



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

May 4, 2015


Attn: Pam Johns

RE: Pioneer Natural Resources USA, Inc.  
University 2-20 49H (OH)  
Reagan County, Texas  
API #: 42-383-38926

Enclosed, please find the original and one copy of the survey performed on the referenced well by LEAM Drilling Systems, LLC. (P-5 No. 491647). Other information required by your office is as follows:

<u>Name &amp; Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Randy W. Rakowitz	OH	685' – 18,738'	04/18/2015-04/29/2015	MWD

A certified plat on which the bottom hole location 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.

  
Nora Tucker  
Well Planner

Enclosures

# LEAM Drilling Systems LLC

## Survey Report

<b>Company:</b>	PIONEER NATURAL RESOURCES	<b>Local Co-ordinate Reference:</b>	Well 49H
<b>Project:</b>	Reagan County, Tx	<b>TVD Reference:</b>	GE 2648' + KB 26' @ 2674.00usft (H&P 606)
<b>Site:</b>	University 2-20	<b>MD Reference:</b>	GE 2648' + KB 26' @ 2674.00usft (H&P 606)
<b>Well:</b>	49H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi User Db

<b>Project</b>	Reagan County, Tx		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Texas Central 4203		

<b>Site</b>	University 2-20		
<b>Site Position:</b>		<b>Northing:</b>	589,867.89 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,558,365.85 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	31° 16' 51.111 N
		<b>Longitude:</b>	101° 44' 49.640 W
		<b>Grid Convergence:</b>	-0.73 °

<b>Well</b>	49H		
<b>Well Position</b>	<b>+N-S</b>	0.00 usft	<b>Northing:</b> 589,897.88 usft
	<b>+E-W</b>	0.00 usft	<b>Easting:</b> 1,558,366.48 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft
		<b>Latitude:</b>	31° 16' 51.408 N
		<b>Longitude:</b>	101° 44' 49.637 W
		<b>Ground Level:</b>	2,648.00 usft

<b>Wellbore</b>	OH		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	User Defined	04/13/15	6.40
			<b>Dip Angle (°)</b> 59.51
			<b>Field Strength (nT)</b> 47,922

<b>Design</b>	OH		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>
	0.00	0.00	0.00
			<b>Direction (°)</b> 1.59

<b>Survey Program</b>	<b>Date</b>	05/04/15		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
100.00	585.00	Survey #1 (OH)	VES GyroFlex V2	
685.00	18,687.00	Survey #2 (OH)	LEAM_MWD+HDGM	LEAM MWD + HDGM
18,738.00	18,738.00	Survey #3 (OH)	Project	Projection

<b>Survey</b>									
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.60	144.14	100.00	-0.42	0.31	-0.42	0.60	0.60	0.00
200.00	0.75	129.82	199.99	-1.27	1.12	-1.24	0.22	0.15	-14.32
300.00	0.50	124.74	299.99	-1.94	1.98	-1.88	0.26	-0.25	-5.08
400.00	0.36	56.68	399.98	-2.01	2.60	-1.94	0.50	-0.14	-68.06
500.00	0.62	242.36	499.98	-2.09	2.38	-2.02	0.98	0.26	-174.32
585.00	0.68	287.50	584.98	-2.15	1.49	-2.11	0.59	0.07	53.11
685.00	0.88	260.61	684.97	-2.10	0.17	-2.09	0.41	0.20	-26.89
778.00	0.44	94.67	777.96	-2.24	-0.18	-2.25	1.41	-0.47	-178.43

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<b>Well:</b>	49H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
870.00	0.88	89.75	869.96	-2.27	0.88	-2.24	0.48	0.48	-5.35
963.00	1.76	86.93	962.93	-2.19	3.02	-2.11	0.95	0.95	-3.03
1,057.00	2.29	85.18	1,056.87	-1.96	6.33	-1.78	0.57	0.56	-1.86
1,151.00	2.11	87.11	1,150.80	-1.71	9.93	-1.43	0.21	-0.19	2.05
1,245.00	2.11	87.46	1,244.74	-1.55	13.39	-1.17	0.01	0.00	0.37
1,340.00	1.85	81.49	1,339.68	-1.24	16.65	-0.78	0.35	-0.27	-6.28
1,434.00	1.76	88.69	1,433.64	-0.98	19.60	-0.44	0.26	-0.10	7.66
1,528.00	1.58	86.23	1,527.60	-0.87	22.33	-0.25	0.21	-0.19	-2.62
1,622.00	1.32	87.29	1,621.57	-0.73	24.71	-0.04	0.28	-0.28	1.13
1,717.00	1.06	91.86	1,716.55	-0.71	26.68	0.03	0.29	-0.27	4.81
1,811.00	0.70	102.40	1,810.54	-0.86	28.11	-0.08	0.42	-0.38	11.21
1,905.00	1.23	68.65	1,904.52	-0.61	29.61	0.21	0.80	0.56	-35.90
1,999.00	1.58	63.56	1,998.49	0.33	31.71	1.21	0.39	0.37	-5.41
2,093.00	1.41	60.74	2,092.46	1.47	33.88	2.41	0.20	-0.18	-3.00
2,187.00	1.14	60.22	2,186.44	2.50	35.70	3.49	0.29	-0.29	-0.55
2,282.00	0.88	69.88	2,281.42	3.22	37.20	4.25	0.33	-0.27	10.17
2,376.00	0.62	77.79	2,375.42	3.58	38.38	4.64	0.30	-0.28	8.41
2,470.00	0.35	85.53	2,469.41	3.71	39.16	4.79	0.29	-0.29	8.23
2,565.00	0.35	85.00	2,564.41	3.76	39.74	4.86	0.00	0.00	-0.56
2,659.00	0.44	47.38	2,658.41	4.03	40.29	5.14	0.29	0.10	-40.02
2,754.00	0.44	58.81	2,753.41	4.46	40.87	5.59	0.09	0.00	12.03
2,848.00	0.26	32.27	2,847.40	4.83	41.30	5.97	0.25	-0.19	-28.23
2,942.00	0.18	188.71	2,941.40	4.86	41.39	6.01	0.46	-0.09	166.43
3,037.00	0.18	193.11	3,036.40	4.57	41.33	5.72	0.01	0.00	4.63
3,131.00	0.26	326.52	3,130.40	4.60	41.18	5.75	0.43	0.09	141.93
3,225.00	0.35	9.06	3,224.40	5.07	41.11	6.20	0.25	0.10	45.26
3,319.00	0.18	121.92	3,318.40	5.27	41.28	6.41	0.48	-0.18	120.06
3,413.00	0.44	10.82	3,412.40	5.55	41.47	6.70	0.57	0.28	-118.19
3,508.00	0.44	24.88	3,507.40	6.24	41.69	7.39	0.11	0.00	14.80
3,602.00	0.44	42.64	3,601.40	6.83	42.09	8.00	0.14	0.00	18.89
3,696.00	0.44	329.69	3,695.39	7.41	42.15	8.57	0.56	0.00	-77.61
3,791.00	0.35	17.50	3,790.39	8.00	42.05	9.16	0.35	-0.09	50.33
3,885.00	0.62	46.15	3,884.39	8.63	42.51	9.80	0.38	0.29	30.48
3,979.00	0.70	54.59	3,978.38	9.31	43.34	10.51	0.13	0.09	8.98
4,074.00	0.35	183.26	4,073.38	9.36	43.80	10.57	1.01	-0.37	135.44
4,168.00	0.53	164.63	4,167.38	8.65	43.90	9.87	0.24	0.19	-19.82
4,262.00	0.70	174.12	4,261.37	7.66	44.07	8.88	0.21	0.18	10.10
4,357.00	0.70	212.97	4,356.36	6.60	43.82	7.81	0.49	0.00	40.89
4,451.00	0.53	167.27	4,450.36	5.69	43.60	6.90	0.53	-0.18	-48.62
4,545.00	0.53	170.96	4,544.36	4.84	43.76	6.05	0.04	0.00	3.93
4,639.00	0.53	202.77	4,638.35	4.01	43.66	5.22	0.31	0.00	33.84
4,734.00	0.44	218.42	4,733.35	3.32	43.27	4.52	0.17	-0.09	16.47
4,828.00	0.26	110.67	4,827.35	2.96	43.24	4.16	0.61	-0.19	-114.63

# LEAM Drilling Systems LLC

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<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
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### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,922.00	0.44	122.79	4,921.35	2.69	43.74	3.90	0.21	0.19	12.89
5,017.00	0.53	116.99	5,016.34	2.29	44.44	3.52	0.11	0.09	-6.11
5,111.00	0.18	191.70	5,110.34	1.95	44.80	3.19	0.55	-0.37	79.48
5,156.00	0.09	206.29	5,155.34	1.85	44.77	3.09	0.21	-0.20	32.42
5,310.00	0.62	113.65	5,309.34	1.40	45.48	2.67	0.41	0.34	-60.16
5,404.00	0.26	66.54	5,403.33	1.29	46.14	2.57	0.51	-0.38	-50.12
5,498.00	0.26	78.67	5,497.33	1.41	46.55	2.70	0.06	0.00	12.90
5,593.00	0.35	75.68	5,592.33	1.53	47.04	2.83	0.10	0.09	-3.15
5,687.00	0.18	98.89	5,686.33	1.57	47.46	2.89	0.21	-0.18	24.69
5,781.00	0.26	103.46	5,780.33	1.50	47.82	2.83	0.09	0.09	4.86
5,876.00	0.26	122.97	5,875.33	1.33	48.21	2.67	0.09	0.00	20.54
5,970.00	0.26	83.59	5,969.33	1.24	48.60	2.59	0.19	0.00	-41.89
6,065.00	0.79	81.49	6,064.32	1.36	49.46	2.74	0.56	0.56	-2.21
6,159.00	1.14	69.53	6,158.31	1.79	50.98	3.20	0.43	0.37	-12.72
6,254.00	0.79	73.75	6,253.30	2.30	52.49	3.76	0.38	-0.37	4.44
6,348.00	0.70	79.90	6,347.29	2.58	53.68	4.07	0.13	-0.10	6.54
6,442.00	0.53	92.21	6,441.28	2.67	54.68	4.18	0.23	-0.18	13.10
6,536.00	0.44	86.06	6,535.28	2.67	55.47	4.21	0.11	-0.10	-6.54
6,630.00	0.35	95.37	6,629.28	2.67	56.12	4.23	0.12	-0.10	9.90
6,725.00	0.35	61.80	6,724.28	2.78	56.66	4.35	0.21	0.00	-35.34
6,819.00	0.35	69.71	6,818.27	3.02	57.18	4.60	0.05	0.00	8.41
6,913.00	0.35	81.84	6,912.27	3.16	57.74	4.76	0.08	0.00	12.90
7,007.00	0.44	84.83	7,006.27	3.23	58.38	4.85	0.10	0.10	3.18
7,101.00	0.44	79.73	7,100.27	3.33	59.10	4.97	0.04	0.00	-5.43
7,196.00	0.44	81.13	7,195.27	3.45	59.82	5.11	0.01	0.00	1.47
7,290.00	0.44	96.78	7,289.26	3.46	60.53	5.14	0.13	0.00	16.65
7,384.00	0.44	95.55	7,383.26	3.38	61.25	5.08	0.01	0.00	-1.31
7,479.00	0.26	74.28	7,478.26	3.41	61.82	5.12	0.23	-0.19	-22.39
7,526.00	2.73	355.00	7,525.24	4.55	61.82	6.27	5.73	5.26	-168.68
7,573.00	7.12	353.42	7,572.05	8.56	61.39	10.26	9.34	9.34	-3.36
7,620.00	11.43	357.46	7,618.43	16.11	60.85	17.79	9.27	9.17	8.60
7,667.00	14.42	2.91	7,664.24	26.61	60.94	28.29	6.86	6.36	11.60
7,714.00	18.29	3.09	7,709.33	39.83	61.64	41.52	8.23	8.23	0.38
7,761.00	22.16	5.37	7,753.42	56.02	62.87	57.74	8.40	8.23	4.85
7,808.00	25.85	6.95	7,796.35	75.02	64.94	76.80	7.97	7.85	3.36
7,855.00	29.90	6.60	7,837.89	96.84	67.52	98.68	8.62	8.62	-0.74
7,902.00	34.21	5.02	7,877.71	121.65	70.03	123.55	9.34	9.17	-3.36
7,950.00	38.34	3.26	7,916.40	149.97	72.05	151.91	8.87	8.60	-3.67
7,997.00	43.00	2.03	7,952.04	180.56	73.45	182.53	10.06	9.91	-2.62
8,044.00	47.84	2.03	7,985.02	214.00	74.64	215.99	10.30	10.30	0.00
8,091.00	52.41	2.91	8,015.14	250.03	76.20	252.05	9.83	9.72	1.87
8,138.00	57.51	2.91	8,042.12	288.45	78.15	290.51	10.85	10.85	0.00
8,185.00	62.61	2.74	8,065.57	329.11	80.16	331.21	10.86	10.85	-0.36

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Survey									
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8,232.00	67.53	2.38	8,085.38	371.68	82.06	373.81	10.49	10.47	-0.77
8,279.00	72.02	1.51	8,101.62	415.74	83.55	417.90	9.71	9.55	-1.85
8,326.00	77.65	1.68	8,113.91	461.07	84.81	463.25	11.98	11.98	0.36
8,374.00	81.78	1.68	8,122.48	508.27	86.20	510.47	8.60	8.60	0.00
8,421.00	85.56	2.03	8,127.66	554.95	87.71	557.17	8.08	8.04	0.74
8,527.00	89.78	1.51	8,131.97	660.79	90.98	663.06	4.01	3.98	-0.49
8,621.00	91.19	1.33	8,131.17	754.75	93.31	757.05	1.51	1.50	-0.19
8,716.00	90.04	1.68	8,130.15	849.71	95.80	852.04	1.27	-1.21	0.37
8,810.00	89.16	2.21	8,130.81	943.66	99.00	946.04	1.09	-0.94	0.56
8,904.00	90.31	2.38	8,131.24	1,037.58	102.76	1,040.03	1.24	1.22	0.18
8,998.00	88.46	2.21	8,132.25	1,131.49	106.52	1,134.01	1.98	-1.97	-0.18
9,092.00	89.34	2.03	8,134.06	1,225.41	110.00	1,227.99	0.96	0.94	-0.19
9,187.00	88.11	3.09	8,136.17	1,320.29	114.24	1,322.95	1.71	-1.29	1.12
9,281.00	89.16	3.97	8,138.41	1,414.08	120.03	1,416.87	1.46	1.12	0.94
9,375.00	89.96	2.56	8,139.13	1,507.92	125.38	1,510.82	1.72	0.85	-1.50
9,470.00	89.96	1.68	8,139.20	1,602.86	128.90	1,605.82	0.93	0.00	-0.93
9,564.00	88.11	0.27	8,140.78	1,696.82	130.49	1,699.79	2.47	-1.97	-1.50
9,658.00	89.16	0.27	8,143.02	1,790.79	130.94	1,793.74	1.12	1.12	0.00
9,752.00	88.02	358.87	8,145.33	1,884.76	130.23	1,887.65	1.92	-1.21	-1.49
9,846.00	88.37	358.69	8,148.29	1,978.69	128.23	1,981.49	0.42	0.37	-0.19
9,941.00	89.87	359.22	8,149.75	2,073.66	126.50	2,076.37	1.67	1.58	0.56
10,035.00	91.10	359.40	8,148.96	2,167.65	125.37	2,170.29	1.32	1.31	0.19
10,129.00	86.97	357.99	8,150.54	2,261.59	123.23	2,264.14	4.64	-4.39	-1.50
10,224.00	89.96	0.98	8,153.09	2,356.53	122.38	2,359.02	4.45	3.15	3.15
10,318.00	91.54	1.68	8,151.86	2,450.49	124.56	2,453.01	1.84	1.68	0.74
10,412.00	92.07	0.80	8,148.89	2,544.42	126.59	2,546.96	1.09	0.56	-0.94
10,507.00	90.92	1.51	8,146.42	2,639.37	128.51	2,641.92	1.42	-1.21	0.75
10,601.00	89.87	2.03	8,145.77	2,733.32	131.41	2,735.91	1.25	-1.12	0.55
10,695.00	90.40	1.68	8,145.55	2,827.27	134.45	2,829.91	0.68	0.56	-0.37
10,790.00	88.02	1.33	8,146.86	2,922.22	136.95	2,924.90	2.53	-2.51	-0.37
10,884.00	88.29	1.15	8,149.88	3,016.15	138.98	3,018.85	0.35	0.29	-0.19
10,978.00	89.08	0.63	8,152.04	3,110.11	140.44	3,112.81	1.01	0.84	-0.55
11,072.00	91.01	0.98	8,151.97	3,204.10	141.76	3,206.80	2.09	2.05	0.37
11,167.00	88.20	0.10	8,152.62	3,299.08	142.66	3,301.77	3.10	-2.96	-0.93
11,261.00	89.25	0.27	8,154.71	3,393.06	142.96	3,395.72	1.13	1.12	0.18
11,355.00	90.84	0.63	8,154.64	3,487.05	143.70	3,489.70	1.73	1.69	0.38
11,449.00	88.02	1.51	8,155.57	3,581.02	145.45	3,583.68	3.14	-3.00	0.94
11,544.00	89.52	2.74	8,157.61	3,675.93	148.97	3,678.65	2.04	1.58	1.29
11,638.00	91.63	3.79	8,156.67	3,769.76	154.33	3,772.60	2.51	2.24	1.12
11,732.00	89.52	1.51	8,155.73	3,863.65	158.67	3,866.56	3.30	-2.24	-2.43
11,826.00	88.37	0.80	8,157.46	3,957.61	160.57	3,960.54	1.44	-1.22	-0.76
11,921.00	88.99	0.80	8,159.65	4,052.58	161.89	4,055.51	0.65	0.65	0.00
12,015.00	88.46	2.03	8,161.74	4,146.52	164.21	4,149.48	1.42	-0.56	1.31
12,109.00	88.64	0.63	8,164.12	4,240.46	166.39	4,243.45	1.50	0.19	-1.49

# LEAM Drilling Systems LLC

## Survey Report

<b>Company:</b>	PIONEER NATURAL RESOURCES	<b>Local Co-ordinate Reference:</b>	Well 49H
<b>Project:</b>	Reagan County, Tx	<b>TVD Reference:</b>	GE 2648' + KB 26' @ 2674.00usft (H&P 606)
<b>Site:</b>	University 2-20	<b>MD Reference:</b>	GE 2648' + KB 26' @ 2674.00usft (H&P 606)
<b>Well:</b>	49H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,204.00	89.25	0.45	8,165.86	4,335.44	167.29	4,338.42	0.67	0.64	-0.19
12,298.00	90.31	358.17	8,166.23	4,429.43	166.16	4,432.33	2.67	1.13	-2.43
12,392.00	88.81	358.69	8,166.95	4,523.39	163.58	4,526.18	1.69	-1.60	0.55
12,487.00	89.25	1.86	8,168.56	4,618.36	164.04	4,621.13	3.37	0.46	3.34
12,581.00	90.75	2.38	8,168.56	4,712.29	167.52	4,715.13	1.69	1.60	0.55
12,675.00	88.55	3.09	8,169.13	4,806.18	172.00	4,809.10	2.46	-2.34	0.76
12,769.00	90.48	3.79	8,169.93	4,900.00	177.64	4,903.04	2.18	2.05	0.74
12,864.00	89.25	3.61	8,170.15	4,994.80	183.77	4,997.98	1.31	-1.29	-0.19
12,958.00	88.46	1.86	8,172.03	5,088.67	188.25	5,091.93	2.04	-0.84	-1.86
13,052.00	91.98	3.61	8,171.67	5,182.54	192.74	5,185.90	4.18	3.74	1.86
13,146.00	89.43	0.80	8,170.51	5,276.45	196.35	5,279.87	4.04	-2.71	-2.99
13,240.00	88.11	0.80	8,172.53	5,370.42	197.67	5,373.83	1.40	-1.40	0.00
13,335.00	89.69	2.21	8,174.35	5,465.36	200.16	5,468.81	2.23	1.66	1.48
13,429.00	89.52	1.51	8,175.00	5,559.31	203.21	5,562.81	0.77	-0.18	-0.74
13,523.00	90.40	2.21	8,175.07	5,653.26	206.26	5,656.80	1.20	0.94	0.74
13,618.00	89.34	0.80	8,175.28	5,748.22	208.76	5,751.80	1.86	-1.12	-1.48
13,712.00	90.75	1.15	8,175.21	5,842.20	210.36	5,845.79	1.55	1.50	0.37
13,806.00	88.72	0.45	8,175.64	5,936.19	211.67	5,939.78	2.28	-2.16	-0.74
13,900.00	89.52	0.45	8,177.09	6,030.17	212.41	6,033.75	0.85	0.85	0.00
13,995.00	89.78	0.98	8,177.67	6,125.16	213.59	6,128.73	0.62	0.27	0.56
14,089.00	89.69	1.86	8,178.10	6,219.13	215.92	6,222.73	0.94	-0.10	0.94
14,183.00	89.87	2.56	8,178.46	6,313.06	219.55	6,316.72	0.77	0.19	0.74
14,278.00	90.04	2.91	8,178.54	6,407.95	224.08	6,411.70	0.41	0.18	0.37
14,372.00	89.34	2.21	8,179.05	6,501.86	228.28	6,505.69	1.05	-0.74	-0.74
14,466.00	89.43	0.98	8,180.05	6,595.81	230.90	6,599.68	1.31	0.10	-1.31
14,560.00	90.13	358.52	8,180.42	6,689.80	230.49	6,693.62	2.72	0.74	-2.62
14,655.00	91.36	358.52	8,179.18	6,784.76	228.03	6,788.48	1.29	1.29	0.00
14,749.00	90.57	357.81	8,177.60	6,878.70	225.02	6,882.30	1.13	-0.84	-0.76
14,843.00	90.75	0.27	8,176.51	6,972.67	223.45	6,976.19	2.62	0.19	2.62
14,937.00	91.10	359.57	8,175.00	7,066.66	223.32	7,070.14	0.83	0.37	-0.74
15,031.00	90.40	2.21	8,173.77	7,160.63	224.78	7,164.11	2.91	-0.74	2.81
15,126.00	88.90	1.68	8,174.35	7,255.57	228.00	7,259.11	1.67	-1.58	-0.56
15,220.00	90.31	2.56	8,174.99	7,349.50	231.48	7,353.10	1.77	1.50	0.94
15,314.00	88.64	1.51	8,175.86	7,443.43	234.82	7,447.08	2.10	-1.78	-1.12
15,408.00	89.78	0.45	8,177.15	7,537.41	236.42	7,541.07	1.66	1.21	-1.13
15,502.00	91.36	0.27	8,176.22	7,631.40	237.01	7,635.04	1.69	1.68	-0.19
15,596.00	89.87	0.98	8,175.21	7,725.39	238.04	7,729.02	1.76	-1.59	0.76
15,691.00	89.52	1.15	8,175.71	7,820.37	239.80	7,824.01	0.41	-0.37	0.18
15,785.00	89.69	0.98	8,176.36	7,914.35	241.55	7,918.00	0.26	0.18	-0.18
15,879.00	89.60	1.33	8,176.94	8,008.33	243.45	8,012.00	0.38	-0.10	0.37
15,974.00	89.78	1.68	8,177.46	8,103.29	245.94	8,107.00	0.41	0.19	0.37
16,068.00	89.34	1.51	8,178.18	8,197.25	248.56	8,200.99	0.50	-0.47	-0.18
16,162.00	89.25	0.98	8,179.34	8,291.22	250.60	8,294.99	0.57	-0.10	-0.56

# LEAM Drilling Systems LLC

## Survey Report

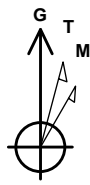
<b>Company:</b>	PIONEER NATURAL RESOURCES	<b>Local Co-ordinate Reference:</b>	Well 49H
<b>Project:</b>	Reagan County, Tx	<b>TVD Reference:</b>	GE 2648' + KB 26' @ 2674.00usft (H&P 606)
<b>Site:</b>	University 2-20	<b>MD Reference:</b>	GE 2648' + KB 26' @ 2674.00usft (H&P 606)
<b>Well:</b>	49H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,256.00	89.52	359.92	8,180.35	8,385.21	251.34	8,388.96	1.16	0.29	-1.13
16,351.00	89.96	359.04	8,180.78	8,480.21	250.48	8,483.89	1.04	0.46	-0.93
16,445.00	87.76	359.75	8,182.65	8,574.18	249.48	8,577.80	2.46	-2.34	0.76
16,539.00	88.64	359.75	8,185.60	8,668.13	249.07	8,671.70	0.94	0.94	0.00
16,634.00	90.40	0.45	8,186.39	8,763.12	249.24	8,766.66	1.99	1.85	0.74
16,728.00	88.99	0.45	8,186.90	8,857.12	249.98	8,860.64	1.50	-1.50	0.00
16,822.00	90.31	2.38	8,187.47	8,951.08	252.30	8,954.63	2.49	1.40	2.05
16,916.00	88.37	0.98	8,188.55	9,045.03	255.05	9,048.62	2.55	-2.06	-1.49
17,011.00	88.99	0.80	8,190.74	9,139.99	256.53	9,143.59	0.68	0.65	-0.19
17,105.00	90.48	0.80	8,191.18	9,233.98	257.84	9,237.57	1.59	1.59	0.00
17,199.00	89.69	1.86	8,191.04	9,327.95	260.02	9,331.57	1.41	-0.84	1.13
17,294.00	90.84	2.21	8,190.60	9,422.89	263.40	9,426.57	1.27	1.21	0.37
17,388.00	88.37	2.21	8,191.24	9,516.81	267.02	9,520.55	2.63	-2.63	0.00
17,482.00	88.90	2.38	8,193.48	9,610.70	270.78	9,614.52	0.59	0.56	0.18
17,576.00	90.75	3.09	8,193.77	9,704.59	275.27	9,708.49	2.11	1.97	0.76
17,670.00	88.11	2.03	8,194.71	9,798.48	279.47	9,802.46	3.03	-2.81	-1.13
17,765.00	88.90	2.03	8,197.18	9,893.39	282.83	9,897.43	0.83	0.83	0.00
17,859.00	89.69	2.56	8,198.34	9,987.31	286.60	9,991.41	1.01	0.84	0.56
17,953.00	90.75	2.38	8,197.98	10,081.22	290.65	10,085.40	1.14	1.13	-0.19
18,048.00	91.98	2.03	8,195.72	10,176.12	294.30	10,180.37	1.35	1.29	-0.37
18,142.00	88.64	0.63	8,195.21	10,270.08	296.48	10,274.35	3.85	-3.55	-1.49
18,237.00	88.29	359.22	8,197.75	10,365.04	296.36	10,369.27	1.53	-0.37	-1.48
18,331.00	88.99	359.04	8,199.98	10,459.00	294.93	10,463.16	0.77	0.74	-0.19
18,425.00	90.22	359.04	8,200.63	10,552.98	293.36	10,557.06	1.31	1.31	0.00
18,520.00	90.66	358.34	8,199.90	10,647.96	291.18	10,651.94	0.87	0.46	-0.74
18,614.00	91.45	357.29	8,198.17	10,741.87	287.60	10,745.71	1.40	0.84	-1.12
18,687.00	92.86	357.46	8,195.43	10,814.74	284.26	10,818.46	1.95	1.93	0.23
18,738.00	92.86	357.46	8,192.88	10,865.63	282.00	10,869.27	0.00	0.00	0.00

# PIONEER NATURAL RESOURCES

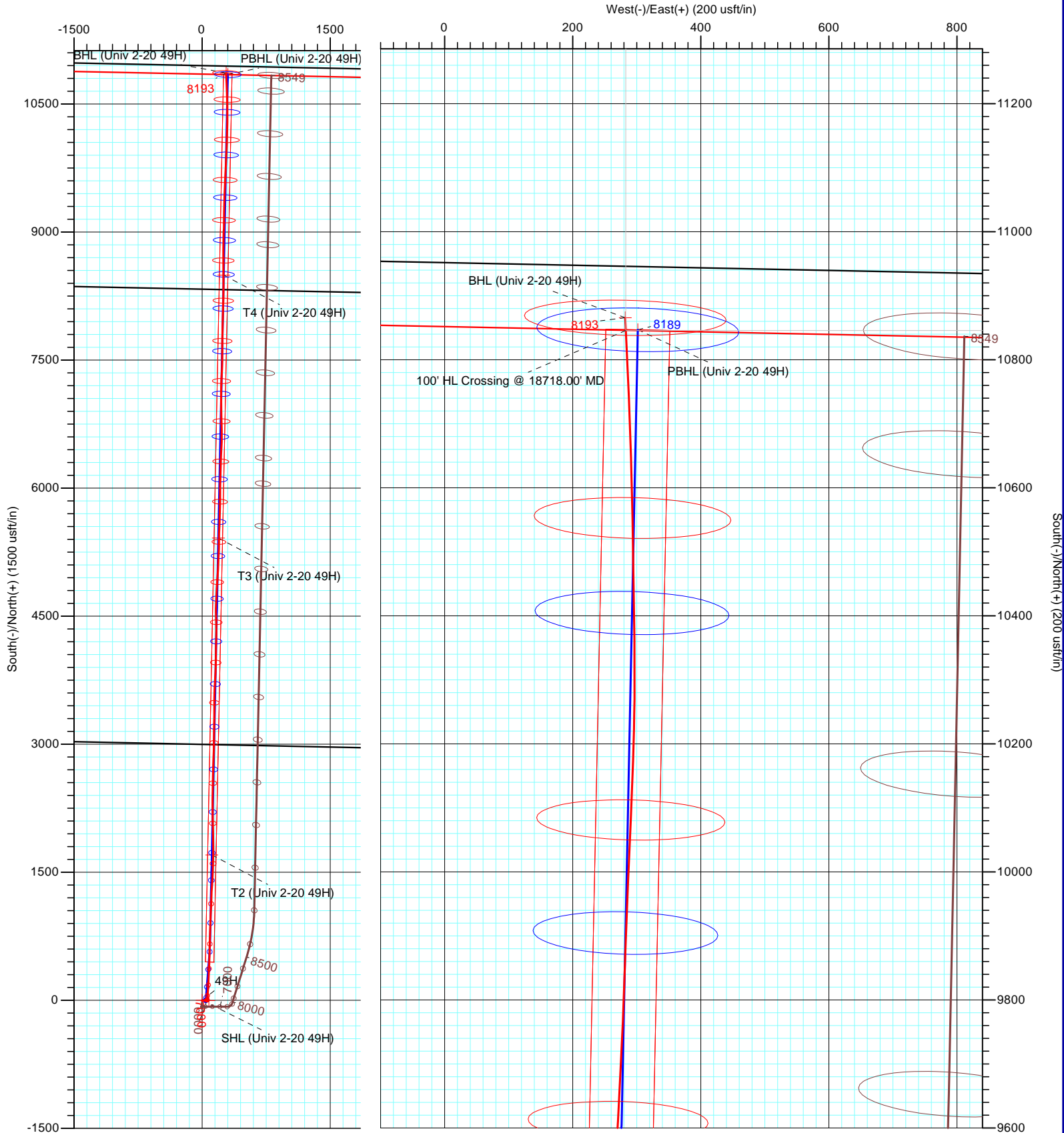
Project: Reagan County, Tx  
 Site: University 2-20  
 Well: 49H  
 Wellbore: OH  
 Design: OH



Azimuths to Grid North  
 True North: 0.73°  
 Magnetic North: 7.13°

Magnetic Field  
 Strength: 47922.0snT  
 Dip Angle: 59.51°  
 Date: 4/13/2015  
 Model: USER DEFINED

**PIONEER**  
 NATURAL RESOURCES



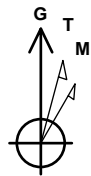
**LEAM DRILLING SYSTEMS LLC**  
 2010 East Davis, Conroe, Texas 77301  
 Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (49H/OH)  
 University 2-20  
 Created By: Mike Moreno  
 Date: \_\_\_\_\_  
 Approved: \_\_\_\_\_  
 Date: 13:02, May 04 2015  
 Date: \_\_\_\_\_



PIONEER NATURAL RESOURCES

Project: Reagan County, Tx  
Site: University 2-20  
Well: 49H  
Wellbore: OH  
Design: OH



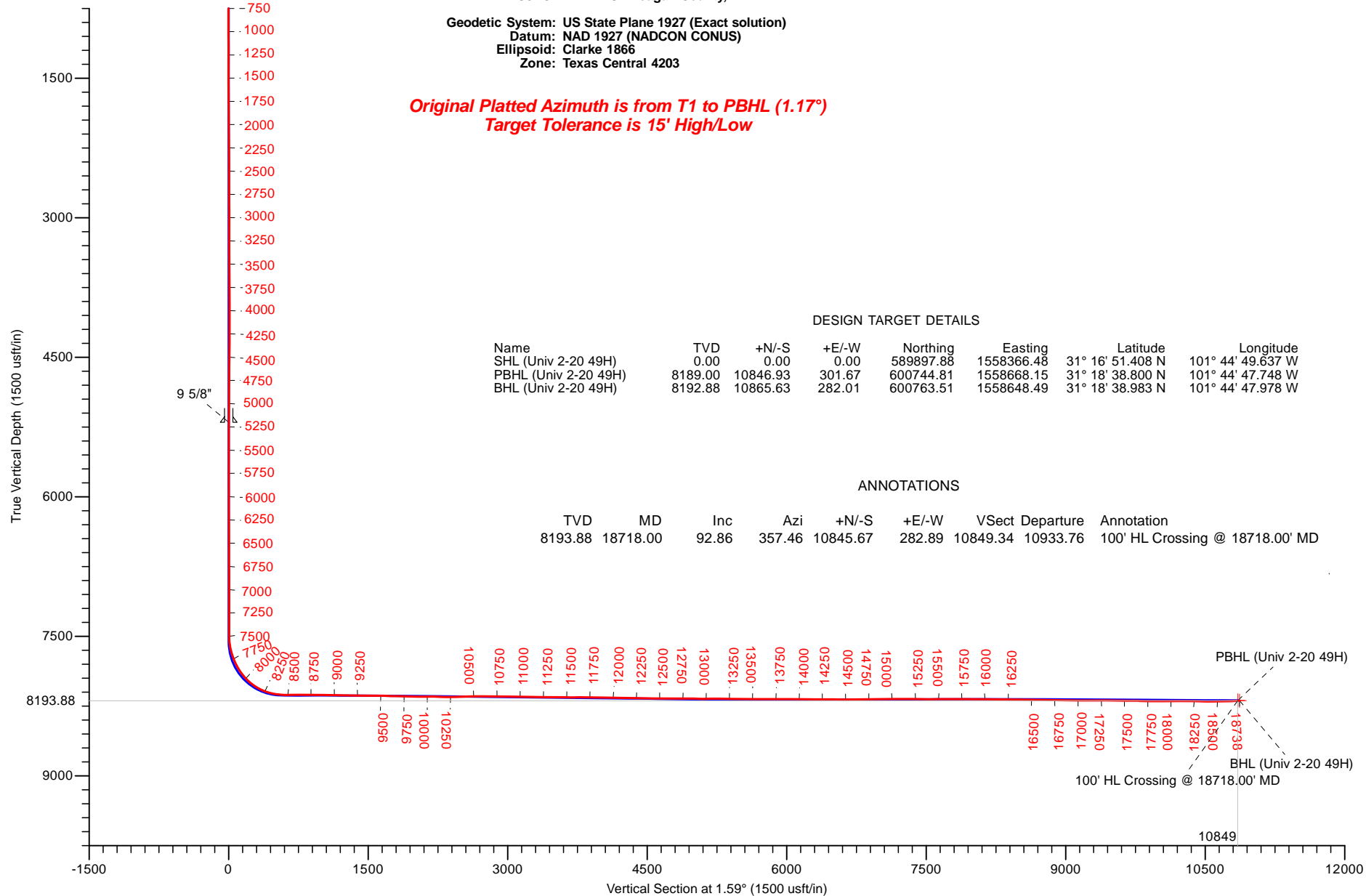
Azimuths to Grid North  
True North: 0.73°  
Magnetic North: 7.13°  
  
Magnetic Field  
Strength: 47922.0snT  
Dip Angle: 59.51°  
Date: 4/13/2015  
Model: USER DEFINED



PROJECT DETAILS: Reagan County, Tx

Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: Texas Central 4203

Original Platted Azimuth is from T1 to PBHL (1.17°)  
Target Tolerance is 15' High/Low



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (Univ 2-20 49H)	0.00	0.00	0.00	589897.88	1558366.48	31° 16' 51.408 N	101° 44' 49.637 W
PBHL (Univ 2-20 49H)	8189.00	10846.93	301.67	600744.81	1558668.15	31° 18' 38.800 N	101° 44' 47.748 W
BHL (Univ 2-20 49H)	8192.88	10865.63	282.01	600763.51	1558648.49	31° 18' 38.983 N	101° 44' 47.978 W

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
8193.88	18718.00	92.86	357.46	10845.67	282.89	10849.34	10933.76	100' HL Crossing @ 18718.00' MD



LEAM DRILLING SYSTEMS LLC  
2010 East Davis, Conroe, Texas 77301  
Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (49H/OH)  
University 2-20  
Created By: Mike Moreno  
Date: 10:55, May 04 2015  
Approved: \_\_\_\_\_  
Date: \_\_\_\_\_

PIONEER NATURAL RESOURCES

Project: Reagan County, Tx  
Site: University 2-20  
Well: 49H  
Wellbore: OH  
Design: OH

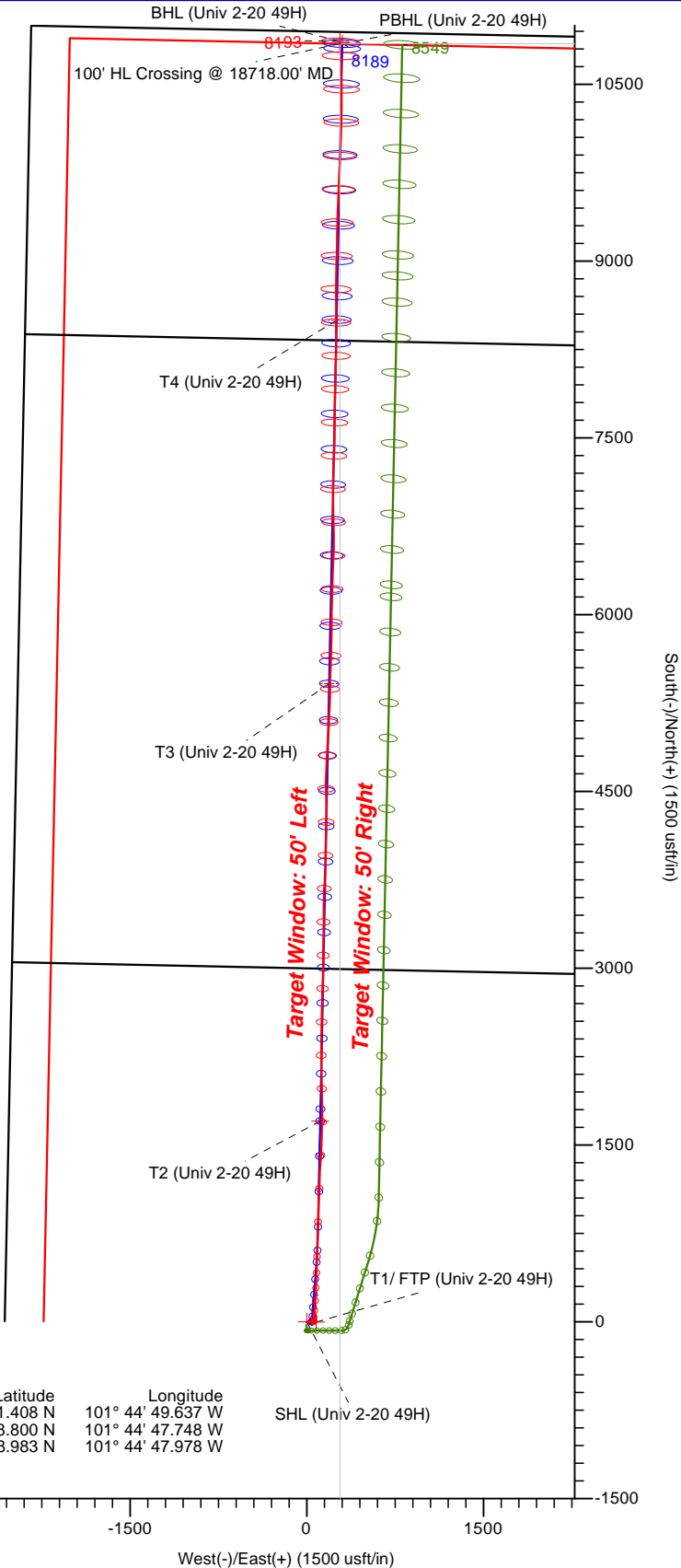


Azimuths to Grid North  
True North: 0.73°  
Magnetic North: 7.13°  
  
Magnetic Field  
Strength: 47922.0snT  
Dip Angle: 59.51°  
Date: 4/13/2015  
Model: USER DEFINED

PROJECT DETAILS: Reagan County, Tx

Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: Texas Central 4203

Original Platted Azimuth is from T1 to PBHL (1.17°)  
Target Tolerance is 50' Left/Right of Platted Lateral



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (Univ 2-20 49H)	0.00	0.00	0.00	589897.88	1558366.48	31° 16' 51.408 N	101° 44' 49.637 W
PBHL (Univ 2-20 49H)	8189.00	10846.93	301.67	600744.81	1558668.15	31° 18' 38.800 N	101° 44' 47.748 W
BHL (Univ 2-20 49H)	8192.88	10865.63	282.01	600763.51	1558648.49	31° 18' 38.983 N	101° 44' 47.978 W

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
8193.88	18718.00	92.86	357.46	10845.67	282.89	10849.34	10933.76	100' HL Crossing @ 18718.00' MD



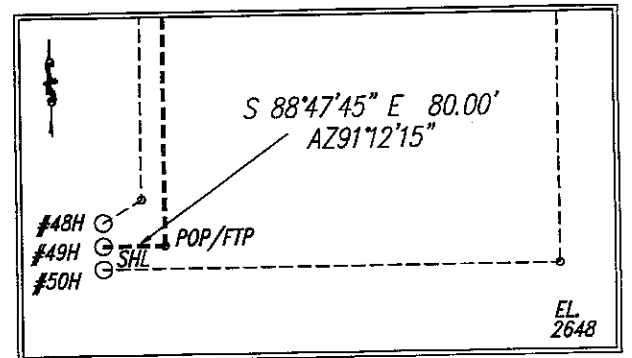
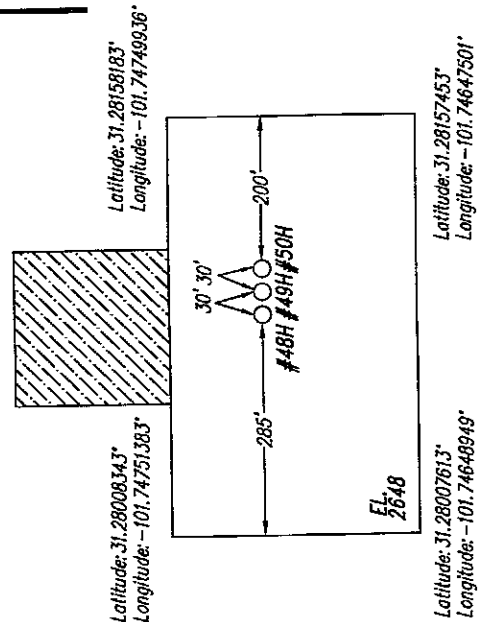
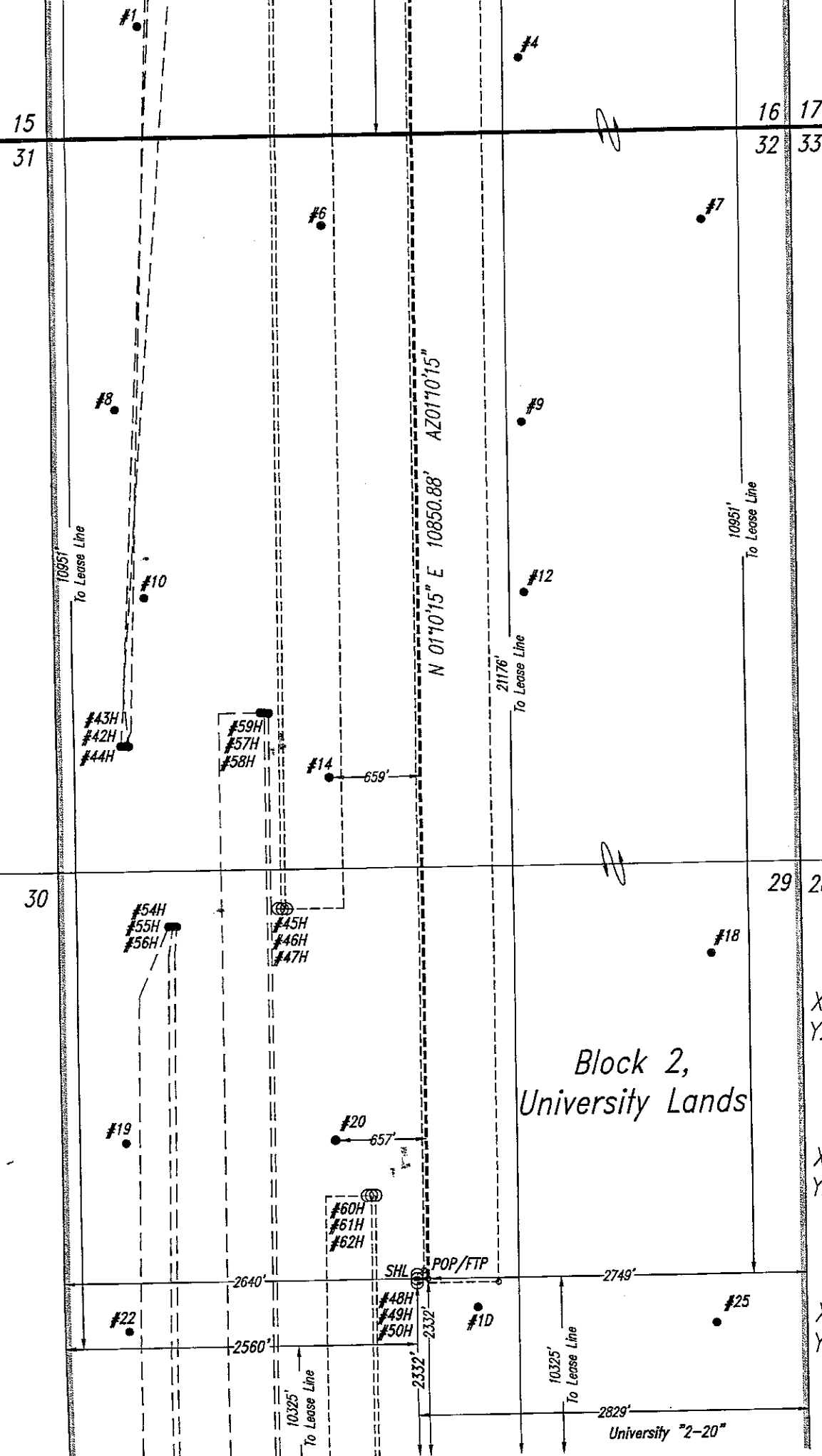
LEAM DRILLING SYSTEMS LLC  
2010 East Davis, Conroe, Texas 77301  
Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (49H/OH)  
University 2-20  
Created By: Mike Moreno  
Date: \_\_\_\_\_  
Approved: \_\_\_\_\_  
Date: 12:57, May 04 2015

Chevron  
Crump Family Partnership  
Black Family Partnership

# Block 58, University Lands

PIONEER NATURAL RESOURCES USA, INC.  
UNIVERSITY 2-20 49H (OH)  
BOTTOM HOLE LOCATION:  
TERMINUS: 18738.00' MD 8192.88' TVD  
CLOSURE: 10869.29' AZI: 1.49°  
N 10865.63' E 282.01'

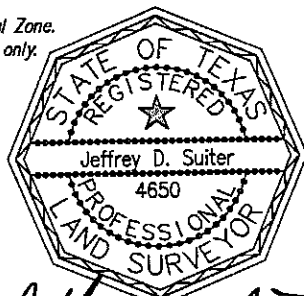


#49H Surface Hole Location  
X: 1558366.48 Latitude: 31.28094674°  
Y: 589897.88 Longitude: -101.74712134°  
2560' FWL & 2332' FSL - Section 29

Point of Penetration/First Take Point  
X: 1558446.46 Latitude: 31.28094491°  
Y: 589896.20 Longitude: -101.74686525°  
2640' FWL & 2332' FSL - Section 29

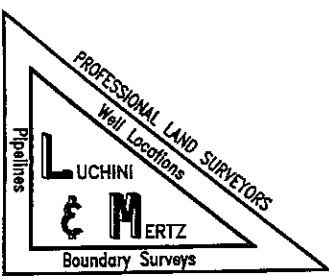
Last Take Point/Bottom Hole  
X: 1558668.15 Latitude: 31.31077785°  
Y: 600744.81 Longitude: -101.74659681°  
2640' FWL & 2519' FSL - Section 16

Note: Survey Reconstruction filed in the Office of Luchini and Mertz Land Surveying Company.  
Note: All bearings and coordinates shown are based on the Texas Coordinate System of 1927, Central Zone.  
Note: The above sketch represents the location as staked on the ground and is for permit purposes only.  
Note: NAD '27 Coordinates & Latitude/Longitude on well location in Sections 16 & 29.  
Note: Well location is approximately 18.5 miles northwest of Big Lake.  
Note: This does not constitute a boundary survey.  
Note: Lease description provided by client.



*Jeffrey D. Suiter*

March 28, 2014  
140328R



Railroad Commission Drawing

University "2-20" 49H

PIONEER NATURAL RESOURCES USA, Inc.  
University "2-20" Lease 2467.3 Acres  
all of Sections 20, 29, 32, W/2 of the NE/4 &  
E/2 of NW/4 of Section 17, Block 2,  
S/2 of Section 16, Block 58,  
University Lands,  
Reagan County, Texas

Scale: 1" = 1000'