

Crestone Peak Resources

DJ BASIN

S25-T1N-R66W (LOCHBUIE LAND)

LOCHBUIE LAND 2B-25H-D166

OH

PLAN #1

Anticollision Summary Report

25 May, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well LOCHBUIE LAND 2B-25H-D166 - Slot LOCHBUIE LAND 2B-25H-D166 SHL
Project:	DJ BASIN	TVD Reference:	KB @ 5101.00usft
Reference Site:	S25-T1N-R66W (LOCHBUIE LAND)	MD Reference:	KB @ 5101.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	LOCHBUIE LAND 2B-25H-D166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Reference	PLAN #1		
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 1,933.21 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	5/25/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	2,000.00	PLAN #1 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	12,113.63	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
S25-T1N-R66W (LOCHBUIE LAND)						
AZUL 13-11HZ - KMG WELL - PLAN ONLY	8,963.72	12,171.49	754.26	676.57	9.709	CC, ES
AZUL 13-11HZ - KMG WELL - PLAN ONLY	9,400.00	12,171.49	871.35	765.52	8.234	SF
AZUL 13-12HZ - KMG WELL - PLAN ONLY	9,248.74	12,521.28	739.15	650.56	8.343	CC, ES
AZUL 13-12HZ - KMG WELL - PLAN ONLY	9,700.00	12,521.28	866.02	752.74	7.645	SF
AZUL 13-19HZ - KMG WELL - PLAN ONLY	10,500.00	12,512.25	754.59	621.35	5.664	SF
AZUL 13-19HZ - KMG WELL - PLAN ONLY	10,600.00	12,512.25	747.93	616.76	5.702	ES
AZUL 13-19HZ - KMG WELL - PLAN ONLY	10,600.03	12,512.25	747.93	616.76	5.702	CC
AZUL 13-1HZ - KMG WELL - PLAN ONLY	7,458.53	12,639.08	743.08	683.89	12.554	CC
AZUL 13-1HZ - KMG WELL - PLAN ONLY	7,500.00	12,639.08	744.55	683.01	12.099	ES
AZUL 13-1HZ - KMG WELL - PLAN ONLY	7,900.00	12,639.08	888.47	798.13	9.835	SF
AZUL 13-20HZ - KMG WELL - PLAN ONLY	10,292.51	12,681.44	721.00	598.06	5.865	CC, ES
AZUL 13-20HZ - KMG WELL - PLAN ONLY	10,500.00	12,681.44	750.26	621.05	5.806	SF
AZUL 13-21HZ - KMG WELL - PLAN ONLY	10,059.41	12,502.03	734.00	621.29	6.512	CC, ES
AZUL 13-21HZ - KMG WELL - PLAN ONLY	10,400.00	12,502.03	809.17	680.18	6.273	SF
AZUL 13-22HZ - KMG WELL - PLAN ONLY	9,829.63	12,413.56	746.82	642.77	7.178	CC, ES
AZUL 13-22HZ - KMG WELL - PLAN ONLY	10,200.00	12,413.56	833.61	708.77	6.677	SF
AZUL 13-23HZ - KMG WELL - PLAN ONLY	9,580.52	12,625.16	720.72	622.14	7.312	CC
AZUL 13-23HZ - KMG WELL - PLAN ONLY	9,600.00	12,625.16	720.98	621.64	7.257	ES
AZUL 13-23HZ - KMG WELL - PLAN ONLY	9,900.00	12,625.16	788.35	668.25	6.564	SF
AZUL 13-24HZ - KMG WELL - SURVEYS	12,113.63	13,242.00	838.21	620.54	3.851	CC, ES, SF
AZUL 13-25HZ - KMG WELL - SURVEYS	12,113.63	13,364.00	735.21	522.16	3.451	CC, ES, SF
AZUL 13-26HZ - KMG WELL - SURVEYS	11,800.00	12,966.00	754.05	562.03	3.927	SF
AZUL 13-26HZ - KMG WELL - SURVEYS	11,900.00	12,966.00	746.08	557.20	3.950	ES
AZUL 13-26HZ - KMG WELL - SURVEYS	11,909.78	12,966.00	746.01	557.53	3.958	CC
AZUL 13-27HZ - KMG WELL - SURVEYS	11,500.00	12,904.00	769.12	596.30	4.450	SF
AZUL 13-27HZ - KMG WELL - SURVEYS	11,576.75	12,904.00	765.28	594.94	4.493	CC, ES
AZUL 13-28HZ - KMG WELL - SURVEYS	11,200.00	12,857.00	726.53	562.97	4.442	SF
AZUL 13-28HZ - KMG WELL - SURVEYS	11,252.09	12,857.00	724.66	562.49	4.469	CC, ES
AZUL 13-29HZ - KMG WELL - SURVEYS	10,800.00	12,714.00	750.53	602.15	5.058	SF
AZUL 13-29HZ - KMG WELL - SURVEYS	10,936.05	12,714.00	738.09	592.96	5.086	CC, ES
AZUL 13-2HZ - KMG WELL - PLAN ONLY	7,687.56	12,395.56	734.84	677.89	12.902	CC
AZUL 13-2HZ - KMG WELL - PLAN ONLY	7,700.00	12,395.56	734.98	677.35	12.755	ES
AZUL 13-2HZ - KMG WELL - PLAN ONLY	8,200.00	12,395.56	912.73	816.08	9.444	SF
AZUL 13-3HZ - KMG WELL - PLAN ONLY	7,900.44	12,283.07	753.92	702.05	14.535	CC
AZUL 13-3HZ - KMG WELL - PLAN ONLY	8,000.00	12,283.07	758.66	701.15	13.191	ES

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

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well LOCHBUIE LAND 2B-25H-D166 - Slot LOCHBUIE LAND 2B-25H-D166 SHL
Project:	DJ BASIN	TVD Reference:	KB @ 5101.00usft
Reference Site:	S25-T1N-R66W (LOCHBUIE LAND)	MD Reference:	KB @ 5101.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	LOCHBUIE LAND 2B-25H-D166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	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
S25-T1N-R66W (LOCHBUIE LAND)						
AZUL 13-3HZ - KMG WELL - PLAN ONLY	8,500.00	12,283.07	943.29	844.22	9.522	SF
AZUL 13-4HZ - KMG WELL - PLAN ONLY	8,283.77	12,546.66	742.77	682.12	12.247	CC
AZUL 13-4HZ - KMG WELL - PLAN ONLY	8,300.00	12,546.66	742.94	681.57	12.106	ES
AZUL 13-4HZ - KMG WELL - PLAN ONLY	8,800.00	12,546.66	904.54	802.93	8.902	SF
AZUL 13-9HZ - KMG WELL - PLAN ONLY	8,620.58	12,663.20	726.97	656.45	10.308	CC, ES
AZUL 13-9HZ - KMG WELL - PLAN ONLY	9,100.00	12,663.20	870.82	764.80	8.214	SF
BEIERLE 2 - KMG WELL - SURVEYS	0.00	4.94	1,545.94			
BEIERLE 2 - KMG WELL - SURVEYS	300.00	301.52	1,546.28	1,545.47	1,922.963	ES
BEIERLE 2 - KMG WELL - SURVEYS	3,000.00	2,558.30	1,910.67	1,901.45	207.259	SF
CRONIN 2 - RITTER OIL - NO SURVEYS	939.82	795.00	1,563.33	1,559.09	368.924	CC, ES
CRONIN 2 - RITTER OIL - NO SURVEYS	1,700.00	795.00	1,738.35	1,732.82	314.502	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	200.00	10.00	9.51	20.283	CC, ES
LOCHBUIE LAND 2A-25H-D166 - OH - PLAN #1	12,113.63	11,963.97	265.16	28.39	1.120	Level 2, SF
LOCHBUIE LAND 2C-25H-D166 - OH - PLAN #1	225.20	225.43	4.63	4.05	7.996	CC, ES
LOCHBUIE LAND 2C-25H-D166 - OH - PLAN #1	12,113.63	11,864.05	262.62	127.49	1.943	SF
LOCHBUIE LAND 2D-25H-D166 - OH - PLAN #1	300.00	301.00	20.00	19.15	23.508	CC, ES
LOCHBUIE LAND 2D-25H-D166 - OH - PLAN #1	12,113.63	11,911.57	526.51	241.16	1.845	SF
LOCHBUIE LAND 2E-25H-D166 - OH - PLAN #1	300.00	301.00	30.00	29.15	35.261	CC, ES
LOCHBUIE LAND 2E-25H-D166 - OH - PLAN #1	12,113.63	11,847.40	799.27	512.53	2.787	SF
LOCHBUIE LAND 2F-25H-D166 - OH - PLAN #1	300.00	301.00	40.00	39.15	47.015	CC, ES
LOCHBUIE LAND 2F-25H-D166 - OH - PLAN #1	12,113.63	12,086.84	829.83	528.81	2.757	SF
LOCHBUIE LAND 2G-25H-D166 - OH - PLAN #1	200.00	199.00	50.00	49.51	101.781	CC, ES
LOCHBUIE LAND 2G-25H-D166 - OH - PLAN #1	12,113.63	11,756.16	1,157.59	868.79	4.008	SF
LOCHBUIE LAND 2H-25H-D166 - OH - PLAN #1	200.00	199.00	60.00	59.51	122.137	CC, ES
LOCHBUIE LAND 2H-25H-D166 - OH - PLAN #1	12,113.63	11,918.36	1,170.24	872.31	3.928	SF
LOCHBUIE LAND 2I-25H-D166 - OH - PLAN #1	200.00	198.00	70.00	69.51	143.012	CC, ES
LOCHBUIE LAND 2I-25H-D166 - OH - PLAN #1	12,113.63	11,876.29	1,441.88	1,144.59	4.850	SF
LOCHBUIE LAND 2J-25H-D166 - OH - PLAN #1	200.00	198.00	80.00	79.51	163.442	CC, ES
LOCHBUIE LAND 2J-25H-D166 - OH - PLAN #1	12,110.04	12,142.08	1,659.64	1,358.38	5.509	SF
LOCHBUIE LAND 2K-25H-D166 - OH - PLAN #1	200.00	198.00	90.00	89.51	183.872	CC, ES
LOCHBUIE LAND 2K-25H-D166 - OH - PLAN #1	12,113.63	11,989.80	1,825.66	1,525.61	6.085	SF
LOCHBUIE LAND 2L-25H-D166 - OH - PLAN #1	200.00	198.00	100.00	99.51	204.303	CC, ES
LOCHBUIE LAND 2L-25H-D166 - OH - PLAN #1	6,800.00	6,506.51	1,925.22	1,890.01	54.680	SF
SAM 13-25 - CPR WELL - SURVEYS						Out of range
TEMPLIN 1 - VESSELS THOMAS G - SURVEYS	11,530.03	7,528.85	698.99	551.13	4.727	CC, ES
TEMPLIN 1 - VESSELS THOMAS G - SURVEYS	11,600.00	7,528.56	702.48	553.28	4.708	SF

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Reference Site:	S25-T1N-R66W (LOCHBUIE LAND)	MD Reference:	KB @ 5101.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	LOCHBUIE LAND 2B-25H-D166	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Summary						
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S25-T1N-R66W (SAM)						
SAM 3A-25H-M166 - OH - PLAN #2						Out of range
SAM 3A-25H-M166 - OH - SURVEYS						Out of range
SAM 3B-25H-M166 - OH - PLAN #2						Out of range
SAM 3B-25H-M166 - OH - SURVEYS						Out of range
SAM 3C-25H-M166 - OH - PLAN #2						Out of range
SAM 3C-25H-M166 - OH - SURVEYS						Out of range
SAM 3D-25H-M166 - OH - PLAN #2						Out of range
SAM 3E-25H-M166 - OH - PLAN #2						Out of range
SAM 3F-25H-M166 - OH - PLAN #2						Out of range
SAM 3F-25H-M166 - OH - SURVEYS						Out of range
SAM 3G-25H-M166 - OH - PLAN #1						Out of range
SAM 3H-25H-M166 - OH - PLAN #2						Out of range
SAM 3I-25H-M166 - OH - PLAN #3						Out of range
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

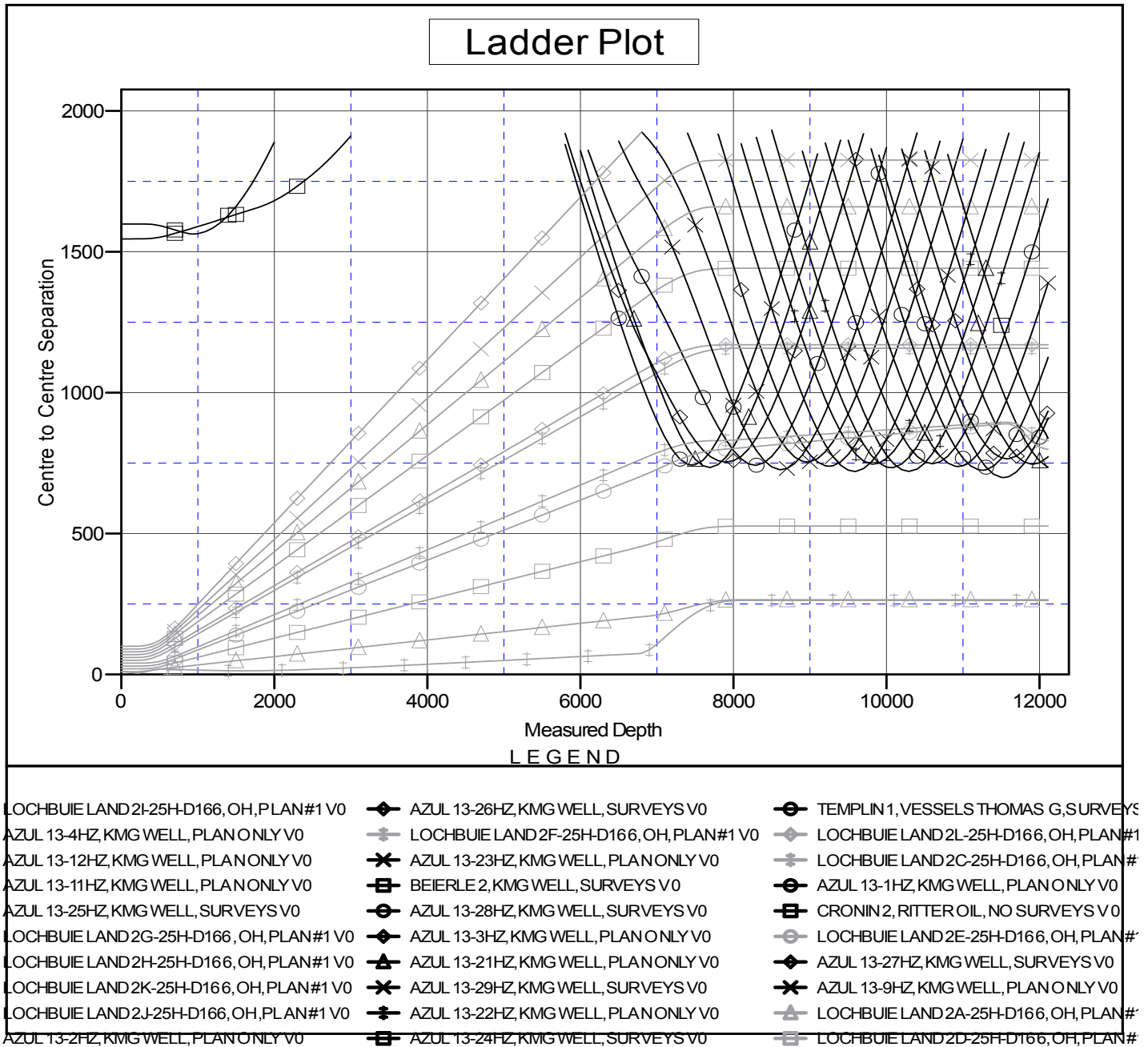
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Site Error:	0.00 usft	North Reference:	True
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Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 5101.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: LOCHBUIE LAND 2B-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

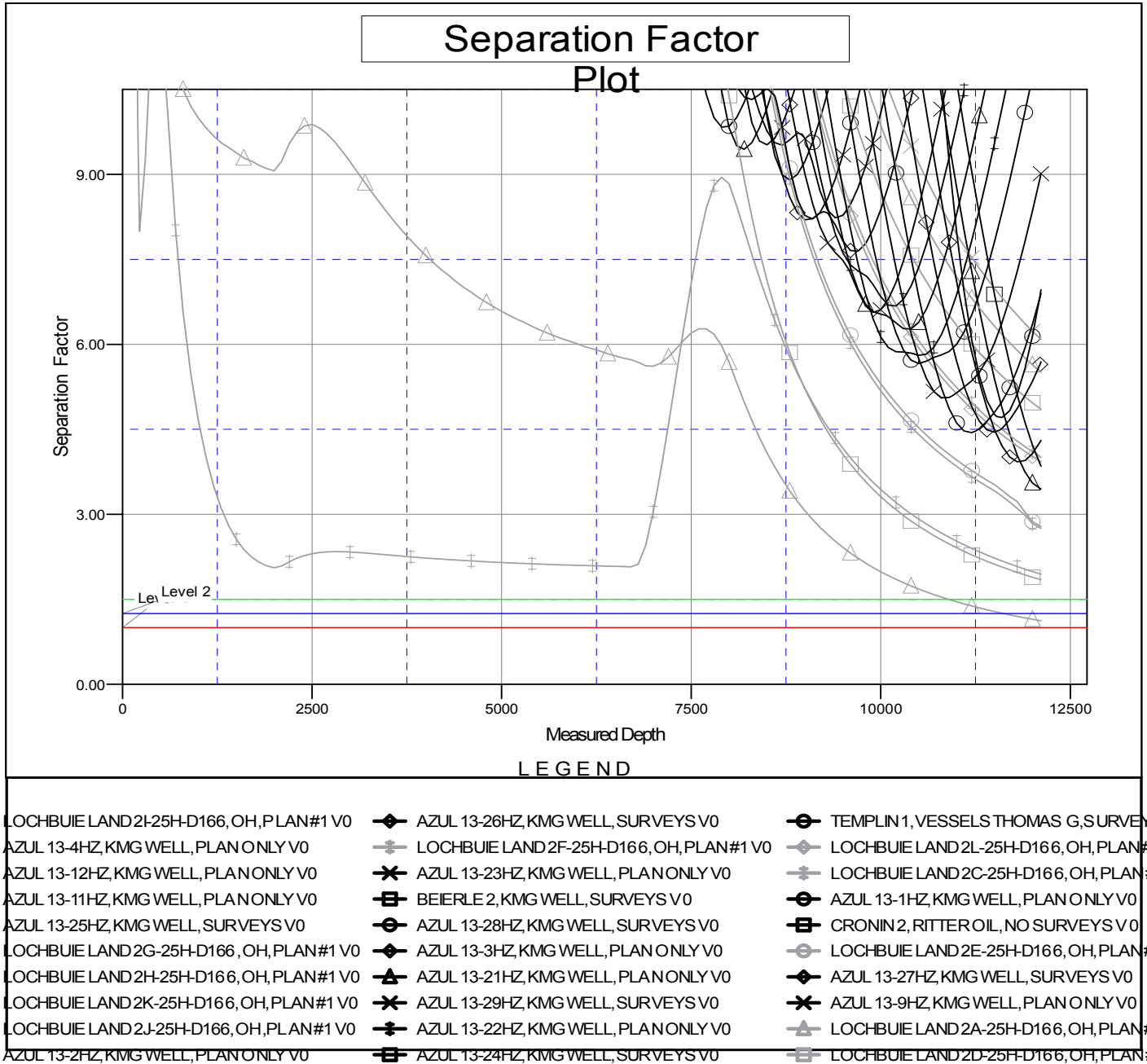
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Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 5101.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: LOCHBUIE LAND 2B-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