Survey Sheet

Company:	Dorado E&P	Job Number:	OK12147
Well Name:	Toews 25-9-4 1H	Mag Declination:	4.64E
Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature
Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
Tie In	0	0.0													
1	500	0.6	72.4	500	499.99	-0.70	0.79	N	2.50	E	2.62	72.38	0.12	0.12	14.48
2	1000	0.2	158.0	500	999.98	-0.57	0.78	N	5.32	E	5.37	81.70	0.12	-0.08	17.12
3	1500	0.8	209.4	500	1499.96	3.22	3.08	S	3.93	E	4.99	128.03	0.14	0.12	10.27
4	2000	0.6	213.6	500	1999.92	8.32	8.30	S	0.77	E	8.33	174.69	0.04	-0.04	0.85
5	2500	0.2	217.2	500	2499.91	11.12	11.17	S	1.20	W	11.24	186.15	0.08	-0.08	0.71
6	2925	0.2	287.6	425	2924.91	11.44	11.54	S	2.36	W	11.78	191.56	0.05	0.00	16.57
7	3161	0.3	87.2	236	3160.91	11.30	11.39	S	2.14	W	11.58	190.62	0.21	0.04	-84.92
8	3192	0.9	141.8	31	3191.90	11.49	11.57	S	1.90	W	11.73	189.34	2.47	1.94	176.13
9	3254	6.9	155.7	62	3253.73	15.34	15.35	S	0.07	W	15.35	180.25	9.73	9.68	22.42
10	3285	9.3	156.1	31	3284.42	19.39	19.34	S	1.71	E	19.42	174.94	7.74	7.74	1.29
11	3316	12.3	153.2	31	3314.87	24.72	24.58	S	4.22	E	24.94	170.26	9.83	9.68	-9.35
12	3347	14.9	153.3	31	3345.00	31.35	31.09	S	7.50	E	31.98	166.44	8.39	8.39	0.32
13	3378	18.5	155.4	31	3374.69	39.53	39.12	S	11.34	E	40.73	163.84	11.77	11.61	6.77
14	3409	21.3	156.2	31	3403.83	49.31	48.75	S	15.66	E	51.20	162.19	9.07	9.03	2.58
15	3440	23.9	156.6	31	3432.45	60.40	59.67	S	20.42	E	63.06	161.10	8.40	8.39	1.29
16	3471	27.0	157.0	31	3460.44	72.84	71.91	S	25.67	E	76.35	160.36	10.02	10.00	1.29
17	3502	29.4	156.3	31	3487.76	86.50	85.36	S	31.48	E	90.98	159.76	7.82	7.74	-2.26
18	3533	31.2	156.7	31	3514.52	101.07	99.70	S	37.71	E	106.59	159.28	5.84	5.81	1.29
19	3564	33.6	156.7	31	3540.69	116.56	114.95	S	44.28	E	123.19	158.93	7.74	7.74	0.00
20	3594	36.9	156.9	30	3565.19	132.72	130.87	S	51.10	E	140.49	158.67	11.01	11.00	0.67
21	3625	39.4	156.3	31	3589.56	150.57	148.44	S	58.71	E	159.63	158.42	8.15	8.06	-1.94
22	3656	41.4	157.5	31	3613.17	169.34	166.92	S	66.59	E	179.71	158.25	6.92	6.45	3.87
23	3687	44.4	157.8	31	3635.88	189.15	186.43	S	74.61	E	200.81	158.19	9.70	9.68	0.97
24	3718	47.4	157.9	31	3657.45	210.07	207.05	S	83.00	E	223.07	158.16	9.68	9.68	0.32
25	3749	49.6	157.5	31	3677.99	231.87	228.53	S	91.81	E	246.28	158.11	7.16	7.10	-1.29
26	3780	52.5	157.4	31	3697.47	254.47	250.79	S	101.06	E	270.39	158.05	9.36	9.35	-0.32
27	3811	56.9	157.9	31	3715.38	278.22	274.19	S	110.67	E	295.68	158.02	14.25	14.19	1.61
28	3842	60.3	158.2	31	3731.53	303.12	298.73	S	120.56	E	322.14	158.02	11.00	10.97	0.97
29	3873	60.9	158.6	31	3746.75	328.59	323.84	S	130.50	E	349.14	158.05	2.24	1.94	1.29
30	3904	61.6	157.9	31	3761.66	354.20	349.08	S	140.57	E	376.32	158.07	3.00	2.26	-2.26

Company:	**Dorado E&P**	**Job Number:**	**OK12147**
Well Name:	**Toews 25-9-4 1H**	**Mag Declination:**	**4.64E**
Location:	**Noble County**	**Directional Driller:**	**Doug Randall/Billy Erwin**
Rig Name:	**Duke 20**	**MWD Engineer 1:**	**Adam Pareja**
Leg:	**Main**	**MWD Engineer 2:**	**Tyler Hill**

Calculation Method:	**Minimum Curvature**
Proposed Azimuth:	**177.81**
Depth Reference:	**0**
Tie Into Provided By:	**0**

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
31	**3935**	**62.5**	**158.1**	31	3776.19	379.96	374.47	S	150.83	E	403.71	158.06	2.96	2.90	0.65
32	**3966**	**63.6**	**158.5**	31	3790.24	406.01	400.15	S	161.05	E	431.34	158.08	3.73	3.55	1.29
33	**3997**	**66.5**	**160.0**	31	3803.32	432.65	426.43	S	171.00	E	459.44	158.15	10.33	9.35	4.84
34	**4028**	**68.6**	**161.2**	31	3815.15	460.02	453.45	S	180.51	E	488.06	158.29	7.66	6.77	3.87
35	**4059**	**70.5**	**163.4**	31	3825.99	488.00	481.12	S	189.34	E	517.04	158.52	9.04	6.13	7.10
36	**4090**	**72.8**	**165.9**	31	3835.75	516.65	509.49	S	197.12	E	546.29	158.85	10.66	7.42	8.06
37	**4121**	**74.1**	**167.1**	31	3844.58	545.79	538.38	S	204.06	E	575.76	159.24	5.60	4.19	3.87
38	**4152**	**75.5**	**168.4**	31	3852.70	575.24	567.62	S	210.41	E	605.36	159.66	6.06	4.52	4.19
39	**4182**	**76.2**	**169.3**	30	3860.04	603.98	596.16	S	216.03	E	634.09	160.08	3.73	2.33	3.00
40	**4213**	**77.1**	**169.9**	31	3867.20	633.83	625.82	S	221.48	E	663.86	160.51	3.46	2.90	1.94
41	**4244**	**79.2**	**171.9**	31	3873.56	663.95	655.78	S	226.27	E	693.72	160.96	9.26	6.77	6.45
42	**4275**	**81.0**	**173.5**	31	3878.89	694.36	686.07	S	230.15	E	723.64	161.46	7.72	5.81	5.16
43	**4306**	**81.7**	**174.2**	31	3883.55	724.93	716.54	S	233.43	E	753.60	161.96	3.18	2.26	2.26
44	**4337**	**83.7**	**175.6**	31	3887.49	755.64	747.16	S	236.17	E	783.60	162.46	7.85	6.45	4.52
45	**4368**	**85.3**	**176.9**	31	3890.46	786.49	777.95	S	238.18	E	813.60	162.98	6.64	5.16	4.19
46	**4399**	**87.3**	**179.2**	31	3892.47	817.42	808.87	S	239.23	E	843.50	163.52	9.82	6.45	7.42
47	**4418**	**88.8**	**180.6**	19	3893.11	836.39	827.85	S	239.27	E	861.74	163.88	10.80	7.89	7.37
48	**4493**	**90.2**	**181.5**	75	3893.77	911.27	902.84	S	237.89	E	933.65	165.24	2.22	1.87	1.20
49	**4524**	**90.2**	**182.6**	31	3893.66	942.18	933.81	S	236.78	E	963.37	165.77	3.55	0.00	3.55
50	**4555**	**90.4**	**182.7**	31	3893.50	973.07	964.78	S	235.35	E	993.07	166.29	0.72	0.65	0.32
51	**4586**	**90.3**	**182.6**	31	3893.31	1003.96	995.75	S	233.92	E	1022.85	166.78	0.46	-0.32	-0.32
52	**4618**	**90.2**	**182.4**	32	3893.17	1035.85	1027.72	S	232.52	E	1053.69	167.25	0.70	-0.31	-0.62
53	**4649**	**90.1**	**182.3**	31	3893.09	1066.75	1058.69	S	231.25	E	1083.65	167.68	0.46	-0.32	-0.32
54	**4680**	**90.1**	**182.3**	31	3893.03	1097.66	1089.67	S	230.01	E	1113.68	168.08	0.00	0.00	0.00
55	**4711**	**90.4**	**182.3**	31	3892.90	1128.56	1120.64	S	228.76	E	1143.75	168.46	0.97	0.97	0.00
56	**4742**	**90.8**	**182.6**	31	3892.57	1159.46	1151.61	S	227.44	E	1173.85	168.83	1.61	1.29	0.97
57	**4773**	**90.0**	**182.3**	31	3892.35	1190.36	1182.58	S	226.11	E	1204.00	169.18	2.76	-2.58	-0.97
58	**4804**	**89.8**	**181.9**	31	3892.41	1221.27	1213.56	S	224.98	E	1234.24	169.50	1.44	-0.65	-1.29
59	**4835**	**89.7**	**181.9**	31	3892.54	1252.19	1244.54	S	223.95	E	1264.53	169.80	0.32	-0.32	0.00
60	**4866**	**89.6**	**182.3**	31	3892.73	1283.10	1275.52	S	222.81	E	1294.84	170.09	1.33	-0.32	1.29
61	**4896**	**89.6**	**182.7**	30	3892.94	1313.00	1305.49	S	221.50	E	1324.15	170.37	1.33	0.00	1.33
62	**4927**	**89.6**	**182.4**	31	3893.16	1343.90	1336.46	S	220.13	E	1354.47	170.65	0.97	0.00	-0.97
63	**4959**	**89.4**	**182.9**	32	3893.44	1375.78	1368.42	S	218.65	E	1385.78	170.92	1.68	-0.62	1.56
64	**4990**	**89.6**	**182.5**	31	3893.71	1406.67	1399.39	S	217.19	E	1416.14	171.18	1.44	0.65	-1.29
65	**5020**	**89.1**	**182.1**	30	3894.05	1436.57	1429.36	S	215.98	E	1445.59	171.41	2.13	-1.67	-1.33
66	**5051**	**88.9**	**181.9**	31	3894.59	1467.48	1460.34	S	214.90	E	1476.07	171.63	0.91	-0.65	-0.65
67	**5082**	**88.5**	**182.0**	31	3895.29	1498.40	1491.31	S	213.85	E	1506.57	171.84	1.33	-1.29	0.32
68	**5113**	**89.1**	**181.8**	31	3895.94	1529.31	1522.29	S	212.82	E	1537.09	172.04	2.04	1.94	-0.65
69	**5144**	**90.6**	**181.6**	31	3896.02	1560.24	1553.27	S	211.90	E	1567.66	172.23	4.88	4.84	-0.65

Company:	Dorado E&P	Job Number:	OK12147
Well Name:	Toews 25-9-4 1H	Mag Declination:	4.64E
Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature
Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
70	**5175**	**91.1**	**181.4**	31	3895.56	1591.17	1584.26	S	211.09	E	1598.26	172.41	1.74	1.61	-0.65
71	**5206**	**91.1**	**181.0**	31	3894.97	1622.11	1615.25	S	210.44	E	1628.90	172.58	1.29	0.00	-1.29
72	**5237**	**91.2**	**180.8**	31	3894.35	1653.06	1646.24	S	209.95	E	1659.57	172.73	0.72	0.32	-0.65
73	**5268**	**90.9**	**180.5**	31	3893.78	1684.01	1677.23	S	209.60	E	1690.28	172.88	1.37	-0.97	-0.97
74	**5299**	**90.7**	**180.0**	31	3893.35	1714.98	1708.23	S	209.46	E	1721.02	173.01	1.74	-0.65	-1.61
75	**5330**	**90.4**	**179.8**	31	3893.05	1745.96	1739.22	S	209.52	E	1751.80	173.13	1.16	-0.97	-0.65
76	**5361**	**90.5**	**179.8**	31	3892.81	1776.94	1770.22	S	209.63	E	1782.59	173.25	0.32	0.32	0.00
77	**5392**	**90.5**	**179.6**	31	3892.53	1807.92	1801.22	S	209.79	E	1813.40	173.36	0.65	0.00	-0.65
78	**5423**	**90.7**	**179.8**	31	3892.21	1838.90	1832.22	S	209.95	E	1844.21	173.46	0.91	0.65	0.65
79	**5454**	**91.2**	**179.5**	31	3891.70	1869.88	1863.22	S	210.14	E	1875.03	173.57	1.88	1.61	-0.97
80	**5485**	**90.5**	**180.1**	31	3891.24	1900.86	1894.21	S	210.25	E	1905.84	173.67	2.97	-2.26	1.94
81	**5515**	**88.9**	**179.6**	30	3891.39	1930.84	1924.21	S	210.33	E	1935.67	173.76	5.59	-5.33	-1.67
82	**5546**	**88.5**	**179.5**	31	3892.10	1961.82	1955.20	S	210.57	E	1966.51	173.85	1.33	-1.29	-0.32
83	**5577**	**88.4**	**180.2**	31	3892.94	1992.79	1986.19	S	210.65	E	1997.33	173.95	2.28	-0.32	2.26
84	**5609**	**89.3**	**179.7**	32	3893.58	2024.76	2018.18	S	210.68	E	2029.15	174.04	3.22	2.81	-1.56
85	**5639**	**89.3**	**180.0**	30	3893.94	2054.74	2048.18	S	210.76	E	2058.99	174.12	1.00	0.00	1.00
86	**5670**	**89.6**	**179.7**	31	3894.24	2085.72	2079.18	S	210.84	E	2089.84	174.21	1.37	0.97	-0.97
87	**5701**	**89.4**	**179.7**	31	3894.51	2116.70	2110.18	S	211.00	E	2120.70	174.29	0.65	-0.65	0.00
88	**5732**	**89.0**	**179.6**	31	3894.94	2147.68	2141.17	S	211.19	E	2151.56	174.37	1.33	-1.29	-0.32
89	**5763**	**89.5**	**179.1**	31	3895.35	2178.67	2172.17	S	211.54	E	2182.44	174.44	2.28	1.61	-1.61
90	**5794**	**89.6**	**179.2**	31	3895.59	2209.66	2203.16	S	212.00	E	2213.34	174.50	0.46	0.32	0.32
91	**5825**	**89.7**	**179.0**	31	3895.78	2240.65	2234.16	S	212.49	E	2244.24	174.57	0.72	0.32	-0.65
92	**5856**	**89.4**	**178.9**	31	3896.03	2271.64	2265.15	S	213.06	E	2275.15	174.63	1.02	-0.97	-0.32
93	**5887**	**89.3**	**179.3**	31	3896.38	2302.63	2296.15	S	213.54	E	2306.06	174.69	1.33	-0.32	1.29
94	**5918**	**90.6**	**178.9**	31	3896.41	2333.62	2327.14	S	214.03	E	2336.96	174.75	4.39	4.19	-1.29
95	**5949**	**90.8**	**178.8**	31	3896.03	2364.61	2358.13	S	214.65	E	2367.88	174.80	0.72	0.65	-0.32
96	**5980**	**90.7**	**178.8**	31	3895.62	2395.61	2389.12	S	215.30	E	2398.81	174.85	0.32	-0.32	0.00
97	**6011**	**90.8**	**179.0**	31	3895.22	2426.60	2420.12	S	215.90	E	2429.73	174.90	0.72	0.32	0.65
98	**6042**	**90.9**	**178.7**	31	3894.76	2457.59	2451.11	S	216.52	E	2460.65	174.95	1.02	0.32	-0.97
99	**6073**	**91.0**	**178.7**	31	3894.24	2488.58	2482.09	S	217.22	E	2491.58	175.00	0.32	0.32	0.00
100	**6104**	**91.5**	**178.9**	31	3893.57	2519.57	2513.08	S	217.87	E	2522.51	175.05	1.74	1.61	0.65
101	**6135**	**90.5**	**179.8**	31	3893.02	2550.55	2544.07	S	218.22	E	2553.41	175.10	4.34	-3.23	2.90
102	**6165**	**90.3**	**179.8**	30	3892.81	2580.53	2574.07	S	218.33	E	2583.31	175.15	0.67	-0.67	0.00
103	**6196**	**89.8**	**179.2**	31	3892.79	2611.52	2605.07	S	218.60	E	2614.23	175.20	2.52	-1.61	-1.94
104	**6227**	**90.0**	**179.6**	31	3892.84	2642.51	2636.07	S	218.92	E	2645.14	175.25	1.44	0.65	1.29
105	**6258**	**90.2**	**179.2**	31	3892.79	2673.50	2667.07	S	219.25	E	2676.06	175.30	1.44	0.65	-1.29
106	**6289**	**90.1**	**178.8**	31	3892.71	2704.49	2698.06	S	219.79	E	2707.00	175.34	1.33	-0.32	-1.29
107	**6320**	**90.3**	**179.0**	31	3892.60	2735.48	2729.06	S	220.38	E	2737.94	175.38	0.91	0.65	0.65
108	**6351**	**90.6**	**179.1**	31	3892.35	2766.48	2760.05	S	220.90	E	2768.88	175.42	1.02	0.97	0.32

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Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature

Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
109	6382	89.9	178.6	31	3892.22	2797.47	2791.04	S	221.52	E	2799.82	175.46	2.77	-2.26	-1.61
110	6413	89.8	178.3	31	3892.30	2828.47	2822.03	S	222.36	E	2830.78	175.49	1.02	-0.32	-0.97
111	6444	88.8	178.8	31	3892.68	2859.46	2853.02	S	223.14	E	2861.73	175.53	3.61	-3.23	1.61
112	6475	88.4	178.1	31	3893.44	2890.45	2884.00	S	223.98	E	2892.68	175.56	2.60	-1.29	-2.26
113	6506	88.8	178.5	31	3894.19	2921.44	2914.98	S	224.90	E	2923.64	175.59	1.82	1.29	1.29
114	6537	88.7	178.5	31	3894.87	2952.43	2945.96	S	225.71	E	2954.59	175.62	0.32	-0.32	0.00
115	6568	88.8	178.9	31	3895.55	2983.42	2976.94	S	226.42	E	2985.54	175.65	1.33	0.32	1.29
116	6599	89.3	178.3	31	3896.06	3014.41	3007.93	S	227.17	E	3016.49	175.68	2.52	1.61	-1.94
117	6630	89.2	178.3	31	3896.47	3045.41	3038.91	S	228.09	E	3047.46	175.71	0.32	-0.32	0.00
118	6661	89.1	177.3	31	3896.93	3076.40	3069.88	S	229.28	E	3078.44	175.73	3.24	-0.32	-3.23
119	6692	90.0	177.0	31	3897.17	3107.40	3100.85	S	230.82	E	3109.42	175.74	3.06	2.90	-0.97
120	6723	90.2	176.9	31	3897.12	3138.40	3131.80	S	232.47	E	3140.42	175.75	0.72	0.65	-0.32
121	6754	90.6	177.3	31	3896.90	3169.39	3162.76	S	234.04	E	3171.41	175.77	1.82	1.29	1.29
122	6785	90.5	176.8	31	3896.60	3200.39	3193.72	S	235.64	E	3202.40	175.78	1.64	-0.32	-1.61
123	6816	90.6	176.9	31	3896.30	3231.38	3224.67	S	237.34	E	3233.39	175.79	0.46	0.32	0.32
124	6847	90.5	176.6	31	3896.01	3262.38	3255.62	S	239.10	E	3264.39	175.80	1.02	-0.32	-0.97
125	6878	91.4	176.1	31	3895.49	3293.36	3286.55	S	241.07	E	3295.38	175.80	3.32	2.90	-1.61
126	6909	90.9	176.8	31	3894.87	3324.35	3317.48	S	242.99	E	3326.37	175.81	2.77	-1.61	2.26
127	6940	91.1	176.3	31	3894.33	3355.33	3348.42	S	244.85	E	3357.36	175.82	1.74	0.65	-1.61
128	6971	90.7	176.3	31	3893.84	3386.32	3379.36	S	246.85	E	3388.36	175.82	1.29	-1.29	0.00
129	7002	89.5	177.2	31	3893.79	3417.31	3410.30	S	248.61	E	3419.35	175.83	4.84	-3.87	2.90
130	7033	89.5	177.6	31	3894.06	3448.31	3441.27	S	250.02	E	3450.34	175.84	1.29	0.00	1.29
131	7064	89.5	177.7	31	3894.33	3479.31	3472.24	S	251.29	E	3481.33	175.86	0.32	0.00	0.32
132	7095	89.7	176.9	31	3894.55	3510.31	3503.21	S	252.75	E	3512.31	175.87	2.66	0.65	-2.58
133	7125	90.1	178.1	30	3894.60	3540.31	3533.18	S	254.06	E	3542.30	175.89	4.22	1.33	4.00
134	7156	90.0	178.8	31	3894.57	3571.31	3564.17	S	254.90	E	3573.27	175.91	2.28	-0.32	2.26
135	7187	89.1	179.7	31	3894.81	3602.29	3595.16	S	255.30	E	3604.22	175.94	4.11	-2.90	2.90
136	7218	89.1	180.8	31	3895.30	3633.26	3626.16	S	255.17	E	3635.13	175.97	3.55	0.00	3.55
137	7249	89.5	181.0	31	3895.68	3664.21	3657.15	S	254.68	E	3666.01	176.02	1.44	1.29	0.65
138	7280	89.4	181.3	31	3895.98	3695.16	3688.15	S	254.06	E	3696.89	176.06	1.02	-0.32	0.97
139	7311	89.7	180.7	31	3896.22	3726.11	3719.14	S	253.52	E	3727.77	176.10	2.16	0.97	-1.94
140	7342	89.7	180.2	31	3896.38	3757.08	3750.14	S	253.27	E	3758.68	176.14	1.61	0.00	-1.61
141	7373	90.0	180.0	31	3896.46	3788.05	3781.14	S	253.22	E	3789.61	176.17	1.16	0.97	-0.65
142	7404	90.3	179.6	31	3896.38	3819.03	3812.14	S	253.33	E	3820.55	176.20	1.61	0.97	-1.29
143	7435	89.4	180.7	31	3896.46	3850.01	3843.14	S	253.25	E	3851.47	176.23	4.58	-2.90	3.55
144	7465	89.0	180.1	30	3896.88	3879.97	3873.13	S	253.04	E	3881.39	176.26	2.40	-1.33	-2.00
145	7496	88.6	179.9	31	3897.53	3910.94	3904.13	S	253.04	E	3912.32	176.29	1.44	-1.29	-0.65
146	7527	89.0	179.9	31	3898.18	3941.92	3935.12	S	253.09	E	3943.25	176.32	1.29	1.29	0.00
147	7557	90.0	180.3	30	3898.44	3971.89	3965.12	S	253.04	E	3973.18	176.35	3.59	3.33	1.33

Company:	Dorado E&P	Job Number:	OK12147
Well Name:	Toews 25-9-4 1H	Mag Declination:	4.64E
Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature
Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
148	**7588**	**90.2**	**180.6**	31	3898.39	4002.86	3996.12	S	252.80	E	4004.10	176.38	1.16	0.65	0.97
149	**7619**	**90.1**	**180.6**	31	3898.31	4033.82	4027.11	S	252.47	E	4035.02	176.41	0.32	-0.32	0.00
150	**7650**	**89.7**	**180.9**	31	3898.36	4064.78	4058.11	S	252.07	E	4065.93	176.45	1.61	-1.29	0.97
151	**7682**	**89.0**	**181.4**	32	3898.73	4096.72	4090.10	S	251.42	E	4097.82	176.48	2.69	-2.19	1.56
152	**7712**	**89.1**	**181.8**	30	3899.22	4126.65	4120.09	S	250.59	E	4127.70	176.52	1.37	0.33	1.33
153	**7743**	**89.0**	**182.2**	31	3899.74	4157.57	4151.06	S	249.50	E	4158.56	176.56	1.33	-0.32	1.29
154	**7774**	**89.0**	**181.5**	31	3900.28	4188.48	4182.04	S	248.50	E	4189.42	176.60	2.26	0.00	-2.26
155	**7805**	**89.2**	**181.9**	31	3900.77	4219.41	4213.02	S	247.58	E	4220.29	176.64	1.44	0.65	1.29
156	**7836**	**89.9**	**182.0**	31	3901.01	4250.33	4244.01	S	246.53	E	4251.16	176.68	2.28	2.26	0.32
157	**7867**	**90.3**	**182.1**	31	3900.95	4281.24	4274.99	S	245.42	E	4282.02	176.71	1.33	1.29	0.32
158	**7898**	**90.5**	**182.5**	31	3900.74	4312.15	4305.96	S	244.18	E	4312.88	176.75	1.44	0.65	1.29
159	**7929**	**91.1**	**181.3**	31	3900.31	4343.06	4336.94	S	243.15	E	4343.75	176.79	4.33	1.94	-3.87

Company:	**Dorado E&P**	**Job Number:**	**OK12147**
Well Name:	**Toews 25-9-4 1H**	**Mag Declination:**	**4.64E**
Location:	**Noble County**	**Directional Driller:**	**Doug Randall/Billy Erwin**
Rig Name:	**Duke 20**	**MWD Engineer 1:**	**Adam Pareja**
Leg:	**Main**	**MWD Engineer 2:**	**Tyler Hill**

Calculation Method:	**Minimum Curvature**
Proposed Azimuth:	**177.81**
Depth Reference:	**0**
Tie Into Provided By:	**0**

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
160	**7960**	**91.4**	**181.5**	31	3899.63	4373.99	4367.92	S	242.39	E	4374.64	176.82	1.16	0.97	0.65
161	**7991**	**91.7**	**181.2**	31	3898.79	4404.92	4398.90	S	241.66	E	4405.54	176.86	1.37	0.97	-0.97
162	**8022**	**92.0**	**181.5**	31	3897.79	4435.85	4429.88	S	240.93	E	4436.42	176.89	1.37	0.97	0.97
163	**8053**	**92.1**	**181.3**	31	3896.68	4466.77	4460.85	S	240.17	E	4467.31	176.92	0.72	0.32	-0.65
164	**8083**	**91.0**	**181.3**	30	3895.87	4496.70	4490.83	S	239.49	E	4497.21	176.95	3.67	-3.67	0.00
165	**8114**	**91.1**	**181.4**	31	3895.30	4527.64	4521.82	S	238.76	E	4528.11	176.98	0.46	0.32	0.32
166	**8145**	**90.5**	**182.1**	31	3894.87	4558.56	4552.80	S	237.82	E	4559.00	177.01	2.97	-1.94	2.26
167	**8176**	**89.1**	**181.8**	31	3894.98	4589.48	4583.78	S	236.76	E	4589.89	177.04	4.62	-4.52	-0.97
168	**8207**	**88.9**	**181.6**	31	3895.52	4620.40	4614.76	S	235.84	E	4620.78	177.07	0.91	-0.65	-0.65
169	**8238**	**88.4**	**181.5**	31	3896.25	4651.33	4645.74	S	235.00	E	4651.68	177.10	1.64	-1.61	-0.32
170	**8269**	**88.4**	**181.6**	31	3897.11	4682.25	4676.72	S	234.17	E	4682.58	177.13	0.32	0.00	0.32
171	**8300**	**88.5**	**181.5**	31	3897.95	4713.17	4707.69	S	233.33	E	4713.47	177.16	0.46	0.32	-0.32
172	**8331**	**88.6**	**181.7**	31	3898.74	4744.09	4738.67	S	232.46	E	4744.37	177.19	0.72	0.32	0.65
173	**8362**	**89.0**	**181.0**	31	3899.39	4775.03	4769.66	S	231.73	E	4775.28	177.22	2.60	1.29	-2.26
174	**8393**	**88.6**	**180.4**	31	3900.04	4805.98	4800.65	S	231.35	E	4806.22	177.24	2.33	-1.29	-1.94
175	**8423**	**88.1**	**180.9**	30	3900.90	4835.93	4830.63	S	231.01	E	4836.15	177.26	2.36	-1.67	1.67
176	**8454**	**88.3**	**180.9**	31	3901.87	4866.87	4861.61	S	230.53	E	4867.08	177.29	0.65	0.65	0.00
177	**8485**	**88.0**	**180.2**	31	3902.87	4897.82	4892.60	S	230.23	E	4898.01	177.31	2.46	-0.97	-2.26
178	**8518**	**88.6**	**180.9**	33	3903.85	4930.77	4925.58	S	229.91	E	4930.94	177.33	2.79	1.82	2.12
179	**8549**	**89.6**	**180.4**	31	3904.34	4961.72	4956.57	S	229.56	E	4961.89	177.35	3.61	3.23	-1.61
180	**8580**	**89.9**	**180.1**	31	3904.47	4992.70	4987.57	S	229.43	E	4992.85	177.37	1.37	0.97	-0.97
181	**8611**	**89.6**	**180.2**	31	3904.61	5023.67	5018.57	S	229.34	E	5023.81	177.38	1.02	-0.97	0.32
182	**8641**	**88.9**	**180.1**	30	3905.00	5053.64	5048.57	S	229.27	E	5053.77	177.40	2.36	-2.33	-0.33
183	**8672**	**90.1**	**180.5**	31	3905.27	5084.61	5079.57	S	229.10	E	5084.73	177.42	4.08	3.87	1.29
184	**8703**	**90.6**	**180.6**	31	3905.08	5115.58	5110.56	S	228.81	E	5115.68	177.44	1.64	1.61	0.32
185	**8734**	**90.7**	**181.1**	31	3904.73	5146.53	5141.56	S	228.35	E	5146.63	177.46	1.64	0.32	1.61
186	**8765**	**90.4**	**180.3**	31	3904.43	5177.49	5172.56	S	227.97	E	5177.58	177.48	2.76	-0.97	-2.58
187	**8796**	**90.2**	**179.8**	31	3904.27	5208.46	5203.55	S	227.94	E	5208.54	177.49	1.74	-0.65	-1.61
188	**8827**	**90.2**	**180.0**	31	3904.16	5239.44	5234.55	S	227.99	E	5239.52	177.51	0.65	0.00	0.65
189	**8858**	**90.0**	**179.5**	31	3904.11	5270.43	5265.55	S	228.13	E	5270.49	177.52	1.74	-0.65	-1.61
190	**8889**	**89.6**	**179.2**	31	3904.22	5301.41	5296.55	S	228.48	E	5301.48	177.53	1.61	-1.29	-0.97
191	**8920**	**89.4**	**179.4**	31	3904.49	5332.40	5327.55	S	228.86	E	5332.46	177.54	0.91	-0.65	0.65
192	**8952**	**90.1**	**178.9**	32	3904.63	5364.39	5359.54	S	229.34	E	5364.45	177.55	2.69	2.19	-1.56
193	**8982**	**90.5**	**178.9**	30	3904.47	5394.39	5389.54	S	229.91	E	5394.44	177.56	1.33	1.33	0.00
194	**9013**	**90.7**	**179.3**	31	3904.15	5425.38	5420.53	S	230.40	E	5425.43	177.57	1.44	0.65	1.29
195	**9043**	**90.9**	**179.9**	30	3903.73	5455.36	5450.53	S	230.61	E	5455.40	177.58	2.11	0.67	2.00
196	**9074**	**91.4**	**179.7**	31	3903.11	5486.33	5481.52	S	230.72	E	5486.38	177.59	1.74	1.61	-0.65
197	**9105**	**91.4**	**179.4**	31	3902.35	5517.31	5512.51	S	230.96	E	5517.35	177.60	0.97	0.00	-0.97
198	**9136**	**89.8**	**179.0**	31	3902.02	5548.30	5543.51	S	231.39	E	5548.33	177.61	5.32	-5.16	-1.29

Company:	Dorado E&P	Job Number:	OK12147
Well Name:	Toews 25-9-4 1H	Mag Declination:	4.64E
Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature
Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
199	**9167**	**90.0**	**178.9**	31	3902.08	5579.29	5574.50	S	231.96	E	5579.32	177.62	0.72	0.65	-0.32
200	**9198**	**89.9**	**179.0**	31	3902.10	5610.29	5605.50	S	232.53	E	5610.32	177.62	0.46	-0.32	0.32
201	**9229**	**89.6**	**179.4**	31	3902.24	5641.28	5636.49	S	232.96	E	5641.30	177.63	1.61	-0.97	1.29

Company:	Dorado E&P	Job Number:	OK12147
Well Name:	Toews 25-9-4 1H	Mag Declination:	4.64E
Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature
Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)		Coordinates E/W (ft)		Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
202	**9260**	**89.4**	**179.0**	31	3902.51	5672.27	5667.49	S	233.39	E	5672.29	177.64	1.44	-0.65	-1.29
203	**9291**	**89.1**	**179.3**	31	3902.92	5703.26	5698.48	S	233.85	E	5703.28	177.65	1.37	-0.97	0.97
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Company:	Dorado E&P	Job Number:	OK12147
Well Name:	Toews 25-9-4 1H	Mag Declination:	4.64E
Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature
Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
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Company:	Dorado E&P	Job Number:	OK12147
Well Name:	Toews 25-9-4 1H	Mag Declination:	4.64E
Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature
Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
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Company:	Dorado E&P	Job Number:	OK12147
Well Name:	Toews 25-9-4 1H	Mag Declination:	4.64E
Location:	Noble County	Directional Driller:	Doug Randall/Billy Erwin
Rig Name:	Duke 20	MWD Engineer 1:	Adam Pareja
Leg:	Main	MWD Engineer 2:	Tyler Hill

Calculation Method:	Minimum Curvature
Proposed Azimuth:	177.81
Depth Reference:	0
Tie Into Provided By:	0

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	Coordinates E/W (ft)	Closure Distance (ft)	Closure Direction Azimuth	Dogleg Severity (ft/100')	Build Rate (d/100')	Walk Rate (d/100')
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553													