



NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 19 2019

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Fort Worth, Texas 76140
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www.msdir.com

MS Directional Survey Data Certification

MS Directional Job Number: MSMO-56550
Survey Type: MWD
Operating Company: RKI Exploration & Production, LLC
Well Name & Number: Binder 4 Fee 001H 30-015-45042
Location: Eddy County, NM
API Number: 30-015-45042

Original Wellbore

Tie In Depth: Surface
Surveyed Depths: 156' – 10,128' MD
Projected TD Survey: 10,188' MD

Sidetrack

Tie In Depth: 8,922' MD
Surveyed Depths: 8,953' – 14,663' MD
Projected TD Survey: 14,731' MD

Dates Performed: 10/06/2018 – 10/29/2018

I certify that the data is true, correct and complete and within the limitations of the tool set forth by MS Directional; that I am authorized and qualified to make this report and that I have reviewed this report and find it conforms to the principles and procedures as set forth by MS Directional.

Digitally signed by:

MWD Surveyor Name: Paul Royar

Date: 11-08-2018

Email: proyar@msdir.com

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Company:	RKI Exploration & Production, LLC
Well Name:	Bindel 4 Fee 001H - Original Wellbore
Location:	Eddy County, NM
Rig:	Orion Phoenix #10
Job Number:	MSMO-56550
API #:	30-015-45042

Magnetic Declination: 7.10 REFERENCED TO GRID NORTH

Vertical Section Azimuth: 268.89 Proposed Direction: 268.89

Survey Calculation Method: Minimum Curvature

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	10,188	0.8	316	10100	-452.48	927.52	-918.58

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
TIE IN	0	0.00	0.00	0.00	0.00	0.00			0.00		
1	156	0.80	297.70	155.99	0.51	-0.96	0.95	1.09	297.70	0.51	0.51
2	246	0.60	298.40	245.99	1.02	-1.94	1.91	2.19	297.85	0.22	-0.22
3	325	0.60	297.80	324.98	1.41	-2.66	2.64	3.02	297.92	0.01	0.00
4	429	0.60	279.60	428.98	1.76	-3.68	3.65	4.08	295.50	0.18	0.00
5	522	0.50	271.50	521.97	1.85	-4.57	4.53	4.93	292.03	0.14	-0.11
6	613	0.30	261.40	612.97	1.82	-5.20	5.17	5.51	289.32	0.23	-0.22
7	703	0.20	236.00	702.97	1.70	-5.56	5.53	5.82	286.99	0.16	-0.11
8	792	0.30	213.60	791.97	1.42	-5.82	5.79	5.99	283.70	0.16	0.11
9	882	0.30	209.70	881.97	1.02	-6.07	6.05	6.15	279.53	0.02	0.00
10	972	0.30	199.30	971.97	0.59	-6.26	6.25	6.29	275.39	0.06	0.00
11	1,061	0.50	223.00	1060.97	0.09	-6.61	6.60	6.61	270.76	0.29	0.22
12	1,151	0.60	171.20	1150.96	-0.67	-6.80	6.81	6.83	264.41	0.54	0.11
13	1,241	1.20	162.90	1240.95	-2.03	-6.45	6.49	6.76	252.52	0.68	0.67
14	1,330	1.90	144.80	1329.92	-4.13	-5.33	5.41	6.74	232.23	0.95	0.79
15	1,420	1.00	100.10	1419.89	-5.49	-3.69	3.80	6.61	213.96	1.54	-1.00
16	1,511	1.30	86.60	1510.87	-5.56	-1.88	1.99	5.87	198.70	0.44	0.33
17	1,602	1.90	102.80	1601.84	-5.84	0.62	-0.51	5.87	173.95	0.82	0.66
18	1,693	0.40	148.30	1692.82	-6.44	2.26	-2.13	6.82	160.69	1.81	-1.65
19	1,787	0.30	237.30	1786.82	-6.85	2.22	-2.09	7.20	162.03	0.53	-0.11
20	1,882	0.40	265.90	1881.81	-7.01	1.68	-1.55	7.21	166.51	0.21	0.11
21	1,977	0.40	255.10	1976.81	-7.12	1.03	-0.89	7.19	171.76	0.08	0.00
22	2,072	0.30	246.20	2071.81	-7.31	0.48	-0.34	7.32	176.22	0.12	-0.11
23	2,167	2.10	141.70	2166.79	-8.77	1.33	-1.16	8.87	171.35	2.31	1.89
24	2,261	4.40	121.80	2260.63	-12.02	5.47	-5.23	13.21	155.55	2.69	2.45
25	2,355	5.80	102.90	2354.27	-14.98	13.16	-12.87	19.94	138.71	2.31	1.49
26	2,450	5.70	98.80	2448.79	-16.78	22.50	-22.17	28.07	126.71	0.44	-0.11
27	2,545	6.00	109.10	2543.30	-19.12	31.86	-31.48	37.16	120.98	1.15	0.32
28	2,641	7.00	114.20	2638.68	-23.16	41.93	-41.48	47.91	118.92	1.20	1.04
29	2,736	8.50	117.50	2732.81	-28.78	53.44	-52.88	60.70	118.30	1.65	1.58
30	2,831	10.60	120.50	2826.49	-36.46	67.20	-66.48	76.45	118.48	2.27	2.21
31	2,926	10.90	120.00	2919.82	-45.38	82.51	-81.61	94.17	118.81	0.33	0.32
32	3,020	10.00	118.50	3012.26	-53.72	97.38	-96.32	111.21	118.88	1.00	-0.96
33	3,116	9.60	118.20	3106.86	-61.48	111.76	-110.55	127.55	118.82	0.42	-0.42

Company:	RKI Exploration & Production, LLC
Well Name:	Bindel 4 Fee 001H - Original Wellbore
Location:	Eddy County, NM
Rig:	Orion Phoenix #10
Job Number:	MSMO-66550
API #:	30-015-45042

Magnetic Declination: 7.10 REFERENCED TO GRID NORTH

Vertical Section Azimuth:	268.89	Proposed Direction:	268.89
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Survey Calculation Method: Minimum Curvature

PTB:	MD		INC		AZM		TVD		N/S		E/W		VS	
	10,188		0.8		316		10100		-452.48		927.52		-918.58	
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure		DLS/ 100	BUR/ 100'			
								Distance	Azm					
34	3,211	9.10	117.50	3200.60	-68.69	125.40	-124.05	142.99	118.71	0.54	-0.53			
35	3,307	8.70	115.70	3295.44	-75.35	138.68	-137.19	157.83	118.52	0.51	-0.42			
36	3,402	9.10	115.20	3389.30	-81.66	151.95	-150.34	172.50	118.25	0.43	0.42			
37	3,497	10.70	115.60	3482.88	-88.67	166.70	-164.95	188.82	118.01	1.69	1.68			
38	3,593	11.50	115.40	3577.08	-96.63	183.38	-181.48	207.28	117.79	0.83	0.83			
39	3,688	11.00	115.00	3670.26	-104.52	200.15	-198.09	225.80	117.57	0.53	-0.53			
40	3,782	10.50	114.20	3762.61	-111.82	216.09	-213.89	243.31	117.36	0.56	-0.53			
41	3,878	10.00	114.50	3857.07	-118.86	231.66	-229.31	260.37	117.16	0.52	-0.52			
42	3,973	9.40	113.90	3950.72	-125.43	246.26	-243.78	276.36	116.99	0.64	-0.63			
43	4,067	10.00	116.30	4043.37	-132.15	260.59	-257.98	292.18	116.89	0.77	0.64			
44	4,163	11.20	118.80	4137.73	-140.34	276.23	-273.46	309.84	116.93	1.34	1.25			
45	4,259	11.10	119.00	4231.92	-149.31	292.49	-289.54	328.39	117.04	0.11	-0.10			
46	4,354	10.20	119.90	4325.28	-157.94	307.78	-304.66	345.93	117.16	0.96	-0.95			
47	4,449	9.50	119.20	4418.88	-165.95	321.91	-318.64	362.17	117.27	0.75	-0.74			
48	4,543	8.80	118.50	4511.69	-173.17	335.00	-331.59	377.11	117.34	0.75	-0.74			
49	4,639	9.40	117.70	4606.48	-180.32	348.40	-344.84	392.30	117.36	0.64	0.63			
50	4,734	9.30	117.80	4700.22	-187.50	362.06	-358.36	407.73	117.38	0.11	-0.11			
51	4,828	8.80	118.30	4793.04	-194.46	375.11	-371.27	422.51	117.40	0.54	-0.53			
52	4,922	9.70	119.20	4885.82	-201.73	388.35	-384.37	437.62	117.45	0.97	0.96			
53	5,017	11.10	119.10	4979.26	-210.08	403.33	-399.18	454.76	117.51	1.47	1.47			
54	5,112	11.30	117.80	5072.45	-218.87	419.55	-415.23	473.21	117.55	0.34	0.21			
55	5,207	10.80	117.90	5165.69	-227.37	435.65	-431.16	491.42	117.56	0.53	-0.53			
56	5,303	10.40	118.30	5260.05	-235.69	451.23	-446.58	509.08	117.58	0.42	-0.42			
57	5,399	10.10	117.80	5354.52	-243.72	466.30	-461.50	526.16	117.59	0.33	-0.31			
58	5,494	9.80	118.90	5448.09	-251.52	480.75	-475.79	542.57	117.62	0.37	-0.32			
59	5,588	9.50	118.50	5540.76	-259.08	494.57	-489.46	558.32	117.65	0.33	-0.32			
60	5,637	9.30	119.50	5589.10	-262.96	501.57	-496.38	566.32	117.67	0.53	-0.41			
61	5,776	7.60	121.00	5726.59	-273.23	519.23	-513.84	586.73	117.75	1.23	-1.22			
62	5,871	7.30	116.00	5820.79	-279.11	530.04	-524.53	599.03	117.77	0.75	-0.32			
63	5,966	7.50	115.30	5914.99	-284.41	541.07	-535.46	611.26	117.73	0.23	0.21			
64	6,061	8.50	119.90	6009.07	-290.56	552.76	-547.03	624.47	117.73	1.25	1.05			
65	6,156	12.30	114.20	6102.49	-298.21	568.08	-562.20	641.59	117.70	4.14	4.00			
66	6,251	11.50	114.40	6195.45	-306.27	585.94	-579.89	661.15	117.60	0.84	-0.84			
67	6,346	10.00	115.50	6288.78	-313.73	602.01	-595.81	678.85	117.53	1.59	-1.58			

Company:	RKI Exploration & Production, LLC
Well Name:	Bindel 4 Fee 001H - Original Wellbore
Location:	Eddy County, NM
Rig:	Orion Phoenix #10
Job Number:	MSMO-56550
API #:	30-015-45042

Magnetic Declination: 7.10 REFERENCED TO GRID NORTH

Vertical Section Azimuth: 268.89 Proposed Direction: 268.89

Survey Calculation Method: Minimum Curvature

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	10,188	0.8	316	10100	-452.48	927.52	-918.58

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
68	6,440	11.40	114.90	6381.14	-321.16	617.80	-611.46	696.29	117.47	1.49	1.49
69	6,536	10.50	114.00	6475.40	-328.71	634.40	-627.91	714.50	117.39	0.95	-0.94
70	6,631	9.50	113.10	6568.95	-335.31	649.52	-642.90	730.96	117.30	1.07	-1.05
71	6,725	9.60	111.80	6661.65	-341.26	663.93	-657.19	746.50	117.20	0.25	0.11
72	6,821	8.20	104.70	6756.49	-345.97	677.98	-671.15	761.16	117.03	1.85	-1.46
73	6,915	8.20	106.20	6849.53	-349.54	690.91	-684.00	774.29	116.84	0.23	0.00
74	7,011	10.40	120.50	6944.28	-355.85	704.95	-697.92	789.67	116.78	3.31	2.29
75	7,105	9.70	123.30	7036.84	-364.50	718.88	-711.68	806.01	116.89	0.91	-0.74
76	7,200	8.70	117.00	7130.61	-372.16	731.97	-724.62	821.15	116.95	1.49	-1.05
77	7,295	11.90	114.00	7224.07	-379.41	747.32	-739.83	838.12	116.92	3.41	3.37
78	7,390	12.70	115.50	7316.89	-387.89	765.70	-758.04	858.34	116.87	0.91	0.84
79	7,485	10.10	114.20	7410.01	-395.80	782.72	-774.91	877.11	116.82	2.75	-2.74
80	7,581	8.70	118.30	7504.72	-402.69	796.80	-788.84	892.77	116.81	1.62	-1.46
81	7,676	7.90	119.80	7598.72	-409.34	808.79	-800.71	906.48	116.84	0.87	-0.84
82	7,771	10.10	122.10	7692.55	-417.02	821.51	-813.28	921.29	116.91	2.35	2.32
83	7,865	9.80	126.30	7785.14	-426.13	834.94	-826.53	937.40	117.04	0.84	-0.32
84	7,962	9.80	124.40	7880.72	-435.68	848.40	-839.81	953.73	117.18	0.33	0.00
85	8,057	9.50	116.80	7974.38	-443.79	862.07	-853.32	969.60	117.24	1.38	-0.32
86	8,152	9.70	115.70	8068.05	-450.79	876.28	-867.39	985.44	117.22	0.29	0.21
87	8,247	8.50	136.20	8161.88	-459.33	888.36	-879.29	1000.08	117.34	3.62	-1.26
88	8,342	7.90	130.20	8255.91	-468.61	898.20	-888.96	1013.10	117.55	1.10	-0.63
89	8,437	7.00	109.40	8350.12	-474.75	908.65	-899.29	1025.20	117.59	2.97	-0.95
90	8,532	4.90	93.80	8444.61	-476.94	918.16	-908.75	1034.65	117.45	2.77	-2.21
91	8,627	3.40	76.30	8539.36	-476.55	924.95	-915.54	1040.49	117.26	2.05	-1.58
92	8,722	2.00	64.40	8634.25	-475.16	929.18	-919.80	1043.63	117.08	1.58	-1.47
93	8,816	1.10	30.60	8728.22	-473.68	931.12	-921.77	1044.68	116.96	1.33	-0.96
94	8,911	1.00	45.70	8823.20	-472.31	932.18	-922.85	1045.00	116.87	0.31	-0.11
95	9,006	0.90	39.10	8918.19	-471.15	933.24	-923.94	1045.43	116.79	0.16	-0.11
96	9,100	0.50	41.20	9012.18	-470.27	933.98	-924.69	1045.69	116.73	0.43	-0.43
97	9,196	0.50	2.10	9108.18	-469.54	934.27	-925.00	1045.62	116.68	0.35	0.00
98	9,291	0.70	352.90	9203.18	-468.55	934.21	-924.96	1045.13	116.64	0.23	0.21
99	9,386	1.10	336.30	9298.16	-467.14	933.77	-924.55	1044.10	116.58	0.50	0.42
100	9,481	1.30	339.50	9393.14	-465.29	933.03	-923.84	1042.61	116.51	0.22	0.21
101	9,577	1.20	337.80	9489.12	-463.34	932.27	-923.12	1041.06	116.43	0.11	-0.10



SURVEY CALCULATION PROGRAM

11/8/18 15:17

V09.04.02

Company:	RKI Exploration & Production, LLC
Well Name:	Bindel 4 Fee 001H - Original Wellbore
Location:	Eddy County, NM
Rig:	Orion Phoenix #10
Job Number:	MSMO-56550
API #:	30-015-45042

Magnetic Declination: 7.10 REFERENCED TO GRID NORTH

Vertical Section Azimuth: 268.89 Proposed Direction: 268.89

Survey Calculation Method: Minimum Curvature

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	10,188	0.8	316	10100	-452.48	927.52	-918.58

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
102	9,671	1.30	336.20	9583.10	-461.46	931.47	-922.35	1039.51	116.35	0.11	0.11
103	9,766	1.30	339.00	9678.07	-459.46	930.64	-921.57	1037.89	116.28	0.07	0.00
104	9,861	1.20	343.80	9773.05	-457.50	929.98	-920.94	1036.42	116.19	0.15	-0.11
105	9,955	1.10	341.60	9867.03	-455.70	929.42	-920.42	1035.13	116.12	0.12	-0.11
106	10,050	1.00	334.40	9962.02	-454.09	928.78	-919.80	1033.84	116.05	0.17	-0.11
107	10,128	0.80	316.00	10040.01	-453.08	928.10	-919.15	1032.79	116.02	0.45	-0.26
PTB:	10,188	0.80	316.00	10100.00	-452.48	927.52	-918.58	1032.01	116.00	0.00	0.00