

HOBBS OCD

DEC 31 2015

RECEIVED



September 9, 2015

Devon Energy Production Co., L. P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: Megan Moravec

Re: **North Thistle 34 State Com No 001H**

Please find enclosed a copy of the survey from 0' to 1370' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

Sincerely,


Keith Havelka
Operations

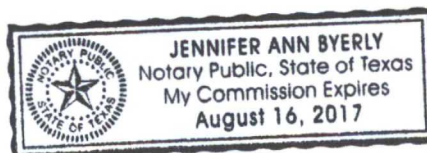
STATE OF TEXAS §

COUNTY OF NUECES §

This instrument was acknowledged before me on the 9 day of September A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

VES Survey International
P.O. Box 261021, Corpus Christi, Texas 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com



JAN 20 2016



Company: Devon Energy

Lease/Well: North Thistle 34 State Com No/001H

Location: S34-T23S-R33E-F330-S-F435-W-LEA

Rig Name: H&P 416

State/County: New Mexico/Lea

VS-Azi: 0.00 Degrees

Latitude: 32.34191, Longitude: -103.56740

Grid North = True North -0.41 degs (NAD 27)

Grid Convergence Applied = -0.41 degs



RKB : 25 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 9/9/2015 / 11:27

VES Survey International

Fort Worth Tx

Surveyor: Jason Wilson

(817) 718-1320

North Thistle 34 State Com No 001H / API 30-025-42465

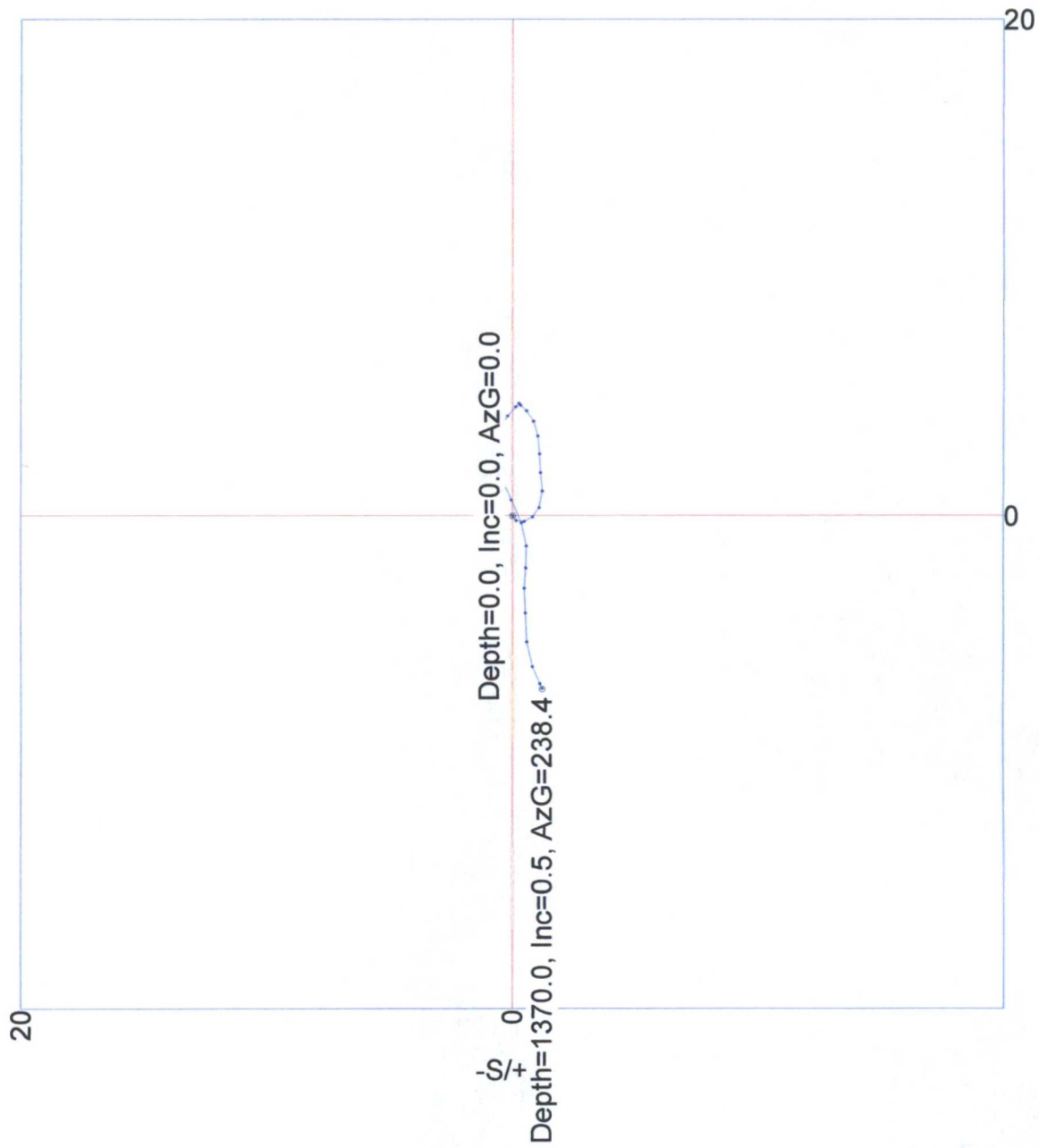
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
50.00	0.11	254.91	50.00	-0.01	-0.05	-0.01	0.05	254.91	0.22
100.00	0.39	223.15	100.00	-0.15	-0.21	-0.15	0.26	234.60	0.60
150.00	0.51	159.04	150.00	-0.48	-0.24	-0.48	0.54	207.05	0.97
200.00	0.37	139.44	200.00	-0.81	-0.06	-0.81	0.81	184.28	0.41
250.00	0.72	118.17	249.99	-1.08	0.32	-1.08	1.13	163.51	0.79
300.00	0.89	86.41	299.99	-1.20	0.98	-1.20	1.55	140.72	0.94
350.00	0.83	83.10	349.98	-1.13	1.73	-1.13	2.07	123.25	0.16
400.00	0.91	90.70	399.98	-1.10	2.48	-1.10	2.72	113.80	0.28
450.00	0.78	76.33	449.97	-1.02	3.21	-1.02	3.37	107.63	0.49
500.00	0.63	70.82	499.97	-0.85	3.80	-0.85	3.89	102.62	0.33
550.00	0.58	40.56	549.97	-0.57	4.22	-0.57	4.26	97.67	0.64
600.00	0.19	50.22	599.97	-0.32	4.45	-0.32	4.46	94.13	0.78
650.00	0.03	30.12	649.97	-0.26	4.52	-0.26	4.53	93.24	0.34
700.00	0.43	307.84	699.96	-0.13	4.38	-0.13	4.38	91.72	0.85
750.00	0.72	315.37	749.96	0.21	4.01	0.21	4.02	87.05	0.61
800.00	1.01	288.15	799.96	0.57	3.37	0.57	3.42	80.43	0.99

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
850.00	1.08	265.94	849.95	0.67	2.48	0.67	2.57	74.83	0.82
900.00	1.13	249.94	899.94	0.47	1.55	0.47	1.62	73.10	0.62
950.00	1.18	241.52	949.93	0.06	0.63	0.06	0.63	84.99	0.35
1000.00	1.15	250.43	999.92	-0.36	-0.30	-0.36	0.46	219.53	0.37
1050.00	1.05	265.62	1049.91	-0.56	-1.23	-0.56	1.35	245.41	0.62
1100.00	0.98	279.50	1099.90	-0.53	-2.11	-0.53	2.17	255.97	0.51
1150.00	0.91	267.36	1149.90	-0.47	-2.93	-0.47	2.97	260.79	0.42
1200.00	1.37	267.62	1199.89	-0.52	-3.92	-0.52	3.96	262.48	0.92
1250.00	1.30	266.58	1249.87	-0.58	-5.09	-0.58	5.12	263.54	0.15
1300.00	1.11	245.26	1299.86	-0.81	-6.09	-0.81	6.15	262.41	0.97
1350.00	0.63	248.76	1349.85	-1.11	-6.79	-1.11	6.88	260.68	0.95
1370.00	0.55	238.39	1369.85	-1.20	-6.97	-1.20	7.08	260.20	0.68



VES Survey International
Fort Worth Tx
Surveyor: Jason Wilson
(817) 718-1320

North Thistle 34 State Com No 001H / API 30-025-42465



-W/+E

VES Survey Date: 9/3/2015



I Jason Wilson certify that I am employed by Vaughn Energy Services. That I did on the day(s) of 09/03/15 through 09/03/15 conduct or supervise the taking of a Ha Gyro survey from a depth of 0 feet to a depth of 1370 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy for the North Thistle 34 State Com Well # 1H API # 30-025-42465 in Lea County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services



Jason Wilson
Service Technician
Vaughn Energy Services



I Jason Wilson certify that I am employed by Vaughn Energy Services. That I did on the day(s) of 09/03/15 through 09/03/15 conduct or supervise the taking of a Ha Gyro survey from a depth of 0 feet to a depth of 1370 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy for the North Thistle 34 State Com Well # 1H API # 30-025-42465 in Lea County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services



Jason Wilson
Service Technician
Vaughn Energy Services