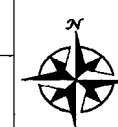


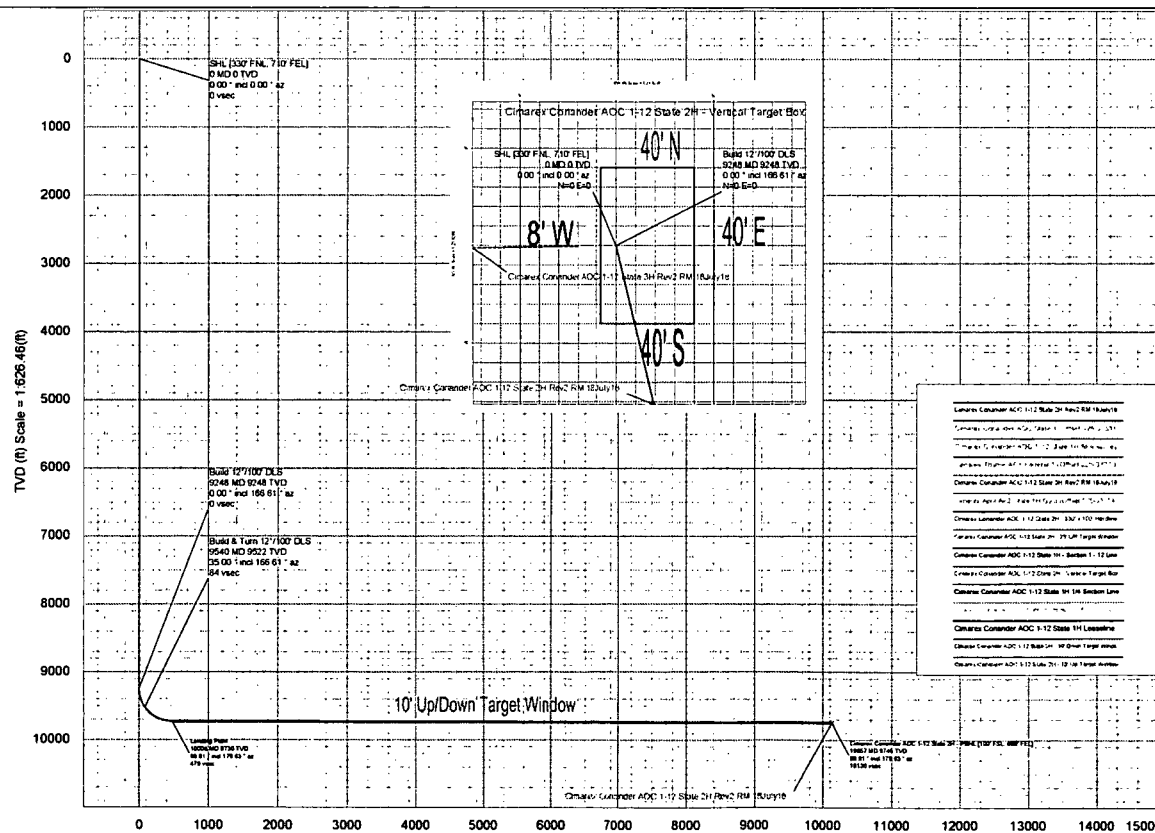
Borehole:				Well:				Field:				Structure:																			
Original Borehole				Cimarex Coriander AOC 1-12 State 2H				NM Lea County (NAD 83)				Cimarex Coriander AOC 1-12 State 2H																			
Gravity & Magnetic Parameters								Surface Location								NAD83 New Mexico State Plane, Eastern Zone, US Feet															
Model:		HDM 2018		Dip:		60.114°		Date:		30-Jul-2018		Lat:		N 32 30 34.55		Nothing:		482008.76US		Grid Conv:		0.3808°		Miscellaneous:		Cimarex Coriander AOC 1-12 State 2H		TYD Ref:		RKB(3777' above MSL)	
MagDec:		6.800°		FS:		48087.045mT		Gravity FS:		988.438m/s² (9.80665 Based)		Lon:		W 103 37 19.48		Easting:		761004.17US		Scale Fact:		0.99998435		Plan:		Cimarex Coriander AOC 1-12 State 2H Rev2 RM 18July18					

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(=)S(-)	E(=)W(-)	DLS
SHL [330° FNL 710° FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Build 12°/100' DLS	9248.06	0.00	166.61	9248.06	0.00	0.00	0.00	0.00
Build & Turn 12°/100' DLS	9539.72	35.00	166.61	9521.92	84.13	-84.00	20.00	12.00
Landing Point	10005.87	89.91	179.63	9730.00	479.35	-479.00	55.33	12.00
Cimarex Coriander AOC 1-12 State 2H - PBHL [100° FSL, 660° FEL]	19656.66	89.91	179.63	9745.00	10130.13	-10129.58	117.80	0.00

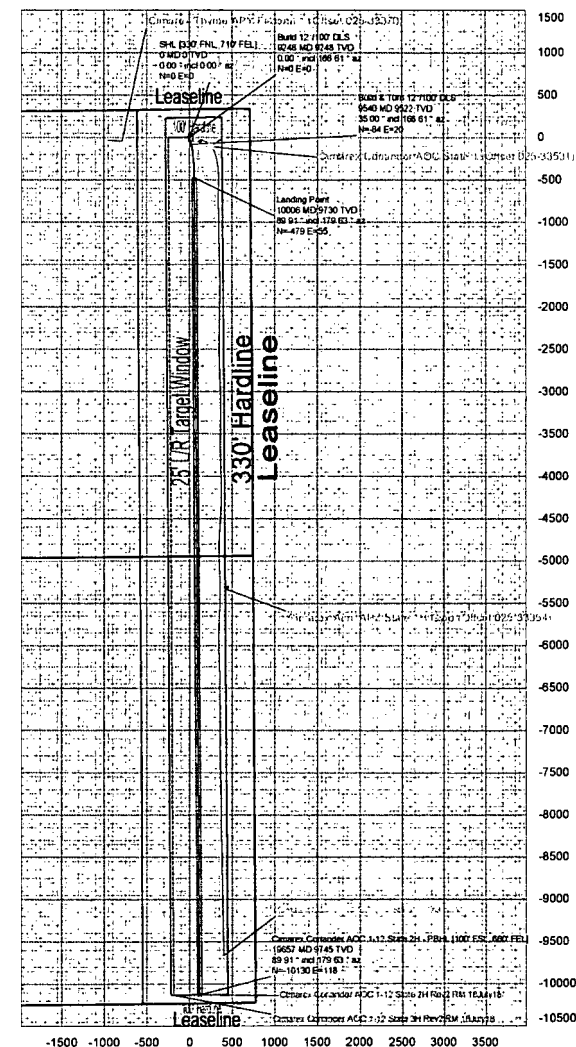


Grid North
Tot Corr (M→G 6 427")
Mag Dec (6.808")
Grid Conv (0.380")

CONTROLLED	
Drawn by	Cimarex Coriander AOC 1-12 State 2H Rev2 RM 18July18
Checked by	
Scale	as is
Date	30-Jul-2018
1. Name	
2. Class	
3. Office	
4. Office	
5. Office	
6. Office	
7. Office	
8. Office	
9. Office	
10. Office	



NS (ft) Scale = 1:504.17 (ft)



Cimarex Coriander AOC 1-12 State 2H Rev2 RM 18July18 Anti-Collision Summary Report

Analysis Date-24hr Time: July 30, 2018 - 10:19
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure: Cimarex Coriander AOC 1-12 State 2H
 Slot: Cimarex Coriander AOC 1-12 State 2H
 Well: Cimarex Coriander AOC 1-12 State 2H
 Borehole: Original Borehole
 Scan MD Range: 0.00ft - 19656.66ft

Analysis Method: 3D Least Distance
 Reference Trajectory: Cimarex Coriander AOC 1-12 State 2H Rev2 RM 18July18 (Def Plan)
 Depth Interval: Every 10.00 Measured Depth (ft)
 Rule Set: NAL Procedure: D&M AntiCollision Standard S002
 Min Pts: All local minima indicated.
 Version / Patch: 2.10.706.0
 Database \ Project: US1153APP452.dir.slb.com\drilling-NM Lea County 2.10

ISCWSAO 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Trajectory Error Model:

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan:

Selection filters:

Not performed!

Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status	
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major			
Cimarex Coriander AOC State 1 (Offset 025-33531) (Def Survey)														Fail Major
370.90	32.81	368.40	338.09	N/A		MAS = 10.00 (m)	0.00	0.00					Surface	
369.66	32.81	367.03	336.85	2989.63		MAS = 10.00 (m)	20.00	20.00					MinPt-O-SF	
369.49	32.81	366.91	336.69	4267.13		MAS = 10.00 (m)	26.00	26.00					WRP	
353.28	107.98	280.46	245.31	4.99		OSF1.50	1920.00	1920.00	OSF<5.00				Enter Alert	
308.56	308.67	101.93	-0.11	1.50		OSF1.50	4920.00	4920.00		OSF<1.50			Enter Minor	
286.65	428.93	-0.16	-142.28	1.00		OSF1.50	6780.00	6780.00			OSF<1.00		Enter Major	
267.28	571.44	-114.54	-304.16	0.70		OSF1.50	9150.00	9150.00					MinPts	
312.59	480.21	-8.38	-167.62	0.97		OSF1.50	9320.00	9319.73			OSF>1.00		Exit Major	
368.96	380.41	114.52	-11.45	1.45		OSF1.50	9430.00	9425.63		OSF>1.50			Exit Minor	
822.07	401.62	553.49	420.45	3.08		OSF1.50	10190.00	9730.29					MinPt-O-SF	
1789.84	538.77	1429.83	1251.08	5.00		OSF1.50	11320.00	9732.04	OSF>5.00				Exit Alert	
10038.55	570.42	9657.44	9468.13	26.51		OSF1.50	19656.66	9745.00					TD	
Cimarex Coriander AOC 1-12 State 3H Rev2 RM 18July18 (Def Plan)														Fail Minor
20.00	16.50	17.50	3.50	N/A		MAS = 5.03 (m)	0.00	0.00	CI<15m<15.00				Enter Alert	
20.00	16.50	17.50	3.50	7877.76		MAS = 5.03 (m)	26.00	26.00					WRP	
20.00	20.01	5.83	-0.01	1.50		OSF1.50	1920.00	1920.00		OSF<1.50			Enter Minor	
20.00	25.38	2.25	-5.38	1.15		OSF1.50	2490.00	2490.00					MinPt-CtCt	
20.02	25.54	2.16	-5.52	1.14		OSF1.50	2510.00	2510.00					MinPts	
20.08	25.61	2.17	-5.54	1.14		OSF1.50	2520.00	2520.00					MinPt-O-ADP	
26.32	26.58	7.77	-0.26	1.48		OSF1.50	2690.00	2690.00		OSF>1.50			Exit Minor	
97.95	31.29	76.25	66.66	4.97		OSF1.50	3490.00	3490.00	OSF>5.00				Exit Alert	
247.47	76.04	195.94	171.43	5.00		OSF1.50	8950.00	8950.00	OSF<5.00				Enter Alert	
247.48	77.20	195.18	170.28	4.92		OSF1.50	9090.00	9090.00					MINPT-O-EOU	
247.49	77.22	195.18	170.28	4.92		OSF1.50	9100.00	9100.00					MinPt-O-ADP	
247.62	77.28	195.27	170.34	4.92		OSF1.50	9140.00	9140.00					MinPt-O-SF	
251.02	77.33	198.63	173.69	4.98		OSF1.50	9260.00	9260.00	OSF>5.00				Exit Alert	
353.24	107.98	280.42	245.26	4.99		OSF1.50	12660.00	9734.12	OSF<5.00				Enter Alert	
347.75	318.01	134.91	29.74	1.64		OSF1.50	19656.66	9745.00					MinPts	
Cimarex Coriander AOC 1-12 State 1H final survey (Def Survey)														Fail Minor
133.97	32.81	131.47	101.16	N/A		MAS = 10.00 (m)	0.00	0.00					Surface	
133.89	32.81	131.38	101.08	17816.79		MAS = 10.00 (m)	26.00	26.00					WRP	
108.78	32.81	93.13	75.97	8.08		MAS = 10.00 (m)	2980.00	2980.00					MinPts	
108.85	32.81	93.06	76.05	8.01		MAS = 10.00 (m)	3010.00	3010.00					MINPT-O-EOU	
128.21	32.81	107.61	95.40	6.95		MAS = 10.00 (m)	4130.00	4130.00					MinPt-O-SF	
132.91	32.81	110.68	100.11	6.61		MAS = 10.00 (m)	4500.00	4500.00					MinPts	
133.00	32.81	110.59	100.19	6.56		MAS = 10.00 (m)	4540.00	4540.00					MINPT-O-EOU	
143.72	38.54	117.19	105.18	5.88		OSF1.50	5440.00	5440.00					MinPt-CtCt	
144.45	40.16	116.85	104.29	5.65		OSF1.50	5690.00	5690.00					MINPT-O-EOU	
144.91	40.68	116.95	104.23	5.59		OSF1.50	5770.00	5770.00					MinPt-O-ADP	
146.29	45.70	114.99	100.59	4.99		OSF1.50	6510.00	6510.00	OSF<5.00				Enter Alert	
129.12	61.68	87.17	67.44	3.21		OSF1.50	8930.00	8930.00					MinPt-CtCt	
129.15	61.74	87.15	67.40	3.21		OSF1.50	8940.00	8940.00					MinPts	
129.33	61.87	87.25	67.46	3.20		OSF1.50	8960.00	8960.00					MinPt-O-SF	
188.74	59.41	148.30	129.32	4.91		OSF1.50	9240.00	9240.00	OSF>5.00				Exit Alert	
324.91	78.79	271.55	246.12	6.34		OSF1.50	11020.00	9731.58					MinPt-CtCt	
318.28	97.49	252.45	220.78	4.99		OSF1.50	11560.00	9732.42	OSF<5.00				Enter Alert	
313.43	110.89	238.67	202.53	4.30		OSF1.50	11940.00	9733.01					MinPt-CtCt	
317.32	119.58	236.77	197.74	4.03		OSF1.50	12180.00	9733.38					MINPT-O-EOU	
322.90	155.91	218.02	166.89	3.13		OSF1.50	13120.00	9734.84					MinPt-CtCt	
324.42	161.09	216.19	163.33	3.04		OSF1.50	13260.00	9735.06					MINPT-O-EOU	
305.74	201.01	170.90	104.73	2.29		OSF1.50	14320.00	9736.71					MinPt-CtCt	
310.26	211.90	168.16	98.36	2.20		OSF1.50	14610.00	9737.16					MINPT-O-EOU	
316.69	223.83	166.64	92.86	2.13		OSF1.50	14890.00	9737.59					MINPT-O-EOU	
302.20	241.88	140.11	60.31	1.88		OSF1.50	15430.00	9738.43					MinPt-CtCt	
306.66	267.21	127.69	39.45	1.72		OSF1.50	15990.00	9739.30					MinPt-CtCt	
308.20	280.04	120.67	28.16	1.65		OSF1.50	16330.00	9739.83					MinPt-CtCt	
307.75	291.51	112.58	16.24	1.58		OSF1.50	16630.00	9740.30					MinPt-CtCt	
311.08	310.42	103.31	0.67	1.50		OSF1.50	17050.00	9740.95					MinPt-CtCt	
311.09	311.37	102.68	-0.28	1.50		OSF1.50	17070.00	9740.98		OSF<1.50			Enter Minor	
318.27	334.33	94.55	-16.06	1.43		OSF1.50	17640.00	9741.87					MinPt-CtCt	
320.67	340.16	93.07	-19.48	1.41		OSF1.50	17800.00	9742.11					MINPT-O-EOU	
325.97	355.91	87.86	-29.94	1.37		OSF1.50	18160.00	9742.67					MinPt-CtCt	
332.42	386.89	73.66	-54.47	1.29		OSF1.50	18890.00	9743.81					MINPT-O-EOU	
332.97	387.62	73.72	-54.65	1.29		OSF1.50	18910.00	9743.84					MinPt-O-SF	
333.63	388.31	73.92	-54.66	1.29		OSF1.50	18930.00	9743.87					MinPt-O-ADP	
336.22	399.22	69.24	-63.00	1.26		OSF1.50	19200.00	9744.29					MinPts	
369.16	370.37	121.41	-1.21	1.50		OSF1.50	19350.00	9744.52	OSF>1.50				Exit Minor	
569.06	253.29	399.36	315.77	3.39		OSF1.50	19656.66	9745.00					TD	
Cimarex April APZ State 1H Gyro (Offset 025-33354) (Def Survey)														
5310.19	32.81	5308.71	5277.38	N/A		MAS = 10.00 (m)	0.00	0.00					Warning Alert	
5310.01	32.81	5308.52	5277.21	282238.51		MAS = 10.00 (m)	26.00	26.00					Surface	
													MinPt-O-SF	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	CI-CI (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
5309.97	32.81	5308.44	5277.16	99164.91	MAS = 10.00 (m)	50.00	50.00					MinPts	
5310.06	32.81	5302.18	5277.25	829.10	MAS = 10.00 (m)	1500.00	1500.00					MinPts	
5314.30	32.81	5295.75	5281.49	311.24	MAS = 10.00 (m)	3850.00	3850.00					MinPts	
5314.40	32.81	5295.63	5281.60	307.28	MAS = 10.00 (m)	3900.00	3900.00					MINPT-O-EQU	
5325.53	34.93	5301.75	5290.59	238.72	OSF1.50	4960.00	4960.00					MINPT-O-EQU	
5312.74	46.91	5280.97	5265.82	175.35	OSF1.50	6860.00	6860.00					MinPt-CICl	
5312.76	47.46	5280.63	5265.30	173.26	OSF1.50	6940.00	6940.00					MinPt-CICl	
5313.38	52.05	5278.19	5261.33	157.57	OSF1.50	7610.00	7610.00					MinPt-CICl	
5313.48	53.06	5277.61	5260.42	154.49	OSF1.50	7760.00	7760.00					MinPt-CICl	
5314.67	59.00	5274.84	5255.67	138.56	OSF1.50	8650.00	8650.00					MinPt-CICl	
5315.24	60.60	5274.34	5254.64	134.82	OSF1.50	8890.00	8890.00					MINPT-O-EQU	
5315.55	61.00	5274.39	5254.55	133.92	OSF1.50	8950.00	8950.00					MinPt-O-ADP	
5319.23	63.05	5276.71	5256.19	129.56	OSF1.50	9300.00	9299.90					MinPt-O-SF	
375.64	116.15	287.12	259.49	4.95	OSF1.50	14750.00	9737.37	OSF<5.00				Enter Alert	
363.78	119.33	283.70	244.45	4.81	OSF1.50	14840.00	9737.51					MinPt-CICl	
363.81	119.48	283.67	244.33	4.61	OSF1.50	14850.00	9737.53					MinPts	
364.12	119.65	283.86	244.47	4.60	OSF1.50	14860.00	9737.54					MinPt-O-SF	
385.05	117.44	306.26	267.60	4.96	OSF1.50	14970.00	9737.72	OSF>5.00				Exit Alert	
4826.20	65.21	4782.23	4760.99	113.55	OSF1.50	19656.66	9745.00					TD	

Cimarex Thyme APY Federal 1
(Offset 025-33370) (Del
Survey)

Warning Alert

951.81	32.81	949.31	919.00	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
951.60	32.81	949.07	918.79	34483.74	MAS = 10.00 (m)	10.00	10.00					MinPt-O-SF	
951.48	32.81	948.96	918.67	50120.04	MAS = 10.00 (m)	26.00	26.00					WRP	
891.58	269.28	711.21	622.30	5.00	OSF1.50	4600.00	4600.00	OSF<5.00				Enter Alert	
810.96	564.14	433.98	246.83	2.16	OSF1.50	9290.00	9289.95					MinPt-CICl	
812.83	570.21	431.80	242.62	2.14	OSF1.50	9390.00	9387.92					MINPT-O-EQU	
814.30	571.96	432.10	242.34	2.14	OSF1.50	9420.00	9416.31					MinPt-O-ADP	
817.08	574.24	433.36	242.84	2.14	OSF1.50	9460.00	9453.11					MinPt-O-SF	
1964.81	591.38	1569.73	1373.43	5.00	OSF1.50	11340.00	9732.07	OSF>5.00				Exit Alert	
10122.13	593.25	9725.79	9528.88	25.70	OSF1.50	19656.66	9745.00					TD	