

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Form C-102
Revised October 15, 2009
Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number	Pool Code	Pool Name
30-015-38221	97056	Hackberry; Bone Spring, North
Property Code	Property Name	Well Number
300582	WEST SHUGART "31" FEDERAL COM	5
OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3547'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	31	18 S	31 E		1980	SOUTH	375	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No. L	Section 31	Township 18 S	Range 31 E	Lot Idn	Feet from the 2185	North/South line SOUTH	Feet from the 476	East/West line WEST	County EDDY
Dedicated Acres 155.78		Joint or Infill	Consolidation Code		Order No.				

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

BHL/End Prod Interval
2185 FSL & 476 FWL

Top Perf
2102 FSL & 960 FEL

SHL & P.P. Bone Spring
1980 FSL & 375 FEL

LC-062084 NM-99038 NM-0560352 NM-0560354

Elevations: 3543.8', 3549.5', 375', 3545.0', 3552.2'

Vertical Dimension: 1980'

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 released 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.

Zeno Farris 8/16/11
Signature Date

Zeno Farris
Printed Name

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.

MARCH 15, 2012
Date Surveyed

GARY L. JONES
Professional Surveyor
No. 22456
State of TEXAS

Certificate No. GARY L. JONES 7977

BASIN SURVEYS



Actual Wellpath Report

No. 5H AWP_Corrected

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38221
15-38821

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 5H SHL
Area	Eddy County, NM	Well	No. 5H
Field	(West Shugart) Sec 31, T18S, R31E	Wellbore	No. 5H AWB
Facility	West Shugart 31 Fed Com No. 5H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Calhphik
Scale	0.999929	Report Generated	5/2/2011 at 4:11:26 PM
Convergence at slot	0.23° East	Database/Source file	WA Midland/No. 5H_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	674199.50	619421.00	32°42'07.512"N	103°54'05.068"W
Facility Reference Pt			674199.50	619421.00	32°42'07.512"N	103°54'05.068"W
Field Reference Pt			669901.10	621047.30	32°42'23.775"N	103°54'55.298"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No. 5H SHL (KB) to GL	20.00ft
Horizontal Reference Pt	Slot	Rig on No. 5H SHL (KB) to Mean Sea Level	3567.00ft
Vertical Reference Pt	Rig on No. 5H SHL (KB)	Rig on No. 5H SHL (KB) to Mud Line at Slot (No. 5H SHL)	20.00ft
MD Reference Pt	Rig on No. 5H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	273.94°



Actual Wellpath Report

No. 5H AWP_Corrected

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 5H SHL
Area	Eddy County, NM	Well	No. 5H
Field	(West Shugart) Sec 31, T18S, R31E	Wellbore	No. 5H AWB
Facility	West Shugart 31 Fed Com No. 5H		

WELLPATH DATA (159 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	211.480	0.00	0.00	0.00	0.00	674199.50	619421.00	32°42'07.512"N	103°54'05.068"W	0.00	
20.00	0.000	211.480	20.00	0.00	0.00	0.00	674199.50	619421.00	32°42'07.512"N	103°54'05.068"W	0.00	
100.00	0.210	211.480	100.00	0.07	-0.13	-0.08	674199.42	619420.87	32°42'07.511"N	103°54'05.069"W	0.26	
200.00	0.300	210.040	200.00	0.27	-0.51	-0.30	674199.20	619420.49	32°42'07.507"N	103°54'05.072"W	0.09	
300.00	0.370	207.940	300.00	0.51	-1.02	-0.59	674198.91	619419.98	32°42'07.502"N	103°54'05.075"W	0.07	
400.00	0.260	215.700	400.00	0.76	-1.49	-0.87	674198.63	619419.51	32°42'07.497"N	103°54'05.078"W	0.12	
500.00	0.360	246.600	499.99	1.16	-1.80	-1.29	674198.21	619419.20	32°42'07.494"N	103°54'05.083"W	0.19	
600.00	0.330	266.040	599.99	1.73	-1.94	-1.87	674197.63	619419.06	32°42'07.493"N	103°54'05.090"W	0.12	
717.80	0.460	292.360	717.79	2.51	-1.79	-2.64	674196.86	619419.21	32°42'07.494"N	103°54'05.099"W	0.19	
813.00	0.420	288.450	812.99	3.21	-1.53	-3.33	674196.17	619419.47	32°42'07.497"N	103°54'05.107"W	0.05	
908.30	0.370	293.760	908.28	3.84	-1.30	-3.94	674195.56	619419.70	32°42'07.499"N	103°54'05.114"W	0.06	
1003.60	0.320	319.410	1003.58	4.32	-0.97	-4.39	674195.11	619420.03	32°42'07.502"N	103°54'05.119"W	0.17	
1098.70	0.310	325.620	1098.68	4.66	-0.56	-4.71	674194.79	619420.44	32°42'07.507"N	103°54'05.123"W	0.04	
1194.00	0.380	344.050	1193.98	4.93	-0.04	-4.94	674194.56	619420.96	32°42'07.512"N	103°54'05.126"W	0.14	
1289.30	0.480	359.840	1289.28	5.07	0.66	-5.03	674194.47	619421.66	32°42'07.519"N	103°54'05.127"W	0.16	
1384.70	0.500	6.830	1384.67	5.07	1.48	-4.98	674194.52	619422.48	32°42'07.527"N	103°54'05.126"W	0.07	
1479.80	0.540	11.890	1479.77	4.99	2.33	-4.84	674194.66	619423.33	32°42'07.535"N	103°54'05.125"W	0.06	
1575.30	0.610	9.020	1575.26	4.88	3.27	-4.67	674194.83	619424.27	32°42'07.544"N	103°54'05.122"W	0.08	
1670.50	0.620	12.200	1670.46	4.76	4.27	-4.48	674195.02	619425.27	32°42'07.554"N	103°54'05.120"W	0.04	
1766.00	0.960	26.450	1765.95	4.38	5.49	-4.02	674195.48	619426.49	32°42'07.566"N	103°54'05.115"W	0.41	
1861.10	1.310	44.020	1861.03	3.38	6.99	-2.91	674196.59	619427.99	32°42'07.581"N	103°54'05.102"W	0.51	
1956.60	1.470	47.760	1956.50	1.83	8.60	-1.24	674198.26	619429.60	32°42'07.597"N	103°54'05.082"W	0.19	
2051.80	1.460	45.760	2051.67	0.17	10.27	0.53	674200.03	619431.26	32°42'07.613"N	103°54'05.061"W	0.05	
2147.10	1.390	30.840	2146.94	-1.16	12.10	2.00	674201.50	619433.10	32°42'07.632"N	103°54'05.044"W	0.40	
2242.60	1.370	9.230	2242.42	-1.79	14.23	2.77	674202.27	619435.22	32°42'07.653"N	103°54'05.035"W	0.54	
2337.80	1.440	4.900	2337.59	-1.91	16.54	3.06	674202.56	619437.54	32°42'07.675"N	103°54'05.031"W	0.13	
2433.10	1.600	0.040	2432.85	-1.84	19.06	3.16	674202.66	619440.06	32°42'07.700"N	103°54'05.030"W	0.22	
2528.30	1.750	356.760	2528.01	-1.57	21.85	3.08	674202.58	619442.84	32°42'07.728"N	103°54'05.031"W	0.19	
2623.60	1.860	4.370	2623.27	-1.40	24.84	3.11	674202.61	619445.84	32°42'07.758"N	103°54'05.030"W	0.28	
2719.00	1.740	10.370	2718.62	-1.57	27.81	3.49	674202.99	619448.81	32°42'07.787"N	103°54'05.026"W	0.23	
2814.30	1.740	18.480	2813.88	-2.10	30.60	4.21	674203.71	619451.60	32°42'07.814"N	103°54'05.017"W	0.26	
2909.60	1.600	18.000	2909.14	-2.79	33.24	5.08	674204.58	619454.24	32°42'07.841"N	103°54'05.007"W	0.15	
3004.80	1.490	22.960	3004.30	-3.51	35.65	5.98	674205.48	619456.64	32°42'07.864"N	103°54'04.996"W	0.18	
3100.10	1.440	18.940	3099.57	-4.23	37.92	6.85	674206.35	619458.92	32°42'07.887"N	103°54'04.986"W	0.12	
3195.60	1.110	17.810	3195.05	-4.76	39.93	7.52	674207.02	619460.93	32°42'07.907"N	103°54'04.978"W	0.35	
3291.10	0.910	18.760	3290.53	-5.17	41.53	8.05	674207.55	619462.53	32°42'07.922"N	103°54'04.972"W	0.21	
3386.20	0.710	26.700	3385.62	-5.59	42.77	8.55	674208.05	619463.77	32°42'07.935"N	103°54'04.966"W	0.24	
3481.60	0.590	28.200	3481.02	-6.02	43.74	9.05	674208.55	619464.73	32°42'07.944"N	103°54'04.960"W	0.13	
3576.80	0.590	20.650	3576.21	-6.37	44.63	9.46	674208.96	619465.62	32°42'07.953"N	103°54'04.955"W	0.08	
3672.20	0.370	33.610	3671.61	-6.66	45.34	9.80	674209.30	619466.34	32°42'07.960"N	103°54'04.951"W	0.26	
3767.50	0.370	40.180	3766.90	-6.99	45.83	10.17	674209.67	619466.83	32°42'07.965"N	103°54'04.947"W	0.04	
3862.90	0.340	46.700	3862.30	-7.37	46.26	10.57	674210.07	619467.26	32°42'07.969"N	103°54'04.942"W	0.05	
3958.20	0.330	55.010	3957.60	-7.77	46.61	11.00	674210.50	619467.61	32°42'07.973"N	103°54'04.937"W	0.05	
4053.70	0.260	67.870	4053.10	-8.18	46.85	11.43	674210.93	619467.85	32°42'07.975"N	103°54'04.932"W	0.10	
4148.90	0.290	81.180	4148.30	-8.61	46.97	11.87	674211.37	619467.97	32°42'07.976"N	103°54'04.927"W	0.07	



Actual Wellpath Report

No. 5H AWP_Corrected

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 5H SHL
Area	Eddy County, NM	Well	No. 5H
Field	(West Shugart) Sec 31, T18S, R31E	Wellbore	No. 5H AWB
Facility	West Shugart 31 Fed Com No. 5H		

WELLPATH DATA (159 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4244.20	0.210	58.080	4243.60	-8.99	47.10	12.26	674211.75	619468.10	32°42'07.977"N	103°54'04.922"W	0.13	
4339.60	0.180	42.820	4339.00	-9.22	47.30	12.51	674212.00	619468.30	32°42'07.979"N	103°54'04.919"W	0.06	
4434.90	0.190	30.270	4434.30	-9.39	47.55	12.69	674212.19	619468.55	32°42'07.982"N	103°54'04.917"W	0.04	
4530.20	0.210	10.490	4529.60	-9.48	47.86	12.80	674212.30	619468.85	32°42'07.985"N	103°54'04.916"W	0.07	
4625.90	0.280	4.240	4625.30	-9.50	48.26	12.85	674212.35	619469.26	32°42'07.989"N	103°54'04.915"W	0.08	
4721.00	0.300	3.850	4720.39	-9.50	48.74	12.88	674212.38	619469.74	32°42'07.994"N	103°54'04.915"W	0.02	
4816.40	0.320	1.080	4815.79	-9.49	49.26	12.90	674212.40	619470.26	32°42'07.999"N	103°54'04.915"W	0.03	
4912.00	0.470	9.010	4911.39	-9.51	49.91	12.97	674212.47	619470.91	32°42'08.005"N	103°54'04.914"W	0.17	
5007.40	0.590	23.150	5006.79	-9.70	50.75	13.22	674212.72	619471.75	32°42'08.013"N	103°54'04.911"W	0.19	
5102.70	0.730	19.590	5102.08	-10.03	51.77	13.62	674213.12	619472.77	32°42'08.024"N	103°54'04.906"W	0.15	
5198.10	0.800	22.170	5197.47	-10.40	52.96	14.08	674213.57	619473.96	32°42'08.035"N	103°54'04.901"W	0.08	
5293.70	0.880	39.540	5293.06	-11.04	54.15	14.79	674214.29	619475.14	32°42'08.047"N	103°54'04.892"W	0.28	
5389.20	0.990	62.990	5388.55	-12.17	55.09	16.00	674215.50	619476.08	32°42'08.056"N	103°54'04.878"W	0.41	
5484.70	1.260	70.690	5484.03	-13.84	55.81	17.72	674217.22	619476.81	32°42'08.063"N	103°54'04.858"W	0.32	
5579.90	1.560	83.080	5579.20	-16.08	56.31	20.00	674219.50	619477.31	32°42'08.068"N	103°54'04.831"W	0.45	
5675.30	0.770	88.080	5674.58	-17.99	56.49	21.93	674221.43	619477.49	32°42'08.070"N	103°54'04.809"W	0.83	
5770.60	0.450	149.140	5769.88	-18.84	56.19	22.76	674222.26	619477.19	32°42'08.067"N	103°54'04.799"W	0.71	
5865.80	0.890	175.120	5865.07	-19.17	55.13	23.01	674222.51	619476.13	32°42'08.056"N	103°54'04.796"W	0.55	
5961.10	0.820	202.300	5960.36	-19.07	53.76	22.82	674222.32	619474.76	32°42'08.043"N	103°54'04.798"W	0.43	
6056.80	0.900	219.470	6056.05	-18.42	52.55	22.08	674221.58	619473.55	32°42'08.031"N	103°54'04.807"W	0.28	
6152.00	0.970	235.290	6151.24	-17.35	51.52	20.94	674220.44	619472.51	32°42'08.021"N	103°54'04.820"W	0.28	
6247.40	0.890	244.290	6246.62	-16.08	50.73	19.61	674219.11	619471.73	32°42'08.013"N	103°54'04.836"W	0.17	
6342.90	1.000	240.940	6342.11	-14.73	50.01	18.21	674217.71	619471.00	32°42'08.006"N	103°54'04.852"W	0.13	
6438.40	1.330	239.700	6437.59	-13.12	49.04	16.53	674216.03	619470.04	32°42'07.996"N	103°54'04.872"W	0.35	
6534.10	1.310	228.670	6533.27	-11.43	47.76	14.75	674214.25	619468.76	32°42'07.984"N	103°54'04.893"W	0.27	
6629.40	1.220	232.350	6628.54	-9.91	46.42	13.13	674212.63	619467.42	32°42'07.971"N	103°54'04.912"W	0.13	
6725.10	1.120	240.740	6724.22	-8.36	45.34	11.50	674211.00	619466.34	32°42'07.960"N	103°54'04.931"W	0.21	
6820.20	1.010	242.060	6819.31	-6.87	44.49	9.95	674209.45	619465.49	32°42'07.952"N	103°54'04.949"W	0.12	
6915.70	1.270	240.780	6914.79	-5.27	43.58	8.29	674207.79	619464.58	32°42'07.943"N	103°54'04.969"W	0.27	
7011.40	1.400	242.500	7010.46	-3.39	42.53	6.32	674205.82	619463.52	32°42'07.932"N	103°54'04.992"W	0.14	
7106.80	1.730	250.090	7105.83	-1.07	41.50	3.94	674203.44	619462.49	32°42'07.922"N	103°54'05.020"W	0.41	
7202.30	2.610	269.260	7201.26	2.41	40.98	0.41	674199.91	619461.98	32°42'07.917"N	103°54'05.061"W	1.18	
7296.80	2.070	279.110	7295.68	6.26	41.22	-3.43	674196.07	619462.22	32°42'07.920"N	103°54'05.106"W	0.71	
7392.30	2.640	281.770	7391.10	10.15	41.94	-7.29	674192.21	619462.94	32°42'07.927"N	103°54'05.151"W	0.61	
7487.10	2.490	273.290	7485.80	14.37	42.51	-11.48	674188.02	619463.50	32°42'07.933"N	103°54'05.200"W	0.43	
7581.80	2.210	264.990	7580.42	18.24	42.47	-15.35	674184.15	619463.46	32°42'07.933"N	103°54'05.246"W	0.46	
7677.10	1.800	252.030	7675.67	21.44	41.84	-18.61	674180.89	619462.84	32°42'07.927"N	103°54'05.284"W	0.64	
7772.60	1.230	259.090	7771.13	23.82	41.19	-21.04	674178.46	619462.18	32°42'07.920"N	103°54'05.312"W	0.63	
7868.20	0.950	268.830	7866.71	25.60	40.98	-22.84	674176.66	619461.97	32°42'07.918"N	103°54'05.333"W	0.35	
7964.00	0.970	262.260	7962.50	27.19	40.85	-24.44	674175.06	619461.85	32°42'07.917"N	103°54'05.352"W	0.12	
8059.50	0.860	246.550	8057.99	28.62	40.46	-25.90	674173.61	619461.45	32°42'07.913"N	103°54'05.369"W	0.29	
8155.10	1.360	229.160	8153.57	30.06	39.43	-27.41	674172.09	619460.43	32°42'07.903"N	103°54'05.387"W	0.62	
8250.70	2.230	230.700	8249.12	32.22	37.51	-29.71	674169.79	619458.51	32°42'07.884"N	103°54'05.414"W	0.91	
8346.40	2.780	218.210	8344.73	34.88	34.51	-32.59	674166.92	619455.50	32°42'07.855"N	103°54'05.448"W	0.81	
8419.00	4.000	214.400	8417.20	37.16	31.03	-35.11	674164.40	619452.03	32°42'07.820"N	103°54'05.477"W	1.71	



Actual Wellpath Report

No. 5H AWP_Corrected

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 5H SHL
Area	Eddy County, NM	Well	No. 5H
Field	(West Shugart) Sec 31, T18S, R31E	Wellbore	No. 5H AWB
Facility	West Shugart 31 Fed Com No. 5H		

WELLPATH DATA (159 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8451.00	6.400	264.300	8449.08	39.48	29.93	-37.51	674161.99	619450.93	32°42'07.810"N	103°54'05.506"W	15.29	
8482.00	13.500	273.100	8479.60	44.81	29.96	-42.85	674156.65	619450.96	32°42'07.810"N	103°54'05.568"W	23.36	
8514.00	22.100	271.900	8510.04	54.58	30.36	-52.62	674146.89	619451.36	32°42'07.814"N	103°54'05.682"W	26.90	
8546.00	30.900	273.600	8538.65	68.84	31.08	-66.86	674132.64	619452.08	32°42'07.822"N	103°54'05.849"W	27.60	
8578.00	39.000	276.500	8564.86	87.15	32.74	-85.10	674114.41	619453.73	32°42'07.839"N	103°54'06.062"W	25.83	
8609.00	45.600	281.900	8587.78	107.89	36.13	-105.66	674093.85	619457.13	32°42'07.874"N	103°54'06.303"W	24.29	
8641.00	53.500	284.400	8608.53	131.90	41.69	-129.34	674070.17	619462.69	32°42'07.930"N	103°54'06.580"W	25.39	
8673.00	62.200	283.600	8625.54	158.55	48.23	-155.60	674043.91	619469.23	32°42'07.995"N	103°54'06.887"W	27.27	
8705.00	69.200	281.900	8638.70	187.35	54.65	-184.03	674015.48	619475.65	32°42'08.060"N	103°54'07.219"W	22.40	
8737.00	70.100	282.500	8649.83	217.05	60.99	-213.36	673986.16	619481.99	32°42'08.124"N	103°54'07.562"W	3.32	
8769.00	70.000	282.300	8660.75	246.80	67.45	-242.74	673956.78	619488.45	32°42'08.189"N	103°54'07.905"W	0.67	
8801.00	70.000	282.300	8671.69	276.55	73.86	-272.12	673927.40	619494.85	32°42'08.254"N	103°54'08.249"W	0.00	
8832.00	70.500	281.100	8682.17	305.46	79.78	-300.69	673898.84	619500.77	32°42'08.313"N	103°54'08.583"W	3.98	
8864.00	70.900	280.300	8692.75	335.45	85.38	-330.36	673869.16	619506.38	32°42'08.370"N	103°54'08.930"W	2.67	
8896.00	71.600	279.600	8703.03	365.58	90.62	-360.21	673839.32	619511.61	32°42'08.423"N	103°54'09.279"W	3.01	
8928.00	72.800	279.300	8712.81	395.91	95.62	-390.26	673809.27	619516.61	32°42'08.474"N	103°54'09.630"W	3.85	
8958.00	73.200	278.700	8721.59	424.49	100.11	-418.60	673780.93	619521.10	32°42'08.519"N	103°54'09.962"W	2.33	
8990.00	75.200	278.100	8730.30	455.18	104.61	-449.06	673750.48	619525.60	32°42'08.565"N	103°54'10.318"W	6.51	
9021.00	77.200	277.000	8737.69	485.23	108.56	-478.90	673720.64	619529.55	32°42'08.605"N	103°54'10.667"W	7.31	
9053.00	79.500	277.100	8744.15	516.52	112.41	-510.00	673689.54	619533.40	32°42'08.645"N	103°54'11.031"W	7.19	
9083.00	81.800	277.000	8749.03	546.08	116.04	-539.38	673660.16	619537.03	32°42'08.682"N	103°54'11.374"W	7.67	
9115.00	84.200	277.800	8752.93	577.78	120.13	-570.87	673628.67	619541.12	32°42'08.723"N	103°54'11.743"W	7.90	
9146.00	86.800	277.600	8755.36	608.61	124.27	-601.49	673598.05	619545.26	32°42'08.766"N	103°54'12.101"W	8.41	
9178.00	89.100	276.600	8756.50	640.54	128.22	-633.23	673566.32	619549.21	32°42'08.806"N	103°54'12.472"W	7.84	
9210.00	89.500	276.500	8756.89	672.51	131.87	-665.01	673534.53	619552.86	32°42'08.843"N	103°54'12.844"W	1.29	
9242.00	89.800	276.700	8757.09	704.47	135.55	-696.80	673502.75	619556.54	32°42'08.881"N	103°54'13.216"W	1.13	
9274.00	89.500	276.400	8757.29	736.44	139.20	-728.59	673470.96	619560.19	32°42'08.918"N	103°54'13.588"W	1.33	
9306.00	89.600	276.000	8757.54	768.41	142.66	-760.40	673439.15	619563.65	32°42'08.954"N	103°54'13.960"W	1.29	
9337.00	90.800	275.700	8757.43	799.39	145.82	-791.24	673408.32	619566.81	32°42'08.986"N	103°54'14.320"W	3.99	
9432.00	92.700	275.900	8754.53	894.29	155.41	-885.71	673313.86	619576.40	32°42'09.085"N	103°54'15.425"W	2.01	
9528.00	92.800	275.400	8749.92	990.14	164.85	-981.13	673218.44	619585.84	32°42'09.182"N	103°54'16.542"W	0.53	
9623.00	93.000	274.300	8745.12	1085.01	172.87	-1075.67	673123.91	619593.86	32°42'09.265"N	103°54'17.648"W	1.18	
9719.00	92.400	273.900	8740.59	1180.90	179.73	-1171.31	673028.27	619600.72	32°42'09.337"N	103°54'18.766"W	0.75	
9814.00	91.000	273.100	8737.78	1275.85	185.53	-1266.09	672933.50	619606.51	32°42'09.398"N	103°54'19.875"W	1.70	
9910.00	86.600	273.000	8739.79	1371.79	190.63	-1361.91	672837.69	619611.62	32°42'09.453"N	103°54'20.996"W	4.58	
10005.00	85.700	272.400	8746.16	1466.56	195.10	-1456.59	672743.02	619616.08	32°42'09.501"N	103°54'22.104"W	1.14	
10101.00	87.200	271.900	8752.11	1562.32	198.69	-1552.34	672647.28	619619.68	32°42'09.540"N	103°54'23.224"W	1.65	
10196.00	87.800	272.100	8756.25	1657.18	202.00	-1647.19	672552.43	619622.99	32°42'09.577"N	103°54'24.334"W	0.67	
10292.00	88.800	271.800	8759.10	1753.07	205.27	-1743.09	672456.54	619626.25	32°42'09.613"N	103°54'25.456"W	1.09	
10388.00	89.900	271.200	8760.19	1848.98	207.78	-1839.05	672360.59	619628.77	32°42'09.641"N	103°54'26.579"W	1.31	
10483.00	89.900	271.100	8760.35	1943.87	209.69	-1934.03	672265.61	619630.67	32°42'09.664"N	103°54'27.691"W	0.11	
10579.00	90.200	271.400	8760.27	2039.76	211.78	-2030.00	672169.64	619632.77	32°42'09.688"N	103°54'28.814"W	0.44	
10674.00	90.300	271.400	8759.86	2134.67	214.10	-2124.98	672074.68	619635.09	32°42'09.715"N	103°54'29.925"W	0.11	
10769.00	90.700	270.900	8759.03	2229.55	216.01	-2219.95	671979.71	619636.99	32°42'09.738"N	103°54'31.036"W	0.67	
10865.00	89.500	270.600	8758.86	2325.40	217.27	-2315.94	671883.73	619638.25	32°42'09.754"N	103°54'32.160"W	1.29	



Actual Wellpath Report

No. 5H AWP_Corrected

Page 5 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 5H SHL
Area	Eddy County, NM	Well	No. 5H
Field	(West Shugart) Sec 31, T18S, R31E	Wellbore	No. 5H AWB
Facility	West Shugart 31 Fed Com No. 5H		

WELLPATH DATA (159 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10960.00	89.800	270.400	8759.44	2420.22	218.09	-2410.94	671788.74	619639.08	32°42'09.766"N	103°54'33.271"W	0.38	
11056.00	89.900	270.600	8759.69	2516.05	218.93	-2506.93	671692.75	619639.92	32°42'09.778"N	103°54'34.394"W	0.23	
11152.00	89.800	270.300	8759.94	2611.87	219.69	-2602.93	671596.76	619640.67	32°42'09.789"N	103°54'35.518"W	0.33	
11246.00	89.400	270.100	8760.60	2705.67	220.01	-2696.93	671502.77	619641.00	32°42'09.796"N	103°54'36.618"W	0.48	
11341.00	89.300	270.300	8761.68	2800.46	220.35	-2791.92	671407.78	619641.33	32°42'09.803"N	103°54'37.729"W	0.24	
11436.00	89.300	270.300	8762.84	2895.26	220.84	-2886.91	671312.80	619641.83	32°42'09.812"N	103°54'38.841"W	0.00	
11530.00	89.900	269.800	8763.49	2989.04	220.93	-2980.91	671218.81	619641.91	32°42'09.817"N	103°54'39.941"W	0.83	
11625.00	90.400	270.100	8763.24	3083.81	220.84	-3075.91	671123.82	619641.83	32°42'09.819"N	103°54'41.053"W	0.61	
11720.00	90.400	270.200	8762.58	3178.60	221.09	-3170.90	671028.83	619642.08	32°42'09.826"N	103°54'42.164"W	0.11	
11816.00	90.800	270.300	8761.58	3274.40	221.51	-3266.90	670932.84	619642.49	32°42'09.834"N	103°54'43.288"W	0.43	
11911.00	90.700	270.600	8760.33	3369.21	222.26	-3361.89	670837.86	619643.24	32°42'09.845"N	103°54'44.399"W	0.33	
12007.00	89.900	269.500	8759.83	3464.99	222.34	-3457.88	670741.87	619643.32	32°42'09.849"N	103°54'45.523"W	1.42	
12102.00	89.500	269.400	8760.33	3559.69	221.43	-3552.88	670646.88	619642.41	32°42'09.844"N	103°54'46.634"W	0.43	
12198.00	89.900	268.900	8760.83	3655.36	220.00	-3648.86	670550.90	619640.99	32°42'09.834"N	103°54'47.758"W	0.67	
12293.00	90.600	269.300	8760.42	3750.02	218.51	-3743.85	670455.92	619639.50	32°42'09.823"N	103°54'48.869"W	0.85	
12388.00	90.700	268.500	8759.34	3844.64	216.69	-3838.83	670360.95	619637.67	32°42'09.808"N	103°54'49.981"W	0.85	
12484.00	90.800	269.000	8758.08	3940.24	214.59	-3934.80	670264.99	619635.58	32°42'09.791"N	103°54'51.104"W	0.53	
12579.00	91.200	268.900	8756.42	4034.86	212.85	-4029.76	670170.03	619633.84	32°42'09.778"N	103°54'52.215"W	0.43	
12675.00	91.500	269.500	8754.16	4130.51	211.51	-4125.73	670074.07	619632.50	32°42'09.768"N	103°54'53.338"W	0.70	
12770.00	90.700	268.800	8752.34	4225.16	210.10	-4220.70	669979.11	619631.09	32°42'09.758"N	103°54'54.450"W	1.12	
12865.00	90.900	268.900	8751.01	4319.77	208.20	-4315.67	669884.14	619629.18	32°42'09.743"N	103°54'55.561"W	0.24	
12917.00	90.900	268.500	8750.19	4371.55	207.02	-4367.65	669832.17	619628.00	32°42'09.733"N	103°54'56.170"W	0.77	
12973.00	90.900	268.500	8749.31	4427.29	205.55	-4423.62	669776.20	619626.54	32°42'09.721"N	103°54'56.825"W	0.00	
12978.00	90.900	268.500	8749.24	4432.27	205.42	-4428.62	669771.20	619626.41	32°42'09.720"N	103°54'56.883"W	0.00	Project to Bit

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No. 5H PBHL		8753.00	305.79	-4438.46	669761.37	619726.77	32°42'10.713"N	103°54'56.994"W	point

WELLPATH COMPOSITION - Ref Wellbore: No. 5H AWB - Ref Wellpath: No. 5H AWP_Corrected

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
20.00	8346.40	Generic gyro - northseeking (Standard)	Gyro	No. 5H AWB
8346.40	12978.00	NaviTrak (Standard)	MWD_Cor	No. 5H AWB

CIMAREX

Cimarex Energy Co. of Colorado
West Shugart 31 Fed 5H
SHL 1980' FSL & 375' FEL
BHL 2310' FSL & 330' FWL
Sec 31 - T18S - R31E, Eddy County NM

M Ketter

8/1/2011

TOC @ 460' (Temp survey)

13-3/8" 48# H40 STC @ 615'

540 sxs cmt; cmt circl'd

Quantity	Description	Length	Setting Depth
	KB	18.00	18.00
243	2-7/8" eu 8rd Tbg	7941.45	7959.45
1	2-7/8" x 5-1/2" TAC	2.68	7962.13
4	2-7/8" L-80 Tbg	130.83	8092.96
1	2-7/8" SN	1.10	8094.06
1	Cavins D2711-G Desander	19.25	8113.31
6	2-7/8" L-80 Tbg	196.13	8309.44
1	2-7/8" Collared Bull Plug	0.65	8310.09

9-5/8" 40# J55 LTC @ 3646'

1315 sxs cmt, cmt circl'd

Sqz csg leak 3770'-3802' with 125 sxs

Sqz csg leak 3770'-3802' with 175 sxs cmt went down csg.

Top Good Cement 4800'

Quantity	Description	Length	Setting Depth
	KB		0.00
1	PR and Stuffing Box		
1	1-1/4" x 18' Pony Rod		
115	1-1/4" Fiber Rod Fiberglass Rods		
84	1" Weatherford S-881 Rods		
40	7/8" Weatherford S-88 Rods		
6	1" x 4' Stabilizer Bars		
	(Spaced out every 3 sinker bars)		
18	1-1/2" C Grade Sinker Bars		

2nd Bone Spring Perfs:

9127'-29', 9326'-28', 9525'-27', 9724'-26',
9,923'-25', 10,122'-124', 10,321'-323', 10,520'-522',
10,719'-721', 10,918'-920', 11,117'-119', 11,316'-318',
11,515'-517', 11,714'-716', 11,913'-915', 12,112'-114',
12,301'-303', 12,525'-527', 12,716'-718', 12,908'-910'

2050 sxs cmt; TOC @ 460' (TS)

5-1/2" 17# P110 LTC @ 12962'

(Buttress from 8354' - 9166')

KOP @ 8427'

350 sxs cmt plug

TD: 12,978 (MD); 8,478' (TVD)

PBTD: 11,688" (MD)

Possible Csg Problems Below 9800'

Cleaned out to 11,688'

CIBP @ 12,213'



Location: Eddy County, NM
Field: (West Shugart) Sec 31, T18S, R31E
Facility: West Shugart 31 Fed Com No. 5H

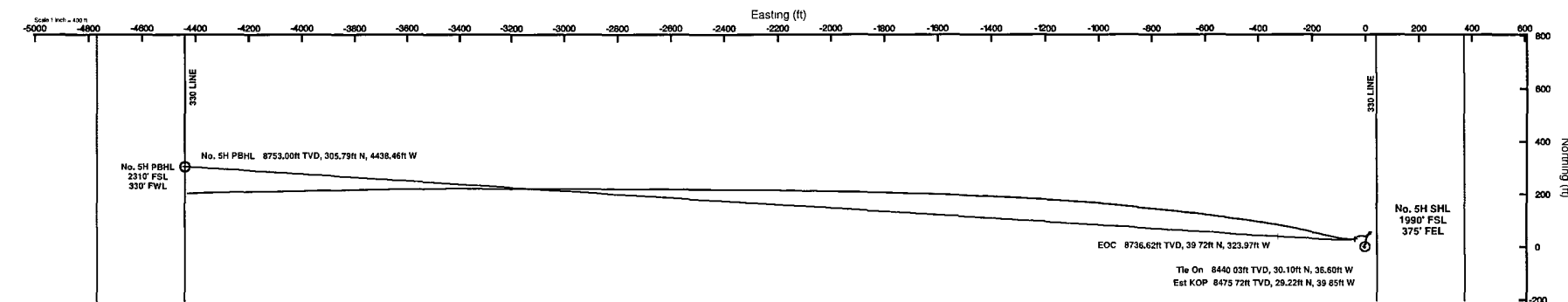
Cimarex Energy Co.

Slot: No. 5H SHL
Well: No. 5H
Wellbore: No. 5H PWB

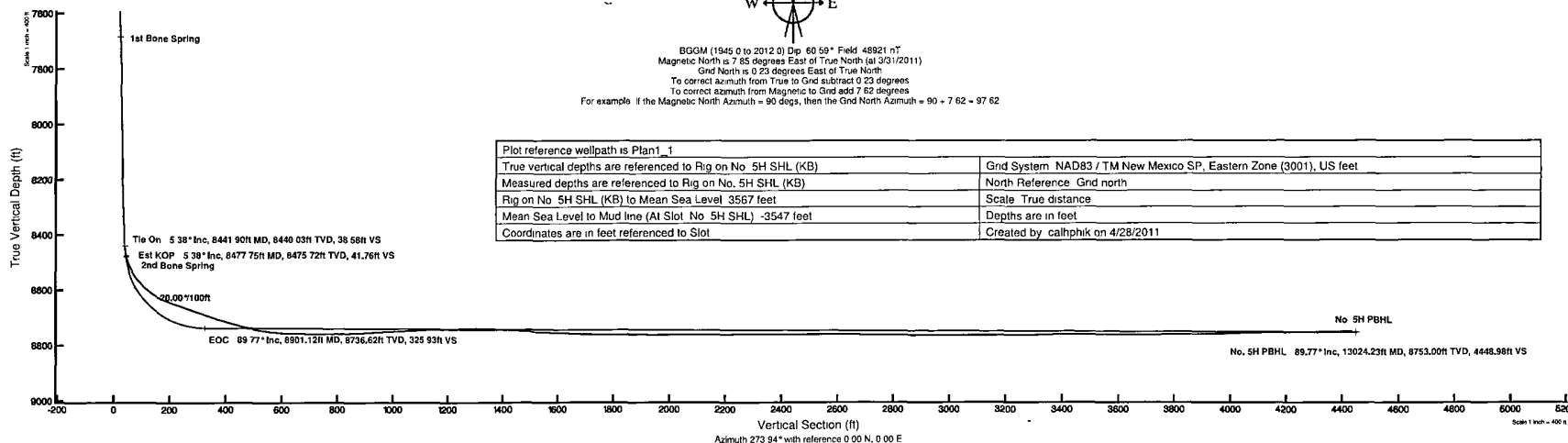


Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	8441.90	5.385	254.985	8440.03	30.10	-36.60	0.00	38.58
Est KOP	8477.75	5.385	254.985	8475.72	29.22	-39.85	0.00	41.76
EOC	8901.12	89.772	273.700	8736.62	39.72	-323.97	20.00	325.93
No. 5H PBHL	13024.23	89.772	273.700	8753.00	305.79	-4438.46	0.00	4448.98



BGGM (1945 0 to 2012 0) Dep. 60 59° Field 48921 nT
Magnetic North is 7.65 degrees East of True North (at 3/31/2011)
Grid North is 0.23 degrees East of True North
To correct azimuth from True to Grid subtract 0.23 degrees
To correct azimuth from Magnetic to Grid add 7.65 degrees
For example: If the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 90 + 7.62 = 97.62



Plot reference wellpath is Plan1_1	Grid System NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
True vertical depths are referenced to Rig on No. 5H SHL (KB)	North Reference Grid north
Measured depths are referenced to Rig on No. 5H SHL (KB)	Scale True distance
Rig on No. 5H SHL (KB) to Mean Sea Level 3567 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot No. 5H SHL) -3547 feet	Coordinates are in feet referenced to Slot
Created by callphik on 4/28/2011	

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other

2. Name of Operator **CIMAREX ENERGY CO. OF COLORADO** Contact: **CAROLYN D LARSON**
Email: **clarson@cimarex.com**

3. Address **600 N. MARIENFELD SUITE 600** 3a. Phone No. (include area code)
MIDLAND, TX 79701 Ph: **432-620-1946**

4. Location of Well (Report location clearly and in accordance with Federal requirements)*
Sec 1 T18S R31E Mer NMP
At surface **S2NE 1980FSL 375FEL**
At top prod. interval reported below **S2NE 1980FSL 375FEL**
Sec 31 T18S R31E Mer NMP
At total depth **S2NW 2310FSL 330FWL**

5. Lease Serial No.
NMLC062085

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.

8. Lease Name and Well No.
WEST SHUGART 31 FEDERAL COM 005

9. API Well No.
30-015-38221

10. Field and Pool, or Exploratory
HACKBERRY BONE SPRING, N

11. Sec., T., R., M., or Block and Survey
or Area **Sec 1 T18S R31E Mer NMP**

12. County or Parish
EDDY

13. State
NM

14. Date Spudded
04/04/2011

15. Date T.D. Reached
04/29/2011

16. Date Completed
☐ D & A ☒ Ready to Prod.
08/02/2011

17. Elevations (DF, KB, RT, GL)*
3547-GL

18. Total Depth: MD **12978** TVD **8749** 19. Plug Back T.D.: MD **12978** TVD **8257** 20. Depth Bridge Plug Set: MD **8257** TVD **8257**

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
DSN, DUAL LATEROLOG

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit analysis)
Directional Survey? ☐ No ☒ Yes (Submit analysis)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17.500	13.375 J55 SC	48.0		615		540		0	
12.250	9.625 K55 LTC	40.0		3646		1315		0	
8.750	5.500 P110	17.0		12961		2050		460	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.875	8310							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) BONE SPRING	9127	12910	12301 TO 12910		40	OPEN
B)			11515 TO 12114		40	OPEN
C)			10719 TO 11318		40	OPEN
D)			9923 TO 10522		40	OPEN

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
12301 TO 12910	FRAC W/199,820 GALS 20# BORATE XL & 236,809# 20/40 CRC SAND
11515 TO 12114	FRAC W/189,678 GALS 20# BORATE XL & 255,943# 20/40 CRC SAND
10719 TO 11318	FRAC W/164,458 GALS 20# BORATE XL & 251,834# 20/40 CRC SAND
9923 TO 10522	FRAC W/197,320 GALS 20# BORATE XL & 248,391# 20/40 CRC SAND

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
08/02/2011	08/14/2011	24	→	133.0	105.0	241.0	38.8		ELECTRIC PUMPING UNIT
Choke Size	Tbg. Press. Flwg SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
--	170	133.0	→	133	105	241	7.89	POW	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

(See Instructions and spaces for additional data on reverse side)

ELECTRONIC SUBMISSION #120489 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

RECLAMATION
DUE 2-2-11ACCEPTED FOR RECORD
OCT 25 2011
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press Flwg SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas Oil Ratio	Well Status	
			→						

28c Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press Flwg SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas Oil Ratio	Well Status	
			→						

29. Disposition of Gas(Sold, used for fuel, vented, etc.)
SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth
				BONE SPRING	6199
				1ST BONE SPRING	7698
				2ND BONE SPRING	8577
				3RD BONE SPRING CARBONATE	8960

32. Additional remarks (include plugging procedure):

#24 SHL NM-0560354, BHL LC-062084
#43 9127-9726 40 holes Open
#44 9127-9726 Frac'd w/160,894 gals 20# Borate XL and 248,084# 20/40 CRC sand

Logs will be mailed under separate cover.
Other: Directional survey, C-102, Wellbore diagram

33. Circle enclosed attachments:

- | | | | |
|---|--------------------|---------------|-----------------------|
| 1. Electrical/Mechanical Logs (1 full set req'd.) | 2. Geologic Report | 3. DST Report | 4. Directional Survey |
| 5. Sundry Notice for plugging and cement verification | 6. Core Analysis | 7. Other: | |

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

Electronic Submission #120489 Verified by the BLM Well Information System.
For CIMAREX ENERGY CO. OF COLORADO, sent to the Carlsbad

Name (please print) CAROLYN D LARSON

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 10/18/2011

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL **

Additional data for transaction #120489 that would not fit on the form

32. Additional remarks, continued