

Pathfinder

6213 WCR, 112
Midland, Texas 79706-3725, USA
Tel. (432) 687-1647
Fax (432) 687-1544

PATHFINDER
A Schlumberger Company

January 29, 2013

Devon Energy
20 N. Broadway
Oklahoma City, OK

RE: Devon Energy
AQUILA 22 FEDERAL COM #2H
API: 30-015-40755
Eddy County, NM
RIG: H&P 300
FIELD: Lusk; Bone Spring, West
PES FILE NO.: 12MLD0396



To whom it may concern:

We hereby certify that the enclosed Original Field Survey Data contained in this report represents to the best of our knowledge, a true and accurate survey of the well at the time the survey was run.

DIRECTIONAL SURVEY DATA
1 – Original survey report
2 – Survey report copies

We appreciate the opportunity to work with you and we look forward to your business support. If you have any questions, I can be reached at (432) 687-1647

Sincerely,


MARCUS MITCHAM
M/LWD Service Coordinator
PathFinder Energy Services

ML:sh



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

DEVON ENERGY

AQUILA 22 FEDERAL COM #2H

EDDY, NEW MEXICO

PREPARED BY: MARCUS MITCHAM

Pathfinder

6213 WCR, 112
Midland, Texas 79706-3725, USA
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DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) ROBERT MCCORMICK
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 12/06/12 TO 12/17/12
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

DEVON ENERGY
AQUILA 22 FEDERAL COM #2H
EDDY COUNTY, NM
RIG: H&P 300

9. SURVEY CERTIFIED FROM: 5,199 TO 14,046 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 4,960.16 FEET ON A BEARING OF 258.87 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 14,120 FEET,
ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



MARCUS MITCHAM
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 12/06/2012
Date Completed: 12/17/2012

DEVON ENERGY
AQUILA 22 FED COM 2H / API #: 30-015-40755
EDDY COUNTY, NM
Rig:H&P 300
PathFinder Office Supervisor: MARCUS MITCHAM
PathFinder Field Engineers:ROBERT MCCORMICK
MAGSUD ALIYEV

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.39.1.2909 N LON:103.50.55.3649 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 690494.8800 Y: 600671.7300
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.30° EAST TO GRID
Vertical Section Plane: 258.77
Survey Vert. Reference: 26.00' Kelly Bushing To Ground
Altitude:3536.80' Ground To MSL

Measured Depth	14120.00	(feet)
Inclination	91.45	(deg)
Azimuth	272.43	(deg)
True Vertical Depth	9067.19	(feet)
Vertical Section	4960.18	(feet)
Survey X cord	685627.93	(feet)
Survey Y cord	599714.52	(feet)
Survey Lat	32.64778762 N	(deg)
Survey Lon	103.86453873 W	(deg)
Rectangular Corr. N/S	957.21 S	(feet)
Rectangular Corr. E/W	4866.95 W	(feet)
Closure Distance	4960.19	(feet)
Direction of Closure	258.87	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
AQUILA 22 FED COM 2H / API #: 30-015-40755
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Vertical Section Plane: 258.77
Survey Vert. Reference: 26.00' Kelly Bushing To Ground
Altitude:3536.80' Ground To MSL

Survey Calculations by RX5 V6.04B using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL		Closure		DLS
						Rectangular (ft)	Offsets (ft)	Dist (ft)	Dir (deg)	
THE FOLLOWING ARE VAUGHN ENERGY SERVICES GYRO SURVEYS										
100.00	0.24	121.89	100.00	100.00	-0.12	0.14 S	0.15 E	0.21@	134.08	0.24
200.00	0.22	99.75	200.00	100.00	-0.45	0.29 S	0.52 E	0.59@	119.08	0.09
300.00	0.26	66.18	300.00	100.00	-0.85	0.23 S	0.91 E	0.94@	104.00	0.14
400.00	0.35	61.18	399.99	100.00	-1.36	0.01 N	1.39 E	1.39@	89.53	0.09
500.00	0.73	51.62	499.99	100.00	-2.22	0.55 N	2.15 E	2.22@	75.57	0.39
600.00	1.12	43.08	599.98	100.00	-3.58	1.66 N	3.32 E	3.71@	63.39	0.41
700.00	1.38	21.46	699.95	100.00	-5.03	3.50 N	4.43 E	5.64@	51.70	0.53
800.00	1.56	15.06	799.92	100.00	-6.28	5.93 N	5.22 E	7.90@	41.36	0.24
900.00	1.56	17.92	899.88	100.00	-7.54	8.54 N	6.00 E	10.44@	35.06	0.08
1000.00	1.62	18.70	999.85	100.00	-8.91	11.18 N	6.87 E	13.12@	31.57	0.06
1100.00	1.57	20.54	1099.81	100.00	-10.34	13.80 N	7.80 E	15.85@	29.48	0.07
1200.00	1.63	29.17	1199.77	100.00	-11.98	16.32 N	8.98 E	18.63@	28.80	0.25
1300.00	1.67	32.54	1299.73	100.00	-13.91	18.79 N	10.45 E	21.50@	29.08	0.10
1400.00	1.50	42.32	1399.69	100.00	-15.97	20.99 N	12.12 E	24.24@	30.00	0.32
1500.00	1.67	42.89	1499.65	100.00	-18.21	23.03 N	13.99 E	26.94@	31.28	0.17
1600.00	1.96	47.76	1599.60	100.00	-20.85	25.24 N	16.25 E	30.02@	32.77	0.33
1700.00	2.15	46.85	1699.54	100.00	-23.91	27.67 N	18.88 E	33.50@	34.31	0.19
1800.00	2.58	47.51	1799.45	100.00	-27.43	30.48 N	21.91 E	37.54@	35.71	0.43
1900.00	2.67	48.66	1899.34	100.00	-31.37	33.54 N	25.32 E	42.02@	37.05	0.10
2000.00	2.63	51.52	1999.24	100.00	-35.42	36.50 N	28.86 E	46.54@	38.33	0.14
2100.00	2.91	52.62	2099.12	100.00	-39.74	39.47 N	32.68 E	51.24@	39.62	0.28
2200.00	2.65	53.81	2199.00	100.00	-44.11	42.38 N	36.56 E	55.97@	40.79	0.27
2300.00	2.16	60.12	2298.92	100.00	-47.99	44.68 N	40.06 E	60.01@	41.88	0.56
2400.00	1.55	52.67	2398.86	100.00	-50.99	46.44 N	42.77 E	63.13@	42.64	0.65
2500.00	1.19	42.61	2498.83	100.00	-53.05	48.02 N	44.55 E	65.50@	42.85	0.43

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
AQUILA 22 FED COM 2H / API #: 30-015-40755
EDDY COUNTY, NM
RIG:H&P 300

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2600.00	0.67	56.65	2598.82	100.00	-54.43	49.11 N	45.74 E	67.11@	42.96	0.56
2700.00	0.68	57.68	2698.81	100.00	-55.52	49.75 N	46.73 E	68.25@	43.21	0.02
2800.00	0.60	353.75	2798.81	100.00	-56.12	50.59 N	47.17 E	69.17@	43.00	0.68
2900.00	0.44	330.12	2898.80	100.00	-56.04	51.44 N	46.93 E	69.63@	42.37	0.26
3000.00	0.68	336.41	2998.80	100.00	-55.79	52.32 N	46.50 E	69.99@	41.63	0.25
3100.00	0.57	355.76	3098.79	100.00	-55.73	53.36 N	46.22 E	70.59@	40.90	0.24
3200.00	0.17	101.50	3198.79	100.00	-55.93	53.82 N	46.33 E	71.02@	40.72	0.64
3300.00	0.65	187.70	3298.79	100.00	-55.88	53.23 N	46.40 E	70.62@	41.08	0.66
3400.00	0.88	211.37	3398.78	100.00	-55.17	52.01 N	45.92 E	69.39@	41.44	0.39
3500.00	0.96	211.28	3498.77	100.00	-54.09	50.64 N	45.09 E	67.81@	41.68	0.08
3600.00	0.75	251.04	3598.76	100.00	-52.87	49.71 N	44.04 E	66.41@	41.53	0.61
3700.00	0.72	258.80	3698.75	100.00	-51.60	49.38 N	42.80 E	65.35@	40.92	0.10
3800.00	0.47	232.63	3798.74	100.00	-50.60	49.01 N	41.86 E	64.45@	40.50	0.36
3900.00	0.43	229.15	3898.74	100.00	-49.91	48.51 N	41.25 E	63.68@	40.37	0.05
4000.00	0.31	295.10	3998.74	100.00	-49.36	48.38 N	40.72 E	63.24@	40.08	0.42
4100.00	0.62	319.26	4098.74	100.00	-48.88	48.91 N	40.12 E	63.26@	39.36	0.36
4200.00	0.99	331.28	4198.73	100.00	-48.35	50.07 N	39.35 E	63.69@	38.16	0.41
4300.00	0.87	336.29	4298.71	100.00	-47.93	51.53 N	38.63 E	64.40@	36.86	0.14
4400.00	0.94	319.71	4398.70	100.00	-47.37	52.85 N	37.80 E	64.97@	35.57	0.27
4500.00	0.98	329.85	4498.69	100.00	-46.69	54.21 N	36.84 E	65.54@	34.20	0.17
4600.00	0.30	348.85	4598.68	100.00	-46.41	55.21 N	36.36 E	66.11@	33.37	0.70
4700.00	0.27	297.52	4698.68	100.00	-46.23	55.58 N	36.10 E	66.27@	33.00	0.25
4800.00	0.44	321.73	4798.68	100.00	-45.87	55.99 N	35.65 E	66.37@	32.49	0.22
4900.00	0.49	348.83	4898.67	100.00	-45.70	56.71 N	35.33 E	66.81@	31.92	0.22
5000.00	0.68	326.96	4998.67	100.00	-45.48	57.62 N	34.92 E	67.38@	31.22	0.29
5100.00	0.72	350.98	5098.66	100.00	-45.28	58.74 N	34.50 E	68.12@	30.43	0.29
** TIED-IN TO VAUGHN ENERGY SERVICES GYRO SURVEY AT 5110'MD.										
5110.00	0.77	349.97	5108.66	10.00	-45.28	58.87 N	34.48 E	68.22@	30.36	0.52

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
AQUILA 22 FED COM 2H / API #: 30-015-40755
EDDY COUNTY, NM
RIG:H&P 300

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
5199.00	0.97	281.06	5197.65	89.00	-44.60	59.60 N	33.64 E	68.44@	29.44	1.12
5294.00	2.02	241.88	5292.62	95.00	-42.25	58.97 N	31.37 E	66.79@	28.01	1.48
5388.00	3.78	213.49	5386.50	94.00	-38.49	55.60 N	28.20 E	62.35@	26.89	2.36
5483.00	4.66	212.30	5481.24	95.00	-33.63	49.73 N	24.41 E	55.40@	26.14	0.93
5577.00	5.80	207.65	5574.85	94.00	-28.02	42.29 N	20.16 E	46.86@	25.49	1.29
5766.00	5.63	210.11	5762.91	189.00	-15.90	25.82 N	11.08 E	28.09@	23.23	0.16
5955.00	3.43	207.90	5951.31	189.00	-6.20	12.80 N	3.78 E	13.35@	16.47	1.17
6145.00	0.18	141.43	6141.19	190.00	-2.75	7.54 N	1.31 E	7.65@	9.86	1.77
6334.00	0.35	50.71	6330.19	189.00	-3.40	7.67 N	1.94 E	7.91@	14.20	0.21
6523.00	0.26	84.11	6519.19	189.00	-4.34	8.08 N	2.82 E	8.56@	19.21	0.10
6712.00	0.18	353.86	6708.19	189.00	-4.79	8.42 N	3.21 E	9.01@	20.87	0.17
6901.00	0.26	336.97	6897.19	189.00	-4.73	9.11 N	3.01 E	9.60@	18.29	0.05
7090.00	0.26	313.84	7086.19	189.00	-4.39	9.80 N	2.53 E	10.13@	14.49	0.06
7280.00	0.79	334.89	7276.18	190.00	-3.83	11.29 N	1.67 E	11.41@	8.40	0.29
7469.00	1.06	323.57	7465.15	189.00	-2.78	13.87 N	0.08 E	13.87@	0.31	0.17
7658.00	1.49	310.11	7654.11	189.00	-0.50	16.86 N	2.84 W	17.10@	350.44	0.28
7847.00	1.23	180.50	7843.08	189.00	1.45	16.42 N	4.74 W	17.09@	343.90	1.30
8036.00	1.23	206.45	8032.04	189.00	3.10	12.57 N	5.66 W	13.79@	335.76	0.29
8225.00	1.58	156.12	8220.99	189.00	3.77	8.37 N	5.51 W	10.02@	326.66	0.65
8415.00	1.76	158.75	8410.91	190.00	2.69	3.26 N	3.39 W	4.70@	313.87	0.10
8488.00	1.41	162.50	8483.88	73.00	2.40	1.36 N	2.71 W	3.04@	296.59	0.50
8515.00	1.49	161.90	8510.87	27.00	2.32	0.71 N	2.51 W	2.60@	285.78	0.30
8546.00	2.90	191.69	8541.85	31.00	2.58	0.44 S	2.54 W	2.58@	260.11	5.71
8578.00	6.07	209.80	8573.75	32.00	4.00	2.70 S	3.54 W	4.46@	232.66	10.73
8610.00	9.67	214.72	8605.44	32.00	7.05	6.38 S	5.92 W	8.70@	222.83	11.44
8641.00	12.57	217.26	8635.86	31.00	11.44	11.21 S	9.44 W	14.66@	220.11	9.48
8673.00	14.51	216.27	8666.96	32.00	17.01	17.21 S	13.92 W	22.14@	218.97	6.11

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Survey Report

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EDDY COUNTY, NM
RIG:H&P 300

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
8704.00	16.62	217.66	8696.83	31.00	23.21	23.85 S	18.93 W	30.45@	218.43	6.91
8736.00	18.73	220.57	8727.31	32.00	30.70	31.38 S	25.07 W	40.16@	218.62	7.15
8767.00	22.60	217.22	8756.32	31.00	39.07	39.91 S	31.91 W	51.10@	218.65	13.05
8799.00	26.38	219.07	8785.43	32.00	49.15	50.33 S	40.11 W	64.36@	218.56	12.05
8830.00	28.75	218.57	8812.91	31.00	60.14	61.51 S	49.10 W	78.70@	218.60	7.68
8862.00	29.46	221.55	8840.87	32.00	72.29	73.41 S	59.12 W	94.26@	218.85	5.04
8893.00	31.22	222.72	8867.63	31.00	84.85	85.02 S	69.63 W	109.89@	219.32	5.99
8925.00	34.29	220.82	8894.54	32.00	98.67	97.94 S	81.15 W	127.19@	219.64	10.12
8956.00	37.55	218.03	8919.64	31.00	112.72	111.99 S	92.68 W	145.37@	219.61	11.77
8988.00	41.77	222.20	8944.27	32.00	128.68	127.58 S	105.86 W	165.78@	219.68	15.58
9020.00	45.11	222.95	8967.50	32.00	146.43	143.78 S	120.75 W	187.75@	220.02	10.56
9051.00	48.45	219.44	8988.73	31.00	164.32	160.78 S	135.60 W	210.33@	220.14	13.57
9083.00	52.06	221.36	9009.19	32.00	183.61	179.51 S	151.55 W	234.93@	220.17	12.19
9114.00	55.57	223.21	9027.49	31.00	203.73	198.01 S	168.39 W	259.93@	220.38	12.30
9146.00	58.83	220.96	9044.82	32.00	225.29	217.97 S	186.41 W	286.81@	220.54	11.78
9177.00	62.26	220.55	9060.07	31.00	246.55	238.42 S	204.03 W	313.80@	220.56	11.12
9209.00	64.98	221.96	9074.28	32.00	269.29	259.96 S	222.93 W	342.46@	220.61	9.37
9240.00	67.44	223.24	9086.79	31.00	292.19	280.84 S	242.13 W	370.81@	220.77	8.79
9272.00	68.50	223.19	9098.79	32.00	316.32	302.46 S	262.44 W	400.44@	220.95	3.32
9303.00	69.47	222.32	9109.91	31.00	339.73	323.70 S	282.09 W	429.37@	221.07	4.08
9331.00	72.63	220.04	9119.00	28.00	360.70	343.64 S	299.52 W	455.85@	221.08	13.66
9368.00	75.36	219.52	9129.20	37.00	388.34	370.97 S	322.27 W	491.40@	220.98	7.50
9399.00	80.02	219.57	9135.81	31.00	411.80	394.31 S	341.55 W	521.67@	220.90	15.03
9431.00	83.10	219.65	9140.51	32.00	436.34	418.70 S	361.73 W	553.31@	220.82	9.63
9525.00	88.99	222.10	9146.99	94.00	510.31	489.56 S	423.07 W	647.04@	220.83	6.78
9619.00	89.78	225.47	9148.00	94.00	587.31	557.41 S	488.10 W	740.91@	221.21	3.68
9714.00	90.04	229.07	9148.15	95.00	668.29	621.86 S	557.87 W	835.42@	221.90	3.80
9810.00	90.31	232.66	9147.85	96.00	753.12	682.44 S	632.32 W	930.35@	222.82	3.75

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AQUILA 22 FED COM 2H / API #: 30-015-40755
EDDY COUNTY, NM
RIG:H&P 300

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9904.00	90.48	235.54	9147.20	94.00	838.53	737.56 S	708.45 W	1022.69@	223.85	3.07
9999.00	91.10	238.05	9145.89	95.00	926.61	789.57 S	787.93 W	1115.46@	224.94	2.72
10093.00	91.10	242.04	9144.09	94.00	1015.60	836.49 S	869.34 W	1206.43@	226.10	4.24
10187.00	90.22	245.64	9143.01	94.00	1106.40	877.92 S	953.69 W	1296.25@	227.37	3.94
10282.00	90.04	249.41	9142.79	95.00	1199.56	914.23 S	1041.46 W	1385.81@	228.72	3.97
10376.00	90.40	252.72	9142.43	94.00	1292.70	944.73 S	1130.36 W	1473.17@	230.11	3.54
10471.00	90.48	257.15	9141.70	95.00	1387.46	969.41 S	1222.07 W	1559.88@	231.58	4.66
10566.00	89.96	260.90	9141.33	95.00	1482.44	987.50 S	1315.31 W	1644.75@	233.10	3.99
10660.00	90.66	265.99	9140.83	94.00	1576.10	998.22 S	1408.67 W	1726.50@	234.68	5.47
10755.00	91.10	270.11	9139.37	95.00	1669.82	1001.46 S	1503.58 W	1806.56@	236.33	4.36
10849.00	91.45	271.27	9137.27	94.00	1761.77	1000.32 S	1597.55 W	1884.89@	237.95	1.29
10944.00	91.36	272.22	9134.94	95.00	1854.32	997.43 S	1692.47 W	1964.52@	239.49	1.00
11039.00	90.92	270.98	9133.05	95.00	1946.93	994.78 S	1787.42 W	2045.59@	240.90	1.38
11133.00	90.13	271.90	9132.19	94.00	2038.63	992.42 S	1881.38 W	2127.08@	242.19	1.29
11228.00	90.75	270.80	9131.46	95.00	2131.35	990.18 S	1976.35 W	2210.52@	243.39	1.33
11322.00	92.86	269.90	9128.50	94.00	2223.38	989.61 S	2070.30 W	2294.66@	244.45	2.44
11417.00	92.59	269.26	9123.99	95.00	2316.59	990.30 S	2165.18 W	2380.91@	245.42	0.73
11511.00	92.59	269.77	9119.74	94.00	2408.85	991.10 S	2259.08 W	2466.93@	246.31	0.54
11606.00	92.77	270.04	9115.30	95.00	2501.95	991.25 S	2353.98 W	2554.18@	247.16	0.34
11700.00	92.59	270.55	9110.90	94.00	2593.96	990.77 S	2447.88 W	2640.78@	247.96	0.57
11795.00	90.66	269.98	9108.21	95.00	2687.01	990.33 S	2542.83 W	2728.87@	248.72	2.12
11890.00	90.48	270.17	9107.26	95.00	2780.16	990.21 S	2637.83 W	2817.56@	249.42	0.28
11984.00	90.31	270.35	9106.61	94.00	2872.28	989.78 S	2731.82 W	2905.60@	250.08	0.26
12079.00	90.04	270.91	9106.32	95.00	2965.25	988.74 S	2826.82 W	2994.74@	250.72	0.65
12173.00	89.96	271.16	9106.32	94.00	3057.10	987.04 S	2920.80 W	3083.07@	251.33	0.28
12268.00	89.96	271.27	9106.39	95.00	3149.87	985.02 S	3015.78 W	3172.57@	251.91	0.12
12362.00	90.04	271.37	9106.39	94.00	3241.62	982.86 S	3109.76 W	3261.38@	252.46	0.14
12457.00	90.40	270.89	9106.03	95.00	3334.42	980.98 S	3204.74 W	3351.52@	252.98	0.63

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY
AQUILA 22 FED COM 2H / API #: 30-015-40755
EDDY COUNTY, NM
RIG:H&P 300

Page 06/06

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
12551.00	90.57	271.30	9105.23	94.00	3426.25	979.19 S	3298.72 W	3440.98@	253.47	0.47
12646.00	90.75	270.11	9104.14	95.00	3519.19	978.02 S	3393.70 W	3531.82@	253.92	1.27
12740.00	91.80	270.36	9102.04	94.00	3611.29	977.63 S	3487.67 W	3622.10@	254.34	1.15
12835.00	91.71	270.05	9099.14	95.00	3704.36	977.29 S	3582.63 W	3713.53@	254.74	0.34
12929.00	91.36	270.23	9096.62	94.00	3796.48	977.07 S	3676.60 W	3804.21@	255.12	0.42
13024.00	91.63	270.17	9094.14	95.00	3889.57	976.73 S	3771.56 W	3895.98@	255.48	0.29
13118.00	91.71	270.38	9091.40	94.00	3981.64	976.28 S	3865.52 W	3986.90@	255.83	0.24
13213.00	91.89	270.41	9088.41	95.00	4074.64	975.63 S	3960.47 W	4078.87@	256.16	0.19
13308.00	92.42	270.75	9084.84	95.00	4167.57	974.67 S	4055.40 W	4170.88@	256.49	0.66
13402.00	91.63	270.74	9081.52	94.00	4259.46	973.45 S	4149.33 W	4261.99@	256.80	0.84
13497.00	91.80	270.82	9078.68	95.00	4352.34	972.15 S	4244.28 W	4354.19@	257.10	0.20
13591.00	90.84	270.53	9076.51	94.00	4444.29	971.05 S	4338.25 W	4445.60@	257.38	1.07
13686.00	90.92	270.88	9075.05	95.00	4537.23	969.88 S	4433.23 W	4538.08@	257.66	0.38
13781.00	90.75	271.24	9073.67	95.00	4630.04	968.12 S	4528.20 W	4630.54@	257.93	0.42
13875.00	90.84	271.45	9072.36	94.00	4721.78	965.91 S	4622.17 W	4722.02@	258.20	0.24
13970.00	91.10	271.85	9070.76	95.00	4814.38	963.18 S	4717.12 W	4814.45@	258.46	0.50
14046.00	91.45	272.43	9069.07	76.00	4888.30	960.34 S	4793.04 W	4888.30@	258.67	0.89
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 14120'MD.										
14120.00	91.45	272.43	9067.19	74.00	4960.18	957.21 S	4866.95 W	4960.19@	258.87	0.00

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET

RECEIVED

JUN 12 2013

NMOCD ARTESIA

CLIENT INFORMATION

CLIENT:	DEVON ENERGY		
LEASE / WELL No.:	AQUILA 22 FED COM	2H	
WELL LOCATION:	EDDY COUNTY, NM, USA		
COUNTY / STATE / COUNTRY:	EDDY	N.M.	USA
RIG:	H&P 300		
API WELL No:	30-015-40755		
JOB No:	12MLD0396		
P.O. / AFE No.	WBS 0100998.03		
DIRECTIONAL COMPANY:	PATHFINDER		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.36	LWD Calculated:	7.302915
Agreed Upon:		7.302915	
X =	690494.880000	Feet	Y = 600671.730000
Feet		Feet	
SITE LATITUDE:	32.650359 N	SITE LONGITUDE:	103.848712 W
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	258.77		
KELLY BUSHING ELEVATION:	26		
ALTITUDE:	3536.8	Feet	WATER DEPTH: N/A
Feet		Feet	

TIE-IN SURVEY

MEASURED DEPTH:	5110		
DRIFT ANGLE:	0.77		
DRIFT DIRECTION:	349.97		
TRUE VERTICAL DEPTH:	5108.66		
VERTICAL SECTION:	58.87		
RECTANGULAR COORDINATE (N / S) :	58.87		
RECTANGULAR COORDINATE (E / W) :	34.48		
CLOSURE DISTANCE / DIRECTION:	68.23	30.36	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	VAUGHN ENERGY SERVICES		
COPY OF TIE-IN SURVEY REPORT	☒ YES		☐ NO

WELL PLAN

KICKOFF DEPTH:	8572.1	TOTAL DEPTH:	14168.2
KICKOFF ANGLE:	0	MAX ANGLE:	91.05

PES Engineers: ROBERT MCCORMICK

MAGSUD ALIYEV

**Signature of both field engineers required if applicable

Directional Driller: JORDAN WILLIAMS

DATE: 6-Dec-2012



Company: Devon Energy
Lease/Well: Aquila 22 Fed Com/2H

Rig Name: H & P 300
State/County: Texas/Eddy
Latitude: 32.65, Longitude: -103.85
GRID North is 0.26 Degrees East of True North
VS-Azi: 0.00 Degrees



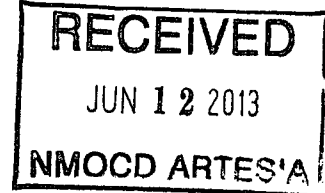
FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB=26

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: aquila 22 fed 2h_ed.ut
Minimum Curvature Method
Report Date/Time: 12/6/2012 / 17:52

Vaughn Energy Services
Fort Worth, Texas
Office 817-741-3610
Troy Hardin



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	****
100.00	0.24	121.89	100.00	-0.11	0.18	-0.11	0.21	121.89	0.24
200.00	0.22	99.75	200.00	-0.25	0.54	-0.25	0.60	115.06	0.09
300.00	0.26	66.18	300.00	-0.19	0.93	-0.19	0.95	101.79	0.14
400.00	0.35	61.18	400.00	0.05	1.41	0.05	1.41	88.15	0.10
500.00	0.73	51.62	499.99	0.59	2.18	0.59	2.25	74.84	0.38
600.00	1.12	43.08	599.98	1.70	3.34	1.70	3.74	63.09	0.41
700.00	1.38	21.46	699.96	3.53	4.45	3.53	5.68	51.55	0.54
800.00	1.56	15.06	799.92	5.96	5.24	5.96	7.94	41.30	0.24
900.00	1.56	17.92	899.89	8.58	6.01	8.58	10.47	35.04	0.08
1000.00	1.62	18.70	999.85	11.21	6.89	11.21	13.16	31.56	0.06
1100.00	1.57	20.54	1099.81	13.84	7.82	13.84	15.89	29.48	0.07
1200.00	1.63	29.17	1199.77	16.36	8.99	16.36	18.67	28.80	0.25
1300.00	1.67	32.54	1299.73	18.82	10.47	18.82	21.54	29.08	0.10
1400.00	1.50	42.32	1399.69	21.01	12.13	21.01	24.26	29.99	0.32
1500.00	1.67	42.89	1499.65	23.05	14.00	23.05	26.97	31.27	0.18
1600.00	1.96	47.76	1599.60	25.27	16.26	25.27	30.05	32.76	0.33
1700.00	2.15	46.85	1699.54	27.71	18.90	27.71	33.54	34.30	0.19
1800.00	2.58	47.51	1799.45	30.52	21.93	30.52	37.58	35.71	0.43
1900.00	2.67	48.66	1899.35	33.57	25.34	33.57	42.06	37.05	0.10
2000.00	2.63	51.52	1999.24	36.54	28.88	36.54	46.57	38.33	0.14
2100.00	2.91	52.62	2099.12	39.50	32.69	39.50	51.27	39.61	0.28
2200.00	2.65	53.81	2199.01	42.40	36.57	42.40	55.99	40.77	0.27
2300.00	2.16	60.12	2298.92	44.71	40.07	44.71	60.03	41.87	0.55
2400.00	1.55	52.67	2398.86	46.47	42.78	46.47	63.16	42.63	0.66
2500.00	1.19	42.61	2498.84	48.05	44.55	48.05	65.52	42.84	0.43
2600.00	0.67	56.65	2598.82	49.13	45.75	49.13	67.13	42.96	0.56
2700.00	0.68	57.68	2698.82	49.77	46.74	49.77	68.28	43.20	0.01
2800.00	0.60	353.75	2798.81	50.61	47.18	50.61	69.19	42.99	0.68
2900.00	0.44	330.12	2898.81	51.46	46.93	51.46	69.65	42.37	0.26
3000.00	0.68	336.41	2998.80	52.33	46.51	52.33	70.01	41.63	0.24
3100.00	0.57	355.76	3098.80	53.37	46.23	53.37	70.61	40.90	0.23
3200.00	0.17	101.50	3198.79	53.84	46.34	53.84	71.04	40.72	0.64
3300.00	0.65	187.70	3298.79	53.25	46.41	53.25	70.64	41.07	0.66
3400.00	0.88	211.37	3398.78	52.04	45.93	52.04	69.41	41.43	0.38

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
3500.00	0.96	211.28	3498.77	50.67	45.10	50.67	67.83	41.67	0.09
3600.00	0.75	251.04	3598.76	49.73	44.04	49.73	66.43	41.53	0.62
3700.00	0.72	258.80	3698.75	49.40	42.81	49.40	65.37	40.91	0.10
3800.00	0.47	232.63	3798.75	49.03	41.87	49.03	64.47	40.50	0.36
3900.00	0.43	229.15	3898.74	48.53	41.25	48.53	63.70	40.37	0.05
4000.00	0.31	295.10	3998.74	48.40	40.72	48.40	63.25	40.08	0.42
4100.00	0.62	319.26	4098.74	48.93	40.12	48.93	63.27	39.35	0.36
4200.00	0.99	331.28	4198.73	50.10	39.35	50.10	63.70	38.15	0.40
4300.00	0.87	336.29	4298.72	51.55	38.63	51.55	64.41	36.85	0.15
4400.00	0.94	319.71	4398.70	52.87	37.79	52.87	64.99	35.56	0.27
4500.00	0.98	329.85	4498.69	54.23	36.83	54.23	65.56	34.18	0.17
4600.00	0.30	348.85	4598.68	55.23	36.35	55.23	66.12	33.35	0.71
4700.00	0.27	297.52	4698.68	55.59	36.09	55.59	66.28	32.99	0.25
4800.00	0.44	321.73	4798.68	56.00	35.65	56.00	66.38	32.48	0.22
4900.00	0.49	348.83	4898.68	56.71	35.33	56.71	66.82	31.92	0.22
5000.00	0.68	326.96	4998.67	57.63	34.93	57.63	67.38	31.22	0.29
5100.00	0.72	350.98	5098.66	58.75	34.50	58.75	68.13	30.43	0.29
5110.00	0.77	349.97	5108.66	58.87	34.48	58.87	68.23	30.36	0.53

HORIZONTAL DISPLACEMENT IS
68.23 FEET AT 30.36 DEGREES

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

DEVON ENERGY
AQUILA 22 FED COM 2H

Field

Rig: HP 300

Fri Dec 07 15:32:31 2012

Coordinates

Latitude: 32.650359 N (32 deg. 39 min. 1.2909 sec.)
Longitude: 103.848712 W (-103 deg. 50 min. 55.3649 sec.)
Elevation: 3562.80 feet.
Calculation Date: Dec/06/2012

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4972 degrees
Total Magnetic Field: 0.48694 gauss
Magnetic Declination: 7.564378 degrees
Horizontal Intensity: 0.239801 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.564378 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 690494.8800 feet
Y: 600671.7300 feet
True to Grid: (convergence) -0.261463 degrees
Magnetic to Grid: 7.302915 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.302915 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

DEVON ENERGY
AQUILA 22 FED COM 2H
EDDY COUNTY, NEW MEXICO
Rig:HP 300

Wed Dec 05 15:38:33 2012

Coordinates

Latitude: 32.650359 N (32 deg. 39 min. 1.2909 sec.)
Longitude: 103.848712 W (-103 deg. 50 min. 55.3649 sec.)
Elevation: 3564.80 feet.
Calculation Date: Dec/05/2012

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.4972 degrees
Total Magnetic Field: 0.48694 gauss
Magnetic Declination: 7.564714 degrees
Horizontal Intensity: 0.239802 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.564714 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 690494.8800 feet
Y: 600671.7300 feet
True to Grid: (convergence) -0.261463 degrees
Magnetic to Grid: 7.303251 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.303251 Degr.

District I
1625 N. French Dr., Hobbs, NM 88240

District II
1301 W. Grand Avenue, Artesia, NM 88210

District III
1060 Rio Brazos Rd., Aztec, NM 87410

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 15, 2009
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number		2 Pool Code		3 Pool Name	
4 Property Code		5 Property Name AQUILA "22" FEDERAL			6 Well Number 2H
7 OGRID No. 6137		8 Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.			9 Elevation 3536.8

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	22	19 S	31 E		1040	NORTH	50	EAST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	22	19 S	31 E		1980	NORTH	340	WEST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
--------------------	--------------------	-----------------------	--------------

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

360°39'32"W 2639.96 FT NW CORNER SEC. 22 LAT. = 32.6531843°N LONG. = 103.8657142°W NMSP EAST (FT) N = 601679.93 E = 695252.48 W O CORNER SEC. 22 LAT. = 32.6459333°N LONG. = 103.8658908°W NMSP EAST (FT) N = 599040.17 E = 695275.29 SW CORNER SEC. 22 LAT. = 32.6366908°N LONG. = 103.8656681°W NMSP EAST (FT) N = 596399.77 E = 685294.91		360°39'30"W 2641.25 FT N O CORNER SEC. 22 LAT. = 32.6532052°N LONG. = 103.8571480°W NMSP EAST (FT) N = 601685.64 E = 687295.37 AQUILA "22" FEDERAL #2H ELEV. = 3536.8 LAT. = 32.6503588°N (HADB.3) LONG. = 103.8487125°W BOTTOM OF HOLE LAT. = 32.6477547°N LONG. = 103.8545923°W NMSP EAST (FT) N = 599702.46 E = 685611.50 SE CORNER SEC. 22 LAT. = 32.6367089°N LONG. = 103.8485136°W NMSP EAST (FT) N = 596432.63 E = 696575.45		360°39'30"W 2641.25 FT NE CORNER SEC. 22 LAT. = 32.6532167°N LONG. = 103.8485583°W NMSP EAST (FT) N = 601711.78 E = 680537.57 E O CORNER SEC. 22 LAT. = 32.6459448°N LONG. = 103.8485371°W NMSP EAST (FT) N = 598073.48 E = 680556.15	
---	--	---	--	--	--

360°24'32"E 2639.93 FT

360°24'14"E 2640.37 FT

360°38'36"E 2640.32 FT

360°24'12"W 2639.36 FT

360°25'08"W 2640.92 FT

360°38'36"E 2640.32 FT

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or valid mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a coownership, pooling or other arrangement entered by the division.

Signature _____ Date _____

Printed Name _____

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge.

MAY 22, 2010

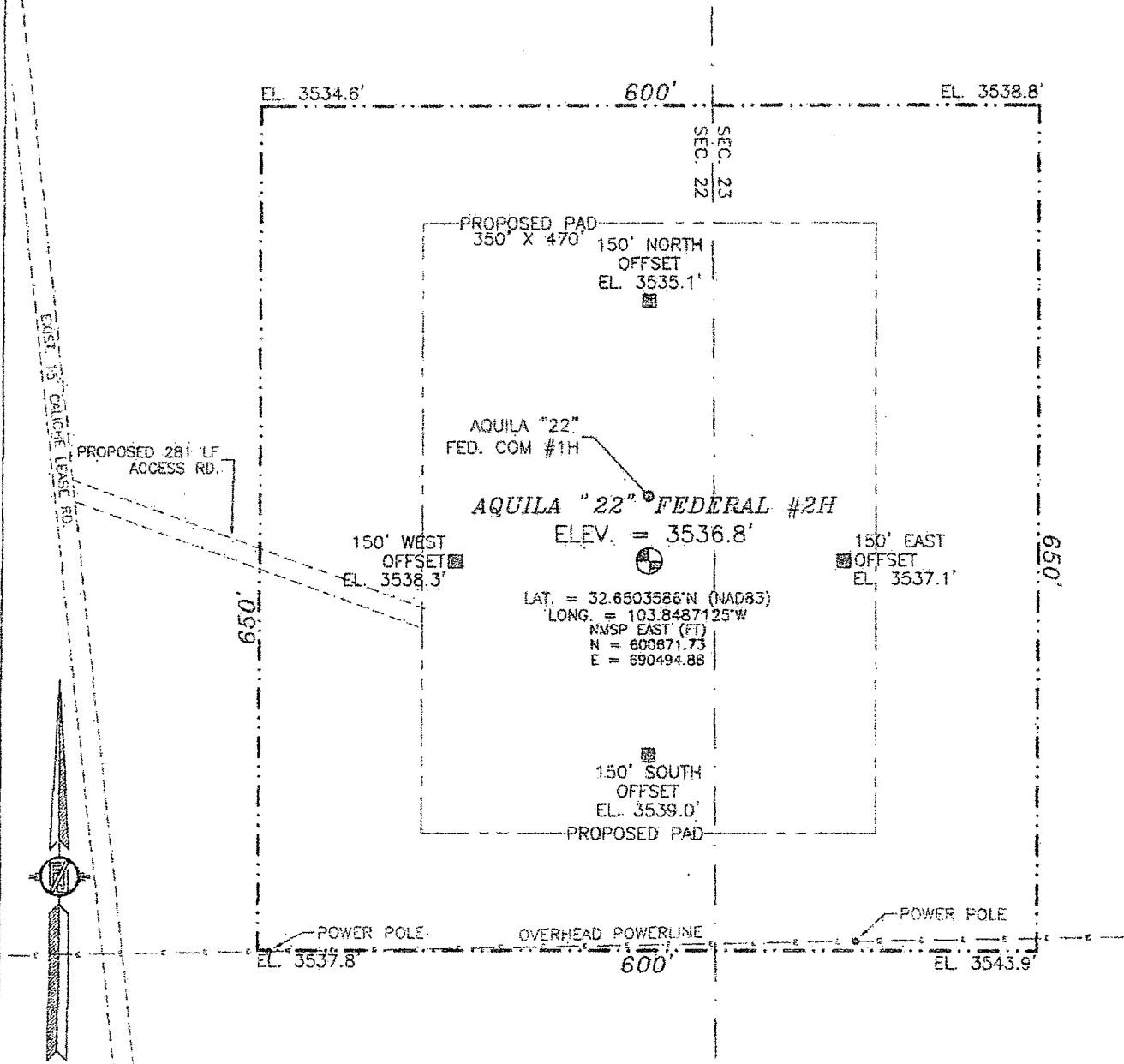
Date of Survey _____

Signature and Seal of Professional Surveyor _____

Certificate Number _____ FILEMON F. JARAMILLO PLS 12797

REGISTERED LAND SURVEYOR NO. 1019

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO



0 12 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM INTERSECTION OF CR 222 (SHUGART ROAD) AND CR 248 (LUSK PLANT ROAD) GO SOUTH ON CR 222 1.1 MILES, TURN LEFT (EAST) ON CALICHE LEASE ROAD GO 0.85 MILES, SITE IS ON THE LEFT (EAST) ABOUT 300 FT.

DEVON ENERGY PRODUCTION COMPANY, L.P.

AQUILA "22" FEDERAL #2H

LOCATED 1040 FT. FROM THE NORTH LINE

AND 50 FT. FROM THE EAST LINE OF

SECTION 22, TOWNSHIP 19 SOUTH.

RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

MAY 22, 2012

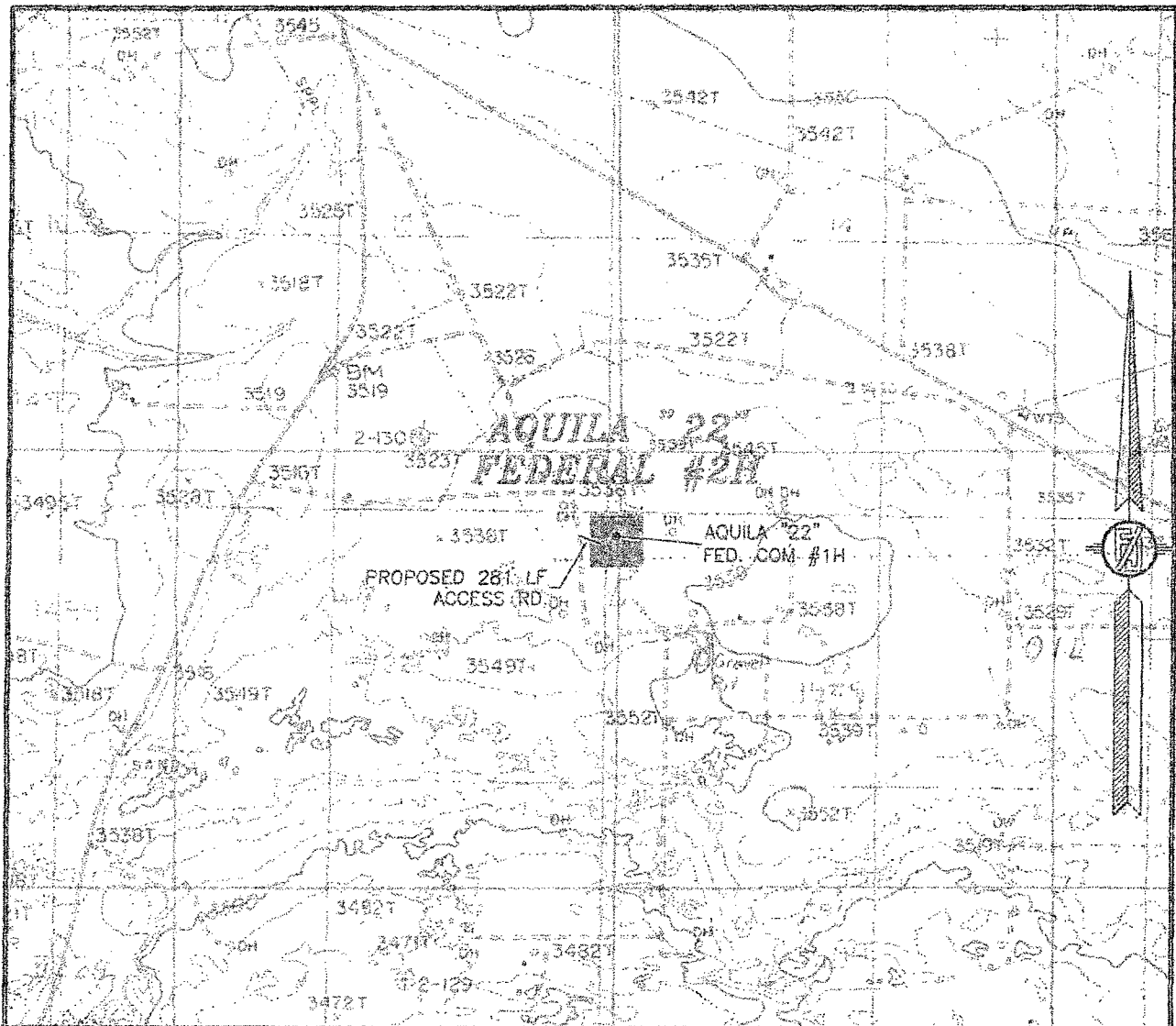
SURVEY NO. 1039

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
GREENWOOD LAKE, NM

NOT TO SCALE

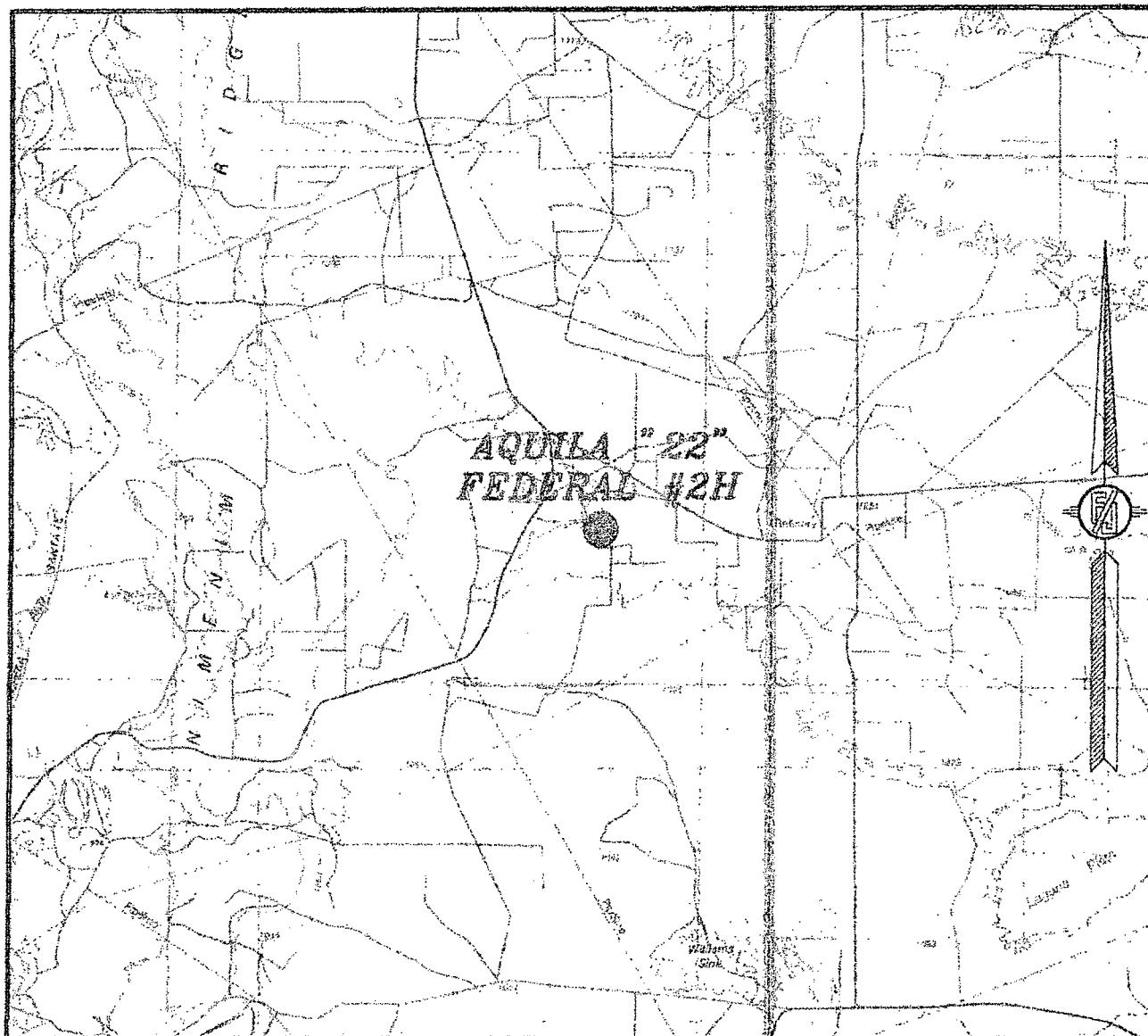
DEVON ENERGY PRODUCTION COMPANY, L.P.
AQUILA "22" FEDERAL #2H
LOCATED 1040 FT. FROM THE NORTH LINE
AND 50 FT. FROM THE EAST LINE OF
SECTION 22, TOWNSHIP 19 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 22, 2012

SURVEY NO. 1039

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3541

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

AQUILA "22" FEDERAL #2H

LOCATED 1040 FT. FROM THE NORTH LINE
AND 50 FT. FROM THE EAST LINE OF
SECTION 22, TOWNSHIP 19 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 22, 2012

SURVEY NO. 1039

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 22, TOWNSHIP 19 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MARCH, 2012

DEVON ENERGY PRODUCTION COMPANY, L.P.

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