

Results of Directional Survey

API number:	30-025-40179			
OGRID:		Operator:	COG OPERATING LLC	
		Property:	AIRBONITA 12 FEDERAL COM	# 2H

surface	ULSTR:	O	12	T 22S	R 32E
				375 FSL	1980 FEL

BH Loc	ULSTR:	B	12	T 22S	R 32E
14110 MD		9751.5	TVD	410 FNL	2143 FEL
				4870 FSL	

Top Perf/OH	ULSTR:	O	12	T 22S	R 32E
9996 MD		9816.3	TVD	774 FSL	1932 FEL

Bot Perf/OH	ULSTR:	B	12	T 22S	R 32E
14034 MD		9756.6	TVD	485 FNL	2131 FEL
				4795 FSL	

	MD	N/S	E/W	VD
	9996	398.73	47.67	9816.25
TOP PERFS/OH	9996	398.73	47.67	9816.25
	10028	429.96	47.59	9823.22
	13937	4324.86	-136.66	9763.36
BOT PERFS/OH	14034	4420.49	-151.47	9756.59
	14064	4450.06	-156.05	9754.50

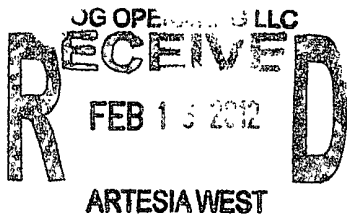
NEXT TO LAST	14064	4450.06	-156.05	9754.50
LAST READING	14110	4495.43	-163.01	9751.50
TD	14110	4495.43	-163.01	9751.50

Surface Location	375 FS	1980 FE
Projected BHL	4870 FS	2143 FE
Location of		
Top Perfs/OH	774 FS	1932 FE
Bottom Perfs/OH	4795 FS	2131 FE

SUMMARY of Subsurface Locations

Surface Location	O-12-22S-32E	375 FS	1980 FE	Vert. Depth
Top Perfs/OH	O-12-22S-32E	774 FS	1932 FE	9816.25
Bottom Perfs/OH	B-12-22S-32E	4795 FS	2131 FE	9756.59
Projected TD	B-12-22S-32E	4870 FS	2143 FE	9751.50

APR 18 2012



OPERATOR: COG Operating, LLC
WELL/LEASE: Airbonita 12 Fed # 2 H
COUNTY: Lea Co., New Mexico
Sec. 12, T22S, R32E

SUR: O-12-22s-32e, 375/S & 1980/E
BHL: B-12-22s-32e, 4870/S & 2143/E
API # 30-025-40179

STATE OF NEW MEXICO
DEVIATION REPORT

Depth	Deviation	Depth	Deviation
251	1	3,782	1 1/2
630	1	3,877	1 1/2
965	1	3,941	2 1/4
1,351	1 1/4	4,006	3
1,470	1 1/2	4,100	3
1,525	1 1/2	4,227	2 3/4
1,680	1 1/4	4,417	2 1/4
1,751	1 3/4	4,597	2 1/2
1,937	1 1/4	4,764	1 3/4
2,065	1 3/4	5,299	3/4
2,384	3	5,590	1 1/2
2,490	3	6,161	1
2,510	3	6,410	1
2,669	3 1/4	7,170	1
2,733	1 1/4	7,431	1
2,797	1 3/4	7,702	1 1/4
2,892	1 1/2	8,033	1/2
2,988	2	8,542	1 1/4
3,083	2 3/4	8,956	1 3/4
3,241	5 1/2	9,239	1
3,337	4 1/4	9,583	1 1/2
3,432	3 1/2	9,931	1 3/4
3,527	2 3/4	10,279	1 1/4
3,623	4 1/4		
3,719	3 3/4		

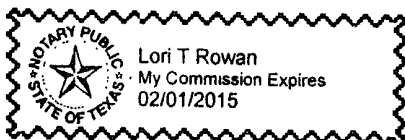
Patriot Drilling, LLC


M. Leroy Peterson, Executive Vice-
President



The foregoing instrument was acknowledged before me on this 16th day of January, 2012 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2015




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

COG OPERATING

Red Tank

Lea County, NM

Airbonita 12 Federal #2H

VH - Job #32K12111192

SUR: O-12-22s-32e, 375/S & 1980/E
BHL: B-12-22s-32e, 4870/S & 2143/E
API # 30-025-40179

Survey: Gyro

SDI Standard Survey Report

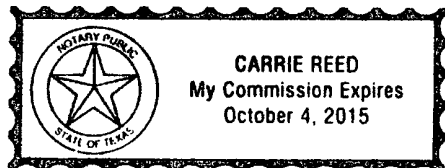
This survey is correct to the best of my knowledge and is supported by actual field data.

Elie Nantz

Notarized this date 31st of December, 2011.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Airbonita 12 Federal #2H
Project:	Red Tank	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Airbonita 12 Federal #2H	North Reference:	Grid
Wellbore:	VH - Job #32K12111192	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K12111192	Database:	EDM-Regulatory

Project:	Red Tank		
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	Lea County, NM				
Site Position:		Northing:	509,961 50 usft	Latitude:	32° 24' 0 043 N
From:	Lat/Long	Easting:	718,394 33 usft	Longitude:	103° 37' 32 671 W
Position Uncertainty:	0 0 usft	Slot Radius:	0"	Grid Convergence:	0 38 °

Well:	Airbonita 12 Federal #2H, Directional (Pathfinder)					
Well Position	+N/-S	0 0 usft	Northing:	509,961 50 usft	Latitude:	32° 24' 0 043 N
	+E/-W	0 0 usft	Easting:	718,394 33 usft	Longitude:	103° 37' 32 671 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	0 0 usft

Wellbore:	VH - Job #32K12111192
------------------	-----------------------

Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	12/6/2011	7 57	60 33	48,695

Design:	VH - Job #32K12111192
----------------	-----------------------

Audit Notes:					
Version:	1 0	Phase:	ACTUAL	Tie On Depth:	0 0

Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0 0	359 60

Survey Program	Date	From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
	1/22/2012	100 0	9,300 0	Gyro (VH - Job #32K12111192)	Keeper	Keeper Gyro

Measured Depth	Inclination	Azimuth	True Vertical	North/South	East/West	Closure Azimuth	Closure Distance
(usft)	(°)	(°)	Depth	(usft)	(usft)	(°)	(usft)
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 0
100 0	0 41	163 65	100 0	-0 3	0 1	163 65	0 4
200 0	0 36	195 26	200 0	-1 0	0 1	173 16	1 0
300 0	0 45	214 54	300 0	-1 6	-0 2	186 59	1 6
400 0	0 64	221 29	400 0	-2 4	-0 8	198 24	2 5
500 0	0 86	225 42	500 0	-3 3	-1 7	206 95	3 7
600 0	1 07	229 06	600 0	-4 4	-2 9	213 31	5 3
700 0	1 12	228 42	699 9	-5 7	-4 4	217 37	7 2
800 0	1 41	225 56	799 9	-7 2	-6 0	219 59	9 4
900 0	1 44	222 86	899 9	-9 0	-7 7	220 56	11 8
1,000 0	1 36	207 76	999 9	-11 0	-9 1	219 70	14 3
1,100 0	1 45	193 62	1,099 8	-13 2	-10 0	216 93	16 6

Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Airbonita 12 Federal #2H
Project:	Red Tank	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Airbonita 12 Federal #2H	North Reference:	Grid
Wellbore:	VH - Job #32K12111192	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K12111192	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 0	1 44	185 34	1,199 8	-15 7	-10 4	213 40	18 8
1,300 0	1 48	192 25	1,299 8	-18 2	-10 8	210 54	21 2
1,400 0	1 08	185 67	1,399 7	-20 4	-11 1	208 57	23 3
1,500 0	1 13	176 83	1,499 7	-22 4	-11 2	206 54	25 0
1,600 0	1 05	189 25	1,599 7	-24 3	-11 3	204 91	26 7
1,700 0	1 10	174 29	1,699 7	-26 1	-11 3	203 43	28 5
1,800 0	1 25	167 42	1,799 7	-28 1	-11 0	201 32	30 2
1,900 0	1 12	143 51	1,899 6	-30 0	-10 2	198 72	31 7
2,000 0	1 45	132 67	1,999 6	-31 6	-8 7	195 30	32 8
2,100 0	1 44	120 77	2,099 6	-33 1	-6 6	191 34	33 8
2,200 0	1 82	112 04	2,199 6	-34 4	-4 1	186 79	34 6
2,300 0	2 47	97 60	2,299 5	-35 2	-0 5	180 78	35 2
2,400 0	3 07	90 22	2,399 4	-35 5	4 3	173 05	35 8
2,500 0	3 10	86 46	2,499 2	-35 4	9 7	164 66	36 7
2,600 0	2 95	88 03	2,599 1	-35 1	15 0	156 91	38 2
2,700 0	2 40	88 34	2,699 0	-35 0	19 6	150 68	40 1
2,800 0	1 19	73 98	2,798 9	-34 6	22 7	146 72	41 4
2,900 0	1 75	55 62	2,898 9	-33 5	25 0	143 26	41 8
3,000 0	2 79	52 98	2,998 8	-31 2	28 2	137 85	42 0
3,100 0	4 11	59 46	3,098 6	-27 9	33 2	129 99	43 4
3,200 0	4 97	76 90	3,198 3	-25 1	40 5	121 73	47 7
3,300 0	4 45	73 32	3,298 0	-23 0	48 5	115 36	53 6
3,400 0	3 02	44 76	3,397 8	-20 0	54 0	110 30	57 6
3,500 0	2 91	15 97	3,497 6	-15 7	56 6	105 48	58 7
3,600 0	3 79	355 76	3,597 5	-9 9	57 0	99 88	57 9
3,700 0	3 72	357 40	3,697 3	-3 4	56 7	93 44	56 8
3,800 0	1 98	6 82	3,797 1	1 6	56 7	88 43	56 7
3,900 0	1 67	90 77	3,897 1	3 2	58 4	86 81	58 5
4,000 0	3 04	128 12	3,997 0	1 6	61 9	88 53	61 9
4,100 0	2 93	120 95	4,096 9	-1 4	66 2	91 18	66 2
4,200 0	2 64	85 69	4,196 8	-2 5	70 7	92 03	70 7
4,300 0	1 77	42 42	4,296 7	-1 2	74 0	90 92	74 0
4,400 0	1 86	15 77	4,396 7	1 5	75 5	88 85	75 5
4,500 0	2 07	10 95	4,496 6	4 9	76 3	86 36	76 4
4,600 0	1 92	13 45	4,596 5	8 3	77 0	83 88	77 5
4,700 0	1 78	22 00	4,696 5	11 3	78 0	81 74	78 8
4,800 0	1 60	18 60	4,796 4	14 1	79 0	79 89	80 3
4,900 0	1 37	14 59	4,896 4	16 6	79 8	78 27	81 5
5,000 0	1 30	5 34	4,996 4	18 9	80 2	76 77	82 4
5,100 0	1 31	349 94	5,096 4	21 1	80 1	75 23	82 8
5,200 0	1 25	348 70	5,196 3	23 3	79 7	73 70	83 0
5,300 0	1 09	359 49	5,296 3	25 3	79 4	72 32	83 4
5,400 0	1 27	354 11	5,396 3	27 4	79 3	70 96	83 9
5,500 0	0 80	4 96	5,496 3	29 2	79 3	69 80	84 5

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Airbonita 12 Federal #2H
Project:	Red Tank	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Airbonita 12 Federal #2H	North Reference:	Grid
Wellbore:	VH - Job #32K12111192	Survey/Calculation Method:	Minimum Curvature
Design:	VH - Job #32K12111192	Database:	EDM-Regulatory

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600 0	0 68	354 51	5,596 3	30 5	79 3	68 98	84 9
5,700 0	0 88	346 61	5,696 2	31 8	79 0	68 09	85 2
5,800 0	0 94	344 79	5,796 2	33 3	78 6	67 03	85 4
5,900 0	0 89	345 50	5,896 2	34 9	78 2	65 97	85 7
6,000 0	0 93	359 72	5,996 2	36 4	78 0	64 97	86 1
6,100 0	0 63	22 13	6,096 2	37 8	78 2	64 24	86 9
6,200 0	0 47	21 09	6,196 2	38 7	78 6	63 81	87 6
6,300 0	0 70	21 05	6,296 2	39 6	79 0	63 36	88 3
6,400 0	0 47	32 99	6,396 2	40 5	79 4	62 96	89 1
6,500 0	0 53	30 73	6,496 2	41 3	79 9	62 68	89 9
6,600 0	0 42	11 54	6,596 2	42 0	80 2	62 34	90 5
6,700 0	0 44	358 30	6,696 2	42 8	80 2	61 94	90 9
6,800 0	0 32	7 68	6,796 2	43 4	80 3	61 59	91 3
6,900 0	0 30	339 29	6,896 2	43 9	80 2	61 28	91 5
7,000 0	0 21	28 85	6,996 2	44 4	80 2	61 06	91 7
7,100 0	0 46	30 46	7,096 2	44 9	80 5	60 87	92 2
7,200 0	0 33	347 47	7,196 2	45 5	80 6	60 57	92 6
7,300 0	0 18	345 77	7,296 2	45 9	80 5	60 31	92 7
7,400 0	0 30	243 55	7,396 2	46 0	80 3	60 21	92 5
7,500 0	0 31	190 53	7,496 2	45 6	80 0	60 33	92 1
7,600 0	0 49	235 46	7,596 2	45 1	79 6	60 48	91 5
7,700 0	0 58	231 28	7,696 2	44 5	78 8	60 55	90 5
7,800 0	0 57	234 76	7,796 2	43 9	78 0	60 64	89 5
7,900 0	0 64	231 60	7,896 1	43 3	77 2	60 73	88 5
8,000 0	0 51	217 28	7,996 1	42 6	76 5	60 90	87 5
8,100 0	0 63	216 41	8,096 1	41 8	75 9	61 17	86 6
8,200 0	0 77	207 37	8,196 1	40 7	75 2	61 57	85 6
8,300 0	0 94	196 35	8,296 1	39 3	74 7	62 23	84 4
8,400 0	0 98	208 76	8,396 1	37 8	74 1	62 96	83 2
8,500 0	0 77	196 82	8,496 1	36 4	73 5	63 63	82 0
8,600 0	0 99	210 60	8,596 1	35 0	72 8	64 31	80 8
8,700 0	1 06	209 32	8,696 1	33 5	71 9	65 04	79 3
8,800 0	0 83	221 33	8,796 1	32 1	71 0	65 65	77 9
8,900 0	0 93	218 58	8,896 0	31 0	70 0	66 15	76 6
9,000 0	1 04	206 53	8,996 0	29 5	69 1	66 88	75 1
9,100 0	0 82	184 60	9,096 0	28 0	68 6	67 82	74 1
9,200 0	0 46	187 11	9,196 0	26 9	68 5	68 59	73 6
9,300 0	0 78	323 57	9,296 0	27 0	68 1	68 36	73 2



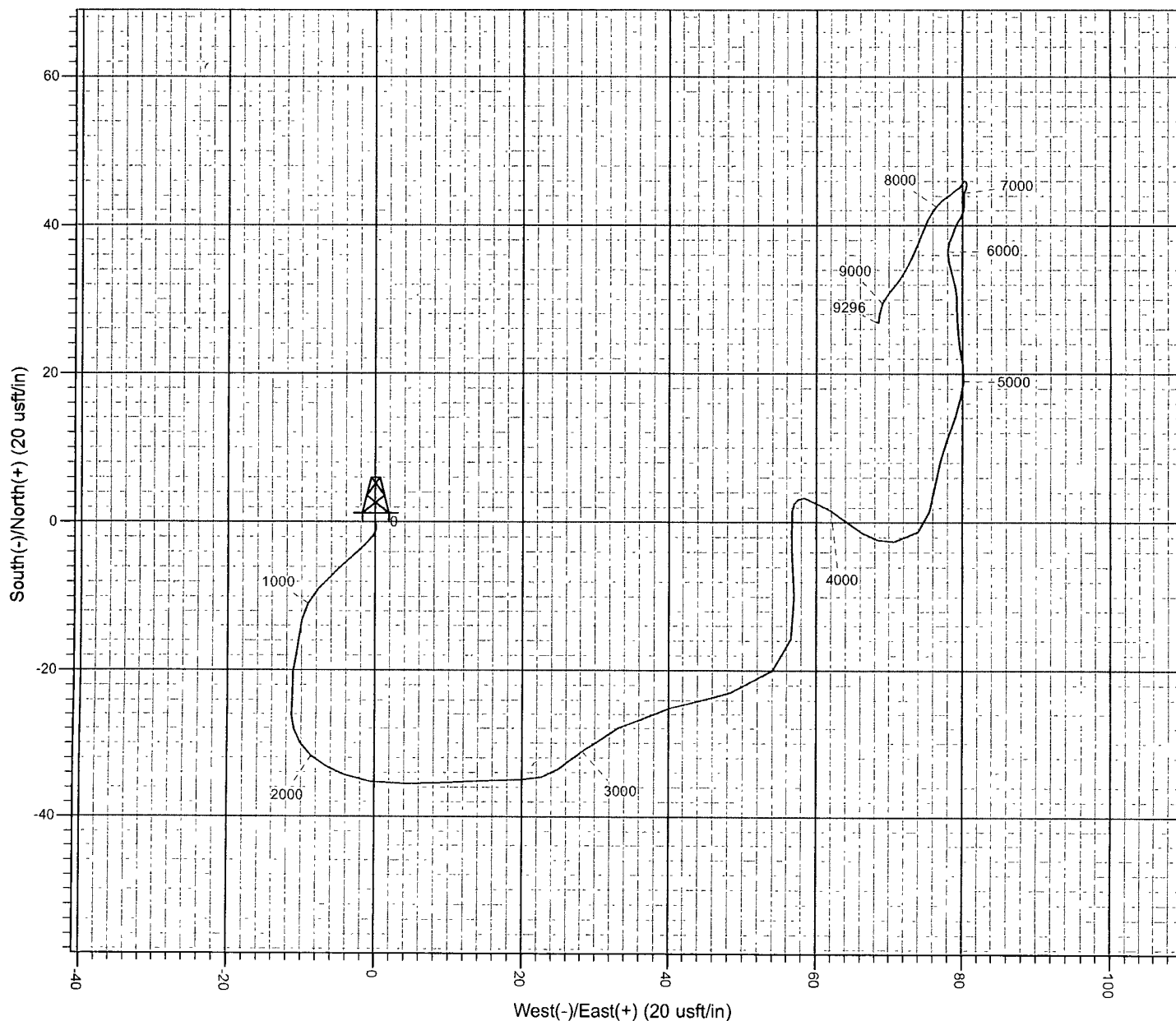
Project Red Tank
Lea County, NM
Well: Airbonita 12 Federal #2H
Wellbore: VH - Job #32K12111192
Design: VH - Job #32K12111192



Azimuths to Grid North
True North -0° 38'
Magnetic North 7° 19'
Magnetic Field
Strength 48694.9 nT
Dip Angle 60° 33'
Date 12/6/2011
Model IGRF2010

WELL DETAILS: Airbonita 12 Federal #2H
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	509961.50	718394.33	32° 24' 0.043 N	103° 37' 32.671 W	



PROJECT DETAILS: Red Tank
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: Lea County, NM
Site Centre Latitude: 32° 24' 0.043 N
Longitude: 103° 37' 32.671 W
Positional Uncertainty: 0.0
Convergence: 0.38
Local North: Grid

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING, LLC.

AIRBONITA 12 FEDERAL #2H ST01

LEA COUNTY, NEW MEXICO

Rig: PATRIOT #6

PathFinder Office Supervisor: STEVE BIBB

PathFinder Field Engineers: P.DAS

S.DOGGETT

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.24.0.0422 N LON: 103.37.32.6716 W

GRID Reference: NAD27 new mexico east Transverse Mercator

Ref GRID Coord: X: 718394.3000 Y: 509961.4000

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.19° EAST TO GRID

Vertical Section Plane: 359.60

Survey Vert. Reference: 17.50' Kelly Bushing To Ground

Altitude: 3635.00' Ground To MSL

Survey Calculations by RX5 V6.03E using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
TIED INTO SCIENTIFIC DRILLING GYRO SURVEY @ 9300'MD.										
9300.00	0.78	323.57	9296.01	0.00	26.57	27.05 N	68.04 E	73.22@	68.32	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
9332.00	0.97	345.13	9328.01	32.00	27.01	27.49 N	67.84 E	73.20@	67.94	1.18
9364.00	2.02	355.06	9360.00	32.00	27.84	28.31 N	67.72 E	73.40@	67.31	3.37
9396.00	6.42	4.55	9391.90	32.00	30.18	30.66 N	67.82 E	74.42@	65.67	13.87
9428.00	11.34	5.96	9423.51	32.00	35.10	35.57 N	68.29 E	77.00@	62.48	15.39
9459.00	14.77	3.67	9453.70	31.00	42.07	42.55 N	68.85 E	80.94@	58.29	11.19
9491.00	18.29	1.04	9484.37	32.00	51.16	51.64 N	69.21 E	86.35@	53.27	11.24
9523.00	21.54	358.05	9514.46	32.00	62.05	62.54 N	69.10 E	93.20@	47.85	10.64
9555.00	24.62	356.20	9543.89	32.00	74.58	75.06 N	68.46 E	101.59@	42.36	9.89
9586.00	27.70	356.12	9571.72	31.00	88.22	88.70 N	67.54 E	111.49@	37.29	9.94
9618.00	30.95	356.20	9599.61	32.00	103.87	104.33 N	66.49 E	123.72@	32.51	10.16
9650.00	33.85	355.41	9626.63	32.00	120.97	121.43 N	65.23 E	137.84@	28.24	9.16
9682.00	37.02	354.89	9652.70	32.00	139.47	139.92 N	63.66 E	153.72@	24.47	9.95
9713.00	40.27	354.53	9676.90	31.00	158.75	159.19 N	61.87 E	170.79@	21.24	10.51
9745.00	44.76	353.66	9700.49	32.00	180.27	180.69 N	59.64 E	190.28@	18.27	14.15
9777.00	49.24	352.51	9722.30	32.00	203.52	203.92 N	56.82 E	211.69@	15.57	14.24
9809.00	53.73	353.30	9742.23	32.00	228.38	228.76 N	53.73 E	234.98@	13.22	14.16
9841.00	57.95	354.97	9760.19	32.00	254.73	255.09 N	51.04 E	260.15@	11.31	13.87
9872.00	62.52	356.99	9775.58	31.00	281.58	281.93 N	49.16 E	286.18@	9.89	15.79
9901.00	67.18	359.28	9787.90	29.00	307.81	308.16 N	48.32 E	311.92@	8.91	17.59
9932.00	71.84	359.45	9798.75	31.00	336.84	337.19 N	48.00 E	340.58@	8.10	15.04
9964.00	74.30	359.72	9808.07	32.00	367.45	367.79 N	47.78 E	370.88@	7.40	7.73
9996.00	76.06	359.89	9816.25	32.00	398.39	398.73 N	47.67 E	401.57@	6.82	5.52
10028.00	78.79	359.83	9823.22	32.00	429.62	429.96 N	47.59 E	432.58@	6.32	8.53

SUR: O-12-22s-32e, 375/S & 1980/E
 BHL: B-12-22s-32e, 4870/S & 2143/E
 API # 30-025-40179

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING, LLC.
AIRBONITA 12 FEDERAL #2H ST01
LEA COUNTY, NEW MEXICO
RIG: PATRIOT #6

Page 02/03

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
10059.00	81.95	358.99	9828.40	31.00	460.17	460.52 N	47.28 E	462.94@	5.86	10.54
10091.00	84.06	358.50	9832.30	32.00	491.93	492.27 N	46.58 E	494.47@	5.41	6.77
10122.00	86.88	358.14	9834.75	31.00	522.82	523.15 N	45.68 E	525.14@	4.99	9.17
10154.00	87.49	357.81	9836.32	32.00	554.77	555.10 N	44.55 E	556.88@	4.59	2.17
10186.00	87.76	357.96	9837.65	32.00	586.73	587.05 N	43.37 E	588.65@	4.22	0.97
10218.00	90.22	358.28	9838.21	32.00	618.71	619.02 N	42.32 E	620.47@	3.91	7.75
10313.00	91.45	0.23	9836.83	95.00	713.69	714.00 N	41.08 E	715.18@	3.29	2.43
10409.00	90.31	0.27	9835.35	96.00	809.67	809.98 N	41.50 E	811.05@	2.93	1.19
10504.00	91.98	2.31	9833.45	95.00	904.61	904.93 N	43.64 E	905.98@	2.76	2.77
10599.00	90.40	1.81	9831.48	95.00	999.49	999.85 N	47.05 E	1000.95@	2.69	1.74
10695.00	90.31	3.48	9830.89	96.00	1095.35	1095.74 N	51.48 E	1096.95@	2.69	1.74
10790.00	89.87	2.75	9830.74	95.00	1190.17	1190.60 N	56.64 E	1191.94@	2.72	0.90
10885.00	91.54	1.48	9829.57	95.00	1285.07	1285.52 N	60.15 E	1286.93@	2.68	2.21
10981.00	91.63	2.19	9826.91	96.00	1380.96	1381.43 N	63.22 E	1382.88@	2.62	0.75
11076.00	90.31	1.42	9825.30	95.00	1475.87	1476.37 N	66.21 E	1477.85@	2.57	1.61
11171.00	87.85	359.82	9826.83	95.00	1570.83	1571.34 N	67.24 E	1572.78@	2.45	3.09
11266.00	88.29	358.15	9830.03	95.00	1665.77	1666.27 N	65.56 E	1667.56@	2.25	1.82
11362.00	90.75	359.25	9830.83	96.00	1761.75	1762.23 N	63.38 E	1763.37@	2.06	2.81
11457.00	91.19	0.00	9829.23	95.00	1856.73	1857.22 N	62.76 E	1858.28@	1.94	0.92
11552.00	90.13	359.14	9828.13	95.00	1951.72	1952.21 N	62.05 E	1953.19@	1.82	1.44
11647.00	89.60	357.76	9828.35	95.00	2046.70	2047.17 N	59.48 E	2048.03@	1.66	1.56
11742.00	91.10	359.21	9827.77	95.00	2141.68	2142.13 N	56.97 E	2142.89@	1.52	2.20
11837.00	90.84	358.67	9826.17	95.00	2236.66	2237.10 N	55.21 E	2237.78@	1.41	0.63
11932.00	91.01	358.47	9824.63	95.00	2331.63	2332.05 N	52.84 E	2332.65@	1.30	0.28
12027.00	90.92	358.19	9823.03	95.00	2426.59	2427.00 N	50.07 E	2427.52@	1.18	0.31
12122.00	90.40	357.33	9821.94	95.00	2521.54	2521.92 N	46.36 E	2522.35@	1.05	1.06
12218.00	89.87	356.88	9821.71	96.00	2617.44	2617.80 N	41.51 E	2618.13@	0.91	0.72
12313.00	89.69	356.68	9822.08	95.00	2712.33	2712.65 N	36.17 E	2712.89@	0.76	0.28

PathFinder Energy Services, Inc.

Survey Report

COG OPERATING, LLC.
AIRBONITA 12 FEDERAL #2H ST01
LEA COUNTY, NEW MEXICO
RIG: PATRIOT #6

Page 03/03

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
12408.00	90.40	356.21	9822.00	95.00	2807.18	2807.46 N	30.28 E	2807.63@	0.62	0.90
12503.00	90.04	355.86	9821.64	95.00	2902.00	2902.23 N	23.71 E	2902.33@	0.47	0.53
12598.00	90.57	355.67	9821.13	95.00	2996.78	2996.97 N	16.70 E	2997.02@	0.32	0.59
12694.00	90.66	356.12	9820.10	96.00	3092.58	3092.72 N	9.83 E	3092.74@	0.18	0.48
12829.00	93.39	356.34	9815.33	135.00	3227.25	3227.33 N	0.96 E	3227.33@	0.02	2.03
12924.00	92.95	356.08	9810.08	95.00	3321.94	3321.98 N	5.31 W	3321.98@	359.91	0.54
13019.00	93.39	355.21	9804.82	95.00	3416.56	3416.56 N	12.52 W	3416.58@	359.79	1.03
13114.00	91.54	353.63	9800.74	95.00	3511.08	3511.01 N	21.74 W	3511.08@	359.65	2.56
13209.00	91.19	353.06	9798.48	95.00	3605.49	3605.35 N	32.75 W	3605.50@	359.48	0.70
13272.00	91.10	352.60	9797.22	63.00	3668.04	3667.84 N	40.61 W	3668.07@	359.37	0.74
13367.00	91.63	352.55	9794.95	95.00	3762.29	3762.02 N	52.89 W	3762.39@	359.19	0.56
13462.00	92.42	351.50	9791.60	95.00	3856.41	3856.04 N	66.06 W	3856.60@	359.02	1.38
13557.00	92.07	350.71	9787.88	95.00	3950.29	3949.82 N	80.74 W	3950.65@	358.83	0.91
13652.00	93.83	351.90	9782.99	95.00	4044.17	4043.60 N	95.08 W	4044.72@	358.65	2.24
13779.00	93.83	351.72	9774.50	127.00	4169.71	4169.03 N	113.13 W	4170.56@	358.45	0.14
13937.00	94.26	351.11	9763.36	158.00	4325.71	4324.86 N	136.66 W	4327.02@	358.19	0.47
14064.00	93.74	351.28	9754.50	127.00	4451.04	4450.06 N	156.05 W	4452.80@	357.99	0.43
STRAIGHT LINE PROJECTION TO BIT AT 14110' MD.										
14110.00	93.74	351.28	9751.50	46.00	4496.46	4495.43 N	163.01 W	4498.39@	357.92	0.00