



# **Crestone Peak Resources**

**Sec 2 T2N-R67W**

**Echeverria Pad**

**ECHEVERRIA 2F-2H-D267**

**Wellbore #1**

**Plan: Design #1 23Apr18 kjs**

## **Standard Planning Report - Geographic**

**14 May, 2018**



# Crestone Peak Resources

Well Name:

ECHEVERRIA 2F-2H-D267

Project Name:

Sec 2 T2N-R67W

Pad Name:

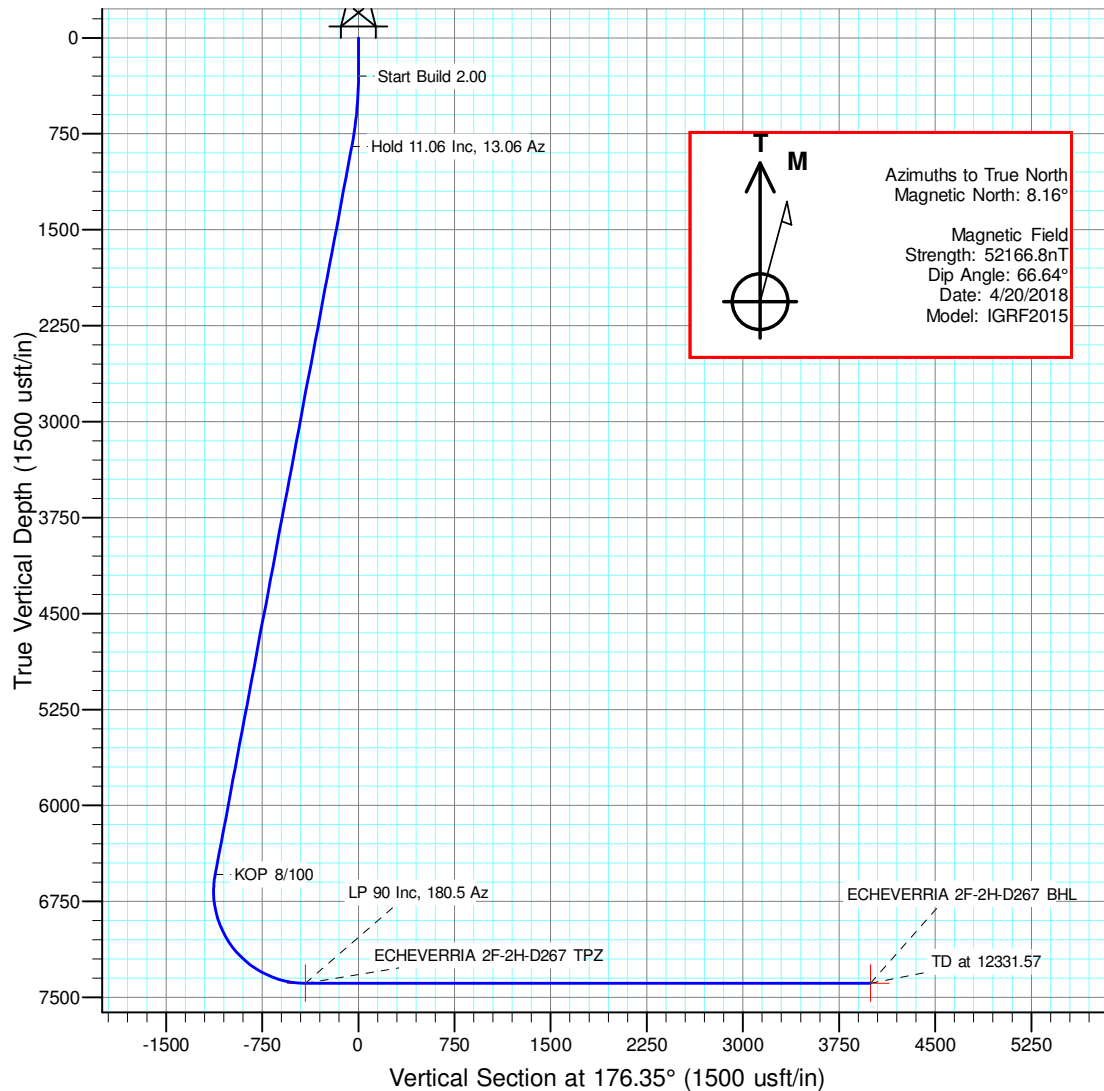
Echeverria Pad

## 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
853.22	11.06	13.06	849.79	51.87	12.03	-51.00	53.25	Hold 11.06 Inc, 13.06 Az
6651.62	11.06	13.06	6540.41	1135.88	263.47	-1116.78	1166.03	KOP 8/100
7911.58	90.00	180.50	7390.00	432.07	293.41	-412.50	1899.83	LP 90 Inc, 180.5 Az
12331.57	90.00	180.50	7390.00	-3987.76	254.62	3995.88	6319.82	TD at 12331.57

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
ECHEVERRIA 2F-2H-D267 BHL	7390.00	-3987.76	254.62	1302163.76	3177788.56	40.16108399	-104.86388100	Point
ECHEVERRIA 2F-2H-D267 TPZ	7390.00	432.07	293.41	1306583.75	3177795.69	40.17321699	-104.86374200	Point

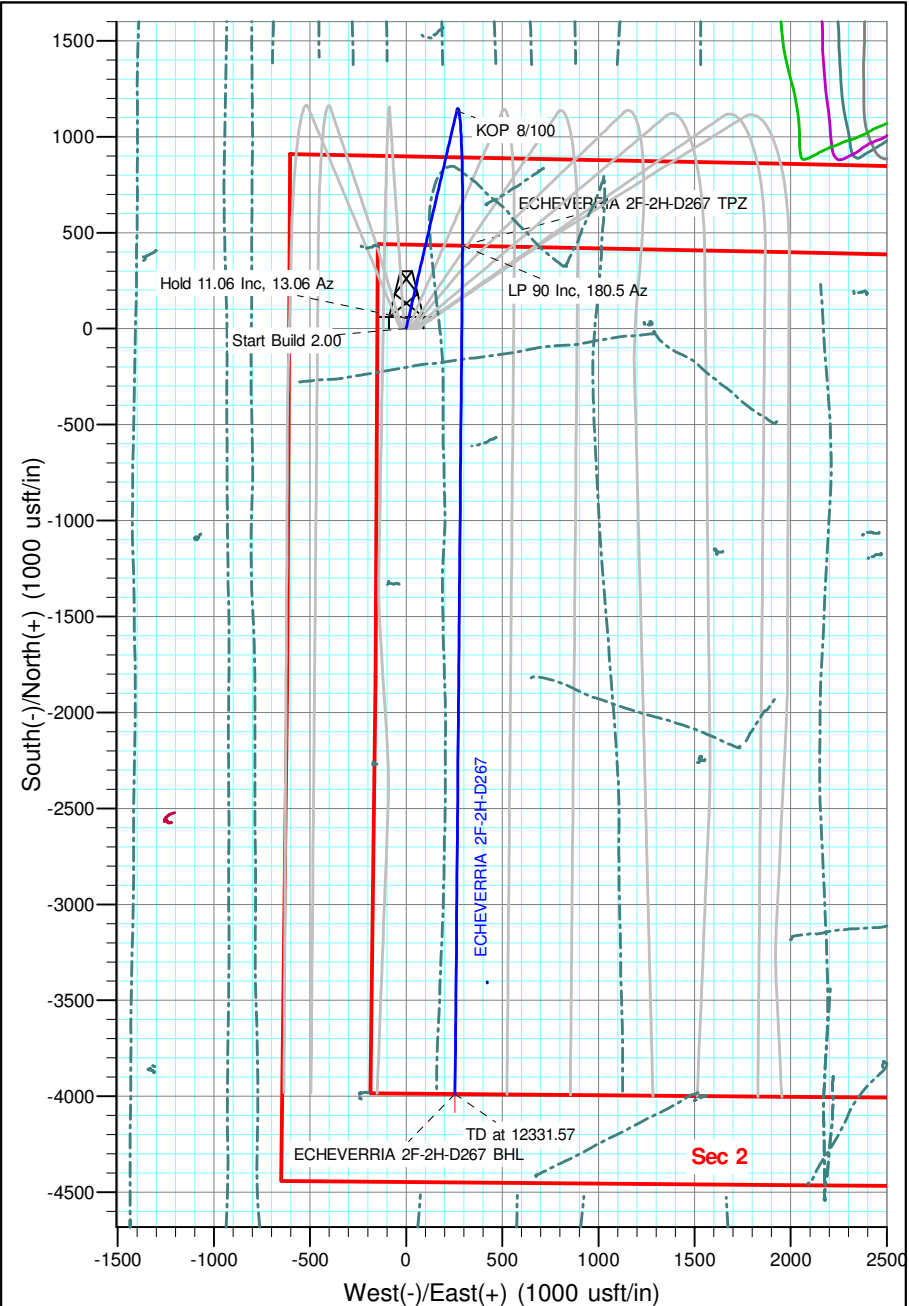


## Geodetic Datum:

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

## Elevation:

Ground Elevation: 4882.00  
KB Elevation: WELL @ 4905.00usft (Original Well Elev)



<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well ECHEVERRIA 2F-2H-D267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Project:</b>	Sec 2 T2N-R67W	<b>MD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Site:</b>	Echeverria Pad	<b>North Reference:</b>	True
<b>Well:</b>	ECHEVERRIA 2F-2H-D267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Apr18 kjs		

<b>Project</b>	Sec 2 T2N-R67W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Echeverria Pad			
Site Position:		Northing:	1,306,149.76 usft	Latitude:	40.17203200
From:	Lat/Long	Easting:	3,177,475.48 usft	Longitude:	-104.86489900
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	ECHEVERRIA 2F-2H-D267					
Well Position	+N/-S	0.00 usft	Northing:	1,306,149.59 usft	Latitude:	40.17203091
	+E/-W	0.00 usft	Easting:	3,177,505.38 usft	Longitude:	-104.86479200
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,882.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	4/20/2018	8.16	66.64	52,166.81073153

<b>Design</b>	Design #1 23Apr18 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	176.35

<b>Plan Survey Tool Program</b>	<b>Date</b>	5/14/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	12,331.58 Design #1 23Apr18 kjs (Wellbore)	MWD	
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
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	
853.22	11.06	13.06	849.79	51.87	12.03	2.00	2.00	0.00	13.06	
6,651.62	11.06	13.06	6,540.41	1,135.88	263.47	0.00	0.00	0.00	0.00	
7,911.58	90.00	180.50	7,390.00	432.07	293.41	8.00	6.26	13.29	167.21	ECHEVERRIA 2F-2H-
12,331.58	90.00	180.50	7,390.00	-3,987.76	254.62	0.00	0.00	0.00	0.00	ECHEVERRIA 2F-2H-

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well ECHEVERRIA 2F-2H-D267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Project:</b>	Sec 2 T2N-R67W	<b>MD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Site:</b>	Echeverria Pad	<b>North Reference:</b>	True
<b>Well:</b>	ECHEVERRIA 2F-2H-D267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Apr18 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	1,306,149.59	3,177,505.38	40.17203091	-104.86479200
100.00	0.00	0.00	100.00	0.00	0.00	1,306,149.59	3,177,505.38	40.17203091	-104.86479200
200.00	0.00	0.00	200.00	0.00	0.00	1,306,149.59	3,177,505.38	40.17203091	-104.86479200
300.00	0.00	0.00	300.00	0.00	0.00	1,306,149.59	3,177,505.38	40.17203091	-104.86479200
<b>Start Build 2.00</b>									
400.00	2.00	13.06	399.98	1.70	0.39	1,306,151.29	3,177,505.76	40.17203558	-104.86479059
500.00	4.00	13.06	499.84	6.80	1.58	1,306,156.39	3,177,506.91	40.17204957	-104.86478635
600.00	6.00	13.06	599.45	15.29	3.55	1,306,164.90	3,177,508.82	40.17207288	-104.86477931
700.00	8.00	13.06	698.70	27.16	6.30	1,306,176.79	3,177,511.49	40.17210547	-104.86476945
800.00	10.00	13.06	797.47	42.40	9.83	1,306,192.05	3,177,514.91	40.17214730	-104.86475681
853.22	11.06	13.06	849.79	51.87	12.03	1,306,201.54	3,177,517.04	40.17217331	-104.86474894
<b>Hold 11.06 Inc, 13.06 Az</b>									
900.00	11.06	13.06	895.70	60.62	14.06	1,306,210.30	3,177,519.01	40.17219732	-104.86474168
1,000.00	11.06	13.06	993.84	79.31	18.40	1,306,229.03	3,177,523.21	40.17224864	-104.86472616
1,100.00	11.06	13.06	1,091.98	98.01	22.73	1,306,247.75	3,177,527.41	40.17229996	-104.86471064
1,200.00	11.06	13.06	1,190.12	116.70	27.07	1,306,266.48	3,177,531.61	40.17235128	-104.86469513
1,300.00	11.06	13.06	1,288.26	135.40	31.41	1,306,285.21	3,177,535.82	40.17240260	-104.86467961
1,400.00	11.06	13.06	1,386.40	154.09	35.74	1,306,303.93	3,177,540.02	40.17245392	-104.86466409
1,500.00	11.06	13.06	1,484.55	172.79	40.08	1,306,322.66	3,177,544.22	40.17250524	-104.86464857
1,600.00	11.06	13.06	1,582.69	191.48	44.42	1,306,341.38	3,177,548.42	40.17255656	-104.86463306
1,700.00	11.06	13.06	1,680.83	210.18	48.75	1,306,360.11	3,177,552.63	40.17260788	-104.86461754
1,800.00	11.06	13.06	1,778.97	228.87	53.09	1,306,378.83	3,177,556.83	40.17265920	-104.86460202
1,900.00	11.06	13.06	1,877.11	247.57	57.42	1,306,397.56	3,177,561.03	40.17271052	-104.86458650
2,000.00	11.06	13.06	1,975.25	266.26	61.76	1,306,416.28	3,177,565.23	40.17276184	-104.86457098
2,100.00	11.06	13.06	2,073.39	284.96	66.10	1,306,435.01	3,177,569.44	40.17281316	-104.86455546
2,200.00	11.06	13.06	2,171.53	303.65	70.43	1,306,453.73	3,177,573.64	40.17286448	-104.86453995
2,300.00	11.06	13.06	2,269.68	322.35	74.77	1,306,472.46	3,177,577.84	40.17291580	-104.86452443
2,400.00	11.06	13.06	2,367.82	341.04	79.11	1,306,491.19	3,177,582.04	40.17296712	-104.86450891
2,500.00	11.06	13.06	2,465.96	359.74	83.44	1,306,509.91	3,177,586.24	40.17301844	-104.86449339
2,600.00	11.06	13.06	2,564.10	378.43	87.78	1,306,528.64	3,177,590.45	40.17306976	-104.86447787
2,700.00	11.06	13.06	2,662.24	397.13	92.12	1,306,547.36	3,177,594.65	40.17312108	-104.86446236
2,800.00	11.06	13.06	2,760.38	415.82	96.45	1,306,566.09	3,177,598.85	40.17317240	-104.86444684
2,900.00	11.06	13.06	2,858.52	434.52	100.79	1,306,584.81	3,177,603.05	40.17322372	-104.86443132
3,000.00	11.06	13.06	2,956.66	453.21	105.12	1,306,603.54	3,177,607.26	40.17327504	-104.86441580
3,100.00	11.06	13.06	3,054.81	471.91	109.46	1,306,622.26	3,177,611.46	40.17332636	-104.86440028
3,200.00	11.06	13.06	3,152.95	490.60	113.80	1,306,640.99	3,177,615.66	40.17337768	-104.86438476
3,300.00	11.06	13.06	3,251.09	509.30	118.13	1,306,659.71	3,177,619.86	40.17342900	-104.86436925
3,400.00	11.06	13.06	3,349.23	527.99	122.47	1,306,678.44	3,177,624.07	40.17348031	-104.86435373
3,500.00	11.06	13.06	3,447.37	546.69	126.81	1,306,697.17	3,177,628.27	40.17353163	-104.86433821
3,600.00	11.06	13.06	3,545.51	565.38	131.14	1,306,715.89	3,177,632.47	40.17358295	-104.86432269
3,700.00	11.06	13.06	3,643.65	584.08	135.48	1,306,734.62	3,177,636.67	40.17363427	-104.86430717
3,800.00	11.06	13.06	3,741.79	602.77	139.82	1,306,753.34	3,177,640.88	40.17368559	-104.86429165
3,900.00	11.06	13.06	3,839.93	621.47	144.15	1,306,772.07	3,177,645.08	40.17373691	-104.86427614
4,000.00	11.06	13.06	3,938.08	640.16	148.49	1,306,790.79	3,177,649.28	40.17378823	-104.86426062
4,100.00	11.06	13.06	4,036.22	658.86	152.83	1,306,809.52	3,177,653.48	40.17383955	-104.86424510
4,200.00	11.06	13.06	4,134.36	677.55	157.16	1,306,828.24	3,177,657.68	40.17389087	-104.86422958
4,300.00	11.06	13.06	4,232.50	696.24	161.50	1,306,846.97	3,177,661.89	40.17394219	-104.86421406
4,400.00	11.06	13.06	4,330.64	714.94	165.83	1,306,865.69	3,177,666.09	40.17399351	-104.86419854
4,500.00	11.06	13.06	4,428.78	733.63	170.17	1,306,884.42	3,177,670.29	40.17404483	-104.86418302
4,600.00	11.06	13.06	4,526.92	752.33	174.51	1,306,903.15	3,177,674.49	40.17409615	-104.86416750
4,700.00	11.06	13.06	4,625.06	771.02	178.84	1,306,921.87	3,177,678.70	40.17414747	-104.86415199
4,800.00	11.06	13.06	4,723.21	789.72	183.18	1,306,940.60	3,177,682.90	40.17419879	-104.86413647
4,900.00	11.06	13.06	4,821.35	808.41	187.52	1,306,959.32	3,177,687.10	40.17425011	-104.86412095
5,000.00	11.06	13.06	4,919.49	827.11	191.85	1,306,978.05	3,177,691.30	40.17430143	-104.86410543

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well ECHEVERRIA 2F-2H-D267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Project:</b>	Sec 2 T2N-R67W	<b>MD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Site:</b>	Echeverria Pad	<b>North Reference:</b>	True
<b>Well:</b>	ECHEVERRIA 2F-2H-D267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Apr18 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	11.06	13.06	5,017.63	845.80	196.19	1,306,996.77	3,177,695.51	40.17435275	-104.86408991
5,200.00	11.06	13.06	5,115.77	864.50	200.53	1,307,015.50	3,177,699.71	40.17440407	-104.86407439
5,300.00	11.06	13.06	5,213.91	883.19	204.86	1,307,034.22	3,177,703.91	40.17445539	-104.86405887
5,400.00	11.06	13.06	5,312.05	901.89	209.20	1,307,052.95	3,177,708.11	40.17450671	-104.86404335
5,500.00	11.06	13.06	5,410.19	920.58	213.53	1,307,071.67	3,177,712.32	40.17455803	-104.86402784
5,600.00	11.06	13.06	5,508.34	939.28	217.87	1,307,090.40	3,177,716.52	40.17460935	-104.86401232
5,700.00	11.06	13.06	5,606.48	957.97	222.21	1,307,109.13	3,177,720.72	40.17466067	-104.86399680
5,800.00	11.06	13.06	5,704.62	976.67	226.54	1,307,127.85	3,177,724.92	40.17471199	-104.86398128
5,900.00	11.06	13.06	5,802.76	995.36	230.88	1,307,146.58	3,177,729.12	40.17476331	-104.86396576
6,000.00	11.06	13.06	5,900.90	1,014.06	235.22	1,307,165.30	3,177,733.33	40.17481463	-104.86395024
6,100.00	11.06	13.06	5,999.04	1,032.75	239.55	1,307,184.03	3,177,737.53	40.17486595	-104.86393472
6,200.00	11.06	13.06	6,097.18	1,051.45	243.89	1,307,202.75	3,177,741.73	40.17491727	-104.86391920
6,300.00	11.06	13.06	6,195.32	1,070.14	248.23	1,307,221.48	3,177,745.93	40.17496859	-104.86390368
6,400.00	11.06	13.06	6,293.47	1,088.84	252.56	1,307,240.20	3,177,750.14	40.17501991	-104.86388816
6,500.00	11.06	13.06	6,391.61	1,107.53	256.90	1,307,258.93	3,177,754.34	40.17507123	-104.86387265
6,600.00	11.06	13.06	6,489.75	1,126.23	261.23	1,307,277.66	3,177,758.54	40.17512255	-104.86385713
6,651.62	11.06	13.06	6,540.41	1,135.88	263.47	1,307,287.32	3,177,760.71	40.17514904	-104.86384911
<b>KOP 8/100</b>									
6,700.00	7.34	19.77	6,588.16	1,143.31	265.57	1,307,294.77	3,177,762.75	40.17516944	-104.86384162
6,800.00	2.66	114.31	6,687.86	1,148.37	269.85	1,307,299.86	3,177,767.00	40.17518334	-104.86382629
6,900.00	9.39	165.61	6,787.29	1,139.50	274.00	1,307,291.02	3,177,771.21	40.17515899	-104.86381144
7,000.00	17.24	172.63	6,884.54	1,116.86	277.94	1,307,268.41	3,177,775.31	40.17509684	-104.86379736
7,100.00	25.18	175.32	6,977.69	1,080.90	281.58	1,307,232.48	3,177,779.21	40.17499813	-104.86378432
7,200.00	33.15	176.77	7,064.94	1,032.32	284.86	1,307,183.92	3,177,782.84	40.17486476	-104.86377257
7,300.00	41.13	177.71	7,144.59	972.06	287.72	1,307,123.68	3,177,786.13	40.17469933	-104.86376235
7,400.00	49.12	178.39	7,215.09	901.29	290.10	1,307,052.93	3,177,789.01	40.17450506	-104.86375385
7,500.00	57.11	178.93	7,275.06	821.39	291.95	1,306,973.05	3,177,791.43	40.17428574	-104.86374724
7,600.00	65.10	179.37	7,323.35	733.93	293.23	1,306,885.59	3,177,793.35	40.17404563	-104.86374264
7,700.00	73.09	179.76	7,359.00	640.59	293.93	1,306,792.26	3,177,794.71	40.17378940	-104.86374015
7,800.00	81.08	180.12	7,381.33	543.20	294.02	1,306,694.87	3,177,795.50	40.17352205	-104.86373982
7,900.00	89.07	180.46	7,389.91	443.65	293.51	1,306,595.32	3,177,795.71	40.17324878	-104.86374165
7,911.58	90.00	180.50	7,390.00	432.07	293.41	1,306,583.75	3,177,795.69	40.17321699	-104.86374200
<b>LP 90 Inc, 180.5 Az - ECHEVERRIA 2F-2H-D267 TPZ</b>									
8,000.00	90.00	180.50	7,390.00	343.65	292.64	1,306,495.32	3,177,795.55	40.17297428	-104.86374478
8,100.00	90.00	180.50	7,390.00	243.66	291.76	1,306,395.32	3,177,795.39	40.17269977	-104.86374792
8,200.00	90.00	180.50	7,390.00	143.66	290.88	1,306,295.32	3,177,795.23	40.17242527	-104.86375107
8,300.00	90.00	180.50	7,390.00	43.66	290.00	1,306,195.33	3,177,795.07	40.17215077	-104.86375421
8,400.00	90.00	180.50	7,390.00	-56.33	289.13	1,306,095.33	3,177,794.90	40.17187627	-104.86375736
8,500.00	90.00	180.50	7,390.00	-156.33	288.25	1,305,995.33	3,177,794.74	40.17160176	-104.86376050
8,600.00	90.00	180.50	7,390.00	-256.33	287.37	1,305,895.33	3,177,794.58	40.17132726	-104.86376365
8,700.00	90.00	180.50	7,390.00	-356.32	286.49	1,305,795.33	3,177,794.42	40.17105276	-104.86376680
8,800.00	90.00	180.50	7,390.00	-456.32	285.62	1,305,695.33	3,177,794.26	40.17077826	-104.86376994
8,900.00	90.00	180.50	7,390.00	-556.31	284.74	1,305,595.33	3,177,794.10	40.17050376	-104.86377309
9,000.00	90.00	180.50	7,390.00	-656.31	283.86	1,305,495.33	3,177,793.93	40.17022925	-104.86377623
9,100.00	90.00	180.50	7,390.00	-756.31	282.98	1,305,395.33	3,177,793.77	40.16995475	-104.86377938
9,200.00	90.00	180.50	7,390.00	-856.30	282.10	1,305,295.33	3,177,793.61	40.16968025	-104.86378252
9,300.00	90.00	180.50	7,390.00	-956.30	281.23	1,305,195.33	3,177,793.45	40.16940575	-104.86378567
9,400.00	90.00	180.50	7,390.00	-1,056.29	280.35	1,305,095.33	3,177,793.29	40.16913124	-104.86378881
9,500.00	90.00	180.50	7,390.00	-1,156.29	279.47	1,304,995.33	3,177,793.13	40.16885674	-104.86379196
9,600.00	90.00	180.50	7,390.00	-1,256.29	278.59	1,304,895.33	3,177,792.97	40.16858224	-104.86379510
9,700.00	90.00	180.50	7,390.00	-1,356.28	277.72	1,304,795.33	3,177,792.80	40.16830774	-104.86379825
9,800.00	90.00	180.50	7,390.00	-1,456.28	276.84	1,304,695.33	3,177,792.64	40.16803323	-104.86380139
9,900.00	90.00	180.50	7,390.00	-1,556.28	275.96	1,304,595.33	3,177,792.48	40.16775873	-104.86380454
10,000.00	90.00	180.50	7,390.00	-1,656.27	275.08	1,304,495.33	3,177,792.32	40.16748423	-104.86380768

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well ECHEVERRIA 2F-2H-D267
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Project:</b>	Sec 2 T2N-R67W	<b>MD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Site:</b>	Echeverria Pad	<b>North Reference:</b>	True
<b>Well:</b>	ECHEVERRIA 2F-2H-D267	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Apr18 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	
10,100.00	90.00	180.50	7,390.00	-1,756.27	274.21	1,304,395.33	3,177,792.16	40.16720973	-104.86381082	
10,200.00	90.00	180.50	7,390.00	-1,856.26	273.33	1,304,295.33	3,177,792.00	40.16693522	-104.86381397	
10,300.00	90.00	180.50	7,390.00	-1,956.26	272.45	1,304,195.33	3,177,791.84	40.16666072	-104.86381711	
10,400.00	90.00	180.50	7,390.00	-2,056.26	271.57	1,304,095.33	3,177,791.67	40.16638622	-104.86382026	
10,500.00	90.00	180.50	7,390.00	-2,156.25	270.69	1,303,995.33	3,177,791.51	40.16611172	-104.86382340	
10,600.00	90.00	180.50	7,390.00	-2,256.25	269.82	1,303,895.33	3,177,791.35	40.16583721	-104.86382655	
10,700.00	90.00	180.50	7,390.00	-2,356.24	268.94	1,303,795.33	3,177,791.19	40.16556271	-104.86382969	
10,800.00	90.00	180.50	7,390.00	-2,456.24	268.06	1,303,695.33	3,177,791.03	40.16528821	-104.86383284	
10,900.00	90.00	180.50	7,390.00	-2,556.24	267.18	1,303,595.33	3,177,790.87	40.16501371	-104.86383598	
11,000.00	90.00	180.50	7,390.00	-2,656.23	266.31	1,303,495.33	3,177,790.71	40.16473920	-104.86383913	
11,100.00	90.00	180.50	7,390.00	-2,756.23	265.43	1,303,395.33	3,177,790.54	40.16446470	-104.86384227	
11,200.00	90.00	180.50	7,390.00	-2,856.22	264.55	1,303,295.33	3,177,790.38	40.16419020	-104.86384542	
11,300.00	90.00	180.50	7,390.00	-2,956.22	263.67	1,303,195.33	3,177,790.22	40.16391570	-104.86384856	
11,400.00	90.00	180.50	7,390.00	-3,056.22	262.79	1,303,095.33	3,177,790.06	40.16364119	-104.86385171	
11,500.00	90.00	180.50	7,390.00	-3,156.21	261.92	1,302,995.33	3,177,789.90	40.16336669	-104.86385485	
11,600.00	90.00	180.50	7,390.00	-3,256.21	261.04	1,302,895.33	3,177,789.74	40.16309219	-104.86385799	
11,700.00	90.00	180.50	7,390.00	-3,356.21	260.16	1,302,795.33	3,177,789.58	40.16281768	-104.86386114	
11,800.00	90.00	180.50	7,390.00	-3,456.20	259.28	1,302,695.33	3,177,789.41	40.16254318	-104.86386428	
11,900.00	90.00	180.50	7,390.00	-3,556.20	258.41	1,302,595.33	3,177,789.25	40.16226868	-104.86386743	
12,000.00	90.00	180.50	7,390.00	-3,656.19	257.53	1,302,495.33	3,177,789.09	40.16199418	-104.86387057	
12,100.00	90.00	180.50	7,390.00	-3,756.19	256.65	1,302,395.33	3,177,788.93	40.16171967	-104.86387372	
12,200.00	90.00	180.50	7,390.00	-3,856.19	255.77	1,302,295.33	3,177,788.77	40.16144517	-104.86387686	
12,300.00	90.00	180.50	7,390.00	-3,956.18	254.89	1,302,195.33	3,177,788.61	40.16117067	-104.86388000	
12,331.58	90.00	180.50	7,390.00	-3,987.76	254.62	1,302,163.76	3,177,788.56	40.16108399	-104.86388100	
TD at 12331.57 - ECHEVERRIA 2F-2H-D267 BHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
ECHEVERRIA 2F-2H-D: - hit/miss target - Shape - Point	0.00	0.41	7,390.00	432.07	293.41	1,306,583.75	3,177,795.69	40.17321699	-104.86374200	
ECHEVERRIA 2F-2H-D: - plan hits target center - Point	0.00	0.41	7,390.00	-3,987.76	254.62	1,302,163.75	3,177,788.56	40.16108399	-104.86388100	

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	
853.22	849.79	51.87	12.03	Hold 11.06 Inc, 13.06 Az	
6,651.62	6,540.41	1,135.88	263.47	KOP 8/100	
7,911.58	7,390.00	432.07	293.41	LP 90 Inc, 180.5 Az	
12,331.58	7,390.00	-3,987.76	254.62	TD at 12331.57	



# **Crestone Peak Resources**

**Sec 2 T2N-R67W**

**Echeverria Pad**

**ECHEVERRIA 2F-2H-D267**

**Wellbore #1**

**Design #1 23Apr18 kjs**

## **Anticollision Summary Report**

**14 May, 2018**

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well ECHEVERRIA 2F-2H-D267
<b>Project:</b>	Sec 2 T2N-R67W	<b>TVD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Reference Site:</b>	Echeverria Pad	<b>MD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	ECHEVERRIA 2F-2H-D267	<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>	Design #1 23Apr18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Design #1 23Apr18 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>	5/14/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	12,331.58	Design #1 23Apr18 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						
Echeverria Pad						
ECHEVERRIA 2C-2H-D267 - Wellbore #1 - Design #1 23	116.33	117.33	29.90	29.51	75.382	CC
ECHEVERRIA 2C-2H-D267 - Wellbore #1 - Design #1 23	200.00	201.00	29.90	28.91	30.007	ES
ECHEVERRIA 2C-2H-D267 - Wellbore #1 - Design #1 23	12,331.58	12,357.86	889.65	723.13	5.343	SF
ECHEVERRIA 2D-2H-D267 - Wellbore #1 - Design #1 23	200.00	200.00	20.12	19.13	20.263	CC
ECHEVERRIA 2D-2H-D267 - Wellbore #1 - Design #1 23	300.00	299.75	20.70	18.99	12.110	ES
ECHEVERRIA 2D-2H-D267 - Wellbore #1 - Design #1 23	12,331.58	12,131.96	781.24	619.70	4.836	SF
ECHEVERRIA 2E-2H-D267 - Wellbore #1 - Design #1 23	204.25	204.25	10.06	9.04	9.830	CC
ECHEVERRIA 2E-2H-D267 - Wellbore #1 - Design #1 23	300.00	299.98	10.10	8.39	5.907	ES
ECHEVERRIA 2E-2H-D267 - Wellbore #1 - Design #1 23	12,331.58	12,184.11	428.08	269.03	2.692	SF
ECHEVERRIA 2G-2H-D267 - Wellbore #1 - Design #1 23	352.70	352.66	10.01	7.92	4.796	CC
ECHEVERRIA 2G-2H-D267 - Wellbore #1 - Design #1 23	500.00	499.80	10.77	7.63	3.427	ES
ECHEVERRIA 2G-2H-D267 - Wellbore #1 - Design #1 23	12,331.58	12,207.38	304.14	149.82	1.971	SF
ECHEVERRIA 2H-2H-D267 - Wellbore #1 - Design #1 23	204.15	204.15	20.12	19.10	19.673	CC
ECHEVERRIA 2H-2H-D267 - Wellbore #1 - Design #1 23	300.00	299.80	20.37	18.66	11.920	ES
ECHEVERRIA 2H-2H-D267 - Wellbore #1 - Design #1 23	12,331.58	12,156.65	638.88	478.59	3.986	SF
ECHEVERRIA 2I-2H-D267 - Wellbore #1 - Design #1 23A	200.00	199.00	29.90	28.91	30.224	CC, ES
ECHEVERRIA 2I-2H-D267 - Wellbore #1 - Design #1 23A	12,331.58	12,256.11	1,038.43	872.60	6.262	SF
ECHEVERRIA 2J-2H-D267 - Wellbore #1 - Design #1 23	204.82	203.82	39.96	38.94	39.029	CC
ECHEVERRIA 2J-2H-D267 - Wellbore #1 - Design #1 23	300.00	298.48	40.28	38.57	23.642	ES
ECHEVERRIA 2J-2H-D267 - Wellbore #1 - Design #1 23	12,331.58	12,257.61	1,278.61	1,113.29	7.734	SF
ECHEVERRIA 2K-2H-D267 - Wellbore #1 - Design #1 23	200.00	199.00	50.02	49.03	50.559	CC, ES
ECHEVERRIA 2K-2H-D267 - Wellbore #1 - Design #1 23	12,331.58	12,404.88	1,580.84	1,414.67	9.514	SF
ECHEVERRIA 2L-2H-D267 - Wellbore #1 - Design #1 23	200.00	199.00	60.08	59.09	60.727	CC, ES
ECHEVERRIA 2L-2H-D267 - Wellbore #1 - Design #1 23	12,331.58	12,467.94	1,696.81	1,531.40	10.258	SF



# Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well ECHEVERRIA 2F-2H-D267
<b>Project:</b>	Sec 2 T2N-R67W	<b>TVD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Reference Site:</b>	Echeverria Pad	<b>MD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	ECHEVERRIA 2F-2H-D267	<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>	Design #1 23Apr18 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 (Echeverria)						
BARCLAY 28C-11HZ - KMG - MWD	12,331.58	17,339.00	2,118.05	1,888.21	9.215	CC, ES, SF
BBKB 15N-35HZ - KMG - MWD	7,140.00	12,400.00	541.98	443.26	5.490	CC, ES
BBKB 15N-35HZ - KMG - MWD	7,200.00	12,400.00	547.00	447.35	5.489	SF
BBKB 16N-35HZ - KMG - MWD	7,167.57	12,431.00	513.82	420.22	5.489	CC, ES, SF
BBKB 16N-A35HZ - KMG - MWD	7,193.48	12,450.00	718.17	613.39	6.854	CC, ES, SF
BBKB 25E-3HZ - KMG - MWD	7,256.09	12,763.06	740.63	637.87	7.208	CC, ES
BBKB 25E-3HZ - KMG - MWD	7,300.00	12,763.06	742.77	639.39	7.185	SF
BBKB 36E-35HZ - KMG - MWD	7,125.05	12,687.00	1,046.61	927.05	8.754	CC, ES
BBKB 36E-35HZ - KMG - MWD	7,200.00	12,687.00	1,050.57	930.17	8.725	SF
BBKB 36N-35HZ - KMG - MWD	7,163.51	12,677.00	855.65	742.59	7.568	CC, ES
BBKB 36N-35HZ - KMG - MWD	7,200.00	12,677.00	856.87	743.30	7.545	SF
BBKB 37C-35HZ - KMG - MWD	7,267.35	12,762.00	526.08	463.82	8.450	CC, ES, SF
BBKB 37N-35HZ - KMG - MWD	7,200.97	12,575.00	419.71	359.67	6.991	CC, ES, SF
BBKB 38C-35HZ - KMG - MWD	7,297.11	12,652.00	938.52	832.74	8.873	CC, ES, SF
BBKB 38N-35HZ - KMG - MWD	7,204.23	12,437.00	1,298.87	1,180.21	10.946	CC, ES, SF
BUTTERBALL 40C-34HZ - KMG - MWD	7,500.00	13,002.89	1,105.17	969.23	8.130	SF
BUTTERBALL 40C-34HZ - KMG - MWD	12,331.58	8,187.18	1,026.93	911.89	8.926	CC, ES
BUTTERBALL 40N-34HZ - KMG - MWD	7,200.00	13,003.32	1,238.24	1,097.72	8.812	SF
BUTTERBALL 40N-34HZ - KMG - MWD	11,626.80	8,674.75	1,190.73	1,080.35	10.787	CC
BUTTERBALL 40N-34HZ - KMG - MWD	12,331.58	7,970.73	1,193.04	1,079.72	10.527	ES
BUTTERBALL 9N-34HZ - KMG - MWD	7,200.00	13,015.70	1,698.43	1,559.14	12.194	SF
BUTTERBALL 9N-34HZ - KMG - MWD	7,400.00	12,900.10	1,689.32	1,551.44	12.253	ES
BUTTERBALL 9N-34HZ - KMG - MWD	11,213.98	9,129.38	1,682.84	1,572.44	15.243	CC
ECHEVERRIA 0-2-2 - CPR - MWD	2,898.99	3,081.87	661.24	630.65	21.612	CC
ECHEVERRIA 0-2-2 - CPR - MWD	2,900.00	3,082.73	661.24	630.63	21.603	ES
ECHEVERRIA 0-2-2 - CPR - MWD	8,800.00	7,693.40	876.27	812.17	13.672	SF
ECHEVERRIA 1 - CPR - No Survey	11,746.07	7,374.00	161.66	74.91	1.864	CC, ES, SF
ECHEVERRIA 11-2 - CPR - Gyro	2,521.93	2,464.14	262.92	243.79	13.743	CC
ECHEVERRIA 11-2 - CPR - Gyro	2,600.00	2,540.45	263.42	243.65	13.328	ES
ECHEVERRIA 11-2 - CPR - Gyro	7,919.48	7,359.06	525.65	470.55	9.540	SF
ECHEVERRIA 1-2 - CPR - Gyro	8,949.94	7,351.58	83.87	23.89	1.398	Level 3, CC, ES, SF
ECHEVERRIA 12-2 - CPR - Gyro	9,680.43	7,362.72	372.58	304.37	5.462	CC, ES
ECHEVERRIA 12-2 - CPR - Gyro	9,700.00	7,362.72	373.10	304.76	5.460	SF
ECHEVERRIA 13-2 - CPR - Gyro	10,608.01	7,365.67	421.13	339.91	5.185	CC, ES, SF
ECHEVERRIA 14-2 - CPR - Gyro	12,331.58	7,386.03	484.60	375.79	4.453	CC, ES, SF
ECHEVERRIA 2-0-2 - CPR - Gyro	7,500.00	7,254.62	405.29	349.76	7.299	SF
ECHEVERRIA 2-0-2 - CPR - Gyro	7,512.14	7,261.00	405.15	349.70	7.306	CC, ES
ECHEVERRIA 21-2 - CPR - Gyro	8,294.29	7,340.18	941.82	886.18	16.926	CC, ES
ECHEVERRIA 21-2 - CPR - Gyro	8,400.00	7,339.09	947.73	891.71	16.919	SF
ECHEVERRIA 22-2 - CPR - Gyro	9,505.98	7,344.04	1,336.48	1,270.55	20.270	CC, ES
ECHEVERRIA 22-2 - CPR - Gyro	9,800.00	7,345.32	1,368.44	1,299.04	19.716	SF
ECHEVERRIA 23-2 - CPR - Gyro	10,593.33	7,360.67	1,248.08	1,167.10	15.413	CC
ECHEVERRIA 23-2 - CPR - Gyro	10,600.00	7,360.69	1,248.10	1,167.01	15.392	ES
ECHEVERRIA 23-2 - CPR - Gyro	10,800.00	7,361.45	1,265.07	1,181.19	15.082	SF
ECHEVERRIA 24-2 - CPR - Gyro	12,331.58	7,354.44	1,238.91	1,130.33	11.410	CC, ES, SF
ECHEVERRIA 2-8-2 - CPR - MWD	12,331.58	7,468.43	601.51	511.98	6.718	CC, ES, SF
ECHEVERRIA 2A-2H - CPR - MWD	8,573.43	8,128.53	185.52	143.11	4.374	CC
ECHEVERRIA 2A-2H - CPR - MWD	12,331.58	11,870.00	202.29	92.85	1.848	ES, SF
ECHEVERRIA 2B-2H - CPR - MWD	8,542.16	8,086.21	683.51	623.39	11.370	CC
ECHEVERRIA 2B-2H - CPR - MWD	8,600.00	8,130.26	684.10	623.31	11.253	ES
ECHEVERRIA 2B-2H - CPR - MWD	12,331.58	11,866.57	872.24	705.45	5.230	SF
ECHEVERRIA 4-2-2 - CPR - MWD	1,117.36	1,039.04	1,273.27	1,265.67	167.409	CC, ES
ECHEVERRIA 4-2-2 - CPR - MWD	9,300.00	7,415.28	1,716.04	1,650.10	26.025	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 ECHEVERRIA 2F-2H-D267
<b>Project:</b>	Sec 2 T2N-R67W	<b>TVD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Reference Site:</b>	Echeverria Pad	<b>MD Reference:</b>	WELL @ 4905.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	ECHEVERRIA 2F-2H-D267	<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>	Design #1 23Apr18 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 (Echeverria)						
ECHEVERRIA 4-4-2 - CPR - MWD	10,248.69	7,349.20	1,652.67	1,577.29	21.924	CC, ES
ECHEVERRIA 4-4-2 - CPR - MWD	10,600.00	7,348.86	1,689.59	1,609.54	21.105	SF
ECHEVERRIA C-2-320-W - CPR - MWD	10,161.57	7,507.55	371.67	296.22	4.926	CC, ES
ECHEVERRIA C-2-320-W - CPR - MWD	10,200.00	7,507.62	373.65	297.18	4.886	SF
ENDERSON 3-11 - KMG - Gyro	12,331.58	7,375.87	1,474.41	1,381.74	15.912	CC, ES, SF
GORDON RED V 10-1 - KMG - Gyro	12,331.58	7,438.01	1,760.75	1,665.42	18.470	CC, ES, SF
HSR-ENDERSON 4-11A - KMG - Gyro	12,331.58	7,398.69	969.01	897.87	13.622	CC, ES, SF
HSR-WITTEMEYER 7-2A - KMG - Gyro	9,520.43	7,327.46	2,123.39	2,057.30	32.126	CC, ES
HSR-WITTEMEYER 7-2A - KMG - Gyro	10,200.00	7,318.97	2,229.47	2,155.36	30.085	SF
KIYOTA 4A-35H-O367 - CPR - MWD	7,182.82	7,462.00	1,736.07	1,678.89	30.362	CC, ES, SF
KIYOTA 4B-35H-O367 - CPR - MWD	7,200.00	7,339.60	1,916.95	1,859.98	33.646	SF
KIYOTA 4B-35H-O367 - CPR - MWD	7,279.41	7,341.56	1,914.69	1,857.90	33.718	CC, ES
KIYOTA 4C-35H-O367 - CPR - MWD	7,100.00	7,197.41	1,991.40	1,934.97	35.289	SF
KIYOTA 4C-35H-O367 - CPR - MWD	7,165.21	7,199.18	1,990.00	1,933.70	35.344	CC, ES
KIYOTA 4D-35H-O367 - CPR - MWD	7,100.00	7,174.00	2,104.23	2,047.67	37.203	SF
KIYOTA 4D-35H-O367 - CPR - MWD	7,235.22	7,174.00	2,098.96	2,042.68	37.294	CC, ES
MATSUSHIMA 35-13L - KMG - Gyro	6,758.68	6,594.23	401.79	351.71	8.022	CC, ES
MATSUSHIMA 35-13L - KMG - Gyro	6,800.00	6,636.29	402.87	352.46	7.992	SF
PANCOST 10-2 - KMG - MWD	10,668.15	7,467.74	2,240.59	2,155.44	26.313	CC
PANCOST 10-2 - KMG - MWD	10,700.00	7,467.83	2,240.82	2,155.11	26.146	ES
PANCOST 10-2 - KMG - MWD	11,300.00	7,469.48	2,327.98	2,233.71	24.696	SF
PANCOST 23-2 - KMG - MWD	11,513.18	7,487.83	1,730.78	1,634.35	17.948	CC, ES
PANCOST 23-2 - KMG - MWD	11,800.00	7,489.78	1,754.39	1,653.84	17.449	SF
PANCOST 36-2 - KMG - MWD	12,331.58	7,629.18	1,895.14	1,776.60	15.987	CC, ES, SF
PENNINGTON 28N-2HZ - KMG - MWD	12,331.58	7,518.04	1,927.14	1,817.50	17.577	CC, ES, SF
PENNINGTON 28N-2HZX - KMG - MWD	8,095.97	11,763.00	1,872.79	1,760.69	16.706	CC
PENNINGTON 28N-2HZX - KMG - MWD	8,100.00	11,763.00	1,872.80	1,760.68	16.705	ES, SF
RICHARDSON V 3-16 - KMG - Gyro	12,198.02	7,357.53	1,570.51	1,464.09	14.758	CC
RICHARDSON V 3-16 - KMG - Gyro	12,200.00	7,357.51	1,570.51	1,464.07	14.754	ES
RICHARDSON V 3-16 - KMG - Gyro	12,331.58	7,356.17	1,576.18	1,468.07	14.579	SF
RICHARDSON V 3-1JI - KMG - Gyro	602.67	600.00	1,360.69	1,356.80	349.926	CC, ES
RICHARDSON V 3-1JI - KMG - Gyro	8,100.00	7,394.51	1,658.18	1,602.81	29.950	SF
RICHARDSON V 3-2 - KMG - No Survey	300.00	307.00	2,704.62	2,703.21	1,925.744	CC
RICHARDSON V 3-2 - KMG - No Survey	400.00	406.98	2,704.94	2,703.00	1,393.381	ES
RICHARDSON V 3-2 - KMG - No Survey	9,800.00	7,397.00	3,366.43	3,312.89	62.883	SF
RICHARDSON V 3-8 - KMG - Gyro	9,446.44	7,403.07	1,361.69	1,296.22	20.797	CC, ES
RICHARDSON V 3-8 - KMG - Gyro	9,700.00	7,404.79	1,385.10	1,317.27	20.420	SF
RICHARDSON V 3-9 - KMG - Gyro	10,883.74	7,441.18	1,489.81	1,404.12	17.384	CC
RICHARDSON V 3-9 - KMG - Gyro	10,900.00	7,441.03	1,489.90	1,403.99	17.342	ES
RICHARDSON V 3-9 - KMG - Gyro	11,100.00	7,439.23	1,505.43	1,417.30	17.083	SF
ROLLIE J VINCENT 1 - Kauffman - Gyro	9,400.28	7,332.06	2,094.97	2,030.67	32.579	CC, ES
ROLLIE J VINCENT 1 - Kauffman - Gyro	10,100.00	7,328.86	2,208.73	2,136.42	30.545	SF
VOLLMAR 28N-11HZ - KMG - MWD	12,331.58	12,881.00	1,515.43	1,327.79	8.076	CC, ES, SF
VOLLMAR 29C-11HZ - KMG - MWD	12,331.58	13,082.00	621.58	514.21	5.789	CC, ES, SF
VOLLMAR 3N-11HZ - KMG - MWD	12,331.58	12,934.00	861.32	706.83	5.575	CC, ES, SF
VOLLMAR 4N-11HZ - KMG - MWD	12,331.58	13,131.00	568.57	472.31	5.906	CC, ES, SF
VYNCKIER 15-2A7952 - KMG - Gyro	12,165.03	7,344.51	2,221.72	2,115.81	20.978	CC
VYNCKIER 15-2A7952 - KMG - Gyro	12,200.00	7,345.02	2,221.99	2,115.47	20.859	ES
VYNCKIER 15-2A7952 - KMG - Gyro	12,331.58	7,346.95	2,227.95	2,119.28	20.501	SF
WITTEMEYER HSR 2-2 - KMG - Gyro	8,123.49	7,300.00	2,036.06	1,980.99	36.974	CC, ES
WITTEMEYER HSR 2-2 - KMG - Gyro	8,500.00	7,300.00	2,070.58	2,014.21	36.733	SF

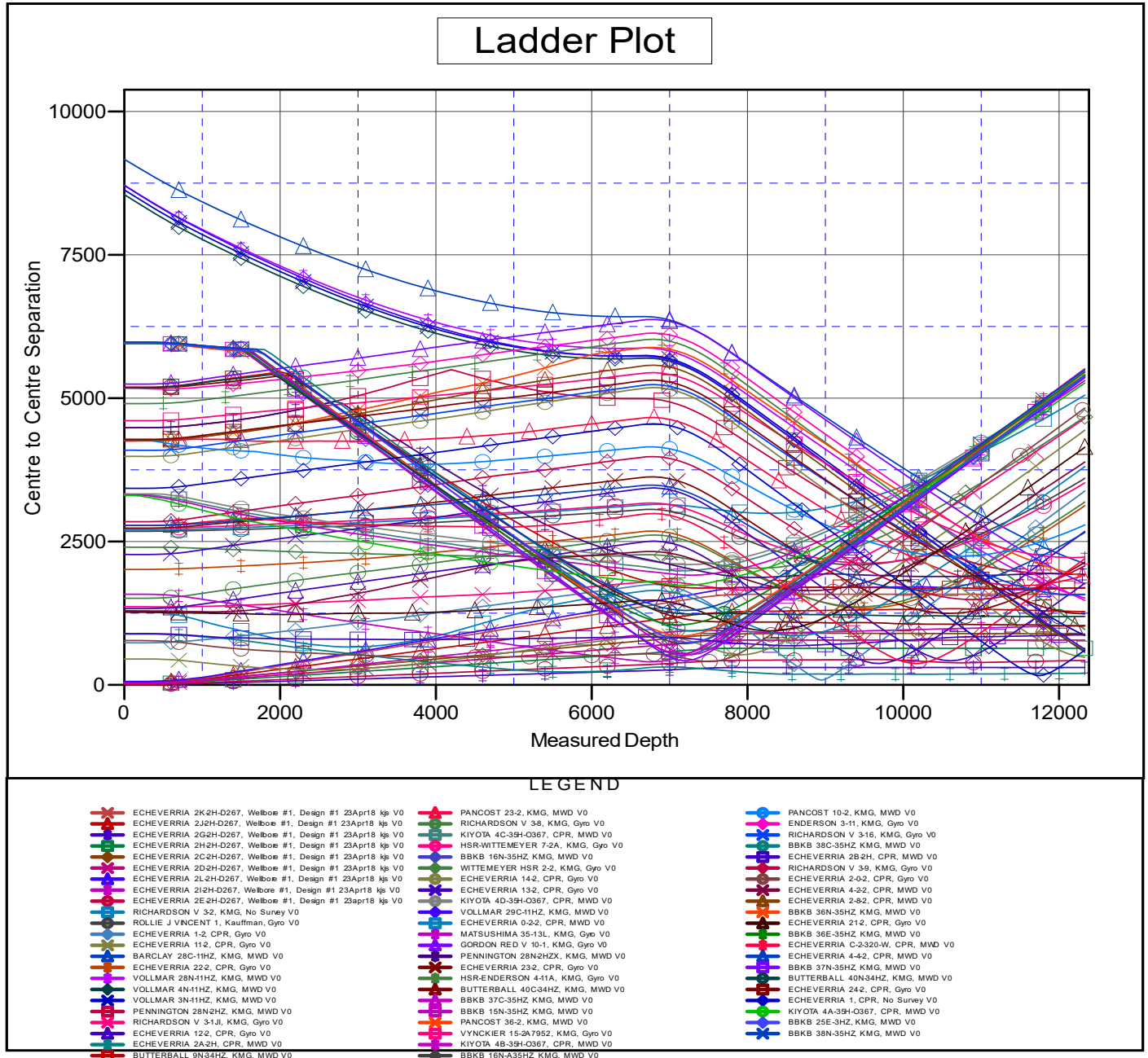
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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<b>Reference Design:</b>	Design #1 23Apr18 kjs	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4905.00usft (Original Well E  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.50000000

Coordinates are relative to: ECHEVERRIA 2F-2H-D267  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.41°



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

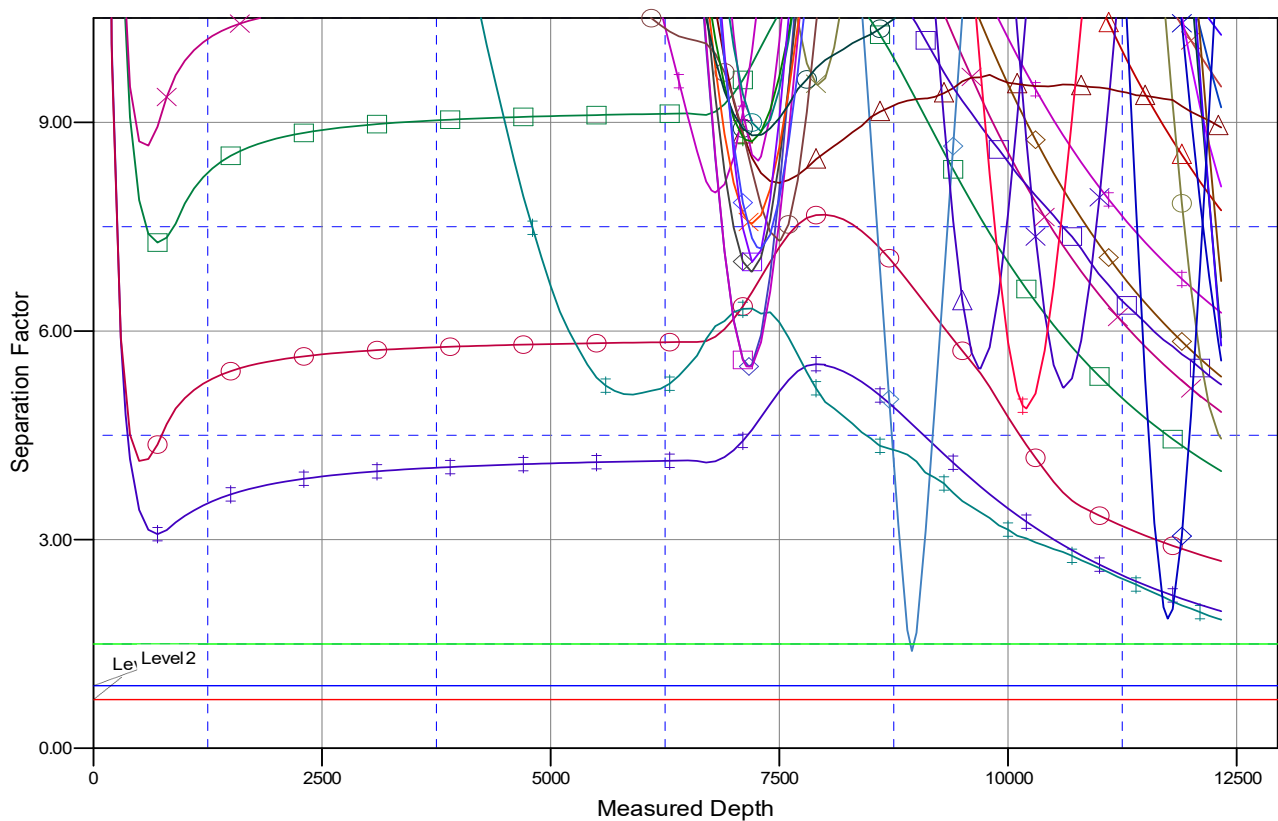
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### Separation Factor Plot



#### LEGEND

ECHEVERRIA 2K2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	PANCOST 23-2, KMG, MWD V0	PANCOST 10-2, KMG, MWD V0
ECHEVERRIA 2J2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	RICHARDSON V 38, KMG, Gyro V0	ENDERSON 3-11, KMG, Gyro V0
ECHEVERRIA 2G2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	KIYOTA 4C-39H-O367, CPR, MWD V0	RICHARDSON V 3-16, KMG, Gyro V0
ECHEVERRIA 2H2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	HSR-WITTEMEYER 7-2A, KMG, Gyro V0	BBKB 38C-35HZ, KMG, MWD V0
ECHEVERRIA 2C2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	BBKB 16N-35HZ, KMG, MWD V0	ECHEVERRIA 2B2H, CPR, MWD V0
ECHEVERRIA 2D2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	WITTEMEYER HSR 2-2, KMG, Gyro V0	RICHARDSON V 3-9, KMG, Gyro V0
ECHEVERRIA 2L2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	ECHEVERRIA 14-2, CPR, Gyro V0	ECHEVERRIA 2-0-2, CPR, Gyro V0
ECHEVERRIA 2I2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	ECHEVERRIA 13-2, CPR, Gyro V0	ECHEVERRIA 4-2-2, CPR, MWD V0
ECHEVERRIA 2E2H-D267, Wellbore #1, Design #1 23Apr18 kjs V0	KIYOTA 4D-39H-O367, CPR, MWD V0	ECHEVERRIA 2-8-2, CPR, MWD V0
RICHARDSON V 32, KMG, No Survey V0	VOLLMAR 29C-11HZ, KMG, MWD V0	BBKB 36N-35HZ, KMG, MWD V0
ROLLIE J VINCENT 1, Kaufman, Gyro V0	ECHEVERRIA 0-2-2, CPR, MWD V0	ECHEVERRIA 21-2, CPR, Gyro V0
ECHEVERRIA 1-2, CPR, Gyro V0	MATSUSHIMA 35-13L, KMG, Gyro V0	BBKB 36E-35HZ, KMG, MWD V0
ECHEVERRIA 11-2, CPR, Gyro V0	GORDON RED V 10-1, KMG, Gyro V0	ECHEVERRIA C-2320-W, CPR, MWD V0
BARCLAY 25C-15HZ, KMG, MWD V0	PENNINGTON 28N2HZ, KMG, MWD V0	ECHEVERRIA 4-4-2, CPR, MWD V0
ECHEVERRIA 22-2, CPR, Gyro V0	ECHEVERRIA 23-2, CPR, Gyro V0	BBKB 37N-35HZ, KMG, MWD V0
VOLLMAR 28N-11HZ, KMG, MWD V0	HSR-ENDERSON 4-11A, KMG, Gyro V0	BUTTERBALL 40N34HZ, KMG, MWD V0
VOLLMAR 4N-11HZ, KMG, MWD V0	BUTTERBALL 40C34HZ, KMG, MWD V0	ECHEVERRIA 24-2, CPR, Gyro V0
VOLLMAR 3N-11HZ, KMG, MWD V0	BBKB 37C-35HZ, KMG, MWD V0	ECHEVERRIA 1, CPR, No Survey V0
PENNINGTON 28N2HZ, KMG, MWD V0	BBKB 15N-35HZ, KMG, MWD V0	KIYOTA 4A-39H-O367, CPR, MWD V0
RICHARDSON V 31-J, KMG, Gyro V0	PANCOST 38-2, KMG, MWD V0	BBKB 25E-3HZ, KMG, MWD V0
ECHEVERRIA 12-2, CPR, Gyro V0	VYNCKIER 15-2A7952, KMG, Gyro V0	BBKB 38N-35HZ, KMG, MWD V0
ECHEVERRIA 2A2H, CPR, MWD V0	KIYOTA 4B-39H-O367, CPR, MWD V0	
BUTTERBALL 9N34HZ, KMG, MWD V0	BBKB 16N-A35HZ, KMG, MWD V0	

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