



Crestone Peak Resources

Sec 10 T1N-R65W

Warner Pad

WARNER 2K-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 2K-10H-E165
Project:	Sec 10 T1N-R65W	TVD Reference:	WELL @ 4994.00usft (Original Well Elev)
Reference Site:	Warner Pad	MD Reference:	WELL @ 4994.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	WARNER 2K-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	15,183.75	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	12,318.73	7,287.08	2,951.40	2,842.48	27.096	CC, ES
CHAPIN 43-4 - CPR - Gyro	12,800.00	7,292.69	2,990.38	2,877.80	26.562	SF
CHAPIN 44-4 - CPR - Gyro	230.18	212.58	3,029.05	3,027.91	2,644.980	CC
CHAPIN 44-4 - CPR - Gyro	300.00	272.24	3,029.44	3,027.84	1,894.082	ES
CHAPIN 44-4 - CPR - Gyro	11,800.00	7,318.69	3,298.57	3,203.37	34.648	SF
COLFER 13C-34HZ - KMG - MWD	15,184.65	11,790.00	1,890.16	1,692.15	9.546	CC, ES, SF
COLFER 13N-34HZ - KMG - MWD	15,184.65	11,496.00	2,250.94	2,046.73	11.023	CC, ES, SF
COLFER 14C-34HZ - KMG - MWD	15,184.65	11,779.00	992.81	889.10	9.573	CC, ES, SF
COLFER 14N-34HZ - KMG - MWD	15,184.65	11,568.00	1,133.59	991.83	7.996	CC, ES, SF
COLFER 35N-34HZ - KMG - MWD	15,184.65	11,687.00	1,625.04	1,439.34	8.751	CC, ES, SF
COLFER 36N-34HZ - KMG - MWD	15,184.65	11,617.00	991.94	914.56	12.819	CC, ES, SF
HDI KF 03-231HN - VERDAD - Proposal	7,256.93	6,899.71	2,769.45	2,714.51	50.413	CC, ES
HDI KF 03-231HN - VERDAD - Proposal	7,800.00	7,259.64	2,920.28	2,858.94	47.610	SF
HDI KF 03-232HC - VERDAD - Proposed	7,260.06	6,902.44	2,793.18	2,738.28	50.885	CC, ES
HDI KF 03-232HC - VERDAD - Proposed	7,800.00	7,259.64	2,941.59	2,880.37	48.051	SF
HDI KF 03-232HN - VERDAD - Proposal	7,258.49	6,901.08	2,781.30	2,726.39	50.649	CC, ES
HDI KF 03-232HN - VERDAD - Proposal	7,800.00	7,259.64	2,930.92	2,869.64	47.830	SF
HDI KF 10-1H - VERDAD - Proposal	7,231.63	6,877.37	2,871.07	2,815.70	51.858	CC, ES
HDI KF 10-1H - VERDAD - Proposal	7,800.00	7,259.64	3,040.17	2,978.03	48.923	SF
HDI KF 10-3H - VERDAD - Proposal	7,234.61	6,880.02	2,894.09	2,838.78	52.329	CC, ES
HDI KF 10-3H - VERDAD - Proposal	7,800.00	7,259.64	3,060.68	2,998.66	49.351	SF
JOKER 1N3-9HZ - KMG - MWD	0.00	0.00	2,776.73			
JOKER 1N3-9HZ - KMG - MWD	200.00	175.91	2,777.49	2,776.59	3,104.531	ES
JOKER 1N3-9HZ - KMG - MWD	10,300.00	11,936.00	3,153.54	3,019.98	23.612	SF
JOKER 26N1-9HZ - KMG - MWD	152.79	155.80	2,761.97	2,761.32	4,237.215	CC
JOKER 26N1-9HZ - KMG - MWD	6,619.59	9,569.38	2,791.88	2,716.24	36.911	ES
JOKER 26N1-9HZ - KMG - MWD	10,300.00	12,052.00	3,041.89	2,907.52	22.637	SF
JOKER 26N2-9HZ - KMG - MWD	6,634.65	9,338.42	2,579.85	2,505.29	34.601	CC, ES
JOKER 26N2-9HZ - KMG - MWD	10,200.00	11,975.00	2,800.90	2,667.84	21.050	SF
OLIN 41-4 - CPR - MWD	15,030.31	7,588.92	3,177.25	3,022.39	20.517	CC, ES
OLIN 41-4 - CPR - MWD	15,184.65	7,593.13	3,180.97	3,024.88	20.379	SF
OLIN 42-4A - CPR - MWD	13,739.94	7,626.57	3,212.32	3,074.25	23.266	CC
OLIN 42-4A - CPR - MWD	13,800.00	7,635.84	3,212.88	3,074.02	23.136	ES
OLIN 42-4A - CPR - MWD	14,300.00	7,609.99	3,260.76	3,117.19	22.712	SF
OTTESEN 1 - VERDAD - Gyro	12,027.77	7,281.35	1,610.89	1,506.81	15.478	CC, ES
OTTESEN 1 - VERDAD - Gyro	12,100.00	7,282.76	1,612.51	1,508.21	15.460	SF
RANDLE RED XX 3-2D - KMG - Gyro	14,230.54	7,240.10	970.07	826.11	6.738	CC, ES, SF

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

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Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well WARNER 2K-10H-E165
Project:	Sec 10 T1N-R65W	TVD Reference:	WELL @ 4994.00usft (Original Well Elev)
Reference Site:	Warner Pad	MD Reference:	WELL @ 4994.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	WARNER 2K-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

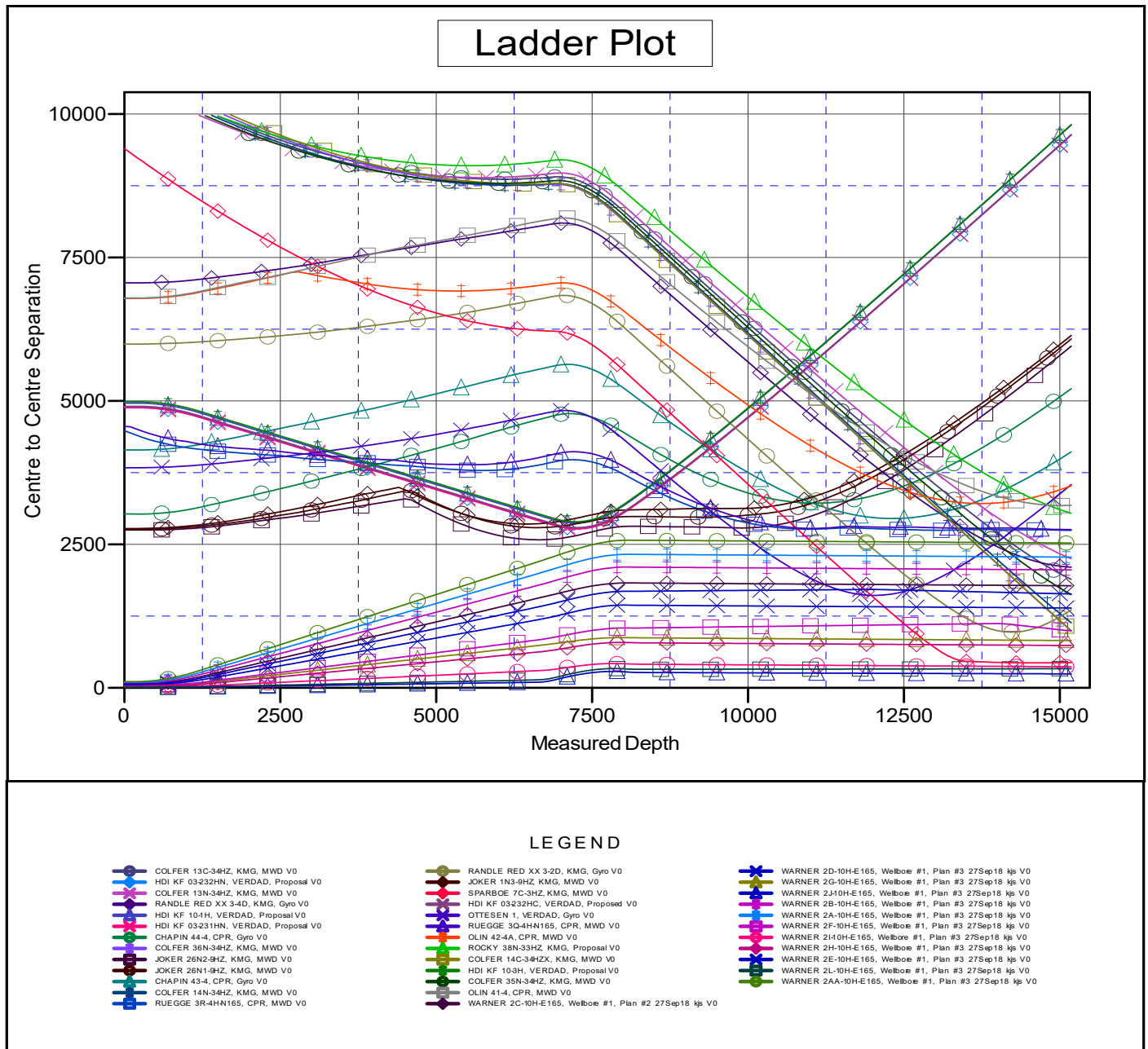
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells (Warner Pad)						
RANDLE RED XX 3-4D - KMG - Gyro	15,184.65	7,269.16	2,104.27	1,946.12	13.306	CC, ES, SF
ROCKY 38N-33HZ - KMG - Proposal	15,184.65	13,373.00	3,041.54	2,816.72	13.529	CC, ES, SF
RUEGGE 3Q-4H-N165 - CPR - MWD	15,184.65	12,233.05	2,758.05	2,545.32	12.965	CC, ES, SF
RUEGGE 3R-4H-N165 - CPR - MWD	15,184.65	12,639.71	2,746.01	2,528.46	12.623	CC, ES, SF
SPARBOE 7C-3HZ - KMG - MWD	14,425.29	13,581.51	435.53	201.07	1.858	CC, ES
SPARBOE 7C-3HZ - KMG - MWD	14,500.00	13,509.92	435.88	201.16	1.857	SF
Warner Pad						
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	199.00	99.92	98.93	100.991	CC, ES
WARNER 2A-10H-E165 - Wellbore #1 - Plan #3 27Sep1	15,184.65	14,609.98	2,278.53	2,014.89	8.643	SF
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	200.00	199.00	109.99	109.00	111.175	CC, ES
WARNER 2AA-10H-E165 - Wellbore #1 - Plan #3 27Sep	15,184.65	14,426.47	2,524.38	2,262.98	9.657	SF
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	199.00	90.12	89.13	91.088	CC, ES
WARNER 2B-10H-E165 - Wellbore #1 - Plan #3 27Sep1	15,184.65	14,529.22	2,055.90	1,793.77	7.843	SF
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	200.00	199.00	80.05	79.06	80.905	CC, ES
WARNER 2C-10H-E165 - Wellbore #1 - Plan #2 27Sep1	15,184.65	14,756.06	1,779.42	1,515.31	6.737	SF
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	69.97	68.98	70.466	CC, ES
WARNER 2D-10H-E165 - Wellbore #1 - Plan #3 27Sep1	15,184.65	14,657.06	1,635.65	1,372.64	6.219	SF
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	59.89	58.90	60.319	CC, ES
WARNER 2E-10H-E165 - Wellbore #1 - Plan #3 27Sep1	15,184.65	14,571.50	1,391.94	1,133.00	5.376	SF
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	50.10	49.11	50.454	CC, ES
WARNER 2F-10H-E165 - Wellbore #1 - Plan #3 27Sep1	15,184.65	14,732.12	994.63	734.51	3.824	SF
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	40.02	39.03	40.307	CC, ES
WARNER 2G-10H-E165 - Wellbore #1 - Plan #3 27Sep1	15,184.65	14,865.55	824.72	561.66	3.135	SF
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	200.00	200.00	29.95	28.96	30.161	CC, ES
WARNER 2H-10H-E165 - Wellbore #1 - Plan #3 27Sep1	15,184.65	14,749.75	737.98	481.28	2.875	SF
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	20.15	19.16	20.296	CC
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	300.00	300.33	20.79	19.09	12.247	ES
WARNER 2I-10H-E165 - Wellbore #1 - Plan #3 27Sep18	15,184.65	14,837.08	367.47	125.27	1.517	SF
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	10.08	9.09	10.151	CC
WARNER 2J-10H-E165 - Wellbore #1 - Plan #3 27Sep18	1,200.00	1,203.57	12.45	4.22	1.513	ES, SF
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	200.00	200.00	10.08	9.08	10.147	CC
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	300.00	299.66	10.68	8.99	6.309	ES
WARNER 2L-10H-E165 - Wellbore #1 - Plan #3 27Sep18	6,600.00	6,593.45	138.19	63.64	1.854	SF

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well WARNER 2K-10H-E165
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Reference Site:	Warner Pad	MD Reference:	WELL @ 4994.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	WARNER 2K-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 @ 4994.00usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

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



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

Local Co-ordinate Reference: Well WARNER 2K-10H-E165
TVD Reference: WELL @ 4994.00usft (Original Well Elev)
MD Reference: WELL @ 4994.00usft (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 @ 4994.00usft (Original Well E

Offset Depths are relative to Offset Datum

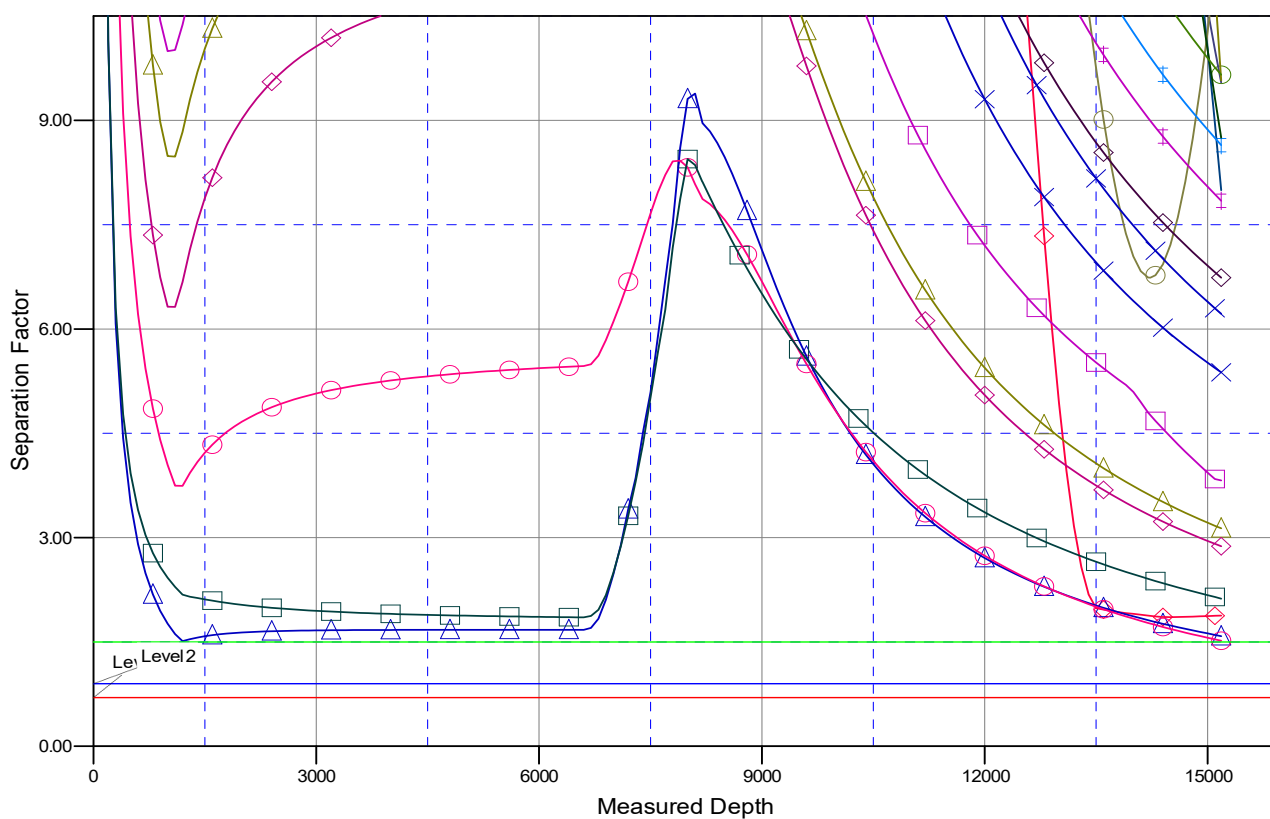
Central Meridian is -105.500000

Coordinates are relative to: WARNER 2K-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 03232HN, VERDAD, Proposal V0
COLFER 13N-34HZ, KMG, MWD V0
RANDLE RED XX 3-4D, KMG, Gyro V0
HDI KF 10-4H, VERDAD, Proposal V0
HDI KF 03231HN, VERDAD, Proposal V0
CHAPIN 44-4, CPR, Gyro V0
COLFER 38N-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 03232HC, VERDAD, Proposal 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-34HZ, 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 2A-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