

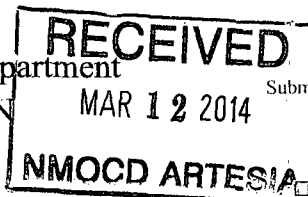
DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

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, New Mexico 87505



Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015- 42152	Pool Code 3250	Pool Name Atoka; Glorieta Yeso
Property Code 38909	Property Name SHERMAN 4 FEE	Well Number 10H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3374'

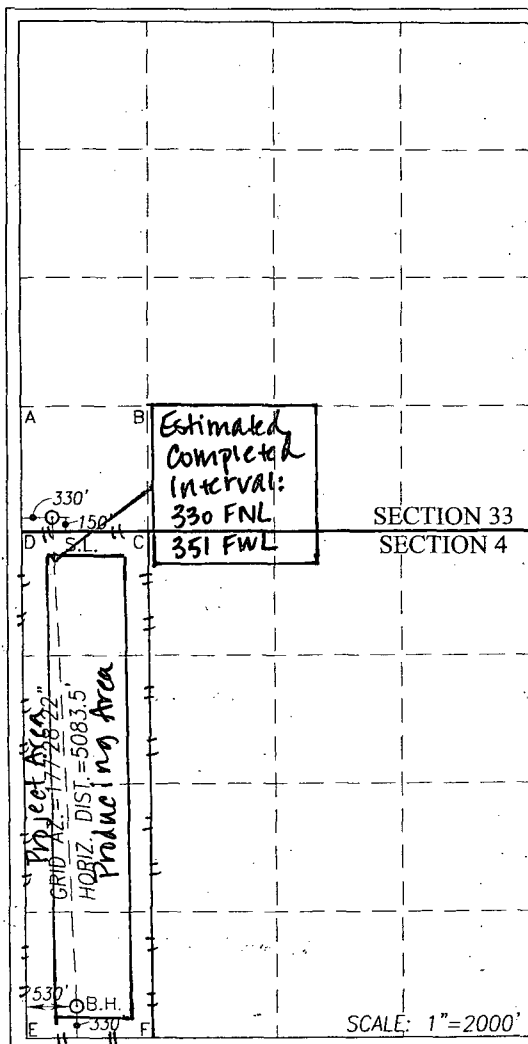
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	33	18-S	26-E		150	SOUTH	330	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	19-S	26-E		330	SOUTH	530	WEST	EDDY
Dedicated Acres 160		Joint or Infill		Consolidation Code		Order No.			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=617385.0 N
X=481303.3 E

LAT.=32.697275° N
LONG.=104.394111° W

BOTTOM HOLE LOCATION
Y=612307.8 N
X=481527.4 E

CORNER COORDINATES TABLE

A - Y=618565.9 N, X=480971.3 E
B - Y=618570.6 N, X=482293.3 E
C - Y=617241.1 N, X=482293.4 E
D - Y=617232.9 N, X=480973.6 E
E - Y=611974.5 N, X=480999.1 E
F - Y=611983.0 N, X=482312.6 E

OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date **3-11-14**

Printed Name **Kelly J. Holly**

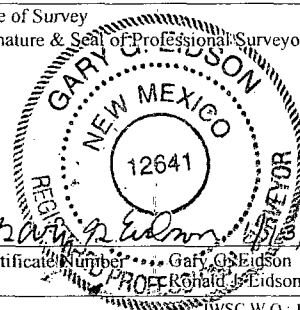
E-mail Address **kholly@concho.com**

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.

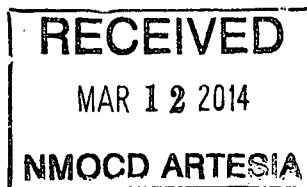
DECEMBER 17, 2013

Date of Survey
Signature & Seal of Professional Surveyor:



Certificate Number **12641**
Surveyor **Gary C. Eidson**

BKL JWSC W.O. 13.11.1431



COG Operating LLC

Eddy County, NM (NAD 27 NME)

Sherman 4 Fee

#10H

WB1

Plan: Plan #1 02-26-14

Surface: 150' FSL, 330' FWL, Sec 33, T18S, R26E, Unit M

PP: 330' FNL, 351' FWL, Sec 4, T19S, R26E, Unit D

BHL: 330' FSL, 530' FWL, Sec 4, T19S, R26E, Unit M

Standard Planning Report

26 February, 2014





Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well: #10H
Company:	GOG Operating, LLC	TVD Reference:	GL @ 3374.00usft
Project:	Eddy County, NM (NAD 27 NME)	MD Reference:	GL @ 3374.00usft
Site:	Sherman 4 Fee	North Reference:	Grid
Well:	#10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 02-26-14		

Project	Eddy County, NM (NAD 27 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	Sherman 4 Fee		
Site Position:		Northing:	612,151.80 usft
From:	Map	Easting:	485,212.40 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Grid Convergence:	-0.03 °

Well	#10H		
Well Position	+N/-S	5,233.20 usft	Latitude: 32° 40' 58.42381 N
	+E/-W	-3,909.10 usft	Longitude: 104° 22' 53.02452 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level: 3,374.00 usft

Wellbore	WB1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010_14	02/26/14	7.67
			Dip Angle (°)
			60.42
			Field Strength (nT)
			48,540

Design	Plan #1 02-26-14		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction (°)
			177.47

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	
2,564.13	0.00	0.00	2,564.13	0.00	0.00	0.00	0.00	0.00	0.00	
3,382.31	90.00	177.47	3,085.00	-520.36	22.97	11.00	11.00	0.00	177.47	
7,943.58	90.00	177.47	3,085.00	-5,077.20	224.10	0.00	0.00	0.00	0.00	PBHL-Sherman 4 Fee



Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #10H
Company:	COG Operating LLC	TVD Reference:	GL @ 3374.00usft
Project:	Eddy County, NM (NAD 27 NME)	MD Reference:	GL @ 3374.00usft
Site:	Sherman 4 Fee	North Reference:	Grid
Well:	#10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 02-26-14		

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
2,564.13	0.00	0.00	2,564.13	0.00	0.00	0.00	0.00	0.00	0.00
KOP: 11°/100' Build									
2,600.00	3.95	177.47	2,599.97	-1.23	0.05	1.23	11.00	11.00	0.00
2,700.00	14.95	177.47	2,698.46	-17.60	0.78	17.62	11.00	11.00	0.00
2,800.00	25.95	177.47	2,792.02	-52.45	2.31	52.50	11.00	11.00	0.00
2,900.00	36.95	177.47	2,877.20	-104.49	4.61	104.59	11.00	11.00	0.00
3,000.00	47.95	177.47	2,950.88	-171.81	7.58	171.97	11.00	11.00	0.00
3,100.00	58.95	177.47	3,010.35	-251.93	11.12	252.18	11.00	11.00	0.00
3,200.00	69.95	177.47	3,053.42	-341.93	15.09	342.26	11.00	11.00	0.00
3,300.00	80.95	177.47	3,078.51	-438.47	19.35	438.90	11.00	11.00	0.00
3,341.87	85.55	177.47	3,083.43	-480.00	21.19	480.47	11.00	11.00	0.00
PP, Sherman 4 Fee #10H									
3,382.31	90.00	177.47	3,085.00	-520.36	22.97	520.87	11.00	11.00	0.00
LP, Hold, 90° Inc, 177.47° Azm, TL, 3085' TVD @ 0 VZ, 90° Inc									
3,400.00	90.00	177.47	3,085.00	-538.04	23.75	538.56	0.00	0.00	0.00
3,500.00	90.00	177.47	3,085.00	-637.94	28.16	638.56	0.00	0.00	0.00
3,600.00	90.00	177.47	3,085.00	-737.84	32.57	738.56	0.00	0.00	0.00
3,700.00	90.00	177.47	3,085.00	-837.74	36.98	838.56	0.00	0.00	0.00
3,800.00	90.00	177.47	3,085.00	-937.65	41.39	938.56	0.00	0.00	0.00
3,900.00	90.00	177.47	3,085.00	-1,037.55	45.80	1,038.56	0.00	0.00	0.00
4,000.00	90.00	177.47	3,085.00	-1,137.45	50.21	1,138.56	0.00	0.00	0.00
4,100.00	90.00	177.47	3,085.00	-1,237.35	54.61	1,238.56	0.00	0.00	0.00
4,200.00	90.00	177.47	3,085.00	-1,337.26	59.02	1,338.56	0.00	0.00	0.00
4,300.00	90.00	177.47	3,085.00	-1,437.16	63.43	1,438.56	0.00	0.00	0.00
4,400.00	90.00	177.47	3,085.00	-1,537.06	67.84	1,538.56	0.00	0.00	0.00
4,500.00	90.00	177.47	3,085.00	-1,636.97	72.25	1,638.56	0.00	0.00	0.00
4,600.00	90.00	177.47	3,085.00	-1,736.87	76.66	1,738.56	0.00	0.00	0.00
4,700.00	90.00	177.47	3,085.00	-1,836.77	81.07	1,838.56	0.00	0.00	0.00
4,800.00	90.00	177.47	3,085.00	-1,936.67	85.48	1,938.56	0.00	0.00	0.00
4,900.00	90.00	177.47	3,085.00	-2,036.58	89.89	2,038.56	0.00	0.00	0.00
5,000.00	90.00	177.47	3,085.00	-2,136.48	94.30	2,138.56	0.00	0.00	0.00
5,100.00	90.00	177.47	3,085.00	-2,236.38	98.71	2,238.56	0.00	0.00	0.00
5,200.00	90.00	177.47	3,085.00	-2,336.29	103.12	2,338.56	0.00	0.00	0.00
5,300.00	90.00	177.47	3,085.00	-2,436.19	107.53	2,438.56	0.00	0.00	0.00
5,400.00	90.00	177.47	3,085.00	-2,536.09	111.94	2,538.56	0.00	0.00	0.00
5,500.00	90.00	177.47	3,085.00	-2,635.99	116.35	2,638.56	0.00	0.00	0.00
5,600.00	90.00	177.47	3,085.00	-2,735.90	120.76	2,738.56	0.00	0.00	0.00
5,700.00	90.00	177.47	3,085.00	-2,835.80	125.17	2,838.56	0.00	0.00	0.00
5,800.00	90.00	177.47	3,085.00	-2,935.70	129.58	2,938.56	0.00	0.00	0.00
5,900.00	90.00	177.47	3,085.00	-3,035.60	133.99	3,038.56	0.00	0.00	0.00
6,000.00	90.00	177.47	3,085.00	-3,135.51	138.40	3,138.56	0.00	0.00	0.00
6,100.00	90.00	177.47	3,085.00	-3,235.41	142.81	3,238.56	0.00	0.00	0.00
6,200.00	90.00	177.47	3,085.00	-3,335.31	147.22	3,338.56	0.00	0.00	0.00
6,300.00	90.00	177.47	3,085.00	-3,435.22	151.63	3,438.56	0.00	0.00	0.00
6,400.00	90.00	177.47	3,085.00	-3,535.12	156.03	3,538.56	0.00	0.00	0.00
6,500.00	90.00	177.47	3,085.00	-3,635.02	160.44	3,638.56	0.00	0.00	0.00
6,600.00	90.00	177.47	3,085.00	-3,734.92	164.85	3,738.56	0.00	0.00	0.00
6,700.00	90.00	177.47	3,085.00	-3,834.83	169.26	3,838.56	0.00	0.00	0.00
6,800.00	90.00	177.47	3,085.00	-3,934.73	173.67	3,938.56	0.00	0.00	0.00
6,900.00	90.00	177.47	3,085.00	-4,034.63	178.08	4,038.56	0.00	0.00	0.00
7,000.00	90.00	177.47	3,085.00	-4,134.53	182.49	4,138.56	0.00	0.00	0.00
7,100.00	90.00	177.47	3,085.00	-4,234.44	186.90	4,238.56	0.00	0.00	0.00



Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #10H
Company:	COG Operating LLC	TVD Reference:	GL @ 3374.00usft
Project:	Eddy County, NM (NAD.27 NME)	MD Reference:	GL @ 3374.00usft
Site:	Sherman 4 Fee	North Reference:	Grid
Well:	#10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 02-26-14		

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)	
7,200.00	90.00	177.47	3,085.00	-4,334.34	191.31	4,338.56	0.00	0.00	0.00	
7,300.00	90.00	177.47	3,085.00	-4,434.24	195.72	4,438.56	0.00	0.00	0.00	
7,400.00	90.00	177.47	3,085.00	-4,534.15	200.13	4,538.56	0.00	0.00	0.00	
7,500.00	90.00	177.47	3,085.00	-4,634.05	204.54	4,638.56	0.00	0.00	0.00	
7,600.00	90.00	177.47	3,085.00	-4,733.95	208.95	4,738.56	0.00	0.00	0.00	
7,700.00	90.00	177.47	3,085.00	-4,833.85	213.36	4,838.56	0.00	0.00	0.00	
7,800.00	90.00	177.47	3,085.00	-4,933.76	217.77	4,938.56	0.00	0.00	0.00	
7,900.00	90.00	177.47	3,085.00	-5,033.66	222.18	5,038.56	0.00	0.00	0.00	
7,943.58	90.00	177.47	3,085.00	-5,077.20	224.10	5,082.14	0.00	0.00	0.00	
TD at 7943.58 PBHL-Sherman 4 Fee #10H										

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
PP-Sherman 4 Fee #10H	- plan hits target center	0.00	360.00	3,083.43	-480.00	21.19	616,905.00	481,324.49	32° 41' 45.44003 N	104° 23' 38.54744 W
	- Point									
PBHL-Sherman 4 Fee #	- plan hits target center	0.00	360.00	3,085.00	-5,077.20	224.10	612,307.80	481,527.40	32° 40' 59.94895 N	104° 23' 36.14243 W
	- Point									

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,382.31	3,085.00	TL, 3085' TVD @ 0 VZ, 90° Inc		0.00	177.47

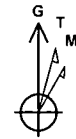
Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2,564.13	2,564.13	0.00	0.00	KOP, 11°/100' Build	
3,382.31	3,085.00	-520.36	22.97	LP, Hold 90° Inc, 177.47° Azm	
7,943.58	3,085.00	-5,077.20	224.10	TD at 7943.58	



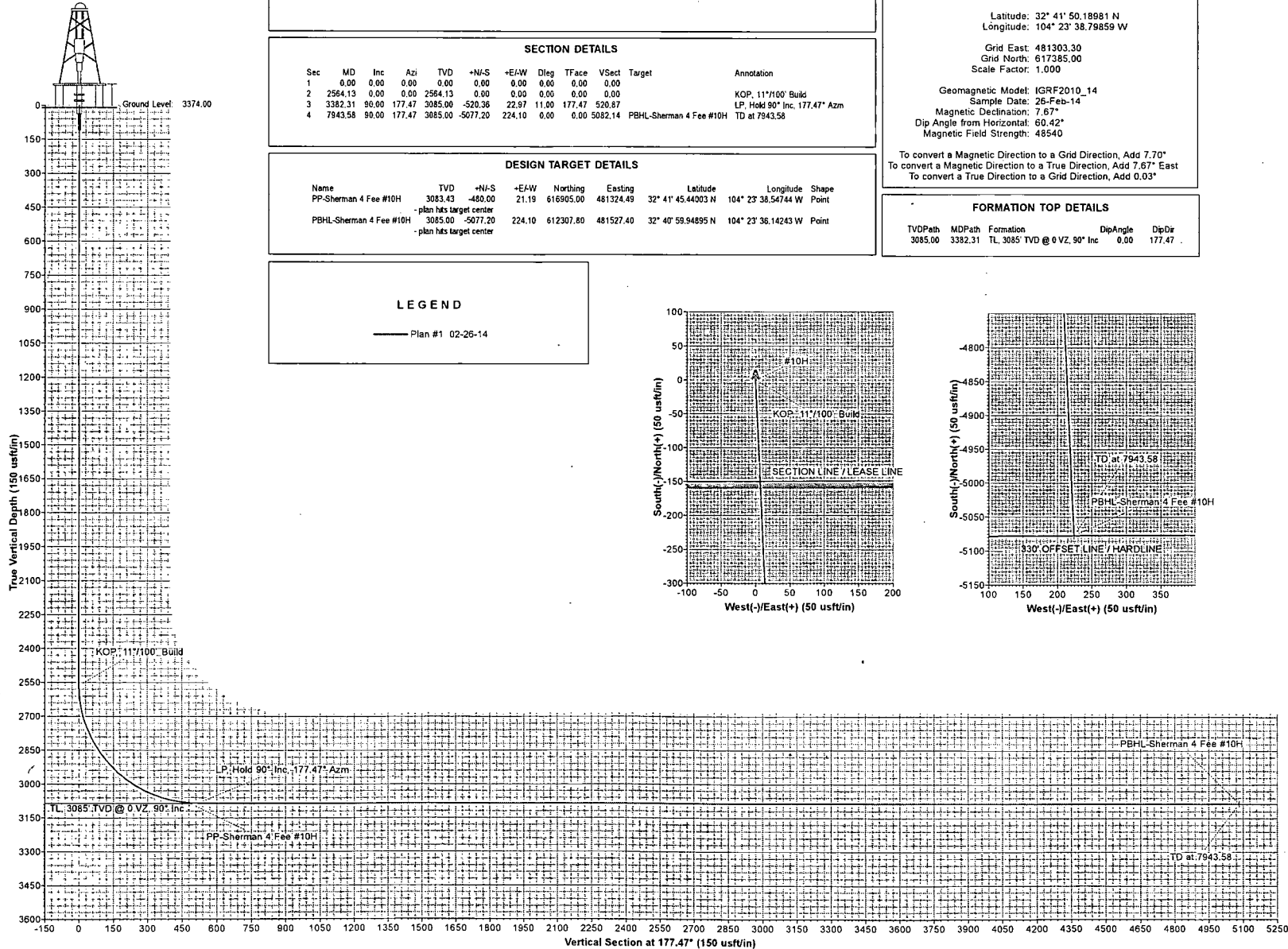
Project: Eddy County, NM (NAD 27 NME)
Site: Sherman 4 Fee
Well: #10H
Wellbore: WB1
Design: Plan #1 02-26-14



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: 0.03°
Magnetic North: 7.70°
Magnetic Field
Strength: 48540.3nT
Dip Angle: 60.42°
Date: 02/26/2014
Model: IGRF2010_14



WELL DETAILS

+N/S	+E/W	Northing	Ground Level	3374.00	Latitude	Longitude
0.00	0.00	617385.00	Easting	481303.30	32° 41' 50.18981 N	104° 23' 38.79859 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	Vsect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		KOP, 11°/100' Build
2	2564.13	0.00	0.00	2564.13	0.00	0.00	0.00	0.00	0.00		LP, Hold 90° Inc. 177.47° Azm
3	3382.31	90.00	177.47	3085.00	-520.36	22.97	11.00	177.47	520.87		PBHL-Sherman 4 Fee #10H
4	7943.58	90.00	177.47	3085.00	-5077.20	224.10	0.00	0.00	5082.14		TD at 7943.58

DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	Shape
PP-Sherman 4 Fee #10H	3083.43	-480.00	21.19	616905.00	481324.49	32° 41' 45.44003 N	104° 23' 38.54744 W	Point
- plan hits target center								
PBHL-Sherman 4 Fee #10H	3085.00	-5077.20	224.10	612307.80	481527.40	32° 40' 59.94895 N	104° 23' 36.14243 W	Point
- plan hits target center								

LEGEND

— Plan #1 02-26-14

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 #10H, Grid North
Latitude: 32° 41' 50.18981 N
Longitude: 104° 23' 38.79859 W
Grid East: 481303.30
Grid North: 617385.00
Scale Factor: 1.000
Geomagnetic Model: IGRF2010_14
Sample Date: 26-Feb-14
Magnetic Declination: 7.67°
Dip Angle from Horizontal: 60.42°
Magnetic Field Strength: 48540
To convert a Magnetic Direction to a Grid Direction, Add 7.70°
To convert a Magnetic Direction to a True Direction, Add 7.67° East
To convert a True Direction to a Grid Direction, Add 0.03°

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3085.00	3382.31	TL, 3085 TVD @ 0 VZ, 90° Inc	0.00	177.47

