



30-015-41292

July 22, 2014

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

NM OIL CONSERVATION
ARTESIA DISTRICT

SEP 24 2014

RECEIVED

Attn: David Cook

Re: **KAYRO 4 State Com No. 001H**

Please find enclosed a copy of the survey from 0.00' to 7414.00' 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.

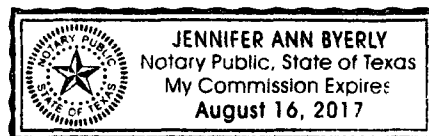
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 22 day of July, A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Devon Energy
Lease/Well: KAYRO 4 State Com/No. 001H

Rig Name: Cactus 105
State/County: New Mexico/Eddy
Latitude: 32.17, Longitude: -104.09
GRID North is 0.13 Degrees East of True North
VS-Azi: 0.00 Degrees



RECEIVED
SEP 24 2014
NM OIL CONSERVATION
ARTESIA DISTRICT

Depth Reference : RKB= 28 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 7/22/2014 / 11:30

VES Survey International
West Texas
(432) 563-5444
Surveyor: Bryan Massey
KAYRO 4 State Com No. 001H / API 30-015-41292

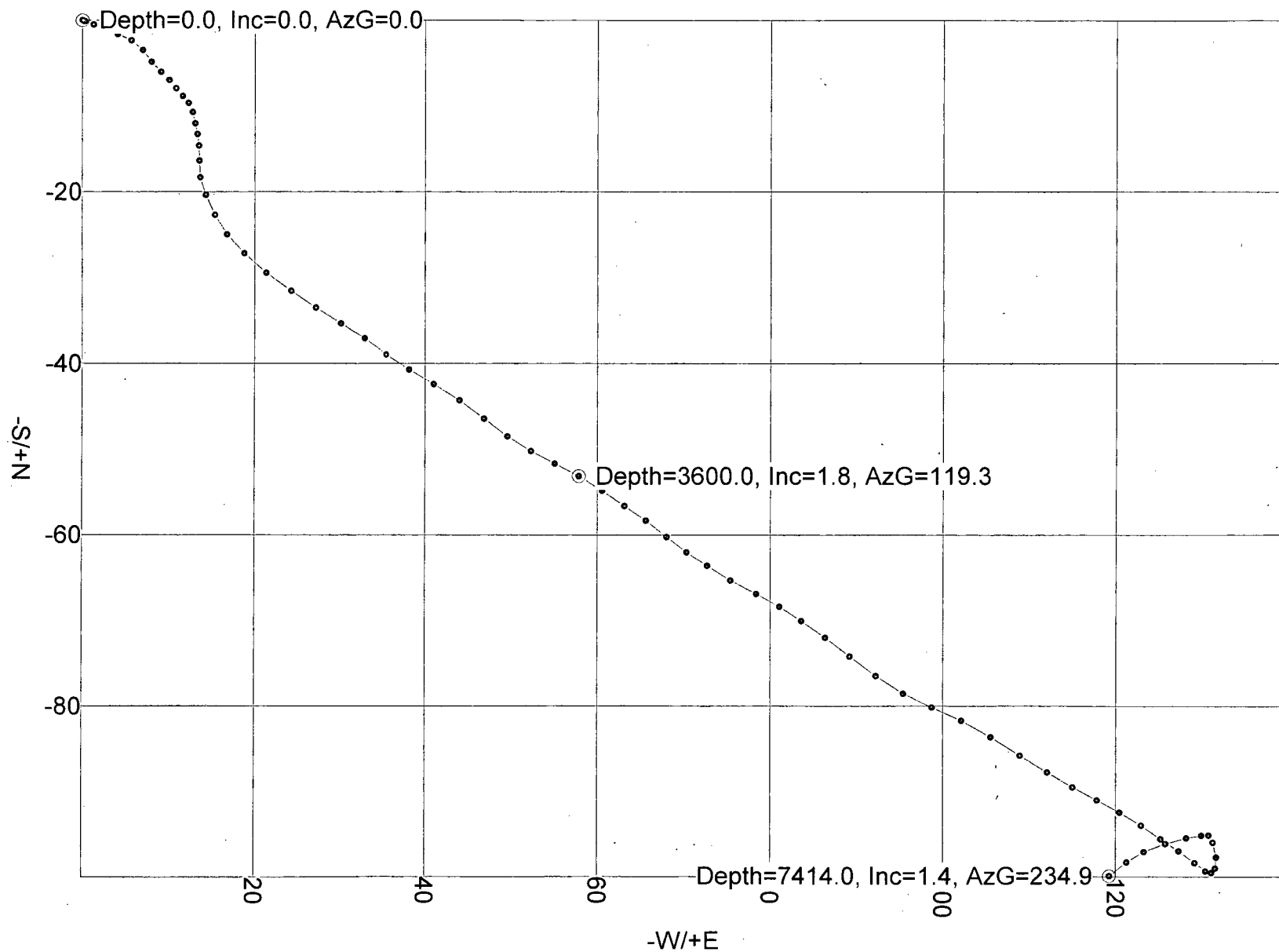
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.34	112.83	100.00	-0.12	0.28	-0.12	0.30	112.83	0.34
200.00	0.90	110.09	199.99	-0.50	1.29	-0.50	1.39	111.27	0.56
300.00	0.77	116.15	299.98	-1.07	2.64	-1.07	2.85	112.10	0.16
400.00	0.97	108.50	399.97	-1.64	4.05	-1.64	4.37	112.03	0.23
500.00	1.03	119.17	499.96	-2.34	5.63	-2.34	6.10	112.59	0.19
600.00	1.01	142.58	599.94	-3.48	6.95	-3.48	7.78	116.59	0.41
700.00	0.95	145.88	699.93	-4.87	7.95	-4.87	9.33	121.46	0.08
800.00	0.94	126.81	799.91	-6.04	9.07	-6.04	10.90	123.67	0.31
900.00	0.61	146.65	899.90	-6.98	10.02	-6.98	12.21	124.85	0.42
1000.00	0.82	137.42	999.90	-7.95	10.79	-7.95	13.40	126.36	0.24
1100.00	0.58	140.94	1099.89	-8.86	11.60	-8.86	14.60	127.39	0.24
1200.00	0.61	139.51	1199.88	-9.66	12.26	-9.66	15.61	128.24	0.03
1300.00	0.77	168.78	1299.88	-10.73	12.74	-10.73	16.65	130.10	0.38
1400.00	0.77	165.27	1399.87	-12.04	13.04	-12.04	17.75	132.72	0.05
1500.00	0.68	172.10	1499.86	-13.28	13.29	-13.28	18.79	134.97	0.12
1600.00	0.87	172.37	1599.85	-14.62	13.47	-14.62	19.88	137.34	0.18
1700.00	1.15	182.31	1699.83	-16.37	13.53	-16.37	21.24	140.41	0.33
1800.00	1.10	173.15	1799.81	-18.32	13.61	-18.32	22.82	143.39	0.19

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
1900.00	1.41	154.09	1899.79	-20.37	14.26	-20.37	24.87	145.01	0.52
2000.00	1.52	154.97	1999.76	-22.68	15.36	-22.68	27.40	145.90	0.11
2100.00	1.55	141.51	2099.72	-24.95	16.76	-24.95	30.06	146.10	0.36
2200.00	1.89	133.83	2199.68	-27.15	18.80	-27.15	33.02	145.30	0.41
2300.00	2.09	129.06	2299.62	-29.44	21.40	-29.44	36.39	143.99	0.26
2400.00	2.04	122.46	2399.55	-31.54	24.31	-31.54	39.82	142.37	0.24
2500.00	1.97	125.43	2499.49	-33.49	27.22	-33.49	43.16	140.90	0.12
2600.00	1.96	119.41	2599.43	-35.33	30.12	-35.33	46.43	139.56	0.21
2700.00	1.81	124.53	2699.38	-37.07	32.91	-37.07	49.57	138.40	0.23
2800.00	1.85	128.09	2799.33	-38.96	35.49	-38.96	52.70	137.68	0.12
2900.00	1.82	118.68	2899.28	-40.73	38.15	-40.73	55.80	136.87	0.30
3000.00	1.96	121.88	2999.22	-42.39	41.00	-42.39	58.98	135.96	0.18
3100.00	2.10	123.38	3099.16	-44.30	43.98	-44.30	62.43	135.21	0.15
3200.00	1.97	130.87	3199.10	-46.44	46.82	-46.44	65.94	134.77	0.29
3300.00	1.96	123.36	3299.04	-48.51	49.55	-48.51	69.34	134.39	0.26
3400.00	1.76	119.82	3398.98	-50.22	52.32	-50.22	72.52	133.83	0.23
3500.00	1.83	116.57	3498.93	-51.70	55.08	-51.70	75.54	133.18	0.12
3600.00	1.76	119.34	3598.89	-53.17	57.85	-53.17	78.57	132.58	0.11
3700.00	1.87	125.23	3698.84	-54.86	60.53	-54.86	81.69	132.19	0.21
3800.00	1.69	124.30	3798.79	-56.63	63.07	-56.63	84.77	131.92	0.19
3900.00	1.78	124.11	3898.74	-58.33	65.57	-58.33	87.76	131.65	0.09
4000.00	1.75	132.54	3998.69	-60.23	67.98	-60.23	90.82	131.54	0.26
4100.00	1.61	122.05	4098.65	-62.01	70.29	-62.01	93.73	131.42	0.34
4200.00	1.68	125.13	4198.61	-63.59	72.68	-63.59	96.57	131.18	0.11
4300.00	1.98	120.96	4298.56	-65.32	75.36	-65.32	99.73	130.92	0.33
4400.00	1.92	113.62	4398.50	-66.88	78.37	-66.88	103.03	130.48	0.26
4500.00	1.66	125.30	4498.45	-68.39	81.08	-68.39	106.07	130.14	0.45
4600.00	1.83	121.08	4598.41	-70.04	83.63	-70.04	109.09	129.95	0.21
4700.00	2.05	128.14	4698.35	-71.97	86.40	-71.97	112.45	129.79	0.33
4800.00	2.06	127.38	4798.29	-74.17	89.23	-74.17	116.03	129.73	0.03
4900.00	2.30	126.64	4898.21	-76.45	92.27	-76.45	119.83	129.64	0.24
5000.00	2.07	119.39	4998.14	-78.54	95.46	-78.54	123.61	129.45	0.36
5100.00	2.11	112.73	5098.07	-80.14	98.73	-80.14	127.16	129.07	0.24
5200.00	2.18	116.11	5198.00	-81.69	102.13	-81.69	130.78	128.65	0.15
5300.00	2.29	123.93	5297.93	-83.64	105.50	-83.64	134.63	128.41	0.32
5400.00	2.28	120.57	5397.85	-85.77	108.87	-85.77	138.60	128.23	0.13
5500.00	2.02	122.95	5497.78	-87.74	112.06	-87.74	142.32	128.06	0.28
5600.00	1.89	118.10	5597.72	-89.47	114.99	-89.47	145.70	127.88	0.21
5700.00	1.77	118.43	5697.67	-90.98	117.81	-90.98	148.85	127.68	0.11

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
5800.00	1.66	118.91	5797.62	-92.42	120.44	-92.42	151.81	127.50	0.11
5900.00	1.73	124.50	5897.58	-93.98	122.95	-93.98	154.75	127.39	0.18
6000.00	1.45	125.23	5997.54	-95.56	125.22	-95.56	157.52	127.35	0.28
6100.00	1.43	123.04	6097.51	-96.97	127.30	-96.97	160.02	127.30	0.06
6200.00	1.21	131.26	6197.48	-98.34	129.14	-98.34	162.33	127.29	0.29
6300.00	0.62	121.90	6297.47	-99.33	130.39	-99.33	163.92	127.30	0.61
6400.00	0.30	63.71	6397.47	-99.50	131.09	-99.50	164.57	127.20	0.52
6500.00	0.52	27.45	6497.47	-98.98	131.53	-98.98	164.61	126.96	0.33
6600.00	1.04	352.93	6597.46	-97.68	131.62	-97.68	163.91	126.58	0.68
6700.00	0.99	342.01	6697.44	-95.96	131.25	-95.96	162.58	126.17	0.20
6800.00	0.25	282.00	6797.44	-95.09	130.77	-95.09	161.69	126.02	0.89
6900.00	0.75	262.34	6897.43	-95.14	129.90	-95.14	161.01	126.22	0.52
7000.00	1.26	258.52	6997.42	-95.44	128.17	-95.44	159.81	126.67	0.51
7100.00	1.60	250.87	7097.38	-96.12	125.77	-96.12	158.30	127.39	0.39
7200.00	1.45	247.75	7197.35	-97.06	123.28	-97.06	156.90	128.21	0.18
7300.00	1.27	228.11	7297.32	-98.28	121.29	-98.28	156.10	129.02	0.50
7414.00	1.35	234.91	7411.29	-99.89	119.25	-99.89	155.56	129.95	0.15



VES Survey International
West Texas
(432) 563-5444
Surveyor: Bryan Massey
KAYRO 4 State Com No. 001H / API 30-015-41292



VES Survey Date: 07/08/2014



KAYRO 4 STATE COM 1H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name POTATO BASIN AREA UNA...	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location Sec. 4 T 25S R28E	API/UWI 3001541292	Latitude (°) 32° 9' 57.36" N	Longitude (°) 104° 5' 24.748" W	Ground Elev... 3,001.40	KB - GL (ft) 28.00	Orig KB Elev (ft) 3,029.40	Tubing Head Elevation (ft)

Wellbores							
Wellbore Name OH	Parent Wellbore	SAP Well ID 35981	Kick Off Depth (ftKB)	Vertical Section Direction (°)			
Actual Deviation Survey GYRO/MWD, Proposed? No		Definitive? Yes	Proposed? No	Proposed Deviation Survey			

Deviation Survey							
Date 7/8/2014	Description GYRO/MWD						
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NS Tie In (ft)	EW Tie In (ft)		

Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
7/8/2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD	VAUHG ENERGY SERVICES
7/8/2014	100.00	0.34	112.83	100.00	0.12	-0.12	0.27	0.34	GYRO	VAUHG ENERGY SERVICES
7/8/2014	200.00	0.90	110.09	199.99	0.51	-0.50	1.28	0.56	GYRO	VAUHG ENERGY SERVICES
7/8/2014	300.00	0.77	116.15	299.98	1.08	-1.07	2.63	0.16	GYRO	VAUHG ENERGY SERVICES
7/8/2014	400.00	0.97	108.50	399.97	1.65	-1.63	4.03	0.23	GYRO	VAUHG ENERGY SERVICES
7/8/2014	500.00	1.03	119.17	499.96	2.37	-2.34	5.62	0.20	GYRO	VAUHG ENERGY SERVICES
7/8/2014	600.00	1.01	142.58	599.94	3.51	-3.48	6.94	0.41	GYRO	VAUHG ENERGY SERVICES
7/8/2014	700.00	0.95	145.88	699.93	4.90	-4.86	7.94	0.08	GYRO	VAUHG ENERGY SERVICES
7/8/2014	800.00	0.94	126.81	799.91	6.09	-6.04	9.06	0.31	GYRO	VAUHG ENERGY SERVICES
7/8/2014	900.00	0.61	146.65	899.90	7.03	-6.98	10.01	0.42	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,000.00	0.82	137.42	999.90	8.01	-7.95	10.79	0.24	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,100.00	0.58	140.94	1,099.89	8.93	-8.87	11.59	0.24	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,200.00	0.61	139.51	1,199.88	9.73	-9.66	12.26	0.03	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,300.00	0.77	168.78	1,299.88	10.80	-10.73	12.73	0.38	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,400.00	0.77	165.27	1,399.87	12.11	-12.04	13.03	0.05	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,500.00	0.68	172.10	1,499.86	13.35	-13.28	13.29	0.12	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,600.00	0.87	172.37	1,599.85	14.69	-14.62	13.47	0.19	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,700.00	1.15	182.31	1,699.83	16.44	-16.37	13.53	0.33	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,800.00	1.10	173.15	1,799.81	18.40	-18.33	13.60	0.19	GYRO	VAUHG ENERGY SERVICES
7/8/2014	1,900.00	1.41	154.09	1,899.79	20.46	-20.39	14.25	0.52	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,000.00	1.52	154.97	1,999.76	22.78	-22.69	15.35	0.11	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,100.00	1.55	141.51	2,099.72	25.05	-24.95	16.76	0.36	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,200.00	1.89	133.83	2,199.68	27.26	-27.16	18.79	0.41	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,300.00	2.09	129.06	2,299.62	29.56	-29.45	21.39	0.26	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,400.00	2.04	122.46	2,399.55	31.68	-31.55	24.31	0.24	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,500.00	1.97	125.43	2,499.49	33.65	-33.50	27.21	0.13	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,600.00	1.96	119.41	2,599.43	35.50	-35.34	30.10	0.21	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,700.00	1.81	124.53	2,699.38	37.25	-37.07	32.89	0.23	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,800.00	1.85	128.09	2,799.33	39.16	-38.96	35.47	0.12	GYRO	VAUHG ENERGY SERVICES
7/8/2014	2,900.00	1.82	118.68	2,899.28	40.93	-40.72	38.13	0.30	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,000.00	1.96	121.88	2,999.22	42.61	-42.39	40.97	0.18	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,100.00	2.10	123.38	3,099.16	44.54	-44.30	43.96	0.15	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,200.00	1.97	130.87	3,199.10	46.69	-46.43	46.79	0.30	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,300.00	1.96	123.36	3,299.04	48.77	-48.50	49.51	0.26	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,400.00	1.76	119.82	3,398.99	50.48	-50.20	52.27	0.23	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,500.00	1.83	116.57	3,498.94	51.98	-51.68	55.04	0.12	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,600.00	1.76	119.34	3,598.89	53.46	-53.15	57.80	0.11	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,700.00	1.87	125.23	3,698.84	55.17	-54.84	60.47	0.22	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,800.00	1.69	124.30	3,798.79	56.95	-56.61	63.02	0.18	GYRO	VAUHG ENERGY SERVICES
7/8/2014	3,900.00	1.78	124.11	3,898.74	58.67	-58.31	65.53	0.09	GYRO	VAUHG ENERGY SERVICES
7/8/2014	4,000.00	1.75	132.54	3,998.70	60.59	-60.22	67.94	0.26	GYRO	VAUHG ENERGY SERVICES
7/8/2014	4,100.00	1.61	122.05	4,098.65	62.38	-61.99	70.25	0.34	GYRO	VAUHG ENERGY SERVICES
7/8/2014	4,200.00	1.68	125.13	4,198.61	63.98	-63.58	72.64	0.11	GYRO	VAUHG ENERGY SERVICES
7/8/2014	4,300.00	1.98	120.96	4,298.56	65.72	-65.32	75.32	0.33	GYRO	VAUHG ENERGY SERVICES
7/8/2014	4,400.00	1.92	113.62	4,398.50	67.30	-66.88	78.34	0.26	GYRO	VAUHG ENERGY SERVICES
7/8/2014	4,500.00	1.66	125.30	4,498.45	68.82	-68.38	81.06	0.45	GYRO	VAUHG ENERGY SERVICES
7/8/2014	4,600.00	1.83	121.08	4,598.41	70.50	-70.04	83.61	0.21	GYRO	VAUHG ENERGY SERVICES



KAYRO 4 STATE COM 1H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name POTATO BASIN AREA UNA...	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 4 T 25S R28E	API/UWI 3001541292	Latitude (°) 32° 9' 57.36" N	Longitude (°) 104° 5' 24.748" W	Ground Elev... 3,001.40
			KB - GL (ft) 28.00	Orig KB Elev (ft) 3,029.40
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azth (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (%/100ft)	Survey Tool	Survey Company
7/8/2014	4,700.00	2.05	128.14	4,698.35	72.44	-71.97	86.38	0.32	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	4,800.00	2.06	127.38	4,798.29	74.65	-74.17	89.22	0.03	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	4,900.00	2.30	126.64	4,898.21	76.96	-76.46	92.26	0.24	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,000.00	2.07	119.39	4,998.14	79.06	-78.54	95.44	0.36	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,100.00	2.11	112.73	5,098.07	80.68	-80.14	98.71	0.25	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,200.00	2.18	116.11	5,198.00	82.24	-81.69	102.12	0.14	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,300.00	2.29	123.93	5,297.93	84.21	-83.64	105.48	0.32	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,400.00	2.28	120.57	5,397.85	86.36	-85.77	108.85	0.13	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,500.00	2.02	122.95	5,497.78	88.35	-87.74	112.04	0.27	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,600.00	1.89	118.10	5,597.72	90.10	-89.47	114.98	0.21	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,700.00	1.77	118.43	5,697.67	91.62	-90.98	117.79	0.12	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,800.00	1.66	118.91	5,797.63	93.07	-92.42	120.42	0.11	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	5,900.00	1.73	124.50	5,897.58	94.64	-93.97	122.93	0.18	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,000.00	1.45	125.23	5,997.54	96.24	-95.56	125.21	0.28	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,100.00	1.43	123.04	6,097.51	97.66	-96.97	127.28	0.06	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,200.00	1.21	131.26	6,197.48	99.05	-98.35	129.12	0.29	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,300.00	0.62	121.90	6,297.47	100.04	-99.33	130.38	0.61	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,400.00	0.30	63.71	6,397.47	100.21	-99.50	131.07	0.53	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,500.00	0.52	27.45	6,497.47	99.70	-98.98	131.52	0.33	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,600.00	1.04	352.93	6,597.46	98.39	-97.68	131.61	0.68	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,700.00	0.99	342.01	6,697.44	96.67	-95.95	131.23	0.20	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,800.00	0.25	282.00	6,797.44	95.80	-95.09	130.75	0.89	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	6,900.00	0.75	262.34	6,897.43	95.84	-95.13	129.89	0.52	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	7,000.00	1.26	258.52	6,997.42	96.13	-95.44	128.17	0.51	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	7,100.00	1.60	250.87	7,097.38	96.80	-96.11	125.77	0.39	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	7,200.00	1.45	247.75	7,197.35	97.72	-97.05	123.28	0.17	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	7,300.00	1.27	228.11	7,297.32	98.93	-98.27	121.28	0.50	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	7,414.00	1.35	234.91	7,411.29	100.53	-99.88	119.24	0.15	GYRO	VAUHGN ENERGY SERVICES
7/8/2014	7,498.00	1.50	263.90	7,495.27	101.21	-100.57	117.34	0.87	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,561.00	1.80	244.60	7,558.24	101.71	-101.08	115.63	1.00	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,593.00	4.70	202.70	7,590.19	103.13	-102.51	114.67	11.15	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,625.00	8.20	203.30	7,621.98	106.43	-105.81	113.26	10.94	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,656.00	11.00	199.90	7,652.55	111.23	-110.62	111.38	9.21	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,688.00	14.60	198.20	7,683.75	117.92	-117.33	109.08	11.31	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,751.00	20.20	196.40	7,743.84	135.88	-135.32	103.52	8.93	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,782.00	23.30	190.40	7,772.63	147.04	-146.49	100.90	12.29	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,814.00	27.10	196.10	7,801.59	160.25	-159.72	97.74	14.08	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,846.00	30.30	195.00	7,829.65	175.04	-174.53	93.63	10.13	MWD	LEAM DRILLING SYSTEMS
7/8/2014	7,877.00	33.60	194.70	7,855.95	190.87	-190.38	89.42	10.66	MWD	LEAM DRILLING SYSTEMS
7/11/2014	7,908.00	36.80	193.10	7,881.28	208.19	-207.73	85.14	10.74	MWD	LEAM DRILLING SYSTEMS
7/11/2014	7,940.00	40.60	190.80	7,906.25	227.74	-227.30	81.02	12.70	MWD	LEAM DRILLING SYSTEMS
7/11/2014	7,972.00	43.80	189.60	7,929.95	248.87	-248.45	77.22	10.31	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,004.00	46.50	186.90	7,952.52	271.30	-270.90	73.98	10.34	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,035.00	49.20	184.50	7,973.32	294.15	-293.76	71.70	10.43	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,066.00	52.80	183.80	7,992.83	318.17	-317.79	69.96	11.74	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,098.00	56.70	183.60	8,011.30	344.23	-343.86	68.28	12.20	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,129.00	60.90	183.40	8,027.35	370.68	-370.32	66.66	13.56	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,161.00	65.20	183.10	8,041.85	399.14	-398.80	65.05	13.46	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,193.00	69.20	182.90	8,054.25	428.59	-428.25	63.50	12.51	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,224.00	73.40	182.00	8,064.18	457.91	-457.58	62.25	13.82	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,256.00	77.60	180.80	8,072.20	488.87	-488.54	61.50	13.62	MWD	LEAM DRILLING SYSTEMS
7/11/2014	8,287.00	82.00	179.70	8,077.68	519.37	-519.04	61.37	14.62	MWD	LEAM DRILLING SYSTEMS
7/12/2014	8,351.00	89.50	178.50	8,082.42	583.15	-582.81	62.37	11.87	MWD	LEAM DRILLING SYSTEMS
7/12/2014	8,447.00	91.00	179.00	8,082.00	679.13	-678.79	64.47	1.65	MWD	LEAM DRILLING SYSTEMS
7/12/2014	8,541.00	92.00	179.20	8,079.54	773.09	-772.74	65.94	1.08	MWD	LEAM DRILLING SYSTEMS



KAYRO 4 STATE COM 1H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name POTATO BASIN AREA UNA...	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 4 T 25S R28E	API/UWI 3001541292	Latitude (") 32° 9' 57.36" N	Longitude (") 104° 5' 24.748" W	Ground Elev... 3,001.40
			KB - GL (ft) 28.00	Orig KB Elev (ft) 3,029.40
				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
7/12/2014	8,636.00	92.90	179.50	8,075.48	868.00	-867.65	67.02	1.00	MWD	LEAM DRILLING SYSTEMS
7/12/2014	8,731.00	92.60	180.10	8,070.93	962.89	-962.54	67.35	0.71	MWD	LEAM DRILLING SYSTEMS
7/12/2014	8,826.00	91.70	179.70	8,067.36	1,057.82	-1,057.47	67.52	1.04	MWD	LEAM DRILLING SYSTEMS
7/12/2014	8,920.00	90.80	180.10	8,065.31	1,151.80	-1,151.45	67.68	1.05	MWD	LEAM DRILLING SYSTEMS
7/12/2014	9,015.00	90.20	179.90	8,064.48	1,246.79	-1,246.44	67.68	0.67	MWD	LEAM DRILLING SYSTEMS
7/12/2014	9,110.00	91.40	180.80	8,063.16	1,341.77	-1,341.43	67.10	1.58	MWD	LEAM DRILLING SYSTEMS
7/12/2014	9,206.00	90.50	181.10	8,061.56	1,437.74	-1,437.40	65.51	0.99	MWD	LEAM DRILLING SYSTEMS
7/13/2014	9,300.00	89.50	180.60	8,061.56	1,531.72	-1,531.39	64.11	1.19	MWD	LEAM DRILLING SYSTEMS
7/13/2014	9,395.00	89.90	181.50	8,062.06	1,626.69	-1,626.37	62.37	1.04	MWD	LEAM DRILLING SYSTEMS
7/13/2014	9,490.00	90.60	182.70	8,061.65	1,721.60	-1,721.30	58.89	1.46	MWD	LEAM DRILLING SYSTEMS
7/13/2014	9,584.00	90.00	182.70	8,061.15	1,815.47	-1,815.20	54.46	0.64	MWD	LEAM DRILLING SYSTEMS
7/13/2014	9,679.00	88.90	181.90	8,062.07	1,910.36	-1,910.11	50.65	1.43	MWD	LEAM DRILLING SYSTEMS
7/13/2014	9,773.00	89.40	180.40	8,063.46	2,004.32	-2,004.08	48.77	1.68	MWD	LEAM DRILLING SYSTEMS
7/13/2014	9,869.00	87.50	180.10	8,066.06	2,100.27	-2,100.04	48.35	2.00	MWD	LEAM DRILLING SYSTEMS
7/13/2014	9,963.00	88.00	180.80	8,069.75	2,194.19	-2,193.96	47.61	0.91	MWD	LEAM DRILLING SYSTEMS
7/13/2014	10,058.00	88.60	181.80	8,072.57	2,289.11	-2,288.90	45.45	1.23	MWD	LEAM DRILLING SYSTEMS
7/13/2014	10,153.00	88.60	181.80	8,074.89	2,384.02	-2,383.82	42.47	0.00	MWD	LEAM DRILLING SYSTEMS
7/13/2014	10,248.00	87.50	181.30	8,078.12	2,478.91	-2,478.73	39.90	1.27	MWD	LEAM DRILLING SYSTEMS
7/13/2014	10,343.00	87.70	182.20	8,082.10	2,573.76	-2,573.60	37.00	0.97	MWD	LEAM DRILLING SYSTEMS
7/16/2014	10,462.00	87.90	181.30	8,086.67	2,692.60	-2,692.46	33.37	0.77	MWD	LEAM DRILLING SYSTEMS
7/16/2014	10,557.00	87.10	179.50	8,090.81	2,787.50	-2,787.36	32.71	2.07	MWD	LEAM DRILLING SYSTEMS
7/16/2014	10,652.00	87.20	179.00	8,095.53	2,882.38	-2,882.23	33.95	0.54	MWD	LEAM DRILLING SYSTEMS
7/16/2014	10,746.00	87.60	179.00	8,099.80	2,976.27	-2,976.12	35.59	0.43	MWD	LEAM DRILLING SYSTEMS
7/16/2014	10,841.00	87.80	179.20	8,103.61	3,071.19	-3,071.03	37.08	0.30	MWD	LEAM DRILLING SYSTEMS
7/16/2014	10,935.00	88.10	179.20	8,106.97	3,165.13	-3,164.96	38.39	0.32	MWD	LEAM DRILLING SYSTEMS
7/16/2014	11,030.00	88.40	179.70	8,109.87	3,260.08	-3,259.92	39.31	0.61	MWD	LEAM DRILLING SYSTEMS
7/16/2014	11,124.00	88.80	179.90	8,112.17	3,354.05	-3,353.89	39.63	0.48	MWD	LEAM DRILLING SYSTEMS
7/16/2014	11,315.00	89.50	180.90	8,115.00	3,545.01	-3,544.86	38.30	0.64	MWD	LEAM DRILLING SYSTEMS
7/16/2014	11,409.00	89.00	180.10	8,116.23	3,638.99	-3,638.84	37.48	1.00	MWD	LEAM DRILLING SYSTEMS
7/16/2014	11,504.00	89.30	178.80	8,117.64	3,733.98	-3,733.83	38.39	1.40	MWD	LEAM DRILLING SYSTEMS
7/16/2014	11,599.00	89.80	179.40	8,118.39	3,828.97	-3,828.81	39.88	0.82	MWD	LEAM DRILLING SYSTEMS
7/17/2014	11,694.00	90.10	180.10	8,118.47	3,923.97	-3,923.81	40.30	0.80	MWD	LEAM DRILLING SYSTEMS
7/17/2014	11,789.00	90.20	180.90	8,118.22	4,018.96	-4,018.81	39.47	0.85	MWD	LEAM DRILLING SYSTEMS
7/17/2014	11,884.00	90.70	180.90	8,117.48	4,113.94	-4,113.79	37.98	0.53	MWD	LEAM DRILLING SYSTEMS
7/17/2014	11,979.00	90.90	180.90	8,116.15	4,208.91	-4,208.77	36.48	0.21	MWD	LEAM DRILLING SYSTEMS
7/17/2014	12,073.00	90.50	180.90	8,115.00	4,302.88	-4,302.75	35.01	0.43	MWD	LEAM DRILLING SYSTEMS
7/17/2014	12,168.00	91.10	181.30	8,113.68	4,397.84	-4,397.72	33.18	0.76	MWD	LEAM DRILLING SYSTEMS
7/17/2014	12,262.00	91.10	181.50	8,111.87	4,491.78	-4,491.68	30.89	0.21	MWD	LEAM DRILLING SYSTEMS
7/17/2014	12,357.00	90.70	180.90	8,110.38	4,586.73	-4,586.65	28.90	0.76	MWD	LEAM DRILLING SYSTEMS
7/17/2014	12,452.00	89.60	180.80	8,110.13	4,681.71	-4,681.63	27.49	1.16	MWD	LEAM DRILLING SYSTEMS
7/17/2014	12,533.00	89.10	180.40	8,111.05	4,762.70	-4,762.62	26.64	0.79	MWD	LEAM DRILLING SYSTEMS
7/17/2014	12,588.00	89.10	180.40	8,111.91	4,817.69	-4,817.61	26.26	0.00	BIT	LEAM DRILLING SYSTEMS