

HALLIBURTON

3950 Interwood South Pkwy Houston, TX 77032
Phone 281-986-4416 Fax 281-986-4499

August 27, 2012

30-015-40216

Devon Energy Production, Co

Attn: Judy Barnett

20 N. Broadway

Oklahoma City, Ok

73102

Final Survey for:

Well Name: Turquoise PWU 27-4H

County: Eddy County, NM

Rig Name: Cactus Rig 126

Sperry Job #: 9464093

Judy Barnett

Enclosed you will find the following survey information on the above referenced well:

- 0 Survey Report(s)
- 0 MWD End of Well Report(s)

2 Certified Letters for New Mexico NMOCD

We appreciate the opportunity to serve you and welcome any comments or suggestions that you may have regarding our service. You may contact your local sales representative,

Ryan Annesley @ 405-231-1868

Should you have any questions or require additional information regarding the enclosed information, please do not hesitate to contact me at (281) 986-4416.

Once again, we thank you for your business.

Sincerely,



Rachell Ortiz

Sperry Drilling Services



3950 Interwood S. Pkwy. Houston, Texas 77032
281-986-4498 Fax • 281-986-4400 Office

State of New Mexico, Eddy County

I, Andrew Hughes, certify that I am employed by Halliburton Energy Services, Inc. (aka Sperry Drilling) and that on the dates of 08-August-12 through 18- August-12. I did conduct or supervise the taking of a DGWD directional with gamma survey for the well from a depth of 7413' MD to a depth of 12360' MD. This data is true, correct, complete and within the limitations of the tools as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling). I am authorized and qualified to make this report and this survey was conducted at the request of Devon Energy for the Turquoise PWU 27-4H well. API No. 30-015-40216-0000 in Eddy County, New Mexico. I have reviewed this report and find that it conforms to the principles and procedures as set forth by Halliburton Energy Services, Inc. (aka Sperry Drilling).

A handwritten signature in black ink that reads "Andrew P. Hughes". The signature is written in a cursive style and is positioned above a horizontal line.

Andrew Hughes
Field Engineer

Devon Energy
Turquoise PWU 27-4H
Eddy County, New Mexico
Cactus Rig 126
API# 30-015-40216-0000

August 08, 2012 – August 18, 2012
HD-MJ-0009464093

Sperry Drilling
MWD Survey Report

Submitted by Andrew Hughes
3950 Interwood S. Pkwy. Houston Texas 77032
Ph: 281.986.4400

HALLIBURTON

**Drilling and Formation
Evaluation**

Survey Report for Devon Energy

Rig : Cactus Rig 126
Well Name : Turquoise PWU 27 4H
Field Name : Bone Spring
Country : USA
Job Number : HD-MJ-0009464093
Job Start Date : 09-Aug-12
API Number : 30-015-40216-0000

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GENERAL INFORMATION

Company	: Devon Energy
Rig	: Cactus Rig 126
Well	: Turquoise PWU 27 4H
Field	: Bone Spring
State	: New Mexico
County	: Eddy
Country	: USA
API Number	: 30-015-40216-0000
Sperry Drilling Job Number	: HD-MJ-0009464093
Job Start Date	: 09-Aug-12
Job End Date	: 09-Aug-12
North Reference	: Grid
Total Correction (deg)	: 7.654
Dip Angle (deg)	: 60.399
Total Magnetic Field (nT)	: 48680
Date of Magnetic Data	: 09 August, 2012
Well Head coordinates N	: 32 deg. 37 min 31.46 sec North
Well Head coordinates E	: 104 deg. 4 min 12.73 sec West
Vertical section direction (deg)	: 82.06
Unit Number	: 11537096
MWD Engineers	: Andrew Hughes, LaKendrick Smith
Company Representatives	: Sam Madrid
Company Geologist:	: Curt McKinney

OPERATIONAL OVERVIEW

Sperry Drilling was contracted by Devon Energy to drill the Turquoise PWU 27-4H well in Eddy County, New Mexico. Sperry hands arrived on location 8/08/2012 and rigged up accordingly.

Run 100: TIH on 09 August 2012. Drilled from 7422' MD to 8356' MD before POOH to swap motors.

Run 200: Drilled from 8356' MD to 12360' MD. TD well. POOH to lay down Sperry tools and rig down.

DIRECTIONAL SURVEY DATA

Tie-in

0.00

0.00

0.00

0.00

0.00 N

0.00 E

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	0.00
83.74	0.41	49.11	83.74	0.20 N	0.23 E	0.25	0.49
178.41	0.86	104.62	178.40	0.24 N	1.17 E	1.19	0.75
273.08	1.00	105.97	273.06	0.17 S	2.65 E	2.60	0.15
367.75	1.14	107.31	367.71	0.68 S	4.35 E	4.21	0.15
462.42	1.14	104.95	462.37	1.20 S	6.15 E	5.93	0.05
557.09	1.14	102.58	557.02	1.65 S	7.98 E	7.68	0.05
651.76	1.39	97.85	651.66	2.01 S	10.04 E	9.67	0.29
746.43	1.64	93.12	746.30	2.24 S	12.53 E	12.10	0.30
841.10	2.09	89.05	840.92	2.28 S	15.61 E	15.14	0.50
935.77	2.54	84.99	935.51	2.07 S	19.42 E	18.95	0.51
1030.44	1.99	81.52	1,030.11	1.65 S	23.14 E	22.69	0.60
1125.11	1.65	78.05	1,124.73	1.12 S	26.10 E	25.69	0.38
1219.78	1.52	75.30	1,219.37	0.52 S	28.65 E	28.30	0.16
1314.45	1.59	72.56	1,314.00	0.19 N	31.11 E	30.84	0.11
1409.12	1.21	67.51	1,408.64	0.97 N	33.29 E	33.11	0.42
1503.79	0.83	62.46	1,503.30	1.67 N	34.82 E	34.72	0.41
1598.46	0.46	56.27	1,597.96	2.19 N	35.75 E	35.71	0.40
1693.13	0.30	50.09	1,692.63	2.56 N	36.25 E	36.26	0.17
1787.80	0.26	43.78	1,787.30	2.88 N	36.59 E	36.64	0.05
1882.47	0.42	37.48	1,881.97	3.31 N	36.95 E	37.05	0.17
1977.14	1.12	34.88	1,976.63	4.34 N	37.69 E	37.93	0.74
2071.81	1.82	32.27	2,071.27	6.37 N	39.02 E	39.53	0.74
2166.48	1.69	26.71	2,165.89	8.89 N	40.45 E	41.29	0.23
2261.15	1.55	21.15	2,260.52	11.33 N	41.54 E	42.71	0.22
2355.82	1.22	23.57	2,355.17	13.45 N	42.41 E	43.86	0.35
2450.49	0.94	25.00	2,449.82	15.08 N	43.14 E	44.81	0.30
2545.16	0.73	29.86	2,544.48	16.30 N	43.77 E	45.60	0.23
2639.83	0.59	35.72	2,639.14	17.22 N	44.35 E	46.31	0.16
2734.50	0.69	40.91	2,733.81	18.05 N	45.01 E	47.07	0.12
2829.17	0.71	46.11	2,828.47	18.89 N	45.81 E	47.98	0.07
2923.84	0.74	54.85	2,923.13	19.65 N	46.73 E	48.99	0.12
3018.51	0.70	63.59	3,017.79	20.26 N	47.75 E	50.09	0.12
3133.18	0.75	66.27	3,132.45	20.87 N	49.06 E	51.47	0.05
3207.85	0.70	68.95	3,207.12	21.23 N	49.93 E	52.39	0.08
3302.52	0.55	62.86	3,301.78	21.64 N	50.88 E	53.38	0.17
3397.19	0.31	56.76	3,396.45	21.99 N	51.50 E	54.04	0.26
3491.86	0.29	48.06	3,491.12	22.29 N	51.89 E	54.47	0.05
3586.53	0.27	35.35	3,585.79	22.63 N	52.20 E	54.82	0.07
3681.20	0.28	25.64	3,680.46	23.03 N	52.43 E	55.10	0.05
3775.87	0.30	11.94	3,775.13	23.48 N	52.58 E	55.32	0.08

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (%/100')
3870.54	0.50	4.78	3,869.79	24.13 N	52.66 E	55.49	0.22
3965.21	0.69	350.62	3,964.46	25.10 N	52.60 E	55.57	0.25
4059.88	0.80	329.12	4,059.12	26.23 N	52.17 E	55.30	0.31
4154.55	0.90	310.62	4,153.78	27.29 N	51.27 E	54.55	0.31
4249.22	1.10	300.24	4,248.44	28.23 N	49.92 E	53.34	0.28
4343.89	1.30	299.87	4,343.08	29.22 N	48.20 E	51.78	0.21
4438.56	1.60	297.77	4,437.72	30.37 N	46.10 E	49.86	0.32
4533.23	1.70	299.68	4,532.36	31.68 N	43.71 E	47.67	0.12
4627.90	1.78	300.86	4,626.98	33.13 N	41.23 E	45.41	0.09
4722.57	1.66	306.04	4,721.61	34.69 N	38.86 E	43.28	0.21
4817.24	1.55	307.47	4,816.24	36.28 N	36.73 E	41.39	0.12
4911.91	1.46	309.00	4,910.88	37.82 N	34.78 E	39.67	0.10
5006.58	1.40	310.37	5,005.52	39.32 N	32.96 E	38.08	0.07
5101.25	1.37	312.84	5,100.16	40.84 N	31.25 E	36.59	0.07
5195.92	1.41	317.62	5,194.80	42.47 N	29.64 E	35.22	0.13
5290.59	1.45	327.40	5,289.44	44.34 N	28.21 E	34.06	0.26
5385.26	1.74	329.68	5,384.08	46.59 N	26.84 E	33.01	0.31
5479.93	2.03	331.95	5,478.70	49.31 N	25.32 E	31.89	0.32
5574.60	1.86	333.90	5,573.31	52.17 N	23.86 E	30.83	0.19
5669.27	1.99	335.84	5,667.93	55.05 N	22.51 E	29.90	0.15
5763.94	2.57	335.30	5,762.52	58.48 N	20.95 E	28.83	0.61
5858.61	3.45	334.76	5,857.06	62.98 N	18.85 E	27.37	0.93
5953.28	3.03	335.42	5,951.58	67.84 N	16.59 E	25.80	0.45
6047.95	2.80	336.07	6,046.13	72.22 N	14.61 E	24.45	0.25
6142.62	2.60	340.03	6,140.69	76.36 N	12.94 E	23.36	0.29
6237.29	2.60	343.98	6,235.27	80.44 N	11.62 E	22.62	0.19
6331.96	2.09	351.12	6,329.86	84.21 N	10.76 E	22.29	0.62
6426.63	1.58	358.26	6,424.48	87.22 N	10.45 E	22.40	0.59
6521.30	1.53	0.66	6,519.11	89.79 N	10.43 E	22.73	0.09
6615.97	1.48	3.07	6,613.75	92.27 N	10.51 E	23.15	0.09
6710.64	1.29	7.73	6,708.39	94.55 N	10.71 E	23.67	0.23
6805.31	1.10	12.39	6,803.04	96.49 N	11.05 E	24.28	0.23
6899.98	1.31	27.05	6,897.69	98.34 N	11.74 E	25.21	0.39
6994.65	1.53	41.72	6,992.33	100.25 N	13.07 E	26.80	0.45
7089.32	1.72	52.51	7,086.96	102.06 N	15.04 E	28.99	0.38
7183.99	1.92	63.30	7,181.59	103.63 N	17.59 E	31.73	0.42
7278.66	2.44	78.06	7,276.19	104.76 N	20.97 E	35.24	0.80
7373.33	2.96	92.82	7,370.75	105.06 N	25.39 E	39.66	0.91
7413.00	3.36	118.78	7,410.37	104.45 N	27.43 E	41.59	3.70
7444.00	4.60	134.60	7,441.29	103.14 N	29.11 E	43.08	5.32
7476.00	8.85	134.49	7,473.06	100.51 N	31.78 E	45.36	13.27
7508.00	12.74	138.13	7,504.49	96.16 N	35.89 E	48.83	12.35
7539.00	15.36	132.52	7,534.56	90.84 N	41.20 E	53.35	9.53
7571.00	18.16	124.30	7,565.21	85.16 N	48.45 E	59.75	11.44
7603.00	20.77	119.22	7,595.38	79.58 N	57.52 E	67.96	9.69

DIRECTIONAL SURVEY DATA

Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (%/100')
7635.00	24.16	115.61	7,624.94	73.98 N	68.38 E	77.94	11.45
7667.00	26.99	112.71	7,653.81	68.34 N	80.99 E	89.65	9.65
7698.00	30.30	111.06	7,681.01	62.81 N	94.78 E	102.55	11.00
7730.00	32.69	108.92	7,708.29	57.11 N	110.49 E	117.32	8.23
7761.00	35.41	105.35	7,733.98	52.02 N	127.07 E	133.04	10.90
7793.00	37.83	102.10	7,759.66	47.50 N	145.61 E	150.78	9.69
7825.00	41.33	96.00	7,784.33	44.34 N	165.73 E	170.27	16.32
7856.00	43.62	92.63	7,807.20	42.78 N	186.60 E	190.72	10.42
7888.00	47.60	90.45	7,829.58	42.18 N	209.45 E	213.27	13.34
7920.00	50.93	90.11	7,850.46	42.06 N	233.69 E	237.26	10.45
7951.00	55.46	89.17	7,869.03	42.22 N	258.51 E	261.86	14.80
7983.00	58.63	88.08	7,886.43	42.87 N	285.35 E	288.53	10.31
8015.00	61.12	87.27	7,902.49	43.99 N	313.00 E	316.08	8.09
8046.00	63.21	86.55	7,916.97	45.47 N	340.37 E	343.39	7.05
8078.00	64.91	85.34	7,930.96	47.51 N	369.07 E	372.10	6.30
8109.00	66.93	84.96	7,943.61	49.90 N	397.27 E	400.36	6.62
8141.00	69.47	84.46	7,955.50	52.64 N	426.85 E	430.03	8.08
8172.00	72.32	84.03	7,965.64	55.58 N	456.00 E	459.30	9.27
8204.00	75.35	83.08	7,974.55	59.03 N	486.53 E	490.02	9.88
8236.00	78.28	82.52	7,981.85	62.94 N	517.44 E	521.17	9.31
8267.00	81.69	81.68	7,987.24	67.14 N	547.67 E	551.70	11.34
8298.00	83.95	81.95	7,991.11	71.52 N	578.11 E	582.45	7.35
8329.00	86.82	81.91	7,993.60	75.85 N	608.70 E	613.35	9.25
8361.00	87.37	82.54	7,995.23	80.17 N	640.37 E	645.30	2.62
8456.00	88.30	81.25	7,998.81	93.56 N	734.35 E	740.23	1.68
8551.00	87.34	82.01	8,002.42	107.38 N	828.27 E	835.16	1.30
8646.00	88.77	82.98	8,005.65	119.78 N	922.40 E	930.10	1.82
8740.00	88.98	82.31	8,007.50	131.82 N	1,015.60 E	1024.08	0.75
8835.00	89.35	82.29	8,008.88	144.55 N	1,109.74 E	1119.07	0.39
8929.00	90.59	81.05	8,008.93	158.17 N	1,202.74 E	1213.06	1.86
9024.00	90.22	79.76	8,008.27	174.00 N	1,296.41 E	1308.02	1.41
9119.00	88.95	79.42	8,008.96	191.16 N	1,389.84 E	1402.92	1.38
9214.00	88.21	78.99	8,011.32	208.95 N	1,483.13 E	1497.77	0.90
9309.00	88.55	80.04	8,014.01	226.22 N	1,576.51 E	1592.64	1.16
9404.00	88.17	79.96	8,016.72	242.70 N	1,670.02 E	1687.54	0.40
9499.00	88.46	80.62	8,019.51	258.72 N	1,763.62 E	1782.45	0.76
9593.00	90.37	81.41	8,020.47	273.40 N	1,856.46 E	1876.43	2.20
9688.00	91.54	79.90	8,018.89	288.82 N	1,950.18 E	1971.38	2.01
9783.00	90.99	81.57	8,016.79	304.11 N	2,043.92 E	2066.33	1.85
9877.00	88.73	82.74	8,017.02	316.95 N	2,137.03 E	2160.32	2.70
9972.00	86.22	85.58	8,021.20	326.60 N	2,231.43 E	2255.15	3.99
10067.00	86.03	87.68	8,027.62	332.17 N	2,326.04 E	2349.63	2.21
10162.00	86.01	86.28	8,034.21	337.17 N	2,420.68 E	2444.04	1.47
10255.00	86.18	84.77	8,040.54	344.40 N	2,513.18 E	2536.66	1.63
10350.00	86.56	83.97	8,046.55	353.70 N	2,607.53 E	2631.39	0.93

DIRECTIONAL SURVEY DATA							
Measured Depth (ft)	Inclination (deg)	Direction (deg)	Vertical Depth (ft)	Latitude (ft)	Departure (ft)	Vertical Section (ft)	Dogleg (°/100')
10445.00	86.02	83.78	8,052.69	363.81 N	2,701.79 E	2726.14	0.61
10540.00	87.56	83.33	8,058.01	374.46 N	2,796.03 E	2820.96	1.69
10634.00	88.80	82.37	8,060.99	386.16 N	2,889.25 E	2914.90	1.66
10730.00	88.99	81.31	8,062.85	399.78 N	2,984.26 E	3010.88	1.12
10824.00	89.01	80.91	8,064.50	414.31 N	3,077.12 E	3104.85	0.43
10919.00	88.98	81.21	8,066.16	429.06 N	3,170.95 E	3199.82	0.32
11014.00	89.20	81.60	8,067.67	443.26 N	3,264.87 E	3294.80	0.47
11109.00	88.61	82.86	8,069.48	456.10 N	3,358.98 E	3389.78	1.46
11203.00	87.59	82.26	8,072.60	468.26 N	3,452.14 E	3483.73	1.26
11298.00	87.09	81.19	8,077.01	481.92 N	3,546.04 E	3578.62	1.24
11393.00	86.74	80.35	8,082.12	497.14 N	3,639.68 E	3673.46	0.96
11488.00	86.95	81.32	8,087.35	512.24 N	3,733.32 E	3768.29	1.04
11583.00	86.76	81.03	8,092.56	526.80 N	3,827.06 E	3863.14	0.36
11677.00	87.62	80.59	8,097.17	541.79 N	3,919.74 E	3957.00	1.03
11772.00	88.77	81.06	8,100.16	556.93 N	4,013.47 E	4051.93	1.31
11866.00	87.34	81.05	8,103.35	571.54 N	4,106.27 E	4145.86	1.52
11960.00	88.05	82.36	8,107.13	585.09 N	4,199.21 E	4239.78	1.58
12056.00	91.05	81.63	8,107.89	598.45 N	4,294.26 E	4335.76	3.22
12149.00	92.19	82.86	8,105.26	611.00 N	4,386.37 E	4428.72	1.80
12243.00	91.08	81.67	8,102.58	623.65 N	4,479.47 E	4522.68	1.73
12270.00	91.17	81.10	8,102.05	627.69 N	4,506.16 E	4549.67	2.14
12360.00	91.17	81.10	8,100.21	641.61 N	4,595.06 E	4639.64	0.00

DIRECTIONAL SURVEY DATA NOTES

- Calculation based on minimum curvature method.
- Survey coordinates relative to well system reference point.
- TVD values given relative to drilling measurement point.
- Vertical section relative to well head.
- Vertical section is computed along a direction of 82.06 degrees (Grid)
- A total correction of 7.65 deg from Magnetic north to Grid north has been applied
- Horizontal displacement is relative to the well head.
- Horizontal displacement (closure) at 12,360.00 feet is 4,639.64 feet along 82.05 degrees (Grid)

SURVEYS CALCULATED USING THE LONG COLLAR METHOD.
TIE-ON SURVEY ASSUMED VERTICAL AT SURFACE.
SURVEYS FROM 0' MD TO 7373.33' MD PROVIDED BY VAUGHN ENERGY SERVICES.
SURVEYS FROM 7413' MD TO 12360' MD PROVIDED BY SPERRY DRILLING.
SURVEY AT 12270' MD HAS BEEN PROJECTED TO TD AT 12360' MD.
SPERRY DRILLING ENGINEERS: ANDREW HUGHES, LA'KENDRICK SMITH.

WARRANTY

HALLIBURTON ENERGY SERVICES, INC. WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON ENERGY SERVICES, INC. CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING, COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION, AND PRODUCTION OPERATION. HALLIBURTON ENERGY SERVICES, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HALLIBURTON ENERGY SERVICES, INC. SERVICES BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HALLIBURTON ENERGY SERVICES, INC.

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Fax 281.986.4498



A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

August 15, 2012

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

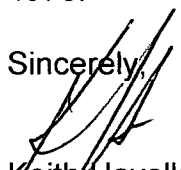
Attn: Mark Cooper

Re: **Turquoise PWU 27 No. 004H**

Please find enclosed a copy of the survey from 0.00' to 7373.33' 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,

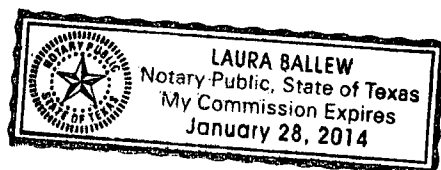

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 15th day of August, A.D., 2012, by Keith Havelka.



Laura Ballew
Notary Public, State of Texas





Company: Devon Energy Production Co., LP
Lease/Well: Turquoise PWU 27/ No. 004H

Rig Name: Cactus 126
State/County: New Mexico / Eddy
Latitude: 32.63
GRID North is 0.14 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB = 25'

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: turquoisepwu27-4hrun1.ut

Minimum Curvature Method

Report Date/Time: 8/15/2012 / 08:38

Vaughn Energy Services

Corpus Christi, Texas

800-606-4976

Surveyor: David Miller

Turquoise PWU 27 No. 004H / API 30-015-40216

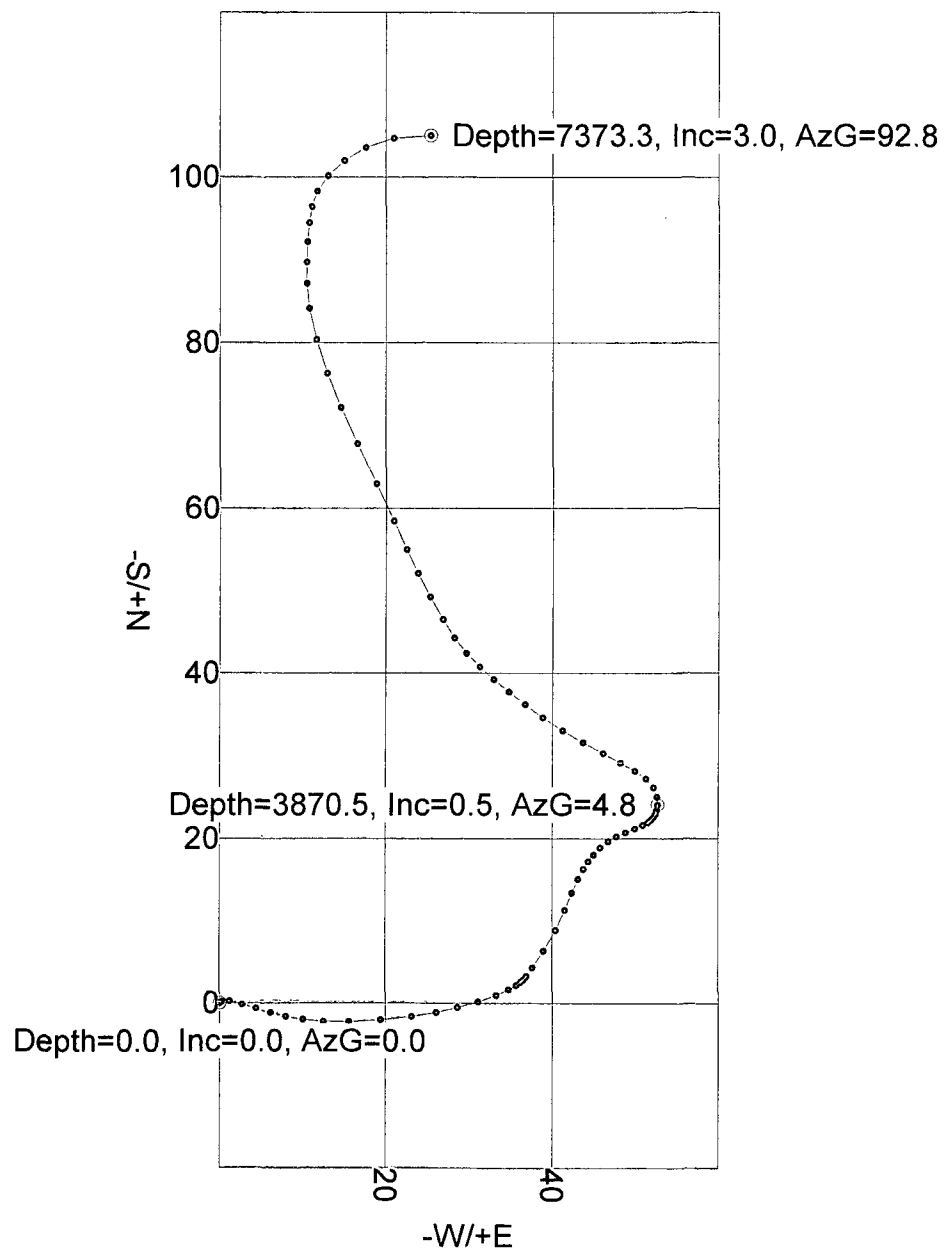
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
83.74	0.41	49.11	83.74	0.19	0.22	0.19	0.30	49.11	0.48
178.41	0.86	104.62	178.40	0.23	1.17	0.23	1.19	78.71	0.76
273.08	1.00	105.97	273.06	-0.17	2.65	-0.17	2.66	93.76	0.15
367.75	1.14	107.31	367.71	-0.68	4.34	-0.68	4.40	98.92	0.15
462.42	1.14	104.95	462.37	-1.20	6.15	-1.20	6.26	101.08	0.05
557.09	1.14	102.58	557.02	-1.65	7.97	-1.65	8.14	101.70	0.05
651.76	1.39	97.85	651.66	-2.01	10.03	-2.01	10.23	101.35	0.29
746.43	1.64	93.12	746.30	-2.24	12.52	-2.24	12.72	100.16	0.30
841.10	2.09	89.05	840.92	-2.29	15.60	-2.29	15.77	98.35	0.49
935.77	2.54	84.99	935.51	-2.08	19.41	-2.08	19.52	96.11	0.50
1030.44	1.99	81.52	1030.11	-1.65	23.13	-1.65	23.19	94.08	0.59
1125.11	1.65	78.05	1124.73	-1.13	26.08	-1.13	26.11	92.47	0.38
1219.78	1.52	75.30	1219.37	-0.53	28.63	-0.53	28.63	91.05	0.16
1314.45	1.59	72.56	1314.00	0.19	31.10	0.19	31.10	89.66	0.11
1409.12	1.21	67.51	1408.64	0.96	33.28	0.96	33.29	88.34	0.42
1503.79	0.83	62.46	1503.30	1.66	34.81	1.66	34.84	87.27	0.41
1598.46	0.46	56.27	1597.96	2.19	35.73	2.19	35.80	86.50	0.39
1693.13	0.30	50.09	1692.63	2.56	36.23	2.56	36.33	85.96	0.18

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
1787.80	0.26	43.78	1787.30	2.87	36.57	2.87	36.68	85.51	0.05
1882.47	0.42	37.48	1881.97	3.30	36.93	3.30	37.07	84.90	0.17
1977.14	1.12	34.88	1976.63	4.33	37.67	4.33	37.91	83.44	0.74
2071.81	1.82	32.27	2071.27	6.36	39.00	6.36	39.51	80.74	0.75
2166.48	1.69	26.71	2165.89	8.88	40.43	8.88	41.39	77.61	0.23
2261.15	1.55	21.15	2260.52	11.32	41.52	11.32	43.04	74.75	0.22
2355.82	1.22	23.57	2355.17	13.44	42.38	13.44	44.46	72.41	0.36
2450.49	0.94	25.00	2449.82	15.06	43.11	15.06	45.67	70.74	0.29
2545.16	0.73	29.86	2544.48	16.29	43.74	16.29	46.68	69.57	0.23
2639.83	0.59	35.72	2639.14	17.21	44.33	17.21	47.55	68.78	0.17
2734.50	0.69	40.91	2733.81	18.03	44.98	18.03	48.46	68.16	0.12
2829.17	0.71	46.11	2828.47	18.87	45.78	18.87	49.51	67.60	0.07
2923.84	0.74	54.85	2923.13	19.63	46.70	19.63	50.66	67.21	0.12
3018.51	0.70	63.59	3017.79	20.24	47.72	20.24	51.83	67.02	0.13
3113.18	0.75	66.27	3112.46	20.74	48.80	20.74	53.03	66.97	0.07
3207.85	0.70	68.95	3207.12	21.20	49.91	21.20	54.22	66.99	0.06
3302.52	0.55	62.86	3301.78	21.62	50.86	21.62	55.26	66.97	0.17
3397.19	0.31	56.76	3396.45	21.96	51.48	21.96	55.97	66.89	0.27
3491.86	0.29	48.06	3491.12	22.26	51.87	22.26	56.44	66.77	0.05
3586.53	0.27	35.35	3585.79	22.60	52.17	22.60	56.86	66.58	0.07
3681.20	0.28	25.64	3680.46	22.99	52.40	22.99	57.23	66.31	0.05
3775.87	0.30	11.94	3775.13	23.44	52.55	23.44	57.55	65.96	0.07
3870.54	0.50	4.78	3869.79	24.09	52.64	24.09	57.89	65.41	0.22
3965.21	0.69	350.62	3964.46	25.06	52.58	25.06	58.25	64.51	0.26
4059.88	0.80	329.12	4059.12	26.19	52.15	26.19	58.36	63.33	0.31
4154.55	0.90	310.62	4153.78	27.24	51.25	27.24	58.04	62.00	0.31
4249.22	1.10	300.24	4248.44	28.18	49.90	28.18	57.31	60.54	0.28
4343.89	1.30	299.87	4343.09	29.17	48.19	29.17	56.33	58.81	0.21
4438.56	1.60	297.77	4437.72	30.32	46.09	30.32	55.17	56.66	0.32
4533.23	1.70	299.68	4532.36	31.63	43.71	31.63	53.95	54.11	0.12
4627.90	1.78	300.86	4626.98	33.08	41.23	33.08	52.86	51.26	0.09
4722.57	1.66	306.04	4721.61	34.64	38.86	34.64	52.06	48.28	0.21
4817.24	1.55	307.47	4816.24	36.22	36.73	36.22	51.59	45.40	0.13
4911.91	1.46	309.00	4910.88	37.76	34.78	37.76	51.34	42.65	0.11
5006.58	1.40	310.37	5005.52	39.26	32.97	39.26	51.27	40.02	0.07
5101.25	1.37	312.84	5100.16	40.78	31.26	40.78	51.38	37.47	0.07
5195.92	1.41	317.62	5194.81	42.41	29.65	42.41	51.74	34.96	0.13
5290.59	1.45	327.40	5289.45	44.28	28.22	44.28	52.50	32.51	0.26
5385.26	1.74	329.68	5384.08	46.53	26.85	46.53	53.72	29.98	0.31

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
5479.93	2.03	331.95	5478.70	49.25	25.33	49.25	55.38	27.22	0.32
5574.60	1.86	333.90	5573.31	52.11	23.86	52.11	57.32	24.60	0.19
5669.27	1.99	335.84	5667.93	55.00	22.51	55.00	59.43	22.26	0.15
5763.94	2.57	335.30	5762.52	58.43	20.95	58.43	62.07	19.73	0.61
5858.61	3.45	334.76	5857.06	62.94	18.85	62.94	65.70	16.67	0.93
5953.28	3.03	335.42	5951.58	67.79	16.59	67.79	69.79	13.76	0.45
6047.95	2.80	336.07	6046.13	72.18	14.62	72.18	73.64	11.45	0.24
6142.62	2.60	340.03	6140.69	76.31	12.94	76.31	77.40	9.63	0.29
6237.29	2.60	343.98	6235.27	80.40	11.62	80.40	81.23	8.22	0.19
6331.96	2.09	351.12	6329.86	84.17	10.76	84.17	84.85	7.28	0.62
6426.63	1.58	358.26	6424.48	87.18	10.45	87.18	87.80	6.84	0.59
6521.30	1.53	0.66	6519.11	89.74	10.43	89.74	90.34	6.63	0.09
6615.97	1.48	3.07	6613.75	92.22	10.51	92.22	92.82	6.50	0.08
6710.64	1.29	7.73	6708.39	94.50	10.71	94.50	95.10	6.47	0.23
6805.31	1.10	12.39	6803.04	96.44	11.05	96.44	97.07	6.54	0.22
6899.98	1.31	27.05	6897.69	98.30	11.74	98.30	98.99	6.81	0.39
6994.65	1.53	41.72	6992.33	100.20	13.07	100.20	101.05	7.43	0.44
7089.32	1.72	52.51	7086.96	102.01	15.04	102.01	103.11	8.39	0.38
7183.99	1.92	63.30	7181.59	103.59	17.59	103.59	105.07	9.64	0.42
7278.66	2.44	78.06	7276.19	104.72	20.98	104.72	106.80	11.33	0.80
7373.33	2.96	92.82	7370.75	105.02	25.39	105.02	108.04	13.59	0.91



Vaughn Energy Services
Corpus Christi, Texas
800-606-4976
Surveyor: David Miller
Turquoise PWU 27 No. 004H / API 30-015-40216



VES Survey Date: 08/08/2012