



Total Directional
Services, LLC

USA Operations

State of Texas Railroad Commission

Lea County, New Mexico

Client: Devon Energy (US)

Well Name: JAYHAWK 7-6 FED FEE COM 6h

Total Job No: 2019-120-126

API No: 30-025-45532

Start Depth: 120 feet MD

End Depth: 23,262 feet MD

Start Date: February 16, 2019

End Date: March 19, 2019

I, Scott Speer, certify that; I am employed by Total Directional Services, LLC. on 02/16/2019 through 03/19/2019. I conducted or supervised the taking of the MWD surveys from a measured depth of 120 feet to a measured depth of 23,262 feet. The data is true, correct, complete and within the limitations of the tool as set forth by Total Directional Services, LLC. I am authorized and qualified to make this report, and these surveys were conducted at the request of Devon Energy (US) for the well: JAYHAWK 7-6 FED FEE COM 6H, API No: 30-025-45532 in Lea County, New Mexico. I have reviewed this report and find that it conforms to the principals and procedures as set forth by Total Directional Services, LLC.

DIRECTIONAL SURVEY REPORT

Company name: Devon Energy

Start date: 2/16/2019

Well name: Jayhawk 7-6 FED FEE COM 6H

End date: 3/19/2019

Field: Rattlesnake

Proposed direction: 9.23

Rig: Cactus 126

Declination: 6.29

API/UWI: 30-025-45532

North Reference: Grid

State/Province: New Mexico

Latitude/Longitude: 32.0523883 / -103.507094

County/Parish: Lea

KB: 3398.2

Location Southeast New Mexico

SVY	Depth	Inc	Azm	TVD	NS	EW	VS	CD	CA	DLS	CL
Tiein	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	
1	124.00	0.80	136.70	124.00	-0.63	0.59	-0.53	0.87	136.70	0.65	124.00
2	216.00	1.10	138.60	215.98	-1.76	1.62	-1.48	2.39	137.40	0.33	92.00
3	307.00	1.20	135.90	306.96	-3.10	2.86	-2.60	4.22	137.31	0.12	91.00
4	399.00	1.40	136.30	398.94	-4.60	4.31	-3.85	6.30	136.91	0.22	92.00
5	490.00	1.40	135.30	489.91	-6.20	5.86	-5.18	8.53	136.62	0.03	91.00
6	582.00	1.20	143.70	581.89	-7.77	7.22	-6.51	10.61	137.12	0.30	92.00
7	674.00	1.50	135.40	673.86	-9.41	8.63	-7.90	12.77	137.46	0.39	92.00
8	765.00	1.50	136.40	764.83	-11.12	10.29	-9.32	15.15	137.21	0.03	91.00
9	840.00	1.60	137.30	839.81	-12.60	11.68	-10.56	17.18	137.17	0.14	75.00
10	976.00	1.40	135.40	975.76	-15.18	14.13	-12.71	20.74	137.04	0.15	136.00
11	1067.00	1.30	134.50	1066.73	-16.69	15.65	-13.96	22.88	136.85	0.11	91.00
12	1159.00	1.70	135.00	1158.70	-18.39	17.36	-15.37	25.29	136.65	0.44	92.00
13	1250.00	0.60	120.60	1249.68	-19.58	18.72	-16.33	27.09	136.29	1.24	91.00
14	1341.00	0.40	120.80	1340.68	-19.99	19.41	-16.62	27.86	135.85	0.22	91.00
15	1433.00	0.50	134.30	1432.68	-20.43	19.97	-16.97	28.57	135.66	0.16	92.00
16	1525.00	0.60	135.80	1524.67	-21.06	20.59	-17.48	29.45	135.64	0.11	92.00
17	1617.00	0.50	136.10	1616.67	-21.69	21.21	-18.01	30.34	135.65	0.11	92.00
18	1709.00	0.50	141.40	1708.66	-22.30	21.73	-18.52	31.14	135.73	0.05	92.00
19	1803.00	0.50	120.50	1802.66	-22.83	22.34	-18.95	31.94	135.61	0.19	94.00
20	1898.00	0.40	108.90	1897.66	-23.14	23.01	-19.15	32.64	135.16	0.14	95.00
21	1991.00	0.40	140.80	1990.66	-23.50	23.53	-19.42	33.25	134.97	0.24	93.00
22	2086.00	0.40	143.00	2085.65	-24.02	23.94	-19.87	33.91	135.10	0.02	95.00
23	2180.00	0.60	150.40	2179.65	-24.71	24.38	-20.48	34.71	135.39	0.22	94.00
24	2275.00	0.80	130.60	2274.64	-25.58	25.13	-21.22	35.85	135.51	0.33	95.00
25	2369.00	1.20	109.90	2368.63	-26.34	26.55	-21.74	37.40	134.77	0.57	94.00
26	2463.00	1.60	113.20	2462.60	-27.19	28.68	-22.24	39.52	133.47	0.43	94.00
27	2558.00	2.00	111.80	2557.55	-28.33	31.44	-22.92	42.32	132.02	0.42	95.00
28	2652.00	2.20	119.70	2651.49	-29.83	34.53	-23.91	45.63	130.83	0.37	94.00
29	2747.00	2.40	121.10	2746.41	-31.76	37.82	-25.29	49.39	130.03	0.22	95.00
30	2841.00	2.20	127.60	2840.34	-33.88	40.93	-26.88	53.13	129.62	0.35	94.00
31	2935.00	2.90	111.90	2934.25	-35.87	44.57	-28.26	57.21	128.83	1.05	94.00
32	3029.00	4.20	104.60	3028.06	-37.62	50.10	-29.10	62.66	126.90	1.46	94.00
33	3123.00	5.90	105.60	3121.70	-39.79	58.09	-29.96	70.41	124.41	1.81	94.00
34	3217.00	7.10	106.70	3215.09	-42.76	68.31	-31.25	80.59	122.05	1.28	94.00
35	3311.00	7.60	107.60	3308.32	-46.31	79.80	-32.91	92.26	120.13	0.55	94.00
36	3405.00	7.80	111.20	3401.47	-50.49	91.67	-35.14	104.66	118.85	0.56	94.00

37	3499.00	8.00	114.80	3494.58	-55.54	103.55	-38.22	117.51	118.21	0.57	94.00
38	3593.00	8.30	114.80	3587.63	-61.13	115.65	-41.79	130.81	117.86	0.32	94.00
39	3687.00	8.40	115.70	3680.63	-66.96	128.00	-45.56	144.45	117.61	0.18	94.00
40	3781.00	8.40	117.40	3773.62	-73.09	140.28	-49.65	158.18	117.52	0.26	94.00
41	3875.00	9.00	114.60	3866.54	-79.31	153.06	-53.74	172.39	117.39	0.78	94.00
42	3969.00	9.60	112.90	3959.31	-85.43	166.97	-57.54	187.55	117.10	0.70	94.00
43	4063.00	9.10	112.70	4052.06	-91.34	181.04	-61.12	202.78	116.77	0.53	94.00
44	4157.00	9.40	107.70	4144.84	-96.55	195.21	-63.98	217.78	116.32	0.91	94.00
45	4251.00	9.60	107.20	4237.55	-101.20	210.02	-66.20	233.13	115.73	0.23	94.00
46	4346.00	9.80	108.70	4331.19	-106.13	225.24	-68.63	248.99	115.23	0.34	95.00
47	4439.00	9.90	109.60	4422.82	-111.35	240.27	-71.37	264.82	114.87	0.20	93.00
48	4534.00	10.60	109.90	4516.30	-117.07	256.18	-74.46	281.66	114.56	0.74	95.00
49	4627.00	10.60	107.60	4607.72	-122.56	272.37	-77.29	298.68	114.23	0.45	93.00
50	4721.00	10.70	107.50	4700.10	-127.80	288.94	-79.80	315.94	113.86	0.11	94.00
51	4815.00	9.30	109.00	4792.67	-132.90	304.44	-82.35	332.19	113.58	1.51	94.00
52	4909.00	9.80	108.00	4885.36	-137.84	319.23	-84.86	347.72	113.35	0.56	94.00
53	5003.00	10.40	109.50	4977.91	-143.15	334.84	-87.59	364.16	113.15	0.70	94.00
54	5097.00	9.90	112.30	5070.44	-149.05	350.31	-90.93	380.70	113.05	0.75	94.00
55	5192.00	8.90	111.80	5164.16	-154.88	364.69	-94.37	396.22	113.01	1.06	95.00
56	5286.00	8.00	110.40	5257.14	-159.86	377.58	-97.22	410.02	112.95	0.98	94.00
57	5380.00	7.60	105.30	5350.27	-163.78	389.70	-99.15	422.72	112.80	0.85	94.00
58	5474.00	8.80	101.70	5443.31	-166.87	402.74	-100.12	435.94	112.51	1.39	94.00
59	5568.00	10.10	102.60	5536.03	-170.13	417.83	-100.91	451.13	112.16	1.39	94.00
60	5662.00	10.20	103.00	5628.56	-173.80	433.98	-101.94	467.49	111.83	0.13	94.00
61	5756.00	9.70	102.80	5721.14	-177.43	449.81	-102.98	483.54	111.53	0.53	94.00
62	5850.00	9.30	101.10	5813.85	-180.64	464.99	-103.72	498.84	111.23	0.52	94.00
63	5944.00	8.80	98.10	5906.68	-183.12	479.56	-103.83	513.33	110.90	0.73	94.00
64	6038.00	9.90	98.80	5999.43	-185.37	494.66	-103.63	528.25	110.54	1.18	94.00
65	6132.00	10.20	98.70	6091.99	-187.86	510.88	-103.49	544.32	110.19	0.32	94.00
66	6226.00	9.90	97.80	6184.55	-190.22	527.11	-103.21	560.38	109.84	0.36	94.00
67	6320.00	9.40	96.00	6277.22	-192.12	542.75	-102.58	575.75	109.49	0.62	94.00
68	6414.00	9.60	105.60	6369.94	-195.03	557.93	-103.01	591.04	109.27	1.70	94.00
69	6508.00	9.00	104.60	6462.70	-198.99	572.60	-104.57	606.19	109.16	0.66	94.00
70	6602.00	9.00	104.90	6555.54	-202.73	586.82	-105.99	620.85	109.06	0.05	94.00
71	6696.00	8.60	104.30	6648.44	-206.36	600.73	-107.33	635.19	108.96	0.44	94.00
72	6791.00	8.50	105.90	6742.38	-210.04	614.37	-108.78	649.28	108.87	0.27	95.00
73	6885.00	9.30	105.10	6835.25	-213.92	628.38	-110.36	663.80	108.80	0.86	94.00
74	6979.00	10.20	106.90	6927.89	-218.32	643.68	-112.25	679.70	108.74	1.01	94.00
75	7073.00	11.20	109.50	7020.25	-223.79	660.25	-114.99	697.14	108.72	1.18	94.00
76	7167.00	11.10	108.90	7112.48	-229.76	677.42	-118.13	715.32	108.74	0.16	94.00
77	7261.00	11.20	110.10	7204.71	-235.83	694.55	-121.37	733.50	108.75	0.27	94.00
78	7355.00	10.90	110.50	7296.96	-242.08	711.45	-124.83	751.51	108.79	0.33	94.00
79	7450.00	10.50	110.60	7390.31	-248.27	727.96	-128.30	769.14	108.83	0.42	95.00
80	7544.00	10.20	111.50	7482.78	-254.34	743.73	-131.75	786.01	108.88	0.36	94.00
81	7638.00	9.90	111.60	7575.34	-260.36	758.98	-135.25	802.40	108.93	0.32	94.00
82	7732.00	9.30	111.80	7668.02	-266.16	773.55	-138.64	818.06	108.99	0.64	94.00
83	7826.00	9.30	112.00	7760.79	-271.82	787.64	-141.97	833.23	109.04	0.03	94.00
84	7920.00	10.10	111.30	7853.44	-277.66	802.36	-145.37	849.05	109.09	0.86	94.00
85	8015.00	10.10	110.20	7946.97	-283.57	817.94	-148.70	865.70	109.12	0.20	95.00

86	8109.00	9.10	109.90	8039.65	-288.94	832.67	-151.64	881.38	109.14	1.07	94.00
87	8203.00	8.20	110.30	8132.58	-293.80	845.94	-154.31	895.51	109.15	0.96	94.00
88	8297.00	8.10	109.30	8225.63	-298.31	858.48	-156.75	908.84	109.16	0.18	94.00
89	8392.00	7.70	110.00	8319.73	-302.70	870.78	-159.11	921.89	109.17	0.43	95.00
90	8486.00	8.80	107.90	8412.76	-307.07	883.54	-161.37	935.38	109.16	1.21	94.00
91	8580.00	9.60	107.40	8505.55	-311.62	897.86	-163.57	950.40	109.14	0.86	94.00
92	8674.00	9.40	106.80	8598.26	-316.18	912.69	-165.69	965.91	109.11	0.24	94.00
93	8768.00	10.40	112.50	8690.86	-321.65	927.88	-168.65	982.05	109.12	1.49	94.00
94	8862.00	10.00	113.90	8783.37	-328.20	943.18	-172.67	998.65	109.19	0.50	94.00
95	8956.00	9.90	112.20	8875.96	-334.56	958.12	-176.55	1014.85	109.25	0.33	94.00
96	9050.00	10.50	110.20	8968.47	-340.57	973.64	-179.99	1031.49	109.28	0.74	94.00
97	9144.00	9.90	110.90	9060.99	-346.41	989.23	-183.26	1048.13	109.30	0.65	94.00
98	9238.00	9.70	110.80	9153.62	-352.11	1004.18	-186.48	1064.12	109.32	0.21	94.00
99	9333.00	9.40	111.00	9247.30	-357.73	1018.91	-189.67	1079.88	109.35	0.32	95.00
100	9428.00	9.70	112.20	9340.98	-363.53	1033.56	-193.05	1095.63	109.38	0.38	95.00
101	9522.00	9.20	112.60	9433.71	-369.41	1047.83	-196.56	1111.04	109.42	0.54	94.00
102	9616.00	10.50	111.30	9526.32	-375.41	1062.75	-200.09	1127.10	109.46	1.40	94.00
103	9710.00	9.10	110.20	9618.95	-381.09	1077.70	-203.30	1143.10	109.47	1.50	94.00
104	9804.00	8.60	108.80	9711.83	-385.92	1091.33	-205.88	1157.56	109.47	0.58	94.00
105	9898.00	7.90	109.20	9804.85	-390.31	1104.09	-208.17	1171.05	109.47	0.75	94.00
106	9992.00	7.30	114.20	9898.03	-394.88	1115.63	-210.83	1183.46	109.49	0.95	94.00
107	10085.00	6.40	117.60	9990.36	-399.71	1125.62	-213.99	1194.48	109.55	1.06	93.00
108	10179.00	8.30	120.50	10083.59	-405.58	1136.11	-218.10	1206.33	109.65	2.06	94.00
109	10273.00	9.50	112.90	10176.46	-412.04	1149.10	-222.39	1220.74	109.73	1.78	94.00
110	10367.00	12.10	108.00	10268.79	-418.11	1165.62	-225.73	1238.34	109.73	2.93	94.00
111	10461.00	11.40	106.10	10360.82	-423.73	1183.91	-228.34	1257.46	109.69	0.85	94.00
112	10554.00	10.30	104.00	10452.15	-428.29	1200.81	-230.13	1274.90	109.63	1.26	93.00
113	10648.00	10.60	100.10	10544.59	-431.84	1217.48	-230.96	1291.80	109.53	0.82	94.00
114	10743.00	11.20	97.70	10637.88	-434.60	1235.22	-230.85	1309.45	109.38	0.79	95.00
115	10836.00	11.60	99.50	10729.05	-437.36	1253.40	-230.65	1327.51	109.24	0.58	93.00
116	10930.00	13.10	107.10	10820.87	-442.05	1272.90	-232.16	1347.47	109.15	2.35	94.00
117	11024.00	15.20	110.50	10912.02	-449.50	1294.63	-236.02	1370.44	109.15	2.40	94.00
118	11120.00	15.30	108.90	11004.64	-458.01	1318.40	-240.61	1395.69	109.16	0.45	96.00
119	11214.00	13.50	110.30	11095.68	-465.83	1340.43	-244.80	1419.06	109.16	1.95	94.00
120	11308.00	13.10	110.50	11187.16	-473.37	1360.69	-248.99	1440.68	109.18	0.43	94.00
121	11402.00	11.80	107.40	11278.95	-479.98	1379.84	-252.44	1460.94	109.18	1.55	94.00
122	11496.00	11.00	108.20	11371.09	-485.65	1397.54	-255.20	1479.52	109.16	0.87	94.00
123	11589.00	11.70	114.50	11462.28	-492.33	1414.55	-259.07	1497.78	109.19	1.53	93.00
124	11684.00	11.10	118.40	11555.41	-500.68	1431.36	-264.61	1516.40	109.28	1.03	95.00
125	11778.00	9.90	119.40	11647.83	-508.95	1446.36	-270.37	1533.29	109.39	1.29	94.00
126	11872.00	9.90	115.60	11740.43	-516.41	1460.68	-275.43	1549.28	109.47	0.69	94.00
127	11966.00	10.80	115.50	11832.90	-523.69	1475.92	-280.18	1566.08	109.54	0.96	94.00
128	12060.00	9.50	112.60	11925.43	-530.46	1491.03	-284.44	1582.58	109.58	1.49	94.00
129	12155.00	9.90	108.20	12019.07	-536.03	1506.03	-287.52	1598.58	109.59	0.89	95.00
130	12249.00	8.60	108.30	12111.85	-540.76	1520.38	-289.89	1613.68	109.58	1.38	94.00
131	12273.00	8.10	109.20	12135.59	-541.88	1523.68	-290.47	1617.17	109.58	2.15	24.00
132	12343.00	7.50	107.50	12204.94	-544.87	1532.69	-291.98	1626.66	109.57	0.92	70.00
133	12437.00	11.90	67.40	12297.68	-542.99	1547.51	-287.74	1640.01	109.33	8.31	94.00
134	12531.00	19.60	35.00	12388.24	-526.30	1565.56	-268.37	1651.66	108.58	12.14	94.00

135	12625.00	27.00	11.00	12474.71	-492.31	1578.73	-232.71	1653.71	107.32	12.66	94.00
136	12719.00	37.60	357.00	12554.16	-442.52	1581.31	-183.15	1642.06	105.63	13.74	94.00
137	12813.00	49.00	353.40	12622.47	-378.42	1575.71	-120.78	1620.51	103.50	12.40	94.00
138	12907.00	61.90	350.20	12675.67	-302.00	1564.53	-47.14	1593.41	100.93	14.00	94.00
139	13001.00	75.80	351.40	12709.51	-215.66	1550.59	35.84	1565.51	97.92	14.83	94.00
140	13095.00	87.10	354.90	12723.46	-123.53	1539.56	125.01	1544.51	94.59	12.57	94.00
141	13142.00	88.20	355.20	12725.39	-76.75	1535.51	170.54	1537.43	92.86	2.43	47.00
142	13189.00	92.40	0.10	12725.15	-29.81	1533.58	216.56	1533.87	91.11	13.73	47.00
143	13283.00	92.20	2.60	12721.37	64.08	1535.80	309.59	1537.13	87.61	2.67	94.00
144	13377.00	89.00	2.60	12720.39	157.97	1540.06	402.94	1548.14	84.14	3.40	94.00
145	13471.00	90.10	2.10	12721.13	251.88	1543.91	496.26	1564.33	80.73	1.29	94.00
146	13565.00	89.80	2.50	12721.21	345.81	1547.69	589.57	1585.85	77.41	0.53	94.00
147	13660.00	90.10	3.00	12721.29	440.70	1552.24	683.97	1613.59	74.15	0.61	95.00
148	13754.00	91.10	3.60	12720.31	534.53	1557.66	777.46	1646.82	71.06	1.24	94.00
149	13848.00	90.40	3.20	12719.08	628.36	1563.23	870.96	1684.79	68.10	0.86	94.00
150	13942.00	88.50	2.40	12719.98	722.24	1567.82	964.36	1726.18	65.27	2.19	94.00
151	14036.00	89.00	2.50	12722.03	816.13	1571.84	1057.68	1771.08	62.56	0.54	94.00
152	14130.00	87.40	3.10	12724.98	909.97	1576.43	1151.04	1820.21	60.01	1.82	94.00
153	14224.00	88.00	3.00	12728.75	1003.76	1581.42	1244.42	1873.08	57.60	0.65	94.00
154	14318.00	85.60	3.20	12734.00	1097.47	1586.50	1337.73	1929.10	55.33	2.56	94.00
155	14411.00	85.50	2.50	12741.22	1190.07	1591.11	1429.87	1986.93	53.21	0.76	93.00
156	14505.00	89.40	1.90	12745.40	1283.89	1594.71	1523.06	2047.31	51.16	4.20	94.00
157	14599.00	91.70	1.00	12744.50	1377.85	1597.09	1616.18	2109.31	49.21	2.63	94.00
158	14693.00	90.00	2.80	12743.10	1471.78	1600.21	1709.39	2174.12	47.39	2.63	94.00
159	14787.00	90.60	2.80	12742.61	1565.67	1604.80	1802.80	2242.03	45.71	0.64	94.00
160	14881.00	90.90	2.00	12741.38	1659.57	1608.74	1896.12	2311.32	44.11	0.91	94.00
161	14976.00	88.30	1.80	12742.04	1754.51	1611.89	1990.34	2382.54	42.57	2.74	95.00
162	15070.00	88.80	1.30	12744.42	1848.45	1614.43	2083.46	2454.21	41.13	0.75	94.00
163	15163.00	90.10	1.10	12745.31	1941.42	1616.37	2175.55	2526.22	39.78	1.41	93.00
164	15257.00	90.50	0.60	12744.82	2035.41	1617.77	2268.54	2600.01	38.48	0.68	94.00
165	15351.00	90.60	0.80	12743.92	2129.40	1618.92	2361.50	2674.92	37.24	0.24	94.00
166	15446.00	91.60	0.50	12742.10	2224.37	1619.99	2455.41	2751.76	36.07	1.10	95.00
167	15540.00	90.40	1.70	12740.45	2318.34	1621.80	2548.45	2829.30	34.97	1.81	94.00
168	15634.00	89.60	1.80	12740.45	2412.29	1624.67	2641.65	2908.38	33.96	0.86	94.00
169	15728.00	90.70	2.60	12740.21	2506.22	1628.28	2734.94	2988.72	33.01	1.45	94.00
170	15758.00	90.90	2.40	12739.79	2536.19	1629.59	2764.73	3014.60	32.72	0.94	30.00
171	15853.00	89.80	2.20	12739.21	2631.11	1633.40	2859.04	3096.89	31.83	1.18	95.00
172	15947.00	87.90	0.10	12741.10	2725.06	1635.29	2952.07	3178.07	30.97	3.01	94.00
173	16041.00	86.90	358.10	12745.36	2818.95	1633.81	3044.51	3258.19	30.10	2.38	94.00
174	16135.00	88.10	358.40	12749.46	2912.81	1630.94	3136.70	3338.33	29.25	1.32	94.00
175	16229.00	89.80	358.60	12751.18	3006.76	1628.48	3229.04	3419.44	28.44	1.82	94.00
176	16323.00	90.30	358.60	12751.10	3100.73	1626.19	3321.42	3501.29	27.67	0.53	94.00
177	16417.00	88.70	359.40	12751.92	3194.71	1624.55	3413.92	3584.04	26.95	1.90	94.00
178	16511.00	90.70	359.40	12752.41	3288.70	1623.56	3506.53	3667.63	26.27	2.13	94.00
179	16605.00	90.80	359.30	12751.18	3382.68	1622.50	3599.13	3751.67	25.62	0.15	94.00
180	16699.00	90.20	359.00	12750.36	3476.67	1621.10	3691.68	3836.04	25.00	0.71	94.00
181	16793.00	90.60	358.60	12749.71	3570.65	1619.13	3784.12	3920.60	24.39	0.60	94.00
182	16887.00	91.40	359.00	12748.07	3664.61	1617.16	3876.55	4005.57	23.81	0.95	94.00
183	16982.00	89.30	356.80	12747.49	3759.53	1613.68	3969.69	4091.22	23.23	3.20	95.00

184	17076.00	89.00	357.10	12748.88	3853.39	1608.68	4061.53	4175.70	22.66	0.45	94.00
185	17170.00	89.40	358.30	12750.19	3947.30	1604.91	4153.62	4261.10	22.13	1.35	94.00
186	17264.00	91.40	0.20	12749.54	4041.28	1603.68	4246.19	4347.85	21.64	2.93	94.00
187	17358.00	90.00	1.90	12748.39	4135.26	1605.40	4339.22	4435.95	21.22	2.34	94.00
188	17451.00	90.00	359.90	12748.39	4228.24	1606.86	4431.23	4523.28	20.81	2.15	93.00
189	17545.00	90.40	2.10	12748.06	4322.22	1608.50	4524.26	4611.82	20.41	2.38	94.00
190	17640.00	89.40	2.30	12748.23	4417.15	1612.15	4618.54	4702.15	20.05	1.07	95.00
191	17734.00	89.60	1.30	12749.05	4511.10	1615.10	4711.75	4791.51	19.70	1.08	94.00
192	17828.00	89.10	357.90	12750.11	4605.07	1614.45	4804.40	4879.87	19.32	3.66	94.00
193	17922.00	88.70	357.90	12751.92	4698.99	1611.00	4896.55	4967.48	18.92	0.43	94.00
194	18016.00	87.80	358.70	12754.79	4792.91	1608.22	4988.80	5055.52	18.55	1.28	94.00
195	18109.00	92.40	1.10	12754.63	4885.87	1608.05	5080.54	5143.70	18.22	5.58	93.00
196	18204.00	92.00	1.50	12750.98	4980.78	1610.21	5174.56	5234.59	17.92	0.60	95.00
197	18298.00	91.50	1.50	12748.11	5074.70	1612.67	5267.67	5324.78	17.63	0.53	94.00
198	18392.00	90.30	0.90	12746.63	5168.67	1614.64	5360.73	5415.00	17.35	1.43	94.00
199	18486.00	90.80	1.50	12745.73	5262.64	1616.60	5453.80	5505.34	17.08	0.83	94.00
200	18580.00	90.50	1.30	12744.66	5356.61	1618.90	5546.92	5595.90	16.82	0.38	94.00
201	18674.00	89.90	1.00	12744.34	5450.59	1620.79	5639.99	5686.46	16.56	0.71	94.00
202	18768.00	89.50	1.30	12744.83	5544.57	1622.67	5733.05	5777.14	16.31	0.53	94.00
203	18862.00	89.60	0.80	12745.57	5638.55	1624.40	5826.09	5867.87	16.07	0.54	94.00
204	18956.00	90.80	0.80	12745.24	5732.54	1625.71	5919.08	5958.60	15.83	1.28	94.00
205	19050.00	89.80	0.80	12744.75	5826.53	1627.02	6012.06	6049.43	15.60	1.06	94.00
206	19144.00	91.20	0.10	12743.92	5920.52	1627.76	6104.95	6140.20	15.37	1.67	94.00
207	19238.00	90.70	0.10	12742.37	6014.50	1627.92	6197.75	6230.92	15.15	0.53	94.00
208	19333.00	88.90	359.30	12742.70	6109.50	1627.43	6291.43	6322.54	14.92	2.07	95.00
209	19427.00	90.10	357.80	12743.52	6203.46	1625.05	6383.79	6412.77	14.68	2.04	94.00
210	19521.00	90.90	359.00	12742.70	6297.42	1622.42	6476.11	6503.05	14.45	1.53	94.00
211	19615.00	89.80	358.00	12742.12	6391.38	1619.96	6568.46	6593.48	14.22	1.58	94.00
212	19709.00	91.80	359.80	12740.81	6485.34	1618.16	6660.92	6684.17	14.01	2.86	94.00
213	19803.00	92.00	0.20	12737.69	6579.29	1618.16	6753.66	6775.36	13.82	0.48	94.00
214	19897.00	90.10	358.80	12735.97	6673.27	1617.34	6846.28	6866.46	13.62	2.51	94.00
215	19991.00	91.90	358.40	12734.33	6767.22	1615.04	6938.65	6957.27	13.42	1.96	94.00
216	20085.00	92.00	358.70	12731.13	6861.13	1612.66	7030.97	7048.11	13.23	0.34	94.00
217	20179.00	91.60	359.50	12728.18	6955.08	1611.19	7123.46	7139.26	13.04	0.95	94.00
218	20273.00	91.80	360.00	12725.39	7049.03	1610.78	7216.13	7230.73	12.87	0.57	94.00
219	20367.00	91.30	359.40	12722.85	7143.00	1610.29	7308.80	7322.26	12.70	0.83	94.00
220	20461.00	90.50	359.40	12721.37	7236.98	1609.30	7401.41	7413.75	12.54	0.85	94.00
221	20555.00	89.90	359.10	12721.04	7330.97	1608.07	7493.98	7505.27	12.37	0.71	94.00
222	20649.00	88.40	358.40	12722.44	7424.93	1606.02	7586.40	7596.64	12.21	1.76	94.00
223	20743.00	88.30	359.20	12725.15	7518.87	1604.05	7678.81	7688.07	12.04	0.86	94.00
224	20837.00	89.00	359.40	12727.36	7612.84	1602.91	7771.37	7779.76	11.89	0.77	94.00
225	20931.00	89.10	359.10	12728.92	7706.82	1601.67	7863.94	7871.49	11.74	0.34	94.00
226	21025.00	91.50	359.00	12728.43	7800.80	1600.12	7956.45	7963.22	11.59	2.56	94.00
227	21119.00	93.70	359.20	12724.16	7894.68	1598.64	8048.89	8054.92	11.45	2.35	94.00
228	21214.00	90.40	359.40	12720.76	7989.60	1597.48	8142.39	8147.74	11.31	3.48	95.00
229	21308.00	91.30	359.70	12719.37	8083.59	1596.74	8235.04	8239.78	11.17	1.01	94.00
230	21402.00	90.20	0.40	12718.14	8177.58	1596.83	8327.83	8332.02	11.05	1.39	94.00
231	21496.00	90.20	1.00	12717.81	8271.57	1597.97	8420.79	8424.51	10.93	0.64	94.00
232	21590.00	88.70	1.10	12718.71	8365.55	1599.70	8513.82	8517.12	10.83	1.60	94.00

233	21684.00	88.30	2.20	12721.17	8459.47	1602.40	8606.97	8609.90	10.73	1.24	94.00
234	21767.00	86.70	2.60	12724.80	8542.32	1605.87	8689.30	8691.95	10.65	1.99	83.00
235	21861.00	86.00	2.70	12730.78	8636.03	1610.21	8782.49	8784.86	10.56	0.75	94.00
236	21955.00	85.10	4.00	12738.07	8729.58	1615.69	8875.71	8877.84	10.49	1.68	94.00
237	22049.00	86.00	4.50	12745.37	8823.04	1622.63	8969.07	8971.01	10.42	1.09	94.00
238	22143.00	87.70	4.10	12750.53	8916.63	1629.67	9062.58	9064.33	10.36	1.86	94.00
239	22237.00	91.60	6.40	12751.11	9010.21	1638.27	9156.32	9157.94	10.31	4.82	94.00
240	22331.00	93.10	5.30	12747.25	9103.64	1647.84	9250.08	9251.57	10.26	1.98	94.00
241	22425.00	93.60	3.40	12741.76	9197.20	1654.96	9343.57	9344.91	10.20	2.09	94.00
242	22519.00	92.60	2.10	12736.67	9290.95	1659.46	9436.83	9437.99	10.13	1.74	94.00
243	22613.00	92.20	0.80	12732.74	9384.84	1661.84	9529.88	9530.84	10.04	1.45	94.00
244	22707.00	92.30	1.20	12729.05	9478.75	1663.48	9622.84	9623.61	9.95	0.44	94.00
245	22801.00	94.20	358.70	12723.72	9572.59	1663.40	9715.45	9716.03	9.86	3.34	94.00
246	22895.00	92.20	357.60	12718.47	9666.39	1660.37	9807.55	9807.95	9.75	2.43	94.00
247	22989.00	92.60	358.00	12714.53	9760.23	1656.76	9899.60	9899.85	9.63	0.60	94.00
248	23083.00	93.20	358.20	12709.78	9854.06	1653.65	9991.72	9991.85	9.53	0.67	94.00
249	23177.00	93.80	358.60	12704.04	9947.85	1651.03	10083.87	10083.93	9.42	0.77	94.00
250	23212.00	93.50	358.60	12701.81	9982.77	1650.18	10118.20	10118.24	9.39	0.86	35.00
PTB	23262.00	93.50	358.60	12698.76	10032.66	1648.96	10167.25	10167.27	9.33	0.00	50.00