Owner– Sample Tank
Tank Capacity Report

Location

NOVLUM INC.

2018/06/26

OWNER – SAMPLE TANK

LOCATION

CONTENTS

LIST OF FIGURES

No table of figures entries found.

LIST OF TABLES

1 INTRODUCTION

The purpose of this examination was to assess the capacity of the tank according with the relevant sections of *API MPMS 2.2A: Manual of Petroleum Management Standard Chapter 2 – Tank Calibration.*

2 ANALYSIS

The floor to shell weld elevation nearest to the Strike point (Bottom) was set to zero.

Table 1: Tank specifics

Shell inner diameter	100 ft 0.05 in
Shell height	55 ft 11.93 in
Strike height (wrt Bottom)	-0.00 in
Gauge height (wrt Strike) (supplied)	57 ft 1.25 in
Course heights	9 ft 11.5000 in, 9 ft 11.5000 in, 9 ft 11.5000 in, 9 ft 11.5000 in, 7 ft 11.5000 in, 7 ft 11.5000 in
Course thicknesses	0.5660 in, 0.4550 in, 0.3440 in, 0.2500 in, 0.2500 in, 0.2500 in
Shell elasticity	29000000 psi
Fill height (wrt Bottom)	50 ft 7.23 in
Fill specific gravity	0.7608
Fill capacity at 60.00 °F	70276.2196 bbl
Measurement temperature	74.00 °F
Standard temperature	60.00 °F
Temperature correction factor to standard temperature	0.99983
External analysis	No
Roof type	Fixed
Floating roof weight	103400.00 lb
Shell data precision (1σ)	0.06 in
Floor data precision (1σ)	0.03 in
Data accuracy (1σ)	0.1 in (Manufacturer specification)

2.1 SHELL CIRCUMFERENCE CALCULATIONS

Table 2: Shell circumference and corrections

Ring	Strap Elev.	Circum.	Circum. Inside	Circum. Empty	Circum. Stress	Incr. Vol. (bbl)	Incr. Vol. LH (bbl)	Incr. Vol. Total (bbl)
1	5 ft 0.00 in	314 ft 0.86 in	314 ft 0.86 in	314 ft 0.86 in	314 ft 1.09 in	116.5203	0.0000	116.5203
2	17 ft 11.99 in	314 ft 1.50 in	314 ft 1.50 in	314 ft 1.50 in	314 ft 1.61 in	116.5523	0.0279	116.5802
3	27 ft 9.98 in	314 ft 2.30 in	314 ft 2.30 in	314 ft 2.30 in	314 ft 2.45 in	116.6048	0.0627	116.6675
4	37 ft 9.96 in	314 ft 2.88 in	314 ft 2.88 in	314 ft 2.88 in	314 ft 3.08 in	116.6437	0.1087	116.7524
5	46 ft 1.95 in	314 ft 2.97 in	314 ft 2.97 in	314 ft 2.97 in	314 ft 3.14 in	116.6472	0.1719	116.8192
6	54 ft 1.95 in	314 ft 2.49 in	314 ft 2.49 in	314 ft 2.49 in	314 ft 2.49 in	116.6068	0.2225	116.8293

2.2 DEADWOOD CALCULATIONS

Table 3: Deadwood measurements

Name	From Elev.	To Elev.	Vol. (bbl)
Sump	-11.25 in	0.75 in	0.6027
Nozzle N6	-3.20 in	1 ft 6.80 in	-0.0072
Nozzle N3	-2.23 in	2 ft 2.00 in	-0.0673
Gauge	0.36 in	56 ft 10.36 in	-0.6132
Support 2	0.37 in	5 ft 5.13 in	-0.2540
Support 1	3.91 in	5 ft 5.21 in	-0.1605
Center Suport	5.54 in	54 ft 5.54 in	-0.8906
Radar Gauge	6.07 in	57 ft 4.07 in	-0.6132
Bleeder Vent	6.18 in	5 ft 4.68 in	-0.0052
Nozzle N4	11.56 in	2 ft 0.31 in	-0.1929
Nozzle N2	1 ft 0.64 in	1 ft 11.39 in	-0.1601
Nozzle N1	1 ft 2.28 in	2 ft 3.60 in	0.2299
Manway MX1	1 ft 5.84 in	3 ft 6.18 in	0.4315
Manway M1	1 ft 8.76 in	4 ft 3.03 in	0.6175
Manway M2	1 ft 9.00 in	4 ft 3.02 in	0.6076
Floating Roof	5 ft 4.44 in	5 ft 7.85 in	-387.7514

2.3 FLOATING ROOF CALCULATIONS

A total of **387.75 bbl** has been deducted from this table between **5 ft 4.44 in** and **5 ft 7.85 in** above the strike point for roof displacement based on a floating weight of **103400.00 lb** and an observed liquid specific gravity of **0.7608** as observed under conditions of the liquid in which the roof is floating. Gauged levels above this range reflect this deduction but should be corrected for actually observed gravity of the liquid at prevailing temperatures as follows:

- For **0.7608** specific gravity observed, no correction
- For a 0.001 specific gravity increase, add **0.51 bbl**
- For a 0.001 specific gravity decrease, subtract **0.51 bbl**

Critical Zone - The displacement of the floating roof is distributed within the range specified above. This range cannot be accurately calibrated because the shape of the roof changes within this range, changes as the tank fills, and may change over time. Therefore, a critical zone should be observed between **5 ft 2.00 in** and **5 ft 10.00 in** above the strike point. This range should be avoided for critical measurements.

If the floating roof is in High Leg position, a critical zone should be observed between **5 ft 2.00 in** and **5 ft 10.00 in** above the strike point. This range should be avoided for critical measurements.

Table 4: Floating roof specifics

Floating roof weight	103400.00 lb
Fluid specific gravity	0.7608
Floating roof displaced fluid volume	387.75 bbl
Floating roof displaced depth	3.41 in
Floating roof bottom height (wrt Strike)	5 ft 4.44 in
Floating roof top height (wrt Strike)	5 ft 7.85 in
Lower critical zone height – Low Leg (wrt Strike)	5 ft 2.00 in
Upper critical zone height – Low Leg (wrt Strike)	5 ft 10.00 in
Displacement correction (per 0.001 change in fluid specific gravity)	0.51 bbl

2.4 TANK TABLE RUN SHEET

Note that the following heights are computed to allow for the difference in elevation at the Strike point vs. the elevation at the floor to shell weld nearest to the Strike point. Volumes are corrected to standard temperature of 60.00 °F.

Table 5: Tank strapping table at 60.00 °F

To Height	Volume (bbl)
	--- 0 ft ---
0 in	5.7003
1 in	37.5128
2 in	103.7571
3 in	195.9985
4 in	301.0659
5 in	413.3436
6 in	529.3543
7 in	645.8400
8 in	762.3275
9 in	878.8149
10 in	995.3024
11 in	1111.7899
	--- 1 ft ---
0 in	1228.2707
1 in	1344.7377
2 in	1461.1952
3 in	1577.6650
4 in	1694.1397
5 in	1810.6144
6 in	1927.0919
7 in	2043.5844
8 in	2160.0771
9 in	2276.5746
10 in	2393.1079
11 in	2509.6413
	--- 2 ft ---
0 in	2626.1837
1 in	2742.7424
2 in	2859.3058
3 in	2975.8715
4 in	3092.4305
5 in	3208.9790
6 in	3325.5275
7 in	3442.0760
8 in	3558.6246
9 in	3675.1731
10 in	3791.7216
11 in	3908.2701
	--- 3 ft ---
0 in	4024.8187
1 in	4141.3672
2 in	4257.9157
3 in	4374.4642
4 in	4491.0128
5 in	4607.5613
6 in	4724.1098
7 in	4840.6439
8 in	4957.1747
9 in	5073.7055
10 in	5190.2363
11 in	5306.7671
	--- 4 ft ---
0 in	5423.2979
1 in	5539.8287
2 in	5656.3595
3 in	5772.8904
4 in	5889.3819
5 in	6005.8720
6 in	6122.3622
7 in	6238.8524
8 in	6355.3426
9 in	6471.8327
10 in	6588.3229
11 in	6704.8131
	--- 5 ft ---
0 in	6821.3032
1 in	6937.7934
2 in	7054.2836
3 in L	7170.7738
4 in L	7287.2639
5 in L	7340.6099
6 in L	7343.4154
7 in L	7346.2219
8 in L	7365.5597
9 in L	7482.0565
10 in L	7598.5533
11 in	7715.0501
	--- 6 ft ---
0 in	7831.5469
1 in	7948.0437
2 in	8064.5405
3 in	8181.0373
4 in	8297.5341
5 in	8414.0309
6 in	8530.5277
7 in	8647.0245
8 in	8763.5213
9 in	8880.0181
10 in	8996.5149
11 in	9113.0117
	--- 7 ft ---
0 in	9229.5085
1 in	9346.0053
2 in	9462.5021
3 in	9578.9989
4 in	9695.4957
5 in	9811.9925
6 in	9928.4893
7 in	10044.9861
8 in	10161.4829
9 in	10277.9797
10 in	10394.4765
11 in	10510.9733
	--- 8 ft ---
0 in	10627.4701
1 in	10743.9669
2 in	10860.4637
3 in	10976.9605
4 in	11093.4573
5 in	11209.9541
6 in	11326.4509
7 in	11442.9477
8 in	11559.4445
9 in	11675.9413
10 in	11792.4381
11 in	11908.9349
	--- 9 ft ---
0 in	12025.4317
1 in	12141.9285
2 in	12258.4253
3 in	12374.9221
4 in	12491.4189
5 in	12607.9157
6 in	12724.4125
7 in	12840.9093
8 in	12957.4061
9 in	13073.9029
10 in	13190.3997
11 in	13306.8965
	--- 10 ft ---
0 in	13423.4224
1 in	13539.9792
2 in	13656.5359
3 in	13773.0926
4 in	13889.6493
5 in	14006.2061
6 in	14122.7628
7 in	14239.3195
8 in	14355.8762
9 in	14472.4329
10 in	14588.9897
11 in	14705.5464
	--- 11 ft ---
0 in	14822.1031
1 in	14938.6598
2 in	15055.2165
3 in	15171.7733
4 in	15288.3300
5 in	15404.8867
6 in	15521.4434
7 in	15638.0002
8 in	15754.5569
9 in	15871.1136
10 in	15987.6703
11 in	16104.2270
	--- 12 ft ---
0 in	16220.7838
1 in	16337.3405
2 in	16453.8972
3 in	16570.4539
4 in	16687.0106
5 in	16803.5674
6 in	16920.1241
7 in	17036.6808
8 in	17153.2375
9 in	17269.7943
10 in	17386.3510
11 in	17502.9077
	--- 13 ft ---
0 in	17619.4644
1 in	17736.0211
2 in	17852.5779
3 in	17969.1346
4 in	18085.6913
5 in	18202.2480
6 in	18318.8047
7 in	18435.3615
8 in	18551.9182
9 in	18668.4749
10 in	18785.0316
11 in	18901.5884
	--- 14 ft ---
0 in	19018.1451
1 in	19134.7018
2 in	19251.2585
3 in	19367.8152
4 in	19484.3720
5 in	19600.9287
6 in	19717.4854
7 in	19834.0421
8 in	19950.5988
9 in	20067.1556
10 in	20183.7123
11 in	20300.2690
	--- 15 ft ---
0 in	20416.8257
1 in	20533.3825
2 in	20649.9392
3 in	20766.4959
4 in	20883.0526
5 in	20999.6093
6 in	21116.1661
7 in	21232.7228
8 in	21349.2795
9 in	21465.8362
10 in	21582.3929
11 in	21698.9497
	--- 16 ft ---
0 in	21815.5064
1 in	21932.0631
2 in	22048.6198
3 in	22165.1766
4 in	22281.7333
5 in	22398.2900
6 in	22514.8467
7 in	22631.4034
8 in	22747.9602
9 in	22864.5169
10 in	22981.0736
11 in	23097.6303
	--- 17 ft ---
0 in	23214.1870
1 in	23330.7438
2 in	23447.3005
3 in	23563.8572
4 in	23680.4139
5 in	23796.9707
6 in	23913.5274
7 in	24030.0841
8 in	24146.6408
9 in	24263.1975
10 in	24379.7543
11 in	24496.3110

	--- 18 ft ---
0 in	24612.8677
1 in	24729.4244
2 in	24845.9811
3 in	24962.5379
4 in	25079.0946
5 in	25195.6513
6 in	25312.2080
7 in	25428.7648
8 in	25545.3215
9 in	25661.8782
10 in	25778.4349
11 in	25894.9916
	--- 19 ft ---
0 in	26011.5484
1 in	26128.1051
2 in	26244.6618
3 in	26361.2185
4 in	26477.7752
5 in	26594.3320
6 in	26710.8887
7 in	26827.4454
8 in	26944.0021
9 in	27060.5589
10 in	27177.1156
11 in	27293.6723
	--- 20 ft ---
0 in	27410.3151
1 in	27526.9590
2 in	27643.6030
3 in	27760.2470
4 in	27876.8909
5 in	27993.5349
6 in	28110.1788
7 in	28226.8228
8 in	28343.4667
9 in	28460.1107
10 in	28576.7546
11 in	28693.3986
	--- 21 ft ---
0 in	28810.0425
1 in	28926.6865
2 in	29043.3304
3 in	29159.9744
4 in	29276.6183
5 in	29393.2623
6 in	29509.9063
7 in	29626.5502
8 in	29743.1942
9 in	29859.8381
10 in	29976.4821
11 in	30093.1260
	--- 22 ft ---
0 in	30209.7700
1 in	30326.4139
2 in	30443.0579
3 in	30559.7018
4 in	30676.3458
5 in	30792.9897
6 in	30909.6337
7 in	31026.2776
8 in	31142.9216
9 in	31259.5655
10 in	31376.2095
11 in	31492.8535
	--- 23 ft ---
0 in	31609.4974
1 in	31726.1414
2 in	31842.7853
3 in	31959.4293
4 in	32076.0732
5 in	32192.7172
6 in	32309.3611
7 in	32426.0051
8 in	32542.6490
9 in	32659.2930
10 in	32775.9369
11 in	32892.5809
	--- 24 ft ---
0 in	33009.2248
1 in	33125.8688
2 in	33242.5128
3 in	33359.1567
4 in	33475.8007
5 in	33592.4446
6 in	33709.0886
7 in	33825.7325
8 in	33942.3765
9 in	34059.0204
10 in	34175.6644
11 in	34292.3083
	--- 25 ft ---
0 in	34408.9523
1 in	34525.5962
2 in	34642.2402
3 in	34758.8841
4 in	34875.5281
5 in	34992.1721
6 in	35108.8160
7 in	35225.4600
8 in	35342.1039
9 in	35458.7479
10 in	35575.3918
11 in	35692.0358
	--- 26 ft ---
0 in	35808.6797
1 in	35925.3237
2 in	36041.9676
3 in	36158.6116
4 in	36275.2555
5 in	36391.8995
6 in	36508.5434
7 in	36625.1874
8 in	36741.8314
9 in	36858.4753
10 in	36975.1193
11 in	37091.7632
	--- 27 ft ---
0 in	37208.4072
1 in	37325.0511
2 in	37441.6951
3 in	37558.3390
4 in	37674.9830
5 in	37791.6269
6 in	37908.2709
7 in	38024.9148
8 in	38141.5588
9 in	38258.2027
10 in	38374.8467
11 in	38491.4906
	--- 28 ft ---
0 in	38608.1346
1 in	38724.7786
2 in	38841.4225
3 in	38958.0665
4 in	39074.7104
5 in	39191.3544
6 in	39307.9983
7 in	39424.6423
8 in	39541.2862
9 in	39657.9302
10 in	39774.5741
11 in	39891.2181
	--- 29 ft ---
0 in	40007.8620
1 in	40124.5060
2 in	40241.1499
3 in	40357.7939
4 in	40474.4379
5 in	40591.0818
6 in	40707.7258
7 in	40824.3697
8 in	40941.0137
9 in	41057.6576
10 in	41174.3016
11 in	41290.9869
	--- 30 ft ---
0 in	41407.7157
1 in	41524.4446
2 in	41641.1735
3 in	41757.9024
4 in	41874.6313
5 in	41991.3602
6 in	42108.0890
7 in	42224.8179
8 in	42341.5468
9 in	42458.2757
10 in	42575.0046
11 in	42691.7334
	--- 31 ft ---
0 in	42808.4623
1 in	42925.1912
2 in	43041.9201
3 in	43158.6490
4 in	43275.3779
5 in	43392.1067
6 in	43508.8356
7 in	43625.5645
8 in	43742.2934
9 in	43859.0223
10 in	43975.7511
11 in	44092.4800
	--- 32 ft ---
0 in	44209.2089
1 in	44325.9378
2 in	44442.6667
3 in	44559.3955
4 in	44676.1244
5 in	44792.8533
6 in	44909.5822
7 in	45026.3111
8 in	45143.0400
9 in	45259.7688
10 in	45376.4977
11 in	45493.2266
	--- 33 ft ---
0 in	45609.9555
1 in	45726.6844
2 in	45843.4132
3 in	45960.1421
4 in	46076.8710
5 in	46193.5999
6 in	46310.3288
7 in	46427.0576
8 in	46543.7865
9 in	46660.5154
10 in	46777.2443
11 in	46893.9732
	--- 34 ft ---
0 in	47010.7021
1 in	47127.4309
2 in	47244.1598
3 in	47360.8887
4 in	47477.6176
5 in	47594.3465
6 in	47711.0753
7 in	47827.8042
8 in	47944.5331
9 in	48061.2620
10 in	48177.9909
11 in	48294.7198
	--- 35 ft ---
0 in	48411.4486
1 in	48528.1775
2 in	48644.9064
3 in	48761.6353
4 in	48878.3642
5 in	48995.0930
6 in	49111.8219
7 in	49228.5508
8 in	49345.2797
9 in	49462.0086
10 in	49578.7374
11 in	49695.4663
	--- 36 ft ---
0 in	49812.1952
1 in	49928.9241
2 in	50045.6530
3 in	50162.3819
4 in	50279.1107
5 in	50395.8396
6 in	50512.5685
7 in	50629.2974
8 in	50746.0263
9 in	50862.7551
10 in	50979.4840
11 in	51096.2129
	--- 37 ft ---
0 in	51212.9418
1 in	51329.6707
2 in	51446.3996
3 in	51563.1284
4 in	51679.8573
5 in	51796.5862
6 in	51913.3151
7 in	52030.0440
8 in	52146.7728
9 in	52263.5017
10 in	52380.2306
11 in	52496.9595
	--- 38 ft ---
0 in	52613.6884
1 in	52730.4172
2 in	52847.1461
3 in	52963.8750
4 in	53080.6039
5 in	53197.3328
6 in	53314.0617
7 in	53430.7905
8 in	53547.5194
9 in	53664.2483
10 in	53780.9772
11 in	53897.7061
	--- 39 ft ---
0 in	54014.4349
1 in	54131.1638
2 in	54247.8927
3 in	54364.6216
4 in	54481.3505
5 in	54598.0794

6 in	54714.8082	**4 in**	58685.5921	**2 in**	62656.6439	**0 in**	66627.7208
7 in	54831.5371	**5 in**	58802.3878	**3 in**	62773.4396	**1 in**	66744.5266
8 in	54948.2660	**6 in**	58919.1834	**4 in**	62890.2352	**2 in**	66861.3323
9 in	55064.9949	**7 in**	59035.9790	**5 in**	63007.0309	**3 in**	66978.1380
10 in	55181.7238	**8 in**	59152.7747	**6 in**	63123.8265	**4 in**	67094.9438
11 in	55298.5185	**9 in**	59269.5703	**7 in**	63240.6221	**5 in**	67211.7495
	--- 40 ft ---	**10 in**	59386.3660	**8 in**	63357.4178	**6 in**	67328.5552
0 in	55415.3142	**11 in**	59503.1616	**9 in**	63474.2134	**7 in**	67445.3609
1 in	55532.1098		--- 43 ft ---	**10 in**	63591.0091	**8 in**	67562.1667
2 in	55648.9054	**0 in**	59619.9573	**11 in**	63707.8047	**9 in**	67678.9724
3 in	55765.7011	**1 in**	59736.7529		--- 46 ft ---	**10 in**	67795.7781
4 in	55882.4967	**2 in**	59853.5485	**0 in**	63824.6003	**11 in**	67912.5839
5 in	55999.2924	**3 in**	59970.3442	**1 in**	63941.3960		--- 49 ft ---
6 in	56116.0880	**4 in**	60087.1398	**2 in**	64058.1916	**0 in**	68029.3896
7 in	56232.8836	**5 in**	60203.9355	**3 in**	64174.9873	**1 in**	68146.1953
8 in	56349.6793	**6 in**	60320.7311	**4 in**	64291.7829	**2 in**	68263.0011
9 in	56466.4749	**7 in**	60437.5267	**5 in**	64408.5786	**3 in**	68379.8068
10 in	56583.2706	**8 in**	60554.3224	**6 in**	64525.3742	**4 in**	68496.6125
11 in	56700.0662	**9 in**	60671.1180	**7 in**	64642.1698	**5 in**	68613.4182
	--- 41 ft ---	**10 in**	60787.9137	**8 in**	64758.9655	**6 in**	68730.2240
0 in	56816.8619	**11 in**	60904.7093	**9 in**	64875.7611	**7 in**	68847.0297
1 in	56933.6575		--- 44 ft ---	**10 in**	64992.5568	**8 in**	68963.8354
2 in	57050.4531	**0 in**	61021.5050	**11 in**	65109.3524	**9 in**	69080.6412
3 in	57167.2488	**1 in**	61138.3006		--- 47 ft ---	**10 in**	69197.4469
4 in	57284.0444	**2 in**	61255.0962	**0 in**	65226.1480	**11 in**	69314.2526
5 in	57400.8401	**3 in**	61371.8919	**1 in**	65342.9437		--- 50 ft ---
6 in	57517.6357	**4 in**	61488.6875	**2 in**	65459.7393	**0 in**	69431.0584
7 in	57634.4313	**5 in**	61605.4832	**3 in**	65576.5350	**1 in**	69547.8641
8 in	57751.2270	**6 in**	61722.2788	**4 in**	65693.3306	**2 in**	69664.6698
9 in	57868.0226	**7 in**	61839.0744	**5 in**	65810.1263	**3 in**	69781.4756
10 in	57984.8183	**8 in**	61955.8701	**6 in**	65926.9219	**4 in**	69898.2813
11 in	58101.6139	**9 in**	62072.6657	**7 in**	66043.7175	**5 in**	70015.0870
	--- 42 ft ---	**10 in**	62189.4614	**8 in**	66160.5132	**6 in**	70131.8927
0 in	58218.4096	**11 in**	62306.2570	**9 in**	66277.3088	**7 in**	70248.6985
1 in	58335.2052		--- 45 ft ---	**10 in**	66394.1094	**7.2 in**	70276.2196
2 in	58452.0008	**0 in**	62423.0526	**11 in**	66510.9151		
3 in	58568.7965	**1 in**	62539.8483		--- 48 ft ---		

L – Denotes floating roof critical zone in Low Leg position

Table 6: Tank average fractional increments table at 60.00 °F

Fraction	Volume (bbl)
1/8 in	14.5628
1/4 in	29.1257
3/8 in	43.6885
1/2 in	58.2514
5/8 in	72.8142
3/4 in	87.3770
7/8 in	101.9399
1 in	116.5027

Average fractional increments table should not be used below the height of the top of the floor and within critical zones.

Table 7: Tank run table at 60.00 °F

To Height	Incr.	Incr. Volume (bbl)
0.00 in	1	5.7003
1.00 in	1	31.8124
2.00 in	1	66.2444
3.00 in	1	92.2413
4.00 in	1	105.0674
5.00 in	1	112.2777
6.00 in	1	116.0107
7.00 in	1	116.4858
11.00 in	4	116.4875
1 ft 0.00 in	1	116.4809
1 ft 1.00 in	1	116.4670
1 ft 2.00 in	1	116.4574
1 ft 3.00 in	1	116.4699
1 ft 5.00 in	2	116.4747
1 ft 6.00 in	1	116.4775
1 ft 7.00 in	1	116.4925
1 ft 8.00 in	1	116.4927
1 ft 9.00 in	1	116.4975
1 ft 10.00 in	1	116.5333
1 ft 11.00 in	1	116.5334
2 ft 0.00 in	1	116.5424
2 ft 1.00 in	1	116.5586
2 ft 2.00 in	1	116.5634
2 ft 3.00 in	1	116.5658
2 ft 4.00 in	1	116.5589
3 ft 6.00 in	14	116.5485
3 ft 7.00 in	1	116.5341
4 ft 3.00 in	8	116.5308
4 ft 4.00 in	1	116.4915
5 ft 4.00 in	12	116.4902
5 ft 5.00 in	1	53.3460
5 ft 6.00 in	1	2.8055
5 ft 7.00 in	1	2.8065
5 ft 8.00 in	1	19.3378
9 ft 11.00 in	51	116.4968
10 ft 0.00 in	1	116.5260
19 ft 11.00 in	119	116.5567
20 ft 0.00 in	1	116.6428
29 ft 10.00 in	118	116.6440
29 ft 11.00 in	1	116.6853
39 ft 10.00 in	119	116.7289
39 ft 11.00 in	1	116.7948
47 ft 9.00 in	94	116.7956
47 ft 10.00 in	1	116.8006
50 ft 7.00 in	33	116.8057
50 ft 7.24 in	1	27.5211