

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA
APR 23 2009

FORM APPROVED
OMB No. 1004-0135
Expires July 31, 1996
Lease Serial No.

RM

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Cimarex Energy Co. of Colorado

3a. Address

5215 N. O'Connor Blvd., Ste 1500; Irving, TX 75039

3b. Phone No. (include area code)

972-401-3111

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL 1780 FSL & 1650 FWL 31-18S-31E
BHL 706 FSL & 1615 FWL

NM-99038

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

Nm 107686

8. Well Name and No.

West Shugart 31 Federal No. 1

9. API Well No.

30-015-31647

10. Field and Pool, or Exploratory Area

Hackberry; Morrow, North

11. County or Parish, State

Eddy County, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

TYPE OF ACTION

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

☐ Acidize

☐ Alter Casing

☐ Casing Repair

☐ Change Plans

☐ Convert to Injection

☐ Deepen

☐ Fracture Treat

☐ New Construction

☐ Plug and Abandon

☒ Plug Back

☐ Production (Start/Resume)

☐ Reclamation

☒ Recomplete

☐ Temporarily Abandon

☐ Water Disposal

☐ Water Shut-Off

☐ Well Integrity

☒ Other Plug back and
recomplete horizontally in
Bone Spring

13. Describe Proposed or Completed Operation (clearly state all pertinent details, included estimated starting date of any proposed work and approximate duration thereof.

If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Well currently producing from Morrow at 12324' - 12340' MD in a directional wellbore.

Cimarex proposes to perform the following operations in order to plug back and recomplete this well horizontally in the Bone Spring:

- Kill well. ND WH & NU 5K BOP. POOH w/ tbg. Set CIBP @ 12274' MD w/ 35' cmt over Morrow perms. Set CIBP @ 8612' MD w/ 2 sx sand. Cimarex will address additional plugs between Morrow perms and Bone Spring at final abandonment.
 - Mill window from 8590' to 8605' MD. Kick off 6 3/4" hole at 8600' MD (8559' TVD). Land curve at 8998' MD 8820' TVD and drill to TD of 11784' MD and 8820' TVD.
 - Run 3 1/2" 9.3# P-110 EUE 8rd liner from RSB packer at 8490' MD to TD at 11784' MD. Liner will be PEAK completion assembly which will require no cement. 2 7/8" 6.5# P-110 per operator 4/20/09
 - Fracture treat in several stages as needed through iso-ports separated by iso-packers.
- Please see attached C-102 and preliminary directional survey.

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct

Name (Printed/Typed)

Natalie Krueger

Signature

Title

Regulatory Analyst

Date

February 3, 2009

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Office

Conditions of Approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title 18 U.S.C. Section 1001, makes 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.

(Instructions on reverse)

APPROVED

APR 20 2009

WESLEY W. INGRAM
PETROLEUM ENGINEER

State of New Mexico

DISTRICT I

P.O. Box 1000, Santa Fe, NM 87504-1000

Energy, Minerals and Natural Resources Department

Form C-102

Revised February 10, 1994

Submit to Appropriate District Office

State Lease - 4 Copies

For Lease - 3 Copies

DISTRICT II

P.O. Box 1000, Santa Fe, NM 87504-1000

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT III

1000 El Estero Rd., Arbores, NM 87410

DISTRICT IV

P.O. Box 1000, Santa Fe, NM 87504-1000

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-31647	Well Code 56405-97056	Pool Name Hackberry Shugart, Bone Spring, North
Property Code	Property Name WEST SHUGART 31 FEDERAL COM	Well Number 1
OGRIID No. 162683	Operator Name Cimarex Energy Co. of Colorado	Elevation 3528

Surface Location

UL or lot No.	Section	Township	Range	Lot No.	Feet from the	North/South line	Feet from the	East/West line	County
K	31	18-S	31-E		1780	SOUTH	1650	WEST	EDDY

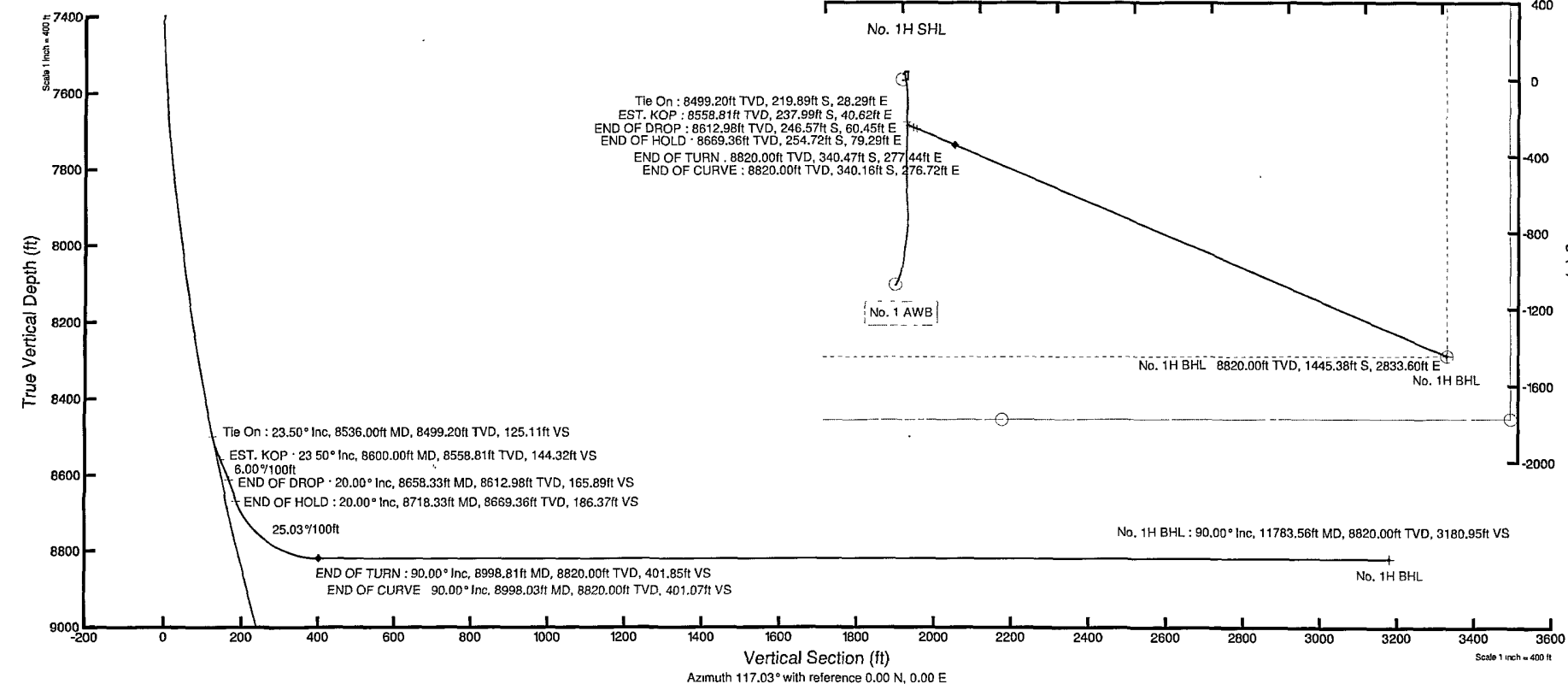
Bottom Hole Location if Different From Surface

UL or lot No.	Section	Township	Range	Lot No.	Feet from the	North/South line	Feet from the	East/West line	County
P	31	18-S	31-E		330	SOUTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
200		P	

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

LOT 1 35.62 AC LOT 2 SHL & P.P. Bone Spring 6060' 1780 FSL & 1650 FWL EOC 8820' TVD 1542 FSL & 1691 FWL 35.70 AC LOT 3 35.78 AC LOT 4 KOP 8559' TVD 1542 FSL & 1691 FWL 35.86 AC NM-99038 NM-0560352 NM-0560354 Producible Interval BHL 330 FSL & 330 FEL 330'	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <i>Zeno Farris</i> Signature Zeno Farris Printed Name Mgr Operations Admin Title 1/30/2009 Date 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. JANUARY 09, 2001 Date Surveyed Signature & Seal of Professional Surveyor RONALD O. HEDSON 81-11-0035 Professional No. 3339 2001
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Planned Wellpath Report

Preliminary Plan_2

Page 1 of 6



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Eddy County, NM	Well	No. 1H
Field	(West Shugart) Sec 31, T18S, R31E	Wellbore	No. 1H PWB
Facility	West Shugart 31 Fed 31 No.1H		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Victor Hernandez
Scale	0.999928	Report Generated	1/28/2009 at 4:11:31 PM
Convergence at slot	0.23° East	Database/Source file	WA_Midland/No. 1H_PWB.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	629903.00	619141.60	32°42'05.066"N	103°54'39.743"W
Facility Reference Pt			629903.00	619141.60	32°42'05.066"N	103°54'39.743"W
Field Reference Pt			629903.00	619141.60	32°42'05.066"N	103°54'39.743"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 1H (RT) to Facility Vertical Datum	17.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 1H (RT) to Mean Sea Level	3545.00ft
Vertical Reference Pt	Rig on No. 1H (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 1H (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	117.03°



Planned Wellpath Report

Preliminary Plan_2

Page 2 of 6



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Facility	West Shugart 31 Fed 31 No.1H		

WELLPATH DATA (124 stations)								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00	0.000	106.330	0.00	0.00	0.00	0.00	0.00	
100.00	0.590	106.330	100.00	0.51	-0.14	0.49	0.59	
200.00	0.680	104.570	199.99	1.59	-0.44	1.56	0.09	
300.00	0.610	108.660	299.99	2.70	-0.76	2.64	0.08	
400.00	0.440	94.520	399.98	3.58	-0.96	3.53	0.21	
500.00	0.460	85.640	499.98	4.28	-0.96	4.31	0.07	
600.00	0.470	86.950	599.98	4.97	-0.91	5.12	0.01	
700.00	0.590	87.370	699.97	5.78	-0.86	6.05	0.12	
800.00	0.690	91.520	799.96	6.77	-0.85	7.16	0.11	
900.00	0.670	80.280	899.96	7.78	-0.77	8.34	0.13	
1000.00	0.650	74.690	999.95	8.67	-0.52	9.46	0.07	
1100.00	0.650	79.510	1099.94	9.54	-0.27	10.57	0.05	
1200.00	0.680	80.240	1199.94	10.46	-0.07	11.71	0.03	
1300.00	0.630	85.480	1299.93	11.40	0.08	12.84	0.08	
1400.00	0.640	82.350	1399.93	12.33	0.20	13.94	0.04	
1500.00	0.690	77.400	1499.92	13.26	0.40	15.09	0.08	
1600.00	0.730	75.810	1599.91	14.20	0.69	16.29	0.04	
1700.00	0.790	74.070	1699.90	15.18	1.04	17.57	0.06	
1800.00	0.820	71.020	1799.89	16.18	1.46	18.91	0.05	
1900.00	0.880	72.330	1899.88	17.23	1.92	20.32	0.06	
2000.00	0.800	63.750	1999.87	18.19	2.46	21.68	0.15	
2100.00	0.870	67.860	2099.86	19.10	3.06	23.01	0.09	
2200.00	0.830	56.380	2199.85	19.96	3.75	24.31	0.17	
2300.00	0.930	55.680	2299.84	20.70	4.61	25.59	0.10	
2400.00	0.980	39.920	2399.82	21.28	5.72	26.81	0.27	
2500.00	1.350	22.780	2499.80	21.38	7.46	27.81	0.50	
2600.00	1.500	14.170	2599.77	21.01	9.82	28.59	0.26	
2700.00	1.650	4.350	2699.73	20.16	12.52	29.02	0.31	
2800.00	1.650	0.340	2799.69	18.96	15.40	29.13	0.12	
2900.00	1.570	354.990	2899.65	17.58	18.20	29.02	0.17	



Planned Wellpath Report

Preliminary Plan_2

Page 3 of 6



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WELLPATH DATA (124 stations)								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
3000.00	1.600	0.520	2999.62	16.23	20.96	28.92	0.16	
3100.00	1.580	355.710	3099.58	14.89	23.73	28.83	0.13	
3200.00	1.420	359.290	3199.54	13.60	26.35	28.71	0.19	
3300.00	1.490	358.830	3299.51	12.41	28.88	28.67	0.07	
3400.00	1.260	357.640	3399.48	11.26	31.28	28.59	0.23	
3500.00	0.970	358.310	3499.46	10.31	33.23	28.52	0.29	
3600.00	0.820	359.980	3599.45	9.58	34.79	28.50	0.15	
3700.00	0.890	9.570	3699.44	9.02	36.27	28.63	0.16	
3800.00	0.780	27.280	3799.43	8.79	37.64	29.07	0.28	
3900.00	0.830	22.380	3899.42	8.73	38.92	29.66	0.09	
4000.00	0.470	31.840	3999.41	8.71	39.93	30.15	0.37	
4100.00	0.460	36.680	4099.41	8.81	40.60	30.60	0.04	
4200.00	0.400	29.550	4199.41	8.89	41.23	31.02	0.08	
4300.00	0.360	34.870	4299.40	8.95	41.79	31.37	0.05	
4400.00	0.270	124.010	4399.40	8.94	42.28	31.60	0.14	
4500.00	0.420	329.170	4499.40	8.58	42.82	31.47	0.30	
4600.00	0.410	300.590	4599.40	7.91	43.32	30.98	0.21	
4700.00	0.460	292.480	4699.40	7.15	43.65	30.30	0.08	
4800.00	0.640	277.250	4799.39	6.23	43.88	29.37	0.23	
4900.00	1.010	274.190	4899.38	4.89	44.01	27.94	0.37	
5000.00	1.350	272.940	4999.36	3.00	44.14	25.89	0.34	
5100.00	1.070	263.760	5099.34	1.15	44.10	23.78	0.34	
5200.00	0.950	257.470	5199.32	-0.27	43.81	22.04	0.16	
5300.00	0.870	255.430	5299.31	-1.48	43.44	20.50	0.09	
5400.00	0.830	248.080	5399.30	-2.52	42.98	19.09	0.12	
5500.00	0.790	252.020	5499.29	-3.49	42.50	17.76	0.07	
5600.00	0.750	236.920	5599.28	-4.30	41.93	16.56	0.21	
5700.00	0.720	222.770	5699.27	-4.80	41.11	15.59	0.18	
5800.00	0.850	217.670	5799.26	-5.10	40.06	14.71	0.15	
5900.00	1.040	214.850	5899.25	-5.36	38.73	13.73	0.20	



Planned Wellpath Report

Preliminary Plan_2

Page 4 of 6



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Facility	West Shugart 31 Fed 31 No.1H		

WELLPATH DATA (124 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
6000.00	1.260	228.110	5999.23	-5.88	37.25	12.40	0.34	
6100.00	1.240	225.510	6099.20	-6.62	35.76	10.81	0.06	
6200.00	1.080	230.190	6199.18	-7.34	34.40	9.31	0.19	
6300.00	0.850	224.180	6299.17	-7.93	33.26	8.07	0.25	
6400.00	0.790	205.070	6399.16	-8.12	32.11	7.26	0.28	
6500.00	0.890	206.460	6499.15	-8.09	30.79	6.62	0.10	
6600.00	0.530	204.840	6599.14	-8.06	29.67	6.08	0.36	
6700.00	0.220	285.200	6699.14	-8.23	29.30	5.70	0.54	
6800.00	0.320	323.230	6799.14	-8.67	29.58	5.35	0.20	
6900.00	0.290	265.090	6899.14	-9.14	29.78	4.93	0.30	
7000.00	0.570	7.240	6999.13	-9.52	30.25	4.74	0.69	
7052.00	1.590	30.950	7051.12	-9.56	31.12	5.15	2.10	
7280.00	1.500	77.770	7279.05	-7.03	34.47	9.69	0.54	
7379.00	1.600	130.870	7378.02	-4.69	33.84	12.00	1.40	
7478.00	2.900	159.870	7476.94	-1.51	30.58	13.91	1.71	
7572.00	5.500	171.770	7570.68	2.84	23.89	15.37	2.90	
7669.00	7.500	171.770	7667.06	9.17	13.02	16.94	2.06	
7765.00	9.500	172.770	7762.00	17.25	-1.04	18.84	2.09	
7860.00	11.500	170.770	7855.40	27.27	-18.16	21.34	2.14	
7955.00	13.200	176.270	7948.20	38.41	-38.34	23.57	2.17	
8052.00	14.500	178.370	8042.38	49.90	-61.53	24.63	1.44	
8149.00	16.400	177.970	8135.87	62.38	-87.35	25.46	1.96	
8245.00	18.400	178.170	8227.47	76.27	-116.04	26.43	2.08	
8342.00	20.000	180.870	8319.08	90.97	-147.93	26.66	1.89	
8438.00	21.800	178.070	8408.76	106.84	-182.17	27.02	2.14	
8536.00	23.500	178.070	8499.20	125.11	-219.89	28.29	1.73	Tie On
8600.00	23.500	113.400	8558.81	144.32	-237.99	40.62	38.48	EST. KOP
8636.00†	21.340	113.400	8592.09	158.02	-243.44	53.22	6.00	
8658.33	20.000	113.400	8612.98	165.89	-246.57	60.45	6.00	END OF DROP
8718.33	20.000	113.400	8669.36	186.37	-254.72	79.29	10.00	END OF HOLD



Planned Wellpath Report

Preliminary Plan_2

Page 5 of 6



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Facility	West Shugart 31 Fed 31 No.1H		

WELLPATH DATA (124 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
8736.00†	24.421	113.400	8685.72	193.03	-257.37	85.41	25.03	
8836.00†	49.448	113.400	8765.01	252.53	-281.05	140.12	25.03	
8936.00†	74.475	113.400	8811.65	339.92	-315.82	220.49	25.03	
8998.03	90.000	113.400	8820.00	401.07	-340.16	276.72	25.03	END OF CURVE
8998.81†	90.000	113.377	8820.00	401.85†	-340.47†	277.44†	3.00	END OF TURN
9036.00†	90.000	113.377	8820.00	438.96	-355.22	311.57	0.00	
9136.00†	90.000	113.377	8820.00	538.76	-394.90	403.37	0.00	
9236.00†	90.000	113.377	8820.00	638.55	-434.58	495.16	0.00	
9336.00†	90.000	113.377	8820.00	738.35	-474.25	586.95	0.00	
9436.00†	90.000	113.377	8820.00	838.15†	-513.93†	678.74†	0.00	
9536.00†	90.000	113.377	8820.00	937.95	-553.61	770.53	0.00	
9636.00†	90.000	113.377	8820.00	1037.74	-593.29	862.32	0.00	
9736.00†	90.000	113.377	8820.00	1137.54	-632.96	954.12	0.00	
9836.00†	90.000	113.377	8820.00	1237.34	-672.64	1045.91	0.00	
9936.00†	90.000	113.377	8820.00	1337.14†	-712.32†	1137.70†	0.00	
10036.00†	90.000	113.377	8820.00	1436.93	-751.99	1229.49	0.00	
10136.00†	90.000	113.377	8820.00	1536.73	-791.67	1321.28	0.00	
10236.00†	90.000	113.377	8820.00	1636.53	-831.35	1413.07	0.00	
10336.00†	90.000	113.377	8820.00	1736.32	-871.03	1504.87	0.00	
10436.00†	90.000	113.377	8820.00	1836.12†	-910.70†	1596.66†	0.00	
10536.00†	90.000	113.377	8820.00	1935.92	-950.38	1688.45	0.00	
10636.00†	90.000	113.377	8820.00	2035.72	-990.06	1780.24	0.00	
10736.00†	90.000	113.377	8820.00	2135.51	-1029.74	1872.03	0.00	
10836.00†	90.000	113.377	8820.00	2235.31	-1069.41	1963.82	0.00	
10936.00†	90.000	113.377	8820.00	2335.11†	-1109.09†	2055.62†	0.00	
11036.00†	90.000	113.377	8820.00	2434.91	-1148.77	2147.41	0.00	
11136.00†	90.000	113.377	8820.00	2534.70	-1188.44	2239.20	0.00	
11236.00†	90.000	113.377	8820.00	2634.50	-1228.12	2330.99	0.00	
11336.00†	90.000	113.377	8820.00	2734.30	-1267.80	2422.78	0.00	
11436.00†	90.000	113.377	8820.00	2834.09†	-1307.48†	2514.57†	0.00	



Planned Wellpath Report

Preliminary Plan_2

Page 6 of 6



INTEQ

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WELLPATH DATA (124 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
11536.00†	90.000	113.377	8820.00	2933.89	-1347.15	2606.37	0.00	
11636.00†	90.000	113.377	8820.00	3033.69	-1386.83	2698.16	0.00	
11736.00†	90.000	113.377	8820.00	3133.49	-1426.51	2789.95	0.00	
11783.56	90.000	113.377	8820.00 ¹	3180.95	-1445.38	2833.60	0.00	No. 1H BHL

HOLE & CASING SECTIONS Ref Wellbore: No. 1H PWB Ref Wellpath: Preliminary Plan_2

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing	0.00	3205.00	3205.00	0.00	3204.54	0.00	0.00	26.47	28.71
5.5in Casing	3205.00	8600.00	5395.00	3204.54	8558.81	26.47	28.71	-237.99	40.62
4.75in Open Hole	8600.00	11783.56	3183.56	8558.81	8820.00	-237.99	40.62	-1445.38	2833.60

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 1H BHL	11783.56	8820.00	-1445.38	2833.60	632736.40	617696.33	32°41'50.652"N	103°54'06.653"W	point

SURVEY PROGRAM Ref Wellbore: No. 1H PWB Ref Wellpath: Preliminary Plan_2

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	7052.00	Gyrodata standard - Continuous gyro		No. 1 AWB
7052.00	8536.00	ISCWSA MWD, Rev. 0 (Standard)		No. 1 AWB
8536.00	11783.56	NaviTrak (Standard)		No. 1H PWB

**West Shugart 31 Federal No. 1
30-015-31647
Cimarex Energy Co. of Colorado
April 20, 2009
Conditions of Approval**

- 1. Test BOP system.**
- 2. Pressure test CIBP set at 12274' to verify seal prior to placing cement on top.**
- 3. At final abandonment, the CIBP at 8612' MD will have to be drilled out and plugs set at the top of the Morrow – 215' plug set from 11500-11285', plug at top of Atoka – 210' from 11200-10990' (operator may want to combine the Morrow top and Atoka formation plugs), plug at top of Wolfcamp – 200' from 9950-9750'.**
- 4. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. Operator to supply NMOCD order or description of pool which details the vertical and horizontal extent of pool to verify that requested communitization is within an approved and established pool.**

WWI 042009