

WYCO OIL & GAS

SURVEY REPORT

WYCO OIL & GAS

BASIC 1727

1/28/2017



The **Ultimate Partner** In Wellbore Placement

CUSTOMER **Wyco Oil & Gas**
PROJECT **University 20-12 #1**
FIELD **Wolfcamp**

SDI JOB NO. **413492**
SDI DISTRICT **Midland**
SDI KIT/UNIT

SITE INFORMATION

Site Name **University 20-12 #1**
Lat/Long **31.741715° N, 103.292356° W**
Northing **766,740.56 ft**
Easting **1,080,159.55 ft**

Section
Township
Range

MAP INFORMATION

North Reference **Grid North**
Grid Correction **1.52 deg**
System **US State Plane 1927**
Datum **North American Datum 1927 (Clarke 1866)**
Map Zone **Texas Central: 4203**



WELL INFORMATION

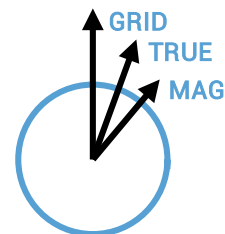
Lat/Long **31.741715° N, 103.292356° W**
Northing **766,740.54 ft**
Easting **1,080,159.55 ft**
UWI **42-495-32488**

DEPTH AND ELEVATION REFERENCE

Ground Level **2817 ft above Mean Sea Level**
Reference Datum **KB**
Reference Height **12 ft above G.L.**
Reference Elevation **2829 ft**

VERTICAL SECTION REFERENCE

+N/-S **0 ft**
+E/-W **0 ft**
Proposal Direction **0.00°**
Calculation Method **Minimum Curvature**



GEOMAGNETIC REFERENCE INFORMATION

Local Gravity: **998.518 mG** [computed]

MD	MODEL	DATE	DECLINATION	TRUE TO GRID	MAG TO GRID
0-13419 ft	HDGM2016	28 Jan 2017	7.03°	add 1.52°	add 8.55°

WELL NOTES

OPERATORS

B. Hughes , S. Acosta

MWD Surveys tied to INC only surveys down at 12,002'

***N/S and E/W displacement is not valid**

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid
264.00	0.50	0.00	264.00	1.15	1.15	0.00	0.19
495.00	0.25	0.00	494.99	2.66	2.66	0.00	0.11
703.00	1.25	0.00	702.97	5.39	5.39	0.00	0.48
860.00	1.25	0.00	859.93	8.81	8.81	0.00	0.00
1014.00	1.50	0.00	1013.89	12.51	12.51	0.00	0.16
1157.00	1.25	0.00	1156.85	15.94	15.94	0.00	0.17
1355.00	1.25	0.00	1354.80	20.26	20.26	0.00	0.00
1602.00	1.25	0.00	1601.74	25.65	25.65	0.00	0.00
1851.00	1.25	0.00	1850.68	31.08	31.08	0.00	0.00
2195.00	1.75	0.00	2194.56	40.08	40.08	0.00	0.15
2349.00	2.25	0.00	2348.47	45.46	45.46	0.00	0.32
2474.00	2.25	0.00	2473.37	50.36	50.36	0.00	0.00
2599.00	2.25	0.00	2598.28	55.27	55.27	0.00	0.00
2691.00	2.25	0.00	2690.21	58.88	58.88	0.00	0.00
2785.00	1.75	0.00	2784.15	62.16	62.16	0.00	0.53
2942.00	2.50	0.00	2941.04	67.99	67.99	0.00	0.48
3033.00	2.25	0.00	3031.96	71.76	71.76	0.00	0.27
3218.00	3.25	0.00	3216.75	80.63	80.63	0.00	0.54
3312.00	3.25	0.00	3310.59	85.96	85.96	0.00	0.00
3376.00	3.25	0.00	3374.49	89.59	89.59	0.00	0.00
3500.00	3.25	0.00	3498.29	96.62	96.62	0.00	0.00
3594.00	2.75	0.00	3592.16	101.54	101.54	0.00	0.53
3755.00	1.75	0.00	3753.04	107.86	107.86	0.00	0.62
3939.00	3.25	0.00	3936.86	115.89	115.89	0.00	0.82
4030.00	3.00	0.00	4027.72	120.85	120.85	0.00	0.27
4123.00	2.75	0.00	4120.60	125.51	125.51	0.00	0.27
4216.00	2.25	0.00	4213.52	129.57	129.57	0.00	0.54
4311.00	1.00	0.00	4308.47	132.26	132.26	0.00	1.32
4433.00	1.25	0.00	4430.45	134.66	134.66	0.00	0.20
4527.00	1.75	0.00	4524.42	137.12	137.12	0.00	0.53
4620.00	1.75	0.00	4617.38	139.96	139.96	0.00	0.00
4710.00	2.50	0.00	4707.31	143.30	143.30	0.00	0.83

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS
ft	deg	deg	ft	ft	ft	ft	°/100ft
4841.00	2.00	0.00	4838.21	148.44	148.44	0.00	0.38
4920.00	2.00	0.00	4917.16	151.20	151.20	0.00	0.00
5157.00	1.00	0.00	5154.08	157.40	157.40	0.00	0.42
5657.00	0.75	0.00	5654.02	165.03	165.03	0.00	0.05
6147.00	0.75	0.00	6143.98	171.45	171.45	0.00	0.00
6555.00	0.25	0.00	6551.96	175.01	175.01	0.00	0.12
7052.00	0.25	0.00	7048.96	177.18	177.18	0.00	0.00
7580.00	0.75	0.00	7576.94	181.79	181.79	0.00	0.09
8014.00	0.25	0.00	8010.92	185.57	185.57	0.00	0.12
8323.00	1.50	0.00	8319.88	190.29	190.29	0.00	0.40
8483.00	1.50	0.00	8479.82	194.48	194.48	0.00	0.00
8731.00	1.25	0.00	8727.75	200.43	200.43	0.00	0.10
8981.00	1.75	0.00	8977.66	206.97	206.97	0.00	0.20
9073.00	1.75	0.00	9069.62	209.78	209.78	0.00	0.00
9167.00	2.00	0.00	9163.57	212.86	212.86	0.00	0.27
9312.00	2.00	0.00	9308.48	217.92	217.92	0.00	0.00
9416.00	1.50	0.00	9412.43	221.10	221.10	0.00	0.48
9540.00	1.75	0.00	9536.38	224.61	224.61	0.00	0.20
9662.00	1.75	0.00	9658.32	228.34	228.34	0.00	0.00
9909.00	1.75	0.00	9905.21	235.88	235.88	0.00	0.00
9972.00	1.50	0.00	9968.18	237.67	237.67	0.00	0.40
10220.00	1.25	0.00	10216.11	243.62	243.62	0.00	0.10
10469.00	1.25	0.00	10465.05	249.05	249.05	0.00	0.00
10714.00	0.50	0.00	10710.02	252.79	252.79	0.00	0.31
10967.00	1.00	0.00	10963.00	256.10	256.10	0.00	0.20
11210.00	1.25	0.00	11205.95	260.87	260.87	0.00	0.10
11400.00	1.50	0.00	11395.90	265.43	265.43	0.00	0.13
11649.00	1.00	0.00	11644.84	270.87	270.87	0.00	0.20
SDI tie to INC only surveys 12002.00	1.25	0.00	11997.77	277.80	277.80	0.00	0.07
12076.00	1.03	157.47	12071.76	277.99	277.99	0.25	3.02
12167.00	1.07	144.76	12162.75	276.54	276.54	1.06	0.26
12291.00	0.94	139.64	12286.73	274.82	274.82	2.39	0.13
12413.00	1.55	141.41	12408.70	272.76	272.76	4.07	0.50

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft
12536.00	1.23	131.33	12531.67	270.59	270.59	6.09	0.32
12658.00	1.42	122.52	12653.63	268.91	268.91	8.36	0.23
12781.00	1.38	120.70	12776.60	267.34	267.34	10.91	0.05
12905.00	1.21	113.75	12900.56	266.05	266.05	13.39	0.18
13025.00	1.35	122.49	13020.53	264.78	264.78	15.74	0.20
13119.00	1.59	143.63	13114.50	263.13	263.13	17.45	0.63
13241.00	0.99	138.67	13236.47	260.98	260.98	19.15	0.50
13395.00	1.38	180.57	13390.44	258.13	258.13	20.01	0.60
13419.00	0.98	181.31	13414.44	257.64	257.64	20.00	1.68



Scientific Drilling

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State of Texas
County of Midland

I, Steven Acosta, certify that; I am employed by Scientific Drilling International; that I did on the day(s) of 02/03/2017 through 02/14/2017 conduct or supervise the taking of a MWD survey from a depth of 12076 feet to a depth of 13419 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Scientific Drilling International; that I am authorized and qualified to make this report; that this survey was conducted at the request of Wyco Oil & Gas for the University 20-12 #1 Well, API# 42-495-32488 in Winkler County, Texas; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Scientific Drilling International.

Field Technician