

DIRECTIONAL SURVEY CALCULATION

MINIMUM CURVATURE METHOD

Well Name		Target Direction	Slot	N / S	E / W	Hole Size	Calculation by	Date			
Ellis 3119 2-19H		181.63	Coordinate					11/14/12			
Job Number		Type of Survey	Tie-in Point				Directional Co.				
0											
Measured Depth	Hole Angle	Hole Direction	Course Length	True Vertical Depth	Vertical Section	Total Coordinate		Dogleg Severity	Build Up %/100 ft	Walk/ %/100 ft	
						N + / S -	E + / W -				
0	0	0	0	0.00	0.00					<< TIE-IN POINT >>	
250	1	345	250	249.99	-1.67	1.68	-0.46	0.32	0.32	137.88	
500	1	345	250	499.97	-4.80	4.84	-1.32	0.04	-0.04	0.00	
744	1	345	244	743.96	-7.24	7.30	-2.00	0.08	-0.08	0.00	
1053	1	345	309	1,052.94	-10.08	10.17	-2.78	0.03	0.03	0.00	
1343	1	345	290	1,342.93	-12.99	13.09	-3.58	0.00	0.00	0.00	
1816	0	345	473	1,815.91	-16.15	16.28	-4.45	0.08	-0.08	0.00	
2291	0	322	475	2,290.91	-17.90	18.06	-5.44	0.03	0.02	-4.76	
2766	0	15	475	2,765.90	-20.07	20.24	-5.88	0.06	0.00	-64.72	
3241	0	128	475	3,240.90	-21.28	21.45	-5.57	0.06	-0.06	23.92	
4192	1	293	951	4,191.88	-23.39	23.71	-10.92	0.07	0.07	17.31	
4246	1	301	54	4,245.87	-23.65	23.98	-11.47	0.26	-0.19	15.56	
4287	0	286	41	4,286.87	-23.79	24.14	-11.79	0.58	-0.49	-36.59	
4318	2	202	31	4,317.87	-23.44	23.79	-12.04	4.88	3.55	-270.97	
4350	3	195	32	4,349.84	-22.23	22.59	-12.42	4.77	4.69	-23.75	
4382	5	191	32	4,381.77	-20.18	20.55	-12.87	4.75	4.69	-11.87	
4413	6	187	31	4,412.64	-17.31	17.69	-13.29	5.63	5.48	-13.87	
4445	9	187	32	4,444.37	-13.23	13.63	-13.79	7.19	7.19	2.50	
4477	11	186	32	4,475.90	-7.81	8.22	-14.41	8.17	8.13	-5.00	
4508	14	185	31	4,506.19	-1.22	1.64	-15.02	7.76	7.74	-2.58	
4540	16	184	32	4,537.12	6.97	-6.53	-15.63	8.51	8.44	-4.38	
4572	19	183	32	4,567.64	16.56	-16.11	-16.21	7.82	7.81	-0.94	
4603	21	183	31	4,596.78	27.14	-26.67	-16.77	8.08	8.06	-1.61	
4635	23	182	32	4,626.43	39.18	-38.70	-17.27	5.70	5.63	-2.50	
4667	25	183	32	4,655.72	52.06	-51.58	-17.80	4.77	4.69	2.19	
4698	27	182	31	4,683.68	65.43	-64.93	-18.39	6.79	6.77	-0.97	
4730	29	181	32	4,712.00	80.33	-79.82	-18.87	7.36	7.19	-3.44	
4762	31	181	32	4,739.71	96.32	-95.82	-19.11	6.99	6.88	-2.50	
4793	33	181	31	4,766.00	112.75	-112.25	-19.29	5.82	5.81	0.65	
4825	34	181	32	4,792.70	130.38	-129.88	-19.49	3.44	3.44	-0.31	
4857	36	181	32	4,818.93	148.71	-148.21	-19.73	5.96	5.94	0.94	
4888	37	181	31	4,843.85	167.15	-166.65	-20.00	3.88	3.87	-0.32	
4920	39	181	32	4,869.10	186.81	-186.30	-20.35	5.06	5.00	1.25	
4952	41	182	32	4,893.72	207.25	-206.74	-20.86	6.33	6.25	1.56	
4983	43	183	31	4,916.79	227.95	-227.42	-21.63	7.93	7.74	2.58	
5015	46	183	32	4,939.65	250.33	-249.78	-22.70	8.20	8.13	1.56	
5047	48	183	32	4,961.56	273.65	-273.08	-23.82	6.97	6.87	-1.56	
5078	48	182	31	4,982.30	296.69	-296.10	-24.74	1.16	0.65	-1.29	
5110	48	182	32	5,003.61	320.56	-319.96	-25.62	0.94	0.94	0.00	
5142	48	182	32	5,024.87	344.47	-343.86	-26.41	0.98	-0.31	-1.25	
5173	49	182	31	5,045.43	367.67	-367.04	-27.18	1.37	0.97	1.29	
5205	48	181	32	5,066.72	391.56	-390.93	-27.85	2.99	-1.88	-3.13	
5237	49	181	32	5,087.93	415.52	-414.89	-28.18	3.43	3.13	-1.87	
5268	52	180	31	5,107.71	439.38	-438.76	-28.35	8.72	8.71	-0.65	
5300	55	180	32	5,126.87	465.00	-464.38	-28.44	9.39	9.38	-0.63	
5332	58	180	32	5,144.60	491.62	-491.01	-28.53	10.33	10.31	0.63	
5363	61	181	31	5,160.26	518.36	-517.76	-28.74	10.68	10.65	0.97	
5395	65	182	32	5,174.81	546.86	-546.25	-29.34	10.84	10.31	3.75	
5427	68	183	32	5,187.62	576.18	-575.54	-30.47	11.48	11.25	2.50	
5458	72	182	31	5,198.07	605.35	-604.69	-31.74	13.56	13.55	-0.65	
5490	76	182	32	5,206.73	636.15	-635.47	-32.95	11.91	11.88	-0.94	
5522	80	182	32	5,213.38	667.45	-666.75	-34.07	11.25	11.25	-0.31	
5553	83	181	31	5,218.04	698.09	-697.38	-34.95	10.25	10.00	-2.26	
5585	86	181	32	5,221.25	729.92	-729.21	-35.51	8.64	8.44	-1.88	
5591	86	181	6	5,221.70	735.90	-735.19	-35.58	3.72	3.33	-1.67	
5673	88	181	82	5,226.06	817.77	-817.06	-36.36	2.81	2.80	-0.12	
5735	89	181	62	5,227.79	879.73	-879.04	-36.96	0.98	0.97	0.16	
5827	91	182	92	5,228.11	971.72	-971.01	-38.88	2.72	2.39	1.30	

Section 18
31S 19W

SEAN 3119 2-18H

Section 17
31S 19W

ELLIS 3119 3-19H SEAN 3119 3-18H

ELLIS 3119 2-19H

RUBY 3119 1A-20H RUBY 1-20H

Miss Entry: 5142'
-99.422448 37.336351

Top Perf: 5352'
-99.42245 37.335873

Section 19
31S 19W

Section 20
31S 19W

Bottom Perf: 9149'
-99.422699 37.32553

BHL: 9605'
-99.422651 37.324258

354 FSL 1064' FEL

Section 30
31S 19W

Section 29
31S 19W



Actual Bottom-Hole Location of Ellis 3119 2-19H
Comanche County, Kansas
T&R: 31S 19W
Section: 19, 1064 FEL & 354' FSL
Long/Lat: -99.422651 37.324258

1 in = 667 ft

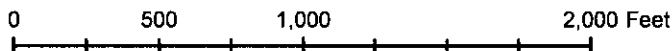


● Actual BH Location

* SandRidge Wells

○ Perf

□ Sections



Draftsman:

Aaron Birk

Draft Date: 11/20/2012

Drawing Name/Number:

Addendum_Ellis_2-19H .mxd

Coordinate System:

NAD 1927 State Plane
Kansas South FIPS: 1502