



30-025-43838

Concho Operating

Lea County, NM (Nad 27)

Stove Pipe Federal Com

Stove Pipe FC 1H

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

17 August, 2017

Provide signature page for
directional survey



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Project	Lea County, NM (Nad 27)		
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	Stove Pipe Federal Com			
Site Position:		Northing:	425,164.50 usft	Latitude: 32.165°N
From: Map		Easting:	789,052.00 usft	Longitude: 103.399°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.50 °

Well	Stove Pipe FC 1H			
Well Position	+N/-S	0.00 ft	Northing:	425,164.50 usft
	+E/-W	0.00 ft	Easting:	789,052.00 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft
			Ground Level:	3,295.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/16/2017	6.87	60.04	47,922.66709996

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	179.59	

Survey Program	Date 8/17/2017				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
100.00	11,780.00	Keeper Gyro (Wellbore #1)	Keeper	Keeper Standard Rate Gyro	
11,915.00	22,017.00	DrilTech MWD (Wellbore #1)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	425,164.50	789,052.00	32.165°N	103.399°W
100.00	0.24	237.69	100.00	-0.11	-0.18	425,164.39	789,051.82	32.165°N	103.399°W
100'MD: Begin Scientific Keeper Gyro									
125.00	0.21	225.64	125.00	-0.17	-0.25	425,164.33	789,051.74	32.165°N	103.399°W
150.00	0.27	230.39	150.00	-0.24	-0.33	425,164.26	789,051.67	32.165°N	103.399°W
175.00	0.41	248.66	175.00	-0.31	-0.46	425,164.19	789,051.54	32.165°N	103.399°W
200.00	0.18	301.20	200.00	-0.32	-0.58	425,164.18	789,051.42	32.165°N	103.399°W
225.00	0.19	325.59	225.00	-0.27	-0.63	425,164.23	789,051.36	32.165°N	103.399°W
250.00	0.24	351.75	250.00	-0.18	-0.67	425,164.32	789,051.33	32.165°N	103.399°W
275.00	0.22	352.08	275.00	-0.08	-0.68	425,164.42	789,051.32	32.165°N	103.399°W
300.00	0.23	358.33	300.00	0.01	-0.69	425,164.51	789,051.31	32.165°N	103.399°W



Survey Report - Geographic

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Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
325.00	0.26	353.10	325.00	0.12	-0.70	425,164.62	789,051.30	32.165°N	103.399°W
350.00	0.27	355.39	350.00	0.24	-0.71	425,164.73	789,051.29	32.165°N	103.399°W
375.00	0.28	348.71	375.00	0.35	-0.72	425,164.85	789,051.27	32.165°N	103.399°W
400.00	0.32	349.26	400.00	0.48	-0.75	425,164.98	789,051.25	32.165°N	103.399°W
425.00	0.28	0.55	425.00	0.61	-0.76	425,165.11	789,051.24	32.165°N	103.399°W
450.00	0.34	14.38	450.00	0.74	-0.74	425,165.24	789,051.25	32.165°N	103.399°W
475.00	0.35	1.65	475.00	0.89	-0.72	425,165.39	789,051.28	32.165°N	103.399°W
500.00	0.39	3.61	500.00	1.05	-0.71	425,165.55	789,051.28	32.165°N	103.399°W
525.00	0.41	5.34	524.99	1.23	-0.70	425,165.73	789,051.30	32.165°N	103.399°W
550.00	0.41	357.87	549.99	1.41	-0.70	425,165.91	789,051.30	32.165°N	103.399°W
575.00	0.33	10.74	574.99	1.57	-0.69	425,166.07	789,051.31	32.165°N	103.399°W
600.00	0.49	1.65	599.99	1.74	-0.67	425,166.24	789,051.33	32.165°N	103.399°W
625.00	0.47	8.32	624.99	1.95	-0.65	425,166.45	789,051.35	32.165°N	103.399°W
650.00	0.43	12.43	649.99	2.15	-0.62	425,166.65	789,051.38	32.165°N	103.399°W
675.00	0.43	21.46	674.99	2.32	-0.56	425,166.82	789,051.44	32.165°N	103.399°W
700.00	0.48	13.28	699.99	2.51	-0.50	425,167.01	789,051.49	32.165°N	103.399°W
725.00	0.48	10.23	724.99	2.72	-0.46	425,167.22	789,051.54	32.165°N	103.399°W
750.00	0.41	359.62	749.99	2.91	-0.44	425,167.41	789,051.55	32.165°N	103.399°W
775.00	0.51	6.06	774.99	3.11	-0.43	425,167.61	789,051.57	32.165°N	103.399°W
800.00	0.57	12.60	799.99	3.34	-0.39	425,167.84	789,051.60	32.165°N	103.399°W
825.00	0.52	6.72	824.98	3.58	-0.35	425,168.08	789,051.65	32.165°N	103.399°W
850.00	0.73	11.22	849.98	3.85	-0.31	425,168.35	789,051.69	32.165°N	103.399°W
875.00	0.86	10.99	874.98	4.19	-0.24	425,168.69	789,051.76	32.165°N	103.399°W
900.00	0.91	8.32	899.98	4.57	-0.18	425,169.07	789,051.82	32.165°N	103.399°W
925.00	0.93	22.45	924.97	4.95	-0.07	425,169.45	789,051.93	32.165°N	103.399°W
950.00	0.91	4.85	949.97	5.34	0.02	425,169.84	789,052.02	32.165°N	103.399°W
975.00	0.93	9.16	974.97	5.73	0.07	425,170.23	789,052.07	32.165°N	103.399°W
1,000.00	0.94	11.13	999.97	6.14	0.14	425,170.64	789,052.14	32.165°N	103.399°W
1,025.00	0.88	7.09	1,024.96	6.53	0.21	425,171.03	789,052.21	32.165°N	103.399°W
1,050.00	1.02	12.08	1,049.96	6.94	0.28	425,171.44	789,052.28	32.165°N	103.399°W
1,075.00	0.97	20.00	1,074.95	7.35	0.40	425,171.85	789,052.39	32.165°N	103.399°W
1,100.00	1.03	38.49	1,099.95	7.73	0.61	425,172.23	789,052.61	32.165°N	103.399°W
1,125.00	1.19	48.04	1,124.95	8.08	0.94	425,172.58	789,052.94	32.165°N	103.399°W
1,150.00	1.28	57.49	1,149.94	8.40	1.37	425,172.90	789,053.37	32.165°N	103.399°W
1,175.00	1.19	53.40	1,174.93	8.71	1.81	425,173.20	789,053.81	32.165°N	103.399°W
1,200.00	1.20	56.64	1,199.93	9.00	2.24	425,173.50	789,054.24	32.165°N	103.399°W
1,225.00	1.39	64.20	1,224.92	9.28	2.73	425,173.78	789,054.73	32.165°N	103.399°W
1,250.00	1.18	56.32	1,249.92	9.55	3.22	425,174.05	789,055.22	32.165°N	103.399°W
1,275.00	1.32	65.26	1,274.91	9.82	3.70	425,174.32	789,055.69	32.165°N	103.399°W
1,300.00	1.26	61.37	1,299.90	10.07	4.20	425,174.57	789,056.20	32.165°N	103.399°W
1,325.00	1.28	60.61	1,324.90	10.34	4.68	425,174.84	789,056.68	32.165°N	103.399°W
1,350.00	1.43	64.63	1,349.89	10.61	5.21	425,175.11	789,057.21	32.165°N	103.399°W
1,375.00	1.28	60.90	1,374.88	10.88	5.73	425,175.38	789,057.73	32.165°N	103.399°W
1,400.00	1.39	61.74	1,399.88	11.16	6.25	425,175.66	789,058.24	32.165°N	103.399°W
1,425.00	1.38	65.21	1,424.87	11.43	6.79	425,175.93	789,058.78	32.165°N	103.399°W
1,450.00	1.34	66.34	1,449.86	11.67	7.33	425,176.17	789,059.32	32.165°N	103.399°W
1,475.00	1.33	80.96	1,474.86	11.83	7.88	425,176.33	789,059.88	32.165°N	103.399°W
1,500.00	1.31	88.37	1,499.85	11.89	8.45	425,176.39	789,060.45	32.165°N	103.399°W
1,525.00	1.21	90.98	1,524.84	11.89	9.00	425,176.39	789,061.00	32.165°N	103.399°W
1,550.00	1.32	101.51	1,549.84	11.83	9.55	425,176.33	789,061.55	32.165°N	103.399°W
1,575.00	1.21	100.68	1,574.83	11.72	10.09	425,176.22	789,062.09	32.165°N	103.399°W
1,600.00	1.32	100.51	1,599.83	11.62	10.63	425,176.12	789,062.63	32.165°N	103.399°W
1,625.00	1.32	101.99	1,624.82	11.51	11.20	425,176.01	789,063.20	32.165°N	103.399°W
1,650.00	1.24	100.79	1,649.81	11.40	11.75	425,175.90	789,063.74	32.165°N	103.399°W
1,675.00	1.28	102.73	1,674.81	11.29	12.28	425,175.79	789,064.28	32.165°N	103.399°W



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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,700.00	1.31	103.14	1,699.80	11.16	12.83	425,175.66	789,064.83	32.165°N	103.399°W
1,725.00	1.35	102.99	1,724.79	11.03	13.40	425,175.53	789,065.40	32.165°N	103.399°W
1,750.00	1.30	105.07	1,749.79	10.89	13.96	425,175.39	789,065.96	32.165°N	103.399°W
1,775.00	1.44	105.25	1,774.78	10.73	14.54	425,175.23	789,066.53	32.165°N	103.399°W
1,800.00	1.29	103.54	1,799.77	10.58	15.11	425,175.08	789,067.11	32.165°N	103.399°W
1,825.00	1.38	102.79	1,824.77	10.45	15.68	425,174.95	789,067.68	32.165°N	103.399°W
1,850.00	1.43	101.60	1,849.76	10.32	16.28	425,174.82	789,068.28	32.165°N	103.399°W
1,875.00	1.36	106.09	1,874.75	10.18	16.87	425,174.68	789,068.87	32.165°N	103.399°W
1,900.00	1.38	102.76	1,899.74	10.03	17.45	425,174.53	789,069.45	32.165°N	103.399°W
1,925.00	1.34	100.64	1,924.74	9.91	18.03	425,174.41	789,070.03	32.165°N	103.399°W
1,950.00	1.33	95.81	1,949.73	9.83	18.61	425,174.32	789,070.60	32.165°N	103.399°W
1,975.00	1.22	87.34	1,974.72	9.81	19.16	425,174.31	789,071.16	32.165°N	103.399°W
2,000.00	1.27	85.22	1,999.72	9.84	19.70	425,174.34	789,071.70	32.165°N	103.399°W
2,025.00	1.51	82.82	2,024.71	9.91	20.31	425,174.41	789,072.30	32.165°N	103.399°W
2,050.00	1.42	83.84	2,049.70	9.98	20.94	425,174.48	789,072.94	32.165°N	103.399°W
2,075.00	1.44	83.73	2,074.69	10.05	21.56	425,174.55	789,073.56	32.165°N	103.399°W
2,100.00	1.36	84.13	2,099.69	10.11	22.17	425,174.61	789,074.17	32.165°N	103.399°W
2,125.00	1.37	83.60	2,124.68	10.18	22.76	425,174.68	789,074.76	32.165°N	103.399°W
2,150.00	1.41	84.25	2,149.67	10.24	23.36	425,174.74	789,075.36	32.165°N	103.399°W
2,175.00	1.37	84.83	2,174.67	10.30	23.97	425,174.80	789,075.96	32.165°N	103.399°W
2,200.00	1.46	85.12	2,199.66	10.35	24.58	425,174.85	789,076.58	32.165°N	103.399°W
2,225.00	1.50	83.48	2,224.65	10.42	25.22	425,174.92	789,077.22	32.165°N	103.399°W
2,250.00	1.30	90.06	2,249.64	10.46	25.83	425,174.95	789,077.83	32.165°N	103.399°W
2,275.00	1.39	85.19	2,274.63	10.48	26.42	425,174.98	789,078.42	32.165°N	103.399°W
2,300.00	1.41	87.05	2,299.63	10.52	27.03	425,175.02	789,079.03	32.165°N	103.399°W
2,325.00	1.47	86.40	2,324.62	10.56	27.66	425,175.06	789,079.65	32.165°N	103.399°W
2,350.00	1.50	85.38	2,349.61	10.60	28.30	425,175.10	789,080.30	32.165°N	103.399°W
2,375.00	1.53	87.25	2,374.60	10.65	28.96	425,175.15	789,080.96	32.165°N	103.399°W
2,400.00	1.46	85.92	2,399.59	10.69	29.61	425,175.18	789,081.61	32.165°N	103.399°W
2,425.00	1.47	86.83	2,424.59	10.73	30.25	425,175.23	789,082.25	32.165°N	103.399°W
2,450.00	1.47	86.60	2,449.58	10.76	30.89	425,175.26	789,082.89	32.165°N	103.399°W
2,475.00	1.43	87.46	2,474.57	10.80	31.52	425,175.29	789,083.52	32.165°N	103.399°W
2,500.00	1.50	87.73	2,499.56	10.82	32.16	425,175.32	789,084.16	32.165°N	103.399°W
2,525.00	1.42	90.41	2,524.55	10.83	32.80	425,175.33	789,084.79	32.165°N	103.399°W
2,550.00	1.35	91.57	2,549.55	10.82	33.40	425,175.32	789,085.40	32.165°N	103.399°W
2,575.00	1.37	92.13	2,574.54	10.80	33.99	425,175.30	789,085.99	32.165°N	103.399°W
2,600.00	1.34	93.92	2,599.53	10.77	34.58	425,175.27	789,086.58	32.165°N	103.399°W
2,625.00	1.37	89.74	2,624.52	10.75	35.17	425,175.25	789,087.17	32.165°N	103.399°W
2,650.00	1.41	92.17	2,649.52	10.74	35.78	425,175.24	789,087.78	32.165°N	103.399°W
2,675.00	1.28	90.05	2,674.51	10.73	36.37	425,175.23	789,088.37	32.165°N	103.399°W
2,700.00	1.17	97.13	2,699.50	10.70	36.90	425,175.20	789,088.90	32.165°N	103.399°W
2,725.00	1.08	83.32	2,724.50	10.70	37.39	425,175.19	789,089.39	32.165°N	103.399°W
2,750.00	1.08	85.37	2,749.50	10.74	37.86	425,175.24	789,089.85	32.165°N	103.399°W
2,775.00	0.82	76.72	2,774.49	10.80	38.27	425,175.30	789,090.26	32.165°N	103.399°W
2,800.00	0.75	68.77	2,799.49	10.90	38.59	425,175.40	789,090.59	32.165°N	103.399°W
2,825.00	0.86	67.64	2,824.49	11.03	38.92	425,175.53	789,090.92	32.165°N	103.399°W
2,850.00	0.89	59.63	2,849.48	11.20	39.26	425,175.70	789,091.26	32.165°N	103.399°W
2,875.00	0.71	64.58	2,874.48	11.37	39.57	425,175.87	789,091.56	32.165°N	103.399°W
2,900.00	0.78	64.03	2,899.48	11.51	39.86	425,176.01	789,091.86	32.165°N	103.399°W
2,925.00	0.77	66.59	2,924.48	11.65	40.17	425,176.15	789,092.16	32.165°N	103.399°W
2,950.00	0.83	60.93	2,949.48	11.80	40.48	425,176.30	789,092.48	32.165°N	103.399°W
2,975.00	1.00	78.71	2,974.47	11.93	40.85	425,176.43	789,092.85	32.165°N	103.399°W
3,000.00	0.96	65.62	2,999.47	12.06	41.26	425,176.56	789,093.25	32.165°N	103.399°W
3,025.00	1.04	68.84	3,024.46	12.23	41.66	425,176.73	789,093.66	32.165°N	103.399°W
3,050.00	1.03	64.97	3,049.46	12.41	42.07	425,176.91	789,094.07	32.165°N	103.399°W



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Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,075.00	1.00	70.63	3,074.46	12.58	42.48	425,177.08	789,094.48	32.165°N	103.399°W
3,100.00	0.94	55.02	3,099.45	12.77	42.86	425,177.27	789,094.85	32.165°N	103.399°W
3,125.00	1.28	64.12	3,124.45	13.01	43.28	425,177.51	789,095.27	32.165°N	103.399°W
3,150.00	1.39	65.53	3,149.44	13.25	43.80	425,177.75	789,095.80	32.165°N	103.399°W
3,175.00	1.36	65.49	3,174.43	13.50	44.35	425,178.00	789,096.35	32.165°N	103.399°W
3,200.00	1.26	69.19	3,199.43	13.72	44.88	425,178.22	789,096.87	32.165°N	103.399°W
3,225.00	1.35	66.15	3,224.42	13.94	45.40	425,178.44	789,097.40	32.165°N	103.399°W
3,250.00	1.32	59.23	3,249.41	14.21	45.92	425,178.71	789,097.92	32.165°N	103.399°W
3,275.00	1.36	48.90	3,274.41	14.55	46.39	425,179.05	789,098.39	32.165°N	103.399°W
3,300.00	1.39	48.30	3,299.40	14.94	46.84	425,179.44	789,098.84	32.165°N	103.399°W
3,325.00	1.25	44.91	3,324.39	15.34	47.26	425,179.84	789,099.26	32.165°N	103.399°W
3,350.00	1.45	44.63	3,349.39	15.76	47.67	425,180.26	789,099.67	32.165°N	103.399°W
3,375.00	1.41	46.25	3,374.38	16.20	48.12	425,180.70	789,100.12	32.165°N	103.399°W
3,400.00	1.39	46.44	3,399.37	16.62	48.56	425,181.12	789,100.56	32.165°N	103.399°W
3,425.00	1.40	41.83	3,424.36	17.05	48.98	425,181.55	789,100.98	32.165°N	103.399°W
3,450.00	1.50	44.62	3,449.36	17.51	49.42	425,182.01	789,101.41	32.165°N	103.399°W
3,475.00	1.40	45.51	3,474.35	17.96	49.86	425,182.46	789,101.86	32.165°N	103.399°W
3,500.00	1.43	46.31	3,499.34	18.39	50.31	425,182.89	789,102.31	32.165°N	103.399°W
3,525.00	1.40	46.42	3,524.33	18.82	50.75	425,183.32	789,102.75	32.165°N	103.399°W
3,550.00	1.44	47.58	3,549.33	19.24	51.21	425,183.74	789,103.21	32.165°N	103.399°W
3,575.00	1.33	45.04	3,574.32	19.66	51.64	425,184.16	789,103.64	32.165°N	103.399°W
3,600.00	1.44	46.86	3,599.31	20.08	52.08	425,184.58	789,104.08	32.165°N	103.399°W
3,625.00	1.49	44.76	3,624.30	20.52	52.54	425,185.02	789,104.54	32.165°N	103.399°W
3,650.00	1.45	48.95	3,649.29	20.96	53.00	425,185.46	789,105.00	32.166°N	103.399°W
3,675.00	1.41	44.96	3,674.29	21.39	53.46	425,185.88	789,105.46	32.166°N	103.399°W
3,700.00	1.21	34.77	3,699.28	21.82	53.83	425,186.32	789,105.83	32.166°N	103.399°W
3,725.00	1.26	37.07	3,724.27	22.26	54.14	425,186.76	789,106.14	32.166°N	103.399°W
3,750.00	1.23	34.84	3,749.27	22.70	54.46	425,187.20	789,106.46	32.166°N	103.399°W
3,775.00	1.14	32.89	3,774.26	23.12	54.75	425,187.62	789,106.75	32.166°N	103.399°W
3,800.00	1.13	30.49	3,799.26	23.55	55.01	425,188.05	789,107.01	32.166°N	103.399°W
3,825.00	0.84	25.28	3,824.25	23.92	55.22	425,188.42	789,107.21	32.166°N	103.399°W
3,850.00	0.96	21.42	3,849.25	24.28	55.37	425,188.78	789,107.37	32.166°N	103.399°W
3,875.00	0.87	10.26	3,874.25	24.67	55.48	425,189.17	789,107.48	32.166°N	103.399°W
3,900.00	0.80	11.51	3,899.25	25.02	55.55	425,189.52	789,107.55	32.166°N	103.399°W
3,925.00	0.77	4.64	3,924.24	25.36	55.60	425,189.86	789,107.60	32.166°N	103.399°W
3,950.00	0.92	9.89	3,949.24	25.73	55.65	425,190.23	789,107.64	32.166°N	103.399°W
3,975.00	0.89	10.60	3,974.24	26.12	55.72	425,190.62	789,107.71	32.166°N	103.399°W
4,000.00	0.92	5.53	3,999.23	26.51	55.77	425,191.01	789,107.77	32.166°N	103.399°W
4,025.00	0.79	9.67	4,024.23	26.88	55.82	425,191.38	789,107.82	32.166°N	103.399°W
4,050.00	0.61	34.82	4,049.23	27.16	55.92	425,191.66	789,107.92	32.166°N	103.399°W
4,075.00	0.69	41.73	4,074.23	27.38	56.10	425,191.88	789,108.10	32.166°N	103.399°W
4,100.00	0.64	47.00	4,099.23	27.58	56.30	425,192.08	789,108.30	32.166°N	103.399°W
4,125.00	0.65	42.30	4,124.22	27.79	56.50	425,192.28	789,108.50	32.166°N	103.399°W
4,150.00	0.51	44.65	4,149.22	27.97	56.67	425,192.47	789,108.67	32.166°N	103.399°W
4,175.00	0.61	20.22	4,174.22	28.17	56.80	425,192.67	789,108.80	32.166°N	103.399°W
4,200.00	0.59	44.62	4,199.22	28.39	56.93	425,192.89	789,108.93	32.166°N	103.399°W
4,225.00	0.64	45.22	4,224.22	28.58	57.12	425,193.08	789,109.12	32.166°N	103.399°W
4,250.00	0.67	43.59	4,249.22	28.78	57.32	425,193.28	789,109.32	32.166°N	103.399°W
4,275.00	0.73	47.06	4,274.22	29.00	57.54	425,193.50	789,109.54	32.166°N	103.399°W
4,300.00	1.04	44.06	4,299.21	29.27	57.82	425,193.77	789,109.81	32.166°N	103.399°W
4,325.00	1.13	47.77	4,324.21	29.60	58.16	425,194.10	789,110.15	32.166°N	103.399°W
4,350.00	1.38	51.69	4,349.20	29.95	58.57	425,194.45	789,110.57	32.166°N	103.399°W
4,375.00	1.50	53.15	4,374.19	30.33	59.07	425,194.83	789,111.07	32.166°N	103.399°W
4,400.00	1.71	58.26	4,399.18	30.73	59.65	425,195.23	789,111.65	32.166°N	103.399°W
4,425.00	1.86	57.90	4,424.17	31.14	60.31	425,195.64	789,112.31	32.166°N	103.399°W



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,450.00	1.85	57.97	4,449.16	31.57	61.00	425,196.07	789,113.00	32.166°N	103.399°W
4,475.00	1.98	62.10	4,474.15	31.98	61.72	425,196.48	789,113.72	32.166°N	103.399°W
4,500.00	2.07	64.29	4,499.13	32.38	62.51	425,196.88	789,114.51	32.166°N	103.399°W
4,525.00	2.00	66.03	4,524.11	32.75	63.32	425,197.25	789,115.31	32.166°N	103.399°W
4,550.00	2.24	71.04	4,549.10	33.09	64.18	425,197.59	789,116.17	32.166°N	103.399°W
4,575.00	2.15	71.04	4,574.08	33.40	65.08	425,197.90	789,117.08	32.166°N	103.399°W
4,600.00	2.17	70.47	4,599.06	33.71	65.97	425,198.21	789,117.97	32.166°N	103.399°W
4,625.00	2.26	70.61	4,624.04	34.03	66.88	425,198.53	789,118.88	32.166°N	103.399°W
4,650.00	2.12	70.69	4,649.02	34.35	67.78	425,198.85	789,119.78	32.166°N	103.399°W
4,675.00	2.10	66.66	4,674.01	34.69	68.64	425,199.18	789,120.64	32.166°N	103.399°W
4,700.00	1.57	55.29	4,698.99	35.06	69.34	425,199.56	789,121.34	32.166°N	103.399°W
4,725.00	1.30	49.76	4,723.99	35.44	69.84	425,199.94	789,121.84	32.166°N	103.399°W
4,750.00	1.24	45.41	4,748.98	35.81	70.25	425,200.31	789,122.25	32.166°N	103.399°W
4,775.00	1.25	41.95	4,773.97	36.21	70.63	425,200.71	789,122.62	32.166°N	103.399°W
4,800.00	1.23	58.24	4,798.97	36.55	71.04	425,201.05	789,123.03	32.166°N	103.399°W
4,825.00	1.29	55.94	4,823.96	36.85	71.50	425,201.35	789,123.49	32.166°N	103.399°W
4,850.00	1.50	60.78	4,848.96	37.17	72.02	425,201.67	789,124.01	32.166°N	103.399°W
4,875.00	1.89	68.32	4,873.94	37.48	72.68	425,201.98	789,124.68	32.166°N	103.399°W
4,900.00	2.05	76.43	4,898.93	37.74	73.50	425,202.23	789,125.50	32.166°N	103.399°W
4,925.00	1.91	75.11	4,923.91	37.95	74.34	425,202.45	789,126.34	32.166°N	103.399°W
4,950.00	1.92	79.73	4,948.90	38.13	75.15	425,202.63	789,127.15	32.166°N	103.399°W
4,975.00	1.88	84.93	4,973.89	38.24	75.98	425,202.74	789,127.97	32.166°N	103.399°W
5,000.00	1.94	88.94	4,998.87	38.28	76.81	425,202.78	789,128.80	32.166°N	103.399°W
5,025.00	1.85	92.13	5,023.86	38.28	77.63	425,202.78	789,129.63	32.166°N	103.399°W
5,050.00	1.94	94.96	5,048.85	38.23	78.46	425,202.72	789,130.46	32.166°N	103.399°W
5,075.00	1.66	95.13	5,073.83	38.16	79.24	425,202.66	789,131.24	32.166°N	103.399°W
5,100.00	1.48	95.35	5,098.82	38.09	79.92	425,202.59	789,131.92	32.166°N	103.399°W
5,125.00	1.35	99.76	5,123.82	38.01	80.53	425,202.51	789,132.53	32.166°N	103.399°W
5,150.00	0.97	93.12	5,148.81	37.95	81.04	425,202.45	789,133.03	32.166°N	103.399°W
5,175.00	0.50	67.90	5,173.81	37.98	81.35	425,202.48	789,133.35	32.166°N	103.399°W
5,200.00	0.37	38.25	5,198.81	38.09	81.50	425,202.59	789,133.50	32.166°N	103.399°W
5,225.00	0.37	27.88	5,223.81	38.22	81.59	425,202.72	789,133.58	32.166°N	103.399°W
5,250.00	0.37	32.35	5,248.81	38.36	81.67	425,202.86	789,133.66	32.166°N	103.399°W
5,275.00	0.48	28.15	5,273.81	38.52	81.76	425,203.02	789,133.76	32.166°N	103.399°W
5,300.00	0.47	30.89	5,298.81	38.70	81.86	425,203.20	789,133.86	32.166°N	103.399°W
5,325.00	0.32	30.13	5,323.81	38.85	81.95	425,203.35	789,133.95	32.166°N	103.399°W
5,350.00	0.36	22.74	5,348.80	38.98	82.02	425,203.48	789,134.01	32.166°N	103.399°W
5,375.00	0.35	56.49	5,373.80	39.10	82.11	425,203.60	789,134.11	32.166°N	103.399°W
5,400.00	0.24	8.82	5,398.80	39.19	82.18	425,203.69	789,134.18	32.166°N	103.399°W
5,425.00	0.24	48.87	5,423.80	39.28	82.23	425,203.78	789,134.23	32.166°N	103.399°W
5,450.00	0.21	25.94	5,448.80	39.35	82.29	425,203.85	789,134.29	32.166°N	103.399°W
5,475.00	0.24	37.99	5,473.80	39.44	82.34	425,203.93	789,134.34	32.166°N	103.399°W
5,500.00	0.18	12.45	5,498.80	39.51	82.38	425,204.01	789,134.38	32.166°N	103.399°W
5,525.00	0.27	51.89	5,523.80	39.59	82.44	425,204.09	789,134.43	32.166°N	103.399°W
5,550.00	0.26	48.76	5,548.80	39.66	82.52	425,204.16	789,134.52	32.166°N	103.399°W
5,575.00	0.23	54.93	5,573.80	39.73	82.61	425,204.23	789,134.61	32.166°N	103.399°W
5,600.00	0.10	57.51	5,598.80	39.77	82.67	425,204.27	789,134.67	32.166°N	103.399°W
5,625.00	0.23	29.68	5,623.80	39.83	82.71	425,204.32	789,134.71	32.166°N	103.399°W
5,650.00	0.33	7.98	5,648.80	39.94	82.75	425,204.44	789,134.74	32.166°N	103.399°W
5,675.00	0.32	37.65	5,673.80	40.07	82.80	425,204.57	789,134.80	32.166°N	103.399°W
5,700.00	0.18	36.78	5,698.80	40.15	82.86	425,204.65	789,134.86	32.166°N	103.399°W
5,725.00	0.25	359.07	5,723.80	40.24	82.89	425,204.74	789,134.88	32.166°N	103.399°W
5,750.00	0.35	10.67	5,748.80	40.37	82.90	425,204.87	789,134.90	32.166°N	103.399°W
5,775.00	0.29	25.06	5,773.80	40.50	82.94	425,205.00	789,134.94	32.166°N	103.399°W
5,800.00	0.23	59.77	5,798.80	40.58	83.01	425,205.08	789,135.01	32.166°N	103.399°W



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,825.00	0.26	55.28	5,823.80	40.64	83.10	425,205.14	789,135.10	32.166°N	103.399°W
5,850.00	0.27	60.10	5,848.80	40.70	83.20	425,205.20	789,135.20	32.166°N	103.399°W
5,875.00	0.13	38.61	5,873.80	40.75	83.27	425,205.25	789,135.27	32.166°N	103.399°W
5,900.00	0.28	52.44	5,898.80	40.81	83.33	425,205.31	789,135.33	32.166°N	103.399°W
5,925.00	0.31	65.29	5,923.80	40.88	83.44	425,205.38	789,135.44	32.166°N	103.399°W
5,950.00	0.31	57.03	5,948.80	40.94	83.56	425,205.44	789,135.56	32.166°N	103.399°W
5,975.00	0.31	68.70	5,973.80	41.01	83.68	425,205.51	789,135.68	32.166°N	103.399°W
6,000.00	0.32	11.48	5,998.80	41.10	83.76	425,205.60	789,135.76	32.166°N	103.399°W
6,025.00	0.40	64.96	6,023.80	41.20	83.85	425,205.70	789,135.85	32.166°N	103.399°W
6,050.00	0.26	56.71	6,048.80	41.27	83.98	425,205.77	789,135.98	32.166°N	103.399°W
6,075.00	0.28	47.09	6,073.80	41.35	84.07	425,205.84	789,136.07	32.166°N	103.399°W
6,100.00	0.24	35.59	6,098.80	41.43	84.15	425,205.93	789,136.14	32.166°N	103.399°W
6,125.00	0.29	44.24	6,123.80	41.52	84.22	425,206.02	789,136.22	32.166°N	103.399°W
6,150.00	0.21	83.77	6,148.80	41.57	84.31	425,206.07	789,136.31	32.166°N	103.399°W
6,175.00	0.37	66.19	6,173.80	41.61	84.43	425,206.10	789,136.43	32.166°N	103.399°W
6,200.00	0.37	55.75	6,198.80	41.68	84.57	425,206.18	789,136.57	32.166°N	103.399°W
6,225.00	0.26	38.32	6,223.80	41.77	84.67	425,206.27	789,136.67	32.166°N	103.399°W
6,250.00	0.31	58.52	6,248.79	41.85	84.76	425,206.35	789,136.76	32.166°N	103.399°W
6,275.00	0.40	60.27	6,273.79	41.93	84.90	425,206.43	789,136.90	32.166°N	103.399°W
6,300.00	0.40	58.78	6,298.79	42.02	85.05	425,206.52	789,137.05	32.166°N	103.399°W
6,325.00	0.64	59.37	6,323.79	42.14	85.24	425,206.64	789,137.24	32.166°N	103.399°W
6,350.00	0.62	56.40	6,348.79	42.28	85.48	425,206.78	789,137.47	32.166°N	103.399°W
6,375.00	0.55	73.46	6,373.79	42.39	85.70	425,206.89	789,137.70	32.166°N	103.399°W
6,400.00	0.51	61.55	6,398.79	42.48	85.92	425,206.98	789,137.91	32.166°N	103.399°W
6,425.00	0.54	59.29	6,423.79	42.59	86.12	425,207.09	789,138.11	32.166°N	103.399°W
6,450.00	0.51	61.58	6,448.79	42.70	86.31	425,207.20	789,138.31	32.166°N	103.399°W
6,475.00	0.75	63.52	6,473.79	42.83	86.56	425,207.33	789,138.56	32.166°N	103.399°W
6,500.00	0.65	63.00	6,498.78	42.97	86.83	425,207.47	789,138.83	32.166°N	103.399°W
6,525.00	0.62	67.27	6,523.78	43.08	87.08	425,207.58	789,139.08	32.166°N	103.399°W
6,550.00	0.54	60.90	6,548.78	43.19	87.31	425,207.69	789,139.31	32.166°N	103.399°W
6,575.00	0.63	60.60	6,573.78	43.32	87.53	425,207.82	789,139.53	32.166°N	103.399°W
6,600.00	0.75	70.18	6,598.78	43.44	87.81	425,207.94	789,139.80	32.166°N	103.399°W
6,625.00	0.68	77.54	6,623.78	43.53	88.11	425,208.03	789,140.10	32.166°N	103.399°W
6,650.00	0.72	57.93	6,648.77	43.64	88.38	425,208.14	789,140.38	32.166°N	103.399°W
6,675.00	0.68	55.15	6,673.77	43.81	88.64	425,208.31	789,140.64	32.166°N	103.399°W
6,700.00	0.68	62.96	6,698.77	43.97	88.89	425,208.46	789,140.89	32.166°N	103.399°W
6,725.00	0.60	52.08	6,723.77	44.11	89.13	425,208.61	789,141.13	32.166°N	103.399°W
6,750.00	0.81	65.02	6,748.77	44.27	89.39	425,208.77	789,141.39	32.166°N	103.399°W
6,775.00	0.75	67.06	6,773.76	44.41	89.70	425,208.91	789,141.70	32.166°N	103.399°W
6,800.00	0.76	63.65	6,798.76	44.54	90.00	425,209.04	789,142.00	32.166°N	103.399°W
6,825.00	0.89	71.76	6,823.76	44.68	90.33	425,209.18	789,142.33	32.166°N	103.399°W
6,850.00	0.78	64.37	6,848.76	44.81	90.67	425,209.31	789,142.67	32.166°N	103.399°W
6,875.00	0.75	53.13	6,873.75	44.98	90.96	425,209.48	789,142.95	32.166°N	103.399°W
6,900.00	0.80	57.52	6,898.75	45.18	91.23	425,209.68	789,143.23	32.166°N	103.399°W
6,925.00	0.85	62.80	6,923.75	45.35	91.55	425,209.85	789,143.54	32.166°N	103.399°W
6,950.00	0.86	64.72	6,948.75	45.52	91.88	425,210.02	789,143.88	32.166°N	103.399°W
6,975.00	0.98	59.47	6,973.74	45.71	92.24	425,210.21	789,144.23	32.166°N	103.399°W
7,000.00	0.95	65.39	6,998.74	45.90	92.61	425,210.40	789,144.61	32.166°N	103.399°W
7,025.00	0.95	65.95	7,023.74	46.07	92.99	425,210.57	789,144.98	32.166°N	103.399°W
7,050.00	1.04	68.15	7,048.73	46.24	93.39	425,210.74	789,145.38	32.166°N	103.399°W
7,075.00	1.22	72.13	7,073.73	46.41	93.85	425,210.91	789,145.85	32.166°N	103.399°W
7,100.00	1.10	74.00	7,098.72	46.56	94.33	425,211.06	789,146.33	32.166°N	103.399°W
7,125.00	1.03	62.93	7,123.72	46.73	94.76	425,211.22	789,146.76	32.166°N	103.399°W
7,150.00	1.13	62.20	7,148.71	46.94	95.18	425,211.44	789,147.18	32.166°N	103.399°W
7,175.00	1.05	62.84	7,173.71	47.16	95.60	425,211.66	789,147.60	32.166°N	103.399°W



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,200.00	1.15	59.26	7,198.71	47.39	96.02	425,211.89	789,148.02	32.166°N	103.399°W
7,225.00	1.11	66.02	7,223.70	47.62	96.46	425,212.12	789,148.46	32.166°N	103.399°W
7,250.00	1.14	65.45	7,248.70	47.82	96.91	425,212.32	789,148.91	32.166°N	103.399°W
7,275.00	1.15	65.99	7,273.69	48.03	97.36	425,212.53	789,149.36	32.166°N	103.399°W
7,300.00	1.14	67.17	7,298.69	48.23	97.82	425,212.73	789,149.82	32.166°N	103.399°W
7,325.00	1.18	62.95	7,323.68	48.44	98.28	425,212.94	789,150.28	32.166°N	103.399°W
7,350.00	1.21	65.62	7,348.67	48.67	98.75	425,213.17	789,150.75	32.166°N	103.399°W
7,375.00	1.17	60.59	7,373.67	48.90	99.21	425,213.40	789,151.21	32.166°N	103.399°W
7,400.00	1.18	65.44	7,398.66	49.13	99.67	425,213.63	789,151.67	32.166°N	103.399°W
7,425.00	1.28	66.85	7,423.66	49.35	100.16	425,213.85	789,152.16	32.166°N	103.399°W
7,450.00	1.13	65.22	7,448.65	49.56	100.64	425,214.06	789,152.64	32.166°N	103.399°W
7,475.00	1.20	69.52	7,473.65	49.76	101.11	425,214.26	789,153.11	32.166°N	103.399°W
7,500.00	1.32	67.69	7,498.64	49.96	101.62	425,214.46	789,153.62	32.166°N	103.399°W
7,525.00	1.29	67.04	7,523.64	50.18	102.15	425,214.68	789,154.14	32.166°N	103.399°W
7,550.00	1.33	66.15	7,548.63	50.41	102.67	425,214.90	789,154.67	32.166°N	103.399°W
7,575.00	1.29	71.27	7,573.62	50.61	103.20	425,215.11	789,155.20	32.166°N	103.399°W
7,600.00	1.31	62.48	7,598.62	50.84	103.72	425,215.33	789,155.72	32.166°N	103.399°W
7,625.00	1.30	68.08	7,623.61	51.07	104.24	425,215.57	789,156.24	32.166°N	103.399°W
7,650.00	1.33	67.60	7,648.60	51.29	104.77	425,215.79	789,156.77	32.166°N	103.399°W
7,675.00	1.32	65.19	7,673.60	51.52	105.30	425,216.02	789,157.30	32.166°N	103.399°W
7,700.00	1.31	74.16	7,698.59	51.72	105.84	425,216.22	789,157.83	32.166°N	103.399°W
7,725.00	1.34	79.79	7,723.58	51.85	106.40	425,216.35	789,158.40	32.166°N	103.399°W
7,750.00	1.33	86.23	7,748.58	51.92	106.98	425,216.42	789,158.97	32.166°N	103.399°W
7,775.00	1.30	84.45	7,773.57	51.97	107.55	425,216.47	789,159.55	32.166°N	103.399°W
7,800.00	1.33	86.50	7,798.56	52.01	108.12	425,216.51	789,160.12	32.166°N	103.399°W
7,825.00	1.27	86.64	7,823.56	52.05	108.69	425,216.55	789,160.68	32.166°N	103.399°W
7,850.00	1.33	86.90	7,848.55	52.08	109.25	425,216.58	789,161.25	32.166°N	103.399°W
7,875.00	1.40	87.19	7,873.54	52.11	109.85	425,216.61	789,161.84	32.166°N	103.399°W
7,900.00	1.35	88.31	7,898.54	52.13	110.45	425,216.63	789,162.44	32.166°N	103.399°W
7,925.00	1.34	88.18	7,923.53	52.15	111.03	425,216.65	789,163.03	32.166°N	103.399°W
7,950.00	1.34	89.98	7,948.52	52.16	111.62	425,216.66	789,163.62	32.166°N	103.399°W
7,975.00	1.35	85.57	7,973.52	52.18	112.20	425,216.68	789,164.20	32.166°N	103.399°W
8,000.00	1.38	87.39	7,998.51	52.22	112.80	425,216.72	789,164.80	32.166°N	103.399°W
8,025.00	1.48	88.01	8,023.50	52.24	113.42	425,216.74	789,165.42	32.166°N	103.399°W
8,050.00	1.41	88.91	8,048.49	52.26	114.05	425,216.76	789,166.05	32.166°N	103.399°W
8,075.00	1.35	86.98	8,073.49	52.28	114.65	425,216.78	789,166.65	32.166°N	103.399°W
8,100.00	1.46	88.06	8,098.48	52.31	115.27	425,216.81	789,167.26	32.166°N	103.399°W
8,125.00	1.45	86.79	8,123.47	52.34	115.90	425,216.84	789,167.90	32.166°N	103.399°W
8,150.00	1.53	89.69	8,148.46	52.36	116.55	425,216.86	789,168.55	32.166°N	103.399°W
8,175.00	1.50	87.78	8,173.45	52.37	117.21	425,216.87	789,169.21	32.166°N	103.399°W
8,200.00	1.51	89.62	8,198.44	52.39	117.87	425,216.89	789,169.86	32.166°N	103.399°W
8,225.00	1.52	86.72	8,223.43	52.41	118.53	425,216.91	789,170.52	32.166°N	103.399°W
8,250.00	1.56	88.79	8,248.43	52.43	119.20	425,216.93	789,171.20	32.166°N	103.399°W
8,275.00	1.50	84.93	8,273.42	52.47	119.86	425,216.97	789,171.86	32.166°N	103.399°W
8,300.00	1.47	85.16	8,298.41	52.53	120.51	425,217.03	789,172.51	32.166°N	103.399°W
8,325.00	1.58	88.02	8,323.40	52.56	121.17	425,217.06	789,173.17	32.166°N	103.399°W
8,350.00	1.54	85.93	8,348.39	52.60	121.85	425,217.10	789,173.85	32.166°N	103.399°W
8,375.00	1.58	88.56	8,373.38	52.63	122.53	425,217.13	789,174.53	32.166°N	103.399°W
8,400.00	1.64	87.32	8,398.37	52.66	123.23	425,217.16	789,175.23	32.166°N	103.399°W
8,425.00	1.71	88.03	8,423.36	52.69	123.96	425,217.19	789,175.96	32.166°N	103.399°W
8,450.00	1.69	85.35	8,448.35	52.73	124.71	425,217.23	789,176.70	32.166°N	103.399°W
8,475.00	1.68	87.65	8,473.34	52.78	125.44	425,217.27	789,177.44	32.166°N	103.399°W
8,500.00	1.66	85.59	8,498.33	52.82	126.17	425,217.32	789,178.16	32.166°N	103.399°W
8,525.00	1.68	85.68	8,523.32	52.87	126.89	425,217.37	789,178.89	32.166°N	103.399°W
8,550.00	1.67	86.82	8,548.31	52.92	127.62	425,217.42	789,179.62	32.166°N	103.399°W



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,575.00	1.68	87.41	8,573.30	52.96	128.35	425,217.46	789,180.35	32.166°N	103.399°W
8,600.00	1.74	84.44	8,598.29	53.01	129.10	425,217.51	789,181.09	32.166°N	103.399°W
8,625.00	1.75	86.12	8,623.27	53.07	129.85	425,217.57	789,181.85	32.166°N	103.399°W
8,650.00	1.74	87.81	8,648.26	53.11	130.61	425,217.61	789,182.61	32.166°N	103.399°W
8,675.00	1.79	86.64	8,673.25	53.15	131.38	425,217.65	789,183.38	32.166°N	103.399°W
8,700.00	1.65	87.71	8,698.24	53.19	132.13	425,217.69	789,184.13	32.166°N	103.399°W
8,725.00	1.73	87.08	8,723.23	53.22	132.87	425,217.72	789,184.87	32.166°N	103.399°W
8,750.00	1.77	86.04	8,748.22	53.27	133.63	425,217.77	789,185.63	32.166°N	103.399°W
8,775.00	1.77	85.65	8,773.20	53.32	134.40	425,217.82	789,186.40	32.166°N	103.399°W
8,800.00	1.88	86.38	8,798.19	53.38	135.20	425,217.88	789,187.19	32.166°N	103.399°W
8,825.00	1.78	86.90	8,823.18	53.43	135.99	425,217.93	789,187.99	32.166°N	103.399°W
8,850.00	1.76	87.51	8,848.17	53.46	136.76	425,217.96	789,188.76	32.166°N	103.399°W
8,875.00	1.91	92.54	8,873.15	53.46	137.56	425,217.96	789,189.56	32.166°N	103.399°W
8,900.00	1.82	86.85	8,898.14	53.47	138.38	425,217.97	789,190.37	32.166°N	103.399°W
8,925.00	1.91	89.09	8,923.13	53.49	139.19	425,217.99	789,191.19	32.166°N	103.399°W
8,950.00	1.86	86.59	8,948.11	53.53	140.01	425,218.02	789,192.01	32.166°N	103.399°W
8,975.00	1.85	86.04	8,973.10	53.58	140.82	425,218.08	789,192.82	32.166°N	103.399°W
9,000.00	1.88	88.51	8,998.09	53.62	141.63	425,218.12	789,193.63	32.166°N	103.399°W
9,025.00	1.82	89.21	9,023.07	53.63	142.44	425,218.13	789,194.43	32.166°N	103.399°W
9,050.00	1.87	86.57	9,048.06	53.66	143.24	425,218.16	789,195.24	32.166°N	103.399°W
9,075.00	1.88	87.74	9,073.05	53.70	144.06	425,218.20	789,196.06	32.166°N	103.399°W
9,100.00	1.89	86.88	9,098.04	53.74	144.88	425,218.24	789,196.88	32.166°N	103.399°W
9,125.00	1.88	87.45	9,123.02	53.78	145.70	425,218.28	789,197.70	32.166°N	103.399°W
9,150.00	1.84	86.11	9,148.01	53.83	146.51	425,218.33	789,198.51	32.166°N	103.399°W
9,175.00	1.82	85.65	9,173.00	53.88	147.31	425,218.38	789,199.30	32.166°N	103.399°W
9,200.00	1.82	86.09	9,197.98	53.94	148.10	425,218.44	789,200.10	32.166°N	103.399°W
9,225.00	1.70	85.26	9,222.97	54.00	148.87	425,218.50	789,200.86	32.166°N	103.399°W
9,250.00	1.80	83.82	9,247.96	54.07	149.63	425,218.57	789,201.62	32.166°N	103.399°W
9,275.00	1.88	85.81	9,272.95	54.14	150.42	425,218.64	789,202.42	32.166°N	103.399°W
9,300.00	1.82	86.53	9,297.93	54.20	151.23	425,218.70	789,203.23	32.166°N	103.399°W
9,325.00	1.82	83.64	9,322.92	54.27	152.02	425,218.77	789,204.02	32.166°N	103.399°W
9,350.00	1.78	82.41	9,347.91	54.36	152.80	425,218.86	789,204.80	32.166°N	103.399°W
9,375.00	1.85	83.60	9,372.90	54.46	153.59	425,218.96	789,205.58	32.166°N	103.399°W
9,400.00	1.75	85.39	9,397.88	54.53	154.37	425,219.03	789,206.36	32.166°N	103.399°W
9,425.00	1.71	84.50	9,422.87	54.60	155.12	425,219.10	789,207.12	32.166°N	103.399°W
9,450.00	1.58	70.89	9,447.86	54.75	155.82	425,219.25	789,207.81	32.166°N	103.399°W
9,475.00	1.51	72.65	9,472.85	54.96	156.46	425,219.46	789,208.45	32.166°N	103.399°W
9,500.00	1.56	64.27	9,497.84	55.21	157.08	425,219.71	789,209.07	32.166°N	103.399°W
9,525.00	1.44	55.10	9,522.84	55.53	157.64	425,220.03	789,209.64	32.166°N	103.399°W
9,550.00	1.36	48.58	9,547.83	55.91	158.12	425,220.41	789,210.12	32.166°N	103.399°W
9,575.00	1.32	45.90	9,572.82	56.31	158.55	425,220.81	789,210.55	32.166°N	103.399°W
9,600.00	1.25	36.38	9,597.82	56.73	158.92	425,221.23	789,210.92	32.166°N	103.399°W
9,625.00	1.04	30.28	9,622.81	57.14	159.20	425,221.64	789,211.19	32.166°N	103.399°W
9,650.00	1.04	18.40	9,647.81	57.55	159.38	425,222.05	789,211.38	32.166°N	103.399°W
9,675.00	1.06	24.48	9,672.80	57.98	159.55	425,222.48	789,211.55	32.166°N	103.399°W
9,700.00	1.06	12.48	9,697.80	58.41	159.69	425,222.91	789,211.69	32.166°N	103.399°W
9,725.00	1.14	8.57	9,722.79	58.89	159.78	425,223.39	789,211.78	32.166°N	103.399°W
9,750.00	0.97	12.16	9,747.79	59.34	159.86	425,223.84	789,211.86	32.166°N	103.399°W
9,775.00	0.99	6.60	9,772.79	59.76	159.93	425,224.26	789,211.93	32.166°N	103.399°W
9,800.00	1.08	7.56	9,797.78	60.21	159.99	425,224.71	789,211.99	32.166°N	103.399°W
9,825.00	1.10	11.33	9,822.78	60.68	160.07	425,225.18	789,212.06	32.166°N	103.399°W
9,850.00	1.09	10.77	9,847.77	61.15	160.16	425,225.65	789,212.16	32.166°N	103.399°W
9,875.00	1.08	9.00	9,872.77	61.61	160.24	425,226.11	789,212.24	32.166°N	103.399°W
9,900.00	1.07	8.58	9,897.76	62.08	160.31	425,226.58	789,212.31	32.166°N	103.399°W
9,925.00	1.11	5.42	9,922.76	62.55	160.37	425,227.05	789,212.37	32.166°N	103.399°W



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,950.00	1.08	7.93	9,947.75	63.02	160.42	425,227.52	789,212.42	32.166°N	103.399°W
9,975.00	1.04	10.59	9,972.75	63.48	160.50	425,227.98	789,212.50	32.166°N	103.399°W
10,000.00	1.09	9.46	9,997.75	63.94	160.58	425,228.44	789,212.58	32.166°N	103.399°W
10,025.00	1.16	19.65	10,022.74	64.41	160.70	425,228.91	789,212.70	32.166°N	103.399°W
10,050.00	1.18	19.47	10,047.74	64.89	160.87	425,229.39	789,212.87	32.166°N	103.399°W
10,075.00	1.25	17.87	10,072.73	65.39	161.04	425,229.89	789,213.04	32.166°N	103.399°W
10,100.00	1.33	18.32	10,097.72	65.93	161.22	425,230.43	789,213.22	32.166°N	103.399°W
10,125.00	1.25	18.48	10,122.72	66.46	161.40	425,230.96	789,213.39	32.166°N	103.399°W
10,150.00	1.18	6.96	10,147.71	66.98	161.51	425,231.47	789,213.51	32.166°N	103.399°W
10,175.00	1.27	20.30	10,172.71	67.49	161.64	425,231.99	789,213.64	32.166°N	103.399°W
10,200.00	1.22	22.06	10,197.70	68.00	161.84	425,232.50	789,213.83	32.166°N	103.399°W
10,225.00	1.17	28.20	10,222.69	68.47	162.06	425,232.97	789,214.06	32.166°N	103.399°W
10,250.00	1.34	26.31	10,247.69	68.96	162.31	425,233.46	789,214.31	32.166°N	103.399°W
10,275.00	1.27	28.41	10,272.68	69.46	162.57	425,233.96	789,214.57	32.166°N	103.399°W
10,300.00	1.30	28.17	10,297.68	69.96	162.84	425,234.45	789,214.83	32.166°N	103.399°W
10,325.00	1.31	28.98	10,322.67	70.46	163.11	425,234.95	789,215.10	32.166°N	103.399°W
10,350.00	1.39	29.09	10,347.66	70.97	163.39	425,235.47	789,215.39	32.166°N	103.399°W
10,375.00	1.32	31.30	10,372.66	71.48	163.69	425,235.98	789,215.69	32.166°N	103.399°W
10,400.00	1.32	31.06	10,397.65	71.97	163.99	425,236.47	789,215.99	32.166°N	103.399°W
10,425.00	1.34	29.74	10,422.64	72.47	164.28	425,236.97	789,216.28	32.166°N	103.399°W
10,450.00	1.49	31.86	10,447.63	73.00	164.60	425,237.50	789,216.60	32.166°N	103.399°W
10,475.00	1.35	31.20	10,472.63	73.53	164.92	425,238.03	789,216.92	32.166°N	103.399°W
10,500.00	1.30	31.05	10,497.62	74.03	165.22	425,238.53	789,217.22	32.166°N	103.399°W
10,525.00	1.32	31.11	10,522.61	74.52	165.52	425,239.02	789,217.51	32.166°N	103.399°W
10,550.00	1.21	31.98	10,547.61	74.99	165.81	425,239.49	789,217.80	32.166°N	103.399°W
10,575.00	1.19	33.73	10,572.60	75.43	166.09	425,239.93	789,218.09	32.166°N	103.399°W
10,600.00	1.23	35.24	10,597.60	75.86	166.39	425,240.36	789,218.39	32.166°N	103.399°W
10,625.00	1.14	30.77	10,622.59	76.29	166.67	425,240.79	789,218.67	32.166°N	103.399°W
10,650.00	0.91	30.99	10,647.59	76.68	166.90	425,241.18	789,218.90	32.166°N	103.399°W
10,675.00	0.82	28.61	10,672.58	77.01	167.09	425,241.51	789,219.08	32.166°N	103.399°W
10,700.00	0.73	23.95	10,697.58	77.31	167.24	425,241.81	789,219.24	32.166°N	103.399°W
10,725.00	0.66	26.09	10,722.58	77.58	167.37	425,242.08	789,219.36	32.166°N	103.399°W
10,750.00	0.64	28.51	10,747.58	77.84	167.50	425,242.33	789,219.49	32.166°N	103.399°W
10,775.00	0.66	23.09	10,772.58	78.09	167.62	425,242.59	789,219.62	32.166°N	103.399°W
10,800.00	0.60	24.32	10,797.58	78.34	167.73	425,242.84	789,219.73	32.166°N	103.399°W
10,825.00	0.55	21.11	10,822.57	78.57	167.83	425,243.07	789,219.82	32.166°N	103.399°W
10,850.00	0.54	26.77	10,847.57	78.79	167.92	425,243.29	789,219.92	32.166°N	103.399°W
10,875.00	0.50	24.07	10,872.57	79.00	168.02	425,243.49	789,220.02	32.166°N	103.399°W
10,900.00	0.38	20.97	10,897.57	79.17	168.09	425,243.67	789,220.09	32.166°N	103.399°W
10,925.00	0.36	13.61	10,922.57	79.33	168.14	425,243.83	789,220.14	32.166°N	103.399°W
10,950.00	0.35	20.98	10,947.57	79.47	168.19	425,243.97	789,220.19	32.166°N	103.399°W
10,975.00	0.30	9.09	10,972.57	79.61	168.23	425,244.11	789,220.22	32.166°N	103.399°W
11,000.00	0.30	15.56	10,997.57	79.74	168.25	425,244.24	789,220.25	32.166°N	103.399°W
11,025.00	0.19	9.24	11,022.57	79.84	168.28	425,244.34	789,220.28	32.166°N	103.399°W
11,050.00	0.14	314.50	11,047.57	79.90	168.26	425,244.40	789,220.26	32.166°N	103.399°W
11,075.00	0.15	332.40	11,072.57	79.95	168.23	425,244.45	789,220.22	32.166°N	103.399°W
11,100.00	0.08	281.58	11,097.57	79.99	168.19	425,244.49	789,220.19	32.166°N	103.399°W
11,125.00	0.15	247.76	11,122.57	79.98	168.15	425,244.48	789,220.14	32.166°N	103.399°W
11,150.00	0.16	230.02	11,147.57	79.94	168.09	425,244.44	789,220.09	32.166°N	103.399°W
11,175.00	0.14	241.54	11,172.57	79.91	168.04	425,244.41	789,220.03	32.166°N	103.399°W
11,200.00	0.17	221.08	11,197.57	79.86	167.98	425,244.36	789,219.98	32.166°N	103.399°W
11,225.00	0.16	233.89	11,222.57	79.81	167.93	425,244.31	789,219.93	32.166°N	103.399°W
11,250.00	0.17	240.12	11,247.57	79.78	167.87	425,244.28	789,219.87	32.166°N	103.399°W
11,275.00	0.14	229.31	11,272.57	79.74	167.82	425,244.24	789,219.81	32.166°N	103.399°W
11,300.00	0.13	224.82	11,297.57	79.70	167.77	425,244.20	789,219.77	32.166°N	103.399°W



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,325.00	0.02	39.10	11,322.57	79.68	167.76	425,244.18	789,219.75	32.166°N	103.399°W
11,350.00	0.13	35.43	11,347.57	79.71	167.78	425,244.21	789,219.77	32.166°N	103.399°W
11,375.00	0.32	33.55	11,372.57	79.79	167.83	425,244.29	789,219.83	32.166°N	103.399°W
11,400.00	0.51	28.40	11,397.57	79.94	167.92	425,244.44	789,219.92	32.166°N	103.399°W
11,425.00	0.64	29.59	11,422.57	80.16	168.04	425,244.66	789,220.04	32.166°N	103.399°W
11,450.00	0.63	29.94	11,447.56	80.40	168.18	425,244.90	789,220.18	32.166°N	103.399°W
11,475.00	0.62	39.37	11,472.56	80.63	168.34	425,245.13	789,220.33	32.166°N	103.399°W
11,500.00	0.67	37.61	11,497.56	80.85	168.51	425,245.35	789,220.51	32.166°N	103.399°W
11,525.00	0.62	39.08	11,522.56	81.07	168.68	425,245.57	789,220.68	32.166°N	103.399°W
11,550.00	0.66	45.34	11,547.56	81.28	168.87	425,245.77	789,220.87	32.166°N	103.399°W
11,575.00	0.40	63.94	11,572.56	81.41	169.05	425,245.91	789,221.05	32.166°N	103.399°W
11,600.00	0.43	105.97	11,597.56	81.43	169.22	425,245.93	789,221.22	32.166°N	103.399°W
11,625.00	0.46	191.72	11,622.56	81.30	169.29	425,245.80	789,221.29	32.166°N	103.399°W
11,650.00	0.78	203.58	11,647.55	81.05	169.20	425,245.55	789,221.20	32.166°N	103.399°W
11,675.00	1.05	202.40	11,672.55	80.68	169.05	425,245.18	789,221.05	32.166°N	103.399°W
11,700.00	1.13	201.05	11,697.55	80.24	168.87	425,244.74	789,220.87	32.166°N	103.399°W
11,725.00	1.15	204.50	11,722.54	79.78	168.68	425,244.28	789,220.68	32.166°N	103.399°W
11,750.00	1.29	205.75	11,747.54	79.30	168.45	425,243.80	789,220.45	32.166°N	103.399°W
11,775.00	1.39	212.40	11,772.53	78.79	168.17	425,243.29	789,220.17	32.166°N	103.399°W
11,780.00	1.41	213.62	11,777.53	78.69	168.10	425,243.19	789,220.10	32.166°N	103.399°W
11780'MD: Final Gyro Survey - 11780'MD: Tie into Keeper Gyro Surveys Scientific									
11,915.00	0.56	226.99	11,912.51	76.85	166.70	425,241.35	789,218.70	32.166°N	103.399°W
11915'MD: Begin DrilTech MWD									
11,977.00	0.42	206.16	11,974.50	76.44	166.38	425,240.94	789,218.38	32.166°N	103.399°W
12,024.00	3.33	213.83	12,021.47	75.15	165.54	425,239.65	789,217.54	32.166°N	103.399°W
12,072.00	8.21	202.55	12,069.22	70.83	163.45	425,235.33	789,215.45	32.166°N	103.399°W
12,119.00	10.48	197.31	12,115.59	63.65	160.89	425,228.15	789,212.89	32.166°N	103.399°W
12,167.00	15.37	193.39	12,162.36	53.29	158.12	425,217.78	789,210.11	32.166°N	103.399°W
12,214.00	20.53	191.23	12,207.06	39.13	155.07	425,203.63	789,207.07	32.166°N	103.399°W
12,261.00	25.61	187.41	12,250.29	20.96	152.15	425,185.46	789,204.15	32.165°N	103.399°W
12,308.00	31.91	183.62	12,291.47	-1.53	150.05	425,162.97	789,202.05	32.165°N	103.399°W
12,356.00	35.13	180.94	12,331.49	-28.01	149.03	425,136.49	789,201.02	32.165°N	103.399°W
12,403.00	40.53	179.63	12,368.60	-56.82	148.90	425,107.68	789,200.90	32.165°N	103.399°W
12,450.00	46.21	179.28	12,402.75	-89.08	149.22	425,075.42	789,201.21	32.165°N	103.399°W
12,497.00	50.99	181.42	12,433.82	-124.32	148.98	425,040.18	789,200.97	32.165°N	103.399°W
12,545.00	56.07	182.85	12,462.35	-162.88	147.52	425,001.62	789,199.52	32.165°N	103.399°W
12,592.00	64.23	182.82	12,485.72	-203.56	145.51	424,960.94	789,197.51	32.165°N	103.399°W
12,640.00	72.28	181.67	12,503.49	-248.08	143.78	424,916.42	789,195.77	32.165°N	103.399°W
12,687.00	80.31	182.07	12,514.62	-293.68	142.28	424,870.82	789,194.28	32.165°N	103.399°W
12,737.00	88.02	183.23	12,519.70	-343.32	139.98	424,821.18	789,191.98	32.164°N	103.399°W
12,831.00	91.72	181.90	12,519.91	-437.21	135.78	424,727.29	789,187.77	32.164°N	103.399°W
12,925.00	91.91	181.45	12,516.93	-531.12	133.03	424,633.38	789,185.03	32.164°N	103.399°W
13,020.00	91.39	179.97	12,514.20	-626.07	131.85	424,538.43	789,183.85	32.164°N	103.399°W
13,115.00	91.01	178.74	12,512.21	-721.05	132.92	424,443.46	789,184.92	32.163°N	103.399°W
13,210.00	89.85	175.75	12,511.49	-815.92	137.49	424,348.58	789,189.49	32.163°N	103.399°W
13,304.00	89.66	173.86	12,511.90	-909.53	146.00	424,254.97	789,198.00	32.163°N	103.399°W
13,399.00	89.05	173.10	12,512.96	-1,003.91	156.79	424,160.59	789,208.78	32.163°N	103.399°W
13,494.00	90.92	174.61	12,512.99	-1,098.36	166.95	424,066.15	789,218.95	32.162°N	103.399°W
13,589.00	91.18	175.38	12,511.25	-1,192.98	175.24	423,971.53	789,227.24	32.162°N	103.399°W
13,684.00	91.85	176.88	12,508.74	-1,287.72	181.65	423,876.78	789,233.65	32.162°N	103.399°W
13,779.00	93.11	177.88	12,504.63	-1,382.53	185.99	423,781.97	789,237.99	32.162°N	103.399°W
13,873.00	93.84	176.86	12,498.93	-1,476.26	190.29	423,688.24	789,242.29	32.161°N	103.399°W
13,968.00	92.72	177.64	12,493.49	-1,570.99	194.84	423,593.51	789,246.84	32.161°N	103.399°W
14,063.00	91.79	180.10	12,489.75	-1,665.89	196.72	423,498.61	789,248.71	32.161°N	103.399°W
14,158.00	92.43	180.46	12,486.26	-1,760.82	196.25	423,403.68	789,248.25	32.161°N	103.399°W



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,253.00	91.25	182.04	12,483.21	-1,855.75	194.18	423,308.75	789,246.18	32.160°N	103.399°W
14,348.00	90.73	181.23	12,481.57	-1,950.69	191.47	423,213.81	789,243.47	32.160°N	103.399°W
14,443.00	90.62	181.30	12,480.45	-2,045.66	189.37	423,118.84	789,241.37	32.160°N	103.399°W
14,538.00	90.43	181.04	12,479.58	-2,140.64	187.43	423,023.86	789,239.43	32.160°N	103.399°W
14,633.00	90.02	180.05	12,479.20	-2,235.63	186.53	422,928.87	789,238.53	32.159°N	103.399°W
14,727.00	89.90	179.29	12,479.27	-2,329.63	187.07	422,834.87	789,239.07	32.159°N	103.399°W
14,821.00	90.00	178.74	12,479.35	-2,423.62	188.69	422,740.89	789,240.68	32.159°N	103.399°W
14,916.00	89.40	179.59	12,479.85	-2,518.61	190.07	422,645.90	789,242.07	32.159°N	103.399°W
15,011.00	89.17	180.61	12,481.03	-2,613.60	189.91	422,550.91	789,241.90	32.158°N	103.399°W
15,106.00	89.66	180.71	12,482.00	-2,708.58	188.81	422,455.92	789,240.81	32.158°N	103.399°W
15,200.00	89.99	180.28	12,482.29	-2,802.58	188.00	422,361.92	789,240.00	32.158°N	103.399°W
15,295.00	90.47	180.27	12,481.91	-2,897.58	187.54	422,266.93	789,239.54	32.157°N	103.399°W
15,389.00	90.60	179.58	12,481.03	-2,991.57	187.67	422,172.93	789,239.66	32.157°N	103.399°W
15,484.00	90.07	179.33	12,480.48	-3,086.57	188.57	422,077.94	789,240.57	32.157°N	103.399°W
15,579.00	89.73	179.26	12,480.64	-3,181.56	189.74	421,982.95	789,241.74	32.157°N	103.399°W
15,673.00	89.02	180.61	12,481.67	-3,275.55	189.85	421,888.95	789,241.84	32.156°N	103.399°W
15,767.00	88.57	180.71	12,483.64	-3,369.52	188.76	421,794.98	789,240.76	32.156°N	103.399°W
15,860.00	87.74	179.84	12,486.64	-3,462.47	188.32	421,702.03	789,240.31	32.156°N	103.399°W
15,954.00	88.32	179.90	12,489.87	-3,556.42	188.53	421,608.09	789,240.53	32.156°N	103.399°W
16,049.00	87.59	179.52	12,493.26	-3,651.35	189.01	421,513.15	789,241.01	32.155°N	103.399°W
16,144.00	87.32	179.31	12,497.48	-3,746.26	189.98	421,418.25	789,241.98	32.155°N	103.399°W
16,239.00	89.04	179.75	12,500.49	-3,841.20	190.76	421,323.31	789,242.76	32.155°N	103.399°W
16,333.00	90.15	179.14	12,501.16	-3,935.19	191.67	421,229.32	789,243.67	32.155°N	103.399°W
16,428.00	90.45	178.50	12,500.66	-4,030.17	193.63	421,134.34	789,245.62	32.154°N	103.399°W
16,522.00	90.66	177.73	12,499.75	-4,124.11	196.72	421,040.39	789,248.71	32.154°N	103.399°W
16,617.00	90.62	176.67	12,498.69	-4,218.99	201.36	420,945.51	789,253.35	32.154°N	103.399°W
16,711.00	91.34	177.70	12,497.08	-4,312.86	205.97	420,851.64	789,257.97	32.154°N	103.399°W
16,805.00	91.83	178.93	12,494.48	-4,406.79	208.74	420,757.72	789,260.73	32.153°N	103.399°W
16,899.00	92.66	179.54	12,490.80	-4,500.70	209.99	420,663.80	789,261.99	32.153°N	103.399°W
16,993.00	91.89	180.55	12,487.07	-4,594.63	209.92	420,569.88	789,261.91	32.153°N	103.399°W
17,088.00	91.39	181.19	12,484.35	-4,689.58	208.47	420,474.93	789,260.47	32.153°N	103.399°W
17,183.00	90.98	180.25	12,482.38	-4,784.55	207.28	420,379.96	789,259.28	32.152°N	103.399°W
17,278.00	90.57	179.41	12,481.10	-4,879.54	207.56	420,284.97	789,259.56	32.152°N	103.399°W
17,373.00	90.86	178.75	12,479.91	-4,974.52	209.09	420,189.99	789,261.09	32.152°N	103.399°W
17,467.00	91.00	178.04	12,478.39	-5,068.47	211.72	420,096.04	789,263.72	32.152°N	103.399°W
17,562.00	89.74	179.54	12,477.78	-5,163.44	213.73	420,001.07	789,265.72	32.151°N	103.399°W
17,657.00	88.42	177.85	12,479.30	-5,258.40	215.89	419,906.11	789,267.89	32.151°N	103.399°W
17,751.00	89.81	178.42	12,480.75	-5,352.33	218.95	419,812.18	789,270.95	32.151°N	103.399°W
17,846.00	90.00	179.27	12,480.91	-5,447.31	220.86	419,717.20	789,272.86	32.150°N	103.399°W
17,940.00	90.86	180.02	12,480.20	-5,541.31	221.45	419,623.20	789,273.44	32.150°N	103.399°W
17,968.00	91.23	180.27	12,479.69	-5,569.30	221.37	419,595.21	789,273.37	32.150°N	103.399°W
18,062.00	90.15	179.82	12,478.56	-5,663.29	221.30	419,501.22	789,273.30	32.150°N	103.399°W
18,156.00	88.74	179.45	12,479.47	-5,757.29	221.90	419,407.23	789,273.90	32.150°N	103.399°W
18,251.00	91.05	179.82	12,479.65	-5,852.28	222.50	419,312.23	789,274.50	32.149°N	103.399°W
18,345.00	92.35	179.66	12,476.86	-5,946.23	222.93	419,218.28	789,274.93	32.149°N	103.399°W
18,438.00	90.22	180.79	12,474.77	-6,039.20	222.57	419,125.31	789,274.56	32.149°N	103.399°W
18,534.00	90.25	181.81	12,474.38	-6,135.17	220.39	419,029.34	789,272.38	32.149°N	103.399°W
18,628.00	89.56	181.08	12,474.53	-6,229.14	218.02	418,935.37	789,270.01	32.148°N	103.399°W
18,723.00	89.32	181.20	12,475.46	-6,324.12	216.13	418,840.39	789,268.12	32.148°N	103.399°W
18,817.00	88.51	180.74	12,477.24	-6,418.09	214.54	418,746.42	789,266.53	32.148°N	103.399°W
18,911.00	89.71	181.76	12,478.70	-6,512.05	212.49	418,652.46	789,264.48	32.148°N	103.399°W
19,006.00	89.19	181.09	12,479.61	-6,607.02	210.12	418,557.50	789,262.12	32.147°N	103.399°W
19,100.00	91.05	182.73	12,479.42	-6,700.96	206.99	418,463.56	789,258.99	32.147°N	103.399°W
19,194.00	91.68	182.99	12,477.18	-6,794.81	202.30	418,369.70	789,254.30	32.147°N	103.399°W
19,288.00	92.50	183.35	12,473.75	-6,888.61	197.11	418,275.91	789,249.10	32.147°N	103.399°W



Survey Report - Geographic

Company:	Concho Operating	Local Co-ordinate Reference:	Well Stove Pipe FC 1H
Project:	Lea County, NM (Nad 27)	TVD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,383.00	91.49	181.84	12,470.44	-6,983.45	192.81	418,181.07	789,244.81	32.146°N	103.399°W
19,477.00	91.12	182.20	12,468.30	-7,077.36	189.50	418,087.15	789,241.49	32.146°N	103.399°W
19,571.00	89.89	181.88	12,467.47	-7,171.30	186.15	417,993.22	789,238.15	32.146°N	103.399°W
19,665.00	90.15	180.34	12,467.44	-7,265.28	184.33	417,899.24	789,236.33	32.145°N	103.399°W
19,759.00	89.80	177.97	12,467.48	-7,359.26	185.72	417,805.25	789,237.71	32.145°N	103.399°W
19,854.00	90.80	177.68	12,466.98	-7,454.19	189.32	417,710.32	789,241.32	32.145°N	103.399°W
19,948.00	91.31	176.81	12,465.25	-7,548.06	193.84	417,616.45	789,245.84	32.145°N	103.399°W
20,043.00	92.53	176.61	12,462.07	-7,642.85	199.29	417,521.66	789,251.28	32.144°N	103.399°W
20,137.00	92.52	176.40	12,457.93	-7,736.59	205.01	417,427.93	789,257.01	32.144°N	103.399°W
20,232.00	92.63	177.09	12,453.66	-7,831.34	210.40	417,333.18	789,262.40	32.144°N	103.399°W
20,325.00	91.27	177.53	12,450.50	-7,924.18	214.76	417,240.34	789,266.76	32.144°N	103.399°W
20,420.00	91.91	178.82	12,447.86	-8,019.09	217.79	417,145.42	789,269.78	32.143°N	103.399°W
20,514.00	91.39	178.63	12,445.15	-8,113.03	219.88	417,051.49	789,271.87	32.143°N	103.399°W
20,608.00	92.09	178.70	12,442.30	-8,206.96	222.07	416,957.56	789,274.06	32.143°N	103.399°W
20,703.00	91.43	178.34	12,439.38	-8,301.88	224.52	416,862.63	789,276.52	32.143°N	103.399°W
20,797.00	91.28	178.00	12,437.16	-8,395.81	227.52	416,768.71	789,279.52	32.142°N	103.399°W
20,891.00	91.59	178.40	12,434.81	-8,489.73	230.47	416,674.79	789,282.47	32.142°N	103.399°W
20,986.00	90.20	177.80	12,433.32	-8,584.66	233.62	416,579.85	789,285.62	32.142°N	103.399°W
21,080.00	89.97	177.61	12,433.18	-8,678.59	237.39	416,485.93	789,289.38	32.142°N	103.399°W
21,174.00	91.73	179.12	12,431.79	-8,772.53	240.07	416,391.98	789,292.06	32.141°N	103.399°W
21,268.00	92.89	179.41	12,428.00	-8,866.45	241.27	416,298.07	789,293.27	32.141°N	103.399°W
21,362.00	92.88	179.90	12,423.27	-8,960.33	241.84	416,204.19	789,293.83	32.141°N	103.399°W
21,457.00	91.72	179.37	12,419.46	-9,055.25	242.44	416,109.27	789,294.44	32.141°N	103.399°W
21,551.00	90.42	179.23	12,417.70	-9,149.22	243.59	416,015.30	789,295.59	32.140°N	103.399°W
21,645.00	89.75	177.76	12,417.56	-9,243.19	246.06	415,921.33	789,298.06	32.140°N	103.399°W
21,740.00	89.80	177.42	12,417.93	-9,338.10	250.05	415,826.42	789,302.05	32.140°N	103.399°W
21,834.00	90.06	177.45	12,418.05	-9,432.01	254.26	415,732.51	789,306.26	32.140°N	103.399°W
21,928.00	91.18	178.72	12,417.03	-9,525.95	257.40	415,638.57	789,309.40	32.139°N	103.399°W
21928'MD: Final Survey Depth									
22,017.00	91.18	178.72	12,415.20	-9,614.90	259.39	415,549.61	789,311.39	32.139°N	103.399°W
22017'MD: Projection to Total Depth									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Stove Pipe FC 1H LT	0.00	0.00	12,408.00	-9,820.12	254.60	415,344.40	789,306.60	32.138°N	103.399°W
- actual wellpath misses target center by 205.40ft at 22017.00ft MD (12415.20 TVD, -9614.90 N, 259.39 E)									
- Point									



Survey Report - Geographic

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Site:	Stove Pipe Federal Com	MD Reference:	3295' + 28' KBE @ 3323.00ft (Noram 23)
Well:	Stove Pipe FC 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.14 Single User Db

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
100.00	100.00	-0.11	-0.18	100'MD: Begin Scientific Keeper Gyro
11,780.00	11,777.53	78.69	168.10	11780'MD: Final Gyro Survey
11,780.00	11,777.53	78.69	168.10	11780'MD: Tie into Keeper Gyro Surveys Scientific
11,915.00	11,912.51	76.85	166.70	11915'MD: Begin DrilTech MWD
21,928.00	12,417.03	-9,525.95	257.40	21928'MD: Final Survey Depth
22,017.00	12,415.20	-9,614.90	259.39	22017'MD: Projection to Total Depth

Checked By: _____ Approved By: _____ Date: _____