



NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 20 2019

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BTA Oil Producers, LLC

Eddy County, New Mexico (NAD 83)

Sec 32, T23-S, R28-E

Ogden 20509 32-29 Fed Com #5H

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

03 April, 2019

A Certified Directional Survey should be
submitted as required by NMOCD Rule
19.15.16.14 NMAC





Survey Report - Geographic



Company:	BTA Oil Producers, LLC	Local Co-ordinate Reference:	Well Ogden 20509 32-29 Fed Com #5H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3132.0usft (Patterson #594)
Site:	Sec 32, T23-S, R28-E	MD Reference:	WELL @ 3132.0usft (Patterson #594)
Well:	Ogden 20509 32-29 Fed Com #5H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Eddy County, New Mexico (NAD 83)	
Map System:	US State Plane 1983	System Datum:
Geo Datum:	North American Datum 1983	Mean Sea Level
Map Zone:	New Mexico Eastern Zone	

Site	Sec 32, T23-S, R28-E	
Site Position:		Northing:
From:	Map	Easting:
Position Uncertainty:	0.0 usft	Slot Radius:
		Latitude:
		Longitude:
		Grid Convergence:

Well	Ogden 20509 32-29 Fed Com #5H					
Well Position	+N/-S	0.0 usft	Northing:	459,105.80 usft	Latitude:	32° 15' 43.078 N
	+E/-W	0.0 usft	Easting:	609,206.70 usft	Longitude:	104° 6' 49.556 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,107.0 usft

Wellbore		Wellbore #1			
Magnetics		Model Name	Sample Date	Declination	Dip Angle
				(°)	(°)
		IGRF2015	3/8/2019	7.02	59.99
					47,728.22263288

Design	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	4.57

Survey Program		Date	4/3/2019	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
154.0	17,165.0	QES MWD Surveys (Wellbore #1)	OWSG (Rev2) MWD	OWSG MWD - Standard

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting	Latitude	Longitude
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
0.0	0.00	0.00	0.0	0.0	0.0	459,105.80	609,206.70	32° 15' 43.078 N	104° 6' 49.556 W
154.0	0.40	318.40	154.0	0.4	-0.4	459,106.20	609,206.35	32° 15' 43.082 N	104° 6' 49.561 W
First MWD Survey @ 154.0' MD / 154.0' TVD									
214.0	0.60	292.70	214.0	0.7	-0.8	459,106.48	609,205.92	32° 15' 43.084 N	104° 6' 49.566 W
277.0	0.90	234.90	277.0	0.5	-1.5	459,106.32	609,205.21	32° 15' 43.083 N	104° 6' 49.574 W
336.0	1.00	263.40	336.0	0.2	-2.4	459,106.00	609,204.32	32° 15' 43.080 N	104° 6' 49.584 W
439.0	0.80	277.80	439.0	0.2	-4.0	459,105.99	609,202.71	32° 15' 43.080 N	104° 6' 49.603 W
613.0	2.30	86.50	612.9	0.6	-1.7	459,106.37	609,204.99	32° 15' 43.083 N	104° 6' 49.576 W
756.0	1.90	87.20	755.8	0.9	3.5	459,106.66	609,210.23	32° 15' 43.086 N	104° 6' 49.515 W
897.0	1.50	64.40	896.8	1.8	7.5	459,107.57	609,214.23	32° 15' 43.095 N	104° 6' 49.469 W
1,087.0	1.30	57.00	1,086.7	4.0	11.6	459,109.82	609,218.28	32° 15' 43.117 N	104° 6' 49.421 W
1,276.0	1.30	67.40	1,275.7	6.0	15.3	459,111.81	609,222.05	32° 15' 43.137 N	104° 6' 49.377 W



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Site:	Sec 32, T23-S, R28-E	MD Reference:	WELL @ 3132.0usft (Patterson #594)
Well:	Ogden 20509 32-29 Fed Com #5H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,466.0	1.10	80.90	1,465.6	7.1	19.1	459,112.93	609,225.84	32° 15' 43.148 N	104° 6' 49.333 W
1,656.0	1.80	91.80	1,655.6	7.3	23.9	459,113.12	609,230.63	32° 15' 43.150 N	104° 6' 49.278 W
1,845.0	2.90	103.60	1,844.4	6.1	31.5	459,111.91	609,238.24	32° 15' 43.138 N	104° 6' 49.189 W
2,035.0	4.00	95.00	2,034.1	4.4	42.8	459,110.20	609,249.52	32° 15' 43.120 N	104° 6' 49.058 W
2,224.0	4.60	100.40	2,222.5	2.5	56.8	459,108.26	609,263.54	32° 15' 43.101 N	104° 6' 48.894 W
2,414.0	3.30	106.40	2,412.1	-0.5	69.6	459,105.34	609,276.28	32° 15' 43.072 N	104° 6' 48.746 W
2,475.0	3.10	105.50	2,473.0	-1.4	72.8	459,104.40	609,279.55	32° 15' 43.062 N	104° 6' 48.708 W
2,670.0	3.60	132.20	2,667.7	-6.9	82.5	459,098.88	609,289.17	32° 15' 43.008 N	104° 6' 48.596 W
2,859.0	5.10	102.00	2,856.1	-12.7	95.1	459,093.14	609,301.78	32° 15' 42.951 N	104° 6' 48.449 W
3,049.0	4.80	105.90	3,045.4	-16.6	111.0	459,089.21	609,317.69	32° 15' 42.911 N	104° 6' 48.264 W
3,238.0	6.80	86.20	3,233.5	-18.0	129.8	459,087.79	609,336.46	32° 15' 42.897 N	104° 6' 48.046 W
3,427.0	6.10	86.20	3,421.3	-16.6	150.9	459,089.19	609,357.65	32° 15' 42.910 N	104° 6' 47.799 W
3,617.0	7.50	94.30	3,609.9	-16.9	173.4	459,088.93	609,380.09	32° 15' 42.907 N	104° 6' 47.537 W
3,806.0	7.70	106.80	3,797.3	-21.5	197.8	459,084.35	609,404.51	32° 15' 42.861 N	104° 6' 47.253 W
3,996.0	6.60	115.00	3,985.8	-29.7	219.9	459,076.05	609,426.59	32° 15' 42.779 N	104° 6' 46.996 W
4,185.0	6.20	119.10	4,173.6	-39.3	238.6	459,066.50	609,445.35	32° 15' 42.684 N	104° 6' 46.778 W
4,375.0	6.60	119.90	4,362.4	-49.7	257.1	459,056.07	609,463.78	32° 15' 42.580 N	104° 6' 46.563 W
4,565.0	4.50	127.10	4,551.5	-59.7	272.5	459,046.13	609,479.20	32° 15' 42.482 N	104° 6' 46.384 W
4,755.0	3.90	99.70	4,741.1	-65.3	284.8	459,040.54	609,491.51	32° 15' 42.426 N	104° 6' 46.241 W
4,945.0	3.40	99.40	4,930.7	-67.3	296.7	459,038.53	609,503.44	32° 15' 42.406 N	104° 6' 46.102 W
5,135.0	5.60	92.30	5,120.1	-68.6	311.6	459,037.24	609,518.26	32° 15' 42.393 N	104° 6' 45.929 W
5,325.0	6.50	106.60	5,309.0	-72.0	331.1	459,033.79	609,537.83	32° 15' 42.358 N	104° 6' 45.702 W
5,514.0	6.00	109.40	5,496.9	-78.3	350.7	459,027.46	609,557.40	32° 15' 42.295 N	104° 6' 45.474 W
5,704.0	5.50	110.40	5,685.9	-84.8	368.6	459,020.99	609,575.30	32° 15' 42.231 N	104° 6' 45.266 W
5,894.0	5.30	99.40	5,875.1	-89.4	385.8	459,016.38	609,592.50	32° 15' 42.185 N	104° 6' 45.065 W
6,084.0	6.20	89.20	6,064.2	-90.7	404.7	459,015.09	609,611.41	32° 15' 42.172 N	104° 6' 44.845 W
6,273.0	8.10	95.20	6,251.7	-91.8	428.2	459,014.02	609,634.88	32° 15' 42.161 N	104° 6' 44.572 W
6,463.0	4.30	98.30	6,440.5	-94.0	448.6	459,011.78	609,655.27	32° 15' 42.138 N	104° 6' 44.334 W
6,653.0	3.10	98.70	6,630.1	-95.8	460.7	459,009.98	609,667.39	32° 15' 42.120 N	104° 6' 44.193 W
6,846.0	5.60	94.60	6,822.6	-97.4	475.2	459,008.43	609,681.94	32° 15' 42.105 N	104° 6' 44.024 W
7,035.0	5.20	95.50	7,010.7	-98.9	493.0	459,006.87	609,699.66	32° 15' 42.089 N	104° 6' 43.818 W
7,225.0	5.80	104.80	7,199.9	-102.2	510.8	459,003.59	609,717.51	32° 15' 42.056 N	104° 6' 43.610 W
7,414.0	6.70	112.20	7,387.7	-108.8	530.2	458,996.99	609,736.95	32° 15' 41.990 N	104° 6' 43.383 W
7,603.0	6.50	114.00	7,575.5	-117.3	550.2	458,988.47	609,756.93	32° 15' 41.905 N	104° 6' 43.151 W
7,790.0	5.60	104.60	7,761.4	-123.9	568.7	458,981.87	609,775.43	32° 15' 41.840 N	104° 6' 42.936 W
7,982.0	5.50	99.70	7,952.5	-127.8	586.9	458,977.95	609,793.57	32° 15' 41.801 N	104° 6' 42.725 W
8,171.0	3.30	112.40	8,141.0	-131.4	600.8	458,974.35	609,807.53	32° 15' 41.765 N	104° 6' 42.562 W
8,361.0	2.00	116.20	8,330.8	-135.0	608.9	458,970.81	609,815.56	32° 15' 41.729 N	104° 6' 42.469 W
8,550.0	3.30	91.10	8,519.6	-136.6	617.3	458,969.25	609,823.96	32° 15' 41.714 N	104° 6' 42.371 W
8,739.0	1.20	96.00	8,708.4	-136.9	624.7	458,968.93	609,831.37	32° 15' 41.711 N	104° 6' 42.285 W
8,871.0	0.70	143.50	8,840.4	-137.7	626.5	458,968.14	609,833.22	32° 15' 41.703 N	104° 6' 42.263 W
9,047.0	9.80	10.60	9,015.6	-123.8	629.9	458,982.04	609,836.62	32° 15' 41.840 N	104° 6' 42.223 W
9,142.0	18.10	3.40	9,107.7	-101.0	632.3	459,004.76	609,838.99	32° 15' 42.065 N	104° 6' 42.195 W
9,237.0	26.50	1.80	9,195.5	-65.1	633.8	459,040.74	609,840.53	32° 15' 42.421 N	104° 6' 42.176 W
9,333.0	34.40	357.20	9,278.2	-16.5	633.2	459,089.31	609,839.88	32° 15' 42.902 N	104° 6' 42.182 W
9,428.0	44.60	358.50	9,351.4	43.8	631.0	459,149.62	609,837.69	32° 15' 43.499 N	104° 6' 42.207 W
9,544.0	56.50	0.80	9,425.0	133.2	630.6	459,239.02	609,837.30	32° 15' 44.383 N	104° 6' 42.209 W
9,578.6	59.64	0.05	9,443.3	162.6	630.8	459,268.38	609,837.51	32° 15' 44.674 N	104° 6' 42.206 W
330' HL Crossed @ 9578.6' MD / 9443.3' TVD									
9,631.0	64.40	359.00	9,467.9	208.8	630.4	459,314.64	609,837.12	32° 15' 45.132 N	104° 6' 42.209 W
9,725.0	76.60	357.40	9,499.2	297.2	627.6	459,403.03	609,834.30	32° 15' 46.006 N	104° 6' 42.240 W
9,820.0	89.20	356.20	9,510.9	391.2	622.3	459,496.96	609,829.03	32° 15' 46.936 N	104° 6' 42.299 W
9,914.0	89.00	356.00	9,512.4	484.9	615.9	459,590.73	609,822.64	32° 15' 47.864 N	104° 6' 42.371 W
10,008.0	91.00	357.40	9,512.4	578.8	610.5	459,684.57	609,817.23	32° 15' 48.793 N	104° 6' 42.432 W
10,102.0	90.80	356.40	9,510.9	672.6	605.4	459,778.42	609,812.15	32° 15' 49.722 N	104° 6' 42.489 W



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Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,197.0	91.70	357.20	9,508.9	767.4	600.1	459,873.25	609,806.84	32° 15' 50.660 N	104° 6' 42.548 W
10,291.0	93.70	0.20	9,504.4	861.3	598.0	459,967.10	609,804.71	32° 15' 51.589 N	104° 6' 42.571 W
10,385.0	92.90	0.10	9,499.0	955.1	598.3	460,060.95	609,804.96	32° 15' 52.518 N	104° 6' 42.566 W
10,479.0	89.80	358.60	9,496.8	1,049.1	597.2	460,154.90	609,803.89	32° 15' 53.447 N	104° 6' 42.576 W
10,574.0	91.40	359.20	9,495.8	1,144.1	595.4	460,249.87	609,802.07	32° 15' 54.387 N	104° 6' 42.595 W
10,668.0	91.20	358.80	9,493.7	1,238.0	593.7	460,343.83	609,800.43	32° 15' 55.317 N	104° 6' 42.612 W
10,762.0	91.50	0.60	9,491.5	1,332.0	593.2	460,437.80	609,799.93	32° 15' 56.247 N	104° 6' 42.615 W
10,856.0	92.00	0.60	9,488.6	1,426.0	594.2	460,531.75	609,800.92	32° 15' 57.177 N	104° 6' 42.602 W
10,951.0	92.40	1.10	9,484.9	1,520.9	595.6	460,626.67	609,802.33	32° 15' 58.116 N	104° 6' 42.583 W
11,046.0	89.30	0.10	9,483.5	1,615.8	596.6	460,721.64	609,803.32	32° 15' 59.056 N	104° 6' 42.569 W
11,140.0	89.00	0.60	9,484.9	1,709.8	597.2	460,815.63	609,803.89	32° 15' 59.986 N	104° 6' 42.560 W
11,235.0	90.70	1.10	9,485.2	1,804.8	598.6	460,910.62	609,805.30	32° 16' 0.926 N	104° 6' 42.541 W
11,329.0	92.20	1.50	9,482.8	1,898.8	600.7	461,004.56	609,807.44	32° 16' 1.856 N	104° 6' 42.514 W
11,424.0	89.10	359.90	9,481.7	1,993.7	601.9	461,099.53	609,808.60	32° 16' 2.795 N	104° 6' 42.499 W
11,518.0	92.80	0.90	9,480.2	2,087.7	602.5	461,193.50	609,809.25	32° 16' 3.725 N	104° 6' 42.489 W
11,612.0	92.90	0.60	9,475.5	2,181.6	603.8	461,287.38	609,810.48	32° 16' 4.654 N	104° 6' 42.472 W
11,706.0	93.60	0.90	9,470.2	2,275.4	605.0	461,381.22	609,811.71	32° 16' 5.583 N	104° 6' 42.455 W
11,801.0	92.50	1.50	9,465.1	2,370.3	607.0	461,476.06	609,813.70	32° 16' 6.521 N	104° 6' 42.430 W
11,895.0	90.70	0.90	9,462.5	2,464.2	609.0	461,570.00	609,815.66	32° 16' 7.451 N	104° 6' 42.405 W
11,989.0	90.30	0.20	9,461.7	2,558.2	609.9	461,663.99	609,816.57	32° 16' 8.381 N	104° 6' 42.392 W
12,083.0	88.50	359.40	9,462.6	2,652.2	609.5	461,757.98	609,816.24	32° 16' 9.311 N	104° 6' 42.394 W
12,178.0	88.20	359.40	9,465.4	2,747.1	608.5	461,852.93	609,815.24	32° 16' 10.251 N	104° 6' 42.403 W
12,272.0	90.50	0.20	9,466.4	2,841.1	608.2	461,946.92	609,814.92	32° 16' 11.181 N	104° 6' 42.405 W
12,367.0	92.60	0.20	9,463.9	2,936.1	608.5	462,041.88	609,815.25	32° 16' 12.121 N	104° 6' 42.398 W
12,461.0	93.00	0.10	9,459.3	3,030.0	608.8	462,135.77	609,815.49	32° 16' 13.050 N	104° 6' 42.393 W
12,555.0	91.20	359.50	9,455.8	3,123.9	608.5	462,229.70	609,815.16	32° 16' 13.979 N	104° 6' 42.395 W
12,649.0	91.30	358.30	9,453.8	3,217.9	606.7	462,323.66	609,813.36	32° 16' 14.909 N	104° 6' 42.414 W
12,743.0	91.70	358.10	9,451.3	3,311.8	603.7	462,417.58	609,810.41	32° 16' 15.839 N	104° 6' 42.446 W
12,838.0	94.20	359.90	9,446.4	3,406.6	602.0	462,512.43	609,808.75	32° 16' 16.777 N	104° 6' 42.463 W
12,932.0	93.50	0.20	9,440.1	3,500.4	602.1	462,606.21	609,808.83	32° 16' 17.705 N	104° 6' 42.460 W
13,026.0	95.20	359.90	9,433.0	3,594.1	602.2	462,699.94	609,808.92	32° 16' 18.633 N	104° 6' 42.456 W
13,120.0	89.90	359.90	9,428.8	3,688.0	602.0	462,793.81	609,808.75	32° 16' 19.562 N	104° 6' 42.456 W
13,215.0	87.50	359.70	9,431.0	3,783.0	601.7	462,888.78	609,808.42	32° 16' 20.502 N	104° 6' 42.458 W
13,308.0	87.00	358.30	9,435.4	3,875.9	600.1	462,981.66	609,806.80	32° 16' 21.421 N	104° 6' 42.474 W
13,402.0	88.20	357.80	9,439.4	3,969.7	596.9	463,075.52	609,803.60	32° 16' 22.350 N	104° 6' 42.509 W
13,496.0	88.50	0.60	9,442.1	4,063.7	595.6	463,169.46	609,802.29	32° 16' 23.279 N	104° 6' 42.522 W
13,589.0	88.60	0.40	9,444.4	4,156.6	596.4	463,262.43	609,803.10	32° 16' 24.199 N	104° 6' 42.510 W
13,684.0	90.20	1.50	9,445.4	4,251.6	598.0	463,357.40	609,804.68	32° 16' 25.139 N	104° 6' 42.490 W
13,778.0	91.00	2.30	9,444.4	4,345.5	601.1	463,451.35	609,807.79	32° 16' 26.069 N	104° 6' 42.451 W
13,873.0	86.90	359.50	9,446.2	4,440.5	602.6	463,546.29	609,809.29	32° 16' 27.008 N	104° 6' 42.432 W
13,967.0	87.20	0.10	9,451.0	4,534.4	602.3	463,640.16	609,808.96	32° 16' 27.937 N	104° 6' 42.433 W
14,061.0	90.30	2.20	9,453.1	4,628.3	604.1	463,734.10	609,810.85	32° 16' 28.867 N	104° 6' 42.409 W
14,155.0	92.10	2.30	9,451.1	4,722.2	607.8	463,828.01	609,814.54	32° 16' 29.796 N	104° 6' 42.364 W
14,249.0	91.00	3.90	9,448.6	4,816.0	612.9	463,921.83	609,819.62	32° 16' 30.724 N	104° 6' 42.302 W
14,343.0	85.80	2.30	9,451.2	4,909.8	618.0	464,015.62	609,824.70	32° 16' 31.652 N	104° 6' 42.241 W
14,437.0	86.50	2.50	9,457.5	5,003.5	621.9	464,109.33	609,828.63	32° 16' 32.580 N	104° 6' 42.193 W
14,530.0	89.40	4.30	9,460.8	5,096.3	627.4	464,202.09	609,834.14	32° 16' 33.497 N	104° 6' 42.126 W
14,625.0	88.80	2.50	9,462.3	5,191.1	633.1	464,296.91	609,839.77	32° 16' 34.436 N	104° 6' 42.058 W
14,720.0	90.50	3.20	9,462.9	5,286.0	637.8	464,391.78	609,844.50	32° 16' 35.374 N	104° 6' 42.001 W
14,814.0	87.80	0.10	9,464.3	5,379.9	640.5	464,485.71	609,847.20	32° 16' 36.304 N	104° 6' 41.967 W
14,909.0	89.10	359.40	9,466.9	5,474.9	640.1	464,580.67	609,846.79	32° 16' 37.244 N	104° 6' 41.970 W
15,003.0	90.50	359.20	9,467.2	5,568.9	638.9	464,674.66	609,845.64	32° 16' 38.174 N	104° 6' 41.981 W
15,097.0	90.70	359.00	9,466.2	5,662.8	637.5	464,768.65	609,844.16	32° 16' 39.104 N	104° 6' 41.996 W
15,191.0	92.30	359.90	9,463.7	5,756.8	636.6	464,862.61	609,843.26	32° 16' 40.034 N	104° 6' 42.004 W
15,285.0	89.70	359.00	9,462.1	5,850.8	635.7	464,956.58	609,842.36	32° 16' 40.964 N	104° 6' 42.012 W



Survey Report - Geographic



Company:	BTA Oil Producers, LLC	Local Co-ordinate Reference:	Well Ogden 20509 32-29 Fed Com #5H
Project:	Eddy County, New Mexico (NAD 83)	TVD Reference:	WELL @ 3132.0usft (Patterson #594)
Site:	Sec 32, T23-S, R28-E	MD Reference:	WELL @ 3132.0usft (Patterson #594)
Well:	Ogden 20509 32-29 Fed Com #5H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,380.0	92.20	359.70	9,460.5	5,945.8	634.6	465,051.55	609,841.28	32° 16' 41.904 N	104° 6' 42.023 W
15,474.0	86.90	357.60	9,461.3	6,039.7	632.4	465,145.48	609,839.07	32° 16' 42.833 N	104° 6' 42.046 W
15,567.0	90.90	359.70	9,463.0	6,132.6	630.2	465,238.42	609,836.88	32° 16' 43.753 N	104° 6' 42.070 W
15,660.0	90.40	358.30	9,462.0	6,225.6	628.6	465,331.40	609,835.26	32° 16' 44.673 N	104° 6' 42.086 W
15,754.0	90.70	358.50	9,461.1	6,319.6	625.9	465,425.35	609,832.63	32° 16' 45.603 N	104° 6' 42.114 W
15,848.0	89.90	358.80	9,460.6	6,413.5	623.7	465,519.33	609,830.42	32° 16' 46.533 N	104° 6' 42.138 W
15,942.0	90.00	359.00	9,460.7	6,507.5	621.9	465,613.31	609,828.61	32° 16' 47.463 N	104° 6' 42.157 W
16,036.0	90.00	359.00	9,460.7	6,601.5	620.3	465,707.29	609,826.97	32° 16' 48.393 N	104° 6' 42.174 W
16,130.0	92.90	0.20	9,458.3	6,695.4	619.6	465,801.25	609,826.31	32° 16' 49.323 N	104° 6' 42.179 W
16,224.0	89.20	359.90	9,456.6	6,789.4	619.7	465,895.22	609,826.40	32° 16' 50.253 N	104° 6' 42.176 W
16,319.0	91.20	0.40	9,456.2	6,884.4	619.9	465,990.21	609,826.65	32° 16' 51.193 N	104° 6' 42.171 W
16,412.0	92.40	0.60	9,453.3	6,977.4	620.8	466,083.16	609,827.46	32° 16' 52.112 N	104° 6' 42.159 W
16,506.0	90.40	358.60	9,451.0	7,071.3	620.1	466,177.12	609,826.80	32° 16' 53.042 N	104° 6' 42.164 W
16,600.0	91.00	358.60	9,449.9	7,165.3	617.8	466,271.08	609,824.50	32° 16' 53.972 N	104° 6' 42.189 W
16,695.0	89.70	357.60	9,449.3	7,260.2	614.6	466,366.03	609,821.35	32° 16' 54.912 N	104° 6' 42.223 W
16,789.0	89.30	357.60	9,450.1	7,354.1	610.7	466,459.94	609,817.42	32° 16' 55.841 N	104° 6' 42.267 W
16,871.9	90.80	358.39	9,450.0	7,437.0	607.8	466,542.79	609,814.52	32° 16' 56.661 N	104° 6' 42.299 W
330' HL Crossed @ 16871.9' MD / 9450.0' TVD									
16,883.0	91.00	358.50	9,449.9	7,448.1	607.5	466,553.88	609,814.22	32° 16' 56.771 N	104° 6' 42.302 W
16,977.0	91.60	358.60	9,447.7	7,542.0	605.1	466,647.83	609,811.84	32° 16' 57.701 N	104° 6' 42.327 W
17,072.0	91.70	358.60	9,445.0	7,637.0	602.8	466,742.76	609,809.52	32° 16' 58.640 N	104° 6' 42.352 W
17,117.0	92.00	358.60	9,443.6	7,681.9	601.7	466,787.72	609,808.42	32° 16' 59.085 N	104° 6' 42.364 W
17,165.0	92.00	358.60	9,441.9	7,729.9	600.5	466,835.68	609,807.25	32° 16' 59.560 N	104° 6' 42.376 W
TD @ 17165.0' MD / 9441.9' TVD									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
154.0	154.0	0.4	-0.4	First MWD Survey @ 154.0' MD / 154.0' TVD	
9,578.6	9,443.3	162.6	630.8	330' HL Crossed @ 9578.6' MD / 9443.3' TVD	
16,871.9	9,450.0	7,437.0	607.8	330' HL Crossed @ 16871.9' MD / 9450.0' TVD	
17,165.0	9,441.9	7,729.9	600.5	TD @ 17165.0' MD / 9441.9' TVD	