OCD Hobbs

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JUL 10 2015

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ATS-15-151

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SHL\BHL: NMNM026394

6. If Indian, Allotee or Tribe Name

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

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

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

8. Lease Name and Well No.
Cascade 29 Federal ~~Com~~ #8H (39981)

2. Name of Operator
Cimarex Energy Co. (215099)

9. API Well No.
30-025-42683

3a. Address
202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103

3b. Phone No. *(include area code)*
918-585-1100

10. Field and Pool, or Exploratory (97994)
WC-025 G-06 S253329D;UPPER BS

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At Surface: 330' FNL 585' FEL (A)
At proposed prod. Zone: 330' FSL 350' FEL (P)
Bone Spring

11. Sec,. T. R. M. or Blk. and Survey and Area
29, 25S, 33E

14. Distance in miles and direction from nearest town or post office*
Approximately 24 miles west of Jal, NM

12. County or Parish: Lea

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft.-(Also to nearest drig. unit line if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
330	NMNM026394=2560.00 acres	160.00

18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on File
150' from #4H	Pilot Hole TD: N/A 14,328 MD 9,875 TVD	NMB001188

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3398 GR	12/29/14	35 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
Aricka Easterling	Aricka Easterling	11/11/14

Title: Regulatory Compliance

Approved By *(Signature)*	Name (Printed/Typed)	Date
Steve Caffey		JUL 2 - 2015
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.

(Continued on page 2)

(Instructions on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

Ka 07/10/15

SEE ATTACHED FOR CONDITIONS OF APPROVAL

JUL 13 2015

Ka

1. Geological Formations

TVD of target 9,875 Pilot Hole TD N/A
MD at TD 14,328 Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	995	N/A	
Salt	1140	N/A	
Castille	3380	N/A	
Base Last Salt	4670	N/A	
Lamar	4900	N/A	
Bell Canyon	4945	N/A	
cherry Cnayon	6190	N/A	
Brushy Canyon	7485	N/A	
Bone Spring	9045	Hydrocarbons	
U Avalon (Leonard)	9080	Hydrocarbons	
L. Avalon	9680	Hydrocarbons	

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2. Casing Program

See COA

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	1050 1080	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.54	3.60	6.39
12 1/4	0	4920	9-5/8"	40.00	J-55	LT&C	1.47	1.51	2.64
8 3/4	0	9398	5-1/2"	17.00	L-80	LT&C	1.41	1.74	2.01
8 3/4	9398	14297	5-1/2"	17.00	L-80	BT&C	1.35	1.66	48.96
				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.	N
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	509	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	136	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	932	12.90	1.88	9.65	30	Lead: 35:65 (Poz:C) + Salt + Bentonite + Retarder
	284	14.80	1.36	6.57	9.5	Tail: Class C + Retarder + LCM
Production	619	10.80	2.35	9.60	Not in current use	Lead: Tuned Light I Class H
	1057	14.20	1.30	5.86	Not in current use	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS + Retarder

Casing String	TOC	% Excess
Surface	0	45
Surface	0	45
Intermediate	0	44
Intermediate	0	44
Production	4720	17
Production	4720	17

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 1050' 1080'	FW Spud Mud	8.30 - 8.80	28	N/C
1050' to 4920'	Brine Water	9.70 - 10.20	30-32	N/C
4920' to 14297'	FW/Cut Brine	8.60 - 9.10	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	4444 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.	
	H2S is present
	H2S plan is attached

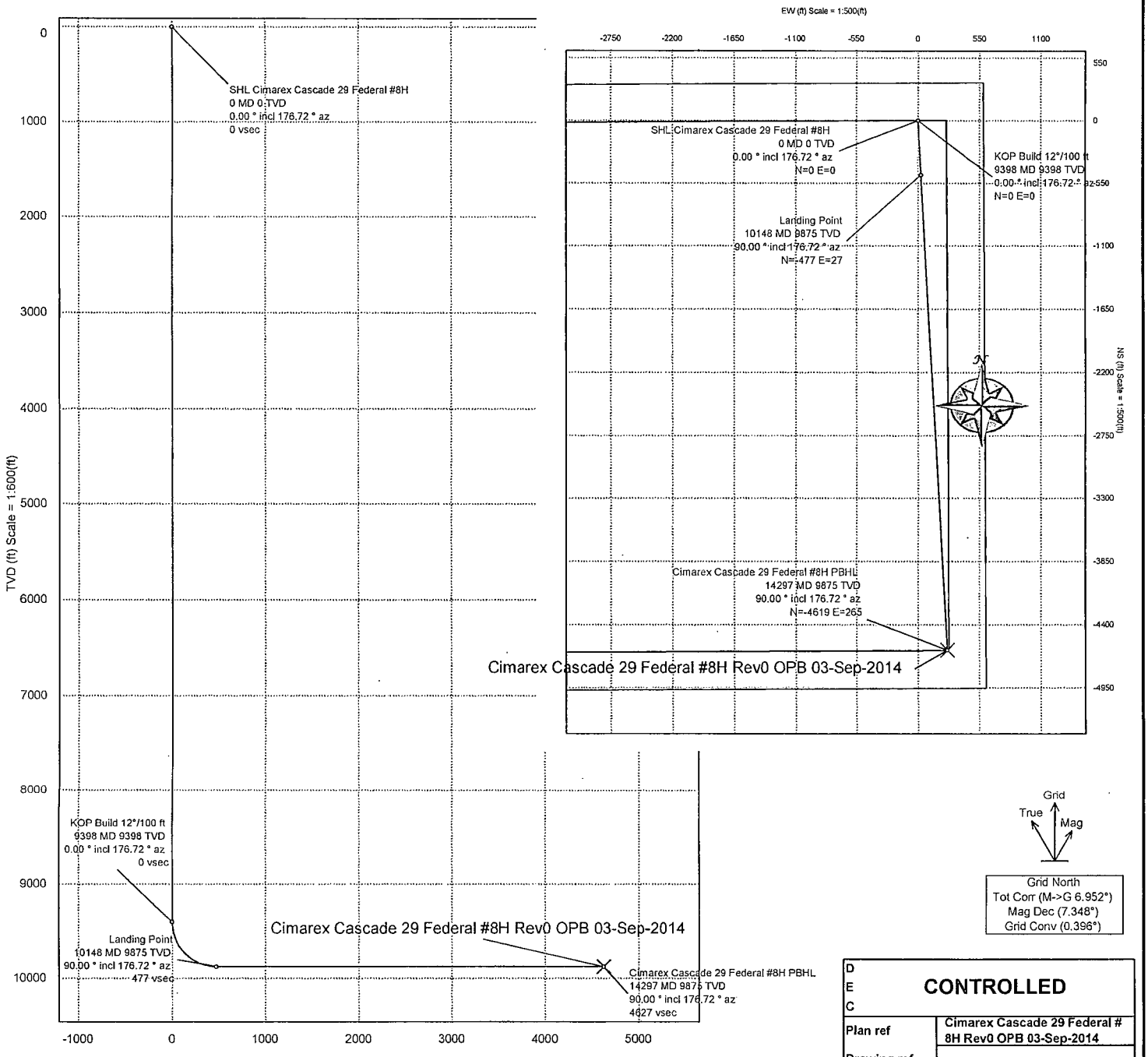
8. Other Facets of Operation

Cimarex

PATHFINDER
A Schlumberger Company

Borehole:	Well:	Field:	Structure:
Original Borehole	Cascade 29 Federal #8H	NM Lea County	TBD

Gravity & Magnetic Parameters					Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	BGGM 2014	Dip:	59.988°	Date:	03-Sep-2014	Lat:	N 32 6 28.51	Northing:	403795.9ftUS	Grid Conv:	0.3964°	Slot:	Cimarex Cascade 29 Federal #8H
MagDec:	7.348°	FS:	48184.156nT	Gravity FS:	998.435mgn (9.80665 Based)	Lon:	W 103 35 15.57	Easting:	772219.9ftUS	Scale Fact:	0.99997014	TVD Ref:	GL(3398ft above MSL)
												Plan:	Rev0 OPB 03-Sep-2014



Grid
True
Mag

Grid North
Tot Corr (M->G 6.952°)
Mag Dec (7.348°)
Grid Conv (0.396°)

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL Cimarex Cascade 29 Federal #8H	0.00	0.00	176.72	0.00	0.00	0.00	0.00	
KOP Build 12°/100 ft	9397.54	0.00	176.72	9397.54	0.00	0.00	0.00	0.00
Landing Point	10147.54	90.00	176.72	9875.00	477.46	-476.68	27.33	12.00
Cimarex Cascade 29 Federal #8H PBHL	14297.10	90.00	176.72	9875.00	4627.03	-4619.45	264.81	0.00

D E C	CONTROLLED
Plan ref	Cimarex Cascade 29 Federal #8H Rev0 OPB 03-Sep-2014
Drawing ref	
Copy number	of 1
Date	03-Sep-2014

1	Originator	
2	DE Sign Off Authority	
3	D&M Line Manager	
4	Client	

Copy number for

Cimarex Cascade 29 Federal #8H Rev0 OPB 03-Sep-2014 Proposal Report
100' Interpolated
(Non-Def Plan)

PATHFINDER
A Schlumberger Company

Report Date:	September 03, 2014 - 01:06 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	176.719 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	TBD / Cimarex Cascade 29 Federal #8H	**TVD Reference Datum:**	GL
Well:	Cascade 29 Federal #8H	**TVD Reference Elevation:**	3398.000 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3398.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.348 °
Survey Name:	Cimarex Cascade 29 Federal #8H Rev0 OPB 03-Sep-2014	**Total Gravity Field Strength:**	998.4351mgn (9.80665 Based)
Survey Date:	September 03, 2014	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	90.000 ° / 4627.031 ft / 5.780 / 0.469	**Total Magnetic Field Strength:**	48184.156 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.988 °
Location Lat / Long:	N 32° 6' 28.50806", W 103° 35' 15.56599"	**Declination Date:**	September 03, 2014
Location Grid N/E Y/X:	N 403795.900 ftUS, E 772219.900 ftUS	**Magnetic Declination Model:**	BGGM 2014
CRS Grid Convergence Angle:	0.3964 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997014	**Grid Convergence Used:**	0.3964 °
Version / Patch:	2.7.1043.0	**Total Corr Mag North->Grid North:**	6.9517 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL Cimarex Cascade 29 Federal #8H	0.00	0.00	176.72	0.00	-3398.00	0.00	N/A	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	100.00	0.00	176.72	100.00	-3298.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	200.00	0.00	176.72	200.00	-3198.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	300.00	0.00	176.72	300.00	-3098.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	400.00	0.00	176.72	400.00	-2998.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	500.00	0.00	176.72	500.00	-2898.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	600.00	0.00	176.72	600.00	-2798.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	700.00	0.00	176.72	700.00	-2698.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	800.00	0.00	176.72	800.00	-2598.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	900.00	0.00	176.72	900.00	-2498.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1000.00	0.00	176.72	1000.00	-2398.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1100.00	0.00	176.72	1100.00	-2298.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1200.00	0.00	176.72	1200.00	-2198.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1300.00	0.00	176.72	1300.00	-2098.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1400.00	0.00	176.72	1400.00	-1998.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1500.00	0.00	176.72	1500.00	-1898.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1600.00	0.00	176.72	1600.00	-1798.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1700.00	0.00	176.72	1700.00	-1698.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1800.00	0.00	176.72	1800.00	-1598.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	1900.00	0.00	176.72	1900.00	-1498.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2000.00	0.00	176.72	2000.00	-1398.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2100.00	0.00	176.72	2100.00	-1298.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2200.00	0.00	176.72	2200.00	-1198.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2300.00	0.00	176.72	2300.00	-1098.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2400.00	0.00	176.72	2400.00	-998.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2500.00	0.00	176.72	2500.00	-898.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2600.00	0.00	176.72	2600.00	-798.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2700.00	0.00	176.72	2700.00	-698.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2800.00	0.00	176.72	2800.00	-598.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	2900.00	0.00	176.72	2900.00	-498.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3000.00	0.00	176.72	3000.00	-398.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3100.00	0.00	176.72	3100.00	-298.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3200.00	0.00	176.72	3200.00	-198.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3300.00	0.00	176.72	3300.00	-98.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3400.00	0.00	176.72	3400.00	2.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3500.00	0.00	176.72	3500.00	102.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3600.00	0.00	176.72	3600.00	202.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3700.00	0.00	176.72	3700.00	302.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3800.00	0.00	176.72	3800.00	402.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	3900.00	0.00	176.72	3900.00	502.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4000.00	0.00	176.72	4000.00	602.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4100.00	0.00	176.72	4100.00	702.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4200.00	0.00	176.72	4200.00	802.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4300.00	0.00	176.72	4300.00	902.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4400.00	0.00	176.72	4400.00	1002.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4500.00	0.00	176.72	4500.00	1102.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4600.00	0.00	176.72	4600.00	1202.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4700.00	0.00	176.72	4700.00	1302.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4800.00	0.00	176.72	4800.00	1402.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	4900.00	0.00	176.72	4900.00	1502.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5000.00	0.00	176.72	5000.00	1602.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5100.00	0.00	176.72	5100.00	1702.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5200.00	0.00	176.72	5200.00	1802.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5300.00	0.00	176.72	5300.00	1902.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5400.00	0.00	176.72	5400.00	2002.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5500.00	0.00	176.72	5500.00	2102.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5600.00	0.00	176.72	5600.00	2202.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5700.00	0.00	176.72	5700.00	2302.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5800.00	0.00	176.72	5800.00	2402.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	5900.00	0.00	176.72	5900.00	2502.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6000.00	0.00	176.72	6000.00	2602.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6100.00	0.00	176.72	6100.00	2702.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6200.00	0.00	176.72	6200.00	2802.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6300.00	0.00	176.72	6300.00	2902.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6400.00	0.00	176.72	6400.00	3002.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6500.00	0.00	176.72	6500.00	3102.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6600.00	0.00	176.72	6600.00	3202.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6700.00	0.00	176.72	6700.00	3302.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6800.00	0.00	176.72	6800.00	3402.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	6900.00	0.00	176.72	6900.00	3502.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7000.00	0.00	176.72	7000.00	3602.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7100.00	0.00	176.72	7100.00	3702.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7200.00	0.00	176.72	7200.00	3802.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7300.00	0.00	176.72	7300.00	3902.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7400.00	0.00	176.72	7400.00	4002.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7500.00	0.00	176.72	7500.00	4102.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7600.00	0.00	176.72	7600.00	4202.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7700.00	0.00	176.72	7700.00	4302.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7800.00	0.00	176.72	7800.00	4402.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	7900.00	0.00	176.72	7900.00	4502.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8000.00	0.00	176.72	8000.00	4602.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8100.00	0.00	176.72	8100.00	4702.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8200.00	0.00	176.72	8200.00	4802.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8300.00	0.00	176.72	8300.00	4902.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8400.00	0.00	176.72	8400.00	5002.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8500.00	0.00	176.72	8500.00	5102.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8600.00	0.00	176.72	8600.00	5202.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8700.00	0.00	176.72	8700.00	5302.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8800.00	0.00	176.72	8800.00	5402.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	8900.00	0.00	176.72	8900.00	5502.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	9000.00	0.00	176.72	9000.00	5602.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	9100.00	0.00	176.72	9100.00	5702.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	9200.00	0.00	176.72	9200.00	5802.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	9300.00	0.00	176.72	9300.00	5902.00	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
KOP Build 12°/100 ft	9397.54	0.00	176.72	9397.54	5999.54	0.00	0.00	0.00	0.00	403795.90	772219.90	N 32 6 28.51	W 103 35 15.57
	9400.00	0.30	176.72	9400.00	6002.00	0.01	12.00	-0.01	0.00	403795.89	772219.90	N 32 6 28.51	W 103 35 15.57
	9500.00	12.30	176.72	9499.22	6101.22	10.95	12.00	-10.93	0.63	403784.97	772220.53	N 32 6 28.40	W 103 35 15.56
	9600.00	24.30	176.72	9593.99	6195.99	42.29	12.00	-42.22	2.42	403753.68	772222.32	N 32 6 28.09	W 103 35 15.54
	9700.00	36.30	176.72	9680.17	6282.17	92.64	12.00	-92.49	5.30	403703.41	772225.20	N 32 6 27.59	W 103 35 15.51
	9800.00	48.30	176.72	9754.01	6356.01	159.81	12.00	-159.55	9.15	403636.35	772229.05	N 32 6 26.93	W 103 35 15.47
	9900.00	60.30	176.72	9812.26	6414.26	240.87	12.00	-240.48	13.79	403555.43	772233.68	N 32 6 26.13	W 103 35 15.43
	10000.00	72.30	176.72	9852.39	6454.39	332.27	12.00	-331.72	19.02	403464.19	772238.92	N 32 6 25.22	W 103 35 15.37
	10100.00	84.30	176.72	9872.64	6474.64	430.01	12.00	-429.30	24.61	403366.61	772244.51	N 32 6 24.26	W 103 35 15.31
Landing Point	10147.54	90.00	176.72	9875.00	6477.00	477.46	12.00	-476.68	27.33	403319.23	772247.22	N 32 6 23.79	W 103 35 15.29
	10200.00	90.00	176.72	9875.00	6477.00	529.93	0.00	-529.06	30.33	403266.86	772250.23	N 32 6 23.27	W 103 35 15.26
	10300.00	90.00	176.72	9875.00	6477.00	629.93	0.00	-628.90	36.05	403167.02	772255.95	N 32 6 22.28	W 103 35 15.20
	10400.00	90.00	176.72	9875.00	6477.00	729.93	0.00	-728.73	41.77	403067.19	772261.67	N 32 6 21.29	W 103 35 15.14
	10500.00	90.00	176.72	9875.00	6477.00	829.93	0.00	-828.57	47.50	402967.36	772267.40	N 32 6 20.31	W 103 35 15.08
	10600.00	90.00	176.72	9875.00	6477.00	929.93	0.00	-928.41	53.22	402867.52	772273.12	N 32 6 19.32	W 103 35 15.02
	10700.00	90.00	176.72	9875.00	6477.00	1029.93	0.00	-1028.24	58.94	402767.69	772278.84	N 32 6 18.33	W 103 35 14.96
	10800.00	90.00	176.72	9875.00	6477.00	1129.93	0.00	-1128.08	64.67	402667.86	772284.56	N 32 6 17.34	W 103 35 14.90
	10900.00	90.00	176.72	9875.00	6477.00	1229.93	0.00	-1227.91	70.39	402568.03	772290.29	N 32 6 16.35	W 103 35 14.85
	11000.00	90.00	176.72	9875.00	6477.00	1329.93	0.00	-1327.75	76.11	402468.19	772296.01	N 32 6 15.36	W 103 35 14.79
	11100.00	90.00	176.72	9875.00	6477.00	1429.93	0.00	-1427.59	81.84	402368.36	772301.73	N 32 6 14.38	W 103 35 14.73
	11200.00	90.00	176.72	9875.00	6477.00	1529.93	0.00	-1527.42	87.56	402268.53	772307.46	N 32 6 13.39	W 103 35 14.67
	11300.00	90.00	176.72	9875.00	6477.00	1629.93	0.00	-1627.26	93.28	402168.69	772313.18	N 32 6 12.40	W 103 35 14.61
	11400.00	90.00	176.72	9875.00	6477.00	1729.93	0.00	-1727.09	99.01	402068.86	772318.90	N 32 6 11.41	W 103 35 14.55
	11500.00	90.00	176.72	9875.00	6477.00	1829.93	0.00	-1826.93	104.73	401969.03	772324.62	N 32 6 10.42	W 103 35 14.50
	11600.00	90.00	176.72	9875.00	6477.00	1929.93	0.00	-1926.77	110.45	401869.19	772330.35	N 32 6 9.43	W 103 35 14.44
	11700.00	90.00	176.72	9875.00	6477.00	2029.93	0.00	-2026.60	116.17	401769.36	772336.07	N 32 6 8.45	W 103 35 14.38
	11800.00	90.00	176.72	9875.00	6477.00	2129.93	0.00	-2126.44	121.90	401669.53	772341.79	N 32 6 7.46	W 103 35 14.32
	11900.00	90.00	176.72	9875.00	6477.00	2229.93	0.00	-2226.27	127.62	401569.70	772347.52	N 32 6 6.47	W 103 35 14.26
	12000.00	90.00	176.72	9875.00	6477.00	2329.93	0.00	-2326.11	133.34	401469.86	772353.24	N 32 6 5.48	W 103 35 14.20
	12100.00	90.00	176.72	9875.00	6477.00	2429.93	0.00	-2425.95	139.07	401370.03	772358.96	N 32 6 4.49	W 103 35 14.14
	12200.00	90.00	176.72	9875.00	6477.00	2529.93	0.00	-2525.78	144.79	401270.20	772364.69	N 32 6 3.51	W 103 35 14.09

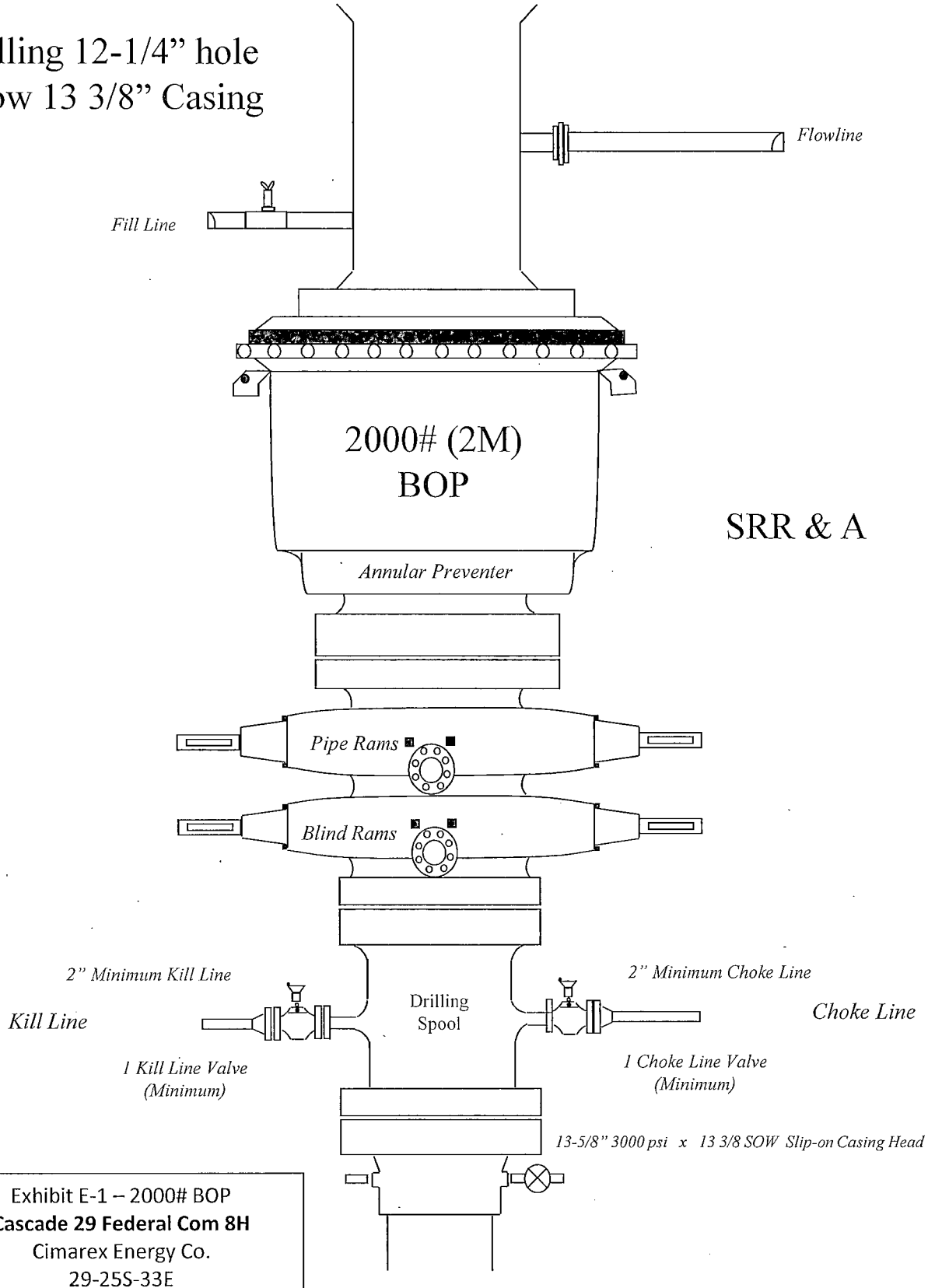
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	DLS (°/100ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	12300.00	90.00	176.72	9875.00	6477.00	2629.93	0.00	-2625.62	150.51	401170.36	772370.41	N 32 6 2.52	W 103 35 14.03
	12400.00	90.00	176.72	9875.00	6477.00	2729.93	0.00	-2725.46	156.24	401070.53	772376.13	N 32 6 1.53	W 103 35 13.97
	12500.00	90.00	176.72	9875.00	6477.00	2829.93	0.00	-2825.29	161.96	400970.70	772381.85	N 32 6 0.54	W 103 35 13.91
	12600.00	90.00	176.72	9875.00	6477.00	2929.93	0.00	-2925.13	167.68	400870.87	772387.58	N 32 5 59.55	W 103 35 13.85
	12700.00	90.00	176.72	9875.00	6477.00	3029.93	0.00	-3024.96	173.41	400771.03	772393.30	N 32 5 58.56	W 103 35 13.79
	12800.00	90.00	176.72	9875.00	6477.00	3129.93	0.00	-3124.80	179.13	400671.20	772399.02	N 32 5 57.58	W 103 35 13.73
	12900.00	90.00	176.72	9875.00	6477.00	3229.93	0.00	-3224.64	184.85	400571.37	772404.75	N 32 5 56.59	W 103 35 13.68
	13000.00	90.00	176.72	9875.00	6477.00	3329.93	0.00	-3324.47	190.57	400471.53	772410.47	N 32 5 55.60	W 103 35 13.62
	13100.00	90.00	176.72	9875.00	6477.00	3429.93	0.00	-3424.31	196.30	400371.70	772416.19	N 32 5 54.61	W 103 35 13.56
	13200.00	90.00	176.72	9875.00	6477.00	3529.93	0.00	-3524.14	202.02	400271.87	772421.91	N 32 5 53.62	W 103 35 13.50
	13300.00	90.00	176.72	9875.00	6477.00	3629.93	0.00	-3623.98	207.74	400172.04	772427.64	N 32 5 52.63	W 103 35 13.44
	13400.00	90.00	176.72	9875.00	6477.00	3729.93	0.00	-3723.82	213.47	400072.20	772433.36	N 32 5 51.65	W 103 35 13.38
	13500.00	90.00	176.72	9875.00	6477.00	3829.93	0.00	-3823.65	219.19	399972.37	772439.08	N 32 5 50.66	W 103 35 13.33
	13600.00	90.00	176.72	9875.00	6477.00	3929.93	0.00	-3923.49	224.91	399872.54	772444.81	N 32 5 49.67	W 103 35 13.27
	13700.00	90.00	176.72	9875.00	6477.00	4029.93	0.00	-4023.32	230.64	399772.70	772450.53	N 32 5 48.68	W 103 35 13.21
	13800.00	90.00	176.72	9875.00	6477.00	4129.93	0.00	-4123.16	236.36	399672.87	772456.25	N 32 5 47.69	W 103 35 13.15
	13900.00	90.00	176.72	9875.00	6477.00	4229.93	0.00	-4223.00	242.08	399573.04	772461.97	N 32 5 46.70	W 103 35 13.09
	14000.00	90.00	176.72	9875.00	6477.00	4329.93	0.00	-4322.83	247.81	399473.20	772467.70	N 32 5 45.72	W 103 35 13.03
	14100.00	90.00	176.72	9875.00	6477.00	4429.93	0.00	-4422.67	253.53	399373.37	772473.42	N 32 5 44.73	W 103 35 12.97
	14200.00	90.00	176.72	9875.00	6477.00	4529.93	0.00	-4522.51	259.25	399273.54	772479.14	N 32 5 43.74	W 103 35 12.92
Cimarex Cascade 29 Federal #8H PBHL	14297.10	90.00	176.72	9875.00	6477.00	4627.03	0.00	-4619.45	264.81	399176.60	772484.70	N 32 5 42.78	W 103 35 12.86

Survey Type: Non-Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	14297.101	1/100.000	30.000	30.000	SLB_UNKNOWN	Original Borehole / Cimarex Cascade 29 Federal #8H Rev0

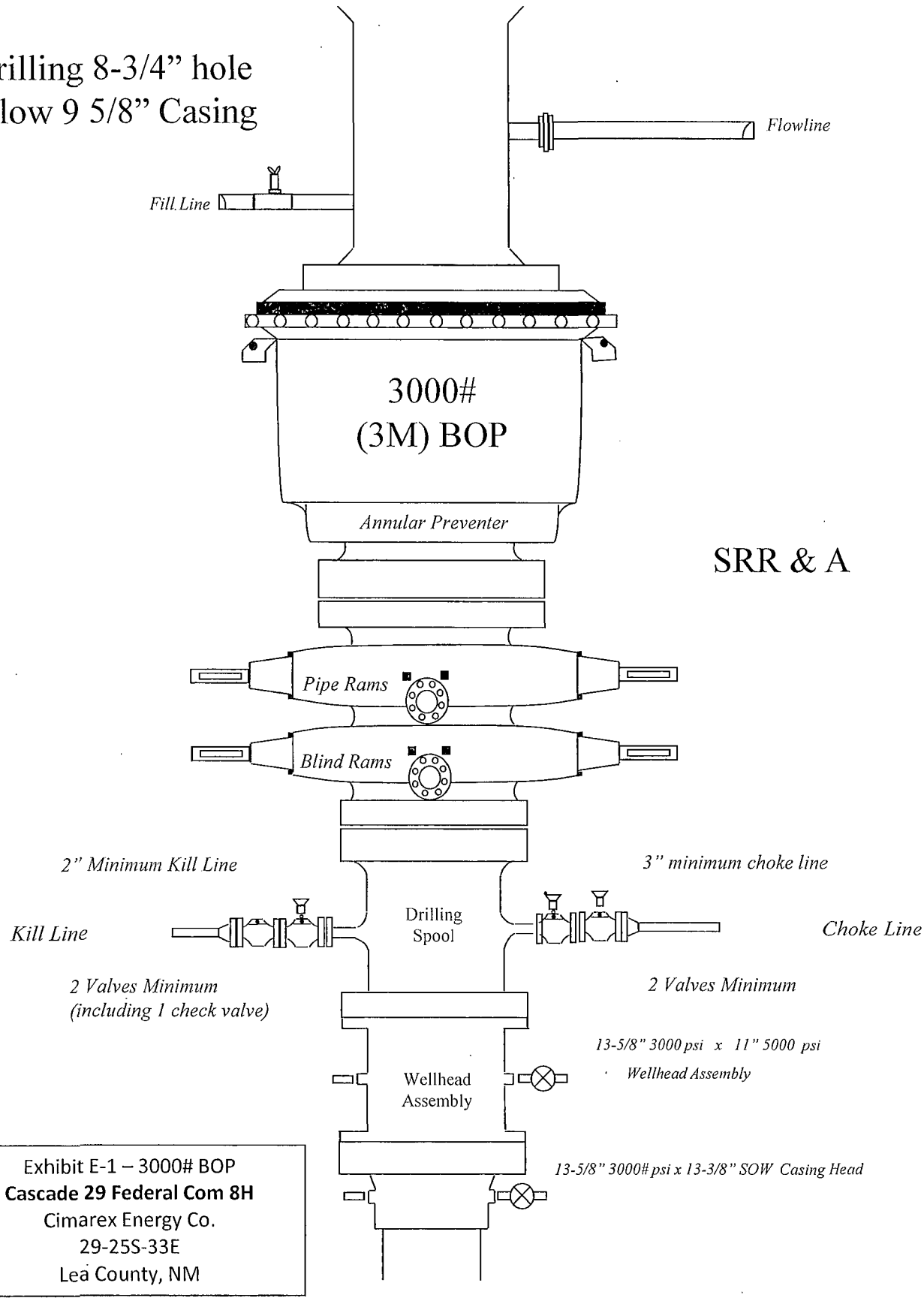
Drilling 12-1/4" hole below 13 3/8" Casing



SRR & A

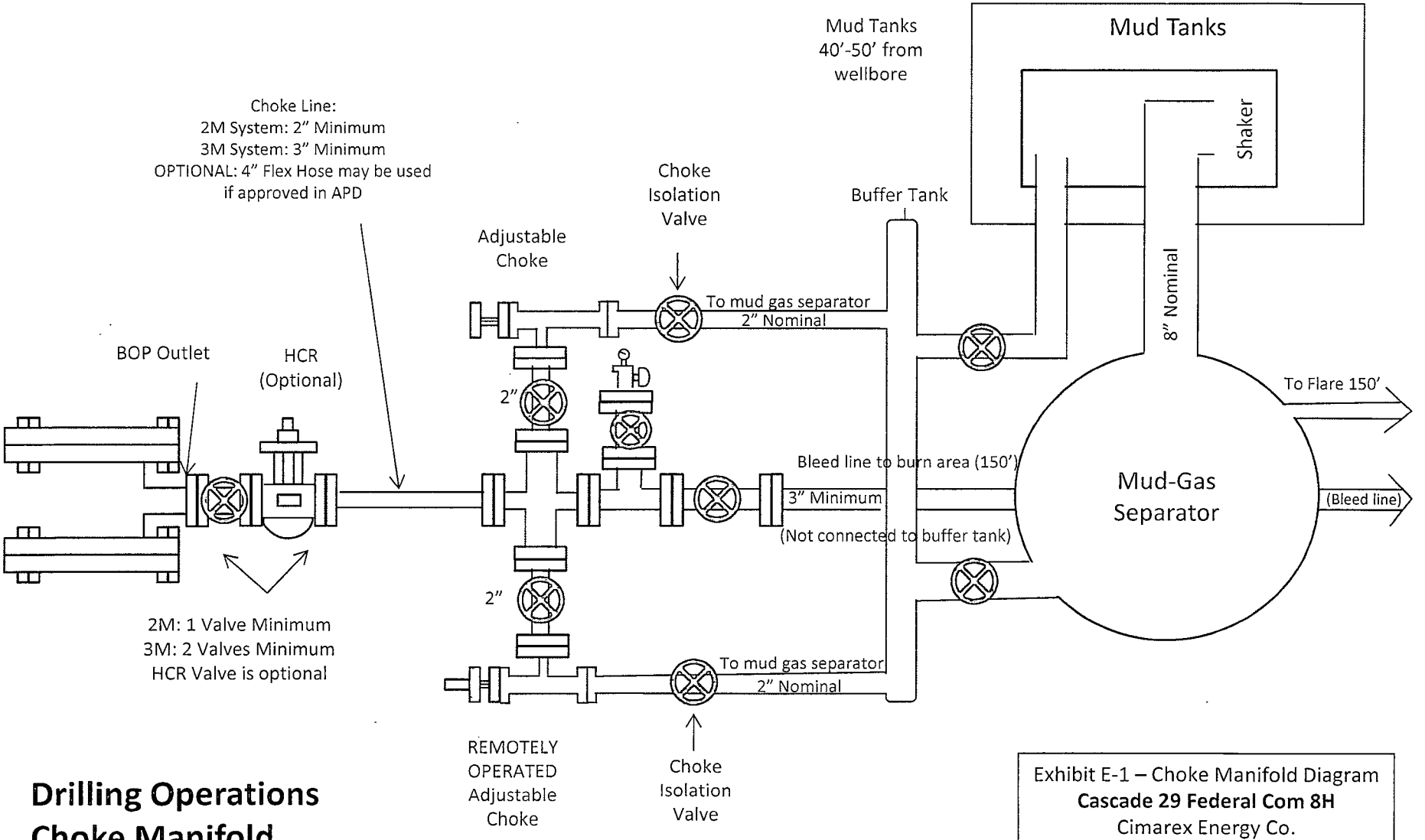
Exhibit E-1 – 2000# BOP
Cascade 29 Federal Com 8H
Cimarex Energy Co.
29-25S-33E
Lea County, NM

Drilling 8-3/4" hole
below 9 5/8" Casing



SRR & A

Exhibit E-1 – 3000# BOP
Cascade 29 Federal Com 8H
Cimarex Energy Co.
29-25S-33E
Lea County, NM



Drilling Operations
Choke Manifold
2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
Cascade 29 Federal Com 8H
Cimarex Energy Co.
29-25S-33E
Lea County, NM

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Cascade 29 Federal Com 8H
Cimarex Energy Co.
29-25S-33E
Lea County, NM

Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer:	P.O. Number:
Oderco Inc	odyd-271

HOSE SPECIFICATIONS

Type:	Hose Length:
Stainless Steel Armor Choke & Kill Hose	45'ft.

I.D.	O.D.
4 INCHES	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	A. Jovin Jara.	

Midwest Hose & Specialty, Inc.

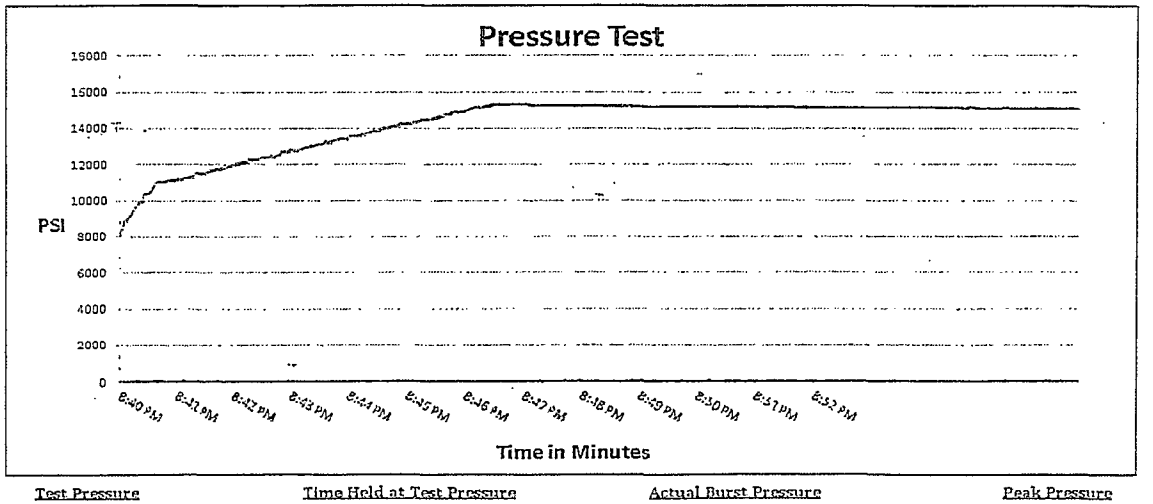
Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

Pick Ticket #: 94260

Hose Specifications		Verification	
Hose Type	Length	Type of Fitting	Coupling Method
C & K	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
Cascade 29 Federal Com 8H
Cimarex Energy Co.
29-25S-33E
Lea County, NM

Exhibit F-2 – Co-Flex Hose
Cascade 29 Federal Com 8H
Cimarex Energy Co.
29-25S-33E
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:	Date: 3/8/2011

Midwest Hose & Specialty, Inc.

Exhibit F -3– Co-Flex Hose
Cascade 29 Federal Com 8H
Cimarex Energy Co.
29-25S-33E
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

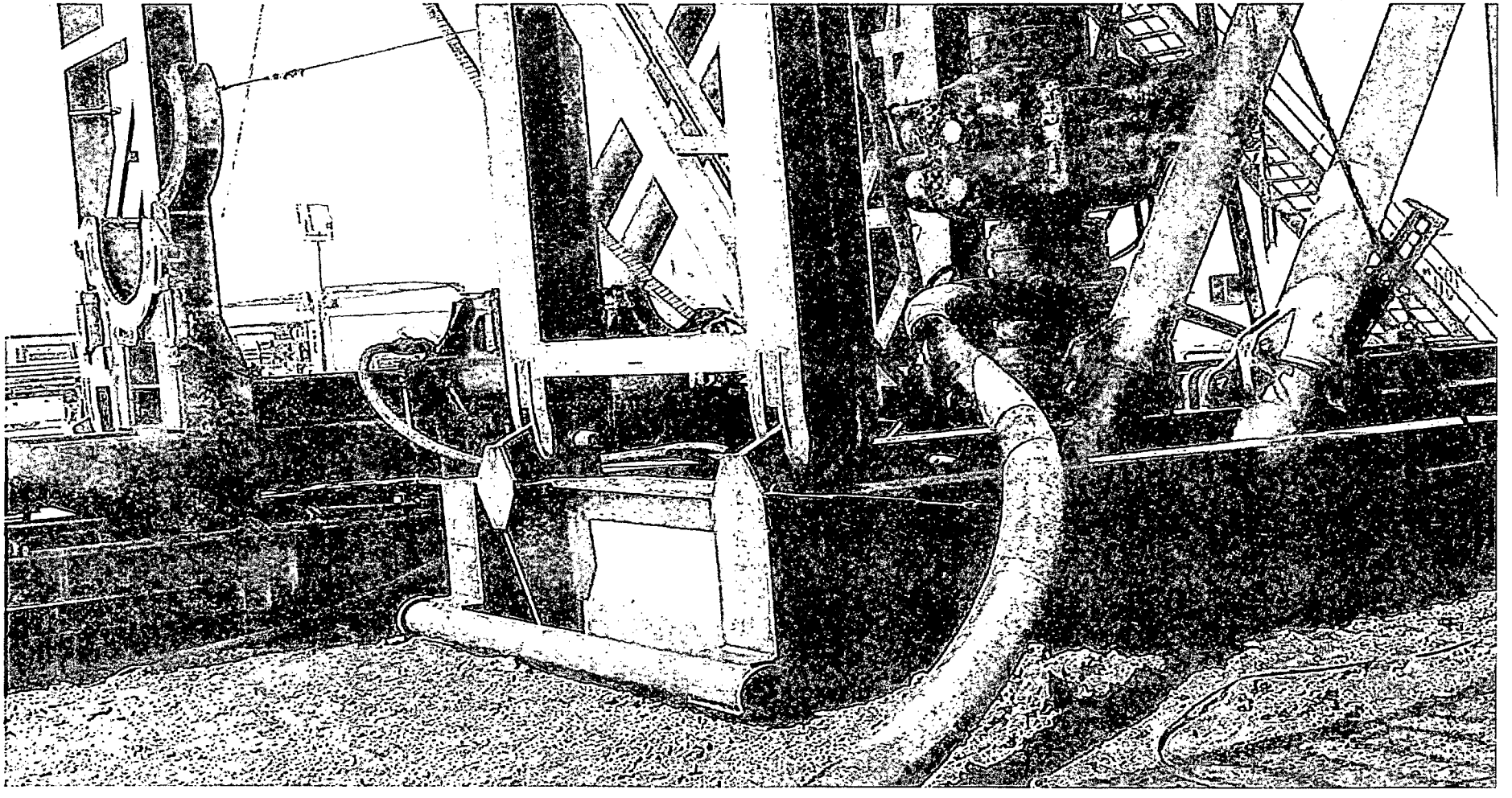
Exhibit F – Co-Flex Hose

Cascade 29 Federal Com 8H

Cimarex Energy Co.

29-25S-33E

Lea County, NM



Operator - Land Owner Agreement

Company: **Cimarex Energy Co.**

Proposed Well: **Cascade 29 Federal 8H**

Federal Lease Number: **NMNM026394**

Please be advised that Cimarex Energy Co. has an agreement with the surface owner, listed below, concerning entry and surface restoration after completion of drilling operations at the above described well.

Brinninstool XL Ranch, LLC
Chris Brinninstool
P.O. Box 940
Jal, NM 88252
575-225-2870

After abandonment of the well, all pits will be filled and levelled and all equipment and trash will be removed from the well site. No other requirements were made concerning restoration of the well site.

11/11/14
Date

Signature

Aricka Easterling