



Crestone Peak Resources

Sec 17 T2N-R65W

Melbon Ranch Pad

MELBON RANCH 4I-17H-M265

Wellbore #1

Plan: Design #1 19Mar18 kjs

Standard Planning Report - Geographic

17 May, 2018



Crestone Peak Resources

Well Name:

MELBON RANCH 4I-17H-M265

Project Name:

Sec 17 T2N-R65W

Pad Name:

Melbon Ranch Pad

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	Start Build 2.00
611.76	6.24	223.71	611.15	-12.25	-11.71	-10.22	16.95	Hold 6.24 Inc, 223.71 Az
6579.64	6.24	223.71	6543.73	-480.79	-459.60	-401.20	665.13	KOP 8/100
7759.11	90.00	89.32	7312.00	-532.28	255.19	314.76	1394.09	LP 90 Inc, 89.32 Az
10759.11	90.00	89.32	7312.00	-496.63	3254.98	3290.51	4394.09	Begin 2/100 Turn
10882.54	90.00	91.79	7312.00	-497.82	3378.39	3413.24	4517.52	Hold 91.79 Az
12138.81	90.00	91.79	7312.00	-537.01	4634.04	4665.06	5773.78	TD at 12138.8

Geodetic Datum:

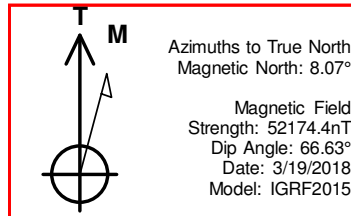
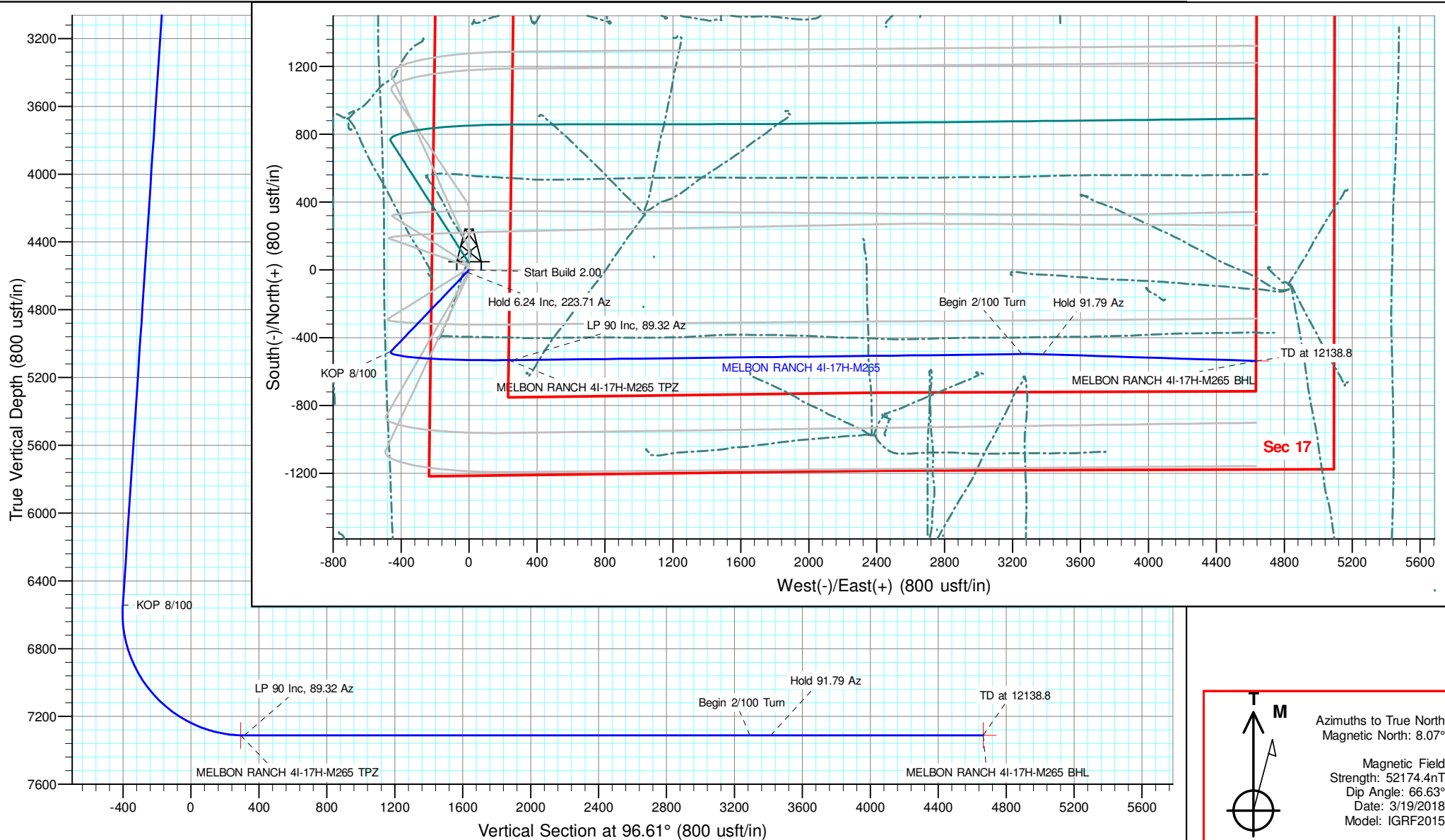
North American Datum 1983
US State Plane 1983, Colorado Northern Zone

Elevation:

Ground Elevation: 4956.00
KB Elevation: WELL @ 4979.00usft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
MELBON RANCH 4I-17H-M265 BHL	312.00	-537.01	4634.04	1292432.62	3229256.14	40.133212	-104.680064	Point
MELBON RANCH 4I-17H-M265 TPZ	312.00	-532.08	233.32	1292397.68	3224855.55	40.133226	-104.695725	Point
- plan misses target center by 0.55usft at 7737.26usft MD (7311.67 TVD, -532.52 N, 233.34 E)								



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well MELBON RANCH 4I-17H-M265
Company:	Crestone Peak Resources	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Project:	Sec 17 T2N-R65W	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site:	Melbon Ranch Pad	North Reference:	True
Well:	MELBON RANCH 4I-17H-M265	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 19Mar18 kjs		

Project	Sec 17 T2N-R65W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Melbon Ranch Pad				
Site Position:		Northing:	1,292,987.77 usft	Latitude:	40.134852
From:	Map	Easting:	3,224,617.42 usft	Longitude:	-104.696635
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52 °

Well	MELBON RANCH 4I-17H-M265					
Well Position	+N/-S	0.00 usft	Northing:	1,292,927.62 usft	Latitude:	40.134687
	+E/-W	0.00 usft	Easting:	3,224,617.42 usft	Longitude:	-104.696637
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,956.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/19/2018	8.07	66.63	52,174.44932266

Design	Design #1 19Mar18 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	96.61

Plan Survey Tool Program	Date	5/17/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,138.81 Design #1 19Mar18 kjs (Wellbore)	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
611.76	6.24	223.71	611.15	-12.25	-11.71	2.00	2.00	0.00	223.71	
6,579.65	6.24	223.71	6,543.73	-480.79	-459.60	0.00	0.00	0.00	0.00	
7,759.11	90.00	89.32	7,312.00	-532.28	255.19	8.00	7.10	-11.39	-134.22	
10,759.11	90.00	89.32	7,312.00	-496.63	3,254.98	0.00	0.00	0.00	0.00	
10,882.53	90.00	91.79	7,312.00	-497.82	3,378.38	2.00	0.00	2.00	90.00	
12,138.81	90.00	91.79	7,312.00	-537.01	4,634.04	0.00	0.00	0.00	0.00	MELBON RANCH 4I-

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well MELBON RANCH 4I-17H-M265
Company:	Crestone Peak Resources	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Project:	Sec 17 T2N-R65W	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site:	Melbon Ranch Pad	North Reference:	True
Well:	MELBON RANCH 4I-17H-M265	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 19Mar18 kjs		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	1,292,927.62	3,224,617.42	40.134687	-104.696637	
100.00	0.00	0.00	100.00	0.00	0.00	1,292,927.62	3,224,617.42	40.134687	-104.696637	
200.00	0.00	0.00	200.00	0.00	0.00	1,292,927.62	3,224,617.42	40.134687	-104.696637	
300.00	0.00	0.00	300.00	0.00	0.00	1,292,927.62	3,224,617.42	40.134687	-104.696637	
Start Build 2.00										
400.00	2.00	223.71	399.98	-1.26	-1.21	1,292,926.35	3,224,616.23	40.134684	-104.696642	
500.00	4.00	223.71	499.84	-5.04	-4.82	1,292,922.53	3,224,612.65	40.134673	-104.696655	
600.00	6.00	223.71	599.45	-11.34	-10.84	1,292,916.18	3,224,606.68	40.134656	-104.696676	
611.76	6.24	223.71	611.15	-12.25	-11.71	1,292,915.27	3,224,605.82	40.134653	-104.696679	
Hold 6.24 Inc, 223.71 Az										
700.00	6.24	223.71	698.86	-19.18	-18.33	1,292,908.28	3,224,599.27	40.134634	-104.696703	
800.00	6.24	223.71	798.27	-27.03	-25.84	1,292,900.36	3,224,591.83	40.134613	-104.696730	
900.00	6.24	223.71	897.68	-34.88	-33.34	1,292,892.44	3,224,584.40	40.134591	-104.696757	
1,000.00	6.24	223.71	997.09	-42.73	-40.85	1,292,884.52	3,224,576.96	40.134570	-104.696783	
1,100.00	6.24	223.71	1,096.50	-50.58	-48.35	1,292,876.60	3,224,569.53	40.134548	-104.696810	
1,200.00	6.24	223.71	1,195.91	-58.43	-55.86	1,292,868.69	3,224,562.10	40.134527	-104.696837	
1,300.00	6.24	223.71	1,295.31	-66.28	-63.36	1,292,860.77	3,224,554.66	40.134505	-104.696864	
1,400.00	6.24	223.71	1,394.72	-74.14	-70.87	1,292,852.85	3,224,547.23	40.134484	-104.696891	
1,500.00	6.24	223.71	1,494.13	-81.99	-78.37	1,292,844.93	3,224,539.80	40.134462	-104.696918	
1,600.00	6.24	223.71	1,593.54	-89.84	-85.88	1,292,837.01	3,224,532.36	40.134440	-104.696945	
1,700.00	6.24	223.71	1,692.95	-97.69	-93.38	1,292,829.09	3,224,524.93	40.134419	-104.696971	
1,800.00	6.24	223.71	1,792.36	-105.54	-100.89	1,292,821.17	3,224,517.50	40.134397	-104.696998	
1,900.00	6.24	223.71	1,891.76	-113.39	-108.39	1,292,813.26	3,224,510.06	40.134376	-104.697025	
2,000.00	6.24	223.71	1,991.17	-121.24	-115.90	1,292,805.34	3,224,502.63	40.134354	-104.697052	
2,100.00	6.24	223.71	2,090.58	-129.09	-123.40	1,292,797.42	3,224,495.20	40.134333	-104.697079	
2,200.00	6.24	223.71	2,189.99	-136.94	-130.91	1,292,789.50	3,224,487.76	40.134311	-104.697106	
2,300.00	6.24	223.71	2,289.40	-144.79	-138.41	1,292,781.58	3,224,480.33	40.134290	-104.697132	
2,400.00	6.24	223.71	2,388.81	-152.65	-145.92	1,292,773.66	3,224,472.89	40.134268	-104.697159	
2,500.00	6.24	223.71	2,488.21	-160.50	-153.42	1,292,765.74	3,224,465.46	40.134246	-104.697186	
2,600.00	6.24	223.71	2,587.62	-168.35	-160.93	1,292,757.82	3,224,458.03	40.134225	-104.697213	
2,700.00	6.24	223.71	2,687.03	-176.20	-168.43	1,292,749.91	3,224,450.59	40.134203	-104.697240	
2,800.00	6.24	223.71	2,786.44	-184.05	-175.94	1,292,741.99	3,224,443.16	40.134182	-104.697267	
2,900.00	6.24	223.71	2,885.85	-191.90	-183.44	1,292,734.07	3,224,435.73	40.134160	-104.697293	
3,000.00	6.24	223.71	2,985.26	-199.75	-190.95	1,292,726.15	3,224,428.29	40.134139	-104.697320	
3,100.00	6.24	223.71	3,084.67	-207.60	-198.45	1,292,718.23	3,224,420.86	40.134117	-104.697347	
3,200.00	6.24	223.71	3,184.07	-215.45	-205.96	1,292,710.31	3,224,413.43	40.134096	-104.697374	
3,300.00	6.24	223.71	3,283.48	-223.30	-213.46	1,292,702.39	3,224,405.99	40.134074	-104.697401	
3,400.00	6.24	223.71	3,382.89	-231.16	-220.97	1,292,694.47	3,224,398.56	40.134052	-104.697428	
3,500.00	6.24	223.71	3,482.30	-239.01	-228.47	1,292,686.56	3,224,391.12	40.134031	-104.697455	
3,600.00	6.24	223.71	3,581.71	-246.86	-235.98	1,292,678.64	3,224,383.69	40.134009	-104.697481	
3,700.00	6.24	223.71	3,681.12	-254.71	-243.48	1,292,670.72	3,224,376.26	40.133988	-104.697508	
3,800.00	6.24	223.71	3,780.52	-262.56	-250.99	1,292,662.80	3,224,368.82	40.133966	-104.697535	
3,900.00	6.24	223.71	3,879.93	-270.41	-258.49	1,292,654.88	3,224,361.39	40.133945	-104.697562	
4,000.00	6.24	223.71	3,979.34	-278.26	-266.00	1,292,646.96	3,224,353.96	40.133923	-104.697589	
4,100.00	6.24	223.71	4,078.75	-286.11	-273.50	1,292,639.04	3,224,346.52	40.133902	-104.697616	
4,200.00	6.24	223.71	4,178.16	-293.96	-281.01	1,292,631.13	3,224,339.09	40.133880	-104.697642	
4,300.00	6.24	223.71	4,277.57	-301.81	-288.51	1,292,623.21	3,224,331.66	40.133859	-104.697669	
4,400.00	6.24	223.71	4,376.98	-309.67	-296.02	1,292,615.29	3,224,324.22	40.133837	-104.697696	
4,500.00	6.24	223.71	4,476.38	-317.52	-303.52	1,292,607.37	3,224,316.79	40.133815	-104.697723	
4,600.00	6.24	223.71	4,575.79	-325.37	-311.03	1,292,599.45	3,224,309.36	40.133794	-104.697750	
4,700.00	6.24	223.71	4,675.20	-333.22	-318.53	1,292,591.53	3,224,301.92	40.133772	-104.697777	
4,800.00	6.24	223.71	4,774.61	-341.07	-326.04	1,292,583.61	3,224,294.49	40.133751	-104.697803	
4,900.00	6.24	223.71	4,874.02	-348.92	-333.54	1,292,575.69	3,224,287.05	40.133729	-104.697830	
5,000.00	6.24	223.71	4,973.43	-356.77	-341.05	1,292,567.78	3,224,279.62	40.133708	-104.697857	

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well MELBON RANCH 4I-17H-M265
Company:	Crestone Peak Resources	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Project:	Sec 17 T2N-R65W	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site:	Melbon Ranch Pad	North Reference:	True
Well:	MELBON RANCH 4I-17H-M265	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 19Mar18 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.00	6.24	223.71	5,072.83	-364.62	-348.55	1,292,559.86	3,224,272.19	40.133686	-104.697884
5,200.00	6.24	223.71	5,172.24	-372.47	-356.06	1,292,551.94	3,224,264.75	40.133665	-104.697911
5,300.00	6.24	223.71	5,271.65	-380.32	-363.56	1,292,544.02	3,224,257.32	40.133643	-104.697938
5,400.00	6.24	223.71	5,371.06	-388.18	-371.07	1,292,536.10	3,224,249.89	40.133621	-104.697965
5,500.00	6.24	223.71	5,470.47	-396.03	-378.57	1,292,528.18	3,224,242.45	40.133600	-104.697991
5,600.00	6.24	223.71	5,569.88	-403.88	-386.08	1,292,520.26	3,224,235.02	40.133578	-104.698018
5,700.00	6.24	223.71	5,669.28	-411.73	-393.58	1,292,512.35	3,224,227.59	40.133557	-104.698045
5,800.00	6.24	223.71	5,768.69	-419.58	-401.09	1,292,504.43	3,224,220.15	40.133535	-104.698072
5,900.00	6.24	223.71	5,868.10	-427.43	-408.59	1,292,496.51	3,224,212.72	40.133514	-104.698099
6,000.00	6.24	223.71	5,967.51	-435.28	-416.10	1,292,488.59	3,224,205.29	40.133492	-104.698126
6,100.00	6.24	223.71	6,066.92	-443.13	-423.60	1,292,480.67	3,224,197.85	40.133471	-104.698152
6,200.00	6.24	223.71	6,166.33	-450.98	-431.11	1,292,472.75	3,224,190.42	40.133449	-104.698179
6,300.00	6.24	223.71	6,265.74	-458.84	-438.61	1,292,464.83	3,224,182.98	40.133427	-104.698206
6,400.00	6.24	223.71	6,365.14	-466.69	-446.12	1,292,456.91	3,224,175.55	40.133406	-104.698233
6,500.00	6.24	223.71	6,464.55	-474.54	-453.62	1,292,449.00	3,224,168.12	40.133384	-104.698260
6,579.65	6.24	223.71	6,543.73	-480.79	-459.60	1,292,442.69	3,224,162.20	40.133367	-104.698281
KOP 8/100									
6,600.00	5.23	210.80	6,563.98	-482.39	-460.84	1,292,441.08	3,224,160.97	40.133363	-104.698286
6,700.00	6.90	129.47	6,663.57	-490.13	-458.53	1,292,433.35	3,224,163.35	40.133342	-104.698277
6,800.00	13.99	107.58	6,761.89	-497.62	-442.34	1,292,426.02	3,224,179.61	40.133321	-104.698219
6,900.00	21.71	100.63	6,857.01	-504.69	-412.59	1,292,419.21	3,224,209.42	40.133302	-104.698113
7,000.00	29.58	97.23	6,947.09	-511.22	-369.86	1,292,413.07	3,224,252.21	40.133284	-104.697960
7,100.00	37.50	95.16	7,030.38	-517.07	-314.97	1,292,407.72	3,224,307.15	40.133268	-104.697764
7,200.00	45.44	93.73	7,105.25	-522.13	-248.99	1,292,403.26	3,224,373.17	40.133254	-104.697528
7,300.00	53.40	92.64	7,170.25	-526.31	-173.22	1,292,399.77	3,224,448.98	40.133242	-104.697257
7,400.00	61.37	91.76	7,224.11	-529.51	-89.12	1,292,397.33	3,224,533.10	40.133233	-104.696956
7,500.00	69.34	91.01	7,265.78	-531.69	1.67	1,292,395.97	3,224,623.91	40.133228	-104.696631
7,600.00	77.31	90.33	7,294.45	-532.79	97.38	1,292,395.74	3,224,719.62	40.133224	-104.696289
7,700.00	85.29	89.69	7,309.57	-532.79	196.14	1,292,396.63	3,224,818.39	40.133224	-104.695936
7,737.26	88.26	89.46	7,311.67	-532.52	233.34	1,292,397.24	3,224,855.58	40.133225	-104.695803
MELBON RANCH 4I-17H-M265 TPZ									
7,759.11	90.00	89.32	7,312.00	-532.28	255.19	1,292,397.67	3,224,877.42	40.133226	-104.695725
LP 90 Inc, 89.32 Az									
7,800.00	90.00	89.32	7,312.00	-531.80	296.07	1,292,398.53	3,224,918.30	40.133227	-104.695579
7,900.00	90.00	89.32	7,312.00	-530.61	396.07	1,292,400.63	3,225,018.28	40.133230	-104.695221
8,000.00	90.00	89.32	7,312.00	-529.42	496.06	1,292,402.72	3,225,118.26	40.133234	-104.694863
8,100.00	90.00	89.32	7,312.00	-528.23	596.05	1,292,404.81	3,225,218.24	40.133237	-104.694506
8,200.00	90.00	89.32	7,312.00	-527.04	696.04	1,292,406.91	3,225,318.21	40.133240	-104.694148
8,300.00	90.00	89.32	7,312.00	-525.85	796.04	1,292,409.00	3,225,418.19	40.133243	-104.693790
8,400.00	90.00	89.32	7,312.00	-524.67	896.03	1,292,411.10	3,225,518.17	40.133247	-104.693433
8,500.00	90.00	89.32	7,312.00	-523.48	996.02	1,292,413.19	3,225,618.15	40.133250	-104.693075
8,600.00	90.00	89.32	7,312.00	-522.29	1,096.02	1,292,415.28	3,225,718.13	40.133253	-104.692718
8,700.00	90.00	89.32	7,312.00	-521.10	1,196.01	1,292,417.38	3,225,818.10	40.133256	-104.692360
8,800.00	90.00	89.32	7,312.00	-519.91	1,296.00	1,292,419.47	3,225,918.08	40.133260	-104.692002
8,900.00	90.00	89.32	7,312.00	-518.72	1,396.00	1,292,421.57	3,226,018.06	40.133263	-104.691645
9,000.00	90.00	89.32	7,312.00	-517.54	1,495.99	1,292,423.66	3,226,118.04	40.133266	-104.691287
9,100.00	90.00	89.32	7,312.00	-516.35	1,595.98	1,292,425.76	3,226,218.02	40.133269	-104.690929
9,200.00	90.00	89.32	7,312.00	-515.16	1,695.97	1,292,427.85	3,226,318.00	40.133273	-104.690572
9,300.00	90.00	89.32	7,312.00	-513.97	1,795.97	1,292,429.94	3,226,417.97	40.133276	-104.690214
9,400.00	90.00	89.32	7,312.00	-512.78	1,895.96	1,292,432.04	3,226,517.95	40.133279	-104.689857
9,500.00	90.00	89.32	7,312.00	-511.59	1,995.95	1,292,434.13	3,226,617.93	40.133282	-104.689499
9,600.00	90.00	89.32	7,312.00	-510.40	2,095.95	1,292,436.23	3,226,717.91	40.133286	-104.689141
9,700.00	90.00	89.32	7,312.00	-509.22	2,195.94	1,292,438.32	3,226,817.89	40.133289	-104.688784
9,800.00	90.00	89.32	7,312.00	-508.03	2,295.93	1,292,440.42	3,226,917.86	40.133292	-104.688426

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well MELBON RANCH 4I-17H-M265
Company:	Crestone Peak Resources	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Project:	Sec 17 T2N-R65W	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site:	Melbon Ranch Pad	North Reference:	True
Well:	MELBON RANCH 4I-17H-M265	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 19Mar18 kjs		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,900.00	90.00	89.32	7,312.00	-506.84	2,395.92	1,292,442.51	3,227,017.84	40.133295	-104.688068
10,000.00	90.00	89.32	7,312.00	-505.65	2,495.92	1,292,444.60	3,227,117.82	40.133299	-104.687711
10,100.00	90.00	89.32	7,312.00	-504.46	2,595.91	1,292,446.70	3,227,217.80	40.133302	-104.687353
10,200.00	90.00	89.32	7,312.00	-503.27	2,695.90	1,292,448.79	3,227,317.78	40.133305	-104.686996
10,300.00	90.00	89.32	7,312.00	-502.09	2,795.90	1,292,450.89	3,227,417.75	40.133308	-104.686638
10,400.00	90.00	89.32	7,312.00	-500.90	2,895.89	1,292,452.98	3,227,517.73	40.133312	-104.686280
10,500.00	90.00	89.32	7,312.00	-499.71	2,995.88	1,292,455.08	3,227,617.71	40.133315	-104.685923
10,600.00	90.00	89.32	7,312.00	-498.52	3,095.88	1,292,457.17	3,227,717.69	40.133318	-104.685565
10,700.00	90.00	89.32	7,312.00	-497.33	3,195.87	1,292,459.26	3,227,817.67	40.133321	-104.685208
10,759.11	90.00	89.32	7,312.00	-496.63	3,254.98	1,292,460.50	3,227,876.77	40.133323	-104.684996
Begin 2/100 Turn									
10,800.00	90.00	90.14	7,312.00	-496.44	3,295.86	1,292,461.07	3,227,917.65	40.133324	-104.684850
10,882.53	90.00	91.79	7,312.00	-497.82	3,378.38	1,292,460.43	3,228,000.18	40.133320	-104.684555
10,882.54	90.00	91.79	7,312.00	-497.82	3,378.39	1,292,460.43	3,228,000.19	40.133320	-104.684555
Hold 91.79 Az									
10,900.00	90.00	91.79	7,312.00	-498.37	3,395.84	1,292,460.04	3,228,017.64	40.133318	-104.684492
11,000.00	90.00	91.79	7,312.00	-501.49	3,495.79	1,292,457.83	3,228,117.61	40.133310	-104.684135
11,100.00	90.00	91.79	7,312.00	-504.60	3,595.74	1,292,455.61	3,228,217.59	40.133301	-104.683777
11,200.00	90.00	91.79	7,312.00	-507.72	3,695.69	1,292,453.40	3,228,317.57	40.133293	-104.683420
11,300.00	90.00	91.79	7,312.00	-510.84	3,795.65	1,292,451.19	3,228,417.54	40.133284	-104.683062
11,400.00	90.00	91.79	7,312.00	-513.96	3,895.60	1,292,448.97	3,228,517.52	40.133275	-104.682705
11,500.00	90.00	91.79	7,312.00	-517.08	3,995.55	1,292,446.76	3,228,617.49	40.133267	-104.682347
11,600.00	90.00	91.79	7,312.00	-520.20	4,095.50	1,292,444.55	3,228,717.47	40.133258	-104.681990
11,700.00	90.00	91.79	7,312.00	-523.32	4,195.45	1,292,442.33	3,228,817.44	40.133249	-104.681633
11,800.00	90.00	91.79	7,312.00	-526.44	4,295.40	1,292,440.12	3,228,917.42	40.133241	-104.681275
11,900.00	90.00	91.79	7,312.00	-529.56	4,395.35	1,292,437.91	3,229,017.39	40.133232	-104.680918
12,000.00	90.00	91.79	7,312.00	-532.68	4,495.31	1,292,435.69	3,229,117.37	40.133224	-104.680560
12,100.00	90.00	91.79	7,312.00	-535.80	4,595.26	1,292,433.48	3,229,217.35	40.133215	-104.680203
12,138.81	90.00	91.79	7,312.00	-537.01	4,634.04	1,292,432.62	3,229,256.14	40.133212	-104.680064
TD at 12138.8 - MELBON RANCH 4I-17H-M265 BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
MELBON RANCH 4I-17I	0.00	0.52	7,312.00	-532.08	233.32	1,292,397.68	3,224,855.55	40.133226	-104.695725
- hit/miss target									
- Shape									
- plan misses target center by 0.55usft at 7737.26usft MD (7311.67 TVD, -532.52 N, 233.34 E)									
- Point									
MELBON RANCH 4I-17I	0.00	0.53	7,312.00	-537.01	4,634.04	1,292,432.62	3,229,256.14	40.133212	-104.680064
- plan hits target center									
- Point									



Planning Report - Geographic

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well MELBON RANCH 4I-17H-M265
Company:	Crestone Peak Resources	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Project:	Sec 17 T2N-R65W	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site:	Melbon Ranch Pad	North Reference:	True
Well:	MELBON RANCH 4I-17H-M265	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 19Mar18 kjs		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
611.76	611.15	-12.25	-11.71	Hold 6.24 Inc, 223.71 Az	
6,579.65	6,543.73	-480.79	-459.60	KOP 8/100	
7,759.11	7,312.00	-532.28	255.19	LP 90 Inc, 89.32 Az	
10,759.11	7,312.00	-496.63	3,254.98	Begin 2/100 Turn	
10,882.54	7,312.00	-497.82	3,378.39	Hold 91.79 Az	
12,138.81	7,312.00	-537.01	4,634.04	TD at 12138.8	



Crestone Peak Resources

Sec 17 T2N-R65W

Melbon Ranch Pad

MELBON RANCH 4I-17H-M265

Wellbore #1

Design #1 19Mar18 kjs

Anticollision Summary Report

17 May, 2018

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well MELBON RANCH 4I-17H-M265
Project:	Sec 17 T2N-R65W	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Reference Site:	Melbon Ranch Pad	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	MELBON RANCH 4I-17H-M265	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:	Design #1 19Mar18 kjs	Offset TVD Reference:	Offset Datum

Reference	Design #1 19Mar18 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	5/17/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	12,138.81	Design #1 19Mar18 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 (Melbon Ranch)						
ADAMSON 13N-28HZ - KMG - MWD	12,138.81	6,699.00	2,947.54	2,795.11	19.337	CC, ES, SF
ADAMSON 14N-28HZ - KMG - MWD	12,138.81	6,605.00	3,326.73	3,192.34	24.753	CC, ES, SF
ADAMSON 28N-28HZ - KMG - MWD	12,138.81	6,794.00	4,096.30	3,972.35	33.048	CC, ES, SF
ADAMSON 35C-28HZ - KMG - MWD	12,138.81	6,792.00	3,077.18	2,934.15	21.514	CC, ES, SF
ADAMSON 36N-28HZ - KMG - MWD	12,138.81	6,605.00	3,511.68	3,381.31	26.937	CC, ES, SF
ADAMSON 37C-28HZ - KMG - MWD	12,138.81	6,794.00	3,733.94	3,605.58	29.090	CC, ES, SF
ADAMSON 37C-28HZX - KMG - MWD	12,138.81	6,794.00	3,733.94	3,605.58	29.090	CC, ES, SF
BYDALEK 28C-20HZ - KMG - MWD	9,554.66	12,039.00	1,221.00	1,119.49	12.028	CC, ES
BYDALEK 28C-20HZ - KMG - MWD	10,100.00	12,039.00	1,337.25	1,223.51	11.758	SF
BYDALEK 28N-20HZ - KMG - MWD	9,631.48	11,830.00	1,235.06	1,130.59	11.821	CC, ES
BYDALEK 28N-20HZ - KMG - MWD	10,100.00	11,830.00	1,320.94	1,207.89	11.684	SF
BYDALEK 29C-20HZ - KMG - MWD	8,458.57	11,880.00	1,220.27	1,152.49	18.003	CC
BYDALEK 29C-20HZ - KMG - MWD	8,500.00	11,880.00	1,220.98	1,152.27	17.770	ES
BYDALEK 29C-20HZ - KMG - MWD	9,300.00	11,880.00	1,482.25	1,376.50	14.016	SF
BYDALEK 29N-20HZ - KMG - MWD	8,341.80	11,671.00	1,234.70	1,168.51	18.655	CC
BYDALEK 29N-20HZ - KMG - MWD	8,400.00	11,671.00	1,236.07	1,168.48	18.289	ES
BYDALEK 29N-20HZ - KMG - MWD	9,200.00	11,671.00	1,503.66	1,399.44	14.429	SF
BYDALEK 30C-20HZ - KMG - MWD	7,588.55	11,950.00	1,168.64	1,109.44	19.742	CC
BYDALEK 30C-20HZ - KMG - MWD	7,600.00	11,950.00	1,168.71	1,109.11	19.612	ES
BYDALEK 30C-20HZ - KMG - MWD	8,400.00	11,950.00	1,439.95	1,340.93	14.542	SF
BYDALEK 3N-20HZ - KMG - MWD	9,057.12	11,597.00	1,386.49	1,302.31	16.470	CC, ES
BYDALEK 3N-20HZ - KMG - MWD	9,900.00	11,597.00	1,622.59	1,511.01	14.542	SF
BYDALEK 4N-20HZ - KMG - MWD	7,802.50	11,755.00	1,225.64	1,166.97	20.891	CC, ES
BYDALEK 4N-20HZ - KMG - MWD	8,700.00	11,755.00	1,519.12	1,418.24	15.059	SF
CAMPBELL JF 17-13D - GW O&G - MWD	9,984.23	7,538.53	1,941.13	1,829.15	17.336	CC
CAMPBELL JF 17-13D - GW O&G - MWD	10,000.00	7,538.59	1,941.19	1,828.76	17.266	ES
CAMPBELL JF 17-13D - GW O&G - MWD	10,500.00	7,540.24	2,008.48	1,884.38	16.184	SF
CAMPBELL JF 17-41D - GW O&G - MWD	12,138.81	7,446.78	3,337.09	3,166.95	19.614	CC, ES, SF
CAMPBELL JF 17-6D - GW O&G - No Survey	300.00	251.00	4,394.73	4,393.43	3,390.446	CC, ES
CAMPBELL JF 17-6D - GW O&G - No Survey	12,138.81	730.00	7,307.62	7,238.52	105.759	SF
CAMPBELL JF 17-6D-1 - GW O&G - MWD	10,388.17	7,266.51	3,262.72	3,145.84	27.917	CC
CAMPBELL JF 17-6D-1 - GW O&G - MWD	10,500.00	7,267.11	3,264.63	3,145.09	27.310	ES
CAMPBELL JF 17-6D-1 - GW O&G - MWD	11,400.00	7,271.46	3,439.68	3,303.06	25.176	SF
CAMPBELL JF 17-7D - GW O&G - MWD	11,172.36	7,172.31	3,281.13	3,146.99	24.461	CC
CAMPBELL JF 17-7D - GW O&G - MWD	11,300.00	7,170.10	3,283.61	3,146.19	23.894	ES
CAMPBELL JF 17-7D - GW O&G - MWD	12,138.81	7,154.57	3,420.46	3,266.00	22.145	SF
CAMPBELL JF 17-8D - GW O&G - MWD	11,902.61	7,367.72	2,656.38	2,498.13	16.785	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 MELBON RANCH 4I-17H-M265
Project:	Sec 17 T2N-R65W	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Reference Site:	Melbon Ranch Pad	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	MELBON RANCH 4I-17H-M265	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:	Design #1 19Mar18 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 (Melbon Ranch)						
CAMPBELL JF 17-8D - GW O&G - MWD	12,000.00	7,369.86	2,658.17	2,497.53	16.548	ES
CAMPBELL JF 17-8D - GW O&G - MWD	12,138.81	7,372.89	2,666.86	2,503.14	16.289	SF
CAMPBELL JF 17-9D - GW O&G - MWD	10,633.65	7,306.24	2,609.94	2,487.63	21.339	CC
CAMPBELL JF 17-9D - GW O&G - MWD	10,700.00	7,305.13	2,610.79	2,486.82	21.060	ES
CAMPBELL JF 17-9D - GW O&G - MWD	11,300.00	7,294.69	2,713.54	2,577.57	19.958	SF
COOK 28N-16HZ - KMG - MWD	12,138.81	8,009.85	3,245.53	3,188.07	56.489	CC, ES, SF
CROWDER 1-18 - KMG - No Survey	300.00	283.00	3,723.22	3,721.86	2,734.797	CC, ES
CROWDER 1-18 - KMG - No Survey	10,700.00	7,295.00	5,876.88	5,795.88	72.551	SF
CROWDER 15C-18HZ - KMG - MWD	6,903.72	11,579.17	1,356.70	1,256.82	13.583	CC, ES
CROWDER 15C-18HZ - KMG - MWD	7,000.00	11,583.00	1,366.53	1,264.17	13.350	SF
CROWDER 15N-18HZ - KMG - MWD	6,791.42	11,538.00	2,055.26	1,951.46	19.800	CC
CROWDER 15N-18HZ - KMG - MWD	6,800.00	11,538.00	2,055.33	1,951.40	19.776	ES
CROWDER 15N-18HZ - KMG - MWD	6,900.00	11,538.00	2,066.31	1,960.98	19.618	SF
CROWDER 16C-19HZ - KMG - MWD	7,086.04	11,154.80	596.63	509.87	6.877	CC
CROWDER 16C-19HZ - KMG - MWD	7,100.00	11,156.25	596.93	509.03	6.791	ES
CROWDER 16C-19HZ - KMG - MWD	7,200.00	11,166.69	616.10	521.23	6.494	SF
CROWDER 16N-19HZ - KMG - MWD	6,928.28	10,981.08	833.53	739.32	8.847	CC, ES
CROWDER 16N-19HZ - KMG - MWD	7,000.00	10,983.59	840.16	743.08	8.654	SF
CROWDER 36N-18HZ - KMG - MWD	6,796.23	11,369.51	1,665.50	1,562.13	16.112	CC
CROWDER 36N-18HZ - KMG - MWD	6,800.00	11,369.61	1,665.51	1,562.07	16.101	ES
CROWDER 36N-18HZ - KMG - MWD	6,900.00	11,371.84	1,676.19	1,571.15	15.958	SF
CROWDER 38N-19HZ - KMG - MWD	7,136.15	11,009.53	260.67	176.10	3.082	CC
CROWDER 38N-19HZ - KMG - MWD	7,200.00	11,014.86	271.06	175.91	2.849	ES, SF
DECHANT 13-9 - KMG - No Survey	12,138.81	7,245.00	5,181.01	5,034.91	35.461	CC, ES, SF
DECHANT 14-9 - KMG - MWD	12,138.81	7,499.95	5,752.91	5,594.07	36.218	CC, ES, SF
DECHANT 23-9 - KMG - MWD	12,138.81	7,777.81	6,648.13	6,486.88	41.230	CC, ES, SF
DECHANT 31-19 - KMG - Gyro	6,659.00	6,600.00	2,307.78	2,260.69	49.005	CC, ES
DECHANT 31-19 - KMG - Gyro	6,900.00	6,858.62	2,340.46	2,291.66	47.959	SF
DECHANT 32-19 - KMG - Gyro	6,648.56	6,430.98	3,344.85	3,298.50	72.168	CC, ES
DECHANT 32-19 - KMG - Gyro	7,400.00	7,014.15	3,565.00	3,514.24	70.244	SF
DECHANT 35-9 - KMG - MWD	12,138.81	7,403.00	5,022.01	4,864.48	31.879	CC, ES, SF
DECHANT 36-9 - KMG - MWD	12,138.81	7,661.58	5,564.04	5,403.44	34.646	CC, ES, SF
DECHANT 38-8 - KMG - MWD	12,138.81	7,418.02	4,684.04	4,518.53	28.299	CC, ES, SF
DECHANT 41-19 - KMG - Gyro	6,866.68	6,841.97	1,112.22	1,063.62	22.884	CC, ES
DECHANT 41-19 - KMG - Gyro	7,000.00	6,955.02	1,117.90	1,068.67	22.708	SF
DECHANT 42-19 - KMG - No Survey	7,015.54	6,958.52	2,934.50	2,896.51	77.247	CC, ES
DECHANT 42-19 - KMG - No Survey	9,400.00	7,310.00	3,909.67	3,844.17	59.683	SF
DECHANT 9-19A - KMG - No Survey	7,084.08	7,010.64	3,869.91	3,831.66	101.157	CC
DECHANT 9-19A - KMG - No Survey	7,100.00	7,023.38	3,869.95	3,831.64	101.032	ES
DECHANT 9-19A - KMG - No Survey	10,500.00	7,305.00	5,344.37	5,260.57	63.775	SF
DECHANT X 08-15 - KMG - Gyro	10,604.31	7,287.07	5,192.15	5,072.64	43.448	CC
DECHANT X 08-15 - KMG - Gyro	10,700.00	7,286.09	5,193.03	5,071.13	42.601	ES
DECHANT X 08-15 - KMG - Gyro	12,138.81	7,271.82	5,468.26	5,315.13	35.710	SF
DECHANT X 08-24D - KMG - MWD	100.00	45.17	5,608.45	5,608.23	10,000.000	CC
DECHANT X 08-24D - KMG - MWD	300.00	233.38	5,608.76	5,607.49	4,427.682	ES
DECHANT X 08-24D - KMG - MWD	12,138.81	7,484.31	6,289.40	6,137.99	41.539	SF
DECHANT X 19-3 - KMG - Gyro	6,651.02	6,590.06	3,246.33	3,199.18	68.847	CC, ES
DECHANT X 19-3 - KMG - Gyro	6,900.00	6,765.40	3,287.67	3,239.06	67.628	SF
DOM RED X 20-02D - KMG - Gyro	8,811.48	7,236.29	2,275.53	2,200.68	30.401	CC
DOM RED X 20-02D - KMG - Gyro	8,900.00	7,235.88	2,277.25	2,200.29	29.590	ES
DOM RED X 20-02D - KMG - Gyro	9,800.00	7,231.71	2,480.96	2,386.05	26.141	SF
DOM RED X 20-3 - NOBLE - Gyro	9,161.08	7,284.84	1,236.60	1,153.42	14.867	CC
DOM RED X 20-3 - NOBLE - Gyro	9,200.00	7,285.27	1,237.21	1,153.03	14.697	ES

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 MELBON RANCH 4I-17H-M265
Project:	Sec 17 T2N-R65W	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Reference Site:	Melbon Ranch Pad	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	MELBON RANCH 4I-17H-M265	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:	Design #1 19Mar18 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 (Melbon Ranch)						
DOM RED X 20-3 - NOBLE - Gyro	9,500.00	7,288.59	1,282.20	1,191.84	14.191	SF
DOM RED X20-2D - KMG - No Survey	8,258.68	7,275.00	2,347.46	2,296.44	46.011	CC
DOM RED X20-2D - KMG - No Survey	8,300.00	7,275.00	2,347.83	2,295.99	45.294	ES
DOM RED X20-2D - KMG - No Survey	9,600.00	7,275.00	2,703.65	2,627.92	35.700	SF
EWERTZ 3-18 - KMG - No Survey	300.00	323.00	4,828.57	4,827.13	3,369.631	CC
EWERTZ 3-18 - KMG - No Survey	600.00	622.45	4,829.52	4,826.50	1,598.584	ES
EWERTZ 3-18 - KMG - No Survey	10,800.00	7,335.00	7,720.04	7,652.16	113.738	SF
FOUR WAY 1 - KMG - No Survey	12,138.81	7,229.00	3,686.39	3,559.41	29.033	CC, ES, SF
FOUR WAY 12-16 - KMG - Gyro	12,138.81	7,130.75	2,716.11	2,564.66	17.934	CC, ES, SF
HAYMAKER 29N-9HZ - KMG - MWD	12,138.81	6,569.00	5,027.72	4,873.11	32.518	CC, ES, SF
HAYMAKER 4C-9HZ - KMG - MWD	12,138.81	6,729.00	5,022.91	4,867.58	32.339	CC, ES, SF
HAYMAKER 4N-9HZ - KMG - MWD	12,138.81	6,475.00	4,895.02	4,741.41	31.866	CC, ES, SF
HSR-WARNER 6-18 - KMG - No Survey	6,600.00	6,574.98	3,765.69	3,727.81	99.408	CC, ES
HSR-WARNER 6-18 - KMG - No Survey	6,900.00	6,868.01	3,817.01	3,777.79	97.324	SF
HUDCO 16-18 - KMG - Gyro	6,657.10	6,623.44	508.69	460.87	10.638	CC, ES
HUDCO 16-18 - KMG - Gyro	6,700.00	6,666.35	509.95	461.81	10.593	SF
HUDCO 24-18 - KMG - MWD	268.59	285.60	1,158.45	1,156.97	781.743	CC
HUDCO 24-18 - KMG - MWD	400.00	415.01	1,158.97	1,156.57	483.463	ES
HUDCO 24-18 - KMG - MWD	6,800.00	6,899.42	2,033.25	1,981.68	39.426	SF
HUDCO 39-18 - KMG - MWD	4,910.03	5,053.87	351.05	310.75	8.712	CC, ES
HUDCO 39-18 - KMG - MWD	5,100.00	5,229.28	355.80	314.02	8.516	SF
HUDCO 40-18 - KMG - MWD	349.69	369.47	1,141.51	1,139.44	552.268	CC
HUDCO 40-18 - KMG - MWD	400.00	415.00	1,141.63	1,139.23	474.963	ES
HUDCO 40-18 - KMG - MWD	8,100.00	7,373.44	2,084.85	2,023.89	34.204	SF
HUDCO 9-18 - KMG - Gyro	460.59	478.50	1,081.55	1,078.64	371.199	CC
HUDCO 9-18 - KMG - Gyro	500.00	516.44	1,081.61	1,078.43	339.868	ES
HUDCO 9-18 - KMG - Gyro	6,900.00	6,862.23	1,461.30	1,411.41	29.294	SF
LUCERO X 20-04 - KMG - Gyro	7,760.92	7,286.60	1,239.22	1,183.84	22.376	CC, ES
LUCERO X 20-04 - KMG - Gyro	8,200.00	7,279.59	1,315.98	1,254.24	21.315	SF
MARKHAM 13-8 - KMG - MWD	3,207.75	3,644.00	4,840.07	4,814.93	192.518	CC, ES
MARKHAM 13-8 - KMG - MWD	11,500.00	7,375.77	6,275.88	6,154.18	51.566	SF
MARKHAM 34-8 - KMG - MWD	5,376.70	5,831.06	4,565.60	4,522.23	105.260	CC
MARKHAM 34-8 - KMG - MWD	5,400.00	5,843.35	4,565.63	4,522.13	104.957	ES
MARKHAM 34-8 - KMG - MWD	11,000.00	7,448.80	5,863.08	5,748.33	51.096	SF
MARKHAM 35-8 - KMG - MWD	8,616.97	7,550.58	4,616.60	4,542.33	62.159	CC
MARKHAM 35-8 - KMG - MWD	8,700.00	7,549.28	4,617.35	4,541.41	60.802	ES
MARKHAM 35-8 - KMG - MWD	11,400.00	7,506.82	5,411.45	5,286.71	43.382	SF
MEGUIRE 28C-16HZ - KMG - MWD	12,138.81	10,821.00	2,781.52	2,687.92	29.717	CC, ES, SF
MEGUIRE 29C-16HZ - KMG - MWD	12,138.81	10,903.00	1,622.03	1,528.99	17.433	CC, ES, SF
MEGUIRE 29N-16HZ - KMG - MWD	12,138.81	10,766.77	1,912.41	1,818.64	20.393	CC, ES, SF
MEGUIRE 30N-16HZ - KMG - MWD	12,138.81	10,790.41	810.29	715.97	8.592	CC, ES, SF
MEGUIRE 3N-16HZ - KMG - No Survey	12,138.81	7,242.00	4,123.64	4,009.58	36.154	CC, ES, SF
MEGUIRE 4N-16HZ - KMG - MWD	12,138.81	10,754.14	1,386.43	1,293.32	14.890	CC, ES, SF
MEGUIRE X 21-04 - KMG - Gyro	12,138.81	7,243.54	1,700.99	1,568.88	12.876	CC, ES, SF
MEGUIRE X 21-06 - KMG - No Survey	12,138.81	7,234.00	3,684.05	3,571.41	32.707	CC, ES, SF
MEGUIRE X 21-5JI - KMG - No Survey	12,138.81	7,239.00	3,021.96	2,882.06	21.600	CC, ES, SF
MELBON 12C-8HZ - KMG - MWD	0.00	0.00	1,626.34			
MELBON 12C-8HZ - KMG - MWD	300.00	286.44	1,626.97	1,625.14	891.928	ES
MELBON 12C-8HZ - KMG - MWD	8,900.00	6,866.00	2,285.91	2,216.69	33.024	SF
MELBON 12N-8HZ - KMG - MWD	305.93	301.91	1,617.14	1,615.27	860.874	CC, ES
MELBON 12N-8HZ - KMG - MWD	8,700.00	6,696.00	2,404.82	2,340.52	37.400	SF
MELBON 19C-8HZ - KMG - MWD	304.90	293.92	1,805.38	1,803.53	974.698	CC, ES
MELBON 19C-8HZ - KMG - MWD	9,500.00	6,836.00	2,230.92	2,148.07	26.928	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 MELBON RANCH 4I-17H-M265
Project:	Sec 17 T2N-R65W	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Reference Site:	Melbon Ranch Pad	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	MELBON RANCH 4I-17H-M265	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:	Design #1 19Mar18 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 (Melbon Ranch)						
MELBON 19N-E8HZ - KMG - MWD	305.65	295.19	1,820.97	1,819.09	972.500	CC, ES
MELBON 19N-E8HZ - KMG - MWD	9,700.00	6,723.83	2,220.79	2,132.81	25.241	SF
MELBON 19N-W8HZ - KMG - MWD	319.61	320.73	1,633.76	1,631.74	810.928	CC, ES
MELBON 19N-W8HZ - KMG - MWD	9,200.00	6,782.00	2,271.89	2,196.34	30.074	SF
MELBON 23C-8HZ - KMG - MWD	275.03	260.04	1,837.52	1,835.89	1,130.457	CC
MELBON 23C-8HZ - KMG - MWD	300.00	283.47	1,837.53	1,835.73	1,022.649	ES
MELBON 23C-8HZ - KMG - MWD	10,200.00	6,913.00	2,180.41	2,073.14	20.325	SF
MELBON 23N-8HZ - KMG - MWD	173.73	158.73	1,853.96	1,853.06	2,057.460	CC
MELBON 23N-8HZ - KMG - MWD	300.00	283.39	1,854.06	1,852.27	1,034.895	ES
MELBON 23N-8HZ - KMG - MWD	10,400.00	6,797.86	2,252.39	2,142.02	20.409	SF
MELBON RANCH 1 - V O&G - No Survey	8,600.20	7,278.00	600.91	542.89	10.357	CC, ES
MELBON RANCH 1 - V O&G - No Survey	8,700.00	7,278.00	609.14	549.78	10.262	SF
MELBON RANCH 13-17 - CPR - MWD	329.06	311.79	1,085.26	1,083.37	574.695	CC, ES
MELBON RANCH 13-17 - CPR - MWD	8,300.00	7,368.37	1,481.91	1,416.83	22.771	SF
MELBON RANCH 14-17 - CPR - MWD	7,845.96	7,421.51	79.46	19.16	1.318	Level 3, CC, ES, SF
MELBON RANCH 17-14 - V O&G - No Survey	8,533.78	7,278.00	307.20	250.60	5.428	CC, ES, SF
MELBON RANCH 23-17 - CPR - MWD	100.00	67.26	1,091.42	1,091.17	4,488.420	CC
MELBON RANCH 23-17 - CPR - MWD	300.00	268.78	1,092.60	1,090.97	670.465	ES
MELBON RANCH 23-17 - CPR - MWD	9,700.00	7,406.32	1,485.36	1,385.73	14.908	SF
MELBON RANCH 24-17 - CPR - MWD	9,152.68	7,342.89	79.30	-7.07	0.918	Level 3, CC, ES, SF
MELBON RANCH 2-4-17 - CPR - MWD	248.38	221.41	1,093.03	1,091.75	852.127	CC
MELBON RANCH 2-4-17 - CPR - MWD	300.00	264.92	1,093.23	1,091.60	673.448	ES
MELBON RANCH 2-4-17 - CPR - MWD	9,400.00	7,404.04	2,000.47	1,913.01	22.872	SF
MELBON RANCH 2-8-17 - CPR - MWD	8,540.96	7,447.09	537.82	458.87	6.812	CC, ES
MELBON RANCH 2-8-17 - CPR - MWD	8,600.00	7,446.63	541.05	460.97	6.756	SF
MELBON RANCH 33-17 - CPR - MWD	10,698.07	7,520.40	471.39	334.84	3.452	CC
MELBON RANCH 33-17 - CPR - MWD	10,700.00	7,520.41	471.40	334.82	3.451	ES, SF
MELBON RANCH 34-17 - CPR - MWD	10,520.66	7,336.25	110.16	-9.82	0.918	Level 3, CC, ES, SF
MELBON RANCH 3A-17H - CPR - MWD	2,439.98	2,452.90	69.42	51.01	3.770	CC
MELBON RANCH 3A-17H - CPR - MWD	12,138.81	11,794.55	217.25	8.96	1.043	Level 3, ES, SF
MELBON RANCH 3B-17H - CPR - MWD	317.89	310.42	106.17	104.26	55.716	CC, ES
MELBON RANCH 3B-17H - CPR - MWD	12,138.81	11,871.07	1,110.37	848.37	4.238	SF
MELBON RANCH 43-17 43-17 - CPR - Gyro	12,138.81	7,227.63	560.34	401.40	3.526	CC, ES, SF
MELBON RANCH 4-6-17 - CPR - MWD	9,825.61	7,406.00	689.19	588.18	6.823	CC, ES
MELBON RANCH 4-6-17 - CPR - MWD	9,900.00	7,406.29	693.19	591.05	6.787	SF
MELBON RANCH 4-8-17 - CPR - Gyro	9,957.41	7,245.73	349.46	246.61	3.398	CC, ES
MELBON RANCH 4-8-17 - CPR - Gyro	10,000.00	7,245.84	352.04	248.19	3.390	SF
MELBON RANCH 6-4-17 - CPR - MWD	11,106.17	7,450.52	941.51	800.17	6.661	CC, ES
MELBON RANCH 6-4-17 - CPR - MWD	11,200.00	7,453.18	946.17	803.44	6.629	SF
Melbon Ranch 6-8-17 - CPR - MWD	11,270.81	7,453.10	562.60	415.34	3.820	CC, ES
Melbon Ranch 6-8-17 - CPR - MWD	11,300.00	7,453.36	563.36	415.45	3.809	SF
MELBON RANCH 8-4-17 - CPR - MWD	12,138.81	7,285.87	1,149.34	1,002.30	7.816	CC, ES, SF
MELBON RANCH 8-6-17 - CPR - MWD	12,138.81	7,312.57	548.51	482.73	8.338	CC, ES, SF
MELBON RANCH 8-8-17 - CPR - MWD	12,138.81	7,621.47	1,515.10	1,360.10	9.775	CC, ES, SF
MELBON RANCH E UNIT 1 - CPR - Gyro	11,487.78	7,245.03	399.02	256.31	2.796	CC
MELBON RANCH E UNIT 1 - CPR - Gyro	11,500.00	7,245.21	399.21	256.23	2.792	ES, SF
MEQUIRE 21-3P - KMG - No Survey	12,138.81	7,229.00	2,696.80	2,596.54	26.896	CC, ES, SF
MUSE 1 - KMG - Gyro	0.00	0.00	2,900.86			
MUSE 1 - KMG - Gyro	300.00	278.60	2,901.72	2,900.06	1,751.387	ES
MUSE 1 - KMG - Gyro	9,100.00	7,273.96	4,240.20	4,170.82	61.109	SF
MUSE 2 - KMG - No Survey	6,604.61	6,583.57	1,191.69	1,153.93	31.556	CC, ES
MUSE 2 - KMG - No Survey	6,700.00	6,678.57	1,197.31	1,159.04	31.283	SF
PALMER 11-20 - KMG - No Survey	9,437.27	7,275.00	3,996.36	3,918.75	51.494	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 MELBON RANCH 4I-17H-M265
Project:	Sec 17 T2N-R65W	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Reference Site:	Melbon Ranch Pad	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	MELBON RANCH 4I-17H-M265	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:	Design #1 19Mar18 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 (Melbon Ranch)						
PALMER 11-20 - KMG - No Survey	9,500.00	7,275.00	3,996.85	3,917.65	50.466	ES
PALMER 11-20 - KMG - No Survey	11,800.00	7,275.00	4,605.85	4,481.43	37.019	SF
PALMER X 20-05 - KMG - Gyro	8,021.20	7,261.48	2,498.21	2,439.20	42.332	CC
PALMER X 20-05 - KMG - Gyro	8,100.00	7,262.04	2,499.46	2,439.09	41.401	ES
PALMER X 20-05 - KMG - Gyro	9,400.00	7,271.33	2,853.43	2,769.35	33.935	SF
PALMER X 20-06 - KMG - Gyro	9,247.65	7,226.83	2,630.82	2,545.73	30.918	CC
PALMER X 20-06 - KMG - Gyro	9,300.00	7,227.00	2,631.34	2,544.93	30.451	ES
PALMER X 20-06 - KMG - Gyro	10,400.00	7,230.54	2,872.13	2,763.27	26.384	SF
PALMER X 20-20 - KMG - Gyro	8,688.07	7,286.20	3,200.07	3,127.75	44.246	CC
PALMER X 20-20 - KMG - Gyro	8,800.00	7,286.56	3,202.03	3,127.12	42.743	ES
PALMER X 20-20 - KMG - Gyro	10,400.00	7,291.61	3,629.21	3,522.57	34.032	SF
POTTS X 18-10 - KMG - Gyro	5,143.68	5,100.00	2,215.79	2,177.98	58.591	CC
POTTS X 18-10 - KMG - Gyro	6,600.00	6,555.74	2,225.90	2,177.05	45.571	ES
POTTS X 18-10 - KMG - Gyro	6,800.00	6,758.46	2,254.08	2,203.91	44.929	SF
POTTS X 18-15 - KMG - Gyro	6,627.06	6,575.90	1,777.37	1,729.73	37.311	CC, ES
POTTS X 18-15 - KMG - Gyro	6,800.00	6,739.72	1,798.27	1,749.45	36.834	SF
RUSSIAN FIDDLER 15N-18HZ - KMG - MWD	6,817.44	12,713.00	1,807.74	1,686.96	14.967	CC, ES
RUSSIAN FIDDLER 15N-18HZ - KMG - MWD	6,900.00	12,713.00	1,814.30	1,692.21	14.861	SF
RUSSIAN FIDDLER 36C-18HZ - KMG - MWD	6,813.60	12,872.00	2,364.87	2,241.76	19.209	CC, ES
RUSSIAN FIDDLER 36C-18HZ - KMG - MWD	6,900.00	12,872.00	2,371.61	2,247.34	19.083	SF
RUSSIAN FIDDLER 36N-18HZ - KMG - MWD	6,767.78	12,128.00	2,760.96	2,654.58	25.955	CC, ES
RUSSIAN FIDDLER 36N-18HZ - KMG - MWD	6,900.00	12,128.00	2,775.61	2,668.16	25.832	SF
RUSSIAN FIDDLER 36N-18HZX - KMG - MWD	6,786.32	12,416.00	2,718.98	2,604.48	23.745	CC, ES
RUSSIAN FIDDLER 36N-18HZX - KMG - MWD	6,900.00	12,416.00	2,730.12	2,614.57	23.628	SF
RUSSIAN FIDDLER 37C-18HZ - KMG - MWD	6,904.83	12,903.00	1,316.95	1,200.21	11.281	CC, ES
RUSSIAN FIDDLER 37C-18HZ - KMG - MWD	7,000.00	12,903.00	1,326.53	1,207.26	11.123	SF
RUSSIAN FIDDLER 37N-18HZ - KMG - MWD	6,843.75	12,711.00	1,512.42	1,393.12	12.677	CC, ES
RUSSIAN FIDDLER 37N-18HZ - KMG - MWD	6,900.00	12,711.00	1,515.63	1,395.19	12.585	SF
SANDLIN-WELD COUNTY 1 - KMG - No Survey	11,520.09	7,249.00	3,333.94	3,202.63	25.389	CC
SANDLIN-WELD COUNTY 1 - KMG - No Survey	11,600.00	7,249.00	3,334.90	3,201.50	25.000	ES
SANDLIN-WELD COUNTY 1 - KMG - No Survey	12,138.81	7,249.00	3,390.87	3,245.31	23.295	SF
SANDLIN-WELD-COUNTY UNIT 2 - KMG - Gyro	151.39	107.40	3,105.47	3,104.93	5,754.516	CC
SANDLIN-WELD-COUNTY UNIT 2 - KMG - Gyro	300.00	249.35	3,105.59	3,104.02	1,973.284	ES
SANDLIN-WELD-COUNTY UNIT 2 - KMG - Gyro	10,500.00	7,247.03	3,644.11	3,537.25	34.102	SF
SARCHET 1 - KMG - No Survey	11,244.15	7,251.00	2,378.34	2,254.31	19.175	CC
SARCHET 1 - KMG - No Survey	11,300.00	7,251.00	2,379.00	2,253.53	18.960	ES
SARCHET 1 - KMG - No Survey	11,900.00	7,251.00	2,467.11	2,330.14	18.011	SF
SARCHET 15N-20HZ - KMG - MWD	10,788.16	7,112.98	505.32	413.69	5.515	CC, ES
SARCHET 15N-20HZ - KMG - MWD	10,800.00	7,112.37	505.74	414.01	5.514	SF
SARCHET 16N-20HZ - KMG - No Survey	12,138.81	7,255.00	1,140.34	993.80	7.782	CC, ES, SF
SARCHET 20-1 - KMG - Gyro	11,918.52	7,236.78	1,136.64	982.50	7.374	CC, ES
SARCHET 20-1 - KMG - Gyro	12,000.00	7,234.66	1,139.56	983.56	7.305	SF
SARCHET 20-2 - NOBLE - No Survey	10,595.85	7,254.00	1,378.95	1,271.96	12.888	CC
SARCHET 20-2 - NOBLE - No Survey	10,600.00	7,254.00	1,378.96	1,271.84	12.874	ES
SARCHET 20-2 - NOBLE - No Survey	10,900.00	7,254.00	1,408.75	1,295.22	12.408	SF
SARCHET 36G-20HZ - KMG - Proposed	10,187.47	7,265.00	1,095.71	999.15	11.347	CC
SARCHET 36G-20HZ - KMG - Proposed	10,200.00	7,265.00	1,095.78	998.86	11.306	ES
SARCHET 36G-20HZ - KMG - Proposed	10,400.00	7,265.00	1,116.13	1,014.87	11.022	SF
SARCHET 36N-20HZ - KMG - MWD	10,211.00	7,067.00	490.38	413.14	6.348	CC, ES
SARCHET 36N-20HZ - KMG - MWD	10,300.00	7,067.00	498.39	419.10	6.285	SF
SARCHET 37C-20HZ - KMG - Proposed	10,247.82	7,264.00	1,029.02	931.00	10.498	CC
SARCHET 37C-20HZ - KMG - Proposed	10,300.00	7,264.00	1,030.35	930.90	10.361	ES
SARCHET 37C-20HZ - KMG - Proposed	10,400.00	7,264.00	1,040.21	938.60	10.237	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 MELBON RANCH 4I-17H-M265
Project:	Sec 17 T2N-R65W	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Reference Site:	Melbon Ranch Pad	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	MELBON RANCH 4I-17H-M265	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:	Design #1 19Mar18 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 (Melbon Ranch)						
SARCHET 37N-20HZ - KMG - Proposed	10,281.30	7,264.00	1,063.95	965.07	10.760	CC
SARCHET 37N-20HZ - KMG - Proposed	10,300.00	7,264.00	1,064.11	964.70	10.704	ES
SARCHET 37N-20HZ - KMG - Proposed	10,500.00	7,264.00	1,086.19	982.63	10.488	SF
SARCHET 38C-20HZ - KMG - Proposed	12,138.81	7,246.00	1,152.69	1,006.56	7.888	CC, ES, SF
SARCHET X 20-8 - KMG - Gyro	12,138.81	7,227.00	2,733.56	2,573.68	17.098	CC, ES, SF
SEATON 2-18 - KMG - No Survey	300.00	298.00	4,075.16	4,073.77	2,935.409	CC
SEATON 2-18 - KMG - No Survey	400.00	397.98	4,075.67	4,073.76	2,131.067	ES
SEATON 2-18 - KMG - No Survey	10,700.00	7,310.00	6,576.49	6,501.98	88.262	SF
SEATON 7-18 - KMG - No Survey	748.58	762.16	2,714.22	2,710.38	707.503	CC
SEATON 7-18 - KMG - No Survey	2,100.00	2,105.58	2,718.19	2,706.54	233.521	ES
SEATON 7-18 - KMG - No Survey	6,900.00	6,872.01	2,832.97	2,793.94	72.578	SF
SEATON 8-18 - KMG - Gyro	0.00	0.00	2,074.50			
SEATON 8-18 - KMG - Gyro	300.00	295.22	2,076.06	2,074.34	1,208.996	ES
SEATON 8-18 - KMG - Gyro	8,200.00	7,301.23	2,989.23	2,930.21	50.653	SF
SUNFLOWER 24N-17HZ - KMG - MWD	11,046.59	12,650.00	2,041.12	1,909.39	15.494	CC
SUNFLOWER 24N-17HZ - KMG - MWD	11,100.00	12,650.00	2,041.82	1,908.54	15.320	ES
SUNFLOWER 24N-17HZ - KMG - MWD	12,000.00	12,650.00	2,252.82	2,084.58	13.391	SF
SUNFLOWER 25G-17HZ - KMG - MWD	10,184.16	12,664.00	1,997.70	1,881.95	17.258	CC
SUNFLOWER 25G-17HZ - KMG - MWD	10,300.00	12,664.00	2,001.06	1,879.82	16.506	ES
SUNFLOWER 25G-17HZ - KMG - MWD	11,100.00	12,664.00	2,208.46	2,051.52	14.072	SF
SUNFLOWER 40C-17HZ - KMG - MWD	12,138.81	12,840.00	2,079.62	1,913.25	12.500	CC, ES, SF
SUNFLOWER 40N-17HZ - KMG - MWD	12,138.81	12,495.00	2,264.00	2,094.29	13.340	CC, ES, SF
SUNFLOWER 7C-17HZ - KMG - MWD	100.00	0.00	7,885.68	7,885.54	10,000.000	CC
SUNFLOWER 7C-17HZ - KMG - MWD	300.00	195.82	7,886.28	7,884.90	5,736.425	ES
SUNFLOWER 7C-17HZ - KMG - MWD	12,138.81	1,800.00	9,417.26	9,303.11	82.501	SF
SUNFLOWER 7N-17HZ - KMG - MWD	10,925.51	12,615.00	1,958.89	1,832.27	15.471	CC
SUNFLOWER 7N-17HZ - KMG - MWD	11,000.00	12,615.00	1,960.31	1,831.70	15.242	ES
SUNFLOWER 7N-17HZ - KMG - MWD	11,900.00	12,615.00	2,187.90	2,023.12	13.278	SF
SUNFLOWER 8N-17HZ - KMG - MWD	11,431.12	12,665.00	2,065.01	1,922.37	14.477	CC
SUNFLOWER 8N-17HZ - KMG - MWD	11,500.00	12,665.00	2,066.16	1,922.04	14.336	ES
SUNFLOWER 8N-17HZ - KMG - MWD	12,138.81	12,665.00	2,182.91	2,017.13	13.167	SF
THOMASON 1 - PETERSON - No Survey	12,138.81	7,233.00	2,071.93	2,022.86	42.230	CC, ES, SF
THOMASON 14-16 - KMG - MWD	12,138.81	7,476.47	2,625.84	2,563.19	41.910	CC, ES, SF
THOMASON 16-5 - KMG - Gyro	12,138.81	7,190.66	3,197.15	3,044.46	20.940	CC, ES, SF
THOMASON 21-16 - KMG - MWD	12,138.81	7,411.90	4,389.61	4,255.94	32.839	CC, ES, SF
THOMASON 23-16 - KMG - MWD	12,138.81	7,375.52	3,114.33	3,045.63	45.331	CC, ES, SF
THOMASON 25-16 - KMG - No Survey	12,138.81	945.00	6,875.74	6,828.33	145.028	CC, ES, SF
THOMASON 25-16R - KMG - MWD	12,138.81	7,402.80	3,680.94	3,571.90	33.759	CC, ES, SF
THOMASON 34N-9HZ - KMG - MWD	12,138.81	11,537.00	4,874.95	4,618.85	19.035	CC, ES, SF
THOMASON 36-16 - KMG - MWD	12,138.81	7,563.38	3,108.11	3,033.65	41.738	CC, ES, SF
THOMASON 6-16 - KMG - MWD	12,138.81	7,322.65	3,590.02	3,462.92	28.244	CC, ES, SF
THOMASON X 16-11 - KMG - No Survey	12,138.81	7,226.00	2,777.07	2,691.62	32.503	CC, ES, SF
THOMASON X 16-12 - KMG - Gyro	12,138.81	7,183.72	1,675.42	1,544.98	12.845	CC, ES, SF
THOMASON X 16-4 - KMG - No Survey	12,138.81	7,229.00	4,109.64	3,965.82	28.576	CC, ES, SF
THOMASON X16-13 - KMG - Gyro	12,138.81	7,233.58	1,080.62	1,023.50	18.918	CC, ES, SF
THOMSEN 1C-18HZ - KMG - MWD	6,791.35	14,563.00	4,164.46	4,088.17	54.584	CC
THOMSEN 1C-18HZ - KMG - MWD	6,800.00	14,563.00	4,164.49	4,088.11	54.523	ES
THOMSEN 1C-18HZ - KMG - MWD	9,900.00	14,563.00	5,731.97	5,587.99	39.811	SF
THOMSEN 1N-18HZ - KMG - Proposed	6,694.85	13,958.15	4,595.88	4,513.53	55.804	CC
THOMSEN 1N-18HZ - KMG - Proposed	6,700.00	13,958.15	4,595.89	4,513.50	55.778	ES
THOMSEN 1N-18HZ - KMG - Proposed	10,000.00	13,958.15	6,337.87	6,194.80	44.299	SF
THOMSEN 2N-18HZ - KMG - MWD	6,783.02	13,966.00	3,730.48	3,666.10	57.938	CC
THOMSEN 2N-18HZ - KMG - MWD	6,800.00	13,966.00	3,730.57	3,666.03	57.804	ES

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 MELBON RANCH 4I-17H-M265
Project:	Sec 17 T2N-R65W	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Reference Site:	Melbon Ranch Pad	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	MELBON RANCH 4I-17H-M265	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:	Design #1 19Mar18 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 (Melbon Ranch)						
THOMSEN 2N-18HZ - KMG - MWD	10,000.00	13,966.00	5,251.50	5,109.39	36.953	SF
THOMSEN 36C-18HZ - KMG - MWD	6,791.27	14,374.00	2,759.96	2,605.49	17.868	CC
THOMSEN 36C-18HZ - KMG - MWD	6,800.00	14,374.00	2,760.02	2,605.45	17.855	ES
THOMSEN 36C-18HZ - KMG - MWD	6,900.00	14,387.08	2,770.26	2,614.26	17.759	SF
THOMSEN 36N-18HZ - KMG - MWD	6,780.44	14,395.37	2,377.05	2,219.42	15.081	CC, ES
THOMSEN 36N-18HZ - KMG - MWD	6,900.00	14,406.03	2,389.93	2,230.69	15.008	SF
THOMSEN 3N-18HZ - KMG - MWD	6,790.83	14,148.00	4,016.14	3,964.94	78.441	CC
THOMSEN 3N-18HZ - KMG - MWD	6,800.00	14,148.00	4,016.16	3,964.88	78.321	ES
THOMSEN 3N-18HZ - KMG - MWD	10,800.00	14,148.00	5,697.86	5,547.44	37.878	SF
THOMSEN 4N-18HZ - KMG - MWD	7,090.39	14,792.00	3,433.36	3,378.54	62.635	CC, ES
THOMSEN 4N-18HZ - KMG - MWD	10,600.00	14,792.00	4,778.92	4,629.76	32.038	SF
UPRR 38 PAN AM X 1 - KMG - Gyro	6,732.03	6,662.40	1,928.47	1,881.05	40.667	CC, ES
UPRR 38 PAN AM X 1 - KMG - Gyro	7,000.00	6,914.75	1,953.59	1,904.64	39.909	SF
WALTERS 21-18 - KMG - MWD	0.00	0.00	3,104.22			
WALTERS 21-18 - KMG - MWD	6,900.00	6,932.96	3,970.67	3,915.06	71.398	SF
WALTERS 25-18 - KMG - MWD	5,232.90	5,404.36	2,946.14	2,893.70	56.185	CC
WALTERS 25-18 - KMG - MWD	6,600.00	6,772.89	2,950.05	2,888.83	48.195	ES
WALTERS 25-18 - KMG - MWD	6,800.00	6,972.30	2,974.64	2,912.26	47.691	SF
WALTERS 28-18 - KMG - MWD	0.00	0.00	3,112.65			
WALTERS 28-18 - KMG - MWD	100.00	87.17	3,112.84	3,112.56	10,000.000	ES
WALTERS 28-18 - KMG - MWD	10,800.00	7,818.33	7,418.62	7,327.69	81.591	SF
WARNER 12-18 - KMG - MWD	0.00	17.10	3,408.09			
WARNER 12-18 - KMG - MWD	6,900.00	7,374.42	4,539.59	4,477.13	72.671	SF
WARNER 14-18 - KMG - No Survey	6,639.47	6,636.31	2,869.71	2,832.88	77.923	CC, ES
WARNER 14-18 - KMG - No Survey	6,900.00	6,890.01	2,916.47	2,878.33	76.480	SF
WARNER 18-18 - KMG - MWD	141.82	160.82	3,410.38	3,409.76	5,502.527	CC
WARNER 18-18 - KMG - MWD	200.00	212.00	3,410.53	3,409.52	3,390.523	ES
WARNER 18-18 - KMG - MWD	6,900.00	7,170.00	4,870.93	4,817.99	92.012	SF
WARNER 22-18 - KMG - MWD	0.00	19.94	3,409.24			
WARNER 22-18 - KMG - MWD	200.00	212.00	3,409.39	3,408.37	3,353.832	ES
WARNER 22-18 - KMG - MWD	6,900.00	6,894.52	4,178.90	4,124.71	77.110	SF
WARNER 23-18 - KMG - MWD	6,612.68	6,683.71	2,509.07	2,454.08	45.632	CC, ES
WARNER 23-18 - KMG - MWD	6,800.00	6,870.51	2,532.79	2,476.70	45.160	SF
WARNER 31-18 - KMG - MWD	100.00	119.00	3,409.68	3,409.36	10,000.000	CC
WARNER 31-18 - KMG - MWD	200.00	201.38	3,409.92	3,408.95	3,484.261	ES
WARNER 31-18 - KMG - MWD	6,900.00	4,865.18	5,673.47	5,627.23	122.706	SF
WARNER 32-18 - KMG - MWD	0.00	19.09	3,408.87			
WARNER 32-18 - KMG - MWD	100.00	114.53	3,408.96	3,408.64	10,000.000	ES
WARNER 32-18 - KMG - MWD	6,700.00	5,788.61	5,029.77	4,975.19	92.145	SF
WARNER 33-18 - KMG - MWD	934.72	656.75	3,195.58	3,190.33	608.670	CC, ES
WARNER 33-18 - KMG - MWD	6,900.00	7,465.15	4,968.51	4,909.23	83.808	SF
WARNER 35-18 - KMG - MWD	1,051.24	770.00	3,201.63	3,195.46	518.984	CC, ES
WARNER 35-18 - KMG - MWD	6,900.00	6,957.46	3,607.89	3,557.20	71.175	SF

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well MELBON RANCH 4I-17H-M265
Project:	Sec 17 T2N-R65W	TVD Reference:	WELL @ 4979.00usft (Original Well Elev)
Reference Site:	Melbon Ranch Pad	MD Reference:	WELL @ 4979.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	MELBON RANCH 4I-17H-M265	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:	Design #1 19Mar18 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						
Melbon Ranch Pad						
MELBON RANCH 4C-17H-M265 - Wellbore #1 - Design	200.00	200.00	60.13	59.14	60.560	CC, ES
MELBON RANCH 4C-17H-M265 - Wellbore #1 - Design	12,138.81	12,067.02	1,864.76	1,596.18	6.943	SF
MELBON RANCH 4D-17H-M265 - Wellbore #1 - Design	203.33	203.33	50.15	49.13	49.315	CC
MELBON RANCH 4D-17H-M265 - Wellbore #1 - Design	300.00	299.14	50.57	48.87	29.611	ES
MELBON RANCH 4D-17H-M265 - Wellbore #1 - Design	12,138.81	12,200.71	1,759.45	1,490.02	6.530	SF
MELBON RANCH 4E-17H-M265 - Wellbore #1 - Plan #2	300.00	300.00	40.14	38.43	23.474	CC, ES
MELBON RANCH 4E-17H-M265 - Wellbore #1 - Plan #2	12,138.81	11,934.52	1,446.33	1,180.02	5.431	SF
MELBON RANCH 4F-17H-M265 - Wellbore #1 - Plan #2	300.00	300.00	30.14	28.43	17.625	CC, ES
MELBON RANCH 4F-17H-M265 - Wellbore #1 - Plan #2	12,138.81	12,098.28	879.55	610.89	3.274	SF
MELBON RANCH 4G-17H-M265 - Wellbore #1 - Plan #2	300.00	300.00	20.14	18.43	11.777	CC, ES
MELBON RANCH 4G-17H-M265 - Wellbore #1 - Plan #2	12,138.81	11,920.13	829.49	568.93	3.184	SF
MELBON RANCH 4H-17H-M265 - Wellbore #1 - Design	366.05	366.21	8.84	6.68	4.093	CC
MELBON RANCH 4H-17H-M265 - Wellbore #1 - Design	400.00	400.15	8.98	6.58	3.745	ES
MELBON RANCH 4H-17H-M265 - Wellbore #1 - Design	12,138.81	11,924.13	332.95	124.74	1.599	SF
MELBON RANCH 4J-17H-M265 - Wellbore #1 - Design #	203.70	203.70	9.87	8.85	9.678	CC
MELBON RANCH 4J-17H-M265 - Wellbore #1 - Design #	300.00	299.85	10.25	8.55	6.019	ES
MELBON RANCH 4J-17H-M265 - Wellbore #1 - Design #	12,138.81	11,996.28	426.07	189.28	1.799	SF
MELBON RANCH 4K-17H-M265 - Wellbore #1 - Design	200.00	200.00	19.87	18.87	20.007	CC, ES
MELBON RANCH 4K-17H-M265 - Wellbore #1 - Design	12,138.81	12,108.94	635.90	371.13	2.402	SF