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DISTRICT II-ARTESIA O.C.D.

TITUS

OIL GAS LLC

Titus Oil & Gas Production, LLC

Eddy County, NM (NAD83-NME)

A01 Todd DSU

Todd 2-24S-31E State 304H

304H

Plan #1-Rev0

Anticollision Report

31 May, 2019

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Reference	Plan #1-Rev0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum separation factor of 12.00	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	5/31/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	16,619.54	Plan #1-Rev0 (304H)	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						
A01 Todd DSU						
Todd 2-24S-31E State 202H - 202H - Plan #1-Rev0	1,500.00	1,500.00	30.10	23.64	4.658	CC
Todd 2-24S-31E State 202H - 202H - Plan #1-Rev0	1,678.93	1,677.58	30.45	23.29	4.253	ES
Todd 2-24S-31E State 202H - 202H - Plan #1-Rev0	1,700.00	1,698.48	30.60	23.36	4.227	SF
Todd 2-24S-31E State 203H - 203H - Plan #1-Rev0	1,500.00	1,500.00	30.10	23.64	4.658	CC, ES, SF
Todd 2-24S-31E State 207H - 207H - Plan #1-Rev0	1,416.33	1,417.33	54.17	48.08	8.897	CC
Todd 2-24S-31E State 207H - 207H - Plan #1-Rev0	1,500.00	1,500.99	54.17	47.70	8.380	ES
Todd 2-24S-31E State 207H - 207H - Plan #1-Rev0	1,600.00	1,600.00	55.32	48.45	8.051	SF
Todd 2-24S-31E State 405H - 405H - Plan #1-Rev0	1,583.53	1,584.07	45.18	38.37	6.639	CC
Todd 2-24S-31E State 405H - 405H - Plan #1-Rev0	1,600.00	1,600.44	45.18	38.31	6.575	ES
Todd 2-24S-31E State 405H - 405H - Plan #1-Rev0	16,620.31	16,757.88	673.30	485.01	3.576	SF
Todd 2-24S-31E State 434H - 434H - Plan #1-Rev0	5,196.41	5,195.43	30.81	7.99	1.350	Level 3, CC
Todd 2-24S-31E State 434H - 434H - Plan #1-Rev0	6,100.00	6,098.95	32.86	5.81	1.215	Level 2, ES
Todd 2-24S-31E State 434H - 434H - Plan #1-Rev0	6,400.00	6,398.92	34.36	5.94	1.209	Level 2, SF

Offset Design		A01 Todd DSU - Todd 2-24S-31E State 202H - 202H - Plan #1-Rev0										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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)		
700.00	700.00	700.00	700.00	1.43	1.43	-90.57	-0.30	-30.10	30.10	27.24	2.87	10.504	
800.00	800.00	800.00	800.00	1.66	1.66	-90.57	-0.30	-30.10	30.10	26.79	3.32	9.080	
900.00	900.00	900.00	900.00	1.88	1.88	-90.57	-0.30	-30.10	30.10	26.34	3.76	7.995	
1,000.00	1,000.00	1,000.00	1,000.00	2.11	2.11	-90.57	-0.30	-30.10	30.10	25.89	4.21	7.143	
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-90.57	-0.30	-30.10	30.10	25.44	4.66	6.454	
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	-90.57	-0.30	-30.10	30.10	24.99	5.11	5.887	
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-90.57	-0.30	-30.10	30.10	24.54	5.56	5.411	
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	-90.57	-0.30	-30.10	30.10	24.09	6.01	5.006	
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-90.57	-0.30	-30.10	30.10	23.64	6.46	4.658 CC	
1,600.00	1,599.99	1,599.24	1,599.23	3.43	3.44	29.30	-0.65	-31.34	30.21	23.34	6.87	4.398	
1,678.93	1,678.86	1,677.58	1,677.51	3.58	3.59	30.48	-1.42	-34.07	30.45	23.29	7.16	4.253 ES	
1,700.00	1,699.91	1,698.48	1,698.39	3.62	3.63	30.84	-1.71	-35.06	30.60	23.36	7.24	4.227 SF	
1,800.00	1,799.80	1,797.68	1,797.38	3.82	3.83	31.65	-3.46	-41.25	32.78	25.16	7.61	4.305	
1,900.00	1,899.69	1,896.77	1,896.06	4.02	4.04	31.09	-5.91	-49.90	37.42	29.43	8.00	4.680	
2,000.00	1,999.58	1,996.61	1,995.38	4.22	4.26	30.20	-8.68	-59.68	43.14	34.74	8.40	5.137	

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

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Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	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															
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	Warning		
2,100.00	2,099.47	2,096.44	2,094.69	4.43	4.49	29.53	-11.45	-69.47	48.86	40.05	8.81	5.548			
2,200.00	2,199.36	2,196.28	2,194.01	4.64	4.73	28.99	-14.22	-79.25	54.59	45.37	9.22	5.920			
2,300.00	2,299.25	2,296.11	2,293.32	4.85	4.97	28.56	-17.00	-89.03	60.32	50.68	9.64	6.257			
2,400.00	2,399.14	2,395.95	2,392.64	5.07	5.22	28.20	-19.77	-98.81	66.05	55.99	10.06	6.564			
2,500.00	2,499.03	2,495.78	2,491.95	5.28	5.47	27.90	-22.54	-108.59	71.79	61.30	10.49	6.843			
2,600.00	2,598.92	2,595.61	2,591.27	5.50	5.73	27.65	-25.31	-118.38	77.53	66.61	10.92	7.098			
2,700.00	2,698.81	2,695.45	2,690.58	5.73	5.99	27.42	-28.08	-128.16	83.27	71.91	11.36	7.332			
2,800.00	2,798.70	2,795.28	2,789.90	5.95	6.25	27.23	-30.85	-137.94	89.01	77.22	11.79	7.547			
2,900.00	2,898.60	2,895.12	2,889.22	6.17	6.52	27.06	-33.62	-147.72	94.75	82.52	12.23	7.745			
3,000.00	2,998.49	2,994.95	2,988.53	6.40	6.79	26.91	-36.40	-157.50	100.49	87.82	12.67	7.929			
3,100.00	3,098.38	3,094.79	3,087.85	6.63	7.06	26.78	-39.17	-167.29	106.24	93.12	13.12	8.098			
3,200.00	3,198.27	3,194.62	3,187.16	6.86	7.33	26.66	-41.94	-177.07	111.98	98.42	13.56	8.256			
3,300.00	3,298.16	3,294.46	3,286.48	7.08	7.60	26.55	-44.71	-186.85	117.72	103.71	14.01	8.403			
3,400.00	3,398.05	3,394.29	3,385.79	7.31	7.87	26.45	-47.48	-196.63	123.47	109.01	14.46	8.540			
3,500.00	3,497.94	3,494.13	3,485.11	7.54	8.15	26.37	-50.25	-206.41	129.21	114.31	14.91	8.668			
3,600.00	3,597.83	3,593.96	3,584.43	7.78	8.43	26.28	-53.02	-216.20	134.96	119.60	15.36	8.787			
3,700.00	3,697.72	3,693.80	3,683.74	8.01	8.70	26.21	-55.80	-225.98	140.70	124.89	15.81	8.900			
3,800.00	3,797.61	3,793.63	3,783.06	8.24	8.98	26.14	-58.57	-235.76	146.45	130.19	16.26	9.005			
3,900.00	3,897.50	3,893.47	3,882.37	8.47	9.26	26.08	-61.34	-245.54	152.20	135.48	16.72	9.105			
4,000.00	3,997.39	3,993.30	3,981.69	8.71	9.54	26.02	-64.11	-255.32	157.94	140.77	17.17	9.198			
4,100.00	4,097.28	4,093.13	4,081.00	8.94	9.82	25.96	-66.88	-265.10	163.69	146.06	17.63	9.287			
4,200.00	4,197.17	4,192.97	4,180.32	9.17	10.10	25.91	-69.65	-274.89	169.43	151.35	18.08	9.370			
4,300.00	4,297.06	4,292.80	4,279.63	9.41	10.39	25.86	-72.42	-284.67	175.18	156.64	18.54	9.450			
4,400.00	4,396.95	4,392.64	4,378.95	9.64	10.67	25.82	-75.20	-294.45	180.93	161.93	19.00	9.525			
4,500.00	4,496.84	4,492.47	4,478.27	9.88	10.95	25.77	-77.97	-304.23	186.67	167.22	19.45	9.596			
4,600.00	4,596.73	4,592.31	4,577.58	10.11	11.24	25.73	-80.74	-314.01	192.42	172.51	19.91	9.664			
4,700.00	4,696.62	4,692.14	4,676.90	10.35	11.52	25.70	-83.51	-323.80	198.17	177.80	20.37	9.728			
4,800.00	4,796.51	4,791.98	4,776.21	10.59	11.80	25.66	-86.28	-333.58	203.91	183.08	20.83	9.789			
4,900.00	4,896.40	4,891.81	4,875.53	10.82	12.09	25.63	-89.05	-343.36	209.66	188.37	21.29	9.848			
5,000.00	4,996.29	4,991.65	4,974.84	11.06	12.37	25.60	-91.82	-353.14	215.41	193.66	21.75	9.904			
5,100.00	5,096.18	5,091.48	5,074.16	11.30	12.66	25.57	-94.60	-362.92	221.16	198.94	22.21	9.957			
5,200.00	5,196.07	5,191.32	5,173.48	11.53	12.95	25.54	-97.37	-372.71	226.90	204.23	22.67	10.008			
5,300.00	5,295.96	5,291.15	5,272.79	11.77	13.23	25.51	-100.14	-382.49	232.65	209.52	23.13	10.057			
5,400.00	5,395.85	5,390.99	5,372.11	12.01	13.52	25.49	-102.91	-392.27	238.40	214.80	23.59	10.104			
5,500.00	5,495.74	5,490.82	5,471.42	12.25	13.81	25.46	-105.68	-402.05	244.14	220.09	24.06	10.149			
5,600.00	5,595.63	5,590.65	5,570.74	12.48	14.09	25.44	-108.45	-411.83	249.89	225.37	24.52	10.192			
5,700.00	5,695.52	5,690.49	5,670.05	12.72	14.38	25.42	-111.22	-421.62	255.64	230.66	24.98	10.234			
5,800.00	5,795.41	5,790.32	5,769.37	12.96	14.67	25.40	-114.00	-431.40	261.39	235.94	25.44	10.273			
5,900.00	5,895.30	5,890.16	5,868.68	13.20	14.96	25.37	-116.77	-441.18	267.13	241.23	25.91	10.312			
6,000.00	5,995.19	5,989.99	5,968.00	13.44	15.24	25.36	-119.54	-450.96	272.88	246.51	26.37	10.349			
6,100.00	6,095.08	6,089.83	6,067.32	13.67	15.53	25.34	-122.31	-460.74	278.63	251.80	26.83	10.384			
6,200.00	6,194.98	6,189.66	6,166.63	13.91	15.82	25.32	-125.08	-470.53	284.38	257.08	27.30	10.418			
6,300.00	6,294.87	6,289.50	6,265.95	14.15	16.11	25.30	-127.85	-480.31	290.12	262.36	27.76	10.451			
6,400.00	6,394.76	6,389.33	6,365.26	14.39	16.40	25.28	-130.62	-490.09	295.87	267.65	28.22	10.483			
6,500.00	6,494.65	6,489.17	6,464.58	14.63	16.68	25.27	-133.40	-499.87	301.62	272.93	28.69	10.514			
6,600.00	6,594.54	6,589.00	6,563.89	14.87	16.97	25.25	-136.17	-509.65	307.37	278.21	29.15	10.544			
6,700.00	6,694.43	6,688.84	6,663.21	15.11	17.26	25.24	-138.94	-519.43	313.11	283.50	29.62	10.572			
6,800.00	6,794.32	6,788.67	6,762.52	15.35	17.55	25.22	-141.71	-529.22	318.86	288.78	30.08	10.600			
6,900.00	6,894.21	6,888.50	6,861.84	15.59	17.84	25.21	-144.48	-539.00	324.61	294.06	30.55	10.627			
7,000.00	6,994.10	6,988.34	6,961.16	15.82	18.13	25.20	-147.25	-548.78	330.36	299.35	31.01	10.653			
7,100.00	7,093.99	7,088.17	7,060.47	16.06	18.42	25.18	-150.02	-558.56	336.10	304.63	31.48	10.678			
7,200.00	7,193.88	7,188.01	7,159.79	16.30	18.71	25.17	-152.80	-568.34	341.85	309.91	31.94	10.703			

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Survey Program: 0-MWD														Offset Well Error:	0.00 usft
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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	Warning		
7,300.00	7,293.77	7,287.84	7,259.10	16.54	19.00	25.16	-155.57	-578.13	347.60	315.19	32.41	10.727			
7,400.00	7,393.66	7,387.68	7,358.42	16.78	19.29	25.15	-158.34	-587.91	353.35	320.48	32.87	10.750			
7,500.00	7,493.55	7,487.51	7,457.73	17.02	19.58	25.14	-161.11	-597.69	359.10	325.76	33.34	10.772			
7,600.00	7,593.44	7,587.35	7,557.05	17.26	19.87	25.13	-163.88	-607.47	364.84	331.04	33.80	10.794			
7,700.00	7,693.33	7,687.18	7,656.37	17.50	20.16	25.12	-166.65	-617.25	370.59	336.32	34.27	10.815			
7,800.00	7,793.22	7,787.02	7,755.68	17.74	20.45	25.11	-169.42	-627.04	376.34	341.61	34.73	10.835			
7,900.00	7,893.11	7,886.85	7,855.00	17.98	20.74	25.10	-172.20	-636.82	382.09	346.89	35.20	10.855			
8,000.00	7,993.00	7,986.69	7,954.31	18.22	21.03	25.09	-174.97	-646.60	387.83	352.17	35.67	10.874			
8,100.00	8,092.89	8,086.52	8,053.63	18.46	21.32	25.08	-177.74	-656.38	393.58	357.45	36.13	10.893			
8,200.00	8,192.78	8,186.36	8,152.94	18.70	21.61	25.07	-180.51	-666.16	399.33	362.73	36.60	10.911			
8,300.00	8,292.67	8,286.19	8,252.26	18.94	21.90	25.06	-183.28	-675.95	405.08	368.01	37.06	10.929			
8,400.00	8,392.56	8,386.02	8,351.57	19.18	22.19	25.05	-186.05	-685.73	410.83	373.30	37.53	10.947			
8,500.00	8,492.45	8,485.86	8,450.89	19.42	22.48	25.04	-188.82	-695.51	416.57	378.58	38.00	10.963			
8,600.00	8,592.34	8,585.69	8,550.21	19.66	22.77	25.03	-191.59	-705.29	422.32	383.86	38.46	10.980			
8,700.00	8,692.23	8,685.53	8,649.52	19.90	23.06	25.03	-194.37	-715.07	428.07	389.14	38.93	10.996			
8,800.00	8,792.12	8,785.36	8,748.84	20.14	23.35	25.02	-197.14	-724.85	433.82	394.42	39.40	11.012			
8,900.00	8,892.01	8,885.20	8,848.15	20.38	23.64	25.01	-199.91	-734.64	439.57	399.70	39.86	11.027			
9,000.00	8,991.90	8,985.03	8,947.47	20.62	23.93	25.00	-202.68	-744.42	445.31	404.98	40.33	11.042			
9,100.00	9,091.79	9,084.92	9,046.94	20.86	24.22	25.01	-205.52	-754.45	450.74	409.93	40.81	11.045			
9,200.00	9,191.68	9,204.09	9,165.70	21.10	24.45	25.08	-207.78	-762.41	453.68	412.41	41.26	10.995			
9,300.00	9,291.57	9,317.25	9,278.75	21.34	24.65	25.24	-209.13	-767.17	453.72	412.03	41.69	10.883			
9,400.00	9,391.46	9,429.98	9,391.46	21.58	24.83	25.48	-209.56	-768.70	450.86	408.76	42.10	10.710			
9,500.00	9,491.36	9,529.87	9,491.36	21.82	24.99	25.74	-209.56	-768.70	446.64	404.11	42.53	10.502			
9,600.00	9,591.25	9,629.76	9,591.25	22.06	25.16	26.00	-209.56	-768.70	442.42	399.46	42.96	10.298			
9,700.00	9,691.14	9,729.75	9,691.23	22.30	25.33	26.27	-209.56	-768.70	438.22	394.82	43.39	10.099			
9,800.00	9,791.03	9,832.17	9,792.83	22.54	25.48	26.06	-198.16	-768.75	433.66	389.79	43.88	9.884			
9,900.00	9,890.92	9,925.00	9,880.91	22.78	25.57	32.16	-169.34	-768.86	430.23	385.76	44.46	9.676			
9,928.13	9,919.02	9,948.55	9,902.24	22.85	25.59	33.56	-159.35	-768.90	429.99	385.35	44.63	9.634			
10,000.00	9,990.81	10,003.59	9,949.96	23.02	25.62	37.35	-132.00	-769.01	431.92	386.89	45.03	9.591			
10,100.00	10,090.70	10,067.84	10,001.26	23.27	25.64	42.56	-93.38	-769.17	442.96	397.65	45.32	9.775			
10,200.00	10,190.59	10,119.57	10,038.49	23.51	25.65	47.20	-57.52	-769.31	466.12	421.04	45.08	10.340			
10,300.00	10,290.48	10,161.19	10,065.50	23.75	25.66	51.11	-25.86	-769.44	502.12	457.80	44.32	11.330			

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
A01 Todd DSU - Todd 2-24S-31E State 203H - 203H - Plan #1-Rev0													Offset Well Error:	0.00 usft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance							
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	Warning	
700.00	700.00	700.00	700.00	1.43	1.43	89.62	0.20	30.10	30.10	27.23	2.87	10.504		
800.00	800.00	800.00	800.00	1.66	1.66	89.62	0.20	30.10	30.10	26.79	3.32	9.079		
900.00	900.00	900.00	900.00	1.88	1.88	89.62	0.20	30.10	30.10	26.34	3.76	7.995		
1,000.00	1,000.00	1,000.00	1,000.00	2.11	2.11	89.62	0.20	30.10	30.10	25.89	4.21	7.142		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	89.62	0.20	30.10	30.10	25.44	4.66	6.454		
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	89.62	0.20	30.10	30.10	24.99	5.11	5.887		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	89.62	0.20	30.10	30.10	24.54	5.56	5.411		
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	89.62	0.20	30.10	30.10	24.09	6.01	5.006		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	89.62	0.20	30.10	30.10	23.64	6.46	4.658 CC, ES, SF		
1,600.00	1,599.99	1,599.19	1,599.18	3.43	3.44	-151.54	-0.13	31.34	32.50	25.63	6.87	4.731		
1,678.93	1,678.86	1,677.25	1,677.19	3.58	3.59	-152.39	-0.87	34.07	37.78	30.61	7.16	5.273		
1,700.00	1,699.91	1,698.04	1,697.95	3.62	3.63	-152.61	-1.13	35.06	39.64	32.40	7.24	5.473		
1,800.00	1,799.80	1,796.40	1,796.10	3.82	3.83	-152.90	-2.79	41.20	49.97	42.35	7.62	6.559		
1,900.00	1,899.69	1,894.27	1,893.57	4.02	4.04	-152.40	-5.08	49.73	62.74	54.74	8.00	7.845		
2,000.00	1,999.58	1,993.30	1,992.08	4.22	4.26	-151.80	-7.71	59.48	76.63	68.23	8.40	9.127		
2,100.00	2,099.47	2,092.32	2,090.59	4.43	4.48	-151.39	-10.33	69.23	90.53	81.72	8.80	10.286		
2,200.00	2,199.36	2,191.35	2,189.10	4.64	4.72	-151.09	-12.96	78.99	104.42	95.21	9.21	11.335		

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error: 0.00 usft	
A01 Todd DSU - Todd 2-24S-31E State 207H - 207H - Plan #1-Rev0													Offset Well Error: 0.00 usft	
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)	Separation Factor		
1,100.00	1,100.00	1,101.00	1,101.00	2.33	2.33	146.37	-45.10	30.00	54.17	49.50	4.67	11.608		
1,200.00	1,200.00	1,201.00	1,201.00	2.56	2.56	146.37	-45.10	30.00	54.17	49.05	5.12	10.588		
1,300.00	1,300.00	1,301.00	1,301.00	2.78	2.78	146.37	-45.10	30.00	54.17	48.60	5.57	9.733		
1,400.00	1,400.00	1,401.00	1,401.00	3.01	3.01	146.37	-45.10	30.00	54.17	48.15	6.01	9.006		
1,416.33	1,416.33	1,417.33	1,417.33	3.04	3.05	146.37	-45.10	30.00	54.17	48.08	6.09	8.897 CC		
1,500.00	1,500.00	1,500.99	1,500.99	3.23	3.23	146.37	-45.10	30.00	54.17	47.70	6.46	8.380 ES		
1,600.00	1,599.99	1,600.00	1,599.99	3.43	3.44	-96.49	-45.47	31.25	55.32	48.45	6.87	8.051 SF		
1,678.93	1,678.86	1,677.66	1,677.60	3.58	3.59	-100.94	-46.28	33.96	58.10	50.94	7.17	8.109		
1,700.00	1,699.91	1,698.38	1,698.29	3.62	3.63	-102.40	-46.57	34.94	59.18	51.94	7.24	8.169		
1,800.00	1,799.80	1,796.97	1,796.68	3.82	3.83	-109.17	-48.35	40.91	66.05	58.42	7.62	8.662		
1,900.00	1,899.69	1,896.40	1,895.88	4.02	4.03	-114.80	-50.31	47.45	74.19	66.17	8.02	9.252		
2,000.00	1,999.58	1,995.83	1,995.07	4.22	4.25	-119.29	-52.26	53.99	82.90	74.48	8.42	9.848		
2,100.00	2,099.47	2,095.26	2,094.27	4.43	4.46	-122.92	-54.21	60.54	92.02	83.20	8.82	10.429		
2,200.00	2,199.36	2,194.69	2,193.46	4.64	4.68	-125.88	-56.16	67.08	101.44	92.21	9.23	10.986		
2,300.00	2,299.25	2,294.12	2,292.66	4.85	4.91	-128.33	-58.12	73.62	111.08	101.44	9.65	11.513		
16,200.00	11,615.40	15,084.24	10,449.30	88.20	88.61	36.93	4,590.47	529.08	1,460.02	1,336.93	123.09	11.861		
16,300.00	11,614.96	15,184.24	10,448.62	89.96	90.37	36.92	4,690.47	528.57	1,460.15	1,334.71	125.43	11.641		
16,400.00	11,614.52	15,284.24	10,447.94	91.71	92.13	36.91	4,790.47	528.06	1,460.27	1,332.49	127.78	11.428		
16,500.00	11,614.09	15,384.24	10,447.26	93.47	93.90	36.90	4,890.46	527.55	1,460.39	1,330.26	130.13	11.222		
16,600.00	11,613.65	15,484.24	10,446.58	95.23	95.67	36.89	4,990.46	527.04	1,460.52	1,328.03	132.49	11.024		
16,619.67	11,613.56	15,503.91	10,446.45	95.58	96.02	36.89	5,010.13	526.94	1,460.54	1,327.59	132.95	10.986		
16,620.31	11,613.56	15,504.55	10,446.44	95.61	96.03	36.89	5,010.77	526.94	1,460.54	1,327.59	132.96	10.985		

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
A01 Todd DSU - Todd 2-24S-31E State 405H - 405H - Plan #1-Rev0													Offset Well Error:	0.00 usft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				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)	Minimum Separation (usft)	Separation Factor		
900.00	900.00	901.00	901.00	1.88	1.88	-179.87	-45.20	-0.10	45.20	41.43	3.77	11.999		
1,000.00	1,000.00	1,001.00	1,001.00	2.11	2.11	-179.87	-45.20	-0.10	45.20	40.98	4.22	10.720		
1,100.00	1,100.00	1,101.00	1,101.00	2.33	2.33	-179.87	-45.20	-0.10	45.20	40.53	4.67	9.687		
1,200.00	1,200.00	1,201.00	1,201.00	2.56	2.56	-179.87	-45.20	-0.10	45.20	40.08	5.12	8.836		
1,300.00	1,300.00	1,301.00	1,301.00	2.78	2.78	-179.87	-45.20	-0.10	45.20	39.63	5.57	8.122		
1,400.00	1,400.00	1,401.00	1,401.00	3.01	3.01	-179.87	-45.20	-0.10	45.20	39.19	6.01	7.515		
1,500.00	1,500.00	1,501.00	1,501.00	3.23	3.23	-179.87	-45.20	-0.10	45.20	38.74	6.46	6.993		
1,516.74	1,516.73	1,517.65	1,517.65	3.27	3.27	-60.63	-45.22	-0.06	45.20	38.67	6.53	6.919		
1,583.53	1,583.52	1,584.07	1,584.07	3.40	3.40	-62.61	-45.59	0.74	45.18	38.37	6.80	6.639 CC		
1,600.00	1,599.99	1,600.44	1,600.43	3.43	3.44	-63.50	-45.76	1.09	45.18	38.31	6.87	6.575 ES		
1,678.93	1,678.86	1,678.85	1,678.79	3.58	3.59	-69.86	-46.96	3.64	45.51	38.35	7.17	6.352		
1,700.00	1,699.91	1,699.86	1,699.77	3.62	3.63	-71.92	-47.34	4.44	45.70	38.46	7.25	6.308		
1,800.00	1,799.80	1,799.55	1,799.38	3.82	3.82	-81.37	-49.11	8.20	47.38	39.75	7.63	6.209		
1,900.00	1,899.69	1,899.24	1,898.98	4.02	4.02	-89.96	-50.89	11.97	50.26	42.23	8.02	6.263		
2,000.00	1,999.58	1,998.93	1,998.58	4.22	4.22	-97.48	-52.66	15.73	54.13	45.71	8.42	6.426		
2,100.00	2,099.47	2,098.62	2,098.19	4.43	4.43	-103.91	-54.44	19.50	58.81	49.98	8.83	6.661		
2,200.00	2,199.36	2,198.31	2,197.79	4.64	4.64	-109.33	-56.22	23.26	64.11	54.88	9.24	6.941		
2,300.00	2,299.25	2,298.00	2,297.39	4.85	4.85	-113.90	-57.99	27.03	69.90	60.25	9.65	7.243		
2,400.00	2,399.14	2,397.69	2,396.99	5.07	5.06	-117.74	-59.77	30.79	76.07	66.00	10.07	7.556		
2,500.00	2,499.03	2,497.37	2,496.60	5.28	5.28	-121.00	-61.54	34.56	82.52	72.03	10.49	7.868		
2,600.00	2,598.92	2,597.06	2,596.20	5.50	5.50	-123.78	-63.32	38.32	89.20	78.29	10.91	8.176		
2,700.00	2,698.81	2,696.75	2,695.80	5.73	5.72	-126.17	-65.09	42.09	96.07	84.73	11.34	8.474		
2,800.00	2,798.70	2,796.44	2,795.41	5.95	5.94	-128.24	-66.87	45.85	103.07	91.31	11.77	8.761		
2,900.00	2,898.60	2,896.13	2,895.01	6.17	6.16	-130.04	-68.64	49.62	110.20	98.00	12.20	9.035		
3,000.00	2,998.49	2,995.82	2,994.61	6.40	6.38	-131.62	-70.42	53.38	117.42	104.79	12.63	9.297		
3,100.00	3,098.38	3,095.51	3,094.22	6.63	6.61	-133.02	-72.19	57.15	124.71	111.65	13.06	9.547		
3,200.00	3,198.27	3,195.20	3,193.82	6.86	6.83	-134.27	-73.97	60.91	132.08	118.58	13.50	9.784		
3,300.00	3,298.16	3,294.89	3,293.42	7.08	7.06	-135.38	-75.74	64.68	139.49	125.56	13.94	10.009		
3,400.00	3,398.05	3,394.58	3,393.02	7.31	7.28	-136.38	-77.52	68.44	146.96	132.58	14.38	10.222		
3,500.00	3,497.94	3,494.27	3,492.63	7.54	7.51	-137.28	-79.29	72.21	154.47	139.65	14.82	10.425		
3,600.00	3,597.83	3,593.96	3,592.23	7.78	7.74	-138.10	-81.07	75.97	162.01	146.75	15.26	10.618		
3,700.00	3,697.72	3,693.65	3,691.83	8.01	7.96	-138.84	-82.84	79.74	169.58	153.88	15.70	10.801		
3,800.00	3,797.61	3,793.34	3,791.44	8.24	8.19	-139.52	-84.62	83.50	177.17	161.03	16.14	10.974		
3,900.00	3,897.50	3,893.03	3,891.04	8.47	8.42	-140.15	-86.40	87.27	184.79	168.20	16.59	11.140		
4,000.00	3,997.39	3,992.72	3,990.64	8.71	8.65	-140.73	-88.17	91.03	192.43	175.40	17.03	11.297		
4,100.00	4,097.28	4,092.41	4,090.24	8.94	8.88	-141.26	-89.95	94.80	200.09	182.61	17.48	11.447		
4,200.00	4,197.17	4,192.10	4,189.85	9.17	9.11	-141.75	-91.72	98.56	207.76	189.84	17.93	11.590		
4,300.00	4,297.06	4,291.79	4,289.45	9.41	9.34	-142.21	-93.50	102.33	215.45	197.08	18.37	11.726		
4,400.00	4,396.95	4,391.48	4,389.05	9.64	9.57	-142.63	-95.27	106.09	223.15	204.33	18.82	11.856		
4,500.00	4,496.84	4,491.17	4,488.66	9.88	9.81	-143.03	-97.05	109.86	230.86	211.59	19.27	11.980		
12,300.00	11,632.52	12,438.45	11,775.16	28.66	29.49	102.07	697.84	329.38	677.11	620.08	57.03	11.872		
12,400.00	11,632.08	12,538.45	11,774.88	29.55	30.41	102.09	797.84	328.86	677.02	618.22	58.80	11.515		
12,500.00	11,631.64	12,638.45	11,774.60	30.52	31.42	102.11	897.84	328.34	676.93	616.21	60.72	11.149		
12,600.00	11,631.20	12,738.45	11,774.32	31.56	32.49	102.12	997.84	327.82	676.84	614.05	62.79	10.780		
12,700.00	11,630.77	12,838.45	11,774.04	32.67	33.63	102.14	1,097.84	327.30	676.75	611.76	64.99	10.413		
12,800.00	11,630.33	12,938.45	11,773.76	33.85	34.83	102.15	1,197.83	326.78	676.66	609.35	67.31	10.052		
12,900.00	11,629.89	13,038.45	11,773.48	35.08	36.08	102.17	1,297.83	326.26	676.57	606.83	69.74	9.701		
13,000.00	11,629.45	13,138.45	11,773.20	36.36	37.38	102.18	1,397.83	325.74	676.49	604.22	72.27	9.361		
13,100.00	11,629.01	13,238.45	11,772.92	37.68	38.72	102.20	1,497.83	325.22	676.40	601.52	74.88	9.033		
13,200.00	11,628.57	13,338.45	11,772.64	39.05	40.10	102.21	1,597.83	324.70	676.31	598.74	77.57	8.719		
13,300.00	11,628.13	13,438.45	11,772.36	40.45	41.51	102.23	1,697.82	324.18	676.22	595.89	80.33	8.418		
13,400.00	11,627.69	13,538.45	11,772.09	41.89	42.96	102.24	1,797.82	323.66	676.13	592.98	83.15	8.131		

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

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 usft
A01 Todd DSU - Todd 2-24S-31E State 405H - 405H - Plan #1-Rev0														Offset Well Error:	0.00 usft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis			Distance								
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	Warning		
13,500.00	11,627.25	13,638.45	11,771.81	43.35	44.43	102.26	1,897.82	323.14	676.04	590.01	86.03	7.858			
13,600.00	11,626.81	13,738.45	11,771.53	44.84	45.93	102.28	1,997.82	322.62	675.95	586.99	88.96	7.598			
13,700.00	11,626.38	13,838.45	11,771.25	46.36	47.45	102.29	2,097.82	322.10	675.86	583.93	91.94	7.351			
13,800.00	11,625.94	13,938.45	11,770.97	47.90	49.00	102.31	2,197.81	321.57	675.78	580.82	94.96	7.117			
13,900.00	11,625.50	14,038.45	11,770.69	49.45	50.56	102.32	2,297.81	321.05	675.69	577.68	98.01	6.894			
14,000.00	11,625.06	14,138.45	11,770.41	51.03	52.14	102.34	2,397.81	320.53	675.60	574.50	101.10	6.682			
14,100.00	11,624.62	14,238.45	11,770.13	52.62	53.73	102.35	2,497.81	320.01	675.51	571.29	104.22	6.481			
14,200.00	11,624.18	14,338.45	11,769.85	54.23	55.34	102.37	2,597.81	319.49	675.42	568.05	107.38	6.290			
14,300.00	11,623.74	14,438.45	11,769.57	55.85	56.96	102.38	2,697.80	318.97	675.33	564.78	110.55	6.109			
14,400.00	11,623.30	14,538.45	11,769.29	57.48	58.60	102.40	2,797.80	318.45	675.25	561.49	113.75	5.936			
14,500.00	11,622.86	14,638.45	11,769.02	59.13	60.25	102.42	2,897.80	317.93	675.16	558.18	116.97	5.772			
14,600.00	11,622.43	14,738.44	11,768.74	60.78	61.90	102.43	2,997.80	317.41	675.07	554.85	120.22	5.615			
14,700.00	11,621.99	14,838.44	11,768.46	62.45	63.57	102.45	3,097.80	316.89	674.98	551.50	123.48	5.466			
14,800.00	11,621.55	14,938.44	11,768.18	64.12	65.24	102.46	3,197.79	316.37	674.89	548.14	126.76	5.324			
14,900.00	11,621.11	15,038.44	11,767.90	65.80	66.93	102.48	3,297.79	315.85	674.80	544.75	130.05	5.189			
15,000.00	11,620.67	15,138.44	11,767.62	67.49	68.62	102.49	3,397.79	315.33	674.72	541.36	133.36	5.059			
15,100.00	11,620.23	15,238.44	11,767.34	69.19	70.31	102.51	3,497.79	314.81	674.63	537.95	136.68	4.936			
15,200.00	11,619.79	15,338.44	11,767.06	70.89	72.02	102.52	3,597.79	314.29	674.54	534.53	140.01	4.818			
15,300.00	11,619.35	15,438.44	11,766.78	72.60	73.73	102.54	3,697.78	313.77	674.45	531.09	143.36	4.705			
15,400.00	11,618.91	15,538.44	11,766.50	74.32	75.44	102.56	3,797.78	313.25	674.37	527.65	146.72	4.596			
15,500.00	11,618.47	15,638.44	11,766.22	76.04	77.16	102.57	3,897.78	312.73	674.28	524.20	150.08	4.493			
15,600.00	11,618.04	15,738.44	11,765.95	77.76	78.89	102.59	3,997.78	312.21	674.19	520.73	153.46	4.393			
15,700.00	11,617.60	15,838.44	11,765.67	79.49	80.62	102.60	4,097.78	311.69	674.10	517.26	156.84	4.298			
15,800.00	11,617.16	15,938.44	11,765.39	81.23	82.36	102.62	4,197.78	311.17	674.02	513.78	160.23	4.206			
15,900.00	11,616.72	16,038.44	11,765.11	82.97	84.09	102.63	4,297.77	310.64	673.93	510.29	163.63	4.119			
16,000.00	11,616.28	16,138.44	11,764.83	84.71	85.84	102.65	4,397.77	310.12	673.84	506.80	167.04	4.034			
16,100.00	11,615.84	16,238.44	11,764.55	86.46	87.58	102.66	4,497.77	309.60	673.75	503.30	170.45	3.953			
16,200.00	11,615.40	16,338.44	11,764.27	88.20	89.33	102.68	4,597.77	309.08	673.67	499.79	173.87	3.874			
16,300.00	11,614.96	16,438.44	11,763.99	89.96	91.09	102.70	4,697.77	308.56	673.58	496.28	177.30	3.799			
16,400.00	11,614.52	16,538.44	11,763.71	91.71	92.84	102.71	4,797.76	308.04	673.49	492.76	180.73	3.726			
16,500.00	11,614.09	16,638.44	11,763.43	93.47	94.60	102.73	4,897.76	307.52	673.40	489.24	184.17	3.656			
16,600.00	11,613.65	16,738.44	11,763.15	95.23	96.36	102.74	4,997.76	307.00	673.32	485.71	187.61	3.589			
16,619.67	11,613.56	16,757.88	11,763.10	95.58	96.70	102.75	5,017.20	306.90	673.30	485.02	188.28	3.576			
16,620.03	11,613.56	16,757.88	11,763.10	95.59	96.70	102.75	5,017.20	306.90	673.30	485.01	188.29	3.576			
16,620.31	11,613.56	16,757.88	11,763.10	95.61	96.70	102.75	5,017.20	306.90	673.30	485.01	188.29	3.576 SF			

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 usft
A01 Todd DSU - Todd 2-24S-31E State 434H - 434H - Plan #1-Rev0														Offset Well Error:	0.00 usft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis		Distance									
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	Warning		
1,100.00	1,100.00	1,101.00	1,101.00	2.33	2.33	-146.43	-45.20	-30.00	54.25	49.58	4.67	11.626			
1,200.00	1,200.00	1,201.00	1,201.00	2.56	2.56	-146.43	-45.20	-30.00	54.25	49.13	5.12	10.605			
1,300.00	1,300.00	1,301.00	1,301.00	2.78	2.78	-146.43	-45.20	-30.00	54.25	48.68	5.57	9.748			
1,400.00	1,400.00	1,401.00	1,401.00	3.01	3.01	-146.43	-45.20	-30.00	54.25	48.24	6.01	9.019			
1,416.33	1,416.33	1,417.33	1,417.33	3.04	3.05	-146.43	-45.20	-30.00	54.25	48.16	6.09	8.911			
1,500.00	1,500.00	1,500.99	1,500.99	3.23	3.23	-146.43	-45.20	-30.00	54.25	47.79	6.46	8.393			
1,600.00	1,599.99	1,600.00	1,599.99	3.43	3.43	-27.15	-45.89	-31.11	54.29	47.42	6.87	7.904			
1,678.93	1,678.86	1,678.23	1,678.18	3.58	3.58	-27.42	-47.25	-33.28	54.07	46.91	7.16	7.554			
1,700.00	1,699.91	1,699.30	1,699.23	3.62	3.62	-27.58	-47.63	-33.89	53.85	46.61	7.24	7.441			
1,800.00	1,799.80	1,799.29	1,799.17	3.82	3.81	-28.36	-49.46	-36.81	52.82	45.20	7.62	6.933			
1,900.00	1,899.69	1,899.28	1,899.10	4.02	4.01	-29.18	-51.28	-39.72	51.80	43.79	8.01	6.469			
2,000.00	1,999.58	1,999.28	1,999.03	4.22	4.21	-30.02	-53.10	-42.63	50.79	42.38	8.40	6.043			
2,100.00	2,099.47	2,099.27	2,098.97	4.43	4.41	-30.91	-54.92	-45.54	49.79	40.98	8.81	5.653			
2,200.00	2,199.36	2,199.26	2,198.90	4.64	4.62	-31.82	-56.74	-48.45	48.80	39.59	9.22	5.296			
2,300.00	2,299.25	2,299.25	2,298.83	4.85	4.82	-32.78	-58.56	-51.37	47.83	38.20	9.63	4.968			
2,400.00	2,399.14	2,399.24	2,398.76	5.07	5.03	-33.77	-60.38	-54.28	46.87	36.83	10.05	4.666			
2,500.00	2,499.03	2,499.24	2,498.70	5.28	5.25	-34.81	-62.20	-57.19	45.93	35.46	10.47	4.387			
2,600.00	2,598.92	2,599.23	2,598.63	5.50	5.46	-35.89	-64.02	-60.10	45.00	34.11	10.89	4.131			
2,700.00	2,698.81	2,699.22	2,698.56	5.73	5.68	-37.01	-65.84	-63.01	44.09	32.76	11.32	3.894			
2,800.00	2,798.70	2,799.21	2,798.50	5.95	5.90	-38.18	-67.66	-65.93	43.19	31.44	11.75	3.674			
2,900.00	2,898.60	2,899.20	2,898.43	6.17	6.11	-39.40	-69.48	-68.84	42.32	30.13	12.19	3.471			
3,000.00	2,998.49	2,999.20	2,998.36	6.40	6.33	-40.67	-71.30	-71.75	41.46	28.83	12.63	3.283			
3,100.00	3,098.38	3,099.19	3,098.30	6.63	6.56	-42.00	-73.12	-74.66	40.63	27.56	13.07	3.109			
3,200.00	3,198.27	3,199.18	3,198.23	6.86	6.78	-43.38	-74.94	-77.57	39.82	26.30	13.51	2.946			
3,300.00	3,298.16	3,299.17	3,298.16	7.08	7.00	-44.81	-76.77	-80.49	39.03	25.07	13.96	2.796			
3,400.00	3,398.05	3,399.16	3,398.10	7.31	7.22	-46.31	-78.59	-83.40	38.27	23.86	14.41	2.656			
3,500.00	3,497.94	3,499.16	3,498.03	7.54	7.45	-47.86	-80.41	-86.31	37.53	22.67	14.86	2.526			
3,600.00	3,597.83	3,599.15	3,597.96	7.78	7.67	-49.47	-82.23	-89.22	36.82	21.51	15.31	2.405			
3,700.00	3,697.72	3,699.14	3,697.89	8.01	7.90	-51.15	-84.05	-92.13	36.15	20.38	15.77	2.292			
3,800.00	3,797.61	3,799.13	3,797.83	8.24	8.12	-52.89	-85.87	-95.05	35.50	19.27	16.23	2.188			
3,900.00	3,897.50	3,899.12	3,897.76	8.47	8.35	-54.69	-87.69	-97.96	34.89	18.20	16.69	2.091			
4,000.00	3,997.39	3,999.12	3,997.69	8.71	8.58	-56.55	-89.51	-100.87	34.32	17.16	17.15	2.001			
4,100.00	4,097.28	4,099.11	4,097.63	8.94	8.80	-58.47	-91.33	-103.78	33.78	16.16	17.62	1.917			
4,200.00	4,197.17	4,199.10	4,197.56	9.17	9.03	-60.46	-93.15	-106.69	33.28	15.19	18.09	1.840			
4,300.00	4,297.06	4,299.09	4,297.49	9.41	9.26	-62.50	-94.97	-109.61	32.83	14.27	18.58	1.769			
4,400.00	4,396.95	4,399.08	4,397.43	9.64	9.49	-64.59	-96.79	-112.52	32.41	13.38	19.03	1.703			
4,500.00	4,496.84	4,499.08	4,497.36	9.88	9.71	-66.74	-98.61	-115.43	32.04	12.54	19.50	1.643			
4,600.00	4,596.73	4,599.07	4,597.29	10.11	9.94	-68.94	-100.43	-118.34	31.72	11.74	19.98	1.588			
4,700.00	4,696.62	4,699.06	4,697.22	10.35	10.17	-71.17	-102.25	-121.25	31.44	10.99	20.45	1.537			
4,800.00	4,796.51	4,799.05	4,797.16	10.59	10.40	-73.44	-104.08	-124.16	31.22	10.29	20.93	1.492 Level 3			
4,900.00	4,896.40	4,899.04	4,897.09	10.82	10.63	-75.75	-105.90	-127.08	31.04	9.63	21.40	1.450 Level 3			
5,000.00	4,996.29	4,999.04	4,997.02	11.06	10.86	-78.07	-107.72	-129.99	30.91	9.03	21.88	1.413 Level 3			
5,100.00	5,096.18	5,099.03	5,096.96	11.30	11.09	-80.41	-109.54	-132.90	30.84	8.48	22.36	1.379 Level 3			
5,196.41	5,192.49	5,195.43	5,193.31	11.53	11.31	-82.67	-111.29	-135.71	30.81	7.99	22.82	1.350 Level 3, CC			
5,200.00	5,196.07	5,199.02	5,196.89	11.53	11.32	-82.76	-111.36	-135.81	30.81	7.98	22.83	1.349 Level 3			
5,300.00	5,295.96	5,299.01	5,296.82	11.77	11.55	-85.11	-113.18	-138.72	30.84	7.53	23.31	1.323 Level 3			
5,400.00	5,395.85	5,399.00	5,396.76	12.01	11.78	-87.45	-115.00	-141.64	30.92	7.14	23.78	1.300 Level 3			
5,500.00	5,495.74	5,499.00	5,496.69	12.25	12.01	-89.77	-116.82	-144.55	31.05	6.79	24.25	1.280 Level 3			
5,600.00	5,595.63	5,598.99	5,596.62	12.48	12.24	-92.07	-118.64	-147.46	31.23	6.51	24.72	1.263 Level 3			
5,700.00	5,695.52	5,698.98	5,696.55	12.72	12.47	-94.34	-120.46	-150.37	31.46	6.27	25.19	1.249 Level 2			
5,800.00	5,795.41	5,798.97	5,796.49	12.96	12.70	-96.57	-122.28	-153.28	31.74	6.08	25.66	1.237 Level 2			
5,900.00	5,895.30	5,898.96	5,896.42	13.20	12.93	-98.76	-124.10	-156.20	32.07	5.94	26.12	1.227 Level 2			

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

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 usft
A01 Todd DSU - Todd 2-24S-31E State 434H - 434H - Plan #1-Rev0														Offset Well Error:	0.00 usft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum		Separation	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor	Warning	
6,000.00	5,995.19	5,998.96	5,996.35	13.44	13.17	-100.91		-125.92	-159.11	32.44	5.85	26.59	1.220	Level 2	
6,100.00	6,095.08	6,098.95	6,096.29	13.67	13.40	-103.00		-127.74	-162.02	32.86	5.81	27.05	1.215	Level 2, ES	
6,200.00	6,194.98	6,198.94	6,196.22	13.91	13.63	-105.04		-129.56	-164.93	33.32	5.81	27.51	1.211	Level 2	
6,300.00	6,294.87	6,298.93	6,296.15	14.15	13.86	-107.02		-131.39	-167.84	33.82	5.85	27.96	1.209	Level 2	
6,400.00	6,394.76	6,398.92	6,396.09	14.39	14.09	-108.94		-133.21	-170.76	34.36	5.94	28.42	1.209	Level 2, SF	
6,500.00	6,494.65	6,498.92	6,496.02	14.63	14.32	-110.79		-135.03	-173.67	34.94	6.06	28.87	1.210	Level 2	
6,600.00	6,594.54	6,598.91	6,596.95	14.87	14.55	-112.59		-136.85	-176.58	35.55	6.22	29.32	1.212	Level 2	
6,700.00	6,694.43	6,698.90	6,696.89	15.11	14.79	-114.32		-138.67	-179.49	36.19	6.42	29.77	1.216	Level 2	
6,800.00	6,794.32	6,798.89	6,796.82	15.35	15.02	-115.99		-140.49	-182.40	36.87	6.65	30.22	1.220	Level 2	
6,900.00	6,894.21	6,898.88	6,896.75	15.59	15.25	-117.60		-142.31	-185.32	37.58	6.91	30.67	1.225	Level 2	
7,000.00	6,994.10	6,998.88	6,996.68	15.82	15.48	-119.15		-144.13	-188.23	38.32	7.20	31.12	1.231	Level 2	
7,100.00	7,093.99	7,098.87	7,096.62	16.06	15.71	-120.64		-145.95	-191.14	39.08	7.52	31.57	1.238	Level 2	
7,200.00	7,193.88	7,198.86	7,196.55	16.30	15.95	-122.07		-147.77	-194.05	39.87	7.86	32.01	1.246	Level 2	
7,300.00	7,293.77	7,298.85	7,296.48	16.54	16.18	-123.45		-149.59	-196.96	40.69	8.23	32.46	1.254	Level 3	
7,400.00	7,393.66	7,398.85	7,396.42	16.78	16.41	-124.77		-151.41	-199.88	41.52	8.62	32.90	1.262	Level 3	
7,500.00	7,493.55	7,498.84	7,496.35	17.02	16.64	-126.03		-153.23	-202.79	42.38	9.03	33.34	1.271	Level 3	
7,600.00	7,593.44	7,598.83	7,596.28	17.26	16.88	-127.25		-155.05	-205.70	43.26	9.47	33.79	1.280	Level 3	
7,700.00	7,693.33	7,698.82	7,696.22	17.50	17.11	-128.42		-156.88	-208.61	44.15	9.92	34.23	1.290	Level 3	
7,800.00	7,793.22	7,798.81	7,795.15	17.74	17.34	-129.54		-158.70	-211.52	45.07	10.39	34.68	1.300	Level 3	
7,900.00	7,893.11	7,898.81	7,895.08	17.98	17.57	-130.62		-160.52	-214.44	46.00	10.88	35.12	1.310	Level 3	
8,000.00	7,993.00	7,998.80	7,995.01	18.22	17.81	-131.65		-162.34	-217.35	46.94	11.38	35.56	1.320	Level 3	
8,100.00	8,092.89	8,098.79	8,094.95	18.46	18.04	-132.64		-164.16	-220.26	47.90	11.90	36.01	1.330	Level 3	
8,200.00	8,192.78	8,198.78	8,194.88	18.70	18.27	-133.59		-165.98	-223.17	48.88	12.43	36.45	1.341	Level 3	
8,300.00	8,292.67	8,298.77	8,294.81	18.94	18.50	-134.51		-167.80	-226.08	49.86	12.97	36.89	1.352	Level 3	
8,400.00	8,392.56	8,398.77	8,394.75	19.18	18.74	-135.39		-169.62	-229.00	50.86	13.53	37.34	1.362	Level 3	
8,500.00	8,492.45	8,498.76	8,494.68	19.42	18.97	-136.23		-171.44	-231.91	51.87	14.09	37.78	1.373	Level 3	
8,600.00	8,592.34	8,598.75	8,594.61	19.66	19.20	-137.04		-173.26	-234.82	52.89	14.67	38.22	1.384	Level 3	
8,700.00	8,692.23	8,698.74	8,694.55	19.90	19.43	-137.83		-175.08	-237.73	53.93	15.26	38.67	1.395	Level 3	
8,800.00	8,792.12	8,798.73	8,794.48	20.14	19.67	-138.58		-176.90	-240.64	54.97	15.86	39.11	1.405	Level 3	
8,900.00	8,892.01	8,898.73	8,894.41	20.38	19.90	-139.30		-178.72	-243.56	56.02	16.46	39.56	1.416	Level 3	
9,000.00	8,991.90	8,998.72	8,994.34	20.62	20.13	-140.00		-180.54	-246.47	57.08	17.08	40.00	1.427	Level 3	
9,100.00	9,091.79	9,098.71	9,094.28	20.86	20.37	-140.67		-182.36	-249.38	58.14	17.70	40.44	1.438	Level 3	
9,200.00	9,191.68	9,198.70	9,194.21	21.10	20.60	-141.32		-184.19	-252.29	59.22	18.33	40.89	1.448	Level 3	
9,300.00	9,291.57	9,298.69	9,294.14	21.34	20.83	-141.95		-186.01	-255.20	60.30	18.97	41.33	1.459	Level 3	
9,400.00	9,391.46	9,398.69	9,394.08	21.58	21.07	-142.55		-187.83	-258.12	61.39	19.61	41.78	1.469	Level 3	
9,500.00	9,491.36	9,498.68	9,494.01	21.82	21.30	-143.13		-189.65	-261.03	62.49	20.26	42.22	1.480	Level 3	
9,600.00	9,591.25	9,598.67	9,593.94	22.06	21.53	-143.69		-191.47	-263.94	63.59	20.92	42.67	1.490	Level 3	
9,700.00	9,691.14	9,698.66	9,693.88	22.30	21.77	-144.23		-193.29	-266.85	64.70	21.58	43.12	1.501		
9,800.00	9,791.03	9,798.65	9,793.81	22.54	22.00	-144.76		-195.11	-269.76	65.81	22.25	43.56	1.511		
9,900.00	9,890.92	9,898.65	9,893.74	22.78	22.23	-145.26		-196.93	-272.68	66.93	22.92	44.01	1.521		
10,000.00	9,990.81	9,998.64	9,993.68	23.02	22.47	-145.75		-198.75	-275.59	68.05	23.60	44.45	1.531		
10,100.00	10,090.70	10,098.63	10,093.61	23.27	22.70	-146.23		-200.57	-278.50	69.18	24.28	44.90	1.541		
10,200.00	10,190.59	10,198.62	10,193.54	23.51	22.93	-146.68		-202.39	-281.41	70.31	24.97	45.35	1.551		
10,300.00	10,290.48	10,298.61	10,293.47	23.75	23.16	-147.13		-204.21	-284.32	71.45	25.66	45.79	1.560		
10,400.00	10,390.37	10,398.23	10,393.03	23.99	23.39	-147.59		-205.99	-287.16	72.66	26.42	46.23	1.572		
10,500.00	10,490.26	10,496.61	10,491.40	24.23	23.58	-148.82		-206.77	-288.42	73.39	26.78	46.61	1.618		
10,530.91	10,521.14	10,527.35	10,522.14	24.30	23.64	-149.37		-206.78	-288.43	76.63	29.90	46.72	1.640		
10,600.00	10,590.17	10,596.38	10,591.17	24.45	23.77	-150.35		-206.78	-288.43	78.88	31.91	46.97	1.679		
10,709.84	10,700.00	10,706.21	10,701.00	24.65	23.98	89.75		-206.78	-288.43	80.26	32.89	47.37	1.694		
10,800.00	10,790.16	10,796.37	10,791.16	24.82	24.14	89.75		-206.78	-288.43	80.26	32.54	47.72	1.682		
10,900.00	10,890.16	10,896.37	10,891.16	25.01	24.33	89.75		-206.78	-288.43	80.26	32.17	48.09	1.669		
11,000.00	10,990.16	10,996.37	10,991.16	25.19	24.52	89.75		-206.78	-288.43	80.26	31.79	48.47	1.656		

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

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
11,070.84	11,061.00	11,067.21	11,062.00	25.32	24.65	89.75	-206.78	-288.43	80.26	31.52	48.74	1.647			
11,100.00	11,090.15	11,096.36	11,091.15	25.37	24.71	87.08	-206.78	-288.43	80.22	31.35	48.87	1.642			
11,145.29	11,135.24	11,141.45	11,136.24	25.44	24.79	90.00	-206.78	-288.43	80.12	31.00	49.11	1.631			
11,150.00	11,139.91	11,146.12	11,140.91	25.45	24.80	90.45	-206.78	-288.43	80.12	30.98	49.14	1.630			
11,200.00	11,189.07	11,195.28	11,190.07	25.52	24.90	96.71	-206.78	-288.43	80.70	31.20	49.50	1.630			
11,250.00	11,237.25	11,243.46	11,238.25	25.58	24.99	105.25	-206.78	-288.43	83.34	33.43	49.91	1.670			
11,300.00	11,284.10	11,290.31	11,285.10	25.63	25.08	114.91	-206.78	-288.43	89.72	39.39	50.33	1.783			
11,350.00	11,329.24	11,335.45	11,330.24	25.68	25.16	124.30	-206.78	-288.43	101.21	50.54	50.67	1.997			
11,400.00	11,372.35	11,378.56	11,373.35	25.71	25.24	132.40	-206.78	-288.43	118.38	67.48	50.90	2.326			
11,450.00	11,413.09	11,429.67	11,424.40	25.74	25.34	140.35	-204.78	-288.56	139.68	88.69	50.99	2.739			
11,500.00	11,451.14	11,484.80	11,479.04	25.76	25.43	146.72	-197.55	-289.03	162.42	111.60	50.82	3.196			
11,550.00	11,486.23	11,543.96	11,536.59	25.77	25.53	151.90	-184.01	-289.92	185.72	135.35	50.37	3.687			
11,600.00	11,518.08	11,607.87	11,596.83	25.78	25.62	156.24	-162.82	-291.31	208.92	159.32	49.60	4.212			
11,650.00	11,546.45	11,677.32	11,659.17	25.79	25.70	160.01	-132.36	-293.31	231.40	182.91	48.48	4.773			
11,700.00	11,571.13	11,753.14	11,722.46	25.80	25.79	163.37	-90.79	-296.03	252.55	205.52	47.02	5.371			
11,750.00	11,591.92	11,836.09	11,784.72	25.81	25.86	166.45	-36.22	-299.61	271.71	226.47	45.24	6.005			
11,800.00	11,608.68	11,926.59	11,842.89	25.87	25.93	169.31	32.85	-304.14	288.19	244.92	43.27	6.660			
11,850.00	11,621.26	12,024.52	11,892.70	26.02	26.08	172.00	116.85	-309.64	301.24	259.88	41.36	7.284			
11,900.00	11,629.58	12,128.83	11,929.18	26.24	26.48	174.57	214.20	-316.02	310.16	270.27	39.89	7.776			
11,950.00	11,633.58	12,237.41	11,947.75	26.48	27.03	177.06	320.79	-323.01	314.39	275.10	39.29	8.002			
11,973.34	11,633.95	12,288.74	11,949.41	26.60	27.32	178.19	371.97	-326.36	314.66	275.28	39.38	7.990			
11,983.33	11,633.91	12,295.53	11,949.43	26.65	27.36	178.33	378.74	-326.78	314.66	275.28	39.38	7.990			
12,000.00	11,633.84	12,312.05	11,949.39	26.73	27.46	178.65	395.24	-327.74	314.64	275.23	39.41	7.984			
12,010.83	11,633.79	12,322.81	11,949.36	26.78	27.53	178.84	405.98	-328.32	314.64	275.20	39.43	7.979			
12,100.00	11,633.40	12,411.69	11,949.14	27.24	28.08	179.86	494.80	-331.52	314.74	275.09	39.66	7.937			
12,144.66	11,633.20	12,456.33	11,949.03	27.50	28.39	179.99	539.44	-332.09	314.83	275.03	39.80	7.910			
12,200.00	11,632.96	12,511.68	11,948.89	27.87	28.81	179.99	594.78	-332.31	314.94	274.94	40.00	7.873			
12,300.00	11,632.52	12,611.68	11,948.65	28.66	29.63	179.99	694.78	-332.71	315.13	274.73	40.40	7.801			
12,400.00	11,632.08	12,711.68	11,948.40	29.55	30.54	179.99	794.78	-333.10	315.32	274.48	40.85	7.720			
12,500.00	11,631.64	12,811.68	11,948.16	30.52	31.52	179.99	894.78	-333.50	315.51	274.17	41.34	7.632			
12,600.00	11,631.20	12,911.68	11,947.91	31.56	32.58	179.99	994.77	-333.90	315.71	273.83	41.88	7.538			
12,700.00	11,630.77	13,011.68	11,947.66	32.67	33.71	180.00	1,094.77	-334.29	315.90	273.43	42.46	7.439			
12,800.00	11,630.33	13,111.68	11,947.42	33.85	34.89	180.00	1,194.77	-334.69	316.09	273.00	43.09	7.336			
12,900.00	11,629.89	13,211.68	11,947.17	35.08	36.13	180.00	1,294.77	-335.08	316.28	272.53	43.76	7.228			
13,000.00	11,629.45	13,311.68	11,946.92	36.36	37.42	180.00	1,394.77	-335.48	316.48	272.01	44.46	7.118			
13,100.00	11,629.01	13,411.68	11,946.68	37.68	38.75	180.00	1,494.77	-335.87	316.67	271.47	45.20	7.006			
13,200.00	11,628.57	13,511.68	11,946.43	39.05	40.12	180.00	1,594.77	-336.27	316.86	270.88	45.98	6.892			
13,300.00	11,628.13	13,611.67	11,946.18	40.45	41.52	180.00	1,694.77	-336.67	317.05	270.27	46.79	6.777			
13,400.00	11,627.69	13,711.67	11,945.94	41.89	42.96	180.00	1,794.76	-337.06	317.24	269.62	47.63	6.661			
13,500.00	11,627.25	13,811.67	11,945.69	43.35	44.42	180.00	1,894.76	-337.46	317.44	268.94	48.50	6.545			
13,600.00	11,626.81	13,911.67	11,945.44	44.84	45.91	180.00	1,994.76	-337.85	317.63	268.23	49.40	6.430			
13,700.00	11,626.38	14,011.67	11,945.20	46.36	47.43	180.00	2,094.76	-338.25	317.82	267.50	50.32	6.316			
13,800.00	11,625.94	14,111.67	11,944.95	47.90	48.96	180.00	2,194.76	-338.65	318.01	266.74	51.27	6.202			
13,900.00	11,625.50	14,211.67	11,944.70	49.45	50.52	180.00	2,294.76	-339.04	318.21	265.96	52.25	6.090			
14,000.00	11,625.06	14,311.67	11,944.46	51.03	52.09	180.00	2,394.76	-339.44	318.40	265.16	53.24	5.980			
14,100.00	11,624.62	14,411.67	11,944.21	52.62	53.68	180.00	2,494.76	-339.83	318.59	264.33	54.26	5.871			
14,200.00	11,624.18	14,511.67	11,943.96	54.23	55.29	180.00	2,594.75	-340.23	318.78	263.48	55.30	5.765			
14,300.00	11,623.74	14,611.67	11,943.72	55.85	56.91	180.00	2,694.75	-340.62	318.98	262.62	56.36	5.660			
14,400.00	11,623.30	14,711.67	11,943.47	57.48	58.54	180.00	2,794.75	-341.02	319.17	261.73	57.43	5.557			
14,500.00	11,622.86	14,811.67	11,943.22	59.13	60.18	180.00	2,894.75	-341.42	319.36	260.83	58.53	5.457			
14,600.00	11,622.43	14,911.67	11,942.98	60.78	61.83	180.00	2,994.75	-341.81	319.55	259.92	59.63	5.358			
14,700.00	11,621.99	15,011.67	11,942.73	62.45	63.49	180.00	3,094.75	-342.21	319.75	258.99	60.76	5.263			

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

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

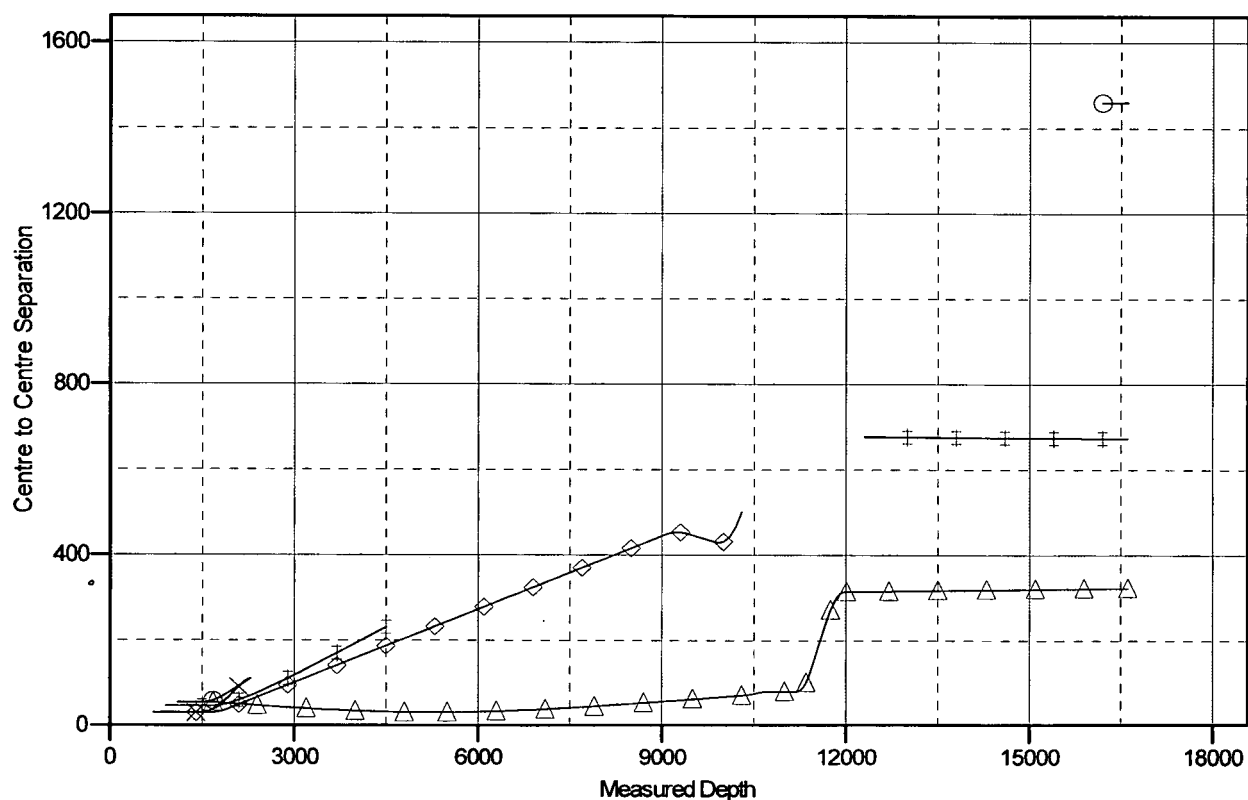
Offset Design										A01 Todd DSU - Todd 2-24S-31E State 434H - 434H - Plan #1-Rev0				Offset Site Error:		0.00 usft
Survey Program: 0-MWD														Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	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	Warning			
14,800.00	11,621.55	15,111.67	11,942.48	64.12	65.16	180.00	3,194.75	-342.60	319.94	258.04	61.90	5.169				
14,900.00	11,621.11	15,211.67	11,942.24	65.80	66.84	180.00	3,294.75	-343.00	320.13	257.08	63.05	5.078				
15,000.00	11,620.67	15,311.67	11,941.99	67.49	68.53	180.00	3,394.74	-343.39	320.32	256.11	64.21	4.988				
15,100.00	11,620.23	15,411.67	11,941.74	69.19	70.23	180.00	3,494.74	-343.79	320.52	255.13	65.39	4.902				
15,200.00	11,619.79	15,511.67	11,941.50	70.89	71.93	180.00	3,594.74	-344.19	320.71	254.13	66.58	4.817				
15,300.00	11,619.35	15,611.67	11,941.25	72.60	73.63	180.00	3,694.74	-344.58	320.90	253.12	67.78	4.735				
15,400.00	11,618.91	15,711.67	11,941.01	74.32	75.35	180.00	3,794.74	-344.98	321.09	252.11	68.99	4.654				
15,500.00	11,618.47	15,811.67	11,940.76	76.04	77.07	180.00	3,894.74	-345.37	321.28	251.08	70.21	4.576				
15,600.00	11,618.04	15,911.67	11,940.51	77.76	78.79	180.00	3,994.74	-345.77	321.48	250.04	71.43	4.500				
15,700.00	11,617.60	16,011.67	11,940.27	79.49	80.52	180.00	4,094.74	-346.16	321.67	249.00	72.67	4.426				
15,800.00	11,617.16	16,111.67	11,940.02	81.23	82.25	180.00	4,194.73	-346.56	321.86	247.94	73.92	4.354				
15,900.00	11,616.72	16,211.67	11,939.77	82.97	83.99	180.00	4,294.73	-346.96	322.05	246.88	75.17	4.284				
16,000.00	11,616.28	16,311.67	11,939.53	84.71	85.73	180.00	4,394.73	-347.35	322.25	245.81	76.43	4.216				
16,100.00	11,615.84	16,411.67	11,939.28	86.46	87.47	180.00	4,494.73	-347.75	322.44	244.74	77.70	4.150				
16,200.00	11,615.40	16,511.67	11,939.03	88.20	89.22	180.00	4,594.73	-348.14	322.63	243.65	78.98	4.085				
16,300.00	11,614.96	16,611.67	11,938.79	89.96	90.97	180.00	4,694.73	-348.54	322.82	242.56	80.26	4.022				
16,400.00	11,614.52	16,711.67	11,938.54	91.71	92.72	180.00	4,794.73	-348.93	323.02	241.47	81.55	3.961				
16,500.00	11,614.09	16,811.67	11,938.29	93.47	94.48	180.00	4,894.73	-349.33	323.21	240.37	82.84	3.902				
16,600.00	11,613.65	16,911.67	11,938.05	95.23	96.21	180.00	4,994.72	-349.73	323.40	239.29	84.11	3.845				
16,619.67	11,613.56	16,930.55	11,938.00	95.58	96.49	180.00	5,013.60	-349.80	323.44	239.13	84.31	3.836				
16,620.31	11,613.56	16,930.55	11,938.00	95.61	96.49	180.00	5,013.60	-349.80	323.44	239.04	84.40	3.832				

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3507+25 @ 3532.00usft (KB=25)
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.33333334

Coordinates are relative to: Todd 2-24S-31E State 304H - Slot 304H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.31°

Ladder Plot



LEGEND

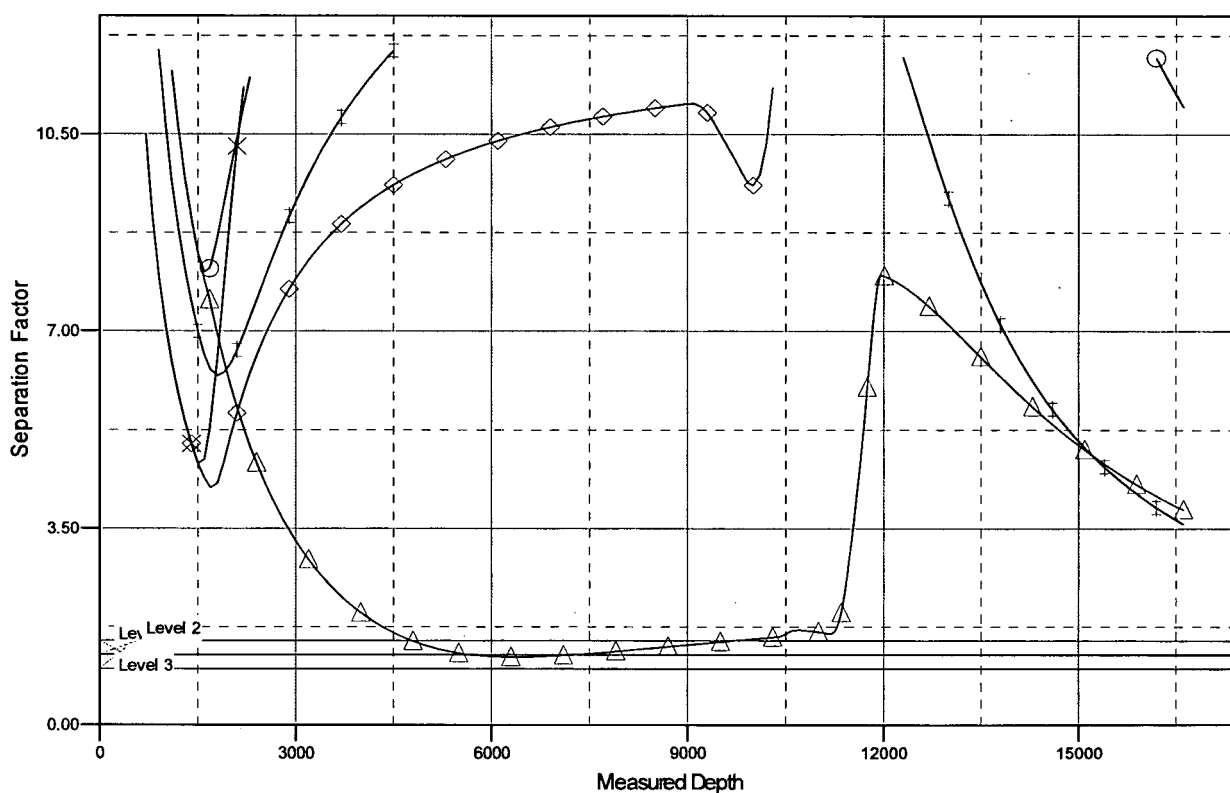
Todd 2-24S-31E State 207H, 207 HP & nP1-Rev0V0
 Todd 2-24S-31E State 436H, 436 HP & nP1-Rev0V0
 Todd 2-24S-31E State 203H, 203 HP & nP1-Rev0V0

Company:	Titus Oil & Gas Production, LLC	Local Co-ordinate Reference:	Well Todd 2-24S-31E State 304H - Slot 304H
Project:	Eddy County, NM (NAD83-NME)	TVD Reference:	3507+25 @ 3532.00usft (KB=25)
Reference Site:	A01 Todd DSU	MD Reference:	3507+25 @ 3532.00usft (KB=25)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Todd 2-24S-31E State 304H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	304H	Database:	EDM 5000.14 Single User Db
Reference Design:	Plan #1-Rev0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3507+25 @ 3532.00usft (KB=25)
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.33333334

Coordinates are relative to: Todd 2-24S-31E State 304H - Slot 304H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.31°

Separation Factor Plot



LEGEND

Todd 2-24S-31E State 207H, 207 HP & n#1-Rev0V0
 Todd 2-24S-31E State 202H, 202 HP & n#1-Rev0V0
 Todd 2-24S-31E State 203H, 203 HP & n#1-Rev0V0
 Todd 2-24S-31E State 434H, 434 HP & n#1-Rev0V0
 Todd 2-24S-31E State 425H, 425 HP & n#1-Rev0V0

TITUS

OIL GAS LLC

Titus Oil & Gas Production, LLC
Project: Eddy County, NM (NAD83-NME)
Site: A01 Todd DSU
Well: Todd 2-24S-31E State 304H
Wellbore: 304H
Plan: Plan #1-Rev0

WELL DETAILS: Todd 2-24S-31E State 304H

Northing	Easting	Latitude	Longitude	Slot
451484.60	722124.00	32.23985416	-103.74860571	304H

Section Details

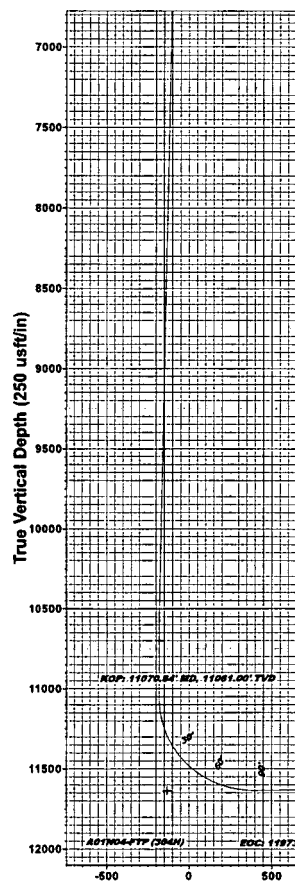
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00
3	1678.93	2.68	240.67	1678.86	-2.05	-3.65	1.50	240.67	-1.79
4	10530.91	2.68	240.67	10521.14	-205.08	-365.04	0.00	0.00	-179.18
5	10709.84	0.00	0.00	10700.00	-207.13	-368.69	1.50	180.00	-180.97
6	11070.84	0.00	0.00	11061.00	-207.13	-368.69	0.00	0.00	-180.97
7	11973.34	90.25	3.20	11633.95	367.43	-336.57	10.00	3.20	389.96
8	12144.66	90.25	359.77	11633.20	538.66	-332.12	2.00	-89.97	560.47
9	16619.67	90.25	359.77	11613.56	5013.60	-349.80	0.00	0.00	5025.79



Azimuths to Grid North
True North: -0.31°
Magnetic North: 6.51°

Magnetic Field
Strength: 47727.9snT
Dip Angle: 60.02°
Date: 5/30/2019
Model: IGRF2015

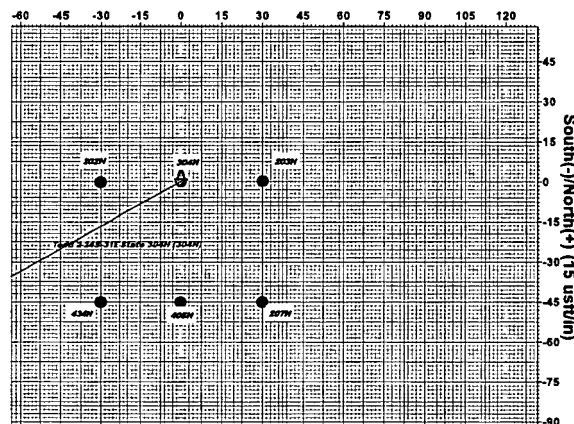
PROJECT DETAILS: Eddy County, NM (NAD83-NME)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid
Grid Convergence: 0.31° West
KB Elevation: 3507+25 @ 3532.00usft (KB=25)
Elevation: 3507.00



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting
A01N04-EON (304H)	-207.13	-368.69	451277.47	721755.31
A01N04-PBHL (304H)	5013.60	-349.80	456498.20	721774.20
A01N04-LTP (304H)	4923.60	-349.40	456408.20	721774.60
A01N04-FTP (304H)	-157.00	-328.90	451327.60	721795.10

West(-)/East(+) (15 usft/in)



Vertical Section at 356.01° (250 usft/in)

