

Reservoir Development

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

May 18, 2014

Cimarex
600 N MARIENFELD STREET SUITE 600

MIDLAND, TX 79701

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 07 2014

RECEIVED

Re:

Sec 24-19S-30E Eddy County NM
N 32.64485 W 103.93351

CLIENT: Cimarex Energy Co.
WELL: Hackberry 23 Federal 2H
FIELD: Hackberry, B.S., NW
RIG: Scandriil Eagle
COUNTY: Eddy
API NO: 30-015-42093
JOB NO: 14MLD0478

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>
John Gilchrist MWD	Hackberry 23 Federal 2H	7888.00 Ft to 18552.00 Ft	May 3, 2014 to May 15, 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 24-19S-30E Eddy County NM
N 32.64485 W 103.93351

I, John Gilchrist certify that; I am employed by PathFinder, a division of Schlumberger Technology Corporation; that I did on the day(s) of May 03, 2014 through May 15, 2014, conduct or supervise the taking of the SlimPulse surveys from a depth of 7888.00 feet to a depth of 18552.00 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 Co. for the Hackberry 23 Federal 2H Well () API No. 30-015-42093 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.

By
John Gilchrist
MWD

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

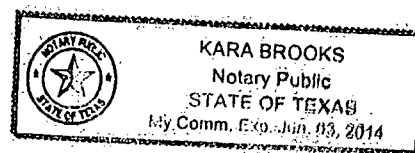
My Commission expires:

June 3, 2014

Notary Public

(signature)

Midland Texas
(County State)



SCHLUMBERGER
Survey Report

24-Jul-2014

Client..... Cimarex Energy Co.
Field..... Hackberry

Well..... Hackberry 23 Federal 2H
API number..... 30-15-42093
Engineer..... John Gilchrist
County..... Eddy
State..... New Mexico
Rig..... ScanDrill Eagle

Spud date..... 19-Apr-14
Last survey date..... 15-May-14
Total accepted surveys..... 124
MD of first survey..... 7888.00 ft
MD of last survey..... 18552.00 ft

Latitude..... 32° 38' 41.448" N
Longitude..... 103° 56' 0.64" W

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

----- Depth reference -----
Permanent datum..... MSL
Depth reference..... Driller's Depth
GI above permanent..... 3252.00
KB above permanent..... 3277.00
DF above permanent..... 3277.00

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

----- Grid Coordinates -----
NAD27 Texas State Plane, Central Zone, US Feet
X..... 598557.80 ft
Y..... 664402.08 ft

Azimuth from Vsect Origin to target: 268.23 degrees

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

-----Run1----- Calculation Date: 3-May-2014
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48517.18 nT Tolerance B..... 300.00 nT
Magnetic Dip: 60.4287 degrees Tolerance Dip: 0.45 degrees

-----Run2----- Calculation Date: 5-May-2014
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48516.54 nT Tolerance B..... 300.00 nT
Magnetic Dip: 60.4285 degrees Tolerance Dip: 0.45 degrees

-----Run3----- Calculation Date: 7-May-2014
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48515.9 nT Tolerance B..... 300.00 nT
Magnetic Dip: 60.4283 degrees Tolerance Dip: 0.45 degrees

-----Run4----- Calculation Date: 10-May-2014
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48514.94 nT Tolerance B..... 300.00 nT
Magnetic Dip: 60.4281 degrees Tolerance Dip: 0.45 degrees

BGGM Model: 2013

-----Run1-----
Magnetic dec (+E/W)..... 7.5528 degrees
Grid Conv (+E/W)..... 0.2128 degrees
Total Azim Corr (+E/W)..... 7.34 degrees

-----Run2-----
Magnetic dec (+E/W)..... 7.5522 degrees
Grid Conv (+E/W)..... 0.2122 degrees
Total Azim Corr (+E/W)..... 7.34 degrees

-----Run3-----
Magnetic dec (+E/W)..... 7.5516 degrees
Grid Conv (+E/W)..... 0.2116 degrees
Total Azim Corr (+E/W)..... 7.34 degrees

-----Run4-----
Magnetic dec (+E/W)..... 7.5507 degrees
Grid Conv (+E/W)..... 0.2107 degrees
Total Azim Corr (+E/W)..... 7.34 degrees

-----Survey Correction Index Description-----

0 = Uncorrected 1 = Sag Corrected
2 = DMAG Corrected 3 = Sag + DMAG Corrected

===== Survey List =====													
Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/S (ft)	E/W (ft)	Closure (ft)	at Azi (deg)	DLS (deg/100ft)	Tool	Correction
1	0.00	0.00	0.00	-999.25	0.00	0.00	0.00	0.00	0	90.00	0.00	TIP	0
2	41.00	0.19	233.48	41.00	41.00	0.06	-0.04	-0.05	0.07	233.48	0.46	SingleShot	0
3	132.20	0.33	263.51	91.20	132.20	0.44	-0.16	-0.44	0.47	249.88	0.21	SingleShot	0
4	223.40	0.41	258.04	91.20	223.40	1.02	-0.26	-1.02	1.05	255.80	0.10	SingleShot	0
5	314.60	0.61	250.11	91.20	314.59	1.81	-0.49	-1.79	1.86	254.71	0.23	SingleShot	0
6	405.80	0.52	257.19	91.20	405.79	2.67	-0.75	-2.65	2.76	254.27	0.12	SingleShot	0
7	497.00	0.58	258.21	91.20	496.98	3.54	-0.93	-3.51	3.63	255.10	0.07	SingleShot	0
8	592.50	0.58	265.75	95.50	592.48	4.49	-1.07	-4.46	4.59	256.55	0.08	SingleShot	0

9	688.10	0.55	266.56	95.60	688.08	5.44	-1.13	-5.40	5.52	258.18	0.03	SingleShot	0
10	783.60	0.49	281.01	95.50	783.57	6.29	-1.08	-6.26	6.36	260.21	0.15	SingleShot	0
11	879.20	0.41	339.50	95.60	879.17	6.80	-0.68	-6.78	6.82	264.26	0.47	SingleShot	0
12	974.70	0.61	26.57	95.50	974.67	6.67	0.09	-6.68	6.68	270.79	0.47	SingleShot	0
13	1070.30	0.87	34.01	95.60	1070.26	6.00	1.15	-6.04	6.15	280.77	0.29	SingleShot	0
14	1165.80	1.10	41.49	95.50	1165.74	4.95	2.44	-5.03	5.59	295.85	0.28	SingleShot	0
15	1261.40	1.38	41.96	95.60	1261.32	3.53	3.98	-3.65	5.4	317.46	0.29	SingleShot	0
16	1356.90	1.70	45.91	95.50	1356.79	1.69	5.82	-1.87	6.11	342.23	0.35	SingleShot	0
17	1452.50	1.50	47.45	95.60	1452.35	-0.31	7.65	0.07	7.65	0.56	0.21	SingleShot	0
18	1548.00	0.61	43.66	95.50	1547.83	-1.62	8.87	1.35	8.97	8.63	0.93	SingleShot	0
19	1643.60	0.27	233.61	95.60	1643.43	-1.80	9.10	1.52	9.23	9.46	0.92	SingleShot	0
20	1739.10	0.58	207.24	95.50	1738.93	-1.38	8.54	1.11	8.61	7.43	0.38	SingleShot	0
21	1834.70	0.72	195.38	95.60	1834.52	-0.97	7.53	0.73	7.56	5.56	0.20	SingleShot	0
22	1930.20	0.85	195.06	95.50	1930.01	-0.58	6.27	0.39	6.28	3.56	0.14	SingleShot	0
23	2025.80	0.90	198.99	95.60	2025.60	-0.11	4.87	-0.04	4.87	359.55	0.08	SingleShot	0
24	2121.30	1.03	205.68	95.50	2121.09	0.55	3.39	-0.65	3.45	349.07	0.18	SingleShot	0
25	2216.90	0.96	208.23	95.60	2216.67	1.35	1.91	-1.41	2.37	323.63	0.09	SingleShot	0
26	2312.40	0.83	205.90	95.50	2312.16	2.07	0.58	-2.09	2.17	285.58	0.14	SingleShot	0
27	2408.00	0.92	206.03	95.60	2407.75	2.75	-0.73	-2.73	2.82	254.99	0.09	SingleShot	0
28	2503.50	0.72	193.08	95.50	2503.24	3.26	-2.00	-3.20	3.77	237.92	0.28	SingleShot	0
29	2599.10	0.28	178.61	95.60	2598.84	3.41	-2.82	-3.33	4.36	229.70	0.48	SingleShot	0
30	2694.60	0.21	174.48	95.50	2694.34	3.40	-3.23	-3.31	4.62	225.66	0.08	SingleShot	0
31	2790.20	0.15	196.76	95.60	2789.94	3.43	-3.52	-3.32	4.85	223.33	0.10	SingleShot	0
32	2885.70	0.05	233.30	95.50	2885.44	3.51	-3.67	-3.39	5	222.77	0.12	SingleShot	0
33	2981.30	0.19	293.14	95.60	2981.04	3.68	-3.63	-3.57	5.09	224.54	0.18	SingleShot	0
34	3076.80	0.29	288.33	95.50	3076.53	4.05	-3.49	-3.95	5.27	228.50	0.11	SingleShot	0
35	3172.40	0.35	297.93	95.60	3172.13	4.54	-3.28	-4.44	5.52	233.52	0.08	SingleShot	0
36	3267.90	0.45	330.53	95.50	3267.63	4.96	-2.82	-4.88	5.63	239.99	0.26	SingleShot	0
37	3363.50	0.64	328.45	95.60	3363.23	5.40	-2.04	-5.34	5.72	249.14	0.20	SingleShot	0
38	3459.00	0.60	328.32	95.50	3458.72	5.92	-1.16	-5.88	6	258.89	0.04	SingleShot	0
39	3603.00	0.62	129.16	144.00	3602.72	5.70	-1.01	-5.68	5.76	259.95	0.84	SingleShot	0
40	3699.00	0.62	328.94	96.00	3698.72	5.57	-0.89	-5.54	5.61	260.89	1.27	SingleShot	0
41	3794.00	0.62	328.94	95.00	3793.71	6.07	-0.01	-6.07	6.07	269.92	0.00	SingleShot	0
42	3889.00	0.62	334.56	95.00	3888.70	6.53	0.90	-6.56	6.62	277.78	0.06	SingleShot	0
43	3984.00	0.62	327.97	95.00	3983.70	6.99	1.80	-7.05	7.28	284.29	0.08	SingleShot	0
44	4079.00	0.70	321.33	95.00	4078.69	7.60	2.68	-7.69	8.14	289.25	0.12	SingleShot	0
45	4174.00	0.79	314.04	95.00	4173.69	8.40	3.59	-8.52	9.25	292.87	0.14	SingleShot	0
46	4269.00	1.01	309.25	95.00	4268.67	9.49	4.58	-9.64	10.67	295.41	0.24	SingleShot	0
47	4365.00	1.01	321.07	96.00	4364.66	10.64	5.77	-10.83	12.27	298.06	0.22	SingleShot	0
48	4460.00	1.01	324.63	95.00	4459.64	11.61	7.11	-11.84	13.81	300.98	0.07	SingleShot	0
49	4556.00	1.01	328.15	96.00	4555.63	12.50	8.51	-12.77	15.35	303.69	0.06	SingleShot	0
50	4651.00	1.01	337.64	95.00	4650.61	13.22	10.00	-13.53	16.83	306.46	0.18	SingleShot	0
51	4746.00	1.01	313.64	95.00	4745.60	14.10	11.35	-14.46	18.38	308.14	0.44	SingleShot	0
52	4842.00	1.10	305.85	96.00	4841.58	15.43	12.47	-15.82	20.14	308.26	0.18	SingleShot	0
53	4938.00	1.19	308.37	96.00	4937.56	16.92	13.63	-17.35	22.06	308.15	0.11	SingleShot	0
54	5033.00	1.41	312.24	95.00	5032.54	18.51	15.03	-18.99	24.21	308.36	0.25	SingleShot	0
55	5129.00	1.41	314.35	96.00	5128.51	20.18	16.65	-20.71	26.57	308.80	0.05	SingleShot	0
56	5225.00	1.58	315.93	96.00	5224.48	21.89	18.42	-22.47	29.06	309.35	0.18	SingleShot	0
57	5320.00	1.71	317.34	95.00	5319.44	23.70	20.41	-24.34	31.76	309.97	0.14	SingleShot	0
58	5415.00	1.80	317.56	95.00	5414.39	25.60	22.55	-26.31	34.65	310.60	0.10	SingleShot	0
59	5511.00	2.02	317.03	96.00	5510.34	27.70	24.90	-28.48	37.83	311.16	0.23	SingleShot	0
60	5606.00	0.88	241.13	95.00	5605.32	29.45	25.77	-30.26	39.75	310.42	2.10	SingleShot	0
61	5701.00	1.01	244.96	95.00	5700.30	30.87	25.07	-31.66	40.38	308.37	0.15	SingleShot	0
62	5797.00	1.01	250.06	96.00	5796.29	32.45	24.42	-33.22	41.23	306.32	0.09	SingleShot	0
63	5892.00	1.01	257.66	95.00	5891.27	34.07	23.96	-34.83	42.27	304.52	0.14	SingleShot	0
64	5988.00	1.10	259.06	96.00	5987.26	35.81	23.60	-36.56	43.51	302.85	0.10	SingleShot	0
65	6083.00	0.88	261.04	95.00	6082.24	37.44	23.31	-38.17	44.73	301.41	0.23	SingleShot	0
66	6179.00	1.01	273.35	96.00	6178.23	39.01	23.25	-39.75	46.05	300.32	0.25	SingleShot	0
67	6274.00	1.01	273.35	95.00	6273.21	40.68	23.35	-41.42	47.54	299.41	0.00	SingleShot	0
68	6370.00	1.32	284.86	96.00	6369.19	42.58	23.68	-43.33	49.38	298.66	0.40	SingleShot	0
69	6466.00	1.41	280.16	96.00	6465.17	44.80	24.17	-45.56	51.58	297.95	0.15	SingleShot	0
70	6561.00	1.19	276.03	95.00	6560.14	46.92	24.48	-47.69	53.61	297.17	0.25	SingleShot	0
71	6657.00	1.10	265.53	96.00	6656.12	48.82	24.51	-49.60	55.33	296.30	0.24	SingleShot	0
72	6752.00	1.01	247.73	95.00	6751.11	50.52	24.13	-51.29	56.68	295.19	0.36	SingleShot	0
73	6848.00	0.79	244.65	96.00	6847.10	51.92	23.52	-52.67	57.68	294.07	0.23	SingleShot	0
74	6943.00	0.62	245.05	95.00	6942.09	52.99	23.02	-53.73	58.45	293.20	0.18	SingleShot	0
75	7039.00	0.40	254.14	96.00	7038.09	53.79	22.71	-54.52	59.06	292.62	0.24	SingleShot	0
76	7134.00	0.46	297.74	95.00	7133.08	54.45	22.80	-55.18	59.7	292.45	0.34	SingleShot	0
77	7230.00	0.70	315.14	96.00	7229.08	55.18	23.40	-55.93	60.63	292.70	0.31	SingleShot	0
78	7326.00	0.31	289.65	96.00	7325.07	55.83	23.90	-56.59	61.43	292.89	0.46	SingleShot	0
79	7421.00	0.22	91.72	95.00	7420.07	55.88	23.98	-56.65	61.52	292.94	0.55	SingleShot	0
80	7517.00	0.22	146.04	96.00	7516.07	55.60	23.82	-56.36	61.19	292.91	0.21	SingleShot	0
81	7613.00	0.31	324.46	96.00	7612.07	55.65	23.88	-56.41	61.26	292.94	0.55	SingleShot	0
82	7707.00	0.48	332.63	94.00	7706.07	55.96	24.44	-56.74	61.78	293.30	0.19	SingleShot	0
83	7802.00	0.62	333.73	95.00	7801.07	56.34	25.25	-57.15	62.48	293.84	0.15	SingleShot	0
84	7844.00	0.70	332.06	42.00	7843.06	56.55	25.68	-57.37	62.86	294.11	0.20	SingleShot	0
85	7888.00	0.95	333.52	44.00	7887.06	56.82	26.24	-57.66	63.35	294.47	0.56	SlimPulse	0
86	7951.00	7.91	250.63	63.00	7949.85	61.18	25.27	-61.98	66.94	292.18	12.45	SlimPulse	0
87	8045.00	20.32	244.55	94.00	8040.84	82.37	16.07	-82.91	84.45	280.97	13.29	SlimPulse	0
88	8140.00	28.04	230.39	95.00	8127.51	115.20	-5.30	-115.09	115.21	267.36	10.11	SlimPulse	0
89	8235.00	36.76	228.72	95.00	8207.64	154.84	-38.36	-153.73	158.45	255.99	9.23	SlimPulse	0
90	8330.00	40.57	232.30	95.00	8281.81	201.81	-76.02	-199.56	213.55	249.15	4.64	SlimPulse	0
91	8424.00	49.37	236.69	94.00	8348.27	257.09	-114.39	-253.68	278.28	245.73	9.93	SlimPulse	0
92	8519.00	52.97	246.47	95.00	8407.91	323.15	-149.39	-318.69	351.97	244.88	8.86	SlimPulse	0
93	8536.00	52.67	247.76	17.00	8418.18	335.78	-154.66	-331.17	365.5	244.97	6.30	SlimPulse	1
94	8568.00	53.54	251.08	32.00	8437.40	360.00	-163.65	-355.12	391.02	245.26	8.73	SlimPulse	1
95	8599.00	55.68	254.33	31.00	8455.35	384.35	-171.15	-379.25	416.08	245.71	10.99	SlimPulse	1
96	8631.00	58.82	256.76	32.00	8472.66	410.60	-177.86	-405.31	442.61	246.31	11.71	SlimPulse	1
97	8662.00	63.39	259.19	31.00	8487.64	437.30	-183.50	-431.85	469.21	246.98	16.26	SlimPulse	1
98	8694.00	67.62	261.83	32.00	8500.91	466.15	-188.28	-460.56	497.56	247.76	15.20	SlimPulse	1
99	8726.00	68.94	264.66	32.00	8								

114	9662.00	90.83	266.76	95.00	8540.35	1425.33	-189.90	-1420.15	1432.79	262.38	0.19	SlimPulse	0
115	9757.00	90.89	266.17	95.00	8538.92	1520.28	-195.76	-1514.96	1527.56	262.64	0.63	SlimPulse	0
116	9852.00	90.76	265.34	95.00	8537.55	1615.18	-202.80	-1609.69	1622.41	262.82	0.89	SlimPulse	0
117	9948.00	90.58	264.11	96.00	8536.43	1710.99	-211.63	-1705.27	1718.36	262.93	1.29	SlimPulse	0
118	10044.00	90.89	265.37	96.00	8535.19	1806.80	-220.43	-1800.86	1814.3	263.02	1.35	SlimPulse	0
119	10139.00	90.86	266.36	95.00	8533.74	1901.71	-227.28	-1895.60	1909.18	263.16	1.04	SlimPulse	0
120	10234.00	90.83	267.69	95.00	8532.34	1996.67	-232.22	-1990.46	2003.96	263.35	1.40	SlimPulse	0
121	10329.00	91.00	269.37	95.00	8530.83	2091.66	-234.65	-2085.41	2098.57	263.58	1.78	SlimPulse	0
122	10425.00	90.96	269.20	96.00	8529.19	2187.63	-235.85	-2181.39	2194.1	263.83	0.19	SlimPulse	0
123	10520.00	90.89	268.96	95.00	8527.65	2282.60	-237.37	-2276.37	2288.71	264.05	0.25	SlimPulse	0
124	10616.00	90.76	269.28	96.00	8526.26	2378.58	-238.84	-2372.34	2384.34	264.25	0.36	SlimPulse	0
125	10711.00	91.13	269.83	95.00	8524.70	2473.54	-239.58	-2467.33	2478.93	264.45	0.70	SlimPulse	0
126	10807.00	91.07	270.63	96.00	8522.85	2569.47	-239.19	-2563.31	2574.44	264.67	0.83	SlimPulse	0
127	10902.00	90.89	269.87	95.00	8521.23	2664.39	-238.77	-2658.29	2669	264.87	0.82	SlimPulse	0
128	10997.00	91.07	270.86	95.00	8519.60	2759.31	-238.16	-2753.28	2763.56	265.06	1.05	SlimPulse	0
129	11092.00	90.93	270.86	95.00	8517.95	2854.20	-236.74	-2848.25	2858.07	265.25	0.14	SlimPulse	0
130	11187.00	91.10	271.62	95.00	8516.27	2949.05	-234.68	-2943.21	2952.56	265.44	0.83	SlimPulse	0
131	11283.00	91.24	273.43	96.00	8514.31	3044.76	-230.45	-3039.10	3047.82	265.66	1.88	SlimPulse	0
132	11377.00	91.13	272.36	94.00	8512.36	3138.43	-225.71	-3132.96	3141.08	265.88	1.14	SlimPulse	0
133	11472.00	91.37	273.12	95.00	8510.28	3233.11	-221.17	-3227.82	3235.39	266.08	0.84	SlimPulse	0
134	11567.00	91.68	272.64	95.00	8507.75	3327.76	-216.39	-3322.67	3329.71	266.27	0.60	SlimPulse	0
135	11661.00	92.82	273.38	94.00	8504.06	3421.36	-211.46	-3416.46	3423	266.46	1.44	SlimPulse	0
136	11757.00	93.89	272.96	96.00	8498.44	3516.84	-206.16	-3512.15	3518.2	266.64	1.20	SlimPulse	0
137	11851.00	93.92	273.67	94.00	8492.04	3610.25	-200.74	-3605.78	3611.36	266.81	0.75	SlimPulse	0
138	11946.00	91.31	271.94	95.00	8487.71	3704.84	-196.10	-3700.55	3705.74	266.97	3.30	SlimPulse	0
139	12041.00	91.93	269.79	95.00	8485.03	3799.69	-194.67	-3795.50	3800.49	267.06	2.36	SlimPulse	0
140	12136.00	90.55	267.55	95.00	8482.97	3894.66	-196.88	-3890.44	3895.42	267.10	2.76	SlimPulse	0
141	12230.00	90.52	266.77	94.00	8482.10	3988.64	-201.54	-3984.32	3989.41	267.10	0.83	SlimPulse	0
142	12325.00	90.62	266.38	95.00	8481.16	4083.60	-207.21	-4079.15	4084.41	267.09	0.42	SlimPulse	0
143	12420.00	90.83	266.17	95.00	8479.96	4178.53	-213.38	-4173.94	4179.39	267.07	0.31	SlimPulse	0
144	12515.00	90.45	266.05	95.00	8478.90	4273.46	-219.83	-4268.71	4274.37	267.05	0.42	SlimPulse	0
145	12610.00	90.45	267.40	95.00	8478.16	4368.42	-225.26	-4363.55	4369.36	267.04	1.42	SlimPulse	0
146	12705.00	90.31	268.86	95.00	8477.53	4463.42	-228.36	-4458.50	4464.34	267.07	1.54	SlimPulse	0
147	12801.00	90.28	269.72	96.00	8477.04	4559.40	-229.55	-4554.49	4560.27	267.11	0.89	SlimPulse	0
148	12897.00	90.28	269.88	96.00	8476.58	4655.36	-229.89	-4650.49	4656.16	267.17	0.17	SlimPulse	0
149	12992.00	90.48	270.20	95.00	8475.96	4750.31	-229.83	-4745.48	4751.05	267.23	0.41	SlimPulse	0
150	13086.00	90.14	270.12	94.00	8475.45	4844.26	-229.56	-4839.48	4844.92	267.28	0.38	SlimPulse	0
151	13182.00	90.89	269.94	96.00	8474.58	4940.21	-229.51	-4935.48	4940.81	267.34	0.81	SlimPulse	0
152	13277.00	90.93	269.16	95.00	8473.07	5035.17	-230.25	-5030.46	5035.73	267.38	0.82	SlimPulse	0
153	13373.00	91.00	268.68	96.00	8471.46	5131.15	-232.06	-5126.43	5131.68	267.41	0.50	SlimPulse	0
154	13468.00	90.89	268.04	95.00	8469.89	5226.13	-234.77	-5221.38	5226.65	267.43	0.69	SlimPulse	0
155	13563.00	90.83	267.69	95.00	8468.47	5321.12	-238.31	-5316.30	5321.64	267.43	0.37	SlimPulse	0
156	13658.00	90.55	267.71	95.00	8467.33	5416.11	-242.13	-5411.22	5416.63	267.44	0.29	SlimPulse	0
157	13753.00	90.45	267.48	95.00	8466.50	5511.10	-246.11	-5506.13	5511.63	267.44	0.26	SlimPulse	0
158	13848.00	91.00	267.42	95.00	8465.30	5606.08	-250.34	-5601.03	5606.62	267.44	0.58	SlimPulse	0
159	13943.00	90.93	267.46	95.00	8463.71	5701.06	-254.58	-5695.92	5701.61	267.44	0.09	SlimPulse	0
160	14038.00	91.00	266.96	95.00	8462.11	5796.03	-259.20	-5790.79	5796.59	267.44	0.53	SlimPulse	0
161	14134.00	91.03	266.63	96.00	8460.41	5891.99	-264.57	-5886.63	5892.57	267.43	0.35	SlimPulse	0
162	14228.00	90.45	266.97	94.00	8459.20	5985.95	-269.81	-5980.47	5986.56	267.42	0.72	SlimPulse	0
163	14323.00	90.55	268.03	95.00	8458.37	6080.94	-273.95	-6075.38	6081.55	267.42	1.12	SlimPulse	0
164	14417.00	90.62	268.84	94.00	8457.41	6174.93	-276.51	-6169.34	6175.53	267.43	0.87	SlimPulse	0
165	14513.00	90.93	269.63	96.00	8456.11	6270.91	-277.80	-6265.32	6271.48	267.46	0.87	SlimPulse	0
166	14608.00	91.20	269.00	95.00	8454.35	6365.87	-278.94	-6360.30	6366.41	267.49	0.72	SlimPulse	0
167	14703.00	90.76	268.38	95.00	8452.72	6460.86	-281.11	-6455.26	6461.37	267.51	0.80	SlimPulse	0
168	14797.00	90.58	268.08	94.00	8451.62	6554.85	-284.02	-6549.21	6555.36	267.52	0.37	SlimPulse	0
169	14892.00	90.65	268.21	95.00	8450.59	6649.84	-287.09	-6644.15	6650.35	267.53	0.15	SlimPulse	0
170	14987.00	90.93	268.79	95.00	8449.28	6744.83	-289.58	-6739.11	6745.33	267.54	0.68	SlimPulse	0
171	15082.00	91.00	266.10	95.00	8447.69	6839.80	-293.82	-6833.99	6840.3	267.54	2.83	SlimPulse	0
172	15176.00	91.00	265.41	94.00	8446.05	6933.70	-300.77	-6927.72	6934.24	267.51	0.73	SlimPulse	0
173	15271.00	91.14	264.04	95.00	8444.29	7028.50	-309.50	-7022.30	7029.12	267.48	1.45	SlimPulse	0
174	15366.00	90.93	266.09	95.00	8442.57	7123.34	-317.67	-7116.93	7124.01	267.44	2.17	SlimPulse	0
175	15460.00	91.07	268.39	94.00	8440.94	7217.30	-322.19	-7210.80	7217.99	267.44	2.45	SlimPulse	0
176	15555.00	91.00	270.13	95.00	8439.23	7312.27	-323.41	-7305.77	7312.92	267.47	1.83	SlimPulse	0
177	15650.00	90.58	272.03	95.00	8437.92	7407.14	-321.62	-7400.74	7407.72	267.51	2.04	SlimPulse	0
178	15745.00	91.41	275.11	95.00	8436.26	7501.70	-315.70	-7495.53	7502.17	267.59	3.36	SlimPulse	0
179	15839.00	91.55	275.59	94.00	8433.84	7594.94	-306.94	-7589.09	7595.29	267.68	0.52	SlimPulse	0
180	15934.00	90.89	272.92	95.00	8431.82	7689.39	-299.90	-7683.79	7689.64	267.76	2.89	SlimPulse	0
181	16029.00	91.07	270.10	95.00	8430.19	7784.21	-297.40	-7778.74	7784.42	267.81	2.97	SlimPulse	0
182	16124.00	91.17	268.90	95.00	8428.34	7879.17	-298.22	-7873.71	7879.36	267.83	1.26	SlimPulse	0
183	16219.00	91.58	268.36	95.00	8426.06	7974.14	-300.49	-7968.66	7974.32	267.84	0.72	SlimPulse	0
184	16313.00	91.34	268.72	94.00	8423.66	8068.10	-302.89	-8062.60	8068.29	267.85	0.46	SlimPulse	0
185	16407.00	91.27	269.76	94.00	8421.52	8162.06	-304.13	-8156.56	8162.23	267.86	1.11	SlimPulse	0
186	16501.00	91.24	270.28	94.00	8419.46	8256.00	-304.10	-8250.54	8256.14	267.89	0.55	SlimPulse	0
187	16596.00	91.31	269.27	95.00	8417.35	8350.94	-304.47	-8345.52	8351.07	267.91	1.06	SlimPulse	0
188	16691.00	91.00	269.31	95.00	8415.44	8445.90	-305.64	-8440.49	8446.02	267.93	0.33	SlimPulse	0
189	16785.00	90.69	268.36	94.00	8414.06	8539.88	-307.56	-8534.46	8540	267.94	1.06	SlimPulse	0
190	16880.00	91.31	268.46	95.00	8412.41	8634.87	-310.20	-8629.41	8634.98	267.94	0.66	SlimPulse	0
191	16975.00	91.17	268.28	95.00	8410.35	8729.85	-312.90	-8724.35	8729.96	267.95	0.24	SlimPulse	0
192	17069.00	91.17	268.31	94.00	8408.44	8823.83	-315.69	-8818.29	8823.93	267.95	0.03	SlimPulse	0
193	17164.00	91.31	268.24	95.00	8406.38	8918.80	-318.56	-8913.22	8918.91	267.95	0.16	SlimPulse	0
194	17259.00	91.34	270.23	95.00	8404.19	9013.76	-319.83	-9008.18	9013.86	267.97	2.10	SlimPulse	0
195	17353.00	91.20	270.46	94.00	8402.10	9107.67	-319.27	-9102.16	9107.75	267.99	0.29	SlimPulse	0
196	17448.00	91.24	269.64	95.00	8400.08	9202							