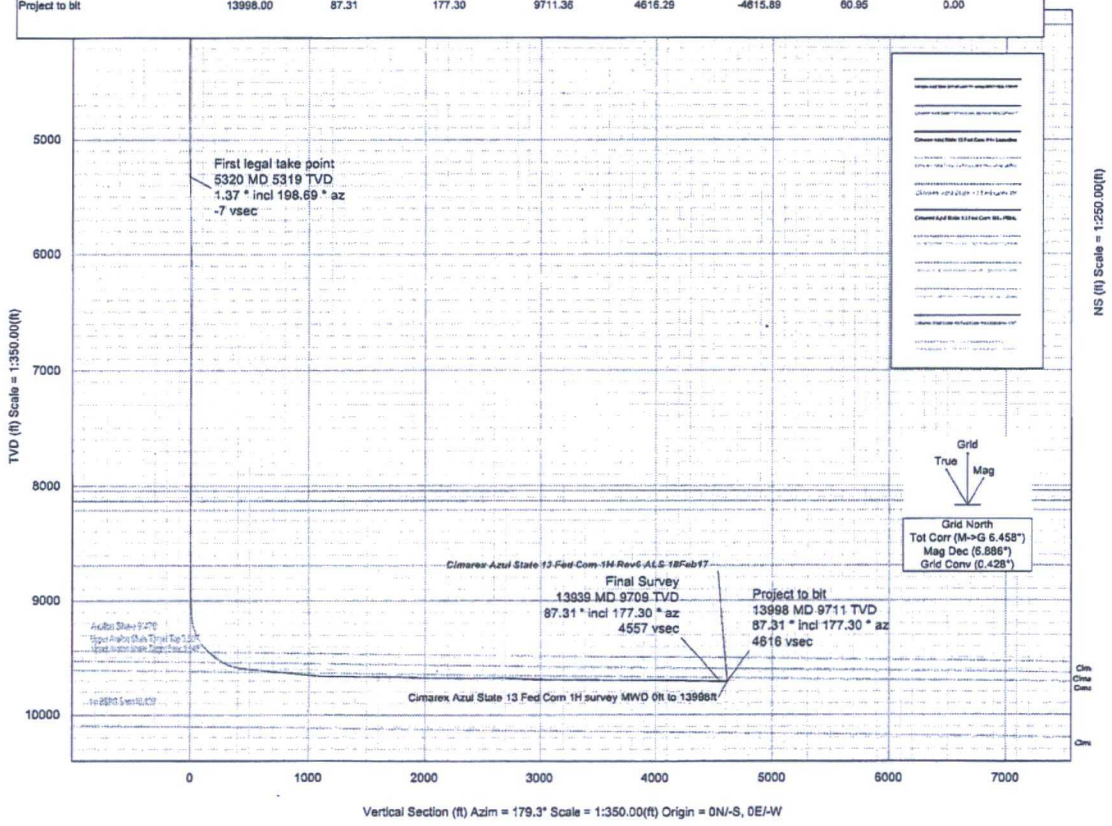
Schlumberger Cactus 148 **Cimarex** Final PvA CIMAREX

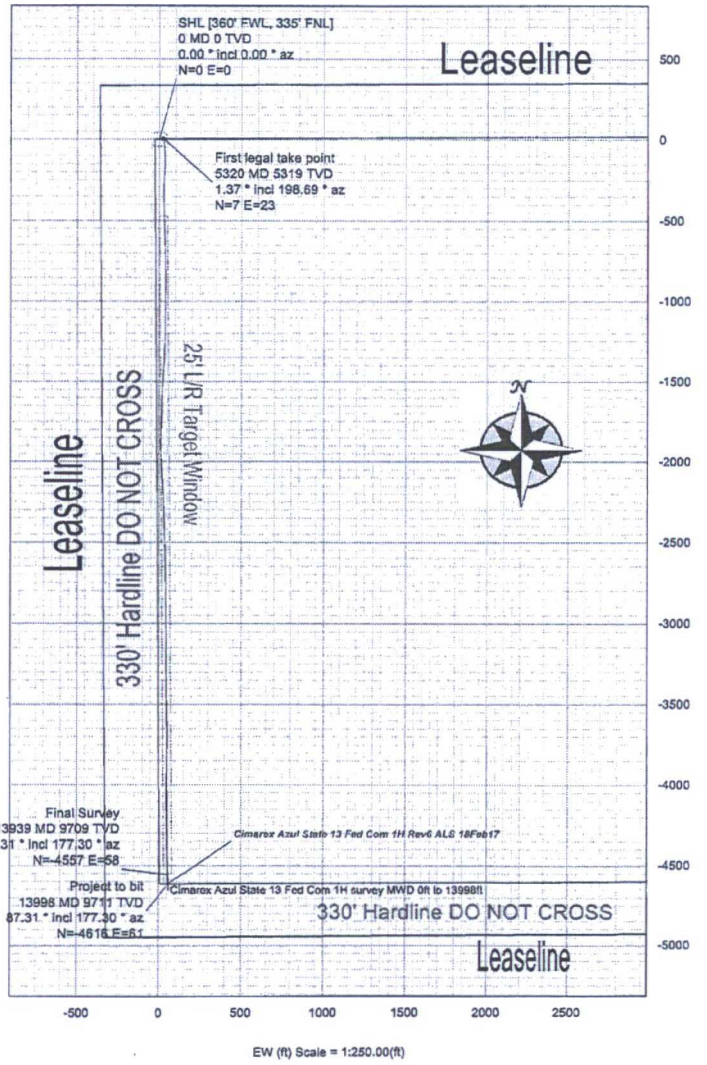
Borehole:	Well:	Field:	Structure:
Original Borehole	Azul State 13 Fed Com 1H	NM Lea County (NAD 83)	Cimarex Azul State 13 Fed Com 1H

Gravity & Magnetic Parameters						Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous		
Model:	HDGM 2016	Dip:	60.153°	Date:	16-Feb-2017	Lat:	N 32 16 30.58	Northing:	477794.17ftUS	Grid Conv:	0.4276°	Slot:	Cimarex Azul State 13 Fed Com 1H	TVD Ref:	RKB(3396.5ft above MSL)
MagDec:	6.886°	FS:	48242.197nT	Gravity FS:	998.454mgn (9.80665 Based)	Lon:	W 103 32 6.43	Easting:	788453.57ftUS	Scale Fact:	0.99997903	Plan:	Cimarex Azul State 13 Fed Com 1H survey MWD 0ft to 13998ft		

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [360' FWL, 335' FNL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
First legal take point	5320.00	1.37	198.69	5319.19	-7.01	7.28	22.70	0.10
Final Survey	13939.00	87.31	177.30	9708.59	4557.39	-4557.02	58.18	1.65
Project to bit	13998.00	87.31	177.30	9711.36	4616.29	-4615.89	60.95	0.00





Schlumberger

Cimarex Azul State 13 Fed Com 1H survey MWD 0ft to 13998ft Survey Geodetic Report

(Def Survey)

CIMAREX

Report Date:	February 20, 2017 - 11:09 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	179.302 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Azul State 13 Fed Com 1H / Cimarex Azul State 13 Fed Com 1H	**TVD Reference Datum:**	RKB
Well:	Azul State 13 Fed Com 1H	**TVD Reference Elevation:**	3596.900 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3573.900 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.886 °
Survey Name:	Cimarex Azul State 13 Fed Com 1H survey MWD 0ft to 13998ft	**Total Gravity Field Strength:**	998.4540mgn (9.80665 Based)
Survey Date:	February 18, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	180.076 ° / 4737.467 ft / 6.090 / 0.488	**Total Magnetic Field Strength:**	48242.197 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.153 °
Location Lat / Long:	N 32° 18' 39.57900", W 103° 32' 0.43283"	**Declination Date:**	February 18, 2017
Location Grid N/E Y/X:	N 477794.100 ftUS, E 788453.570 ftUS	**Magnetic Declination Model:**	HDGM 2016
CRS Grid Convergence Angle:	0.4276 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997903	**Grid Convergence Used:**	0.4276 °
Version / Patch:	2.10.254.0	**Total Corr Mag North->Grid North:**	6.4581 °
		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 [360' FWL, 335' FNL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	477794.10	788453.57	N 32 18 39.58	W 103 32 0.43
	163.00	0.62	90.29	163.00	0.02	0.00	0.88	0.38	477794.10	788454.45	N 32 18 39.58	W 103 32 0.42
	229.00	0.31	98.13	228.99	0.05	-0.03	1.42	0.48	477794.07	788454.99	N 32 18 39.58	W 103 32 0.42
	318.00	0.40	73.28	317.99	0.00	0.02	1.95	0.20	477794.12	788455.52	N 32 18 39.58	W 103 32 0.41
	409.00	0.80	74.07	408.99	-0.25	0.29	2.87	0.44	477794.39	788456.44	N 32 18 39.58	W 103 32 0.40
	499.00	0.80	89.40	498.98	-0.42	0.47	4.10	0.24	477794.57	788457.67	N 32 18 39.58	W 103 32 0.39
	590.00	0.40	114.08	589.97	-0.28	0.35	5.02	0.51	477794.45	788458.59	N 32 18 39.58	W 103 32 0.37
	681.00	0.62	93.33	680.97	-0.12	0.19	5.81	0.31	477794.29	788459.38	N 32 18 39.58	W 103 32 0.37
	771.00	0.40	125.58	770.97	0.10	-0.02	6.55	0.39	477794.08	788460.12	N 32 18 39.58	W 103 32 0.36
	862.00	0.80	60.54	861.96	-0.01	0.10	7.36	0.80	477794.20	788460.93	N 32 18 39.58	W 103 32 0.35
	952.00	0.71	57.50	951.95	-0.61	0.71	8.38	0.11	477794.81	788461.95	N 32 18 39.59	W 103 32 0.34
	1045.00	0.80	44.06	1044.95	-1.38	1.49	9.31	0.21	477795.59	788462.88	N 32 18 39.59	W 103 32 0.32
	1069.00	0.80	41.06	1068.94	-1.62	1.74	9.54	0.17	477795.84	788463.11	N 32 18 39.60	W 103 32 0.32
	1218.00	1.02	36.35	1217.93	-3.45	3.59	11.01	0.16	477797.69	788464.58	N 32 18 39.61	W 103 32 0.30
	1309.00	1.41	44.90	1308.91	-4.88	5.03	12.28	0.47	477799.13	788465.85	N 32 18 39.63	W 103 32 0.29
	1399.00	1.33	54.11	1398.88	-6.26	6.43	13.91	0.26	477800.53	788467.48	N 32 18 39.64	W 103 32 0.27
	1493.00	1.33	25.51	1492.86	-7.87	8.05	15.26	0.70	477802.15	788468.83	N 32 18 39.66	W 103 32 0.25
	1588.00	1.41	62.44	1587.83	-9.38	9.59	16.77	0.92	477803.69	788470.34	N 32 18 39.67	W 103 32 0.24
	1682.00	1.33	56.71	1681.80	-10.50	10.72	18.71	0.17	477804.82	788472.28	N 32 18 39.68	W 103 32 0.21
	1776.00	1.10	60.81	1775.78	-11.51	11.76	20.41	0.26	477805.86	788473.98	N 32 18 39.69	W 103 32 0.19
	1871.00	0.49	228.57	1870.78	-11.68	11.94	20.90	1.67	477806.04	788474.47	N 32 18 39.70	W 103 32 0.19
	1965.00	0.49	246.15	1964.77	-11.26	11.51	20.23	0.16	477805.61	788473.80	N 32 18 39.69	W 103 32 0.20
	2060.00	0.49	252.76	2059.77	-10.99	11.23	19.47	0.06	477805.33	788473.04	N 32 18 39.69	W 103 32 0.20
	2154.00	0.40	243.02	2153.77	-10.73	10.96	18.80	0.12	477805.06	788472.37	N 32 18 39.69	W 103 32 0.21
	2249.00	0.71	272.73	2248.76	-10.62	10.84	17.91	0.43	477804.93	788471.48	N 32 18 39.68	W 103 32 0.22
	2343.00	0.60	288.06	2342.76	-10.81	11.02	16.86	0.22	477805.12	788470.43	N 32 18 39.69	W 103 32 0.24

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 ° ' ")
	2439.00	0.49	318.11	2438.75	-11.28	11.48	16.11	0.31	477805.58	788469.68	N 32 18 39.69	W 103 32 0.24
	2533.00	0.62	354.25	2532.75	-12.09	12.28	15.79	0.39	477806.38	788469.36	N 32 18 39.70	W 103 32 0.25
	2628.00	0.88	15.99	2627.74	-13.30	13.49	15.94	0.40	477807.59	788469.51	N 32 18 39.71	W 103 32 0.25
	2722.00	1.19	27.14	2721.73	-14.85	15.06	16.59	0.39	477809.16	788470.15	N 32 18 39.73	W 103 32 0.24
	2817.00	1.50	94.91	2816.70	-15.60	15.83	18.27	1.60	477809.93	788471.84	N 32 18 39.73	W 103 32 0.22
	2912.00	1.90	96.32	2911.66	-15.29	15.55	21.08	0.42	477809.65	788474.65	N 32 18 39.73	W 103 32 0.19
	3006.00	1.02	137.83	3005.63	-14.47	14.76	23.19	1.41	477808.86	788476.76	N 32 18 39.72	W 103 32 0.16
	3101.00	1.02	138.14	3100.62	-13.20	13.50	24.32	0.01	477807.60	788477.89	N 32 18 39.71	W 103 32 0.15
	3196.00	1.02	153.26	3195.60	-11.81	12.12	25.27	0.28	477806.22	788478.83	N 32 18 39.70	W 103 32 0.14
	3290.00	1.33	138.54	3289.58	-10.23	10.55	26.36	0.46	477804.65	788479.93	N 32 18 39.68	W 103 32 0.12
	3385.00	1.41	124.88	3384.56	-8.71	9.06	28.05	0.35	477803.16	788481.62	N 32 18 39.67	W 103 32 0.11
	3479.00	1.10	126.99	3478.53	-7.49	7.85	29.72	0.33	477801.95	788483.29	N 32 18 39.65	W 103 32 0.09
	3573.00	1.33	134.05	3572.51	-6.17	6.55	31.23	0.29	477800.65	788484.80	N 32 18 39.64	W 103 32 0.07
	3667.00	1.02	297.98	3666.51	-5.80	6.18	31.27	2.48	477800.28	788484.84	N 32 18 39.64	W 103 32 0.07
	3762.00	1.59	299.30	3761.48	-6.87	7.23	29.38	0.60	477801.33	788482.95	N 32 18 39.65	W 103 32 0.09
	3856.00	1.33	305.51	3855.45	-8.16	8.50	27.35	0.32	477802.60	788480.92	N 32 18 39.66	W 103 32 0.11
	3952.00	1.41	300.27	3951.42	-9.43	9.74	25.42	0.15	477803.84	788478.99	N 32 18 39.67	W 103 32 0.14
	4047.00	1.41	290.35	4046.39	-10.45	10.74	23.32	0.26	477804.84	788476.89	N 32 18 39.68	W 103 32 0.16
	4141.00	0.88	309.61	4140.38	-11.33	11.60	21.68	0.69	477805.70	788475.25	N 32 18 39.69	W 103 32 0.18
	4236.00	0.71	301.19	4235.37	-12.12	12.37	20.61	0.22	477806.47	788474.18	N 32 18 39.70	W 103 32 0.19
	4330.00	0.80	305.51	4329.36	-12.81	13.05	19.58	0.11	477807.15	788473.15	N 32 18 39.71	W 103 32 0.20
	4424.00	0.71	302.78	4423.35	-13.52	13.75	18.56	0.10	477807.85	788472.13	N 32 18 39.71	W 103 32 0.22
	4518.00	0.40	290.40	4517.35	-13.96	14.18	17.76	0.35	477808.28	788471.33	N 32 18 39.72	W 103 32 0.22
	4613.00	0.09	326.36	4612.34	-14.14	14.36	17.41	0.35	477808.46	788470.98	N 32 18 39.72	W 103 32 0.23
	4707.00	0.50	140.60	4706.34	-13.88	14.10	17.63	0.63	477808.20	788471.20	N 32 18 39.72	W 103 32 0.23
	4801.00	0.88	116.07	4800.34	-13.24	13.47	18.54	0.50	477807.57	788472.10	N 32 18 39.71	W 103 32 0.22
	4896.00	1.41	105.23	4895.32	-12.59	12.84	20.32	0.60	477806.94	788473.89	N 32 18 39.70	W 103 32 0.19
	4989.00	2.03	76.18	4988.28	-12.65	12.93	23.02	1.13	477807.03	788476.59	N 32 18 39.71	W 103 32 0.16
	5083.00	1.10	202.53	5082.26	-12.20	12.50	24.29	3.00	477806.60	788477.86	N 32 18 39.70	W 103 32 0.15
	5178.00	1.41	193.80	5177.24	-10.23	10.52	23.67	0.38	477804.62	788477.23	N 32 18 39.68	W 103 32 0.16
	5272.00	1.33	197.81	5271.21	-8.07	8.36	23.06	0.13	477802.46	788476.62	N 32 18 39.66	W 103 32 0.16
First legal take point	*5320.00*	*1.37*	*198.69*	*5319.19*	*-7.01*	*7.28*	*22.70*	*0.10*	*477801.38*	*788476.27*	*N 32 18 39.65*	*W 103 32 0.17*
	5366.00	1.41	199.49	5365.18	-5.95	6.23	22.34	0.10	477800.33	788475.91	N 32 18 39.64	W 103 32 0.17
	5461.00	1.50	197.59	5460.15	-3.68	3.94	21.57	0.11	477798.04	788475.14	N 32 18 39.62	W 103 32 0.18
	5555.00	1.41	202.13	5554.12	-1.44	1.70	20.76	0.16	477795.80	788474.33	N 32 18 39.59	W 103 32 0.19
	5649.00	1.41	199.40	5648.09	0.71	-0.47	19.94	0.07	477793.63	788473.51	N 32 18 39.57	W 103 32 0.20
	5744.00	1.19	196.71	5743.07	2.75	-2.51	19.27	0.24	477791.59	788472.84	N 32 18 39.55	W 103 32 0.21
	5838.00	1.19	200.19	5837.05	4.59	-4.36	18.65	0.08	477789.74	788472.22	N 32 18 39.53	W 103 32 0.22
	5933.00	1.19	196.58	5932.03	6.45	-6.24	18.03	0.08	477787.86	788471.60	N 32 18 39.52	W 103 32 0.22
	6027.00	1.33	193.27	6026.00	8.45	-8.23	17.50	0.17	477785.87	788471.07	N 32 18 39.50	W 103 32 0.23
	6122.00	1.10	193.10	6120.98	10.40	-10.19	17.04	0.24	477783.91	788470.61	N 32 18 39.48	W 103 32 0.24
	6216.00	0.31	307.71	6214.98	11.12	-10.92	16.64	1.34	477783.18	788470.21	N 32 18 39.47	W 103 32 0.24
	6310.00	0.40	318.33	6308.98	10.71	-10.52	16.22	0.12	477783.58	788469.79	N 32 18 39.47	W 103 32 0.24
	6405.00	0.31	317.94	6403.97	10.27	-10.08	15.83	0.09	477784.02	788469.39	N 32 18 39.48	W 103 32 0.25
	6499.00	0.31	336.58	6497.97	9.84	-9.66	15.55	0.11	477784.44	788469.12	N 32 18 39.48	W 103 32 0.25
	6594.00	0.31	320.23	6592.97	9.41	-9.22	15.29	0.09	477784.88	788468.86	N 32 18 39.49	W 103 32 0.26
	6688.00	0.40	340.90	6686.97	8.90	-8.72	15.02	0.17	477785.38	788468.59	N 32 18 39.49	W 103 32 0.26
	6782.00	0.31	331.38	6780.97	8.36	-8.18	14.79	0.11	477785.92	788468.36	N 32 18 39.50	W 103 32 0.26
	6877.00	0.31	350.24	6875.97	7.88	-7.71	14.62	0.11	477786.40	788468.19	N 32 18 39.50	W 103 32 0.26
	6971.00	0.40	334.07	6969.96	7.33	-7.16	14.43	0.14	477786.94	788468.00	N 32 18 39.51	W 103 32 0.27
	7066.00	0.22	351.03	7064.96	6.85	-6.68	14.26	0.21	477787.42	788467.83	N 32 18 39.51	W 103 32 0.27
	7160.00	0.31	327.50	7158.96	6.46	-6.29	14.10	0.15	477787.81	788467.67	N 32 18 39.52	W 103 32 0.27
	7256.00	0.20	346.40	7254.96	6.08	-5.91	13.92	0.14	477788.19	788467.49	N 32 18 39.52	W 103 32 0.27
	7351.00	0.22	345.13	7349.96	5.74	-5.57	13.83	0.02	477788.53	788467.40	N 32 18 39.52	W 103 32 0.27
	7445.00	0.22	310.49	7443.96	5.44	-5.28	13.65	0.14	477788.82	788467.22	N 32 18 39.53	W 103 32 0.27
	7540.00	0.09	63.54	7538.96	5.29	-5.13	13.58	0.28	477788.97	788467.15	N 32 18 39.53	W 103 32 0.28
	7635.00	0.20	49.50	7633.96	5.15	-4.98	13.77	0.12	477789.12	788467.34	N 32 18 39.53	W 103 32 0.27

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 ° ' ")
	7730.00	0.31	54.72	7728.96	4.90	-4.73	14.11	0.12	477789.37	788467.67	N 32 18 39.53	W 103 32 0.27
	7824.00	0.20	55.10	7822.96	4.66	-4.49	14.45	0.12	477789.61	788468.02	N 32 18 39.53	W 103 32 0.26
	7919.00	0.49	53.09	7917.95	4.33	-4.15	14.91	0.31	477789.95	788468.48	N 32 18 39.54	W 103 32 0.26
	8014.00	0.49	50.58	8012.95	3.84	-3.65	15.55	0.02	477790.45	788469.12	N 32 18 39.54	W 103 32 0.25
	8109.00	0.62	59.31	8107.95	3.33	-3.13	16.30	0.16	477790.97	788469.87	N 32 18 39.55	W 103 32 0.24
	8204.00	0.71	70.94	8202.94	2.88	-2.67	17.30	0.17	477791.43	788470.87	N 32 18 39.55	W 103 32 0.23
	8298.00	0.88	75.66	8296.93	2.53	-2.30	18.55	0.19	477791.80	788472.12	N 32 18 39.55	W 103 32 0.22
	8393.00	0.80	102.54	8391.92	2.51	-2.27	19.90	0.42	477791.83	788473.47	N 32 18 39.56	W 103 32 0.20
	8488.00	0.71	101.74	8486.91	2.79	-2.53	21.13	0.10	477791.57	788474.70	N 32 18 39.55	W 103 32 0.19
	8583.00	0.80	106.55	8581.91	3.11	-2.84	22.34	0.12	477791.26	788475.91	N 32 18 39.55	W 103 32 0.17
	8678.00	0.71	116.07	8676.90	3.57	-3.29	23.50	0.16	477790.81	788477.07	N 32 18 39.54	W 103 32 0.16
	8772.00	0.71	118.89	8770.89	4.12	-3.82	24.54	0.04	477790.28	788478.11	N 32 18 39.54	W 103 32 0.15
	8866.00	0.71	130.92	8864.88	4.80	-4.49	25.49	0.16	477789.61	788479.06	N 32 18 39.53	W 103 32 0.14
	8960.00	0.50	141.70	8958.88	5.51	-5.19	26.18	0.25	477788.91	788479.75	N 32 18 39.53	W 103 32 0.13
	9054.00	0.09	128.10	9052.88	5.88	-5.56	26.49	0.44	477788.54	788480.06	N 32 18 39.52	W 103 32 0.12
	9125.00	2.74	173.12	9123.85	7.60	-7.28	26.74	3.77	477786.82	788480.31	N 32 18 39.51	W 103 32 0.12
	9172.00	8.94	175.77	9170.58	12.37	-12.04	27.15	13.20	477782.06	788480.72	N 32 18 39.46	W 103 32 0.12
	9219.00	14.30	177.01	9216.60	21.82	-21.48	27.72	11.42	477772.62	788481.29	N 32 18 39.36	W 103 32 0.11
	9266.00	19.56	176.45	9261.55	35.49	-35.14	28.51	11.20	477758.96	788482.08	N 32 18 39.23	W 103 32 0.10
	9313.00	24.87	175.81	9305.04	53.22	-52.87	29.72	11.31	477741.24	788483.29	N 32 18 39.05	W 103 32 0.09
	9360.00	30.52	177.59	9346.64	75.04	-74.66	30.94	12.15	477719.44	788484.51	N 32 18 38.84	W 103 32 0.08
	9407.00	36.68	178.40	9385.77	101.03	-100.64	31.84	13.14	477693.46	788485.41	N 32 18 38.58	W 103 32 0.07
	9455.00	41.80	179.37	9422.94	131.38	-130.99	32.42	10.74	477663.11	788485.98	N 32 18 38.28	W 103 32 0.07
	9502.00	46.26	182.48	9456.72	164.01	-163.64	31.85	10.54	477630.47	788485.42	N 32 18 37.96	W 103 32 0.08
	9549.00	49.73	183.71	9488.17	198.85	-198.50	29.96	7.63	477595.60	788483.53	N 32 18 37.61	W 103 32 0.10
	9596.00	55.81	183.39	9516.59	236.16	-235.84	27.65	12.95	477558.27	788481.21	N 32 18 37.24	W 103 32 0.13
	9643.00	61.50	182.08	9541.03	276.21	-275.91	25.74	12.34	477518.19	788479.31	N 32 18 36.85	W 103 32 0.16
	9690.00	66.85	179.90	9561.50	318.48	-318.20	25.03	12.12	477475.91	788478.60	N 32 18 36.43	W 103 32 0.17
	9738.00	74.04	178.89	9577.56	363.68	-363.39	25.52	15.11	477430.71	788479.09	N 32 18 35.98	W 103 32 0.17
	9832.00	84.56	178.52	9594.99	455.91	-455.61	27.61	11.20	477338.50	788481.18	N 32 18 35.07	W 103 32 0.15
	9926.00	84.18	178.13	9604.21	549.44	-549.11	30.34	0.58	477245.00	788483.91	N 32 18 34.14	W 103 32 0.13
	10020.00	84.56	177.82	9613.43	642.96	-642.60	33.65	0.52	477151.51	788487.22	N 32 18 33.22	W 103 32 0.10
	10115.00	84.14	179.04	9622.78	737.49	-737.10	36.24	1.35	477057.02	788489.81	N 32 18 32.28	W 103 32 0.07
	10209.00	84.83	180.28	9631.82	831.05	-830.66	36.79	1.50	476963.46	788490.36	N 32 18 31.36	W 103 32 0.08
	10304.00	83.90	180.36	9641.15	925.57	-925.20	36.27	0.98	476868.92	788489.83	N 32 18 30.42	W 103 32 0.09
	10400.00	84.94	180.27	9650.48	1021.10	-1020.74	35.74	1.09	476773.38	788489.31	N 32 18 29.48	W 103 32 0.11
	10447.00	85.59	179.80	9654.36	1067.94	-1067.58	35.71	1.70	476726.54	788489.28	N 32 18 29.01	W 103 32 0.11
	10495.00	85.94	180.13	9657.91	1115.80	-1115.45	35.74	1.00	476678.68	788489.31	N 32 18 28.54	W 103 32 0.11
	10589.00	90.41	180.95	9660.90	1209.71	-1209.37	34.85	4.83	476584.75	788488.42	N 32 18 27.61	W 103 32 0.13
	10627.00	91.31	181.22	9660.33	1247.69	-1247.36	34.14	2.47	476546.77	788487.70	N 32 18 27.23	W 103 32 0.14
	10721.00	88.73	182.54	9660.29	1341.58	-1341.30	31.05	3.08	476452.83	788484.62	N 32 18 26.30	W 103 32 0.19
	10816.00	88.21	183.97	9662.83	1436.32	-1436.11	25.66	1.60	476358.02	788479.23	N 32 18 25.37	W 103 32 0.26
	10911.00	89.28	182.93	9664.91	1531.04	-1530.91	19.94	1.57	476263.22	788473.51	N 32 18 24.43	W 103 32 0.33
	11005.00	90.28	180.43	9665.27	1624.95	-1624.86	17.19	2.86	476169.27	788470.76	N 32 18 23.50	W 103 32 0.37
	11098.00	89.72	182.44	9665.27	1717.88	-1717.83	14.86	2.24	476076.31	788468.43	N 32 18 22.58	W 103 32 0.41
	11193.00	89.21	182.94	9666.16	1812.71	-1812.72	10.40	0.75	475981.42	788463.97	N 32 18 21.64	W 103 32 0.47
	11220.00	88.71	182.02	9666.65	1839.67	-1839.69	9.23	3.88	475954.45	788462.80	N 32 18 21.38	W 103 32 0.49
	11315.00	87.48	178.02	9669.81	1934.59	-1934.62	9.20	4.40	475859.53	788462.77	N 32 18 20.44	W 103 32 0.49
	11409.00	88.99	176.59	9672.71	2028.48	-2028.46	13.62	2.21	475765.68	788467.19	N 32 18 19.51	W 103 32 0.45
	11504.00	88.99	176.05	9674.38	2123.34	-2123.25	19.71	0.57	475670.90	788473.28	N 32 18 18.57	W 103 32 0.39
	11598.00	90.00	177.91	9675.21	2217.25	-2217.11	24.67	2.25	475577.04	788478.24	N 32 18 17.64	W 103 32 0.34
	11692.00	89.56	177.34	9675.57	2311.21	-2311.03	28.56	0.77	475483.12	788482.13	N 32 18 16.71	W 103 32 0.30
	11786.00	90.22	178.74	9675.75	2405.18	-2404.97	31.78	1.65	475389.18	788485.35	N 32 18 15.78	W 103 32 0.27
	11880.00	90.17	178.29	9675.43	2499.17	-2498.94	34.21	0.48	475295.22	788487.78	N 32 18 14.85	W 103 32 0.25
	11974.00	90.45	178.36	9674.92	2593.16	-2592.90	36.96	0.31	475201.26	788490.53	N 32 18 13.92	W 103 32 0.23
	12069.00	89.50	179.37	9674.96	2688.15	-2687.88	38.84	1.46	475106.28	788492.41	N 32 18 12.98	W 103 32 0.21
	12163.00	87.59	179.25	9677.35	2782.12	-2781.84	39.97	2.04	475012.33	788493.54	N 32 18 12.05	W 103 32 0.21
	12257.00	86.24	179.17	9682.41	2875.98	-2875.69	41.27	1.44	474918.48	788494.84	N 32 18 11.12	W 103 32 0.20

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 ° ' ")
	12352.00	87.81	179.07	9687.34	2970.85	-2970.55	42.72	1.66	474823.62	788496.29	N 32 18 10.18	W 103 32 0.19
	12446.00	89.33	179.57	9689.68	3064.81	-3064.51	43.84	1.70	474729.66	788497.41	N 32 18 9.25	W 103 32 0.19
	12540.00	89.83	180.02	9690.37	3158.81	-3158.50	44.18	0.72	474635.67	788497.74	N 32 18 8.32	W 103 32 0.19
	12635.00	89.72	179.53	9690.75	3253.80	-3253.50	44.55	0.53	474540.67	788498.12	N 32 18 7.38	W 103 32 0.20
	12729.00	90.39	179.64	9690.66	3347.80	-3347.50	45.23	0.72	474446.68	788498.80	N 32 18 6.45	W 103 32 0.20
	12824.00	88.82	178.90	9691.31	3442.80	-3442.49	46.44	1.83	474351.69	788500.01	N 32 18 5.51	W 103 32 0.19
	12919.00	88.88	178.36	9693.22	3537.77	-3537.44	48.71	0.57	474256.74	788502.28	N 32 18 4.57	W 103 32 0.17
	13013.00	88.54	178.17	9695.33	3631.73	-3631.37	51.56	0.41	474162.81	788505.12	N 32 18 3.64	W 103 32 0.15
	13108.00	90.06	181.01	9696.49	3726.71	-3726.35	52.23	3.39	474067.84	788505.80	N 32 18 2.70	W 103 32 0.15
	13203.00	89.94	181.44	9696.49	3821.66	-3821.33	50.20	0.47	473972.86	788503.77	N 32 18 1.76	W 103 32 0.18
	13297.00	90.79	180.06	9695.90	3915.62	-3915.32	48.97	1.72	473878.87	788502.54	N 32 18 0.83	W 103 32 0.20
	13391.00	89.50	180.00	9695.66	4009.61	-4009.31	48.92	1.37	473784.88	788502.49	N 32 17 59.90	W 103 32 0.21
	13485.00	88.71	179.77	9697.13	4103.59	-4103.30	49.11	0.88	473690.89	788502.68	N 32 17 58.97	W 103 32 0.22
	13580.00	88.60	179.71	9699.36	4198.57	-4198.27	49.54	0.13	473595.92	788503.11	N 32 17 58.03	W 103 32 0.22
	13674.00	89.27	178.92	9701.10	4292.55	-4292.25	50.67	1.10	473501.95	788504.24	N 32 17 57.10	W 103 32 0.22
	13769.00	88.77	178.52	9702.73	4387.53	-4387.21	52.79	0.67	473406.99	788506.36	N 32 17 56.16	W 103 32 0.20
	13863.00	87.93	178.39	9705.43	4481.48	-4481.14	55.32	0.90	473313.07	788508.89	N 32 17 55.24	W 103 32 0.18
Final Survey	13939.00	87.31	177.30	9708.59	4557.39	-4557.02	58.18	1.65	473237.19	788511.75	N 32 17 54.48	W 103 32 0.15
Project to bit	13998.00	87.31	177.30	9711.36	4616.29	-4615.89	60.95	0.00	473178.32	788514.52	N 32 17 53.90	W 103 32 0.12

Survey Type: Def Survey

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)	Survey Tool Type	Borehole / Survey
	1	0.000	23.000	1/98.425	30.000	30.000	NAL_MWD_PLUS_0.5_DEG-Depth Only	Original Borehole / Cimarex Azul State 13 Fed Com 1H survey MWD 0ft to 13998ft
	1	23.000	23.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG-Depth Only	Original Borehole / Cimarex Azul State 13 Fed Com 1H survey MWD 0ft to 13998ft
	1	23.000	13998.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Azul State 13 Fed Com 1H survey