



American Energy Partners

Reagan County, TX.

Sec 18 - 7, Blk 9, Enduring Lease

University 09 #1828H

Original Wellbore

Design: Original Wellbore

Survey Report - Geographic

09 February, 2015



**AMERICAN ENERGY
PARTNERS**

Company:	American Energy Partners	Local Co-ordinate Reference:	Well University 09 #1828H
Project:	Reagan County, TX.	TVD Reference:	WELL @ 2744.0usft (Original Well Elev)
Site:	Sec 18 - 7, Blk 9, Enduring Lease	MD Reference:	WELL @ 2744.0usft (Original Well Elev)
Well:	University 09 #1828H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Project	Reagan County, TX.		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site	Sec 18 - 7, Blk 9, Enduring Lease		
Site Position:		Northing:	584,291.03 usft
From:	Map	Easting:	1,612,117.99 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	31° 16' 2.265 N
		Longitude:	101° 34' 29.507 W
		Grid Convergence:	-0.64 °

Well	University 09 #1828H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	2,744.0 usft
		Latitude:	31° 16' 2.296 N
		Longitude:	101° 34' 28.589 W
		Ground Level:	2,714.0 usft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/1/2014	6.14	59.52	47,892

Design	Original Wellbore				
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	0.11	

Survey Program	Date	2/9/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	652.0	Gyro Surveys (Original Wellbore)	NS-GYRO-SS	NS Gyro single shots	
805.0	14,894.0	MWD Surveys (Original Wellbore)	MWD	MWD - Standard	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	584,293.30	1,612,197.74	31° 16' 2.296 N	101° 34' 28.589 W
100.0	0.38	263.29	100.0	0.0	-0.3	584,293.26	1,612,197.41	31° 16' 2.296 N	101° 34' 28.593 W
1st Gyro Survey									
200.0	0.30	213.44	200.0	-0.3	-0.8	584,293.01	1,612,196.93	31° 16' 2.293 N	101° 34' 28.598 W
300.0	0.10	55.15	300.0	-0.5	-0.9	584,292.84	1,612,196.86	31° 16' 2.291 N	101° 34' 28.599 W
400.0	0.14	189.97	400.0	-0.5	-0.8	584,292.77	1,612,196.91	31° 16' 2.291 N	101° 34' 28.598 W
500.0	0.20	293.67	500.0	-0.6	-1.0	584,292.72	1,612,196.73	31° 16' 2.290 N	101° 34' 28.600 W
600.0	0.09	24.50	600.0	-0.4	-1.1	584,292.86	1,612,196.60	31° 16' 2.292 N	101° 34' 28.602 W
Last Gyro Survey									
652.0	0.11	160.56	652.0	-0.5	-1.1	584,292.85	1,612,196.64	31° 16' 2.292 N	101° 34' 28.602 W
Gyro PTB									

Company:	American Energy Partners	Local Co-ordinate Reference:	Well University 09 #1828H
Project:	Reagan County, TX.	TVD Reference:	WELL @ 2744.0usft (Original Well Elev)
Site:	Sec 18 - 7, Blk 9, Enduring Lease	MD Reference:	WELL @ 2744.0usft (Original Well Elev)
Well:	University 09 #1828H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	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
805.0	0.20	349.30	805.0	-0.3	-1.1	584,292.97	1,612,196.64	31° 16' 2.293 N	101° 34' 28.602 W
First MWD Survey									
899.0	0.20	309.90	899.0	-0.1	-1.3	584,293.24	1,612,196.48	31° 16' 2.295 N	101° 34' 28.603 W
994.0	0.30	302.80	994.0	0.2	-1.6	584,293.48	1,612,196.14	31° 16' 2.298 N	101° 34' 28.607 W
1,089.0	0.50	296.90	1,089.0	0.5	-2.2	584,293.80	1,612,195.56	31° 16' 2.301 N	101° 34' 28.614 W
1,183.0	0.60	306.90	1,183.0	1.0	-2.9	584,294.28	1,612,194.80	31° 16' 2.306 N	101° 34' 28.623 W
1,277.0	0.50	313.40	1,277.0	1.6	-3.6	584,294.86	1,612,194.11	31° 16' 2.311 N	101° 34' 28.631 W
1,371.0	0.70	302.40	1,371.0	2.1	-4.4	584,295.45	1,612,193.33	31° 16' 2.317 N	101° 34' 28.640 W
1,465.0	0.90	311.80	1,465.0	2.9	-5.4	584,296.25	1,612,192.30	31° 16' 2.325 N	101° 34' 28.652 W
1,559.0	1.00	312.10	1,559.0	4.0	-6.6	584,297.29	1,612,191.14	31° 16' 2.335 N	101° 34' 28.665 W
1,653.0	0.20	166.70	1,653.0	4.4	-7.2	584,297.68	1,612,190.57	31° 16' 2.339 N	101° 34' 28.672 W
1,748.0	0.60	134.00	1,748.0	3.9	-6.8	584,297.18	1,612,190.96	31° 16' 2.334 N	101° 34' 28.667 W
1,842.0	0.80	119.70	1,841.9	3.2	-5.9	584,296.51	1,612,191.89	31° 16' 2.327 N	101° 34' 28.657 W
1,932.0	0.80	116.30	1,931.9	2.6	-4.7	584,295.92	1,612,192.99	31° 16' 2.322 N	101° 34' 28.644 W
2,026.0	1.10	105.00	2,025.9	2.1	-3.3	584,295.40	1,612,194.45	31° 16' 2.316 N	101° 34' 28.627 W
2,121.0	1.10	106.80	2,120.9	1.6	-1.5	584,294.90	1,612,196.21	31° 16' 2.312 N	101° 34' 28.607 W
2,215.0	1.00	101.50	2,214.9	1.2	0.1	584,294.47	1,612,197.88	31° 16' 2.308 N	101° 34' 28.587 W
2,308.0	0.90	95.60	2,307.9	0.9	1.7	584,294.24	1,612,199.40	31° 16' 2.306 N	101° 34' 28.570 W
2,402.0	0.80	81.70	2,401.9	1.0	3.0	584,294.26	1,612,200.78	31° 16' 2.306 N	101° 34' 28.554 W
2,496.0	0.90	76.20	2,495.9	1.2	4.4	584,294.53	1,612,202.15	31° 16' 2.309 N	101° 34' 28.538 W
2,590.0	1.10	76.90	2,589.8	1.6	6.0	584,294.91	1,612,203.74	31° 16' 2.313 N	101° 34' 28.520 W
2,684.0	1.30	70.20	2,683.8	2.2	7.9	584,295.48	1,612,205.63	31° 16' 2.319 N	101° 34' 28.498 W
2,778.0	0.50	131.00	2,777.8	2.3	9.2	584,295.57	1,612,206.94	31° 16' 2.320 N	101° 34' 28.483 W
2,872.0	0.60	171.90	2,871.8	1.5	9.6	584,294.81	1,612,207.32	31° 16' 2.312 N	101° 34' 28.479 W
2,965.0	0.70	318.90	2,964.8	1.5	9.3	584,294.76	1,612,207.01	31° 16' 2.312 N	101° 34' 28.482 W
3,060.0	0.90	326.50	3,059.8	2.5	8.5	584,295.82	1,612,206.22	31° 16' 2.322 N	101° 34' 28.491 W
3,154.0	1.20	324.60	3,153.8	3.9	7.5	584,297.24	1,612,205.24	31° 16' 2.336 N	101° 34' 28.503 W
3,249.0	0.50	62.30	3,248.8	4.9	7.3	584,298.24	1,612,205.03	31° 16' 2.346 N	101° 34' 28.505 W
3,342.0	0.50	82.70	3,341.8	5.2	8.1	584,298.48	1,612,205.79	31° 16' 2.348 N	101° 34' 28.497 W
3,437.0	0.80	81.20	3,436.8	5.3	9.1	584,298.64	1,612,206.86	31° 16' 2.350 N	101° 34' 28.484 W
3,532.0	0.90	82.90	3,531.7	5.5	10.5	584,298.83	1,612,208.26	31° 16' 2.352 N	101° 34' 28.468 W
3,626.0	0.90	78.80	3,625.7	5.8	12.0	584,299.06	1,612,209.71	31° 16' 2.354 N	101° 34' 28.452 W
3,720.0	1.10	82.00	3,719.7	6.0	13.6	584,299.33	1,612,211.33	31° 16' 2.357 N	101° 34' 28.433 W
3,814.0	0.30	110.70	3,813.7	6.1	14.7	584,299.37	1,612,212.45	31° 16' 2.358 N	101° 34' 28.420 W
3,909.0	0.30	216.40	3,908.7	5.8	14.8	584,299.08	1,612,212.54	31° 16' 2.355 N	101° 34' 28.419 W
4,003.0	0.50	241.40	4,002.7	5.4	14.3	584,298.69	1,612,212.03	31° 16' 2.351 N	101° 34' 28.425 W
4,097.0	0.40	244.70	4,096.7	5.0	13.6	584,298.35	1,612,211.38	31° 16' 2.348 N	101° 34' 28.432 W
4,191.0	0.60	270.80	4,190.7	4.9	12.9	584,298.22	1,612,210.59	31° 16' 2.346 N	101° 34' 28.441 W
4,285.0	0.50	277.70	4,284.7	5.0	12.0	584,298.28	1,612,209.69	31° 16' 2.347 N	101° 34' 28.452 W
4,379.0	0.60	287.20	4,378.7	5.2	11.1	584,298.48	1,612,208.81	31° 16' 2.349 N	101° 34' 28.462 W
4,473.0	0.60	267.00	4,472.7	5.3	10.1	584,298.60	1,612,207.85	31° 16' 2.350 N	101° 34' 28.473 W
4,567.0	0.50	260.40	4,566.7	5.2	9.2	584,298.51	1,612,206.96	31° 16' 2.349 N	101° 34' 28.483 W
4,662.0	0.60	259.40	4,661.7	5.0	8.3	584,298.35	1,612,206.06	31° 16' 2.347 N	101° 34' 28.494 W
4,756.0	0.50	263.20	4,755.7	4.9	7.4	584,298.21	1,612,205.17	31° 16' 2.345 N	101° 34' 28.504 W
4,850.0	0.60	250.00	4,849.7	4.7	6.6	584,297.99	1,612,204.30	31° 16' 2.343 N	101° 34' 28.514 W
4,945.0	1.30	298.00	4,944.7	5.0	5.1	584,298.33	1,612,202.88	31° 16' 2.346 N	101° 34' 28.530 W
5,039.0	1.70	332.60	5,038.6	6.8	3.6	584,300.06	1,612,201.29	31° 16' 2.363 N	101° 34' 28.549 W
5,133.0	2.20	327.00	5,132.6	9.5	1.9	584,302.82	1,612,199.67	31° 16' 2.390 N	101° 34' 28.568 W
5,227.0	2.40	351.50	5,226.5	13.0	0.7	584,306.28	1,612,198.40	31° 16' 2.425 N	101° 34' 28.583 W
5,321.0	3.10	15.90	5,320.4	17.4	1.1	584,310.67	1,612,198.80	31° 16' 2.468 N	101° 34' 28.579 W
5,416.0	3.50	33.10	5,415.2	22.3	3.4	584,315.57	1,612,201.09	31° 16' 2.517 N	101° 34' 28.553 W
5,509.0	3.30	36.80	5,508.1	26.8	6.5	584,320.09	1,612,204.24	31° 16' 2.562 N	101° 34' 28.517 W
5,604.0	1.50	44.60	5,603.0	29.9	9.0	584,323.16	1,612,206.75	31° 16' 2.593 N	101° 34' 28.489 W
5,699.0	0.60	80.20	5,698.0	30.8	10.4	584,324.13	1,612,208.12	31° 16' 2.602 N	101° 34' 28.473 W
5,794.0	0.70	87.00	5,793.0	30.9	11.5	584,324.25	1,612,209.19	31° 16' 2.604 N	101° 34' 28.461 W

Company:	American Energy Partners	Local Co-ordinate Reference:	Well University 09 #1828H
Project:	Reagan County, TX.	TVD Reference:	WELL @ 2744.0usft (Original Well Elev)
Site:	Sec 18 - 7, Blk 9, Enduring Lease	MD Reference:	WELL @ 2744.0usft (Original Well Elev)
Well:	University 09 #1828H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	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	
5,887.0	0.40	133.40	5,886.0	30.8	12.3	584,324.05	1,612,209.99	31° 16' 2.602 N	101° 34' 28.452 W	
5,982.0	0.40	150.00	5,981.0	30.2	12.7	584,323.54	1,612,210.40	31° 16' 2.597 N	101° 34' 28.447 W	
6,076.0	0.60	133.30	6,075.0	29.6	13.2	584,322.92	1,612,210.92	31° 16' 2.591 N	101° 34' 28.441 W	
6,161.0	0.70	139.90	6,160.0	28.9	13.8	584,322.22	1,612,211.58	31° 16' 2.584 N	101° 34' 28.433 W	
6,259.0	0.90	133.90	6,257.9	27.9	14.8	584,321.22	1,612,212.52	31° 16' 2.574 N	101° 34' 28.422 W	
6,353.0	1.00	127.50	6,351.9	26.9	16.0	584,320.21	1,612,213.70	31° 16' 2.564 N	101° 34' 28.408 W	
6,447.0	0.90	117.80	6,445.9	26.1	17.3	584,319.37	1,612,215.00	31° 16' 2.556 N	101° 34' 28.393 W	
6,541.0	0.80	109.30	6,539.9	25.5	18.5	584,318.81	1,612,216.28	31° 16' 2.551 N	101° 34' 28.379 W	
6,635.0	0.80	101.60	6,633.9	25.2	19.8	584,318.46	1,612,217.54	31° 16' 2.547 N	101° 34' 28.364 W	
6,729.0	0.90	96.50	6,727.9	24.9	21.2	584,318.24	1,612,218.92	31° 16' 2.545 N	101° 34' 28.348 W	
6,824.0	1.00	86.10	6,822.9	24.9	22.7	584,318.22	1,612,220.48	31° 16' 2.545 N	101° 34' 28.330 W	
6,918.0	1.00	86.10	6,916.9	25.0	24.4	584,318.33	1,612,222.12	31° 16' 2.546 N	101° 34' 28.311 W	
7,012.0	0.90	91.50	7,010.8	25.1	25.9	584,318.36	1,612,223.68	31° 16' 2.547 N	101° 34' 28.293 W	
7,106.0	0.80	80.50	7,104.8	25.1	27.3	584,318.45	1,612,225.06	31° 16' 2.548 N	101° 34' 28.277 W	
7,138.0	1.30	40.50	7,136.8	25.5	27.8	584,318.76	1,612,225.52	31° 16' 2.551 N	101° 34' 28.272 W	
7,169.0	4.00	7.40	7,167.8	26.8	28.2	584,320.10	1,612,225.89	31° 16' 2.565 N	101° 34' 28.268 W	
7,200.0	7.60	0.00	7,198.6	29.9	28.3	584,323.23	1,612,226.03	31° 16' 2.595 N	101° 34' 28.267 W	
7,231.0	12.00	352.50	7,229.2	35.2	27.9	584,328.48	1,612,225.60	31° 16' 2.647 N	101° 34' 28.272 W	
7,263.0	15.00	350.70	7,260.3	42.6	26.8	584,335.86	1,612,224.50	31° 16' 2.720 N	101° 34' 28.286 W	
7,294.0	18.70	354.90	7,290.0	51.5	25.7	584,344.77	1,612,223.41	31° 16' 2.808 N	101° 34' 28.300 W	
7,325.0	22.10	359.10	7,319.0	62.3	25.1	584,355.56	1,612,222.88	31° 16' 2.915 N	101° 34' 28.307 W	
7,357.0	23.30	359.70	7,348.5	74.6	25.0	584,367.91	1,612,222.75	31° 16' 3.037 N	101° 34' 28.310 W	
7,388.0	22.30	356.80	7,377.1	86.6	24.7	584,379.91	1,612,222.39	31° 16' 3.156 N	101° 34' 28.316 W	
7,420.0	23.80	0.80	7,406.6	99.1	24.4	584,392.43	1,612,222.14	31° 16' 3.280 N	101° 34' 28.320 W	
7,451.0	24.80	6.20	7,434.8	111.8	25.2	584,405.15	1,612,222.93	31° 16' 3.406 N	101° 34' 28.313 W	
7,483.0	26.80	357.60	7,463.6	125.7	25.6	584,419.04	1,612,223.35	31° 16' 3.543 N	101° 34' 28.310 W	
7,514.0	30.40	357.70	7,490.8	140.6	25.0	584,433.86	1,612,222.74	31° 16' 3.690 N	101° 34' 28.319 W	
7,545.0	33.50	354.30	7,517.1	156.9	23.8	584,450.22	1,612,221.58	31° 16' 3.852 N	101° 34' 28.334 W	
7,577.0	36.60	352.70	7,543.3	175.2	21.8	584,468.47	1,612,219.49	31° 16' 4.032 N	101° 34' 28.361 W	
7,608.0	39.80	351.20	7,567.7	194.1	19.1	584,487.45	1,612,216.80	31° 16' 4.220 N	101° 34' 28.394 W	
7,639.0	43.70	351.80	7,590.8	214.6	16.0	584,507.86	1,612,213.75	31° 16' 4.421 N	101° 34' 28.432 W	
7,671.0	49.00	350.10	7,612.9	237.4	12.4	584,530.71	1,612,210.10	31° 16' 4.647 N	101° 34' 28.477 W	
7,702.0	53.50	348.70	7,632.3	261.2	7.9	584,554.47	1,612,205.64	31° 16' 4.882 N	101° 34' 28.531 W	
7,733.0	55.30	347.80	7,650.3	285.8	2.8	584,579.14	1,612,200.51	31° 16' 5.126 N	101° 34' 28.594 W	
7,765.0	56.50	346.20	7,668.3	311.7	-3.2	584,604.96	1,612,194.54	31° 16' 5.380 N	101° 34' 28.666 W	
7,796.0	59.70	344.10	7,684.7	337.1	-9.9	584,630.39	1,612,187.79	31° 16' 5.631 N	101° 34' 28.747 W	
7,827.0	63.30	342.40	7,699.5	363.2	-17.8	584,656.47	1,612,179.93	31° 16' 5.889 N	101° 34' 28.841 W	
7,859.0	67.50	342.30	7,712.8	390.9	-26.6	584,684.19	1,612,171.11	31° 16' 6.162 N	101° 34' 28.946 W	
7,890.0	72.30	343.20	7,723.4	418.7	-35.2	584,711.99	1,612,162.49	31° 16' 6.436 N	101° 34' 29.049 W	
7,922.0	74.20	343.30	7,732.6	448.0	-44.1	584,741.33	1,612,153.66	31° 16' 6.726 N	101° 34' 29.154 W	
7,953.0	75.50	340.90	7,740.8	476.5	-53.3	584,769.80	1,612,144.46	31° 16' 7.006 N	101° 34' 29.264 W	
7,985.0	78.60	348.40	7,747.9	506.5	-61.5	584,799.85	1,612,136.22	31° 16' 7.303 N	101° 34' 29.363 W	
8,017.0	81.10	352.80	7,753.6	537.6	-66.7	584,830.91	1,612,131.09	31° 16' 7.610 N	101° 34' 29.426 W	
8,048.0	82.10	354.70	7,758.1	568.1	-70.0	584,861.40	1,612,127.75	31° 16' 7.911 N	101° 34' 29.468 W	
8,079.0	82.20	355.10	7,762.3	598.7	-72.7	584,891.99	1,612,125.02	31° 16' 8.214 N	101° 34' 29.504 W	
8,110.0	83.10	356.00	7,766.3	629.3	-75.1	584,922.64	1,612,122.63	31° 16' 8.517 N	101° 34' 29.535 W	
8,142.0	84.40	359.00	7,769.8	661.1	-76.5	584,954.41	1,612,121.25	31° 16' 8.831 N	101° 34' 29.555 W	
8,173.0	86.20	0.90	7,772.3	692.0	-76.5	584,985.31	1,612,121.22	31° 16' 9.137 N	101° 34' 29.559 W	
8,204.0	86.80	1.20	7,774.2	722.9	-75.9	585,016.24	1,612,121.79	31° 16' 9.443 N	101° 34' 29.557 W	
8,236.0	87.10	1.40	7,775.9	754.9	-75.2	585,048.19	1,612,122.51	31° 16' 9.759 N	101° 34' 29.553 W	
8,330.0	87.50	1.80	7,780.4	848.7	-72.6	585,142.05	1,612,125.13	31° 16' 10.689 N	101° 34' 29.535 W	
8,424.0	89.90	1.60	7,782.5	942.7	-69.8	585,235.97	1,612,127.92	31° 16' 11.618 N	101° 34' 29.515 W	
8,518.0	91.90	2.60	7,781.0	1,036.6	-66.4	585,329.89	1,612,131.36	31° 16' 12.548 N	101° 34' 29.487 W	
8,612.0	90.60	2.60	7,779.0	1,130.5	-62.1	585,423.77	1,612,135.63	31° 16' 13.478 N	101° 34' 29.450 W	
8,706.0	90.40	0.80	7,778.1	1,224.4	-59.3	585,517.72	1,612,138.42	31° 16' 14.408 N	101° 34' 29.430 W	

Company:	American Energy Partners	Local Co-ordinate Reference:	Well University 09 #1828H
Project:	Reagan County, TX.	TVD Reference:	WELL @ 2744.0usft (Original Well Elev)
Site:	Sec 18 - 7, Blk 9, Enduring Lease	MD Reference:	WELL @ 2744.0usft (Original Well Elev)
Well:	University 09 #1828H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	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	
8,800.0	88.40	358.30	7,779.1	1,318.4	-60.1	585,611.70	1,612,137.68	31° 16' 15.338 N	101° 34' 29.450 W	
8,894.0	88.70	358.40	7,781.5	1,412.3	-62.8	585,705.63	1,612,134.97	31° 16' 16.268 N	101° 34' 29.494 W	
8,988.0	90.80	0.60	7,781.9	1,506.3	-63.6	585,799.62	1,612,134.15	31° 16' 17.198 N	101° 34' 29.515 W	
9,082.0	89.10	1.30	7,782.0	1,600.3	-62.0	585,893.60	1,612,135.71	31° 16' 18.128 N	101° 34' 29.509 W	
9,176.0	90.00	1.70	7,782.7	1,694.3	-59.6	585,987.57	1,612,138.17	31° 16' 19.058 N	101° 34' 29.493 W	
9,270.0	90.90	1.70	7,782.0	1,788.2	-56.8	586,081.52	1,612,140.96	31° 16' 19.989 N	101° 34' 29.473 W	
9,364.0	90.20	1.70	7,781.1	1,882.2	-54.0	586,175.47	1,612,143.75	31° 16' 20.919 N	101° 34' 29.453 W	
9,458.0	88.30	1.20	7,782.3	1,976.1	-51.6	586,269.43	1,612,146.13	31° 16' 21.849 N	101° 34' 29.438 W	
9,552.0	88.70	1.90	7,784.8	2,070.1	-49.1	586,363.36	1,612,148.67	31° 16' 22.779 N	101° 34' 29.420 W	
9,647.0	88.90	1.40	7,786.8	2,165.0	-46.3	586,458.30	1,612,151.40	31° 16' 23.719 N	101° 34' 29.401 W	
9,662.0	89.16	1.64	7,787.0	2,180.0	-45.9	586,473.30	1,612,151.80	31° 16' 23.867 N	101° 34' 29.398 W	
Cross Section Line MD: 9662.0, Inc.: 89.16, Azi.: 1.64, TVD: 7787.0, N: 586473.30, E: 1612151.81										
9,741.0	90.50	2.90	7,787.3	2,258.9	-42.8	586,552.23	1,612,154.93	31° 16' 24.649 N	101° 34' 29.373 W	
9,836.0	90.10	2.80	7,786.8	2,353.8	-38.1	586,647.11	1,612,159.65	31° 16' 25.589 N	101° 34' 29.330 W	
9,930.0	90.20	1.60	7,786.5	2,447.7	-34.5	586,741.04	1,612,163.26	31° 16' 26.519 N	101° 34' 29.301 W	
10,025.0	90.60	1.20	7,785.9	2,542.7	-32.2	586,836.01	1,612,165.58	31° 16' 27.459 N	101° 34' 29.286 W	
10,120.0	91.60	1.70	7,784.0	2,637.7	-29.7	586,930.96	1,612,167.99	31° 16' 28.399 N	101° 34' 29.271 W	
10,214.0	90.60	1.80	7,782.2	2,731.6	-26.9	587,024.90	1,612,170.86	31° 16' 29.329 N	101° 34' 29.250 W	
10,307.0	87.70	1.20	7,783.6	2,824.5	-24.4	587,117.84	1,612,173.29	31° 16' 30.249 N	101° 34' 29.234 W	
10,402.0	88.40	1.70	7,786.8	2,919.5	-22.0	587,212.76	1,612,175.69	31° 16' 31.189 N	101° 34' 29.218 W	
10,496.0	89.40	2.70	7,788.6	3,013.4	-18.4	587,306.67	1,612,179.30	31° 16' 32.119 N	101° 34' 29.189 W	
10,589.0	89.20	2.50	7,789.8	3,106.3	-14.2	587,399.57	1,612,183.52	31° 16' 33.039 N	101° 34' 29.152 W	
10,684.0	90.10	2.50	7,790.4	3,201.2	-10.1	587,494.47	1,612,187.66	31° 16' 33.978 N	101° 34' 29.117 W	
10,778.0	87.90	359.30	7,792.0	3,295.1	-8.6	587,588.43	1,612,189.14	31° 16' 34.908 N	101° 34' 29.112 W	
10,872.0	86.40	357.20	7,796.7	3,389.0	-11.5	587,682.26	1,612,186.27	31° 16' 35.837 N	101° 34' 29.157 W	
10,967.0	87.60	356.20	7,801.6	3,483.7	-16.9	587,776.97	1,612,180.81	31° 16' 36.774 N	101° 34' 29.232 W	
11,061.0	88.80	356.70	7,804.6	3,577.4	-22.7	587,870.74	1,612,175.00	31° 16' 37.701 N	101° 34' 29.311 W	
11,155.0	90.10	356.90	7,805.5	3,671.3	-28.0	587,964.59	1,612,169.75	31° 16' 38.629 N	101° 34' 29.383 W	
11,250.0	90.00	356.30	7,805.4	3,766.1	-33.6	588,059.42	1,612,164.11	31° 16' 39.567 N	101° 34' 29.461 W	
11,344.0	90.90	356.60	7,804.7	3,859.9	-39.4	588,153.24	1,612,158.29	31° 16' 40.495 N	101° 34' 29.540 W	
11,438.0	92.40	357.60	7,802.0	3,953.8	-44.2	588,247.07	1,612,153.54	31° 16' 41.423 N	101° 34' 29.607 W	
11,532.0	93.50	359.40	7,797.1	4,047.6	-46.7	588,340.91	1,612,151.08	31° 16' 42.352 N	101° 34' 29.647 W	
11,627.0	92.10	0.80	7,792.5	4,142.5	-46.5	588,435.79	1,612,151.25	31° 16' 43.291 N	101° 34' 29.657 W	
11,721.0	92.00	0.60	7,789.1	4,236.4	-45.3	588,529.73	1,612,152.40	31° 16' 44.221 N	101° 34' 29.656 W	
11,815.0	90.40	2.30	7,787.2	4,330.4	-43.0	588,623.67	1,612,154.77	31° 16' 45.151 N	101° 34' 29.641 W	
11,910.0	89.60	2.40	7,787.2	4,425.3	-39.1	588,718.59	1,612,158.67	31° 16' 46.091 N	101° 34' 29.608 W	
12,004.0	90.60	3.10	7,787.0	4,519.2	-34.6	588,812.48	1,612,163.18	31° 16' 47.021 N	101° 34' 29.568 W	
12,098.0	91.00	3.20	7,785.7	4,613.0	-29.4	588,906.33	1,612,168.34	31° 16' 47.950 N	101° 34' 29.521 W	
12,192.0	88.60	1.40	7,786.0	4,706.9	-25.6	589,000.24	1,612,172.12	31° 16' 48.880 N	101° 34' 29.489 W	
12,286.0	89.30	1.90	7,787.7	4,800.9	-22.9	589,094.18	1,612,174.82	31° 16' 49.810 N	101° 34' 29.470 W	
12,381.0	89.40	1.40	7,788.8	4,895.8	-20.2	589,189.14	1,612,177.56	31° 16' 50.750 N	101° 34' 29.451 W	
12,475.0	90.30	1.90	7,789.1	4,989.8	-17.5	589,283.10	1,612,180.26	31° 16' 51.680 N	101° 34' 29.432 W	
12,570.0	91.60	3.10	7,787.5	5,084.7	-13.3	589,377.99	1,612,184.41	31° 16' 52.620 N	101° 34' 29.396 W	
12,665.0	87.10	0.50	7,788.6	5,179.6	-10.3	589,472.91	1,612,187.39	31° 16' 53.560 N	101° 34' 29.374 W	
12,761.0	87.20	0.50	7,793.3	5,275.5	-9.5	589,568.78	1,612,188.23	31° 16' 54.509 N	101° 34' 29.377 W	
12,857.0	89.10	359.90	7,796.4	5,371.4	-9.2	589,664.73	1,612,188.56	31° 16' 55.458 N	101° 34' 29.385 W	
12,952.0	90.40	0.00	7,796.9	5,466.4	-9.3	589,759.72	1,612,188.48	31° 16' 56.399 N	101° 34' 29.398 W	
13,046.0	90.50	359.10	7,796.1	5,560.4	-10.0	589,853.72	1,612,187.74	31° 16' 57.329 N	101° 34' 29.419 W	
13,142.0	92.00	0.30	7,794.0	5,656.4	-10.5	589,949.69	1,612,187.24	31° 16' 58.279 N	101° 34' 29.437 W	
13,237.0	92.60	0.20	7,790.2	5,751.3	-10.1	590,044.61	1,612,187.65	31° 16' 59.218 N	101° 34' 29.445 W	
13,333.0	91.70	359.70	7,786.6	5,847.2	-10.2	590,140.54	1,612,187.57	31° 17' 0.168 N	101° 34' 29.458 W	
13,429.0	91.60	1.00	7,783.8	5,943.2	-9.6	590,236.50	1,612,188.16	31° 17' 1.117 N	101° 34' 29.464 W	
13,525.0	90.00	1.90	7,782.5	6,039.2	-7.2	590,332.45	1,612,190.58	31° 17' 2.067 N	101° 34' 29.448 W	
13,620.0	88.70	5.40	7,783.6	6,133.9	-1.1	590,427.24	1,612,196.63	31° 17' 3.006 N	101° 34' 29.390 W	
13,714.0	87.20	4.20	7,786.9	6,227.5	6.8	590,520.84	1,612,204.49	31° 17' 3.933 N	101° 34' 29.312 W	

Company:	American Energy Partners	Local Co-ordinate Reference:	Well University 09 #1828H
Project:	Reagan County, TX.	TVD Reference:	WELL @ 2744.0usft (Original Well Elev)
Site:	Sec 18 - 7, Blk 9, Enduring Lease	MD Reference:	WELL @ 2744.0usft (Original Well Elev)
Well:	University 09 #1828H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

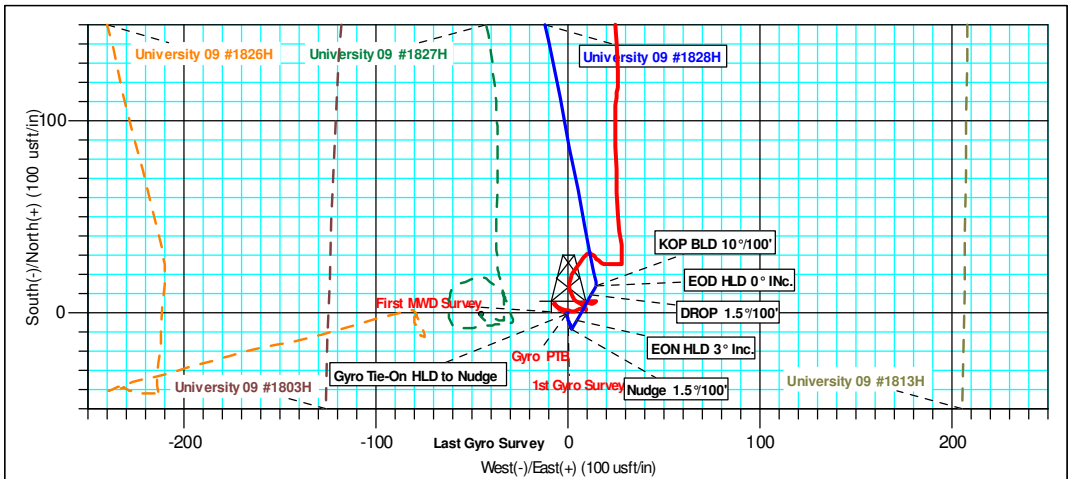
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,808.0	86.50	1.70	7,792.1	6,321.3	11.6	590,614.57	1,612,209.32	31° 17' 4.862 N	101° 34' 29.268 W
13,902.0	87.00	0.50	7,797.4	6,415.1	13.4	590,708.40	1,612,211.12	31° 17' 5.790 N	101° 34' 29.260 W
13,996.0	89.00	358.60	7,800.7	6,509.0	12.6	590,802.33	1,612,210.38	31° 17' 6.720 N	101° 34' 29.280 W
14,090.0	88.50	356.80	7,802.8	6,602.9	8.9	590,896.23	1,612,206.61	31° 17' 7.649 N	101° 34' 29.336 W
14,186.0	89.70	355.90	7,804.3	6,698.7	2.8	590,992.02	1,612,200.50	31° 17' 8.596 N	101° 34' 29.418 W
14,281.0	91.30	357.00	7,803.4	6,793.5	-3.1	591,086.83	1,612,194.62	31° 17' 9.534 N	101° 34' 29.498 W
14,377.0	90.90	356.00	7,801.6	6,889.3	-9.0	591,182.63	1,612,188.76	31° 17' 10.482 N	101° 34' 29.578 W
14,472.0	92.60	357.50	7,798.7	6,984.1	-14.4	591,277.43	1,612,183.38	31° 17' 11.419 N	101° 34' 29.652 W
14,568.0	93.20	0.20	7,793.8	7,080.0	-16.3	591,373.28	1,612,181.45	31° 17' 12.368 N	101° 34' 29.687 W
14,664.0	93.10	0.40	7,788.6	7,175.8	-15.8	591,469.13	1,612,181.95	31° 17' 13.317 N	101° 34' 29.694 W
14,760.0	93.30	2.20	7,783.2	7,271.6	-13.6	591,564.95	1,612,184.13	31° 17' 14.265 N	101° 34' 29.681 W
14,838.0	93.20	2.20	7,778.8	7,349.5	-10.6	591,642.77	1,612,187.12	31° 17' 15.036 N	101° 34' 29.656 W
Last MWD Survey _MD: 14838.0, Inc.: 93.20, Azi.: 2.20, TVD: 7778.8, N: 591642.76, E: 1612187.12									
14,894.0	93.20	2.20	7,775.7	7,405.3	-8.5	591,698.64	1,612,189.27	31° 17' 15.589 N	101° 34' 29.639 W
PTB – TD _MD: 14893.9, Inc.: 93.20, Azi.: 2.20, TVD: 7775.7, N: 591698.59, E: 1612189.27									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.0	100.0	0.0	-0.3	1st Gyro Survey
600.0	600.0	-0.4	-1.1	Last Gyro Survey
652.0	652.0	-0.5	-1.1	Gyro PTB
805.0	805.0	-0.3	-1.1	First MWD Survey
9,662.0	7,787.0	2,180.0	-45.9	Cross Section Line _MD: 9662.0, Inc.: 89.16, Azi.: 1.64, TVD: 7787.0, N: 58647
14,838.0	7,778.8	7,349.5	-10.6	Last MWD Survey _MD: 14838.0, Inc.: 93.20, Azi.: 2.20, TVD: 7778.8, N: 59164
14,894.0	7,775.7	7,405.3	-8.5	PTB – TD _MD: 14893.9, Inc.: 93.20, Azi.: 2.20, TVD: 7775.7, N: 591698.59, E:

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------



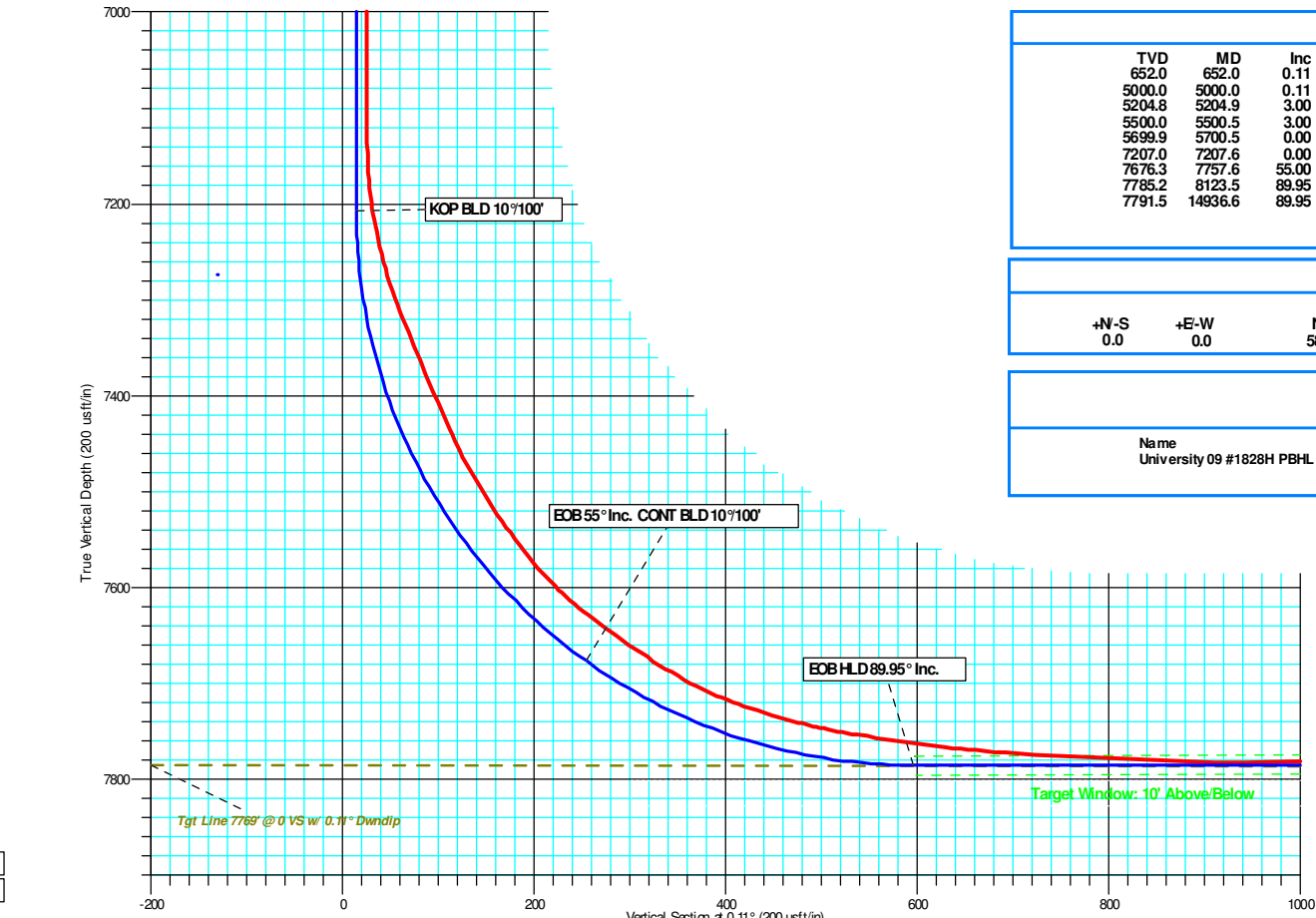
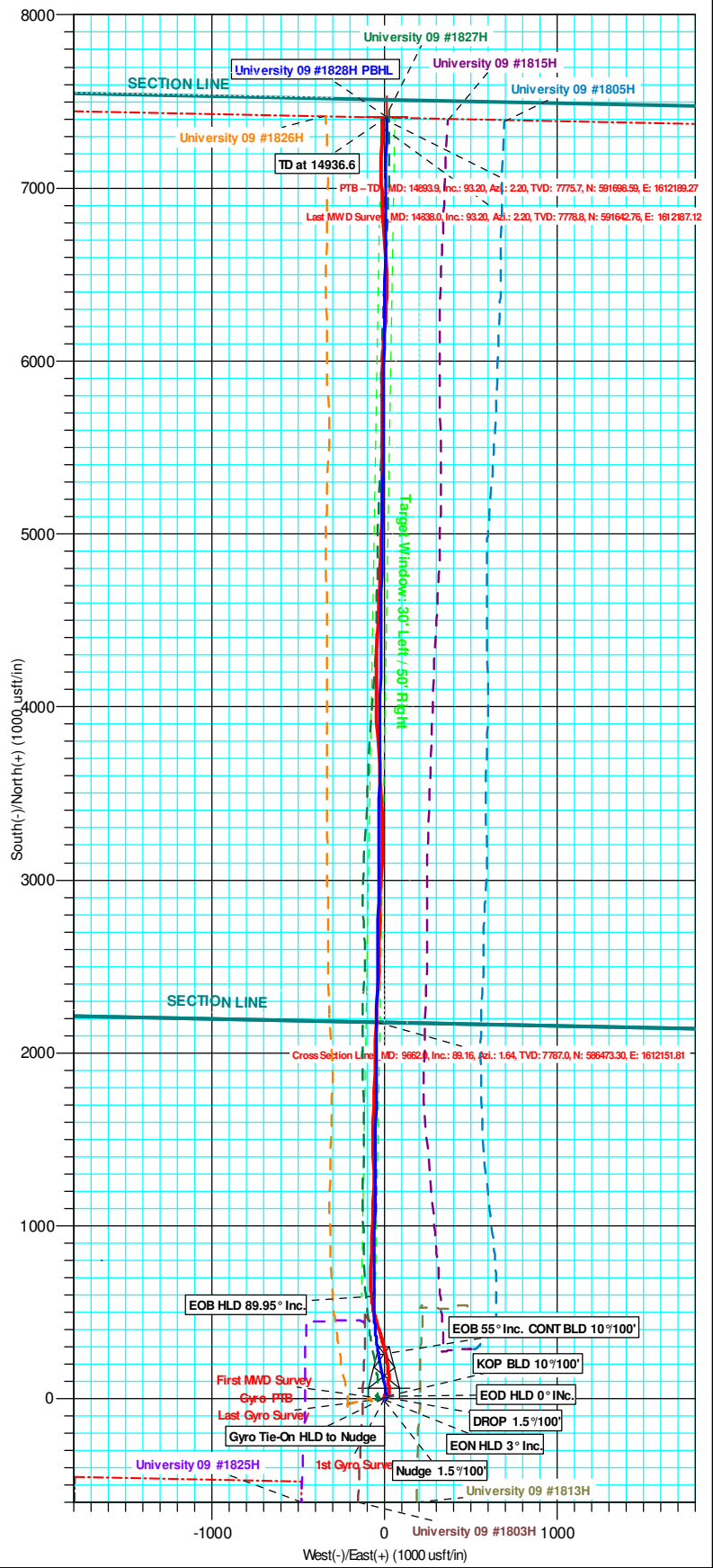
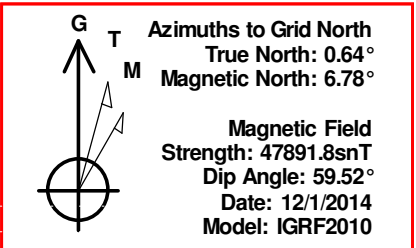
American Energy Partners
Project: Reagan County, TX.
Site: Sec 18 - 7, Blk 9, Enduring Lease
Well: University 09 #1828H
Wellbore: Original Wellbore
Design: Plan #2B
Lat: 31°16' 2.296 N
Long: 101°34' 28.589 W
Pad GL: 2714.0
KB: WELL @ 2744.0usft (Original Well Elev)



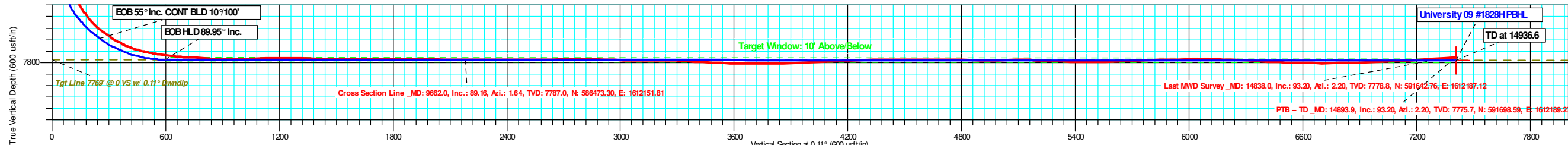
ANNOTATIONS									
TVD	MD	Inc	Azi	+N-S	+E-W	Vsect	Departure	Annotation	
652.0	652.0	0.11	160.56	-0.5	-1.1	-0.5	0.0	Gyro Tie-On HLD to Nudge	
5000.0	5000.0	0.11	160.56	-8.3	1.7	-8.3	8.3	Nudge 1.5°/100'	
5204.8	5204.9	3.00	30.00	-3.9	4.4	-3.9	13.7	EON HLD 3° Inc.	
5500.0	5500.5	3.00	30.00	9.5	12.2	9.6	29.2	DROP 1.5°/100'	
5699.9	5700.5	0.00	0.00	14.1	14.8	14.1	34.4	EOD HLD 0° Inc.	
7207.0	7207.6	0.00	0.00	14.1	14.8	14.1	34.4	KOP BLD 10°/100'	
7676.3	7757.6	55.00	349.00	253.9	-31.8	253.8	278.8	EOB 55° Inc. CONT BLD 10°/100'	
7785.2	8123.5	89.95	0.62	595.7	-59.4	595.6	622.2	EOB HLD 89.95° Inc.	
7791.5	14936.6	89.95	0.62	7408.3	14.2	7408.3	7435.2	TD at 14936.6	

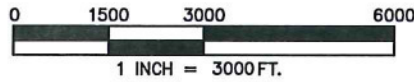
WELL DETAILS: University 09 #1828H						
Ground Level: 2714.0						
+N-S	+E-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	584293.30	1612197.74	31°16' 2.296 N	101°34' 28.589 W	

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N-S	+E-W	Latitude	Longitude	
University 09 #1828H PBHL Plan #2	7791.5	7408.3	14.2	31°17' 15.621 N	101°34' 29.378 W	



PTB - TD_MD: 14893.9, Inc.: 93.20, Azi.: 2.20, TVD: 7775.7, N: 591698.59, E: 1612189.27





LINE	BEARING	DISTANCE
L1	N 25°15'22" W	305.11'

AMERICAN ENERGY—
PERMIAN BASIN, L.L.C.
UNIVERSITY 09,
#1828H WELL
BOTTOM HOLE LOCATION/LTP
X=1,612,211.97
Y=591,701.61
LAT=31°17'15.62"(27)
LON=101°34'29.38"(27)
LAT=31°17'16.16"(84)
LON=101°34'30.81"(84)

TRACT	LEASE #	CALLED ACREAGE	MEASURED ACREAGE	MEASURED PCT.
1	UNIVERSITY LANDS 113331	322.90 ACRES	322.994 ACRES	7.142
2	UNIVERSITY LANDS 113333	645.80 ACRES	645.988 ACRES	14.285
3	UNIVERSITY LANDS 113334	484.35 ACRES	484.491 ACRES	10.713
4	UNIVERSITY LANDS 113335	565.075 ACRES	565.399 ACRES	12.503
5	UNIVERSITY LANDS 113337	322.90 ACRES	323.079 ACRES	7.144
6	UNIVERSITY LANDS 113338	322.90 ACRES	322.985 ACRES	7.142
7	UNIVERSITY LANDS 113339	565.075 ACRES	565.270 ACRES	12.500
8	UNIVERSITY LANDS 113340	322.90 ACRES	323.031 ACRES	7.143
9	UNIVERSITY LANDS 78414	161.45 ACRES	161.497 ACRES	3.571
10	UNIVERSITY LANDS 111020	322.90 ACRES	323.071 ACRES	7.144
11	UNIVERSITY LANDS 111021	322.90 ACRES	322.998 ACRES	7.142
12	UNIVERSITY LANDS 107981	80.725 ACRES	80.774 ACRES	1.786
13	UNIVERSITY LANDS 108484	80.725 ACRES	80.708 ACRES	1.785
TOTAL			4522.285 ACRES	100.000

Last MWD Survey
MD: 14838.0, Inc.: 93.20, Azi.: 2.20, TVD: 7778.8,
N: 591642.76, E: 1612187.12
PTB - TD
MD: 14893.9, Inc.: 93.20, Azi.: 2.20, TVD: 7775.7,
N: 591698.59, E: 1612189.27

AMERICAN ENERGY—
PERMIAN BASIN, L.L.C.
UNIVERSITY 09,
#1828H WELL
PENETRATION POINT LOCATION

Cross Section Line
MD: 9662.0, Inc.: 89.16, Azi.: 1.64, TVD: 7787.0,
N: 586473.30, E: 1612151.81



FINAL
AMERICAN ENERGY—
PERMIAN BASIN, L.L.C.
UNIVERSITY 09,
#1828H WELL
4522.285 ACRES
REAGAN COUNTY, TEXAS
PERCHERON

SURVEY, L.L.C.
15411 Vantage Pkwy West
Suite 205
Houston, Texas 77032
(281) 447-6230
Texas Surveying Firm License
No. 10020700
OCTOBER 29, 2014
PROJECT 182.0002.028

THIS MAP WAS PREPARED FROM AN ACTUAL ON THE
GROUND SURVEY PERFORMED UNDER MY SUPERVISION
ON OCTOBER 29, 2014.

LARRY W. SMITH
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS NO. 4279

BEARINGS AND COORDINATES SHOWN ON THIS MAP ARE
BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM,
CENTRAL ZONE, NAD 27.

LATITUDES AND LONGITUDES SHOWN ON THIS MAP ARE
BASED ON WGS 84.

THIS MAP WAS PREPARED FOR AREA COMPUTATIONS OF
MINERAL OWNERSHIP AND DOES NOT REPRESENT A CURRENT
OWNERSHIP BOUNDARY SURVEY.

RECORDS RESEARCH WAS PROVIDED BY THE CLIENT OR
CLIENT'S REPRESENTATIVES. CLIENTS REPRESENTATIVE DIRECT THE
SURVEYOR TO EXTEND THE MINERAL DEEDS TO THE CENTERLINE OF THE
RIGHT-OF-WAY WHEN MINERAL DEEDS ARE NOT PROVIDED. THE SURVEYOR
PERFORMED NO ADDITIONAL RESEARCH.

LESSOR NAMES ARE PROVIDED BY THE CLIENTS REPRESENTATIVE AND
NOT BY THE SURVEYOR.

UNIVERSITY 09, #1828H SURFACE HOLE LOCATION BEARS N 48°45' W
10.15 MILES FROM BIG LAKE, TX.

§ = APPROXIMATE SURVEY ABSTRACT LINE

AMERICAN ENERGY—
PERMIAN BASIN, L.L.C.
UNIVERSITY 09,
#1828H WELL
SURFACE HOLE LOCATION
X=1,612,197.74
Y=584,293.30
LAT=31°16'02.30"(27)
LON=101°34'28.59"(27)
LAT=31°16'02.84"(84)
LON=101°34'30.02"(84)
SURFACE ELEVATION=2714.16'



Railroad Commission of Texas
Oil and Gas Division
PO Box 12967
Capitol Station
Austin, TX 78711

Attention: Pam Johns

Re American Energy Partners
University 09 #1828H
Reagan County, Texas
API # 42-383-39288

Enclosed, please find the original and one copy of the survey performed on the referenced well by INTREPID DIRECTIONAL MWD TECH., a division of INTREPID DIRECTIONAL DRILLING SPECIALIST, LTD. Other information required by your office is as follows:

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
David Williams MWD Engineer	#1	805' - 14838'	1-27-15, 2-7-15	MWD/D&I

A certified plat on which the bottom hole is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Sincerely,

Phillip Calhoun

Well Planner
Phillip Calhoun

Enclosures: 2



State of Texas
County of Reagan, Tx

I, David Williams, certify that; I am employed by INTREPID DIRECTIONAL DRILLING SPECIALIST, LTD.; that I did on the days of 1/27/15 through 2/7/15 conduct or supervise the taking of MWD surveys from a depth of 805 feet to a depth of 14838 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by INTREPID DIRECTIONAL MWD, a division of INTREPID DIRECTIONAL DRILLING SPECIALIST, LTD.; that I am authorized and qualified to make this report; that this survey was conducted at the request of American Energy Partners, API# 42-383-39288 in Pecos County, Texas; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by INTREPID DIRECTIONAL MWD, a division of INTREPID DIRECTIONAL DRILLING SPECIALISTS, LTD.

David Williams

David Williams,
MWD Engineer