

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 30-025-41096	² Pool Code 55610	³ Pool Name Scharb; Bone Spring
⁴ Property Code 39801	⁵ Property Name Gateway 2 State # 2H	⁶ Well Number 2H
⁷ OGRID No. 249099	⁸ Operator Name Caza Operating, LLC	⁹ Elevation 3849

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
D	2	19 S	35 E	4	525	North	660	West	Lea

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot 1dn	Feet from the	North/South line	Feet from the	East/West line	County
M	2	19 S	35 E		4711	North	632	West	Lea

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

660 FWL  525 FNL zone Entry 846 FNL	
4711 FNL 	
RSI entry pt 741 FSL 632 FWL  555 FSL	

5265.9 ft

17 OPERATOR CERTIFICATION

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

Signature	Date
	10-16-13
Printed Name	
Richard L. Wright	
E-mail Address	
rwright@cazapetro.com	

18 SURVEYOR CERTIFICATION

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

Date of Survey	Signature and Seal of Professional Surveyor:

Certificate Number

OCT 22 2013



Survey Report

Service Company: Cathedral Energy Services

Location: 525' FNL & 660' FWL

Well: Gateway 2 State #2H

Rig: Patriot Drilling 4

API or UWI: 30-025-41096

Job Number: 137079

State: New Mexico

Operating Company: Caza Operating, LLC

County: Lea

Magnetic Declination: 0.00

Comment: Survey Corrected to Grid North 6.81°
Last Survey is Projected to Bit

Proposed Azimuth: 179.43

North Reference: GRID

HOBBS OCD

OCT 16 2013

RECEIVED

Tie-In Data:

MD	Inclination	Azimuth	TVD	NS	EW
0.00	0.00	0.00	0.00	0.00	0.00

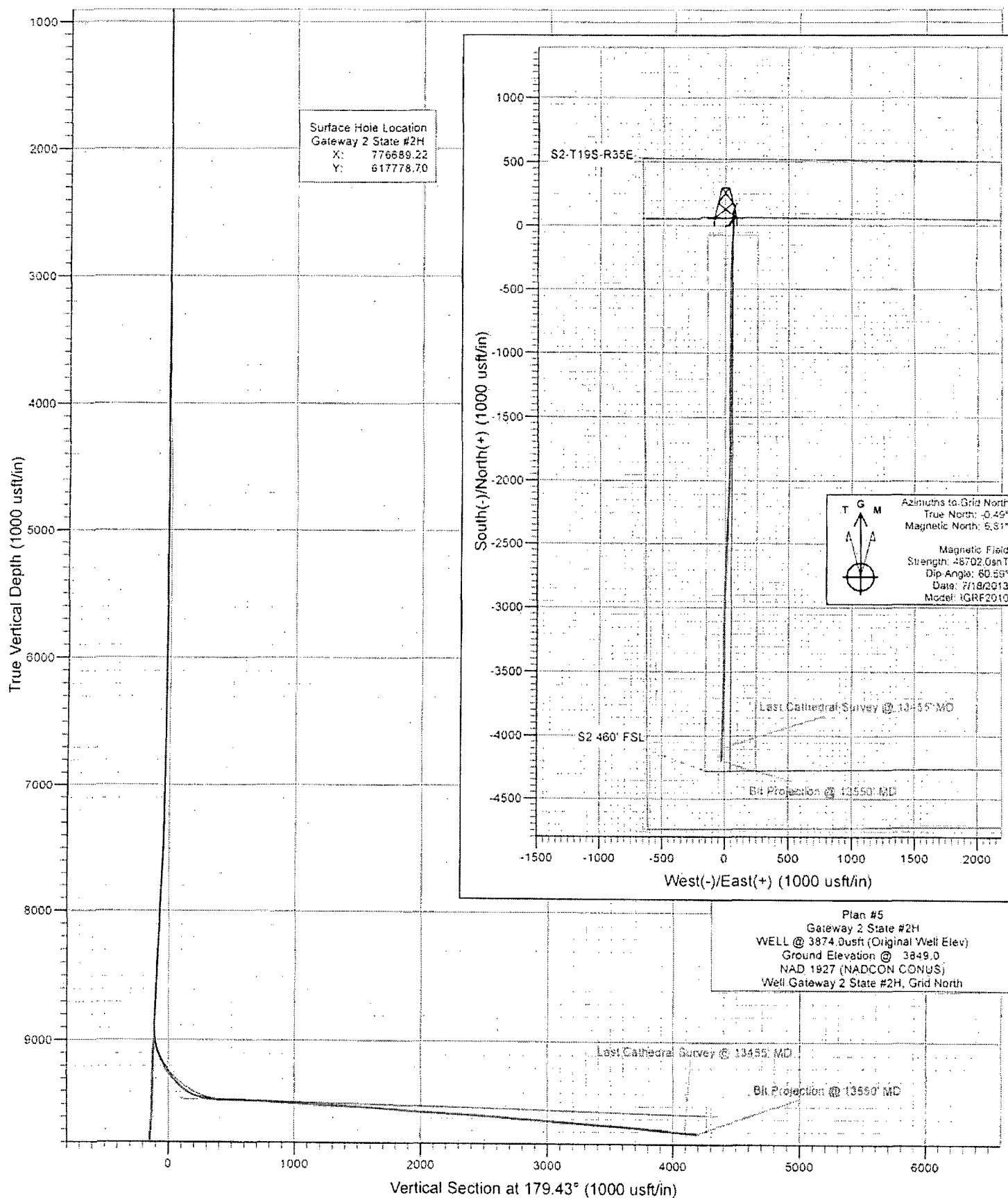
Survey Data:

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
100.00	0.22	328.51	100.00	0.16	-0.10	328.51	0.19	-0.16	0.22
200.00	0.22	338.44	200.00	0.51	-0.27	331.85	0.58	-0.51	0.04
300.00	0.20	26.01	300.00	0.85	-0.27	342.49	0.89	-0.85	0.17
400.00	0.58	45.42	400.00	1.36	0.17	7.13	1.37	-1.36	0.40
500.00	0.78	52.28	499.99	2.13	1.07	26.65	2.38	-2.12	0.22
600.00	0.49	33.80	599.98	2.90	1.85	32.45	3.44	-2.88	0.35
700.00	0.70	63.94	699.98	3.53	2.63	36.74	4.40	-3.50	0.37
800.00	0.45	63.17	799.97	3.97	3.53	41.64	5.31	-3.94	0.25
900.00	0.28	81.92	899.97	4.18	4.12	44.59	5.87	-4.14	0.21
1000.00	0.36	86.86	999.97	4.23	4.68	47.86	6.31	-4.19	0.08
1100.00	0.32	97.30	1099.97	4.22	5.27	51.34	6.75	-4.16	0.07
1200.00	0.78	99.42	1199.96	4.07	6.22	56.80	7.43	-4.01	0.46
1300.00	0.78	81.08	1299.95	4.06	7.56	61.75	8.58	-3.99	0.25
1400.00	0.70	80.30	1399.94	4.27	8.84	64.20	9.81	-4.18	0.08
1500.00	0.37	79.66	1499.94	4.43	9.76	65.57	10.72	-4.34	0.33
1600.00	0.43	69.93	1599.94	4.62	10.43	66.10	11.40	-4.52	0.09
1700.00	0.31	66.56	1699.94	4.86	11.03	66.23	12.05	-4.75	0.12
1800.00	0.40	69.52	1799.93	5.09	11.60	66.33	12.67	-4.97	0.09
1900.00	0.30	63.48	1899.93	5.32	12.16	66.36	13.28	-5.20	0.11
2000.00	0.19	66.87	1999.93	5.51	12.55	66.31	13.71	-5.38	0.11
2100.00	0.32	66.34	2099.93	5.68	12.96	66.32	14.15	-5.55	0.13
2200.00	0.38	79.80	2199.93	5.85	13.54	66.62	14.75	-5.72	0.10
2300.00	0.48	87.60	2299.93	5.93	14.29	67.45	15.47	-5.79	0.12
2400.00	0.77	95.91	2399.92	5.88	15.37	69.07	16.46	-5.73	0.30
2500.00	0.79	88.13	2499.91	5.83	16.73	70.78	17.72	-5.67	0.11
2600.00	0.65	98.70	2599.90	5.77	17.98	72.21	18.88	-5.59	0.19
2700.00	1.02	79.46	2699.89	5.85	19.42	73.24	20.28	-5.65	0.46
2800.00	1.24	75.85	2799.87	6.27	21.34	73.62	22.24	-6.06	0.23
2900.00	1.31	76.80	2899.85	6.80	23.50	73.86	24.47	-6.56	0.07
3000.00	1.30	67.30	2999.82	7.50	25.66	73.71	26.73	-7.24	0.22
3100.00	1.35	70.67	3099.79	8.33	27.82	73.34	29.04	-8.05	0.09
3200.00	1.22	50.60	3199.77	9.39	29.75	72.48	31.20	-9.09	0.47

3300.00	0.97	61.41	3299.75	10.47	31.32	71.51	33.02	-10.16	0.32
3400.80	0.86	42.63	3400.54	11.44	32.58	70.66	34.53	-11.11	0.32
3500.00	0.63	28.91	3499.73	12.46	33.35	69.51	35.60	-12.13	0.29
3600.00	0.59	25.94	3599.73	13.41	33.84	68.39	36.40	-13.07	0.05
3700.00	0.27	13.62	3699.72	14.10	34.12	67.55	36.92	-13.76	0.33
3800.00	0.34	30.16	3799.72	14.58	34.32	66.98	37.29	-14.24	0.11
3900.00	0.30	16.36	3899.72	15.09	34.55	66.40	37.70	-14.75	0.09
4000.00	0.37	12.92	3999.72	15.66	34.69	65.71	38.06	-15.31	0.07
4100.00	0.40	12.12	4099.72	16.31	34.84	64.91	38.47	-15.97	0.03
4200.00	0.50	355.74	4199.71	17.09	34.88	63.90	38.84	-16.74	0.16
4300.00	0.41	351.34	4299.71	17.88	34.79	62.80	39.12	-17.53	0.10
4400.00	0.54	347.68	4399.71	18.69	34.64	61.65	39.36	-18.35	0.13
4500.00	0.49	359.39	4499.70	19.58	34.53	60.45	39.70	-19.24	0.12
4600.00	0.48	346.58	4599.70	20.42	34.43	59.34	40.03	-20.07	0.11
4700.00	0.58	1.08	4699.69	21.33	34.34	58.16	40.43	-20.99	0.17
4800.00	0.40	1.87	4799.69	22.18	34.37	57.16	40.90	-21.84	0.18
4900.00	0.36	8.46	4899.69	22.84	34.42	56.43	41.31	-22.50	0.06
5000.00	0.39	18.67	4999.69	23.48	34.58	55.83	41.79	-23.13	0.07
5100.00	0.29	38.95	5099.68	24.00	34.85	55.45	42.31	-23.65	0.15
5200.00	0.35	38.96	5199.68	24.43	35.20	55.24	42.85	-24.08	0.06
5300.00	0.30	28.55	5299.68	24.90	35.51	54.97	43.37	-24.54	0.08
5400.00	0.51	29.63	5399.68	25.51	35.86	54.57	44.01	-25.16	0.21
5500.00	0.32	27.94	5499.68	26.15	36.21	54.17	44.66	-25.79	0.19
5600.00	0.38	34.71	5599.67	26.67	36.53	53.87	45.23	-26.30	0.07
5700.00	0.35	39.20	5699.67	27.18	36.91	53.64	45.84	-26.81	0.04
5800.00	0.36	58.98	5799.67	27.58	37.37	53.58	46.45	-27.20	0.12
5900.00	0.56	44.88	5899.67	28.08	37.99	53.53	47.24	-27.70	0.23
6000.00	0.57	50.16	5999.66	28.75	38.72	53.40	48.22	-28.36	0.05
6100.00	0.57	66.32	6099.66	29.27	39.55	53.50	49.20	-28.87	0.16
6200.00	0.65	66.28	6199.65	29.69	40.53	53.77	50.24	-29.29	0.08
6300.00	0.68	59.34	6299.65	30.23	41.56	53.97	51.39	-29.81	0.09
6400.00	0.77	45.70	6399.64	31.00	42.55	53.93	52.64	-30.57	0.19
6500.00	0.91	61.88	6499.63	31.84	43.73	53.94	54.09	-31.40	0.27
6600.00	0.97	58.25	6599.61	32.66	45.15	54.12	55.72	-32.21	0.08
6700.00	0.94	58.73	6699.60	33.53	46.57	54.25	57.39	-33.07	0.03
6800.00	0.88	48.46	6799.59	34.47	47.85	54.23	58.97	-33.99	0.17
6900.00	1.03	41.11	6899.57	35.65	49.01	53.97	60.61	-35.16	0.19
7000.00	1.17	48.50	6999.55	37.01	50.37	53.69	62.50	-36.50	0.20
7100.00	1.35	51.54	7099.53	38.42	52.06	53.57	64.70	-37.90	0.19
7200.00	1.44	45.39	7199.50	40.03	53.87	53.38	67.12	-39.49	0.17
7300.00	1.42	40.18	7299.47	41.86	55.57	53.01	69.57	-41.31	0.13
7400.00	1.95	32.61	7399.43	44.24	57.28	52.32	72.38	-43.67	0.57
7500.00	2.40	19.89	7499.35	47.64	58.91	51.04	75.77	-47.05	0.66
7600.00	2.46	11.40	7599.26	51.71	60.05	49.26	79.25	-51.12	0.36
7700.00	2.51	11.97	7699.17	55.96	60.93	47.43	82.73	-55.35	0.06
7800.00	2.59	12.16	7799.07	60.31	61.86	45.72	86.39	-59.69	0.08
7900.00	2.67	1.78	7898.97	64.85	62.40	43.90	90.00	-64.22	0.48
8000.00	2.61	357.16	7998.86	69.45	62.36	41.92	93.34	-68.83	0.22
8100.00	2.72	354.40	8098.75	74.09	62.02	39.93	96.62	-73.47	0.17
8200.00	3.16	1.52	8198.62	79.20	61.86	37.99	100.50	-78.58	0.57
8300.00	2.79	5.45	8298.49	84.38	62.17	36.38	104.81	-83.76	0.42
8400.00	2.73	8.14	8398.37	89.16	62.73	35.13	109.02	-88.53	0.14
8500.00	2.74	3.69	8498.25	93.90	63.23	33.95	113.20	-93.27	0.21
8600.00	2.74	3.21	8598.14	98.68	63.51	32.77	117.35	-98.04	0.02
8700.00	2.87	0.06	8698.02	103.57	63.65	31.57	121.56	-102.93	0.20

8800.00	2.84	355.35	8797.90	108.54	63.45	30.31	125.72	-107.90	0.24
8865.00	2.34	355.34	8862.83	111.47	63.21	29.56	128.14	-110.83	0.77
8891.00	1.70	190.50	8888.82	111.62	63.10	29.48	128.22	-110.98	15.41
8923.00	2.90	186.90	8920.80	110.35	62.92	29.69	127.02	-109.71	3.78
8954.00	4.40	180.80	8951.73	108.38	62.80	30.09	125.26	-107.75	4.99
8984.00	7.00	178.10	8981.58	105.40	62.85	30.81	122.72	-104.77	8.71
9018.00	9.70	178.00	9015.22	100.47	63.02	32.10	118.59	-99.83	7.94
9049.00	12.50	178.00	9045.64	94.50	63.23	33.78	113.70	-93.87	9.03
9080.00	15.10	177.30	9075.74	87.11	63.53	36.10	107.82	-86.48	8.40
9112.00	18.90	178.40	9106.34	77.77	63.87	39.40	100.64	-77.13	11.92
9144.00	21.10	177.70	9136.41	66.83	64.25	43.87	92.71	-66.19	6.92
9173.00	24.30	179.60	9163.16	55.64	64.50	49.22	85.19	-55.00	11.32
9205.00	29.00	182.90	9191.75	41.30	64.16	57.23	76.30	-40.66	15.39
9239.00	31.40	182.90	9221.13	24.22	63.29	69.06	67.77	-23.59	7.06
9270.00	34.60	180.80	9247.13	7.35	62.76	83.32	63.19	-6.73	10.96
9302.00	38.90	181.70	9272.76	-11.78	62.33	100.71	63.44	12.40	13.54
9333.00	40.70	183.50	9296.58	-31.60	61.43	117.23	69.08	32.21	6.89
9363.00	40.50	184.30	9319.36	-51.08	60.10	130.36	78.88	51.68	1.86
9393.00	44.30	182.40	9341.51	-71.27	58.93	140.41	92.48	71.85	13.37
9422.00	47.30	183.10	9361.72	-92.03	57.93	147.81	108.75	92.61	10.49
9451.00	51.30	182.90	9380.63	-113.99	56.78	153.52	127.35	114.55	13.80
9484.00	58.10	181.40	9399.69	-140.88	55.79	158.40	151.53	141.43	20.94
9516.00	63.40	182.90	9415.32	-168.77	54.73	162.03	177.42	169.31	17.06
9546.00	69.10	181.80	9427.40	-196.20	53.61	164.72	203.39	196.72	19.29
9580.00	73.40	183.20	9438.33	-228.35	52.20	167.12	234.24	228.86	13.23
9612.00	76.90	182.70	9446.53	-259.24	50.61	168.95	264.13	259.73	11.04
9640.00	80.00	182.20	9452.13	-286.64	49.44	170.21	290.87	287.12	11.21
9675.00	83.20	181.60	9457.24	-321.24	48.29	171.45	324.85	321.71	9.30
9739.00	88.00	180.40	9462.15	-385.03	47.18	173.01	387.91	385.48	7.73
9834.00	89.30	181.00	9464.39	-479.99	46.02	174.52	482.19	480.42	1.51
9929.00	88.90	181.40	9465.88	-574.96	44.03	175.62	576.64	575.37	0.60
10024.00	87.30	180.80	9469.03	-669.88	42.21	176.39	671.21	670.27	1.80
10119.00	84.60	180.50	9475.74	-764.63	41.13	176.92	765.74	765.00	2.86
10214.00	86.10	180.00	9483.44	-859.31	40.72	177.29	860.28	859.68	1.66
10309.00	87.20	180.70	9489.00	-954.15	40.14	177.59	954.99	954.50	1.37
10404.00	87.10	180.70	9493.72	-1049.02	38.98	177.87	1049.75	1049.36	0.11
10500.00	86.70	179.90	9498.91	-1144.88	38.48	178.08	1145.53	1145.21	0.93
10594.00	88.10	180.40	9503.17	-1238.78	38.23	178.23	1239.37	1239.10	1.58
10690.00	88.20	180.60	9506.27	-1334.73	37.39	178.40	1335.25	1335.03	0.23
10785.00	86.10	180.10	9511.00	-1429.60	36.81	178.52	1430.08	1429.90	2.27
10880.00	86.60	180.00	9517.04	-1524.41	36.73	178.62	1524.85	1524.70	0.54
10975.00	86.20	180.00	9523.01	-1619.22	36.73	178.70	1619.64	1619.51	0.42
11071.00	86.20	180.30	9529.37	-1715.01	36.48	178.78	1715.40	1715.29	0.31
11166.00	85.80	180.40	9536.00	-1809.78	35.90	178.86	1810.13	1810.04	0.43
11261.00	85.70	180.60	9543.04	-1904.51	35.08	178.94	1904.84	1904.77	0.23
11356.00	85.70	181.20	9550.16	-1999.23	33.59	179.04	1999.51	1999.47	0.63
11451.00	86.50	181.90	9556.62	-2093.98	31.02	179.15	2094.21	2094.18	1.12
11547.00	87.20	182.20	9561.90	-2189.77	27.59	179.28	2189.94	2189.94	0.79
11642.00	87.10	182.20	9566.62	-2284.58	23.95	179.40	2284.71	2284.71	0.11
11738.00	86.70	182.10	9571.81	-2380.37	20.36	179.51	2380.46	2380.46	0.43
11833.00	86.30	182.10	9577.61	-2475.13	16.88	179.61	2475.19	2475.18	0.42
11928.00	85.90	181.90	9584.08	-2569.85	13.57	179.70	2569.89	2569.86	0.47
12023.00	85.50	182.10	9591.20	-2664.53	10.27	179.78	2664.55	2664.50	0.47
12119.00	84.90	181.90	9599.23	-2760.13	6.93	179.86	2760.14	2760.07	0.66
12218.00	84.80	182.30	9608.12	-2858.67	3.32	179.93	2858.67	2858.56	0.41

12313.00	86.10	182.10	9615.66	-2953.30	-0.32	180.01	2953.30	2953.15	1.38
12408.00	86.50	182.20	9621.79	-3048.03	-3.88	180.07	3048.03	3047.84	0.43
12504.00	85.80	180.30	9628.23	-3143.79	-5.97	180.11	3143.79	3143.57	2.11
12599.00	85.80	180.30	9635.19	-3238.53	-6.46	180.11	3238.54	3238.31	0.00
12694.00	85.80	180.50	9642.15	-3333.27	-7.12	180.12	3333.28	3333.04	0.21
12789.00	85.80	180.70	9649.11	-3428.01	-8.12	180.14	3428.02	3427.76	0.21
12884.00	85.60	181.10	9656.23	-3522.73	-9.60	180.16	3522.75	3522.46	0.47
12979.00	85.50	181.20	9663.60	-3617.43	-11.50	180.18	3617.45	3617.13	0.15
13074.00	85.00	181.30	9671.47	-3712.08	-13.57	180.21	3712.10	3711.76	0.54
13170.00	85.60	181.30	9679.33	-3807.73	-15.74	180.24	3807.76	3807.39	0.63
13265.00	85.20	181.40	9686.95	-3902.40	-17.97	180.26	3902.44	3902.03	0.43
13360.00	84.60	181.90	9695.40	-3996.98	-20.70	180.30	3997.04	3996.58	0.82
13455.00	84.10	182.30	9704.75	-4091.46	-24.16	180.34	4091.53	4091.01	0.67
13550.00	84.10	182.40	9714.52	-4185.87	-28.03	180.38	4185.97	4185.39	0.10



Cathedral Energy Services

Survey Report

Company: Caza Operating, LLC
Project: Lea County, NM
Site: Gateway 2 State
Well: Gateway 2 State #2H
Wellbore: HZ
Design: HZ

Local Co-ordinate Reference: Well Gateway 2 State #2H
TVD Reference: WELL @ 3874.0usft (Original Well Elev)
MD Reference: WELL @ 3874.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Project	Lea 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 East 3001		

Site	Gateway 2 State				
Site Position:		Northing:	617,778.70 usft	Latitude:	32° 41' 42.530 N
From:	Lat/Long	Easting:	776,689.22 usft	Longitude:	103° 26' 2.170 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.49 °

Well	Gateway 2 State #2H					
Well Position	+N/-S	0.0 usft	Northing:	617,778.70 usft	Latitude:	32° 41' 42.530 N
	+E/-W	0.0 usft	Easting:	776,689.22 usft	Longitude:	103° 26' 2.170 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,849.0 usft	

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	7/18/2013	(°)	(°)	(nT)
			7.30	60.59	48.702

Design	HZ				
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	179.43	

Survey Program		Date	8/28/2013	
From	To			
(usft)	(usft)	Survey (Wellbore)	Tool Name	Description
100.0	8,800.0	Gyro (HZ)	Gyro	Gyro
8,865.0	13,550.0	MWD (HZ)	ISCWSA MWD	MWD - ISCWSA

Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Formations /
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Comments
(usft)			(usft)			(usft)	(°/100usf	(°/100u	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.22	328.51	100.0	0.2	-0.1	-0.2	0.22	0.22	
200.0	0.22	338.44	200.0	0.5	-0.3	-0.5	0.04	0.00	
300.0	0.20	26.01	300.0	0.8	-0.3	-0.8	0.17	-0.03	
400.0	0.58	45.42	400.0	1.4	0.2	-1.4	0.40	0.38	
500.0	0.78	52.28	500.0	2.1	1.1	-2.1	0.22	0.20	
600.0	0.49	33.80	600.0	2.9	1.8	-2.9	0.35	-0.29	
700.0	0.70	63.94	700.0	3.5	2.6	-3.5	0.37	0.21	
800.0	0.45	63.17	800.0	4.0	3.5	-3.9	0.26	-0.26	
900.0	0.28	81.92	900.0	4.2	4.1	-4.1	0.20	-0.17	
1,000.0	0.36	86.86	1,000.0	4.2	4.7	-4.2	0.08	0.08	
1,100.0	0.32	97.30	1,100.0	4.2	5.3	-4.2	0.07	-0.04	

Cathedral Energy Services

Survey Report

Company: Caza Operating, LLC
Project: Lea County, NM
Site: Gateway 2 State
Well: Gateway 2 State #2H
Wellbore: HZ
Design: HZ

Local Co-ordinate Reference: Well Gateway 2 State #2H
TVD Reference: WELL @ 3874.0usft (Original Well Elev)
MD Reference: WELL @ 3874.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
1,200.0	0.78	99.42	1,200.0	4.1	6.2	-4.0	0.46	0.46	
1,300.0	0.78	81.08	1,300.0	4.1	7.6	-4.0	0.25	-0.01	
1,400.0	0.70	80.30	1,399.9	4.3	8.8	-4.2	0.08	-0.08	
1,500.0	0.37	79.66	1,499.9	4.4	9.8	-4.3	0.32	-0.32	
1,600.0	0.43	69.93	1,599.9	4.6	10.4	-4.5	0.09	0.06	
1,700.0	0.31	66.56	1,699.9	4.9	11.0	-4.7	0.12	-0.12	
1,800.0	0.40	69.52	1,799.9	5.1	11.6	-5.0	0.10	0.09	
1,900.0	0.30	63.48	1,899.9	5.3	12.2	-5.2	0.11	-0.10	
2,000.0	0.19	66.87	1,999.9	5.5	12.6	-5.4	0.11	-0.11	
2,100.0	0.32	66.34	2,099.9	5.7	13.0	-5.6	0.12	0.12	
2,200.0	0.38	79.80	2,199.9	5.9	13.6	-5.7	0.10	0.06	
2,300.0	0.48	87.59	2,299.9	5.9	14.3	-5.8	0.12	0.11	
2,400.0	0.77	95.91	2,399.9	5.9	15.4	-5.7	0.30	0.29	
2,500.0	0.79	88.13	2,499.9	5.8	16.8	-5.7	0.11	0.02	
2,600.0	0.65	98.70	2,599.9	5.8	18.0	-5.6	0.20	-0.15	
2,700.0	1.02	79.46	2,699.9	5.9	19.4	-5.7	0.47	0.38	
2,800.0	1.24	75.84	2,799.9	6.3	21.4	-6.1	0.22	0.21	
2,900.0	1.31	76.80	2,899.8	6.8	23.5	-6.6	0.08	0.08	
3,000.0	1.30	67.30	2,999.8	7.5	25.7	-7.2	0.22	-0.01	
3,100.0	1.35	70.67	3,099.8	8.3	27.9	-8.1	0.09	0.05	
3,200.0	1.22	50.59	3,199.8	9.4	29.8	-9.1	0.47	-0.13	
3,300.0	0.96	61.40	3,299.8	10.5	31.4	-10.2	0.33	-0.25	
3,400.0	0.86	42.63	3,399.7	11.4	32.6	-11.1	0.32	-0.11	
3,500.0	0.63	28.91	3,499.7	12.5	33.4	-12.1	0.29	-0.22	
3,600.0	0.59	25.94	3,599.7	13.4	33.9	-13.1	0.05	-0.04	
3,700.0	0.27	13.62	3,699.7	14.1	34.1	-13.8	0.33	-0.32	
3,800.0	0.34	30.16	3,799.7	14.6	34.4	-14.2	0.11	0.07	
3,900.0	0.30	16.36	3,899.7	15.1	34.6	-14.7	0.08	-0.03	
4,000.0	0.37	12.91	3,999.7	15.7	34.7	-15.3	0.08	0.07	
4,100.0	0.40	12.12	4,099.7	16.3	34.9	-16.0	0.03	0.03	
4,200.0	0.50	355.74	4,199.7	17.1	34.9	-16.7	0.16	0.10	
4,300.0	0.41	351.34	4,299.7	17.9	34.8	-17.5	0.10	-0.09	
4,400.0	0.54	347.68	4,399.7	18.7	34.7	-18.4	0.13	0.13	
4,500.0	0.49	359.39	4,499.7	19.6	34.6	-19.2	0.12	-0.05	
4,600.0	0.48	346.58	4,599.7	20.4	34.5	-20.1	0.11	-0.01	
4,700.0	0.58	1.08	4,699.7	21.3	34.4	-21.0	0.16	0.10	
4,800.0	0.40	1.87	4,799.7	22.2	34.4	-21.8	0.17	-0.17	
4,900.0	0.36	8.46	4,899.7	22.8	34.5	-22.5	0.06	-0.04	
5,000.0	0.39	18.67	4,999.7	23.5	34.6	-23.1	0.07	0.02	
5,100.0	0.29	38.95	5,099.7	24.0	34.9	-23.6	0.15	-0.10	
5,200.0	0.35	38.96	5,199.7	24.4	35.2	-24.1	0.06	0.06	
5,300.0	0.30	28.55	5,299.7	24.9	35.5	-24.5	0.08	-0.05	
5,400.0	0.51	29.63	5,399.7	25.5	35.9	-25.2	0.21	0.21	
5,500.0	0.32	27.93	5,499.7	26.1	36.2	-25.8	0.19	-0.19	
5,600.0	0.38	34.71	5,599.7	26.7	36.6	-26.3	0.07	0.06	
5,700.0	0.35	39.20	5,699.7	27.2	36.9	-26.8	0.04	-0.03	
5,800.0	0.36	58.98	5,799.7	27.6	37.4	-27.2	0.12	0.01	
5,900.0	0.56	44.88	5,899.7	28.1	38.0	-27.7	0.23	0.20	
6,000.0	0.57	50.16	5,999.7	28.7	38.7	-28.4	0.05	0.01	
6,100.0	0.57	66.32	6,099.7	29.3	39.6	-28.9	0.16	0.00	
6,200.0	0.65	66.28	6,199.7	29.7	40.6	-29.3	0.08	0.08	
6,300.0	0.68	59.34	6,299.6	30.2	41.6	-29.8	0.09	0.03	
6,400.0	0.77	45.69	6,399.6	31.0	42.6	-30.6	0.19	0.09	

Cathedral Energy Services

Survey Report

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 Project: Lea County, NM
 Site: Gateway 2 State
 Well: Gateway 2 State #2H
 Wellbore: HZ
 Design: HZ

Local Co-ordinate Reference: Well Gateway 2 State #2H
 TVD Reference: WELL @ 3874.0usft (Original Well Elev)
 MD Reference: WELL @ 3874.0usft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u	Formations / Comments
6,500.0	0.91	61.88	6,499.6	31.8	43.8	-31.4	0.28	0.14	
6,600.0	0.96	58.25	6,599.6	32.7	45.2	-32.2	0.08	0.05	
6,700.0	0.94	58.73	6,699.6	33.5	46.6	-33.1	0.03	-0.03	
6,800.0	0.88	48.46	6,799.6	34.5	47.9	-34.0	0.17	-0.06	
6,900.0	1.03	41.11	6,899.6	35.6	49.0	-35.2	0.20	0.15	
7,000.0	1.17	48.50	6,999.6	37.0	50.4	-36.5	0.20	0.14	
7,100.0	1.35	51.54	7,099.5	38.4	52.1	-37.9	0.19	0.18	
7,200.0	1.44	45.38	7,199.5	40.0	53.9	-39.5	0.18	0.09	
7,300.0	1.42	40.18	7,299.5	41.9	55.6	-41.3	0.13	-0.02	
7,400.0	1.95	32.61	7,399.4	44.2	57.3	-43.7	0.57	0.53	
7,500.0	2.39	19.89	7,499.4	47.6	58.9	-47.0	0.65	0.44	
7,600.0	2.46	11.39	7,599.3	51.7	60.1	-51.1	0.36	0.06	
7,700.0	2.51	11.97	7,699.2	55.9	61.0	-55.3	0.06	0.05	
7,800.0	2.59	12.16	7,799.1	60.3	61.9	-59.7	0.08	0.08	
7,900.0	2.67	1.78	7,899.0	64.8	62.4	-64.2	0.48	0.08	
8,000.0	2.61	357.15	7,998.9	69.4	62.4	-68.8	0.22	-0.06	
8,100.0	2.72	354.40	8,098.8	74.1	62.0	-73.4	0.17	0.11	
8,200.0	3.16	1.51	8,198.6	79.2	61.9	-78.6	0.57	0.44	
8,300.0	2.79	5.45	8,298.5	84.4	62.2	-83.7	0.42	-0.36	
8,400.0	2.73	8.14	8,398.4	89.1	62.8	-88.5	0.14	-0.06	
8,500.0	2.74	3.69	8,498.3	93.9	63.3	-93.3	0.21	0.01	
8,600.0	2.74	3.21	8,598.1	98.7	63.5	-98.0	0.02	0.00	
8,700.0	2.87	0.06	8,698.0	103.6	63.7	-102.9	0.20	0.13	
8,800.0	2.84	355.35	8,797.9	108.5	63.5	-107.9	0.24	-0.03	
8,865.0	2.84	355.35	8,862.8	111.7	63.2	-111.1	0.00	0.00	
8,891.0	1.70	190.50	8,888.8	112.0	63.1	-111.4	17.32	-4.38	
8,923.0	2.90	186.90	8,920.8	110.7	62.9	-110.1	3.78	3.75	
8,954.0	4.40	180.80	8,951.7	108.8	62.8	-108.1	4.99	4.84	
8,984.0	7.00	178.10	8,981.6	105.8	62.8	-105.2	8.71	8.67	
9,018.0	9.70	178.00	9,015.2	100.9	63.0	-100.2	7.94	7.94	
9,049.0	12.50	178.00	9,045.6	94.9	63.2	-94.3	9.03	9.03	
9,112.0	18.90	178.40	9,106.2	77.9	63.7	-77.2	10.16	10.16	
9,144.0	21.10	177.70	9,136.3	66.9	64.1	-66.3	6.92	6.87	
9,173.0	24.30	179.60	9,163.1	55.7	64.4	-55.1	11.32	11.03	
9,205.0	29.00	182.90	9,191.7	41.4	64.0	-40.8	15.39	14.69	
9,239.0	31.40	182.90	9,221.0	24.3	63.2	-23.7	7.06	7.06	
9,270.0	34.60	180.80	9,247.0	7.4	62.6	-6.8	10.96	10.32	
9,302.0	38.90	181.70	9,272.7	-11.7	62.2	12.3	13.54	13.44	
9,333.0	40.70	183.50	9,296.5	-31.5	61.3	32.1	6.89	5.81	
9,363.0	40.50	184.30	9,319.3	-51.0	60.0	51.6	1.86	-0.67	
9,393.0	44.30	182.40	9,341.4	-71.2	58.8	71.8	13.37	12.67	
9,422.0	47.30	183.10	9,361.6	-91.9	57.8	92.5	10.49	10.34	
9,451.0	51.30	182.90	9,380.5	-113.9	56.7	114.4	13.80	13.79	
9,484.0	58.10	181.40	9,399.6	-140.8	55.7	141.3	20.94	20.61	
9,516.0	63.40	182.90	9,415.2	-168.7	54.6	169.2	17.06	16.56	
9,546.0	69.10	181.80	9,427.3	-196.1	53.5	196.6	19.29	19.00	
9,580.0	73.40	183.20	9,438.2	-228.3	52.1	228.8	13.23	12.65	
9,612.0	76.90	182.70	9,446.4	-259.1	50.5	259.6	11.04	10.94	
9,640.0	80.00	182.20	9,452.0	-286.5	49.3	287.0	11.21	11.07	
9,675.0	83.20	181.60	9,457.1	-321.1	48.2	321.6	9.30	9.14	
9,739.0	88.00	180.40	9,462.1	-384.9	47.1	385.4	7.73	7.50	
9,834.0	89.30	181.00	9,464.3	-479.9	45.9	480.3	1.51	1.37	
9,929.0	88.90	181.40	9,465.8	-574.9	43.9	575.3	0.60	-0.42	

Cathedral Energy Services

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
10,024.0	87.30	180.80	9,468.9	-669.8	42.1	670.2	1.80	-1.68	
10,119.0	84.60	180.50	9,475.6	-764.5	41.0	764.9	2.86	-2.84	
10,214.0	86.10	180.00	9,483.3	-859.2	40.6	859.6	1.66	1.58	
10,309.0	87.20	180.70	9,488.9	-954.1	40.0	954.4	1.37	1.16	
10,404.0	87.10	180.70	9,493.6	-1,048.9	38.9	1,049.3	0.11	-0.11	
10,500.0	86.70	179.90	9,498.8	-1,144.8	38.4	1,145.1	0.93	-0.42	
10,594.0	88.10	180.40	9,503.1	-1,238.7	38.1	1,239.0	1.58	1.49	
10,690.0	88.20	180.60	9,506.2	-1,334.6	37.3	1,334.9	0.23	0.10	
10,785.0	86.10	180.10	9,510.9	-1,429.5	36.7	1,429.8	2.27	-2.21	
10,880.0	86.60	180.00	9,516.9	-1,524.3	36.6	1,524.6	0.54	0.53	
10,975.0	86.20	180.00	9,522.9	-1,619.1	36.6	1,619.4	0.42	-0.42	
11,071.0	86.20	180.30	9,529.3	-1,714.9	36.4	1,715.2	0.31	0.00	
11,166.0	85.80	180.40	9,535.9	-1,809.7	35.8	1,809.9	0.43	-0.42	
11,261.0	85.70	180.60	9,542.9	-1,904.4	34.9	1,904.7	0.23	-0.11	
11,356.0	85.70	181.20	9,550.1	-1,999.1	33.5	1,999.4	0.63	0.00	
11,451.0	86.50	181.90	9,556.5	-2,093.9	30.9	2,094.1	1.12	0.84	
11,547.0	87.20	182.20	9,561.8	-2,189.7	27.5	2,189.8	0.79	0.73	
11,642.0	87.10	182.20	9,566.5	-2,284.5	23.8	2,284.6	0.11	-0.11	
11,738.0	86.70	182.10	9,571.7	-2,380.3	20.2	2,380.4	0.43	-0.42	
11,833.0	86.30	182.10	9,577.5	-2,475.0	16.8	2,475.1	0.42	-0.42	
11,928.0	85.90	181.90	9,584.0	-2,569.8	13.4	2,569.8	0.47	-0.42	
12,023.0	85.50	182.10	9,591.1	-2,664.4	10.1	2,664.4	0.47	-0.42	
12,119.0	84.90	181.90	9,599.1	-2,760.0	6.8	2,760.0	0.66	-0.62	
12,218.0	84.80	182.30	9,608.0	-2,858.6	3.2	2,858.5	0.41	-0.10	
12,313.0	86.10	182.10	9,615.6	-2,953.2	-0.4	2,953.0	1.38	1.37	
12,408.0	86.50	182.20	9,621.7	-3,047.9	-4.0	3,047.7	0.43	0.42	
12,504.0	85.80	180.30	9,628.1	-3,143.7	-6.1	3,143.5	2.11	-0.73	
12,599.0	85.80	180.30	9,635.1	-3,238.4	-8.6	3,238.2	0.00	0.00	
12,694.0	85.80	180.50	9,642.0	-3,333.2	-7.3	3,332.9	0.21	0.00	
12,789.0	85.80	180.70	9,649.0	-3,427.9	-8.2	3,427.6	0.21	0.00	
12,884.0	85.60	181.10	9,656.1	-3,522.6	-9.7	3,522.3	0.47	-0.21	
12,979.0	85.50	181.20	9,663.5	-3,617.3	-11.6	3,617.0	0.15	-0.11	
13,074.0	85.00	181.30	9,671.4	-3,712.0	-13.7	3,711.6	0.54	-0.53	
13,170.0	85.60	181.30	9,679.2	-3,807.6	-15.9	3,807.3	0.63	0.63	
13,265.0	85.20	181.40	9,686.8	-3,902.3	-18.1	3,901.9	0.43	-0.42	
13,360.0	84.60	181.90	9,695.3	-3,996.9	-20.8	3,996.5	0.82	-0.63	
13,455.0	84.10	182.30	9,704.7	-4,091.4	-24.3	4,090.9	0.67	-0.53	Last Cathedral Survey @ 13455' MD
13,550.0	84.10	182.30	9,714.4	-4,185.8	-28.1	4,185.3	0.00	0.00	Bit Projection @ 13550' MD

Cathedral Energy Services

Survey Report

Company: Caza Operating, LLC
Project: Lea County, NM
Site: Gateway 2 State
Well: Gateway 2 State #2H
Wellbore: HZ
Design: HZ

Local Co-ordinate Reference: Well Gateway 2 State #2H
TVD Reference: WELL @ 3874.0usft (Original Well Elev)
MD Reference: WELL @ 3874.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Targets

Target Name

hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
State #2H PBHL P5	91.58	180.24	9,571.0	-4,268.7	42.2	613,509.99	776,731.39	32° 41' 0.290 N	103° 26' 2.100 W
- actual wellpath misses target center by 179.9usft at 13550.0usft MD (9714.4 TVD, -4185.8 N, -28.1 E) - Rectangle (sides W0.0 H400.0 D4,200.0)									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
13,455.0	9,704.7	-4,091.4	-24.3	Last Cathedral Survey @ 13455' MD
13,550.0	9,714.4	-4,185.8	-28.1	Bit Projection @ 13550' MD

Checked By: _____ **Approved By:** _____ **Date:** _____

VES

Rig Name: Patriot 4
State/County: New Mexico/Lea County

VES

Latitude: 32.695, Longitude: -103.434

GRID North is 0.490 Degrees East of True North

VS-Azi: 0.000 Degrees

FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = 22 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ha gyro-de_01.ut

Minimum Curvature Method

Report Date/Time: 8/12/2013 / 10:17

Vaughn Energy Services

Midland, TX

432-563-5444

Charles Hines

HOBBS OOD

OCT 16

RECEIVED

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.221	328.507	100.000	0.164	-0.101	0.164	0.192	328.507	0.221
200.000	0.223	338.443	199.999	0.509	-0.273	0.509	0.577	331.838	0.038
300.000	0.196	26.012	299.998	0.843	-0.269	0.843	0.885	342.301	0.171
400.000	0.581	45.417	399.996	1.353	0.167	1.353	1.363	7.041	0.402
500.000	0.783	52.279	499.989	2.127	1.069	2.127	2.381	26.685	0.217
600.000	0.491	33.802	599.983	2.902	1.848	2.902	3.440	32.497	0.354
700.000	0.703	63.938	699.977	3.528	2.638	3.528	4.405	36.793	0.372
800.000	0.447	63.169	799.972	3.973	3.538	3.973	5.320	41.683	0.256
900.000	0.281	81.916	899.970	4.184	4.129	4.184	5.878	44.620	0.203
1000.000	0.361	86.862	999.969	4.236	4.686	4.236	6.317	47.889	0.085
1100.000	0.323	97.300	1099.967	4.217	5.280	4.217	6.758	51.387	0.073
1200.000	0.783	99.415	1199.962	4.070	6.234	4.070	7.445	56.865	0.460
1300.000	0.776	81.083	1299.953	4.063	7.578	4.063	8.598	61.803	0.249
1400.000	0.696	80.302	1399.945	4.270	8.846	4.270	9.823	64.233	0.081
1500.000	0.374	79.659	1499.940	4.431	9.766	4.431	10.724	65.595	0.322
1600.000	0.431	69.932	1599.938	4.619	10.440	4.619	11.416	66.136	0.089
1700.000	0.309	66.560	1699.936	4.855	11.040	4.855	12.060	66.263	0.124
1800.000	0.404	69.524	1799.934	5.085	11.618	5.085	12.682	66.360	0.097
1900.000	0.304	63.481	1899.932	5.327	12.186	5.327	13.299	66.387	0.106
2000.000	0.194	66.874	1999.931	5.513	12.580	5.513	13.735	66.337	0.111
2100.000	0.317	66.337	2099.930	5.690	12.989	5.690	14.181	66.343	0.123
2200.000	0.377	79.798	2199.928	5.860	13.566	5.860	14.778	66.639	0.101
2300.000	0.484	87.595	2299.925	5.936	14.312	5.936	15.494	67.475	0.122
2400.000	0.774	95.911	2399.919	5.884	15.407	5.884	16.492	69.098	0.303
2500.000	0.794	88.128	2499.910	5.837	16.771	5.837	17.758	70.811	0.108
2600.000	0.645	98.699	2599.902	5.774	18.020	5.774	18.923	72.233	0.199
2700.000	1.024	79.458	2699.891	5.853	19.455	5.853	20.316	73.257	0.466
2800.000	1.235	75.845	2799.872	6.280	21.378	6.280	22.281	73.631	0.222
2900.000	1.312	76.798	2899.847	6.804	23.537	6.804	24.501	73.876	0.080
3000.000	1.304	67.301	2999.821	7.505	25.701	7.505	26.774	73.722	0.217
3100.000	1.354	70.668	3099.794	8.335	27.866	8.335	29.085	73.347	0.092
3200.000	1.220	50.595	3199.769	9.402	29.803	9.402	31.251	72.491	0.467
3300.000	0.965	61.405	3299.751	10.481	31.365	10.481	33.070	71.522	0.327
3400.000	0.856	42.630	3399.739	11.433	32.610	11.433	34.556	70.679	0.316
3500.000	0.631	28.906	3499.730	12.465	33.382	12.465	35.633	69.524	0.285

Depth FT	Angle Deg	Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Section FT	Distance FT	Direction Deg	Severity Deg/100
3600.000	0.589	25.943	3599.725	13.409	33.873	13.409	36.431	68.403	0.053
3700.000	0.266	13.624	3699.722	14.096	34.152	14.096	36.947	67.571	0.334
3800.000	0.336	30.160	3799.721	14.575	34.354	14.575	37.318	67.010	0.111
3900.000	0.301	16.355	3899.719	15.081	34.575	15.081	37.721	66.434	0.084
4000.000	0.374	12.915	3999.717	15.651	34.722	15.651	38.087	65.736	0.076
4100.000	0.404	12.116	4099.715	16.314	34.869	16.314	38.497	64.927	0.030
4200.000	0.504	355.737	4199.712	17.097	34.911	17.097	38.873	63.907	0.163
4300.000	0.409	351.342	4299.709	17.890	34.824	17.890	39.150	62.810	0.101
4400.000	0.536	347.682	4399.705	18.700	34.670	18.700	39.392	61.659	0.131
4500.000	0.487	359.393	4499.701	19.582	34.566	19.582	39.728	60.468	0.116
4600.000	0.480	346.582	4599.698	20.415	34.464	20.415	40.057	59.360	0.108
4700.000	0.576	1.078	4699.693	21.325	34.377	21.325	40.454	58.187	0.164
4800.000	0.402	1.874	4799.690	22.179	34.397	22.179	40.928	57.187	0.174
4900.000	0.362	8.459	4899.688	22.842	34.455	22.842	41.339	56.458	0.060
5000.000	0.386	18.668	4999.685	23.473	34.610	23.473	41.819	55.854	0.071
5100.000	0.290	38.952	5099.684	23.989	34.876	23.989	42.330	55.479	0.152
5200.000	0.351	38.962	5199.682	24.424	35.228	24.424	42.867	55.266	0.062
5300.000	0.302	28.549	5299.681	24.894	35.547	24.894	43.397	54.996	0.077
5400.000	0.511	29.634	5399.678	25.513	35.893	25.513	44.036	54.595	0.209
5500.000	0.321	27.935	5499.675	26.147	36.245	26.147	44.692	54.193	0.191
5600.000	0.377	34.708	5599.673	26.665	36.563	26.665	45.253	53.897	0.069
5700.000	0.351	39.202	5699.671	27.172	36.944	27.172	45.860	53.665	0.038
5800.000	0.362	58.977	5799.670	27.573	37.408	27.573	46.472	53.607	0.123
5900.000	0.561	44.878	5899.666	28.083	38.024	28.083	47.270	53.552	0.228
6000.000	0.570	50.155	5999.661	28.748	38.751	28.748	48.251	53.430	0.053
6100.000	0.569	66.316	6099.657	29.266	39.587	29.266	49.231	53.526	0.160
6200.000	0.651	66.283	6199.651	29.694	40.562	29.694	50.269	53.794	0.083
6300.000	0.683	59.344	6299.644	30.226	41.595	30.226	51.418	53.995	0.087
6400.000	0.769	45.689	6399.636	30.999	42.588	30.999	52.675	53.950	0.192
6500.000	0.911	61.881	6499.626	31.842	43.769	31.842	54.126	53.964	0.275
6600.000	0.965	58.246	6599.612	32.660	45.186	32.660	55.754	54.141	0.080
6700.000	0.939	58.729	6699.598	33.528	46.603	33.528	57.411	54.267	0.027
6800.000	0.878	48.464	6799.586	34.462	47.877	34.462	58.990	54.254	0.173
6900.000	1.032	41.106	6899.572	35.649	49.043	35.649	60.631	53.987	0.197
7000.000	1.171	48.502	6999.553	37.005	50.401	37.005	62.527	53.713	0.199
7100.000	1.350	51.543	7099.529	38.415	52.089	38.415	64.722	53.592	0.191
7200.000	1.441	45.385	7199.500	40.031	53.907	40.031	67.145	53.402	0.175
7300.000	1.420	40.178	7299.468	41.862	55.602	41.862	69.599	53.025	0.132
7400.000	1.951	32.612	7399.425	44.243	57.319	44.243	72.408	52.337	0.575
7500.000	2.395	19.893	7499.353	47.642	58.948	47.642	75.793	51.055	0.653
7600.000	2.456	11.395	7599.264	51.706	60.082	51.706	79.268	49.285	0.364
7700.000	2.509	11.968	7699.170	55.947	60.959	55.947	82.741	47.455	0.059
7800.000	2.591	12.164	7799.071	60.298	61.889	60.298	86.407	45.746	0.083
7900.000	2.670	1.780	7898.966	64.836	62.438	64.836	90.012	43.920	0.482
8000.000	2.607	357.155	7998.860	69.436	62.397	69.436	93.353	41.944	0.222
8100.000	2.719	354.399	8098.753	74.068	62.053	74.068	96.626	39.956	0.170
8200.000	3.157	1.515	8198.621	79.181	61.894	79.181	100.502	38.014	0.569
8300.000	2.794	5.450	8298.486	84.360	62.198	84.360	104.810	36.401	0.417
8400.000	2.734	8.136	8398.370	89.147	62.767	89.147	109.027	35.149	0.142
8500.000	2.742	3.686	8498.256	93.895	63.259	93.895	113.216	33.969	0.213
8600.000	2.741	3.213	8598.142	98.669	63.546	98.669	117.361	32.783	0.023
8700.000	2.871	0.063	8698.022	103.561	63.683	103.561	121.575	31.589	0.202
8800.000	2.841	355.346	8797.898	108.535	63.485	108.535	125.739	30.324	0.237
8900.000	2.336	7.236	8897.796	113.028	63.541	113.028	129.664	29.343	0.735
9000.000	2.080	4.034	8997.722	116.860	63.925	116.860	133.201	28.680	0.284
9100.000	1.945	9.444	9097.660	120.344	64.331	120.344	136.460	28.127	0.233

Depth FT	Angle Deg	Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Section FT	Distance FT	Direction Deg	Severity Deg/100
9200.000	2.075	13.890	9197.599	123.776	65.044	123.776	139.826	27.722	0.203
9300.000	2.117	18.149	9297.532	127.290	66.054	127.290	143.408	27.426	0.161
9400.000	2.268	24.010	9397.459	130.853	67.435	130.853	147.207	27.264	0.270
9500.000	2.302	19.410	9497.379	134.554	68.907	134.554	151.172	27.118	0.186
9600.000	2.548	16.088	9597.289	138.584	70.191	138.584	155.346	26.862	0.283
9700.000	2.664	22.751	9697.186	142.863	71.706	142.863	159.849	26.653	0.324
9800.000	2.724	17.223	9797.076	147.276	73.308	147.276	164.512	26.462	0.266
9900.000	2.961	20.181	9896.953	151.969	74.902	151.969	169.426	26.238	0.279
10000.00	3.128	23.038	9996.812	156.905	76.861	156.905	174.719	26.098	0.226
10100.00	3.228	26.485	10096.66	161.936	79.185	161.936	180.260	26.058	0.216
10200.00	3.334	28.492	10196.49	167.012	81.828	167.012	185.980	26.103	0.156
10300.00	3.620	36.277	10296.31	172.112	85.082	172.112	191.994	26.305	0.551
10400.00	2.961	42.740	10396.15	176.554	88.703	176.554	197.584	26.676	0.755

HORIZONTAL DISPLACEMENT IS
197.584 FEET AT 26.676 DEGREES
