

HOBBS OCD

SEP 21 2012

RECEIVED

OCD Hobbs

12-985
FORM APPROVED
OMB No 1004-013
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work: ☒ DRILL ☐ REENTER		5 Lease Serial No NMNM006413
1b Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2 Name of Operator COG Operating LLC (229137)		7 If Unit or CA Agreement, Name and No
3a Address 2208 West Main Street Artesia, NM 88210	3b. Phone No. (include area code) 575-748-6940	8. Lease Name and Well No 79461 Prickly Pear 6 Federal #4H
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 270' FNL & 1130' FWL Lot #4 (NWNW) SHL Sec 6-T20S-R35E At proposed prod. Zone 330' FSL & 660' FWL Lot #7 (SWSW) BHL Sec 6-T20S-R35E		9 API Well No 30-025-40778
14 Distance in miles and direction from nearest town or post office* About 12 miles from Monument		10 Field and Pool, or Exploratory WC-025-0-075203506D; Wildcat, Bone Spring 92983
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig Unit line, if any) 330'		11 Sec, T R M or Blk and Survey or Area Sec 6 - T20S - R35E
16. No. of acres in lease 600 12		12 County or Parish Lea County
17 Spacing Unit dedicated to this well 158.17		13 State NM
18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft. 390'		
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3697'		22. Approximate date work will start* 12/1/2012
		23 Estimated duration 30 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. | 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 shall be filed with the appropriate Forest Service Office) | 6 Such other site specific information and/or plans as may be required by the authorized officer. |

25 Signature Mayte Reyes	Name (Printed/Typed) Mayte Reyes	Date 7/18/2012
Title Regulatory Analyst		
Approved by (Signature) Is/ Don Peterson	Name (Printed/Typed) Is/ Don Peterson	Date SEP 19 2012
Title FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

Application approval does not warrant or certify that the applicant holds legan or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon

APPROVAL FOR TWO YEARS

Conditions of approval, if any, are attached

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)

Capitan Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

OCD CONDITION OF APPROVAL for Drilling
Intent to drill ONLY — CANNOT produce until the Non-Standard
Location has been approved by the OCD Santa Fe office

Approval Subject to General Requirements
& Special Stipulations Attached

SEP 26 2012

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Date: 7/18/2012

Lease #: NMNM006413
Prickly Pear 6 Fed #4H

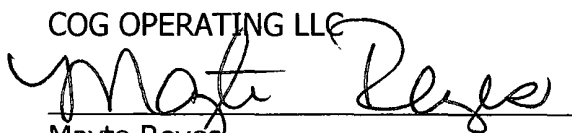
Legal Description: Sec. 6– T20S – R35E
Lea County, New Mexico

Formation(s): 3rd Bone Spring Sand

Bond Coverage: Statewide

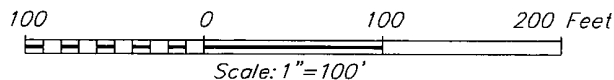
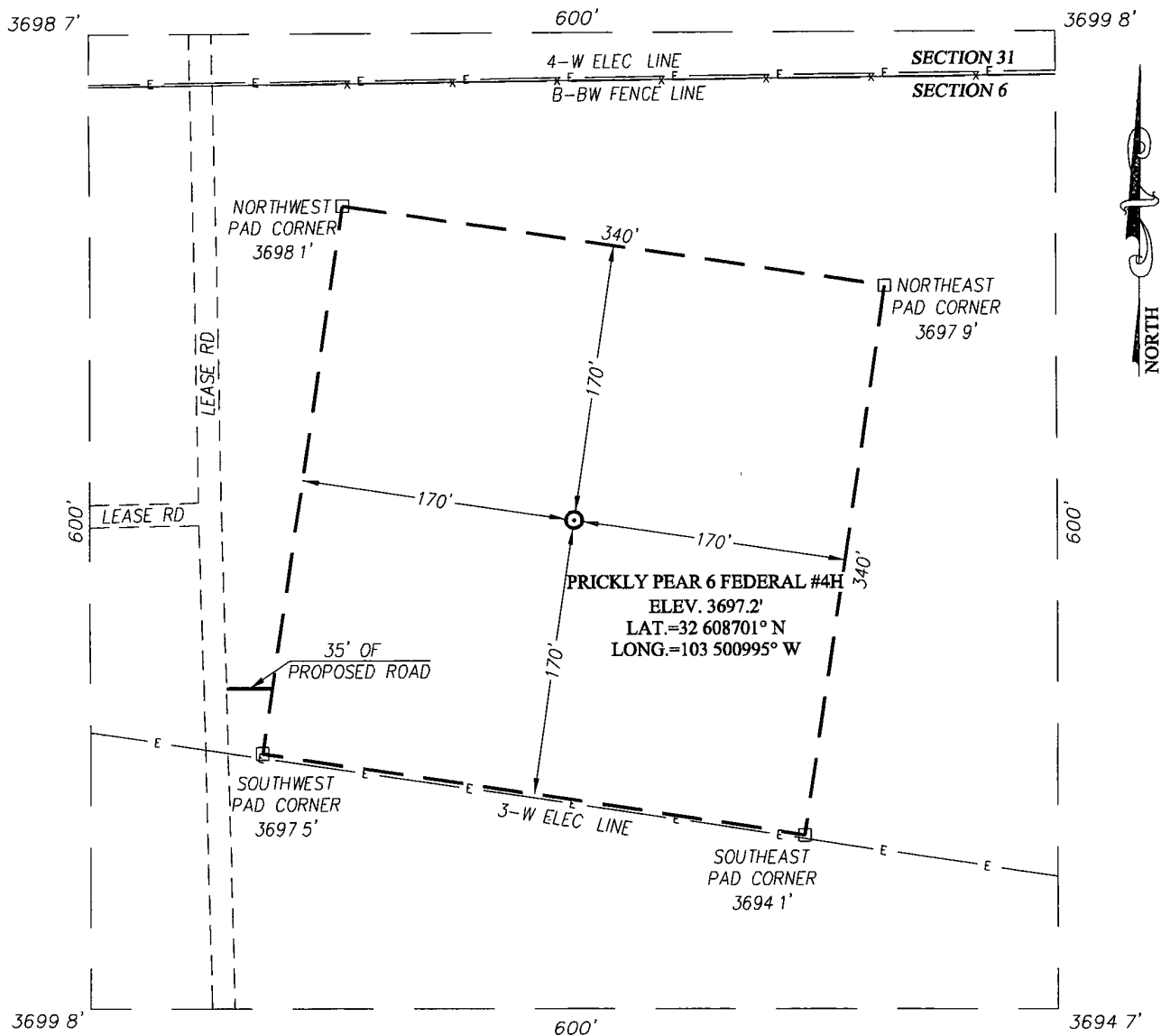
BLM Bond File #: NMB000740

COG OPERATING LLC

A handwritten signature in black ink, appearing to read 'Mayte Reyes', is written over a horizontal line.

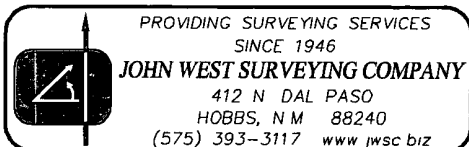
Mayte Reyes
Regulatory Analyst

SECTION 6, TOWNSHIP 20 SOUTH, RANGE 35 EAST, N.M.P.M.
LEA COUNTY **NEW MEXICO**



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST HWY #62-180 AND CO RD H-27 (MARATHON RD) GO SOUTH ON MARATHON RD APPROX 1.9 MILES TURN LEFT AND GO EAST APPROX 0.85 MILES TURN LEFT AND GO NORTH APPROX 0.1 MILES THE LOCATION STAKE IS 220 FEET EAST OF THE LEASE ROAD

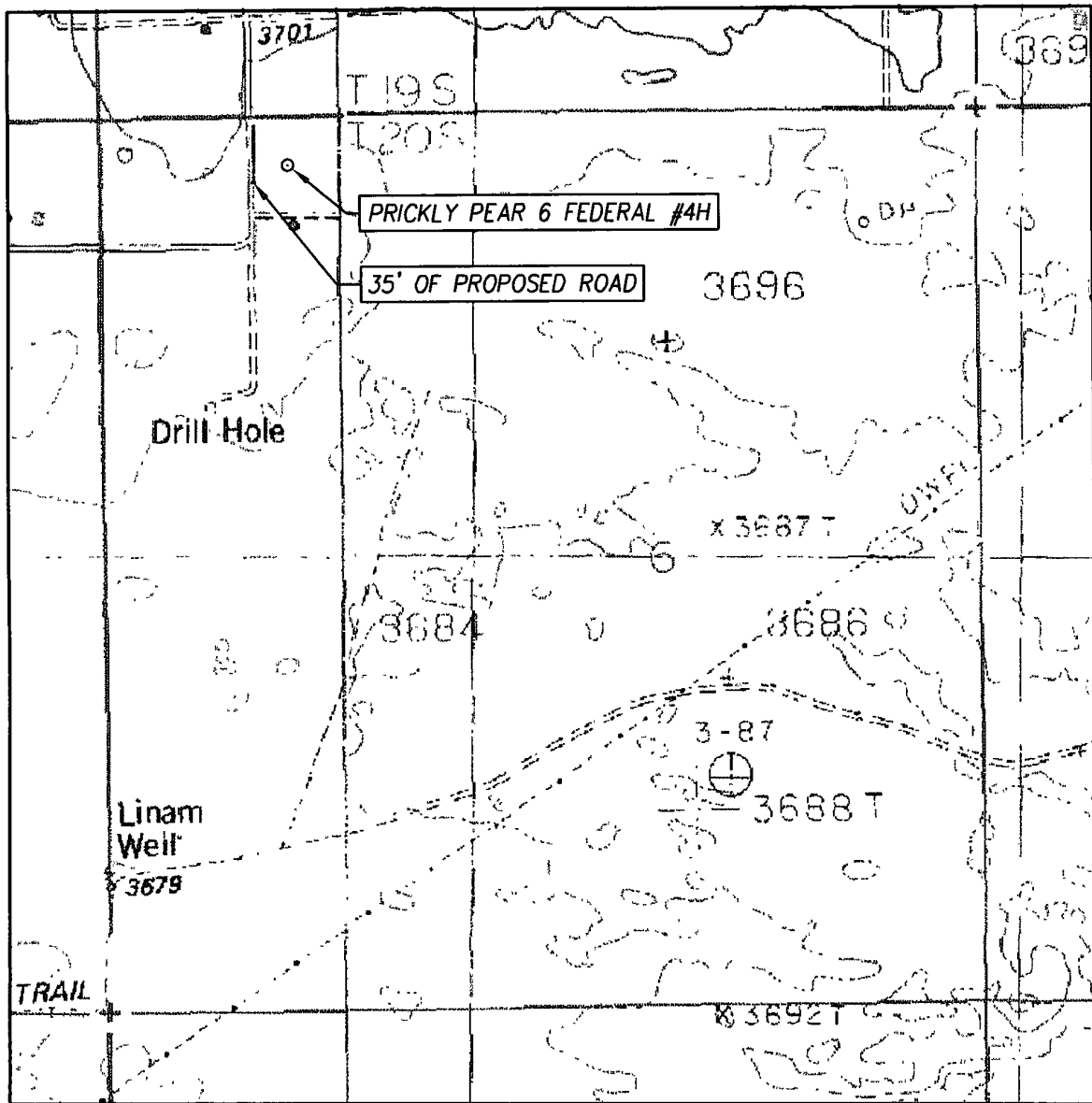


COG OPERATING, LLC

PRICKLY PEAR 6 FEDERAL #4H WELL
LOCATED 270 FEET FROM THE NORTH LINE
AND 1130 FEET FROM THE WEST LINE OF SECTION 6,
TOWNSHIP 20 SOUTH, RANGE 35 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date 5/3/12	CAD Date 5/19/12	Drawn By AF
W O No 12110784	Rev:	Rel W O
		Sheet 1 of 1

LOCATION VERIFICATION MAP



SCALE: 1" = 1000'

CONTOUR INTERVAL:
LEA, N M - 10'

SEC 6 TWP 20-S RGE 35-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

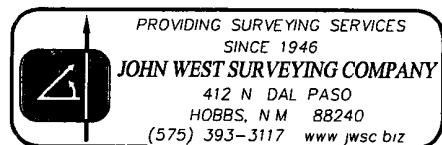
DESCRIPTION 270' FNL & 1130' FWL

ELEVATION 3697'

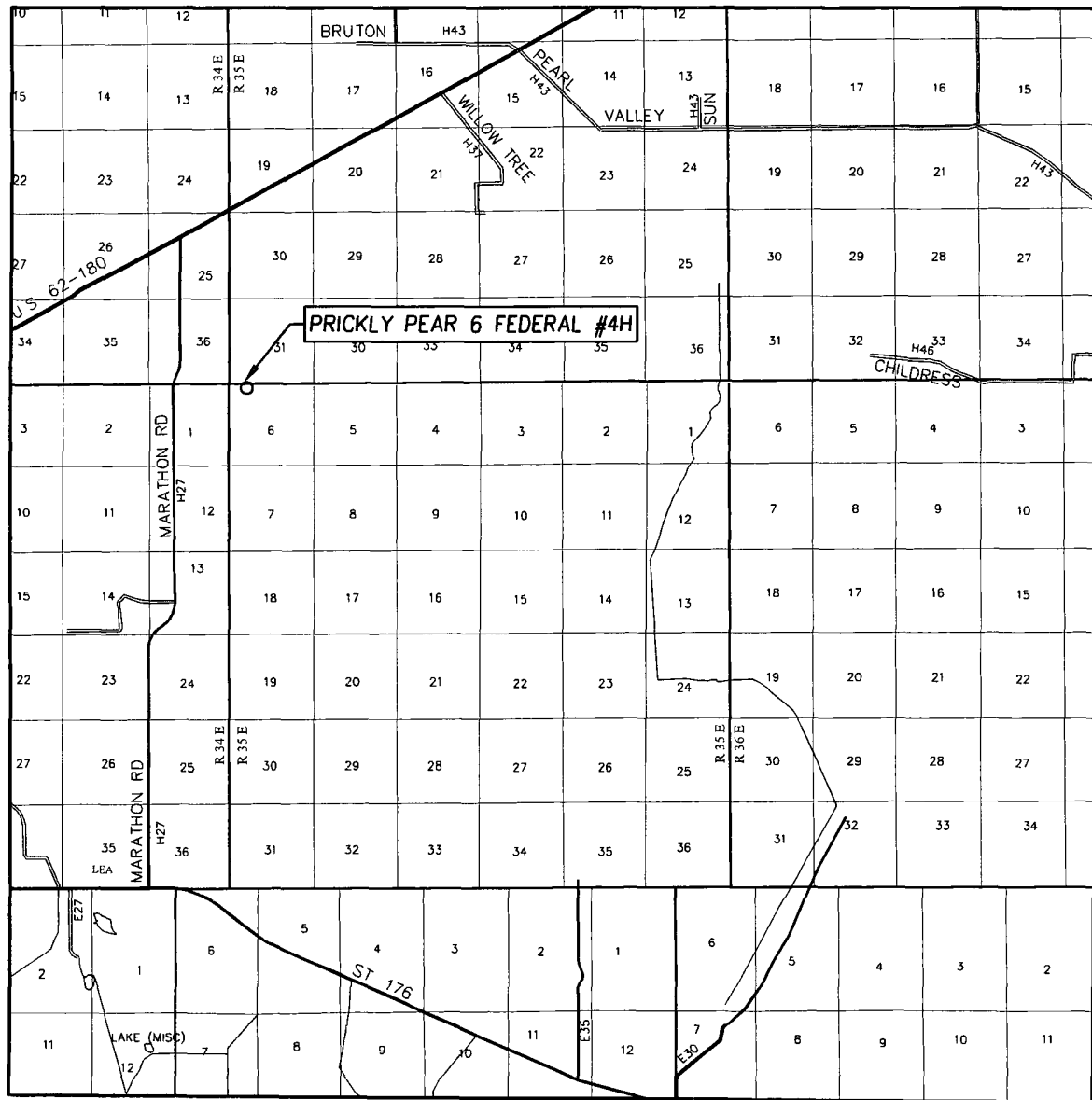
OPERATOR COG OPERATING, LLC

LEASE PRICKLY PEAR 6 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
LEA, N M

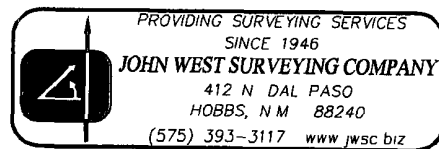


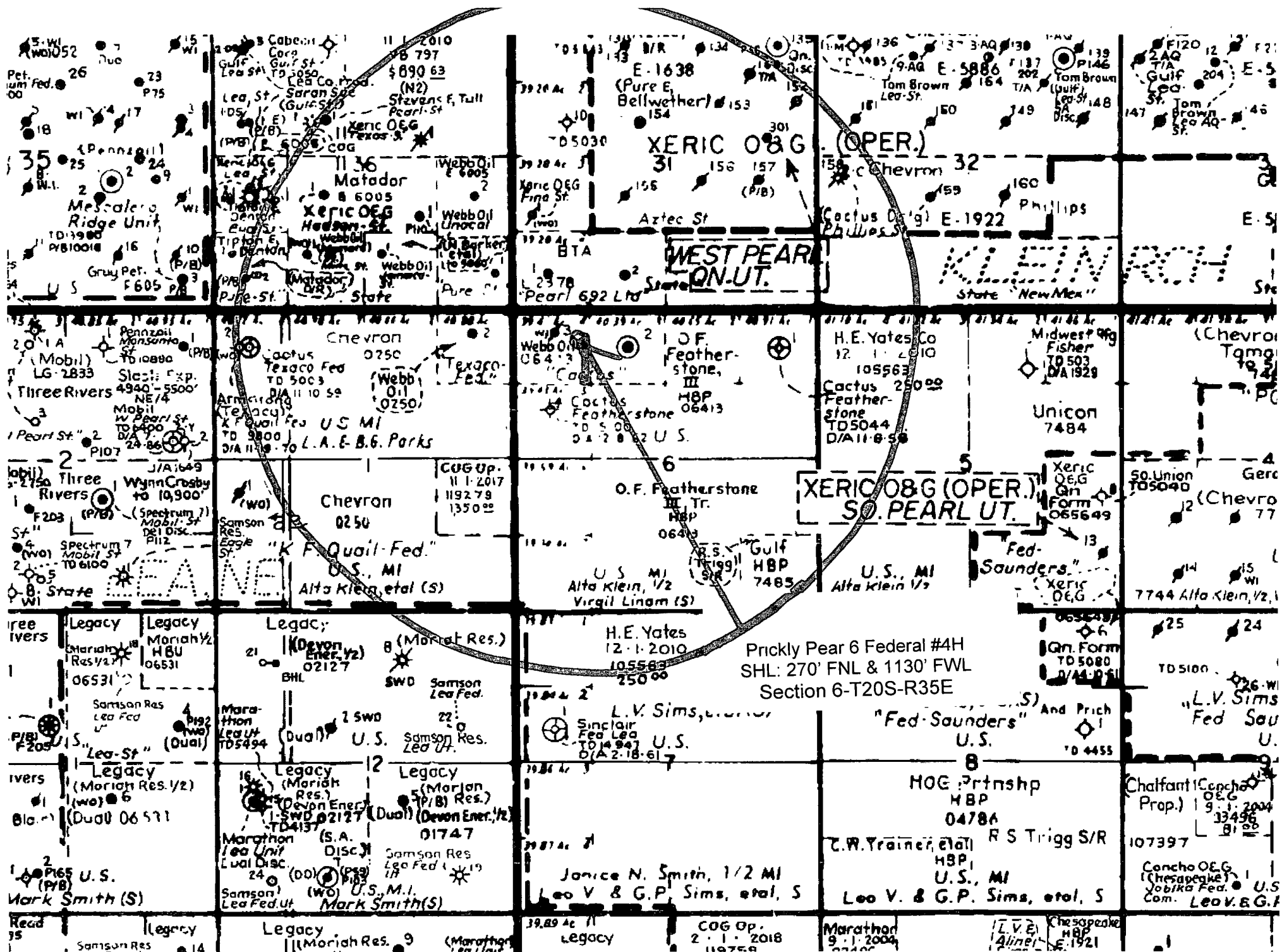
VICINITY MAP

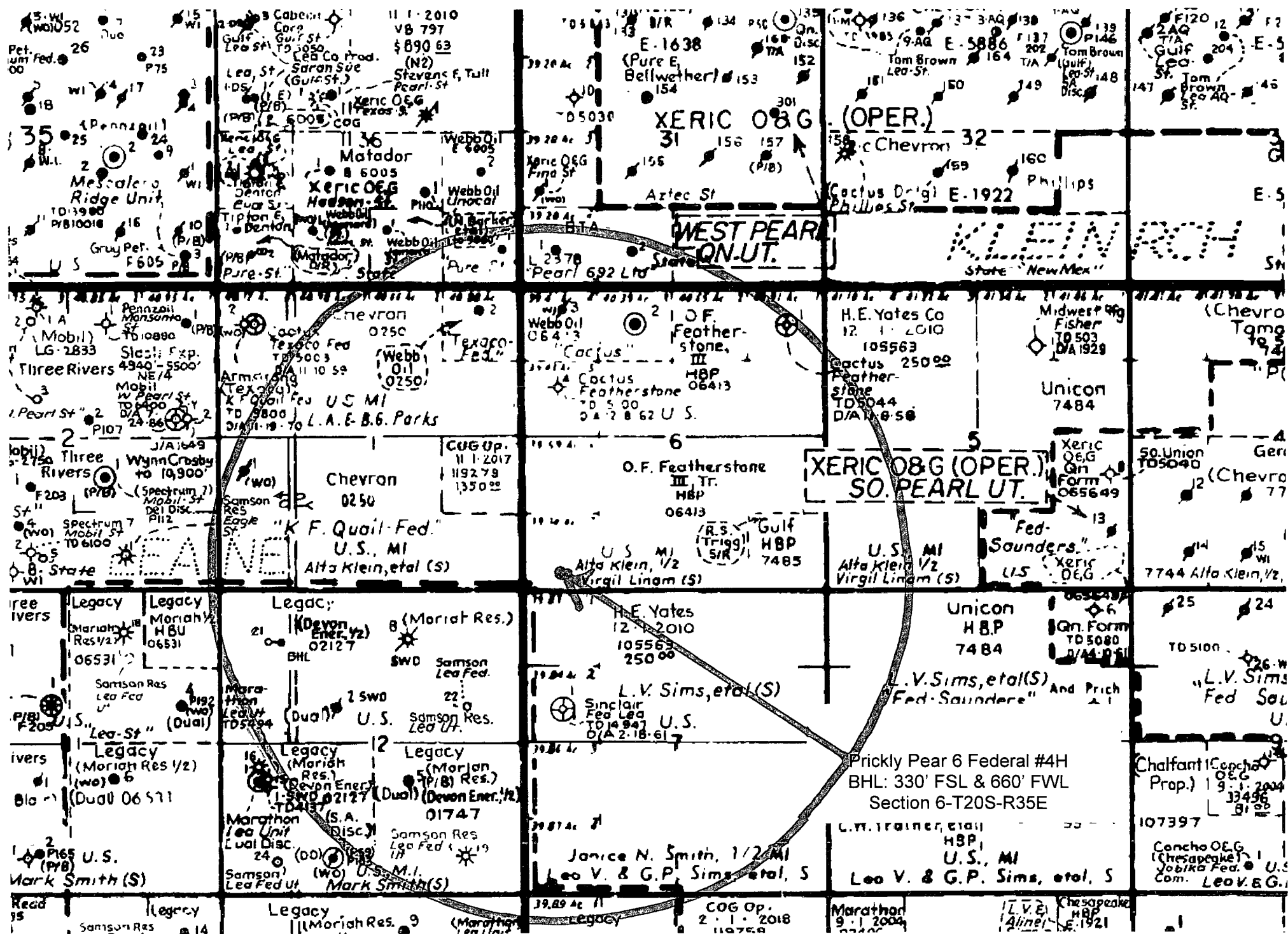


SCALE: 1" = 2 MILES

SEC 6 TWP 20-S RGE 35-E
 SURVEY N.M.P.M
 COUNTY EDDY STATE NEW MEXICO
 DESCRIPTION 270' FNL & 1130' FWL
 ELEVATION 3697'
 OPERATOR COG OPERATING, LLC
 LEASE PRICKLY PEAR 6 FEDERAL







COG Operating LLC
DRILLING AND OPERATIONS PROGRAM
Prickly Pear 6 Fed #4H
SHL: 1130' FWL & 270' FNL
BHL: 660' FWL & 330' FSL
Section 6 T20S R35E
Lea County, New Mexico

In conjunction with Form 3160-3, Application for Permit to Drill subject well, COG Operating LLC submits the following eleven items of pertinent information in accordance with BLM requirements.

1. Geological surface formation: Permian
2. The estimated tops of geologic markers & estimated depths at which anticipated water, oil or gas formations are expected to be encountered are as follows:

Fresh Water	64'	
Rustler	1860'	
Top of Salt	1950'	
Base of Salt	3,469'	
Yates	3,702'	
Seven Rivers	4,110'	
Queen	4,706'	
Delaware	5,659'	Oil
Bone Spring	8,249'	Oil
3 rd Bone Spring	10,839'	Oil
Wolfcamp	11,057'	Oil
EOC TVD	11,030'	
TD TVD	11,060'	
TD MD	15,613'	
PH TD	11,250'	

No other formations are expected to give up oil, gas or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 13-3/8" casing at ~~1,890'~~ and circulating cement back to surface. All intervals will be isolated by setting 5 1/2" casing to total depth and tying back cement to a minimum of 500' into 9-5/8" csg.

*See
COA*

3. Proposed Casing Program: All casing is new and API approved

Hole Size	Depths	Section	OD Casing	New/Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	1935 0' - 1,890'	Surface	13 3/8"	New	54.5#	STC	J-55	1.125	1.125	1.6
12 1/4"	0' - 3,750'	Intrmd	9 5/8"	New	36#	LTC	J-55	1.125	1.125	1.6
7 7/8"	0' - 15,613'	Production Curve & Lateral	5 1/2"	New	17#	LTC	P-110	1.125	1.125	1.6

7. Mud Program: The applicable depths and properties of this system are as follows:

Depth	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' – 1,890'	Fresh Water	8.4	29	N.C.
1,890' – 3,750'	Brine	10	29	N.C.
3,750' – 11,250' (PH)	Cut Brine	8.8 – 9.2	29	N.C.
3,750' – 15,613' (Lateral)	Cut Brine	8.8 – 9.2	29	N.C.

The necessary mud products for weight addition and fluid loss control will be on location at all times.

8. Auxiliary Well Control and Monitoring Equipment:

- A Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

9. Testing, Logging and Coring Program: *See COA*

- Drill stem tests will be based on geological sample shows.
- If open hole electrical logging is preformed, the program will be:
 - Total Depth to Intermediate Casing: Dual Laterolog-Micro Laterolog and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 - Total Depth to Surface: Compensated Neutron with Gamma Ray
 - No coring program is planned
 - Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

10. Potential Hazards:

- No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. No H2S is anticipated to be encountered.

11. Anticipated starting date and Duration of Operations:

- Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.



COG Operating LLC

Lea County(NAD27)

Prickly Pear 6 Fed

#4H

OH

Plan: Plan #1

Pathfinder X&Y Report

12 July, 2012

PATHFINDER[®]

A Schlumberger Company



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #4H
Project:	Lea County(NAD27)	TVD Reference:	KB = 17' @ 3714 0usft (Original Well Elev)
Site:	Pnckly Pear 6 Fed	MD Reference:	KB = 17' @ 3714 0usft (Original Well Elev)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000 1 Single User Db

Project Lea County(NAD27)			
Map System:	US State Plane 1927 (Exact solution)	System Datum.	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Pnckly Pear 6 Fed			
Site Position:		Northing	586,160 200 usft	Latitude:	32 609
From:	Map	Easting	756,305 140 usft	Longitude:	-103 501
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16 "	Grid Convergence	0 45 °

Well	#4H					
Well Position	+N/-S	0 0 usft	Northing.	586,160 200 usft	Latitude:	32 609
	+E/-W	0 0 usft	Easting:	756,305 140 usft	Longitude:	-103 501
Position Uncertainty		0 0 usft	Wellhead Elevation.	usft	Ground Level:	3,697 0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	7/12/2012	7 44	60 55	48,785

Design	Plan #1			
Audit Notes:				
Version	Phase.	PLAN	Tie On Depth:	0 0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0 0	185 24

Survey Tool Program		Date	7/12/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0 0	15,613 1	Plan #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: COG Operating LLC
Project: Lea County(NAD27)
Site: Pnckly Pear 6 Fed
Well: #4H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #4H
TVD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
MD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
North Reference: Grd
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0 0	0 00	0 00	0 0	-3,714 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
100 0	0 00	0 00	100 0	-3,614 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
200 0	0 00	0 00	200 0	-3,514 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
300 0	0 00	0 00	300 0	-3,414 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
400 0	0 00	0 00	400 0	-3,314 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
500 0	0 00	0 00	500 0	-3,214 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
600 0	0 00	0 00	600 0	-3,114 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
700 0	0 00	0 00	700 0	-3,014 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
800 0	0 00	0 00	800 0	-2,914 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
900 0	0 00	0 00	900 0	-2,814 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,000 0	0 00	0 00	1,000 0	-2,714 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,100 0	0 00	0 00	1,100 0	-2,614 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,200 0	0 00	0 00	1,200 0	-2,514 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,300 0	0 00	0 00	1,300 0	-2,414 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,400 0	0 00	0 00	1,400 0	-2,314 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,500 0	0 00	0 00	1,500 0	-2,214 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,600 0	0 00	0 00	1,600 0	-2,114 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,700 0	0 00	0 00	1,700 0	-2,014 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,800 0	0 00	0 00	1,800 0	-1,914 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
1,900 0	0 00	0 00	1,900 0	-1,814 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,000 0	0 00	0 00	2,000 0	-1,714 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,100 0	0 00	0 00	2,100 0	-1,614 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,200 0	0 00	0 00	2,200 0	-1,514 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,300 0	0 00	0 00	2,300 0	-1,414 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,400 0	0 00	0 00	2,400 0	-1,314 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,500 0	0 00	0 00	2,500 0	-1,214 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,600 0	0 00	0 00	2,600 0	-1,114 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: COG Operating LLC
Project: Lea County(NAD27)
Site: Prckly Pear 6 Fed
Well: #4H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #4H
TVD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
MD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
North Reference: Grd
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,700 0	0 00	0 00	2,700 0	-1,014 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,800 0	0 00	0 00	2,800 0	-914 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
2,900 0	0 00	0 00	2,900 0	-814 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,000 0	0 00	0 00	3,000 0	-714 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,100 0	0 00	0 00	3,100 0	-614 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,200 0	0 00	0 00	3,200 0	-514 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,300 0	0 00	0 00	3,300 0	-414 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,400 0	0 00	0 00	3,400 0	-314 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,500 0	0 00	0 00	3,500 0	-214 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,600 0	0 00	0 00	3,600 0	-114 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,700 0	0 00	0 00	3,700 0	-14 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,800 0	0 00	0 00	3,800 0	86 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
3,900 0	0 00	0 00	3,900 0	186 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,000 0	0 00	0 00	4,000 0	286 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,100 0	0 00	0 00	4,100 0	386 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,200 0	0 00	0 00	4,200 0	486 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,300 0	0 00	0 00	4,300 0	586 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,400 0	0 00	0 00	4,400 0	686 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,500 0	0 00	0 00	4,500 0	786 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,600 0	0 00	0 00	4,600 0	886 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,700 0	0 00	0 00	4,700 0	986 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,800 0	0 00	0 00	4,800 0	1,086 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
4,900 0	0 00	0 00	4,900 0	1,186 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,000 0	0 00	0 00	5,000 0	1,286 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,100 0	0 00	0 00	5,100 0	1,386 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,200 0	0 00	0 00	5,200 0	1,486 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,300 0	0 00	0 00	5,300 0	1,586 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: COG Operating LLC
Project: Lea County(NAD27)
Site: Prickly Pear 6 Fed
Well: #4H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #4H
TVD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
MD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V-Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,400 0	0 00	0 00	5,400 0	1,686 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,500 0	0 00	0 00	5,500 0	1,786 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,600 0	0 00	0 00	5,600 0	1,886 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,700 0	0 00	0 00	5,700 0	1,986 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,800 0	0 00	0 00	5,800 0	2,086 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
5,900 0	0 00	0 00	5,900 0	2,186 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,000 0	0 00	0 00	6,000 0	2,286 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,100 0	0 00	0 00	6,100 0	2,386 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,200 0	0 00	0 00	6,200 0	2,486 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,300 0	0 00	0 00	6,300 0	2,586 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,400 0	0 00	0 00	6,400 0	2,686 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,500 0	0 00	0 00	6,500 0	2,786 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,600 0	0 00	0 00	6,600 0	2,886 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,700 0	0 00	0 00	6,700 0	2,986 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,800 0	0 00	0 00	6,800 0	3,086 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
6,900 0	0 00	0 00	6,900 0	3,186 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,000 0	0 00	0 00	7,000 0	3,286 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,100 0	0 00	0 00	7,100 0	3,386 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,200 0	0 00	0 00	7,200 0	3,486 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,300 0	0 00	0 00	7,300 0	3,586 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,400 0	0 00	0 00	7,400 0	3,686 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,500 0	0 00	0 00	7,500 0	3,786 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,600 0	0 00	0 00	7,600 0	3,886 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,700 0	0 00	0 00	7,700 0	3,986 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,800 0	0 00	0 00	7,800 0	4,086 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
7,900 0	0 00	0 00	7,900 0	4,186 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,000 0	0 00	0 00	8,000 0	4,286 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: COG Operating LLC
Project: Lea County(NAD27)
Site: Prckly Pear 6 Fed
Well: #4H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #4H
TVD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
MD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
North Reference: Grd
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
8,100 0	0 00	0 00	8,100 0	4,386 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,200 0	0 00	0 00	8,200 0	4,486 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,300 0	0 00	0 00	8,300 0	4,586 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,400 0	0 00	0 00	8,400 0	4,686 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,500 0	0 00	0 00	8,500 0	4,786 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,600 0	0 00	0 00	8,600 0	4,886 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,700 0	0 00	0 00	8,700 0	4,986 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,800 0	0 00	0 00	8,800 0	5,086 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
8,900 0	0 00	0 00	8,900 0	5,186 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,000 0	0 00	0 00	9,000 0	5,286 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,100 0	0 00	0 00	9,100 0	5,386 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,200 0	0 00	0 00	9,200 0	5,486 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,300 0	0 00	0 00	9,300 0	5,586 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,400 0	0 00	0 00	9,400 0	5,686 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,500 0	0 00	0 00	9,500 0	5,786 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,600 0	0 00	0 00	9,600 0	5,886 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,700 0	0 00	0 00	9,700 0	5,986 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,800 0	0 00	0 00	9,800 0	6,086 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
9,900 0	0 00	0 00	9,900 0	6,186 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
10,000 0	0 00	0 00	10,000 0	6,286 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
10,100 0	0 00	0 00	10,100 0	6,386 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
10,200 0	0 00	0 00	10,200 0	6,486 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
10,300 0	0 00	0 00	10,300 0	6,586 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
10,400 0	0 00	0 00	10,400 0	6,686 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
10,500 0	0 00	0 00	10,500 0	6,786 0	0 0	0 0	0 0	0 00	586,160 20	756,305 14
10,552 5	0 00	0 00	10,552 5	6,838 5	0 0	0 0	0 0	0 00	586,160 20	756,305 14
10,575 0	2 70	200 00	10,575 0	6,861 0	-0 5	-0 2	0 5	12 00	586,159 70	756,304 96



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: COG Operating LLC
Project: Lea County(NAD27)
Site: Prckly Pear 6 Fed
Well: #4H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #4H
TVD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
MD Reference: KB = 17' @ 3714 0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northung (usft)	Easting (usft)
10,600 0	5 70	200 00	10,599 9	6,885 9	-2 2	-0 8	2 3	12 00	586,157 98	756,304 33
10,625 0	8 70	200 00	10,624 7	6,910 7	-5 2	-1 9	5 3	12 00	586,155 04	756,303 26
10,650 0	11 70	200 00	10,649 3	6,935 3	-9 3	-3 4	9 6	12 00	586,150 88	756,301 75
10,675 0	14 70	200 00	10,673 7	6,959 7	-14 7	-5 3	15 1	12 00	586,145 52	756,299 80
10,700 0	17 70	200 00	10,697 7	6,983 7	-21 2	-7 7	21 9	12 00	586,138 96	756,297 41
10,725 0	20 70	200 00	10,721 3	7,007 3	-29 0	-10 5	29 8	12 00	586,131 24	756,294 60
10,750 0	23 70	200 00	10,744 4	7,030 4	-37 8	-13 8	38 9	12 00	586,122 36	756,291 37
10,775 0	26 70	200 00	10,767 0	7,053 0	-47 8	-17 4	49 2	12 00	586,112 36	756,287 73
10,800 0	29 70	200 00	10,789 1	7,075 1	-58 9	-21 5	60 6	12 00	586,101 26	756,283 69
10,825 0	32 70	200 00	10,810 4	7,096 4	-71 1	-25 9	73 2	12 00	586,089 10	756,279 26
10,850 0	35 70	200 00	10,831 1	7,117 1	-84 3	-30 7	86 8	12 00	586,075 90	756,274 46
10,875 0	38 70	200 00	10,851 0	7,137 0	-98 5	-35 9	101 4	12 00	586,061 69	756,269 29
10,900 0	41 70	200 00	10,870 1	7,156 1	-113 7	-41 4	117 0	12 00	586,046 53	756,263 77
10,925 0	44 70	200 00	10,888 4	7,174 4	-129 7	-47 2	133 5	12 00	586,030 46	756,257 92
10,950 0	47 70	200 00	10,905 7	7,191 7	-146 7	-53 4	151 0	12 00	586,013 50	756,251 75
10,975 0	50 70	200 00	10,922 0	7,208 0	-164 5	-59 9	169 3	12 00	585,995 72	756,245 28
11,000 0	53 69	200 00	10,937 3	7,223 3	-183 0	-66 6	188 4	12 00	585,977 16	756,238 52
11,025 0	56 69	200 00	10,951 6	7,237 6	-202 3	-73 6	208 2	12 00	585,957 88	756,231 50
11,050 0	59 69	200 00	10,964 8	7,250 8	-222 3	-80 9	228 7	12 00	585,937 91	756,224 23
11,075 0	62 69	200 00	10,976 8	7,262 8	-242 9	-88 4	249 9	12 00	585,917 33	756,216 74
11,100 0	65 69	200 00	10,987 7	7,273 7	-264 0	-96 1	271 7	12 00	585,896 18	756,209 05
11,125 0	68 69	200 00	10,997 4	7,283 4	-285 7	-104 0	294 0	12 00	585,874 53	756,201 16
11,150 0	71 69	200 00	11,005 8	7,291 8	-307 8	-112 0	316 7	12 00	585,852 43	756,193 12
11,175 0	74 69	200 00	11,013 1	7,299 1	-330 3	-120 2	339 9	12 00	585,829 94	756,184 94
11,200 0	77 69	200 00	11,019 0	7,305 0	-353 1	-128 5	363 3	12 00	585,807 13	756,176 63
11,225 0	80 69	200 00	11,023 7	7,309 7	-376 1	-136 9	387 1	12 00	585,784 06	756,168 24
11,250 0	83 69	200 00	11,027 1	7,313 1	-399 4	-145 4	411 0	12 00	585,760 79	756,159 77



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: COG Operating LLC
Project: Lea County(NAD27)
Site: Prckly Pear 6 Fed
Well: #4H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #4H
KB = 17' @ 3714 0usft (Original Well Elev)
KB = 17' @ 3714 0usft (Original Well Elev)
Gnd
Minimum Curvature
EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
11,275 0	86 69	200 00	11,029 2	7,315 2	-422 8	-153 9	435 1	12 00	585,737 38	756,151 25
11,299 2	89 60	200 00	11,030 0	7,316 0	-445 6	-162 2	458 5	12 00	585,714 62	756,142 96
11,400 0	89 60	195 97	11,030 7	7,316 7	-541 4	-193 3	556 8	4 00	585,618 80	756,111 86
11,500 0	89 60	191 97	11,031 4	7,317 4	-638 4	-217 4	655 6	4 00	585,521 78	756,087 72
11,600 0	89 60	187 97	11,032 1	7,318 1	-736 9	-234 7	755 2	4 00	585,423 32	756,070 41
11,700 0	89 60	183 97	11,032 8	7,318 8	-836 3	-245 1	855 2	4 00	585,323 88	756,060 02
11,729 8	89 60	182 78	11,033 0	7,319 0	-866 1	-246 9	885 0	4 00	585,294 14	756,058 26
11,800 0	89 60	182 78	11,033 5	7,319 5	-936 2	-250 3	955 1	0 00	585,224 02	756,054 86
11,900 0	89 60	182 78	11,034 2	7,320 2	-1,036 1	-255 1	1,055 0	0 00	585,124 14	756,050 02
12,000 0	89 60	182 78	11,034 9	7,320 9	-1,135 9	-260 0	1,154 9	0 00	585,024 26	756,045 17
12,100 0	89 60	182 78	11,035 6	7,321 6	-1,235 8	-264 8	1,254 8	0 00	584,924 38	756,040 33
12,200 0	89 60	182 78	11,036 3	7,322 3	-1,335 7	-269 7	1,354 7	0 00	584,824 50	756,035 48
12,300 0	89 60	182 78	11,037 0	7,323 0	-1,435 6	-274 5	1,454 7	0 00	584,724 62	756,030 64
12,400 0	89 60	182 78	11,037 7	7,323 7	-1,535 5	-279 4	1,554 6	0 00	584,624 74	756,025 79
12,500 0	89 60	182 78	11,038 4	7,324 4	-1,635 3	-284 2	1,654 5	0 00	584,524 86	756,020 94
12,600 0	89 60	182 78	11,039 1	7,325 1	-1,735 2	-289 0	1,754 4	0 00	584,424 98	756,016 10
12,700 0	89 60	182 78	11,039 8	7,325 8	-1,835 1	-293 9	1,854 3	0 00	584,325 10	756,011 25
12,800 0	89 60	182 78	11,040 5	7,326 5	-1,935 0	-298 7	1,954 2	0 00	584,225 22	756,006 41
12,900 0	89 60	182 78	11,041 2	7,327 2	-2,034 9	-303 6	2,054 1	0 00	584,125 34	756,001 56
13,000 0	89 60	182 78	11,041 8	7,327 8	-2,134 7	-308 4	2,154 0	0 00	584,025 46	755,996 72
13,100 0	89 60	182 78	11,042 5	7,328 5	-2,234 6	-313 3	2,253 9	0 00	583,925 58	755,991 87
13,200 0	89 60	182 78	11,043 2	7,329 2	-2,334 5	-318 1	2,353 8	0 00	583,825 70	755,987 03
13,300 0	89 60	182 78	11,043 9	7,329 9	-2,434 4	-323 0	2,453 7	0 00	583,725 82	755,982 18
13,400 0	89 60	182 78	11,044 6	7,330 6	-2,534 3	-327 8	2,553 6	0 00	583,625 94	755,977 33
13,500 0	89 60	182 78	11,045 3	7,331 3	-2,634 1	-332 7	2,653 5	0 00	583,526 06	755,972 49
13,600 0	89 60	182 78	11,046 0	7,332 0	-2,734 0	-337 5	2,753 4	0 00	583,426 18	755,967 64
13,700 0	89 60	182 78	11,046 7	7,332 7	-2,833 9	-342 3	2,853 3	0 00	583,326 30	755,962 80



Pathfinder
Pathfinder X&Y Report

PATHFINDER
A Schlumberger Company

Company: COG Operating LLC
Project: Lea County(NAD27)
Site: Prickly Pear 6 Fed
Well: #4H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

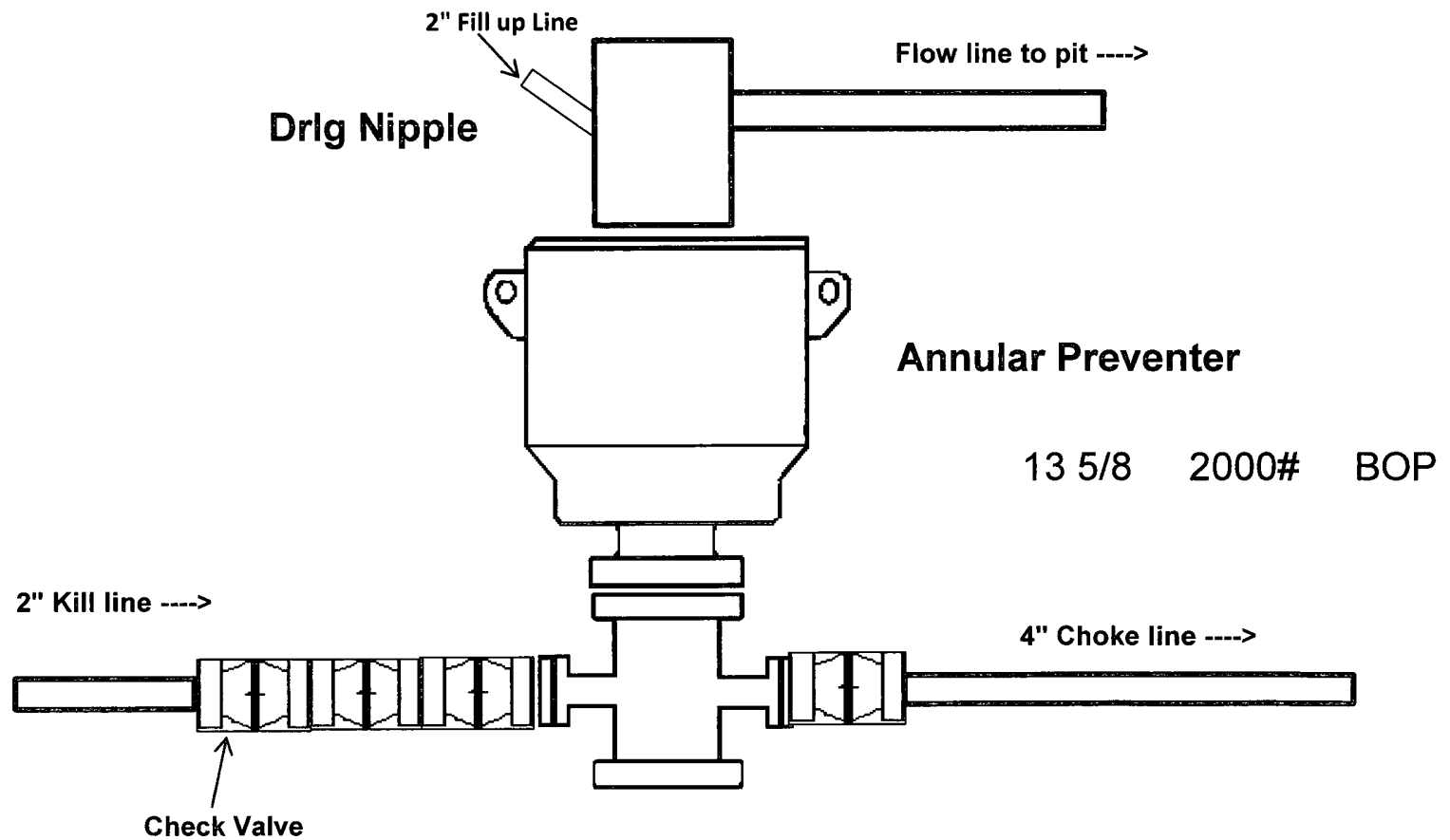
Well #4H
KB = 17' @ 3714 0usft (Original Well Elev)
KB = 17' @ 3714 0usft (Original Well Elev)
Grid
Minimum Curvature
EDM 5000 1 Single User Db

Planned Survey

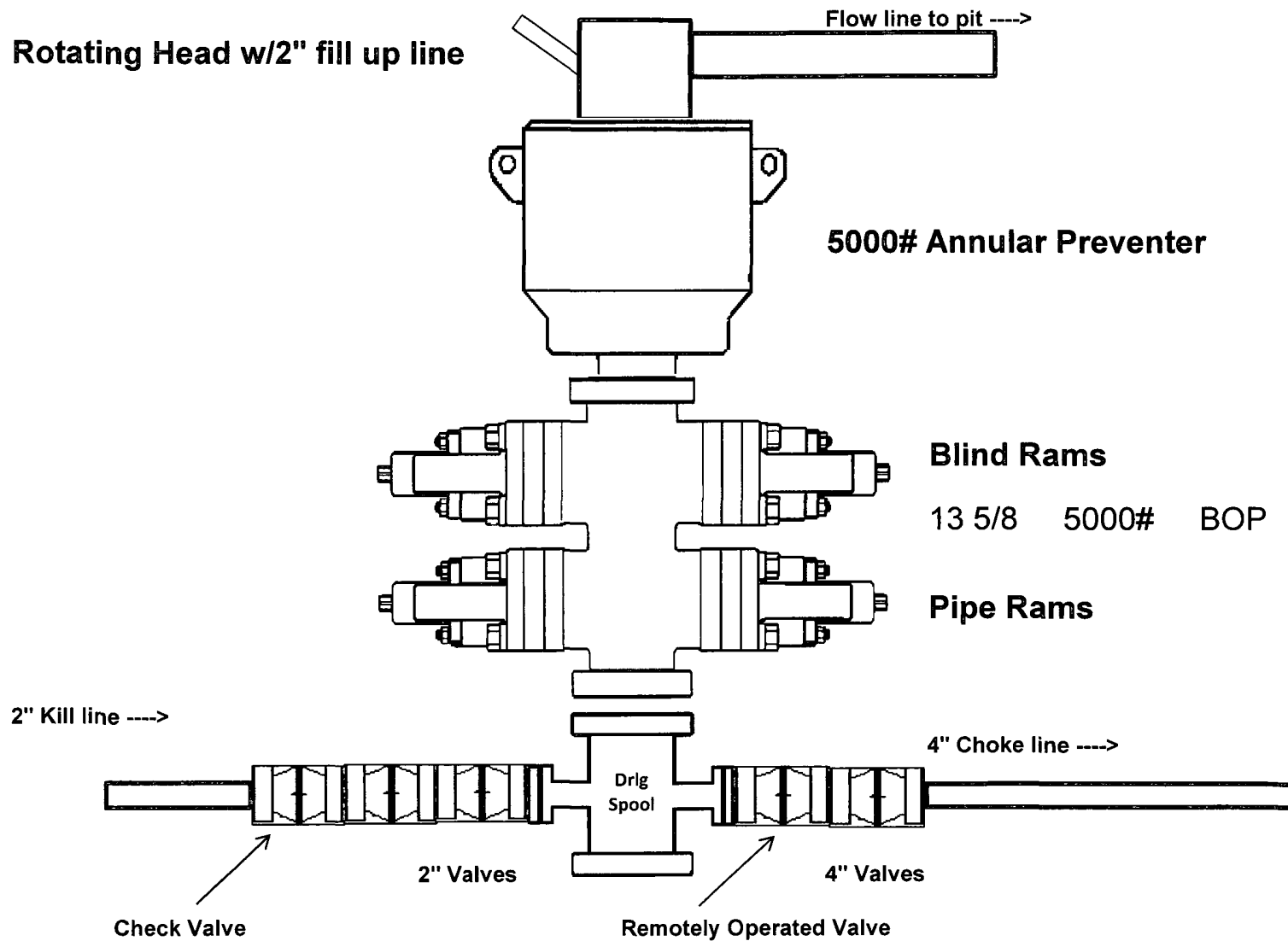
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
13,800 0	89 60	182 78	11,047 4	7,333 4	-2,933 8	-347 2	2,953 2	0 00	583,226 42	755,957 95
13,900 0	89 60	182 78	11,048 1	7,334 1	-3,033 7	-352 0	3,053 1	0 00	583,126 54	755,953 11
14,000 0	89 60	182 78	11,048 8	7,334 8	-3,133 5	-356 9	3,153 0	0 00	583,026 65	755,948 26
14,100 0	89 60	182 78	11,049 5	7,335 5	-3,233 4	-361 7	3,252 9	0 00	582,926 77	755,943 42
14,200 0	89 60	182 78	11,050 2	7,336 2	-3,333 3	-366 6	3,352 9	0 00	582,826 89	755,938 57
14,300 0	89 60	182 78	11,050 9	7,336 9	-3,433 2	-371 4	3,452 8	0 00	582,727 01	755,933 73
14,400 0	89 60	182 78	11,051 6	7,337 6	-3,533 1	-376 3	3,552 7	0 00	582,627 13	755,928 88
14,500 0	89 60	182 78	11,052 3	7,338 3	-3,632 9	-381 1	3,652 6	0 00	582,527 25	755,924 03
14,600 0	89 60	182 78	11,053 0	7,339 0	-3,732 8	-386 0	3,752 5	0 00	582,427 37	755,919 19
14,700 0	89 60	182 78	11,053 7	7,339 7	-3,832 7	-390 8	3,852 4	0 00	582,327 49	755,914 34
14,800 0	89 60	182 78	11,054 4	7,340 4	-3,932 6	-395 6	3,952 3	0 00	582,227 61	755,909 50
14,900 0	89 60	182 78	11,055 0	7,341 0	-4,032 5	-400 5	4,052 2	0 00	582,127 73	755,904 65
15,000 0	89 60	182 78	11,055 7	7,341 7	-4,132 3	-405 3	4,152 1	0 00	582,027 85	755,899 81
15,100 0	89 60	182 78	11,056 4	7,342 4	-4,232 2	-410 2	4,252 0	0 00	581,927 97	755,894 96
15,200 0	89 60	182 78	11,057 1	7,343 1	-4,332 1	-415 0	4,351 9	0 00	581,828 09	755,890 12
15,300 0	89 60	182 78	11,057 8	7,343 8	-4,432 0	-419 9	4,451 8	0 00	581,728 21	755,885 27
15,400 0	89 60	182 78	11,058 5	7,344 5	-4,531 9	-424 7	4,551 7	0 00	581,628 33	755,880 43
15,500 0	89 60	182 78	11,059 2	7,345 2	-4,631 7	-429 6	4,651 6	0 00	581,528 45	755,875 58
15,600 0	89 60	182 78	11,059 9	7,345 9	-4,731 6	-434 4	4,751 5	0 00	581,428 57	755,870 73
15,613 1	89 60	182 78	11,060 0	7,346 0	-4,744 7	-435 0	4,764 6	0 00	581,415 50	755,870 10

Checked By: _____ Approved By: _____ Date: _____

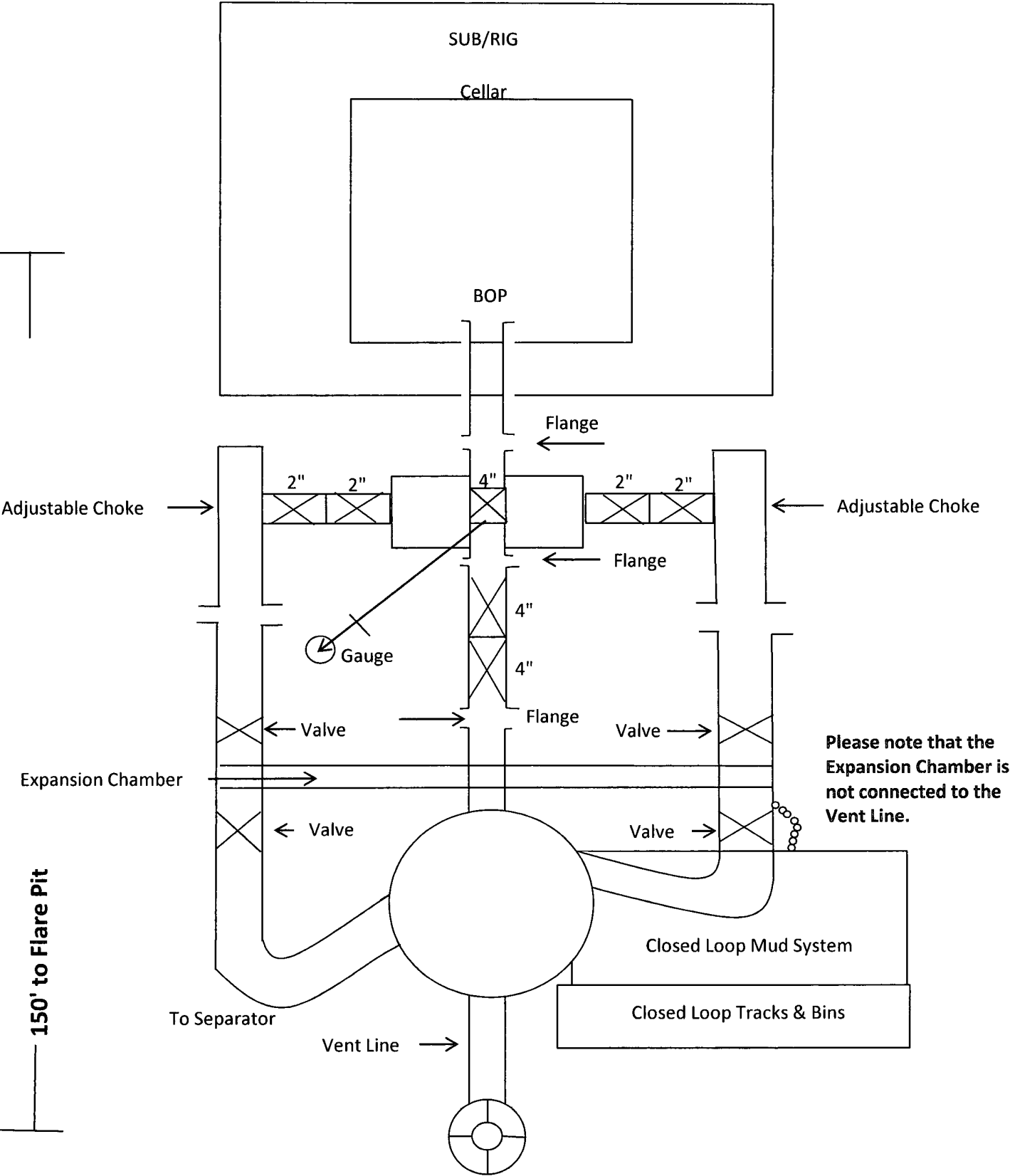
2,000 psi BOP Schematic



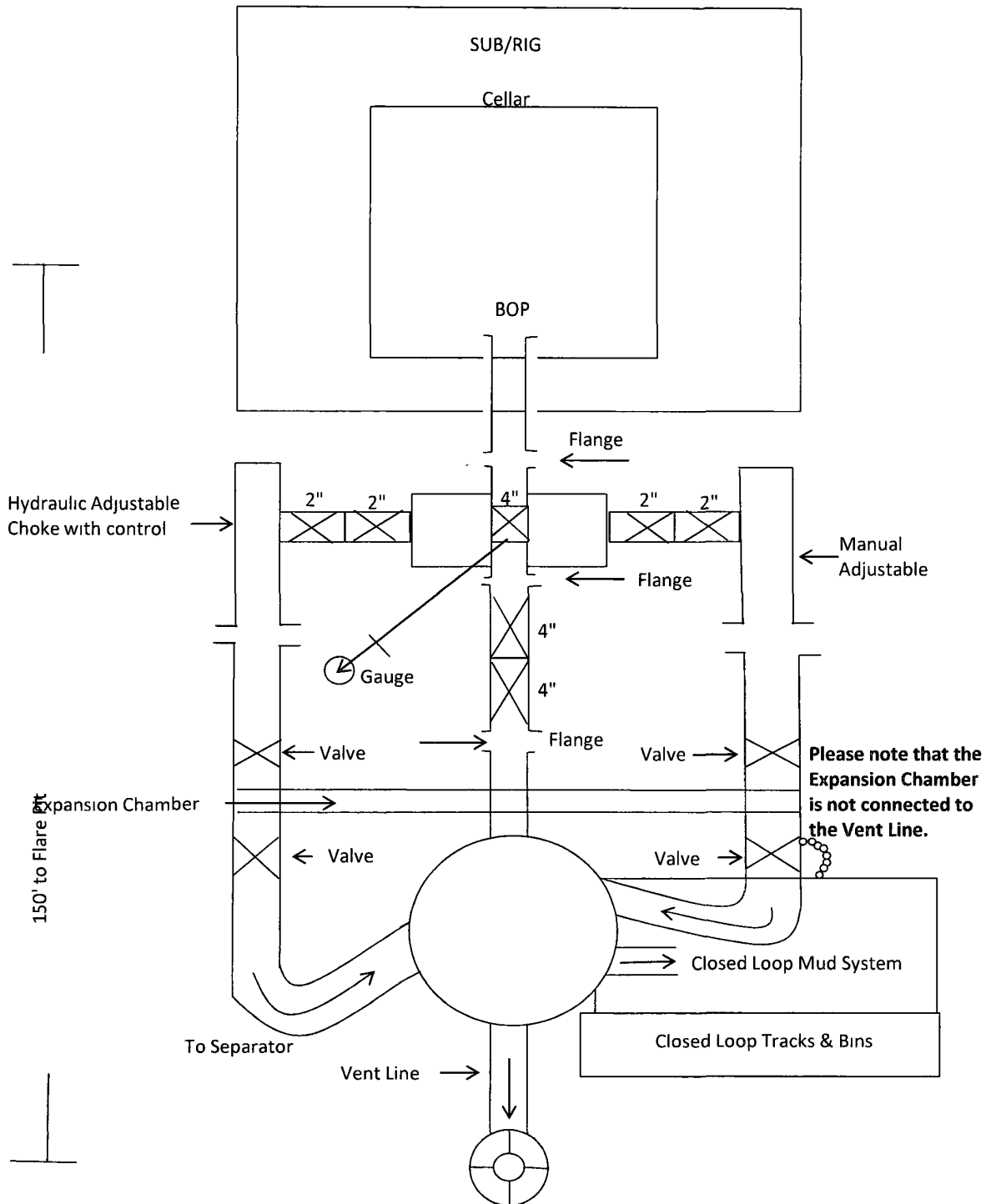
5,000 psi BOP Schematic



2M Choke Manifold Equipment



5M Choke Manifold Equipment





New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file)

(R=POD has
been replaced,
O=orphaned,

C=the file is (quarters are 1=NW 2=NE 3=SW 4=SE)
closed) (quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD	Code	Subbasin	County	Q	Q	Q	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 04157		L		LE	3	3	06	20S	35E	640483	3607561*	70	64		6

Average Depth to Water **64 feet**

Minimum Depth: **64 feet**

Maximum Depth: **64 feet**

Record Count: 1

PLSS Search:

Section(s): 6

Township: 20S

Range: 35E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data

7/18/12 2:10 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

COG Operating LLC

Rig Plat & Closed Loop Equipment Diagram

Well pad will be 340' X 340'
with cellar in center of pad

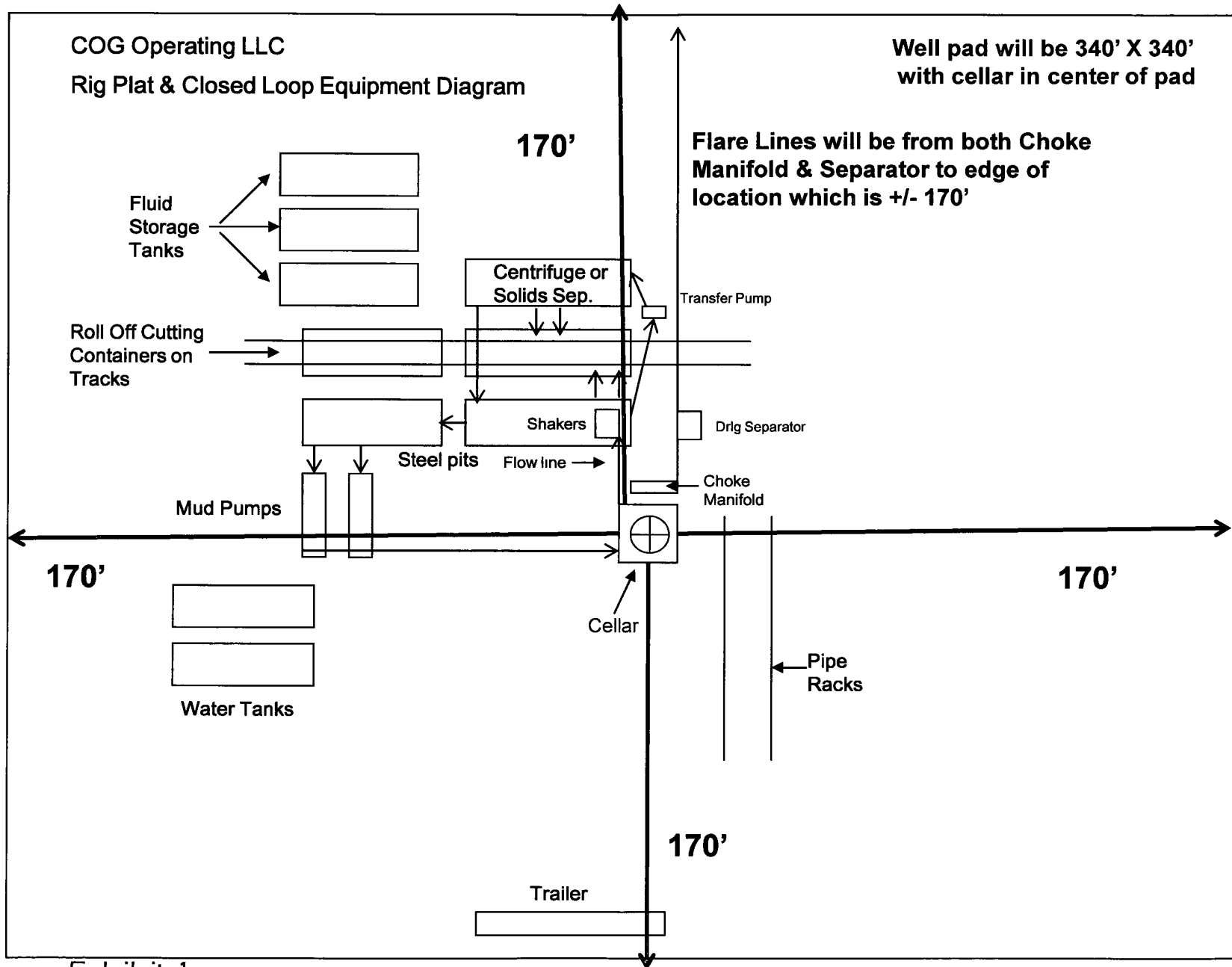


Exhibit 1