

Cimarex Mescalero Ridge 21 Federal 1H Rev1 RM 2Aug18 Proposal Geodetic Report (Non-Def Plan)



Report Date: August 02, 2018 - 09:53 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Mescalero Ridge 21 Federal 1H / Cimarex Mescalero Ridge 21 Federal 1H
Well: Cimarex Mescalero Ridge 21 Federal 1H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Mescalero Ridge 21 Federal 1H Rev1 RM 2Aug18
Survey Date: August 02, 2018
Tort / AHD / DDI / ERD Ratio: 109.785' / 5943.509 ft / 5.966' / 0.550
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 39' 5.42267", W 103° 33' 47.17362"
Location Grid N/E Y/X: N 801608.670 RUS, E 778398.760 RUS
CRS Grid Convergence Angle: 0.4156 °
Grid Scale Factor: 0.99997345
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.509 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3786.400 ft above MSL
Seabed / Ground Elevation: 3780.400 ft above MSL
Magnetic Declination: 8.622 °
Total Gravity Field Strength: 988.5085mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48219.665 nT
Magnetic Dip Angle: 60.622 °
Declination Date: August 02, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.4156 °
Total Corr Mag North->Grid North: 6.2069 °
Local Coord Referenced To: Well Head

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 [544' FNL, 1980' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
DLS	1500.00	0.00	90.00	1500.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
Nudge 2"/100'	1980.30	9.61	90.00	1978.06	0.34	0.00	40.17	2.00	601608.67	778438.83	N 32 39 5.42	W 103 33 46.70
Hold Nudoe	9406.37	9.61	90.00	9300.00	10.96	0.00	1279.38	0.00	601608.67	779678.10	N 32 39 5.33	W 103 33 32.21
Drop to Vertical	9406.37	9.61	90.00	9300.00	10.96	0.00	1279.38	0.00	601608.67	779678.10	N 32 39 5.33	W 103 33 32.21
2"/100' DLS	9886.67	0.00	90.00	9778.06	11.31	0.00	1319.55	2.00	601608.67	779718.27	N 32 39 5.33	W 103 33 31.74
Hold Vertical	9886.67	0.00	90.00	9778.06	11.31	0.00	1319.55	2.00	601608.67	779718.27	N 32 39 5.33	W 103 33 31.74
KOP - Build	10441.18	0.00	90.00	10332.56	11.31	0.00	1319.55	0.00	601608.67	779718.27	N 32 39 5.33	W 103 33 31.74
12"/100' DLS	11195.79	90.55	179.51	10810.00	493.38	-482.06	1323.87	12.00	601126.83	779722.40	N 32 39 0.56	W 103 33 31.73
Landing Point	11195.79	90.55	179.51	10810.00	493.38	-482.06	1323.87	12.00	601126.83	779722.40	N 32 39 0.56	W 103 33 31.73
Cimarex Mescalero Ridge 21 Federal 1H PBHL [100' FSL, 660' FEL]	15337.87	90.55	179.51	10770.00	4635.27	-4623.79	1359.13	0.00	596985.01	779757.85	N 32 38 19.58	W 103 33 31.67

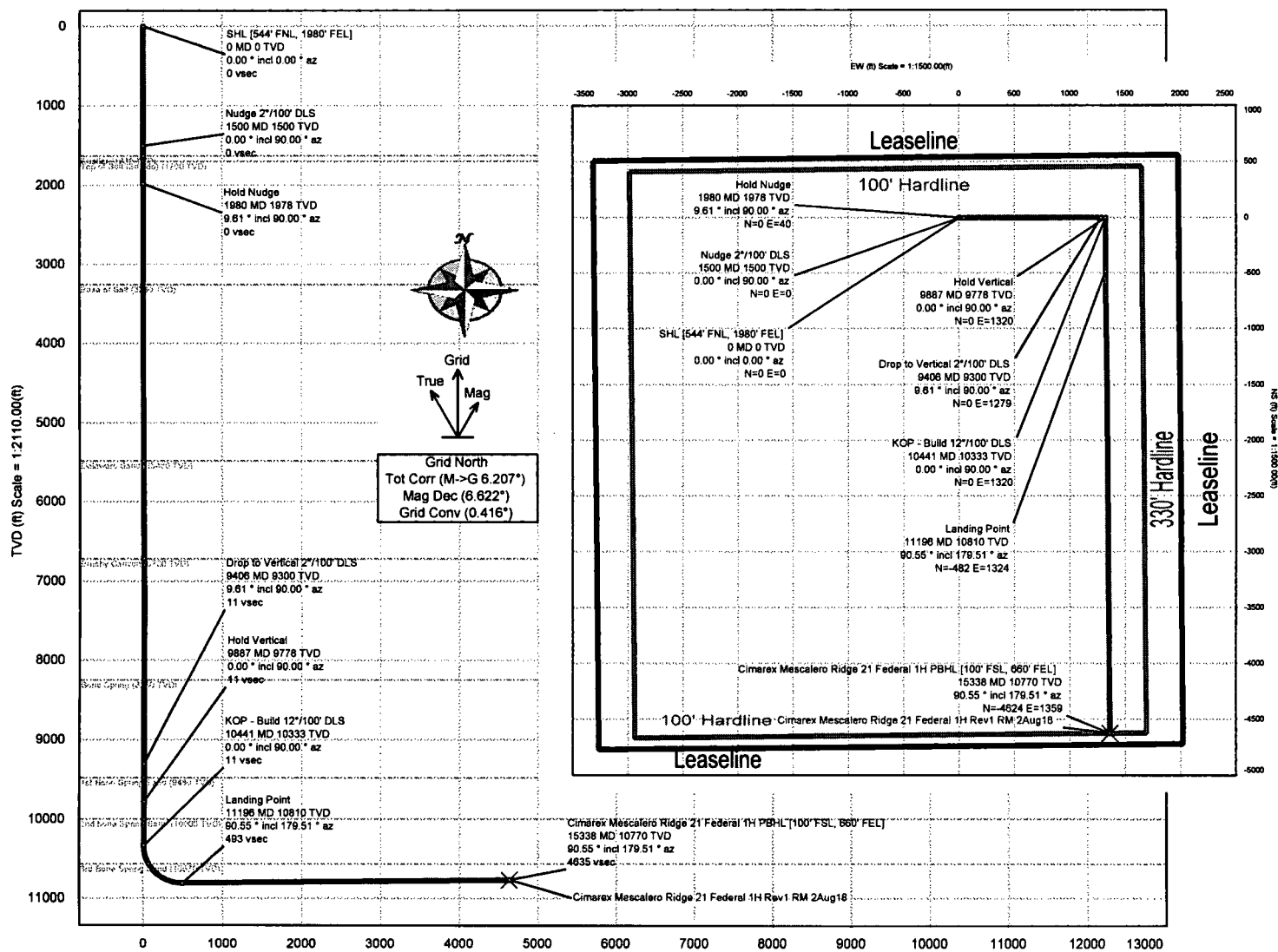
Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7655 sigma
Survey Program:

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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Mescalero Ridge 21 Federal 1H Rev1 RM 2Aug18
	1	26.000	15337.866	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Mescalero Ridge 21 Federal 1H

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Mescalero Ridge 21 Federal 1H	NM Lea County (NAD 83)	Cimarex Mescalero Ridge 21 Federal 1H

Gravity & Magnetic Parameters					Surface Location					NAD83 New Mexico State Plane, Eastern Zone, US Feet					Miscellaneous			
Model:	HOGM 2018		Dip:	80.822°	Date:	02-Aug-2018		Lat:	N 32 39 6.42	Northing:	601608.67RUS		Grid Conv:	0.4166°		Spot:	Mescalero Ridge TVD Ref:	
MagDec:	8.622°		FS:	48219.688nT		Gravity FS:	988.508mgm (9.80665 Based)		Lon:	W 103 33 47.17		Easting:	778398.78RUS		Scale Fact:	0.9997345		
															Plan:		Cimarex Mescalero Ridge 21 Federal 1H Rev1 RM 2Aug18	



Vertical Section (ft) Azim = 179.51° Scale = 1:2110.00(ft) Origin = 0N-S, 0E-W

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [544' FNL, 1980' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Nudge 2°/100' DLS	1500.00	0.00	90.00	1500.00	0.00	0.00	0.00	0.00
Rustler	1630.04	2.60	90.00	1630.00	0.03	0.00	2.95	2.00
Top of Salt (Salado)	1700.16	4.00	90.00	1700.00	0.06	0.00	6.99	2.00
Hold Nudge	1980.30	9.61	90.00	1978.06	0.34	0.00	40.17	2.00
Base of Salt	3280.48	9.61	90.00	3260.00	2.20	0.00	257.13	0.00
Delaware Sands	5532.05	9.61	90.00	5480.00	5.42	0.00	632.86	0.00
Brushy Canyon	6789.68	9.61	90.00	6720.00	7.22	0.00	842.72	0.00
Bone Spring	8341.44	9.61	90.00	8250.00	9.44	0.00	1101.67	0.00
Drop to Vertical 2°/100' DLS	9406.37	9.61	90.00	9300.00	10.96	0.00	1279.38	0.00
1st Bone Spring Sand	9588.08	5.97	90.00	9480.00	11.17	0.00	1304.00	2.00
Hold Vertical	9886.87	0.00	90.00	9778.06	11.31	0.00	1319.55	2.00
2nd bone Spring Sand	10108.62	0.00	90.00	10000.00	11.31	0.00	1319.55	0.00
KOP - Build 12°/100' DLS	10441.18	0.00	90.00	10332.56	11.31	0.00	1319.55	0.00
3rd Bone Spring Sand	10689.69	28.82	179.51	10570.00	74.53	-83.22	1320.09	12.00
Landing Point	11195.79	90.55	179.51	10810.00	463.38	-482.06	1323.67	12.00
Cimarex Mescalero Ridge 21 Federal 1H PBHL [100' FSL, 860' FEL]	15337.87	90.55	179.51	10770.00	4635.27	-4623.79	1359.13	0.00
Wolfcamp	NaN			10870.00				

Cimarex Mescalero Ridge 21 Federal 1H Rev1 RM 2Aug18 Proposal

Geodetic Report

(Non-Def Plan)



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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [544' FNL, 1980' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	100.00	0.00	90.00	100.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	200.00	0.00	90.00	200.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	300.00	0.00	90.00	300.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	400.00	0.00	90.00	400.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	500.00	0.00	90.00	500.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	600.00	0.00	90.00	600.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	700.00	0.00	90.00	700.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	800.00	0.00	90.00	800.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	900.00	0.00	90.00	900.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	1000.00	0.00	90.00	1000.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	1100.00	0.00	90.00	1100.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	1200.00	0.00	90.00	1200.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	1300.00	0.00	90.00	1300.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	1400.00	0.00	90.00	1400.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
Nudge 2"/100' DLS	1500.00	0.00	90.00	1500.00	0.00	0.00	0.00	0.00	601608.67	778398.76	N 32 39 5.42	W 103 33 47.17
	1600.00	2.00	90.00	1599.98	0.01	0.00	1.75	2.00	601608.67	778400.51	N 32 39 5.42	W 103 33 47.15
Rustler	1630.04	2.80	90.00	1630.00	0.03	0.00	2.95	2.00	601608.67	778401.71	N 32 39 5.42	W 103 33 47.14
	1700.00	4.00	90.00	1699.84	0.06	0.00	6.98	2.00	601608.67	778405.74	N 32 39 5.42	W 103 33 47.09
Top of Salt (Salado)	1700.16	4.00	90.00	1700.00	0.06	0.00	6.98	2.00	601608.67	778405.75	N 32 39 5.42	W 103 33 47.09
	1800.00	8.00	90.00	1799.45	0.13	0.00	15.89	2.00	601608.67	778414.45	N 32 39 5.42	W 103 33 46.99
	1900.00	8.00	90.00	1898.70	0.24	0.00	27.88	2.00	601608.67	778426.84	N 32 39 5.42	W 103 33 46.85
	1980.30	9.81	90.00	1978.06	0.34	0.00	40.17	2.00	601608.67	778438.93	N 32 39 5.42	W 103 33 46.70
	2000.00	9.81	90.00	1997.48	0.37	0.00	43.46	0.00	601608.67	778442.21	N 32 39 5.42	W 103 33 46.67
	2100.00	9.81	90.00	2096.07	0.52	0.00	60.14	0.00	601608.67	778458.90	N 32 39 5.42	W 103 33 46.47
	2200.00	9.81	90.00	2194.67	0.66	0.00	76.83	0.00	601608.67	778475.59	N 32 39 5.42	W 103 33 46.28
	2300.00	9.81	90.00	2293.27	0.80	0.00	93.52	0.00	601608.67	778492.28	N 32 39 5.42	W 103 33 46.08
	2400.00	9.81	90.00	2391.87	0.94	0.00	110.20	0.00	601608.67	778508.96	N 32 39 5.41	W 103 33 45.88
	2500.00	9.81	90.00	2490.47	1.09	0.00	126.89	0.00	601608.67	778525.65	N 32 39 5.41	W 103 33 45.69
	2600.00	9.81	90.00	2589.06	1.23	0.00	143.58	0.00	601608.67	778542.34	N 32 39 5.41	W 103 33 45.49
	2700.00	9.81	90.00	2687.66	1.37	0.00	160.27	0.00	601608.67	778559.02	N 32 39 5.41	W 103 33 45.30
	2800.00	9.81	90.00	2786.26	1.52	0.00	176.95	0.00	601608.67	778575.71	N 32 39 5.41	W 103 33 45.10
	2900.00	9.81	90.00	2884.86	1.66	0.00	193.64	0.00	601608.67	778592.40	N 32 39 5.41	W 103 33 44.91
	3000.00	9.81	90.00	2983.46	1.80	0.00	210.33	0.00	601608.67	778609.08	N 32 39 5.41	W 103 33 44.71
	3100.00	9.81	90.00	3082.05	1.95	0.00	227.02	0.00	601608.67	778625.77	N 32 39 5.41	W 103 33 44.52
	3200.00	9.81	90.00	3180.65	2.09	0.00	243.70	0.00	601608.67	778642.46	N 32 39 5.41	W 103 33 44.32
Base of Salt	3280.48	9.81	90.00	3260.00	2.20	0.00	257.13	0.00	601608.67	778655.89	N 32 39 5.40	W 103 33 44.17
	3300.00	9.81	90.00	3279.25	2.23	0.00	260.39	0.00	601608.67	778659.14	N 32 39 5.40	W 103 33 44.13
	3400.00	9.81	90.00	3377.85	2.37	0.00	277.08	0.00	601608.67	778675.83	N 32 39 5.40	W 103 33 43.93
	3500.00	9.81	90.00	3476.44	2.52	0.00	293.77	0.00	601608.67	778692.52	N 32 39 5.40	W 103 33 43.74
	3600.00	9.81	90.00	3575.04	2.66	0.00	310.45	0.00	601608.67	778709.20	N 32 39 5.40	W 103 33 43.54
	3700.00	9.81	90.00	3673.64	2.80	0.00	327.14	0.00	601608.67	778725.89	N 32 39 5.40	W 103 33 43.35
	3800.00	9.81	90.00	3772.24	2.95	0.00	343.83	0.00	601608.67	778742.58	N 32 39 5.40	W 103 33 43.15
	3900.00	9.81	90.00	3870.84	3.09	0.00	360.51	0.00	601608.67	778759.26	N 32 39 5.40	W 103 33 42.96
	4000.00	9.81	90.00	3969.43	3.23	0.00	377.20	0.00	601608.67	778775.95	N 32 39 5.40	W 103 33 42.76
	4100.00	9.81	90.00	4068.03	3.38	0.00	393.89	0.00	601608.67	778792.64	N 32 39 5.39	W 103 33 42.57
	4200.00	9.81	90.00	4166.63	3.52	0.00	410.58	0.00	601608.67	778809.32	N 32 39 5.39	W 103 33 42.37
	4300.00	9.81	90.00	4265.23	3.66	0.00	427.26	0.00	601608.67	778826.01	N 32 39 5.39	W 103 33 42.18
	4400.00	9.81	90.00	4363.83	3.80	0.00	443.95	0.00	601608.67	778842.70	N 32 39 5.39	W 103 33 41.98
	4500.00	9.81	90.00	4462.42	3.95	0.00	460.64	0.00	601608.67	778859.38	N 32 39 5.39	W 103 33 41.79
	4600.00	9.81	90.00	4561.02	4.09	0.00	477.33	0.00	601608.67	778876.07	N 32 39 5.39	W 103 33 41.59
	4700.00	9.81	90.00	4659.62	4.23	0.00	494.01	0.00	601608.67	778892.76	N 32 39 5.39	W 103 33 41.40
	4800.00	9.81	90.00	4758.22	4.38	0.00	510.70	0.00	601608.67	778909.45	N 32 39 5.39	W 103 33 41.20
	4900.00	9.81	90.00	4856.81	4.52	0.00	527.38	0.00	601608.67	778926.13	N 32 39 5.38	W 103 33 41.01
	5000.00	9.81	90.00	4955.41	4.66	0.00	544.07	0.00	601608.67	778942.82	N 32 39 5.38	W 103 33 40.81
	5100.00	9.81	90.00	5054.01	4.81	0.00	560.76	0.00	601608.67	778959.51	N 32 39 5.38	W 103 33 40.62
	5200.00	9.81	90.00	5152.61	4.95	0.00	577.45	0.00	601608.67	778976.19	N 32 39 5.38	W 103 33 40.42
	5300.00	9.81	90.00	5251.21	5.09	0.00	594.14	0.00	601608.67	778992.88	N 32 39 5.38	W 103 33 40.22
	5400.00	9.81	90.00	5349.80	5.23	0.00	610.82	0.00	601608.67	779009.57	N 32 39 5.38	W 103 33 40.03
	5500.00	9.81	90.00	5448.40	5.38	0.00	627.51	0.00	601608.67	779026.25	N 32 39 5.38	W 103 33 39.83
Delaware Sands	5532.05	9.81	90.00	5480.00	5.42	0.00	632.66	0.00	601608.67	779031.60	N 32 39 5.38	W 103 33 39.77
	5600.00	9.81	90.00	5547.00	5.52	0.00	644.20	0.00	601608.67	779042.94	N 32 39 5.38	W 103 33 39.64
	5700.00	9.81	90.00	5645.60	5.66	0.00	660.89	0.00	601608.67	779059.63	N 32 39 5.38	W 103 33 39.44
	5800.00	9.81	90.00	5744.19	5.81	0.00	677.57	0.00	601608.67	779076.31	N 32 39 5.37	W 103 33 39.25
	5900.00	9.81	90.00	5842.79	5.95	0.00	694.26	0.00	601608.67	779093.00	N 32 39 5.37	W 103 33 39.05
	6000.00	9.81	90.00	5941.39	6.09	0.00	710.95	0.00	601608.67	779109.69	N 32 39 5.37	W 103 33 38.86
	6100.00	9.81	90.00	6039.99	6.24	0.00	727.63	0.00	601608.67	779126.37	N 32 39 5.37	W 103 33 38.66
	6200.00	9.81	90.00	6138.59	6.38	0.00	744.32	0.00	601608.67	779143.06	N 32 39 5.37	W 103 33 38.47
	6300.00	9.81	90.00	6237.18	6.52	0.00	761.01	0.00	601608.67	779159.75	N 32 39 5.37	W 103 33 38.27
	6400.00	9.81	90.00	6335.78	6.66	0.00	777.70	0.00	601608.67	779176.43	N 32 39 5.37	W 103 33 38.08
	6500.00	9.81	90.00	6434.38	6.81	0.00	794.38	0.00	601608.67	779193.12	N 32 39 5.37	W 103 33 37.88
	6600.00	9.81	90.00	6532.98	6.95	0.00	811.07	0.00	601608.67	779209.81	N 32 39 5.36	W 103 33 37.69
	6700.00	9.81	90.00	6631.58	7.09	0.00	827.76	0.00	601608.67	779226.49	N 32 39 5.36	W 103 33 37.49

	Comments	MD	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS	EW	DLS (ft/100ft)	Northng (ftUS)	Eastng (ftUS)	Latitude (N/S+/-)	Longitude (E/W+/-)
Brushy Canyon	6759.69	9.67	90.00	6720.00	7.22	0.00	642.72	0.00	607608.67	779241.46	N 32.39	W 103.33 37.32	
	6800.00	9.61	90.00	6730.17	7.24	0.00	644.45	0.00	607608.67	779256.87	N 32.39	W 103.33 37.10	
	6900.00	9.61	90.00	6828.77	7.38	0.00	661.13	0.00	607608.67	779258.18	N 32.39	W 103.33 37.00	
	7000.00	9.61	90.00	6927.37	7.52	0.00	677.82	0.00	607608.67	779279.56	N 32.39	W 103.33 36.81	
	7100.00	9.61	90.00	7025.97	7.67	0.00	694.51	0.00	607608.67	779293.24	N 32.39	W 103.33 36.71	
	7200.00	9.61	90.00	7124.56	7.81	0.00	711.19	0.00	607608.67	779308.62	N 32.39	W 103.33 36.52	
	7300.00	9.61	90.00	7223.16	7.95	0.00	727.88	0.00	607608.67	779326.62	N 32.39	W 103.33 36.32	
	7400.00	9.61	90.00	7321.76	8.09	0.00	744.57	0.00	607608.67	779343.50	N 32.39	W 103.33 36.13	
	7500.00	9.61	90.00	7420.36	8.24	0.00	761.26	0.00	607608.67	779359.69	N 32.39	W 103.33 35.93	
	7600.00	9.61	90.00	7518.96	8.38	0.00	777.94	0.00	607608.67	779376.68	N 32.39	W 103.33 35.74	
Bone Spring	7700.00	9.61	90.00	7617.55	8.52	0.00	794.63	0.00	607608.67	779393.36	N 32.39	W 103.33 35.54	
	7800.00	9.61	90.00	7716.15	8.67	0.00	811.32	0.00	607608.67	779410.05	N 32.39	W 103.33 35.35	
	7900.00	9.61	90.00	7814.75	8.81	0.00	828.01	0.00	607608.67	779426.78	N 32.39	W 103.33 35.16	
	8000.00	9.61	90.00	7913.35	8.95	0.00	844.69	0.00	607608.67	779443.42	N 32.39	W 103.33 34.96	
	8100.00	9.61	90.00	8011.95	9.10	0.00	861.38	0.00	607608.67	779478.80	N 32.39	W 103.33 34.76	
	8200.00	9.61	90.00	8110.54	9.24	0.00	878.07	0.00	607608.67	779493.46	N 32.39	W 103.33 34.57	
	8300.00	9.61	90.00	8209.14	9.38	0.00	894.75	0.00	607608.67	779509.00	N 32.39	W 103.33 34.29	
	8400.00	9.61	90.00	8307.74	9.52	0.00	911.44	0.00	607608.67	779510.17	N 32.39	W 103.33 34.17	
	8500.00	9.61	90.00	8406.34	9.67	0.00	928.13	0.00	607608.67	779526.86	N 32.39	W 103.33 33.98	
	8600.00	9.61	90.00	8504.93	9.81	0.00	944.82	0.00	607608.67	779543.54	N 32.39	W 103.33 33.78	
Drop to Vertical 27100 DLS	8700.00	9.61	90.00	8603.53	9.95	0.00	961.50	0.00	607608.67	779560.23	N 32.39	W 103.33 33.59	
	8800.00	9.61	90.00	8702.13	10.10	0.00	978.19	0.00	607608.67	779576.92	N 32.39	W 103.33 33.39	
	8900.00	9.61	90.00	8800.73	10.24	0.00	994.88	0.00	607608.67	779610.29	N 32.39	W 103.33 33.20	
	9000.00	9.61	90.00	8899.33	10.38	0.00	1011.57	0.00	607608.67	779643.66	N 32.39	W 103.33 32.81	
	9100.00	9.61	90.00	8997.92	10.53	0.00	1028.25	0.00	607608.67	779668.68	N 32.39	W 103.33 32.61	
	9200.00	9.61	90.00	9096.52	10.67	0.00	1044.94	0.00	607608.67	779690.35	N 32.39	W 103.33 32.42	
	9300.00	9.61	90.00	9195.12	10.81	0.00	1061.63	0.00	607608.67	779716.04	N 32.39	W 103.33 32.22	
	9400.00	9.61	90.00	9293.72	10.95	0.00	1078.32	0.00	607608.67	779741.70	N 32.39	W 103.33 32.05	
	9500.00	7.73	90.00	9392.55	11.08	0.00	1095.01	2.00	607608.67	779802.21	N 32.39	W 103.33 32.05	
	9586.09	5.97	90.00	9490.00	11.17	0.00	1104.00	2.00	607608.67	779702.72	N 32.39	W 103.33 31.92	
1st Bone Spring	9600.00	5.73	90.00	9591.86	11.18	0.00	1105.22	2.00	607608.67	779703.64	N 32.39	W 103.33 31.91	
	9700.00	3.73	90.00	9691.51	11.26	0.00	1133.47	2.00	607608.67	779712.19	N 32.39	W 103.33 31.81	
	9800.00	1.73	90.00	9891.39	11.30	0.00	1138.24	2.00	607608.67	779718.27	N 32.39	W 103.33 31.78	
	9888.67	0.00	90.00	9778.06	11.31	0.00	1138.55	2.00	607608.67	779718.27	N 32.39	W 103.33 31.74	
	9900.00	0.00	90.00	9791.38	11.31	0.00	1138.55	0.00	607608.67	779718.27	N 32.39	W 103.33 31.74	
	10000.00	0.00	90.00	9891.38	11.31	0.00	1138.55	0.00	607608.67	779718.27	N 32.39	W 103.33 31.74	
	10100.00	0.00	90.00	9891.38	11.31	0.00	1138.55	0.00	607608.67	779718.27	N 32.39	W 103.33 31.74	
	10200.00	0.00	90.00	10000.00	11.37	0.00	1319.55	0.00	607608.67	779718.27	N 32.39	W 103.33 31.74	
	10300.00	0.00	90.00	10091.38	11.31	0.00	1319.55	0.00	607608.67	779718.27	N 32.39	W 103.33 31.74	
	10400.00	0.00	90.00	10281.38	11.31	0.00	1319.55	0.00	607608.67	779718.27	N 32.39	W 103.33 31.74	
KOP - Build 127100 DLS	10441.18	0.00	90.00	10332.56	11.31	0.00	1319.55	0.00	607608.67	779718.27	N 32.39	W 103.33 31.74	
	10500.00	7.06	179.51	10391.23	14.93	-3.62	1319.56	12.00	607605.05	779718.30	N 32.39	W 103.33 31.74	
	10600.00	19.06	179.51	10488.47	37.48	-26.17	1319.77	12.00	607592.50	779718.40	N 32.39	W 103.33 31.74	
	10689.69	29.82	179.51	10570.00	74.53	-63.22	1320.09	12.00	607545.45	779718.87	N 32.39	W 103.33 31.74	
	10700.00	31.06	179.51	10676.89	78.76	-68.45	1320.13	12.00	607480.22	779718.86	N 32.39	W 103.33 31.74	
	10800.00	43.08	179.51	10658.55	139.91	-129.60	1320.65	12.00	607460.07	779718.37	N 32.39	W 103.33 31.74	
	10900.00	55.08	179.51	10723.95	215.31	-204.00	1321.29	12.00	607420.68	779720.02	N 32.39	W 103.33 31.74	
	11000.00	67.06	179.51	10772.26	302.66	-291.35	1322.04	12.00	607404.33	779720.76	N 32.39	W 103.33 31.74	
	11100.00	79.06	179.51	10801.34	398.15	-386.83	1322.86	12.00	607317.83	779721.58	N 32.39	W 103.33 31.74	
	11185.79	80.55	179.51	10810.00	493.38	-482.06	1323.67	12.00	607126.83	779722.43	N 32.39	W 103.33 31.73	
Landing Point	11200.00	80.55	179.51	10800.99	487.60	-486.27	1323.71	0.00	607102.42	779723.29	N 32.39	W 103.33 31.73	
	11300.00	80.55	179.51	10800.99	487.59	-486.25	1323.57	0.00	600822.44	779723.43	N 32.38	W 103.33 31.73	
	11400.00	80.55	179.51	10800.00	487.59	-486.25	1323.42	0.00	600822.44	779723.43	N 32.38	W 103.33 31.73	
	11500.00	80.55	179.51	10800.00	487.59	-486.25	1328.26	0.00	600822.44	779725.14	N 32.38	W 103.33 31.73	
	11600.00	80.55	179.51	10800.00	487.59	-486.25	1327.13	0.00	600822.44	779725.14	N 32.38	W 103.33 31.73	
	11700.00	80.55	179.51	10800.00	487.59	-486.25	1327.13	0.00	600822.44	779725.14	N 32.38	W 103.33 31.73	
	11800.00	80.55	179.51	10800.00	487.59	-486.25	1327.13	0.00	600822.44	779725.14	N 32.38	W 103.33 31.73	
	11900.00	80.55	179.51	10800.00	487.59	-486.25	1327.13	0.00	600822.44	779725.14	N 32.38	W 103.33 31.73	
	12000.00	80.55	179.51	10800.00	487.59	-486.25	1327.13	0.00	600822.50	779726.28	N 32.38	W 103.33 31.72	
	12100.00	80.55	179.51	10801.27	10801.27	-1286.20	1330.56	0.00	600322.50	779726.28	N 32.38	W 103.33 31.72	
12200.00	80.55	179.51	10801.27	10801.27	-1386.20	1331.41	0.00	600222.51	779726.28	N 32.38	W 103.33 31.72		
12300.00	80.55	179.51	10800.30	1487.55	-1486.19	1332.27	0.00	600122.54	779730.99	N 32.38	W 103.33 31.72		
12400.00	80.55	179.51	10799.34	1597.54	-1586.18	1333.13	0.00	600022.54	779731.85	N 32.38	W 103.33 31.72		
12500.00	80.55	179.51	10798.37	1697.54	-1686.17	1333.88	0.00	599922.56	779732.70	N 32.38	W 103.33 31.72		
12600.00	80.55	179.51	10787.44	1897.53	-1786.16	1334.84	0.00	599822.58	779733.56	N 32.38	W 103.33 31.71		
12700.00	80.55	179.51	10765.44	1987.53	-1886.15	1335.69	0.00	599722.57	779734.42	N 32.38	W 103.33 31.71		
12800.00	80.55	179.51	10749.47	1987.53	-1986.15	1335.69	0.00	599622.58	779735.27	N 32.38	W 103.33 31.71		
12900.00	80.55	179.51	10734.51	2087.52	-2086.14	1337.41	0.00	599522.59	779736.13	N 32.38	W 103		

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLB (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
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Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
 Survey Program:

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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Mescalero Ridge 21 Federal 1H Rev1 RM 2Aug18
	1	26.000	15337.896	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Mescalero Ridge 21 Federal 1H