

HOBBS OCD

MAR 26 2015

RECEIVED



Reservoir Development
PathFinder, a Schlumberger Company
9200 West Reno Avenue
Oklahoma City, Oklahoma 73127 USA
Phone: (405) 789-1515
Fax: (405) 789-1519

December 17, 2014

Cimarex
600 N MARIENFELD STREET SUITE 600

MIDLAND, TX 79701

Re:

Sec 30, T23S, R33E Lea NM
N 32.26942 W 103.60927

CLIENT: Cimarex Energy Co.
WELL: Triste Draw 30 Federal 3H
FIELD: Bone Spring
RIG: Cactus 101
COUNTY: Lea
API NO: 30-025-41176
JOB NO: 14MLD0494

Enclosed, please find the original copy of the survey performed on the referenced well by PathFinder, a division of Schlumberger Technology Corporation.
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Jacob Collinsworth MWD	Triste Draw 30 Federal 3H Original Hole	10378.00 Ft to 15334.00 Ft	November 29, 2014 to December 12, 2014	SlimPulse

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Joseph Hogan
Field Service Manager

MAR 31 2015

Reservoir Development

PathFinder, a Schlumberger Company
9200 West Reno Avenue
Oklahoma City, Oklahoma 73127 USA
Phone: (405) 789-1515
Fax: (405) 789-1519



Well Reference:

Sec 30, T23S, R33E Lea NM
N 32.26942 W 103.60927

I, Jacob Collinsworth certify that; I am employed by PathFinder, a division of Schlumberger Technology Corporation; that I did on the day(s) of November 29, 2014 through December 12, 2014, conduct or supervise the taking of the SlimPulse surveys from a depth of 10378.00 feet to a depth of 15334.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by PathFinder, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of Cimarex Energy Co. for the Triste Draw 30 Federal 3H Well (Original Hole) API No. 30-025-41176 and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by PathFinder, a division of Schlumberger Technology Corporation.

By
Jacob Collinsworth
MWD

Subscribed and Sworn to before me this 17 day of December (month) 2014 (yr)

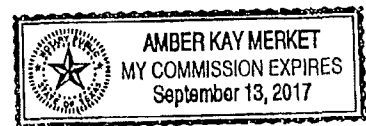
My Commission expires:

September 13, 2017

Amber Kay Merket
Notary Public

(signature)

Midland County, Texas
(County State)



12-Jan-2015

SCHUMBERGER
Survey Report

Client: Cimarex Energy Co.
Field: Bone Spring

Well: Frise Draw 30 Federal 3H
API number: 30-025-41176
Engineer: J. Collinsworth

County: Lea
State: New Mexico
Rig: Cactus 101

Survey calculation methods:
Method for positions: Minimum curvature
Method for DLS: Lubinski

Depth reference
Permanent datum: MSL
Driller's Depth

GL above permanent: 3694.00
KB above permanent: 3712.00
DF above permanent: 3712.00

Vertical section origin
Latitude (+N/-): 0.00 ft
Departure (+E/-): 0.00 ft

Grid Coordinates
NAD83 New Mexico State Planes, Eastern Zone, US Foot
X: 765133.50 ft
Y: 462502.70 ft

Azimuth from Vsect Origin to target: 359.58 degrees

MWD Survey Reference Criteria

Run 1
Calculation Date: 2-Dec-2014
Location G.: 998.43942 mgn
Tolerance G.: 2.50 mgn
Location B.: 48414.66 nt
Tolerance B.: 300.00 nt
Magnetic Dip: 60.105 degrees
Tolerance Dip: 0.45 degrees

Run 2
Calculation Date: 5-Dec-2014
Location G.: 998.43942 mgn
Tolerance G.: 2.50 mgn
Location B.: 48414.66 nt
Tolerance B.: 300.00 nt
Magnetic Dip: 60.105 degrees
Tolerance Dip: 0.45 degrees

Run 3
Calculation Date: 7-Dec-2014
Location G.: 998.4015 mgn
Tolerance G.: 2.50 mgn
Location B.: 48414.66 nt
Tolerance B.: 300.00 nt
Magnetic Dip: 60.105 degrees
Tolerance Dip: 0.45 degrees

Run 4
Calculation Date: 11-Dec-2014
Location G.: 998.4015 mgn
Tolerance G.: 2.50 mgn
Location B.: 48414.66 nt
Tolerance B.: 300.00 nt
Magnetic Dip: 60.105 degrees
Tolerance Dip: 0.45 degrees

HDSM Model: 2014

Run 1
Magnetic dec (+E/-W-): 7.136 degrees
Grid Conv (+E/-W-): 0.38659 degrees
Total Azim Corr (+E/-W-): 6.74941 degrees

Run 2
Magnetic dec (+E/-W-): 7.136 degrees
Grid Conv (+E/-W-): 0.38659 degrees
Total Azim Corr (+E/-W-): 6.74941 degrees

Run 3
Magnetic dec (+E/-W-): 7.136 degrees
Grid Conv (+E/-W-): 0.38659 degrees
Total Azim Corr (+E/-W-): 6.74941 degrees

Run 4
Magnetic dec (+E/-W-): 7.136 degrees
Grid Conv (+E/-W-): 0.38659 degrees
Total Azim Corr (+E/-W-): 6.74941 degrees

Survey Correction Index Description
0 = Uncorrected
1 = Sag Corrected
2 = DMAg Corrected
3 = Sag + DMAg Corrected

Survey List
Seq M/D Incl Azim Course TVD V Sec N/S E/W Closure at Azi DLS Tool Correction
(ft) (deg) (ft) (ft) (ft) (ft) (ft) (deg/100ft)

96	9023.00	0.49	233.38	98.00	9021.89	-45.40	-45.33	9.86	46.89887	167.73	0.19	SingleShot	0
97	9117.00	0.88	251.01	94.00	9115.89	-45.87	-45.81	8.85	46.6527	169.06	0.47	SingleShot	0
98	9213.00	0.88	270.66	96.00	9211.88	-46.09	-46.04	7.42	46.6304	170.85	0.31	SingleShot	0
99	9309.00	0.80	284.36	96.00	9307.86	-46.14	-46.09	6.01	46.48467	172.57	0.13	SingleShot	0
100	9403.00	1.10	245.01	94.00	9401.85	-46.57	-46.54	4.54	46.76093	174.43	0.46	SingleShot	0
101	9470.00	1.10	237.79	69.00	9470.84	-47.20	-47.17	3.38	47.29369	175.90	0.20	SingleShot	0
102	9566.00	0.88	247.39	94.00	9564.83	-47.94	-47.93	1.95	47.97083	177.67	0.29	SingleShot	0
103	9661.00	0.80	266.78	95.00	9659.82	-48.25	-48.25	0.62	48.25778	179.27	0.31	SingleShot	0
104	9753.00	0.71	307.59	92.00	9751.81	-47.93	-47.94	-0.48	47.93959	180.57	0.58	SingleShot	0
105	9848.00	0.80	301.86	95.00	9846.80	-47.22	-47.23	-1.51	47.75214	181.83	0.12	SingleShot	0
106	9942.00	1.59	282.12	94.00	9940.78	-46.58	-46.61	-3.34	46.72737	184.10	0.94	SingleShot	0
107	10036.00	1.81	282.12	94.00	10034.74	-45.98	-46.02	-6.07	46.42042	187.51	0.23	SingleShot	0
108	10131.00	1.72	280.00	95.00	10129.69	-45.39	-45.46	-8.94	46.32992	191.12	0.12	SingleShot	0
109	10226.00	1.41	291.02	95.00	10224.66	-44.71	-44.79	-11.43	46.22879	194.32	0.45	SingleShot	0
110	10324.00	1.19	284.01	98.00	10322.63	-44.01	-44.11	-13.54	46.14671	197.07	0.28	SingleShot	0
111	10378.00	1.04	276.23	54.00	10376.62	-43.82	-43.93	-14.58	46.38063	198.36	0.39	SingleShot	0
112	10411.00	2.45	359.37	33.00	10409.61	-43.08	-43.19	-14.88	45.88082	199.01	7.70	SingleShot	0
113	10443.00	6.41	7.43	32.00	10441.51	-40.62	-40.73	-14.66	43.28994	199.79	12.52	SingleShot	0
114	10474.00	11.34	2.42	31.00	10472.12	-35.81	-35.91	-14.30	38.65749	201.72	16.72	SingleShot	0
115	10506.00	16.12	356.22	32.00	10503.18	-28.17	-28.28	-14.46	31.76102	207.09	15.03	SingleShot	0
116	10537.00	18.90	353.27	31.00	10532.74	-18.88	-19.00	-15.33	24.41256	218.91	9.39	SingleShot	0
117	10569.00	19.48	351.98	32.00	10562.97	-8.44	-8.57	-16.69	18.75654	242.83	2.26	SingleShot	0
118	10600.00	20.42	351.00	31.00	10592.11	2.03	1.89	-18.25	18.35209	275.93	3.21	SingleShot	0
119	10631.00	21.43	350.88	31.00	10620.96	13.22	13.08	-20.04	23.52987	303.13	6.98	SingleShot	0
120	10664.00	24.69	352.00	33.00	10651.21	26.28	26.12	-22.00	34.14586	319.90	6.99	SingleShot	0
121	10695.00	25.53	352.53	31.00	10679.28	39.33	39.15	-23.76	45.80109	328.74	2.80	SingleShot	0
122	10726.00	26.73	352.58	31.00	10707.11	52.88	52.69	-25.53	58.55046	334.15	3.86	SingleShot	0
123	10758.00	28.56	353.67	32.00	10735.46	67.63	67.43	-27.31	72.74852	337.95	5.95	SingleShot	0
124	10791.00	32.11	354.98	33.00	10735.94	84.22	84.01	-28.94	88.85914	340.99	10.94	SingleShot	0
125	10822.00	36.75	355.99	31.00	10789.50	101.70	101.48	-30.31	105.91236	343.37	15.07	SingleShot	0
126	10854.00	41.10	356.90	32.00	10814.39	121.77	121.54	-31.55	125.57281	345.45	13.73	SingleShot	0
127	10885.00	46.20	357.10	31.00	10836.81	143.14	142.91	-32.67	146.59355	347.12	16.45	SingleShot	0
128	10917.00	50.71	357.85	32.00	10858.03	167.07	166.83	-33.72	170.20171	348.57	14.21	SingleShot	0
129	10948.00	53.02	358.38	31.00	10877.17	191.44	191.20	-34.53	194.28758	349.76	7.55	SingleShot	0
130	10980.00	54.81	358.89	32.00	10896.02	217.30	217.05	-35.14	219.87319	350.80	5.76	SingleShot	0
131	11011.00	57.47	359.04	31.00	10913.29	243.04	242.78	-35.60	245.37913	351.66	8.58	SingleShot	0
132	11043.00	60.91	0.28	32.00	10979.67	270.52	270.26	-35.76	272.61735	352.46	11.27	SingleShot	0
133	11074.00	63.88	0.83	31.00	10944.04	297.98	297.73	-35.49	299.8363	353.20	9.68	SingleShot	0
134	11106.00	66.85	0.97	32.00	10957.37	327.06	326.81	-35.03	338.68093	353.88	9.30	SingleShot	0
135	11138.00	70.28	1.44	32.00	10969.07	356.83	356.58	-34.41	358.24023	354.49	10.81	SingleShot	0
136	11169.00	74.06	2.82	31.00	10978.56	386.30	386.07	-33.31	387.50275	355.07	12.92	SingleShot	0
137	11201.00	77.38	2.95	32.00	10986.45	417.26	417.04	-31.75	418.24316	355.65	10.38	SingleShot	0
138	11232.00	79.83	2.85	31.00	10992.57	447.60	447.38	-30.21	448.40338	356.14	7.90	SingleShot	0
139	11264.00	82.24	3.23	32.00	10997.56	479.15	478.95	-28.64	479.80776	356.58	7.52	SingleShot	0
140	11295.00	84.70	3.33	31.00	11001.07	509.89	509.71	-27.01	510.42215	356.97	8.24	SingleShot	0
141	11327.00	86.84	3.75	32.00	11003.41	541.74	541.57	-25.21	542.15449	357.34	6.48	SingleShot	0
142	11359.00	88.25	3.71	32.00	11004.79	573.64	573.48	-23.27	573.95064	357.68	4.63	SingleShot	0
143	11395.00	88.56	3.98	36.00	11005.79	605.52	605.38	-20.45	605.7405	358.04	1.15	SingleShot	0
144	11427.00	89.04	4.37	32.00	11006.46	641.42	641.30	-18.64	641.57043	358.34	1.51	SingleShot	0
145	11522.00	90.03	4.29	95.00	11007.23	736.12	736.05	-11.80	736.14331	359.08	1.10	SingleShot	0
146	11617.00	90.34	3.97	95.00	11006.92	830.81	830.80	-4.95	830.81582	359.66	0.47	SingleShot	0
147	11712.00	90.21	2.16	95.00	11006.46	925.63	925.66	0.13	925.65989	0.01	1.91	SingleShot	0
148	11807.00	90.31	0.14	95.00	11005.03	1020.59	1020.63	2.04	1020.63684	0.11	2.13	SingleShot	0
149	11921.00	90.52	358.65	95.00	11005.35	1115.59	1115.62	1.04	1115.62482	0.05	1.59	SingleShot	0
150	11986.00	90.14	356.55	94.00	11004.81	1209.52	1209.54	-2.89	1209.53856	359.86	2.27	SingleShot	0
151	12081.00	89.28	355.74	95.00	11005.30	1304.32	1304.29	-9.69	1304.32348	359.57	1.65	SingleShot	0
152	12186.00	89.86	354.74	95.00	11006.01	1398.02	1398.92	-17.98	1399.03663	359.26	0.81	SingleShot	0
153	12281.00	89.86	354.73	95.00	11006.24	1493.68	1493.52	-26.71	1493.7584	358.98	0.01	SingleShot	0
154	12375.00	89.90	354.97	94.00	11006.44	1587.36	1587.14	-35.14	1587.52906	358.73	0.26	SingleShot	0
155	12470.00	89.52	356.03	95.00	11006.92	1682.11	1681.84	-42.59	1682.38403	358.55	1.19	SingleShot	0
156	12565.00	88.07	357.17	95.00	11008.92	1776.96	1776.65	-48.22	1777.30693	358.45	1.93	SingleShot	0
157	12660.00	86.76	0.44	95.00	11013.20	1871.84	1871.52	-50.20	1872.19566	358.46	3.71	SingleShot	0
158	12754.00	87.69	3.26	94.00	11017.75	1965.65	1965.35	-47.17	1965.91687	358.63	3.16	SingleShot	0
159	12849.00	89.62	4.25	95.00	11019.97	2060.36	2060.11	-40.95	2060.52188	358.86	2.28	SingleShot	0
160	12944.00	90.03	3.05	95.00	11020.26	2155.12	2154.92	-34.90	2155.20249	359.07	1.34	SingleShot	0
161	13039.00	90.07	1.78	95.00	11020.17	2250.00	2249.83	-30.90	2250.04597	359.21	1.34	SingleShot	0
162	13133.00	90.03	1.66	94.00	11020.69	2343.93	2343.79	-28.08	2343.95963	359.31	0.13	SingleShot	0
163	13228.00	89.72	1.20	95.00	11020.29	2438.88	2438.76	-25.71	2438.89685	359.40	0.59	SingleShot	0
164	13324.00	88.52	358.87	96.00	11021.76	2534.86	2534.74	-25.66	2534.87152	359.42	2.73	SingleShot	0
165	13418.00	90.48	0.37	94.00	11022.58	2628.85	2628.73	-26.28	2628.86013	359.43	2.63	SingleShot	0
166	13513.00	90.55	0.30	95.00	11021.72	2723.84	2723.72	-25.56	2723.842	359.46	0.16	SingleShot	0
167	13608.00	90.48	0.14	95.00	11020.87	2818.82	2818.72	-25.02	2818.82765	359.49	0.39	SingleShot	0
168	13703.00	90.34	0.80	95.00	11020.18	2913.81	2913.71	-24.25	2913.81113	359.52	0.71	SingleShot	0
169	13798.00	90.28	359.73	95.00	11019.67	3008.80	3008.71	-23.82	3008.80089	359.55	1.13	SingleShot	0
170	13892.00	89.83	1.22	94.00	11019.58	3102.79	3102.70	-23.04	3102.78595	359.57	1.66	SingleShot	0
171	13987.00	89.69	2.53	95.00	11019.98	3197.71	3197.65	-19.92	3197.70848	359.64	1.39	SingleShot	0
172	14081.00	90.10	2.06	94.00	11020.15	3291.60	3291.57	-16.15	3291.60999	359.72	0.67	SingleShot	0
173	14176.00	90.07	1.96	95.00	11020.01	3386.51	3386.51	-12.82	3386.536	359.78	0.10	SingleShot	0
174	14271.00	90.10	1.17	95.00	11019.87	3481.46	3481.48	-10.23	3481.49041	359.83	0.84	SingleShot	0
175	14366.00	90.21	1.31	95.00	11019.61	3576.42	3576.45	-8.17	3576.46212	359.87	0.19	SingleShot	0
176	14460.00	89.93	0.66	94.00	11019.50	3670.39	3670.44	-6.55	3670.44402	359.90	0.75	SingleShot	0
177	14555.00	90.07	359.94	95.00	11019.50	3765.38	3765.44	-6.05	3765.44106	359.91	0.77	SingleShot	0
178	14649.00	90.03	359.27	94.00	11019.41	3859.38	3859.43	-6.70	3859.43922	359.90	0.71	SingleShot	0
179	14744.00	90.03	358.19	95.00	11019.35	3954.37	3954.41	-8.40	3954.41844	359.87	1.14	SingleShot	0
180	14839.00	89.66	357.04	95.00	11019.35</								