

JAN 29 2019

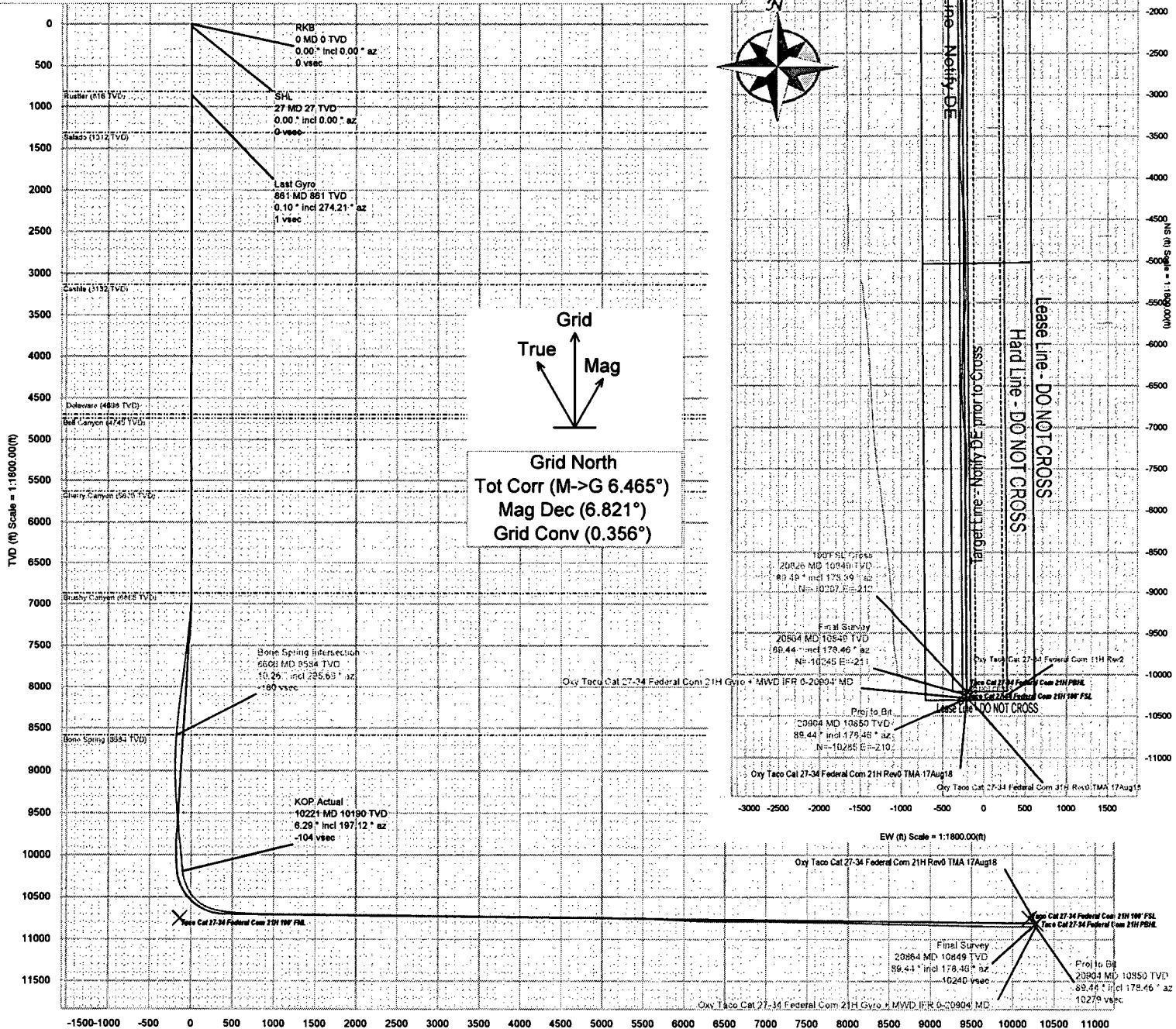
NM Lea County (NAD 83)
RECEIVED

Borehole:	Well:	Field:	Structure:
Original Borehole	Taco Cat 27-34 Federal Com 21H	NM Lea County (NAD 83)	Oxy Taco Cat 27-34 Federal Com 21H

Gravity & Magnetic Parameters			Surface Location			Miscellaneous		
Model: IFR1	Dip: 60.169°	Date: 02-Oct-2018	Lat: N 32 22 9.14	Northing: 48685.968US	Grid Conv: 0.3569°	Slot: 34 Federal Com 21H	TVD Ref: RKB(3661.81 above MSL)	
MagDec: 6.821°	FS: 48182.2nT	Gravity FS: 988.454mgm (8.20645 Based)	Lon: W 103 40 6.86	Easting: 746877.798US	Scale Fact: 0.99996733	Plan: Oxy Taco Cat 27-34 Federal Com 21H Gyro + MWD IFR 0-20904' 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	0.00
Last Gyro	860.61	0.10	274.21	860.60	1.25	-1.18	-3.32	0.09
Bone Spring Intersection	8606.37	10.26	295.69	8584.00	-187.25	191.04	-181.97	0.47
100°FNL Cross	9853.61	6.18	202.60	9824.63	-151.56	157.20	-272.43	0.31
KOP Actual	10221.00	6.29	197.12	10190.09	-115.43	121.29	-283.28	1.60
100°FSL Cross	20826.00	89.49	178.39	10848.77	10209.13	-10206.92	-212.41	0.23
Final Survey	20864.00	89.44	178.46	10849.13	10247.09	-10244.91	-211.37	0.23
Proj to Bit	20904.00	89.44	178.46	10849.52	10287.04	-10284.89	-210.29	0.00



Oxy Taco Cat 27-34 Federal Com 21H Gyro + MWD IFR 0-20904' MD Survey

Geodetic Report

(Def Survey)



HOBBS OCD

JAN 29 2019

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Report Date: November 20, 2018 - 09:10 AM Client: OXY Field: NM Lea County (NAD 83) Structure / Slot: Oxy Taco Cat 27-34 Federal Com 21H / Oxy Taco Cat 27-34 Federal Com 21H Well: Taco Cat 27-34 Federal Com 21H Borehole: Original Borehole UWI / API#: Unknown / Unknown Survey Name: Oxy Taco Cat 27-34 Federal Com 21H Gyro + MWD IFR 0-20904' MD Survey Date: September 24, 2018 Tort / AHD / DDI / ERD Ratio: 242.612' / 10880.328 ft / 6.706 / 1.001 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet Location Lat / Long: N 32° 22' 9.13869", W 103° 40' 6.85630" Location Grid N/E Y/X: N 498885.960 RUS, E 748577.790 RUS CRS Grid Convergence Angle: 0.3559° Grid Scale Factor: 0.9995733 Version / Patch: 2.10.740.0	Survey / DLS Computation: Minimum Curvature / Lubinski Vertical Section Azimuth: 181.180° (Grid North) Vertical Section Origin: 0.000 ft, 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 3661.800 ft above MSL Seabed / Ground Elevation: 3635.300 ft above MSL Magnetic Declination: 6.821° Total Gravity Field Strength: 998.4543mgm (9.80665 Based) Gravity Model: GARM Total Magnetic Field Strength: 48162.200 nT Magnetic Dip Angle: 60.159° Declination Date: October 02, 2018 Magnetic Declination Model: IFR1 North Reference: Grid North Grid Convergence Used: 0.3559° Total Corr Mag North->Grid North: 6.4851° Local Coord Referenced To: Well Head	
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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 ° ' ")
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	498885.96	748577.79	N 32 22 9.14	W 103 40 6.86
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	498885.96	748577.79	N 32 22 9.14	W 103 40 6.86
	68.55	0.42	219.98	68.55	0.12	-0.12	-0.10	1.00	498885.84	748577.89	N 32 22 9.14	W 103 40 6.88
	126.88	0.46	229.42	126.88	0.44	-0.43	-0.41	0.14	498885.53	748577.38	N 32 22 9.13	W 103 40 6.86
	211.24	0.35	229.48	211.24	0.84	-0.82	-0.87	0.13	498885.14	748576.92	N 32 22 9.13	W 103 40 6.87
	298.91	0.31	238.42	298.90	1.15	-1.12	-1.27	0.07	498884.84	748576.52	N 32 22 9.13	W 103 40 6.87
	393.36	0.21	265.35	393.35	1.30	-1.27	-1.66	0.16	498884.69	748576.13	N 32 22 9.13	W 103 40 6.88
	487.88	0.31	280.77	487.87	1.28	-1.23	-2.09	0.13	498884.73	748575.70	N 32 22 9.13	W 103 40 6.88
	582.42	0.28	280.28	582.41	1.20	-1.15	-2.55	0.05	498884.81	748575.24	N 32 22 9.13	W 103 40 6.89
	676.98	0.14	269.40	676.97	1.17	-1.11	-2.88	0.13	498884.85	748574.91	N 32 22 9.13	W 103 40 6.89
	776.83	0.16	252.74	776.82	1.22	-1.15	-3.13	0.05	498884.81	748574.66	N 32 22 9.13	W 103 40 6.89
	880.81	0.10	274.21	880.80	1.25	-1.18	-3.32	0.09	498884.78	748574.47	N 32 22 9.13	W 103 40 6.90
	942.00	0.06	42.21	941.99	1.22	-1.15	-3.36	0.18	498884.81	748574.43	N 32 22 9.13	W 103 40 6.90
	1035.00	0.12	179.56	1034.99	1.28	-1.21	-3.32	0.18	498884.75	748574.47	N 32 22 9.13	W 103 40 6.90
	1126.00	0.12	197.27	1125.99	1.46	-1.39	-3.35	0.04	498884.57	748574.44	N 32 22 9.13	W 103 40 6.90
	1218.00	0.06	90.16	1217.99	1.55	-1.49	-3.33	0.16	498884.47	748574.46	N 32 22 9.12	W 103 40 6.90
	1309.00	0.06	93.31	1308.99	1.58	-1.49	-3.24	0.00	498884.47	748574.55	N 32 22 9.12	W 103 40 6.89
	1400.00	0.12	218.02	1399.99	1.63	-1.57	-3.25	0.18	498884.39	748574.54	N 32 22 9.12	W 103 40 6.89
	1490.00	0.06	115.42	1489.99	1.73	-1.66	-3.26	0.16	498884.30	748574.53	N 32 22 9.12	W 103 40 6.89
	1582.00	0.06	48.32	1581.99	1.72	-1.65	-3.18	0.07	498884.31	748574.61	N 32 22 9.12	W 103 40 6.89
	1676.00	0.06	349.45	1675.99	1.63	-1.57	-3.16	0.06	498884.39	748574.63	N 32 22 9.12	W 103 40 6.89
	1771.00	0.14	196.79	1770.99	1.70	-1.63	-3.20	0.21	498884.33	748574.59	N 32 22 9.12	W 103 40 6.89
	1865.00	0.06	114.11	1864.99	1.83	-1.76	-3.19	0.15	498884.20	748574.60	N 32 22 9.12	W 103 40 6.89
	1960.00	0.06	67.55	1959.99	1.83	-1.76	-3.10	0.05	498884.20	748574.69	N 32 22 9.12	W 103 40 6.89
	2054.00	0.12	92.93	2053.99	1.81	-1.75	-2.95	0.08	498884.21	748574.84	N 32 22 9.12	W 103 40 6.89
	2148.00	0.06	79.00	2147.99	1.80	-1.74	-2.81	0.07	498884.22	748574.98	N 32 22 9.12	W 103 40 6.89
	2243.00	0.14	191.18	2242.99	1.91	-1.85	-2.78	0.18	498884.11	748575.01	N 32 22 9.12	W 103 40 6.89
	2337.00	0.06	119.06	2336.99	2.04	-1.99	-2.76	0.14	498883.97	748575.03	N 32 22 9.12	W 103 40 6.89
	2432.00	0.06	108.39	2431.99	2.08	-2.02	-2.67	0.01	498883.94	748575.12	N 32 22 9.12	W 103 40 6.89
	2527.00	0.06	292.88	2526.99	2.08	-2.02	-2.67	0.13	498883.94	748575.12	N 32 22 9.12	W 103 40 6.89
	2621.00	0.09	163.98	2620.99	2.13	-2.07	-2.69	0.14	498883.89	748575.10	N 32 22 9.12	W 103 40 6.89
	2716.00	0.09	150.13	2715.99	2.26	-2.21	-2.63	0.02	498883.75	748575.16	N 32 22 9.12	W 103 40 6.89
	2811.00	0.06	63.44	2810.99	2.30	-2.25	-2.55	0.11	498883.71	748575.24	N 32 22 9.12	W 103 40 6.89
	2905.00	0.06	354.42	2904.99	2.23	-2.18	-2.51	0.07	498883.78	748575.28	N 32 22 9.12	W 103 40 6.89
	3000.00	0.09	112.01	2999.99	2.21	-2.16	-2.45	0.14	498883.80	748575.34	N 32 22 9.12	W 103 40 6.89
	3094.00	0.09	145.68	3093.99	2.30	-2.25	-2.34	0.06	498883.71	748575.45	N 32 22 9.12	W 103 40 6.88
	3189.00	0.06	282.74	3188.99	2.35	-2.30	-2.34	0.15	498883.66	748575.45	N 32 22 9.12	W 103 40 6.88
	3283.00	0.09	347.02	3282.99	2.27	-2.22	-2.41	0.09	498883.74	748575.38	N 32 22 9.12	W 103 40 6.88
	3378.00	0.06	4.37	3377.99	2.14	-2.09	-2.42	0.04	498883.87	748575.37	N 32 22 9.12	W 103 40 6.88
	3473.00	0.09	247.59	3472.99	2.12	-2.07	-2.49	0.14	498883.89	748575.30	N 32 22 9.12	W 103 40 6.89
	3567.00	0.06	339.44	3566.99	2.11	-2.05	-2.57	0.12	498883.91	748575.22	N 32 22 9.12	W 103 40 6.89
	3662.00	0.05	101.72	3661.99	2.07	-2.02	-2.55	0.10	498883.94	748575.24	N 32 22 9.12	W 103 40 6.89
	3757.00	0.09	150.01	3756.99	2.14	-2.09	-2.47	0.07	498883.87	748575.32	N 32 22 9.12	W 103 40 6.89
	3851.00	0.06	57.38	3850.99	2.18	-2.13	-2.39	0.12	498883.83	748575.40	N 32 22 9.12	W 103 40 6.88
	3946.00	0.06	23.64	3945.99	2.10	-2.05	-2.33	0.04	498883.91	748575.46	N 32 22 9.12	W 103 40 6.88
	4040.00	0.13	99.91	4039.99	2.07	-2.03	-2.21	0.14	498883.93	748575.58	N 32 22 9.12	W 103 40 6.88
	4135.00	0.09	156.92	4134.99	2.16	-2.11	-2.07	0.12	498883.85	748575.72	N 32 22 9.12	W 103 40 6.88
	4230.00	0.01	56.41	4229.99	2.22	-2.18	-2.04	0.10	498883.78	748575.75	N 32 22 9.12	W 103 40 6.88
	4419.00	0.17	69.68	4418.99	2.11	-2.07	-1.76	0.08	498883.89	748576.03	N 32 22 9.12	W 103 40 6.88
	4513.00	0.19	121.67	4512.99	2.14	-2.11	-1.50	0.17	498883.85	748576.29	N 32 22 9.12	W 103 40 6.87
	4607.00	0.06	205.83	4606.99	2.28	-2.23	-1.38	0.21	498883.73	748576.41	N 32 22 9.12	W 103 40 6.87
	4702.00	0.06	95.40	4701.99	2.31	-2.28	-1.36	0.10	498883.68	748576.43	N 32 22 9.12	W 103 40 6.87
	4796.00	0.06	267.06	4795.99	2.32	-2.29	-1.36	0.13	498883.67	748576.43	N 32 22 9.12	W 103 40 6.87
	4891.00	0.06	345.65	4890.99	2.27	-2.24	-1.42	0.08	498883.72	748576.37	N 32 22 9.12	W 103 40 6.87
	5080.00	0.06	27.24	5079.99	2.09	-2.06	-1.40	0.02	498883.90	748576.39	N 32 22 9.12	W 103 40 6.87
	5174.00	0.09	39.08	5173.99	1.99	-1.96	-1.33	0.04	498884.00	748576.46	N 32 22 9.12	W 103 40 6.87
	5269.00	0.12	119.06	5268.99	1.97	-1.95	-1.19	0.14	498884.01	748576.60	N 32 22 9.12	W 103 40 6.87
	5363.00	0.09	301.20	5362.99	1.98	-1.96	-1.17	0.22	498884.00	748576.62	N 32 22 9.12	W 103 40 6.87
	5458.00	0.09	91.08	5457.99	1.94	-1.92	-1.16	0.18	498884.04	748576.83	N 32 22 9.12	W 103 40 6.87
	5553.00	0.14	57.10	5552.99	1.88	-1.86	-0.99	0.09	498884.10	748576.80	N 32 22 9.12	W 103 40 6.87
	5648.00	0.09	130.18	5647.99	1.86	-1.84	-0.83	0.15	498884.12	748576.96	N 32 22 9.12	W 103 40 6.87
	5742.00	0.09	214.06	5741.99	1.97	-1.95	-0.82	0.13	498884.01	748576.97	N 32 22 9.12	W 103 40 6.87
	5837.00	0.06	54.66	5836.99	2.00	-1.99	-0.82	0.16	498883.97	748576.97	N 32 22 9.12	W 103 40 6.87
	5931.00	0.06	79.37	5930.99	1.96	-1.95	-0.73	0.03	498884.01	748577.00	N 32 22 9.12	W 103 40 6.88
	6026.00	0.09	262.98	6025.99	1.96	-1.95	-0.76	0.16	498884.01	748577.03	N 32 22 9.12	W 103 40 6.87
	6120.00	0.06	18.77	6119.99	1.93	-1.91	-0.81	0.14	498884.05	748576.98	N 32 22 9.12	W 103 40 6.87
	6215.00	0.06	140.51	6214.99	1.92	-1.90	-0.77	0.11	498884.06	748577.02	N 32 22 9.12	W 103 40 6.87
	6309.00	0.09	284.68	6308.99	1.94	-1.92	-0.81	0.15	498884.04	748576.98	N 32 22 9.12	W 103 40 6.87
	6374.00	0.09	121.30	6373.99	1.95	-1.94	-0.81	0.27	498884.02	748576.98	N 32 22 9.12	W 103 40 6.87
	6550.00	0.10	31.38	6549.99	1.89	-1.88	-0.61	0.08	498884.08	748577.18	N 32 22 9.12	W 103 40 6.88
	6593.00	0.10	150.19	6592.99	1.89	-1.88	-0.58	0.40	498884.08	748577.21	N 32 22 9.12	W 103 40 6.88
	6689.00	0.04	206.65	6688.99	1.99	-1.98	-0.55	0.09	498883.98	748577.24	N 32 22 9.12	W 103 40 6.88
	6782.00	0.16	148.57	6781.99	2.13	-2.12	-0.50	0.15	498883.84	748577.29	N 32 22 9.12	W 103 40 6.88

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7255.00	7.76	321.28	7253.51	-23.31	23.73	-20.07	1.63	498708.69	746557.72	N 32 22 9.37	W 103 40 7.09
	7350.00	8.47	322.48	7347.55	-33.69	34.28	-28.35	0.77	498720.24	746548.45	N 32 22 9.48	W 103 40 7.18
	7444.00	8.78	322.33	7440.49	-44.68	45.45	-38.95	0.33	498731.41	746540.85	N 32 22 9.59	W 103 40 7.28
	7539.00	9.16	322.32	7534.33	-56.22	57.18	-48.00	0.40	498743.13	746531.79	N 32 22 9.71	W 103 40 7.39
	7634.00	9.42	323.63	7628.08	-68.27	69.42	-55.23	0.35	498755.38	746522.56	N 32 22 9.83	W 103 40 7.50
	7728.00	9.67	323.40	7720.78	-80.81	81.95	-64.50	0.27	498767.91	746513.29	N 32 22 9.95	W 103 40 7.60
	7823.00	10.21	323.81	7814.36	-93.59	95.14	-74.25	0.57	498781.09	746503.54	N 32 22 10.08	W 103 40 7.72
	7917.00	10.81	322.80	7906.78	-107.08	108.85	-84.55	0.67	498794.80	746493.24	N 32 22 10.22	W 103 40 7.83
	8012.00	11.02	320.49	8000.06	-120.93	122.93	-95.74	0.48	498808.88	746482.06	N 32 22 10.36	W 103 40 7.96
	8106.00	10.95	318.80	8092.34	-134.10	136.35	-107.59	0.79	498822.30	746470.21	N 32 22 10.49	W 103 40 8.10
	8201.00	10.96	313.80	8185.61	-148.62	149.13	-120.33	0.60	498835.08	746457.47	N 32 22 10.62	W 103 40 8.25
	8295.00	10.58	310.02	8277.95	-158.06	160.84	-133.41	0.82	498846.79	746444.39	N 32 22 10.74	W 103 40 8.40
	8390.00	10.66	304.17	8371.33	-168.31	171.39	-147.36	1.14	498857.34	746430.44	N 32 22 10.84	W 103 40 8.56
	8484.00	10.80	300.10	8463.69	-177.31	180.69	-162.17	0.82	498866.64	746415.63	N 32 22 10.94	W 103 40 8.73
	8578.00	10.38	296.04	8556.09	-185.13	188.82	-177.40	0.91	498874.77	746400.40	N 32 22 11.02	W 103 40 8.91
Bone Spring Intersection	8606.37	10.26	295.69	8584.00	-187.25	191.04	-181.97	0.47	498876.99	746395.83	N 32 22 11.04	W 103 40 8.96
	8673.00	9.99	294.82	8649.59	-192.03	196.04	-192.57	0.47	498881.99	746385.23	N 32 22 11.09	W 103 40 9.09
	8767.00	8.32	292.62	8742.39	-197.78	202.07	-206.24	1.81	498888.03	746371.55	N 32 22 11.15	W 103 40 9.25
	8862.00	6.41	287.63	8836.60	-201.80	206.32	-217.64	2.12	498892.28	746360.16	N 32 22 11.19	W 103 40 9.38
	8957.00	4.23	279.47	8931.19	-203.81	208.51	-226.15	2.42	498894.46	746351.65	N 32 22 11.22	W 103 40 9.48
	9051.00	3.17	265.60	9024.99	-204.05	208.88	-232.17	1.47	498894.83	746345.63	N 32 22 11.22	W 103 40 9.55
	9146.00	3.78	246.05	9119.82	-202.47	207.41	-237.65	1.39	498893.36	746340.15	N 32 22 11.21	W 103 40 9.61
	9240.00	3.49	233.42	9213.61	-199.20	204.25	-243.04	0.90	498890.20	746334.76	N 32 22 11.17	W 103 40 9.68
	9335.00	4.82	221.98	9308.36	-194.46	198.61	-248.08	1.03	498885.56	746329.73	N 32 22 11.13	W 103 40 9.73
	9429.00	4.89	213.86	9402.05	-188.34	193.59	-252.73	0.86	498879.54	746325.07	N 32 22 11.07	W 103 40 9.79
	9524.00	5.39	209.12	9496.67	-180.99	188.33	-257.16	0.69	498872.28	746320.64	N 32 22 11.00	W 103 40 9.84
	9613.00	5.85	209.71	9584.80	-164.97	170.49	-266.09	0.14	498856.44	746311.71	N 32 22 10.84	W 103 40 9.95
100FNL Cross	9607.00	6.21	203.93	9778.29	-156.22	161.82	-270.44	0.87	498847.78	746307.36	N 32 22 10.76	W 103 40 10.00
	9653.61	6.18	202.60	9824.63	-151.56	157.20	-272.43	0.31	498843.16	746305.37	N 32 22 10.71	W 103 40 10.02
	9602.00	6.16	201.20	9872.74	-146.69	152.38	-274.37	0.31	498838.33	746303.43	N 32 22 10.66	W 103 40 10.04
	9696.00	6.07	195.75	9968.21	-137.14	142.89	-277.54	0.62	498828.84	746300.26	N 32 22 10.57	W 103 40 10.08
	10091.00	5.54	193.73	10060.72	-127.81	133.60	-280.00	0.60	498819.56	746297.81	N 32 22 10.48	W 103 40 10.11
KOP Actual	10161.00	5.37	194.41	10130.40	-121.32	127.15	-281.61	0.26	498813.10	746296.19	N 32 22 10.41	W 103 40 10.13
	10221.00	6.29	197.12	10190.09	-115.43	121.29	-283.28	1.60	498807.24	746294.52	N 32 22 10.36	W 103 40 10.15
	10316.00	17.27	194.05	10282.95	-96.82	102.58	-288.25	11.57	498788.53	746289.55	N 32 22 10.17	W 103 40 10.21
	10410.00	23.56	191.59	10371.00	-64.51	70.80	-295.42	6.75	498756.58	746282.38	N 32 22 9.86	W 103 40 10.30
	10505.00	34.12	191.33	10454.10	-19.48	25.75	-304.46	11.12	498711.71	746273.31	N 32 22 9.41	W 103 40 10.40
	10599.00	45.04	187.29	10528.45	39.73	-33.27	-313.92	11.93	498652.69	746263.88	N 32 22 8.83	W 103 40 10.52
	10694.00	56.99	178.20	10586.19	113.29	-106.78	-316.95	14.59	498579.18	746260.85	N 32 22 8.10	W 103 40 10.56
	10788.00	70.08	174.96	10628.00	196.96	-190.58	-311.81	14.26	498495.39	746265.99	N 32 22 7.27	W 103 40 10.51
	10883.00	76.09	176.17	10655.62	287.37	-281.15	-304.80	8.44	498404.82	746273.00	N 32 22 6.38	W 103 40 10.43
	10977.00	82.64	177.63	10672.96	379.45	-373.35	-299.82	7.13	498312.62	746277.98	N 32 22 5.46	W 103 40 10.38
	11072.00	83.13	178.37	10684.73	473.46	-467.49	-294.88	1.41	498218.49	746282.92	N 32 22 4.53	W 103 40 10.33
	11166.00	87.75	178.85	10692.20	568.84	-561.00	-289.35	4.94	498124.98	746288.46	N 32 22 3.61	W 103 40 10.27
	11217.00	87.28	178.19	10694.41	617.62	-611.86	-286.25	1.59	498074.13	746291.55	N 32 22 3.10	W 103 40 10.24
	11253.00	86.38	176.57	10696.40	653.44	-647.73	-283.98	2.71	498030.26	746293.82	N 32 22 2.75	W 103 40 10.21
	11348.00	88.38	175.70	10700.75	747.97	-742.41	-277.59	2.30	497943.58	746300.22	N 32 22 1.81	W 103 40 10.15
	11536.00	89.28	180.68	10704.59	935.61	-930.22	-271.65	2.89	497755.78	746306.15	N 32 21 59.95	W 103 40 10.09
	11631.00	89.38	181.30	10705.70	1030.61	-1025.20	-273.30	0.66	497660.81	746304.51	N 32 21 59.01	W 103 40 10.12
	11726.00	89.45	182.25	10706.67	1125.60	-1120.14	-276.24	1.00	497565.87	746301.56	N 32 21 58.07	W 103 40 10.16
	11820.00	89.41	182.13	10707.60	1219.58	-1214.07	-279.83	0.13	497471.94	746297.97	N 32 21 57.14	W 103 40 10.21
	11915.00	89.28	182.09	10708.69	1314.56	-1309.00	-283.33	0.14	497377.02	746294.46	N 32 21 56.20	W 103 40 10.25
	12005.00	89.35	181.93	10709.77	1404.54	-1398.94	-286.48	0.19	497287.08	746291.32	N 32 21 55.31	W 103 40 10.30
	12096.00	89.41	182.24	10710.75	1495.52	-1489.87	-289.79	0.35	497196.15	746288.01	N 32 21 54.41	W 103 40 10.34
	12282.00	89.86	179.94	10711.94	1681.51	-1675.82	-293.33	1.26	497010.21	746284.47	N 32 21 52.57	W 103 40 10.40
	12377.00	89.52	179.83	10712.45	1776.48	-1770.82	-293.14	0.38	496915.22	746284.66	N 32 21 51.73	W 103 40 10.40
	12471.00	89.48	179.07	10713.27	1870.43	-1864.81	-292.24	0.81	496821.23	746285.56	N 32 21 50.70	W 103 40 10.40
	12661.00	89.48	177.21	10714.99	2060.15	-2054.70	-286.07	0.98	496631.36	746291.73	N 32 21 48.83	W 103 40 10.34
	12755.00	89.48	177.08	10715.85	2153.91	-2148.58	-281.39	0.14	496537.48	746296.41	N 32 21 47.90	W 103 40 10.29
	12944.00	90.03	175.44	10716.66	2342.21	-2337.16	-269.06	0.92	496348.90	746308.74	N 32 21 46.03	W 103 40 10.16
	13039.00	89.17	175.51	10717.32	2436.74	-2431.86	-261.57	0.91	496254.20	746316.23	N 32 21 45.09	W 103 40 10.08
	13145.00	89.38	177.41	10718.66	2542.36	-2537.65	-255.02	1.80	496148.42	746322.78	N 32 21 44.04	W 103 40 10.01
	13323.00	88.79	182.09	10721.50	2720.23	-2715.57	-254.25	2.65	495970.51	746323.55	N 32 21 42.28	W 103 40 10.02
	13417.00	89.48	184.29	10722.92	2814.16	-2809.41	-259.48	2.45	495876.67	746318.32	N 32 21 41.36	W 103 40 10.08
	13606.00	89.79	184.66	10724.13	3002.82	-2997.80	-274.55	0.34	495688.29	746303.25	N 32 21 39.49	W 103 40 10.27
	13796.00	89.83	183.54	10724.76	3192.55	-3187.29	-288.47	0.70	495498.81	746289.34	N 32 21 37.62	W 103 40 10.45
	13985.00	89.07	183.09	10726.57	3381.41	-3375.96	-299.40	0.47	495310.15	746278.41	N 32 21 35.75	W 103 40 10.59
	14174.00	89.14	180.96	10729.52	3570.36	-3564.81	-306.07	1.13	495121.31	746271.73	N 32 21 33.88	W 103 40 10.68
	14269.00	89.48	179.33	10730.67	3665.33	-3659.80	-306.31	1.75	495026.32	746271.49	N 32 21 32.94	W 103 40 10.69
	14364.00	89.62	176.71	10731.42	3760.18	-3754.73	-303.03	2.76	494931.40	746274.77	N 32 21 32.01	W 103 40 10.66
	14553.00	89.21	175.53	10733.34	3948.43	-3943.29	-290.24	0.66	494742.85	746287.56	N 32 21 30.14	W 103 40 10.53
	14647.00	89.24	175.24	10734.62	4041.94	-4036.97	-282.68	0.31	494649.17	746295.12	N 32 21 29.21	W 103 40 10.44
	14742.00	89.38	173.05	10735.76	4136.21	-4131.46	-272.99	2.31	494554.68	746304.81	N 32 21 28.28	W 103 40 10.34
	14837.00	89.39	173.64	10736.76	4230.32	-4225.82	-261.98	0.62	494460.33	746315.82	N 32 21 27.34	W 103 40 10.22
	14932.00	89.45	174.33	10737.76	4324.56	-4320.29	-252.03	0.73	494365.86	746325.77	N 32 21 26.41	W 103 40 10.11
	15026.00	88.16	175.82	10739.70	4418.01	-4413.92	-243.96	2.08	494272.24	746333.64	N 32 21 25.48	W 1

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 ° ' ")
	18678.00	88.44	178.21	10807.10	8062.45	-8059.56	-223.12	0.54	490626.78	746354.68	N 32 20 49.41	W 103 40 10.04
	18875.00	88.65	180.52	10812.11	8259.27	-8256.47	-220.94	1.18	490429.86	746356.86	N 32 20 47.46	W 103 40 10.03
	18962.00	88.72	180.02	10814.10	8346.24	-8343.45	-221.35	0.58	490342.88	746356.45	N 32 20 46.60	W 103 40 10.04
	19056.00	88.58	180.34	10816.32	8440.20	-8437.42	-221.64	0.37	490248.92	746356.16	N 32 20 45.67	W 103 40 10.05
	19151.00	88.61	180.06	10818.65	8535.15	-8532.39	-221.98	0.30	490153.95	746355.82	N 32 20 44.73	W 103 40 10.06
	19245.00	88.37	180.42	10821.12	8629.11	-8626.36	-222.37	0.46	490059.99	746355.43	N 32 20 43.80	W 103 40 10.07
	19340.00	89.20	180.90	10823.14	8724.08	-8721.33	-223.48	1.01	489965.02	746354.34	N 32 20 42.88	W 103 40 10.09
	19434.00	88.58	180.18	10824.96	8818.06	-8815.31	-224.35	1.01	489871.05	746353.45	N 32 20 41.93	W 103 40 10.11
	19623.00	88.78	179.72	10829.31	9006.96	-9004.26	-224.18	0.27	489682.11	746353.62	N 32 20 40.06	W 103 40 10.12
	19812.00	88.58	179.51	10833.67	9195.84	-9193.20	-222.91	0.15	489493.17	746354.89	N 32 20 38.19	W 103 40 10.12
	19907.00	88.65	179.89	10835.96	9290.78	-9288.17	-222.25	0.20	489398.20	746355.55	N 32 20 37.25	W 103 40 10.12
	20001.00	88.48	179.57	10838.32	9384.71	-9382.14	-221.84	0.22	489304.24	746356.16	N 32 20 36.32	W 103 40 10.12
	20191.00	89.06	180.50	10842.40	9574.63	-9572.09	-221.76	0.58	489114.29	746356.04	N 32 20 34.44	W 103 40 10.13
	20285.00	89.23	180.36	10843.80	9668.61	-9666.08	-222.47	0.23	489020.31	746355.33	N 32 20 33.51	W 103 40 10.15
	20379.00	88.99	179.72	10845.26	9762.58	-9760.07	-222.53	0.73	488926.33	746355.27	N 32 20 32.58	W 103 40 10.16
	20569.00	89.82	178.55	10847.23	9952.44	-9950.03	-219.66	0.75	488736.37	746356.14	N 32 20 30.70	W 103 40 10.14
	20758.00	89.58	178.26	10848.22	10141.22	-10138.96	-214.40	0.20	488547.46	746363.40	N 32 20 28.83	W 103 40 10.09
100FSL Cross	20826.00	89.49	178.39	10848.77	10209.13	-10206.92	-212.41	0.23	488479.49	746365.39	N 32 20 28.16	W 103 40 10.07
Final Survey	20864.00	89.44	178.46	10849.13	10247.09	-10244.91	-211.37	0.23	488441.51	746366.43	N 32 20 27.78	W 103 40 10.06
Proj to Bit	20904.00	89.44	178.46	10849.52	10287.04	-10284.89	-210.29	0.00	488401.53	746367.50	N 32 20 27.39	W 103 40 10.05

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 Taco Cat 27-34 Federal Com 21H Gyro + MWD IFR 0-20904' MD
	1	26.500	26.500	Act Sins	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Taco Cat 27-34 Federal Com 21H Gyro + MWD IFR 0-20904' MD
	1	26.500	776.630	Act Sins	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Taco Cat 27-34 Federal Com 21H Gyro + Original Borehole / Oxy Taco Cat
	1	776.630	20904.000	Act Sins	30.000	30.000	NAL_MWD_IFR1+MS	27-34 Federal Com 21H Gyro +