

OPERATOR: COG Operating, LLC
WELL/LEASE: Diamondback 22 State Com # 3 I
COUNTY: Eddy Co., New Mexico
Sec. 22, T26S, R28 E

PATRIOT DRILLING, LLC

30-015-39861

**STATE OF NEW MEXICO
DEVIATION REPORT**

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
150	1/4	2,225	2 1/4
332	1 1/2	2,580	1
434	1	3,084	1/2
800	2	3,590	1 1/2
895	3 1/4	4,120	1/4
990	4	4,630	1/4
1,086	4	5,145	1 3/4
1,244	4 1/2	6,145	1 1/4
1,276	4 1/2	6,657	1 1/2
1,308	4	7,102	1 1/2
1,314	4 1/2	7,650	2
1,658	3	7,679	2 3/4
1,752	1 3/4	8,189	1 1/2
1,846	2 1/4	8,672	1/2
1,941	2 1/2	9,180	1
2,130	2 1/2		

RECEIVED

OCT 22 2012

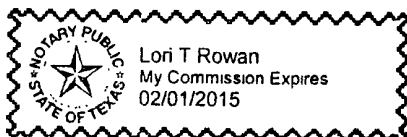
NMOCD ARTESIA

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-
President

The foregoing instrument was acknowledged before me on this 1st day of
November, 2011 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling,

My Commission Expires: 02/01/2015

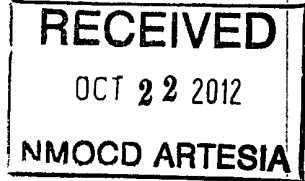


Lori T. Rowan
Notary Public for Ector Co., Texas

COG OPERATING, LLC
RECEIVED

JUL 09 2012

ARTESIA WEST



COG OPERATING

Wildcat (Eddy County, NM)

Eddy County, NM

Diamondback 22 State Com #3H

VH - Job #32K0512626

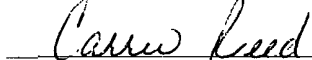
Survey: Gyro

SDI Standard Survey Report

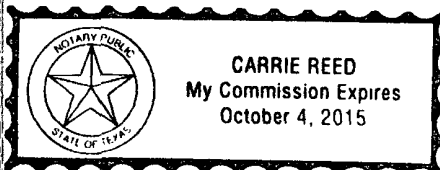
This survey is correct to the best of my knowledge and is supported by actual field data.

_____

Notarized this date 15th of June, 2012.

_____

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Diamondback 22 State Com #3H
Project:	Wildcat (Eddy County, NM)	TVD Reference:	WELL @ 0 00usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 00usft (Original Well Elev)
Well:	Diamondback 22 State Com #3H	North Reference:	Grid
Wellbore:	VH - Job #32K0512626	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0512626	Database:	EDM-Regulatory

Project	Wildcat (Eddy County, NM)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico Central 3002		

Site	Eddy County, NM				
Site Position:		Northing:	695,322 90 usft	Latitude:	32° 53' 31 090 N
From:	Lat/Long	Easting:	1,178,985 29 usft	Longitude:	104° 2' 17 570 W
Position Uncertainty:	0 00 usft	Slot Radius:	0"	Grid Convergence:	1 20 °

Well	Diamondback 22 State Com #3H, Directional (DDC)					
Well Position	+N/-S	0 00 usft	Northing:	382,559 77 usft	Latitude:	32° 1' 58 800 N
	+E/-W	0 00 usft	Easting:	1,176,231 92 usft	Longitude:	104° 4' 4 800 W
Position Uncertainty		0 00 usft	Wellhead Elevation:	usft	Ground Level:	0 00 usft

Wellbore	VH - Job #32K0512626				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2012/05/27	7 68	59 90	48,376

Design	VH - Job #32K0512626			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 00	0 00	0 00	180 83

Survey Program	Date	2012/06/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100 00	9,698 00	Gyro (VH - Job #32K0512626)	Keeper	Keeper Gyro	

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
100 00	0 35	340 53	100 00	0 29	-0 10	340 53	0 31
200 00	0 77	357 33	199 99	1 25	-0 23	349 33	1 27
300 00	0 90	3 99	299 98	2 70	-0 21	355 52	2 71
400 00	0 72	350 91	399 97	4 11	-0 26	356 43	4 11
500 00	0 50	324 52	499 97	5 08	-0 61	353 17	5 12
600 00	0 77	270 38	599 96	5 44	-1 53	344 26	5 65
700 00	0 91	257 07	699 95	5 27	-2 98	330 51	6 05
800 00	2 09	266 75	799 92	4 99	-5 57	311 82	7 48
900 00	3 37	277 66	899 80	5 28	-10 31	297 10	11 58
1,000 00	3 82	282 25	999 60	6 37	-16 48	291 15	17 67
1,100 00	3 95	282 60	1,099 37	7 83	-23 09	288 73	24 38

Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Diamondback 22 State Com #3H
Project:	Wildcat (Eddy County, NM)	TVD Reference:	WELL @ 0 00usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 00usft (Original Well Elev)
Well:	Diamondback 22 State Com #3H	North Reference:	Grid
Wellbore:	VH - Job #32K0512626	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0512626	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200 00	4 12	284 09	1,199 13	9 46	-29 94	287 53	31 40
1,300 00	4 11	284 62	1,298 87	11 24	-36 89	286 94	38 56
1,400 00	2 82	292 01	1,398 68	13 06	-42 64	287 03	44 59
1,500 00	1 81	307 99	1,498 60	14 96	-46 16	287 95	48 53
1,600 00	2 35	322 16	1,598 54	17 55	-48 67	289 83	51 73
1,700 00	2 00	334 18	1,698 47	20 74	-50 68	292 25	54 76
1,800 00	1 89	8 41	1,798 41	23 94	-51 20	295 06	56 52
1,900 00	2 21	18 21	1,898 35	27 40	-50 36	298 55	57 33
2,000 00	2 45	29 94	1,998 27	31 09	-48 69	302 56	57 77
2,100 00	2 13	42 02	2,098 19	34 32	-46 38	306 50	57 70
2,200 00	2 26	60 55	2,198 11	36 67	-43 42	310 18	56 83
2,300 00	2 99	70 95	2,298 01	38 49	-39 24	314 45	54 96
2,400 00	2 16	77 45	2,397 91	39 75	-34 93	318 69	52 92
2,500 00	0 97	102 05	2,497 87	39 98	-32 26	321 10	51 38
2,600 00	0 65	134 00	2,597 86	39 41	-31 03	321 79	50 16
2,700 00	0 62	123 95	2,697 85	38 72	-30 17	322 07	49 09
2,800 00	0 54	139 60	2,797 85	38 06	-29 42	322 30	48 10
2,900 00	0 47	121 91	2,897 84	37 48	-28 76	322 50	47 25
3,000 00	0 04	219 80	2,997 84	37 24	-28 44	322 63	46 85
3,100 00	0 09	129 02	3,097 84	37 16	-28 40	322 61	46 77
3,200 00	0 10	314 06	3,197 84	37 17	-28 40	322 62	46 78
3,300 00	0 09	167 32	3,297 84	37 16	-28 45	322 56	46 79
3,400 00	0 03	196 51	3,397 84	37 05	-28 44	322 50	46 71
3,500 00	0 18	173 79	3,497 84	36 87	-28 43	322 37	46 56
3,600 00	0 05	228 65	3,597 84	36 69	-28 44	322 22	46 42
3,700 00	0 07	210 46	3,697 84	36 61	-28 51	322 09	46 40
3,800 00	0 16	214 05	3,797 84	36 44	-28 62	321 86	46 33
3,900 00	0 07	266 29	3,897 84	36 32	-28 75	321 63	46 32
4,000 00	0 31	202 98	3,997 84	36 07	-28 92	321 27	46 23
4,100 00	0 33	243 45	4,097 84	35 69	-29 28	320 63	46 16
4,200 00	0 38	198 95	4,197 84	35 25	-29 65	319 93	46 06
4,300 00	0 41	195 88	4,297 84	34 59	-29 86	319 20	45 69
4,400 00	0 44	202 52	4,397 83	33 89	-30 10	318 39	45 33
4,500 00	0 51	205 66	4,497 83	33 13	-30 44	317 43	44 99
4,600 00	0 46	187 44	4,597 83	32 33	-30 68	316 50	44 58
4,700 00	0 49	200 34	4,697 82	31 53	-30 89	315 60	44 14
4,800 00	0 88	195 85	4,797 82	30 40	-31 24	314 21	43 59
4,900 00	0 85	194 27	4,897 80	28 94	-31 64	312 45	42 87
5,000 00	0 92	190 79	4,997 79	27 43	-31 97	310 63	42 12
5,100 00	0 98	193 24	5,097 78	25 81	-32 32	308 61	41 36
5,200 00	0 93	200 67	5,197 76	24 22	-32 80	306 44	40 77
5,300 00	1 00	191 81	5,297 75	22 60	-33 26	304 20	40 22
5,400 00	0 85	194 95	5,397 74	21 03	-33 63	302 02	39 67
5,500 00	0 96	196 91	5,497 72	19 52	-34 07	299 81	39 26

Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Diamondback 22 State Com #3H
Project:	Wildcat (Eddy County, NM)	TVD Reference:	WELL @ 0 00usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 00usft (Original Well Elev)
Well:	Diamondback 22 State Com #3H	North Reference:	Grid
Wellbore:	VH - Job #32K0512626	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0512626	Database:	EDM-Regulatory

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600 00	1 00	200 58	5,597 71	17 90	-34 62	297 34	38 97
5,700 00	1 22	194 48	5,697 69	16 05	-35 19	294 52	38 68
5,800 00	1 25	195 72	5,797 67	13 97	-35 75	291 34	38 38
5,900 00	1 35	191 76	5,897 64	11 77	-36 29	287 96	38 15
6,000 00	1 42	196 71	5,997 61	9 43	-36 88	284 33	38 07
6,100 00	1 46	200 02	6,097 58	7 04	-37 68	280 59	38 33
6,200 00	1 83	207 50	6,197 54	4 43	-38 85	276 50	39 10
6,300 00	2 60	213 67	6,297 47	1 12	-40 85	271 58	40 86
6,400 00	2 98	221 07	6,397 35	-2 72	-43 81	266 44	43 90
6,500 00	3 14	222 65	6,497 20	-6 70	-47 37	261 95	47 85
6,600 00	2 54	227 84	6,597 08	-10 20	-50 87	258 66	51 88
6,700 00	1 84	233 60	6,697 01	-12 64	-53 81	256 78	55 27
6,800 00	1 64	216 87	6,796 96	-14 74	-55 96	255 25	57 87
6,900 00	1 26	164 44	6,896 93	-16 94	-56 52	253 32	59 01
7,000 00	1 37	140 85	6,996 91	-18 93	-55 47	251 16	58 61
7,100 00	2 25	150 85	7,096 86	-21 57	-53 76	248 14	57 93
7,200 00	2 33	151 45	7,196 78	-25 07	-51 83	244 19	57 58
7,300 00	2 06	151 66	7,296 70	-28 44	-50 01	240 38	57 53
7,400 00	1 78	152 01	7,396 65	-31 39	-48 43	237 05	57 71
7,500 00	1 98	131 48	7,496 60	-33 90	-46 40	233 85	57 47
7,600 00	2 16	143 98	7,596 53	-36 57	-44 00	230 27	57 22
7,700 00	2 37	146 80	7,696 45	-39 83	-41 76	226 36	57 71
7,800 00	2 04	129 57	7,796 38	-42 69	-39 26	222 60	58 00
7,900 00	2 11	127 47	7,896 31	-44 95	-36 42	219 02	57 85
8,000 00	2 67	128 11	7,996 23	-47 50	-33 13	214 89	57 91
8,100 00	1 70	124 11	8,096 15	-49 77	-30 07	211 14	58 15
8,200 00	1 59	117 09	8,196 11	-51 24	-27 61	208 32	58 20
8,300 00	1 87	87 18	8,296 07	-51 79	-24 74	205 54	57 39
8,400 00	1 31	80 23	8,396 03	-51 51	-21 98	203 11	56 01
8,500 00	0 47	83 26	8,496 02	-51 27	-20 45	201 75	55 20
8,600 00	0 13	58 15	8,596 01	-51 16	-19 95	201 30	54 91
8,700 00	0 16	8 78	8,696 01	-50 96	-19 83	201 26	54 69
8,800 00	0 19	285 51	8,796 01	-50 78	-19 97	201 46	54 57
8,900 00	0 41	257 72	8,896 01	-50 81	-20 48	201 95	54 79
9,000 00	0 56	240 61	8,996 01	-51 13	-21 25	202 57	55 37
9,100 00	0 75	224 18	9,096 00	-51 84	-22 13	203 12	56 37
9,200 00	0 92	215 54	9,195 99	-52 96	-23 06	203 53	57 76
9,300 00	1 20	208 15	9,295 97	-54 54	-24 02	203 77	59 59
9,400 00	1 68	205 49	9,395 94	-56 79	-25 14	203 88	62 10
9,500 00	1 98	194 10	9,495 89	-59 78	-26 19	203 66	65 27
9,600 00	1 74	187 87	9,595 84	-62 96	-26 82	203 07	68 44
9,698 00	1 64	171 08	9,693 80	-65 82	-26 81	202 16	71 07

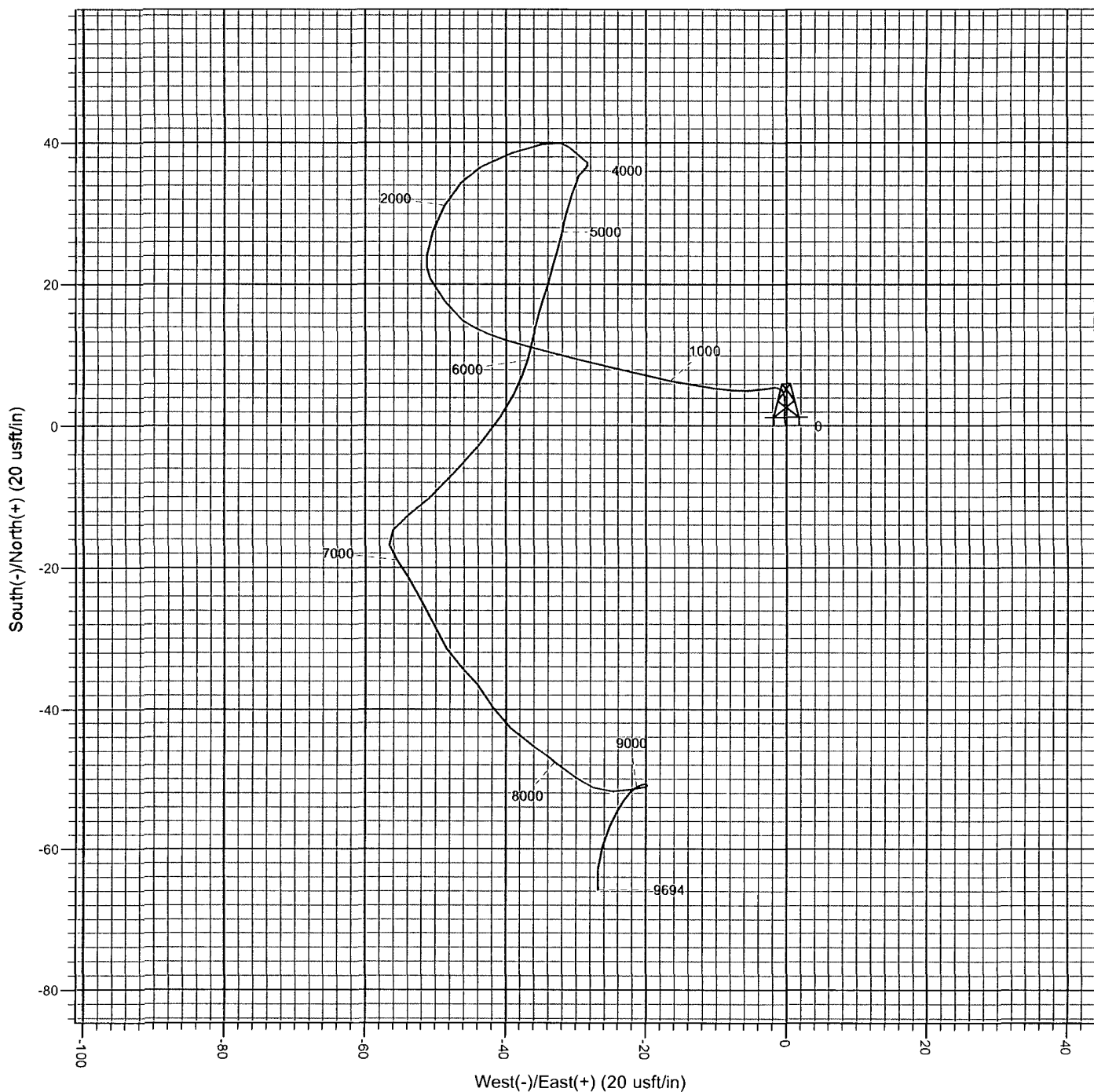


Scientific Drilling
Directional Drilling Operations

Project: Wildcat (Eddy County, NM)
Eddy County, NM
Well: Diamondback 22 State Com #3H
Wellbore: VH - Job #32K0512626
Design: VH - Job #32K0512626

WELL DETAILS: Diamondback 22 State Com #3H
WELL @ 0.00usft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	382559.77	1176231.92	32° 1' 58.800 N	104° 4' 4.800 W	



PROJECT DETAILS: Wildcat (Eddy County, NM)	SITE DETAILS: Eddy County, NM
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 53' 31.090 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 104° 2' 17.570 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.00
Zone: New Mexico Central 3002	Convergence: 1.20
System Datum: Mean Sea Level	Local North: Grid

COG Operating, LLC

Eddy County, NM

Sec 22, T26S, R28E

Diamondback 22 State Com #3H

Wellbore #1

Survey: DDC MWD Surveys

DDC Survey Report

22 June, 2012



DDC Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Diamondback 22 State Com #3H
Project:	Eddy County, NM	TVD Reference:	WELL @ 2999.1usft (Patriot #3)
Site:	Sec 22, T26S, R28E	MD Reference:	WELL @ 2999.1usft (Patriot #3)
Well:	Diamondback 22 State Com #3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Eddy County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Sec 22, T26S, R28E			
Site Position:		Northing:	376,074.84 usft	Latitude:	32° 2' 1.083 N
From:	Map	Easting:	623,273.57 usft	Longitude:	104° 4' 8.102 W
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0 14 °

Well	Diamondback 22 State Com #3H					
Well Position	+N/-S	0.0 usft	Northing:	376,074.84 usft	Latitude:	32° 2' 1.083 N
	+E/-W	0.0 usft	Easting:	623,273.57 usft	Longitude:	104° 4' 8.102 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	2,982.1 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/7/2012	7.69	59.90	48,360

Design		Wellbore #1		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	180.83

Survey Program	Date 6/22/2012			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	9,698.0	GYRO (Wellbore #1)	Good_gyro	Good Gyro
9,818.0	14,116.0	DDC MWD Surveys (Wellbore #1)	MWD default	MWD - Standard

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)
TIE IN @ 9698' MD / 9694' TVD									
9,698.0	1.64	171.08	9,693.8	-65.8	-26.8	66.2	0.00	0.00	0.00
9,818.0	1.20	190.20	9,813.8	-68.8	-26.8	69.1	0.53	-0.37	15.93
9,850.0	3.10	186.20	9,845.7	-69.9	-26.9	70.3	5.95	5.94	-12.50
9,881.0	6.50	186.90	9,876.6	-72.5	-27.2	72.9	10.97	10.97	2.26
9,913.0	9.80	190.40	9,908.3	-77.0	-27.9	77.4	10.42	10.31	10.94
9,944.0	12.80	195.00	9,938.7	-82.9	-29.3	83.3	10.10	9.68	14.84
9,976.0	16.50	202.10	9,969.6	-90.6	-31.9	91.0	12.83	11.56	22.19
10,007.0	19.80	204.70	9,999.1	-99.4	-35.8	99.9	10.96	10.65	8.39

DDC
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Diamondback 22 State Com #3H
Project:	Eddy County, NM	TVD Reference:	WELL @ 2999.1usft (Patriot #3)
Site:	Sec 22, T26S, R28E	MD Reference:	WELL @ 2999.1usft (Patriot #3)
Well:	Diamondback 22 State Com #3H	North Reference:	Grd
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
CROSSED HARD LINE @ 10038' MD / 10028' TVD									
10,038.0	23.20	199.80	10,027.9	-109.9	-40.0	110.5	12.39	10.97	-15.81
10,070.0	26.50	191.90	10,057.0	-122.8	-43.6	123.5	14.61	10.31	-24.69
10,101.0	30.80	185.80	10,084.2	-137.5	-45.9	138.2	16.76	13.87	-19.68
10,133.0	35.50	181.60	10,111.0	-155.0	-47.0	155.6	16.34	14.69	-13.13
10,165.0	40.00	180.50	10,136.3	-174.6	-47.3	175.2	14.22	14.06	-3.44
10,197.0	43.90	180.20	10,160.1	-195.9	-47.4	196.6	12.20	12.19	-0.94
10,229.0	46.20	180.00	10,182.7	-218.6	-47.5	219.2	7.20	7.19	-0.63
10,260.0	47.30	179.00	10,203.9	-241.2	-47.3	241.8	4.26	3.55	-3.23
10,292.0	49.40	178.90	10,225.2	-265.1	-46.8	265.7	6.57	6.56	-0.31
10,324.0	53.20	178.90	10,245.2	-290.0	-46.4	290.7	11.88	11.88	0.00
10,346.0	56.70	179.50	10,257.8	-308.0	-46.1	308.7	16.06	15.91	2.73
10,388.0	60.70	180.20	10,279.6	-343.9	-46.0	344.5	9.63	9.52	1.67
10,419.0	63.90	179.90	10,294.0	-371.4	-46.0	372.0	10.36	10.32	-0.97
10,451.0	67.50	179.60	10,307.2	-400.5	-45.9	401.1	11.28	11.25	-0.94
10,483.0	70.20	178.90	10,318.8	-430.4	-45.5	431.0	8.68	8.44	-2.19
10,515.0	73.00	179.10	10,328.9	-460.7	-45.0	461.3	8.77	8.75	0.63
10,587.0	79.10	178.70	10,346.2	-530.5	-43.7	531.1	8.49	8.47	-0.56
10,619.0	82.10	178.50	10,351.4	-562.1	-42.9	562.7	9.40	9.38	-0.63
10,651.0	84.70	178.90	10,355.1	-593.9	-42.2	594.4	8.22	8.13	1.25
10,683.0	84.80	178.50	10,358.0	-625.7	-41.4	626.3	1.28	0.31	-1.25
10,714.0	84.90	178.80	10,360.8	-656.6	-40.7	657.1	1.02	0.32	0.97
10,745.0	85.30	178.80	10,363.5	-687.5	-40.1	688.0	1.29	1.29	0.00
10,777.0	84.20	178.10	10,366.4	-719.3	-39.2	719.8	4.07	-3.44	-2.19
10,809.0	85.40	177.80	10,369.3	-751.2	-38.1	751.7	3.86	3.75	-0.94
10,840.0	87.40	178.20	10,371.2	-782.1	-37.0	782.6	6.58	6.45	1.29
10,872.0	90.50	179.20	10,371.8	-814.1	-36.3	814.5	10.18	9.69	3.13
10,936.0	90.10	177.80	10,371.5	-878.1	-34.6	878.5	2.28	-0.63	-2.19
10,999.0	91.70	178.60	10,370.5	-941.0	-32.6	941.4	2.84	2.54	1.27
11,062.0	91.00	179.40	10,369.0	-1,004.0	-31.5	1,004.3	1.69	-1.11	1.27
11,126.0	91.20	179.40	10,367.8	-1,068.0	-30.8	1,068.3	0.31	0.31	0.00
11,188.0	90.50	180.40	10,366.9	-1,130.0	-30.7	1,130.3	1.97	-1.13	1.61
11,251.0	90.60	180.10	10,366.3	-1,193.0	-31.0	1,193.3	0.50	0.16	-0.48
11,315.0	90.90	180.50	10,365.4	-1,257.0	-31.3	1,257.3	0.78	0.47	0.63
11,378.0	90.40	179.10	10,364.7	-1,320.0	-31.1	1,320.3	2.36	-0.79	-2.22
11,403.0	90.50	179.80	10,364.5	-1,344.9	-30.9	1,345.3	2.83	0.40	2.80
11,467.0	92.00	183.10	10,363.1	-1,408.9	-32.5	1,409.2	5.66	2.34	5.16
11,530.0	90.20	184.30	10,361.9	-1,471.8	-36.6	1,472.1	3.43	-2.86	1.90
11,593.0	89.90	183.30	10,361.9	-1,534.6	-40.7	1,535.0	1.66	-0.48	-1.59
11,625.0	89.30	181.70	10,362.1	-1,566.6	-42.1	1,567.0	5.34	-1.88	-5.00
11,657.0	89.00	181.10	10,362.6	-1,598.6	-42.9	1,599.0	2.10	-0.94	-1.88
11,720.0	88.10	181.00	10,364.1	-1,661.5	-44.1	1,662.0	1.44	-1.43	-0.16
11,784.0	89.40	181.30	10,365.5	-1,725.5	-45.4	1,726.0	2.08	2.03	0.47

DDC
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Diamondback 22 State Com #3H
Project:	Eddy County, NM	TVD Reference:	WELL @ 2999.1usft (Patriot #3)
Site:	Sec 22, T26S, R28E	MD Reference:	WELL @ 2999.1usft (Patriot #3)
Well:	Diamondback 22 State Com #3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
11,847.0	90.10	183.00	10,365.8	-1,788.5	-47.7	1,789.0	2.92	1.11	2.70
11,879.0	90.20	183.60	10,365.7	-1,820.4	-49.6	1,820.9	1.90	0.31	1.88
11,910.0	90.10	181.40	10,365.7	-1,851.4	-50.9	1,851.9	7.10	-0.32	-7.10
11,942.0	89.80	179.90	10,365.7	-1,883.4	-51.3	1,883.9	4.78	-0.94	-4.69
11,974.0	90.40	179.00	10,365.6	-1,915.4	-51.0	1,915.9	3.38	1.88	-2.81
12,005.0	89.90	178.50	10,365.5	-1,946.4	-50.3	1,946.9	2.28	-1.61	-1.61
12,069.0	94.20	182.40	10,363.3	-2,010.3	-50.8	2,010.8	9.07	6.72	6.09
12,100.0	93.00	181.80	10,361.3	-2,041.2	-51.9	2,041.7	4.33	-3.87	-1.94
12,131.0	91.00	180.30	10,360.2	-2,072.2	-52.5	2,072.7	8.06	-6.45	-4.84
12,163.0	90.10	179.60	10,359.9	-2,104.2	-52.5	2,104.7	3.56	-2.81	-2.19
12,195.0	90.20	180.30	10,359.8	-2,136.2	-52.4	2,136.7	2.21	0.31	2.19
12,226.0	90.60	181.10	10,359.6	-2,167.2	-52.8	2,167.7	2.89	1.29	2.58
12,258.0	90.60	180.70	10,359.3	-2,199.2	-53.3	2,199.7	1.25	0.00	-1.25
12,289.0	90.20	180.70	10,359.1	-2,230.2	-53.7	2,230.7	1.29	-1.29	0.00
12,321.0	90.90	179.90	10,358.8	-2,262.2	-53.9	2,262.7	3.32	2.19	-2.50
12,352.0	90.60	180.20	10,358.4	-2,293.2	-53.9	2,293.7	1.37	-0.97	0.97
12,383.0	92.10	177.40	10,357.6	-2,324.1	-53.2	2,324.7	10.24	4.84	-9.03
12,415.0	91.30	175.40	10,356.7	-2,356.1	-51.2	2,356.6	6.73	-2.50	-6.25
12,447.0	91.50	174.70	10,355.9	-2,387.9	-48.5	2,388.4	2.27	0.63	-2.19
12,478.0	92.80	176.20	10,354.7	-2,418.8	-46.0	2,419.2	6.40	4.19	4.84
12,510.0	93.10	178.10	10,353.1	-2,450.7	-44.4	2,451.1	6.00	0.94	5.94
12,542.0	93.00	178.20	10,351.4	-2,482.7	-43.4	2,483.0	0.44	-0.31	0.31
12,573.0	91.90	177.30	10,350.1	-2,513.6	-42.2	2,514.0	4.58	-3.55	-2.90
12,604.0	89.30	175.90	10,349.7	-2,544.6	-40.3	2,544.9	9.53	-8.39	-4.52
12,636.0	88.30	175.90	10,350.4	-2,576.5	-38.1	2,576.7	3.13	-3.13	0.00
12,668.0	87.80	175.80	10,351.5	-2,608.4	-35.7	2,608.6	1.59	-1.56	-0.31
12,699.0	88.00	175.90	10,352.6	-2,639.3	-33.5	2,639.5	0.72	0.65	0.32
12,731.0	88.70	175.10	10,353.5	-2,671.2	-31.0	2,671.3	3.32	2.19	-2.50
12,763.0	90.00	174.90	10,353.9	-2,703.0	-28.2	2,703.2	4.11	4.06	-0.63
12,796.0	90.60	174.70	10,353.7	-2,735.9	-25.2	2,736.0	1.92	1.82	-0.61
12,828.0	91.00	175.90	10,353.3	-2,767.8	-22.6	2,767.8	3.95	1.25	3.75
12,860.0	91.50	177.90	10,352.6	-2,799.7	-20.9	2,799.7	6.44	1.56	6.25
12,892.0	91.20	180.30	10,351.8	-2,831.7	-20.4	2,831.7	7.56	-0.94	7.50
12,924.0	90.60	181.40	10,351.3	-2,863.7	-20.8	2,863.7	3.92	-1.88	3.44
12,955.0	90.40	181.80	10,351.1	-2,894.7	-21.7	2,894.7	1.44	-0.65	1.29
12,987.0	90.50	182.10	10,350.8	-2,926.7	-22.8	2,926.7	0.99	0.31	0.94
13,018.0	89.70	182.30	10,350.8	-2,957.6	-24.0	2,957.7	2.66	-2.58	0.65
13,050.0	88.80	181.30	10,351.2	-2,989.6	-25.0	2,989.7	4.20	-2.81	-3.13
13,081.0	88.30	181.20	10,352.0	-3,020.6	-25.7	3,020.7	1.64	-1.61	-0.32
13,113.0	88.10	181.50	10,353.0	-3,052.6	-26.4	3,052.6	1.13	-0.63	0.94
13,144.0	89.10	182.00	10,353.7	-3,083.6	-27.4	3,083.6	3.61	3.23	1.61
13,176.0	90.70	182.50	10,353.8	-3,115.5	-28.6	3,115.6	5.24	5.00	1.56
13,208.0	91.50	183.10	10,353.2	-3,147.5	-30.2	3,147.6	3.12	2.50	1.88
13,240.0	92.00	183.60	10,352.2	-3,179.4	-32.0	3,179.5	2.21	1.56	1.56

DDC
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Diamondback 22 State Com #3H
Project:	Eddy County, NM	TVD Reference:	WELL @ 2999.1usft (Patriot #3)
Site:	Sec 22, T26S, R28E	MD Reference:	WELL @ 2999.1usft (Patriot #3)
Well:	Diamondback 22 State Com #3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
13,271.0	91.50	183.40	10,351.2	-3,210.3	-33.9	3,210.5	1.74	-1.61	-0.65
13,302.0	91.50	182.30	10,350.4	-3,241.3	-35.5	3,241.5	3.55	0.00	-3.55
13,334.0	90.90	180.50	10,349.8	-3,273.3	-36.3	3,273.5	5.93	-1.88	-5.63
13,366.0	90.20	180.10	10,349.5	-3,305.3	-36.4	3,305.5	2.52	-2.19	-1.25
13,398.0	90.30	179.00	10,349.3	-3,337.3	-36.2	3,337.4	3.45	0.31	-3.44
13,429.0	90.40	178.90	10,349.1	-3,368.3	-35.6	3,368.4	0.46	0.32	-0.32
13,461.0	90.70	178.90	10,348.8	-3,400.3	-35.0	3,400.4	0.94	0.94	0.00
13,492.0	89.30	179.60	10,348.8	-3,431.3	-34.6	3,431.4	5.05	-4.52	2.26
13,524.0	89.40	179.60	10,349.2	-3,463.3	-34.4	3,463.4	0.31	0.31	0.00
13,556.0	89.60	179.30	10,349.5	-3,495.3	-34.1	3,495.4	1.13	0.63	-0.94
13,587.0	88.80	179.30	10,349.9	-3,526.2	-33.7	3,526.4	2.58	-2.58	0.00
13,619.0	88.40	179.10	10,350.7	-3,558.2	-33.2	3,558.3	1.40	-1.25	-0.63
13,651.0	88.70	179.50	10,351.5	-3,590.2	-32.8	3,590.3	1.56	0.94	1.25
13,682.0	88.60	179.60	10,352.2	-3,621.2	-32.6	3,621.3	0.46	-0.32	0.32
13,714.0	88.80	179.60	10,352.9	-3,653.2	-32.4	3,653.3	0.63	0.63	0.00
13,746.0	88.10	179.30	10,353.8	-3,685.2	-32.1	3,685.3	2.38	-2.19	-0.94
13,777.0	88.30	179.50	10,354.8	-3,716.2	-31.7	3,716.2	0.91	0.65	0.65
13,809.0	89.10	180.00	10,355.5	-3,748.2	-31.6	3,748.2	2.95	2.50	1.56
13,840.0	89.70	179.80	10,355.8	-3,779.2	-31.5	3,779.2	2.04	1.94	-0.65
13,872.0	89.20	179.40	10,356.1	-3,811.2	-31.3	3,811.2	2.00	-1.56	-1.25
13,904.0	89.20	179.80	10,356.6	-3,843.2	-31.1	3,843.2	1.25	0.00	1.25
13,936.0	88.80	180.20	10,357.1	-3,875.1	-31.1	3,875.2	1.77	-1.25	1.25
13,967.0	89.10	180.60	10,357.7	-3,906.1	-31.3	3,906.2	1.61	0.97	1.29
13,999.0	89.00	180.90	10,358.2	-3,938.1	-31.7	3,938.2	0.99	-0.31	0.94
14,030.0	89.10	180.70	10,358.8	-3,969.1	-32.2	3,969.2	0.72	0.32	-0.65
14,062.0	89.10	180.90	10,359.3	-4,001.1	-32.6	4,001.2	0.62	0.00	0.63
TD @ 14116' MD / 10360' TVD									
14,116.0	89.10	180.90	10,360.1	-4,055.1	-33.5	4,055.2	0.00	0.00	0.00

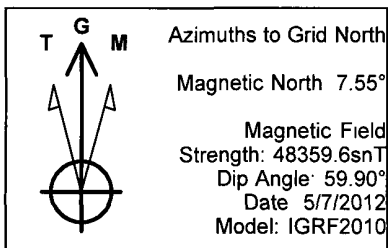
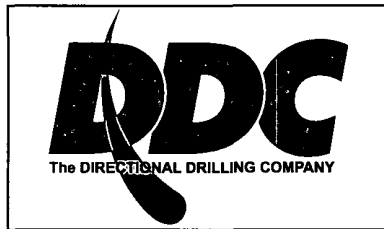
Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
9,698.0	9,693.8	-65.8	-26.8	TIE IN @ 9698' MD / 9694' TVD
10,038.0	10,027.9	-109.9	-40.0	CROSSED HARD LINE @ 10038' MD / 10028' TVD
14,116.0	10,360.1	-4,055.1	-33.5	TD @ 14116' MD / 10360' TVD

Checked By: _____ Approved By: _____ Date: _____

Company Name: COG Operating, LLC
 Diamondback 22 State Com #3H
 Eddy County, NM
 Rig: Patriot #3
 Created By: Dina Chance
 Date: 6/22/2012

Diamondback 22 State Com #3H
 Eddy County, NM
 Q120412 & WT-12382
 TC #1



PROJECT DETAILS:		Eddy County, NM
Geodetic System:	US State Plane 1983	
Datum:	North American Datum 1983	
Ellipsoid:	GRS 1980	
Zone:	New Mexico Eastern Zone	
System Datum:	Mean Sea Level	

WELL DETAILS		Diamondback 22 State Com #3H
Ground Level	2982.1	
+N/-S	+E/-W	Northing
0.0	0.0	376074.84
		Eastings
		623273.57
		Latitude
		32° 2' 1.063 N
		Longitude
		104° 4' 8.102 W

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation	
9698.0	1.64	171.08	9693.5	-45.9	-26.9	66.2	231.0	TIE IN @ 9698' MD / 9694' TVD	
10038.0	23.20	199.80	10027.9	-109.9	-40.0	110.6	277.5	CROSSED HARD LINE @ 10038' MD / 10028' TVD	
14116.0	89.10	180.90	10360.1	-4055.1	-33.6	4056.2	4226.8	TD @ 14116' MD / 10360' TVD	

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Eastings	Latitude	Longitude
PBHL Diamondback 22 State Com #3H TC #1 10346.0	-4057.0	-59.1	372017.80	623214.49	32° 1' 20.934 N	104° 4' 8.993 W	
- plan hits target center							

