



CONCHO

NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 12 2018

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COG Operating L L C

Eddy County, NM (NAD 27 NME)

Sec. 05, T 26 S. , R 28 E

SRO 5 State Com 504H

30-015-45531

Wellbore #1

Plan #1

Anticollision Report

10 December, 2018



INTEGRITY
DIRECTIONAL



Anticollision Report



Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S. , R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 504H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 504H
TVD Reference: KB=30' @ 3037.20usft (Nabors 894)
MD Reference: KB=30' @ 3037.20usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

Reference	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 19,999.96 u
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Circular Conic
Casing Method:	Not applied

Survey Tool Program		Date 12/10/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,160.33	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Summary							
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
Offset Well - Wellbore - Design							
Sec. 05, T 26 S. , R 28 E							
SRO 5 State Com 505H - Wellbore #1 - Plan #1	5,600.00	5,599.90	30.00	5.12	1.206	Level 2, CC, ES, SF	

Offset Design Sec. 05, T 26 S. , R 28 E - SRO 5 State Com 505H - Wellbore #1 - Plan #1											
Survey Program: 0-MWD											
Reference	Offset	Semi Major Axis		Distance		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-30.00	30.00		
100.00	100.00	99.90	99.90	0.08	0.08	-90.00	0.00	-30.00	30.00	29.84	0.16
200.00	200.00	199.90	199.90	0.30	0.30	-90.00	0.00	-30.00	30.00	29.39	0.61
300.00	300.00	299.90	299.90	0.53	0.53	-90.00	0.00	-30.00	30.00	28.94	1.06
400.00	400.00	399.90	399.90	0.75	0.75	-90.00	0.00	-30.00	30.00	28.49	1.51
500.00	500.00	499.90	499.90	0.98	0.98	-90.00	0.00	-30.00	30.00	28.04	1.96
600.00	600.00	599.90	599.90	1.20	1.20	-90.00	0.00	-30.00	30.00	27.60	2.40
700.00	700.00	699.90	699.90	1.43	1.43	-90.00	0.00	-30.00	30.00	27.15	2.85
800.00	800.00	799.90	799.90	1.65	1.65	-90.00	0.00	-30.00	30.00	26.70	3.30
900.00	900.00	899.90	899.90	1.88	1.88	-90.00	0.00	-30.00	30.00	26.25	3.75
1,000.00	1,000.00	999.90	999.90	2.10	2.10	-90.00	0.00	-30.00	30.00	25.80	4.20
1,100.00	1,100.00	1,099.90	1,099.90	2.33	2.33	-90.00	0.00	-30.00	30.00	25.35	4.65
1,200.00	1,200.00	1,199.90	1,199.90	2.55	2.55	-90.00	0.00	-30.00	30.00	24.90	5.10
1,300.00	1,300.00	1,299.90	1,299.90	2.78	2.78	-90.00	0.00	-30.00	30.00	24.45	5.55
1,400.00	1,400.00	1,399.90	1,399.90	3.00	3.00	-90.00	0.00	-30.00	30.00	24.00	6.00
1,500.00	1,500.00	1,499.90	1,499.90	3.23	3.23	-90.00	0.00	-30.00	30.00	23.55	6.45
1,600.00	1,600.00	1,599.90	1,599.90	3.45	3.45	-90.00	0.00	-30.00	30.00	23.10	6.90
1,700.00	1,700.00	1,699.90	1,699.90	3.67	3.67	-90.00	0.00	-30.00	30.00	22.65	7.35
1,800.00	1,800.00	1,799.90	1,799.90	3.90	3.90	-90.00	0.00	-30.00	30.00	22.20	7.80
1,900.00	1,900.00	1,899.90	1,899.90	4.12	4.12	-90.00	0.00	-30.00	30.00	21.75	8.25
2,000.00	2,000.00	1,999.90	1,999.90	4.35	4.35	-90.00	0.00	-30.00	30.00	21.30	8.70
2,100.00	2,100.00	2,099.90	2,099.90	4.57	4.57	-90.00	0.00	-30.00	30.00	20.85	9.15
2,200.00	2,200.00	2,199.90	2,199.90	4.80	4.80	-90.00	0.00	-30.00	30.00	20.40	9.60
2,300.00	2,300.00	2,299.90	2,299.90	5.02	5.02	-90.00	0.00	-30.00	30.00	19.95	10.05
2,400.00	2,400.00	2,399.90	2,399.90	5.25	5.25	-90.00	0.00	-30.00	30.00	19.50	10.50
2,500.00	2,500.00	2,499.90	2,499.90	5.47	5.47	-90.00	0.00	-30.00	30.00	19.05	10.95

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

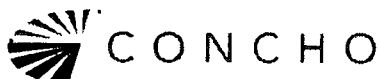


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Offset Design Sec. 05, T 26 S. , R 28 E - SRO 5 State Com 505H - Wellbore #1 - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
2,600.00	2,600.00	2,599.90	2,599.90	5.70	5.70	-90.00	0.00	-30.00	30.00	18.60	11.40	2.633	
2,700.00	2,700.00	2,699.90	2,699.90	5.92	5.92	-90.00	0.00	-30.00	30.00	18.16	11.84	2.533	
2,800.00	2,800.00	2,799.90	2,799.90	6.15	6.15	-90.00	0.00	-30.00	30.00	17.71	12.29	2.440	
2,900.00	2,900.00	2,899.90	2,899.90	6.37	6.37	-90.00	0.00	-30.00	30.00	17.26	12.74	2.354	
3,000.00	3,000.00	2,999.90	2,999.90	6.60	6.60	-90.00	0.00	-30.00	30.00	16.81	13.19	2.274	
3,100.00	3,100.00	3,099.90	3,099.90	6.82	6.82	-90.00	0.00	-30.00	30.00	16.36	13.64	2.199	
3,200.00	3,200.00	3,199.90	3,199.90	7.05	7.05	-90.00	0.00	-30.00	30.00	15.91	14.09	2.129	
3,300.00	3,300.00	3,299.90	3,299.90	7.27	7.27	-90.00	0.00	-30.00	30.00	15.46	14.54	2.063	
3,400.00	3,400.00	3,399.90	3,399.90	7.50	7.50	-90.00	0.00	-30.00	30.00	15.01	14.99	2.001	
3,500.00	3,500.00	3,499.90	3,499.90	7.72	7.72	-90.00	0.00	-30.00	30.00	14.56	15.44	1.943	
3,600.00	3,600.00	3,599.90	3,599.90	7.95	7.95	-90.00	0.00	-30.00	30.00	14.11	15.89	1.888	
3,700.00	3,700.00	3,699.90	3,699.90	8.17	8.17	-90.00	0.00	-30.00	30.00	13.66	16.34	1.836	
3,800.00	3,800.00	3,799.90	3,799.90	8.40	8.39	-90.00	0.00	-30.00	30.00	13.21	16.79	1.787	
3,900.00	3,900.00	3,899.90	3,899.90	8.62	8.62	-90.00	0.00	-30.00	30.00	12.76	17.24	1.740	
4,000.00	4,000.00	3,999.90	3,999.90	8.84	8.84	-90.00	0.00	-30.00	30.00	12.31	17.69	1.696	
4,100.00	4,100.00	4,099.90	4,099.90	9.07	9.07	-90.00	0.00	-30.00	30.00	11.86	18.14	1.654	
4,200.00	4,200.00	4,199.90	4,199.90	9.29	9.29	-90.00	0.00	-30.00	30.00	11.41	18.59	1.614	
4,300.00	4,300.00	4,299.90	4,299.90	9.52	9.52	-90.00	0.00	-30.00	30.00	10.96	19.04	1.576	
4,400.00	4,400.00	4,399.90	4,399.90	9.74	9.74	-90.00	0.00	-30.00	30.00	10.51	19.49	1.539	
4,500.00	4,500.00	4,499.90	4,499.90	9.97	9.97	-90.00	0.00	-30.00	30.00	10.06	19.94	1.505	
4,600.00	4,600.00	4,599.90	4,599.90	10.19	10.19	-90.00	0.00	-30.00	30.00	9.61	20.39	1.472	Level 3
4,700.00	4,700.00	4,699.90	4,699.90	10.42	10.42	-90.00	0.00	-30.00	30.00	9.16	20.84	1.440	Level 3
4,800.00	4,800.00	4,799.90	4,799.90	10.64	10.64	-90.00	0.00	-30.00	30.00	8.71	21.29	1.409	Level 3
4,900.00	4,900.00	4,899.90	4,899.90	10.87	10.87	-90.00	0.00	-30.00	30.00	8.27	21.73	1.380	Level 3
5,000.00	5,000.00	4,999.90	4,999.90	11.09	11.09	-90.00	0.00	-30.00	30.00	7.82	22.18	1.352	Level 3
5,100.00	5,100.00	5,099.90	5,099.90	11.32	11.32	-90.00	0.00	-30.00	30.00	7.37	22.63	1.325	Level 3
5,200.00	5,200.00	5,199.90	5,199.90	11.54	11.54	-90.00	0.00	-30.00	30.00	6.92	23.08	1.300	Level 3
5,300.00	5,300.00	5,299.90	5,299.90	11.77	11.77	-90.00	0.00	-30.00	30.00	6.47	23.53	1.275	Level 3
5,400.00	5,400.00	5,399.90	5,399.90	11.99	11.99	-90.00	0.00	-30.00	30.00	6.02	23.98	1.251	Level 3
5,500.00	5,500.00	5,499.90	5,499.90	12.22	12.22	-90.00	0.00	-30.00	30.00	5.57	24.43	1.228	Level 2
5,600.00	5,600.00	5,599.90	5,599.90	12.44	12.44	-90.00	0.00	-30.00	30.00	5.12	24.88	1.206	Level 2, CC, ES, SF
5,700.00	5,699.98	5,699.44	5,699.42	12.66	12.66	-114.99	1.56	-30.73	31.47	6.15	25.33	1.243	Level 2
5,800.00	5,799.84	5,798.84	5,798.68	12.89	12.88	-114.96	6.25	-32.93	35.89	10.12	25.77	1.393	Level 3
5,900.00	5,899.45	5,897.99	5,897.46	13.11	13.11	-114.90	14.02	-36.57	43.24	17.03	26.22	1.650	
6,000.00	5,998.70	5,996.76	5,995.50	13.33	13.33	-114.82	24.84	-41.64	53.51	26.85	26.66	2.007	
6,062.31	6,060.31	6,058.32	6,056.39	13.47	13.47	-114.88	32.99	-45.46	61.31	34.37	26.94	2.276	
6,100.00	6,097.51	6,095.69	6,093.34	13.56	13.55	-115.22	38.04	-47.82	66.25	39.13	27.11	2.443	
6,200.00	6,196.21	6,194.82	6,191.36	13.79	13.78	-115.91	51.42	-54.10	79.35	51.77	27.58	2.878	
6,300.00	6,294.91	6,293.95	6,289.39	14.03	14.02	-116.41	64.81	-60.37	92.46	64.41	28.05	3.297	
6,400.00	6,393.61	6,393.09	6,387.42	14.27	14.26	-116.78	78.19	-66.64	105.58	77.05	28.53	3.701	
6,500.00	6,492.31	6,492.22	6,485.44	14.52	14.50	-117.07	91.58	-72.91	118.70	89.68	29.02	4.090	
6,600.00	6,591.01	6,591.36	6,583.47	14.77	14.75	-117.30	104.96	-79.19	131.82	102.30	29.52	4.465	
6,700.00	6,689.71	6,690.49	6,681.49	15.03	15.00	-117.49	118.35	-85.46	144.94	114.91	30.03	4.826	
6,800.00	6,788.41	6,789.62	6,779.52	15.29	15.26	-117.65	131.73	-91.73	158.07	127.52	30.55	5.174	
6,900.00	6,887.11	6,888.76	6,877.54	15.56	15.52	-117.79	145.12	-98.00	171.20	140.12	31.07	5.509	
7,000.00	6,985.81	6,987.89	6,975.57	15.83	15.78	-117.90	158.51	-104.28	184.32	152.72	31.61	5.832	
7,100.00	7,084.51	7,087.03	7,073.60	16.10	16.05	-118.00	171.89	-110.55	197.45	165.31	32.14	6.143	
7,200.00	7,183.21	7,186.16	7,171.62	16.37	16.31	-118.09	185.28	-116.82	210.58	177.89	32.69	6.442	
7,303.57	7,285.44	7,288.83	7,273.15	16.66	16.59	-118.17	199.14	-123.32	224.18	190.92	33.26	6.740	
7,350.00	7,331.46	7,334.78	7,318.58	16.78	16.72	-144.40	205.35	-126.23	230.51	197.01	33.50	6.881	
7,400.00	7,381.23	7,383.87	7,367.12	16.87	16.86	166.45	211.97	-129.33	237.91	204.18	33.73	7.053	
7,450.00	7,430.84	7,428.84	7,411.69	16.96	16.96	135.90	217.05	-132.42	246.42	212.50	33.92	7.265	

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7,500.00	7,479.91	7,472.88	7,455.52	17.03	17.05	123.68	218.78	-136.20	256.72	222.65	34.07	7.534					
7,550.00	7,528.08	7,517.00	7,499.36	17.08	17.12	117.95	217.22	-140.75	268.77	234.56	34.21	7.857					
7,600.00	7,574.97	7,561.20	7,542.97	17.13	17.19	114.74	212.34	-146.04	282.47	248.15	34.33	8.229					
7,650.00	7,620.22	7,605.50	7,586.08	17.18	17.25	112.64	204.16	-152.05	297.71	263.28	34.43	8.647					
7,700.00	7,663.50	7,650.00	7,628.53	17.22	17.30	111.08	192.67	-158.76	314.37	279.85	34.52	9.107					
7,750.00	7,704.48	7,694.51	7,669.88	17.25	17.35	109.76	177.97	-166.10	332.32	297.71	34.60	9.604					
7,800.00	7,742.84	7,739.32	7,710.14	17.29	17.39	108.56	160.01	-174.09	351.41	316.73	34.69	10.132					
7,850.00	7,778.29	7,784.44	7,749.03	17.34	17.43	107.39	138.84	-182.69	371.51	336.74	34.77	10.684					
7,900.00	7,810.55	7,829.97	7,786.37	17.41	17.47	106.22	114.48	-191.88	392.48	357.60	34.87	11.254					
7,950.00	7,839.40	7,876.03	7,821.94	17.50	17.51	105.03	86.91	-201.64	414.15	379.14	35.01	11.830					
8,000.00	7,864.60	7,922.77	7,855.55	17.64	17.55	103.82	56.13	-211.96	436.38	401.19	35.19	12.401					
8,050.00	7,885.96	7,970.36	7,886.95	17.82	17.61	102.60	22.08	-222.82	459.01	423.58	35.43	12.956					
8,100.00	7,903.33	8,018.98	7,915.88	18.05	17.68	101.37	-15.27	-234.20	481.87	446.14	35.73	13.485					
8,150.00	7,916.56	8,068.85	7,942.03	18.32	17.79	100.15	-56.02	-246.11	504.81	468.69	36.11	13.978					
8,200.00	7,925.56	8,120.21	7,965.02	18.64	17.94	98.95	-100.22	-258.51	527.63	491.05	36.58	14.424					
8,250.00	7,930.26	8,173.31	7,984.40	18.99	18.15	97.80	-147.93	-271.37	550.16	513.02	37.14	14.814					
8,279.81	7,931.00	8,205.91	7,994.01	19.22	18.30	97.14	-178.07	-279.25	563.38	525.86	37.51	15.018					
8,300.00	7,930.98	8,228.60	7,999.65	19.36	18.41	97.59	-199.36	-284.70	572.07	534.30	37.78	15.144					
8,400.00	7,930.89	8,349.22	8,014.86	20.11	19.14	98.35	-315.41	-312.94	608.96	569.71	39.25	15.514					
8,500.00	7,930.82	8,515.85	8,015.02	20.95	20.31	97.74	-479.33	-342.30	632.00	590.74	41.26	15.316					
8,533.27	7,930.80	8,574.77	8,015.03	21.25	20.78	97.64	-537.97	-348.11	635.56	593.52	42.03	15.120					
8,600.00	7,930.77	8,687.43	8,015.04	21.89	21.76	97.60	-650.51	-352.50	637.86	594.21	43.65	14.612					
8,700.00	7,930.72	8,787.43	8,015.05	22.96	22.77	97.60	-750.51	-353.04	638.16	592.43	45.73	13.955					
8,800.00	7,930.67	8,887.43	8,015.06	24.12	23.87	97.60	-850.51	-353.57	638.45	590.47	47.99	13.305					
8,900.00	7,930.62	8,987.43	8,015.07	25.35	25.05	97.61	-950.51	-354.10	638.75	588.34	50.40	12.673					
9,000.00	7,930.57	9,087.43	8,015.08	26.66	26.30	97.61	-1,050.50	-354.63	639.04	586.08	52.96	12.066					
9,100.00	7,930.52	9,187.43	8,015.09	28.02	27.62	97.61	-1,150.50	-355.16	639.34	583.70	55.64	11.491					
9,200.00	7,930.47	9,287.43	8,015.10	29.43	28.99	97.61	-1,250.50	-355.69	639.63	581.21	58.42	10.948					
9,300.00	7,930.42	9,387.43	8,015.11	30.88	30.41	97.61	-1,350.50	-356.23	639.93	578.63	61.30	10.440					
9,400.00	7,930.37	9,487.43	8,015.12	32.38	31.87	97.62	-1,450.50	-356.76	640.22	575.97	64.25	9.965					
9,500.00	7,930.32	9,587.43	8,015.13	33.90	33.37	97.62	-1,550.49	-357.29	640.52	573.25	67.27	9.522					
9,600.00	7,930.27	9,687.43	8,015.14	35.45	34.90	97.62	-1,650.49	-357.82	640.81	570.46	70.35	9.109					
9,700.00	7,930.22	9,787.43	8,015.15	37.03	36.45	97.62	-1,750.49	-358.35	641.11	567.63	73.48	8.725					
9,800.00	7,930.17	9,887.43	8,015.16	38.63	38.03	97.62	-1,850.49	-358.89	641.40	564.74	76.66	8.367					
9,900.00	7,930.12	9,987.43	8,015.17	40.25	39.63	97.63	-1,950.49	-359.42	641.70	561.82	79.88	8.033					
10,000.00	7,930.07	10,087.43	8,015.18	41.88	41.25	97.63	-2,050.48	-359.95	642.00	558.86	83.13	7.722					
10,100.00	7,930.02	10,187.43	8,015.19	43.54	42.88	97.63	-2,150.48	-360.48	642.29	555.87	86.42	7.432					
10,200.00	7,929.97	10,287.43	8,015.20	45.20	44.53	97.63	-2,250.48	-361.01	642.59	552.85	89.73	7.161					
10,300.00	7,929.92	10,387.43	8,015.21	46.87	46.20	97.63	-2,350.48	-361.55	642.88	549.81	93.07	6.907					
10,400.00	7,929.87	10,487.43	8,015.22	48.56	47.87	97.63	-2,450.48	-362.08	643.18	546.74	96.43	6.670					
10,500.00	7,929.82	10,587.43	8,015.23	50.26	49.56	97.64	-2,550.48	-362.61	643.47	543.66	99.81	6.447					
10,600.00	7,929.77	10,687.42	8,015.24	51.96	51.25	97.64	-2,650.47	-363.14	643.77	540.55	103.21	6.237					
10,700.00	7,929.72	10,787.42	8,015.25	53.68	52.95	97.64	-2,750.47	-363.67	644.06	537.43	106.63	6.040					
10,800.00	7,929.67	10,887.42	8,015.26	55.40	54.67	97.64	-2,850.47	-364.20	644.36	534.29	110.06	5.854					
10,900.00	7,929.62	10,987.42	8,015.27	57.12	56.38	97.64	-2,950.47	-364.74	644.65	531.14	113.51	5.679					
11,000.00	7,929.57	11,087.42	8,015.28	58.86	58.11	97.65	-3,050.47	-365.27	644.95	527.98	116.96	5.514					
11,100.00	7,929.52	11,187.42	8,015.29	60.59	59.84	97.65	-3,150.46	-365.80	645.24	524.81	120.43	5.358					
11,200.00	7,929.47	11,287.42	8,015.30	62.34	61.58	97.65	-3,250.46	-366.33	645.54	521.62	123.91	5.210					
11,300.00	7,929.42	11,387.42	8,015.31	64.08	63.32	97.65	-3,350.46	-366.86	645.83	518.43	127.40	5.069					
11,400.00	7,929.37	11,487.42	8,015.32	65.84	65.06	97.65	-3,450.46	-367.40	646.13	515.23	130.90	4.936					
11,500.00	7,929.32	11,587.42	8,015.33	67.59	66.81	97.66	-3,550.46	-367.93	646.42	512.02	134.40	4.810					
11,600.00	7,929.27	11,687.42	8,015.34	69.35	68.57	97.66	-3,650.46	-368.46	646.72	508.80	137.92	4.689					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S. , R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 504H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 504H
TVD Reference: KB=30' @ 3037.20usft (Nabors 894)
MD Reference: KB=30' @ 3037.20usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
11,700.00	7,929.22	11,787.42	8,015.35	71.11	70.32	97.66	-3,750.45	-368.99	647.01	505.58	141.44	4.575		
11,800.00	7,929.17	11,887.42	8,015.36	72.88	72.08	97.66	-3,850.45	-369.52	647.31	502.34	144.96	4.465		
11,900.00	7,929.12	11,987.42	8,015.37	74.65	73.85	97.66	-3,950.45	-370.06	647.60	499.11	148.50	4.361		
12,000.00	7,929.07	12,087.42	8,015.38	76.42	75.61	97.66	-4,050.45	-370.59	647.90	495.87	152.03	4.262		
12,100.00	7,929.02	12,187.42	8,015.39	78.19	77.38	97.67	-4,150.45	-371.12	648.19	492.62	155.58	4.166		
12,200.00	7,928.97	12,287.42	8,015.40	79.97	79.16	97.67	-4,250.44	-371.65	648.49	489.36	159.12	4.075		
12,300.00	7,928.92	12,387.42	8,015.41	81.75	80.93	97.67	-4,350.44	-372.18	648.78	486.11	162.68	3.988		
12,400.00	7,928.87	12,487.42	8,015.42	83.53	82.71	97.67	-4,450.44	-372.72	649.08	482.85	166.23	3.905		
12,500.00	7,928.83	12,587.42	8,015.43	85.31	84.48	97.67	-4,550.44	-373.25	649.37	479.58	169.79	3.824		
12,600.00	7,928.78	12,687.42	8,015.44	87.09	86.26	97.68	-4,650.44	-373.78	649.67	476.31	173.36	3.748		
12,700.00	7,928.73	12,787.42	8,015.45	88.88	88.05	97.68	-4,750.43	-374.31	649.97	473.04	176.93	3.674		
12,800.00	7,928.68	12,887.42	8,015.46	90.67	89.83	97.68	-4,850.43	-374.84	650.26	469.76	180.50	3.603		
12,900.00	7,928.63	12,987.41	8,015.47	92.45	91.62	97.68	-4,950.43	-375.37	650.56	466.48	184.07	3.534		
13,000.00	7,928.58	13,087.41	8,015.48	94.24	93.40	97.68	-5,050.43	-375.91	650.85	463.20	187.65	3.468		
13,100.00	7,928.53	13,187.41	8,015.49	96.04	95.19	97.68	-5,150.43	-376.44	651.15	459.92	191.23	3.405		
13,200.00	7,928.48	13,287.41	8,015.50	97.83	96.98	97.69	-5,250.43	-376.97	651.44	456.63	194.81	3.344		
13,300.00	7,928.43	13,387.41	8,015.51	99.62	98.77	97.69	-5,350.42	-377.50	651.74	453.34	198.39	3.285		
13,400.00	7,928.38	13,487.41	8,015.52	101.42	100.56	97.69	-5,450.42	-378.03	652.03	450.05	201.98	3.228		
13,500.00	7,928.33	13,587.41	8,015.53	103.21	102.36	97.69	-5,550.42	-378.57	652.33	446.76	205.57	3.173		
13,600.00	7,928.28	13,687.41	8,015.54	105.01	104.15	97.69	-5,650.42	-379.10	652.62	443.46	209.16	3.120		
13,700.00	7,928.23	13,787.41	8,015.55	106.81	105.95	97.70	-5,750.42	-379.63	652.92	440.16	212.76	3.069		
13,800.00	7,928.18	13,887.41	8,015.56	108.61	107.74	97.70	-5,850.41	-380.16	653.21	436.86	216.35	3.019		
13,900.00	7,928.13	13,987.41	8,015.57	110.41	109.54	97.70	-5,950.41	-380.69	653.51	433.56	219.95	2.971		
14,000.00	7,928.08	14,087.41	8,015.58	112.21	111.34	97.70	-6,050.41	-381.23	653.80	430.26	223.55	2.925		
14,100.00	7,928.03	14,187.41	8,015.59	114.01	113.14	97.70	-6,150.41	-381.76	654.10	426.95	227.15	2.880		
14,200.00	7,927.98	14,287.41	8,015.60	115.81	114.94	97.70	-6,250.41	-382.29	654.39	423.64	230.75	2.836		
14,300.00	7,927.93	14,387.41	8,015.61	117.61	116.74	97.71	-6,350.41	-382.82	654.69	420.34	234.35	2.794		
14,400.00	7,927.88	14,487.41	8,015.62	119.42	118.54	97.71	-6,450.40	-383.35	654.98	417.03	237.96	2.753		
14,500.00	7,927.83	14,587.41	8,015.63	121.22	120.34	97.71	-6,550.40	-383.88	655.28	413.72	241.56	2.713		
14,600.00	7,927.78	14,687.41	8,015.64	123.03	122.14	97.71	-6,650.40	-384.42	655.57	410.40	245.17	2.674		
14,700.00	7,927.73	14,787.41	8,015.65	124.83	123.95	97.71	-6,750.40	-384.95	655.87	407.09	248.78	2.636		
14,800.00	7,927.68	14,887.41	8,015.66	126.64	125.75	97.71	-6,850.40	-385.48	656.16	403.78	252.39	2.600		
14,900.00	7,927.63	14,987.41	8,015.67	128.44	127.56	97.72	-6,950.39	-386.01	656.46	400.46	256.00	2.564		
15,000.00	7,927.58	15,087.41	8,015.68	130.25	129.36	97.72	-7,050.39	-386.54	656.75	397.14	259.61	2.530		
15,100.00	7,927.53	15,187.41	8,015.69	132.06	131.17	97.72	-7,150.39	-387.08	657.05	393.82	263.23	2.496		
15,200.00	7,927.48	15,287.40	8,015.70	133.87	132.97	97.72	-7,250.39	-387.61	657.35	390.51	266.84	2.463		
15,300.00	7,927.43	15,387.40	8,015.71	135.67	134.78	97.72	-7,350.39	-388.14	657.64	387.19	270.45	2.432		
15,400.00	7,927.38	15,487.40	8,015.72	137.48	136.59	97.73	-7,450.38	-388.67	657.94	383.87	274.07	2.401		
15,500.00	7,927.33	15,587.40	8,015.73	139.29	138.39	97.73	-7,550.38	-389.20	658.23	380.54	277.69	2.370		
15,600.00	7,927.28	15,687.40	8,015.74	141.10	140.20	97.73	-7,650.38	-389.74	658.53	377.22	281.30	2.341		
15,700.00	7,927.23	15,787.40	8,015.75	142.91	142.01	97.73	-7,750.38	-390.27	658.82	373.90	284.92	2.312		
15,800.00	7,927.18	15,887.40	8,015.76	144.72	143.82	97.73	-7,850.38	-390.80	659.12	370.57	288.54	2.284		
15,900.00	7,927.13	15,987.40	8,015.77	146.53	145.63	97.73	-7,950.38	-391.33	659.41	367.25	292.16	2.257		
16,000.00	7,927.08	16,087.40	8,015.78	148.35	147.44	97.74	-8,050.37	-391.86	659.71	363.92	295.78	2.230		
16,100.00	7,927.03	16,187.40	8,015.79	150.16	149.25	97.74	-8,150.37	-392.39	660.00	360.60	299.40	2.204		
16,200.00	7,926.98	16,287.40	8,015.80	151.97	151.06	97.74	-8,250.37	-392.93	660.30	357.27	303.03	2.179		
16,300.00	7,926.93	16,387.40	8,015.81	153.78	152.87	97.74	-8,350.37	-393.46	660.59	353.94	306.65	2.154		
16,400.00	7,926.88	16,487.40	8,015.82	155.59	154.68	97.74	-8,450.37	-393.99	660.89	350.61	310.27	2.130		
16,500.00	7,926.83	16,587.40	8,015.83	157.41	156.49	97.75	-8,550.36	-394.52	661.18	347.29	313.90	2.106		
16,600.00	7,926.78	16,687.40	8,015.84	159.22	158.30	97.75	-8,650.36	-395.05	661.48	343.96	317.52	2.083		
16,700.00	7,926.73	16,787.40	8,015.85	161.03	160.11	97.75	-8,750.36	-395.59	661.77	340.63	321.15	2.061		
16,800.00	7,926.68	16,887.40	8,015.86	162.85	161.93	97.75	-8,850.36	-396.12	662.07	337.30	324.77	2.039		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S. , R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 504H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

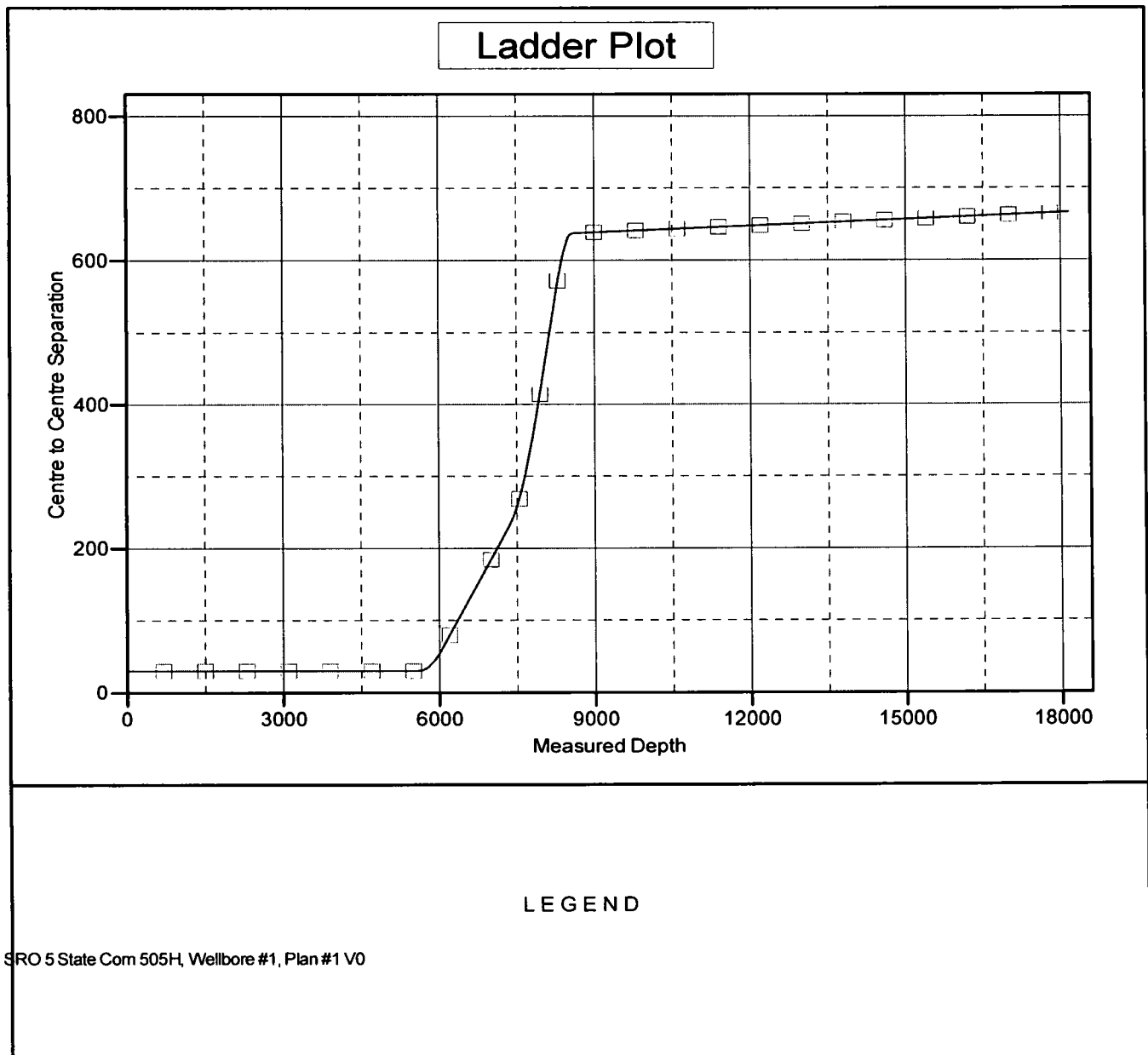
Local Co-ordinate Reference: Well SRO 5 State Com 504H
TVD Reference: KB=30' @ 3037.20usft (Nabors 894)
MD Reference: KB=30' @ 3037.20usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

Offset Design Sec. 05, T 26 S. , R 28 E - SRO 5 State Com 505H - Wellbore #1 - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
16,900.00	7,926.63	16,987.40	8,015.87	164.66	163.74	97.75	-8,950.36	-396.65	662.36	333.97	328.40	2.017		
17,000.00	7,926.58	17,087.40	8,015.88	166.47	165.55	97.75	-9,050.36	-397.18	662.66	330.63	332.03	1.996		
17,100.00	7,926.53	17,187.40	8,015.89	168.29	167.36	97.76	-9,150.35	-397.71	662.95	327.30	335.65	1.975		
17,200.00	7,926.48	17,287.40	8,015.90	170.10	169.18	97.76	-9,250.35	-398.25	663.25	323.97	339.28	1.955		
17,300.00	7,926.43	17,387.40	8,015.91	171.92	170.99	97.76	-9,350.35	-398.78	663.54	320.64	342.91	1.935		
17,400.00	7,926.38	17,487.40	8,015.92	173.73	172.80	97.76	-9,450.35	-399.31	663.84	317.30	346.54	1.916		
17,500.00	7,926.33	17,587.39	8,015.93	175.55	174.62	97.76	-9,550.35	-399.84	664.14	313.97	350.17	1.897		
17,600.00	7,926.28	17,687.39	8,015.94	177.36	176.43	97.76	-9,650.34	-400.37	664.43	310.63	353.80	1.878		
17,700.00	7,926.23	17,787.39	8,015.95	179.18	178.25	97.77	-9,750.34	-400.91	664.73	307.30	357.43	1.860		
17,800.00	7,926.18	17,887.39	8,015.96	181.00	180.06	97.77	-9,850.34	-401.44	665.02	303.96	361.06	1.842		
17,900.00	7,926.13	17,987.39	8,015.97	182.81	181.88	97.77	-9,950.34	-401.97	665.32	300.63	364.69	1.824		
18,000.00	7,926.08	18,087.39	8,015.98	184.63	183.69	97.77	-10,050.34	-402.50	665.61	297.29	368.32	1.807		
18,100.00	7,926.03	18,187.39	8,015.99	186.44	185.51	97.77	-10,150.33	-403.03	665.91	293.96	371.95	1.790		
18,160.35	7,926.00	18,247.74	8,016.00	187.54	186.60	97.77	-10,210.68	-403.35	666.08	291.94	374.14	1.780		

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S. , R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 504H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 504H
TVD Reference: KB=30' @ 3037.20usft (Nabors 894)
MD Reference: KB=30' @ 3037.20usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=30' @ 3037.20usft (Nabors 894) Coordinates are relative to: SRO 5 State Com 504H
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Central Meridian is -104.33334 Grid Convergence at Surface is: 0.12°

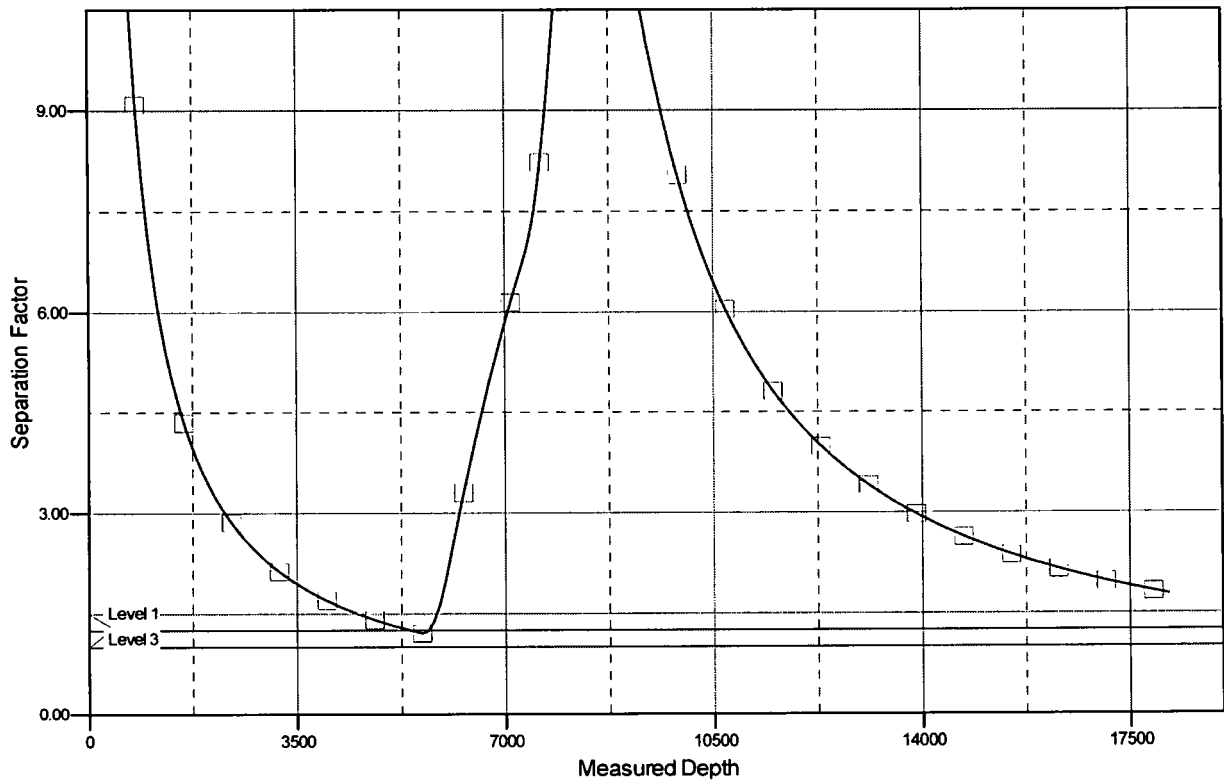


Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S., R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 504H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 504H
TVD Reference: KB=30' @ 3037.20usft (Nabors 894)
MD Reference: KB=30' @ 3037.20usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

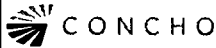
Reference Depths are relative to KB=30' @ 3037.20usft (Nabors 894) Coordinates are relative to: SRO 5 State Com 504H
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Central Meridian is -104.33334 Grid Convergence at Surface is: 0.12°

Separation Factor Plot



LEGEND

SRO 5 State Com 505H, Wellbore #1, Plan #1 V0



COG Operating L.L.C.
Project: Eddy County, NM (NAD 27 NME)
Site: Sec. 05, T 26 S., R 28 E
Well: SRO 5 State Com 504H
Wellbore: Wellbore #1
Plan: Plan #1 (SRO 5 State Com 504H/Wellbore #1)
Nabors 894

WELL DETAILS: SRO 5 State Com 504H

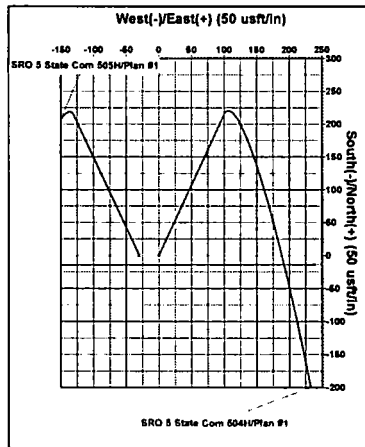
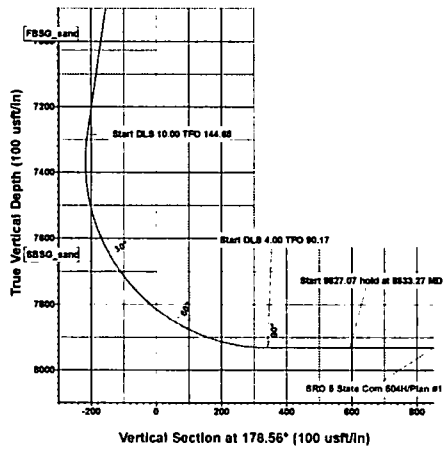
Ground Elevation:: 3007.20
RKB Elevation: KB=30' @ 3037.20usft (Nabors 894)
Rig Name: Nabors 894

Northing 392156.60 Easting 571525.70 Latitude 32.07794 Longitude -104.10241



Planned Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
2	5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00	Start DLS 10.00 TFO 144.65
3	6062.31	9.25	24.99	6060.31	33.74	15.73	2.00	24.99	-33.33	Start DLS 4.00 TFO 90.17
4	7303.57	9.25	24.99	7285.44	214.50	100.00	0.00	0.00	-211.92	Start 9627.07 hold at 8533.27 MD
5	8279.81	90.06	170.00	7931.00	-334.96	258.15	10.00	144.65	341.33	TD at 18160.35
6	8533.27	90.03	180.14	7930.80	-587.16	278.81	4.00	90.17	594.00	
7	18160.35	90.03	180.14	7926.00	-10214.20	256.60	0.00	0.00	0.00	



PROJECT DETAILS: Eddy County, NM (NAD 27 NME)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

