

Reservoir Development

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

December 23, 2014

Cimarex
600 N MARIENFELD STREET SUITE 600

MIDLAND, TX 79701

ART OIL CONSERVATION
ARTESTA DISTRICT
MAR 25 2015
RECEIVED

Re:

Sec 32, T26S, R27E Eddy NM
N 32. 00060 W 104.20559

CLIENT: Cimarex Energy Company of Co
WELL: Medwick 32 Federal Com 12H
FIELD: Wildcat
RIG: Cactus 112
COUNTY: Eddy
API NO: 30-015-42150
JOB NO: 14MLD0402

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>
De'Jon Douglas MWD	Medwick 32 Federal Com 12H Original Hole	9101.00 Ft to 16317.00 Ft	October 2, 2014 to November 25, 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

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 32, T26S, R27E Eddy NM
N 32.00058 W 104.16499

I, De'Jon Douglas certify that; I am employed by PathFinder, a division of Schlumberger Technology Corporation; that I did on the day(s) of October 02, 2014 through November 25, 2014, conduct or supervise the taking of the SlimPulse surveys from a depth of 9101.00 feet to a depth of 16317.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, 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 Company of Co for the Medwick 32 Federal Com 12H Well (Original Hole) API No. 30-015-42150 and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

SIGNED ON BEHALF OF DEJON DOUGLAS BY JOE HOGAN

By
De'Jon Douglas
MWD

Subscribed and Sworn to before me this 26 day of February (month) 2015 (yr)

My Commission expires:

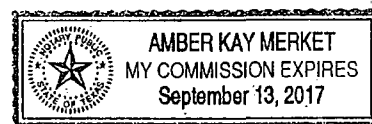
September 13, 2017

Amber Kay Merket

(signature)

Notary Public

Midland County, Texas
(County State)



SCHLUMBERGER

Survey Report

26-Feb-2015

Client.....: Cimarex Energy Company of Co.
Field.....: Wildcat

Well.....: Medwick 32 Federal Com 12
API number.....: 30-015-42150
Engineer.....: D. Douglas

Spud date.....: 13-Sep-14
Last survey date.....: 25-Nov-14
Total accepted surveys.....: 106
MD of first survey.....: 9101.00 ft
MD of last survey.....: 16285.00 ft

County.....: Eddy
State.....: New Mexico
Rig.....: United States of America

Latitude.....: 32° 0' 2.17" N
Longitude.....: 104° 12' 20.14" W

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

----- Depth reference -----
Permanent datum.....: MSL
Depth reference.....: Driller's Depth
GL above permanent.....: 3183.00
KB above permanent.....: 3207.00
DF above permanent.....: 3207.00

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

----- Grid Coordinates -----
NAD83 Texas State Plane, Central Zone, US Feet
X.....: 580934.52 ft
Y.....: 363982.39 ft

Azimuth from Vsect Origin to target: 359.46 degrees

-----MWD Survey Reference Criteria-----

-----Run1----- Calculation Date: 1-Oct-2014
Location G.....: 998.94325 mgn Tolerance G.....: 2.50 mgn
Location B.....: 48034.86 nT Tolerance B.....: 300.00 nT
Magnetic Dip: 59.7755 degrees Tolerance Dip: 0.45 degrees

-----Run2----- Calculation Date: 2-Nov-2014
Location G.....: 998.94325 mgn Tolerance G.....: 2.50 mgn
Location B.....: 48024.12 nT Tolerance B.....: 300.00 nT
Magnetic Dip: 59.7733 degrees Tolerance Dip: 0.45 degrees

-----Run3----- Calculation Date: 11-Nov-2014
Location G.....: 998.94325 mgn Tolerance G.....: 2.50 mgn
Location B.....: 48021.09 nT Tolerance B.....: 300.00 nT
Magnetic Dip: 59.7727 degrees Tolerance Dip: 0.45 degrees

-----Run4----- Calculation Date: 12-Nov-2014
Location G.....: 998.94325 mgn Tolerance G.....: 2.50 mgn
Location B.....: 48020.76 nT Tolerance B.....: 300.00 nT
Magnetic Dip: 59.7726 degrees Tolerance Dip: 0.45 degrees

-----Run5----- Calculation Date: 19-Nov-2014
Location G.....: 998.94325 mgn Tolerance G.....: 2.50 mgn
Location B.....: 48018.41 nT Tolerance B.....: 300.00 nT
Magnetic Dip: 59.7721 degrees Tolerance Dip: 0.45 degrees

-----Run6----- Calculation Date: 23-Nov-2014
Location G.....: 998.94325 mgn Tolerance G.....: 2.50 mgn
Location B.....: 48017.07 nT Tolerance B.....: 300.00 nT
Magnetic Dip: 59.7718 degrees Tolerance Dip: 0.45 degrees

BGGM Model: 2014

-----Run1-----
Magnetic dec (+E/W-).....: 7.6221 degrees
Grid Conv (+E/W-).....: 0.0721 degrees
Total Azim Corr (+E/W-).....: 7.55 degrees

-----Run2-----
Magnetic dec (+E/W-).....: 7.6135 degrees
Grid Conv (+E/W-).....: 0.0635 degrees
Total Azim Corr (+E/W-).....: 7.55 degrees

-----Run3-----
Magnetic dec (+E/W-).....: 7.6111 degrees
Grid Conv (+E/W-).....: 0.0711 degrees
Total Azim Corr (+E/W-).....: 7.54 degrees

-----Run4-----
Magnetic dec (+E/W-).....: 7.6109 degrees
Grid Conv (+E/W-).....: 0.0709 degrees
Total Azim Corr (+E/W-).....: 7.54 degrees

-----Run5-----
Magnetic dec (+E/W-).....: 7.609 degrees
Grid Conv (+E/W-).....: 0.069 degrees
Total Azim Corr (+E/W-).....: 7.54 degrees

-----Run6-----
Magnetic dec (+E/W-).....: 7.6079 degrees
Grid Conv (+E/W-).....: 0.0679 degrees
Total Azim Corr (+E/W-).....: 7.54 degrees

Sag	MD	Incl	Azlm	Course	TVD	V Sec	N/S	E/W	Closure	at Azl	DLS	Tool	Correction
(deg)	(deg)	(deg)	(deg)	(deg)	(ft)	(ft)	(ft)	(ft)	(ft)	(deg)	(deg/1000)	(deg/1000)	
Survey List													
0 = Uncorrected 1 = Sag Corrected													
2 = DMAG Corrected 3 = Sag + DMAG Corrected													
Survey Correction Index Description													

102	9075.30	1.19	177.22	66.79	9074.47	-35.79	-35.70	9.82	37.03	164.61	0.48	SingleShot	0
103	9101.00	0.94	177.60	25.70	9100.17	-36.27	-36.18	9.85	37.49	164.77	0.96	SlimPulse	0
104	9132.00	0.44	207.73	31.00	9131.17	-36.63	-36.54	9.80	37.83	164.98	1.96	SlimPulse	0
105	9163.00	3.03	351.69	31.00	9162.15	-35.92	-35.83	9.63	37.1	164.96	10.95	SlimPulse	0
106	9195.00	7.54	356.42	32.00	9194.01	-32.98	-32.89	9.38	34.2	164.09	14.13	SlimPulse	0
107	9227.00	11.98	359.84	32.00	9225.54	-27.56	-27.47	9.23	28.98	161.42	14.00	SlimPulse	0
108	9259.00	16.52	2.08	32.00	9256.55	-19.69	-19.60	9.39	21.74	154.40	14.26	SlimPulse	0
109	9290.00	19.95	0.95	31.00	9285.99	-10.00	-9.91	9.64	13.82	135.79	11.14	SlimPulse	0
110	9322.00	22.84	359.86	32.00	9315.78	1.67	1.76	9.71	9.87	79.71	9.12	SlimPulse	0
111	9354.00	26.22	358.90	32.00	9344.89	14.96	15.05	9.56	17.83	32.44	10.62	SlimPulse	0
112	9386.00	29.43	359.89	32.00	9373.18	29.89	29.98	9.41	31.42	17.43	10.13	SlimPulse	0
113	9418.00	31.13	1.15	32.00	9400.82	46.02	46.11	9.56	47.09	11.72	5.68	SlimPulse	0
114	9450.00	34.19	1.43	32.00	9427.75	63.28	63.37	9.95	64.15	8.93	9.57	SlimPulse	0
115	9481.00	38.19	359.97	31.00	9452.77	81.57	81.67	10.17	82.3	7.09	13.19	SlimPulse	0
116	9513.00	42.32	359.41	32.00	9477.19	102.24	102.34	10.05	102.83	5.61	12.96	SlimPulse	0
117	9545.00	47.15	359.01	32.00	9499.91	124.76	124.85	9.74	125.23	4.46	15.14	SlimPulse	0
118	9576.00	51.70	357.96	31.00	9520.07	148.29	148.39	9.11	148.66	3.51	14.89	SlimPulse	0
119	9608.00	54.52	356.86	32.00	9539.28	173.87	173.95	7.95	174.13	2.62	9.23	SlimPulse	0
120	9639.00	57.04	355.15	31.00	9556.71	199.45	199.52	6.16	199.61	1.77	9.33	SlimPulse	0
121	9671.00	59.93	354.69	32.00	9573.44	226.64	226.68	3.74	226.72	0.94	9.10	SlimPulse	0
122	9703.00	62.70	354.83	32.00	9588.80	254.61	254.64	1.18	254.64	0.26	8.68	SlimPulse	0
123	9734.00	67.07	355.49	31.00	9601.95	282.60	282.60	-1.19	282.6	359.76	14.23	SlimPulse	0
124	9766.00	71.45	357.57	32.00	9613.28	312.48	312.46	-2.99	312.48	359.45	14.98	SlimPulse	0
125	9864.00	76.57	2.26	98.00	9640.28	406.62	406.61	-3.08	406.62	359.57	6.97	SlimPulse	0
126	9896.00	77.10	2.36	32.00	9647.57	437.74	437.74	-1.83	437.75	359.76	1.66	SlimPulse	0
127	9927.00	77.73	1.90	31.00	9654.32	467.96	467.98	-0.70	467.98	359.91	2.50	SlimPulse	0
128	9959.00	78.27	1.76	32.00	9660.98	499.24	499.26	0.30	499.26	0.03	1.74	SlimPulse	0
129	9991.00	79.35	1.88	32.00	9667.19	530.60	530.64	1.29	530.64	0.14	3.40	SlimPulse	0
130	10022.00	80.28	1.37	31.00	9672.67	561.09	561.14	2.16	561.14	0.22	3.41	SlimPulse	0
131	10054.00	81.23	1.31	32.00	9677.81	592.66	592.71	2.90	592.72	0.28	2.97	SlimPulse	0
132	10086.00	82.14	1.77	32.00	9682.44	624.30	624.36	3.75	624.37	0.34	3.17	SlimPulse	0
133	10118.00	83.24	1.74	32.00	9686.51	656.01	656.09	4.77	656.1	0.41	3.45	SlimPulse	0
134	10150.00	84.00	1.57	32.00	9690.07	687.79	687.88	5.64	687.9	0.47	2.43	SlimPulse	0
135	10181.00	84.70	1.83	31.00	9693.12	718.62	718.71	6.56	718.74	0.52	2.39	SlimPulse	0
136	10213.00	85.49	1.87	32.00	9695.85	750.47	750.58	7.58	750.62	0.58	2.48	SlimPulse	0
137	10244.00	86.35	1.51	31.00	9698.06	781.37	781.48	8.50	781.53	0.62	3.00	SlimPulse	0
138	10276.00	87.08	1.39	32.00	9699.89	813.30	813.42	9.31	813.47	0.66	2.31	SlimPulse	0
139	10308.00	88.07	1.50	32.00	9701.25	845.25	845.38	10.11	845.44	0.69	3.13	SlimPulse	0
140	10339.00	89.07	1.17	31.00	9702.02	876.22	876.35	10.83	876.43	0.71	3.39	SlimPulse	0
141	10371.00	90.21	1.23	32.00	9702.22	908.21	908.36	11.51	908.43	0.73	3.55	SlimPulse	0
142	10402.00	91.03	1.14	31.00	9701.88	939.19	939.35	12.15	939.43	0.74	2.68	SlimPulse	0
143	10434.00	91.58	1.34	32.00	9701.15	971.17	971.33	12.84	971.42	0.76	1.83	SlimPulse	0
144	10466.00	91.79	1.01	32.00	9700.21	1003.14	1003.31	13.50	1003.4	0.77	1.21	SlimPulse	0
145	10498.00	92.06	1.03	32.00	9699.14	1035.11	1035.29	14.07	1035.38	0.78	0.86	SlimPulse	0
146	10530.00	92.17	0.35	32.00	9697.96	1067.08	1067.26	14.46	1067.36	0.78	2.13	SlimPulse	0
147	10562.00	92.03	359.63	32.00	9696.78	1099.06	1099.24	14.45	1099.34	0.75	2.28	SlimPulse	0
148	10593.00	91.17	358.26	31.00	9695.92	1130.04	1130.22	13.88	1130.31	0.70	5.23	SlimPulse	0
149	10625.00	90.96	358.00	32.00	9695.32	1162.03	1162.20	12.84	1162.27	0.63	1.04	SlimPulse	0
150	10688.00	89.66	357.34	63.00	9694.98	1224.99	1225.15	10.27	1225.19	0.48	2.32	SlimPulse	0
151	10783.00	89.66	355.68	95.00	9695.55	1319.86	1319.96	4.49	1319.97	0.19	1.75	SlimPulse	0
152	10878.00	89.93	355.31	95.00	9695.90	1414.63	1414.67	-2.98	1414.67	359.88	0.48	SlimPulse	0
153	10971.00	89.38	357.20	93.00	9696.45	1507.48	1507.46	-9.05	1507.49	359.66	2.11	SlimPulse	0
154	11066.00	88.90	357.19	95.00	9697.88	1602.40	1602.34	-13.70	1602.4	359.51	0.51	SlimPulse	0
155	11161.00	87.90	355.63	95.00	9700.53	1697.22	1697.11	-19.65	1697.23	359.34	1.95	SlimPulse	0
156	11256.00	87.66	355.65	95.00	9704.21	1791.94	1791.77	-26.86	1791.97	359.14	0.25	SlimPulse	0
157	11351.00	87.56	356.41	95.00	9708.17	1886.69	1886.46	-33.43	1886.75	358.98	0.80	SlimPulse	0
158	11445.00	87.49	357.57	94.00	9712.23	1980.51	1980.24	-38.36	1980.61	358.89	1.23	SlimPulse	0
159	11540.00	87.56	358.66	95.00	9716.34	2075.39	2075.10	-41.48	2075.51	358.85	1.15	SlimPulse	0
160	11635.00	87.83	359.74	95.00	9720.16	2170.31	2170.01	-42.81	2170.43	358.87	1.16	SlimPulse	0
161	11730.00	87.56	0.29	95.00	9723.98	2265.23	2264.93	-42.78	2265.33	358.92	0.65	SlimPulse	0
162	11825.00	87.42	0.73	95.00	9728.14	2360.13	2359.83	-41.93	2360.21	358.98	0.49	SlimPulse	0
163	11920.00	87.83	1.54	95.00	9732.08	2455.00	2454.73	-40.05	2455.06	359.07	0.95	SlimPulse	0
164	12015.00	87.90	0.93	95.00	9735.61	2549.89	2549.65	-38.00	2549.93	359.15	0.64	SlimPulse	0
165	12110.00	88.66	0.04	95.00	9738.47	2644.83	2644.60	-37.20	2644.86	359.19	1.23	SlimPulse	0
166	12205.00	89.31	358.77	95.00	9740.15	2739.81	2739.57	-38.19	2739.84	359.20	1.51	SlimPulse	0
167	12300.00	88.32	356.99	95.00	9742.11	2834.75	2834.48	-41.70	2834.79	359.16	2.14	SlimPulse	0
168	12394.00	88.14	355.95	94.00	9745.02	2928.58	2928.26	-47.49	2928.65	359.07	1.12	SlimPulse	0
169	12489.00	89.59	356.56	95.00	9746.90	3023.41	3023.04	-53.69	3023.51	358.98	1.65	SlimPulse	0
170	12584.00	90.34	358.78	95.00	9746.95	3118.35	3117.95	-57.55	3118.48	358.94	2.47	SlimPulse	0
171	12679.00	90.55	0.44	95.00	9746.21	3213.35	3212.94	-58.19	3213.47	358.96	1.76	SlimPulse	0
172	12773.00	90.62	358.59	94.00	9745.25	3307.34	3306.93	-58.98	3307.46	358.98	1.97	SlimPulse	0
173	12869.00	90.48	359.00	96.00	9744.33	3403.33	3402.90	-61.00	3403.45	358.97	0.45	SlimPulse	0
174	12964.00	90.21	0.09	95.00	9743.76	3498.32	3497.90	-61.75	3498.44	358.99	1.18	SlimPulse	0
175	13058.00	90.52	1.40	94.00	9743.17	3592.30	3591.89	-60.53	3592.4	359.03	1.44	SlimPulse	0
176	13153.00	90.76	2.39	95.00	9742.11	3687.20	3686.83	-57.39	3687.27	359.11	1.07	SlimPulse	0
177	13248.00	91.38	3.10	95.00	9740.35	3782.03	3781.70	-52.84	3782.07	359.20	1.00	SlimPulse	0
178	13343.00	91.72	2.77	95.00	9737.78	3876.82	3876.54	-47.98	3876.84	359.29	0.51	SlimPulse	0
179	13438.00	90.65	0.99	95.00	9735.82	3971.71	3971.46	-44.87	3971.72	359.35	2.19	SlimPulse	0
180	13533.00	90.79	359.41	95.00	9734.67	4066.69	4066.45	-44.54	4066.7	359.37	1.66	SlimPulse	0
181	13627.00	90.45	359.49	94.00	9733.60	4160.69	4160.44	-45.44	4160.69	359.37	0.38	SlimPulse	0
182	13722.00	90.89	359.25	95.00	9732.49	4255.68	4255.43	-46.48	4255.68	359.37	0.53	SlimPulse	0
183	13817.00	90.86	358.61	95.00	9731.04	4350.66	4350.40	-48.25	4350.67	359.36	0.68	SlimPulse	0
184	13912.00	90.41	357.94	95.00	9729.98	4445.64	4445.35	-51.11	4445.65	359.34	0.84	SlimPulse	0
185	14007.00	90.79	358.01	95.00	9728.99	4540.60	4540.29	-54.46	4540.61	359.31	0.41	SlimPulse	0
186	14102.00	90.52	358.07	95.00	9727.90	4635.56	4635.23	-57.70	4635.59	359.29	0.30	SlimPulse	0
187	14198.00	90.93	358.11	96.00	9726.69	4731.53							