

# **Crestone Peak Resources**

**DJ BASIN**

**S32-T2N-R68W**

**FILE 3B-32H-K268**

**OH**

**PLAN #1**

## **Anticollision Report**

**17 July, 2017**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well FILE 3B-32H-K268
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4993.00usft
<b>Reference Site:</b>	S32-T2N-R68W	<b>MD Reference:</b>	23' KB @ 4993.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	FILE 3B-32H-K268	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<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 1,707.12usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	7/17/2017		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	14,209.12	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

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<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4993.00usft
<b>Reference Site:</b>	S32-T2N-R68W	<b>MD Reference:</b>	23' KB @ 4993.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	FILE 3B-32H-K268	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres Between Ellipses (usft)		Separation Factor	Warning
S32-T2N-R68W						
Anderson 22-32 - KPK WELL - NO SURVEYS						Out of range
Anderson 32-32 - CPR WELL - SURVEYS						Out of range
Anderson 41-32 - CPR - GYRO						Out of range
Anderson 4-2-32 - CPR WELL - SURVEYS						Out of range
Anderson 6-4-32 - CPR WELL - SURVEYS						Out of range
Anderson Trust 1 - KPK - NO SURVEYS						Out of range
Anderson Trust 1 A - CPR WELL - GYRO						Out of range
Anderson Trust 2-A - CPR WELL - NO SURVEYS						Out of range
Anderson Trust 32-2 - CPR WELL - GYRO						Out of range
Anderson Trust 32-8 - CPR WELL - GYRO						Out of range
Anderson Trust C 1 - CPR WELL - SURVEYS						Out of range
Anderson Trust C Unit 2 - CPR WELL - GYRO						Out of range
Brown 22-5 - CPR WELL - GYRO	11,210.45	7,499.62	1,585.74	1,512.51	21.656	CC, ES
Brown 22-5 - CPR WELL - GYRO	11,300.00	7,497.70	1,588.30	1,514.71	21.581	SF
Brown 31-5 - CPR WELL - SURVEYS						Out of range
Brown 41-5 - CPR WELL - SURVEYS						Out of range
Brown 5-3 - CPR WELL - GYRO	9,693.87	7,496.39	1,702.45	1,650.67	32.874	CC
Brown 5-3 - CPR WELL - GYRO	9,700.00	7,496.64	1,702.47	1,650.64	32.853	ES
Brown 5-3 - CPR WELL - GYRO	9,800.00	7,500.44	1,705.76	1,653.40	32.581	SF
Brown 5-5 - CPR WELL - GYRO	11,102.67	7,494.54	123.21	50.13	1.686	CC, ES, SF
Brown C Unit 1 - CPR WELL - GYRO						Out of range
Brown C Unit 2 - CPR WELL - GYRO	10,199.39	7,478.54	502.57	443.07	8.447	CC, ES, SF
Bryant 10-30 - KMG WELL - SURVEYS						Out of range
Bryant 16-30 - KMG WELL - SURVEYS						Out of range
Bryant 20-30 - KMG WELL - SURVEYS						Out of range
Bryant 23-30 - KMG WELL - SURVEYS						Out of range
Bryant 24-30 - KMG WELL - SURVEYS						Out of range
Bryant 33-29 - KMG WELL - SURVEYS						Out of range
Bryant 36-30 - KMG WELL - SURVEYS						Out of range
Bryant 8-30 - KMG WELL - SURVEYS						Out of range
Bryant Federal 37-30 - KMG WELL - SURVEYS						Out of range
Bulthaup 1-6 - KMG WELL - GYRO	10,047.66	7,483.60	935.37	880.75	17.127	CC, ES
Bulthaup 1-6 - KMG WELL - GYRO	10,300.00	7,477.52	968.79	909.43	16.321	SF
Bulthaup 16-6 - KMG WELL - SURVEYS	14,000.00	7,501.14	1,037.61	915.23	8.478	CC, ES
Bulthaup 16-6 - KMG WELL - SURVEYS	14,100.00	7,501.24	1,050.27	925.73	8.433	SF
Bulthaup 17-6 - KMG WELL - SURVEYS						Out of range
Bulthaup 24-6 - KMG WELL - SURVEYS						Out of range
Bulthaup 27-6 - KMG WELL - SURVEYS	9,355.01	7,550.27	1,701.31	1,640.53	27.991	CC, ES
Bulthaup 27-6 - KMG WELL - SURVEYS	9,400.00	7,549.57	1,701.90	1,640.55	27.739	SF
Bulthaup 39-6 - KMG WELL - SURVEYS	13,354.24	7,600.40	473.33	355.10	4.004	CC, ES
Bulthaup 39-6 - KMG WELL - SURVEYS	13,400.00	7,599.52	475.53	355.72	3.969	SF
Bulthaup 40-6 - KMG WELL - SURVEYS	11,869.69	7,538.04	443.03	349.75	4.749	CC, ES
Bulthaup 40-6 - KMG WELL - SURVEYS	11,900.00	7,537.87	444.07	350.06	4.723	SF
Bulthaup 8-6 - KMG WELL - GYRO	11,328.04	7,540.67	1,140.55	1,067.92	15.704	CC, ES
Bulthaup 8-6 - KMG WELL - GYRO	11,600.00	7,541.62	1,172.53	1,095.40	15.203	SF
Bulthaup 9-6 - KMG WELL - SURVEYS	12,736.58	7,795.32	1,048.23	940.92	9.768	CC, ES
Bulthaup 9-6 - KMG WELL - SURVEYS	12,900.00	7,791.85	1,060.88	950.00	9.568	SF
Canino 1-X - HUGHES CW - NO SURVEYS						Out of range
Champlin 86 Amoco F 6 - KPK - NO SURVEYS						Out of range
Champlin 86 N 1 - KMG WELL - GYRO						Out of range
Champlin Amoco 86 F 7 - KPK WELL - SURVEYS						Out of range
Cinque 1 - FOUNDATION WELL - NO SURVEYS						Out of range
Cinque 2 - FOUNDATION WELL - NO SURVEYS						Out of range

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well FILE 3B-32H-K268
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4993.00usft
<b>Reference Site:</b>	S32-T2N-R68W	<b>MD Reference:</b>	23' KB @ 4993.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	FILE 3B-32H-K268	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S32-T2N-R68W						
Cinque 4 - FOUNDATION WELL - NO SURVEYS						Out of range
FILE 3A-32H-K268 - OH - PLAN #1	200.00	200.00	10.07	9.08	10.143	CC, ES
FILE 3A-32H-K268 - OH - PLAN #1	14,000.00	14,429.79	316.49	116.12	1.580	SF
FILE 3C-32H-K268 - OH - PLAN #1	430.91	431.27	4.38	2.30	2.107	CC, ES
FILE 3C-32H-K268 - OH - PLAN #1	14,209.12	14,119.74	395.93	183.30	1.862	SF
FILE 3C-32H-K268 - OH - SURVEYS	430.91	431.27	4.38	2.30	2.107	CC, ES, SF
FILE 3D-32H-K268 - OH - PLAN #1	359.14	359.49	15.70	14.12	9.954	CC, ES
FILE 3D-32H-K268 - OH - PLAN #1	14,209.12	14,515.40	713.41	491.45	3.214	SF
FILE 3D-32H-K268 - OH - SURVEYS	359.14	359.49	15.70	14.12	9.954	CC, ES
FILE 3D-32H-K268 - OH - SURVEYS	500.00	500.38	18.98	16.63	8.049	SF
FILE 3E-32H-K268 - OH - PLAN #1	0.00	0.00	29.94			
FILE 3E-32H-K268 - OH - PLAN #1	308.93	309.03	31.22	29.88	23.235	ES
FILE 3E-32H-K268 - OH - PLAN #1	14,209.12	14,280.65	1,060.33	841.54	4.846	SF
FILE 3E-32H-K268 - OH - SURVEYS	0.00	0.00	29.94			
FILE 3E-32H-K268 - OH - SURVEYS	308.93	309.03	31.22	29.88	23.235	ES
FILE 3E-32H-K268 - OH - SURVEYS	700.00	701.87	46.95	43.37	13.135	SF
FILE 3F-32H-K268 - OH - PLAN #1	0.00	0.00	40.01			
FILE 3F-32H-K268 - OH - PLAN #1	14,209.12	14,219.83	1,546.46	1,324.67	6.973	SF
FILE 3F-32H-K268 - OH - SURVEYS	0.00	0.00	40.01			
FILE 3F-32H-K268 - OH - SURVEYS	800.00	805.85	50.47	46.24	11.917	SF
FILE 3G-32H-K268 - OH - PLAN #1	415.66	417.49	40.88	38.96	21.371	CC, ES
FILE 3G-32H-K268 - OH - PLAN #1	13,400.00	13,472.08	1,695.73	1,503.26	8.811	SF
FILE 3G-32H-K268 - OH - SURVEYS	415.66	417.49	40.88	38.96	21.371	CC, ES
FILE 3G-32H-K268 - OH - SURVEYS	700.00	702.00	54.73	51.10	15.099	SF
FILE 3H-32H-K268 - OH - PLAN #2	327.25	327.81	59.53	58.10	41.404	CC, ES
FILE 3H-32H-K268 - OH - PLAN #2	800.00	799.91	94.08	89.94	22.734	SF
FILE 3H-32H-K268 - OH - SURVEYS	327.25	327.81	59.53	58.10	41.404	CC, ES
FILE 3H-32H-K268 - OH - SURVEYS	800.00	799.91	94.08	89.94	22.734	SF
FILE 3Q-32H-K268 - OH - PLAN #1	254.70	255.73	149.07	148.12	156.666	CC
FILE 3Q-32H-K268 - OH - PLAN #1	300.00	298.65	149.33	148.10	121.836	ES
FILE 3Q-32H-K268 - OH - PLAN #1	7,400.00	7,952.07	1,491.12	1,437.52	27.821	SF
FILE 3Q-32H-K268 - OH - SURVEYS	254.70	255.73	149.07	148.12	156.666	CC
FILE 3Q-32H-K268 - OH - SURVEYS	300.00	298.65	149.33	148.10	121.836	ES
FILE 3Q-32H-K268 - OH - SURVEYS	900.00	853.00	239.89	235.28	52.052	SF
FILE 3R-32H-K268 - OH - PLAN #1	200.00	200.60	159.65	158.96	230.050	CC
FILE 3R-32H-K268 - OH - PLAN #1	214.35	214.35	159.66	158.87	201.936	ES
FILE 3R-32H-K268 - OH - PLAN #1	6,200.00	5,981.46	1,698.51	1,655.66	39.641	SF
FILE 3R-32H-K268 - OH - SURVEYS	200.00	200.60	159.65	158.96	230.050	CC
FILE 3R-32H-K268 - OH - SURVEYS	214.35	214.35	159.66	158.87	201.936	ES
FILE 3R-32H-K268 - OH - SURVEYS	900.00	848.00	273.46	268.68	57.150	SF
FILE 3S-32H-K268 - OH - PLAN #1	300.00	300.00	170.11	168.40	99.482	CC, ES
FILE 3S-32H-K268 - OH - PLAN #1	5,900.00	5,653.90	1,698.21	1,655.53	39.795	SF
FILE 3T-32H-K268 - OH - PLAN #1	200.00	200.00	179.90	178.90	181.172	CC, ES
FILE 3T-32H-K268 - OH - PLAN #1	5,300.00	5,034.98	1,683.44	1,645.38	44.232	SF
FILE FED 3I-32H-K268 - OH - PLAN #2	399.86	402.17	64.42	62.59	35.203	CC
FILE FED 3I-32H-K268 - OH - PLAN #2	400.00	402.30	64.42	62.59	35.188	ES
FILE FED 3I-32H-K268 - OH - PLAN #2	8,000.00	7,694.28	201.59	143.91	3.495	SF
FILE FED 3I-32H-K268 - OH - SURVEYS	399.86	402.17	64.42	62.59	35.203	CC
FILE FED 3I-32H-K268 - OH - SURVEYS	400.00	402.30	64.42	62.59	35.188	ES
FILE FED 3I-32H-K268 - OH - SURVEYS	800.00	803.36	87.97	83.79	21.024	SF
FILE FED 3J-32H-K268 - OH - PLAN #1	252.36	252.59	79.64	78.69	84.531	CC
FILE FED 3J-32H-K268 - OH - PLAN #1	7,611.48	7,863.96	112.26	56.80	2.024	ES, SF
FILE FED 3J-32H-K268 - OH - SURVEYS	252.36	252.59	79.64	78.69	84.531	CC

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well FILE 3B-32H-K268
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4993.00usft
<b>Reference Site:</b>	S32-T2N-R68W	<b>MD Reference:</b>	23' KB @ 4993.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	FILE 3B-32H-K268	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S32-T2N-R68W						
FILE FED 3J-32H-K268 - OH - SURVEYS	300.00	299.76	79.71	78.48	64.657	ES
FILE FED 3J-32H-K268 - OH - SURVEYS	800.00	802.66	109.30	105.17	26.456	SF
FILE FED 3K-32H-K268 - OH - PLAN #2	0.00	0.00	90.09			
FILE FED 3K-32H-K268 - OH - PLAN #2	100.00	99.66	90.28	90.04	376.744	ES
FILE FED 3K-32H-K268 - OH - PLAN #2	7,486.79	7,592.10	386.38	333.76	7.342	SF
FILE FED 3K-32H-K268 - OH - SURVEYS	0.00	0.00	90.09			
FILE FED 3K-32H-K268 - OH - SURVEYS	100.00	99.66	90.28	90.04	376.744	ES
FILE FED 3K-32H-K268 - OH - SURVEYS	900.00	873.00	142.85	138.19	30.620	SF
FILE FED 3L-32H-K268 - OH - PLAN #1	316.38	316.93	99.10	97.78	74.885	CC, ES
FILE FED 3L-32H-K268 - OH - PLAN #1	7,400.00	7,638.13	611.93	559.64	11.703	SF
FILE FED 3L-32H-K268 - OH - SURVEYS	316.38	316.93	99.10	97.78	74.885	CC, ES
FILE FED 3L-32H-K268 - OH - SURVEYS	800.00	795.29	143.69	139.63	35.393	SF
FILE FED 3M-32H-K268 - OH - PLAN #1	347.24	349.08	106.68	105.15	69.564	CC, ES
FILE FED 3M-32H-K268 - OH - PLAN #1	7,769.55	7,799.16	751.35	696.75	13.762	SF
FILE FED 3M-32H-K268 - OH - SURVEYS	347.24	349.08	106.68	105.15	69.564	CC, ES
FILE FED 3M-32H-K268 - OH - SURVEYS	800.00	798.33	147.38	143.14	34.772	SF
FILE FED 3N-32H-K268 - OH - PLAN #1	221.36	221.36	119.76	118.93	144.661	CC
FILE FED 3N-32H-K268 - OH - PLAN #1	300.00	299.28	119.99	118.72	94.689	ES
FILE FED 3N-32H-K268 - OH - PLAN #1	7,500.00	7,936.40	815.45	761.46	15.104	SF
FILE FED 3N-32H-K268 - OH - SURVEYS	221.36	221.36	119.76	118.93	144.661	CC
FILE FED 3N-32H-K268 - OH - SURVEYS	300.00	299.28	119.99	118.72	94.689	ES
FILE FED 3N-32H-K268 - OH - SURVEYS	900.00	873.00	191.02	186.29	40.314	SF
FILE FED 3O-32H-K268 - OH - PLAN #1	321.29	322.23	126.63	125.28	93.802	CC, ES
FILE FED 3O-32H-K268 - OH - PLAN #1	7,319.75	7,924.81	1,070.75	1,017.24	20.008	SF
FILE FED 3O-32H-K268 - OH - SURVEYS	321.29	322.23	126.63	125.28	93.802	CC, ES
FILE FED 3O-32H-K268 - OH - SURVEYS	900.00	851.00	195.42	190.80	42.242	SF
FILE FED 3P-32H-K268 - OH - PLAN #1	270.48	270.49	139.38	138.27	125.697	CC
FILE FED 3P-32H-K268 - OH - PLAN #1	300.00	299.16	139.47	138.19	109.233	ES
FILE FED 3P-32H-K268 - OH - PLAN #1	7,400.00	8,001.23	1,389.36	1,335.40	25.749	SF
FILE FED 3P-32H-K268 - OH - SURVEYS	270.48	270.49	139.38	138.27	125.697	CC
FILE FED 3P-32H-K268 - OH - SURVEYS	300.00	299.16	139.47	138.19	109.233	ES
FILE FED 3P-32H-K268 - OH - SURVEYS	800.00	782.16	206.46	202.22	48.746	SF
Foster 33-5 - CPR WELL - SURVEYS						Out of range
Foster 43-5 - CPR WELL - SURVEYS						Out of range
Foster 4-5 - CPR WELL - SURVEYS						Out of range
Foster 4-6-5 - CPR WELL - SURVEYS						Out of range
Foster 6-4-5 - CPR - SURVEYS						Out of range
Foster 6-4-5X - CPR WELL - SURVEYS						Out of range
Foster 6-8-5 - CPR WELL - SURVEYS						Out of range
Foster 8-8-5 - CPR WELL - SURVEYS						Out of range
Foster E Unit 1 - CPR - GYRO						Out of range
Gene 11-5 - KERR-MCGEE - GYRO						Out of range
Hankins 1 - KPK WELL - NO SURVEYS						Out of range
Hauck 17-29 - KMG WELL - SURVEYS						Out of range
Hauck 24-29 - KMG WELL - SURVEYS						Out of range
Hauck 7-29 - KMG WELL - SURVEYS						Out of range
HSR-Bryant 9-30A - KMG WELL - GYRO						Out of range
HSR-Williams 10-20 - KMG WELL - GYRO						Out of range
HWY52 4A-32H-O268 - OH - FINAL						Out of range
HWY52 4B-32H-O268 - OH - FINAL						Out of range
HWY52 4C-32H-O268 - OH - FINAL						Out of range
HWY52 4D-32H-O268 - OH - FINAL						Out of range
HWY52 4E-32H-O268 - OH - FINAL						Out of range

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well FILE 3B-32H-K268
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4993.00usft
<b>Reference Site:</b>	S32-T2N-R68W	<b>MD Reference:</b>	23' KB @ 4993.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	FILE 3B-32H-K268	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S32-T2N-R68W						
HWY52 4F-32H-O268 - OH - FINAL						Out of range
HWY52 4G-32H-O268 - OH - FINAL						Out of range
HWY52 4H-32H-O268 - OH - FINAL						Out of range
HWY52 4I-32H-O268 - OH - FINAL						Out of range
HWY52 4J-32H-O268 - OH - FINAL						Out of range
HWY52 4K-32H-O268 - OH - FINAL						Out of range
HWY52 4L-32H-O268 - OH - PLAN #3						Out of range
HWY52 4L-32H-O268 - OH - SURVEYS						Out of range
HWY52 4M-32H-O268 - OH - FINAL						Out of range
HWY52 4N-32H-O268 - OH - PLAN #5						Out of range
HWY52 4N-32H-O268 - OH - SURVEYS						Out of range
HWY52 4O-32H-O268 - OH - PLAN #3						Out of range
HWY52 4O-32H-O268 - OH - SURVEYS						Out of range
HWY52 4P-32H-O268 - OH - PLAN #2						Out of range
HWY52 4Q-32H-O268 - OH - PLAN #2						Out of range
HWY52 4R-32H-O268 - OH - PLAN #2						Out of range
HWY52 4S-32H-O268 - OH - PLAN #4						Out of range
HWY52 4S-32H-O268 - OH - SURVEYS						Out of range
HWY52 4T-32H-O268 - OH - PLAN #3						Out of range
HWY52 4U-32H-O268 - OH - PLAN #5						Out of range
HWY52 4U-32H-O268 - OH - SURVEYS						Out of range
HWY52 4V-32H-O268 - OH - PLAN #2						Out of range
HWY52 4V-32H-O268 - OH - SURVEYS						Out of range
HWY52 4W-32H-O268 - OH - PLAN #3						Out of range
HWY52 4W-32H-O268 - OH - SURVEYS						Out of range
Jack Hein Unit 1 - HS RESOURCES WELL - NO SURVE	5,427.98	5,085.00	1,277.59	1,245.58	39.914	CC, ES
Jack Hein Unit 1 - HS RESOURCES WELL - NO SURVE	5,600.00	5,085.00	1,289.11	1,256.53	39.557	SF
John Lamar 1 - KPK WELL - NO SURVEYS						Out of range
Johnson 32-30 - KPK WELL - NO SURVEYS						Out of range
Johnson 7-30A - KMG WELL - GYRO						Out of range
Kenneth Koch 1 - KPK WELL - NO SURVEYS						Out of range
Kenyon 34-19 - CPR WELL - SURVEYS						Out of range
Kenyon 4-8-19 - CPR WELL - SURVEYS						Out of range
Kenyon 8-4-19 - CPR WELL - SURVEYS						Out of range
Kenyon 8-6-19 - CPR WELL - SURVEYS						Out of range
Kenyon 8-8-19 - CPR WELL - SURVEYS						Out of range
Koch 41-6 - KPK WELL - NO SURVEYS						Out of range
Koch Kenneth E A-1 - KMG WELL - SURVEY						Out of range
Milton H Nelson H-1 - KMG WELL - GYRO						Out of range
Milton H Nelson I1 - KMG WELL - GYRO						Out of range
Milton H Nelson L1 - KMG WELL - GYRO						Out of range
Milton Nelson K1 - KMG WELL - GYRO						Out of range
Nelson 1 - TEXAS TEA - NO SURVEYS						Out of range
Nelson 1-A - TEXAS TEA WELL - NO SURVEYS	5,212.65	5,011.00	1,605.04	1,571.33	47.617	CC, ES
Nelson 1-A - TEXAS TEA WELL - NO SURVEYS	5,500.00	5,011.00	1,630.56	1,595.56	46.586	SF
Nelson 2 - TEXAS TEA WELL - NO SURVEYS	5,003.89	4,876.00	237.47	205.24	7.369	CC, ES, SF
Nelson 3 - TEXAS TEA WELL - NO SURVEYS	300.00	314.00	1,117.00	1,115.56	776.046	CC, ES
Nelson 3 - TEXAS TEA WELL - NO SURVEYS	5,000.00	4,941.32	1,705.33	1,674.86	55.962	SF
Nelson 4 - TEXAS TEA WELL - NO SURVEYS	300.00	265.00	415.43	414.10	312.278	CC, ES
Nelson 4 - TEXAS TEA WELL - NO SURVEYS	5,100.00	4,990.65	1,179.22	1,149.32	39.450	SF
Nelson 5 - TEXAS TEA WELL - NO SURVEYS	4,581.98	4,482.29	916.14	886.49	30.900	CC
Nelson 5 - TEXAS TEA WELL - NO SURVEYS	4,800.00	4,703.34	917.00	885.85	29.444	ES
Nelson 5 - TEXAS TEA WELL - NO SURVEYS	5,200.00	5,035.00	924.65	890.84	27.341	SF

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well FILE 3B-32H-K268
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4993.00usft
<b>Reference Site:</b>	S32-T2N-R68W	<b>MD Reference:</b>	23' KB @ 4993.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	FILE 3B-32H-K268	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S32-T2N-R68W						
Nelson D2 - KPK WELL - NO SURVEYS						Out of range
Nelson E Unit 1 - CPR WELL - GYRO	2,358.22	2,293.97	631.18	619.99	56.431	CC
Nelson E Unit 1 - CPR WELL - GYRO	2,500.00	2,434.55	631.54	619.62	52.959	ES
Nelson E Unit 1 - CPR WELL - GYRO	8,050.20	7,432.76	700.46	662.33	18.368	SF
Nelson E Unit 2 - CPR WELL - GYRO						Out of range
NOAA Federal 11-32 - CPR WELL - GYRO						Out of range
Osarkson 2-8-33 - CPR WELL - SURVEYS						Out of range
Oskarson 13-33 - CPR - GYRO						Out of range
Oskarson 23-33 - CPR WELL - GYRO						Out of range
Oskarson 4 - HRM - NO SURVEYS						Out of range
Oskarson 4-4-33 - CPR WELL - SURVEYS						Out of range
Oskarson 4-6-33 - CPR WELL - SURVEYS						Out of range
Oskarson 4-8-33 - CPR WELL - SURVEYS						Out of range
Oskarson E Unit 1 - CPR WELL - GYRO						Out of range
Paquette 13-5 - KMG WELL - GYRO	14,171.12	7,492.23	145.99	32.79	1.290	Level 3, CC, ES, SF
Paquette 14-5 - KERR-MCGEE - GYRO	13,718.99	7,474.97	1,376.20	1,265.63	12.446	CC, ES
Paquette 14-5 - KERR-MCGEE - GYRO	13,800.00	7,474.00	1,378.58	1,267.69	12.432	SF
Rasmussen 10-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 14-29 - KMG WELL - GYRO						Out of range
Rasmussen 16-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 19-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 20-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 22-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 23-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 25-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 36-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 37-29 - KMG WELL - SURVEYS						Out of range
Rasmussen 39-29 - KMG WELL - SURVEYS						Out of range
Rasmussen Fed 35-29 - KMG WELL - SURVEYS						Out of range
Ray Nelson 0-4-32 - CPR WELL - SURVEYS	6,952.19	6,895.61	956.04	905.78	19.023	CC, ES
Ray Nelson 0-4-32 - CPR WELL - SURVEYS	7,000.00	6,941.59	957.64	907.08	18.940	SF
Ray Nelson 12-32 - CPR WELL - GYRO	6,900.00	6,691.11	1,447.69	1,412.77	41.461	CC, ES
Ray Nelson 12-32 - CPR WELL - GYRO	7,000.00	6,790.63	1,456.96	1,421.53	41.123	SF
Ray Nelson 13-32 - CPR WELL - SURVEYS	6,900.00	6,931.25	130.67	61.56	1.891	CC, ES, SF
Ray Nelson 14-32 - CPR WELL - SURVEYS	8,757.81	7,498.36	153.38	86.38	2.289	CC, ES, SF
Ray Nelson 23-32 - CPR WELL - GYRO	313.63	196.89	543.35	542.28	505.455	CC, ES
Ray Nelson 23-32 - CPR WELL - GYRO	7,300.00	7,058.18	1,626.93	1,593.88	49.222	SF
Ray Nelson 24-32 - CPR WELL - SURVEYS	1,445.98	1,393.19	913.46	903.34	90.289	CC
Ray Nelson 24-32 - CPR WELL - SURVEYS	1,600.00	1,545.02	914.26	902.66	78.807	ES
Ray Nelson 24-32 - CPR WELL - SURVEYS	9,100.00	7,594.27	1,540.21	1,467.15	21.083	SF
Ray Nelson 2-4-32 - CPR WELL - SURVEYS	4,348.59	4,405.57	991.38	955.04	27.275	CC
Ray Nelson 2-4-32 - CPR WELL - SURVEYS	4,400.00	4,450.73	991.61	954.86	26.981	ES
Ray Nelson 2-4-32 - CPR WELL - SURVEYS	6,300.00	6,273.21	1,129.41	1,082.97	24.321	SF
Ray Nelson 33-32 - CPR WELL - SURVEYS						Out of range
Ray Nelson 34-32 - CPR WELL - SURVEYS						Out of range
Ray Nelson 44-32 - CPR WELL - SURVEYS						Out of range
Ray Nelson 4-4-32 - CPR WELL - SURVEYS	151.51	132.52	545.92	545.16	714.201	CC
Ray Nelson 4-4-32 - CPR WELL - SURVEYS	200.00	176.18	546.14	545.02	488.957	ES
Ray Nelson 4-4-32 - CPR WELL - SURVEYS	4,800.00	4,581.90	1,685.95	1,645.11	41.275	SF
Ray Nelson 4-6-32 - CPR WELL - SURVEYS	206.42	187.43	547.12	545.92	456.958	CC
Ray Nelson 4-6-32 - CPR WELL - SURVEYS	300.00	275.56	547.64	545.73	285.986	ES
Ray Nelson 4-6-32 - CPR WELL - SURVEYS	4,800.00	4,603.48	1,685.10	1,644.27	41.263	SF
Ray Nelson 8-8-32 - CPR WELL - SURVEYS						Out of range

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# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well FILE 3B-32H-K268
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4993.00usft
<b>Reference Site:</b>	S32-T2N-R68W	<b>MD Reference:</b>	23' KB @ 4993.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	FILE 3B-32H-K268	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
S32-T2N-R68W						
Regnier Farms 32-19 - CPR WELL - GYRO						Out of range
Regnier Farms 33-19 - CPR WELL - GYRO						Out of range
Regnier Farms 42-19 - CPR WELL - GYRO						Out of range
Regnier Farms 43-19 - CPR WELL - SURVEYS						Out of range
Regnier Farms B 2 - CPR WELL - GYRO						Out of range
Regnier Farms B Unit 1 - CPR WELL - GYRO						Out of range
Sawdey Unit 2 - KMG WELL - GYRO						Out of range
Schriner 11-5 - KMG WELL - GYRO	13,146.54	7,520.87	1,234.52	1,134.82	12.382	CC, ES
Schriner 11-5 - KMG WELL - GYRO	13,200.00	7,519.40	1,235.67	1,135.74	12.365	SF
Schriner 12-5 - KMG WELL - GYRO	12,939.63	7,515.42	251.72	153.77	2.570	CC, ES, SF
SEC Four 12-4 - KMG WELL - SURVEYS						Out of range
SEC Four 13-4 - KMG WELL - SURVEYS						Out of range
SEC Four 14-4 - KMG WELL - SURVEYS						Out of range
SEC Four 21-4 - KMG WELL - SURVEYS						Out of range
SEC Four 22-4 - KMG WELL - SURVEYS						Out of range
SEC Four 31-4 - KMG WELL - SURVEYS						Out of range
SEC Four 32-4 - KMG WELL - SURVEYS						Out of range
SEC Four 33-4 - KMG WELL - SURVEYS						Out of range
SEC Four 3-4 - KMG WELL - SURVEYS						Out of range
SEC Four 35-4 - KMG WELL - SURVEYS						Out of range
SEC Four 4-4 - KMG WELL - SURVEYS						Out of range
SEC Four 5-4 - KMG WELL - SURVEYS						Out of range
SEC Four 6-4 - KMG WELL - SURVEYS						Out of range
Shaw 11-29A - KMG WELL - SURVEYS						Out of range
Shaw 12-29A - KMG - GYRO						Out of range
Shaw 15-20 - KPK - SURVEYS						Out of range
Shaw 16-20 - KPK - SURVEYS						Out of range
Tallgrass 1-8 - KMG - SURVEYS						Out of range
Tallgrass 2-8 - KMG - SURVEYS						Out of range
Tallgrass 3-8 - KMG - SURVEYS						Out of range
Tallgrass 4-8 - KMG - SURVEYS	14,209.12	14,209.12	1,204.07	1,116.47	13.745	CC, ES, SF
Tallgrass 5-8 - KMG - SURVEYS						Out of range
Tallgrass 6-8 - KMG WELL - SURVEYS						Out of range
Williams 10-20 - KMG WELL - SURVEYS						Out of range
Williams 11-20 - KMG WELL - SURVEYS						Out of range
Williams 13-20 - KMG WELL - SURVEYS						Out of range
Williams 14-20 - KMG WELL - SURVEYS						Out of range
Williams 16-20 - KMG WELL - SURVEYS						Out of range
Williams 18-29 - KMG WELL - SURVEYS						Out of range
Williams 23-20 - KMG WELL - SURVEYS						Out of range
Williams 24-20 - KMG WELL - SURVEYS						Out of range
Williams 24-20X - KMG WELL - SURVEYS						Out of range
Williams 25-20 - KMG WELL - SURVEYS						Out of range
Williams 35-20 - KMG WELL - SURVEYS						Out of range
Williams 36-20 - KMG WELL - SURVEYS						Out of range
Williams 39-20 - KMG WELL - SURVEYS						Out of range
Williams 4-29 - KMG WELL - SURVEYS						Out of range
Williams 7-20 - KMG WELL - SURVEYS						Out of range
Williams 8-20 - KMG WELL - SURVEYS						Out of range
Williams 9-20 - KMG WELL - SURVEYS						Out of range
Woolley 41-7 - CPR WELL - GYRO	14,209.12	7,516.28	1,513.27	1,430.80	18.349	CC, ES, SF
Woolley 42-7 KPK - KPK WELL - SURVEYS						Out of range

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## Cathedral Energy Services

### Anticollision Report

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<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 4993.00usft
<b>Reference Site:</b>	S32-T2N-R68W	<b>MD Reference:</b>	23' KB @ 4993.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	FILE 3B-32H-K268	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<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