



A GYRO TECHNOLOGIES INC. COMPANY

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

April 30, 2014

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

Attn: David Cook

Re: **Vega 29 Federal 003H**

30-015-41624

Please find enclosed a copy of the survey from 0.00' to 4071.00' ran on the above-referenced well.

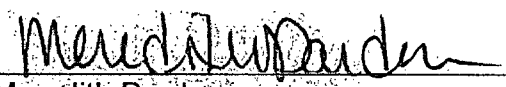
If I can be of any further service please do not hesitate to call me at 800-606-4976.

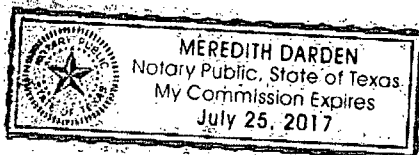
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 30th day of April, A.D., 2014, by Keith Havelka.


Meredith Darden
Notary Public, State of Texas





Company: DEVON ENERGY
Lease/Well: VEGA 29 FEDERAL/003H

Rig Name: SCAN TEXAS
State/County: NEW MEXICO/EDDY
Latitude: 32.64, Longitude: -103.89
GRID North is 0.24 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB 26 FEET

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey-de_01.ut
Minimum Curvature Method
Report Date/Time: 4/30/2014 / 08:46

VES Survey International
Woodward, OK
580-254-5000

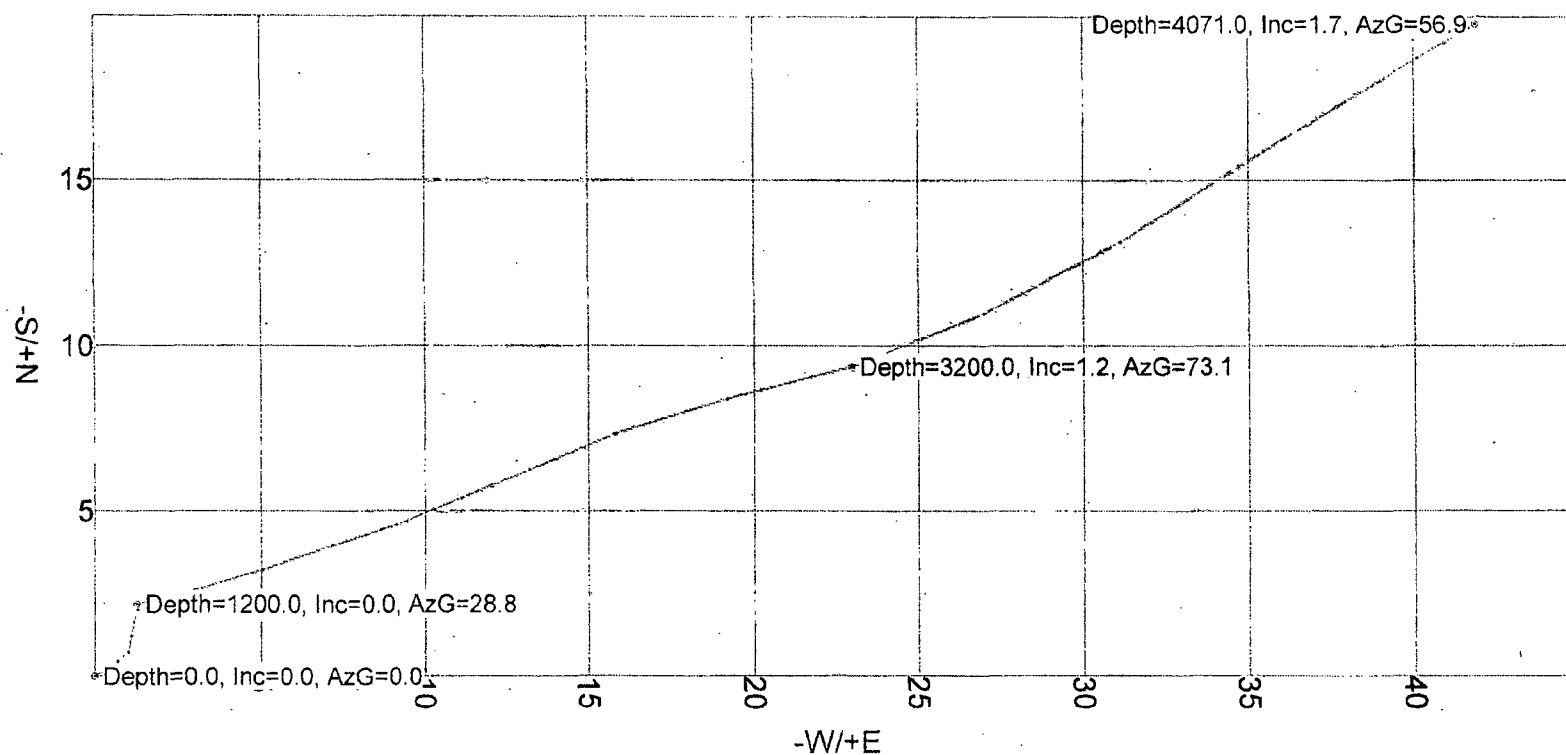
Surveyor: Vincent Marasco
Vega 29 Federal 003H / API 30-015-41624

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	****
200.00	0.28	60.81	200.00	0.24	0.43	0.24	0.49	60.81	0.14
400.00	0.17	29.35	400.00	0.74	1.00	0.74	1.24	53.68	0.08
600.00	0.13	347.39	600.00	1.22	1.10	1.22	1.64	41.91	0.06
800.00	0.14	32.85	800.00	1.65	1.18	1.65	2.03	35.48	0.05
1000.00	0.10	352.12	1000.00	2.02	1.28	2.02	2.39	32.40	0.05
1200.00	0.01	28.85	1200.00	2.20	1.27	2.20	2.54	29.88	0.05
1400.00	0.21	74.97	1400.00	2.31	1.63	2.31	2.82	35.18	0.10
1600.00	0.59	78.20	1599.99	2.61	2.99	2.61	3.97	48.84	0.19
1800.00	0.65	68.50	1799.98	3.24	5.05	3.24	6.00	57.33	0.06
2000.00	0.63	74.01	1999.97	3.96	7.17	3.96	8.19	61.09	0.03
2200.00	0.54	69.97	2199.96	4.59	9.12	4.59	10.21	63.29	0.05
2400.00	0.70	66.25	2399.94	5.41	11.13	5.41	12.37	64.09	0.08
2600.00	0.59	68.86	2599.93	6.27	13.21	6.27	14.62	64.61	0.06
2800.00	1.02	66.66	2799.91	7.35	15.80	7.35	17.43	65.07	0.21
3000.00	1.03	78.52	2999.88	8.41	19.19	8.41	20.95	66.34	0.11
3200.00	1.22	73.06	3199.84	9.38	22.98	9.38	24.82	67.79	0.11
3400.00	1.28	63.78	3399.79	10.99	27.01	10.99	29.16	67.87	0.10
3600.00	1.40	60.97	3599.74	13.16	31.15	13.16	33.81	67.10	0.07

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
3800.00	1.54	54.88	3799.67	15.89	35.49	15.89	38.88	65.88	0.10
4000.00	1.58	61.98	3999.60	18.73	40.12	18.73	44.28	64.97	0.10
4071.00	1.72	56.93	4070.57	19.78	41.88	19.78	46.31	64.72	0.29



VES Survey International
Woodward, OK
580-254-5000
Surveyor: Vincent Marasco
Vega 29 Federal 003H / API 30-015-41624



VES Survey Date: 04/13/2014



Directional Survey

District DELAWARE BASIN	County EDDY	Field Name HACKBERRY	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location SEC29 T19S R31E	API/UWI 3001541624	Latitude (°) 32° 38' 17.66" N	Longitude (°) 103° 53' 27.018" W	Ground Elev... 3,469.70	KB - GL (ft) 26.00	Orig KB Elev (ft) 3,495.70	Tubing Head Elevation (ft)

Wellbore Name OH	Parent Wellbore	SAP Well ID 34824	Kick Off Depth (ftKB)	Vertical Section Direction (°) 176.45
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Actual Deviation Survey GYRO / MWD, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey
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Deviation Survey

Date 4/13/2014		Description GYRO / MWD			
MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00	Inclination Tie In (°) 0.00	Azimuth Tie In (°) 0.00	NSTie In (ft) 0.00	EW Tie In (ft) 0.00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
4/13/2014	0.00			0.00	0.00	0.00	0.00	0.00	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	200.00	0.28	60.81	200.00	-0.21	0.24	0.43	0.14	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	400.00	0.17	29.35	400.00	-0.67	0.74	1.00	0.08	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	600.00	0.13	347.39	600.00	-1.15	1.22	1.09	0.06	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	800.00	0.14	32.85	800.00	-1.57	1.64	1.18	0.05	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	1,000.00	0.10	352.12	1,000.00	-1.94	2.02	1.29	0.05	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	1,200.00	0.01	28.85	1,200.00	-2.13	2.21	1.27	0.05	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	1,400.00	0.21	74.97	1,400.00	-2.21	2.32	1.63	0.10	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	1,600.00	0.59	78.20	1,599.99	-2.43	2.62	3.00	0.19	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	1,800.00	0.65	68.50	1,799.98	-2.93	3.25	5.06	0.06	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	2,000.00	0.63	74.01	1,999.97	-3.52	3.97	7.17	0.03	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	2,200.00	0.54	69.97	2,199.96	-4.02	4.60	9.11	0.05	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	2,400.00	0.70	66.25	2,399.94	-4.71	5.41	11.12	0.08	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	2,600.00	0.59	68.86	2,599.93	-5.44	6.27	13.20	0.06	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	2,800.00	1.02	66.66	2,799.91	-6.36	7.35	15.79	0.22	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	3,000.00	1.03	78.52	2,999.88	-7.21	8.41	19.19	0.11	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	3,200.00	1.22	73.06	3,199.84	-7.95	9.39	22.99	0.11	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	3,400.00	1.28	63.78	3,399.79	-9.30	11.00	27.03	0.11	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	3,600.00	1.40	60.97	3,599.74	-11.22	13.17	31.17	0.07	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	3,800.00	1.54	54.88	3,799.67	-13.67	15.90	35.50	0.10	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	4,000.00	1.58	61.98	3,999.60	-16.22	18.74	40.13	0.10	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	4,071.00	1.72	56.93	4,070.57	-17.15	19.79	41.89	0.28	GYRO	VAUHGN ENERGY SERVICES
4/13/2014	4,156.00	1.63	79.66	4,155.53	-17.93	20.70	44.15	0.78	MWD	WEATHERFORD
4/13/2014	4,250.00	3.17	57.08	4,249.45	-19.36	22.35	47.65	1.89	MWD	WEATHERFORD
4/13/2014	4,344.00	3.51	55.12	4,343.29	-22.13	25.41	52.19	0.38	MWD	WEATHERFORD
4/13/2014	4,438.00	3.51	58.23	4,437.11	-24.99	28.57	56.99	0.20	MWD	WEATHERFORD
4/13/2014	4,533.00	3.30	59.14	4,531.95	-27.62	31.50	61.81	0.23	MWD	WEATHERFORD
4/13/2014	4,627.00	3.39	57.41	4,625.79	-30.21	34.39	66.48	0.14	MWD	WEATHERFORD
4/13/2014	4,721.00	3.42	55.80	4,719.62	-32.98	37.46	71.14	0.11	MWD	WEATHERFORD
4/13/2014	4,816.00	3.23	57.55	4,814.46	-35.72	40.49	75.74	0.23	MWD	WEATHERFORD
4/13/2014	4,910.00	3.14	55.46	4,908.32	-38.33	43.37	80.10	0.16	MWD	WEATHERFORD
4/13/2014	5,004.00	3.22	56.56	5,002.17	-40.97	46.28	84.42	0.11	MWD	WEATHERFORD
4/13/2014	5,098.00	3.20	55.35	5,096.02	-43.64	49.23	88.78	0.08	MWD	WEATHERFORD
4/13/2014	5,192.00	3.21	60.77	5,189.88	-46.14	52.01	93.24	0.32	MWD	WEATHERFORD
4/13/2014	5,286.00	2.83	60.73	5,283.75	-48.28	54.43	97.56	0.40	MWD	WEATHERFORD
4/13/2014	5,380.00	2.77	65.02	5,377.63	-50.12	56.52	101.64	0.23	MWD	WEATHERFORD
4/13/2014	5,474.00	2.82	68.83	5,471.52	-51.65	58.32	105.86	0.20	MWD	WEATHERFORD
4/13/2014	5,568.00	2.78	72.47	5,565.41	-52.90	59.84	110.19	0.19	MWD	WEATHERFORD
4/13/2014	5,663.00	2.87	63.35	5,660.30	-54.39	61.60	114.51	0.48	MWD	WEATHERFORD
4/13/2014	5,757.00	2.97	56.77	5,754.17	-56.52	63.99	118.65	0.37	MWD	WEATHERFORD
4/13/2014	5,852.00	3.03	57.36	5,849.04	-58.96	66.69	122.82	0.07	MWD	WEATHERFORD
4/13/2014	5,946.00	2.97	58.86	5,942.91	-61.29	69.29	127.00	0.11	MWD	WEATHERFORD
4/13/2014	6,039.00	2.99	59.32	6,035.79	-63.52	71.77	131.15	0.03	MWD	WEATHERFORD
4/13/2014	6,134.00	2.94	60.21	6,130.66	-65.72	74.25	135.39	0.07	MWD	WEATHERFORD
4/13/2014	6,227.00	2.87	57.64	6,223.54	-67.90	76.68	139.43	0.16	MWD	WEATHERFORD
4/13/2014	6,321.00	2.80	58.70	6,317.43	-70.10	79.13	143.38	0.09	MWD	WEATHERFORD
4/13/2014	6,415.00	2.88	58.85	6,411.31	-72.27	81.55	147.36	0.09	MWD	WEATHERFORD



Directional Survey

District DELAWARE BASIN	County EDDY	Field Name HACKBERRY	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC29 T19S R31E	API/UWI 3001541624	Latitude (°) 32° 38' 17.66" N	Longitude (°) 103° 53' 27.018" W	Ground Elev. (ft) 3,469.70
Wellbores		KB - GL (ft) 26.00	Orig KB Elev (ft) 3,495.70	Tubing Head Elevation (ft)
Wellbore Name OH	Parent Wellbore	SAP Well ID 34824	Kick Off Depth (ftKB)	Vertical Section Direction (°) 176.45
Actual Deviation Survey GYRO / MWD, Proposed? No		Definitive? Yes	Proposed? No	Proposed Deviation Survey

Deviation Survey

Date 4/13/2014	Description GYRO / MWD				
MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00	Inclination Tie In (°) 0.00	Azimuth Tie In (°) 0.00	NS Tie In (ft) 0.00	EW Tie In (ft) 0.00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
4/13/2014	0.00			0.00	0.00	0.00	0.00	0.00	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	200.00	0.28	60.81	200.00	-0.21	0.24	0.43	-0.14	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	400.00	0.17	29.35	400.00	-0.67	0.74	1.00	0.08	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	600.00	0.13	347.39	600.00	-1.15	1.22	1.09	0.06	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	800.00	0.14	32.85	800.00	-1.57	1.64	1.18	0.05	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	1,000.00	0.10	352.12	1,000.00	-1.94	2.02	1.29	0.05	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	1,200.00	0.01	28.85	1,200.00	-2.13	2.21	1.27	0.05	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	1,400.00	0.21	74.97	1,400.00	-2.21	2.32	1.63	0.10	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	1,600.00	0.59	78.20	1,599.99	-2.43	2.62	3.00	0.19	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	1,800.00	0.65	68.50	1,799.98	-2.93	3.25	5.06	0.06	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	2,000.00	0.63	74.01	1,999.97	-3.52	3.97	7.17	0.03	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	2,200.00	0.54	69.97	2,199.96	-4.02	4.60	9.11	0.05	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	2,400.00	0.70	66.25	2,399.94	-4.71	5.41	11.12	0.08	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	2,600.00	0.59	68.86	2,599.93	-5.44	6.27	13.20	0.06	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	2,800.00	1.02	66.66	2,799.91	-6.36	7.35	15.79	0.22	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	3,000.00	1.03	78.52	2,999.88	-7.21	8.41	19.19	0.11	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	3,200.00	1.22	73.06	3,199.84	-7.95	9.39	22.99	0.11	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	3,400.00	1.28	63.78	3,399.79	-9.30	11.00	27.03	0.11	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	3,600.00	1.40	60.97	3,599.74	-11.22	13.17	31.17	0.07	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	3,800.00	1.54	54.88	3,799.67	-13.67	15.90	35.50	0.10	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	4,000.00	1.58	61.98	3,999.60	-16.22	18.74	40.13	0.10	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	4,071.00	1.72	56.93	4,070.57	-17.15	19.79	41.89	0.28	GYRO	VAUHG N ENERGY SERVICES
4/13/2014	4,156.00	1.63	79.66	4,155.53	-17.93	20.70	44.15	0.78	MWD	WEATHERFORD
4/13/2014	4,250.00	3.17	57.08	4,249.45	-19.36	22.35	47.65	1.89	MWD	WEATHERFORD
4/13/2014	4,344.00	3.51	55.12	4,343.29	-22.13	25.41	52.19	0.38	MWD	WEATHERFORD
4/13/2014	4,438.00	3.51	58.23	4,437.11	-24.99	28.57	56.99	0.20	MWD	WEATHERFORD
4/13/2014	4,533.00	3.30	59.14	4,531.95	-27.62	31.50	61.81	0.23	MWD	WEATHERFORD
4/13/2014	4,627.00	3.39	57.41	4,625.79	-30.21	34.39	66.48	0.14	MWD	WEATHERFORD
4/13/2014	4,721.00	3.42	55.80	4,719.62	-32.98	37.46	71.14	0.11	MWD	WEATHERFORD
4/13/2014	4,816.00	3.23	57.55	4,814.46	-35.72	40.49	75.74	0.23	MWD	WEATHERFORD
4/13/2014	4,910.00	3.14	55.46	4,908.32	-38.33	43.37	80.10	0.16	MWD	WEATHERFORD
4/13/2014	5,004.00	3.22	56.56	5,002.17	-40.97	46.28	84.42	0.11	MWD	WEATHERFORD
4/13/2014	5,098.00	3.20	55.35	5,096.02	-43.64	49.23	88.78	0.08	MWD	WEATHERFORD
4/13/2014	5,192.00	3.21	60.77	5,189.88	-46.14	52.01	93.24	0.32	MWD	WEATHERFORD
4/13/2014	5,286.00	2.83	60.73	5,283.75	-48.28	54.43	97.56	0.40	MWD	WEATHERFORD
4/13/2014	5,380.00	2.77	65.02	5,377.63	-50.12	56.52	101.64	0.23	MWD	WEATHERFORD
4/13/2014	5,474.00	2.82	68.83	5,471.52	-51.65	58.32	105.86	0.20	MWD	WEATHERFORD
4/13/2014	5,568.00	2.78	72.47	5,565.41	-52.90	59.84	110.19	0.19	MWD	WEATHERFORD
4/13/2014	5,663.00	2.87	63.35	5,660.30	-54.39	61.60	114.51	0.48	MWD	WEATHERFORD
4/13/2014	5,757.00	2.97	56.77	5,754.17	-56.52	63.99	118.65	0.37	MWD	WEATHERFORD
4/13/2014	5,852.00	3.03	57.36	5,849.04	-58.96	66.69	122.82	0.07	MWD	WEATHERFORD
4/13/2014	5,946.00	2.97	58.86	5,942.91	-61.29	69.29	127.00	0.11	MWD	WEATHERFORD
4/13/2014	6,039.00	2.99	59.32	6,035.79	-63.52	71.77	131.15	0.03	MWD	WEATHERFORD
4/13/2014	6,134.00	2.94	60.21	6,130.66	-65.72	74.25	135.39	0.07	MWD	WEATHERFORD
4/13/2014	6,227.00	2.87	57.64	6,223.54	-67.90	76.68	139.43	0.16	MWD	WEATHERFORD
4/13/2014	6,321.00	2.80	58.70	6,317.43	-70.10	79.13	143.38	0.09	MWD	WEATHERFORD
4/13/2014	6,415.00	2.88	58.85	6,411.31	-72.27	81.55	147.36	0.09	MWD	WEATHERFORD

devon

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name HACKBERRY	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC29 T19S R31E	API/UWI 3001541624	Latitude (°) 32° 38' 17.66" N	Longitude (°) 103° 53' 27.018" W	Ground Elev 3,469.70
				KB - GL (ft) 26.00
				Orig KB Elev (ft) 3,495.70
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
4/13/2014	6,509.00	2.61	55.36	6,505.20	-74.46	83.98	151.14	0.34	MWD	WEATHERFORD
4/13/2014	6,604.00	2.66	57.08	6,600.10	-76.66	86.41	154.77	0.10	MWD	WEATHERFORD
4/13/2014	6,698.00	2.47	57.24	6,694.01	-78.72	88.69	158.31	0.20	MWD	WEATHERFORD
4/13/2014	6,792.00	3.07	53.94	6,787.90	-81.06	91.27	162.04	0.66	MWD	WEATHERFORD
4/13/2014	6,886.00	2.90	50.21	6,881.77	-83.82	94.27	165.91	0.27	MWD	WEATHERFORD
4/13/2014	6,980.00	2.58	50.28	6,975.66	-86.48	97.15	169.36	0.34	MWD	WEATHERFORD
4/13/2014	7,075.00	3.04	52.89	7,070.55	-89.13	100.03	173.01	0.50	MWD	WEATHERFORD
4/13/2014	7,169.00	3.02	56.08	7,164.42	-91.76	102.92	177.06	0.18	MWD	WEATHERFORD
4/13/2014	7,264.00	2.97	57.76	7,259.29	-94.21	105.63	181.22	0.11	MWD	WEATHERFORD
4/13/2014	7,358.00	2.74	59.00	7,353.17	-96.41	108.09	185.20	0.25	MWD	WEATHERFORD
4/13/2014	7,418.00	2.85	60.72	7,413.10	-97.72	109.55	187.73	0.23	MWD	WEATHERFORD
4/13/2014	7,449.00	2.79	60.93	7,444.06	-98.38	110.30	189.06	0.20	MWD	WEATHERFORD
4/13/2014	7,480.00	2.61	82.79	7,475.03	-98.75	110.75	190.42	3.35	MWD	WEATHERFORD
4/13/2014	7,512.00	3.03	138.34	7,507.00	-98.13	110.21	191.71	8.29	MWD	WEATHERFORD
4/13/2014	7,543.00	5.91	158.38	7,537.90	-95.97	108.12	192.84	10.43	MWD	WEATHERFORD
4/13/2014	7,575.00	9.74	163.86	7,569.60	-91.76	103.98	194.20	12.18	MWD	WEATHERFORD
4/13/2014	7,606.00	12.93	169.05	7,599.99	-85.76	98.06	195.59	10.79	MWD	WEATHERFORD
4/13/2014	7,638.00	15.93	173.48	7,630.98	-77.82	90.18	196.77	9.98	MWD	WEATHERFORD
4/13/2014	7,669.00	19.04	172.67	7,660.54	-68.52	80.93	197.90	10.06	MWD	WEATHERFORD
4/13/2014	7,701.00	22.16	171.72	7,690.49	-57.30	69.78	199.43	9.81	MWD	WEATHERFORD
4/13/2014	7,732.00	25.80	172.34	7,718.81	-44.74	57.31	201.17	11.77	MWD	WEATHERFORD
4/13/2014	7,764.00	29.45	172.58	7,747.16	-29.94	42.60	203.12	11.41	MWD	WEATHERFORD
4/13/2014	7,795.00	33.31	173.12	7,773.62	-13.83	26.58	205.12	12.48	MWD	WEATHERFORD
4/13/2014	7,827.00	37.35	173.68	7,799.72	4.64	8.20	207.24	12.67	MWD	WEATHERFORD
4/13/2014	7,858.00	41.60	173.22	7,823.64	24.32	-11.37	209.50	13.74	MWD	WEATHERFORD
4/13/2014	7,889.00	45.80	172.43	7,846.05	45.69	-32.61	212.18	13.66	MWD	WEATHERFORD
4/13/2014	7,921.00	49.76	173.14	7,867.55	69.33	-56.12	215.15	12.48	MWD	WEATHERFORD
4/13/2014	7,952.00	52.54	172.99	7,886.99	93.43	-80.08	218.06	8.98	MWD	WEATHERFORD
4/13/2014	7,984.00	54.34	173.25	7,906.05	119.09	-105.60	221.14	5.66	MWD	WEATHERFORD
4/13/2014	8,015.00	56.56	173.30	7,923.63	144.58	-130.96	224.13	7.16	MWD	WEATHERFORD
4/13/2014	8,047.00	57.94	174.50	7,940.94	171.47	-157.72	226.99	5.34	MWD	WEATHERFORD
4/13/2014	8,078.00	60.16	175.15	7,956.89	198.04	-184.19	229.38	7.38	MWD	WEATHERFORD
4/13/2014	8,109.00	61.41	175.71	7,972.02	225.09	-211.16	231.54	4.33	MWD	WEATHERFORD
4/13/2014	8,141.00	62.76	176.60	7,987.00	253.37	-239.37	233.43	4.88	MWD	WEATHERFORD
4/13/2014	8,172.00	64.53	177.78	8,000.76	281.14	-267.12	234.79	6.65	MWD	WEATHERFORD
4/13/2014	8,204.00	67.45	177.32	8,013.78	310.36	-296.32	236.04	9.22	MWD	WEATHERFORD
4/13/2014	8,236.00	69.26	176.78	8,025.58	340.10	-326.02	237.58	5.87	MWD	WEATHERFORD
4/13/2014	8,267.00	71.04	176.14	8,036.11	369.26	-355.12	239.38	6.06	MWD	WEATHERFORD
4/13/2014	8,299.00	74.13	176.33	8,045.68	399.79	-385.58	241.38	9.67	MWD	WEATHERFORD
4/13/2014	8,330.00	77.16	176.47	8,053.37	429.82	-415.55	243.27	9.78	MWD	WEATHERFORD
4/13/2014	8,362.00	78.80	177.15	8,060.03	461.12	-446.80	245.01	5.53	MWD	WEATHERFORD
4/13/2014	8,393.00	80.01	178.10	8,065.73	491.58	-477.25	246.27	4.93	MWD	WEATHERFORD
4/13/2014	8,424.00	82.70	179.34	8,070.39	522.20	-507.88	246.95	9.54	MWD	WEATHERFORD
4/13/2014	8,488.00	87.97	178.15	8,075.60	585.91	-571.63	248.35	8.44	MWD	WEATHERFORD
4/13/2014	8,582.00	87.76	178.34	8,079.10	679.80	-665.52	251.23	0.30	MWD	WEATHERFORD
4/13/2014	8,676.00	89.16	176.99	8,081.62	773.74	-759.41	255.06	2.07	MWD	WEATHERFORD
4/13/2014	8,770.00	89.30	177.11	8,082.89	867.73	-853.27	259.89	0.20	MWD	WEATHERFORD
4/13/2014	8,865.00	89.51	176.55	8,083.87	962.72	-948.12	265.15	0.63	MWD	WEATHERFORD
4/13/2014	8,959.00	89.86	174.94	8,084.39	1,056.71	-1,041.86	272.12	1.75	MWD	WEATHERFORD
4/13/2014	9,053.00	89.30	174.87	8,085.08	1,150.67	-1,135.48	280.47	0.60	MWD	WEATHERFORD
4/13/2014	9,147.00	89.02	174.65	8,086.46	1,244.62	-1,229.08	289.05	0.38	MWD	WEATHERFORD
4/13/2014	9,242.00	88.88	174.77	8,088.20	1,339.56	-1,323.66	297.81	0.19	MWD	WEATHERFORD
4/13/2014	9,337.00	88.39	175.35	8,090.46	1,434.51	-1,418.28	305.99	0.80	MWD	WEATHERFORD
4/13/2014	9,431.00	89.86	175.36	8,091.90	1,528.48	-1,511.96	313.60	1.56	MWD	WEATHERFORD
4/13/2014	9,526.00	89.79	175.63	8,092.19	1,623.46	-1,606.66	321.06	0.29	MWD	WEATHERFORD

devon

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name HACKBERRY	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC29 T19S R31E	API/UWI 3001541624	Latitude (°) 32° 38' 17.66" N	Longitude (°) 103° 53' 27.018" W	Ground Elev. 3,469.70
				KB - GL (ft) 26.00
				Orig KB Elev (ft) 3,495.70
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ft/B)	Inc (°)	Azm (°)	VD (ft/B)	VS (ft)	N/S (ft)	E/W (ft)	DLS (7/100ft)	Survey Tool	Survey Company
4/13/2014	9,620.00	89.16	176.16	8,093.05	1,717.45	-1,700.42	327.79	0.88	MWD	WEATHERFORD
4/13/2014	9,714.00	88.32	176.27	8,095.12	1,811.43	-1,794.19	333.99	0.90	MWD	WEATHERFORD
4/13/2014	9,809.00	88.18	175.46	8,098.02	1,906.38	-1,888.90	340.84	0.86	MWD	WEATHERFORD
4/13/2014	9,904.00	90.42	177.12	8,099.18	2,001.36	-1,983.68	346.99	2.93	MWD	WEATHERFORD
4/13/2014	9,998.00	90.49	177.35	8,098.43	2,095.35	-2,077.57	351.52	0.26	MWD	WEATHERFORD
4/13/2014	10,092.00	90.14	176.97	8,097.91	2,189.34	-2,171.45	356.18	0.55	MWD	WEATHERFORD
4/13/2014	10,187.00	88.25	177.65	8,099.25	2,284.32	-2,266.33	360.64	2.11	MWD	WEATHERFORD
4/13/2014	10,281.00	88.67	177.07	8,101.78	2,378.27	-2,360.20	364.96	0.76	MWD	WEATHERFORD
4/23/2014	10,376.00	89.16	175.47	8,103.57	2,473.25	-2,454.98	371.14	1.76	MWD	WEATHERFORD
4/23/2014	10,470.00	88.60	175.12	8,105.41	2,567.21	-2,548.64	378.85	0.70	MWD	WEATHERFORD
4/23/2014	10,565.00	89.30	175.78	8,107.15	2,662.18	-2,643.33	386.39	1.01	MWD	WEATHERFORD
4/23/2014	10,660.00	89.44	175.89	8,108.20	2,757.17	-2,738.07	393.29	0.19	MWD	WEATHERFORD
4/23/2014	10,754.00	88.25	175.25	8,110.09	2,851.14	-2,831.77	400.55	1.44	MWD	WEATHERFORD
4/23/2014	10,849.00	89.02	175.03	8,112.36	2,946.08	-2,926.40	408.59	0.84	MWD	WEATHERFORD
4/23/2014	10,943.00	88.53	174.36	8,114.36	3,040.02	-3,019.97	417.28	0.88	MWD	WEATHERFORD
4/23/2014	11,038.00	89.86	174.84	8,115.70	3,134.96	-3,114.54	426.22	1.49	MWD	WEATHERFORD
4/23/2014	11,133.00	90.56	175.43	8,115.35	3,229.93	-3,209.20	434.28	0.96	MWD	WEATHERFORD
4/23/2014	11,228.00	90.14	175.48	8,114.77	3,324.91	-3,303.90	441.80	0.45	MWD	WEATHERFORD
4/23/2014	11,321.00	90.28	175.75	8,114.43	3,417.90	-3,396.62	448.91	0.33	MWD	WEATHERFORD
4/23/2014	11,416.00	90.63	175.34	8,113.68	3,512.89	-3,491.33	456.29	0.57	MWD	WEATHERFORD
4/23/2014	11,510.00	89.86	176.68	8,113.27	3,606.88	-3,585.10	462.83	1.64	MWD	WEATHERFORD
4/24/2014	11,604.00	88.39	177.37	8,114.71	3,700.86	-3,678.96	467.71	1.73	MWD	WEATHERFORD
4/24/2014	11,699.00	88.04	177.19	8,117.67	3,795.80	-3,773.81	472.22	0.41	MWD	WEATHERFORD
4/24/2014	11,793.00	87.83	177.64	8,121.06	3,889.73	-3,867.65	476.45	0.53	MWD	WEATHERFORD
4/24/2014	11,888.00	89.37	176.94	8,123.38	3,984.69	-3,962.51	480.95	1.78	MWD	WEATHERFORD
4/24/2014	11,982.00	90.42	177.46	8,123.55	4,078.68	-4,056.40	485.54	1.25	MWD	WEATHERFORD
4/24/2014	12,076.00	89.44	176.78	8,123.66	4,172.67	-4,150.28	490.26	1.27	MWD	WEATHERFORD
4/24/2014	12,171.00	88.39	177.49	8,125.46	4,267.64	-4,245.14	495.01	1.33	MWD	WEATHERFORD
4/24/2014	12,265.00	89.23	178.76	8,127.41	4,361.58	-4,339.07	498.08	1.62	MWD	WEATHERFORD
4/24/2014	12,359.00	87.76	177.79	8,129.88	4,455.50	-4,432.99	500.91	1.87	MWD	WEATHERFORD
4/24/2014	12,454.00	86.99	178.68	8,134.23	4,550.35	-4,527.84	503.83	1.24	MWD	WEATHERFORD
4/24/2014	12,549.00	86.43	178.43	8,139.69	4,645.13	-4,622.65	506.23	0.65	MWD	WEATHERFORD
4/24/2014	12,643.00	86.15	179.45	8,145.77	4,738.84	-4,716.44	507.96	1.12	MWD	WEATHERFORD
4/24/2014	12,717.00	86.15	179.45	8,150.74	4,812.57	-4,790.27	508.67	0.00	BIT	WEATHERFORD