



# **Crestone Peak Resources**

**Sec 10 T1N-R65W**

**Warner Pad**

**WARNER 2L-10H-E165**

**Wellbore #1**

**Plan #3 27Sep18 kjs**

## **Anticollision Summary Report**

**28 September, 2018**

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well WARNER 2L-10H-E165
<b>Project:</b>	Sec 10 T1N-R65W	<b>TVD Reference:</b>	WELL @ 4994.00usft (Original Well Elev)
<b>Reference Site:</b>	Warner Pad	<b>MD Reference:</b>	WELL @ 4994.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	WARNER 2L-10H-E165	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #3 27Sep18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>	<b>Date</b>	9/28/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	14,779.75	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	11,890.26	6,975.30	3,029.79	2,923.52	28.508	CC
CHAPIN 43-4 - CPR - Gyro	11,900.00	6,975.61	3,029.81	2,923.44	28.484	ES
CHAPIN 43-4 - CPR - Gyro	12,400.00	6,990.83	3,072.34	2,962.20	27.896	SF
CHAPIN 44-4 - CPR - Gyro	226.17	209.12	3,032.58	3,031.46	2,710.418	CC, ES
CHAPIN 44-4 - CPR - Gyro	11,400.00	6,979.83	3,372.04	3,279.59	36.473	SF
COLFER 13C-34HZ - KMG - MWD	14,779.75	11,790.00	1,999.14	1,800.12	10.045	CC, ES, SF
COLFER 13N-34HZ - KMG - MWD	14,779.75	11,496.00	2,330.18	2,123.87	11.295	CC, ES, SF
COLFER 14C-34HZX - KMG - MWD	14,779.75	11,779.00	1,064.46	947.55	9.105	CC, ES, SF
COLFER 14N-34HZ - KMG - MWD	14,779.75	11,568.00	1,166.55	1,012.40	7.568	CC, ES, SF
COLFER 35N-34HZ - KMG - MWD	14,779.75	11,687.00	1,703.09	1,512.67	8.944	CC, ES, SF
COLFER 36N-34HZ - KMG - MWD	14,779.75	11,617.00	964.68	891.41	13.167	CC, ES, SF
HDI KF 03-231HN - VERDAD - Proposal	6,953.21	6,582.82	2,803.53	2,749.53	51.915	CC, ES
HDI KF 03-231HN - VERDAD - Proposal	7,600.00	6,973.15	3,021.58	2,959.16	48.410	SF
HDI KF 03-232HC - VERDAD - Proposed	6,956.39	6,585.59	2,826.61	2,772.67	52.404	CC, ES
HDI KF 03-232HC - VERDAD - Proposed	7,600.00	6,973.15	3,041.62	2,979.34	48.834	SF
HDI KF 03-232HN - VERDAD - Proposal	6,954.80	6,584.20	2,815.06	2,761.09	52.160	CC, ES
HDI KF 03-232HN - VERDAD - Proposal	7,600.00	6,973.15	3,031.58	2,969.23	48.622	SF
HDI KF 10-1H - VERDAD - Proposal	6,929.04	6,561.64	2,910.38	2,855.83	53.359	CC, ES
HDI KF 10-1H - VERDAD - Proposal	7,500.00	6,941.55	3,085.62	3,023.64	49.784	SF
HDI KF 10-3H - VERDAD - Proposal	6,932.08	6,564.32	2,932.74	2,878.27	53.843	CC, ES
HDI KF 10-3H - VERDAD - Proposal	7,500.00	6,941.55	3,105.40	3,043.55	50.213	SF
JOKER 1N3-9HZ - KMG - MWD	0.00	0.00	2,781.26			
JOKER 1N3-9HZ - KMG - MWD	200.00	175.93	2,782.02	2,781.12	3,109.304	ES
JOKER 1N3-9HZ - KMG - MWD	9,800.00	11,936.00	3,190.06	3,056.90	23.957	SF
JOKER 26N1-9HZ - KMG - MWD	153.15	156.16	2,766.41	2,765.75	4,227.214	CC
JOKER 26N1-9HZ - KMG - MWD	200.00	194.00	2,766.49	2,765.53	2,890.049	ES
JOKER 26N1-9HZ - KMG - MWD	9,900.00	12,052.00	3,104.62	2,970.54	23.157	SF
JOKER 26N2-9HZ - KMG - MWD	6,569.58	9,384.19	2,706.86	2,632.23	36.266	CC
JOKER 26N2-9HZ - KMG - MWD	6,600.00	9,381.39	2,706.99	2,632.13	36.161	ES
JOKER 26N2-9HZ - KMG - MWD	9,700.00	11,975.00	2,847.62	2,714.77	21.435	SF
OLIN 41-4 - CPR - MWD	14,594.16	7,359.19	3,291.12	3,138.56	21.573	CC
OLIN 41-4 - CPR - MWD	14,600.00	7,359.49	3,291.12	3,138.51	21.566	ES
OLIN 41-4 - CPR - MWD	14,779.75	7,368.60	3,296.35	3,142.30	21.398	SF
OLIN 42-4A - CPR - MWD	13,324.31	7,390.66	3,311.97	3,175.86	24.333	CC, ES
OLIN 42-4A - CPR - MWD	13,900.00	7,369.73	3,361.53	3,219.82	23.722	SF
OTTESEN 1 - VERDAD - Gyro	11,606.12	6,942.66	1,681.84	1,580.56	16.605	CC, ES
OTTESEN 1 - VERDAD - Gyro	11,700.00	6,944.80	1,684.46	1,582.91	16.587	SF

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

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well WARNER 2L-10H-E165
<b>Project:</b>	Sec 10 T1N-R65W	<b>TVD Reference:</b>	WELL @ 4994.00usft (Original Well Elev)
<b>Reference Site:</b>	Warner Pad	<b>MD Reference:</b>	WELL @ 4994.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	WARNER 2L-10H-E165	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #3 27Sep18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

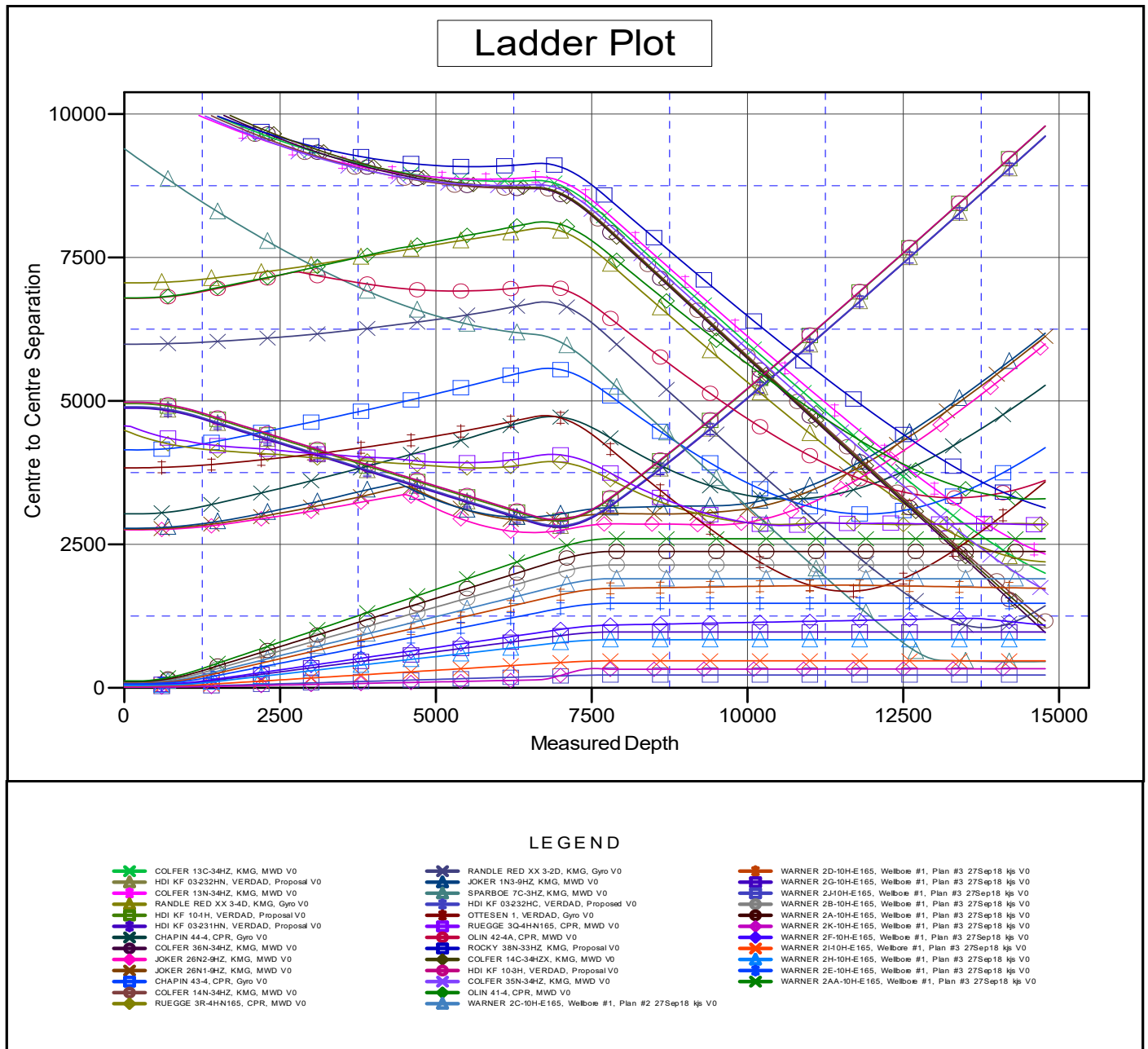
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells (Warner Pad)						
RANDLE RED XX 3-2D - KMG - Gyro	13,800.00	6,916.49	1,048.92	908.16	7.451	ES, SF
RANDLE RED XX 3-2D - KMG - Gyro	13,803.43	6,916.69	1,048.92	908.16	7.452	CC
RANDLE RED XX 3-4D - KMG - Gyro	14,779.75	6,905.89	2,197.30	2,041.88	14.138	CC, ES, SF
ROCKY 38N-33HZ - KMG - Proposal	14,779.75	13,373.00	3,138.14	2,913.27	13.956	CC, ES, SF
RUEGGE 3Q-4H-N165 - CPR - MWD	10,538.36	8,018.62	2,829.14	2,736.55	30.556	CC
RUEGGE 3Q-4H-N165 - CPR - MWD	14,779.75	12,229.33	2,844.09	2,629.60	13.260	ES, SF
RUEGGE 3R-4H-N165 - CPR - MWD	12,541.17	10,380.41	2,846.11	2,699.96	19.473	CC
RUEGGE 3R-4H-N165 - CPR - MWD	14,779.75	12,653.77	2,856.11	2,637.59	13.070	ES, SF
SPARBOE 7C-3HZ - KMG - MWD	14,168.76	13,439.00	455.69	268.07	2.429	CC, ES
SPARBOE 7C-3HZ - KMG - MWD	14,200.00	13,408.87	455.73	268.08	2.429	SF
Warner Pad						
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	199.00	109.99	109.00	111.175	CC, ES
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,779.75	14,607.46	2,376.36	2,113.00	9.023	SF
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	199.00	120.07	119.08	121.358	CC, ES
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,779.75	14,423.53	2,599.30	2,336.57	9.893	SF
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	199.00	100.20	99.21	101.272	CC, ES
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,779.75	14,526.63	2,141.75	1,878.48	8.135	SF
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	200.00	199.00	90.12	89.13	91.088	CC, ES
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	14,779.75	14,753.41	1,901.87	1,640.12	7.266	SF
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	80.05	79.05	80.613	CC, ES
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,779.75	14,656.50	1,734.22	1,470.60	6.579	SF
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	69.97	68.98	70.466	CC, ES
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,779.75	14,568.81	1,473.00	1,210.50	5.611	SF
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	60.17	59.18	60.601	CC, ES
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,779.75	14,732.12	1,094.83	832.34	4.171	SF
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	50.10	49.11	50.454	CC, ES
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,779.75	14,862.53	973.94	718.39	3.811	SF
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	40.02	39.03	40.307	CC, ES
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,779.75	14,747.06	839.27	578.84	3.223	SF
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	30.23	29.24	30.442	CC, ES
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,779.75	14,834.39	470.70	217.48	1.859	SF
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	20.15	19.16	20.296	CC
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,779.75	14,820.17	223.70	-25.34	0.898	Level 2, ES, SF
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	10.08	9.08	10.147	CC
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.27	10.68	8.99	6.306	ES
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	6,600.00	6,602.91	138.32	63.68	1.853	SF

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well WARNER 2L-10H-E165
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<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	WARNER 2L-10H-E165	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #3 27Sep18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4994.00usft (Original Well E  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: WARNER 2L-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

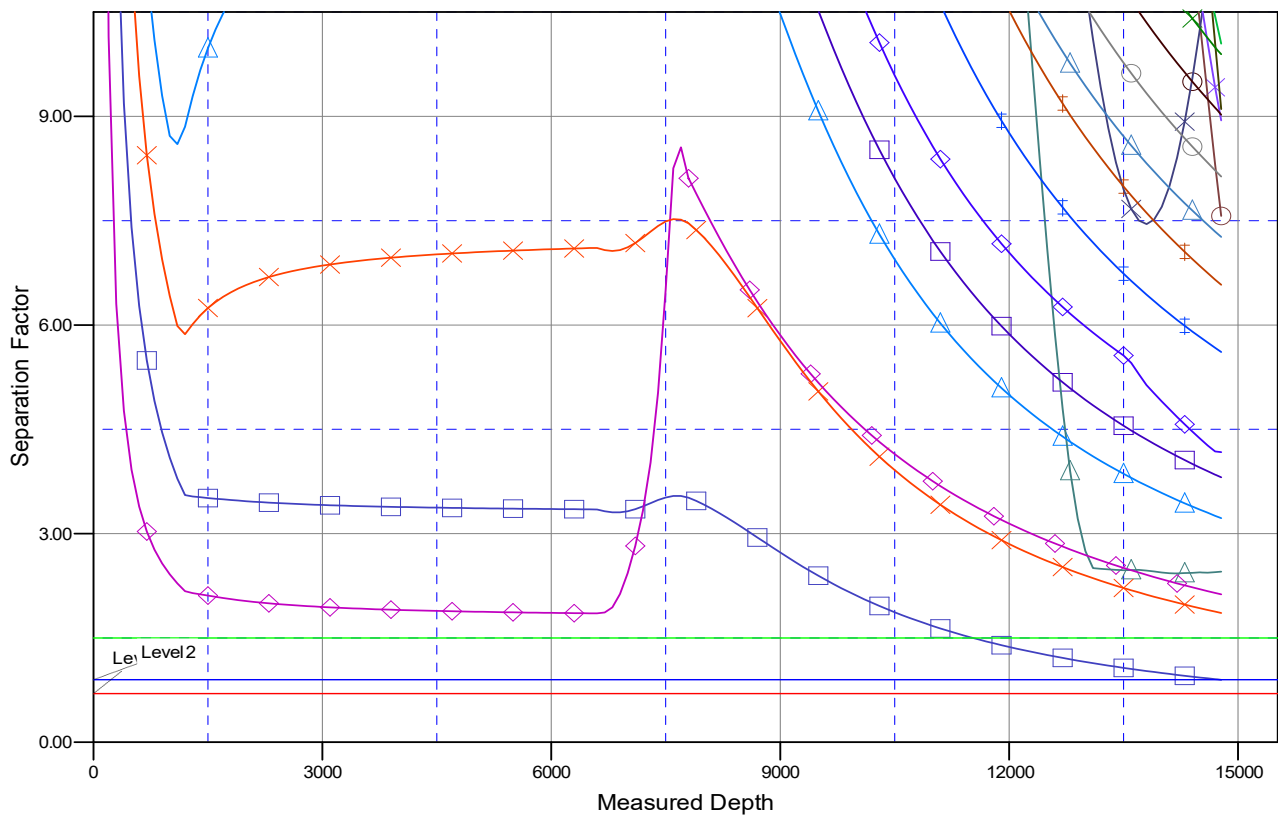
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Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: WARNER 2L-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 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 2J-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
RANDLE RED XX 3-4D, KMG, Gyo V0	HDI KF 03232HC, VERDAD, Proposal V0	WARNER 2B-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 10-4H, VERDAD, Proposal V0	OTTESEN 1, VERDAD, Gyo V0	WARNER 2A-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
HDI KF 03231HN, VERDAD, Proposal V0	RUEGGE 3Q-4HN165, CPR, MWD V0	WARNER 2K-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
CHAPIN 44-4, CPR, Gyo V0	OLIN 42-4A, CPR, MWD V0	WARNER 2F-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
COLFER 35N-34HZ, KMG, MWD V0	ROCKY 38N-33HZ, KMG, Proposal V0	WARNER 2I-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
JOKER 26N2-9HZ, KMG, MWD V0	COLFER 14C-34HZ, KMG, MWD V0	WARNER 2H-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
JOKER 26N1-9HZ, KMG, MWD V0	HDI KF 10-3H, VERDAD, Proposal V0	WARNER 2E-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
CHAPIN 43-4, CPR, Gyo 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	