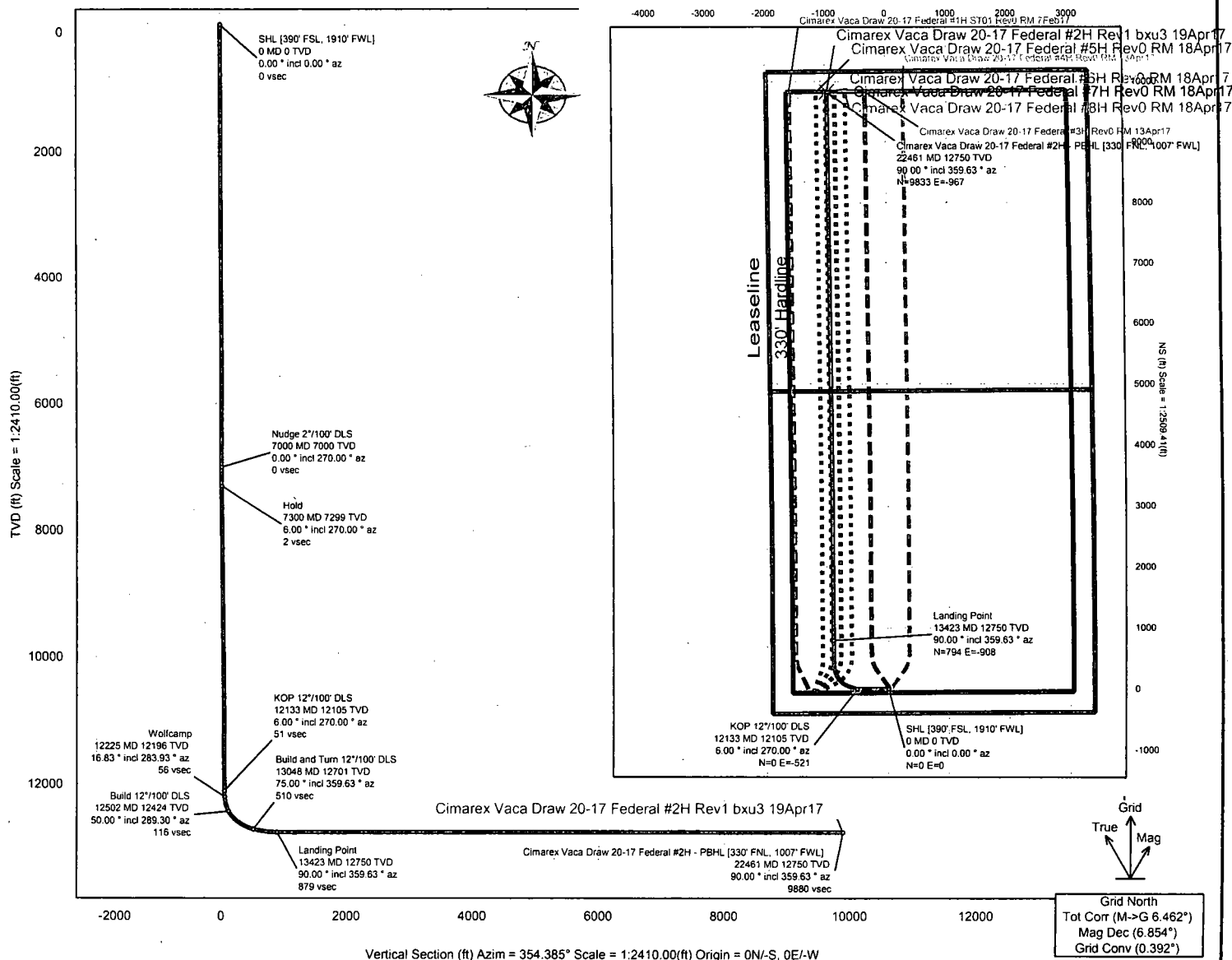


Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Vaca Draw 20-17 Federal #2H	NM Lea County (NAD 83)	Cimarex Vaca Draw 20-17 Federal #2H

Gravity & Magnetic Parameters				Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HGDM 2016	Dip:	59.638°	Date:	13-Apr-2017	Lat:	N 32 6 36.88	Northing:	404499.3110US	Grid Conv:	0.3916°
MagDec:	6.854°	FS:	48017.1nT	Gravity FS:	996.43mgn (9.80665 Based)	Lon:	W 103 35 48.05	Eastings:	769421.1910US	Scale Fact:	0.99996867
								Slot: Cimarex Vaca Draw 20-17 Federal #2H Rev1 bxu3 19Apr17			
								Plan: Cimarex Vaca Draw 20-17 Federal #2H Rev1 bxu3 19Apr17			

EW (ft) Scale = 1:2509.41(ft)



Vertical Section (ft) Azim = 354.385° Scale = 1:2410.00(ft) Origin = 0N/-S, 0E/-W

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [390' FSL, 1910' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Nudge 2°/100' DLS	7000.00	0.00	270.00	7000.00	0.00	0.00	0.00	0.00
Hold	7300.00	6.00	270.00	7299.45	1.54	0.00	-15.69	2.00
KOP 12°/100' DLS	12132.50	6.00	270.00	12105.48	50.96	0.00	-520.83	0.00
Wolfcamp	12224.97	16.83	283.93	12196.00	55.93	3.23	-538.71	12.00
Build 12°/100' DLS	12502.25	50.00	289.30	12424.27	115.79	49.30	-681.95	12.00
Build and Turn 12°/100' DLS	13047.70	75.00	359.63	12700.92	509.96	423.37	-905.71	12.00
Landing Point	13422.65	90.00	359.63	12749.73	879.09	794.05	-908.11	4.00
Cimarex Vaca Draw 20-17 Federal #2H - PBHL [330° FNL, 1007' FWL]	22461.36	90.00	359.63	12750.00	9879.98	9832.57	-966.73	0.00

Cimarex Vaca Draw 20-17 Federal #2H Rev1 bxu3 19Apr17 Anti-Collision Summary Report

Analysis Date-24hr Time: April 21, 2017 - 10:39

Client: Cimarex

Field: NM Lea County (NAD 83)

Structure: Cimarex Vaca Draw 20-17 Federal #2H

Slot: Cimarex Vaca Draw 20-17 Federal #2H

Well: Cimarex Vaca Draw 20-17 Federal #2H

Borehole: Original Borehole

Scan MD Range: 0.00ft ~ 22461.36ft

Analysis Method: 3D Least Distance

Reference Trajectory: Cimarex Vaca Draw 20-17 Federal #2H Rev1 bxu3 19Apr17 (Non-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: 2.10.254.0

Database \ Project: us1153APP452.dir.slb.com\drilling-NM Lea County 2.10

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Not performed!

Selection filters: 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		

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Vaca Draw 20-17

Federal #3H Rev0 RM

13Apr17 (Non-Def Plan)

Fail Major

20.02	16.52	17.52	3.51	N/A	MAS = 5.03 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
20.02	16.52	17.52	3.50	N/A	MAS = 5.03 (m)	24.00	24.00					WRP	
20.02	20.11	5.78	-0.09	1.49	OSF1.50	1930.00	1930.00		OSF<1.50			Enter Minor	
20.02	28.87	-0.06	-8.85	1.00	OSF1.50	2860.00	2860.00			OSF<1.00		Enter Major	
20.02	67.90	-26.08	-47.88	0.40	OSF1.50	7000.00	7000.00					MinPt-CtCt	
20.04	67.97	-26.11	-47.93	0.40	OSF1.50	7010.00	7010.00					MinPts	
20.09	68.04	-26.10	-47.95	0.40	OSF1.50	7020.00	7020.00					MinPt-O-ADP	
47.21	70.13	-0.38	-22.92	0.99	OSF1.50	7410.00	7408.85			OSF>1.00		Exit Major	
71.25	71.32	22.87	-0.07	1.50	OSF1.50	7640.00	7637.59		OSF>1.50			Exit Minor	
269.86	82.82	213.81	187.04	4.99	OSF1.50	9540.00	9527.18	OSF>5.00				Exit Alert	
464.57	101.83	395.85	362.74	6.98	OSF1.50	12220.00	12191.23					MinPt-CtCt	
464.83	102.65	395.56	362.17	6.92	OSF1.50	12240.00	12210.32					MinPts	
468.35	104.10	398.12	364.25	6.88	OSF1.50	12280.00	12247.65					MinPt-O-SF	
722.59	96.56	657.38	626.03	11.48	OSF1.50	13050.00	12701.51					MinPt-CtCt	
735.54	222.45	586.40	513.08	5.00	OSF1.50	16500.00	12749.82	OSF<5.00				Enter Alert	
732.47	522.28	383.45	210.19	2.11	OSF1.50	22461.36	12750.00					MinPts	

Cimarex Vaca Draw 20-17

Federal #4H Rev0 RM

13Apr17 (Non-Def Plan)

Fail Major

39.99	32.49	37.49	7.50	N/A	MAS = 9.90 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
39.98	32.49	37.48	7.50	N/A	MAS = 9.90 (m)	24.00	24.00					WRP	
39.98	40.00	12.49	-0.01	1.50	OSF1.50	4040.00	4040.00		OSF<1.50			Enter Minor	
39.98	58.75	-0.02	-18.77	1.00	OSF1.50	6030.00	6030.00			OSF<1.00		Enter Major	

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 Vaca Draw 20-17 Federal #5H Rev0 RM 18Apr17 (Non-Def Plan)														Warning Alert
	1241.29	32.81	1238.79	1208.48	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
	1241.29	32.81	1238.78	1208.48	111510.42	MAS = 10.00 (m)	24.00	24.00					WRP	
	405.76	97.14	339.71	308.62	6.46	OSF1.50	12680.00	12535.61					MinPt-O-SF	
	375.26	83.00	318.76	292.26	7.01	OSF1.50	12810.00	12607.81					MinPt-O-ADP	
	373.35	80.56	318.50	292.79	7.19	OSF1.50	12830.00	12617.81					MINPT-O-EOU	
	371.49	74.59	320.68	296.90	7.74	OSF1.50	12880.00	12641.25					MinPt-CtCt	
	429.33	130.66	341.35	298.67	5.00	OSF1.50	15600.00	12749.79	OSF<5.00				Enter Alert	
	422.82	378.06	169.89	44.76	1.68	OSF1.50	22461.36	12750.00					MinPts	
Cimarex Vaca Draw 20-17 Federal #1H ST01 Rev0 RM 7Feb17 (Non-Def Plan)														Warning Alert
	1319.82	32.81	1317.32	1287.01	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
	1319.82	32.81	1317.31	1287.01	116254.41	MAS = 10.00 (m)	24.00	24.00					WRP	
	814.69	101.83	745.54	712.85	12.40	OSF1.50	12080.00	12053.27					MinPts	
	662.63	94.45	598.42	568.17	10.89	OSF1.50	12760.00	12581.40					MinPt-O-SF	
	659.28	93.74	595.57	565.55	10.92	OSF1.50	12820.00	12612.85					MinPts	
	659.27	93.65	595.61	565.61	10.93	OSF1.50	12830.00	12617.81					MinPt-CtCt	
	740.67	224.92	589.56	515.76	4.99	OSF1.50	16330.00	12749.82	OSF<5.00				Enter Alert	
	737.32	531.26	381.97	206.06	2.09	OSF1.50	22461.36	12750.00					MinPts	
Cimarex Vaca Draw 20-17 Federal #1H Rev0 RM 10Apr17 (Non-Def Plan)														Pass
	1319.82	32.81	1317.32	1287.01	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
	1319.82	32.81	1317.31	1287.01	116254.41	MAS = 10.00 (m)	24.00	24.00					WRP	
	512.07	110.69	436.84	401.38	7.16	OSF1.50	12810.00	12607.81					MinPt-CtCt	
	512.12	110.87	436.78	401.25	7.15	OSF1.50	12820.00	12612.85					MinPts	
	513.22	111.23	437.66	401.99	7.14	OSF1.50	12840.00	12622.68					MinPt-O-SF	
	9848.42	121.55	9766.55	9726.87	124.06	OSF1.50	22461.36	12750.00					TD	

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		
39.98	67.90	-6.12	-27.92	0.86		OSF1.50	7000.00	7000.00				MinPt-CICl	
40.00	67.97	-6.15	-27.97	0.86		OSF1.50	7010.00	7010.00				MinPts	
40.05	68.04	-6.14	-27.99	0.86		OSF1.50	7020.00	7020.00				MinPt-O-ADP	
46.28	69.04	-0.58	-22.76	0.99		OSF1.50	7190.00	7189.86			OSF>1.00	Exit Major	
69.26	70.23	21.61	-0.97	1.48		OSF1.50	7430.00	7428.74		OSF>1.50		Exit Minor	
264.73	81.22	209.75	183.51	5.00		OSF1.50	9300.00	9288.50	OSF>5.00			Exit Alert	
1310.50	395.30	1046.13	915.19	4.99		OSF1.50	19340.00	12749.91	OSF<5.00			Enter Alert	
1309.71	566.34	931.32	743.37	3.48		OSF1.50	22461.36	12750.00				MinPts	

Cimarex Vaca Draw 20-17
Federal #8H Rev0 RM
18Apr17 (Non-Def Plan)

Warning Alert												
1181.34	32.81	1178.84	1148.54	N/A		MAS = 10.00 (m)	0.00	0.00				Surface
1181.34	32.81	1178.83	1148.54	110536.13		MAS = 10.00 (m)	24.00	24.00				WRP
707.06	99.71	639.36	607.35	10.99		OSF1.50	11700.00	11675.35				MinPts
308.55	95.29	243.78	213.26	4.99		OSF1.50	12200.00	12171.92	OSF<5.00			Enter Alert
188.30	103.21	118.28	85.09	2.78		OSF1.50	12440.00	12381.27				MinPt-O-SF
183.75	99.58	116.19	84.17	2.81		OSF1.50	12460.00	12395.72				MinPt-O-ADP
181.96	97.38	115.90	84.58	2.85		OSF1.50	12470.00	12402.72				MINPT-O-EQU
178.28	86.26	119.76	92.02	3.16		OSF1.50	12510.00	12429.25				MinPt-CICl
187.98	61.49	146.16	126.49	4.72		OSF1.50	12580.00	12473.97	OSF>5.00			Exit Alert
464.45	72.56	415.24	391.89	9.89		OSF1.50	13090.00	12711.26				MinPt-O-SF
469.10	73.26	419.42	395.84	9.89		OSF1.50	13110.00	12715.73				MinPt-O-SF
494.45	150.34	393.39	344.10	4.99		OSF1.50	15660.00	12749.79	OSF<5.00			Enter Alert
488.96	434.53	198.44	54.43	1.69		OSF1.50	22461.36	12750.00				MinPts

Cimarex Vaca Draw 20-17
Federal #7H Rev0 RM
18Apr17 (Non-Def Plan)

Warning Alert												
1201.31	32.81	1198.81	1168.50	N/A		MAS = 10.00 (m)	0.00	0.00				Surface
1201.31	32.81	1198.80	1168.50	114800.12		MAS = 10.00 (m)	24.00	24.00				WRP
717.61	100.43	649.42	617.18	11.07		OSF1.50	11790.00	11764.86				MinPts
349.56	108.03	276.21	241.52	4.98		OSF1.50	12380.00	12334.64	OSF<5.00			Enter Alert
280.39	100.48	212.18	179.91	4.29		OSF1.50	12530.00	12442.09				MinPt-O-SF
262.96	90.87	201.27	172.10	4.45		OSF1.50	12590.00	12480.28				MinPt-O-ADP
259.38	86.64	200.55	172.74	4.61		OSF1.50	12610.00	12492.83				MINPT-O-EQU
256.25	79.47	202.28	176.79	4.97		OSF1.50	12640.00	12511.41	OSF>5.00			Exit Alert
255.69	74.28	205.24	181.41	5.31		OSF1.50	12660.00	12523.60				MinPt-CICl
375.73	45.50	344.56	330.23	13.02		OSF1.50	13090.00	12711.26				MinPt-O-SF
409.29	124.68	325.34	284.62	4.99		OSF1.50	16000.00	12749.81	OSF<5.00			Enter Alert
402.93	341.87	174.18	61.05	1.77		OSF1.50	22461.36	12750.00				MinPts

Cimarex Vaca Draw 20-17
Federal #6H Rev0 RM
18Apr17 (Non-Def Plan)

Warning Alert												
1221.29	32.81	1218.79	1188.48	N/A		MAS = 10.00 (m)	0.00	0.00				Surface
1221.29	32.81	1218.78	1188.48	105490.68		MAS = 10.00 (m)	24.00	24.00				WRP
728.11	101.07	659.48	627.04	11.16		OSF1.50	11880.00	11854.36				MinPts
341.96	97.98	275.39	243.98	5.38		OSF1.50	12610.00	12492.83				MinPt-O-SF
316.94	84.86	259.28	232.09	5.77		OSF1.50	12700.00	12547.41				MinPt-O-ADP
313.88	81.22	258.65	232.65	5.98		OSF1.50	12720.00	12558.99				MINPT-O-EQU
309.99	69.52	262.68	240.47	6.91		OSF1.50	12780.00	12592.19				MinPt-CICl
391.71	119.50	311.22	272.22	4.99		OSF1.50	16180.00	12749.81	OSF<5.00			Enter Alert
385.15	311.82	176.44	73.33	1.86		OSF1.50	22461.36	12750.00				MinPts

Cimarex Vaca Draw 20-17 Federal #2H Rev1 bxu3 19Apr17 Proposal

Geodetic Report

(Non-Def Plan)



Report Date: April 21, 2017 - 10:36 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Vaca Draw 20-17 Federal #2H / Cimarex Vaca Draw 20-17 Federal #2H
Well: Cimarex Vaca Draw 20-17 Federal #2H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Vaca Draw 20-17 Federal #2H Rev1 bxu3 19Apr17
Survey Date: April 13, 2017
Tort / AHD / DDI / ERD Ratio: 130.822 ° / 10563.390 ft / 6.386 / 0.829
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 6' 35.65902", W 103° 35' 48.04794"
Location Grid N/E Y/X: N 404499.310 ftUS, E 769421.190 ftUS
CRS Grid Convergence Angle: 0.3916 °
Grid Scale Factor: 0.99996867
Version / Patch: 2.10.254.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 354.385 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3442.200 ft above MSL
Seabed / Ground Elevation: 3418.200 ft above MSL
Magnetic Declination: 6.854 °
Total Gravity Field Strength: 998.4302mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48017.100 nT
Magnetic Dip Angle: 59.838 °
Declination Date: April 13, 2017
Magnetic Declination Model: HDGM 2016
North Reference: Grid North
Grid Convergence Used: 0.3916 °
Total Corr Mag North->Grid North: 6.4623 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [390' FSL, 1910' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	100.00	0.00	270.00	100.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	200.00	0.00	270.00	200.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	300.00	0.00	270.00	300.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	400.00	0.00	270.00	400.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	500.00	0.00	270.00	500.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	600.00	0.00	270.00	600.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	700.00	0.00	270.00	700.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	800.00	0.00	270.00	800.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	900.00	0.00	270.00	900.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1000.00	0.00	270.00	1000.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1100.00	0.00	270.00	1100.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1200.00	0.00	270.00	1200.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1300.00	0.00	270.00	1300.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1400.00	0.00	270.00	1400.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1500.00	0.00	270.00	1500.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1600.00	0.00	270.00	1600.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1700.00	0.00	270.00	1700.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1800.00	0.00	270.00	1800.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	1900.00	0.00	270.00	1900.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	2000.00	0.00	270.00	2000.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	2100.00	0.00	270.00	2100.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	2200.00	0.00	270.00	2200.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	2300.00	0.00	270.00	2300.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	2400.00	0.00	270.00	2400.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	
	2500.00	0.00	270.00	2500.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W 103 35 48.05	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2600.00	0.00	270.00	2600.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	2700.00	0.00	270.00	2700.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	2800.00	0.00	270.00	2800.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	2900.00	0.00	270.00	2900.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3000.00	0.00	270.00	3000.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3100.00	0.00	270.00	3100.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3200.00	0.00	270.00	3200.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3300.00	0.00	270.00	3300.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3400.00	0.00	270.00	3400.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3500.00	0.00	270.00	3500.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3600.00	0.00	270.00	3600.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3700.00	0.00	270.00	3700.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3800.00	0.00	270.00	3800.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	3900.00	0.00	270.00	3900.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4000.00	0.00	270.00	4000.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4100.00	0.00	270.00	4100.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4200.00	0.00	270.00	4200.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4300.00	0.00	270.00	4300.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4400.00	0.00	270.00	4400.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4500.00	0.00	270.00	4500.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4600.00	0.00	270.00	4600.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4700.00	0.00	270.00	4700.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4800.00	0.00	270.00	4800.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	4900.00	0.00	270.00	4900.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5000.00	0.00	270.00	5000.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5100.00	0.00	270.00	5100.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5200.00	0.00	270.00	5200.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5300.00	0.00	270.00	5300.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5400.00	0.00	270.00	5400.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5500.00	0.00	270.00	5500.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5600.00	0.00	270.00	5600.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5700.00	0.00	270.00	5700.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5800.00	0.00	270.00	5800.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	5900.00	0.00	270.00	5900.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6000.00	0.00	270.00	6000.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6100.00	0.00	270.00	6100.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6200.00	0.00	270.00	6200.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6300.00	0.00	270.00	6300.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6400.00	0.00	270.00	6400.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6500.00	0.00	270.00	6500.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6600.00	0.00	270.00	6600.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6700.00	0.00	270.00	6700.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6800.00	0.00	270.00	6800.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
	6900.00	0.00	270.00	6900.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
Nudge 2"/100'	7000.00	0.00	270.00	7000.00	0.00	0.00	0.00	0.00	404499.31	769421.19	N 32 6 35.66 W	103 35 48.05
DLS	7100.00	2.00	270.00	7099.98	0.17	0.00	-1.75	2.00	404499.31	769419.44	N 32 6 35.66 W	103 35 48.07
	7200.00	4.00	270.00	7199.84	0.68	0.00	-6.98	2.00	404499.31	769414.21	N 32 6 35.66 W	103 35 48.13
Hold	7300.00	6.00	270.00	7299.45	1.54	0.00	-15.69	2.00	404499.31	769405.50	N 32 6 35.66 W	103 35 48.23
	7400.00	6.00	270.00	7398.90	2.56	0.00	-26.15	0.00	404499.31	769395.04	N 32 6 35.66 W	103 35 48.35
	7500.00	6.00	270.00	7498.36	3.58	0.00	-36.60	0.00	404499.31	769384.59	N 32 6 35.66 W	103 35 48.47
	7600.00	6.00	270.00	7597.81	4.60	0.00	-47.05	0.00	404499.31	769374.14	N 32 6 35.66 W	103 35 48.59
	7700.00	6.00	270.00	7697.26	5.63	0.00	-57.50	0.00	404499.31	769363.69	N 32 6 35.66 W	103 35 48.72
	7800.00	6.00	270.00	7796.71	6.65	0.00	-67.96	0.00	404499.31	769353.23	N 32 6 35.66 W	103 35 48.84
	7900.00	6.00	270.00	7896.17	7.67	0.00	-78.41	0.00	404499.31	769342.78	N 32 6 35.66 W	103 35 48.96
	8000.00	6.00	270.00	7995.62	8.70	0.00	-88.86	0.00	404499.31	769332.33	N 32 6 35.67 W	103 35 49.08
	8100.00	6.00	270.00	8095.07	9.72	0.00	-99.32	0.00	404499.31	769321.88	N 32 6 35.67 W	103 35 49.20
	8200.00	6.00	270.00	8194.52	10.74	0.00	-109.77	0.00	404499.31	769311.42	N 32 6 35.67 W	103 35 49.32
	8300.00	6.00	270.00	8293.97	11.76	0.00	-120.22	0.00	404499.31	769300.97	N 32 6 35.67 W	103 35 49.45

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	8400.00	6.00	270.00	8393.43	12.79	0.00	-130.67	0.00	404499.31	769290.52	N 32 6 35.67 W	103 35 49.57
	8500.00	6.00	270.00	8492.88	13.81	0.00	-141.13	0.00	404499.31	769280.07	N 32 6 35.67 W	103 35 49.69
	8600.00	6.00	270.00	8592.33	14.83	0.00	-151.58	0.00	404499.31	769269.61	N 32 6 35.67 W	103 35 49.81
	8700.00	6.00	270.00	8691.78	15.85	0.00	-162.03	0.00	404499.31	769259.16	N 32 6 35.67 W	103 35 49.93
	8800.00	6.00	270.00	8791.23	16.88	0.00	-172.49	0.00	404499.31	769248.71	N 32 6 35.67 W	103 35 50.05
	8900.00	6.00	270.00	8890.69	17.90	0.00	-182.94	0.00	404499.31	769238.26	N 32 6 35.67 W	103 35 50.17
	9000.00	6.00	270.00	8990.14	18.92	0.00	-193.39	0.00	404499.31	769227.80	N 32 6 35.67 W	103 35 50.30
	9100.00	6.00	270.00	9089.59	19.95	0.00	-203.84	0.00	404499.31	769217.35	N 32 6 35.67 W	103 35 50.42
	9200.00	6.00	270.00	9189.04	20.97	0.00	-214.30	0.00	404499.31	769206.90	N 32 6 35.67 W	103 35 50.54
	9300.00	6.00	270.00	9288.50	21.99	0.00	-224.75	0.00	404499.31	769196.45	N 32 6 35.67 W	103 35 50.66
	9400.00	6.00	270.00	9387.95	23.01	0.00	-235.20	0.00	404499.31	769185.99	N 32 6 35.67 W	103 35 50.78
	9500.00	6.00	270.00	9487.40	24.04	0.00	-245.66	0.00	404499.31	769175.54	N 32 6 35.68 W	103 35 50.90
	9600.00	6.00	270.00	9586.85	25.06	0.00	-256.11	0.00	404499.31	769165.09	N 32 6 35.68 W	103 35 51.03
	9700.00	6.00	270.00	9686.30	26.08	0.00	-266.56	0.00	404499.31	769154.64	N 32 6 35.68 W	103 35 51.15
	9800.00	6.00	270.00	9785.76	27.11	0.00	-277.01	0.00	404499.31	769144.18	N 32 6 35.68 W	103 35 51.27
	9900.00	6.00	270.00	9885.21	28.13	0.00	-287.47	0.00	404499.31	769133.73	N 32 6 35.68 W	103 35 51.39
	10000.00	6.00	270.00	9984.66	29.15	0.00	-297.92	0.00	404499.31	769123.28	N 32 6 35.68 W	103 35 51.51
	10100.00	6.00	270.00	10084.11	30.17	0.00	-308.37	0.00	404499.31	769112.83	N 32 6 35.68 W	103 35 51.63
	10200.00	6.00	270.00	10183.57	31.20	0.00	-318.83	0.00	404499.31	769102.37	N 32 6 35.68 W	103 35 51.75
	10300.00	6.00	270.00	10283.02	32.22	0.00	-329.28	0.00	404499.31	769091.92	N 32 6 35.68 W	103 35 51.88
	10400.00	6.00	270.00	10382.47	33.24	0.00	-339.73	0.00	404499.31	769081.47	N 32 6 35.68 W	103 35 52.00
	10500.00	6.00	270.00	10481.92	34.26	0.00	-350.18	0.00	404499.31	769071.02	N 32 6 35.68 W	103 35 52.12
	10600.00	6.00	270.00	10581.37	35.29	0.00	-360.64	0.00	404499.31	769060.56	N 32 6 35.68 W	103 35 52.24
	10700.00	6.00	270.00	10680.83	36.31	0.00	-371.09	0.00	404499.31	769050.11	N 32 6 35.68 W	103 35 52.36
	10800.00	6.00	270.00	10780.28	37.33	0.00	-381.54	0.00	404499.31	769039.66	N 32 6 35.68 W	103 35 52.48
	10900.00	6.00	270.00	10879.73	38.36	0.00	-392.00	0.00	404499.31	769029.21	N 32 6 35.69 W	103 35 52.61
	11000.00	6.00	270.00	10979.18	39.38	0.00	-402.45	0.00	404499.31	769018.75	N 32 6 35.69 W	103 35 52.73
	11100.00	6.00	270.00	11078.64	40.40	0.00	-412.90	0.00	404499.31	769008.30	N 32 6 35.69 W	103 35 52.85
	11200.00	6.00	270.00	11178.09	41.42	0.00	-423.35	0.00	404499.31	768997.85	N 32 6 35.69 W	103 35 52.97
	11300.00	6.00	270.00	11277.54	42.45	0.00	-433.81	0.00	404499.31	768987.40	N 32 6 35.69 W	103 35 53.09
	11400.00	6.00	270.00	11376.99	43.47	0.00	-444.26	0.00	404499.31	768976.94	N 32 6 35.69 W	103 35 53.21
	11500.00	6.00	270.00	11476.44	44.49	0.00	-454.71	0.00	404499.31	768966.49	N 32 6 35.69 W	103 35 53.33
	11600.00	6.00	270.00	11575.90	45.52	0.00	-465.17	0.00	404499.31	768956.04	N 32 6 35.69 W	103 35 53.46
	11700.00	6.00	270.00	11675.35	46.54	0.00	-475.62	0.00	404499.31	768945.59	N 32 6 35.69 W	103 35 53.58
	11800.00	6.00	270.00	11774.80	47.56	0.00	-486.07	0.00	404499.31	768935.13	N 32 6 35.69 W	103 35 53.70
	11900.00	6.00	270.00	11874.25	48.58	0.00	-496.52	0.00	404499.31	768924.68	N 32 6 35.69 W	103 35 53.82
	12000.00	6.00	270.00	11973.70	49.61	0.00	-506.98	0.00	404499.31	768914.23	N 32 6 35.69 W	103 35 53.94
	12100.00	6.00	270.00	12073.16	50.63	0.00	-517.43	0.00	404499.31	768903.78	N 32 6 35.69 W	103 35 54.06
KOP 12°/100'	12132.50	6.00	270.00	12105.48	50.96	0.00	-520.83	0.00	404499.31	768900.38	N 32 6 35.69 W	103 35 54.10
DLS	12200.00	13.86	282.29	12171.92	53.80	1.72	-532.28	12.00	404501.03	768888.93	N 32 6 35.71 W	103 35 54.24
Wolfcamp	12224.97	16.83	283.93	12196.00	55.93	3.23	-538.71	12.00	404502.54	768882.50	N 32 6 35.73 W	103 35 54.31
	12300.00	25.78	286.62	12265.83	65.76	10.53	-564.94	12.00	404509.84	768856.27	N 32 6 35.80 W	103 35 54.62
	12400.00	37.75	288.32	12350.70	86.48	26.43	-615.02	12.00	404525.74	768806.19	N 32 6 35.96 W	103 35 55.20
	12500.00	49.73	289.28	12422.82	115.06	48.73	-680.33	12.00	404548.04	768740.89	N 32 6 36.19 W	103 35 55.95
Build 12°/100'	12502.25	50.00	289.30	12424.27	115.79	49.30	-681.95	12.00	404548.61	768739.26	N 32 6 36.19 W	103 35 55.97
DLS	12600.00	51.13	304.44	12486.57	156.19	83.31	-748.91	12.00	404582.62	768672.31	N 32 6 36.53 W	103 35 56.75
	12700.00	54.21	319.04	12547.41	214.53	136.14	-807.82	12.00	404635.45	768613.40	N 32 6 37.06 W	103 35 57.43
	12800.00	58.90	332.30	12602.68	287.56	204.93	-854.48	12.00	404704.23	768566.74	N 32 6 37.74 W	103 35 57.97
	12900.00	64.81	344.16	12649.96	372.06	286.66	-886.85	12.00	404785.96	768534.37	N 32 6 38.56 W	103 35 58.34
	13000.00	71.57	354.85	12687.20	464.36	377.76	-903.53	12.00	404877.06	768517.69	N 32 6 39.46 W	103 35 58.52
Build and Turn	13047.70	75.00	359.63	12700.92	509.96	423.37	-905.71	12.00	404922.66	768515.51	N 32 6 39.91 W	103 35 58.54
12°/100' DLS	13100.00	77.09	359.63	12713.53	560.50	474.12	-906.04	4.00	404973.42	768515.18	N 32 6 40.41 W	103 35 58.54
	13200.00	81.09	359.63	12732.45	658.26	572.29	-906.67	4.00	405071.59	768514.55	N 32 6 41.38 W	103 35 58.54
	13300.00	85.09	359.63	12744.48	757.10	671.55	-907.31	4.00	405170.83	768513.91	N 32 6 42.37 W	103 35 58.54
	13400.00	89.09	359.63	12749.55	856.54	771.40	-907.96	4.00	405270.68	768513.26	N 32 6 43.35 W	103 35 58.54
Landing Point	13422.65	90.00	359.63	12749.73	879.09	794.05	-908.11	4.00	405293.33	768513.11	N 32 6 43.58 W	103 35 58.54

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (RUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	13500.00	90.00	359.63	12749.73	956.12	871.39	-908.61	0.00	405370.67	768512.61	N 32 6 44.34 W	103 35 58.54
	13600.00	90.00	359.63	12749.73	1055.70	971.39	-909.26	0.00	405470.67	768511.96	N 32 6 45.33 W	103 35 58.54
	13700.00	90.00	359.63	12749.74	1155.28	1071.39	-909.91	0.00	405570.66	768511.31	N 32 6 46.32 W	103 35 58.54
	13800.00	90.00	359.63	12749.74	1254.86	1171.39	-910.55	0.00	405670.66	768510.67	N 32 6 47.31 W	103 35 58.54
	13900.00	90.00	359.63	12749.74	1354.44	1271.38	-911.20	0.00	405770.65	768510.02	N 32 6 48.30 W	103 35 58.54
	14000.00	90.00	359.63	12749.74	1454.02	1371.38	-911.85	0.00	405870.65	768509.37	N 32 6 49.29 W	103 35 58.54
	14100.00	90.00	359.63	12749.75	1553.61	1471.38	-912.50	0.00	405970.64	768508.72	N 32 6 50.28 W	103 35 58.54
	14200.00	90.00	359.63	12749.75	1653.19	1571.38	-913.15	0.00	406070.64	768508.07	N 32 6 51.27 W	103 35 58.54
	14300.00	90.00	359.63	12749.75	1752.77	1671.38	-913.80	0.00	406170.63	768507.42	N 32 6 52.26 W	103 35 58.54
	14400.00	90.00	359.63	12749.76	1852.35	1771.37	-914.45	0.00	406270.62	768506.77	N 32 6 53.25 W	103 35 58.54
	14500.00	90.00	359.63	12749.76	1951.93	1871.37	-915.09	0.00	406370.62	768506.13	N 32 6 54.24 W	103 35 58.54
	14600.00	90.00	359.63	12749.76	2051.51	1971.37	-915.74	0.00	406470.61	768505.48	N 32 6 55.23 W	103 35 58.54
	14700.00	90.00	359.63	12749.77	2151.09	2071.37	-916.39	0.00	406570.61	768504.83	N 32 6 56.22 W	103 35 58.54
	14800.00	90.00	359.63	12749.77	2250.68	2171.36	-917.04	0.00	406670.60	768504.18	N 32 6 57.21 W	103 35 58.54
	14900.00	90.00	359.63	12749.77	2350.26	2271.36	-917.69	0.00	406770.60	768503.53	N 32 6 58.20 W	103 35 58.54
	15000.00	90.00	359.63	12749.77	2449.84	2371.36	-918.34	0.00	406870.59	768502.88	N 32 6 59.19 W	103 35 58.54
	15100.00	90.00	359.63	12749.78	2549.42	2471.36	-918.99	0.00	406970.59	768502.23	N 32 7 0.18 W	103 35 58.54
	15200.00	90.00	359.63	12749.78	2649.00	2571.36	-919.63	0.00	407070.58	768501.59	N 32 7 1.16 W	103 35 58.54
	15300.00	90.00	359.63	12749.78	2748.58	2671.35	-920.28	0.00	407170.58	768500.94	N 32 7 2.15 W	103 35 58.54
	15400.00	90.00	359.63	12749.79	2848.16	2771.35	-920.93	0.00	407270.57	768500.29	N 32 7 3.14 W	103 35 58.54
	15500.00	90.00	359.63	12749.79	2947.75	2871.35	-921.58	0.00	407370.56	768499.64	N 32 7 4.13 W	103 35 58.53
	15600.00	90.00	359.63	12749.79	3047.33	2971.35	-922.23	0.00	407470.56	768498.99	N 32 7 5.12 W	103 35 58.53
	15700.00	90.00	359.63	12749.80	3146.91	3071.35	-922.88	0.00	407570.55	768498.34	N 32 7 6.11 W	103 35 58.53
	15800.00	90.00	359.63	12749.80	3246.49	3171.34	-923.53	0.00	407670.55	768497.69	N 32 7 7.10 W	103 35 58.53
	15900.00	90.00	359.63	12749.80	3346.07	3271.34	-924.17	0.00	407770.54	768497.05	N 32 7 8.09 W	103 35 58.53
	16000.00	90.00	359.63	12749.81	3445.65	3371.34	-924.82	0.00	407870.54	768496.40	N 32 7 9.08 W	103 35 58.53
	16100.00	90.00	359.63	12749.81	3545.24	3471.34	-925.47	0.00	407970.53	768495.75	N 32 7 10.07 W	103 35 58.53
	16200.00	90.00	359.63	12749.81	3644.82	3571.34	-926.12	0.00	408070.53	768495.10	N 32 7 11.06 W	103 35 58.53
	16300.00	90.00	359.63	12749.81	3744.40	3671.33	-926.77	0.00	408170.52	768494.45	N 32 7 12.05 W	103 35 58.53
	16400.00	90.00	359.63	12749.82	3843.98	3771.33	-927.42	0.00	408270.52	768493.80	N 32 7 13.04 W	103 35 58.53
	16500.00	90.00	359.63	12749.82	3943.56	3871.33	-928.07	0.00	408370.51	768493.15	N 32 7 14.03 W	103 35 58.53
	16600.00	90.00	359.63	12749.82	4043.14	3971.33	-928.72	0.00	408470.50	768492.51	N 32 7 15.02 W	103 35 58.53
	16700.00	90.00	359.63	12749.83	4142.72	4071.32	-929.36	0.00	408570.50	768491.86	N 32 7 16.01 W	103 35 58.53
	16800.00	90.00	359.63	12749.83	4242.31	4171.32	-930.01	0.00	408670.49	768491.21	N 32 7 17.00 W	103 35 58.53
	16900.00	90.00	359.63	12749.83	4341.89	4271.32	-930.66	0.00	408770.49	768490.56	N 32 7 17.99 W	103 35 58.53
	17000.00	90.00	359.63	12749.84	4441.47	4371.32	-931.31	0.00	408870.48	768489.91	N 32 7 18.98 W	103 35 58.53
	17100.00	90.00	359.63	12749.84	4541.05	4471.32	-931.96	0.00	408970.48	768489.26	N 32 7 19.97 W	103 35 58.53
	17200.00	90.00	359.63	12749.84	4640.63	4571.31	-932.61	0.00	409070.47	768488.61	N 32 7 20.96 W	103 35 58.53
	17300.00	90.00	359.63	12749.84	4740.21	4671.31	-933.26	0.00	409170.47	768487.97	N 32 7 21.95 W	103 35 58.53
	17400.00	90.00	359.63	12749.85	4839.79	4771.31	-933.90	0.00	409270.46	768487.32	N 32 7 22.93 W	103 35 58.53
	17500.00	90.00	359.63	12749.85	4939.38	4871.31	-934.55	0.00	409370.46	768486.67	N 32 7 23.92 W	103 35 58.53
	17600.00	90.00	359.63	12749.85	5038.96	4971.31	-935.20	0.00	409470.45	768486.02	N 32 7 24.91 W	103 35 58.53
	17700.00	90.00	359.63	12749.86	5138.54	5071.30	-935.85	0.00	409570.44	768485.37	N 32 7 25.90 W	103 35 58.53
	17800.00	90.00	359.63	12749.86	5238.12	5171.30	-936.50	0.00	409670.44	768484.72	N 32 7 26.89 W	103 35 58.53
	17900.00	90.00	359.63	12749.86	5337.70	5271.30	-937.15	0.00	409770.43	768484.07	N 32 7 27.88 W	103 35 58.53
	18000.00	90.00	359.63	12749.87	5437.28	5371.30	-937.80	0.00	409870.43	768483.43	N 32 7 28.87 W	103 35 58.53
	18100.00	90.00	359.63	12749.87	5536.87	5471.30	-938.44	0.00	409970.42	768482.78	N 32 7 29.86 W	103 35 58.53
	18200.00	90.00	359.63	12749.87	5636.45	5571.29	-939.09	0.00	410070.42	768482.13	N 32 7 30.85 W	103 35 58.52
	18300.00	90.00	359.63	12749.87	5736.03	5671.29	-939.74	0.00	410170.41	768481.48	N 32 7 31.84 W	103 35 58.52
	18400.00	90.00	359.63	12749.88	5835.61	5771.29	-940.39	0.00	410270.41	768480.83	N 32 7 32.83 W	103 35 58.52
	18500.00	90.00	359.63	12749.88	5935.19	5871.29	-941.04	0.00	410370.40	768480.18	N 32 7 33.82 W	103 35 58.52
	18600.00	90.00	359.63	12749.88	6034.77	5971.29	-941.69	0.00	410470.40	768479.53	N 32 7 34.81 W	103 35 58.52
	18700.00	90.00	359.63	12749.89	6134.35	6071.28	-942.34	0.00	410570.39	768478.89	N 32 7 35.80 W	103 35 58.52
	18800.00	90.00	359.63	12749.89	6233.94	6171.28	-942.98	0.00	410670.39	768478.24	N 32 7 36.79 W	103 35 58.52
	18900.00	90.00	359.63	12749.89	6333.52	6271.28	-943.63	0.00	410770.38	768477.59	N 32 7 37.78 W	103 35 58.52
	19000.00	90.00	359.63	12749.90	6433.10	6371.28	-944.28	0.00	410870.37	768476.94	N 32 7 38.77 W	103 35 58.52
	19100.00	90.00	359.63	12749.90	6532.68	6471.27	-944.93	0.00	410970.37	768476.29	N 32 7 39.76 W	103 35 58.52
	19200.00	90.00	359.63	12749.90	6632.26	6571.27	-945.58	0.00	411070.36	768475.64	N 32 7 40.75 W	103 35 58.52
	19300.00	90.00	359.63	12749.90	6731.84	6671.27	-946.23	0.00	411170.36	768474.99	N 32 7 41.74 W	103 35 58.52

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	19400.00	90.00	359.63	12749.91	6831.43	6771.27	-946.88	0.00	411270.35	768474.35	N 32 7 42.73 W	103 35 58.52
	19500.00	90.00	359.63	12749.91	6931.01	6871.27	-947.52	0.00	411370.35	768473.70	N 32 7 43.71 W	103 35 58.52
	19600.00	90.00	359.63	12749.91	7030.59	6971.26	-948.17	0.00	411470.34	768473.05	N 32 7 44.70 W	103 35 58.52
	19700.00	90.00	359.63	12749.92	7130.17	7071.26	-948.82	0.00	411570.34	768472.40	N 32 7 45.69 W	103 35 58.52
	19800.00	90.00	359.63	12749.92	7229.75	7171.26	-949.47	0.00	411670.33	768471.75	N 32 7 46.68 W	103 35 58.52
	19900.00	90.00	359.63	12749.92	7329.33	7271.26	-950.12	0.00	411770.33	768471.10	N 32 7 47.67 W	103 35 58.52
	20000.00	90.00	359.63	12749.93	7428.91	7371.26	-950.77	0.00	411870.32	768470.45	N 32 7 48.66 W	103 35 58.52
	20100.00	90.00	359.63	12749.93	7528.50	7471.25	-951.42	0.00	411970.31	768469.81	N 32 7 49.65 W	103 35 58.52
	20200.00	90.00	359.63	12749.93	7628.08	7571.25	-952.06	0.00	412070.31	768469.16	N 32 7 50.64 W	103 35 58.52
	20300.00	90.00	359.63	12749.93	7727.66	7671.25	-952.71	0.00	412170.30	768468.51	N 32 7 51.63 W	103 35 58.52
	20400.00	90.00	359.63	12749.94	7827.24	7771.25	-953.36	0.00	412270.30	768467.86	N 32 7 52.62 W	103 35 58.52
	20500.00	90.00	359.63	12749.94	7926.82	7871.25	-954.01	0.00	412370.29	768467.21	N 32 7 53.61 W	103 35 58.52
	20600.00	90.00	359.63	12749.94	8026.40	7971.24	-954.66	0.00	412470.29	768466.56	N 32 7 54.60 W	103 35 58.52
	20700.00	90.00	359.63	12749.95	8125.98	8071.24	-955.31	0.00	412570.28	768465.91	N 32 7 55.59 W	103 35 58.52
	20800.00	90.00	359.63	12749.95	8225.57	8171.24	-955.96	0.00	412670.28	768465.27	N 32 7 56.58 W	103 35 58.51
	20900.00	90.00	359.63	12749.95	8325.15	8271.24	-956.61	0.00	412770.27	768464.62	N 32 7 57.57 W	103 35 58.51
	21000.00	90.00	359.63	12749.96	8424.73	8371.23	-957.25	0.00	412870.27	768463.97	N 32 7 58.56 W	103 35 58.51
	21100.00	90.00	359.63	12749.96	8524.31	8471.23	-957.90	0.00	412970.26	768463.32	N 32 7 59.55 W	103 35 58.51
	21200.00	90.00	359.63	12749.96	8623.89	8571.23	-958.55	0.00	413070.25	768462.67	N 32 8 0 54 W	103 35 58.51
	21300.00	90.00	359.63	12749.96	8723.47	8671.23	-959.20	0.00	413170.25	768462.02	N 32 8 1 53 W	103 35 58.51
	21400.00	90.00	359.63	12749.97	8823.06	8771.23	-959.85	0.00	413270.24	768461.37	N 32 8 2 52 W	103 35 58.51
	21500.00	90.00	359.63	12749.97	8922.64	8871.22	-960.50	0.00	413370.24	768460.73	N 32 8 3 51 W	103 35 58.51
	21600.00	90.00	359.63	12749.97	9022.22	8971.22	-961.15	0.00	413470.23	768460.08	N 32 8 4 49 W	103 35 58.51
	21700.00	90.00	359.63	12749.98	9121.80	9071.22	-961.79	0.00	413570.23	768459.43	N 32 8 5 48 W	103 35 58.51
	21800.00	90.00	359.63	12749.98	9221.38	9171.22	-962.44	0.00	413670.22	768458.78	N 32 8 6 47 W	103 35 58.51
	21900.00	90.00	359.63	12749.98	9320.96	9271.22	-963.09	0.00	413770.22	768458.13	N 32 8 7 46 W	103 35 58.51
	22000.00	90.00	359.63	12749.99	9420.54	9371.21	-963.74	0.00	413870.21	768457.48	N 32 8 8 45 W	103 35 58.51
	22100.00	90.00	359.63	12749.99	9520.13	9471.21	-964.39	0.00	413970.21	768456.83	N 32 8 9 44 W	103 35 58.51
	22200.00	90.00	359.63	12749.99	9619.71	9571.21	-965.04	0.00	414070.20	768456.19	N 32 8 10 43 W	103 35 58.51
	22300.00	90.00	359.63	12750.00	9719.29	9671.21	-965.69	0.00	414170.19	768455.54	N 32 8 11 42 W	103 35 58.51
	22400.00	90.00	359.63	12750.00	9818.87	9771.21	-966.33	0.00	414270.19	768454.89	N 32 8 12 41 W	103 35 58.51

Cimarex Vaca
Draw 20-17
Federal #2H -
PBHL [330'
FNL, 1007'
FWL]

22461.36

90.00

359.63

12750.00

9879.98

9832.57

-966.73

0.00

414331.55

768454.49

N 32 8 13.02 W 103 35 58.51

Survey Type:

Non-Def Plan

Survey Error Model:
Survey Program:

ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	24.000	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Cimarex Vaca Draw 20-17 Federal #2H Rev1 bxu3 19Apr17
	1	24.000	22461.364	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Vaca Draw 20-17 Federal #2H Rev1