

Results of Directional Survey

API number:	30-025-40619		
OGRID:		Operator:	CIMAREX ENERGY CO.
		Property:	BLANCO 3 STATE COM # 1H

surface	ULSTR:	O	03	T 23S	R 33E
				330 FSL	1980 FEL

BH Loc	ULSTR:	B	03	T 23S	R 33E
15574	MD	11084.7	TVD	345 FNL	2052 FEL
				4935 FSL	

Top Perf/OH	ULSTR:	O	03	T 23S	R 33E
10850	MD	10841.3	TVD	303 FSL	2031 FEL

Bot Perf/OH	ULSTR:	B	03	T 23S	R 33E
15546	MD	11084.7	TVD	373 FNL	2049 FEL
				4907 FSL	

	MD	N/S	E/W	VD
	10848	-27.77	-50.59	10839.51
TOP PERFS/OH	10850	-26.78	-50.60	10841.25
	10880	-11.89	-50.71	10867.28
	15516	4547.05	-67.02	11084.60
BOT PERFS/OH	15546	4576.96	-69.38	11084.67
	15574	4604.87	-71.59	11084.73

NEXT TO LAST	15516	4547.05	-67.02	11084.60
LAST READING	15574	4604.87	-71.59	11084.73
TD	15574	4604.87	-71.59	11084.73

Surface Location	330	FS	1980	FE
Projected BHL	4935	FS	2052	FE
Location of				
Top Perfs/OH	303	FS	2031	FE
Bottom Perfs/OH	4907	FS	2049	FE

SUMMARY of Subsurface Locations

Surface Location	O-03-23S-33E	330	FS	1980	FE	Vert. Depth
Top Perfs/OH	O-03-23S-33E	303	FS	2031	FE	10841.25
Bottom Perfs/OH	B-03-23S-33E	4907	FS	2049	FE	11084.67
Projected TD	B-03-23S-33E	4935	FS	2052	FE	11084.73

JUN 11 2013



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

HOBBS OCD

MAY 08 2013

RECEIVED

CIMAREX ENERGY CO.

BLANCO 3 STATE COM #1H

LEA COUNTY, NEW MEXICO

SUR: O-03-23s-33e, 330/S & 1980/E
BHL: B-03-23s-33e, 4935/S & 2052/E
API # 30-025-40619

PREPARED BY: MARCUS MITCHAM

Pathfinder

6213 WCR. 112
Midland, Texas. 79706-3725, USA
Tel. (432) 687-1647
Fax (432) 687-1544



March 28, 2013

Cimarex Energy Co. Of Colorado
Attn: Genea Holloway
15 E 5TH Street Ste 1000
Tulsa, OK 74103

RE: Cimarex Energy Co. Of Colorado
BLANCO 3 STATE COM #1H
LEA COUNTY, NEW MEXICO
API No: 30-025-40619
Rig: NORAM 23
PES File No.: 12MLD0609

To whom it may concern:

We hereby certify that the enclosed Original Field Survey Data contained in this report represents to the best of our knowledge, a true and accurate survey of the well at the time the survey was run.

DIRECTIONAL SURVEY DATA
1 – Original survey report
2 – Survey report copies

We appreciate the opportunity to work with you and we look forward to your business support. If you have any questions, I can be reached at (432) 687-1647

Sincerely,

A handwritten signature in black ink, appearing to read "MARCUS MITCHAM".

MARCUS MITCHAM
M/LWD Service Coordinator
PathFinder Energy Services

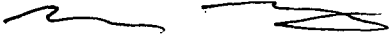
ML:sh

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) NABIL MERIDJI
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 12/2/12 TO 12/10/12
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

CIMAREX ENERGY CO.
BLANCO 3 STATE COM #1H
LEA COUNTY, NM
RIG: NORAM 23
9. SURVEY CERTIFIED FROM: 10627 TO 15516 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4,605.43 FEET ON A BEARING OF 359.11 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 15574.00 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



MARCUS MITCHAM
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 12/01/2012
Date Completed: 12/10/2012

CIMAREX ENERGY CO.
BLANCO 3 STATE COM #1H / API # 30-025-40619
LEA COUNTY, NM
Rig:NORAM 23
PathFinder Office Supervisor: MARCUS MITCHAM
PathFinder Field Engineers:NABIL MERIDJI
ATTIYA DARENSBURG

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.19.38.6931 N LON:103.33.29.1220 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 780799.1000 Y: 483712.0000
North Aligned To:GRID NORTH
Total Magnetic Correction: 6.99° EAST TO GRID
Vertical Section Plane: 359.52
Survey Vert. Reference:3569.60' Rotary Table To Ground
Altitude: 28.40' Ground To MSL

Measured Depth	15574.00	(feet)
Inclination	89.87	(deg)
Azimuth	355.00	(deg)
True Vertical Depth	11084.73	(feet)
Vertical Section	4605.31	(feet)
Survey X cord	780727.51	(feet)
Survey Y cord	488316.87	(feet)
Survey Lat	32.34007316 N	(deg)
Survey Lon	103.55821335 W	(deg)
Rectangular Corr. N/S	4604.87 N	(feet)
Rectangular Corr. E/W	71.59 W	(feet)
Closure Distance	4605.43	(feet)
Direction of Closure	359.11	(deg)
Dogleg Severity	1.64	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY CO.

BLANCO 3 STATE COM #1H / API # 30-025-40619

RED TANK

Rig: NORAM 23

PathFinder Office Supervisor: MARCUS MITCHAM

PathFinder Field Engineers: NABIL MERIDJI

ATTIYA DARENSBURG

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.19.38.6931 N LON: 103.33.29.1220 W

GRID Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 780799.1000 Y: 483712.0000

North Aligned To: GRID NORTH

Total Magnetic Correction: 6.99° EAST TO GRID

Vertical Section Plane: 359.52

Survey Vert. Reference: 3569.60' Rotary Table To Ground

Altitude: 28.40' Ground To MSL

Survey Calculations by RX5 V6.04B using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
TIED INTO GYRO DATA GYRO SURVEY AT 10512.70'MD.										
10512.70	1.16	217.24	10510.70	0.00	-70.43	70.90 S	55.44 W	90.00@	218.02	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
10627.00	1.23	79.76	10624.99	114.30	-71.14	71.60 S	54.93 W	90.25@	217.49	1.95
10659.00	4.13	22.11	10656.96	32.00	-70.02	70.47 S	54.16 W	88.88@	217.54	11.32
10691.00	6.07	17.19	10688.83	32.00	-67.34	67.79 S	53.23 W	86.19@	218.14	6.21
10722.00	7.74	10.18	10719.60	31.00	-63.73	64.17 S	52.37 W	82.83@	219.22	6.02
10753.00	11.34	5.25	10750.17	31.00	-58.64	59.08 S	51.73 W	78.52@	221.20	11.90
10785.00	16.44	2.61	10781.22	32.00	-50.99	51.42 S	51.23 W	72.58@	224.90	16.06
10816.00	22.16	2.07	10810.47	31.00	-40.76	41.18 S	50.82 W	65.41@	230.98	18.46
10848.00	27.44	0.09	10839.51	32.00	-27.34	27.77 S	50.59 W	57.71@	241.24	16.70
10880.00	32.10	359.14	10867.28	32.00	-11.46	11.89 S	50.71 W	52.08@	256.81	14.64
10911.00	36.05	358.87	10892.95	31.00	5.90	5.48 N	51.01 W	51.30@	276.13	12.75
10943.00	40.80	359.27	10918.01	32.00	25.79	25.36 N	51.33 W	57.25@	296.29	14.87
10974.00	45.55	0.04	10940.61	31.00	46.99	46.56 N	51.45 W	69.39@	312.14	15.42
11006.00	49.24	1.13	10962.27	32.00	70.53	70.11 N	51.20 W	86.81@	323.86	11.80
11037.00	52.76	1.56	10981.78	31.00	94.61	94.19 N	50.64 W	106.94@	331.74	11.41
11069.00	56.37	1.93	11000.33	32.00	120.66	120.24 N	49.84 W	130.16@	337.49	11.32
11100.00	60.50	1.68	11016.55	31.00	147.05	146.64 N	49.01 W	154.61@	341.52	13.34
11132.00	64.28	1.62	11031.38	32.00	175.38	174.98 N	48.19 W	181.49@	344.60	11.81
11163.00	67.80	2.07	11043.97	31.00	203.68	203.29 N	47.28 W	208.71@	346.91	11.43
11195.00	70.96	2.08	11055.23	32.00	233.59	233.21 N	46.20 W	237.75@	348.80	9.88
11226.00	73.86	0.92	11064.60	31.00	263.12	262.75 N	45.42 W	266.65@	350.19	10.01
11258.00	76.59	359.92	11072.76	32.00	294.06	293.69 N	45.20 W	297.15@	351.25	9.05

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY CO.
 BLANCO 3 STATE COM #1H / API # 30-025-40619
 RED TANK
 RIG:NORAM 23

Page 02/03

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
11289.00	79.76	358.97	11079.11	31.00	324.40	324.03 N	45.49 W	327.20@	352.01	10.66
11321.00	82.92	358.46	11083.93	32.00	356.02	355.65 N	46.20 W	358.64@	352.60	10.00
11352.00	86.88	358.92	11086.69	31.00	386.89	386.51 N	46.91 W	389.35@	353.08	12.86
11435.00	92.77	359.87	11086.94	83.00	469.85	469.47 N	47.79 W	471.89@	354.19	7.19
11530.00	94.00	359.17	11081.33	95.00	564.68	564.30 N	48.58 W	566.38@	355.08	1.49
11624.00	93.56	358.20	11075.13	94.00	658.47	658.07 N	50.73 W	660.02@	355.59	1.13
11719.00	92.77	358.76	11069.89	95.00	753.31	752.89 N	53.25 W	754.77@	355.95	1.02
11814.00	89.96	359.37	11067.63	95.00	848.27	847.84 N	54.80 W	849.61@	356.30	3.03
11909.00	87.32	359.19	11069.88	95.00	943.23	942.80 N	55.99 W	944.46@	356.60	2.79
12003.00	86.88	358.31	11074.64	94.00	1037.10	1036.65 N	58.04 W	1038.27@	356.80	1.05
12098.00	86.00	358.38	11080.53	95.00	1131.90	1131.43 N	60.78 W	1133.06@	356.93	0.93
12193.00	87.76	356.54	11085.71	95.00	1226.69	1226.19 N	64.98 W	1227.91@	356.97	2.68
12288.00	89.25	356.00	11088.18	95.00	1321.50	1320.95 N	71.16 W	1322.86@	356.92	1.67
12383.00	90.56	356.67	11088.34	95.00	1416.35	1415.75 N	77.23 W	1417.86@	356.88	1.55
12478.00	89.69	358.97	11088.13	95.00	1511.30	1510.68 N	80.85 W	1512.84@	356.94	2.59
12572.00	91.10	359.77	11087.49	94.00	1605.29	1604.66 N	81.88 W	1606.75@	357.08	1.73
12667.00	90.40	0.05	11086.24	95.00	1700.28	1699.66 N	82.03 W	1701.63@	357.24	0.79
12762.00	90.75	0.51	11085.29	95.00	1795.27	1794.65 N	81.56 W	1796.50@	357.40	0.61
12857.00	90.40	3.28	11084.34	95.00	1890.17	1889.58 N	78.42 W	1891.21@	357.62	2.94
12952.00	90.66	2.90	11083.46	95.00	1984.99	1984.44 N	73.30 W	1985.79@	357.88	0.49
13047.00	90.22	2.58	11082.73	95.00	2079.83	2079.33 N	68.76 W	2080.47@	358.11	0.57
13142.00	89.52	2.05	11082.94	95.00	2174.72	2174.25 N	64.92 W	2175.22@	358.29	0.92
13237.00	88.64	1.36	11084.47	95.00	2269.64	2269.19 N	62.10 W	2270.04@	358.43	1.18
13332.00	90.48	1.11	11085.20	95.00	2364.59	2364.17 N	60.05 W	2364.93@	358.54	1.95
13427.00	91.36	0.85	11083.67	95.00	2459.54	2459.14 N	58.43 W	2459.83@	358.64	0.97
13522.00	92.15	0.57	11080.76	95.00	2554.48	2554.09 N	57.25 W	2554.73@	358.72	0.88
13617.00	92.24	0.85	11077.13	95.00	2649.39	2649.01 N	56.07 W	2649.60@	358.79	0.31

PathFinder Energy Services, Inc.

Survey Report

CIMAREX ENERGY CO.
 BLANCO 3 STATE COM #1H / API # 30-025-40619
 RED TANK
 RIG:NORAM 23

Page 03/03

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
13712.00	90.57	0.93	11074.80	95.00	2744.33	2743.97 N	54.60 W	2744.51@	358.86	1.76
13807.00	91.36	359.86	11073.20	95.00	2839.30	2838.95 N	53.94 W	2839.46@	358.91	1.40
13902.00	88.64	0.99	11073.20	95.00	2934.28	2933.93 N	53.24 W	2934.42@	358.96	3.10
13997.00	87.32	0.98	11076.54	95.00	3029.19	3028.86 N	51.61 W	3029.30@	359.02	1.39
14092.00	89.34	1.27	11079.31	95.00	3124.10	3123.80 N	49.74 W	3124.19@	359.09	2.15
14187.00	89.78	0.97	11080.04	95.00	3219.06	3218.77 N	47.89 W	3219.13@	359.15	0.56
14282.00	88.20	0.30	11081.72	95.00	3314.03	3313.75 N	46.83 W	3314.08@	359.19	1.81
14377.00	89.08	1.02	11083.97	95.00	3408.98	3408.72 N	45.74 W	3409.02@	359.23	1.20
14472.00	88.64	0.59	11085.86	95.00	3503.94	3503.69 N	44.40 W	3503.97@	359.27	0.65
14567.00	89.43	359.75	11087.46	95.00	3598.91	3598.67 N	44.12 W	3598.94@	359.30	1.21
14662.00	88.55	358.91	11089.14	95.00	3693.90	3693.65 N	45.23 W	3693.93@	359.30	1.28
14756.00	90.31	0.03	11090.07	94.00	3787.89	3787.63 N	46.10 W	3787.92@	359.30	2.22
14851.00	89.60	359.55	11090.15	95.00	3882.89	3882.63 N	46.45 W	3882.91@	359.31	0.90
14946.00	91.71	0.28	11089.06	95.00	3977.87	3977.62 N	46.59 W	3977.89@	359.33	2.35
15041.00	91.63	359.30	11086.29	95.00	4072.83	4072.58 N	46.94 W	4072.85@	359.34	1.03
15136.00	90.66	358.82	11084.39	95.00	4167.81	4167.55 N	48.50 W	4167.83@	359.33	1.14
15231.00	89.87	357.92	11083.95	95.00	4262.78	4262.50 N	51.20 W	4262.81@	359.31	1.26
15326.00	89.87	356.93	11084.17	95.00	4357.72	4357.41 N	55.47 W	4357.76@	359.27	1.04
15421.00	89.87	356.59	11084.38	95.00	4452.61	4452.25 N	60.84 W	4452.67@	359.22	0.36
15516.00	89.87	355.95	11084.60	95.00	4547.45	4547.05 N	67.02 W	4547.55@	359.16	0.67
INTERPOLATED PROJECTION TO BIT DEPTH AT 15574'MD.										
15574.00	89.87	355.00	11084.73	58.00	4605.31	4604.87 N	71.59 W	4605.43@	359.11	1.64

HOBBS OCD

MAY 08 2013

RECEIVED



A Schlumberger Company

Section 2

Plan vs Actual



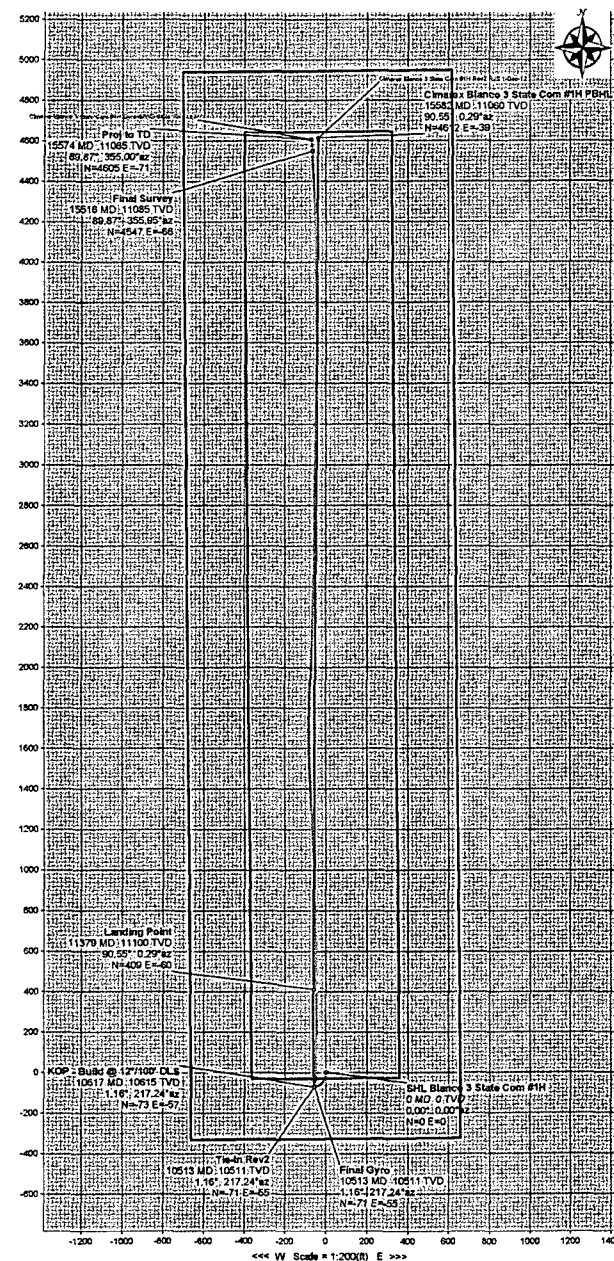
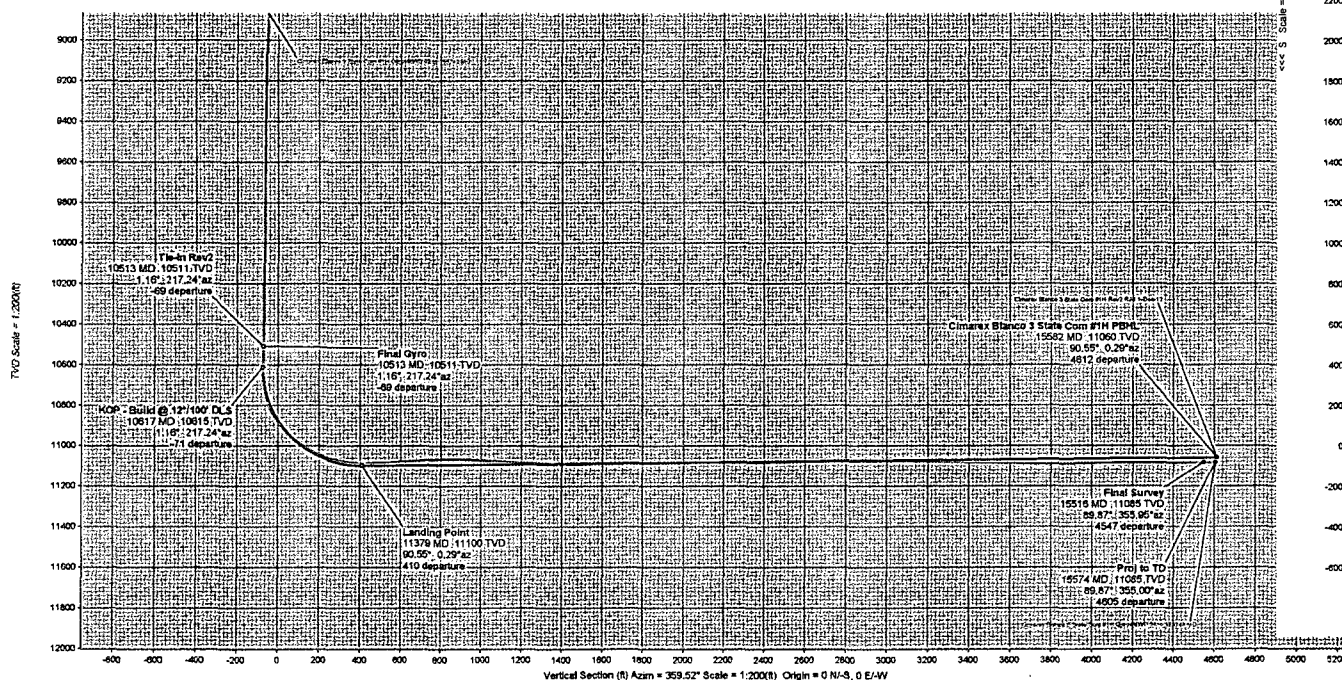
WELL Blanco 3 State Com #1H		FIELD NM Lea County		STRUCTURE Noram 23	
Algebraic Parameters Model: NGSIM 5912 Dip: 60.11° Map Dev: "511" Date: November 27, 2012 F8: 48230.747		Surface Location Lat: N 32 19 38.693 Lon: W 103 31 28.122 HAZEN New Mexico State Plaza, Eastern Zone, US Post Northing: 43 7712.80 8123 Easting: 784 799.60 8123 Grid Coord: 0 415° Scale East: 0.99997476		Miscellaneous Slat: Blanco 3 State Com #1H Rev: R/S L-Dec-12 TYP Date: November 27, 2012 R/SN/YES shows JMS.	



Grid North
Tot Corr (M->G 7.0964°)
Mag Dec (7.511°)
Grid Conv (0.415°)

Legend

Chicago Black & White Club #114 300 rd.
Chicago Black & White Club #114 Location
Chicago Black & White Club #114 Room 2 R/R 3-Dec-12
Chicago Black & White Club #114 Chicago-MPD ON the 156748 MO



Drawn By: R. Schneider
 Date Created: December 01, 2012 10:53:00 AM
 Checked By: _____
 Checked Date: _____
 Approved By: _____
 Approved Date: _____



Cimarex Blanco 3 State Com #1H Gyro+MWD 0ft to 15574ft MD (Def Survey)



Report Date: December 11, 2012 - 08:39 AM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Blanco 23 / Cimarex Blanco 3 State Com #1H
 Well: Cimarex Blanco 3 State Com #1H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Blanco 3 State Com #1H Gyro+MWD 0ft to 15574ft MD
 Survey Date: December 01, 2012
 Tort / AHD / DOI / ERD Ratio: 188.536 ° / 4844.713 ft / 5.108 / 0.437
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 19' 38.69313", W 103° 33' 29.12204"
 Location Grid N/E Y/X: N 483712.000 ftUS, E 780799.100 ftUS
 CRS Grid Convergence Angle: 0.4146 °
 Grid Scale Factor: 0.99997476

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 359.519 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3598.000 ft above MSL
 Seabed / Ground Elevation: 3570.000 ft above MSL
 Magnetic Declination: 7.510 °
 Total Gravity Field Strength: 999.1566 mgn (9.8 based)
 Total Magnetic Field Strength: 48519.335 nT
 Magnetic Dip Angle: 60.211 °
 Declination Date: December 01, 2012
 Magnetic Declination Model: BGGM 2012
 North Reference: Grid North
 Grid Convergence Used: 0.4146 °
 Total Corr Mag North->Grid: 7.0952 °
 North:
 Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
SHL Blanco 3 State Com #1H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	258.64M
	147.40	0.40	258.64	147.40	-0.10	-0.10	-0.50	0.51	258.64	0.27	245.79M
	247.40	0.43	245.79	247.40	-0.31	-0.32	-1.19	1.23	254.76	0.10	238.36M
	347.40	0.44	238.36	347.39	-0.66	-0.68	-1.86	1.98	249.92	0.06	232.38M
	447.40	0.32	232.38	447.39	-1.03	-1.05	-2.41	2.63	246.40	0.13	191.64M
	547.40	0.31	191.64	547.39	-1.46	-1.49	-2.68	3.07	241.00	0.22	257.9M
	647.40	0.24	257.90	647.39	-1.77	-1.80	-2.94	3.45	238.60	0.31	287.16M
	739.20	0.16	287.16	739.19	-1.77	-1.80	-3.25	3.72	241.06	0.14	354.55M
	831.10	0.11	354.55	831.09	-1.64	-1.67	-3.38	3.77	243.69	0.17	62.74M
	922.50	0.21	62.74	922.49	-1.48	-1.51	-3.24	3.58	245.05	0.22	71.21M
	1015.40	0.32	71.21	1015.39	-1.32	-1.35	-2.85	3.15	244.67	0.13	75.55M
	1110.20	0.30	75.55	1110.19	-1.18	-1.20	-2.35	2.64	243.00	0.03	39.55M
	1204.80	0.18	39.55	1204.78	-1.01	-1.02	-2.02	2.26	243.14	0.20	5.44M
	1299.30	0.34	5.44	1299.28	-0.61	-0.63	-1.90	2.00	251.66	0.23	348.08M
	1393.90	0.29	348.08	1393.88	-0.10	-0.12	-1.92	1.93	266.55	0.11	228.19M
	1488.60	0.13	228.19	1488.58	0.06	0.05	-2.05	2.05	271.31	0.39	65.21M
	1583.10	0.13	65.21	1583.08	0.04	0.02	-2.03	2.03	270.58	0.27	323.96M
	1677.70	0.35	323.96	1677.68	0.32	0.30	-2.11	2.13	278.08	0.42	252.05M
	1772.10	0.38	252.05	1772.08	0.46	0.44	-2.57	2.61	279.61	0.45	201.83M
	1866.60	0.30	201.83	1866.58	0.13	0.11	-2.96	2.97	272.12	0.31	170.8M
	1961.10	0.23	170.80	1961.08	-0.28	-0.31	-3.03	3.04	264.20	0.17	178.03M
	2055.60	0.19	178.03	2055.58	-0.63	-0.65	-2.99	3.06	257.71	0.05	80.01M
	2150.20	0.19	80.01	2150.18	-0.76	-0.78	-2.83	2.94	254.58	0.30	34.04M
	2244.80	0.31	34.04	2244.78	-0.52	-0.54	-2.53	2.59	257.93	0.24	335.93M
	2339.50	0.39	335.93	2339.47	-0.01	-0.03	-2.52	2.52	269.21	0.37	274.42M
	2434.10	0.50	274.42	2434.07	0.32	0.29	-3.06	3.08	275.43	0.49	240.68M
	2528.70	0.43	240.68	2528.67	0.18	0.15	-3.78	3.79	272.25	0.29	206.49M
	2623.30	0.25	206.49	2623.27	-0.17	-0.21	-4.19	4.19	267.13	0.28	72.34M
	2717.90	0.02	72.34	2717.87	-0.35	-0.39	-4.26	4.28	264.78	0.28	324.75M
	2812.50	0.17	324.75	2812.47	-0.23	-0.27	-4.33	4.34	266.43	0.19	335.13M
	2907.10	0.17	335.13	2907.07	0.01	-0.03	-4.47	4.47	269.64	0.03	325.44M
	3001.70	0.15	325.44	3001.67	0.24	0.20	-4.60	4.60	272.51	0.04	291.74M
	3096.30	0.15	291.74	3096.27	0.39	0.35	-4.78	4.79	274.18	0.09	356.52M
	3190.90	0.11	356.52	3190.87	0.53	0.49	-4.90	4.93	275.66	0.15	0.91M
	3285.60	0.25	0.91	3285.56	0.82	0.78	-4.90	4.97	279.07	0.15	301.32M
	3380.00	0.29	301.32	3379.96	1.16	1.11	-5.11	5.23	282.30	0.29	248.65M
	3475.40	0.23	248.65	3475.36	1.22	1.17	-5.49	5.61	282.02	0.25	47.02M
	3570.50	0.16	47.02	3570.46	1.24	1.19	-5.57	5.70	282.06	0.40	281.54M
	3665.70	0.65	281.54	3665.66	1.44	1.39	-6.00	6.16	283.03	0.79	183.06M
	3760.80	0.95	183.06	3760.75	0.76	0.71	-6.57	6.61	276.16	1.29	70.99M
	3855.40	0.86	70.99	3855.35	0.21	0.16	-5.94	5.95	271.52	1.59	10.93M
	3950.70	0.92	10.93	3950.64	1.18	1.14	-5.12	5.25	282.56	0.94	351.93M
	4045.70	0.50	351.93	4045.63	2.34	2.30	-5.04	5.54	294.56	0.50	336.58M
	4140.50	0.58	336.58	4140.43	3.20	3.15	-5.28	6.15	300.80	0.17	246.57M
	4235.50	0.84	246.57	4235.42	3.37	3.32	-6.11	6.96	298.46	1.07	163.03M
	4330.60	1.73	163.03	4330.50	1.72	1.66	-6.34	6.55	284.72	1.93	117.57M
	4425.60	2.66	117.57	4425.44	-0.69	-0.73	-3.96	4.03	259.60	2.00	80.06M
	4520.70	3.32	80.06	4520.42	-1.28	-1.27	0.71	1.46	150.98	2.13	57.57M
	4615.40	3.92	57.57	4614.93	0.88	0.94	6.14	6.21	81.33	1.61	40.78M
	4710.40	3.03	40.78	4709.76	4.49	4.58	10.52	11.47	66.48	1.41	22.92M
	4805.10	1.94	22.92	4804.37	7.84	7.95	12.78	15.05	58.11	1.40	5.62M
	4900.00	1.09	5.62	4899.24	10.21	10.33	13.49	16.99	52.57	1.01	246.63M
	4994.60	0.63	246.63	4993.83	10.91	11.02	13.10	17.12	49.94	1.59	213.41M
	5089.40	0.96	213.41	5088.62	10.05	10.15	12.19	15.86	50.22	0.58	206.85M
	5184.10	1.03	206.85	5183.31	8.63	8.73	11.37	14.33	52.49	0.14	205.33M
	5278.60	1.06	205.33	5277.79	7.09	7.18	10.61	12.81	55.92	0.04	206.93M
	5373.20	1.04	206.93	5372.38	5.54	5.62	9.85	11.34	60.28	0.04	204.83M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	5467.80	1.07	204.83	5466.96	3.98	4.06	9.09	9.95	65.95	0.05	197.95M
	5562.40	1.05	197.95	5561.55	2.36	2.43	8.45	8.79	73.96	0.14	198.13M
	5657.00	1.04	198.13	5656.13	0.72	0.79	7.91	7.95	84.31	0.01	195.7M
	5751.60	0.89	195.70	5750.72	-0.80	-0.73	7.45	7.49	95.63	0.16	196.91M
	5846.10	0.90	196.91	5845.20	-2.21	-2.15	7.03	7.36	107.01	0.02	207.44M
	5940.80	0.89	207.44	5939.89	-3.57	-3.52	6.48	7.37	118.48	0.17	210.4M
	6035.40	0.98	210.40	6034.48	-4.91	-4.87	5.73	7.52	130.33	0.11	210.24M
	6129.90	0.98	210.24	6128.97	-6.30	-6.26	4.92	7.96	141.86	0.00	210.49M
	6224.60	1.02	210.49	6223.65	-7.72	-7.69	4.08	8.70	152.04	0.04	208.54M
	6319.30	0.95	208.54	6318.34	-9.13	-9.10	3.28	9.67	160.20	0.08	208.11M
	6413.90	0.89	208.11	6412.93	-10.46	-10.44	2.56	10.75	166.24	0.06	206.76M
	6508.60	0.86	206.76	6507.61	-11.74	-11.72	1.89	11.87	170.84	0.04	208.88M
	6603.20	0.82	208.88	6602.20	-12.96	-12.95	1.24	13.01	174.52	0.05	210.95M
	6697.90	0.70	210.95	6696.90	-14.04	-14.04	0.62	14.05	177.48	0.13	215.78M
	6792.60	0.70	215.78	6791.59	-15.00	-15.00	-0.02	15.00	180.07	0.06	212.65M
	6887.30	0.88	212.65	6886.28	-16.08	-16.09	-0.75	16.10	182.66	0.20	211.52M
	6981.80	0.91	211.52	6980.77	-17.32	-17.34	-1.53	17.40	185.05	0.04	204.78M
	7076.50	0.91	204.78	7075.46	-18.64	-18.66	-2.24	18.79	186.85	0.11	206.26M
	7171.10	0.98	206.26	7170.04	-20.04	-20.07	-2.91	20.28	188.26	0.08	204.44M
	7265.80	1.01	204.44	7264.73	-21.52	-21.55	-3.62	21.86	189.52	0.05	205.6M
	7360.40	1.05	205.60	7359.31	-23.06	-23.09	-4.34	23.50	190.63	0.05	206.58M
	7455.10	1.05	206.58	7454.00	-24.61	-24.65	-5.10	25.18	191.69	0.02	204.77M
	7549.80	1.12	204.77	7548.68	-26.22	-26.27	-5.88	26.92	192.61	0.08	206.23M
	7644.40	1.03	206.23	7643.26	-27.82	-27.87	-6.64	28.65	193.40	0.10	200.85M
	7739.00	1.09	200.85	7737.85	-29.41	-29.48	-7.33	30.37	193.97	0.12	200.83M
	7833.50	1.07	200.83	7832.33	-31.07	-31.14	-7.97	32.14	194.35	0.02	197.35M
	7928.10	1.06	197.35	7926.92	-32.73	-32.80	-8.54	33.90	194.60	0.07	199.18M
	8022.70	1.08	199.18	8021.50	-34.40	-34.48	-9.10	35.66	194.78	0.04	201.73M
	8117.20	0.99	201.73	8115.98	-36.00	-36.08	-9.69	37.36	195.04	0.11	201.64M
	8211.80	0.91	201.64	8210.57	-37.45	-37.54	-10.27	38.92	195.30	0.08	203.54M
	8306.40	1.01	203.54	8305.16	-38.91	-39.00	-10.88	40.49	195.59	0.11	204.2M
	8401.00	1.08	204.20	8399.74	-40.48	-40.58	-11.58	42.20	195.93	0.08	211.21M
	8495.70	1.13	211.21	8494.42	-42.08	-42.19	-12.43	43.98	196.42	0.15	214.6M
	8590.20	1.16	214.60	8588.91	-43.66	-43.77	-13.46	45.79	197.09	0.08	217.31M
	8684.80	1.14	217.31	8683.49	-45.19	-45.31	-14.57	47.59	197.83	0.06	219.73M
	8779.50	1.30	219.73	8778.16	-46.75	-46.88	-15.83	49.48	198.65	0.18	219.08M
	8874.00	1.42	219.08	8872.64	-48.47	-48.62	-17.25	51.59	199.54	0.13	220.01M
	8968.70	1.47	220.01	8967.31	-50.30	-50.46	-18.77	53.84	200.41	0.06	224.71M
	9063.30	1.55	224.71	9061.87	-52.12	-52.30	-20.45	56.15	201.36	0.16	220.56M
	9158.00	1.65	220.56	9156.54	-54.06	-54.24	-22.24	58.63	202.29	0.16	218.97M
	9252.60	1.67	218.97	9251.10	-56.15	-56.35	-23.99	61.24	203.06	0.05	228.67M
	9347.20	1.62	228.67	9345.66	-58.09	-58.31	-25.86	63.78	203.92	0.30	240.18M
	9441.80	1.66	240.18	9440.22	-59.63	-59.87	-28.06	66.12	205.11	0.35	244.17M
	9536.70	1.72	244.17	9535.08	-60.92	-61.17	-30.53	68.37	206.52	0.14	242.35M
	9631.40	1.84	242.35	9629.73	-62.22	-62.50	-33.16	70.75	207.95	0.14	244.76M
	9726.00	1.53	244.76	9724.29	-63.44	-63.74	-35.64	73.03	209.21	0.34	253.61M
	9820.70	1.56	253.61	9818.96	-64.32	-64.64	-38.02	75.00	210.46	0.25	262.2M
	9915.40	1.80	262.20	9913.62	-64.87	-65.21	-40.73	76.89	211.99	0.37	260.29M
	10010.10	1.80	260.29	10008.27	-65.29	-65.66	-43.67	78.86	213.63	0.06	254.7M
	10104.70	1.77	254.70	10102.83	-65.91	-66.30	-46.55	81.01	215.07	0.19	247.56M
	10199.50	1.63	247.56	10197.58	-66.78	-67.20	-49.21	83.29	216.21	0.27	244.02M
	10294.30	1.44	244.02	10292.35	-67.80	-68.24	-51.52	85.50	217.06	0.22	240.33M
	10389.00	1.24	240.33	10387.02	-68.81	-69.26	-53.48	87.51	217.67	0.23	225M
	10483.70	1.17	225.00	10481.70	-69.99	-70.46	-55.06	89.42	218.01	0.35	217.24M
	10512.70	1.16	217.24	10510.70	-70.43	-70.90	-55.44	90.00	218.03	0.54	79.76M
	10627.00	1.23	79.76	10624.99	-71.14	-71.60	-54.94	90.25	217.50	1.95	22.11M
	10659.00	4.13	22.11	10656.95	-70.02	-70.47	-54.16	88.88	217.55	11.32	17.19M
	10691.00	6.07	17.19	10688.82	-67.34	-67.79	-53.23	86.19	218.14	6.21	10.18M
	10722.00	7.74	10.18	10719.60	-63.73	-64.17	-52.38	82.83	219.22	6.02	5.25M
	10753.00	11.34	5.25	10750.17	-58.64	-59.08	-51.73	78.52	221.21	11.90	8.37L
	10785.00	16.44	2.61	10781.22	-50.98	-51.41	-51.23	72.58	224.90	16.06	2.04L
	10816.00	22.16	2.07	10810.47	-40.75	-41.18	-50.82	65.41	230.98	18.46	9.84L
	10848.00	27.44	0.09	10839.50	-27.34	-27.77	-50.59	57.71	241.24	16.70	6.18L
	10880.00	32.11	359.14	10867.27	-11.46	-11.88	-50.71	52.08	256.81	14.67	2.31L
	10911.00	36.05	358.87	10892.94	5.91	5.48	-51.01	51.31	276.13	12.72	3.15R
	10943.00	40.80	359.27	10918.01	25.79	25.36	-51.33	57.26	296.29	14.86	6.61R
	10974.00	45.55	0.04	10940.61	47.00	46.57	-51.45	69.40	312.15	15.42	12.64R
	11006.00	49.24	1.13	10962.27	70.54	70.11	-51.21	86.82	323.86	11.80	5.56R
	11037.00	52.76	1.56	10981.77	94.62	94.19	-50.64	106.94	331.74	11.41	4.88R
	11069.00	56.37	1.93	11000.32	120.67	120.25	-49.84	130.17	337.49	11.32	3.02L
	11100.00	60.50	1.68	11016.55	147.05	146.65	-49.01	154.62	341.52	13.34	0.82L
	11132.00	64.28	1.62	11031.37	175.38	174.98	-48.20	181.50	344.60	11.81	6.76R
	11163.00	67.80	2.07	11043.96	203.68	203.29	-47.28	208.72	346.91	11.43	0.17R
	11195.00	70.96	2.08	11055.23	233.60	233.22	-46.20	237.75	348.80	9.88	21.05L
	11226.00	73.86	0.92	11064.60	263.13	262.76	-45.43	266.66	350.19	10.01	31.27L
	11258.00	76.59	359.22	11072.76	294.07	293.69	-45.39	297.18	351.21	9.96	4.44L
	11289.00	79.76	358.97	11079.11	324.40	324.03	-45.87	327.26	351.94	10.26	9.1L
	11321.00	82.92	358.46	11083.93	356.03	355.65	-46.58	358.69	352.54	10.00	6.62R
	11352.00	86.88	358.92	11086.68	386.90	386.52	-47.29	389.40	353.02	12.86	9.17R
	11435.00	92.77	359.87	11086.93	469.86	469.47	-48.16	471.94	354.14	7.19	6.94L
	11530.00	94.00	359.72	11081.33	564.69	564.30	-48.50	566.39	355.09	1.30	106.13L
	11624.00	93.56	358.20	11075.13	658.48	658.08	-50.21	659.99	355.64	1.68	144.69R

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	11719.00	92.77	358.76	11069.88	753.32	752.90	-52.72	754.75	355.99	1.02	167.75R
Survey 7-Dec-12	11814.00	89.96	359.37	11067.62	848.28	847.85	-54.27	849.59	356.34	3.03	176.1L
	11908.00	87.32	359.19	11069.87	943.24	942.81	-55.46	944.44	356.63	2.79	116.62L
	12003.00	86.88	358.31	11074.63	1037.11	1036.67	-57.51	1038.26	356.82	1.05	175.46R
	12098.00	86.00	358.38	11080.53	1131.91	1131.44	-60.25	1133.05	356.95	0.93	46.28L
	12193.00	87.76	356.54	11085.70	1226.70	1226.20	-64.46	1227.89	356.99	2.68	19.92L
	12288.00	89.25	356.00	11088.18	1321.51	1320.96	-70.63	1322.85	356.94	1.67	27.09R
	12383.00	90.56	356.67	11088.34	1416.36	1415.77	-76.71	1417.84	356.90	1.55	110.71R
	12478.00	89.69	358.97	11088.13	1511.31	1510.69	-80.32	1512.82	356.96	2.59	29.57R
	12572.00	91.10	359.77	11087.48	1605.31	1604.68	-81.35	1606.74	357.10	1.72	158.2R
	12667.00	90.40	0.05	11086.24	1700.30	1699.67	-81.50	1701.62	357.25	0.79	52.73R
Survey 8-Dec-12	12762.00	90.75	0.51	11085.28	1795.28	1794.66	-81.04	1796.49	357.41	0.61	97.19R
	12857.00	90.40	3.28	11084.33	1890.19	1889.60	-77.90	1891.20	357.64	2.94	55.62L
	12952.00	90.66	2.90	11083.45	1985.00	1984.46	-72.78	1985.79	357.90	0.48	143.97L
	13047.00	90.22	2.58	11082.72	2079.84	2079.34	-68.24	2080.46	358.12	0.57	142.87L
	13142.00	89.52	2.05	11082.94	2174.73	2174.27	-64.40	2175.22	358.30	0.92	141.91L
	13237.00	88.64	1.36	11084.46	2269.65	2269.21	-61.57	2270.04	358.45	1.18	7.74L
	13332.00	90.48	1.11	11085.19	2364.60	2364.18	-59.52	2364.93	358.56	1.95	16.46L
	13427.00	91.36	0.85	11083.67	2459.55	2459.15	-57.90	2459.83	358.65	0.97	19.5L
	13522.00	92.15	0.57	11080.76	2554.49	2554.10	-56.72	2554.73	358.73	0.88	72.16R
	13617.00	92.24	0.85	11077.12	2649.40	2649.02	-55.55	2649.61	358.80	0.31	177.26R
Survey 9-Dec-12	13712.00	90.57	0.93	11074.79	2744.34	2743.98	-54.07	2744.51	358.87	1.76	53.55L
	13807.00	91.36	359.86	11073.19	2839.31	2838.96	-53.42	2839.46	358.92	1.40	157.44R
	13902.00	88.64	0.99	11073.19	2934.29	2933.95	-52.71	2934.42	358.97	3.10	179.57L
	13997.00	87.32	0.98	11076.54	3029.20	3028.87	-51.08	3029.30	359.03	1.39	8.17R
	14092.00	89.34	1.27	11079.31	3124.11	3123.81	-49.22	3124.20	359.10	2.15	34.29L
	14187.00	89.78	0.97	11080.04	3219.07	3218.79	-47.36	3219.14	359.16	0.56	157.03L
	14282.00	88.20	0.30	11081.71	3314.04	3313.77	-46.31	3314.09	359.20	1.81	39.29R
	14377.00	89.08	1.02	11083.97	3408.99	3408.73	-45.21	3409.03	359.24	1.20	135.67L
	14472.00	88.64	0.59	11085.86	3503.95	3503.70	-43.88	3503.98	359.28	0.65	46.76L
	14567.00	89.43	359.75	11087.46	3598.93	3598.69	-43.60	3598.95	359.31	1.21	136.34L
Survey 10-Dec-12	14662.00	88.55	358.91	11089.13	3693.91	3693.66	-44.71	3693.93	359.31	1.28	32.48R
	14756.00	90.31	0.03	11090.07	3787.90	3787.65	-45.58	3787.92	359.31	2.22	145.94L
	14851.00	89.60	359.55	11090.14	3882.90	3882.65	-45.92	3882.92	359.32	0.90	19.08R
	14946.00	91.71	0.28	11089.05	3977.88	3977.64	-46.06	3977.90	359.34	2.35	94.65L
	15041.00	91.63	359.30	11086.29	4072.84	4072.59	-46.41	4072.86	359.35	1.03	153.67L
	15136.00	90.66	358.82	11084.39	4167.82	4167.56	-47.97	4167.84	359.34	1.14	131.27L
Final Survey	15231.00	89.87	357.92	11083.95	4262.79	4262.52	-50.67	4262.82	359.32	1.26	90L
	15326.00	89.87	356.93	11084.16	4357.73	4357.42	-54.94	4357.77	359.28	1.04	90L
	15421.00	89.87	356.59	11084.38	4452.62	4452.27	-60.31	4452.68	359.22	0.36	90L
Proj to TD	15516.00	89.87	355.95	11084.59	4547.47	4547.07	-66.49	4547.55	359.16	0.67	90L

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EQU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	28.000		Act Stns	30.000	30.000	SLB_NSG+MSHOT-Depth Only
	28.000	10512.700		Act Stns	30.000	30.000	SLB_NSG+MSHOT
	10512.700	15516.000		Act Stns	30.000	30.000	SLB_MWD-STD
	15516.000	15574.000		Act Stns	30.000	30.000	SLB_BLIND+TREND



Cimarex Blanco 3 State Com #1H Gyro+MWD Off to Update Survey Report

(Non-Def Survey)

Report Date:	December 10, 2012 - 04:40 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Cimarex	Vertical Section Azimuth:	359.519 ° (Grid North)
Field:	NM Lea County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Blanco 3 State Com #1H / Cimarex Blanco 3 State Com #1H	TVD Reference Datum:	RKB
Well:	Cimarex Blanco 3 State Com #1H	TVD Reference Elevation:	3596.000 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3570.000 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	7.510 °
Survey Name:	Cimarex Blanco 3 State Com #1H Gyro+MWD Off to Update	Total Field Strength:	48519.335 nT
Survey Date:	December 01, 2012	Magnetic Dip Angle:	60.211 °
Tort / AHD / DDI / ERD Ratio:	188.536 ° / 4844.713 ft / 6.108 / 0.437	Declination Date:	December 01, 2012
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Declination Model:	BGGM 2012
Location Lat / Long:	N 32° 19' 38.69313", W 103° 33' 29.12204"	North Reference:	Grid North
Location Grid N/E Y/X:	N 483712.000 ftUS, E 780799.100 ftUS	Grid Convergence Used:	0.415 °
CRS Grid Convergence Angle:	0.41458521 °	Total Corr Mag North->Grid North:	7.095 °
Grid Scale Factor:	0.99997476	Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (N/S ft)	EW (E/W ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
SHL Blanco 3 State Com #1H	0.00	0.00	0.00	0.00	0.00	N 0.00	E 0.00	0.00	0.00	N/A	258.64M
	147.40	0.40	258.64	147.40	-0.10	S 0.10	W 0.50	0.51	258.64	0.27	245.79M
	247.40	0.43	245.79	247.40	-0.31	S 0.32	W 1.19	1.23	254.76	0.10	238.36M
	347.40	0.44	238.36	347.39	-0.66	S 0.68	W 1.86	1.98	249.92	0.06	232.38M
	447.40	0.32	232.38	447.39	-1.03	S 1.05	W 2.41	2.63	246.40	0.13	191.64M
	547.40	0.31	191.64	547.39	-1.46	S 1.49	W 2.68	3.07	241.00	0.22	257.9M
	647.40	0.24	257.90	647.39	-1.77	S 1.80	W 2.94	3.45	238.60	0.31	287.16M
	739.20	0.16	287.16	739.19	-1.77	S 1.80	W 3.25	3.72	241.06	0.14	354.55M
	831.10	0.11	354.55	831.09	-1.64	S 1.67	W 3.38	3.77	243.69	0.17	62.74M
	922.50	0.21	62.74	922.49	-1.48	S 1.51	W 3.24	3.58	245.05	0.22	71.21M
	1015.40	0.32	71.21	1015.39	-1.32	S 1.35	W 2.85	3.15	244.67	0.13	75.55M
	1110.20	0.30	75.55	1110.19	-1.18	S 1.20	W 2.35	2.64	243.00	0.03	39.55M
	1204.80	0.18	39.55	1204.78	-1.01	S 1.02	W 2.02	2.26	243.14	0.20	5.44M
	1299.30	0.34	5.44	1299.28	-0.61	S 0.63	W 1.90	2.00	251.66	0.23	348.08M
	1393.90	0.29	348.08	1393.88	-0.10	S 0.12	W 1.92	1.93	266.55	0.11	228.19M
	1488.60	0.13	228.19	1488.58	0.06	N 0.05	W 2.05	2.05	271.31	0.39	65.21M
	1583.10	0.13	65.21	1583.08	0.04	N 0.02	W 2.03	2.03	270.58	0.27	323.96M
	1677.70	0.35	323.96	1677.68	0.32	N 0.30	W 2.11	2.13	278.08	0.42	252.05M
	1772.10	0.38	252.05	1772.08	0.46	N 0.44	W 2.57	2.61	279.61	0.45	201.83M
	1866.60	0.30	201.83	1866.58	0.13	N 0.11	W 2.96	2.97	272.12	0.31	170.8M
	1961.10	0.23	170.80	1961.08	-0.28	S 0.31	W 3.03	3.04	264.20	0.17	178.03M
	2055.60	0.19	178.03	2055.58	-0.63	S 0.65	W 2.99	3.06	257.71	0.05	80.01M
	2150.20	0.19	80.01	2150.18	-0.76	S 0.78	W 2.83	2.94	254.58	0.30	34.04M
	2244.80	0.31	34.04	2244.78	-0.52	S 0.54	W 2.53	2.59	257.93	0.24	335.93M
	2339.50	0.39	335.93	2339.47	-0.01	S 0.03	W 2.52	2.52	269.21	0.37	274.42M
	2434.10	0.50	274.42	2434.07	0.32	N 0.29	W 3.06	3.08	275.43	0.49	240.68M
	2528.70	0.43	240.68	2528.67	0.18	N 0.15	W 3.78	3.79	272.25	0.29	206.49M
	2623.30	0.25	206.49	2623.27	-0.17	S 0.21	W 4.19	4.19	267.13	0.28	72.34M
	2717.90	0.02	72.34	2717.87	-0.35	S 0.39	W 4.26	4.28	264.78	0.28	324.75M
	2812.50	0.17	324.75	2812.47	-0.23	S 0.27	W 4.33	4.34	266.43	0.19	335.13M
	2907.10	0.17	335.13	2907.07	0.01	S 0.03	W 4.47	4.47	269.64	0.03	325.44M
	3001.70	0.15	325.44	3001.67	0.24	N 0.20	W 4.60	4.60	272.51	0.04	291.74M
	3096.30	0.15	291.74	3096.27	0.39	N 0.35	W 4.78	4.79	274.18	0.09	356.52M
	3190.90	0.11	356.52	3190.87	0.53	N 0.49	W 4.90	4.93	275.66	0.15	0.91M
	3285.60	0.25	0.91	3285.56	0.82	N 0.78	W 4.90	4.97	279.07	0.15	301.32M
	3380.00	0.29	301.32	3379.96	1.16	N 1.11	W 5.11	5.23	282.30	0.29	248.65M
	3475.40	0.23	248.65	3475.36	1.22	N 1.17	W 5.49	5.61	282.02	0.25	47.02M
	3570.50	0.16	47.02	3570.46	1.24	N 1.19	W 5.57	5.70	282.06	0.40	281.54M
	3665.70	0.65	281.54	3665.66	1.44	N 1.39	W 6.00	6.16	283.03	0.79	183.06M
	3760.80	0.95	183.06	3760.75	0.76	N 0.71	W 6.57	6.61	276.16	1.29	70.99M
	3855.40	0.86	70.99	3855.35	0.21	N 0.16	W 5.94	5.95	271.52	1.59	10.93M
	3950.70	0.92	10.93	3950.64	1.18	N 1.14	W 5.12	5.25	282.56	0.94	351.93M
	4045.70	0.50	351.93	4045.63	2.34	N 2.30	W 5.04	5.54	294.56	0.50	336.58M
	4140.50	0.58	336.58	4140.43	3.20	N 3.15	W 5.28	6.15	300.80	0.17	246.57M
	4235.50	0.84	246.57	4235.42	3.37	N 3.32	W 6.11	6.96	298.46	1.07	163.03M
	4330.60	1.73	163.03	4330.50	1.72	N 1.66	W 6.34	6.55	284.72	1.93	117.57M
	4425.60	2.66	117.57	4425.44	-0.69	S 0.73	W 3.96	4.03	259.60	2.00	80.06M
	4520.70	3.32	80.06	4520.42	-1.28	S 1.27	E 0.71	1.46	150.98	2.13	57.57M
	4615.40	3.92	57.57	4614.93	0.88	N 0.94	E 6.14	6.21	81.33	1.61	40.78M
	4710.40	3.03	40.78	4709.76	4.49	N 4.58	E 10.52	11.47	66.48	1.41	22.92M
	4805.10	1.94	22.92	4804.37	7.84	N 7.95	E 12.78	15.05	58.11	1.40	5.62M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (N/S ft)	EW (E/W ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	4900.00	1.09	5.62	4899.24	10.21	N 10.33	E 13.49	16.99	52.57	1.01	246.63M
	4994.60	0.63	246.63	4993.83	10.91	N 11.02	E 13.10	17.12	49.94	1.59	213.41M
	5089.40	0.96	213.41	5088.62	10.05	N 10.15	E 12.19	15.86	50.22	0.58	206.85M
	5184.10	1.03	206.85	5183.31	8.63	N 8.73	E 11.37	14.33	52.49	0.14	205.33M
	5278.60	1.06	205.33	5277.79	7.09	N 7.18	E 10.61	12.81	55.92	0.04	206.93M
	5373.20	1.04	206.93	5372.38	5.54	N 5.62	E 9.85	11.34	60.28	0.04	204.83M
	5467.80	1.07	204.83	5466.96	3.98	N 4.06	E 9.09	9.95	65.95	0.05	197.95M
	5562.40	1.05	197.95	5561.55	2.36	N 2.43	E 8.45	8.79	73.96	0.14	198.13M
	5657.00	1.04	198.13	5656.13	0.72	N 0.79	E 7.91	7.95	84.31	0.01	195.7M
	5751.60	0.89	195.70	5750.72	-0.80	S 0.73	E 7.45	7.49	95.63	0.16	196.91M
	5846.10	0.90	196.91	5845.20	-2.21	S 2.15	E 7.03	7.36	107.01	0.02	207.44M
	5940.80	0.89	207.44	5939.89	-3.57	S 3.52	E 6.48	7.37	118.48	0.17	210.4M
	6035.40	0.98	210.40	6034.48	-4.91	S 4.87	E 5.73	7.52	130.33	0.11	210.24M
	6129.90	0.98	210.24	6128.97	-6.30	S 6.26	E 4.92	7.96	141.86	0.00	210.49M
	6224.60	1.02	210.49	6223.65	-7.72	S 7.69	E 4.08	8.70	152.04	0.04	208.54M
	6319.30	0.95	208.54	6318.34	-9.13	S 9.10	E 3.28	9.67	160.20	0.08	208.11M
	6413.90	0.89	208.11	6412.93	-10.46	S 10.44	E 2.56	10.75	166.24	0.06	206.76M
	6508.60	0.86	206.76	6507.61	-11.74	S 11.72	E 1.89	11.87	170.84	0.04	208.88M
	6603.20	0.82	208.88	6602.20	-12.96	S 12.95	E 1.24	13.01	174.52	0.05	210.95M
	6697.90	0.70	210.95	6696.90	-14.04	S 14.04	E 0.62	14.05	177.48	0.13	215.78M
	6792.60	0.70	215.78	6791.59	-15.00	S 15.00	W 0.02	15.00	180.07	0.06	212.65M
	6887.30	0.88	212.65	6886.28	-16.08	S 16.09	W 0.75	16.10	182.66	0.20	211.52M
	6981.80	0.91	211.52	6980.77	-17.32	S 17.34	W 1.53	17.40	185.05	0.04	204.78M
	7076.50	0.91	204.78	7075.46	-18.64	S 18.66	W 2.24	18.79	186.85	0.11	206.26M
	7171.10	0.98	206.26	7170.04	-20.04	S 20.07	W 2.91	20.28	188.26	0.08	204.44M
	7265.80	1.01	204.44	7264.73	-21.52	S 21.55	W 3.62	21.86	189.52	0.05	205.6M
	7360.40	1.05	205.60	7359.31	-23.06	S 23.09	W 4.34	23.50	190.63	0.05	206.58M
	7455.10	1.05	206.58	7454.00	-24.61	S 24.65	W 5.10	25.18	191.69	0.02	204.77M
	7549.80	1.12	204.77	7548.68	-26.22	S 26.27	W 5.88	26.92	192.61	0.08	206.23M
	7644.40	1.03	206.23	7643.26	-27.82	S 27.87	W 6.64	28.65	193.40	0.10	200.85M
	7739.00	1.09	200.85	7737.85	-29.41	S 29.48	W 7.33	30.37	193.97	0.12	200.83M
	7833.50	1.07	200.83	7832.33	-31.07	S 31.14	W 7.97	32.14	194.35	0.02	197.35M
	7928.10	1.06	197.35	7926.92	-32.73	S 32.80	W 8.54	33.90	194.60	0.07	199.18M
	8022.70	1.08	199.18	8021.50	-34.40	S 34.48	W 9.10	35.66	194.78	0.04	201.73M
	8117.20	0.99	201.73	8115.98	-36.00	S 36.08	W 9.69	37.36	195.04	0.11	201.64M
	8211.80	0.91	201.64	8210.57	-37.45	S 37.54	W 10.27	38.92	195.30	0.08	203.54M
	8306.40	1.01	203.54	8305.16	-38.91	S 39.00	W 10.88	40.49	195.59	0.11	204.2M
	8401.00	1.08	204.20	8399.74	-40.48	S 40.58	W 11.58	42.20	195.93	0.08	211.21M
	8495.70	1.13	211.21	8494.42	-42.08	S 42.19	W 12.43	43.98	196.42	0.15	214.6M
	8590.20	1.16	214.60	8588.91	-43.66	S 43.77	W 13.46	45.79	197.09	0.08	217.31M
	8684.80	1.14	217.31	8683.49	-45.19	S 45.31	W 14.57	47.59	197.83	0.06	219.73M
	8779.50	1.30	219.73	8778.16	-46.75	S 46.88	W 15.83	49.48	198.65	0.18	219.08M
	8874.00	1.42	219.08	8872.64	-48.47	S 48.62	W 17.25	51.59	199.54	0.13	220.01M
	8968.70	1.47	220.01	8967.31	-50.30	S 50.46	W 18.77	53.84	200.41	0.06	224.71M
	9063.30	1.55	224.71	9061.87	-52.12	S 52.30	W 20.45	56.15	201.36	0.16	220.56M
	9158.00	1.65	220.56	9156.54	-54.06	S 54.24	W 22.24	58.63	202.29	0.16	218.97M
	9252.60	1.67	218.97	9251.10	-56.15	S 56.35	W 23.99	61.24	203.06	0.05	228.67M
	9347.20	1.62	228.67	9345.66	-58.09	S 58.31	W 25.86	63.78	203.92	0.30	240.18M
	9441.80	1.66	240.18	9440.22	-59.63	S 59.87	W 28.06	66.12	205.11	0.35	244.17M
	9536.70	1.72	244.17	9535.08	-60.92	S 61.17	W 30.53	68.37	206.52	0.14	242.35M
	9631.40	1.84	242.35	9629.73	-62.22	S 62.50	W 33.16	70.75	207.95	0.14	244.76M
	9726.00	1.53	244.76	9724.29	-63.44	S 63.74	W 35.64	73.03	209.21	0.34	253.61M
	9820.70	1.56	253.61	9818.96	-64.32	S 64.64	W 38.02	75.00	210.46	0.25	262.2M
	9915.40	1.80	262.20	9913.62	-64.87	S 65.21	W 40.73	76.89	211.99	0.37	260.29M
	10010.10	1.80	260.29	10008.27	-65.29	S 65.66	W 43.67	78.86	213.63	0.06	254.7M
	10104.70	1.77	254.70	10102.83	-65.91	S 66.30	W 46.55	81.01	215.07	0.19	247.56M
	10199.50	1.63	247.56	10197.58	-66.78	S 67.20	W 49.21	83.29	216.21	0.27	244.02M
	10294.30	1.44	244.02	10292.35	-67.80	S 68.24	W 51.52	85.50	217.06	0.22	240.33M
	10389.00	1.24	240.33	10387.02	-68.81	S 69.26	W 53.48	87.51	217.67	0.23	225M
	10483.70	1.17	225.00	10481.70	-69.99	S 70.46	W 55.06	89.42	218.01	0.35	217.24M
	10512.70	1.16	217.24	10510.70	-70.43	S 70.90	W 55.44	90.00	218.03	0.54	79.76M
	10627.00	1.23	79.76	10624.99	-71.14	S 71.60	W 54.94	90.25	217.50	1.95	22.11M
	10659.00	4.13	22.11	10656.95	-70.02	S 70.47	W 54.16	88.88	217.55	11.32	17.19M
	10691.00	6.07	17.19	10688.82	-67.34	S 67.79	W 53.23	86.19	218.14	6.21	30.29L
Final Gyro RUN # 3	10722.00	7.74	10.18	10719.60	-63.73	S 64.17	W 52.38	82.83	219.22	6.02	15.23L
	10753.00	11.34	5.25	10750.17	-58.64	S 59.08	W 51.73	78.52	221.21	11.90	8.37L
	10785.00	16.44	2.61	10781.22	-50.98	S 51.41	W 51.23	72.58	224.90	16.06	2.04L
	10816.00	22.16	2.07	10810.47	-40.75	S 41.18	W 50.82	65.41	230.98	18.46	9.84L
	10848.00	27.44	0.09	10839.50	-27.34	S 27.77	W 50.59	57.71	241.24	16.70	6.18L
	10880.00	32.11	359.14	10867.27	-11.46	S 11.88	W 50.71	52.08	256.81	14.67	2.31L
	10911.00	36.05	358.87	10892.94	5.91	N 5.48	W 51.01	51.31	276.13	12.72	3.15R
	10943.00	40.80	359.27	10918.01	25.79	N 25.36	W 51.33	57.26	296.29	14.86	6.61R
	10974.00	45.55	0.04	10940.61	47.00	N 46.57	W 51.45	69.40	312.15	15.42	12.64R
	11006.00	49.24	1.13	10962.27	70.54	N 70.11	W 51.21	86.82	323.86	11.80	5.56R
	11037.00	52.76	1.56	10981.77	94.62	N 94.19	W 50.64	106.94	331.74	11.41	4.88R
	11069.00	56.37	1.93	11000.32	120.67	N 120.25	W 49.84	130.17	337.49	11.32	3.02L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (NS ft)	EW (EW ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	11100.00	60.50	1.68	11016.55	147.05	N 146.65	W 49.01	154.62	341.52	13.34	0.82L
	11132.00	64.28	1.62	11031.37	175.38	N 174.98	W 48.20	181.50	344.60	11.81	6.76R
	11163.00	67.80	2.07	11043.96	203.68	N 203.29	W 47.28	208.72	346.91	11.43	0.17R
	11195.00	70.96	2.08	11055.23	233.60	N 233.22	W 46.20	237.75	348.80	9.88	21.05L
	11226.00	73.86	0.92	11064.60	263.13	N 262.76	W 45.43	266.66	350.19	10.01	31.27L
	11258.00	76.59	359.22	11072.76	294.07	N 293.69	W 45.39	297.18	351.21	9.96	4.44L
	11289.00	79.76	358.97	11079.11	324.40	N 324.03	W 45.87	327.26	351.94	10.26	9.1L
	11321.00	82.92	358.46	11083.93	356.03	N 355.65	W 46.58	358.69	352.54	10.00	6.62R
	11352.00	86.88	358.92	11086.68	386.90	N 386.52	W 47.29	389.40	353.02	12.86	9.17R
RUN # 5	11435.00	92.77	359.87	11086.93	469.86	N 469.47	W 48.16	471.94	354.14	7.19	6.94L
	11530.00	94.00	359.72	11081.33	564.69	N 564.30	W 48.50	566.39	355.09	1.30	106.13L
	11624.00	93.56	358.20	11075.13	658.48	N 658.08	W 50.21	659.99	355.64	1.68	144.69R
RUN # 6	11719.00	92.77	358.76	11069.88	753.32	N 752.90	W 52.72	754.75	355.99	1.02	167.75R
	11814.00	89.96	359.37	11067.62	848.28	N 847.85	W 54.27	849.59	356.34	3.03	176.1L
	11909.00	87.32	359.19	11069.87	943.24	N 942.81	W 55.46	944.44	356.63	2.79	116.62L
	12003.00	86.88	358.31	11074.63	1037.11	N 1036.67	W 57.51	1038.26	356.82	1.05	175.46R
	12098.00	86.00	358.38	11080.53	1131.91	N 1131.44	W 60.25	1133.05	356.95	0.93	46.28L
	12193.00	87.76	356.54	11085.70	1226.70	N 1226.20	W 64.46	1227.89	356.99	2.68	19.92L
	12288.00	89.25	356.00	11088.18	1321.51	N 1320.96	W 70.63	1322.85	356.94	1.67	27.09R
	12383.00	90.56	356.67	11088.34	1416.36	N 1415.77	W 76.71	1417.84	356.90	1.55	110.71R
	12478.00	89.69	358.97	11088.13	1511.31	N 1510.69	W 80.32	1512.82	356.96	2.59	29.57R
	12572.00	91.10	359.77	11087.48	1605.31	N 1604.68	W 81.35	1606.74	357.10	1.72	158.2R
	12667.00	90.40	0.05	11086.24	1700.30	N 1699.67	W 81.50	1701.62	357.25	0.79	52.73R
	12762.00	90.75	0.51	11085.28	1795.28	N 1794.66	W 81.04	1796.49	357.41	0.61	97.19R
	12857.00	90.40	3.28	11084.33	1890.19	N 1889.60	W 77.90	1891.20	357.64	2.94	55.62L
	12952.00	90.66	2.90	11083.45	1985.00	N 1984.46	W 72.78	1985.79	357.90	0.48	143.97L
	13047.00	90.22	2.58	11082.72	2079.84	N 2079.34	W 68.24	2080.46	358.12	0.57	142.87L
	13142.00	89.52	2.05	11082.94	2174.73	N 2174.27	W 64.40	2175.22	358.30	0.92	141.91L
	13237.00	88.64	1.36	11084.46	2269.65	N 2269.21	W 61.57	2270.04	358.45	1.18	7.74L
	13332.00	90.48	1.11	11085.19	2364.60	N 2364.18	W 59.52	2364.93	358.56	1.95	16.46L
	13427.00	91.36	0.85	11083.67	2459.55	N 2459.15	W 57.90	2459.83	358.65	0.97	19.5L
	13522.00	92.15	0.57	11080.76	2554.49	N 2554.10	W 56.72	2554.73	358.73	0.88	72.16R
	13617.00	92.24	0.85	11077.12	2649.40	N 2649.02	W 55.55	2649.61	358.80	0.31	177.26R
	13712.00	90.57	0.93	11074.79	2744.34	N 2743.98	W 54.07	2744.51	358.87	1.76	53.55L
	13807.00	91.36	359.86	11073.19	2839.31	N 2838.96	W 53.42	2839.46	358.92	1.40	157.44R
	13902.00	88.64	0.99	11073.19	2934.29	N 2933.95	W 52.71	2934.42	358.97	3.10	179.57L
	13997.00	87.32	0.98	11076.54	3029.20	N 3028.87	W 51.08	3029.30	359.03	1.39	8.17R
	14092.00	89.34	1.27	11079.31	3124.11	N 3123.81	W 49.22	3124.20	359.10	2.15	34.29L
	14187.00	89.78	0.97	11080.04	3219.07	N 3218.79	W 47.36	3219.14	359.16	0.56	157.03L
	14282.00	88.20	0.30	11081.71	3314.04	N 3313.73	W 46.31	3314.09	359.20	1.81	39.29R
	14377.00	89.08	1.02	11083.97	3408.99	N 3408.77	W 45.21	3409.03	359.24	1.20	135.67L
	14472.00	88.64	0.59	11085.86	3503.95	N 3503.70	W 43.88	3503.98	359.28	0.65	46.76L
	14567.00	89.43	359.75	11087.46	3598.93	N 3598.69	W 43.60	3598.95	359.31	1.21	136.34L
	14662.00	88.55	358.91	11089.13	3693.91	N 3693.66	W 44.71	3693.93	359.31	1.28	32.48R
	14756.00	90.31	0.03	11090.07	3787.90	N 3787.65	W 45.58	3787.92	359.31	2.22	145.94L
	14851.00	89.60	359.55	11090.14	3882.90	N 3882.65	W 45.92	3882.92	359.32	0.90	19.08R
	14946.00	91.71	0.28	11089.05	3977.88	N 3977.64	W 46.06	3977.90	359.34	2.35	94.65L
	15041.00	91.63	359.30	11086.29	4072.84	N 4072.59	W 46.41	4072.86	359.35	1.03	153.67L
	15136.00	90.66	358.82	11084.39	4167.82	N 4167.56	W 47.97	4167.84	359.34	1.14	131.27L
	15231.00	89.87	357.92	11083.95	4262.79	N 4262.52	W 50.67	4262.82	359.32	1.26	90L
	15326.00	89.87	356.93	11084.16	4357.73	N 4357.42	W 54.94	4357.77	359.28	1.04	90L
	15421.00	89.87	356.59	11084.38	4452.62	N 4452.27	W 60.31	4452.68	359.22	0.36	90L
	15516.00	89.87	355.95	11084.59	4547.47	N 4547.07	W 66.49	4547.55	359.16	0.67	90L
BIT PROJECTION	15574.00	89.87	355.00	11084.73	4605.32	N 4604.89	W 71.07	4605.43	359.12	1.64	

Survey Type: Non-Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Survey Tool Type	Borehole / Survey
	0.000	28.000	Act Stns	SLB_NSG+MSHOT-Depth Only	Original Borehole / Cimarex Blanco 3 State Com #1H Gyro+MWD 0ft to Update
	28.000	28.000	Act Stns	SLB_NSG+MSHOT-Depth Only	Original Borehole / Cimarex Blanco 3 State Com #1H Gyro+MWD 0ft to Update
	28.000	10512.700	Act Stns	SLB_NSG+MSHOT	Original Borehole / Cimarex Blanco 3 State Com #1H Gyro+MWD 0ft to Update
	10512.700	15574.000	Act Stns	SLB_MWD-STD	Original Borehole / Cimarex Blanco 3 State Com #1H Gyro+MWD 0ft to Update