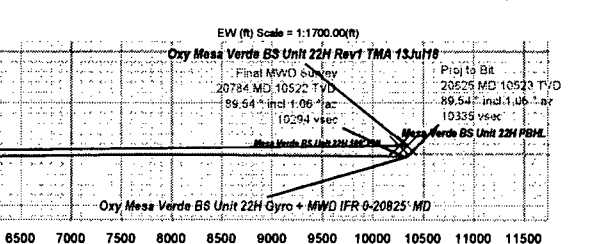
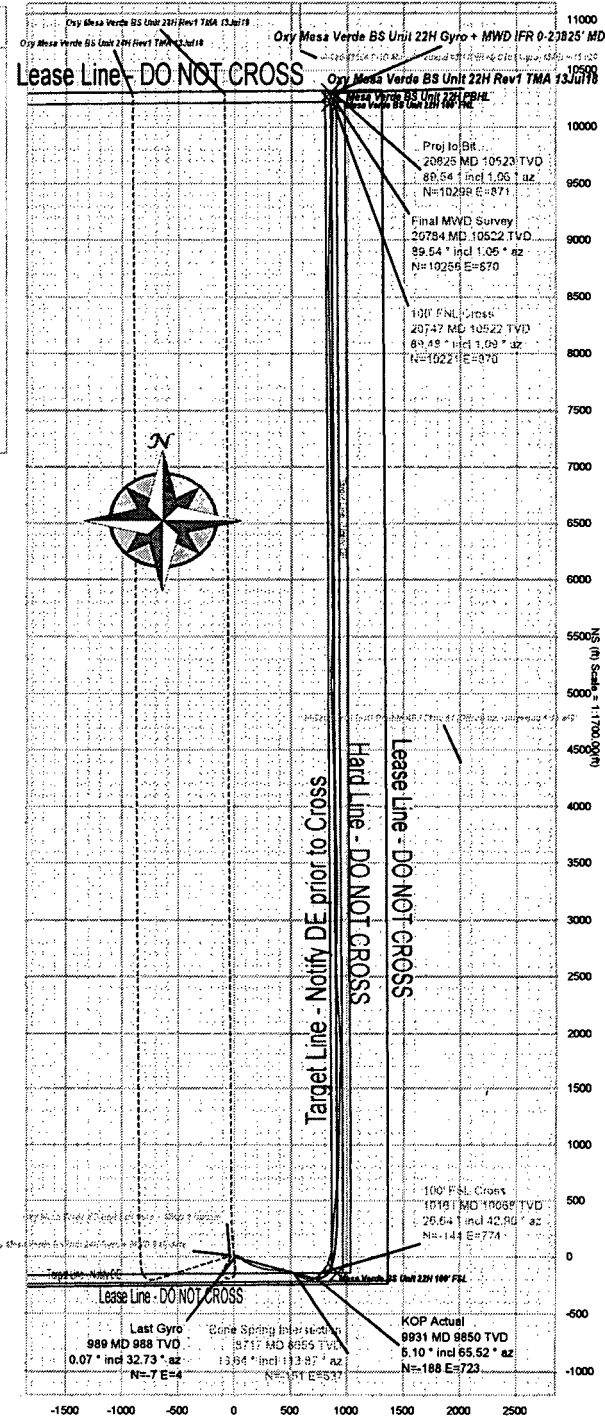
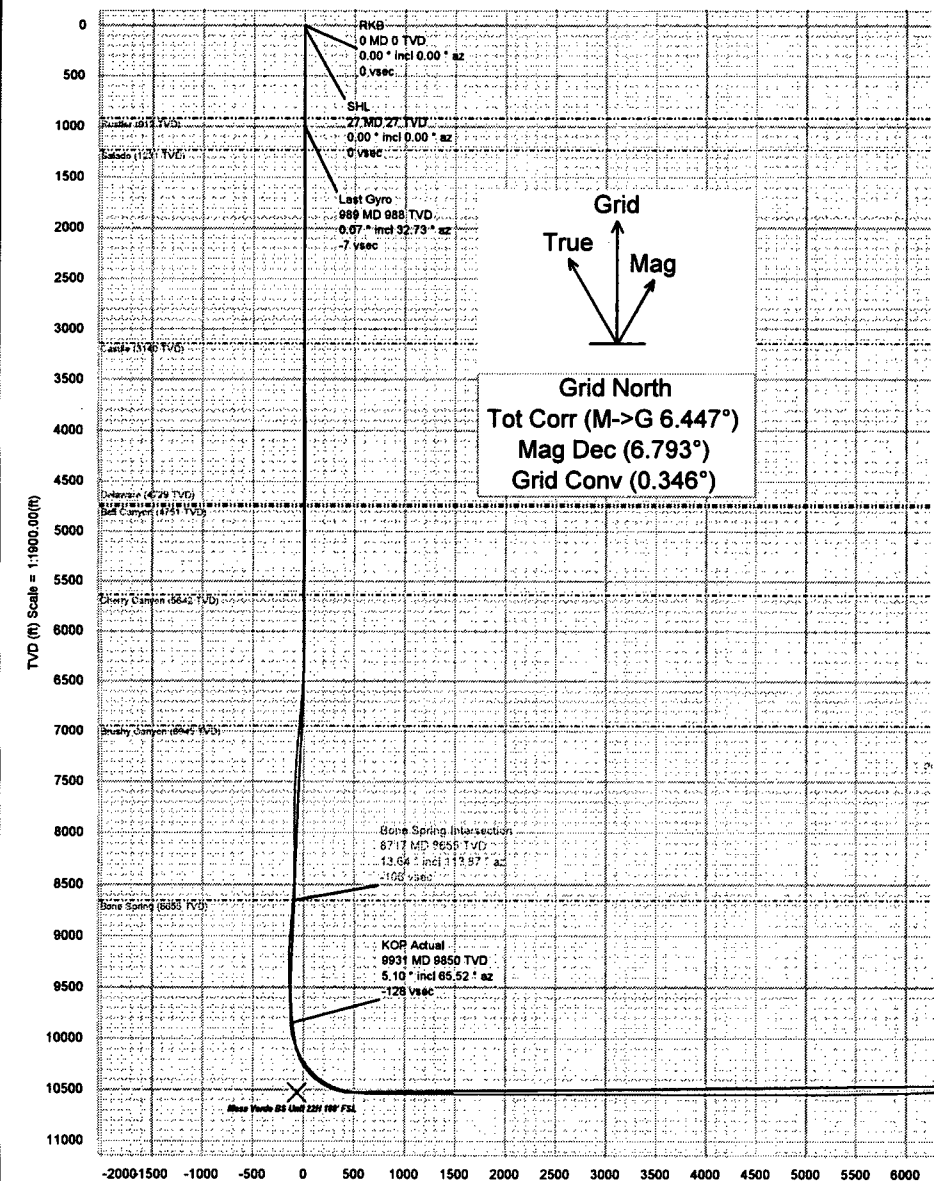


Borehole:	Well:	Field:	Structure:
Original Borehole	Mesa Verde BS Unit 22H	NM Lea County (NAD 83)	Oxy Mesa Verde BS Unit 22H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	HGM 2018	Dip:	88.912°	Date:	01-Aug-2018	Lat:	N 32 12 38.43	North:	441086.18RUS	Grid Conv:	0.3461°
MagDec:	6.793°	FS:	47978.844nT	Gravity FS:	988.432mg (8.80688 Based)	Lon:	W 103 41 2.82	East:	742162.88RUS	Scale Fact:	0.99996028
								Slot: Mesa Verde BS Unit 22H			
								TVD Ref: RKB=26.6' (3894.7' above MSL)			
								Plan: Oxy Mesa Verde BS Unit 22H Gyro + MWD IFR 0-20825' MD			

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	
Last Gyro	988.50	0.07	32.73	988.46	-6.51	-6.90	4.42	1.19
Bone Spring Intersection	8717.00	13.84	113.87	8654.80	-106.12	-150.73	537.31	0.68
KOP Actual	9931.00	5.10	65.52	9849.59	-128.27	-188.28	723.36	1.84
100' FSL Cross	10161.00	26.64	42.90	10067.82	-79.56	-143.59	774.10	4.97
100' FNL Cross	20747.00	89.48	1.09	10521.90	10257.47	10220.57	869.61	0.19
Final MWD Survey	20784.00	89.54	1.06	10522.22	10294.39	10257.57	870.30	0.19
Proj to Bit	20825.00	89.54	1.06	10522.54	10335.31	10298.56	871.06	0.00





Oxy Mesa Verde BS Unit 22H Gyro + MWD IFR 0-20825' MD Survey Geodetic Report

(Def Survey)

Report Date: August 28, 2018 - 09:34 AM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Shot: Oxy Mesa Verde BS Unit 22H / Mesa Verde BS Unit 22H
 Well: Mesa Verde BS Unit 22H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Oxy Mesa Verde BS Unit 22H Gyro + MWD IFR 0-20825' MD
 Survey Date: August 01, 2018
 Tort / AHD / DDI / ERD Ratio: 209.891' / 11327.911 ft / 8.871' / 1.074
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 39.42948", W 103° 41' 2.51728"
 Location Grid N/E Y/X: N 441085.180 RUS, E 742152.660 RUS
 Grid Convergence Angle: 0.3461°
 Grid Scale Factor: 0.99995528
 Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 4.708° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3594.700 ft above MSL
 Seabed / Ground Elevation: 3568.200 ft above MSL
 Magnetic Declination: 6.793°
 Total Gravity Field Strength: 988.4319mgN (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47978.644 nT
 Magnetic Dip Angle: 59.912°
 Declination Date: August 01, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3461°
 Total Corr Mag North->Grid: 6.4472°
 North: 6.4472°
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	441085.18	742152.66	N 32 12 39.43	W 103 41 2.52
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441085.18	742152.66	N 32 12 39.43	W 103 41 2.52
	68.50	0.85	142.71	68.50	-0.18	-0.19	0.14	1.55	441084.99	742152.80	N 32 12 39.43	W 103 41 2.52
	121.50	0.75	149.80	121.50	-0.68	-0.73	0.50	0.25	441084.45	742153.16	N 32 12 39.42	W 103 41 2.51
	213.50	0.89	157.13	213.49	-1.87	-1.76	1.02	0.12	441083.42	742153.68	N 32 12 39.41	W 103 41 2.51
	298.50	0.88	156.41	298.48	-2.57	-2.69	1.42	0.02	441082.49	742154.08	N 32 12 39.40	W 103 41 2.50
	392.50	0.85	154.87	392.48	-3.52	-3.89	1.87	0.04	441081.49	742154.53	N 32 12 39.39	W 103 41 2.50
	487.50	0.50	154.06	487.47	-4.34	-4.55	2.28	0.16	441080.63	742154.94	N 32 12 39.38	W 103 41 2.49
	581.50	0.42	152.18	581.47	-4.99	-5.22	2.82	0.09	441079.96	742155.28	N 32 12 39.38	W 103 41 2.49
	676.50	0.33	141.80	676.47	-5.48	-5.74	2.95	0.12	441079.44	742155.61	N 32 12 39.37	W 103 41 2.48
	770.50	0.40	132.09	770.46	-5.88	-6.18	3.37	0.10	441079.01	742156.03	N 32 12 39.37	W 103 41 2.48
	865.50	0.36	125.24	865.46	-6.23	-6.57	3.86	0.08	441078.61	742156.51	N 32 12 39.36	W 103 41 2.47
	960.50	0.33	118.53	960.46	-6.49	-6.87	4.34	0.05	441078.31	742157.00	N 32 12 39.36	W 103 41 2.47
	988.50	0.07	32.73	988.46	-6.51	-6.90	4.42	1.19	441078.28	742157.08	N 32 12 39.36	W 103 41 2.47
	1032.00	0.28	96.64	1031.96	-6.49	-6.89	4.53	0.55	441078.29	742157.19	N 32 12 39.36	W 103 41 2.47
	1123.00	0.35	76.02	1122.96	-6.41	-6.84	5.01	0.15	441078.34	742157.67	N 32 12 39.36	W 103 41 2.46
	1215.00	0.13	8.48	1214.96	-6.21	-6.67	5.29	0.38	441078.51	742157.95	N 32 12 39.36	W 103 41 2.46
	1307.00	0.18	35.25	1306.96	-5.99	-6.45	5.39	0.10	441078.73	742158.05	N 32 12 39.37	W 103 41 2.46
	1399.00	0.04	76.70	1398.96	-5.85	-6.32	5.50	0.17	441078.86	742158.16	N 32 12 39.37	W 103 41 2.45
	1493.00	0.25	308.73	1492.96	-5.73	-6.19	5.37	0.29	441078.99	742158.03	N 32 12 39.37	W 103 41 2.48
	1588.00	0.21	357.91	1587.96	-5.44	-5.88	5.20	0.21	441079.30	742157.88	N 32 12 39.37	W 103 41 2.48
	1682.00	0.30	337.75	1681.96	-5.05	-5.48	5.11	0.13	441079.70	742157.77	N 32 12 39.37	W 103 41 2.48
	1777.00	0.15	340.48	1776.95	-4.71	-5.14	4.97	0.16	441080.04	742157.63	N 32 12 39.38	W 103 41 2.48
	1872.00	0.10	356.77	1871.95	-4.52	-4.94	4.92	0.06	441080.24	742157.58	N 32 12 39.38	W 103 41 2.48
	1966.00	0.08	54.14	1965.95	-4.39	-4.82	4.97	0.09	441080.36	742157.63	N 32 12 39.38	W 103 41 2.48
	2061.00	0.04	293.58	2060.95	-4.34	-4.76	5.00	0.11	441080.42	742157.65	N 32 12 39.38	W 103 41 2.48
	2155.00	0.24	23.73	2154.95	-4.14	-4.57	5.04	0.26	441080.61	742157.70	N 32 12 39.38	W 103 41 2.48
	2249.00	0.19	68.95	2248.95	-3.89	-4.33	5.27	0.18	441080.85	742157.93	N 32 12 39.39	W 103 41 2.48
	2344.00	0.16	87.28	2343.95	-3.80	-4.27	5.55	0.07	441080.91	742158.21	N 32 12 39.39	W 103 41 2.45
	2438.00	0.24	94.90	2437.95	-3.79	-4.28	5.88	0.09	441080.90	742158.54	N 32 12 39.39	W 103 41 2.45
	2533.00	0.30	85.41	2532.95	-3.75	-4.28	6.32	0.08	441080.90	742158.98	N 32 12 39.39	W 103 41 2.44
	2628.00	0.12	129.32	2627.95	-3.76	-4.32	6.85	0.24	441080.86	742159.31	N 32 12 39.39	W 103 41 2.44
	2722.00	0.20	41.59	2721.95	-3.69	-4.26	6.83	0.24	441080.92	742159.49	N 32 12 39.39	W 103 41 2.44
	2816.00	0.48	44.30	2815.95	-3.25	-3.86	7.22	0.30	441081.32	742159.88	N 32 12 39.39	W 103 41 2.43
	2911.00	0.77	23.02	2910.94	-2.34	-2.99	7.74	0.39	441082.19	742160.40	N 32 12 39.40	W 103 41 2.43
	3006.00	0.88	30.89	3005.93	-1.08	-1.77	8.37	0.17	441083.41	742161.03	N 32 12 39.41	W 103 41 2.42
	3100.00	1.08	38.08	3099.92	0.31	-0.48	9.28	0.25	441084.72	742161.94	N 32 12 39.42	W 103 41 2.41
	3194.00	1.08	40.58	3193.90	1.77	0.91	10.41	0.05	441086.09	742163.07	N 32 12 39.44	W 103 41 2.40
	3289.00	1.15	47.12	3288.88	3.20	2.24	11.69	0.15	441087.42	742164.35	N 32 12 39.45	W 103 41 2.38
	3383.00	0.91	54.07	3382.87	4.38	3.32	12.98	0.29	441088.50	742165.64	N 32 12 39.46	W 103 41 2.37
	3477.00	0.80	48.35	3476.86	5.34	4.20	14.08	0.15	441089.38	742166.74	N 32 12 39.47	W 103 41 2.35
	3666.00	0.77	19.67	3665.84	7.52	6.27	15.49	0.21	441091.45	742168.15	N 32 12 39.49	W 103 41 2.34
	3761.00	0.87	30.30	3760.83	8.79	7.49	16.07	0.19	441092.67	742168.73	N 32 12 39.50	W 103 41 2.33
	3855.00	0.95	16.76	3854.82	10.19	8.86	16.66	0.24	441094.04	742169.31	N 32 12 39.52	W 103 41 2.32
	3950.00	0.83	38.98	3949.81	11.53	10.15	17.32	0.38	441095.32	742169.97	N 32 12 39.53	W 103 41 2.32
	4045.00	1.07	72.28	4044.80	12.44	10.95	18.59	0.62	441096.13	742171.25	N 32 12 39.54	W 103 41 2.30
	4140.00	1.10	75.50	4139.78	13.08	11.45	20.32	0.07	441096.63	742172.98	N 32 12 39.54	W 103 41 2.28
	4235.00	1.39	92.12	4234.76	13.43	11.63	22.36	0.48	441096.81	742175.01	N 32 12 39.54	W 103 41 2.26
	4329.00	1.64	114.13	4328.73	13.03	11.04	24.72	0.67	441096.22	742177.38	N 32 12 39.54	W 103 41 2.23
	4424.00	2.17	122.62	4423.67	11.74	9.52	27.48	0.63	441094.70	742180.14	N 32 12 39.52	W 103 41 2.20
	4518.00	2.23	127.54	4517.60	9.92	7.44	30.43	0.21	441092.62	742183.09	N 32 12 39.50	W 103 41 2.16
	4606.00	2.08	126.90	4605.54	8.14	5.44	33.06	0.17	441090.62	742185.72	N 32 12 39.48	W 103 41 2.13
	4795.00	0.71	127.99	4794.48	5.67	2.66	36.73	0.72	441087.84	742189.39	N 32 12 39.45	W 103 41 2.09
	4890.00	0.11	183.21	4889.48	5.25	2.21	37.19	0.69	441087.39	742189.84	N 32 12 39.45	W 103 41 2.08
	4984.00	0.17	297.51	4983.48	5.22	2.18	37.06	0.25	441087.36	742189.72	N 32 12 39.45	W 103 41 2.09
	5079.00	0.15	141.23	5078.48	5.18	2.15	37.01	0.33	441087.33	742189.67	N 32 12 39.45	W 103 41 2.09
	5173.00	0.20	235.09	5172.48	4.99	1.96	36.95	0.27	441087.14	742189.61	N 32 12 39.45	W 103 41 2.09
	5268.00	0.15	123.80	5267.48	4.82	1.80	36.92	0.31	441086.98	742189.58	N 32 12 39.45	W 103 41 2.09
	5457.00	0.14	49.08	5456.48	4.87	1.81	37.30	0.09	441086.99	742189.96	N 32 12 39.45	W 103 41 2.08
	5552.00	0.17	49.61	5551.48	5.05	1.98	37.50	0.03	441087.16	742190.15	N 32 12 39.45	W 103 41 2.08
	5647.00	0.17	156.54	5646.48	5.02	1.94	37.66	0.29	441087.12	742190.32	N 32 12 39.45	W 103 41 2.08
	5741.00	0.12	17.04	5740.48	5.00	1.91	37.74	0.29	441087.09	742190.40	N 32 12 39.45	W 103 41 2.08
	5836.00	0.15	153.45	5835.48	4.99	1.89	37.83	0.26	441087.07	742190.49	N 32 12 39.45	W 103 41 2.08
	5931.00	0.17	242.63	5930.48	4.81	1.71	37.76	0.24	441086.89	742190.42	N 32 12 39.44	W 103 41 2.08
	6025.00	0.17	191.17	6024.48	4.59	1.51	37.61	0.16	441086.69	742190.27	N 32 12 39.44	W 103 41 2.08
	6120.00	0.13	125.24	6119.48	4.40	1.31	37.67	0.18	441086.49	742190.33	N 32 12 39.44	W 103 41 2.08
	6215.00	1.01	121.30	6214.47	3.97	0.81	38.47	0.93	441085.99	742191.13	N 32 12 39.44	W 103 41 2.07
	6309.00	2.99	125.84	6308.41	2.33	-1.05	41.17	2.11	441084.13	742193.82	N 32 12 39.42	W 103 41 2.04
	6404.00	4.72	129.92	6403.19	-1.20	-5.01	46.17	1.84	441080.17	742198.83	N 32 12 39.38	W 103 41 1.98
	6498.00	6.28	129.63	6496.75	-6.38	-10.77	53.10	1.66	441074.41	742205.78	N 32 12 39.32	W 103 41 1.90
	6593.00	7.98	125.39	6591.02	-12.72	-17.91	62.48	1.87	441067.28	742215.14	N 32 12 39.25	W 103 41 1.79
	6687.00	9.80	123.81	6685.88	-19.94	-28.14	74.45	1.95	441059.04	742227.10	N 32 12 39.17	W 103 41 1.65
	6782.00	11.73	121.60	6777.21	-28.24	-35.70	89.39	2.08	441049.49	742242.05	N 32 12 39.07	W 103 41 1.48
	6877.00	13.48	119.77	6869.91	-37.30	-46.26	107.23	1.89	441038.93	742259.88	N 32 12 38.97	W 103 41 1.27

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (NUS)	Easting (EUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7350.00	13.95	109.01	7328.80	-74.51	-92.23	212.08	0.40	440992.96	742384.71	N 32 12 38.50	W 103 41 0.06
	7444.00	14.21	106.22	7419.98	-79.61	-99.14	233.86	0.77	440986.04	742386.50	N 32 12 38.43	W 103 40 59.80
	7539.00	14.00	103.92	7512.12	-83.78	-105.16	256.21	0.63	440980.02	742408.85	N 32 12 38.37	W 103 40 59.54
	7633.00	14.31	100.89	7603.26	-86.85	-110.09	278.65	0.85	440975.08	742431.30	N 32 12 38.32	W 103 40 59.28
	7728.00	13.95	97.42	7695.39	-88.68	-113.79	301.53	0.97	440971.39	742454.18	N 32 12 38.29	W 103 40 59.02
	7822.00	14.07	95.26	7786.60	-89.30	-116.30	324.15	0.57	440968.88	742476.78	N 32 12 38.28	W 103 40 58.75
	7917.00	14.18	94.46	7878.73	-89.38	-118.26	347.23	0.23	440966.92	742499.88	N 32 12 38.24	W 103 40 58.48
	8012.00	14.04	93.65	7970.88	-89.10	-119.80	370.32	0.24	440965.28	742522.96	N 32 12 38.22	W 103 40 58.22
	8107.00	13.99	92.54	8063.04	-88.45	-121.14	393.29	0.29	440964.04	742545.93	N 32 12 38.21	W 103 40 57.95
	8202.00	13.94	93.43	8155.23	-87.78	-122.34	416.18	0.23	440962.85	742568.82	N 32 12 38.19	W 103 40 57.68
	8296.00	14.26	97.38	8246.40	-88.05	-124.50	438.97	1.08	440960.68	742591.61	N 32 12 38.17	W 103 40 57.42
	8391.00	14.13	99.52	8338.50	-89.57	-127.92	462.01	0.57	440957.26	742614.65	N 32 12 38.14	W 103 40 57.15
	8485.00	14.21	103.62	8429.64	-92.32	-132.54	484.54	1.07	440952.65	742637.17	N 32 12 38.09	W 103 40 56.89
	8579.00	13.95	107.64	8520.82	-96.64	-138.69	506.55	1.08	440946.50	742659.18	N 32 12 38.03	W 103 40 56.63
	8674.00	13.88	113.20	8613.04	-102.82	-146.65	527.93	1.41	440938.54	742680.57	N 32 12 37.95	W 103 40 56.38
Bone Spring Intersection	8717.00	13.64	113.87	8654.80	-106.12	-150.73	537.31	0.68	440934.46	742689.95	N 32 12 37.91	W 103 40 56.27
	8768.00	13.35	114.70	8704.39	-110.11	-155.62	548.16	0.68	440929.58	742700.79	N 32 12 37.86	W 103 40 56.15
	8863.00	13.42	116.29	8796.81	-117.91	-165.09	568.01	0.39	440920.10	742720.64	N 32 12 37.76	W 103 40 55.92
	8958.00	13.27	117.46	8889.25	-126.18	-175.00	587.56	0.33	440910.19	742740.20	N 32 12 37.66	W 103 40 55.69
	9052.00	14.01	115.10	8980.60	-134.32	-184.80	607.44	0.98	440900.39	742760.07	N 32 12 37.56	W 103 40 55.46
	9147.00	13.01	110.10	9072.97	-141.17	-193.35	627.90	1.62	440891.83	742780.53	N 32 12 37.48	W 103 40 55.22
	9242.00	11.46	105.12	9165.81	-145.71	-199.49	647.05	1.97	440885.70	742799.68	N 32 12 37.42	W 103 40 55.00
	9336.00	10.13	97.14	9258.15	-147.75	-202.96	664.27	2.13	440882.23	742816.90	N 32 12 37.38	W 103 40 54.80
	9431.00	8.51	86.03	9351.90	-147.04	-203.51	679.58	2.54	440881.68	742832.20	N 32 12 37.38	W 103 40 54.62
	9525.00	6.67	74.19	9445.08	-144.08	-201.54	691.77	2.56	440883.65	742844.40	N 32 12 37.39	W 103 40 54.48
	9620.00	5.35	62.44	9539.58	-139.78	-197.99	701.00	1.89	440887.20	742853.83	N 32 12 37.43	W 103 40 54.37
	9714.00	4.81	61.17	9633.21	-135.35	-194.14	708.20	0.80	440891.05	742860.83	N 32 12 37.47	W 103 40 54.29
	9809.00	3.86	72.40	9727.95	-132.03	-191.33	714.59	1.17	440893.88	742867.22	N 32 12 37.49	W 103 40 54.21
	9890.00	4.36	72.56	9798.78	-130.11	-189.80	719.44	0.70	440895.39	742872.07	N 32 12 37.51	W 103 40 54.16
KOP Actual	9931.00	5.10	65.52	9849.59	-128.27	-188.28	723.38	1.84	440896.81	742875.98	N 32 12 37.52	W 103 40 54.11
	10025.00	15.98	52.40	9941.88	-117.49	-178.62	737.45	11.78	440906.57	742890.08	N 32 12 37.62	W 103 40 53.95
	10120.00	24.74	44.57	10030.87	-93.38	-158.43	761.82	9.84	440928.75	742914.44	N 32 12 37.84	W 103 40 53.68
100' FSL Cross	10161.00	26.64	42.90	10067.82	-79.56	-143.59	774.10	4.97	440941.60	742926.72	N 32 12 37.96	W 103 40 53.52
	10214.00	29.13	41.05	10114.68	-59.63	-125.15	790.68	4.97	440960.04	742943.29	N 32 12 38.14	W 103 40 53.32
	10309.00	34.09	28.95	10195.82	-16.88	-84.35	818.78	8.45	441000.84	742971.40	N 32 12 38.55	W 103 40 52.99
	10403.00	39.56	18.26	10270.91	36.38	-32.78	840.95	8.95	441052.40	742993.57	N 32 12 39.05	W 103 40 52.73
	10498.00	44.34	15.32	10341.55	98.44	28.01	859.21	5.44	441113.19	743011.83	N 32 12 39.68	W 103 40 52.52
	10593.00	54.22	2.67	10403.60	169.92	98.88	869.83	14.46	441184.04	743022.45	N 32 12 40.38	W 103 40 52.39
	10687.00	62.85	1.00	10452.62	249.92	178.92	872.34	9.30	441264.09	743024.96	N 32 12 41.15	W 103 40 52.35
	10782.00	70.32	3.73	10490.35	336.95	285.95	875.99	8.29	441351.12	743028.61	N 32 12 42.01	W 103 40 52.30
	10877.00	80.32	4.41	10514.39	428.73	357.50	882.52	10.55	441442.66	743035.14	N 32 12 42.91	W 103 40 52.22
	11003.00	85.24	6.48	10530.23	553.87	481.89	894.39	4.23	441567.05	743047.01	N 32 12 44.14	W 103 40 52.07
	11130.00	88.61	5.39	10537.04	680.44	608.01	907.50	2.79	441693.16	743060.12	N 32 12 45.39	W 103 40 51.91
	11221.00	90.06	4.19	10538.09	771.43	698.68	915.10	2.07	441783.83	743067.71	N 32 12 46.29	W 103 40 51.82
	11312.00	89.85	1.43	10538.17	862.37	789.56	919.56	3.04	441874.70	743072.17	N 32 12 47.19	W 103 40 51.76
	11404.00	89.78	0.84	10538.46	954.19	881.54	921.38	0.65	441966.68	743074.00	N 32 12 48.10	W 103 40 51.73
	11495.00	89.75	0.70	10538.84	1044.98	972.53	922.60	0.16	442057.67	743075.22	N 32 12 49.00	W 103 40 51.71
	11587.00	89.92	1.13	10539.10	1136.77	1064.52	924.07	0.50	442149.65	743076.69	N 32 12 49.91	W 103 40 51.69
	11679.00	89.89	0.85	10539.25	1228.58	1156.51	925.06	0.31	442241.63	743078.28	N 32 12 50.82	W 103 40 51.66
	11771.00	89.85	1.18	10539.46	1320.39	1248.49	927.29	0.36	442333.61	743079.91	N 32 12 51.73	W 103 40 51.64
	11863.00	89.82	1.35	10539.73	1412.22	1340.47	929.32	0.19	442425.59	743081.94	N 32 12 52.64	W 103 40 51.61
	11955.00	89.82	1.26	10540.02	1504.06	1432.44	931.42	0.10	442517.56	743084.03	N 32 12 53.55	W 103 40 51.58
	12046.00	89.85	1.24	10540.28	1594.89	1523.42	933.40	0.04	442608.53	743086.02	N 32 12 54.45	W 103 40 51.55
	12137.00	89.92	1.45	10540.46	1685.74	1614.40	935.54	0.24	442699.50	743088.16	N 32 12 55.35	W 103 40 51.51
	12229.00	89.92	1.38	10540.59	1777.58	1706.37	937.81	0.08	442791.47	743090.43	N 32 12 56.26	W 103 40 51.48
	12323.00	89.96	0.86	10540.69	1871.40	1800.35	939.65	0.55	442885.45	743092.26	N 32 12 57.19	W 103 40 51.45
	12512.00	89.82	358.38	10541.05	2059.29	1989.25	935.10	2.37	443074.33	743087.71	N 32 12 59.06	W 103 40 51.49
	12606.00	89.78	356.14	10541.38	2152.27	2083.05	928.97	0.28	443168.13	743081.58	N 32 12 59.99	W 103 40 51.56
	12701.00	89.78	355.94	10541.74	2246.18	2177.82	922.41	0.21	443262.90	743075.02	N 32 13 0.82	W 103 40 51.63
	12890.00	89.78	356.39	10542.47	2433.08	2366.39	909.76	0.24	443451.46	743062.38	N 32 13 2.79	W 103 40 51.76
	12984.00	89.78	356.60	10542.83	2526.12	2480.22	904.02	0.22	443545.28	743056.64	N 32 13 3.72	W 103 40 51.82
	13079.00	89.89	358.50	10543.10	2620.37	2555.13	899.96	2.00	443640.19	743052.57	N 32 13 4.66	W 103 40 51.86
	13268.00	90.57	1.65	10542.35	2808.73	2744.10	900.20	1.71	443829.15	743052.82	N 32 13 6.53	W 103 40 51.85
	13363.00	89.85	1.06	10542.00	2903.56	2839.07	902.45	0.98	443924.12	743055.07	N 32 13 7.47	W 103 40 51.81
	13458.00	89.78	0.75	10542.30	2998.35	2934.06	903.95	0.33	444019.10	743058.57	N 32 13 8.41	W 103 40 51.79
	13552.00	89.82	1.05	10542.63	3092.14	3028.05	905.43	0.32	444113.08	743058.05	N 32 13 9.34	W 103 40 51.77
	13741.00	89.86	0.60	10542.99	3280.71	3217.03	908.15	0.25	444302.05	743060.77	N 32 13 11.21	W 103 40 51.72
	13836.00	90.09	0.06	10542.95	3375.43	3312.02	908.70	0.58	444397.05	743061.31	N 32 13 12.15	W 103 40 51.71
	14025.00	89.82	358.34	10543.10	3563.55	3501.00	906.08	0.92	444586.01	743058.67	N 32 13 14.02	W 103 40 51.72
	14119.00	89.82	358.38	10543.31	3656.98	3594.96	903.37	0.11	444679.97	743055.98	N 32 13 14.95	W 103 40 51.75
	14308.00	89.89	358.37	10543.63	3844.82	3783.88	898.01	0.12	444868.89	743050.63	N 32 13 16.82	W 103 40 51.80
	14403.00	89.89	358.48	10543.81	3939.25	3878.85	895.40	0.02	444963.85	743048.01	N 32 13 17.76	W 103 40 51.82
	14497.00	89.85	358.52	10544.02	4032.70	3972.81	892.94	0.06	445057.81	743045.55	N 32 13 18.69	W 103 40 51.84
	14592.00	90.02	358.20	10544.13	4127.12	4067.77	890.22	0.38	445152.78	743042.84	N 32 13 19.63	W 103 40 51.87
	14687.00	90.06	358.43	10544.07	4221.53	4162.73	887.42	0.25	445247.72	743040.04	N 32 13 20.57	W 103 40 51.89
	14782.00	89.86	358.41	10544.05	4315.95	4257.70	884.80	0.11	445342.88	743037.42	N 32 13 21.51	W 103 40 51.92

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 ° ' ")
	18378.00	89.75	359.46	10506.97	7893.03	7850.33	842.94	0.52	448935.15	742995.56	N 32 13 57.06	W 103 40 52.15
	18470.00	89.81	359.23	10507.50	7986.62	7944.33	841.87	0.29	449029.14	742994.49	N 32 13 57.99	W 103 40 52.16
	18660.00	89.81	358.57	10508.79	8175.64	8134.29	838.22	0.35	449219.09	742990.84	N 32 13 59.87	W 103 40 52.19
	18849.00	89.85	359.21	10509.68	8363.66	8323.25	834.56	0.38	449408.04	742987.18	N 32 14 1.74	W 103 40 52.22
	18943.00	89.85	359.07	10510.09	8457.22	8417.24	833.15	0.28	449502.02	742985.77	N 32 14 2.67	W 103 40 52.23
	19133.00	89.81	359.05	10511.32	8648.29	8607.21	830.03	0.02	449691.98	742982.65	N 32 14 4.55	W 103 40 52.25
	19322.00	89.71	0.77	10512.44	8834.62	8796.20	829.73	0.91	449880.96	742982.35	N 32 14 6.42	W 103 40 52.24
	19417.00	89.81	0.96	10513.01	8929.40	8891.18	831.17	0.23	449975.95	742983.79	N 32 14 7.36	W 103 40 52.22
	19511.00	89.47	0.94	10513.76	9023.20	8985.17	832.72	0.15	450069.93	742985.35	N 32 14 8.29	W 103 40 52.19
	19606.00	89.71	1.73	10514.44	9118.03	9080.14	834.94	0.87	450164.89	742987.56	N 32 14 9.23	W 103 40 52.16
	19795.00	89.58	1.83	10515.81	9306.78	9269.04	840.81	0.09	450353.79	742993.43	N 32 14 11.10	W 103 40 52.08
	19890.00	89.82	1.82	10516.11	9401.66	9363.99	843.92	0.27	450448.73	742996.54	N 32 14 12.04	W 103 40 52.03
	20079.00	89.51	2.01	10517.21	9590.44	9552.88	850.40	0.17	450637.61	743003.02	N 32 14 13.90	W 103 40 51.94
	20268.00	89.81	1.20	10518.67	9779.16	9741.79	855.69	0.43	450826.52	743008.31	N 32 14 15.77	W 103 40 51.87
	20457.00	89.58	2.17	10520.00	9967.89	9930.71	861.25	0.51	451015.42	743013.87	N 32 14 17.64	W 103 40 51.79
	20552.00	89.75	1.87	10520.56	10062.78	10025.85	864.60	0.36	451110.36	743017.22	N 32 14 18.58	W 103 40 51.75
	20741.00	89.47	1.10	10521.84	10251.48	10214.58	869.49	0.43	451299.28	743022.11	N 32 14 20.45	W 103 40 51.68
100' FNL Cross	20747.00	89.48	1.09	10521.90	10257.47	10220.57	869.61	0.19	451305.28	743022.23	N 32 14 20.51	W 103 40 51.67
Final MWD	20784.00	89.54	1.06	10522.22	10294.39	10257.57	870.30	0.19	451342.27	743022.92	N 32 14 20.88	W 103 40 51.66
Proj to Bit	20825.00	89.54	1.06	10522.54	10335.31	10298.56	871.06	0.00	451383.26	743023.68	N 32 14 21.28	W 103 40 51.65

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	26.500	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 22H Gyro + MWD IFR 0-20825' MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 22H Gyro + MWD IFR 0-20825' MD
	1	26.500	988.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde BS Unit 22H Gyro + MWD
	1	988.500	20825.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde BS Unit 22H Gyro + MWD