

# **Crestone Peak Resources**

**DJ BASIN**

**S25-T1N-R66W (LOCHBUIE LAND)**

**LOCHBUIE LAND 2L-25H-D166**

**OH**

**PLAN #1**

## **Anticollision Summary Report**

**25 May, 2018**

# Cathedral Energy Services

## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well LOCHBUIE LAND 2L-25H-D166 - Slot LOCHBUIE LAND 2L-25H-D166 SHL
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	KB @ 5099.00usft
<b>Reference Site:</b>	S25-T1N-R66W (LOCHBUIE LAND)	<b>MD Reference:</b>	KB @ 5099.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LOCHBUIE LAND 2L-25H-D166	<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>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN #1		
<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 1,933.21 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>	5/25/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	2,000.00	PLAN #1 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	11,957.83	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
S25-T1N-R66W (LOCHBUIE LAND)						
AZUL 13-11HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-12HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-19HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-1HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-20HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-21HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-22HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-23HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-24HZ - KMG WELL - SURVEYS						Out of range
AZUL 13-25HZ - KMG WELL - SURVEYS						Out of range
AZUL 13-26HZ - KMG WELL - SURVEYS						Out of range
AZUL 13-27HZ - KMG WELL - SURVEYS						Out of range
AZUL 13-28HZ - KMG WELL - SURVEYS						Out of range
AZUL 13-29HZ - KMG WELL - SURVEYS						Out of range
AZUL 13-2HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-3HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-4HZ - KMG WELL - PLAN ONLY						Out of range
AZUL 13-9HZ - KMG WELL - PLAN ONLY						Out of range
BEIERLE 2 - KMG WELL - SURVEYS	2,618.96	2,370.77	1,130.27	1,122.07	137.764	CC, ES
BEIERLE 2 - KMG WELL - SURVEYS	7,300.00	7,241.27	1,374.63	1,336.15	35.725	SF
CRONIN 2 - RITTER OIL - NO SURVEYS	200.00	210.00	1,696.83	1,696.01	2,069.634	CC, ES
CRONIN 2 - RITTER OIL - NO SURVEYS	1,300.00	795.00	1,920.69	1,915.79	391.793	SF
JOHNSON 1N-65W-30-1S - VERDAD RESOURCES LL						Out of range
JOHNSON 1N-65W-30-2S - VERDAD RESOURCES LL						Out of range
LOCHBUIE LAND 2A-25H-D166 - OH - PLAN #1	200.00	202.00	110.00	109.50	221.511	CC, ES
LOCHBUIE LAND 2A-25H-D166 - OH - PLAN #1	6,100.00	5,801.01	1,901.84	1,871.67	63.041	SF
LOCHBUIE LAND 2B-25H-D166 - OH - PLAN #1	200.00	202.00	100.00	99.50	201.373	CC, ES
LOCHBUIE LAND 2B-25H-D166 - OH - PLAN #1	6,800.00	6,524.45	1,927.49	1,892.22	54.651	SF
LOCHBUIE LAND 2C-25H-D166 - OH - PLAN #1	0.00	1.95	90.00			
LOCHBUIE LAND 2C-25H-D166 - OH - PLAN #1	7,100.00	6,870.63	1,928.29	1,890.95	51.638	SF
LOCHBUIE LAND 2D-25H-D166 - OH - PLAN #1	200.00	201.00	80.00	79.51	161.678	CC, ES
LOCHBUIE LAND 2D-25H-D166 - OH - PLAN #1	11,958.60	11,903.26	1,585.00	1,284.60	5.276	SF
LOCHBUIE LAND 2E-25H-D166 - OH - PLAN #1	200.00	201.00	70.00	69.51	141.468	CC, ES
LOCHBUIE LAND 2E-25H-D166 - OH - PLAN #1	11,958.60	11,830.22	1,319.40	1,018.86	4.390	SF
LOCHBUIE LAND 2F-25H-D166 - OH - PLAN #1	200.00	201.00	60.00	59.51	121.259	CC, ES

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

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## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well LOCHBUIE LAND 2L-25H-D166 - Slot LOCHBUIE LAND 2L-25H-D166 SHL
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	KB @ 5099.00usft
<b>Reference Site:</b>	S25-T1N-R66W (LOCHBUIE LAND)	<b>MD Reference:</b>	KB @ 5099.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LOCHBUIE LAND 2L-25H-D166	<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>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<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
S25-T1N-R66W (LOCHBUIE LAND)						
LOCHBUIE LAND 2F-25H-D166 - OH - PLAN #1	11,958.60	12,076.32	1,274.64	978.59	4.305	SF
LOCHBUIE LAND 2G-25H-D166 - OH - PLAN #1	205.24	206.33	50.00	49.49	97.429	CC
LOCHBUIE LAND 2G-25H-D166 - OH - PLAN #1	300.00	302.44	50.25	49.40	59.266	ES
LOCHBUIE LAND 2G-25H-D166 - OH - PLAN #1	11,958.60	11,747.85	978.43	679.42	3.272	SF
LOCHBUIE LAND 2H-25H-D166 - OH - PLAN #1	206.38	207.47	40.00	39.48	77.342	CC
LOCHBUIE LAND 2H-25H-D166 - OH - PLAN #1	300.00	302.19	40.21	39.36	47.433	ES
LOCHBUIE LAND 2H-25H-D166 - OH - PLAN #1	11,958.60	11,915.19	926.37	626.30	3.087	SF
LOCHBUIE LAND 2I-25H-D166 - OH - PLAN #1	200.00	200.00	30.00	29.51	60.848	CC
LOCHBUIE LAND 2I-25H-D166 - OH - PLAN #1	400.00	401.94	30.34	29.14	25.248	ES
LOCHBUIE LAND 2I-25H-D166 - OH - PLAN #1	11,958.60	11,867.98	659.70	358.99	2.194	SF
LOCHBUIE LAND 2J-25H-D166 - OH - PLAN #1	200.00	200.00	20.00	19.51	40.565	CC
LOCHBUIE LAND 2J-25H-D166 - OH - PLAN #1	600.00	602.61	20.66	18.73	10.726	ES
LOCHBUIE LAND 2J-25H-D166 - OH - PLAN #1	11,958.60	12,137.35	486.32	220.72	1.831	SF
LOCHBUIE LAND 2K-25H-D166 - OH - PLAN #1	200.00	200.00	10.00	9.51	20.283	CC
LOCHBUIE LAND 2K-25H-D166 - OH - PLAN #1	11,958.60	11,981.48	272.87	-19.37	0.934	Level 1, ES, SF
SAM 13-25 - CPR WELL - SURVEYS	7,651.04	7,415.04	921.82	874.06	19.301	CC
SAM 13-25 - CPR WELL - SURVEYS	7,700.00	7,427.69	922.89	873.92	18.847	ES
SAM 13-25 - CPR WELL - SURVEYS	8,100.00	7,451.60	1,015.59	956.37	17.148	SF
TEMPLIN 1 - VESSELS THOMAS G - SURVEYS	11,384.47	7,224.70	1,374.53	1,227.27	9.334	CC
TEMPLIN 1 - VESSELS THOMAS G - SURVEYS	11,400.00	7,224.65	1,374.62	1,226.93	9.307	ES
TEMPLIN 1 - VESSELS THOMAS G - SURVEYS	11,600.00	7,224.02	1,391.33	1,239.69	9.175	SF
S25-T1N-R66W (SAM)						
SAM 3A-25H-M166 - OH - PLAN #2	11,958.60	11,995.58	405.78	109.45	1.369	Level 3, CC, ES, SF
SAM 3A-25H-M166 - OH - SURVEYS						Out of range
SAM 3B-25H-M166 - OH - PLAN #2	11,958.60	12,151.95	585.47	309.32	2.120	CC, ES, SF
SAM 3B-25H-M166 - OH - SURVEYS						Out of range
SAM 3C-25H-M166 - OH - PLAN #2	11,958.60	11,899.03	643.67	343.11	2.142	CC, ES, SF
SAM 3C-25H-M166 - OH - SURVEYS						Out of range
SAM 3D-25H-M166 - OH - PLAN #2	11,953.75	11,939.67	866.53	566.30	2.886	CC
SAM 3D-25H-M166 - OH - PLAN #2	11,958.60	11,938.59	866.54	566.18	2.885	ES, SF
SAM 3E-25H-M166 - OH - PLAN #2	11,953.31	11,846.39	1,158.76	857.70	3.849	CC
SAM 3E-25H-M166 - OH - PLAN #2	11,958.60	11,844.31	1,158.78	857.60	3.848	ES, SF
SAM 3F-25H-M166 - OH - PLAN #2	11,958.60	11,915.69	1,310.70	1,010.60	4.368	CC, ES, SF
SAM 3F-25H-M166 - OH - SURVEYS						Out of range
SAM 3G-25H-M166 - OH - PLAN #1	11,950.61	11,831.03	1,519.03	1,218.66	5.057	CC
SAM 3G-25H-M166 - OH - PLAN #1	11,958.60	11,831.03	1,519.05	1,218.42	5.053	ES, SF
SAM 3H-25H-M166 - OH - PLAN #2	7,439.47	7,343.39	1,741.90	1,695.07	37.193	CC
SAM 3H-25H-M166 - OH - PLAN #2	11,955.09	12,078.94	1,745.42	1,446.97	5.848	ES, SF
SAM 3I-25H-M166 - OH - PLAN #3	11,954.83	11,908.68	1,835.09	1,534.16	6.098	CC, ES, SF
SAM 3J-25H-M166 - OH - PLAN #2						Out of range
SAM 3K-25H-M166 - OH - PLAN #2						Out of range
SAM 3L-25H-M166 - OH - PLAN #2						Out of range

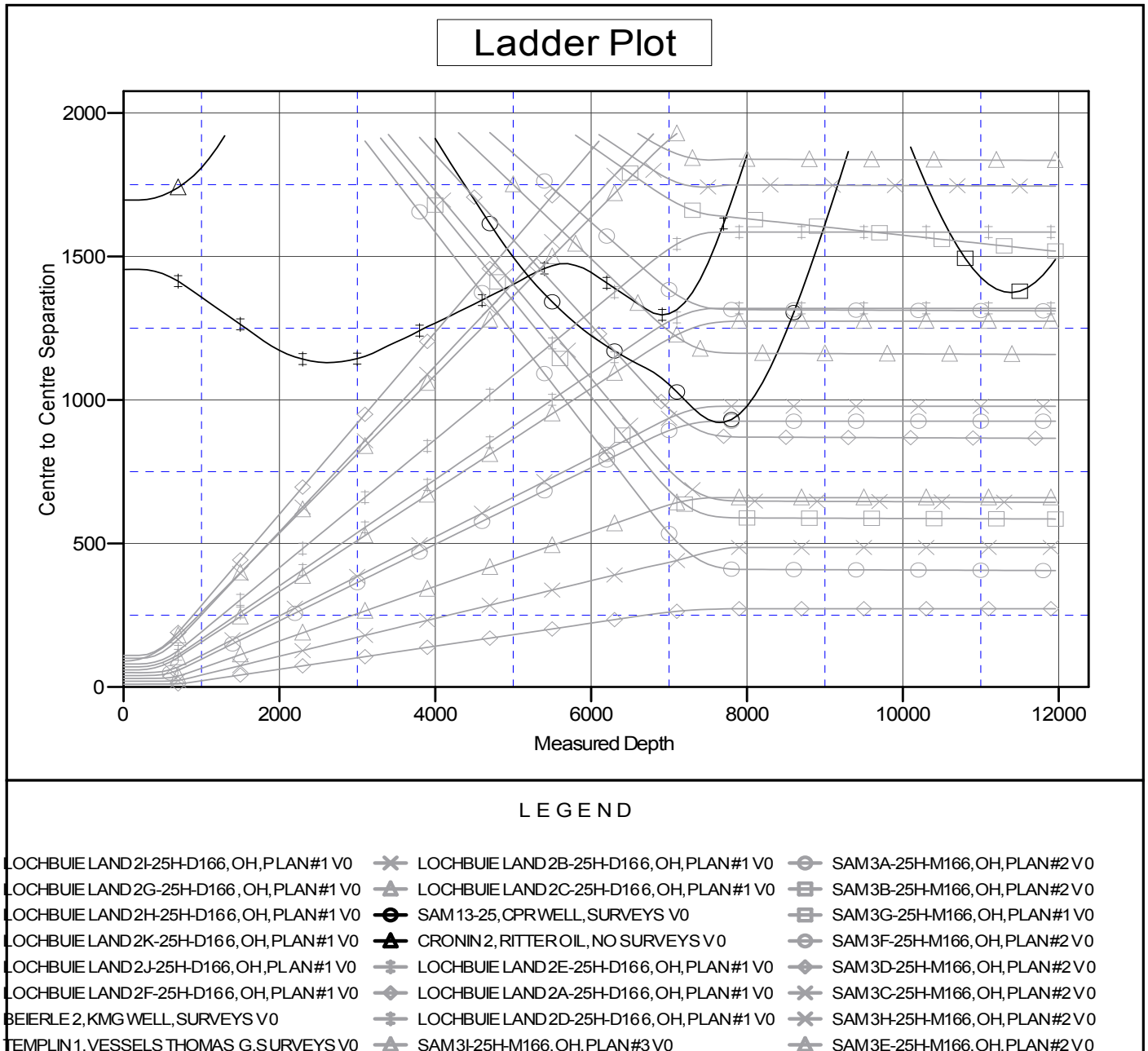
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## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well LOCHBUIE LAND 2L-25H-D166 - Slot LOCHBUIE LAND 2L-25H-D166 SHL
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	KB @ 5099.00usft
<b>Reference Site:</b>	S25-T1N-R66W (LOCHBUIE LAND)	<b>MD Reference:</b>	KB @ 5099.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LOCHBUIE LAND 2L-25H-D166	<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>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 5099.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: LOCHBUIE LAND 2L-25H-D166 - Slot LOCHBUIE LA  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.50°



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

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## Anticollision Summary Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well LOCHBUIE LAND 2L-25H-D166 - Slot LOCHBUIE LAND 2L-25H-D166 SHL
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	KB @ 5099.00usft
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<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LOCHBUIE LAND 2L-25H-D166	<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>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 5099.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: LOCHBUIE LAND 2L-25H-D166 - Slot LOCHBUIE LA  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.50°

