



Crestone Peak Resources

Sec 10 T1N-R65W

Warner Pad

WARNER 2B-10H-E165

Wellbore #1

Plan #3 27Sep18 kjs

Anticollision Summary Report

28 September, 2018

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well WARNER 2B-10H-E165
Project:	Sec 10 T1N-R65W	TVD Reference:	WELL @ 4993.00usft (Original Well Elev)
Reference Site:	Warner Pad	MD Reference:	WELL @ 4993.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	WARNER 2B-10H-E165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #3 27Sep18 kjs	Offset TVD Reference:	Offset Datum

Reference	Plan #3 27Sep18 kjs		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	9/28/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	14,563.38	Plan #3 27Sep18 kjs (Wellbore #1)	MWD	OWSG 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						
Existing Wells (Warner Pad)						
CHAPIN 43-4 - CPR - Gyro	11,635.44	7,056.72	889.44	782.29	8.301	CC, ES
CHAPIN 43-4 - CPR - Gyro	11,700.00	7,058.33	891.78	783.85	8.263	SF
CHAPIN 44-4 - CPR - Gyro	10,400.14	7,054.78	1,149.03	1,062.16	13.226	CC, ES
CHAPIN 44-4 - CPR - Gyro	10,500.00	7,055.17	1,153.36	1,065.21	13.084	SF
COLFER 13C-34HZ - KMG - MWD	14,563.38	11,790.00	1,031.13	927.39	9.939	CC, ES, SF
COLFER 13N-34HZ - KMG - MWD	14,563.38	11,496.00	928.40	875.97	17.708	CC, ES, SF
COLFER 14C-34HZX - KMG - MWD	14,563.38	11,779.00	2,032.00	1,836.90	10.415	CC, ES, SF
COLFER 14N-34HZ - KMG - MWD	14,563.38	11,568.00	1,763.77	1,578.72	9.531	CC, ES, SF
COLFER 35N-34HZ - KMG - MWD	14,563.38	11,687.00	1,173.20	1,026.78	8.013	CC, ES, SF
COLFER 36N-34HZ - KMG - MWD	14,563.38	11,617.00	2,367.94	2,164.42	11.635	CC, ES, SF
HDI KF 03-231HN - VERDAD - Proposal	6,450.44	6,427.64	4,528.69	4,480.48	93.932	CC, ES
HDI KF 03-231HN - VERDAD - Proposal	7,000.00	6,911.21	4,608.70	4,558.10	91.082	SF
HDI KF 03-232HC - VERDAD - Proposed	6,450.76	6,427.96	4,556.13	4,507.91	94.485	CC, ES
HDI KF 03-232HC - VERDAD - Proposed	7,000.00	6,911.21	4,635.57	4,584.97	91.603	SF
HDI KF 03-232HN - VERDAD - Proposal	6,450.60	6,427.80	4,542.40	4,494.19	94.208	CC, ES
HDI KF 03-232HN - VERDAD - Proposal	7,000.00	6,911.21	4,622.13	4,571.53	91.343	SF
HDI KF 10-1H - VERDAD - Proposal	6,445.94	6,423.15	4,587.19	4,539.10	95.389	CC, ES
HDI KF 10-1H - VERDAD - Proposal	7,000.00	6,911.21	4,675.32	4,624.80	92.539	SF
HDI KF 10-3H - VERDAD - Proposal	6,446.23	6,423.44	4,614.44	4,566.34	95.939	CC, ES
HDI KF 10-3H - VERDAD - Proposal	7,000.00	6,911.21	4,701.96	4,651.44	93.055	SF
JOKER 1N3-9HZ - KMG - MWD	7,176.99	9,899.06	993.50	913.94	12.487	CC
JOKER 1N3-9HZ - KMG - MWD	9,200.00	11,893.36	1,035.47	906.57	8.033	ES
JOKER 1N3-9HZ - KMG - MWD	9,300.00	11,936.00	1,039.28	908.69	7.958	SF
JOKER 26N1-9HZ - KMG - MWD	8,274.24	11,098.96	889.20	786.44	8.653	CC
JOKER 26N1-9HZ - KMG - MWD	8,700.00	11,505.51	893.39	779.29	7.830	ES
JOKER 26N1-9HZ - KMG - MWD	9,300.00	12,019.63	937.39	807.58	7.221	SF
JOKER 26N2-9HZ - KMG - MWD	9,243.87	11,975.00	699.00	568.26	5.346	CC, ES, SF
OLIN 41-4 - CPR - MWD	14,334.45	7,318.31	1,150.46	997.74	7.533	CC, ES
OLIN 41-4 - CPR - MWD	14,400.00	7,318.31	1,152.32	998.98	7.515	SF
OLIN 42-4A - CPR - MWD	13,068.79	7,369.78	1,170.46	1,034.03	8.579	CC
OLIN 42-4A - CPR - MWD	13,100.00	7,367.97	1,170.87	1,033.75	8.539	ES
OLIN 42-4A - CPR - MWD	13,200.00	7,362.02	1,177.76	1,038.95	8.485	SF
OTTESSEN 1 - VERDAD - Gyro	11,352.14	7,065.94	456.47	354.04	4.456	CC, ES, SF
RANDLE RED XX 3-2D - KMG - Gyro	13,555.88	7,082.11	1,086.48	943.45	7.596	CC, ES
RANDLE RED XX 3-2D - KMG - Gyro	13,600.00	7,084.61	1,087.38	943.73	7.570	SF
RANDLE RED XX 3-4D - KMG - Gyro	14,563.38	7,045.10	68.76	-69.72	0.497	Level 1, CC, ES, SF
ROCKY 38N-33HZ - KMG - Proposal	14,563.38	13,373.00	1,259.85	1,102.59	8.012	CC, ES, SF

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

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well WARNER 2B-10H-E165
Project:	Sec 10 T1N-R65W	TVD Reference:	WELL @ 4993.00usft (Original Well Elev)
Reference Site:	Warner Pad	MD Reference:	WELL @ 4993.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	WARNER 2B-10H-E165	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #3 27Sep18 kjs	Offset TVD Reference:	Offset Datum

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						
Existing Wells (Warner Pad)						
RUEGGE 3Q-4H-N165 - CPR - MWD	10,321.39	8,029.68	692.97	601.97	7.615	CC
RUEGGE 3Q-4H-N165 - CPR - MWD	14,563.38	12,265.00	703.86	488.18	3.263	ES, SF
RUEGGE 3R-4H-N165 - CPR - MWD	10,268.30	8,362.69	720.41	625.03	7.553	CC
RUEGGE 3R-4H-N165 - CPR - MWD	14,562.24	12,660.00	727.03	510.64	3.360	ES, SF
SPARBOE 7C-3HZ - KMG - MWD	14,043.76	13,307.09	2,491.73	2,257.68	10.646	CC
SPARBOE 7C-3HZ - KMG - MWD	14,100.00	13,254.06	2,491.75	2,257.64	10.643	ES
SPARBOE 7C-3HZ - KMG - MWD	14,400.00	12,966.07	2,492.89	2,258.48	10.635	SF
Warner Pad						
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	9.80	8.81	9.872	CC
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,563.38	14,642.51	243.58	-10.74	0.958	Level 3, ES, SF
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	200.00	200.00	19.87	18.88	20.015	CC, ES
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	14,563.38	14,468.07	470.83	210.17	1.806	SF
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	254.56	254.54	10.03	8.65	7.287	CC
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	300.00	299.90	10.20	8.51	6.039	ES
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	14,563.38	14,786.84	344.27	127.29	1.587	SF
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	274.91	275.84	20.05	18.53	13.168	CC
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.83	20.16	18.46	11.890	ES
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,563.38	14,657.06	422.29	161.65	1.620	SF
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	289.53	290.41	30.07	28.45	18.500	CC, ES
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,563.38	14,595.63	669.84	405.32	2.532	SF
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	270.22	271.09	39.92	38.43	26.789	CC
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.00	40.10	38.41	23.648	ES
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,563.38	14,631.04	1,057.88	796.59	4.049	SF
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	287.30	288.10	49.95	48.34	31.016	CC, ES
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,563.38	14,882.63	1,239.10	979.19	4.767	SF
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	269.94	270.74	60.07	58.59	40.368	CC
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.00	60.26	58.56	35.560	ES
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,563.38	14,762.09	1,322.16	1,058.79	5.020	SF
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	258.17	258.96	69.90	68.50	49.737	CC, ES
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,563.38	14,842.36	1,706.52	1,443.01	6.476	SF
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	201.00	80.04	79.05	80.322	CC
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	300.00	300.00	80.68	78.99	47.689	ES
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,563.38	14,823.77	1,939.54	1,675.45	7.344	SF
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	90.12	89.12	90.433	CC, ES
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,563.38	15,184.65	2,056.18	1,793.11	7.816	SF
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	116.33	117.33	100.20	99.80	252.585	CC
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	100.20	99.21	100.808	ES
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,563.38	14,779.75	2,142.07	1,877.76	8.105	SF

Anticollision Summary Report

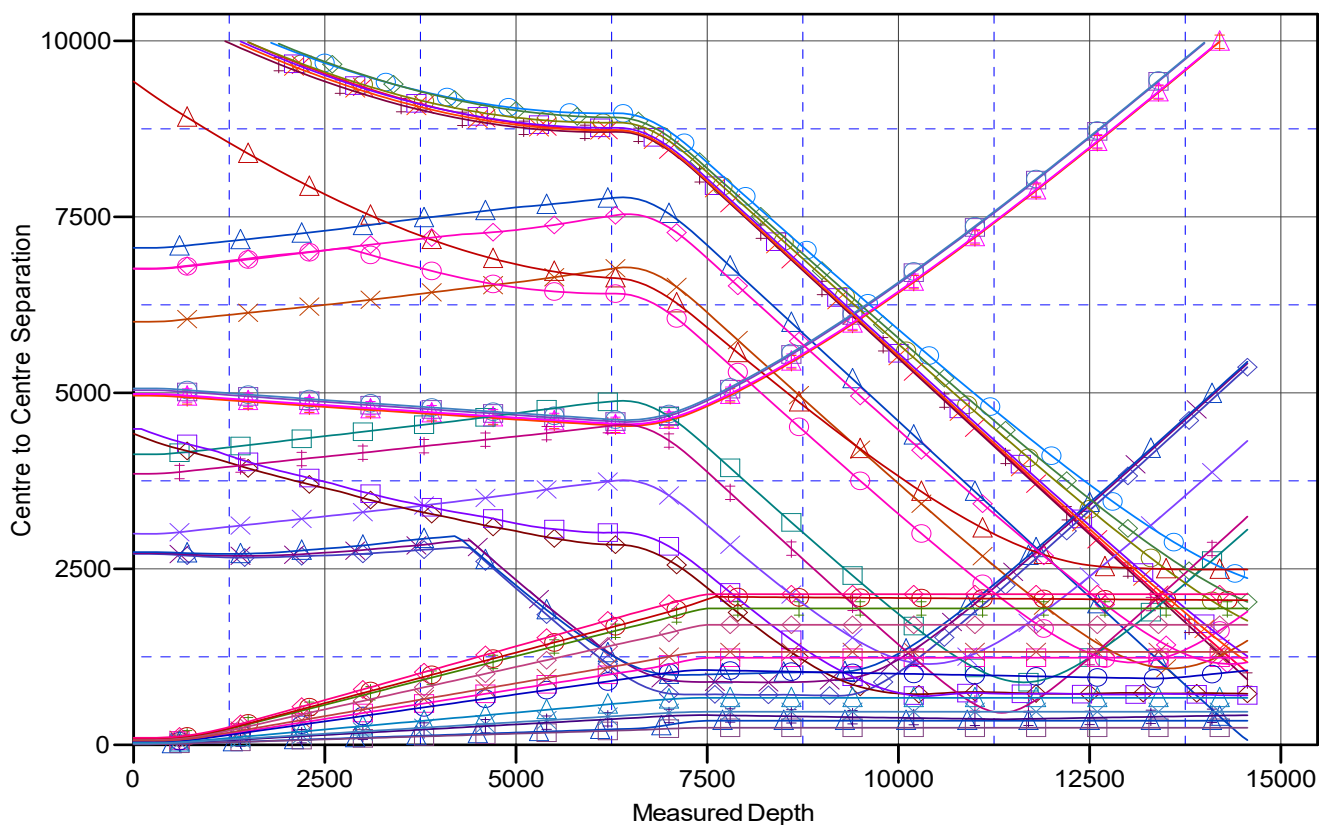
Company: Crestone Peak Resources
Project: Sec 10 T1N-R65W
Reference Site: Warner Pad
Site Error: 0.00 usft
Reference Well: WARNER 2B-10H-E165
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #3 27Sep18 kjs

Local Co-ordinate Reference: Well WARNER 2B-10H-E165
TVD Reference: WELL @ 4993.00usft (Original Well Elev)
MD Reference: WELL @ 4993.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.15 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 4993.00usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: WARNER 2B-10H-E165
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.54°

Ladder Plot



LEGEND

COLFER 13C-34HZ, KMG, MWD V0	RANDLE RED XX 3-2D, KMG, Gyro V0	WARNER 2D-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 03232HN, VERDAD, Proposal V0	JOKER 1N3-9HZ, KMG, MWD V0	WARNER 2S-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
COLFER 13N-34HZ, KMG, MWD V0	SPARBOE 7C-3HZ, KMG, MWD V0	WARNER 2J-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
RANDLE RED XX 3-4D, KMG, Gyro V0	HDI KF 03232HC, VERDAD, Proposal V0	WARNER 2A-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 104H, VERDAD, Proposal V0	OTTESEN 1, VERDAD, Gyro V0	WARNER 2K-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 03231HN, VERDAD, Proposal V0	RUEGGE 3Q-4HN165, CPR, MWD V0	WARNER 2F-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
CHAPIN 44-4, CPR, Gyro V0	OLIN 42-4A, CPR, MWD V0	WARNER 2I-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
COLFER 36N-34HZ, KMG, MWD V0	ROCKY 38N-33HZ, KMG, Proposal V0	WARNER 2H-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
JOKER 26N2-9HZ, KMG, MWD V0	COLFER 14C-34HZ, KMG, MWD V0	WARNER 2E-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
JOKER 26N1-9HZ, KMG, MWD V0	HDI KF 103H, VERDAD, Proposal V0	WARNER 2L-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
CHAPIN 43-4, CPR, Gyro V0	COLFER 35N-34HZ, KMG, MWD V0	WARNER 2AA-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
COLFER 14N-34HZ, KMG, MWD V0	OLIN 41-4, CPR, MWD V0	
RUEGGE 3R-4HN165, CPR, MWD V0	WARNER 2C-10H-E165, Wellbore #1, Plan #2 27Sep18 kjs V0	

Anticollision Summary Report

Company: Crestone Peak Resources
Project: Sec 10 T1N-R65W
Reference Site: Warner Pad
Site Error: 0.00 usft
Reference Well: WARNER 2B-10H-E165
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #3 27Sep18 kjs

Local Co-ordinate Reference: Well WARNER 2B-10H-E165
TVD Reference: WELL @ 4993.00usft (Original Well Elev)
MD Reference: WELL @ 4993.00usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.15 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 4993.00usft (Original Well E

Offset Depths are relative to Offset Datum

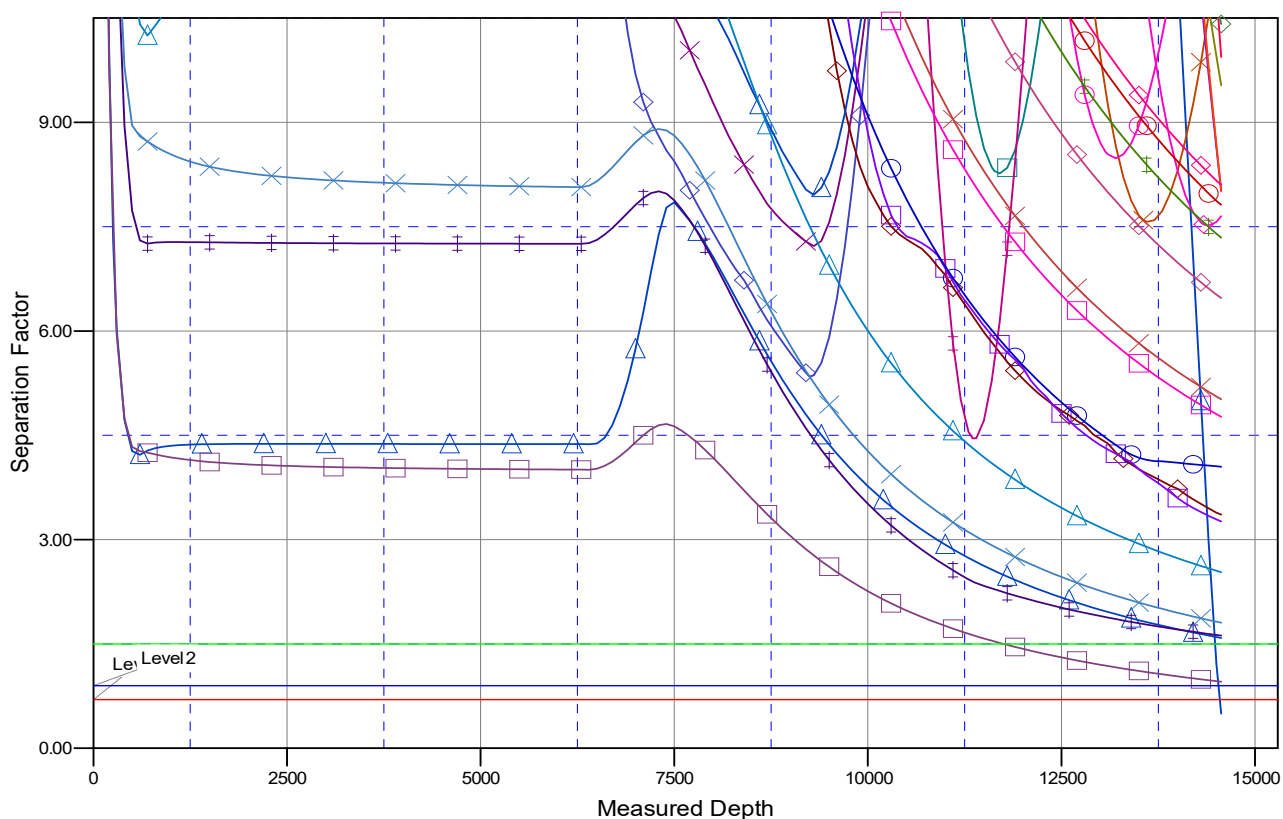
Central Meridian is -105.500000

Coordinates are relative to: WARNER 2B-10H-E165

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.54°

Separation Factor Plot



LEGEND

COLFER 13C-34HZ, KMG, MWD V0	RANDLE RED XX 3-2D, KMG, Gyro V0	WARNER 2D-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 03232HN, VERDAD, Proposal V0	JOKER 1N3-9HZ, KMG, MWD V0	WARNER 2G-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
COLFER 13N-34HZ, KMG, MWD V0	SPARBOE 7C-3HZ, KMG, MWD V0	WARNER 2A-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
RANDLE RED XX 3-4D, KMG, Gyro V0	HDI KF 03232HC, VERDAD, Proposal V0	WARNER 2K-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 10-1H, VERDAD, Proposal V0	OTTESEN 1, VERDAD, Gyro V0	WARNER 2F-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 03231HN, VERDAD, Proposal V0	RUEGGE 3Q-4HN165, CPR, MWD V0	WARNER 2I-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
CHAPIN 44-4, CPR, Gyro V0	OLIN 42-4A, CPR, MWD V0	WARNER 2H-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
COLFER 38N-34HZ, KMG, MWD V0	ROCKY 38N-33HZ, KMG, Proposal V0	WARNER 2E-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
JOKER 26N2-9HZ, KMG, MWD V0	COLFER 14C-34HZ, KMG, MWD V0	WARNER 2L-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
JOKER 26N1-9HZ, KMG, MWD V0	HDI KF 10-3H, VERDAD, Proposal V0	WARNER 2AA-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
CHAPIN 43-4, CPR, Gyro V0	COLFER 35N-34HZ, KMG, MWD V0	
COLFER 14N-34HZ, KMG, MWD V0	OLIN 41-4, CPR, MWD V0	
RUEGGE 3R-4HN165, CPR, MWD V0	WARNER 2C-10H-E165, Wellbore #1, Plan #2 27Sep18 kjs V0	