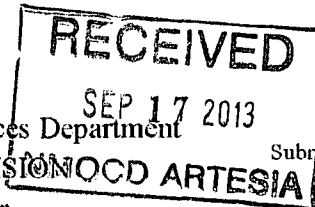


District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis 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



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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015- 41669	² Pool Code 96718✓	³ Pool Name Loco Hills; Glorieta Yeso
⁴ Property Code <40132>	⁵ Property Name JUNIPER HARPER STATE COM	⁶ Well Number 4H
⁷ OGRID No. 229137	⁸ Operator Name COG OPERATING, LLC	⁹ Elevation 3677'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	16	17-S	30-E		783	SOUTH	155	EAST	EDDY

¹¹ 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	16	17-S	30-E		660	SOUTH	330	WEST	EDDY

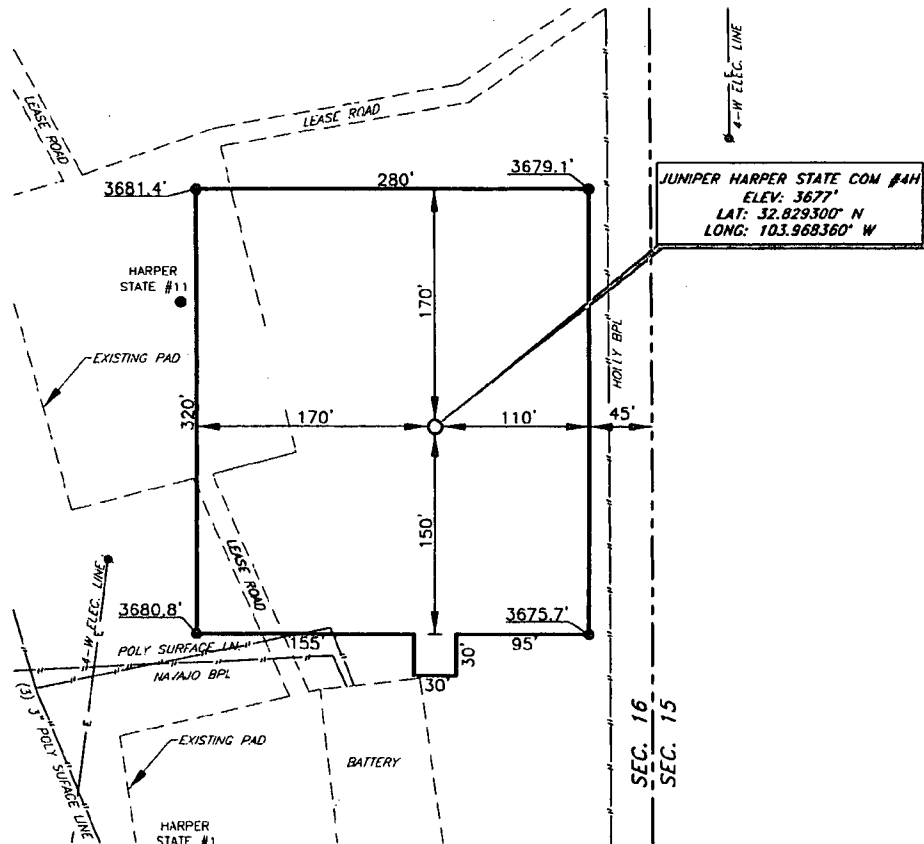
¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
--------------------------------------	-------------------------------	----------------------------------	-------------------------

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.

CORNER DATA NAD 27 GRID - NM EAST A: FND BRASS CAP 1916 N 664812.6 - E 606985.4 B: FND BRASS CAP 1916 N 667453.2 - E 606975.6 C: FND BRASS CAP 1916 N 670092.7 - E 606967.2 D: FND BRASS CAP 1916 N 670097.0 - E 606960.0 E: FND BRASS CAP 1916 N 670102.3 - E 612250.5 F: FND BRASS CAP 1916 N 667461.9 - E 612259.6 G: FND BRASS CAP 1916 N 664822.3 - E 612268.5 H: FND BRASS CAP 1916 N 664818.5 - E 609582.4 GEODETIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 665604.8 E 612110.8 BOTTOM LOCATION N 665473.2 E 607312.9 Project Area S 88°25'41" W (GRID) 4801.01' (HORIZ.) Producing Area Estimated Completed Interval: 778 FSL 330 FEL	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 undivided 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 previously entered by the division. <i>[Signature]</i> 9-12-13 Signature Date Kelly J. Holly Printed Name kholly@concho.com E-mail Address 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. 3/13/13 Date of Survey <i>[Signature]</i> Signature and Seal of Professional Surveyor 19680 Certificate Number ROBERT M. HOWETT NEW MEXICO 19680 PROFESSIONAL SURVEYOR
--	--

COG OPERATING, LLC

JUNIPER HARPER STATE COM #4H
(783' FSL & 155' FEL)
Section 16, T-17-S, R-30-E,
N. M. P. M., Eddy Co., New Mexico



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82 AND
CR-219 (GOAT ROPERS):

GO NORTH CR-219 APPROX. 0.8 MILE.

TURN RIGHT ON LEASE ROAD AND GO NORTHEAST
APPROX. 0.5 MILE.

TURN RIGHT AND GO SOUTHEAST APPROX. 0.2 MILE
TO THE HARPER STATE #11.

THE LOCATION IS APPROX. 200 FEET SOUTHEAST OF
THE EXISTING COG WELL.



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NO.	REVISION	DATE
JOB NO.:	LS130088	
DWG. NO.:	130088	

PROSPERITY CONSULTANTS, LLC

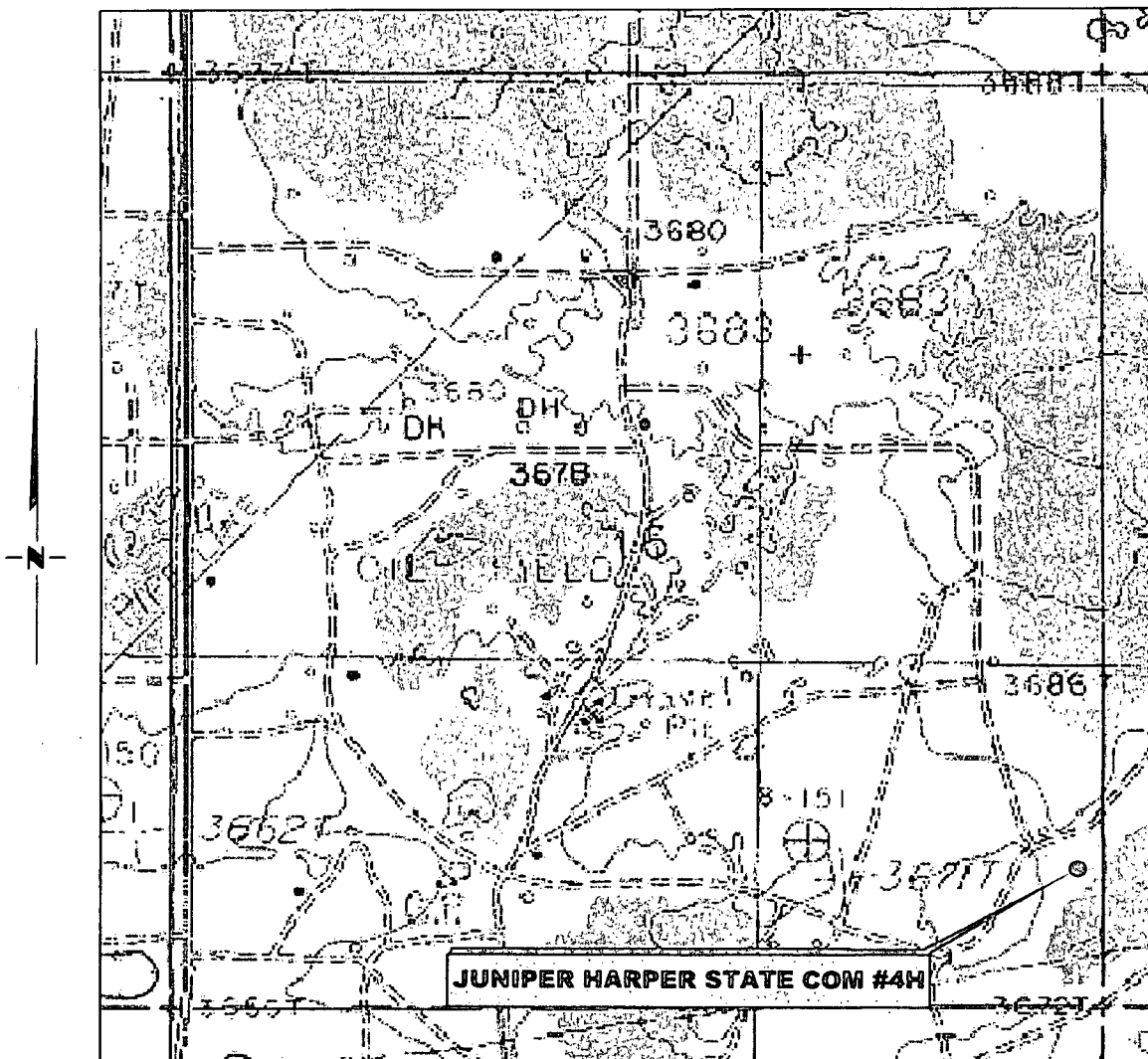


2751 Double Creek Drive, Suite 602, Round Rock, Texas 78664

(512) 992-2087 / (512) 251-2518

SCALE: 1" = 100'
DATE: 3/13/13
SURVEYED BY: GB
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

LOCATION VERIFICATION MAP



SECTION 16, TWP. 17 SOUTH, RGE. 30 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: COG Operating, LLC
LEASE: JUNIPER HARPER STATE COM
WELL NO.: 4H
ELEVATION: 3677'

LOCATION: 783' FSL & 155' FEL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
LOCO HILLS, NM (Prov. Ed. 1985)

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NO.	REVISION	DATE
JOB NO.:	LS130088	
DWG. NO.:	130088	

PROSPERITY CONSULTANTS, LLC



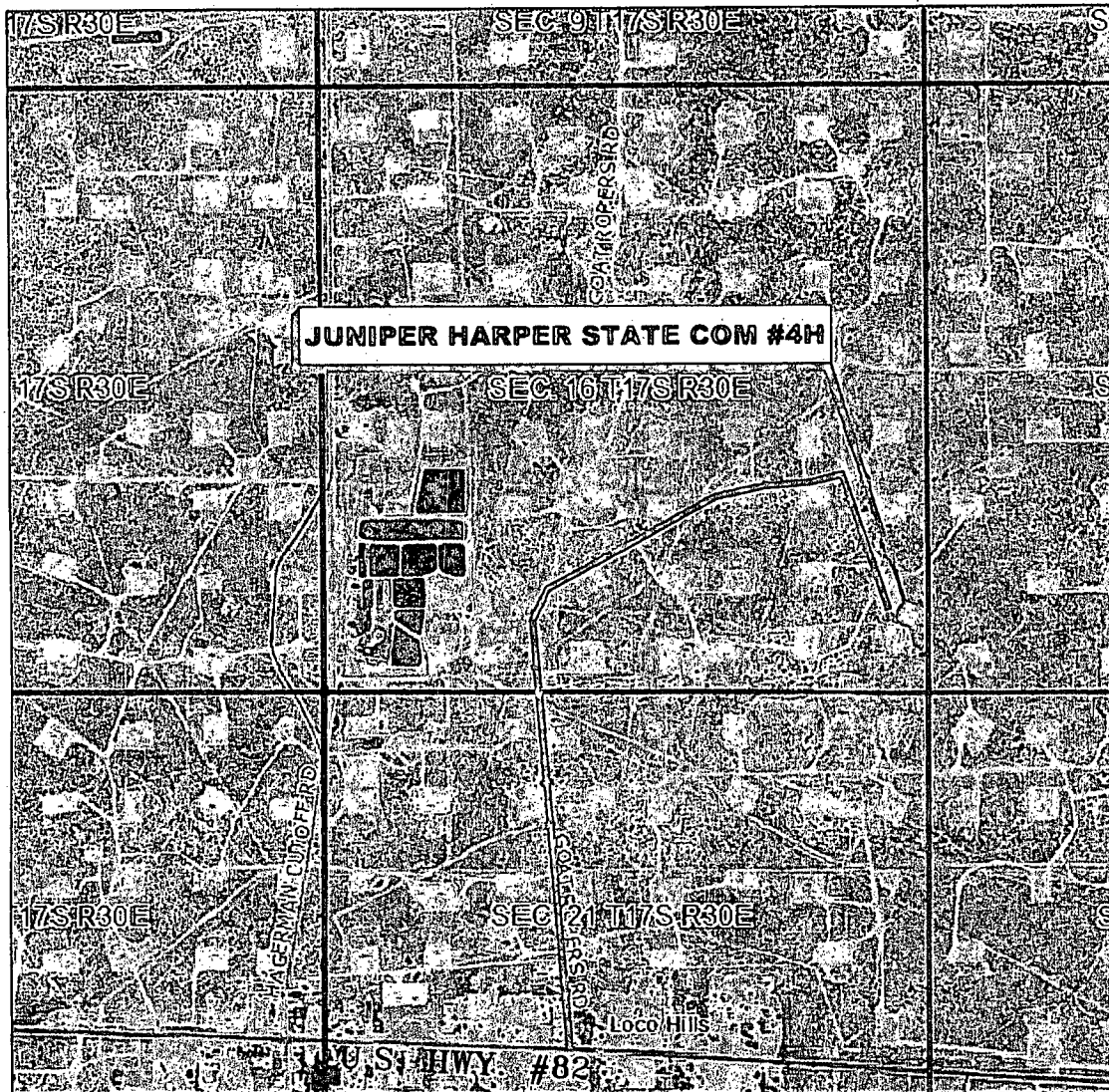
2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE: 1" = 1000'
DATE: 3/13/13
SURVEYED BY: GB
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

VICINITY MAP

NOT TO SCALE



*SECTION 16, TWP. 17 SOUTH, RGE. 30 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: COG Operating, LLC
LEASE: JUNIPER HARPER STATE COM
WELL NO.: 4H

LOCATION: 783' FSL & 155' FEL
ELEVATION: 3677'

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NO.	REVISION	DATE
JOB NO.:	LS130088	
DWG. NO.:	130088	

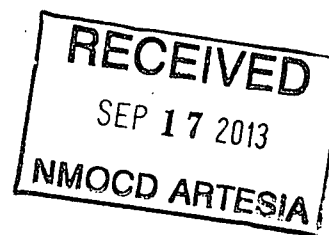
PROSPERITY CONSULTANTS, LLC



2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE: 1" = 1000'
DATE: 3/13/13
SURVEYED BY: GB
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1



COG Operating LLC

Eddy County, New Mexico (NAD 27 NME)

Juniper Harper State Com

#4H

WB1

Plan: Plan #2 09-03-13

Surface: 783' FSL, 155' FEL, Sec 16, T17S, R30E, Unit P

PP: 778' FSL, 330' FEL, Sec 16, T17S, R30E, Unit P

BHL: 660' FSL, 330' FWL, Sec 16, T17S, R30E, Unit M

Standard Planning Report

03 September, 2013





Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	GL @ 3677.00usft
Project:	Eddy County, New Mexico (NAD 27 NME)	MD Reference:	GL @ 3677.00usft
Site:	Juniper Harper State Com	North Reference:	Gnd
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2, 09-03-13		

Project	Eddy County, New Mexico (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	Juniper Harper State Com		
Site Position:		Northing:	665,604.80 usft
From:	Map	Easting:	612,110.80 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 49' 45.48741 N
		Longitude:	103° 58' 6.08651 W
		Grid Convergence:	0.20 °

Well	#4H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level:
			3,677.00 usft

Wellbore	WB1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	09/03/13	7.54
			Dip Angle
			(°)
			60.62
			Field Strength
			(nT)
			48,713

Design	Plan #2, 09-03-13		
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
			(°)
			261.66

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(%/100usft)	(%/100usft)	(%/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,179.21	0.00	0.00	5,179.21	0.00	0.00	0.00	0.00	0.00	0.00	
6,006.48	91.00	268.43	5,700.00	-14.53	-529.76	11.00	11.00	0.00	268.43	
10,276.87	91.00	268.43	5,625.47	-131.60	-4,797.90	0.00	0.00	0.00	0.00	PBHL-Juniper Harper



Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	GL @ 3677.00usft
Project:	Eddy County, New Mexico (NAD 27-NME)	MD Reference:	GL @ 3677.00usft
Site:	Juniper Harper State Com	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2 09-03-13		

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
5,179.21	0.00	0.00	5,179.21	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 11.00									
5,200.00	2.29	268.43	5,199.99	-0.01	-0.41	0.41	11.00	11.00	0.00
5,300.00	13.29	268.43	5,298.92	-0.38	-13.94	13.85	11.00	11.00	0.00
5,400.00	24.29	268.43	5,393.45	-1.26	-46.08	45.78	11.00	11.00	0.00
5,500.00	35.29	268.43	5,480.10	-2.62	-95.67	95.03	11.00	11.00	0.00
5,600.00	46.29	268.43	5,555.70	-4.41	-160.87	159.80	11.00	11.00	0.00
5,619.20	48.40	268.43	5,568.71	-4.80	-174.98	173.82	11.00	11.00	0.00
PP-Juniper Harper #4H									
5,700.00	57.29	268.43	5,617.46	-6.56	-239.29	237.71	11.00	11.00	0.00
5,800.00	68.29	268.43	5,663.12	-9.00	-328.05	325.88	11.00	11.00	0.00
5,900.00	79.29	268.43	5,691.00	-11.63	-423.89	421.09	11.00	11.00	0.00
5,990.47	89.24	268.43	5,700.03	-14.09	-513.75	510.36	11.00	11.00	0.00
TL 5709.9' TVD @ 0 VZ, 91.0° Inc									
6,000.00	90.29	268.43	5,700.07	-14.35	-523.28	519.83	11.00	11.00	0.00
6,006.48	91.00	268.43	5,700.00	-14.53	-529.76	526.26	11.00	11.00	0.00
LP Start 4270.39 hold at 6006.48 MD									
6,100.00	91.00	268.43	5,698.37	-17.09	-623.23	619.12	0.00	0.00	0.00
6,200.00	91.00	268.43	5,696.62	-19.84	-723.18	718.40	0.00	0.00	0.00
6,300.00	91.00	268.43	5,694.88	-22.58	-823.13	817.69	0.00	0.00	0.00
6,400.00	91.00	268.43	5,693.13	-25.32	-923.07	916.98	0.00	0.00	0.00
6,500.00	91.00	268.43	5,691.39	-28.06	-1,023.02	1,016.26	0.00	0.00	0.00
6,600.00	91.00	268.43	5,689.64	-30.80	-1,122.97	1,115.55	0.00	0.00	0.00
6,700.00	91.00	268.43	5,687.90	-33.54	-1,222.92	1,214.84	0.00	0.00	0.00
6,800.00	91.00	268.43	5,686.15	-36.28	-1,322.86	1,314.13	0.00	0.00	0.00
6,900.00	91.00	268.43	5,684.40	-39.03	-1,422.81	1,413.41	0.00	0.00	0.00
7,000.00	91.00	268.43	5,682.66	-41.77	-1,522.76	1,512.70	0.00	0.00	0.00
7,100.00	91.00	268.43	5,680.91	-44.51	-1,622.70	1,611.99	0.00	0.00	0.00
7,200.00	91.00	268.43	5,679.17	-47.25	-1,722.65	1,711.27	0.00	0.00	0.00
7,300.00	91.00	268.43	5,677.42	-49.99	-1,822.60	1,810.56	0.00	0.00	0.00
7,400.00	91.00	268.43	5,675.68	-52.73	-1,922.55	1,909.85	0.00	0.00	0.00
7,500.00	91.00	268.43	5,673.93	-55.47	-2,022.49	2,009.14	0.00	0.00	0.00
7,600.00	91.00	268.43	5,672.19	-58.22	-2,122.44	2,108.42	0.00	0.00	0.00
7,700.00	91.00	268.43	5,670.44	-60.96	-2,222.39	2,207.71	0.00	0.00	0.00
7,800.00	91.00	268.43	5,668.70	-63.70	-2,322.33	2,307.00	0.00	0.00	0.00
7,900.00	91.00	268.43	5,666.95	-66.44	-2,422.28	2,406.28	0.00	0.00	0.00
8,000.00	91.00	268.43	5,665.21	-69.18	-2,522.23	2,505.57	0.00	0.00	0.00
8,100.00	91.00	268.43	5,663.46	-71.92	-2,622.18	2,604.86	0.00	0.00	0.00
8,200.00	91.00	268.43	5,661.72	-74.66	-2,722.12	2,704.14	0.00	0.00	0.00
8,300.00	91.00	268.43	5,659.97	-77.41	-2,822.07	2,803.43	0.00	0.00	0.00
8,400.00	91.00	268.43	5,658.23	-80.15	-2,922.02	2,902.72	0.00	0.00	0.00
8,500.00	91.00	268.43	5,656.48	-82.89	-3,021.96	3,002.01	0.00	0.00	0.00
8,600.00	91.00	268.43	5,654.74	-85.63	-3,121.91	3,101.29	0.00	0.00	0.00
8,700.00	91.00	268.43	5,652.99	-88.37	-3,221.86	3,200.58	0.00	0.00	0.00
8,800.00	91.00	268.43	5,651.25	-91.11	-3,321.81	3,299.87	0.00	0.00	0.00
8,900.00	91.00	268.43	5,649.50	-93.85	-3,421.75	3,399.15	0.00	0.00	0.00
9,000.00	91.00	268.43	5,647.75	-96.60	-3,521.70	3,498.44	0.00	0.00	0.00
9,100.00	91.00	268.43	5,646.01	-99.34	-3,621.65	3,597.73	0.00	0.00	0.00
9,200.00	91.00	268.43	5,644.26	-102.08	-3,721.60	3,697.02	0.00	0.00	0.00
9,300.00	91.00	268.43	5,642.52	-104.82	-3,821.54	3,796.30	0.00	0.00	0.00
9,400.00	91.00	268.43	5,640.77	-107.56	-3,921.49	3,895.59	0.00	0.00	0.00
9,500.00	91.00	268.43	5,639.03	-110.30	-4,021.44	3,994.88	0.00	0.00	0.00
9,600.00	91.00	268.43	5,637.28	-113.04	-4,121.38	4,094.16	0.00	0.00	0.00



Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	GL @ 3677.00usft
Project:	Eddy County, New Mexico (NAD 27 NME)	MD Reference:	GL @ 3677.00usft
Site:	Juniper Harper State Com	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #2 09-03-13		

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)
9,700.00	91.00	268.43	5,635.54	-115.79	-4,221.33	4,193.45	0.00	0.00	0.00
9,800.00	91.00	268.43	5,633.79	-118.53	-4,321.28	4,292.74	0.00	0.00	0.00
9,900.00	91.00	268.43	5,632.05	-121.27	-4,421.23	4,392.02	0.00	0.00	0.00
10,000.00	91.00	268.43	5,630.30	-124.01	-4,521.17	4,491.31	0.00	0.00	0.00
10,100.00	91.00	268.43	5,628.56	-126.75	-4,621.12	4,590.60	0.00	0.00	0.00
10,200.00	91.00	268.43	5,626.81	-129.49	-4,721.07	4,689.89	0.00	0.00	0.00
10,276.87	91.00	268.43	5,625.47	-131.60	-4,797.90	4,766.21	0.00	0.00	0.00
TD at 10276.87 - PBHL-Juniper Harper #4H									

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	
PP-Juniper Harper #4H	- plan hits target center	0.00	0.00	5,568.73	-4.80	-175.00	665,600.00	611,935.80	Latitude
	- Point								Longitude
PBHL-Juniper Harper #4	- plan hits target center	0.00	0.01	5,625.47	-131.60	-4,797.90	665,473.20	607,312.90	32° 49' 45.44589 N
	- Point								103° 58' 8.13762 W
									32° 49' 44.34565 N
									103° 59' 2.32099 W

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,990.47	5,700.03	TL, 5709.9' TVD @ 0 VZ, 91.0° Inc		-1.00	269.90

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,179.21	5,179.21	0.00	0.00	KOP Start Build 11.00
6,006.48	5,700.00	-14.53	-529.76	LP Start 4270.39 hold at 6006.48 MD
10,276.87	5,625.47	-131.60	-4,797.90	TD at 10276.87



COG Operating LLC

Eddy County, New Mexico (NAD 27 NME)

Juniper Harper State Com

#4H

WB1

Plan #2 09-03-13

Anticollision Report

03 September, 2013



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services
Anticollision Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, New Mexico (NAD 27-NME)	TVD Reference:	GL @ 3677.00usft
Reference Site:	Juniper Harper State Com	MD Reference:	GL @ 3677.00usft
Site Error:	0.00-usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #2 09-03-13	Offset TVD Reference:	Offset Datum

Reference	Plan #2 09-03-13		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Circular Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date		09/03/13	
From (usft)	To (usft)	Survey (Wellbore)		Tool Name	Description
0.00	10,276.87	Plan #2 09-03-13 (WB1)		MWD	MWD - Standard

Summary						
		Reference	Offset	Distance		
Site Name		Measured	Measured	Between	Between	Warning
Offset Well - Wellbore - Design		Depth	Depth	Centres	Ellipses	Factor
		(usft)	(usft)	(usft)	(usft)	
Juniper State						
#6 - OH - Plan #1 06-26-13		10,274.46	5,645.17	320.39	175.30	2.208 CC
#6 - OH - Plan #1 06-26-13		10,276.87	5,645.13	320.40	175.25	2.207 ES, SF

Offset Design											Juniper State - #6 - OH - Plan #1 06-26-13		Offset Site Error: 0.00 usft	
Survey Program: 0-MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							
Measured Vertical	Measured Vertical	Measured Vertical	Measured Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Toolface (°)	N/S (usft)	E/W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-100.54	-891.70	-4,790.20	4,872.52					
100.00	100.00	83.00	83.00	0.11	0.09	-100.54	-891.70	-4,790.20	4,872.49	4,872.28	0.21	N/A		
200.00	200.00	183.00	183.00	0.34	0.30	-100.54	-891.70	-4,790.20	4,872.49	4,871.85	0.64	7,660.087		
300.00	300.00	283.00	283.00	0.56	0.52	-100.54	-891.70	-4,790.20	4,872.49	4,871.40	1.09	4,488.208		
400.00	400.00	383.00	383.00	0.79	0.75	-100.54	-891.70	-4,790.20	4,872.49	4,870.95	1.54	3,173.945		
500.00	500.00	483.00	483.00	1.01	0.97	-100.54	-891.70	-4,790.20	4,872.49	4,870.50	1.98	2,455.045		
600.00	600.00	583.00	583.00	1.24	1.20	-100.54	-891.70	-4,790.20	4,872.49	4,870.05	2.43	2,001.666		
700.00	700.00	683.00	683.00	1.46	1.42	-100.54	-891.70	-4,790.20	4,872.49	4,869.60	2.88	1,689.637		
800.00	800.00	783.00	783.00	1.69	1.65	-100.54	-891.70	-4,790.20	4,872.49	4,869.16	3.33	1,461.770		
900.00	900.00	883.00	883.00	1.91	1.87	-100.54	-891.70	-4,790.20	4,872.49	4,868.71	3.78	1,288.060		
1,000.00	1,000.00	983.00	983.00	2.14	2.10	-100.54	-891.70	-4,790.20	4,872.49	4,868.26	4.23	1,151.251		
1,100.00	1,100.00	1,083.00	1,083.00	2.36	2.32	-100.54	-891.70	-4,790.20	4,872.49	4,867.81	4.68	1,040.713		
1,200.00	1,200.00	1,183.00	1,183.00	2.58	2.55	-100.54	-891.70	-4,790.20	4,872.49	4,867.36	5.13	949.542		
1,300.00	1,300.00	1,283.00	1,283.00	2.81	2.77	-100.54	-891.70	-4,790.20	4,872.49	4,866.91	5.58	873.059		
1,400.00	1,400.00	1,422.81	1,422.77	3.03	3.09	-100.51	-889.07	-4,790.18	4,872.15	4,866.03	6.12	795.977		
1,500.00	1,500.00	1,570.13	1,569.73	3.26	3.42	-100.40	-878.97	-4,790.10	4,870.85	4,864.17	6.68	728.970		
1,600.00	1,600.00	1,716.03	1,714.57	3.48	3.77	-100.20	-861.55	-4,789.96	4,868.60	4,861.35	7.25	671.455		
1,700.00	1,700.00	1,844.79	1,841.55	3.71	4.11	-99.95	-840.25	-4,789.79	4,865.52	4,857.70	7.82	622.412		
1,800.00	1,800.00	1,943.20	1,938.39	3.93	4.39	-99.75	-822.76	-4,789.65	4,862.29	4,853.96	8.32	584.068		
1,900.00	1,900.00	2,041.61	2,035.24	4.16	4.69	-99.54	-805.28	-4,789.51	4,859.12	4,850.28	8.85	549.320		
2,000.00	2,000.00	2,140.02	2,132.08	4.38	4.99	-99.34	-787.80	-4,789.37	4,856.02	4,846.64	9.38	517.820		
2,100.00	2,100.00	2,238.43	2,228.93	4.61	5.31	-99.14	-770.32	-4,789.23	4,852.98	4,843.06	9.92	489.248		
2,200.00	2,200.00	2,336.84	2,325.77	4.83	5.64	-98.93	-752.84	-4,789.10	4,850.01	4,839.54	10.47	463.297		
2,300.00	2,300.00	2,435.25	2,422.62	5.06	5.97	-98.73	-735.36	-4,788.96	4,847.10	4,836.07	11.02	439.680		
2,400.00	2,400.00	2,533.66	2,519.46	5.28	6.30	-98.53	-717.88	-4,788.82	4,844.25	4,832.66	11.59	418.139		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services
Anticollision Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	GL @ 3677.00usft
Reference Site:	Juniper Harper State Com	MD Reference:	GL @ 3677.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #2 09-03-13	Offset TVD Reference:	Offset Datum

Offset Design - Juniper State - #6 - OH - Plan #1 06-26-13													Offset Site Error:
Survey Program 0-MWD													0.00 usft
Reference													Offset Well Error:
Offset													0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,500.00	2,500.00	2,632.07	2,616.30	5.51	6.64	-98.32	-700.40	-4,788.68	4,841.46	4,829.31	12.15	398.441	
2,600.00	2,600.00	2,730.48	2,713.15	5.73	6.99	-98.12	-682.91	-4,788.54	4,838.74	4,826.02	12.72	380.382	
2,700.00	2,700.00	2,828.89	2,809.99	5.96	7.34	-97.91	-665.43	-4,788.40	4,836.08	4,822.79	13.29	363.784	
2,800.00	2,800.00	2,927.30	2,906.84	6.18	7.69	-97.71	-647.95	-4,788.26	4,833.49	4,819.62	13.87	348.489	
2,900.00	2,900.00	3,025.71	3,003.68	6.41	8.04	-97.50	-630.47	-4,788.12	4,830.96	4,816.51	14.45	334.359	
3,000.00	3,000.00	3,124.12	3,100.53	6.63	8.40	-97.30	-612.99	-4,787.98	4,828.49	4,813.46	15.03	321.274	
3,100.00	3,100.00	3,222.53	3,197.37	6.86	8.76	-97.09	-595.51	-4,787.84	4,826.09	4,810.48	15.61	309.128	
3,200.00	3,200.00	3,320.94	3,294.21	7.08	9.12	-96.88	-578.03	-4,787.70	4,823.75	4,807.56	16.20	297.828	
3,300.00	3,300.00	3,419.35	3,391.06	7.30	9.48	-96.68	-560.55	-4,787.57	4,821.48	4,804.70	16.78	287.294	
3,400.00	3,400.00	3,517.75	3,487.90	7.53	9.84	-96.47	-543.07	-4,787.43	4,819.27	4,801.90	17.37	277.452	
3,500.00	3,500.00	3,616.16	3,584.75	7.75	10.20	-96.27	-525.58	-4,787.29	4,817.13	4,799.17	17.96	268.240	
3,600.00	3,600.00	3,714.57	3,681.59	7.98	10.57	-96.06	-508.10	-4,787.15	4,815.05	4,796.50	18.55	259.600	
3,700.00	3,700.00	3,800.00	3,765.68	8.20	10.88	-95.88	-493.04	-4,787.03	4,813.06	4,793.98	19.08	252.250	
3,800.00	3,800.00	3,890.40	3,855.00	8.43	11.13	-95.72	-479.16	-4,786.92	4,811.38	4,791.82	19.56	245.994	
3,900.00	3,900.00	3,974.49	3,938.45	8.65	11.34	-95.59	-468.79	-4,786.84	4,810.06	4,790.06	20.00	240.542	
4,000.00	4,000.00	4,059.13	4,022.71	8.88	11.54	-95.50	-460.83	-4,786.77	4,809.07	4,788.65	20.41	235.578	
4,100.00	4,100.00	4,144.16	4,107.56	9.10	11.71	-95.43	-455.34	-4,786.73	4,808.40	4,787.59	20.81	231.071	
4,200.00	4,200.00	4,229.45	4,192.80	9.33	11.85	-95.40	-452.37	-4,786.70	4,808.04	4,786.86	21.18	226.982	
4,300.00	4,300.00	4,319.66	4,283.00	9.55	12.00	-95.39	-451.80	-4,786.70	4,807.97	4,786.43	21.55	223.116	
4,400.00	4,400.00	4,419.66	4,383.00	9.78	12.17	-95.39	-451.80	-4,786.70	4,807.97	4,786.03	21.94	219.101	
4,500.00	4,500.00	4,519.66	4,483.00	10.00	12.34	-95.39	-451.80	-4,786.70	4,807.97	4,785.63	22.34	215.211	
4,600.00	4,600.00	4,619.66	4,583.00	10.23	12.51	-95.39	-451.80	-4,786.70	4,807.97	4,785.24	22.74	211.441	
4,700.00	4,700.00	4,719.66	4,683.00	10.45	12.69	-95.39	-451.80	-4,786.70	4,807.97	4,784.84	23.14	207.787	
4,800.00	4,800.00	4,819.66	4,783.00	10.68	12.86	-95.39	-451.80	-4,786.70	4,807.97	4,784.43	23.54	204.243	
4,900.00	4,900.00	4,919.66	4,883.00	10.90	13.04	-95.39	-451.80	-4,786.70	4,807.97	4,784.03	23.94	200.806	
5,000.00	5,000.00	5,019.66	4,983.00	11.13	13.22	-95.39	-451.80	-4,786.70	4,807.97	4,783.63	24.35	197.471	
5,100.00	5,100.00	5,119.66	5,083.00	11.35	13.40	-95.39	-451.80	-4,786.70	4,807.97	4,783.22	24.75	194.235	
5,179.21	5,179.21	5,198.87	5,162.21	11.53	13.55	-95.39	-451.80	-4,786.70	4,807.97	4,782.90	25.08	191.739	
5,200.00	5,199.99	5,219.65	5,182.99	11.57	13.58	-3.82	-451.80	-4,786.70	4,807.56	4,782.40	25.16	191.099	
5,250.00	5,249.78	5,269.44	5,232.78	11.67	13.68	-3.86	-451.80	-4,786.70	4,803.18	4,777.83	25.35	189.487	
5,300.00	5,298.92	5,318.58	5,281.92	11.78	13.77	-3.94	-451.80	-4,786.70	4,794.06	4,768.52	25.54	187.695	
5,350.00	5,346.96	5,366.61	5,329.96	11.88	13.86	-4.06	-451.80	-4,786.70	4,780.29	4,754.55	25.74	185.718	
5,400.00	5,393.45	5,413.11	5,376.45	12.01	13.94	-4.23	-451.80	-4,786.70	4,761.98	4,736.03	25.95	183.533	
5,450.00	5,437.97	5,457.62	5,420.97	12.15	14.02	-4.46	-451.80	-4,786.70	4,739.31	4,713.14	26.17	181.104	
5,500.00	5,480.10	5,499.76	5,463.10	12.32	14.10	-4.77	-451.80	-4,786.70	4,712.49	4,686.07	26.42	178.387	
5,550.00	5,519.47	5,539.13	5,502.47	12.53	14.18	-5.18	-451.80	-4,786.70	4,681.77	4,655.06	26.70	175.325	
5,600.00	5,555.70	5,575.36	5,538.70	12.80	14.24	-5.71	-451.80	-4,786.70	4,647.42	4,620.38	27.04	171.869	
5,650.00	5,588.47	5,608.12	5,571.47	13.14	14.30	-6.43	-451.80	-4,786.70	4,609.77	4,582.32	27.44	167.980	
5,700.00	5,617.46	5,637.12	5,600.46	13.56	14.36	-7.41	-451.80	-4,786.70	4,569.16	4,541.24	27.92	163.646	
5,750.00	5,642.43	5,662.08	5,625.43	14.08	14.41	-8.82	-451.80	-4,786.70	4,525.96	4,497.48	28.48	158.891	
5,800.00	5,663.12	5,682.78	5,646.12	14.69	14.44	-10.97	-451.80	-4,786.70	4,480.59	4,451.45	29.14	153.776	
5,850.00	5,679.36	5,699.02	5,662.36	15.40	14.48	-14.55	-451.80	-4,786.70	4,433.44	4,403.56	29.88	148.395	
5,900.00	5,691.00	5,710.66	5,674.00	16.20	14.50	-21.51	-451.80	-4,786.70	4,384.96	4,354.27	30.69	142.861	
5,950.00	5,697.92	5,717.58	5,680.92	17.07	14.51	-39.20	-451.80	-4,786.70	4,335.60	4,304.02	31.58	137.297	
6,000.00	5,700.07	5,719.73	5,683.07	18.00	14.51	-93.83	-451.80	-4,786.70	4,285.80	4,253.29	32.51	131.820	
6,006.48	5,700.00	5,719.66	5,683.00	18.12	14.51	-103.09	-451.80	-4,786.70	4,279.34	4,246.70	32.64	131.121	
6,100.00	5,698.37	5,718.03	5,681.37	20.01	14.51	-102.81	-451.80	-4,786.70	4,186.10	4,151.58	34.52	121.277	
6,200.00	5,696.62	5,716.28	5,679.62	22.17	14.51	-102.51	-451.80	-4,786.70	4,086.42	4,049.73	36.68	111.404	
6,300.00	5,694.88	5,714.53	5,677.88	24.46	14.50	-102.21	-451.80	-4,786.70	3,986.75	3,947.78	38.96	102.321	
6,400.00	5,693.13	5,712.79	5,676.13	26.83	14.50	-101.92	-451.80	-4,786.70	3,887.09	3,845.76	41.33	94.045	
6,500.00	5,691.39	5,711.04	5,674.39	29.27	14.50	-101.62	-451.80	-4,786.70	3,787.46	3,743.69	43.77	86.535	
6,600.00	5,689.64	5,709.30	5,672.64	31.76	14.49	-101.32	-451.80	-4,786.70	3,687.84	3,641.59	46.25	79.730	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services
Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	GL @ 3677.00usft
Reference Site:	Juniper Harper State Com	MD Reference:	GL @ 3677.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR-DB
Reference Design:	Plan #2 09-03-13	Offset-TVD Reference:	Offset Datum

Offset Design: Juniper State - #6 - OH - Plan #1 06-26-13												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,700.00	5,687.90	5,707.55	5,670.90	34.29	14.49	-101.02	-451.80	-4,786.70	3,588.24	3,539.46	48.78	73.559	
6,800.00	5,686.15	5,705.81	5,669.15	36.85	14.49	-100.72	-451.80	-4,786.70	3,488.67	3,437.33	51.34	67.954	
6,900.00	5,684.40	5,704.06	5,667.40	39.44	14.48	-100.41	-451.80	-4,786.70	3,389.12	3,335.20	53.92	62.852	
7,000.00	5,682.66	5,702.32	5,665.66	42.05	14.48	-100.11	-451.80	-4,786.70	3,289.60	3,233.07	56.53	58.196	
7,100.00	5,680.91	5,700.57	5,663.91	44.67	14.48	-99.81	-451.80	-4,786.70	3,190.10	3,130.95	59.15	53.934	
7,200.00	5,679.17	5,698.83	5,662.17	47.31	14.47	-99.51	-451.80	-4,786.70	3,090.64	3,028.86	61.78	50.023	
7,300.00	5,677.42	5,697.08	5,660.42	49.96	14.47	-99.20	-451.80	-4,786.70	2,991.21	2,926.78	64.43	46.425	
7,400.00	5,675.68	5,695.34	5,658.68	52.62	14.47	-98.90	-451.80	-4,786.70	2,891.82	2,824.73	67.09	43.104	
7,500.00	5,673.93	5,693.59	5,656.93	55.29	14.47	-98.59	-451.80	-4,786.70	2,792.47	2,722.72	69.76	40.032	
7,600.00	5,672.19	5,691.85	5,655.19	57.97	14.46	-98.29	-451.80	-4,786.70	2,693.17	2,620.74	72.43	37.183	
7,700.00	5,670.44	5,690.10	5,653.44	60.65	14.46	-97.98	-451.80	-4,786.70	2,593.93	2,518.82	75.11	34.534	
7,800.00	5,668.70	5,688.36	5,651.70	63.34	14.46	-97.68	-451.80	-4,786.70	2,494.74	2,416.94	77.80	32.067	
7,900.00	5,666.95	5,686.61	5,649.95	66.04	14.45	-97.37	-451.80	-4,786.70	2,395.62	2,315.13	80.49	29.763	
8,000.00	5,665.21	5,684.87	5,648.21	68.74	14.45	-97.06	-451.80	-4,786.70	2,296.57	2,213.38	83.19	27.608	
8,100.00	5,663.46	5,683.12	5,646.46	71.44	14.45	-96.75	-451.80	-4,786.70	2,197.61	2,111.72	85.89	25.588	
8,200.00	5,661.72	5,681.38	5,644.72	74.15	14.44	-96.45	-451.80	-4,786.70	2,098.74	2,010.15	88.59	23.691	
8,300.00	5,659.97	5,679.63	5,642.97	76.86	14.44	-96.14	-451.80	-4,786.70	1,999.99	1,908.69	91.30	21.907	
8,400.00	5,658.23	5,677.88	5,641.23	79.57	14.44	-95.83	-451.80	-4,786.70	1,901.36	1,807.35	94.00	20.226	
8,500.00	5,656.48	5,676.14	5,639.48	82.28	14.43	-95.52	-451.80	-4,786.70	1,802.88	1,706.17	96.72	18.641	
8,600.00	5,654.74	5,674.39	5,637.74	85.00	14.43	-95.21	-451.80	-4,786.70	1,704.58	1,605.15	99.43	17.143	
8,700.00	5,652.99	5,672.65	5,635.99	87.72	14.43	-94.90	-451.80	-4,786.70	1,606.49	1,504.34	102.15	15.727	
8,800.00	5,651.25	5,670.90	5,634.25	90.44	14.42	-94.59	-451.80	-4,786.70	1,508.64	1,403.78	104.86	14.387	
8,900.00	5,649.50	5,669.16	5,632.50	93.17	14.42	-94.28	-451.80	-4,786.70	1,411.10	1,303.52	107.58	13.116	
9,000.00	5,647.75	5,667.41	5,630.75	95.89	14.42	-93.97	-451.80	-4,786.70	1,313.92	1,203.62	110.31	11.912	
9,100.00	5,646.01	5,665.67	5,629.01	98.62	14.41	-93.66	-451.80	-4,786.70	1,217.20	1,104.17	113.03	10.769	
9,200.00	5,644.26	5,663.92	5,627.26	101.34	14.41	-93.35	-451.80	-4,786.70	1,121.05	1,005.30	115.75	9.685	
9,300.00	5,642.52	5,662.18	5,625.52	104.07	14.41	-93.04	-451.80	-4,786.70	1,025.63	907.16	118.48	8.657	
9,400.00	5,640.77	5,660.43	5,623.77	106.80	14.40	-92.73	-451.80	-4,786.70	931.18	809.97	121.20	7.683	
9,500.00	5,639.03	5,658.69	5,622.03	109.53	14.40	-92.42	-451.80	-4,786.70	838.00	714.07	123.93	6.762	
9,600.00	5,637.28	5,656.94	5,620.28	112.26	14.40	-92.10	-451.80	-4,786.70	746.59	619.93	126.66	5.894	
9,700.00	5,635.54	5,655.20	5,618.54	115.00	14.39	-91.79	-451.80	-4,786.70	657.68	528.29	129.39	5.083	
9,800.00	5,633.79	5,653.45	5,616.79	117.73	14.39	-91.48	-451.80	-4,786.70	572.44	440.32	132.12	4.333	
9,900.00	5,632.05	5,651.71	5,615.05	120.46	14.39	-91.17	-451.80	-4,786.70	492.77	357.92	134.85	3.654	
10,000.00	5,630.30	5,649.96	5,613.30	123.20	14.38	-90.86	-451.80	-4,786.70	421.84	284.26	137.58	3.066	
10,100.00	5,628.56	5,648.22	5,611.56	125.94	14.38	-90.54	-451.80	-4,786.70	364.79	224.48	140.32	2.600	
10,200.00	5,626.81	5,646.47	5,609.81	128.67	14.38	-90.23	-451.80	-4,786.70	328.92	185.87	143.05	2.299	
10,274.46	5,625.51	5,645.17	5,608.51	130.71	14.37	-90.00	-451.80	-4,786.70	320.39	175.30	145.08	2.208 CC	
10,276.87	5,625.47	5,645.13	5,608.47	130.78	14.37	-89.99	-451.80	-4,786.70	320.40	175.25	145.15	2.207 ES, SF	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



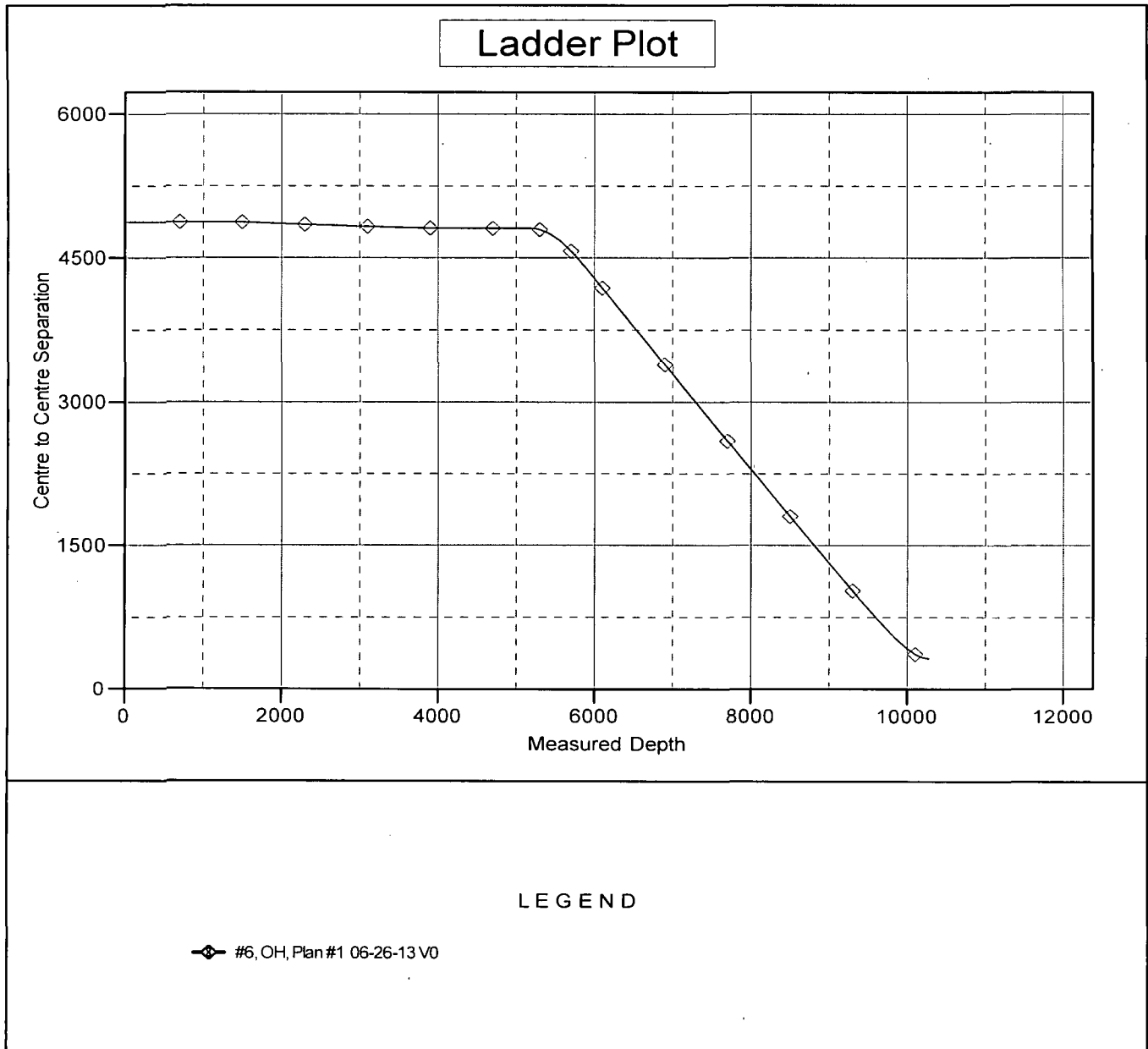
Phoenix Technology Services
Anticollision Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #4H:
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	GL @ 3677.00usft
Reference Site:	Juniper Harper State Com	MD Reference:	GL @ 3677.00usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	#4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	WB1	Database:	GCR DB
Reference Design:	Plan #2 09-03-13	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL @ 3677.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: #4H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.20°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



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Well Error:	0.00 usft	Output errors are at:	2:00 sigma
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Reference Design:	Plan #2 09-03-13	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL @ 3677.00usft

Offset Depths are relative to Offset Datum

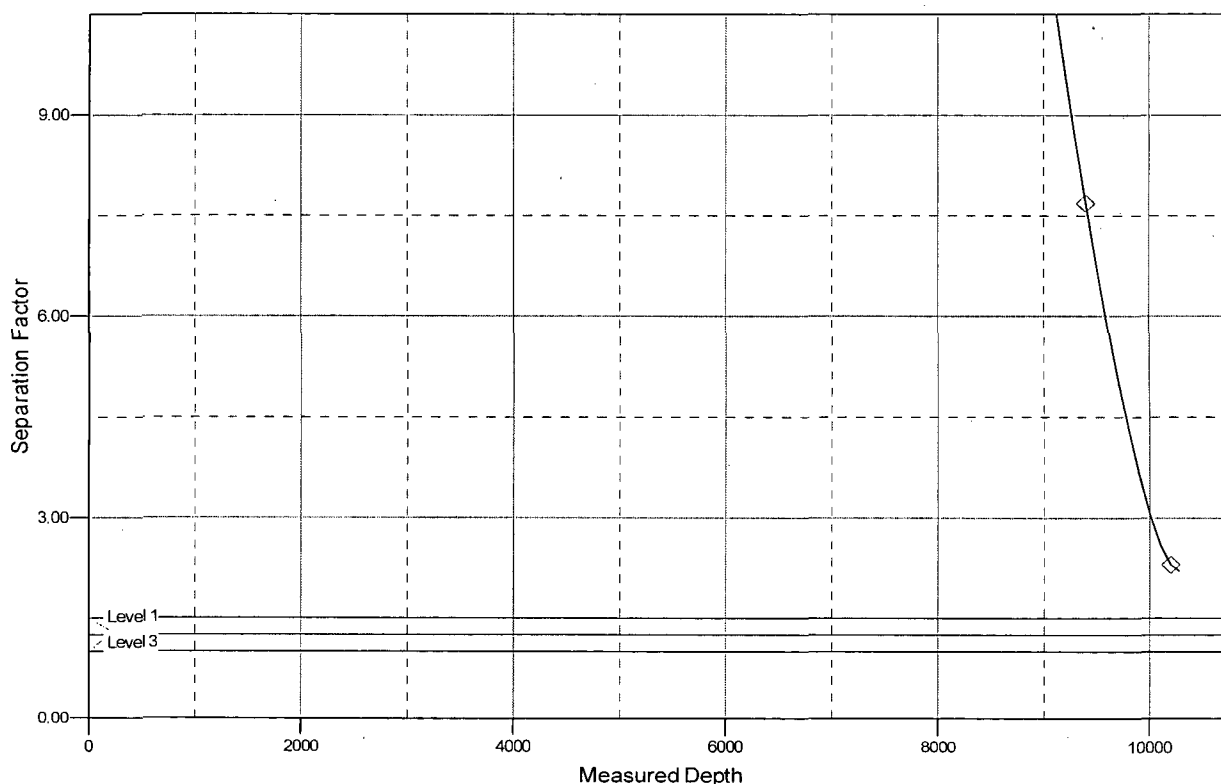
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: #4H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.20°

Separation Factor Plot



LEGEND

◆ #6, OH, Plan #1 06-26-13 V0



Project: Eddy County, New Mexico (NAD 27 NME)
Site: Juniper Harper State Com
Well: #4H
Wellbore: WB1
Design: Plan #2 09-03-13

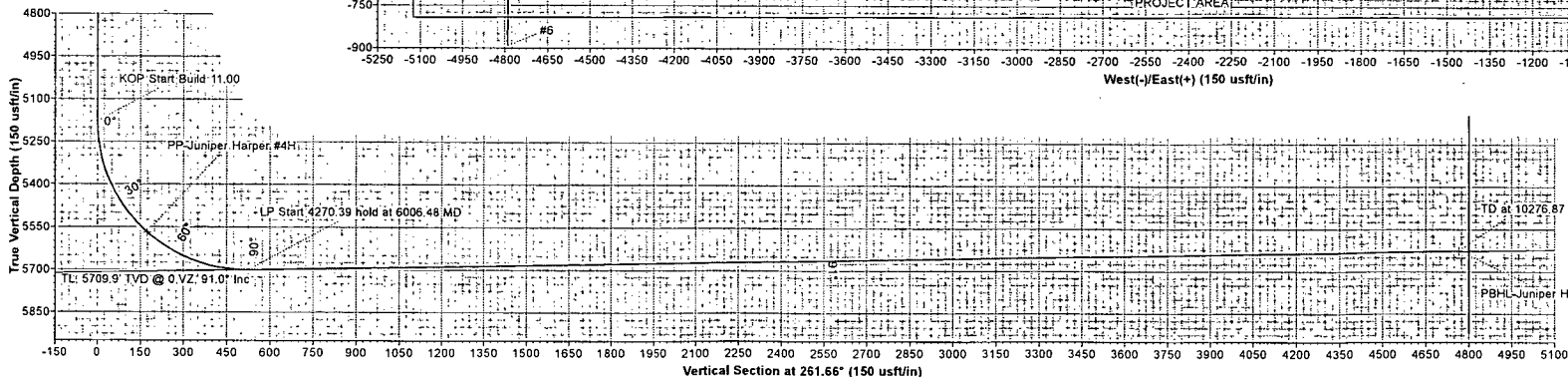
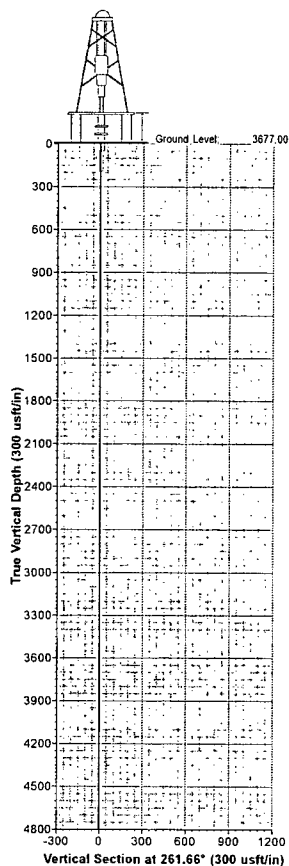


PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: -0.20°
Magnetic North: 7.34°

Magnetic Field
Strength: 48712.8nT
Dip Angle: 60.62°
Date: 09/03/2013
Model: IGRF2010_14



WELL DETAILS											
	+N/-S	+E/-W	Nothing	Ground Level	3677.00	Latitude	Longitude				
	0.00	0.00	665604.80	Easting	612110.80	32° 49' 45.48741 N	103° 58' 6.08651 W				

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	5179.21	0.00	0.00	5179.21	0.00	0.00	0.00	0.00	0.00		KOP Start Build 11.00
3	6006.48	91.00	268.43	5700.00	-14.53	-529.76	11.00	268.43	526.26		LP Start 4270.39 hold at 6006.48 MD
4	10276.87	91.00	268.43	5625.47	-131.60	-4797.90	0.00	0.00	4766.21	PBHL-Juniper Harper #4H	TD at 10276.87

DESIGN TARGET DETAILS											
Name	TVD	+N/-S	+E/-W	Nothing	Easting	Latitude	Longitude	Shape			
PP-Juniper Harper #4H	5568.73	-4.80	-175.00	665600.00	611935.80	32° 49' 45.44589 N	103° 58' 8.13762 W	Point			
				- plan hits target center							
PBHL-Juniper Harper #4H	5625.47	-131.60	-4797.90	665473.20	607312.90	32° 49' 44.34565 N	103° 59' 2.32099 W	Point			
				- plan hits target center							

PROJECT DETAILS: Eddy County, New Mexico (NAD 27 NME)											
Geodetic System: US State Plane 1927 (Exact solution)											
Datum: NAD 1927 (NADCON CONUS)											
Ellipsoid: Clarke 1866											
Zone: New Mexico East 3001											
System Datum: Mean Sea Level											
SITE DETAILS: Juniper Harper State Com											
Site Centre Northing: 665604.80											
Easting: 612110.80											
Positional Uncertainty: 0.00											
Convergence: 0.20											
Local North: Grid											
FORMATION TOP DETAILS											
TVDPath	MDPath	Formation	TL	5709.9'	TVD	@ 0.0° VZ	91.0° Inc	DipAngle	DipDir		
5700.03	5990.47							-1.00	269.90		

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 #4H, Grid North											
Latitude: 32° 49' 45.48741 N											
Longitude: 103° 58' 6.08651 W											
Grid East: 612110.80											
Grid North: 665604.80											
Scale Factor: 1.000											
Geomagnetic Model: IGRF2010_14											
Sample Date: 03-Sep-13											
Magnetic Declination: 7.54°											
Dip Angle from Horizontal: 60.62°											
Magnetic Field Strength: 48713											
To convert a Magnetic Direction to a Grid Direction, Add 7.34°											
To convert a Magnetic Direction to a True Direction, Add 7.54° East											
To convert a True Direction to a Grid Direction, Subtract 0.20°											
LEGEND											
— #6, OH, Plan #1 06-26-13 V0											
— Plan #2 09-03-13											

