

SEP 16 2014

Form C-102

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

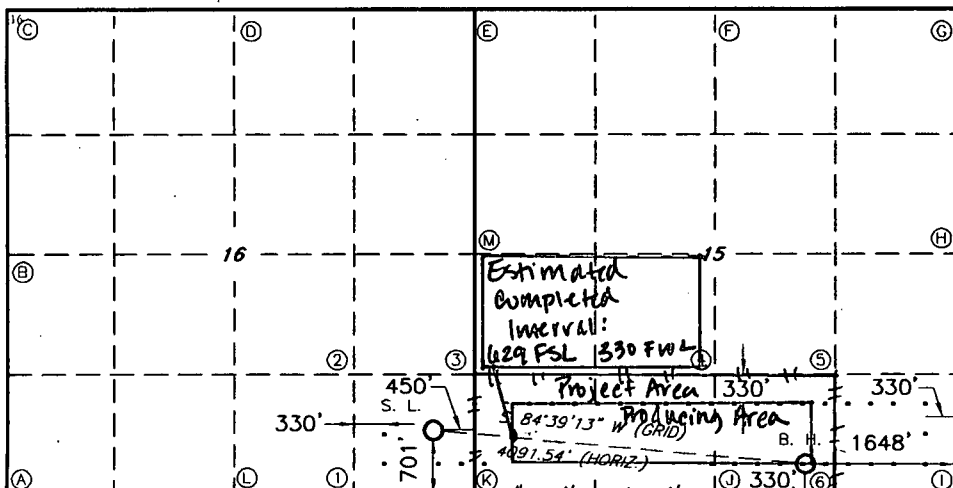
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-42644		2 Pool Code 3250		3 Pool Name Atoka; Glorieta Yeso	
4 Property Code 313428 313706		5 Property Name PILUM 15 FEE			6 Well Number 2H
7 GRID NO. 229137		8 Operator Name COG OPERATING, LLC			9 Elevation 3355'
10 Surface Location					
UL or lot no. P	Section 16	Township 18S	Range 26E	Lot Ida 701	Feet from the 701
		North/South line SOUTH		Feet From the 450	East/West line EAST
				County EDDY	
11 Bottom Hole Location If Different From Surface					
UL or lot no. 0	Section 15	Township 18S	Range 26E	Lot Ida 330	Feet from the 330
		North/South line SOUTH		Feet from the 1648	East/West line EAST
				County EDDY	
12 Dedicated Acres 120		13 Joint or Infill		14 Consolidation Code	
				15 Order No.	

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *Kelly J. Holly* Date: **9-15-14**
Printed Name: **Kelly J. Holly**
E-mail Address: **kholly@concho.com**

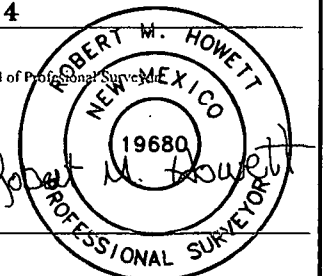
18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

8-12-14

Date of Survey

Signature and Seal of Professional Surveyor



19680

Certificate Number

CORNER DATA
NAD 27 GRID - NM EAST

A: FOUND COTTON SPINDLE
N: 633133.5 - E: 480997.7

B: CALCULATED CORNER
N: 635775.9 - E: 481013.2

C: FOUND COTTON SPINDLE
N: 638418.3 - E: 481028.7

D: CALCULATED CORNER
N: 638424.6 - E: 483677.7

E: FOUND COTTON SPINDLE
N: 638430.8 - E: 486326.6

F: CALCULATED CORNER
N: 638414.7 - E: 488971.0

G: FOUND 5/8" REBAR
N: 638425.9 - E: 491615.4

H: CALCULATED CORNER
N: 635773.4 - E: 491605.6

I: FOUND COTTON SPINDLE
N: 633121.0 - E: 491595.8

J: CALCULATED CORNER
N: 633128.5 - E: 488961.2

K: CALCULATED CORNER
N: 633136.0 - E: 486326.6

L: CALCULATED CORNER
N: 633134.7 - E: 483662.1

M: CALCULATED CORNER
N: 635783.4 - E: 486326.6

1: CALCULATED CORNER
N: 633135.3 - E: 484994.4

2: CALCULATED CORNER
N: 634458.4 - E: 484996.3

3: CALCULATED CORNER
N: 634459.7 - E: 486326.6

4: CALCULATED CORNER
N: 634453.5 - E: 488963.6

5: CALCULATED CORNER
N: 634450.3 - E: 490282.2

6: CALCULATED CORNER
N: 633124.8 - E: 490278.5

GEODETIC DATA
NAD 27 GRID - NM EAST

SURFACE LOCATION
N: 633836.6
E: 485876.6

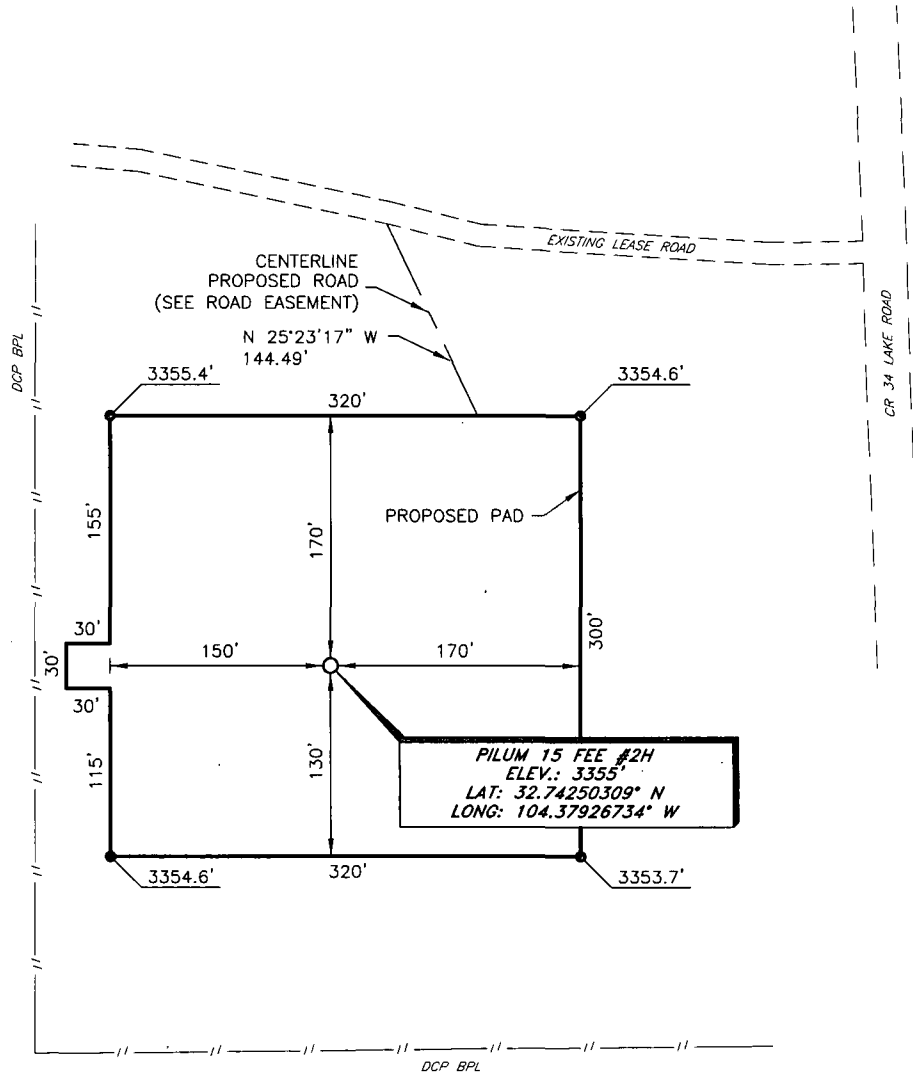
BOTTOM HOLE
N: 633455.7
E: 489948.4

LAT: 32.74250309° N
LONG: 104.37926734° W

RRC - Firm No.: TX 10193838 NM 4655451 - Job No.: LS140320

COG OPERATING, LLC

PILUM 15 FEE #2H
(701' FSL & 450' FEL)
SECTION 16, T18S, R26E,
N. M. P. M., EDDY CO., NEW MEXICO



SCALE: 1" = 100'
0 50 100
BEARINGS ARE
NAD 27 GRID - NM EAST
DISTANCES ARE
GROUND.

DIRECTIONS TO LOCATION

From intersection of CR-39 (Four Dinkus) and CR-34 (Lake Road);
Go Southwest on CR-34 (Lake Road) approx. 0.9 miles;
Location is approx. 372 feet West of CR-34 (Lake Road).

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.:	LS140320	
DWG. NO.:	140320PAD	

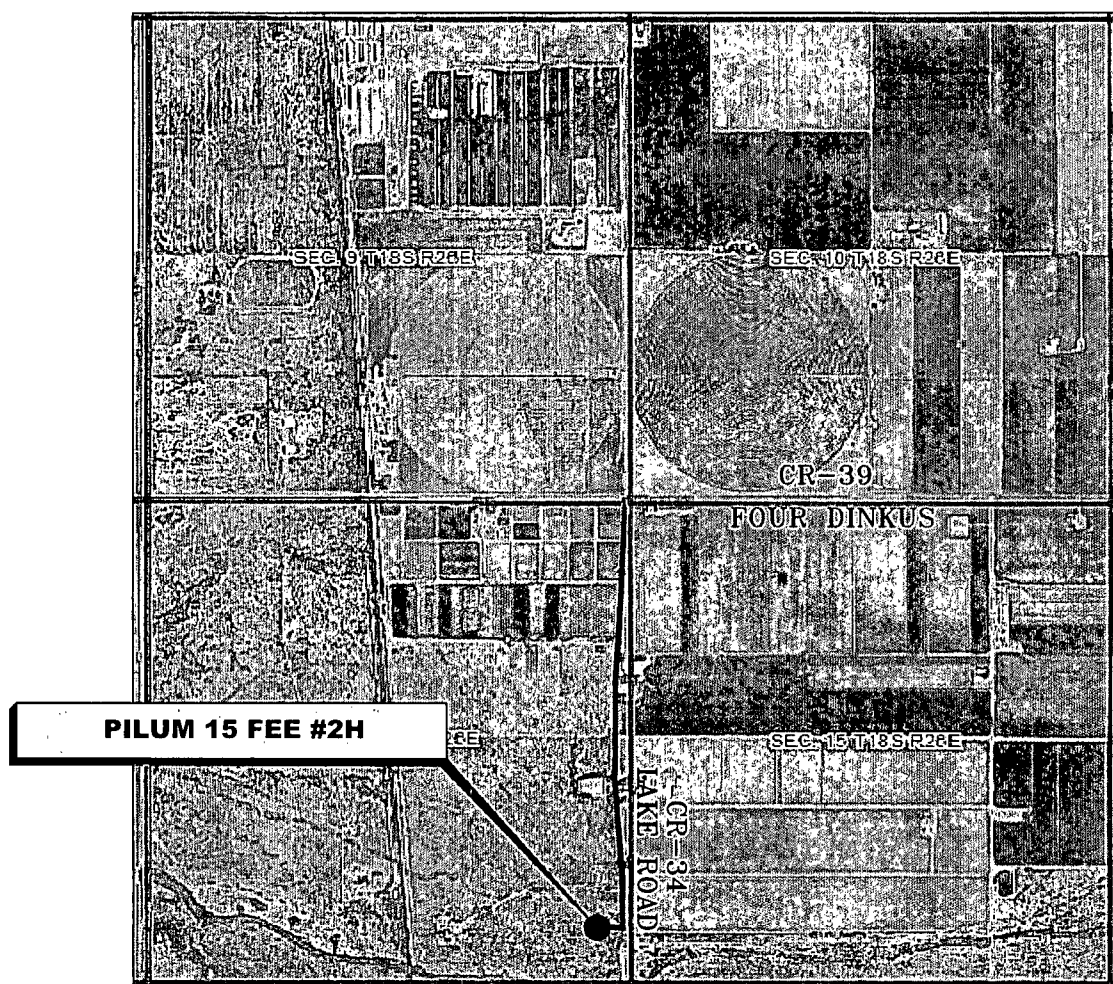
RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 8-12-14
SURVEYED BY: GB/IE
DRAWN BY: ARJ
APPROVED BY: RMH
SHEET : 1 OF 1

VICINITY MAP

NOT TO SCALE



*SECTION 16, TWP. 18 SOUTH, RGE. 26 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: COG Operating, LLC
 LEASE: Pilum 15 Fee
 WELL NO.: 2H

LOCATION: 701' FSL & 450' FEL
 ELEVATION: 3355'

Firm No.: TX 10193838 NM 4655451

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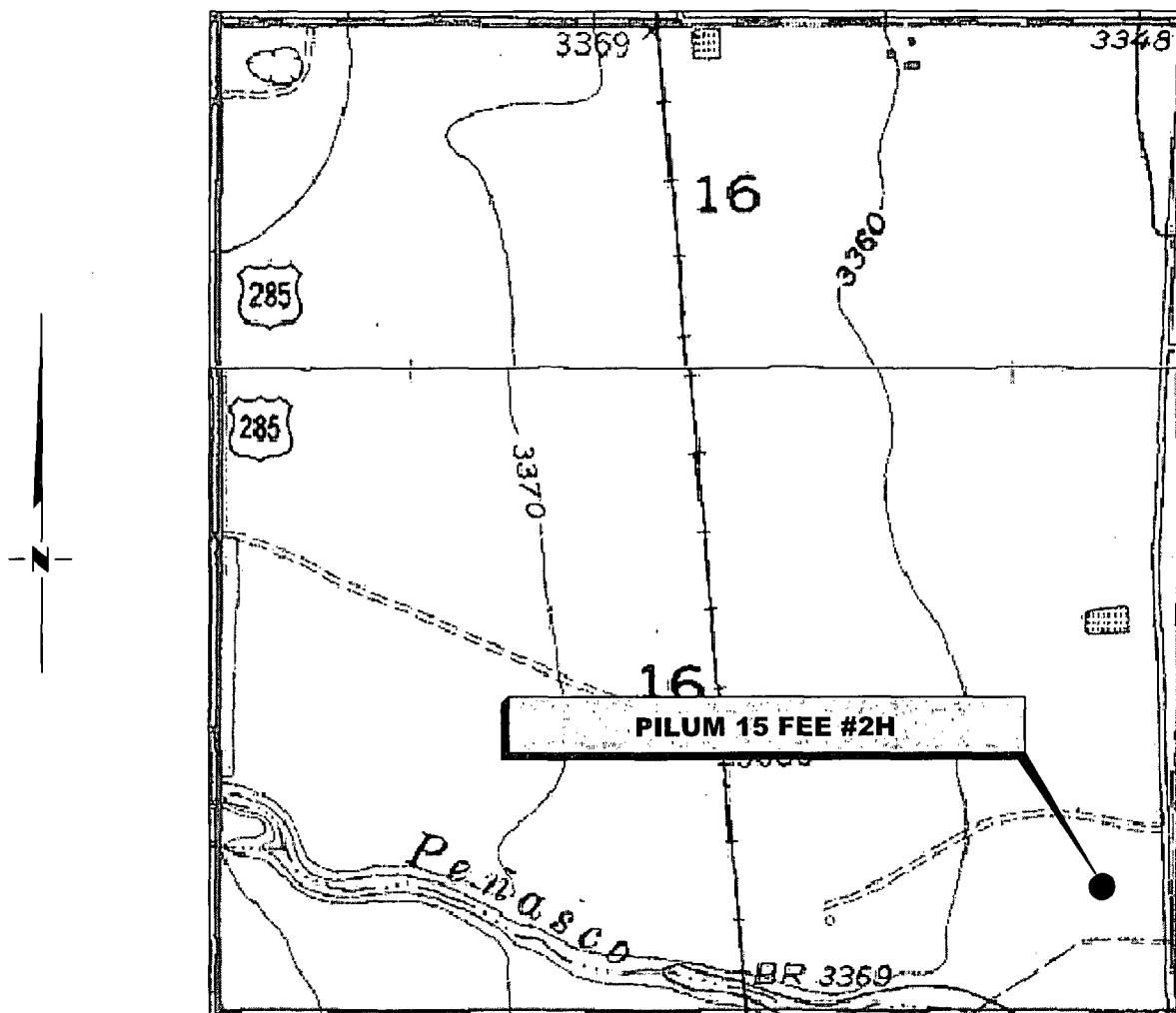
NO.	REVISION	DATE
JOB NO.: LS140320		
DWG. NO.: 140320VM		

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: N.T.S.
 DATE: 8-12-14
 SURVEYED BY: GB/IE
 DRAWN BY: ARJ
 APPROVED BY: RMH
 SHEET : 1 OF 1

LOCATION VERIFICATION MAP



SECTION 16, TWP. 18 SOUTH, RGE. 26 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: COG Operating, LLC
LEASE: Pilum 15 Fee
WELL NO.: 2H
ELEVATION: 3355'

LOCATION: 701' FSL & 450' FEL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Dayton, N. M. (1955)

Firm No.: TX 10193838 NM 4655451

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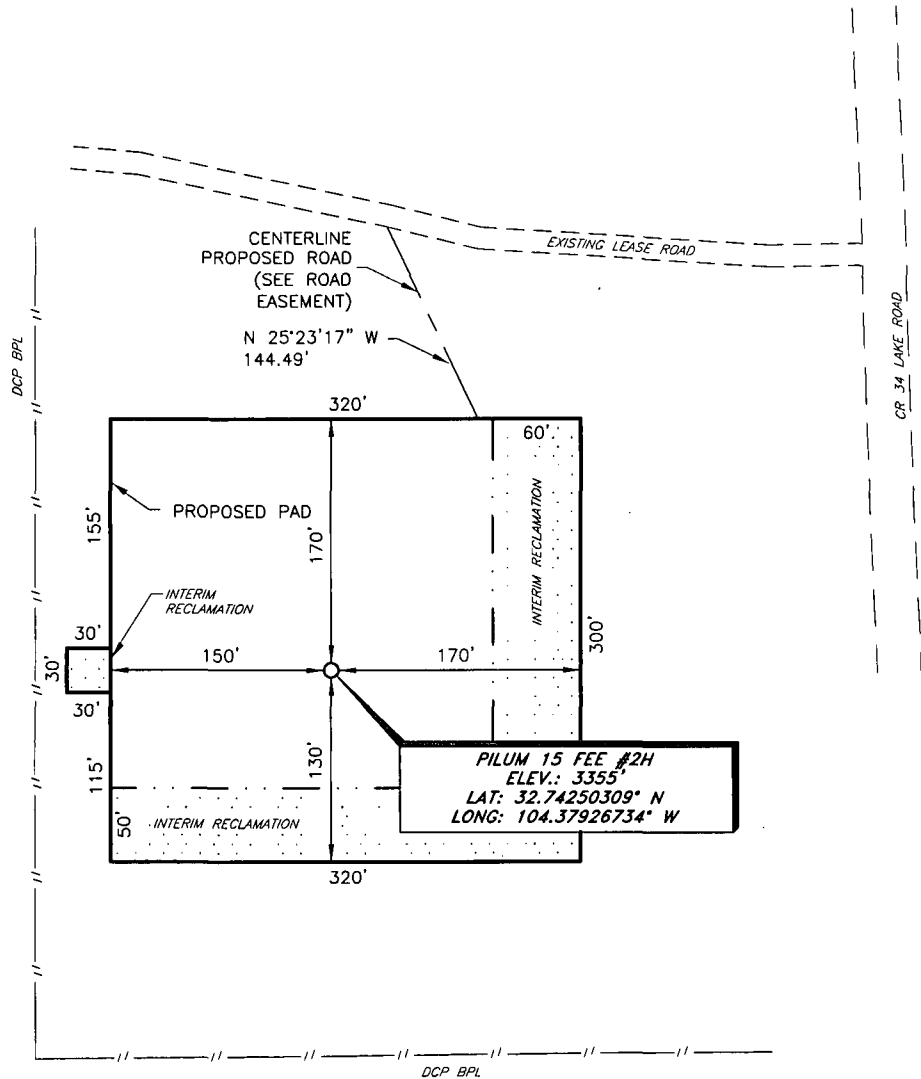
NO.	REVISION	DATE
JOB NO.:	LS140320	
DWG. NO.:	140320LVM	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 8-12-14
SURVEYED BY: GB/IE
DRAWN BY: ARJ
APPROVED BY: RMH
SHEET : 1 OF 1

COG OPERATING, LLC
 INTERIM RECLAMATION
 PILUM 15 FEE #2H
 (701' FSL & 450' FEL)
 SECTION 16, T18S, R26E,
 N. M. P. M., EDDY CO., NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-39 (Four Dinkus) and CR-34 (Lake Road);

Go Southwest on CR-34 (Lake Road) approx. 0.9 miles;

Location is approx. 372 feet West of CR-34 (Lake Road).

SCALE: 1" = 100'
 0 50 100
 BEARINGS ARE
 NAD 27 GRID - NM EAST
 DISTANCES ARE
 GROUND.

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.:	LS140320	
DWG. NO.:	140320REC	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 8-12-14
SURVEYED BY: GB/IE
DRAWN BY: ARJ
APPROVED BY: RMH
SHEET: 1 OF 1



COG Operating LLC

Eddy County, NM (NAD27 NME)

Pilum 15 Fee

#2H

WB1

Plan: Plan #2 08-25-14

Surface: 701' FSL, 450' FEL, Sec 16, T18S, R26E, Unit P

PP: 629' FSL, 330' FWL, Sec 15, T18S, R26E, Unit M

BHL: 330' FSL, 1648' FEL, Sec 15, T18S, R26E, Unit O

Standard Planning Report

25 August, 2014





Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #2H
Company:	COG Operating LLC	TVD Reference:	KB @ 3373.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3373.00usft (Silver Oak 3)
Site:	Pilum 15 Fee	North Reference:	Grid
Well:	#2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2 08-25-14		

Project:	Eddy County, NM (NAD27 NME)		
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:	Pilum 15 Fee		
Site Position:		Northing:	632,879.50 usft
From:	Map	Easting:	487,958.90 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Grid Convergence:	-0.02 °

Well:	#2H		
Well Position	+N/-S	957.10 usft	Latitude: 32° 44' 23.54811 N
	+E/-W	-2,082.30 usft	Longitude: 104° 22' 20.97828 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	3,355.00 usft

Wellbore:	WB1		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	08/22/14	7.61	60.45	48,521

Design:	Plan #2 08-25-14		
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Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	95.34

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,159.60	0.00	0.00	2,159.60	0.00	0.00	0.00	0.00	0.00	0.00	
2,982.33	90.50	95.34	2,680.45	-48.94	523.13	11.00	11.00	0.00	95.34	
6,546.63	90.50	95.34	2,649.35	-380.90	4,071.80	0.00	0.00	0.00	0.00	BHL-Pilum 15 Fee #2



Phoenix Technology Services

Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #2H
Company:	COG Operating LLC	TVD Reference:	KB @ 3373.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3373.00usft (Silver Oak 3)
Site:	Pilum 15 Fee	North Reference:	Grid
Well:	#2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2 08-25-14		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,159.60	0.00	0.00	2,159.60	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start 11°/100' Build									
2,200.00	4.44	95.34	2,199.96	-0.15	1.56	1.57	11.00	11.00	0.00
2,300.00	15.44	95.34	2,298.31	-1.75	18.73	18.81	11.00	11.00	0.00
2,400.00	26.44	95.34	2,391.56	-5.08	54.26	54.50	11.00	11.00	0.00
2,500.00	37.44	95.34	2,476.28	-10.00	106.86	107.32	11.00	11.00	0.00
2,600.00	48.44	95.34	2,549.37	-16.33	174.59	175.35	11.00	11.00	0.00
2,700.00	59.44	95.34	2,608.14	-23.85	254.95	256.07	11.00	11.00	0.00
2,800.00	70.44	95.34	2,650.43	-32.27	345.01	346.52	11.00	11.00	0.00
2,900.00	81.44	95.34	2,674.68	-41.30	441.45	443.37	11.00	11.00	0.00
2,975.94	89.80	95.34	2,680.47	-48.34	516.77	519.03	11.00	11.00	0.00
TL 2685' TVD @ 0 VZ, 90.5° Inc									
2,982.33	90.50	95.34	2,680.45	-48.94	523.13	525.42	11.00	11.00	0.00
LP Hold 90.5° Inc, 95.34° Azm									
3,000.00	90.50	95.34	2,680.30	-50.58	540.72	543.09	0.00	0.00	0.00
3,100.00	90.50	95.34	2,679.43	-59.90	640.29	643.08	0.00	0.00	0.00
3,200.00	90.50	95.34	2,678.55	-69.21	739.85	743.08	0.00	0.00	0.00
3,240.33	90.50	95.34	2,678.20	-72.97	780.00	783.41	0.00	0.00	0.00
PP-Pilum 15 Fee #2H									
3,300.00	90.50	95.34	2,677.68	-78.52	839.41	843.07	0.00	0.00	0.00
3,400.00	90.50	95.34	2,676.81	-87.84	938.97	943.07	0.00	0.00	0.00
3,500.00	90.50	95.34	2,675.94	-97.15	1,038.53	1,043.07	0.00	0.00	0.00
3,600.00	90.50	95.34	2,675.06	-106.46	1,138.09	1,143.06	0.00	0.00	0.00
3,700.00	90.50	95.34	2,674.19	-115.78	1,237.66	1,243.06	0.00	0.00	0.00
3,800.00	90.50	95.34	2,673.32	-125.09	1,337.22	1,343.05	0.00	0.00	0.00
3,900.00	90.50	95.34	2,672.45	-134.40	1,436.78	1,443.05	0.00	0.00	0.00
4,000.00	90.50	95.34	2,671.57	-143.72	1,536.34	1,543.05	0.00	0.00	0.00
4,100.00	90.50	95.34	2,670.70	-153.03	1,635.90	1,643.04	0.00	0.00	0.00
4,200.00	90.50	95.34	2,669.83	-162.35	1,735.46	1,743.04	0.00	0.00	0.00
4,300.00	90.50	95.34	2,668.96	-171.66	1,835.02	1,843.04	0.00	0.00	0.00
4,400.00	90.50	95.34	2,668.08	-180.97	1,934.59	1,943.03	0.00	0.00	0.00
4,500.00	90.50	95.34	2,667.21	-190.29	2,034.15	2,043.03	0.00	0.00	0.00
4,600.00	90.50	95.34	2,666.34	-199.60	2,133.71	2,143.02	0.00	0.00	0.00
4,700.00	90.50	95.34	2,665.46	-208.91	2,233.27	2,243.02	0.00	0.00	0.00
4,800.00	90.50	95.34	2,664.59	-218.23	2,332.83	2,343.02	0.00	0.00	0.00
4,900.00	90.50	95.34	2,663.72	-227.54	2,432.39	2,443.01	0.00	0.00	0.00
5,000.00	90.50	95.34	2,662.85	-236.85	2,531.95	2,543.01	0.00	0.00	0.00
5,100.00	90.50	95.34	2,661.97	-246.17	2,631.52	2,643.01	0.00	0.00	0.00
5,200.00	90.50	95.34	2,661.10	-255.48	2,731.08	2,743.00	0.00	0.00	0.00
5,300.00	90.50	95.34	2,660.23	-264.79	2,830.64	2,843.00	0.00	0.00	0.00
5,400.00	90.50	95.34	2,659.36	-274.11	2,930.20	2,942.99	0.00	0.00	0.00
5,500.00	90.50	95.34	2,658.48	-283.42	3,029.76	3,042.99	0.00	0.00	0.00
5,600.00	90.50	95.34	2,657.61	-292.74	3,129.32	3,142.99	0.00	0.00	0.00
5,700.00	90.50	95.34	2,656.74	-302.05	3,228.89	3,242.98	0.00	0.00	0.00
5,800.00	90.50	95.34	2,655.87	-311.36	3,328.45	3,342.98	0.00	0.00	0.00
5,900.00	90.50	95.34	2,654.99	-320.68	3,428.01	3,442.97	0.00	0.00	0.00
6,000.00	90.50	95.34	2,654.12	-329.99	3,527.57	3,542.97	0.00	0.00	0.00
6,100.00	90.50	95.34	2,653.25	-339.30	3,627.13	3,642.97	0.00	0.00	0.00
6,200.00	90.50	95.34	2,652.37	-348.62	3,726.69	3,742.96	0.00	0.00	0.00
6,300.00	90.50	95.34	2,651.50	-357.93	3,826.25	3,842.96	0.00	0.00	0.00
6,400.00	90.50	95.34	2,650.63	-367.24	3,925.82	3,942.96	0.00	0.00	0.00
6,500.00	90.50	95.34	2,649.76	-376.56	4,025.38	4,042.95	0.00	0.00	0.00
6,546.63	90.50	95.34	2,649.35	-380.90	4,071.80	4,089.58	0.00	0.00	0.00



Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #2H
Company:	COG Operating LLC	TVD Reference:	KB @ 3373.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3373.00usft (Silver Oak 3)
Site:	Pilum 15 Fee	North Reference:	Grid
Well:	#2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2 08-25-14		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD at 6546.63 - BHL-Pilum 15 Fee #2H									

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
BHL-Pilum 15 Fee #2H	- plan hits target center	0.00	360.00	2,649.35	-380.90	4,071.80	633,455.70	489,948.40	32° 44' 29.25661 N 104° 21' 57.68712 W
	- Point								
PP-Pilum 15 Fee #2H	- plan hits target center	0.00	360.00	2,678.20	-72.97	780.00	633,763.64	486,656.60	32° 44' 32.29209 N 104° 22' 36.22996 W
	- Point								

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,975.94	2,680.47	TL, 2685' TVD @ 0 VZ, 90.5° Inc		-0.50	95.34

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2,159.60	2,159.60	0.00	0.00	KOP, Start 11°/100' Build	
2,982.33	2,680.45	-48.94	523.13	LP, Hold 90.5° Inc, 95.34° Azm	
6,546.63	2,649.35	-380.90	4,071.80	TD at 6546.63	



Project: Eddy County, NM (NAD27 NME)
Site: Pilum 15 Fee
Well: #2H
Wellbore: WB1
Design: Plan #2 08-25-14
Rig: Silver Oak 3



Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well #2H, Grid North
Latitude: 32° 44' 33.01087 N
Longitude: 104° 22' 45.36288 W
Grid East: 485876.60
Grid North: 633836.60
Scale Factor: 1.000
Geomagnetic Model: IGRF2010_14
Sample Date: 22-Aug-14
Magnetic Declination: 7.61°
Dip Angle from Horizontal: 60.45°
Magnetic Field Strength: 48521

WELL DETAILS

+N/-S	+E/-W	Northing	Ground Level: Easting	3355.00	Latitude	Longitude
0.00	0.00	633836.60	485876.60	32° 44' 33.01087 N	104° 22' 45.36288 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	2159.60	0.00	0.00	2159.60	0.00	0.00	0.00	0.00	0.00		KOP, Start 111'/100' Build
3	2982.33	90.50	95.34	2680.45	-48.94	523.13	11.00	95.34	525.42		LP, Hold 90.5° Inc, 95.34° Azm
4	6546.63	90.50	95.34	2649.35	-380.90	4071.80	0.00	0.00	4089.58	BHL-Pilum 15 Fee #2H	TD at 6546.63

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BHL-Pilum 15 Fee #2H	2648.35	-380.90	4071.80	633455.70	489948.40	32° 44' 29.25661 N	104° 21' 57.68712 W	Point
PP-Pilum 15 Fee #2H	2678.20	-72.97	780.00	633763.63	486056.60	32° 44' 32.29209 N	104° 22' 36.22996 W	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
2880.47	2975.94	TL 2685' TVD @ 0 VZ 90.5° Inc	-0.50	95.34

LEGEND

Plan #2 08-25-14

