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HOBBS
04/17/2020
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Concho Resources, Inc.

Lea County, NM (NAD 27 NME)
(Brot Helm) Sec-35_T-24-S_R-34-E
Brot Helm Federal Com #703H

OWB

Design: AWB

Standard Survey Report

25 October, 2019



Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Project	Lea County, NM (NAD 27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	(Brot Helm) Sec-35_T-24-S_R-34-E		
Site Position:		Northing:	430,515.90 usft
From:	Map	Easting:	776,731.20 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 49.593 N
		Longitude:	103° 26' 20.027 W
		Grid Convergence:	0.48 °

Well	Brot Helm Federal Com #703H		
Well Position	+N/-S	0.0 usft	Northing: 430,522.30 usft
	+E/-W	0.0 usft	Easting: 777,681.10 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 10' 49.579 N
		Longitude:	103° 26' 8.975 W
		Ground Level:	3,415.9 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	08/04/19	6.59	59.81	47,795.40000000

Design	AWB				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	180.34	

Survey Program	Date	10/25/19			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	12,005.0	SDI Gyro Svys (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
12,100.0	22,964.0	Intrepid MWD Crv/Lat (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.41	132.99	100.0	-0.2	0.3	0.2	0.41	0.41	0.00	
125.0	0.47	123.83	125.0	-0.4	0.4	0.4	0.37	0.24	-36.64	
150.0	0.50	125.81	150.0	-0.5	0.6	0.5	0.14	0.12	7.92	
175.0	0.47	128.07	175.0	-0.6	0.8	0.6	0.14	-0.12	9.04	
200.0	0.49	128.08	200.0	-0.7	0.9	0.7	0.08	0.08	0.04	
225.0	0.52	134.41	225.0	-0.9	1.1	0.9	0.25	0.12	25.32	
250.0	0.50	121.80	250.0	-1.0	1.3	1.0	0.46	-0.08	-50.44	
275.0	0.47	122.88	275.0	-1.1	1.4	1.1	0.13	-0.12	4.32	
300.0	0.38	133.12	300.0	-1.2	1.6	1.2	0.47	-0.36	40.96	

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
325.0	0.55	141.52	325.0	-1.4	1.7	1.4	0.73	0.68	33.60
350.0	0.60	148.25	350.0	-1.6	1.9	1.6	0.34	0.20	26.92
375.0	0.52	133.35	375.0	-1.8	2.0	1.8	0.66	-0.32	-59.60
400.0	0.71	143.65	400.0	-2.0	2.2	2.0	0.88	0.76	41.20
425.0	0.56	143.02	425.0	-2.2	2.4	2.2	0.60	-0.60	-2.52
450.0	0.50	148.36	450.0	-2.4	2.5	2.4	0.31	-0.24	21.36
475.0	0.59	151.93	475.0	-2.6	2.6	2.6	0.38	0.36	14.28
500.0	0.59	155.88	500.0	-2.8	2.7	2.8	0.16	0.00	15.80
525.0	0.60	153.47	525.0	-3.1	2.8	3.1	0.11	0.04	-9.64
550.0	0.65	150.47	550.0	-3.3	3.0	3.3	0.24	0.20	-12.00
575.0	0.75	146.58	575.0	-3.6	3.1	3.6	0.44	0.40	-15.56
600.0	0.71	144.86	600.0	-3.8	3.3	3.8	0.18	-0.16	-6.88
625.0	0.74	138.74	625.0	-4.1	3.5	4.1	0.33	0.12	-24.48
650.0	0.66	146.37	650.0	-4.3	3.7	4.3	0.49	-0.32	30.52
675.0	0.68	144.03	675.0	-4.6	3.8	4.5	0.14	0.08	-9.36
700.0	0.74	143.52	700.0	-4.8	4.0	4.8	0.24	0.24	-2.04
725.0	0.83	146.93	725.0	-5.1	4.2	5.1	0.41	0.36	13.64
750.0	0.78	144.33	750.0	-5.4	4.4	5.4	0.25	-0.20	-10.40
775.0	0.81	143.79	775.0	-5.7	4.6	5.6	0.12	0.12	-2.16
800.0	0.84	125.68	800.0	-5.9	4.9	5.9	1.05	0.12	-72.44
825.0	0.88	118.86	825.0	-6.1	5.2	6.1	0.44	0.16	-27.28
850.0	0.75	105.04	850.0	-6.3	5.5	6.2	0.94	-0.52	-55.28
875.0	0.83	113.80	875.0	-6.4	5.8	6.3	0.58	0.32	35.04
900.0	0.77	118.86	899.9	-6.5	6.2	6.5	0.37	-0.24	20.24
902.1	0.77	118.38	902.0	-6.5	6.2	6.5	0.33	0.11	-23.30
Rustler									
925.0	0.80	113.25	924.9	-6.7	6.5	6.6	0.33	0.12	-22.36
950.0	0.92	118.22	949.9	-6.8	6.8	6.8	0.56	0.48	19.88
975.0	0.87	112.91	974.9	-7.0	7.2	7.0	0.39	-0.20	-21.24
1,000.0	0.76	112.26	999.9	-7.1	7.5	7.1	0.44	-0.44	-2.60
1,025.0	0.69	115.42	1,024.9	-7.3	7.8	7.2	0.32	-0.28	12.64
1,050.0	0.71	114.82	1,049.9	-7.4	8.0	7.4	0.09	0.08	-2.40
1,075.0	0.79	121.12	1,074.9	-7.6	8.3	7.5	0.46	0.32	25.20
1,100.0	0.75	117.23	1,099.9	-7.7	8.6	7.7	0.26	-0.16	-15.56
1,125.0	0.81	116.10	1,124.9	-7.9	8.9	7.8	0.25	0.24	-4.52
1,150.0	0.83	109.00	1,149.9	-8.0	9.3	8.0	0.41	0.08	-28.40
1,175.0	0.80	113.86	1,174.9	-8.1	9.6	8.1	0.30	-0.12	19.44
1,200.0	0.83	110.31	1,199.9	-8.3	9.9	8.2	0.23	0.12	-14.20
1,225.0	0.76	117.23	1,224.9	-8.4	10.2	8.4	0.47	-0.28	27.68
1,250.0	0.77	113.38	1,249.9	-8.6	10.5	8.5	0.21	0.04	-15.40
1,275.0	0.86	113.55	1,274.9	-8.7	10.9	8.6	0.36	0.36	0.68
1,300.0	0.81	110.15	1,299.9	-8.8	11.2	8.8	0.28	-0.20	-13.60
1,325.0	0.76	108.10	1,324.9	-8.9	11.5	8.9	0.23	-0.20	-8.20

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1,350.0	0.78	113.22	1,349.9	-9.1	11.8	9.0	0.29	0.08	20.48
1,375.0	0.66	91.43	1,374.9	-9.1	12.1	9.1	1.19	-0.48	-87.16
1,400.0	0.74	48.30	1,399.9	-9.0	12.4	9.0	2.08	0.32	-172.52
1,425.0	0.89	25.96	1,424.9	-8.7	12.6	8.7	1.39	0.60	-89.36
1,444.1	0.99	21.07	1,444.0	-8.5	12.7	8.4	0.66	0.51	-25.62
TOS									
1,450.0	1.02	19.75	1,449.9	-8.4	12.8	8.3	0.66	0.54	-22.33
1,475.0	1.10	17.17	1,474.9	-7.9	12.9	7.8	0.37	0.32	-10.32
1,500.0	1.14	21.39	1,499.9	-7.5	13.1	7.4	0.37	0.16	16.88
1,525.0	1.23	14.49	1,524.9	-7.0	13.2	6.9	0.67	0.36	-27.60
1,550.0	1.11	15.09	1,549.9	-6.5	13.4	6.4	0.48	-0.48	2.40
1,575.0	1.16	18.26	1,574.9	-6.0	13.5	5.9	0.32	0.20	12.68
1,600.0	1.15	17.97	1,599.9	-5.5	13.7	5.4	0.05	-0.04	-1.16
1,625.0	1.11	16.40	1,624.9	-5.1	13.8	5.0	0.20	-0.16	-6.28
1,650.0	1.21	17.47	1,649.9	-4.6	14.0	4.5	0.41	0.40	4.28
1,675.0	1.23	16.63	1,674.9	-4.1	14.1	4.0	0.11	0.08	-3.36
1,700.0	1.18	12.50	1,699.8	-3.6	14.2	3.5	0.40	-0.20	-16.52
1,725.0	1.16	14.23	1,724.8	-3.1	14.4	3.0	0.16	-0.08	6.92
1,750.0	1.20	10.34	1,749.8	-2.6	14.5	2.5	0.36	0.16	-15.56
1,775.0	1.47	5.93	1,774.8	-2.0	14.6	1.9	1.15	1.08	-17.64
1,800.0	1.93	352.06	1,799.8	-1.2	14.5	1.2	2.46	1.84	-55.48
1,825.0	2.24	345.99	1,824.8	-0.4	14.4	0.3	1.52	1.24	-24.28
1,850.0	2.70	340.88	1,849.8	0.7	14.0	-0.8	2.04	1.84	-20.44
1,875.0	3.34	333.98	1,874.7	1.9	13.5	-2.0	2.94	2.56	-27.60
1,900.0	4.01	329.86	1,899.7	3.3	12.8	-3.4	2.88	2.68	-16.48
1,925.0	4.71	326.37	1,924.6	4.9	11.8	-5.0	2.99	2.80	-13.96
1,950.0	4.95	326.38	1,949.5	6.7	10.6	-6.7	0.96	0.96	0.04
1,975.0	4.82	326.75	1,974.4	8.4	9.4	-8.5	0.54	-0.52	1.48
2,000.0	4.87	327.74	1,999.3	10.2	8.3	-10.3	0.39	0.20	3.96
2,025.0	4.94	326.14	2,024.3	12.0	7.1	-12.0	0.61	0.28	-6.40
2,050.0	4.95	327.09	2,049.2	13.8	5.9	-13.8	0.33	0.04	3.80
2,075.0	4.98	326.33	2,074.1	15.6	4.7	-15.6	0.29	0.12	-3.04
2,100.0	4.90	327.47	2,099.0	17.4	3.6	-17.4	0.51	-0.32	4.56
2,125.0	4.87	327.75	2,123.9	19.2	2.4	-19.2	0.15	-0.12	1.12
2,150.0	5.03	326.56	2,148.8	21.0	1.3	-21.0	0.76	0.64	-4.76
2,175.0	4.85	326.31	2,173.7	22.8	0.1	-22.8	0.73	-0.72	-1.00
2,200.0	5.02	327.37	2,198.6	24.6	-1.1	-24.6	0.77	0.68	4.24
2,225.0	4.97	325.26	2,223.5	26.4	-2.3	-26.4	0.76	-0.20	-8.44
2,250.0	4.89	322.79	2,248.4	28.2	-3.6	-28.1	0.91	-0.32	-9.88
2,275.0	4.80	318.40	2,273.3	29.8	-4.9	-29.8	1.53	-0.36	-17.56
2,300.0	4.84	314.47	2,298.2	31.3	-6.4	-31.3	1.33	0.16	-15.72
2,325.0	4.79	314.17	2,323.2	32.8	-7.9	-32.7	0.22	-0.20	-1.20
2,350.0	4.75	314.85	2,348.1	34.2	-9.3	-34.2	0.28	-0.16	2.72
2,375.0	4.88	315.79	2,373.0	35.7	-10.8	-35.7	0.61	0.52	3.76

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2,400.0	4.93	313.94	2,397.9	37.2	-12.3	-37.2	0.66	0.20	-7.40
2,425.0	4.79	313.82	2,422.8	38.7	-13.9	-38.6	0.56	-0.56	-0.48
2,450.0	4.57	309.05	2,447.7	40.1	-15.4	-40.0	1.79	-0.88	-19.08
2,475.0	4.11	300.97	2,472.6	41.2	-16.9	-41.0	3.06	-1.84	-32.32
2,500.0	3.79	297.99	2,497.6	42.0	-18.4	-41.9	1.52	-1.28	-11.92
2,525.0	3.70	295.75	2,522.5	42.7	-19.9	-42.6	0.69	-0.36	-8.96
2,550.0	3.76	294.39	2,547.5	43.4	-21.4	-43.3	0.43	0.24	-5.44
2,575.0	3.70	294.04	2,572.4	44.1	-22.8	-44.0	0.26	-0.24	-1.40
2,600.0	3.73	295.74	2,597.4	44.8	-24.3	-44.6	0.46	0.12	6.80
2,625.0	3.80	293.80	2,622.3	45.5	-25.8	-45.3	0.58	0.28	-7.76
2,650.0	3.74	294.88	2,647.3	46.1	-27.3	-46.0	0.37	-0.24	4.32
2,675.0	3.70	295.18	2,672.2	46.8	-28.8	-46.7	0.18	-0.16	1.20
2,700.0	3.80	295.12	2,697.2	47.5	-30.2	-47.3	0.40	0.40	-0.24
2,725.0	3.76	294.88	2,722.1	48.2	-31.7	-48.0	0.17	-0.16	-0.96
2,750.0	3.72	294.32	2,747.1	48.9	-33.2	-48.7	0.22	-0.16	-2.24
2,775.0	3.78	294.37	2,772.0	49.6	-34.7	-49.4	0.24	0.24	0.20
2,800.0	3.79	294.57	2,796.9	50.3	-36.2	-50.0	0.07	0.04	0.80
2,825.0	3.84	294.92	2,821.9	51.0	-37.7	-50.7	0.22	0.20	1.40
2,850.0	3.62	295.84	2,846.8	51.6	-39.2	-51.4	0.91	-0.88	3.68
2,875.0	3.67	296.01	2,871.8	52.3	-40.6	-52.1	0.20	0.20	0.68
2,900.0	3.60	296.38	2,896.7	53.0	-42.0	-52.8	0.30	-0.28	1.48
2,925.0	3.66	297.44	2,921.7	53.8	-43.5	-53.5	0.36	0.24	4.24
2,950.0	3.64	296.67	2,946.6	54.5	-44.9	-54.2	0.21	-0.08	-3.08
2,975.0	3.53	297.72	2,971.6	55.2	-46.3	-54.9	0.51	-0.44	4.20
3,000.0	3.46	297.81	2,996.5	55.9	-47.6	-55.6	0.28	-0.28	0.36
3,025.0	3.42	297.95	3,021.5	56.6	-48.9	-56.3	0.16	-0.16	0.56
3,050.0	3.34	298.51	3,046.4	57.3	-50.2	-57.0	0.35	-0.32	2.24
3,075.0	3.35	297.49	3,071.4	58.0	-51.5	-57.7	0.24	0.04	-4.08
3,100.0	3.25	298.55	3,096.4	58.7	-52.8	-58.3	0.47	-0.40	4.24
3,125.0	3.31	298.82	3,121.3	59.4	-54.1	-59.0	0.25	0.24	1.08
3,150.0	3.15	299.47	3,146.3	60.0	-55.3	-59.7	0.66	-0.64	2.60
3,175.0	3.09	299.25	3,171.2	60.7	-56.5	-60.4	0.24	-0.24	-0.88
3,200.0	3.10	300.23	3,196.2	61.4	-57.6	-61.0	0.22	0.04	3.92
3,225.0	2.91	298.35	3,221.2	62.0	-58.8	-61.7	0.86	-0.76	-7.52
3,250.0	2.98	298.77	3,246.1	62.6	-59.9	-62.3	0.29	0.28	1.68
3,275.0	3.06	299.83	3,271.1	63.3	-61.1	-62.9	0.39	0.32	4.24
3,300.0	2.97	300.23	3,296.1	63.9	-62.2	-63.6	0.37	-0.36	1.60
3,325.0	2.96	299.92	3,321.0	64.6	-63.3	-64.2	0.08	-0.04	-1.24
3,350.0	3.03	300.49	3,346.0	65.2	-64.4	-64.9	0.30	0.28	2.28
3,375.0	3.04	300.28	3,371.0	65.9	-65.6	-65.5	0.06	0.04	-0.84
3,400.0	3.20	304.66	3,395.9	66.6	-66.7	-66.2	1.15	0.64	17.52
3,425.0	3.76	309.45	3,420.9	67.6	-67.9	-67.1	2.52	2.24	19.16
3,450.0	4.10	313.78	3,445.8	68.7	-69.2	-68.3	1.80	1.36	17.32

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,475.0	4.21	313.78	3,470.8	70.0	-70.5	-69.5	0.44	0.44	0.00
3,500.0	4.20	315.06	3,495.7	71.2	-71.8	-70.8	0.38	-0.04	5.12
3,525.0	4.28	315.49	3,520.6	72.5	-73.1	-72.1	0.34	0.32	1.72
3,550.0	4.23	315.26	3,545.6	73.9	-74.4	-73.4	0.21	-0.20	-0.92
3,575.0	4.08	316.92	3,570.5	75.2	-75.7	-74.7	0.77	-0.60	6.64
3,600.0	4.04	318.48	3,595.4	76.5	-76.9	-76.0	0.47	-0.16	6.24
3,625.0	3.91	318.32	3,620.4	77.8	-78.0	-77.3	0.52	-0.52	-0.64
3,650.0	3.80	318.97	3,645.3	79.0	-79.2	-78.6	0.47	-0.44	2.60
3,675.0	3.89	319.14	3,670.3	80.3	-80.2	-79.8	0.36	0.36	0.68
3,700.0	3.79	319.53	3,695.2	81.6	-81.3	-81.1	0.41	-0.40	1.56
3,725.0	3.76	318.22	3,720.1	82.8	-82.4	-82.3	0.37	-0.12	-5.24
3,750.0	3.78	320.70	3,745.1	84.1	-83.5	-83.6	0.66	0.08	9.92
3,775.0	3.68	319.81	3,770.0	85.3	-84.5	-84.8	0.46	-0.40	-3.56
3,800.0	3.71	318.70	3,795.0	86.5	-85.6	-86.0	0.31	0.12	-4.44
3,825.0	3.71	319.31	3,819.9	87.8	-86.6	-87.2	0.16	0.00	2.44
3,850.0	3.68	320.06	3,844.9	89.0	-87.7	-88.5	0.23	-0.12	3.00
3,875.0	3.59	318.54	3,869.8	90.2	-88.7	-89.7	0.53	-0.36	-6.08
3,900.0	3.51	316.68	3,894.8	91.3	-89.8	-90.8	0.56	-0.32	-7.44
3,925.0	3.59	315.60	3,919.7	92.4	-90.8	-91.9	0.42	0.32	-4.32
3,950.0	3.53	315.38	3,944.7	93.6	-91.9	-93.0	0.25	-0.24	-0.88
3,975.0	3.43	316.25	3,969.6	94.6	-93.0	-94.1	0.45	-0.40	3.48
4,000.0	3.58	315.15	3,994.6	95.7	-94.0	-95.2	0.66	0.60	-4.40
4,025.0	3.71	313.75	4,019.5	96.8	-95.2	-96.3	0.63	0.52	-5.60
4,050.0	3.50	311.75	4,044.5	97.9	-96.3	-97.3	0.98	-0.84	-8.00
4,075.0	3.60	309.62	4,069.4	98.9	-97.5	-98.3	0.66	0.40	-8.52
4,100.0	3.45	310.73	4,094.4	99.9	-98.7	-99.3	0.66	-0.60	4.44
4,125.0	3.60	310.95	4,119.4	100.9	-99.8	-100.3	0.60	0.60	0.88
4,150.0	3.55	309.87	4,144.3	101.9	-101.0	-101.3	0.34	-0.20	-4.32
4,175.0	3.46	310.20	4,169.3	102.9	-102.2	-102.3	0.37	-0.36	1.32
4,200.0	3.32	309.35	4,194.2	103.9	-103.3	-103.2	0.59	-0.56	-3.40
4,225.0	3.26	309.49	4,219.2	104.8	-104.4	-104.1	0.24	-0.24	0.56
4,250.0	3.25	308.30	4,244.1	105.7	-105.6	-105.0	0.27	-0.04	-4.76
4,275.0	3.29	308.45	4,269.1	106.5	-106.7	-105.9	0.16	0.16	0.60
4,300.0	3.12	308.13	4,294.1	107.4	-107.8	-106.8	0.68	-0.68	-1.28
4,325.0	3.31	309.31	4,319.0	108.3	-108.9	-107.6	0.80	0.76	4.72
4,350.0	3.20	308.54	4,344.0	109.2	-110.0	-108.5	0.47	-0.44	-3.08
4,375.0	3.36	310.07	4,368.9	110.1	-111.1	-109.4	0.73	0.64	6.12
4,400.0	3.24	308.61	4,393.9	111.0	-112.2	-110.3	0.59	-0.48	-5.84
4,425.0	3.03	310.99	4,418.9	111.9	-113.2	-111.2	0.99	-0.84	9.52
4,450.0	3.02	313.73	4,443.8	112.8	-114.2	-112.1	0.58	-0.04	10.96
4,475.0	2.77	316.00	4,468.8	113.7	-115.1	-113.0	1.10	-1.00	9.08
4,500.0	2.67	319.77	4,493.8	114.5	-115.9	-113.8	0.82	-0.40	15.08
4,525.0	2.68	322.02	4,518.7	115.4	-116.6	-114.7	0.42	0.04	9.00

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,550.0	2.70	321.65	4,543.7	116.4	-117.4	-115.7	0.11	0.08	-1.48
4,575.0	2.68	322.06	4,568.7	117.3	-118.1	-116.6	0.11	-0.08	1.64
4,600.0	2.70	321.45	4,593.6	118.2	-118.8	-117.5	0.14	0.08	-2.44
4,625.0	2.50	322.30	4,618.6	119.1	-119.5	-118.4	0.81	-0.80	3.40
4,650.0	2.30	327.45	4,643.6	120.0	-120.1	-119.2	1.18	-0.80	20.60
4,675.0	2.14	330.75	4,668.6	120.8	-120.6	-120.1	0.82	-0.64	13.20
4,700.0	2.05	330.09	4,693.6	121.6	-121.1	-120.8	0.37	-0.36	-2.64
4,725.0	2.15	331.95	4,718.5	122.4	-121.5	-121.6	0.48	0.40	7.44
4,750.0	2.28	328.25	4,743.5	123.2	-122.0	-122.5	0.77	0.52	-14.80
4,775.0	2.53	327.98	4,768.5	124.1	-122.5	-123.4	1.00	1.00	-1.08
4,800.0	2.83	322.91	4,793.5	125.1	-123.2	-124.3	1.53	1.20	-20.28
4,825.0	2.83	324.25	4,818.5	126.1	-123.9	-125.3	0.26	0.00	5.36
4,850.0	2.80	323.37	4,843.4	127.0	-124.7	-126.3	0.21	-0.12	-3.52
4,875.0	2.77	323.43	4,868.4	128.0	-125.4	-127.3	0.12	-0.12	0.24
4,900.0	2.84	324.39	4,893.4	129.0	-126.1	-128.3	0.34	0.28	3.84
4,925.0	2.79	325.99	4,918.3	130.0	-126.8	-129.3	0.37	-0.20	6.40
4,950.0	2.78	334.41	4,943.3	131.1	-127.4	-130.3	1.64	-0.04	33.68
4,975.0	2.62	338.32	4,968.3	132.1	-127.9	-131.4	0.98	-0.64	15.64
5,000.0	2.45	345.19	4,993.2	133.2	-128.2	-132.4	1.39	-0.68	27.48
5,025.0	2.42	353.03	5,018.2	134.2	-128.4	-133.5	1.34	-0.12	31.36
5,050.0	2.30	353.75	5,043.2	135.3	-128.6	-134.5	0.49	-0.48	2.88
5,075.0	2.13	358.35	5,068.2	136.2	-128.6	-135.4	0.98	-0.68	18.40
5,100.0	2.15	354.55	5,093.2	137.2	-128.7	-136.4	0.57	0.08	-15.20
5,125.0	1.63	349.66	5,118.2	138.0	-128.8	-137.2	2.18	-2.08	-19.56
5,150.0	1.11	332.35	5,143.1	138.5	-129.0	-137.8	2.64	-2.08	-69.24
5,175.0	0.78	307.43	5,168.1	138.9	-129.2	-138.1	2.08	-1.32	-99.68
5,200.0	0.62	291.60	5,193.1	139.0	-129.5	-138.2	1.00	-0.64	-63.32
5,225.0	0.56	293.30	5,218.1	139.1	-129.7	-138.3	0.25	-0.24	6.80
5,225.9	0.56	293.30	5,219.0	139.1	-129.7	-138.3	0.00	0.00	0.00
BOS (Fletcher)									
5,250.0	0.48	295.02	5,243.1	139.2	-129.9	-138.4	0.34	-0.33	7.12
5,275.0	0.54	286.95	5,268.1	139.3	-130.1	-138.5	0.37	0.24	-32.28
5,300.0	0.53	289.39	5,293.1	139.3	-130.4	-138.6	0.10	-0.04	9.76
5,325.0	0.48	279.08	5,318.1	139.4	-130.6	-138.6	0.41	-0.20	-41.24
5,350.0	0.46	278.82	5,343.1	139.4	-130.8	-138.6	0.08	-0.08	-1.04
5,375.0	0.55	284.77	5,368.1	139.5	-131.0	-138.7	0.42	0.36	23.80
5,400.0	0.66	274.07	5,393.1	139.5	-131.2	-138.7	0.63	0.44	-42.80
5,425.0	0.96	266.09	5,418.1	139.5	-131.6	-138.7	1.28	1.20	-31.92
5,450.0	1.25	259.80	5,443.1	139.5	-132.1	-138.7	1.26	1.16	-25.16
5,475.0	1.25	257.66	5,468.1	139.3	-132.6	-138.5	0.19	0.00	-8.56
5,500.0	1.31	255.68	5,493.1	139.2	-133.1	-138.4	0.30	0.24	-7.92
5,505.9	1.33	256.27	5,499.0	139.2	-133.3	-138.4	0.39	0.32	10.04
LMAR (Top Delaware)									
5,525.0	1.39	258.08	5,518.1	139.1	-133.7	-138.3	0.39	0.32	9.46

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,545.9	1.33	257.24	5,539.0	139.0	-134.2	-138.2	0.30	-0.28	-4.01
BLCN									
5,550.0	1.32	257.07	5,543.1	139.0	-134.3	-138.1	0.30	-0.28	-4.22
5,575.0	1.38	257.59	5,568.1	138.8	-134.9	-138.0	0.24	0.24	2.08
5,600.0	1.27	254.90	5,593.1	138.7	-135.4	-137.9	0.51	-0.44	-10.76
5,625.0	1.33	256.96	5,618.1	138.6	-136.0	-137.7	0.30	0.24	8.24
5,650.0	1.41	257.94	5,643.1	138.4	-136.6	-137.6	0.33	0.32	3.92
5,675.0	1.41	257.89	5,668.1	138.3	-137.2	-137.5	0.00	0.00	-0.20
5,700.0	1.45	254.38	5,693.1	138.1	-137.8	-137.3	0.39	0.16	-14.04
5,725.0	1.45	255.65	5,718.1	138.0	-138.4	-137.1	0.13	0.00	5.08
5,750.0	1.51	254.81	5,743.0	137.8	-139.0	-137.0	0.26	0.24	-3.36
5,775.0	1.51	257.01	5,768.0	137.7	-139.7	-136.8	0.23	0.00	8.80
5,800.0	1.50	253.77	5,793.0	137.5	-140.3	-136.6	0.34	-0.04	-12.96
5,825.0	1.50	256.80	5,818.0	137.3	-140.9	-136.5	0.32	0.00	12.12
5,850.0	1.53	251.31	5,843.0	137.1	-141.6	-136.3	0.59	0.12	-21.96
5,875.0	1.62	235.46	5,868.0	136.8	-142.2	-136.0	1.77	0.36	-63.40
5,900.0	1.65	228.10	5,893.0	136.4	-142.7	-135.5	0.85	0.12	-29.44
5,925.0	1.75	227.29	5,918.0	135.9	-143.3	-135.0	0.41	0.40	-3.24
5,950.0	1.73	224.59	5,943.0	135.4	-143.8	-134.5	0.34	-0.08	-10.80
5,975.0	1.79	225.36	5,968.0	134.8	-144.4	-134.0	0.26	0.24	3.08
6,000.0	1.69	221.19	5,992.9	134.3	-144.9	-133.4	0.65	-0.40	-16.68
6,025.0	1.70	222.33	6,017.9	133.7	-145.4	-132.8	0.14	0.04	4.56
6,050.0	1.76	227.28	6,042.9	133.2	-145.9	-132.3	0.64	0.24	19.80
6,075.0	1.78	223.51	6,067.9	132.6	-146.4	-131.8	0.47	0.08	-15.08
6,100.0	1.70	220.44	6,092.9	132.1	-147.0	-131.2	0.49	-0.32	-12.28
6,125.0	1.65	223.64	6,117.9	131.5	-147.4	-130.7	0.42	-0.20	12.80
6,150.0	1.69	224.79	6,142.9	131.0	-148.0	-130.1	0.21	0.16	4.60
6,175.0	1.59	221.81	6,167.9	130.5	-148.4	-129.6	0.53	-0.40	-11.92
6,200.0	1.48	221.76	6,192.9	130.0	-148.9	-129.1	0.44	-0.44	-0.20
6,225.0	1.49	225.24	6,217.8	129.5	-149.3	-128.6	0.36	0.04	13.92
6,250.0	1.53	225.60	6,242.8	129.1	-149.8	-128.2	0.16	0.16	1.44
6,275.0	1.37	225.05	6,267.8	128.6	-150.3	-127.7	0.64	-0.64	-2.20
6,300.0	1.45	228.84	6,292.8	128.2	-150.7	-127.3	0.49	0.32	15.16
6,325.0	1.37	226.96	6,317.8	127.8	-151.2	-126.9	0.37	-0.32	-7.52
6,350.0	1.20	229.72	6,342.8	127.4	-151.6	-126.5	0.72	-0.68	11.04
6,375.0	1.25	232.60	6,367.8	127.1	-152.0	-126.2	0.32	0.20	11.52
6,400.0	1.07	232.78	6,392.8	126.8	-152.4	-125.9	0.72	-0.72	0.72
6,425.0	1.03	237.82	6,417.8	126.5	-152.8	-125.6	0.40	-0.16	20.16
6,450.0	1.10	237.26	6,442.8	126.3	-153.2	-125.3	0.28	0.28	-2.24
6,475.0	1.01	238.32	6,467.8	126.0	-153.6	-125.1	0.37	-0.36	4.24
6,500.0	1.01	240.23	6,492.8	125.8	-153.9	-124.9	0.13	0.00	7.64
6,525.0	1.02	240.19	6,517.8	125.6	-154.3	-124.6	0.04	0.04	-0.16
6,526.2	1.01	240.44	6,519.0	125.6	-154.3	-124.6	0.62	-0.50	20.45
CYCN									

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,550.0	0.90	245.97	6,542.8	125.4	-154.7	-124.5	0.62	-0.48	23.26
6,575.0	0.90	248.78	6,567.8	125.2	-155.1	-124.3	0.18	0.00	11.24
6,600.0	0.98	247.87	6,592.8	125.1	-155.4	-124.1	0.33	0.32	-3.64
6,625.0	0.90	250.50	6,617.8	124.9	-155.8	-124.0	0.36	-0.32	10.52
6,650.0	0.87	251.02	6,642.8	124.8	-156.2	-123.9	0.12	-0.12	2.08
6,675.0	0.97	253.24	6,667.8	124.7	-156.6	-123.7	0.42	0.40	8.88
6,700.0	0.88	249.65	6,692.8	124.6	-156.9	-123.6	0.43	-0.36	-14.36
6,725.0	0.92	251.69	6,717.8	124.4	-157.3	-123.5	0.20	0.16	8.16
6,750.0	0.87	249.85	6,742.7	124.3	-157.7	-123.3	0.23	-0.20	-7.36
6,775.0	0.83	261.60	6,767.7	124.2	-158.0	-123.3	0.71	-0.16	47.00
6,800.0	0.90	257.77	6,792.7	124.1	-158.4	-123.2	0.36	0.28	-15.32
6,825.0	0.84	260.72	6,817.7	124.1	-158.8	-123.1	0.30	-0.24	11.80
6,850.0	0.88	263.92	6,842.7	124.0	-159.2	-123.1	0.25	0.16	12.80
6,875.0	0.82	258.63	6,867.7	124.0	-159.5	-123.0	0.39	-0.24	-21.16
6,900.0	0.83	267.49	6,892.7	123.9	-159.9	-123.0	0.51	0.04	35.44
6,925.0	0.85	261.41	6,917.7	123.9	-160.2	-122.9	0.37	0.08	-24.32
6,950.0	0.84	270.61	6,942.7	123.9	-160.6	-122.9	0.54	-0.04	36.80
6,975.0	0.85	265.37	6,967.7	123.8	-161.0	-122.9	0.31	0.04	-20.96
7,000.0	0.78	276.17	6,992.7	123.8	-161.3	-122.9	0.67	-0.28	43.20
7,025.0	0.84	279.85	7,017.7	123.9	-161.7	-122.9	0.32	0.24	14.72
7,050.0	0.71	276.37	7,042.7	123.9	-162.0	-123.0	0.55	-0.52	-13.92
7,075.0	0.83	280.65	7,067.7	124.0	-162.4	-123.0	0.53	0.48	17.12
7,100.0	0.71	280.11	7,092.7	124.1	-162.7	-123.1	0.48	-0.48	-2.16
7,125.0	0.81	286.63	7,117.7	124.1	-163.0	-123.2	0.53	0.40	26.08
7,150.0	0.62	281.36	7,142.7	124.2	-163.3	-123.2	0.80	-0.76	-21.08
7,175.0	0.73	301.79	7,167.7	124.3	-163.6	-123.3	1.05	0.44	81.72
7,200.0	0.66	302.70	7,192.7	124.5	-163.8	-123.5	0.28	-0.28	3.64
7,225.0	0.61	309.84	7,217.7	124.6	-164.1	-123.7	0.37	-0.20	28.56
7,250.0	0.61	322.41	7,242.7	124.8	-164.2	-123.8	0.53	0.00	50.28
7,275.0	0.62	329.23	7,267.7	125.1	-164.4	-124.1	0.30	0.04	27.28
7,300.0	0.60	331.95	7,292.7	125.3	-164.5	-124.3	0.14	-0.08	10.88
7,325.0	0.61	321.81	7,317.7	125.5	-164.7	-124.5	0.43	0.04	-40.56
7,350.0	0.59	321.84	7,342.7	125.7	-164.8	-124.7	0.08	-0.08	0.12
7,375.0	0.65	320.06	7,367.7	125.9	-165.0	-124.9	0.25	0.24	-7.12
7,400.0	0.54	322.10	7,392.7	126.1	-165.2	-125.1	0.45	-0.44	8.16
7,425.0	0.52	328.83	7,417.7	126.3	-165.3	-125.3	0.26	-0.08	26.92
7,450.0	0.61	333.76	7,442.7	126.5	-165.4	-125.5	0.41	0.36	19.72
7,475.0	0.67	331.53	7,467.7	126.8	-165.5	-125.8	0.26	0.24	-8.92
7,500.0	0.46	328.84	7,492.7	127.0	-165.7	-126.0	0.85	-0.84	-10.76
7,525.0	0.51	346.07	7,517.7	127.2	-165.7	-126.2	0.61	0.20	68.92
7,550.0	0.48	334.49	7,542.7	127.4	-165.8	-126.4	0.42	-0.12	-46.32
7,575.0	0.43	337.73	7,567.7	127.6	-165.9	-126.6	0.22	-0.20	12.96
7,600.0	0.49	334.84	7,592.7	127.8	-166.0	-126.8	0.26	0.24	-11.56

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,625.0	0.45	332.06	7,617.7	127.9	-166.1	-126.9	0.18	-0.16	-11.12
7,650.0	0.50	346.46	7,642.7	128.1	-166.1	-127.1	0.52	0.20	57.60
7,675.0	0.53	332.76	7,667.7	128.3	-166.2	-127.3	0.51	0.12	-54.80
7,700.0	0.49	341.18	7,692.7	128.5	-166.3	-127.5	0.34	-0.16	33.68
7,725.0	0.43	340.86	7,717.7	128.7	-166.4	-127.7	0.24	-0.24	-1.28
7,750.0	0.47	331.71	7,742.7	128.9	-166.4	-127.9	0.33	0.16	-36.60
7,775.0	0.54	328.90	7,767.7	129.1	-166.6	-128.1	0.30	0.28	-11.24
7,800.0	0.49	338.90	7,792.7	129.3	-166.7	-128.3	0.41	-0.20	40.00
7,825.0	0.59	332.92	7,817.7	129.5	-166.7	-128.5	0.46	0.40	-23.92
7,850.0	0.54	331.11	7,842.7	129.7	-166.9	-128.7	0.21	-0.20	-7.24
7,875.0	0.50	333.03	7,867.7	129.9	-167.0	-128.9	0.17	-0.16	7.68
7,900.0	0.47	340.05	7,892.7	130.1	-167.1	-129.1	0.27	-0.12	28.08
7,925.0	0.51	336.07	7,917.7	130.3	-167.1	-129.3	0.21	0.16	-15.92
7,950.0	0.47	334.19	7,942.7	130.5	-167.2	-129.5	0.17	-0.16	-7.52
7,975.0	0.51	332.94	7,967.7	130.7	-167.3	-129.7	0.17	0.16	-5.00
8,000.0	0.49	343.86	7,992.7	130.9	-167.4	-129.9	0.39	-0.08	43.68
8,025.0	0.59	335.43	8,017.7	131.1	-167.5	-130.1	0.51	0.40	-33.72
8,050.0	0.54	327.26	8,042.7	131.4	-167.6	-130.3	0.38	-0.20	-32.68
8,075.0	0.53	320.19	8,067.7	131.5	-167.7	-130.5	0.27	-0.04	-28.28
8,100.0	0.44	315.53	8,092.7	131.7	-167.9	-130.7	0.39	-0.36	-18.64
8,125.0	0.48	286.50	8,117.7	131.8	-168.0	-130.8	0.94	0.16	-116.12
8,150.0	0.45	277.35	8,142.7	131.8	-168.2	-130.8	0.32	-0.12	-36.60
8,156.3	0.46	279.64	8,149.0	131.9	-168.3	-130.8	0.34	0.18	36.16
BYCN									
8,175.0	0.50	285.73	8,167.7	131.9	-168.4	-130.9	0.34	0.21	32.62
8,200.0	0.63	287.61	8,192.7	132.0	-168.7	-130.9	0.53	0.52	7.52
8,225.0	0.54	274.69	8,217.7	132.0	-168.9	-131.0	0.64	-0.36	-51.68
8,250.0	0.44	267.02	8,242.7	132.0	-169.1	-131.0	0.48	-0.40	-30.68
8,275.0	0.61	272.68	8,267.7	132.0	-169.4	-131.0	0.71	0.68	22.64
8,300.0	0.50	265.58	8,292.7	132.0	-169.6	-131.0	0.52	-0.44	-28.40
8,325.0	0.53	271.03	8,317.7	132.0	-169.8	-131.0	0.23	0.12	21.80
8,350.0	0.37	270.16	8,342.7	132.0	-170.0	-131.0	0.64	-0.64	-3.48
8,375.0	0.41	268.46	8,367.7	132.0	-170.2	-131.0	0.17	0.16	-6.80
8,400.0	0.44	271.81	8,392.7	132.0	-170.4	-131.0	0.16	0.12	13.40
8,425.0	0.47	251.88	8,417.7	132.0	-170.6	-130.9	0.64	0.12	-79.72
8,450.0	0.35	263.09	8,442.7	131.9	-170.8	-130.9	0.58	-0.48	44.84
8,475.0	0.41	279.77	8,467.7	131.9	-170.9	-130.9	0.50	0.24	66.72
8,500.0	0.48	258.09	8,492.7	131.9	-171.1	-130.9	0.72	0.28	-86.72
8,525.0	0.45	240.77	8,517.7	131.9	-171.3	-130.8	0.57	-0.12	-69.28
8,550.0	0.32	257.59	8,542.7	131.8	-171.5	-130.8	0.68	-0.52	67.28
8,575.0	0.31	265.16	8,567.6	131.8	-171.6	-130.7	0.17	-0.04	30.28
8,600.0	0.25	298.67	8,592.6	131.8	-171.7	-130.8	0.69	-0.24	134.04
8,625.0	0.33	273.05	8,617.6	131.8	-171.8	-130.8	0.60	0.32	-102.48

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,650.0	0.24	293.29	8,642.6	131.9	-171.9	-130.8	0.53	-0.36	80.96
8,675.0	0.21	304.47	8,667.6	131.9	-172.0	-130.9	0.21	-0.12	44.72
8,700.0	0.31	323.29	8,692.6	132.0	-172.1	-130.9	0.52	0.40	75.28
8,725.0	0.37	302.50	8,717.6	132.1	-172.2	-131.0	0.54	0.24	-83.16
8,750.0	0.36	313.68	8,742.6	132.2	-172.3	-131.1	0.29	-0.04	44.72
8,775.0	0.28	315.78	8,767.6	132.3	-172.4	-131.2	0.32	-0.32	8.40
8,800.0	0.27	301.43	8,792.6	132.4	-172.5	-131.3	0.28	-0.04	-57.40
8,825.0	0.24	320.79	8,817.6	132.4	-172.6	-131.4	0.36	-0.12	77.44
8,850.0	0.31	326.88	8,842.6	132.5	-172.7	-131.5	0.30	0.28	24.36
8,875.0	0.37	339.96	8,867.6	132.7	-172.8	-131.6	0.39	0.24	52.32
8,900.0	0.47	334.91	8,892.6	132.8	-172.8	-131.8	0.43	0.40	-20.20
8,925.0	0.49	341.19	8,917.6	133.0	-172.9	-132.0	0.22	0.08	25.12
8,950.0	0.50	349.00	8,942.6	133.2	-173.0	-132.2	0.27	0.04	31.24
8,975.0	0.55	351.02	8,967.6	133.4	-173.0	-132.4	0.21	0.20	8.08
9,000.0	0.65	358.30	8,992.6	133.7	-173.0	-132.7	0.50	0.40	29.12
9,025.0	0.63	2.86	9,017.6	134.0	-173.0	-132.9	0.22	-0.08	18.24
9,050.0	0.77	352.85	9,042.6	134.3	-173.0	-133.2	0.74	0.56	-40.04
9,075.0	0.81	358.50	9,067.6	134.6	-173.1	-133.6	0.35	0.16	22.60
9,100.0	0.81	0.05	9,092.6	135.0	-173.1	-133.9	0.09	0.00	6.20
9,125.0	0.77	1.60	9,117.6	135.3	-173.1	-134.3	0.18	-0.16	6.20
9,150.0	0.95	2.98	9,142.6	135.7	-173.0	-134.7	0.72	0.72	5.52
9,175.0	1.02	5.69	9,167.6	136.1	-173.0	-135.1	0.34	0.28	10.84
9,200.0	1.16	4.00	9,192.6	136.6	-173.0	-135.6	0.57	0.56	-6.76
9,225.0	1.16	6.14	9,217.6	137.1	-172.9	-136.1	0.17	0.00	8.56
9,250.0	1.17	8.35	9,242.6	137.6	-172.9	-136.6	0.18	0.04	8.84
9,275.0	1.26	11.06	9,267.6	138.1	-172.8	-137.1	0.43	0.36	10.84
9,300.0	1.36	10.75	9,292.6	138.7	-172.7	-137.7	0.40	0.40	-1.24
9,325.0	1.41	15.24	9,317.6	139.3	-172.5	-138.3	0.48	0.20	17.96
9,350.0	1.41	14.15	9,342.6	139.9	-172.4	-138.8	0.11	0.00	-4.36
9,375.0	1.42	9.79	9,367.6	140.5	-172.2	-139.5	0.43	0.04	-17.44
9,378.4	1.42	9.79	9,371.0	140.6	-172.2	-139.5	0.00	0.00	0.00
Bone Sprg (BSGL)									
9,400.0	1.43	9.68	9,392.6	141.1	-172.1	-140.1	0.05	0.05	-0.51
9,425.0	1.59	10.02	9,417.6	141.8	-172.0	-140.7	0.64	0.64	1.36
9,450.0	1.60	9.61	9,442.5	142.4	-171.9	-141.4	0.06	0.04	-1.64
9,475.0	1.67	6.85	9,467.5	143.1	-171.8	-142.1	0.42	0.28	-11.04
9,500.0	1.64	7.30	9,492.5	143.9	-171.7	-142.8	0.13	-0.12	1.80
9,525.0	1.71	8.23	9,517.5	144.6	-171.6	-143.5	0.30	0.28	3.72
9,550.0	1.78	6.53	9,542.5	145.3	-171.5	-144.3	0.35	0.28	-6.80
9,575.0	1.69	6.49	9,567.5	146.1	-171.4	-145.1	0.36	-0.36	-0.16
9,600.0	1.67	2.83	9,592.5	146.8	-171.4	-145.8	0.44	-0.08	-14.64
9,625.0	1.73	2.11	9,617.5	147.6	-171.3	-146.5	0.25	0.24	-2.88
9,650.0	1.68	3.51	9,642.5	148.3	-171.3	-147.3	0.26	-0.20	5.60
9,675.0	1.74	1.73	9,667.5	149.0	-171.3	-148.0	0.32	0.24	-7.12

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,700.0	1.77	358.95	9,692.4	149.8	-171.3	-148.8	0.36	0.12	-11.12
9,725.0	1.76	356.29	9,717.4	150.6	-171.3	-149.6	0.33	-0.04	-10.64
9,750.0	1.91	353.32	9,742.4	151.4	-171.4	-150.3	0.71	0.60	-11.88
9,775.0	1.81	347.68	9,767.4	152.2	-171.5	-151.1	0.83	-0.40	-22.56
9,800.0	1.75	338.76	9,792.4	152.9	-171.7	-151.9	1.13	-0.24	-35.68
9,825.0	1.68	332.31	9,817.4	153.6	-172.0	-152.6	0.82	-0.28	-25.80
9,850.0	1.60	328.44	9,842.4	154.2	-172.4	-153.2	0.55	-0.32	-15.48
9,875.0	1.58	326.46	9,867.4	154.8	-172.8	-153.8	0.23	-0.08	-7.92
9,900.0	1.49	314.53	9,892.3	155.3	-173.2	-154.3	1.33	-0.36	-47.72
9,925.0	1.62	313.24	9,917.3	155.8	-173.7	-154.7	0.54	0.52	-5.16
9,950.0	1.51	305.69	9,942.3	156.2	-174.2	-155.2	0.93	-0.44	-30.20
9,975.0	1.48	306.90	9,967.3	156.6	-174.7	-155.6	0.17	-0.12	4.84
10,000.0	1.42	305.72	9,992.3	157.0	-175.2	-155.9	0.27	-0.24	-4.72
10,025.0	1.50	308.01	10,017.3	157.4	-175.7	-156.3	0.40	0.32	9.16
10,050.0	1.60	302.54	10,042.3	157.8	-176.3	-156.7	0.71	0.40	-21.88
10,075.0	1.56	300.53	10,067.3	158.1	-176.9	-157.1	0.27	-0.16	-8.04
10,100.0	1.61	301.07	10,092.3	158.5	-177.5	-157.4	0.21	0.20	2.16
10,125.0	1.58	299.00	10,117.3	158.8	-178.1	-157.7	0.26	-0.12	-8.28
10,150.0	1.69	301.91	10,142.3	159.2	-178.7	-158.1	0.55	0.44	11.64
10,175.0	1.77	297.66	10,167.2	159.6	-179.3	-158.5	0.60	0.32	-17.00
10,200.0	1.81	291.60	10,192.2	159.9	-180.1	-158.8	0.77	0.16	-24.24
10,225.0	1.84	293.30	10,217.2	160.2	-180.8	-159.1	0.25	0.12	6.80
10,250.0	1.87	289.19	10,242.2	160.5	-181.5	-159.4	0.55	0.12	-16.44
10,275.0	1.97	286.47	10,267.2	160.7	-182.3	-159.6	0.54	0.40	-10.88
10,300.0	1.92	288.16	10,292.2	161.0	-183.2	-159.9	0.30	-0.20	6.76
10,325.0	1.99	283.22	10,317.2	161.2	-184.0	-160.1	0.73	0.28	-19.76
10,350.0	2.11	283.43	10,342.1	161.4	-184.8	-160.3	0.48	0.48	0.84
10,375.0	2.14	280.04	10,367.1	161.6	-185.8	-160.5	0.52	0.12	-13.56
10,400.0	2.15	280.38	10,392.1	161.8	-186.7	-160.7	0.06	0.04	1.36
10,425.0	2.21	278.94	10,417.1	161.9	-187.6	-160.8	0.32	0.24	-5.76
10,450.0	2.22	276.14	10,442.1	162.1	-188.6	-160.9	0.43	0.04	-11.20
10,475.0	2.20	281.42	10,467.1	162.2	-189.5	-161.1	0.82	-0.08	21.12
10,500.0	2.34	281.24	10,492.0	162.4	-190.5	-161.3	0.56	0.56	-0.72
10,525.0	2.58	280.16	10,517.0	162.6	-191.5	-161.5	0.98	0.96	-4.32
10,550.0	2.66	281.85	10,542.0	162.8	-192.7	-161.7	0.44	0.32	6.76
10,559.0	2.72	282.55	10,551.0	162.9	-193.1	-161.7	0.80	0.72	7.80
FBSG_sand									
10,575.0	2.84	283.72	10,567.0	163.1	-193.8	-161.9	0.80	0.72	7.30
10,600.0	2.96	285.47	10,591.9	163.4	-195.1	-162.2	0.60	0.48	7.00
10,625.0	2.93	286.85	10,616.9	163.8	-196.3	-162.6	0.31	-0.12	5.52
10,650.0	3.07	290.20	10,641.9	164.2	-197.5	-163.0	0.90	0.56	13.40
10,675.0	3.07	288.75	10,666.8	164.6	-198.8	-163.4	0.31	0.00	-5.80
10,700.0	3.13	293.63	10,691.8	165.1	-200.1	-163.9	1.08	0.24	19.52

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,725.0	3.18	294.81	10,716.8	165.7	-201.3	-164.5	0.33	0.20	4.72
10,750.0	3.24	296.98	10,741.7	166.3	-202.6	-165.1	0.54	0.24	8.68
10,775.0	3.16	297.00	10,766.7	166.9	-203.8	-165.7	0.32	-0.32	0.08
10,800.0	3.16	297.93	10,791.6	167.6	-205.0	-166.3	0.21	0.00	3.72
10,825.0	3.24	297.57	10,816.6	168.2	-206.3	-167.0	0.33	0.32	-1.44
10,850.0	3.00	299.62	10,841.6	168.9	-207.5	-167.6	1.06	-0.96	8.20
10,875.0	3.03	301.11	10,866.5	169.5	-208.6	-168.3	0.34	0.12	5.96
10,900.0	3.13	298.43	10,891.5	170.2	-209.8	-168.9	0.70	0.40	-10.72
10,925.0	3.07	299.23	10,916.5	170.8	-210.9	-169.6	0.30	-0.24	3.20
10,950.0	3.08	301.13	10,941.4	171.5	-212.1	-170.2	0.41	0.04	7.60
10,975.0	3.15	300.55	10,966.4	172.2	-213.3	-170.9	0.31	0.28	-2.32
11,000.0	3.25	298.28	10,991.3	172.9	-214.5	-171.6	0.65	0.40	-9.08
11,025.0	3.19	300.20	11,016.3	173.6	-215.7	-172.3	0.49	-0.24	7.68
11,050.0	3.32	300.06	11,041.3	174.3	-216.9	-173.0	0.52	0.52	-0.56
11,075.0	3.30	300.16	11,066.2	175.0	-218.2	-173.7	0.08	-0.08	0.40
11,100.0	3.31	299.16	11,091.2	175.7	-219.4	-174.4	0.23	0.04	-4.00
11,125.0	3.40	299.68	11,116.1	176.5	-220.7	-175.1	0.38	0.36	2.08
11,134.9	3.45	299.89	11,126.0	176.7	-221.2	-175.4	0.50	0.48	2.12
SBSG_sand									
11,150.0	3.52	300.20	11,141.1	177.2	-222.0	-175.9	0.50	0.48	2.05
11,175.0	3.38	297.27	11,166.0	177.9	-223.3	-176.6	0.90	-0.56	-11.72
11,200.0	3.19	302.55	11,191.0	178.6	-224.6	-177.3	1.43	-0.76	21.12
11,225.0	3.05	308.29	11,216.0	179.4	-225.7	-178.1	1.37	-0.56	22.96
11,250.0	2.88	305.59	11,240.9	180.2	-226.7	-178.8	0.88	-0.68	-10.80
11,275.0	2.90	307.15	11,265.9	181.0	-227.7	-179.6	0.32	0.08	6.24
11,300.0	2.70	304.68	11,290.9	181.7	-228.7	-180.3	0.93	-0.80	-9.88
11,325.0	2.48	305.17	11,315.8	182.3	-229.7	-180.9	0.88	-0.88	1.96
11,350.0	2.29	302.53	11,340.8	182.9	-230.5	-181.5	0.88	-0.76	-10.56
11,375.0	2.32	306.61	11,365.8	183.5	-231.3	-182.1	0.67	0.12	16.32
11,400.0	2.38	303.89	11,390.8	184.1	-232.2	-182.7	0.51	0.24	-10.88
11,425.0	2.28	303.29	11,415.8	184.6	-233.0	-183.2	0.41	-0.40	-2.40
11,450.0	2.25	301.67	11,440.7	185.2	-233.9	-183.7	0.28	-0.12	-6.48
11,475.0	2.06	301.41	11,465.7	185.6	-234.7	-184.2	0.76	-0.76	-1.04
11,500.0	1.69	293.59	11,490.7	186.0	-235.4	-184.6	1.80	-1.48	-31.28
11,525.0	0.98	273.24	11,515.7	186.2	-235.9	-184.8	3.37	-2.84	-81.40
11,550.0	0.85	251.85	11,540.7	186.1	-236.3	-184.7	1.45	-0.52	-85.56
11,575.0	0.77	242.62	11,565.7	186.0	-236.7	-184.6	0.61	-0.32	-36.92
11,580.3	0.78	241.88	11,571.0	186.0	-236.7	-184.5	0.33	0.28	-13.99
SBSG_sand_Base									
11,600.0	0.84	239.35	11,590.7	185.8	-237.0	-184.4	0.33	0.28	-12.83
11,625.0	0.85	241.33	11,615.7	185.7	-237.3	-184.2	0.12	0.04	7.92
11,650.0	1.00	233.71	11,640.7	185.4	-237.6	-184.0	0.77	0.60	-30.48
11,675.0	1.12	228.93	11,665.7	185.1	-238.0	-183.7	0.60	0.48	-19.12
11,700.0	1.31	222.60	11,690.7	184.8	-238.4	-183.3	0.93	0.76	-25.32

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,725.0	1.47	219.85	11,715.7	184.3	-238.8	-182.9	0.69	0.64	-11.00
11,750.0	1.51	219.48	11,740.7	183.8	-239.2	-182.4	0.16	0.16	-1.48
11,775.0	1.72	221.21	11,765.7	183.3	-239.6	-181.8	0.86	0.84	6.92
11,800.0	1.69	218.93	11,790.6	182.7	-240.1	-181.3	0.30	-0.12	-9.12
11,825.0	1.82	216.55	11,815.6	182.1	-240.6	-180.7	0.60	0.52	-9.52
11,850.0	1.92	217.04	11,840.6	181.5	-241.1	-180.0	0.41	0.40	1.96
11,875.0	1.89	217.31	11,865.6	180.8	-241.6	-179.3	0.13	-0.12	1.08
11,900.0	2.06	220.05	11,890.6	180.1	-242.1	-178.7	0.78	0.68	10.96
11,925.0	2.13	222.04	11,915.6	179.4	-242.7	-178.0	0.40	0.28	7.96
11,950.0	2.19	224.96	11,940.6	178.7	-243.4	-177.3	0.50	0.24	11.68
11,975.0	2.55	223.18	11,965.5	178.0	-244.1	-176.5	1.47	1.44	-7.12
12,000.0	2.52	228.21	11,990.5	177.2	-244.9	-175.8	0.90	-0.12	20.12
12,005.0	2.57	228.51	11,995.5	177.1	-245.0	-175.6	1.03	1.00	6.00
12,143.0	3.31	230.25	12,133.3	172.5	-250.4	-171.0	0.54	0.54	1.26
12,164.0	3.17	228.82	12,154.3	171.7	-251.3	-170.2	0.77	-0.67	-6.81
12,170.7	3.25	224.23	12,161.0	171.5	-251.6	-169.9	4.01	1.21	-68.24
TBSG_sand									
12,196.0	3.72	209.38	12,186.2	170.2	-252.5	-168.7	4.01	1.85	-58.76
12,227.0	6.25	178.92	12,217.1	167.7	-252.9	-166.1	11.54	8.16	-98.26
12,258.0	9.69	183.25	12,247.8	163.4	-253.1	-161.8	11.26	11.10	13.97
12,290.0	13.28	185.54	12,279.2	157.0	-253.6	-155.5	11.31	11.22	7.16
12,321.0	16.49	183.17	12,309.1	149.1	-254.2	-147.6	10.54	10.35	-7.65
12,323.7	16.78	182.77	12,311.7	148.3	-254.2	-146.8	11.57	10.74	-14.95
FTP @ 12323.7'MD, 100'FNL & 1118.9'FWL									
12,352.0	19.86	179.23	12,338.6	139.4	-254.3	-137.9	11.57	10.88	-12.50
12,383.0	23.24	178.99	12,367.4	128.0	-254.2	-126.5	10.91	10.90	-0.77
12,414.0	26.90	175.30	12,395.5	114.9	-253.5	-113.4	12.83	11.81	-11.90
12,446.0	30.31	174.04	12,423.6	99.7	-252.0	-98.2	10.82	10.66	-3.94
12,478.0	33.65	173.10	12,450.7	82.8	-250.1	-81.3	10.55	10.44	-2.94
12,509.0	36.68	173.05	12,476.0	65.1	-248.0	-63.6	9.77	9.77	-0.16
12,540.0	39.47	173.84	12,500.4	46.1	-245.8	-44.6	9.14	9.00	2.55
12,571.0	41.67	174.53	12,524.0	26.1	-243.8	-24.6	7.24	7.10	2.23
12,603.0	42.97	174.03	12,547.7	4.6	-241.6	-3.2	4.20	4.06	-1.56
12,634.0	44.59	174.30	12,570.0	-16.7	-239.4	18.1	5.26	5.23	0.87
12,665.0	46.13	173.84	12,591.8	-38.6	-237.2	40.1	5.08	4.97	-1.48
12,696.0	47.70	173.21	12,613.0	-61.1	-234.6	62.5	5.28	5.06	-2.03
12,700.5	47.94	173.10	12,616.0	-64.4	-234.2	65.8	5.60	5.31	-2.43
WFMP									
12,728.0	49.40	172.45	12,634.2	-84.9	-231.6	86.3	5.60	5.31	-2.37
12,759.0	51.13	171.87	12,654.0	-108.5	-228.4	109.9	5.76	5.58	-1.87
12,790.0	52.72	171.19	12,673.1	-132.7	-224.8	134.0	5.41	5.13	-2.19
12,822.0	54.29	169.34	12,692.1	-158.0	-220.4	159.4	6.76	4.91	-5.78
12,854.0	56.11	168.23	12,710.4	-183.8	-215.3	185.1	6.36	5.69	-3.47
12,885.0	57.96	167.73	12,727.3	-209.2	-209.9	210.5	6.12	5.97	-1.61

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,918.0	59.74	167.65	12,744.3	-236.8	-203.9	238.1	5.40	5.39	-0.24
12,950.0	62.76	167.96	12,759.7	-264.3	-197.9	265.4	9.48	9.44	0.97
12,982.0	67.86	169.39	12,773.1	-292.8	-192.2	293.9	16.45	15.94	4.47
13,013.0	72.98	171.18	12,783.5	-321.5	-187.3	322.7	17.39	16.52	5.77
13,044.0	76.97	172.17	12,791.5	-351.2	-183.0	352.2	13.24	12.87	3.19
13,076.0	81.79	172.43	12,797.4	-382.3	-178.8	383.4	15.08	15.06	0.81
13,114.0	86.69	172.85	12,801.2	-419.8	-173.9	420.8	12.94	12.89	1.11
13,146.0	87.09	172.92	12,803.0	-451.5	-170.0	452.5	1.27	1.25	0.22
13,240.0	87.76	172.84	12,807.2	-544.7	-158.3	545.6	0.72	0.71	-0.09
13,334.0	88.78	174.18	12,810.0	-638.0	-147.7	638.9	1.79	1.09	1.43
13,428.0	88.91	174.98	12,811.9	-731.6	-138.8	732.4	0.86	0.14	0.85
13,522.0	91.03	176.63	12,812.0	-825.3	-132.0	826.1	2.86	2.26	1.76
13,616.0	91.46	177.33	12,809.9	-919.2	-127.0	919.9	0.87	0.46	0.74
13,711.0	89.74	183.89	12,808.9	-1,014.1	-128.0	1,014.9	7.14	-1.81	6.91
13,805.0	88.96	185.29	12,810.0	-1,107.8	-135.5	1,108.6	1.70	-0.83	1.49
13,899.0	84.61	184.23	12,815.3	-1,201.3	-143.3	1,202.1	4.76	-4.63	-1.13
13,994.0	83.41	183.78	12,825.2	-1,295.6	-149.9	1,296.4	1.35	-1.26	-0.47
14,029.0	82.65	180.55	12,829.4	-1,330.3	-151.2	1,331.2	9.41	-2.17	-9.23
14,124.0	81.30	180.66	12,842.7	-1,424.3	-152.2	1,425.2	1.43	-1.42	0.12
14,218.0	80.59	180.20	12,857.5	-1,517.2	-152.9	1,518.0	0.90	-0.76	-0.49
14,272.0	80.61	180.00	12,866.3	-1,570.4	-153.0	1,571.3	0.37	0.04	-0.37
14,366.0	87.70	179.25	12,875.9	-1,663.9	-152.4	1,664.8	7.58	7.54	-0.80
14,461.0	87.70	179.47	12,879.7	-1,758.8	-151.3	1,759.7	0.23	0.00	0.23
14,555.0	88.50	179.80	12,882.8	-1,852.7	-150.7	1,853.6	0.92	0.85	0.35
14,648.0	88.40	179.59	12,885.3	-1,945.7	-150.2	1,946.6	0.25	-0.11	-0.23
14,742.0	88.16	179.78	12,888.1	-2,039.7	-149.7	2,040.5	0.33	-0.26	0.20
14,837.0	87.30	179.41	12,891.9	-2,134.6	-149.1	2,135.4	0.99	-0.91	-0.39
14,931.0	88.32	178.62	12,895.5	-2,228.5	-147.4	2,229.3	1.37	1.09	-0.84
15,024.0	88.05	178.38	12,898.4	-2,321.4	-145.0	2,322.3	0.39	-0.29	-0.26
15,119.0	87.39	178.21	12,902.2	-2,416.3	-142.2	2,417.1	0.72	-0.69	-0.18
15,214.0	89.37	178.28	12,904.9	-2,511.2	-139.3	2,512.0	2.09	2.08	0.07
15,309.0	87.73	178.44	12,907.3	-2,606.1	-136.6	2,606.9	1.73	-1.73	0.17
15,403.0	92.21	179.31	12,907.4	-2,700.1	-134.7	2,700.9	4.85	4.77	0.93
15,497.0	89.30	178.96	12,906.1	-2,794.1	-133.3	2,794.8	3.12	-3.10	-0.37
15,592.0	87.93	179.15	12,908.4	-2,889.0	-131.7	2,889.8	1.46	-1.44	0.20
15,686.0	88.02	178.73	12,911.7	-2,983.0	-130.0	2,983.7	0.46	0.10	-0.45
15,781.0	91.48	178.21	12,912.1	-3,077.9	-127.5	3,078.6	3.68	3.64	-0.55
15,876.0	90.40	177.58	12,910.6	-3,172.8	-124.0	3,173.5	1.32	-1.14	-0.66
15,971.0	91.26	177.03	12,909.2	-3,267.7	-119.5	3,268.4	1.07	0.91	-0.58
16,065.0	92.46	177.30	12,906.2	-3,361.5	-114.9	3,362.2	1.31	1.28	0.29
16,160.0	91.82	179.88	12,902.6	-3,456.4	-112.5	3,457.1	2.80	-0.67	2.72
16,255.0	87.25	180.15	12,903.4	-3,551.4	-112.5	3,552.0	4.82	-4.81	0.28
16,350.0	85.35	180.11	12,909.5	-3,646.2	-112.8	3,646.8	2.00	-2.00	-0.04

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,445.0	84.79	179.37	12,917.7	-3,740.9	-112.3	3,741.5	0.97	-0.59	-0.78
16,539.0	86.41	179.22	12,924.9	-3,834.6	-111.2	3,835.2	1.73	1.72	-0.16
16,634.0	87.85	179.64	12,929.6	-3,929.4	-110.2	3,930.0	1.58	1.52	0.44
16,728.0	90.02	179.73	12,931.4	-4,023.4	-109.7	4,024.0	2.31	2.31	0.10
16,823.0	92.13	180.08	12,929.6	-4,118.4	-109.6	4,119.0	2.25	2.22	0.37
16,953.0	91.38	180.09	12,925.6	-4,248.3	-109.8	4,248.9	0.58	-0.58	0.01
17,046.0	90.23	180.95	12,924.3	-4,341.3	-110.6	4,341.9	1.54	-1.24	0.92
17,141.0	91.46	181.66	12,922.9	-4,436.3	-112.8	4,436.9	1.49	1.29	0.75
17,236.0	89.63	181.29	12,922.0	-4,531.2	-115.2	4,531.9	1.97	-1.93	-0.39
17,330.0	89.45	180.99	12,922.8	-4,625.2	-117.1	4,625.8	0.37	-0.19	-0.32
17,425.0	88.73	180.12	12,924.3	-4,720.2	-118.0	4,720.8	1.19	-0.76	-0.92
17,519.0	89.22	180.02	12,926.0	-4,814.2	-118.1	4,814.8	0.53	0.52	-0.11
17,614.0	89.00	179.84	12,927.4	-4,909.2	-118.0	4,909.8	0.30	-0.23	-0.19
17,708.0	89.58	180.09	12,928.6	-5,003.2	-117.9	5,003.8	0.67	0.62	0.27
17,803.0	90.11	180.20	12,928.9	-5,098.2	-118.2	5,098.8	0.57	0.56	0.12
17,897.0	89.64	180.19	12,929.1	-5,192.2	-118.5	5,192.8	0.50	-0.50	-0.01
17,992.0	90.03	180.78	12,929.3	-5,287.2	-119.3	5,287.8	0.74	0.41	0.62
18,085.0	90.61	180.68	12,928.8	-5,380.2	-120.5	5,380.8	0.63	0.62	-0.11
18,180.0	90.81	180.21	12,927.6	-5,475.1	-121.2	5,475.8	0.54	0.21	-0.49
18,275.0	89.81	179.91	12,927.1	-5,570.1	-121.3	5,570.8	1.10	-1.05	-0.32
18,370.0	87.83	178.68	12,929.1	-5,665.1	-120.2	5,665.7	2.45	-2.08	-1.29
18,464.0	87.06	177.94	12,933.3	-5,759.0	-117.4	5,759.6	1.14	-0.82	-0.79
18,558.0	85.77	177.40	12,939.2	-5,852.7	-113.6	5,853.3	1.49	-1.37	-0.57
18,653.0	84.84	177.26	12,946.9	-5,947.3	-109.2	5,947.8	0.99	-0.98	-0.15
18,749.0	84.82	177.31	12,955.6	-6,042.8	-104.6	6,043.3	0.06	-0.02	0.05
18,843.0	85.95	177.66	12,963.1	-6,136.4	-100.5	6,136.9	1.26	1.20	0.37
18,938.0	89.38	178.24	12,967.0	-6,231.2	-97.1	6,231.7	3.66	3.61	0.61
19,033.0	91.63	179.33	12,966.2	-6,326.2	-95.1	6,326.7	2.63	2.37	1.15
19,127.0	92.08	180.16	12,963.1	-6,420.1	-94.7	6,420.6	1.00	0.48	0.88
19,222.0	92.14	181.46	12,959.6	-6,515.1	-96.0	6,515.5	1.37	0.06	1.37
19,317.0	92.31	182.70	12,955.9	-6,609.9	-99.5	6,610.4	1.32	0.18	1.31
19,411.0	92.32	182.45	12,952.1	-6,703.8	-103.7	6,704.3	0.27	0.01	-0.27
19,506.0	91.45	180.69	12,949.0	-6,798.7	-106.3	6,799.2	2.07	-0.92	-1.85
19,600.0	92.29	180.22	12,946.0	-6,892.6	-107.0	6,893.1	1.02	0.89	-0.50
19,695.0	91.07	180.23	12,943.2	-6,987.6	-107.4	6,988.1	1.28	-1.28	0.01
19,790.0	90.87	180.11	12,941.6	-7,082.6	-107.7	7,083.1	0.25	-0.21	-0.13
19,885.0	90.98	179.53	12,940.0	-7,177.5	-107.4	7,178.1	0.62	0.12	-0.61
19,979.0	91.09	179.46	12,938.3	-7,271.5	-106.6	7,272.0	0.14	0.12	-0.07
20,074.0	91.11	179.69	12,936.5	-7,366.5	-105.9	7,367.0	0.24	0.02	0.24
20,169.0	89.93	180.41	12,935.6	-7,461.5	-106.0	7,462.0	1.46	-1.24	0.76
20,264.0	89.00	179.11	12,936.5	-7,556.5	-105.6	7,557.0	1.68	-0.98	-1.37
20,359.0	89.15	177.21	12,938.1	-7,651.4	-102.5	7,651.9	2.01	0.16	-2.00
20,453.0	89.92	177.30	12,938.8	-7,745.3	-98.0	7,745.8	0.82	0.82	0.10
20,548.0	90.05	177.67	12,938.9	-7,840.2	-93.8	7,840.6	0.41	0.14	0.39

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,643.0	90.14	178.96	12,938.7	-7,935.2	-91.0	7,935.6	1.36	0.09	1.36
20,738.0	89.97	180.19	12,938.6	-8,030.2	-90.3	8,030.6	1.31	-0.18	1.29
20,833.0	89.89	181.05	12,938.7	-8,125.2	-91.4	8,125.6	0.91	-0.08	0.91
20,928.0	90.03	181.67	12,938.8	-8,220.1	-93.6	8,220.6	0.67	0.15	0.65
21,023.0	89.83	180.04	12,938.9	-8,315.1	-95.0	8,315.6	1.73	-0.21	-1.72
21,118.0	89.89	176.58	12,939.1	-8,410.1	-92.2	8,410.5	3.64	0.06	-3.64
21,212.0	90.10	176.06	12,939.1	-8,503.9	-86.2	8,504.2	0.60	0.22	-0.55
21,307.0	90.05	177.07	12,939.0	-8,598.7	-80.5	8,599.0	1.06	-0.05	1.06
21,402.0	90.09	178.43	12,938.9	-8,693.6	-76.8	8,693.9	1.43	0.04	1.43
21,497.0	90.13	179.15	12,938.7	-8,788.6	-74.8	8,788.9	0.76	0.04	0.76
21,591.0	89.78	179.63	12,938.8	-8,882.6	-73.8	8,882.9	0.63	-0.37	0.51
21,686.0	89.14	179.96	12,939.7	-8,977.6	-73.4	8,977.9	0.76	-0.67	0.35
21,780.0	88.10	180.45	12,942.0	-9,071.6	-73.8	9,071.8	1.22	-1.11	0.52
21,875.0	88.19	182.43	12,945.0	-9,166.5	-76.2	9,166.8	2.09	0.09	2.08
21,969.0	88.99	182.51	12,947.3	-9,260.4	-80.2	9,260.7	0.86	0.85	0.09
22,063.0	89.09	182.47	12,948.9	-9,354.3	-84.3	9,354.6	0.11	0.11	-0.04
22,158.0	88.97	180.69	12,950.5	-9,449.2	-86.9	9,449.6	1.88	-0.13	-1.87
22,249.0	89.94	179.23	12,951.4	-9,540.2	-86.8	9,540.6	1.93	1.07	-1.60
22,340.0	91.09	178.05	12,950.6	-9,631.2	-84.7	9,631.5	1.81	1.26	-1.30
22,431.0	89.72	176.53	12,949.9	-9,722.1	-80.4	9,722.4	2.25	-1.51	-1.67
22,522.0	90.40	178.56	12,949.8	-9,813.0	-76.5	9,813.3	2.35	0.75	2.23
22,614.0	89.91	181.36	12,949.6	-9,905.0	-76.4	9,905.2	3.09	-0.53	3.04
22,705.0	91.24	182.05	12,948.7	-9,995.9	-79.1	9,996.2	1.65	1.46	0.76
22,795.0	90.12	180.48	12,947.6	-10,085.9	-81.1	10,086.2	2.14	-1.24	-1.74
22,887.0	89.86	179.24	12,947.6	-10,177.9	-80.9	10,178.2	1.38	-0.28	-1.35
22,914.4	89.83	179.01	12,947.7	-10,205.3	-80.5	10,205.6	0.85	-0.10	-0.84
LTP @ 22914.4'MD, 100'FSL & 1218.3'FWL									
22,937.0	89.81	178.82	12,947.8	-10,227.9	-80.0	10,228.2	0.85	-0.10	-0.84
LAST SVY									
22,964.0	89.81	178.82	12,947.9	-10,254.9	-79.5	10,255.2	0.00	0.00	0.00
Projection to TD @ 22964'MD, 50.4'FNL & 1218.9'FWL									

Company:	Concho Resources, Inc.	Local Co-ordinate Reference:	Well Brot Helm Federal Com #703H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 3440.9usft (Latshaw 44)
Site:	(Brot Helm) Sec-35_T-24-S_R-34-E	MD Reference:	KB @ 3440.9usft (Latshaw 44)
Well:	Brot Helm Federal Com #703H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Brot Helm Feder - actual wellpath misses target center by 284.4usft at 12670.8usft MD (12595.9 TVD, -42.8 N, -236.7 E) - Point	0.00	0.00	12,790.0	149.0	-156.8	430,671.30	777,524.30	32° 10' 51.066 N	103° 26' 10.785 W
PBHL (Brot Helm Fed - actual wellpath misses target center by 17.9usft at 22964.0usft MD (12947.9 TVD, -10254.9 N, -79.5 E) - Rectangle (sides W60.0 H2,862.3 D30.0)	0.33	179.48	12,950.0	-10,255.2	-61.7	420,267.10	777,619.40	32° 9' 8.106 N	103° 26' 10.688 W
LTP (Brot Helm Feder - actual wellpath misses target center by 18.5usft at 22914.8usft MD (12947.7 TVD, -10205.7 N, -80.5 E) - Point	0.00	0.00	12,950.0	-10,205.3	-62.1	420,317.00	777,619.00	32° 9' 8.600 N	103° 26' 10.687 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
902.1	902.0	Rustler			
1,444.1	1,444.0	TOS			
5,225.9	5,219.0	BOS (Fletcher)			
5,505.9	5,499.0	LMAR (Top Delaware)			
5,545.9	5,539.0	BLCN			
6,526.2	6,519.0	CYCN			
8,156.3	8,149.0	BYCN			
9,378.4	9,371.0	Bone Sprg (BSGL)			
10,559.0	10,551.0	FBSG_sand			
11,134.9	11,126.0	SBSG_sand			
11,580.3	11,571.0	SBSG_sand_Base			
12,170.7	12,161.0	TBSG_sand			
12,700.5	12,616.0	WFMP			

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,323.7	12,311.7	148.3	-254.2	FTP @ 12323.7'MD, 100'FNL & 1118.9'FWL
22,914.4	12,947.7	-10,205.3	-80.5	LTP @ 22914.4'MD, 100'FSL & 1218.3'FWL
22,937.0	12,947.8	-10,227.9	-80.0	LAST SVY
22,964.0	12,947.9	-10,254.9	-79.5	Projection to TD @ 22964'MD, 50.4'FNL & 1218.9'FWL

Checked By: _____ Approved By: _____ Date: _____