



Crestone Peak Resources

Sec 10 T1N-R65W

Warner Pad

WARNER 2C-10H-E165

Wellbore #1

Plan #2 27Sep18 kjs

Anticollision Summary Report

28 September, 2018

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well WARNER 2C-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 2C-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 #2 27Sep18 kjs	Offset TVD Reference:	Offset Datum

Reference	Plan #2 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	14,786.84	Plan #2 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
Existing Wells (Warner Pad)						
CHAPIN 43-4 - CPR - Gyro	11,867.60	7,275.72	1,152.00	1,044.09	10.675	CC, ES
CHAPIN 43-4 - CPR - Gyro	12,000.00	7,277.33	1,159.59	1,050.39	10.619	SF
CHAPIN 44-4 - CPR - Gyro	10,630.03	7,287.70	1,411.88	1,324.12	16.088	CC, ES
CHAPIN 44-4 - CPR - Gyro	10,800.00	7,289.02	1,422.07	1,332.40	15.860	SF
COLFER 13C-34HZ - KMG - MWD	14,786.84	11,790.00	936.61	872.45	14.597	CC, ES, SF
COLFER 13N-34HZ - KMG - MWD	14,786.84	11,496.00	988.26	910.08	12.641	CC, ES, SF
COLFER 14C-34HZX - KMG - MWD	14,786.84	11,779.00	1,794.05	1,606.93	9.588	CC, ES, SF
COLFER 14N-34HZ - KMG - MWD	14,786.84	11,568.00	1,564.70	1,393.72	9.151	CC, ES, SF
COLFER 35N-34HZ - KMG - MWD	14,786.84	11,687.00	1,044.36	931.32	9.239	CC, ES, SF
COLFER 36N-34HZ - KMG - MWD	14,786.84	11,617.00	2,140.46	1,943.03	10.842	CC, ES, SF
HDI KF 03-231HN - VERDAD - Proposal	6,737.06	6,705.60	4,305.84	4,256.17	86.685	CC, ES
HDI KF 03-231HN - VERDAD - Proposal	7,200.00	7,111.33	4,367.64	4,315.92	84.455	SF
HDI KF 03-232HC - VERDAD - Proposed	6,737.83	6,706.36	4,333.02	4,283.34	87.209	CC, ES
HDI KF 03-232HC - VERDAD - Proposed	7,200.00	7,111.33	4,394.26	4,342.53	84.958	SF
HDI KF 03-232HN - VERDAD - Proposal	6,737.44	6,705.98	4,319.43	4,269.75	86.947	CC, ES
HDI KF 03-232HN - VERDAD - Proposal	7,200.00	7,111.33	4,380.94	4,329.22	84.706	SF
HDI KF 10-1H - VERDAD - Proposal	6,726.95	6,695.60	4,368.37	4,318.88	88.270	CC, ES
HDI KF 10-1H - VERDAD - Proposal	7,200.00	7,111.33	4,437.86	4,386.23	85.965	SF
HDI KF 10-3H - VERDAD - Proposal	6,727.65	6,696.29	4,395.31	4,345.81	88.791	CC, ES
HDI KF 10-3H - VERDAD - Proposal	7,200.00	7,111.33	4,464.19	4,412.56	86.463	SF
JOKER 1N3-9HZ - KMG - MWD	7,032.56	9,650.42	1,239.17	1,162.65	16.195	CC, ES
JOKER 1N3-9HZ - KMG - MWD	9,500.00	11,936.00	1,331.08	1,203.14	10.404	SF
JOKER 26N1-9HZ - KMG - MWD	7,191.88	9,843.54	1,143.68	1,065.66	14.659	CC
JOKER 26N1-9HZ - KMG - MWD	8,900.00	11,473.86	1,162.09	1,049.45	10.317	ES
JOKER 26N1-9HZ - KMG - MWD	9,600.00	12,052.00	1,214.02	1,083.66	9.313	SF
JOKER 26N2-9HZ - KMG - MWD	7,087.08	9,642.53	952.10	875.87	12.489	CC
JOKER 26N2-9HZ - KMG - MWD	9,472.30	11,975.00	985.02	857.26	7.710	ES
JOKER 26N2-9HZ - KMG - MWD	9,500.00	11,975.00	985.41	857.46	7.701	SF
OLIN 41-4 - CPR - MWD	14,574.80	7,520.80	1,399.02	1,245.32	9.102	CC
OLIN 41-4 - CPR - MWD	14,600.00	7,521.70	1,399.25	1,245.28	9.088	ES
OLIN 41-4 - CPR - MWD	14,700.00	7,525.24	1,404.60	1,249.92	9.081	SF
OLIN 42-4A - CPR - MWD	13,288.64	7,568.56	1,423.92	1,287.02	10.401	CC
OLIN 42-4A - CPR - MWD	13,300.00	7,568.56	1,423.97	1,286.83	10.384	ES
OLIN 42-4A - CPR - MWD	13,500.00	7,568.56	1,439.52	1,299.47	10.279	SF
OTTESEN 1 - VERDAD - Gyro	11,586.08	7,281.43	190.54	87.30	1.846	CC, ES
OTTESEN 1 - VERDAD - Gyro	11,600.00	7,281.69	191.04	87.50	1.845	SF
RANDLE RED XX 3-2D - KMG - Gyro	13,796.31	7,294.41	815.23	671.08	5.655	CC

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 2C-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 2C-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 #2 27Sep18 kjs	Offset TVD Reference:	Offset Datum

Summary

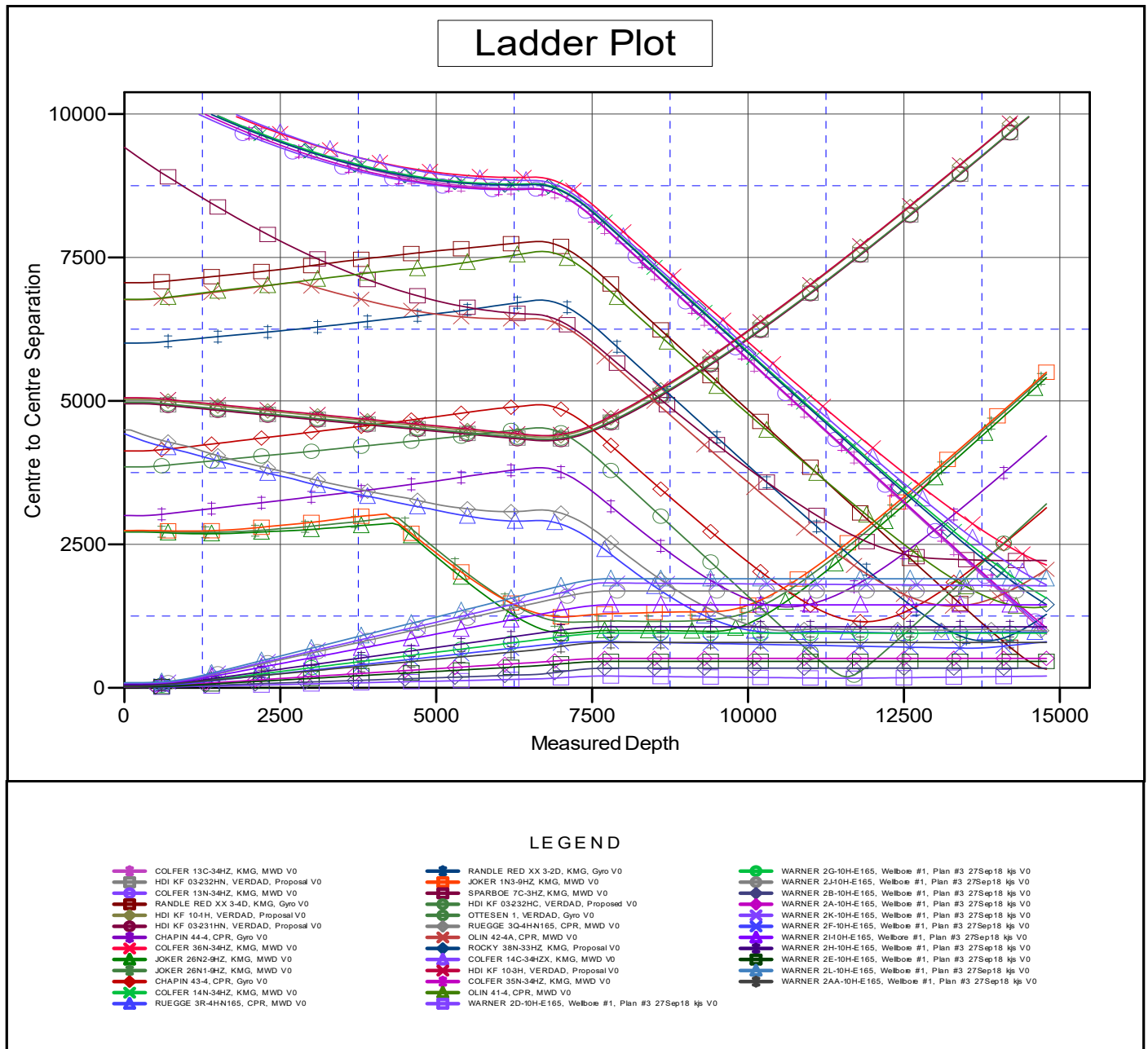
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells (Warner Pad)						
RANDLE RED XX 3-2D - KMG - Gyro	13,800.00	7,294.62	815.24	671.02	5.653	ES, SF
RANDLE RED XX 3-4D - KMG - Gyro	14,786.84	7,266.50	326.59	169.59	2.080	CC, ES, SF
ROCKY 38N-33HZ - KMG - Proposal	14,786.84	13,373.00	1,451.76	1,272.40	8.094	CC, ES, SF
RUEGGE 3Q-4H-N165 - CPR - MWD	10,589.37	8,060.00	996.77	910.64	11.573	CC
RUEGGE 3Q-4H-N165 - CPR - MWD	14,786.84	12,264.98	997.43	789.61	4.800	ES, SF
RUEGGE 3R-4H-N165 - CPR - MWD	12,522.81	10,390.54	952.03	806.94	6.562	CC
RUEGGE 3R-4H-N165 - CPR - MWD	14,786.84	12,660.00	966.74	749.05	4.441	ES, SF
SPARBOE 7C-3HZ - KMG - MWD	14,310.27	13,269.00	2,219.15	1,984.89	9.473	CC
SPARBOE 7C-3HZ - KMG - MWD	14,400.00	13,190.06	2,219.33	1,984.82	9.464	ES
SPARBOE 7C-3HZ - KMG - MWD	14,600.00	12,998.80	2,220.01	1,985.28	9.458	SF
Warner Pad						
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	19.87	18.88	20.015	CC
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	299.96	20.25	18.57	11.998	ES
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,786.84	14,638.22	514.25	257.26	2.001	SF
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	200.00	200.00	29.95	28.96	30.161	CC, ES
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	14,786.84	14,462.61	792.32	545.20	3.206	SF
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	10.08	9.08	10.147	CC
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.05	10.20	8.51	6.038	ES
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,786.84	14,558.88	344.24	127.32	1.587	SF
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	326.68	327.54	9.94	8.06	5.289	CC
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,786.84	14,657.06	205.89	-7.25	0.966	Level 3, ES, SF
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	332.68	333.40	19.89	17.97	10.350	CC
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	400.00	400.39	20.12	17.74	8.457	ES
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,786.84	14,595.63	461.41	219.59	1.908	SF
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	288.21	288.96	29.69	28.08	18.372	CC, ES
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	13,900.00	13,790.03	705.38	474.38	3.054	SF
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	313.67	314.20	39.82	38.03	22.210	CC
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	400.00	400.00	40.37	37.99	16.959	ES
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,786.84	14,882.63	954.79	690.74	3.616	SF
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	286.92	287.50	49.85	48.24	31.020	CC, ES
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,786.84	14,762.09	1,064.38	801.24	4.045	SF
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	271.01	271.60	59.72	58.23	39.938	CC, ES
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,786.84	14,842.36	1,446.78	1,182.95	5.484	SF
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	201.00	69.97	68.97	70.212	CC
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	300.00	300.00	70.48	68.78	41.614	ES
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,786.84	14,823.77	1,689.26	1,425.80	6.412	SF
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	80.05	79.05	80.323	CC, ES
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,786.84	15,184.65	1,779.69	1,514.63	6.714	SF
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	116.33	117.33	90.12	89.72	227.186	CC
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	90.13	89.13	90.650	ES
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,786.84	14,779.75	1,902.17	1,639.38	7.238	SF

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well WARNER 2C-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 2C-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 #2 27Sep18 kjs	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 2C-10H-E165
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.54°



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

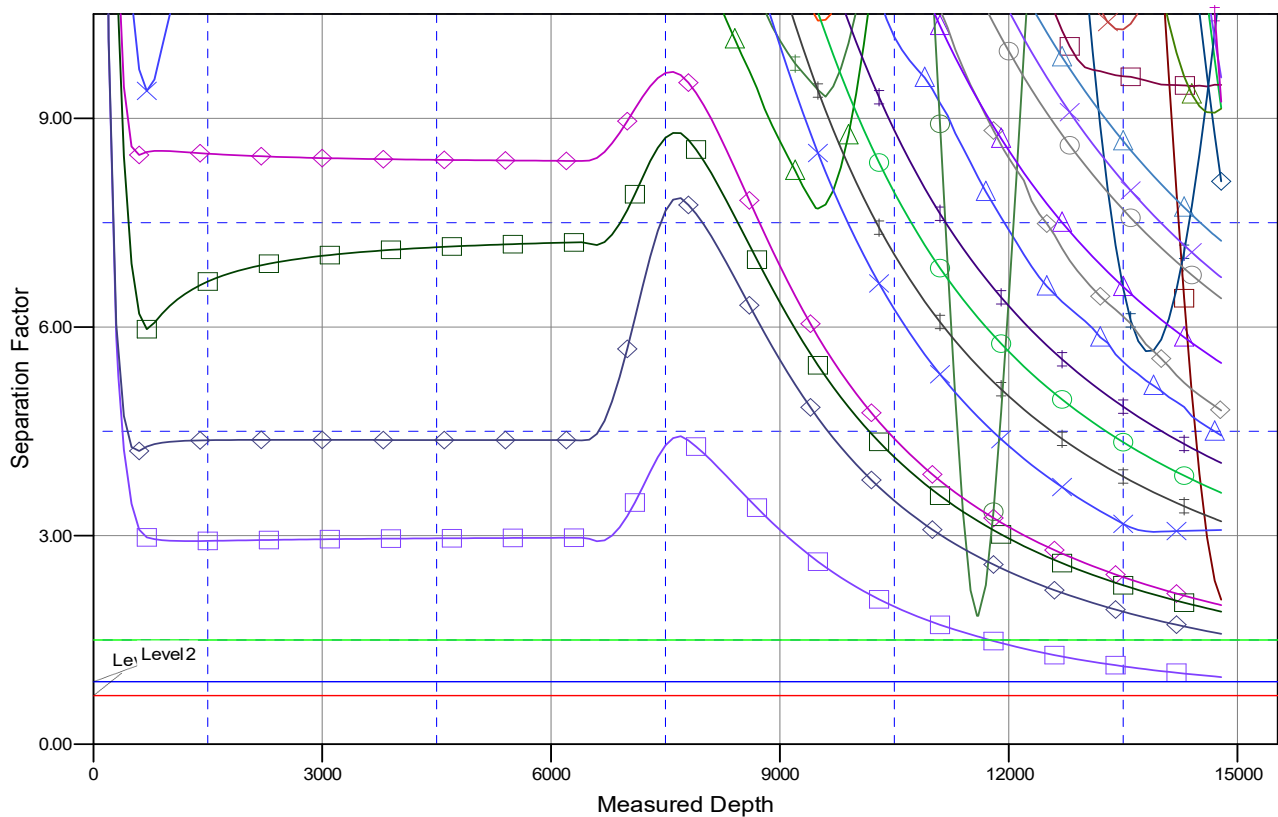
Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well WARNER 2C-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 2C-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 #2 27Sep18 kjs	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 2C-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, Gyo V0	WARNER 2G-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 03232HN, VERDAD, Proposal V0	JOKER 1N3-9HZ, KMG, MWD V0	WARNER 2B-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, Gyo V0	HDI KF 03232HC, VERDAD, Proposal V0	WARNER 2K-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 10-4H, VERDAD, Proposal V0	OTTESEN 1, VERDAD, Gyo 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, Gyo 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, Gyo 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 2D-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0	