS: 48379-4mT	Lat: N 32 4 43.494	Northings: 392977.00 NUS	Stat: Hallertau 4 Federal 5H
			Long: W 103 41 10.972	Eastings: 741715.30 NUS	Plan: ST01 Rev0 mcs 19Sept12
				Grid Conv: 0.344°	Scale Fact: 0.99995508
					TVD Ref: Ground Elevation(3310ft above MSL)
					Srvy Date: September 19, 2012



Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
ST01 Tie-In Point	10172.00	0.00	176.38	10172.00	0.00	0.00	0.00	
KOP Build 12"/100' DLS	10172.01	0.00	176.38	10172.01	0.00	0.00	0.00	0.00
Landing Point	10918.68	89.60	176.38	10649.46	474.13	-473.19	29.93	12.00
Cimarex Hallertau 4 Federal 5H - PBHL	15135.54	89.60	176.38	10679.00	4690.89	-4681.52	296.31	0.00



Cimarex Hallertau 4 Federal 5H ST01 Rev0 mcs 19Sept12 Proposal Report

100' Interpolated

(Non-Def Plan)



Report Date: September 20, 2012 - 05:02 PM
 Client: Cimarex Energy Co.
 Field: NM Lea County (NAD 83)
 Structure / Slot: TBD / Cimarex Hallertau 4 Federal 5H
 Well: Cimarex Hallertau 4 Federal 5H
 Borehole: ST01 (Lateral)
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Hallertau 4 Federal 5H ST01 Rev0 mcs 19Sept12
 Survey Date: September 19, 2012
 Tort / AHD / DDI / ERD Ratio: 89.606 ° / 4690.888 ft / 5.775 / 0.439
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 4' 43.40436", W 103° 41' 10.97198"
 Location Grid N/E Y/X: N 392977.600 ftUS, E 741715.300 ftUS
 CRS Grid Convergence Angle: 0.3436 °
 Grid Scale Factor: 0.99995508

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 176.378 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Ground Elevation
 TVD Reference Elevation: 3310.000 ft above MSL
 Seabed / Ground Elevation: 3310.000 ft above MSL
 Magnetic Declination: 7.573 °
 Total Gravity Field Strength: 999.1618 mgn (9.8 based)
 Total Magnetic Field Strength: 48379.445 nT
 Magnetic Dip Angle: 59.959 °
 Declination Date: September 19, 2012
 Magnetic Declination Model: BGGM 2012
 North Reference: Grid North
 Grid Convergence Used: 0.3436 °
 Total Corr Mag North->Grid North: 7.2294 °
 Local Coord Referenced To: Structure Reference Point

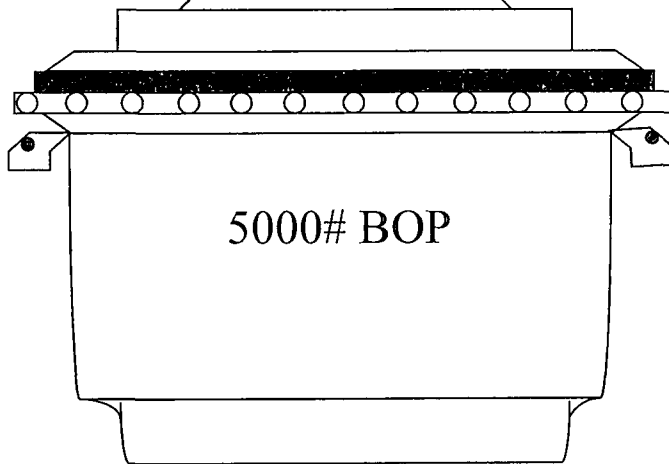
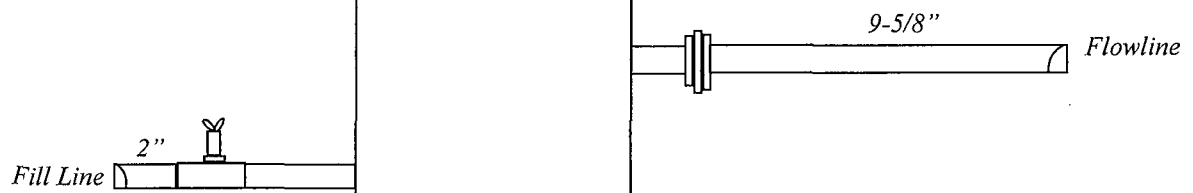
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
Cimarex Hallertau 4 Federal 5H - SHL	0.00	0.00	176.38	0.00	0.00	0.00	0.00	392977.60	741715.30	N 32 4 43.40	W 103 41 10.97	0.00	0.00	N/A
ST01 Tie-In Point	10172.00	0.00	176.38	10172.00	0.00	0.00	0.00	392977.60	741715.30	N 32 4 43.40	W 103 41 10.97	0.00	0.00	0.00
KOP Build 12"/100'	10172.00	0.00	176.38	10172.00	0.00	0.00	0.00	392977.60	741715.30	N 32 4 43.40	W 103 41 10.97	0.00	0.00	N/A
DLS	10200.00	3.36	176.38	10199.98	0.82	-0.82	0.05	392976.78	741715.35	N 32 4 43.40	W 103 41 10.97	0.82	176.38	12.00
	10300.00	15.36	176.38	10298.47	17.05	-17.02	1.08	392960.58	741716.38	N 32 4 43.24	W 103 41 10.96	17.05	176.38	12.00
	10400.00	27.36	176.38	10391.43	53.41	-53.30	3.37	392924.30	741718.67	N 32 4 42.88	W 103 41 10.94	53.41	176.38	12.00
	10500.00	39.36	176.38	10474.81	108.29	-108.08	6.84	392869.53	741722.14	N 32 4 42.33	W 103 41 10.90	108.29	176.38	12.00
	10600.00	51.36	176.38	10544.94	179.32	-178.96	11.32	392798.65	741726.62	N 32 4 41.63	W 103 41 10.85	179.32	176.38	12.00
	10700.00	63.36	176.38	10598.78	263.37	-262.84	16.62	392714.77	741731.92	N 32 4 40.80	W 103 41 10.80	263.37	176.38	12.00
	10800.00	75.36	176.38	10633.97	356.78	-356.07	22.52	392621.55	741737.82	N 32 4 39.88	W 103 41 10.74	356.78	176.38	12.00
	10900.00	87.36	176.38	10648.97	455.46	-454.55	28.75	392523.07	741744.05	N 32 4 38.90	W 103 41 10.67	455.46	176.38	12.00
Landing Point	10918.68	89.60	176.38	10649.46	474.13	-473.19	29.93	392504.44	741745.23	N 32 4 38.72	W 103 41 10.66	474.13	176.38	12.00
	11000.00	89.60	176.38	10650.03	555.45	-554.35	35.06	392423.28	741750.36	N 32 4 37.92	W 103 41 10.60	555.45	176.38	0.00
	11100.00	89.60	176.38	10650.73	655.45	-654.14	41.38	392323.49	741756.67	N 32 4 36.93	W 103 41 10.54	655.45	176.38	0.00
	11200.00	89.60	176.38	10651.43	755.45	-753.94	47.69	392223.69	741762.99	N 32 4 35.94	W 103 41 10.47	755.45	176.38	0.00
	11300.00	89.60	176.38	10652.13	855.45	-853.74	54.00	392123.90	741769.30	N 32 4 34.95	W 103 41 10.40	855.45	176.38	0.00
	11400.00	89.60	176.38	10652.82	955.44	-953.54	60.31	392024.11	741775.61	N 32 4 33.97	W 103 41 10.34	955.44	176.38	0.00
	11500.00	89.60	176.38	10653.52	1055.44	-1053.34	66.63	391924.31	741781.92	N 32 4 32.98	W 103 41 10.27	1055.44	176.38	0.00
	11600.00	89.60	176.38	10654.22	1155.44	-1153.13	72.94	391824.52	741788.24	N 32 4 31.99	W 103 41 10.20	1155.44	176.38	0.00
	11700.00	89.60	176.38	10654.92	1255.44	-1252.93	79.26	391724.73	741794.55	N 32 4 31.00	W 103 41 10.14	1255.44	176.38	0.00
	11800.00	89.60	176.38	10655.62	1355.43	-1352.73	85.57	391624.93	741800.87	N 32 4 30.01	W 103 41 10.07	1355.43	176.38	0.00
	11900.00	89.60	176.38	10656.32	1455.43	-1452.53	91.88	391525.14	741807.18	N 32 4 29.03	W 103 41 10.01	1455.43	176.38	0.00
	12000.00	89.60	176.38	10657.02	1555.43	-1552.33	98.20	391425.35	741813.49	N 32 4 28.04	W 103 41 9.94	1555.43	176.38	0.00
	12100.00	89.60	176.38	10657.72	1655.43	-1652.12	104.51	391325.55	741819.81	N 32 4 27.05	W 103 41 9.87	1655.43	176.38	0.00
	12200.00	89.60	176.38	10658.42	1755.42	-1751.92	110.83	391225.76	741826.12	N 32 4 26.06	W 103 41 9.81	1755.42	176.38	0.00
	12300.00	89.60	176.38	10659.12	1855.42	-1851.72	117.14	391125.97	741832.44	N 32 4 25.07	W 103 41 9.74	1855.42	176.38	0.00
	12400.00	89.60	176.38	10659.82	1955.42	-1951.52	123.46	391026.17	741838.75	N 32 4 24.09	W 103 41 9.67	1955.42	176.38	0.00
	12500.00	89.60	176.38	10660.52	2055.42	-2051.32	129.78	390926.38	741845.07	N 32 4 23.10	W 103 41 9.61	2055.42	176.38	0.00
	12600.00	89.60	176.38	10661.22	2155.41	-2151.11	136.09	390826.59	741851.39	N 32 4 22.11	W 103 41 9.54	2155.41	176.38	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")		Longitude (E/W ° ' ")		Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
	12700.00	89.60	176.38	10661.92	2255.41	-2250.91	142.41	390726.79	741857.70	N 32	4 21.12	W 103 41	9.47	2255.41	176.38	0.00
	12800.00	89.60	176.38	10662.62	2355.41	-2350.71	148.72	390627.00	741864.02	N 32	4 20.13	W 103 41	9.41	2355.41	176.38	0.00
	12900.00	89.60	176.38	10663.32	2455.41	-2450.51	155.04	390527.21	741870.33	N 32	4 19.15	W 103 41	9.34	2455.41	176.38	0.00
	13000.00	89.60	176.38	10664.02	2555.40	-2550.30	161.36	390427.42	741876.65	N 32	4 18.16	W 103 41	9.27	2555.40	176.38	0.00
	13100.00	89.60	176.38	10664.72	2655.40	-2650.10	167.68	390327.62	741882.97	N 32	4 17.17	W 103 41	9.21	2655.40	176.38	0.00
	13200.00	89.60	176.38	10665.42	2755.40	-2749.90	173.99	390227.83	741889.28	N 32	4 16.18	W 103 41	9.14	2755.40	176.38	0.00
	13300.00	89.60	176.38	10666.12	2855.40	-2849.70	180.31	390128.04	741895.60	N 32	4 15.20	W 103 41	9.08	2855.40	176.38	0.00
	13400.00	89.60	176.38	10666.82	2955.39	-2949.50	186.63	390028.24	741901.92	N 32	4 14.21	W 103 41	9.01	2955.39	176.38	0.00
	13500.00	89.60	176.38	10667.52	3055.39	-3049.29	192.95	389928.45	741908.24	N 32	4 13.22	W 103 41	8.94	3055.39	176.38	0.00
	13600.00	89.60	176.38	10668.22	3155.39	-3149.09	199.26	389828.66	741914.56	N 32	4 12.23	W 103 41	8.88	3155.39	176.38	0.00
	13700.00	89.60	176.38	10668.92	3255.39	-3248.89	205.58	389728.86	741920.87	N 32	4 11.24	W 103 41	8.81	3255.39	176.38	0.00
	13800.00	89.60	176.38	10669.62	3355.38	-3348.69	211.90	389629.07	741927.19	N 32	4 10.26	W 103 41	8.74	3355.38	176.38	0.00
	13900.00	89.60	176.38	10670.33	3455.38	-3448.48	218.22	389529.28	741933.51	N 32	4 9.27	W 103 41	8.68	3455.38	176.38	0.00
	14000.00	89.60	176.38	10671.03	3555.38	-3548.28	224.54	389429.48	741939.83	N 32	4 8.28	W 103 41	8.61	3555.38	176.38	0.00
	14100.00	89.60	176.38	10671.73	3655.38	-3648.08	230.86	389329.69	741946.15	N 32	4 7.29	W 103 41	8.54	3655.38	176.38	0.00
	14200.00	89.60	176.38	10672.43	3755.37	-3747.88	237.18	389229.90	741952.47	N 32	4 6.30	W 103 41	8.48	3755.37	176.38	0.00
	14300.00	89.60	176.38	10673.13	3855.37	-3847.67	243.50	389130.11	741958.79	N 32	4 5.32	W 103 41	8.41	3855.37	176.38	0.00
	14400.00	89.60	176.38	10673.83	3955.37	-3947.47	249.82	389030.31	741965.11	N 32	4 4.33	W 103 41	8.34	3955.37	176.38	0.00
	14500.00	89.60	176.38	10674.54	4055.37	-4047.27	256.14	388930.52	741971.43	N 32	4 3.34	W 103 41	8.28	4055.37	176.38	0.00
	14600.00	89.60	176.38	10675.24	4155.36	-4147.07	262.46	388830.73	741977.75	N 32	4 2.35	W 103 41	8.21	4155.36	176.38	0.00
	14700.00	89.60	176.38	10675.94	4255.36	-4246.87	268.78	388730.93	741984.07	N 32	4 1.36	W 103 41	8.14	4255.36	176.38	0.00
	14800.00	89.60	176.38	10676.64	4355.36	-4346.66	275.10	388631.14	741990.39	N 32	4 0.38	W 103 41	8.08	4355.36	176.38	0.00
	14900.00	89.60	176.38	10677.35	4455.36	-4446.46	281.42	388531.35	741996.71	N 32	3 59.39	W 103 41	8.01	4455.36	176.38	0.00
	15000.00	89.60	176.38	10678.05	4555.35	-4546.26	287.75	388431.56	742003.03	N 32	3 58.40	W 103 41	7.95	4555.35	176.38	0.00
	15100.00	89.60	176.38	10678.75	4655.35	-4646.06	294.07	388331.76	742009.35	N 32	3 57.41	W 103 41	7.88	4655.35	176.38	0.00
Cimarex Hallertau 4 Federal 5H - PBHL	15135.54	89.60	176.38	10679.00	4690.89	-4681.52	296.31	388296.30	742011.60	N 32	3 57.06	W 103 41	7.85	4690.89	176.38	0.00

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	10172.000	1/100.000	30.000	30.000	SLB_NSG+MSHOT	Pilot Borehole / Cimarex Hallertau 4 Federal 5H Pilot Rev0 mcs
	10172.000	15135.536	1/100.000	30.000	30.000	SLB_MWD-STD	ST01 (Lateral) / Cimarex Hallertau 4 Federal 5H ST01 Rev0 mcs



SRR & A

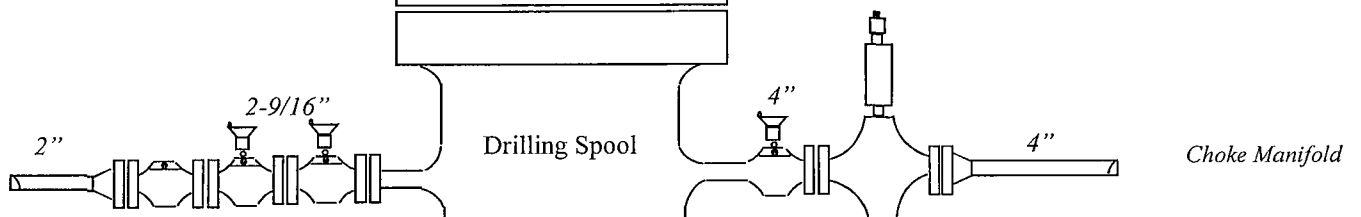
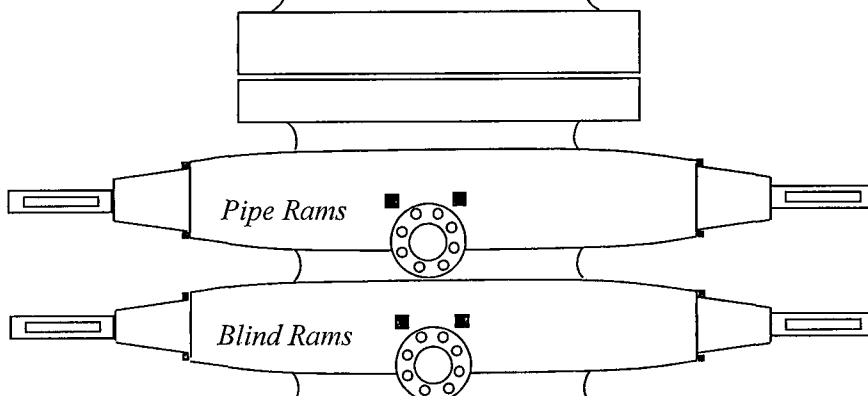
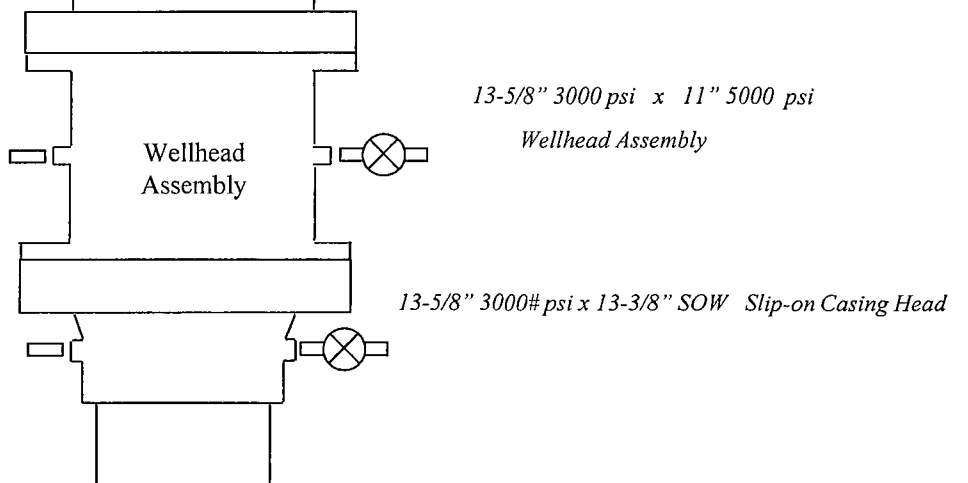


Exhibit E – 5000# BOP
Hallertau 4 Federal No. 5H
Cimarex Energy Co. of Colorado
4-26S-32E
SHL 330 FNL & 710 FWL
BHL 330 FSL & 970 FWL
Lea County, NM



Drilling Operations

Choke Manifold

5M Service tested to 3M

Exhibit E-1 – Choke Manifold Diagram

Hallertau 4 Federal No. 5H

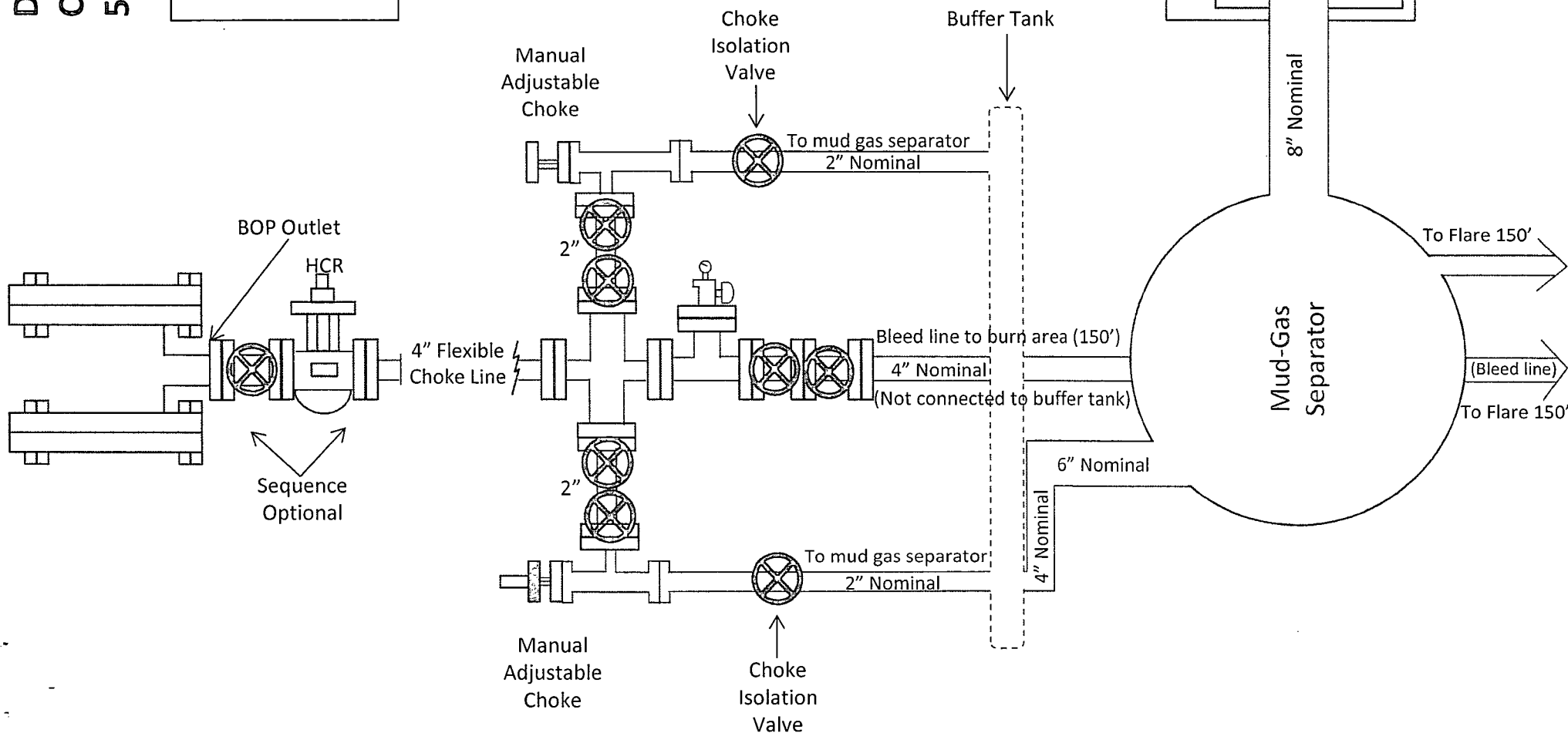
Cimarex Energy Co. of Colorado

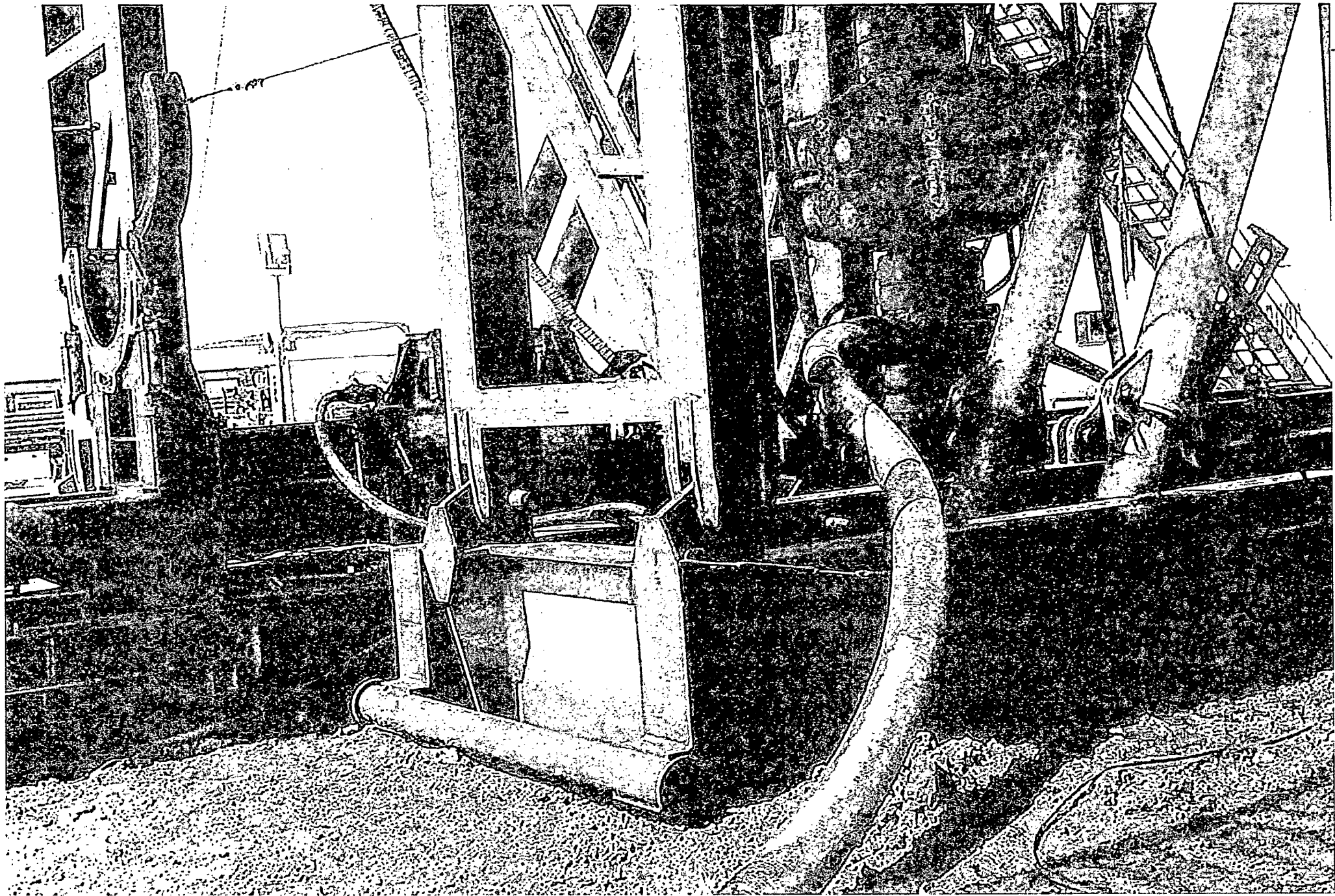
4-26S-32E

SHL 330 FNL & 710 FWL

BHL 330 FSL & 970 FWL

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. Dennis Smith</i>	Approved: <i>Kevin [Signature]</i>	



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

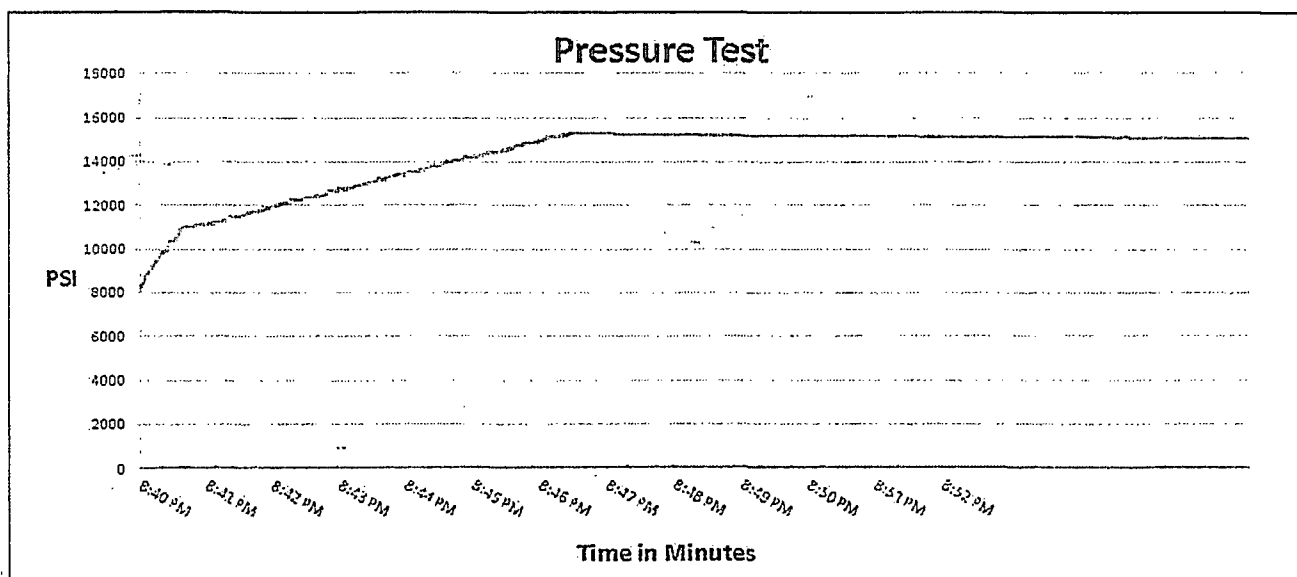
Pick Ticket #: 94260

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>
41/16 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

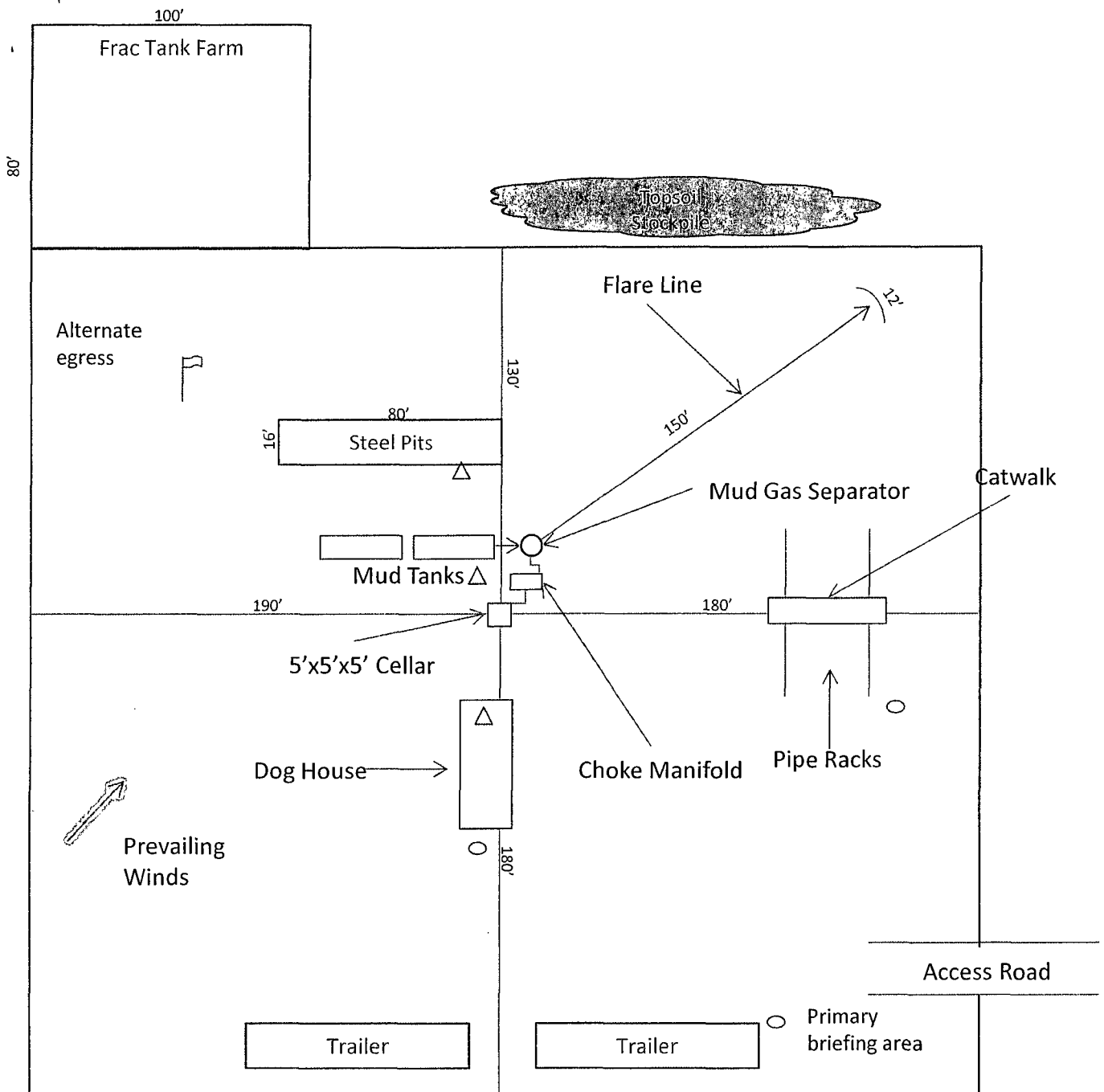
Comments:

Approved:

Samuel Garcia

Date:

3/8/2011



-  Wind Direction Indicators
(wind sock or streamers)
-  • H2S Monitors
(alarms at bell nipple and shale
shaker)
-  Briefing Areas



Exhibit D – Rig Diagram
Hallertau 4 Federal No. 5H
 Cimarex Energy Co. of Colorado
 4-26S-32E
 SHL 330 FNL & 710 FWL
 BHL 330 FSL & 970 FWL
 Lea County, NM