

Acid, Fracture, Treatment, Cement Squeeze, etc. Attachment
Glycerin 10 Federal Com No. 2
10-16S-29E
Eddy County, NM

30 015 36409

MR

Depth Interval	Amount and Type of Material Used
Stage 1 11142-11390	2789 gal 15% HCL, 2982 gal 15% XL HCL, 27,867 gal slickwater and 94,572 gal 20# XL Borate carrying 47,056# 20/40 white sand and 26,943# 20/40 SB Excel sand
Stage 2 10500-11142	3430 gal 15% HCL, 4485 gal 15% XL HCL, 26,120 gal slickwater and 92,396 gal 20# XL Borate carrying 48,385# 20/40 white sand and 18,665# 20/40 SB Excel sand
Stage 3 10034-10500	3485 gal 15% HCL, 2431 gal 15% XL HCL, 25,477 gal slickwater and 103,415 gal 20# XL Borate carrying 51,038# 20/40 white sand and 21,544# 20/40 SB Excel sand
Stage 4 9512-10034	3548 gal 15% HCL, 3626 gal 15% XL HCL, 32,677 gal slickwater and 93,859 gal 20# XL Borate carrying 50,595# 20/40 white sand and 25,582# 20/40 SB Excel sand
Stage 5 8990-9512	4447 gal 15% HCL, 2501 gal 15% XL HCL, 50,639 gal slickwater and 108,096 gal 20# XL Borate carrying 52,502# 20/40 white sand and 22,821# 20/40 SB Excel sand
Stage 6 8468-8990	2594 gal 15% HCL, 2321 gal 15% XL HCL, 22,548 gal slickwater and 95,812 gal 20# XL Borate carrying 50,158# 20/40 white sand and 25,747# 20/40 SB Excel sand
Stage 7 7952-8468	2462 gal 15% HCL, 2372 gal 15% XL HCL, 35.285 gal slickwater and 97.115 gal 20# XL Borate carrying 46.719# 20/40 white sand and 30.593# 20/40 SB Excel sand
Stage 8 7524-7952	2237 gal 15% HCL, 6597 gal 15% XL HCL, 20,436 gal slickwater and 94,415 gal 20# XL Borate carrying 54,329# 20/40 white sand and 23,833# 20/40 SB Excel sand
Stage 9 6758-7524	3725 gal 15% HCL, 6054 gal 15% XL HCL, 38,856 gal slickwater and 93,911 gal 20# XL Borate carrying 39,876# 20/40 white sand and 7439# 20/40 SB Excel sand

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-36409	Pool Code 97197	Pool Name County Line Tank; Abo (Oil)
Property Code 37195	Property Name GLYCERIN "10" FEDERAL COM	Well Number 2
GRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3719'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	10	16 S	29 E		2180	NORTH	330	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	10	16 S	29 E		1988	NORTH	348	WEST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code P	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

BHL & End of Prod Interval 1988 FNL & 348 FWL SHL & Beg of Prod Interval 2180 FNL & 330 FEL NM-119268 NM-15007	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 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. <i>Zeno Farris</i> 6/15/2010 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. NOVEMBER 2 2007 Date Surveyed <i>[Signature]</i> Signature & Seal of Professional Surveyor W. L. Jones Professional Surveyor
	Certificate No. Gary L. Jones 7977
	Basin Surveys



Cimarex Energy Co.

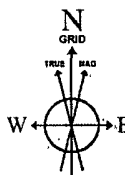
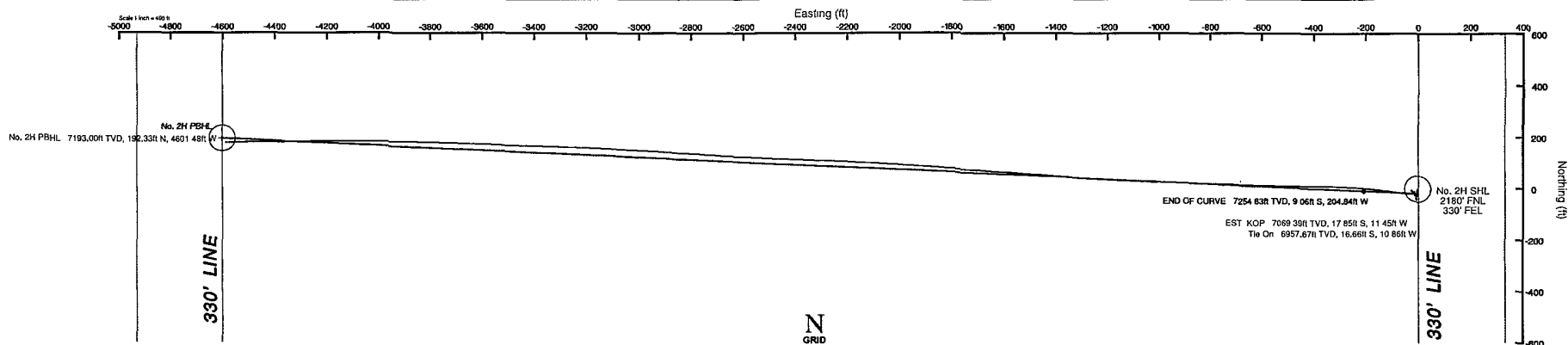
Location: Eddy County, NM
Field: (Glycerin) Sec 10, T16S, R29E
Facility: Glycerin 10 Fed Com No. 2H

Slot: No. 2H SHL
Well: No. 2H
Wellbore: No. 2H PWB



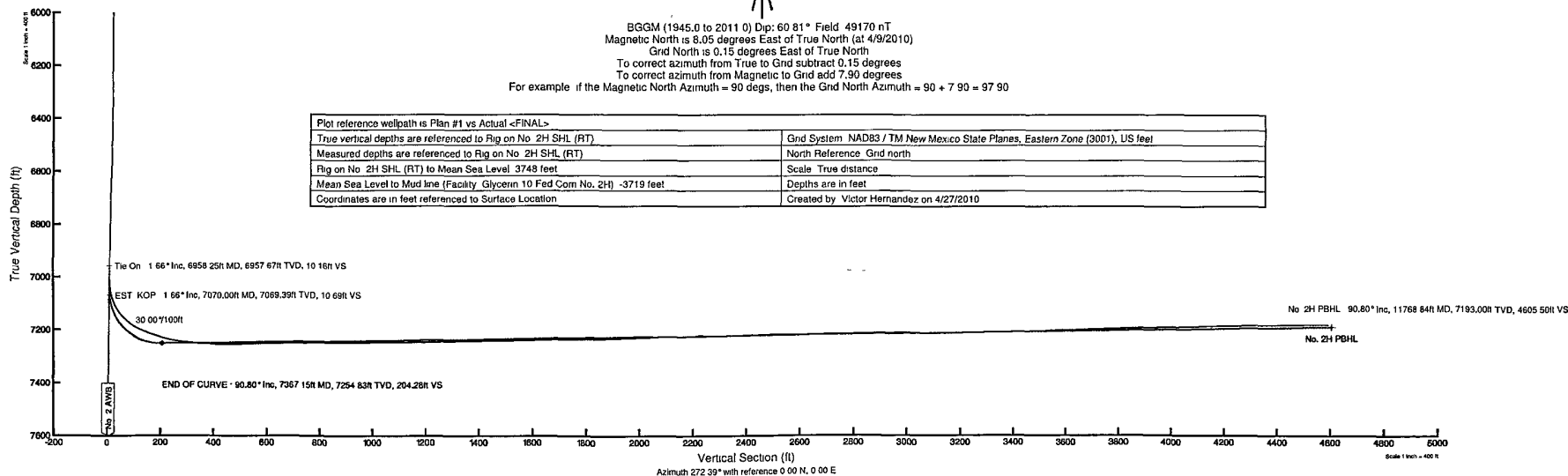
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6958.25	1.660	140.376	6957.67	-16.66	-10.86	0.00	10.16
EST. KOP	7070.00	1.660	272.000	7069.39	-17.85	-11.45	2.71	10.69
END OF CURVE	7367.15	90.805	272.623	7254.83	-9.08	-204.84	30.00	204.28
No. 2H PBHL	11768.84	90.805	272.623	7193.00	192.33	-4601.48	0.00	4605.50



BGGM (1945.0 to 2011.0) Dip: 60.81° Field: 49170 nT
Magnetic North is 8.05 degrees East of True North (at 4/9/2010)
Grid North is 0.15 degrees East of True North
To correct azimuth from True to Grid subtract 0.15 degrees
To correct azimuth from Magnetic to Grid add 7.90 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.90 = 97.90

Plot reference wellpath is Plan #1 vs Actual <FINAL>	
True vertical depths are referenced to Rig on No. 2H SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 2H SHL (RT)	North Reference: Grid north
Rig on No. 2H SHL (RT) to Mean Sea Level: 3748 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: Glycerin 10 Fed Com No. 2H): -3719 feet	Depths are in feet
Coordinates are in feet referenced to Surface Location	Created by: Victor Hernandez on 4/27/2010





Actual Wellpath Report

No. 2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Glycerin) Sec 10, T16S, R29E	Wellbore	No. 2H AWB
Facility	Glycerin 10 Fed Com No. 2H	Sidetrack from	No. 2 AWB at 6958.25 MD

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999917	Report Generated	4/27/2010 at 10:51:11 AM
Convergence at slot	0.15° East	Database/Source file	WA_Midland/No._2H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	626677.00	704899.90	32°56'14.899"N	104°03'18.601"W
Facility Reference Pt			626677.00	704899.90	32°56'14.899"N	104°03'18.601"W
Field Reference Pt			626677.00	704899.90	32°56'14.899"N	104°03'18.601"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 2H SHL (RT) to GL	29.00ft
Horizontal Reference Pt	Surface Location	Rig on No. 2H SHL (RT) to Mean Sea Level	3748.00ft
Vertical Reference Pt	Rig on No. 2H SHL (RT)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 2H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	272.39°



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Facility	Glycerin 10 Fed Com No. 2H	Sidetrack from	No. 2 AWB at 6958.25 MD

WELLPATH DATA (137 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]
0.00	0.000	145.630	0.00	0.00	0.00	0.00	0.00
100.00	0.150	145.630	100.00	-0.08	-0.11	0.07	0.15
200.00	0.420	177.280	200.00	-0.19	-0.58	0.17	0.30
300.00	1.030	202.450	299.99	0.09	-1.78	-0.16	0.67
400.00	1.110	204.750	399.97	-0.76	-3.49	-0.91	0.09
500.00	1.180	206.440	499.95	1.55	-5.29	-1.77	0.08
600.00	1.140	207.130	599.93	2.39	-7.10	-2.69	0.04
700.00	0.870	187.770	699.92	2.87	-8.74	-3.24	0.43
800.00	0.850	181.340	799.91	2.93	-10.23	-3.36	0.10
900.00	0.900	166.200	899.89	2.70	-11.73	-3.19	0.24
923.50	0.970	150.600	923.39	2.54	-12.09	-3.05	1.12
1017.60	0.900	146.650	1017.48	1.69	-13.40	-2.25	0.10
1111.60	0.760	145.080	1111.47	0.88	-14.53	-1.49	0.15
1206.60	0.700	148.070	1206.46	0.17	-15.53	-0.82	0.07
1300.50	0.670	143.720	1300.35	-0.49	-16.46	-0.19	0.06
1394.90	0.640	161.880	1394.75	-1.02	-17.41	0.30	0.22
1489.40	0.510	169.080	1489.24	-1.30	-18.32	0.54	0.16
1583.20	0.570	164.740	1583.04	-1.54	-19.18	0.74	0.08
1677.00	0.470	158.100	1676.84	-1.84	-19.99	1.01	0.12
1770.90	0.390	157.650	1770.73	-2.13	-20.64	1.27	0.09
1864.50	0.410	166.710	1864.33	-2.36	-21.26	1.47	0.07
1958.70	0.450	168.650	1958.53	-2.54	-21.96	1.62	0.05
2053.00	0.540	169.290	2052.82	-2.73	-22.76	1.78	0.10
2147.40	0.540	190.100	2147.22	-2.77	-23.63	1.78	0.21
2241.60	0.570	211.090	2241.42	-2.48	-24.47	1.46	0.22
2336.70	0.410	233.450	2336.51	-1.99	-25.08	0.94	0.26
2431.70	0.540	241.770	2431.51	-1.34	-25.49	0.28	0.15
2525.30	0.560	251.870	2525.11	-0.53	-25.84	-0.55	0.11
2619.30	0.760	269.060	2619.10	0.52	-25.99	-1.61	0.30
2712.80	0.780	276.430	2712.59	1.77	-25.93	-2.86	0.11



Actual Wellpath Report

No. 2H AWP

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Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Glycerin) Sec 10, T16S, R29E	Wellbore	No. 2H AWB
Facility	Glycerin 10 Fed Com No. 2H	Sidetrack from	No. 2 AWB at 6958.25 MD

WELLPATH DATA (137 stations)							
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]
2807.40	0.750	286.380	2807.18	3.02	-25.69	-4.09	0.14
2901.70	0.770	293.880	2901.47	4.20	-25.26	-5.26	0.11
2996.90	0.800	299.970	2996.66	5.39	-24.67	-6.42	0.09
3092.10	0.790	304.800	3091.86	6.53	-23.96	-7.54	0.07
3187.00	0.890	308.680	3186.75	7.68	-23.12	-8.65	0.12
3280.60	0.620	316.990	3280.34	8.63	-22.30	-9.56	0.31
3374.80	0.520	333.280	3374.53	9.20	-21.55	-10.10	0.20
3468.10	0.390	350.040	3467.83	9.47	-20.85	-10.35	0.20
3562.00	0.250	51.200	3561.73	9.38	-20.41	-10.25	0.37
3655.90	0.970	330.860	3655.62	9.65	-19.59	-10.47	1.02
3749.50	1.020	325.090	3749.21	10.56	-18.21	-11.34	0.12
3843.90	0.730	325.360	3843.60	11.44	-17.03	-12.16	0.31
3939.70	0.660	315.980	3939.39	12.20	-16.13	-12.89	0.14
4034.10	0.710	306.640	4033.78	13.08	-15.39	-13.74	0.13
4128.50	0.680	302.830	4128.18	14.05	-14.74	-14.68	0.06
4222.20	0.710	302.740	4221.87	15.03	-14.12	-15.63	0.03
4316.50	0.680	304.570	4316.16	16.01	-13.49	-16.58	0.04
4412.30	0.610	305.340	4411.96	16.91	-12.87	-17.47	0.07
4506.80	0.600	298.810	4506.45	17.78	-12.34	-18.31	0.07
4600.40	0.660	302.770	4600.05	18.68	-11.81	-19.19	0.08
4694.20	0.670	303.340	4693.84	19.62	-11.22	-20.11	0.01
4788.80	0.650	311.120	4788.43	20.51	-10.56	-20.97	0.10
4884.10	0.610	321.710	4883.73	21.27	-9.81	-21.69	0.13
4980.00	0.560	334.910	4979.62	21.81	-8.99	-22.21	0.15
5073.40	0.600	340.660	5073.02	22.21	-8.11	-22.56	0.08
5169.30	0.510	337.120	5168.91	22.57	-7.24	-22.90	0.10
5263.00	0.450	310.480	5262.61	23.04	-6.62	-23.34	0.24
5357.00	0.390	312.900	5356.61	23.58	-6.16	-23.85	0.07
5450.80	0.320	306.600	5450.41	24.04	-5.79	-24.30	0.09
5546.60	0.300	294.520	5546.21	24.49	-5.53	-24.74	0.07



Actual Wellpath Report

No. 2H AWP

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Facility	Glycerin 10 Fed Com No. 2H	Sidetrack from	No. 2 AWP at 6958.25 MD

WELLPATH DATA (137 stations)							
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]
5640.50	0.270	275.500	5640.10	24.94	-5.40	-25.19	0.11
5734.40	0.230	272.720	5734.00	25.35	-5.37	-25.59	0.04
5828.30	0.160	172.570	5827.90	25.51	-5.49	-25.76	0.32
5922.30	0.350	134.380	5921.90	25.28	-5.82	-25.54	0.26
6016.00	0.500	132.710	6015.60	24.75	-6.30	-25.04	0.16
6110.00	0.820	130.030	6109.59	23.91	-7.01	-24.22	0.34
6203.60	0.780	128.680	6203.18	22.86	-7.84	-23.21	0.05
6298.00	0.610	119.770	6297.58	21.90	-8.49	-22.27	0.21
6391.80	0.810	119.450	6391.37	20.87	-9.07	-21.26	0.21
6485.70	0.930	123.360	6485.26	19.62	-9.81	-20.05	0.14
6580.60	1.160	119.840	6580.14	18.11	-10.71	-18.57	0.25
6674.10	1.410	120.110	6673.62	16.25	-11.76	-16.76	0.27
6767.60	1.530	125.820	6767.09	14.19	-13.07	-14.75	0.20
6863.40	1.600	132.210	6862.85	12.10	-14.72	-12.72	0.20
6958.25	1.660	140.376	6957.67	10.16	-16.66	-10.86	0.25
7047.00	5.400	261.700	7046.29	13.40	-18.26	-14.18	7.23
7078.00	15.100	269.300	7076.76	18.88	-18.52	-19.67	31.53
7110.00	24.800	272.700	7106.81	29.78	-18.25	-30.57	30.52
7142.00	34.500	274.200	7134.58	45.59	-17.27	-46.35	30.40
7173.00	44.000	275.900	7158.56	65.16	-15.52	-65.86	30.84
7206.00	53.700	277.200	7180.25	89.91	-12.67	-90.52	29.54
7237.00	63.500	277.700	7196.38	116.23	-9.23	-116.72	31.64
7269.00	67.400	277.500	7209.68	145.21	-5.38	-145.57	12.20
7300.00	71.100	276.700	7220.66	174.10	-1.80	-174.33	12.18
7332.00	73.200	275.700	7230.47	204.49	1.48	-204.61	7.21
7363.00	76.900	274.500	7238.46	234.40	4.14	-234.43	12.51
7395.00	79.100	273.700	7245.12	265.69	6.38	-265.65	7.30
7427.00	83.000	273.000	7250.09	297.29	8.22	-297.20	12.38
7459.00	84.500	271.800	7253.58	329.10	9.56	-328.98	5.99
7490.00	87.600	270.100	7255.71	360.01	10.07	-359.90	11.40



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No. 2H AWP

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Facility	Glycerin 10 Fed Com No. 2H	Sidetrack from	No. 2 AWB at 6958.25 MD

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]
7522.00	88.400	270.200	7256.83	391.96	10.15	-391.88	2.52
7554.00	89.400	269.900	7257.44	423.93	10.18	-423.87	3.26
7649.00	91.200	271.500	7256.95	518.88	11.34	-518.86	2.54
7744.00	91.000	271.300	7255.12	613.85	13.66	-613.81	0.30
7839.00	91.200	272.200	7253.30	708.82	16.56	-708.75	0.97
7934.00	90.900	272.000	7251.56	803.81	20.04	-803.67	0.38
8029.00	90.000	271.800	7250.81	898.80	23.19	-898.61	0.97
8124.00	90.500	271.900	7250.40	993.79	26.26	-993.56	0.54
8219.00	90.500	272.600	7249.57	1088.79	29.99	-1088.49	0.74
8314.00	90.800	272.700	7248.49	1183.78	34.38	-1183.38	0.33
8409.00	91.800	273.500	7246.34	1278.75	39.52	-1278.21	1.35
8504.00	91.100	274.100	7243.93	1373.69	45.81	-1372.97	0.97
8599.00	90.800	274.200	7242.36	1468.63	52.68	-1467.71	0.33
8694.00	91.200	274.500	7240.70	1563.56	59.89	-1562.42	0.53
8789.00	91.100	274.500	7238.79	1658.48	67.34	-1657.11	0.11
8884.00	90.400	274.200	7237.55	1753.41	74.55	-1751.83	0.80
8979.00	91.200	274.100	7236.22	1848.36	81.42	-1846.57	0.85
9074.00	92.200	274.200	7233.40	1943.27	88.29	-1941.28	1.06
9169.00	91.400	273.500	7230.42	2038.19	94.67	-2036.01	1.12
9264.00	90.400	273.800	7228.93	2133.16	100.71	-2130.81	1.10
9360.00	91.500	272.400	7227.34	2229.13	105.90	-2226.65	1.85
9455.00	91.200	272.400	7225.10	2324.10	109.88	-2321.54	0.32
9550.00	92.000	272.900	7222.45	2419.07	114.27	-2416.40	0.99
9645.00	91.000	272.500	7219.96	2514.03	118.75	-2511.26	1.13
9740.00	89.900	272.200	7219.21	2609.03	122.64	-2606.18	1.20
9835.00	91.500	273.800	7218.05	2704.01	127.61	-2701.03	2.38
9931.00	91.200	273.700	7215.79	2799.95	133.89	-2796.80	0.33
10025.00	90.700	273.000	7214.23	2893.93	139.38	-2890.63	0.92
10120.00	90.000	273.600	7213.65	2988.91	144.85	-2985.47	0.97
10215.00	89.600	272.600	7213.98	3083.90	149.99	-3080.33	1.13



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Facility	Glycerin 10 Fed Com No. 2H	Sidetrack from	No. 2 AWB at 6958.25 MD

WELLPATH DATA (137 stations)								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	
10311.00	90.800	272.800	7213.65	3179.90	154.51	-3176.22	1.27	
10406.00	91.700	272.600	7211.58	3274.87	158.98	-3271.09	0.97	
10500.00	90.300	271.700	7209.93	3368.86	162.51	-3365.00	1.77	
10595.00	92.200	272.200	7207.86	3463.83	165.74	-3459.92	2.07	
10690.00	91.200	272.100	7205.04	3558.78	169.30	-3554.81	1.06	
10785.00	92.000	272.300	7202.39	3653.74	172.95	-3649.70	0.87	
10880.00	92.400	272.200	7198.74	3748.67	176.67	-3744.56	0.43	
10975.00	91.500	271.200	7195.51	3843.61	179.49	-3839.46	1.42	
11069.00	91.000	270.200	7193.46	3937.54	180.64	-3933.43	1.19	
11164.00	91.700	270.300	7191.22	4032.45	181.05	-4028.40	0.74	
11260.00	91.300	269.800	7188.71	4128.34	181.14	-4124.37	0.67	
11355.00	91.100	269.600	7186.72	4223.21	180.64	-4219.35	0.30	
11450.00	90.900	269.900	7185.06	4318.09	180.23	-4314.33	0.38	
11545.00	90.300	269.200	7184.07	4412.97	179.48	-4409.32	0.97	
11640.00	90.400	269.300	7183.49	4507.83	178.24	-4504.31	0.15	
11672.00	90.200	269.300	7183.32	4539.78	177.84	-4536.31	0.62	
11725.00	90.200	269.300	7183.14	4592.70	177.20	-4589.31	0.00	



Actual Wellpath Report

No. 2H AWP

Page 7 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Eddy County, NM	Well	No. 2H
Field	(Glycerin) Sec 10, T16S, R29E	Wellbore	No. 2H AWB
Facility	Glycerin 10 Fed Com No. 2H	Sidetrack from	No. 2 AWB at 6958.25 MD

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 2H PBHL		7193.00	192.33	-4601.48	622075.91	705092.22	32°56'16.919"N	104°04'12.586"W	point

WELLPATH COMPOSITION					Ref Wellbore: No. 2H AWB	Ref Wellpath: No. 2H AWP
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment	Wellbore
0.00	6958.25	Gyrodatta relative depth - Drop gyro or Multi-shot			GYRO <100 - 7498>	No. 2 AWB
6958.25	11672.00	NaviTrak (Standard)			MWD <7047 - 11672>	No. 2H AWB
11672.00	11725.00	Blind Drilling (std)			Projection to bit	No. 2H AWB



CACTUS DRILLING COMPANY, L.L.C.

REPORT OF PROOF OF APPARENT DEVIATION
NEW MEXICO

OPERATOR CIMAREX ENERGY CO OF CO
600 N Marienfeld St
Midland, TX 79701

FIELD NAME _____

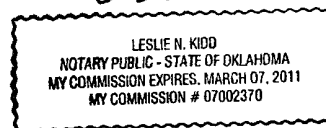
COUNTY/PARISH EDDY

WELL NAME & NO. GLYCERIN 10 FED #2

LEGAL SEC 10-16S-29E

MEASURED DEPTH (FT)	COURSE LENGTH (HUNDREDS OF FT)	ANGLE OF INCLINATION (DEGREES)	DISPLACEMENT PER HUNDRED FT (SINE OF ANGLE X 100)	COURSE DISPLACEMENT (FEET)	ACCUMULATIVE DISPLACEMENT (FEET)	REMARKS
420	4.20	1	1.7452	7.33	7.33	
1093	6.73	1	1.7452	11.75	19.08	
1372	2.79	2	3.4899	9.74	28.81	
1665	2.93	1	1.7452	5.11	33.93	
2007	3.42	1	1.7452	5.97	39.89	
2465	4.58	1	1.7452	7.99	47.89	
2921	4.56	1	1.7452	7.96	55.85	
3480	5.59	1	1.7452	9.76	65.60	
3900	4.20	1	1.7452	7.33	72.93	
4325	4.25	1	1.7452	7.42	80.35	
4805	4.80	1	1.7452	8.38	88.73	
5280	4.75	1	1.7452	8.29	97.02	
6311	10.31	1	1.7452	17.99	115.01	
6783	4.72	1	1.7452	8.24	123.25	
7283	5.00	2	3.4899	17.45	140.70	

Leslie N. Kidd
6-22-10



P.O. Box 270848 • Oklahoma City, OK 73137-0848
(405) 577-5347 • Fax (405) 577-9306

6/22/2010

KOP @ 7554 FT
End of Curve @

4 1/2 LTC x BTC Cross Over
3.656" Frac Port
Depth @ 7243'
Open at 2051 Psi
3.750" Ball

#8 Predator II Packer
Depth @ 7524'
Set with 1892 Psi

3.531" Frac Port
Depth @ 7758'
Open at 2051 Psi
3.625" Ball

#7 Predator II Packer
Depth @ 7951'
Set with 1892 Psi

3.406" Frac Port
Depth @ 8093'
Open at 2051 Psi
3.500" Ball

#6 Predator II Packer
Depth @ 8468'
Set with 1892 Psi

3.281" Frac Port
Depth @ 8566'
Open at 2051 Psi
3.375" Ball

#5 Predator II Packer
Depth @ 8990'
Set with 1892 Psi

3.156" Frac Port
Depth @ 9271'
Open at 2051 Psi
3.250" Ball

#4 Predator II Packer
Depth @ 9512'
Set with 1892 Psi

3.031" Frac Port
Depth @ 9702'
Open at 2051 Psi
3.125" Ball

#3 Predator II Packer
Depth @ 10034'
Set with 1892 Psi

2.906" Frac Port
Depth @ 10357'
Open at 2051 Psi
3.000" Ball

#2 Predator II Packer
Depth @ 10675'
Set with 1892 Psi

2.781" Frac Port
Depth @ 10826'
Open at 2051 Psi
2.875" Ball

#1 Predator II Packer
Depth @ 11141'
Set with 1892 Psi

Hydra-Pak SS Anchor
Depth @ 11339'
Set with 1892 Psi

Pump Out Plug
Depth @ 11390'
Set with 1.125" Ball
Open with 4576 Psi

DOWN HOLE WELL PROFILE					
WELL NAME	Cimarex Energy, Glycerin 10 Fed Com #2H			DATE	4/25/10
SUPERVISOR	Billy Martin			TOOL HAND	Ray Lollar
PHONE #	575-390-4697			PHONE #	432-425-2193
RIG #	Cactus Drilling Co. Rig #122			FIELD TICKET #	5804
ELEVATIONS					
KB ELEV	GL ELEV	KB TO THF	KB TO SCF	RIG KBD	PBTD
				19	
CASING / OPEN HOLE LAYOUT		OD (IN)	LANDED DEPTH	WEIGHT (LB/FT)	TOP OF (FTKB)
CASING DESCRIPTION		7	6830' Shoe	26	
WINDOW DESCRIPTION					
OPEN HOLE DESCRIPTION		6 1/8	11725.00	JUNCTION @	7554.00

Liner Schematic Tool Placement

DOWNHOLE DESCRIPTION FROM BOTTOM UP (Liner String)					
BOTTOM @	DESCRIPTION	LENGTH	ID	OD	
11390.00	Peak 3 1/2 Pump Out Plug (3" ID when Pumped Open)(Set with 1.125" Ball)	0.86	0.75	4.50	
11389.14	3 1/2 8rd Pin x 4 1/2 LTC Box Cross Over	1.01	4.00	4.50	
11388.13	1 Joint 4 1/2 P-110, 11.6# Liner w/LTC threads (1)	45.92	4.00	4.50	
11342.21	4 1/2 x 2' P-110 Liner Sub	2.09	4.00	4.50	
11340.12	7 x 4 1/2 Peak Rotating Centralizer	0.62	4.00	5.88	
11339.50	7 x 4 1/2 Peak Extreme Service, Open Hole Hydra-Pak, SS Anchor	4.91	4.00	5.88	
11334.59	4 1/2 x 6' P-110 Liner Sub	6.11	4.00	4.50	
11328.48	4 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (2-5)	183.87	4.00	4.50	
11144.61	4 1/2 x 2' P-110 Liner Sub	2.02	4.00	4.50	
11142.59	7 x 4 1/2 Peak Rotating Centralizer	0.62	4.00	5.88	
11141.97	7 x 4 1/2 Peak Extreme Service, Open Hole Preator II Packer w/HPHT Element System	4.02	4.00	5.69	
11137.95	4 1/2 x 8' P-110 Liner Sub	6.07	4.00	4.50	
11131.88	7 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (6-12)	305.24	4.00	4.50	
10826.64	Peak Gen III Strata-Port Frac Sleeve with 2.781" ID Seat (Open with 2.875" Ball)	3.55	2.78	5.88	
10823.09	7 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (13-19)	320.30	4.00	4.50	
10502.79	4 1/2 x 2' P-110 Liner Sub	2.10	4.00	4.50	
10500.69	7 x 4 1/2 Peak Rotating Centralizer	0.61	4.00	5.88	
10500.08	7 x 4 1/2 Peak Extreme Service, Open Hole Preator II Packer w/HPHT Element System	4.00	4.00	5.69	
10496.08	4 1/2 x 6' P-110 Liner Sub	6.05	4.00	4.50	
10490.03	3 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (20-22)	132.45	4.00	4.50	
10357.58	Peak Gen III Strata-Port Frac Sleeve with 2.906" ID Seat (Open with 3.000" Ball)	3.55	2.91	5.88	
10354.03	7 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (23-29)	317.25	4.00	4.50	
10036.78	4 1/2 x 2' P-110 Liner Sub	2.06	4.00	4.50	
10034.72	7 x 4 1/2 Peak Rotating Centralizer	0.60	4.00	5.88	
10034.12	7 x 4 1/2 Peak Extreme Service, Open Hole Preator II Packer w/HPHT Element System	3.99	4.00	5.69	
10030.13	4 1/2 x 6' P-110 Liner Sub	6.08	4.00	4.50	
10024.05	7 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (30-36)	322.01	4.00	4.50	
9702.04	Peak Gen III Strata-Port Frac Sleeve with 3.031" ID Seat (Open with 3.125" Ball)	3.55	3.03	5.88	
9698.49	4 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (37-40)	183.52	4.00	4.50	
9514.97	4 1/2 x 2' P-110 Liner Sub	2.11	4.00	4.50	
9512.86	7 x 4 1/2 Peak Rotating Centralizer	0.61	4.00	5.88	
9512.25	7 x 4 1/2 Peak Extreme Service, Open Hole Preator II Packer w/HPHT Element System	4.00	4.00	5.69	
9508.25	4 1/2 x 6' P-110 Liner Sub	6.05	4.00	4.50	
9502.20	5 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (41-45)	230.71	4.00	4.50	
9271.49	Peak Gen III Strata-Port Frac Sleeve with 3.156" ID Seat (Open with 3.250" Ball)	3.55	3.16	5.88	
9267.94	6 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (46-51)	275.53	4.00	4.50	
8992.41	4 1/2 x 2' P-110 Liner Sub	2.04	4.00	4.50	
8990.37	7 x 4 1/2 Peak Rotating Centralizer	0.62	4.00	5.88	
8989.75	7 x 4 1/2 Peak Extreme Service, Open Hole Preator II Packer w/HPHT Element System	4.01	4.00	5.69	
8985.74	4 1/2 x 6' P-110 Liner Sub	6.07	4.00	4.50	
8979.67	9 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (52-60)	413.41	4.00	4.50	
8566.26	Peak Gen III Strata-Port Frac Sleeve with 3.281" ID Seat (Open with 3.375" Ball)	3.55	3.28	5.88	
8562.71	2 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (61-62)	91.70	4.00	4.50	
8471.01	4 1/2 x 2' P-110 Liner Sub	2.07	4.00	4.50	
8468.94	7 x 4 1/2 Peak Rotating Centralizer	0.59	4.00	5.88	
8468.35	7 x 4 1/2 Peak Extreme Service, Open Hole Preator II Packer w/HPHT Element System	3.99	4.00	5.69	
8464.36	4 1/2 x 6' P-110 Liner Sub	6.03	4.00	4.50	
8458.33	8 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (63-70)	365.19	4.00	4.50	
8093.14	Peak Gen III Strata-Port Frac Sleeve with 3.406" ID Seat (Open with 3.500" Ball)	3.55	3.41	5.88	
8089.59	3 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (71-73)	135.14	4.00	4.50	
7954.45	4 1/2 x 2' P-110 Liner Sub	2.09	4.00	4.50	
7952.36	7 x 4 1/2 Peak Rotating Centralizer	0.61	4.00	5.88	
7951.75	7 x 4 1/2 Peak Extreme Service, Open Hole Preator II Packer w/HPHT Element System	4.02	4.00	5.69	
7947.73	4 1/2 x 6' P-110 Liner Sub	6.11	4.00	4.50	
7941.62	4 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (74-77)	183.08	4.00	4.50	
7758.54	Peak Gen III Strata-Port Frac Sleeve with 3.531" ID Seat (Open with 3.625" Ball)	3.55	3.53	5.88	
7754.99	5 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (78-82)	228.00	4.00	4.50	
7526.99	4 1/2 x 2' P-110 Liner Sub	2.08	4.00	4.50	
7524.91	7 x 4 1/2 Peak Rotating Centralizer	0.61	4.00	5.88	
7524.30	7 x 4 1/2 Peak Extreme Service, Open Hole Preator II Packer w/HPHT Element System	4.00	4.00	5.69	
7520.30	4 1/2 x 6' P-110 Liner Sub	6.10	4.00	4.50	
7514.20	6 Joints 4 1/2 P-110, 11.6# Liner w/LTC threads (83-88)	270.43	4.00	4.50	
7243.77	Peak Gen III Strata-Port Frac Sleeve with 3.656" ID Seat (Open with 3.750" Ball)	3.55	3.66	5.88	
7240.22	4 1/2 LTC Pin x 4 1/2 BTC Box Cross Over	1.84	4.00	4.50	
7236.38	11 Joints 4 1/2 P-110, 11.6# Liner w/BTC threads (1-11)	475.47	4.00	4.50	
6762.91	4 1/2 BTC Pin x 4 1/2 LTC Box Cross Over	1.88	4.00	4.50	
6761.03	4 1/2 x 2' P-110 Liner Sub	2.07	4.00	4.50	
6758.96	Peak 7" 26# SMP-X Casing Hanger with HPHT Element System	9.44	4.00	5.94	
6749.52	TLC Releasing Adaptor with 1.750 ID Seat (Release with 2" Steel Ball)	2.69	1.75	5.38	
6746.83	Peak 4 1/2" x 4" ID 3-Lug Gudgeon	2.50	4.00	4.50	
6744.33	TLC Running/Releasing Tool x 3 1/2 IF Box Cross Over	0.83	2.25	5.00	
6743.50	3 1/2 IF Drill Pipe Handling Sub	7.67	2.76	3.50	
6735.83	40 Joints 4 3/4" OD Drill Collars 3 1/2 IF Threads	1228.71	2.25	4.75	
5507.12	174 Joints 3 1/2 13.3# Drill Pipe to Surface (IF Threads)	5508.33	2.76	3.50	
-1.21	Stick Up	0.00	2.76	3.50	
		0.00			
WEIGHT OF TUBING STRING		TOTAL STRING LENGTH		11391.21	
PUSH / PULL TEST		STICK-UP OFF RIG FLOOR		9.58	
LINER STRING WEIGHT		TUBING BOTTOM		11381.65	

Final Tool Placement 4/29/10
Completed by Ray Lollar

*** CONFIDENTIAL ***
NOT TO BE DISCLOSED OUTSIDE

Cimarex Energy Company

TOTAL MEASURED DEPTH @
11725 FT