Crestone Peak Resources

Sec 10 T1N-R65W
Warner Pad
WARNER 2A-10H-E165

Wellbore #1
Plan #3 27Sep18 kjs

Anticollision Summary Report

28 September, 2018

CRESTONE PEAK RESOURCES

Anticollision Summary Report

Company:	Crestone Peak Resources	**Local Co-ordinate Reference:**	Well WARNER 2A-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 2A-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	14,646.51	Plan #3 27Sep18 kjs (Wellbore #1)	MWD	OWSG MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	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	11,715.80	7,134.15	658.53	550.88	6.117	CC, ES, SF
CHAPIN 44-4 - CPR - Gyro	10,479.15	7,133.85	918.57	831.18	10.512	CC
CHAPIN 44-4 - CPR - Gyro	10,500.00	7,133.99	918.80	831.10	10.476	ES
CHAPIN 44-4 - CPR - Gyro	10,600.00	7,134.67	926.48	837.59	10.423	SF
COLFER 13C-34HZ - KMG - MWD	14,646.51	11,790.00	1,127.17	991.55	8.311	CC, ES, SF
COLFER 13N-34HZ - KMG - MWD	14,646.51	11,496.00	960.58	883.68	12.492	CC, ES, SF
COLFER 14C-34HZX - KMG - MWD	14,646.51	11,779.00	2,230.85	2,029.75	11.093	CC, ES, SF
COLFER 14N-34HZ - KMG - MWD	14,646.51	11,568.00	1,962.76	1,770.00	10.182	CC, ES, SF
COLFER 35N-34HZ - KMG - MWD	14,646.51	11,687.00	1,325.68	1,158.35	7.923	CC, ES, SF
COLFER 36N-34HZ - KMG - MWD	14,646.51	11,617.00	2,581.30	2,374.21	12.464	CC, ES, SF
HDI KF 03-231HN - VERDAD - Proposal	6,468.33	6,447.72	4,721.23	4,672.40	96.678	CC
HDI KF 03-231HN - VERDAD - Proposal	6,500.00	6,479.38	4,721.45	4,672.39	96.241	ES
HDI KF 03-231HN - VERDAD - Proposal	7,000.00	6,935.73	4,791.12	4,739.77	93.308	SF
HDI KF 03-232HC - VERDAD - Proposed	6,468.23	6,447.62	4,748.86	4,700.02	97.239	CC
HDI KF 03-232HC - VERDAD - Proposed	6,500.00	6,479.38	4,749.07	4,700.01	96.798	ES
HDI KF 03-232HC - VERDAD - Proposed	7,000.00	6,935.73	4,818.36	4,767.01	93.832	SF
HDI KF 03-232HN - VERDAD - Proposal	6,468.28	6,447.67	4,735.04	4,686.21	96.958	CC
HDI KF 03-232HN - VERDAD - Proposal	6,500.00	6,479.38	4,735.26	4,686.20	96.519	ES
HDI KF 03-232HN - VERDAD - Proposal	7,000.00	6,935.73	4,804.74	4,753.39	93.570	SF
HDI KF 10-1H - VERDAD - Proposal	6,469.80	6,449.18	4,776.69	4,727.90	97.902	CC
HDI KF 10-1H - VERDAD - Proposal	6,500.00	6,479.38	4,776.91	4,727.90	97.479	ES
HDI KF 10-1H - VERDAD - Proposal	7,000.00	6,935.73	4,852.51	4,801.21	94.591	SF
HDI KF 10-3H - VERDAD - Proposal	6,469.70	6,449.09	4,804.16	4,755.36	98.459	CC
HDI KF 10-3H - VERDAD - Proposal	6,500.00	6,479.38	4,804.37	4,755.36	98.032	ES
HDI KF 10-3H - VERDAD - Proposal	7,000.00	6,935.73	4,879.56	4,828.25	95.111	SF
JOKER 1N3-9HZ - KMG - MWD	7,163.70	9,820.61	765.25	686.75	9.748	CC
JOKER 1N3-9HZ - KMG - MWD	7,200.00	9,852.54	765.49	686.52	9.694	ES
JOKER 1N3-9HZ - KMG - MWD	9,300.00	11,914.64	816.96	688.60	6.365	SF
JOKER 26N1-9HZ - KMG - MWD	8,359.08	11,105.26	655.18	551.87	6.342	CC
JOKER 26N1-9HZ - KMG - MWD	8,800.00	11,527.03	660.24	545.12	5.735	ES
JOKER 26N1-9HZ - KMG - MWD	9,400.00	12,052.00	708.34	577.44	5.411	SF
JOKER 26N2-9HZ - KMG - MWD	9,322.42	11,975.00	473.16	343.47	3.648	CC, ES, SF
OLIN 41-4 - CPR - MWD	14,416.07	7,363.73	914.77	761.62	5.973	CC, ES, SF
OLIN 42-4A - CPR - MWD	13,144.21	7,421.75	936.12	799.37	6.845	CC, ES
OLIN 42-4A - CPR - MWD	13,200.00	7,418.72	937.78	799.71	6.792	SF
OTTESEN 1 - VERDAD - Gyro	11,432.65	7,146.28	685.79	582.82	6.660	CC, ES
OTTESEN 1 - VERDAD - Gyro	11,500.00	7,148.02	689.08	585.37	6.644	SF

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

Company:	Crestone Peak Resources	**Local Co-ordinate Reference:**	Well WARNER 2A-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 2A-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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Existing Wells (Warner Pad)						
RANDLE RED XX 3-2D - KMG - Gyro	13,639.34	7,169.12	1,314.04	1,170.25	9.139	CC, ES
RANDLE RED XX 3-2D - KMG - Gyro	13,700.00	7,172.55	1,315.43	1,170.87	9.100	SF
RANDLE RED XX 3-4D - KMG - Gyro	14,646.51	7,126.57	174.52	19.10	1.123	Level 3, CC, ES, SF
ROCKY 38N-33HZ - KMG - Proposal	14,646.51	13,373.00	1,111.58	980.39	8.473	CC, ES, SF
RUEGGE 3Q-4H-N165 - CPR - MWD	10,439.49	8,060.00	482.62	396.21	5.585	CC
RUEGGE 3Q-4H-N165 - CPR - MWD	14,637.71	12,265.00	483.68	273.34	2.300	ES, SF
RUEGGE 3R-4H-N165 - CPR - MWD	10,347.91	8,363.75	477.29	381.78	4.997	CC
RUEGGE 3R-4H-N165 - CPR - MWD	14,641.24	12,660.00	484.32	267.06	2.229	ES, SF
SPARBOE 7C-3HZ - KMG - MWD	14,142.01	13,287.37	2,716.46	2,481.85	11.579	CC
SPARBOE 7C-3HZ - KMG - MWD	14,200.00	13,234.89	2,716.51	2,481.79	11.574	ES
SPARBOE 7C-3HZ - KMG - MWD	14,400.00	13,045.02	2,716.93	2,481.98	11.564	SF
Warner Pad						
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	200.00	200.00	10.08	9.08	10.147	CC
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	300.00	299.87	10.59	8.91	6.292	ES
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	14,646.51	14,473.10	292.09	68.94	1.309	Level 3, SF
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	9.80	8.81	9.872	CC
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,646.51	14,563.38	243.61	-10.77	0.958	Level 3, ES, SF
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	200.00	200.00	19.87	18.88	20.015	CC
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	300.00	299.80	20.25	18.56	11.999	ES
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	14,646.51	14,786.84	514.32	257.19	2.000	SF
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	29.95	28.95	30.053	CC
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.75	30.21	28.51	17.833	ES
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,646.51	14,657.06	644.93	379.80	2.432	SF
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	40.02	39.03	40.163	CC
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.74	40.20	38.50	23.697	ES
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,646.51	14,595.63	903.57	639.38	3.420	SF
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	49.82	48.82	49.992	CC
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.00	50.15	48.46	29.608	ES
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,646.51	14,609.37	1,284.00	1,022.01	4.901	SF
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	59.90	58.90	60.102	CC
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.00	60.09	58.39	35.442	ES
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,646.51	14,882.63	1,456.34	1,193.30	5.537	SF
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	69.97	68.97	70.213	CC
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.00	70.31	68.62	41.525	ES
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,646.51	14,762.09	1,549.90	1,285.52	5.862	SF
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	201.00	79.77	78.77	80.042	CC
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	300.00	300.00	80.26	78.57	47.429	ES
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,646.51	14,842.36	1,934.79	1,670.44	7.319	SF
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	201.00	89.84	88.85	90.153	CC, ES
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,646.51	14,823.77	2,171.15	1,906.67	8.209	SF
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	99.92	98.92	100.265	CC, ES
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,646.51	15,184.65	2,278.83	2,014.25	8.613	SF
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	116.33	117.33	109.99	109.60	277.284	CC
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	110.00	109.00	110.684	ES
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,646.51	14,779.75	2,376.68	2,112.29	8.989	SF

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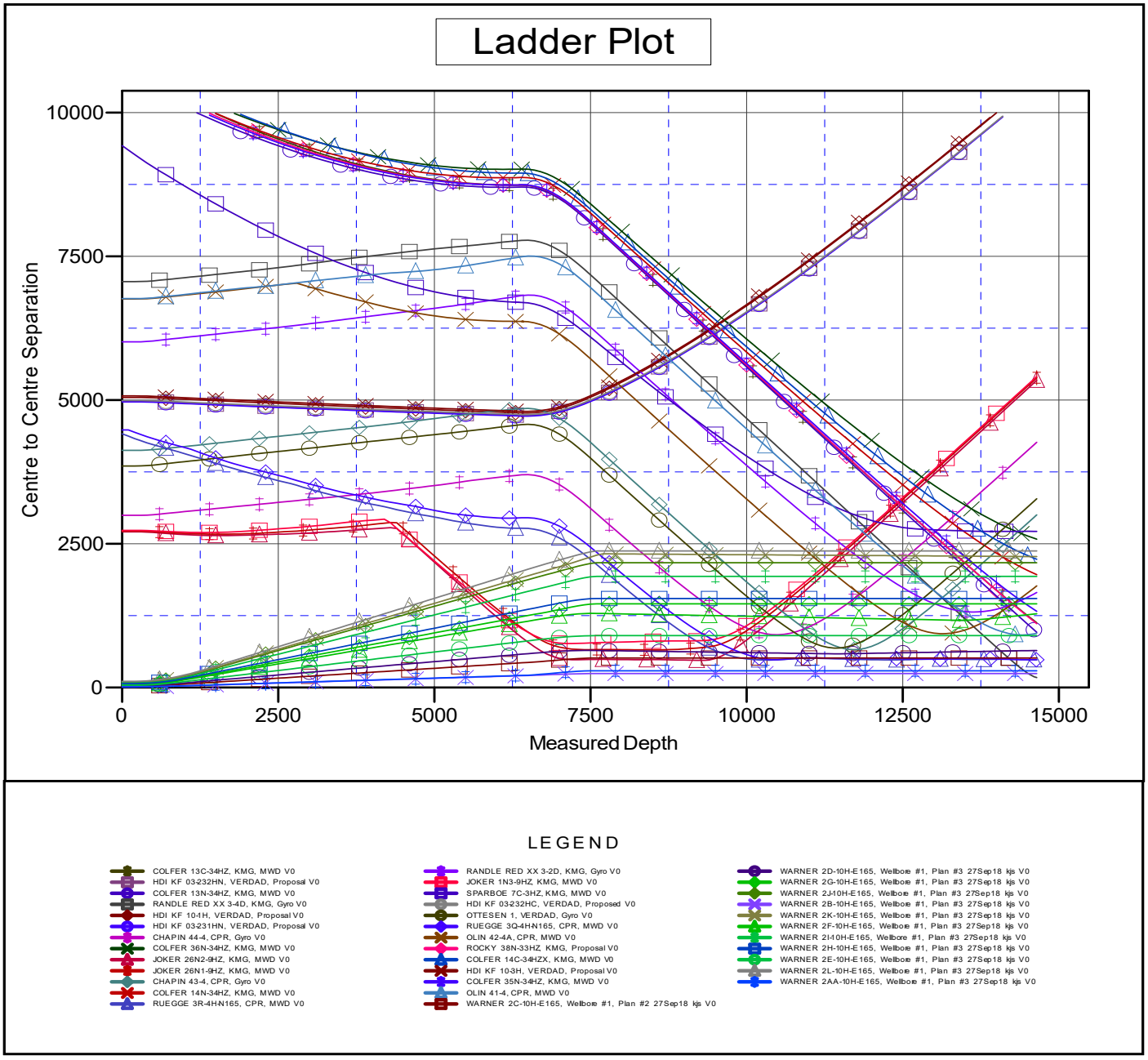
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	WARNER 2A-10H-E165	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.15 Single User Db
Reference Design:	Plan #3 27Sep18 kjs	**Offset TVD Reference:**	Offset Datum

Reference 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 2A-10H-E165
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.54°



Company:	Crestone Peak Resources	**Local Co-ordinate Reference:**	Well WARNER 2A-10H-E165
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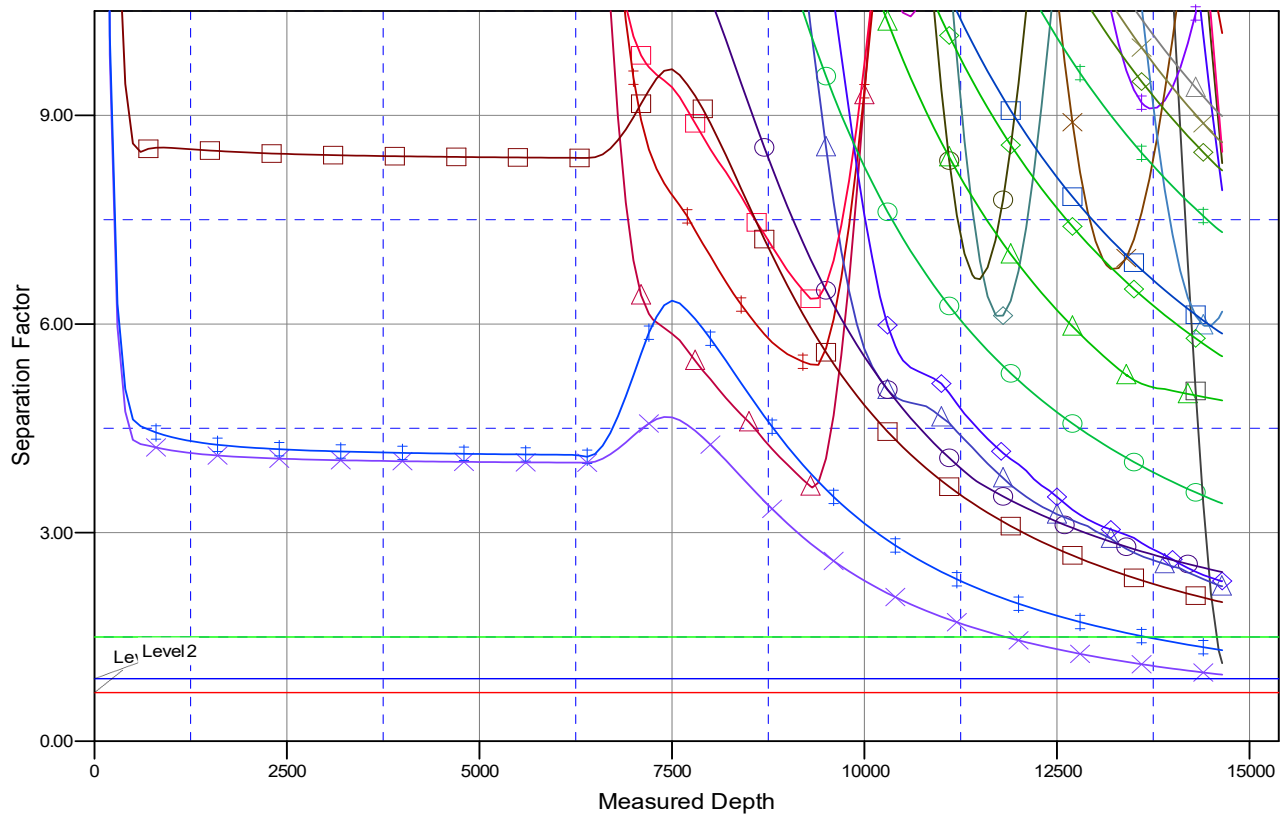
Reference Depths are relative to WELL @ 4993.00usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: WARNER 2A-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
HDI KF 03-232HN, VERDAD, Proposal V0
COLFER 13N-34HZ, KMG, MWD V0
RANDLE RED XX 3-4D, KMG, Gyro V0
HDI KF 10-1H, VERDAD, Proposal V0
HDI KF 03-231HN, VERDAD, Proposal V0
CHAPIN 44-4, CPR, Gyro V0
COLFER 36N-34HZ, KMG, MWD V0
JOKER 26N2-9HZ, KMG, MWD V0
JOKER 26N1-9HZ, KMG, MWD V0
CHAPIN 43-4, CPR, Gyro V0
COLFER 14N-34HZ, KMG, MWD V0
RUEGGE 3R-4HN165, CPR, MWD V0
RANDLE RED XX 3-2D, KMG, Gyro V0
JOKER 1N3-9HZ KMG, MWD V0
SPARBOE 7C-3HZ, KMG, MWD V0
HDI KF 03-232HC, VERDAD, Proposed V0
OTTESEN 1, VERDAD, Gyro V0
RUEGGE 3Q-4HN165, CPR, MWD V0
OLIN 42-4A, CPR, MWD V0
ROCKY 38N-33HZ, KMG, Proposal V0
COLFER 14C-34HZX, KMG, MWD V0
HDI KF 10-3H, VERDAD, Proposal V0
COLFER 35N-34HZ, KMG, MWD V0
OLIN 41-4, CPR, MWD V0
WARNER 2C-10H-E165, Wellbore #1, Plan #2 27Sep18 kjs V0
WARNER 2D-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2G-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2J-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2B-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2K-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2F-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2I-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2H-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2E-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2L-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
WARNER 2AA-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0