1. Geological Formations

TVD of target 10,565
MD at TD 14,855

Pilot Hole TD N/A
Deepest expected fresh water 4,327

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	731	N/A	
Top Salt	816	N/A	
Dealware	4555	N/A	
Cherry Canyon	5557	N/A	
Brushy Canyon	7412	N/A	
Bone Spring	8479	N/A	
Bone Spring A Shale	8606	N/A	
Bone Spring B Carb.	8787	N/A	
Bone Spring C Shale	9246	N/A	
1st Bone Spring Ss	9554	N/A	
2nd Bone Spring Ss	10139	Hydrocarbons	
Bone Spring HZ target	10565	N/A	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	781	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	2.07	4.84	8.59
12 1/4	0	4535	9-5/8"	40.00	J-55	LT&C	1.38	1.64	2.87
8 3/4	0	10080	5-1/2"	17.00	L-80	LT&C	1.30	1.61	1.88
8 3/4	10080	14855	5-1/2"	17.00	L-80	BT&C	1.24	1.53	48.15
					BLM Minimum Safety Factor		1.125	1	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	292	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	869	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	265	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	768	10.80	2.35	9.60	17:43	Lead: Tuned Light I Class H
	1021	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	40
Intermediate	0	45
Production	4335	18

4. Pressure Control Equipment

	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	50% of working pressure
			Blind Ram	X	2M
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	50% of working pressure
			Blind Ram	X	3M
			Pipe Ram		
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	N	Are anchors required by manufacturer?

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 781'	FW Spud Mud	8.30 - 8.80	28	N/C
781' to 4535'	Brine Water	9.70 - 10.20	30-32	N/C
4535' to 14855'	FW/Cut Brine	8.70 - 9.20	30-32	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test?
	Coring?

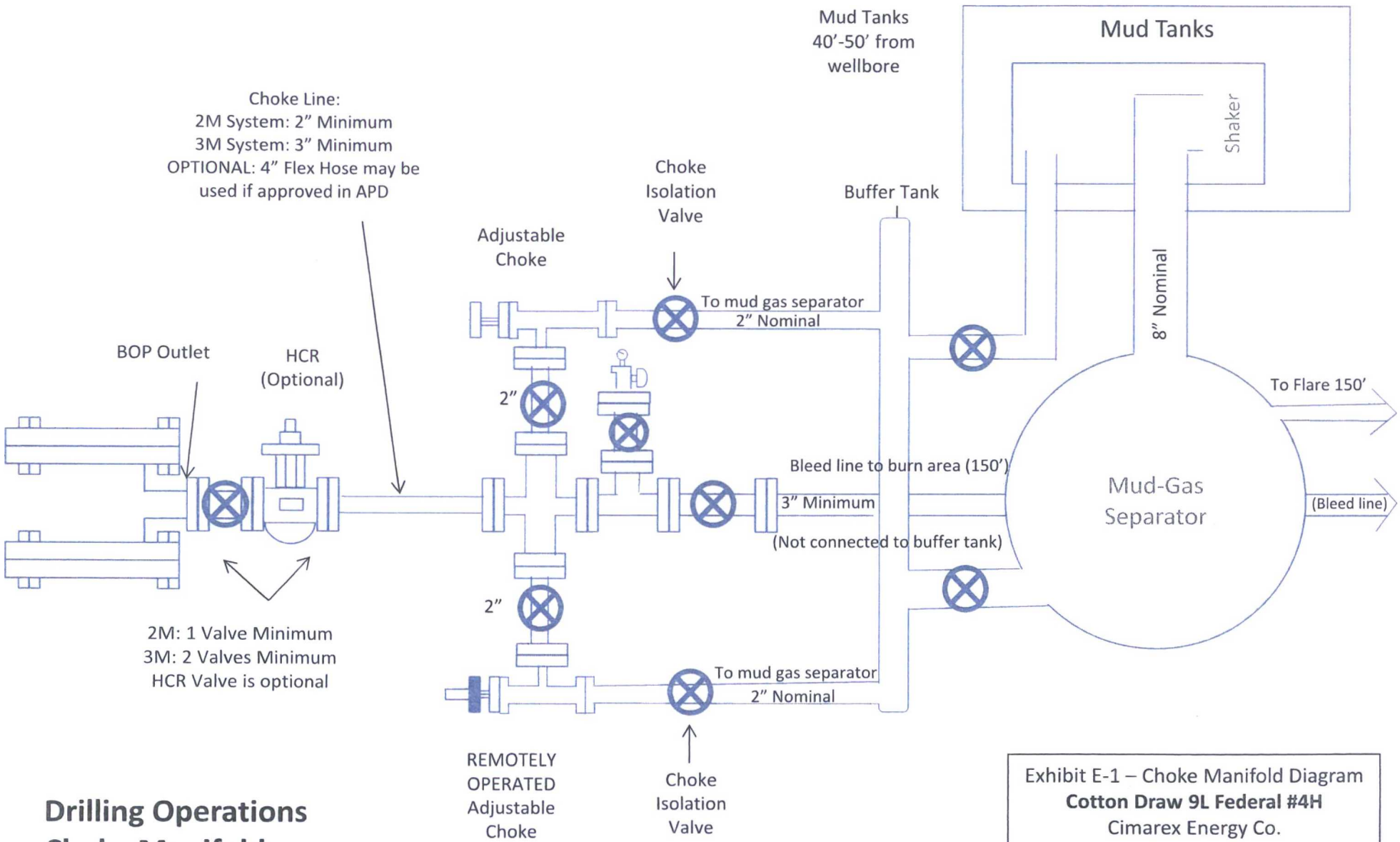
Additional Logs Planned	Interval

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5054 psi
Abnormal Temperature	No

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
X	H2S is present
X	H2S plan is attached

8. Other Facets of Operation



Drilling Operations
Choke Manifold
2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
Cotton Draw 9L Federal #4H
Cimarex Energy Co.
9-25S-32E
Lea County, NM

Drilling 12-1/4" hole
below 13 3/8" Casing

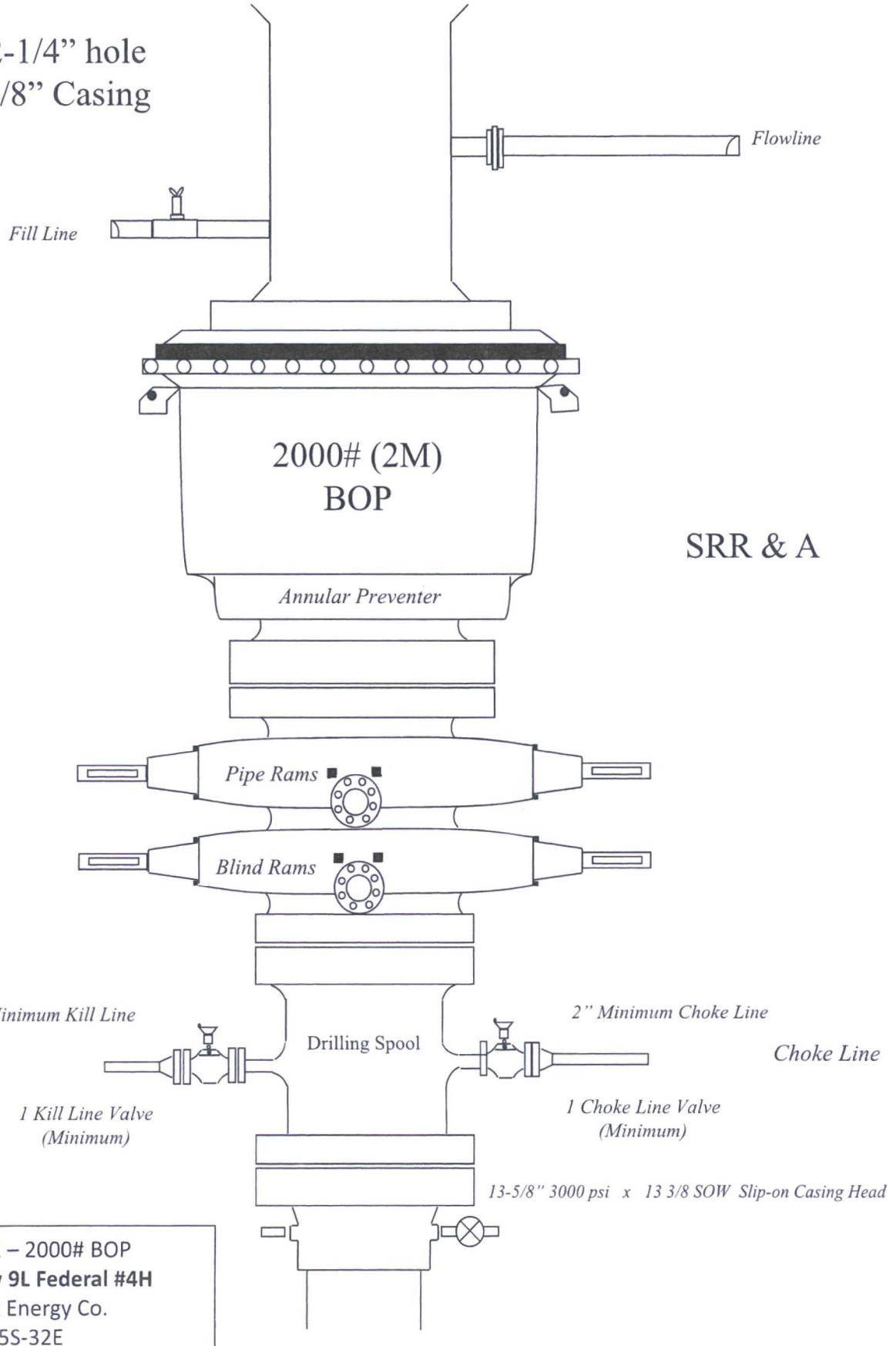


Exhibit E-1 – 2000# BOP
Cotton Draw 9L Federal #4H
Cimarex Energy Co.
9-25S-32E
Lea County, NM

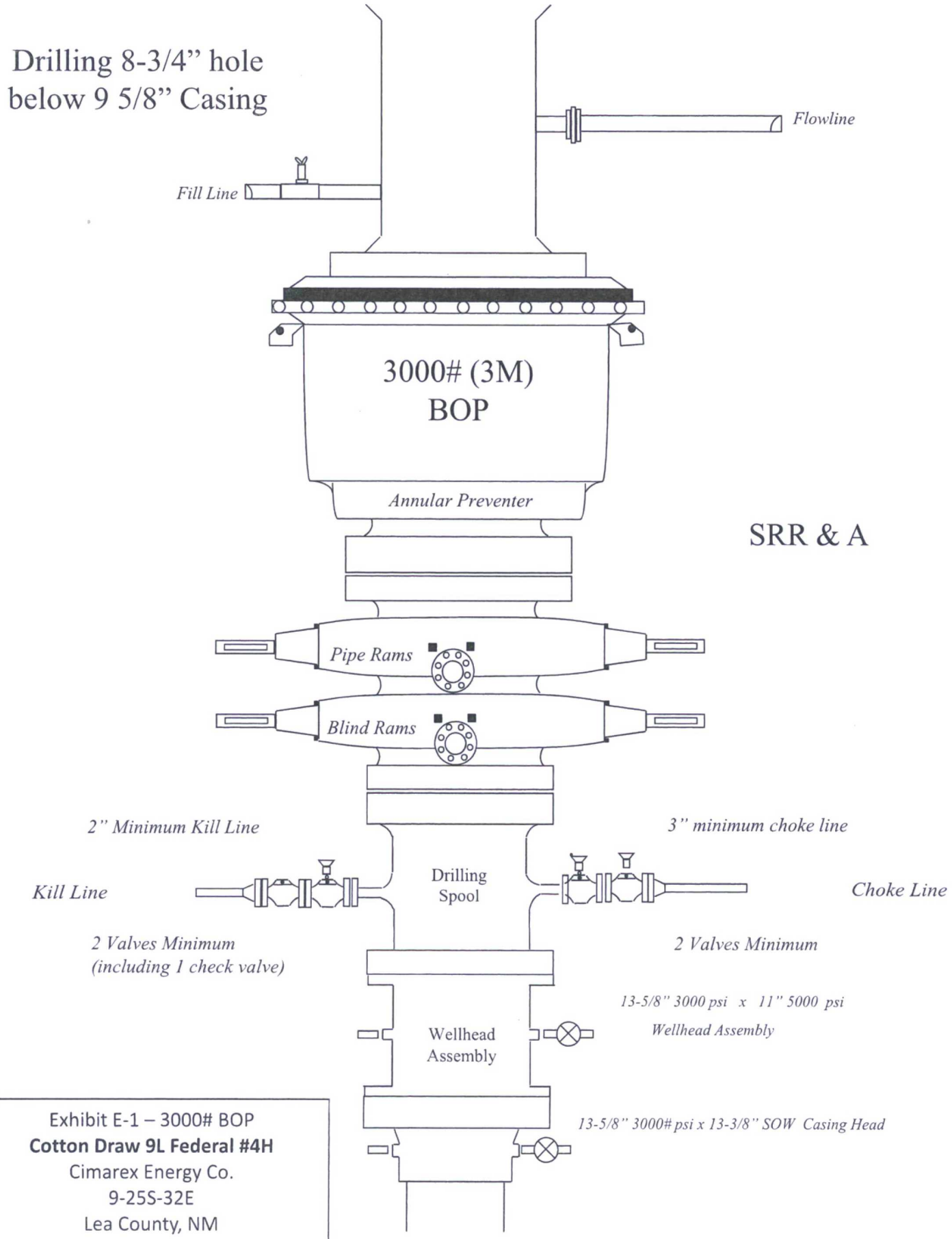


Exhibit E-1 – 3000# BOP
Cotton Draw 9L Federal #4H
Cimarex Energy Co.
9-25S-32E
Lea County, NM

Cotton Draw 9L Federal 4H

Casing Assumptions

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	781	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	2.07	4.84	8.59
12 1/4	0	4535	9-5/8"	40.00	J-55	LT&C	1.38	1.64	2.87
8 3/4	0	10080	5-1/2"	17.00	L-80	LT&C	1.30	1.61	1.88
8 3/4	10080	14855	5-1/2"	17.00	L-80	BT&C	1.24	1.53	48.15
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Exhibit F – Co-Flex Hose
Cotton Draw 9L Federal #4H
Cimarex Energy Co.
9-25S-32E
Lea County, NM

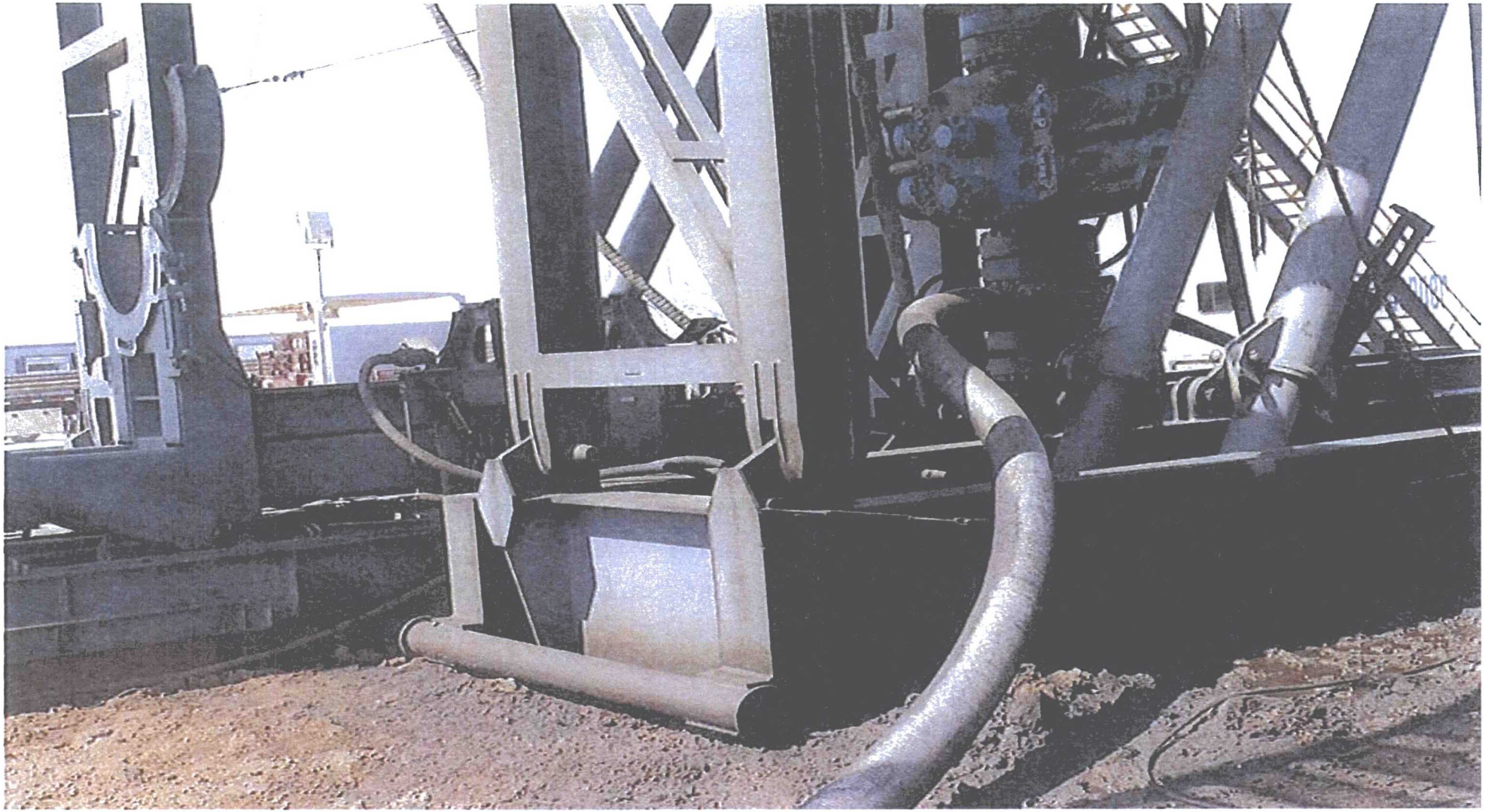


Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Cotton Draw 9L Federal #4H
Cimarex Energy Co.
9-25S-32E
Lea County, NM

Midwest Hose
& Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer:	P.O. Number:
Oderco Inc	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	TEST PRESSURE	BURST PRESSURE
10,000 *PSI*	15,000 *PSI*	0 *PSI*

COUPLINGS

Stem Part No.	Ferrule No.
OKC OKC	OKC OKC
Type of Coupling: Swage-It	

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:
15 *MIN.*	0 *PSI*

Hose Assembly Serial Number:	Hose Serial Number:
79793	OKC

Comments:

Date:	Tested:	Approved:
3/8/2011		

Midwest Hose & Specialty, Inc.

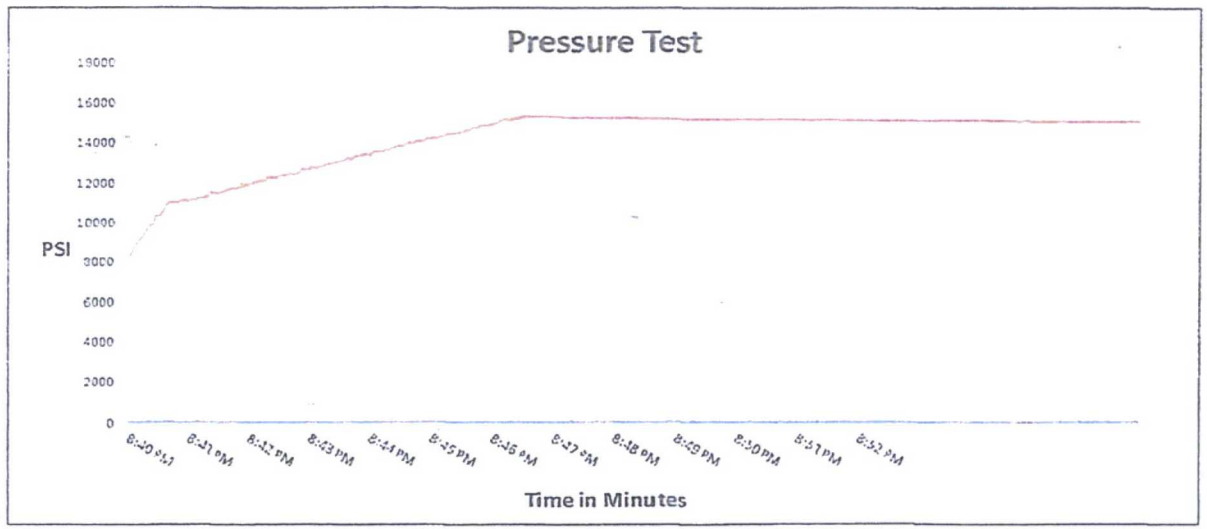
Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

Pick Ticket #: 94260

Hose Specifications		Verification	
Hose Type	Length	Type of Fitting	Coupling Method
C.S.I.	45'	4 1/16 10K	Swage
I.D.	O.D.	Die Size	Final O.D.
4"	6.09"	6.38"	6.25"
Working Pressure	Burst Pressure	Hose Serial #	Hose Assembly Serial #
10000 PSI	Standard Safety Multiplier Applies	5544	79793



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	11 Minutes		15483 PSI

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

Tested By: *Zac Mcconnell*

Approved By: *Kim Thomas*

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Cotton Draw 9L Federal #4H
Cimarex Energy Co.
9-25S-32E
Lea County, NM

Exhibit F-2 – Co-Flex Hose
Cotton Draw 9L Federal #4H
Cimarex Energy Co.
9-25S-32E
Lea County, NM

Midwest Hose
& Specialty, Inc.

Certificate of Conformity	
Customer: DEM	**PO** ODYD-271
SPECIFICATIONS	
Sales Order 79793	**Dated:** 3/8/2011

We hereby cerify 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: Jamal Garcia	**Date:** 3/8/2011

Midwest Hose & Specialty, Inc.

Exhibit F -3– Co-Flex Hose
Cotton Draw 9L Federal #4H
Cimarex Energy Co.
9-25S-32E
Lea County, NM

Specification Sheet
Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unibolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816