



Crestone Peak Resources

Sec 10 T1N-R65W

Warner Pad

WARNER 2AA-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 2AA-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 2AA-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	14,477.75	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
Existing Wells (Warner Pad)						
CHAPIN 43-4 - CPR - Gyro	11,538.21	6,950.78	430.64	324.03	4.039	CC, ES, SF
CHAPIN 44-4 - CPR - Gyro	10,305.56	6,956.40	690.04	603.67	7.989	CC, ES
CHAPIN 44-4 - CPR - Gyro	10,400.00	6,956.38	696.47	608.81	7.945	SF
COLFER 13C-34HZ - KMG - MWD	14,477.76	11,790.00	1,301.12	1,144.23	8.293	CC, ES, SF
COLFER 13N-34HZ - KMG - MWD	14,477.76	11,496.00	1,043.33	930.19	9.222	CC, ES, SF
COLFER 14C-34HZ - KMG - MWD	14,477.76	11,779.00	2,455.41	2,251.13	12.020	CC, ES, SF
COLFER 14N-34HZ - KMG - MWD	14,477.76	11,568.00	2,166.54	1,967.87	10.905	CC, ES, SF
COLFER 35N-34HZ - KMG - MWD	14,477.76	11,687.00	1,506.67	1,326.01	8.340	CC, ES, SF
COLFER 36N-34HZ - KMG - MWD	14,477.76	11,617.00	2,796.42	2,586.77	13.338	CC, ES, SF
HDI KF 03-231HN - VERDAD - Proposal	6,205.63	6,179.51	4,912.43	4,864.90	103.352	CC, ES
HDI KF 03-231HN - VERDAD - Proposal	6,800.00	6,735.72	4,988.80	4,938.23	98.657	SF
HDI KF 03-232HC - VERDAD - Proposed	6,204.93	6,178.82	4,940.20	4,892.67	103.947	CC, ES
HDI KF 03-232HC - VERDAD - Proposed	6,800.00	6,735.72	5,016.27	4,965.70	99.200	SF
HDI KF 03-232HN - VERDAD - Proposal	6,205.28	6,179.16	4,926.31	4,878.78	103.650	CC, ES
HDI KF 03-232HN - VERDAD - Proposal	6,800.00	6,735.72	5,002.53	4,951.96	98.928	SF
HDI KF 10-1H - VERDAD - Proposal	6,216.33	6,190.14	4,965.41	4,917.81	104.311	CC, ES
HDI KF 10-1H - VERDAD - Proposal	6,800.00	6,735.72	5,046.53	4,995.96	99.811	SF
HDI KF 10-3H - VERDAD - Proposal	6,215.69	6,189.50	4,993.05	4,945.45	104.900	CC, ES
HDI KF 10-3H - VERDAD - Proposal	6,800.00	6,735.72	5,073.84	5,023.28	100.351	SF
JOKER 1N3-9HZ - KMG - MWD	7,344.13	10,144.48	540.85	457.71	6.505	CC
JOKER 1N3-9HZ - KMG - MWD	9,100.00	11,902.03	574.67	445.66	4.455	ES, SF
JOKER 26N1-9HZ - KMG - MWD	8,168.85	11,088.02	463.40	367.19	4.816	CC
JOKER 26N1-9HZ - KMG - MWD	8,600.00	11,510.13	466.52	359.07	4.342	ES
JOKER 26N1-9HZ - KMG - MWD	9,100.00	11,973.77	498.32	376.75	4.099	SF
JOKER 26N2-9HZ - KMG - MWD	9,149.43	11,975.00	265.50	144.20	2.189	CC, ES, SF
OLIN 41-4 - CPR - MWD	14,230.96	7,207.17	704.12	552.69	4.650	CC, ES, SF
OLIN 42-4A - CPR - MWD	12,984.69	7,249.87	719.14	583.27	5.293	CC
OLIN 42-4A - CPR - MWD	13,000.00	7,248.27	719.30	582.95	5.275	ES
OLIN 42-4A - CPR - MWD	13,100.00	7,237.50	728.22	589.90	5.265	SF
OTTESEN 1 - VERDAD - Gyro	11,255.40	6,970.58	917.26	815.29	8.996	CC, ES
OTTESEN 1 - VERDAD - Gyro	11,300.00	6,971.60	918.34	815.82	8.958	SF
RANDLE RED XX 3-2D - KMG - Gyro	13,456.55	6,995.82	1,549.12	1,406.64	10.872	CC, ES
RANDLE RED XX 3-2D - KMG - Gyro	13,600.00	7,003.94	1,555.73	1,411.71	10.802	SF
RANDLE RED XX 3-4D - KMG - Gyro	14,477.76	6,951.57	403.82	246.99	2.575	CC, ES, SF
ROCKY 38N-33HZ - KMG - Proposal	14,477.76	13,373.00	1,022.97	928.34	10.810	CC, ES, SF
RUEGGE 3Q-4H-N165 - CPR - MWD	10,221.45	8,013.93	231.03	137.32	2.465	CC
RUEGGE 3Q-4H-N165 - CPR - MWD	14,477.76	12,265.00	256.90	46.26	1.220	Level 3, 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 2AA-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 2AA-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

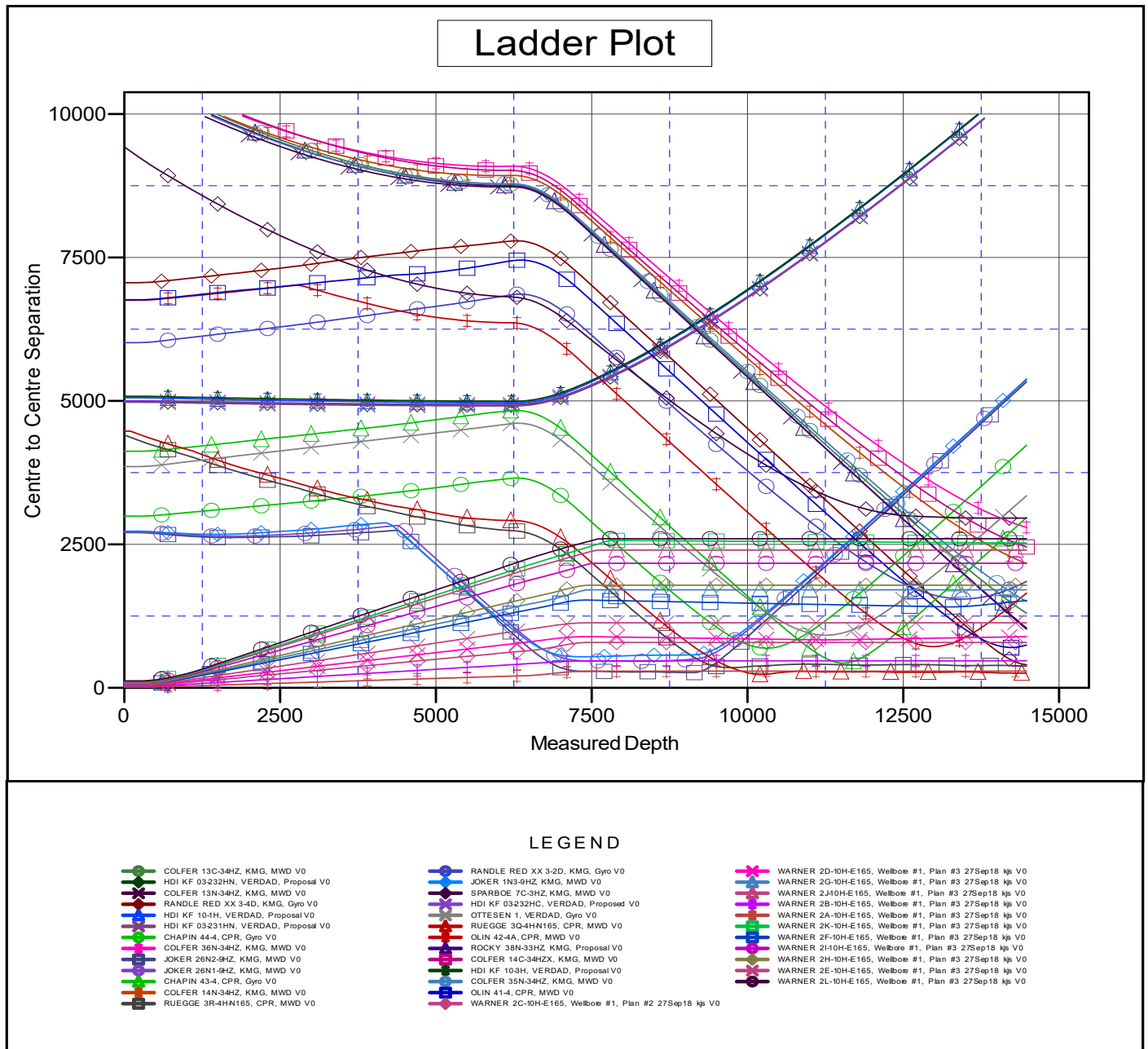
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells (Warner Pad)						
RUEGGE 3R-4H-N165 - CPR - MWD	9,716.02	7,879.73	353.34	270.62	4.272	CC
RUEGGE 3R-4H-N165 - CPR - MWD	14,468.15	12,660.00	378.37	206.93	2.207	ES, SF
SPARBOE 7C-3HZ - KMG - MWD	13,933.81	13,322.60	2,958.74	2,724.89	12.652	CC
SPARBOE 7C-3HZ - KMG - MWD	14,000.00	13,259.78	2,958.77	2,724.85	12.649	ES
SPARBOE 7C-3HZ - KMG - MWD	14,300.00	12,978.96	2,959.88	2,725.56	12.632	SF
Warner Pad						
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	10.08	9.08	10.147	CC
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.03	10.59	8.91	6.292	ES
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,477.76	14,646.51	292.13	69.03	1.309	Level 3, SF
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	19.87	18.88	20.015	CC, ES
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,477.76	14,563.38	470.92	210.18	1.806	SF
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	200.00	200.00	29.95	28.96	30.161	CC, ES
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	14,477.76	14,786.84	792.47	545.15	3.204	SF
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	40.02	39.03	40.163	CC, ES
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,477.76	14,657.06	893.14	632.72	3.430	SF
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	50.10	49.10	50.273	CC
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	300.00	300.66	50.78	49.09	29.967	ES
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,477.76	14,595.63	1,134.35	870.83	4.305	SF
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	59.90	58.90	60.102	CC
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	203.52	204.52	59.90	58.87	58.648	ES
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,477.76	14,587.34	1,523.58	1,264.30	5.876	SF
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	69.97	68.97	70.213	CC
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	202.98	203.98	69.97	68.95	68.768	ES
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,477.76	14,882.63	1,709.80	1,449.98	6.581	SF
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	80.05	79.05	80.323	CC, ES
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,477.76	14,762.09	1,788.96	1,526.33	6.812	SF
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	201.00	89.84	88.85	90.153	CC, ES
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,477.76	14,842.36	2,172.26	1,909.36	8.263	SF
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	201.00	99.92	98.92	100.263	CC, ES
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,477.76	14,823.77	2,401.77	2,138.14	9.110	SF
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	201.00	109.99	109.00	110.375	CC, ES
WARNER 2K-10H-E165 - Wellbore #1 - Plan #3 27Sep1	14,477.76	15,184.65	2,524.90	2,262.26	9.613	SF
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	116.33	117.33	120.07	119.67	302.683	CC
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	120.07	119.08	120.838	ES
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	14,477.76	14,779.75	2,599.87	2,335.79	9.845	SF

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



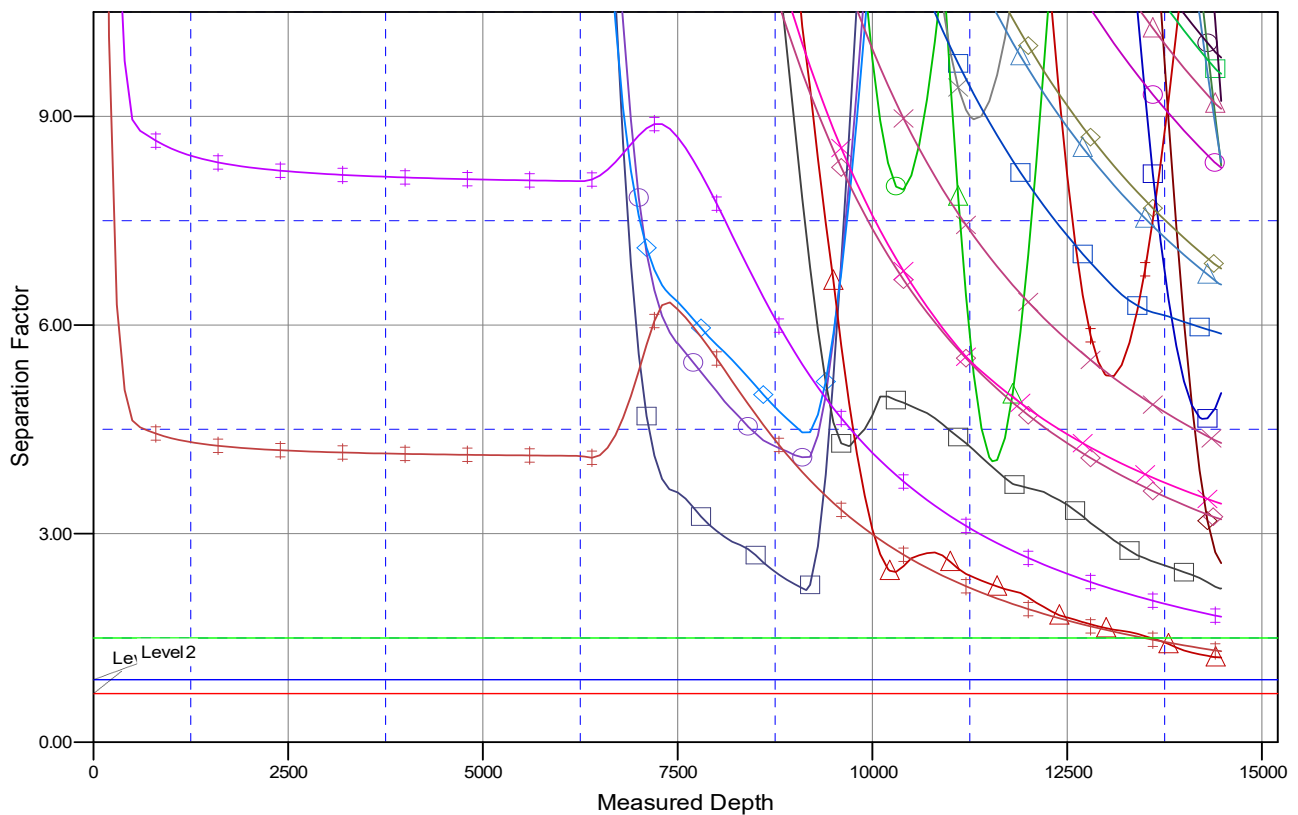
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Well Error:	0.00 usft	Output errors are at	2.00 sigma
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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 2AA-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 032321HN, VERDAD, Proposal V0	JOKER 1N3-9HZ, KMG, MWD V0	WARNER 2J-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
COLFER 13N-34HZ, KMG, MWD V0	SPARBOE 7C-3HZ, KMG, MWD V0	WARNER 2B-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 10-1H, VERDAD, Proposal V0	OTTESSEN 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 2H-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
COLFER 38N-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 2E-10H-E165, Wellbore #1, Plan #3 27Sep18 kjs V0
JOKER 26N1-9HZ, KMG, MWD V0	HDI KF 10-3H, 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	
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	