



ΧΡΥΣΟΥΝ ΜΕΤΑΛΛΙΟΝ
ΑΚΑΔΗΜΙΑΣ ΑΘΗΝΩΝ

ΕΚΠΑΙΔΕΥΤΙΚΟ ΚΕΙΜΕΝΟ
ΑΚΑΔΗΜΙΩΝ ΕΜΠΟΡΙΚΟΥ ΝΑΥΤΙΚΟΥ

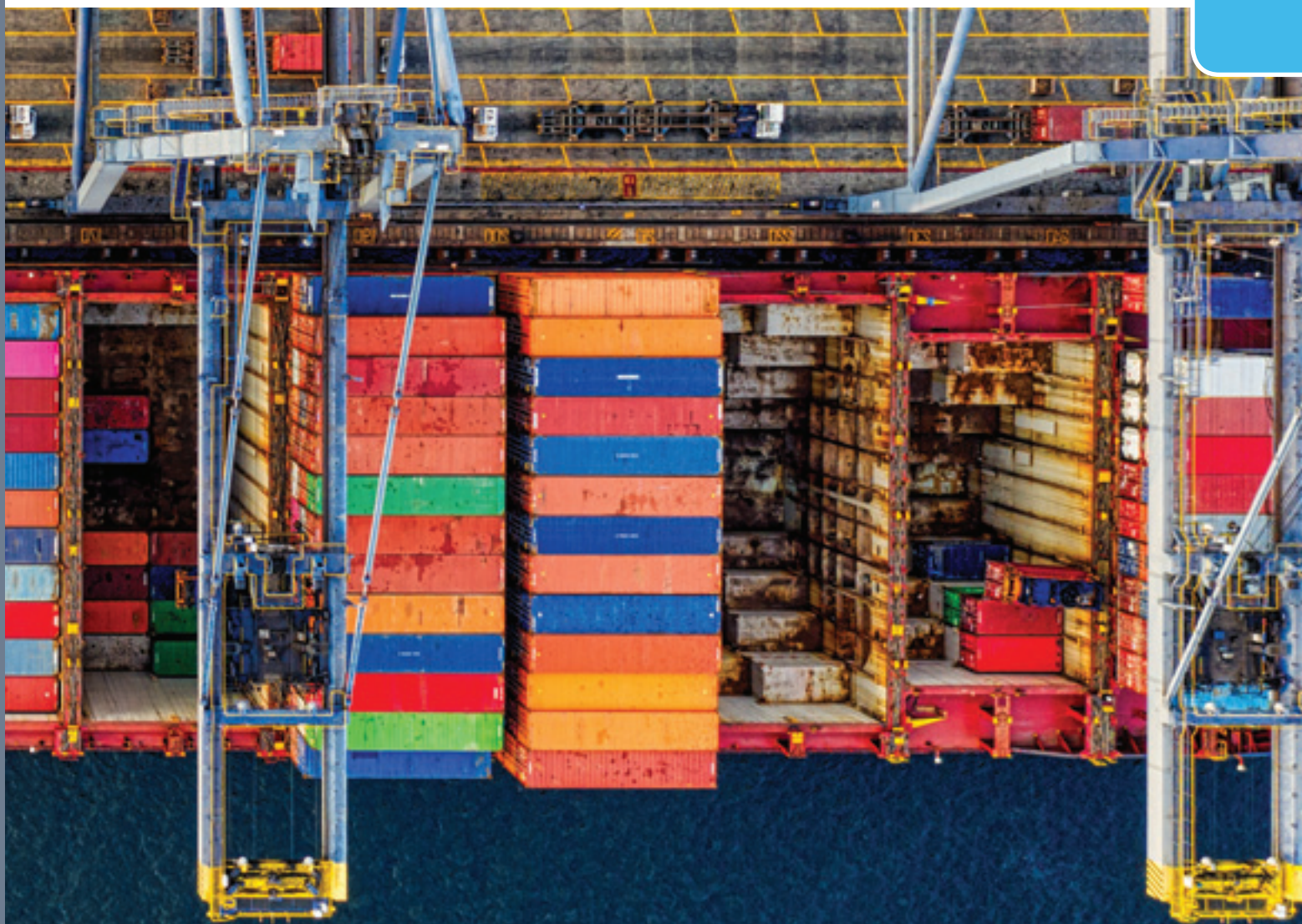
ΜΕΤΑΦΟΡΑ ΦΟΡΤΙΩΝ

ΝΙΚΟΛΑΟΥ Α. ΖΥΓΟΜΑΛΑ

γ' έκδοση

ΠΑΡΑΡΤΗΜΑΤΑ

ΠΛΟΙΑΡΧΩΝ





Α΄ ΕΚΔΟΣΗ 2011

Β΄ ΕΚΔΟΣΗ 2015

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Απαγορεύεται η ολική ή μερική ανατύπωση του βιβλίου και των εικόνων με κάθε μέσο καθώς και η διασκευή, η προσαρμογή, η μετατροπή και η κυκλοφορία του (Άρθρο 3 του Ν. 2121/1993).

ΠΙΝΑΚΕΣ

Πίνακας 3 Υδροστατικοί πίνακες του πλοίου "Bulker"

Πίνακας 10 Πίνακας συντελεστή θερμικής διαστολής (Volume Correction Factor - VCF)



Πίνακας 3
Υδροστατικοί πίνακες του πλοίου «Bulker»

Το M/V BULKER έχει τα παρακάτω στοιχεία:

DEADWEIGHT					
	MARK ZONE	FREEBOARD (M)	DRAUGHT (EXT.) (M)	DISPLACEMENT (TONNES)	DEADWEIGHT (TONNES)
TF	TROPICAL FRESH WATER	4.709	14.7395	88399,6	76472,85
F	FRESH WATER	5.003	14.4455	88475,9	74550,15
T	TROPICAL	5.033	14.4155	88437,8	76511,05
S	SUMMER	5.327	14.1215	88457,0	74540,25
W	WINTER	5.621	13.8275	84505,8	72579,05

CARGO HOLDS					
COMPARTMENT	LOCATION (FR.NO)	CAPACITIES	CEN. OF GRAVITY		MAX F.S.MOM. (M ⁴)
		VOLUME 100% (M ³)	L.C.G (M)	V.C.G (M)	
NO.1 HOLD	200 – 227	12293.1	66.61	11.66	50378
NO.2 HOLD (PARTIAL)	173 – 201	13263.9	62.05	10.81	70237
NO.3 HOLD	145 – 174	13169.3	36.70	10.78	70214
NO.4 HOLD (FLOODABLE)	119 – 147	13194.7	11.35	10.78	70234
NO.5 HOLD	92 – 120	13278.0	-14.11	10.78	70635
NO.6 HOLD (PARTIAL)	65 – 93	13223.4	-39.48	10.79	70305
NO.7 HOLD	38 – 66	12127.5	-64.82	11.37	69052
SUB. TOTAL		90549.9			

BUNKER CONSUMPTION:

Sea Consumption

Loaded at 14 kns: IFO 32,5 for main engine MT/D plus 2,5 MT/D for D/G. MDO Nil

Ballast at 14 kns: IFO 27,5 for main engine MT/D plus 2,5 MT/D for D/G. MDO Nil

Port Consumption

IFO 2,5 MT/D for D/G or 3,5 MT/D when Ballasting/De ballasting MDO Nil

FW CONSUMPTION:

Sea: Nil (self produced)

Port: 8MT/D

Unpumpable IFO: 30 MT

Constants: 300 MT

(συνεχίζεται)

TABLE 6A. GENERALIZED CRUDE OILS
 VOLUME CORRECTION TO 60 F

TEMP. F	API GRAVITY AT 60 F											TEMP. F
	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	
FACTOR FOR CORRECTING VOLUME TO 60 F												
75.0	0.9933	0.9933	0.9932	0.9932	0.9931	0.9931	0.9931	0.9930	0.9930	0.9929	0.9929	75.0
75.5	0.9931	0.9930	0.9930	0.9930	0.9929	0.9929	0.9928	0.9928	0.9927	0.9927	0.9926	75.5
76.0	0.9929	0.9928	0.9928	0.9927	0.9927	0.9926	0.9926	0.9925	0.9925	0.9925	0.9924	76.0
76.5	0.9926	0.9926	0.9925	0.9925	0.9925	0.9924	0.9924	0.9923	0.9923	0.9922	0.9922	76.5
77.0	0.9924	0.9924	0.9923	0.9923	0.9922	0.9922	0.9921	0.9921	0.9920	0.9920	0.9919	77.0
77.5	0.9922	0.9921	0.9921	0.9920	0.9920	0.9919	0.9919	0.9918	0.9918	0.9917	0.9917	77.5
78.0	0.9920	0.9919	0.9919	0.9918	0.9918	0.9917	0.9917	0.9916	0.9916	0.9915	0.9915	78.0
78.5	0.9917	0.9917	0.9916	0.9916	0.9915	0.9915	0.9914	0.9914	0.9913	0.9913	0.9912	78.5
79.0	0.9915	0.9915	0.9914	0.9914	0.9913	0.9913	0.9912	0.9911	0.9911	0.9910	0.9910	79.0
79.5	0.9913	0.9912	0.9912	0.9911	0.9911	0.9910	0.9910	0.9909	0.9909	0.9908	0.9907	79.5
80.0	0.9911	0.9910	0.9910	0.9909	0.9908	0.9908	0.9907	0.9907	0.9906	0.9906	0.9905	80.0
80.5	0.9908	0.9908	0.9907	0.9907	0.9906	0.9906	0.9905	0.9904	0.9904	0.9903	0.9903	80.5
81.0	0.9906	0.9906	0.9905	0.9904	0.9904	0.9903	0.9903	0.9902	0.9902	0.9901	0.9900	81.0
81.5	0.9904	0.9903	0.9903	0.9902	0.9902	0.9901	0.9900	0.9900	0.9899	0.9899	0.9898	81.5
82.0	0.9902	0.9901	0.9901	0.9900	0.9899	0.9899	0.9898	0.9897	0.9897	0.9896	0.9896	82.0
82.5	0.9900	0.9899	0.9898	0.9898	0.9897	0.9896	0.9896	0.9895	0.9894	0.9894	0.9893	82.5
83.0	0.9897	0.9897	0.9896	0.9895	0.9895	0.9894	0.9893	0.9893	0.9892	0.9891	0.9891	83.0
83.5	0.9895	0.9894	0.9894	0.9893	0.9892	0.9892	0.9891	0.9890	0.9890	0.9889	0.9888	83.5
84.0	0.9893	0.9892	0.9891	0.9891	0.9890	0.9889	0.9889	0.9888	0.9887	0.9887	0.9886	84.0
84.5	0.9891	0.9890	0.9889	0.9889	0.9888	0.9887	0.9886	0.9886	0.9885	0.9884	0.9884	84.5
85.0	0.9888	0.9888	0.9887	0.9886	0.9886	0.9885	0.9884	0.9883	0.9883	0.9882	0.9881	85.0
85.5	0.9886	0.9885	0.9885	0.9884	0.9883	0.9883	0.9882	0.9881	0.9880	0.9880	0.9879	85.5
86.0	0.9884	0.9883	0.9882	0.9882	0.9881	0.9880	0.9879	0.9879	0.9878	0.9877	0.9877	86.0
86.5	0.9882	0.9881	0.9880	0.9879	0.9879	0.9878	0.9877	0.9876	0.9876	0.9875	0.9874	86.5
87.0	0.9879	0.9879	0.9878	0.9877	0.9876	0.9876	0.9875	0.9874	0.9873	0.9873	0.9872	87.0
87.5	0.9877	0.9876	0.9876	0.9875	0.9874	0.9873	0.9873	0.9872	0.9871	0.9870	0.9869	87.5
88.0	0.9875	0.9874	0.9873	0.9873	0.9872	0.9871	0.9870	0.9869	0.9869	0.9868	0.9867	88.0
88.5	0.9873	0.9872	0.9871	0.9870	0.9869	0.9869	0.9868	0.9867	0.9866	0.9865	0.9865	88.5
89.0	0.9870	0.9870	0.9869	0.9868	0.9867	0.9866	0.9866	0.9865	0.9864	0.9863	0.9862	89.0
89.5	0.9868	0.9867	0.9867	0.9866	0.9865	0.9864	0.9863	0.9862	0.9862	0.9861	0.9860	89.5
90.0	0.9866	0.9865	0.9864	0.9863	0.9863	0.9862	0.9861	0.9860	0.9859	0.9858	0.9857	90.0

* DENOTES EXTRAPOLATED VALUE

126

API GRAVITY = 30.0 TO 35.0

 TABLE 6A. GENERALIZED CRUDE OILS
 VOLUME CORRECTION TO 60 F

TEMP. F	API GRAVITY AT 60 F											TEMP. F
	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	
FACTOR FOR CORRECTING VOLUME TO 60 F												
90.0	0.9866	0.9865	0.9864	0.9863	0.9863	0.9862	0.9861	0.9860	0.9859	0.9858	0.9857	90.0
90.5	0.9864	0.9863	0.9862	0.9861	0.9860	0.9859	0.9859	0.9858	0.9857	0.9856	0.9855	90.5
91.0	0.9861	0.9861	0.9860	0.9859	0.9858	0.9857	0.9856	0.9855	0.9854	0.9854	0.9853	91.0
91.5	0.9859	0.9858	0.9857	0.9857	0.9856	0.9855	0.9854	0.9853	0.9852	0.9851	0.9850	91.5
92.0	0.9857	0.9856	0.9855	0.9854	0.9853	0.9852	0.9852	0.9851	0.9850	0.9849	0.9848	92.0
92.5	0.9855	0.9854	0.9853	0.9852	0.9851	0.9850	0.9849	0.9848	0.9847	0.9846	0.9846	92.5
93.0	0.9852	0.9852	0.9851	0.9850	0.9849	0.9848	0.9847	0.9846	0.9845	0.9844	0.9843	93.0
93.5	0.9850	0.9849	0.9848	0.9847	0.9846	0.9845	0.9845	0.9844	0.9843	0.9842	0.9841	93.5
94.0	0.9848	0.9847	0.9846	0.9845	0.9844	0.9843	0.9842	0.9841	0.9840	0.9839	0.9838	94.0
94.5	0.9846	0.9845	0.9844	0.9843	0.9842	0.9841	0.9840	0.9839	0.9838	0.9837	0.9836	94.5
95.0	0.9843	0.9842	0.9842	0.9841	0.9840	0.9839	0.9838	0.9837	0.9836	0.9835	0.9834	95.0
95.5	0.9841	0.9840	0.9839	0.9838	0.9837	0.9836	0.9835	0.9834	0.9833	0.9832	0.9831	95.5
96.0	0.9839	0.9838	0.9837	0.9836	0.9835	0.9834	0.9833	0.9832	0.9831	0.9830	0.9829	96.0
96.5	0.9837	0.9836	0.9835	0.9834	0.9833	0.9832	0.9831	0.9830	0.9829	0.9827	0.9826	96.5
97.0	0.9834	0.9833	0.9832	0.9831	0.9830	0.9829	0.9828	0.9827	0.9826	0.9825	0.9824	97.0
97.5	0.9832	0.9831	0.9830	0.9829	0.9828	0.9827	0.9826	0.9825	0.9824	0.9823	0.9822	97.5
98.0	0.9830	0.9829	0.9828	0.9827	0.9826	0.9825	0.9824	0.9823	0.9821	0.9820	0.9819	98.0
98.5	0.9828	0.9827	0.9826	0.9825	0.9823	0.9822	0.9821	0.9820	0.9819	0.9818	0.9817	98.5
99.0	0.9826	0.9824	0.9823	0.9822	0.9821	0.9820	0.9819	0.9818	0.9817	0.9816	0.9814	99.0
99.5	0.9823	0.9822	0.9821	0.9820	0.9819	0.9818	0.9817	0.9815	0.9814	0.9813	0.9812	99.5
100.0	0.9821	0.9820	0.9819	0.9818	0.9817	0.9815	0.9814	0.9813	0.9812	0.9811	0.9810	100.0
100.5	0.9819	0.9818	0.9817	0.9816	0.9815	0.9813	0.9812	0.9811	0.9810	0.9808	0.9807	100.5
101.0	0.9817	0.9815	0.9814	0.9813	0.9812	0.9811	0.9810	0.9808	0.9807	0.9806	0.9805	101.0
101.5	0.9814	0.9813	0.9812	0.9811	0.9810	0.9808	0.9807	0.9806	0.9805	0.9804	0.9803	101.5
102.0	0.9812	0.9811	0.9810	0.9808	0.9807	0.9806	0.9805	0.9804	0.9803	0.9801	0.9800	102.0
102.5	0.9810	0.9809	0.9807	0.9806	0.9805	0.9804	0.9803	0.9801	0.9800	0.9799	0.9798	102.5
103.0	0.9808	0.9806	0.9805	0.9804	0.9803	0.9801	0.9800	0.9799	0.9798	0.9797	0.9795	103.0
103.5	0.9805	0.9804	0.9803	0.9802	0.9800	0.9799	0.9798	0.9797	0.9795	0.9794	0.9793	103.5
104.0	0.9803	0.9802	0.9801	0.9799	0.9798	0.9797	0.9796	0.9794	0.9793	0.9792	0.9791	104.0
104.5	0.9801	0.9799	0.9798	0.9797	0.9796	0.9795	0.9793	0.9792	0.9791	0.9789	0.9788	104.5
105.0	0.9799	0.9797	0.9796	0.9795	0.9793	0.9792	0.9791	0.9790	0.9788	0.9787	0.9786	105.0

* DENOTES EXTRAPOLATED VALUE

127

API GRAVITY = 30.0 TO 35.0

HYDROSTATIC TABLE =====								
DRAFT (EXT.) (M)	DISPL EXT. (MT)	TPC (MT/CM)	MTC (MT*M/CM)	L.C.B (M)	L.C.F (M)	KMT (M)	Cb	WETSUR (M)2
11.600	69793	65.3	1010.3	7.908	1.522	13.376	0.8373	10453
11.620	69923	65.4	1011.0	7.896	1.495	13.375	0.8374	10463
11.640	70054	65.4	1011.6	7.885	1.468	13.373	0.8375	10473
11.660	70184	65.4	1012.3	7.873	1.441	13.372	0.8377	10482
11.680	70315	65.4	1012.9	7.861	1.414	13.370	0.8378	10492
11.700	70446	65.4	1013.6	7.850	1.388	13.369	0.8379	10502
11.720	70576	65.4	1014.3	7.838	1.361	13.368	0.8380	10512
11.740	70707	65.4	1014.9	7.826	1.334	13.366	0.8381	10521
11.760	70837	65.5	1015.6	7.815	1.307	13.365	0.8383	10531
11.780	70968	65.5	1016.3	7.803	1.280	13.363	0.8384	10541
11.800	71099	65.5	1016.9	7.792	1.253	13.362	0.8385	10551
11.820	71229	65.5	1017.6	7.781	1.226	13.360	0.8386	10560
11.840	71360	65.5	1018.3	7.769	1.199	13.359	0.8387	10570
11.860	71490	65.5	1018.9	7.758	1.173	13.358	0.8389	10580
11.880	71621	65.6	1019.6	7.747	1.146	13.356	0.8390	10589
11.900	71751	65.6	1020.2	7.736	1.119	13.355	0.8391	10599
11.920	71882	65.6	1020.9	7.724	1.092	13.353	0.8392	10609
11.940	72013	65.6	1021.6	7.713	1.066	13.352	0.8393	10619
11.960	72143	65.6	1022.2	7.702	1.039	13.351	0.8394	10628
11.980	72274	65.6	1022.9	7.691	1.012	13.349	0.8396	10638
12.000	72404	65.6	1023.6	7.680	0.985	13.348	0.8397	10648
12.020	72535	65.7	1024.2	7.669	0.959	13.347	0.8398	10658
12.040	72667	65.7	1024.8	7.656	0.939	13.347	0.8399	10667
12.060	72799	65.7	1025.3	7.643	0.920	13.347	0.8400	10677
12.080	72931	65.7	1025.8	7.630	0.901	13.347	0.8402	10686
12.100	73063	65.7	1026.4	7.617	0.882	13.348	0.8403	10695
12.120	73195	65.7	1026.9	7.604	0.863	13.348	0.8404	10705
12.140	73327	65.7	1027.5	7.591	0.844	13.348	0.8406	10714
12.160	73459	65.7	1028.0	7.579	0.825	13.348	0.8407	10724
12.180	73591	65.8	1028.5	7.566	0.806	13.349	0.8408	10733
12.200	73722	65.8	1029.1	7.553	0.787	13.349	0.8409	10743
12.220	73854	65.8	1029.6	7.540	0.768	13.349	0.8411	10752
12.240	73986	65.8	1030.1	7.528	0.749	13.349	0.8412	10761
12.260	74118	65.8	1030.7	7.515	0.730	13.350	0.8413	10771
12.280	74250	65.8	1031.2	7.503	0.711	13.350	0.8415	10780
12.300	74382	65.8	1031.7	7.490	0.692	13.350	0.8416	10790
12.320	74514	65.8	1032.3	7.478	0.673	13.351	0.8417	10799
12.340	74646	65.9	1032.8	7.465	0.654	13.351	0.8418	10809
12.360	74778	65.9	1033.3	7.453	0.635	13.351	0.8420	10818
12.380	74910	65.9	1033.9	7.441	0.616	13.351	0.8421	10827
12.400	75042	65.9	1034.4	7.428	0.597	13.352	0.8422	10837
12.420	75174	65.9	1035.0	7.416	0.578	13.352	0.8423	10846
12.440	75306	65.9	1035.5	7.404	0.559	13.352	0.8424	10856
12.460	75438	65.9	1036.0	7.392	0.541	13.352	0.8426	10865
12.480	75570	65.9	1036.6	7.380	0.522	13.353	0.8427	10874
12.500	75702	66.0	1037.1	7.368	0.503	13.353	0.8428	10884
12.520	75834	66.0	1037.6	7.356	0.484	13.353	0.8429	10893
12.540	75966	66.0	1038.2	7.344	0.465	13.353	0.8430	10903
12.560	76098	66.0	1038.7	7.332	0.446	13.354	0.8432	10912
12.580	76230	66.0	1039.2	7.320	0.427	13.354	0.8433	10922
12.600	76362	66.0	1039.8	7.308	0.408	13.354	0.8434	10931
12.620	76494	66.0	1040.3	7.296	0.390	13.354	0.8435	10940
12.640	76626	66.0	1040.9	7.284	0.371	13.355	0.8436	10950
12.660	76757	66.1	1041.4	7.273	0.352	13.355	0.8438	10959
12.680	76889	66.1	1041.9	7.261	0.333	13.355	0.8439	10969
12.700	77021	66.1	1042.5	7.249	0.314	13.355	0.8440	10978
12.720	77153	66.1	1043.0	7.238	0.295	13.356	0.8441	10988
12.740	77285	66.1	1043.5	7.226	0.277	13.356	0.8442	10997
12.760	77417	66.1	1044.1	7.215	0.258	13.356	0.8443	11006
12.780	77549	66.1	1044.6	7.203	0.239	13.356	0.8445	11016

HYDROSTATIC TABLE								
DRAFT (EXT.) (M)	DISPL EXT. (MT)	TPC (MT/CM)	MTC (MT*M/CM)	L.C.B (M)	L.C.F (M)	KMT (M)	Cb	WETSUR (M)2
12.800	77681	66.1	1045.1	7.192	0.220	13.357	0.8446	11025
12.820	77813	66.2	1045.7	7.180	0.201	13.357	0.8447	11035
12.840	77945	66.2	1046.2	7.169	0.183	13.357	0.8448	11044
12.860	78077	66.2	1046.8	7.158	0.164	13.357	0.8449	11054
12.880	78209	66.2	1047.3	7.146	0.145	13.358	0.8450	11063
12.900	78341	66.2	1047.8	7.135	0.126	13.358	0.8452	11072
12.920	78473	66.2	1048.4	7.124	0.108	13.358	0.8453	11082
12.940	78605	66.2	1048.9	7.113	0.089	13.358	0.8454	11091
12.960	78737	66.2	1049.4	7.101	0.070	13.359	0.8455	11101
12.980	78869	66.3	1050.0	7.090	0.052	13.359	0.8456	11110
13.000	79001	66.3	1050.5	7.079	0.033	13.359	0.8457	11120
13.020	79133	66.3	1051.0	7.068	0.014	13.359	0.8458	11129
13.040	79266	66.3	1051.5	7.056	0.000	13.361	0.8459	11138
13.060	79399	66.3	1052.0	7.043	-0.013	13.363	0.8461	11148
13.080	79532	66.3	1052.4	7.031	-0.027	13.364	0.8462	11157
13.100	79665	66.3	1052.9	7.019	-0.041	13.366	0.8463	11166
13.120	79798	66.3	1053.3	7.007	-0.054	13.368	0.8464	11175
13.140	79931	66.3	1053.8	6.994	-0.068	13.370	0.8466	11185
13.160	80064	66.3	1054.2	6.982	-0.081	13.371	0.8467	11194
13.180	80197	66.4	1054.6	6.970	-0.095	13.373	0.8468	11203
13.200	80330	66.4	1055.1	6.958	-0.109	13.375	0.8469	11213
13.220	80463	66.4	1055.5	6.946	-0.122	13.376	0.8470	11222
13.240	80597	66.4	1056.0	6.934	-0.136	13.378	0.8472	11231
13.260	80730	66.4	1056.4	6.922	-0.149	13.380	0.8473	11240
13.280	80863	66.4	1056.9	6.910	-0.163	13.382	0.8474	11250
13.300	80996	66.4	1057.3	6.898	-0.176	13.383	0.8475	11259
13.320	81129	66.4	1057.8	6.886	-0.190	13.385	0.8476	11268
13.340	81262	66.4	1058.2	6.874	-0.203	13.387	0.8478	11277
13.360	81395	66.5	1058.7	6.862	-0.217	13.388	0.8479	11287
13.380	81528	66.5	1059.1	6.851	-0.231	13.390	0.8480	11296
13.400	81661	66.5	1059.6	6.839	-0.244	13.392	0.8481	11305
13.420	81794	66.5	1060.0	6.827	-0.258	13.393	0.8482	11315
13.440	81927	66.5	1060.5	6.815	-0.271	13.395	0.8483	11324
13.460	82060	66.5	1060.9	6.804	-0.285	13.396	0.8485	11333
13.480	82194	66.5	1061.4	6.792	-0.298	13.398	0.8486	11342
13.500	82327	66.5	1061.8	6.781	-0.312	13.400	0.8487	11352
13.520	82460	66.5	1062.3	6.769	-0.325	13.401	0.8488	11361
13.540	82593	66.5	1062.7	6.758	-0.339	13.403	0.8489	11370
13.560	82726	66.6	1063.2	6.746	-0.352	13.405	0.8490	11380
13.580	82859	66.6	1063.6	6.735	-0.366	13.406	0.8491	11389
13.600	82992	66.6	1064.1	6.724	-0.379	13.408	0.8493	11398
13.620	83125	66.6	1064.5	6.712	-0.393	13.409	0.8494	11407
13.640	83258	66.6	1065.0	6.701	-0.406	13.411	0.8495	11417
13.660	83391	66.6	1065.4	6.690	-0.420	13.412	0.8496	11426
13.680	83524	66.6	1065.9	6.679	-0.433	13.414	0.8497	11435
13.700	83658	66.6	1066.3	6.667	-0.447	13.416	0.8498	11445
13.720	83791	66.6	1066.8	6.656	-0.460	13.417	0.8499	11454
13.740	83924	66.7	1067.2	6.645	-0.473	13.419	0.8500	11463
13.760	84057	66.7	1067.7	6.634	-0.487	13.420	0.8502	11472
13.780	84190	66.7	1068.1	6.623	-0.500	13.422	0.8503	11482
13.800	84323	66.7	1068.6	6.612	-0.514	13.423	0.8504	11491
13.820	84456	66.7	1069.0	6.601	-0.527	13.425	0.8505	11500
13.840	84589	66.7	1069.5	6.590	-0.541	13.427	0.8506	11510
13.860	84722	66.7	1069.9	6.579	-0.554	13.428	0.8507	11519
13.880	84855	66.7	1070.4	6.568	-0.568	13.430	0.8508	11528
13.900	84988	66.7	1070.8	6.558	-0.581	13.431	0.8509	11537
13.920	85122	66.7	1071.3	6.547	-0.594	13.433	0.8510	11547
13.940	85255	66.8	1071.7	6.536	-0.608	13.434	0.8511	11556
13.960	85388	66.8	1072.2	6.525	-0.621	13.436	0.8512	11565
13.980	85521	66.8	1072.6	6.515	-0.635	13.437	0.8514	11574

HYDROSTATIC TABLE								
DRAFT (EXT.) (M)	DISPL EXT. (MT)	TDC (MT/CM)	MTC (MT*M/CM)	L.C.B (M)	L.C.F (M)	KMT (M)	Cb	WTSUR (M)2
14.000	85654	66.8	1073.1	6.504	-0.648	13.439	0.8515	11584
14.020	85787	66.8	1073.5	6.493	-0.661	13.440	0.8516	11593
14.040	85921	66.8	1073.9	6.482	-0.671	13.443	0.8517	11602
14.060	86055	66.8	1074.3	6.470	-0.681	13.446	0.8518	11611
14.080	86189	66.8	1074.7	6.459	-0.690	13.449	0.8519	11621
14.100	86323	66.8	1075.1	6.447	-0.700	13.452	0.8520	11630
14.120	86457	66.8	1075.5	6.436	-0.709	13.455	0.8521	11639
14.140	86591	66.9	1075.9	6.425	-0.719	13.458	0.8523	11648
14.160	86725	66.9	1076.3	6.413	-0.728	13.461	0.8524	11657
14.180	86859	66.9	1076.7	6.402	-0.738	13.463	0.8525	11667
14.200	86993	66.9	1077.1	6.391	-0.747	13.466	0.8526	11676
14.220	87127	66.9	1077.5	6.379	-0.757	13.469	0.8527	11685
14.240	87262	66.9	1077.9	6.368	-0.766	13.472	0.8528	11694
14.260	87396	66.9	1078.3	6.357	-0.776	13.475	0.8529	11703
14.280	87530	66.9	1078.7	6.346	-0.785	13.478	0.8531	11713
14.300	87664	66.9	1079.1	6.335	-0.795	13.481	0.8532	11722
14.320	87798	66.9	1079.5	6.324	-0.804	13.483	0.8533	11731
14.340	87932	66.9	1079.9	6.313	-0.814	13.486	0.8534	11740
14.360	88066	67.0	1080.3	6.302	-0.823	13.489	0.8535	11749
14.380	88200	67.0	1080.7	6.291	-0.833	13.492	0.8536	11759
14.400	88334	67.0	1081.1	6.280	-0.842	13.495	0.8537	11768
14.420	88468	67.0	1081.5	6.269	-0.851	13.497	0.8538	11777
14.440	88602	67.0	1081.9	6.258	-0.861	13.500	0.8539	11786
14.460	88736	67.0	1082.3	6.247	-0.870	13.503	0.8541	11795
14.480	88870	67.0	1082.7	6.236	-0.880	13.506	0.8542	11805
14.500	89004	67.0	1083.1	6.226	-0.889	13.508	0.8543	11814
14.520	89138	67.0	1083.5	6.215	-0.899	13.511	0.8544	11823
14.540	89272	67.0	1083.9	6.204	-0.908	13.514	0.8545	11832
14.560	89407	67.0	1084.3	6.194	-0.918	13.517	0.8546	11841
14.580	89541	67.1	1084.7	6.183	-0.927	13.519	0.8547	11851
14.600	89675	67.1	1085.1	6.172	-0.936	13.522	0.8548	11860
14.620	89809	67.1	1085.5	6.162	-0.946	13.525	0.8549	11869
14.640	89943	67.1	1085.9	6.151	-0.955	13.528	0.8550	11878
14.660	90077	67.1	1086.3	6.141	-0.965	13.530	0.8551	11887
14.680	90211	67.1	1086.7	6.130	-0.974	13.533	0.8552	11897
14.700	90345	67.1	1087.1	6.120	-0.984	13.536	0.8553	11905
14.720	90479	67.1	1087.5	6.109	-0.993	13.538	0.8554	11915
14.740	90613	67.1	1087.9	6.099	-1.002	13.541	0.8556	11924
14.760	90747	67.1	1088.3	6.089	-1.012	13.544	0.8557	11933
14.780	90881	67.1	1088.7	6.078	-1.021	13.546	0.8558	11943
14.800	91015	67.2	1089.1	6.068	-1.031	13.549	0.8559	11952
14.820	91149	67.2	1089.5	6.058	-1.040	13.551	0.8560	11961
14.840	91283	67.2	1089.9	6.047	-1.049	13.554	0.8561	11970
14.860	91417	67.2	1090.3	6.037	-1.059	13.557	0.8562	11979
14.880	91552	67.2	1090.7	6.027	-1.068	13.559	0.8563	11989
14.900	91686	67.2	1091.1	6.017	-1.078	13.562	0.8564	11998
14.920	91820	67.2	1091.4	6.007	-1.087	13.564	0.8565	12007
14.940	91954	67.2	1091.8	5.997	-1.096	13.567	0.8566	12016
14.960	92088	67.2	1092.2	5.987	-1.106	13.570	0.8567	12025
14.980	92222	67.2	1092.6	5.977	-1.115	13.572	0.8568	12035
15.000	92356	67.2	1093.0	5.967	-1.125	13.575	0.8569	12044
15.020	92490	67.3	1093.4	5.957	-1.134	13.577	0.8570	12053
15.040	92625	67.3	1093.8	5.946	-1.140	13.581	0.8571	12062
15.060	92760	67.3	1094.2	5.936	-1.145	13.585	0.8572	12071
15.080	92895	67.3	1094.6	5.925	-1.150	13.589	0.8573	12081
15.100	93030	67.3	1095.0	5.915	-1.155	13.593	0.8574	12090
15.120	93165	67.3	1095.4	5.904	-1.160	13.597	0.8575	12099
15.140	93300	67.3	1095.8	5.894	-1.166	13.601	0.8577	12108
15.160	93435	67.3	1096.2	5.884	-1.171	13.605	0.8578	12117
15.180	93570	67.3	1096.6	5.873	-1.176	13.608	0.8579	12126

HYDROSTATIC TABLE								
DRAFT (EXT.) (M)	DISPL EXT. (MT)	TPC (MT/CM)	MTC (MT*M/CM)	L.C.B (M)	L.C.F (M)	KMT (M)	Cb	WETSUR (M)2
15.200	93705	67.3	1097.0	5.863	-1.181	13.612	0.8580	12136
15.220	93839	67.3	1097.4	5.853	-1.187	13.616	0.8581	12145
15.240	93974	67.4	1097.8	5.842	-1.192	13.620	0.8582	12154
15.260	94109	67.4	1098.2	5.832	-1.197	13.624	0.8583	12163
15.280	94244	67.4	1098.6	5.822	-1.202	13.628	0.8584	12172
15.300	94379	67.4	1098.9	5.812	-1.207	13.631	0.8585	12181
15.320	94514	67.4	1099.3	5.802	-1.213	13.635	0.8586	12191
15.340	94649	67.4	1099.7	5.792	-1.218	13.639	0.8587	12200
15.360	94784	67.4	1100.1	5.781	-1.223	13.643	0.8588	12209
15.380	94919	67.4	1100.5	5.771	-1.228	13.646	0.8589	12218
15.400	95054	67.4	1100.9	5.761	-1.233	13.650	0.8590	12227
15.420	95189	67.4	1101.3	5.751	-1.239	13.654	0.8591	12236
15.440	95324	67.4	1101.7	5.741	-1.244	13.658	0.8592	12246
15.460	95459	67.5	1102.1	5.732	-1.249	13.661	0.8593	12255
15.480	95594	67.5	1102.5	5.722	-1.254	13.665	0.8594	12264
15.500	95729	67.5	1102.9	5.712	-1.259	13.669	0.8595	12273
15.520	95864	67.5	1103.3	5.702	-1.265	13.672	0.8597	12282
15.540	95999	67.5	1103.7	5.692	-1.270	13.676	0.8598	12291
15.560	96134	67.5	1104.1	5.682	-1.275	13.680	0.8599	12301
15.580	96269	67.5	1104.5	5.673	-1.280	13.683	0.8600	12310
15.600	96404	67.5	1104.8	5.663	-1.285	13.687	0.8601	12319
15.620	96539	67.5	1105.2	5.653	-1.291	13.691	0.8602	12328
15.640	96674	67.5	1105.6	5.643	-1.296	13.694	0.8603	12337
15.660	96809	67.5	1106.0	5.634	-1.301	13.698	0.8604	12347
15.680	96944	67.5	1106.4	5.624	-1.306	13.702	0.8605	12356
15.700	97079	67.6	1106.8	5.615	-1.311	13.705	0.8606	12365
15.720	97213	67.6	1107.2	5.605	-1.317	13.709	0.8607	12374
15.740	97348	67.6	1107.6	5.595	-1.322	13.712	0.8608	12383
15.760	97483	67.6	1108.0	5.586	-1.327	13.716	0.8609	12392
15.780	97618	67.6	1108.4	5.576	-1.332	13.719	0.8610	12402
15.800	97753	67.6	1108.8	5.567	-1.337	13.723	0.8611	12411
15.820	97888	67.6	1109.2	5.558	-1.342	13.727	0.8612	12420
15.840	98023	67.6	1109.6	5.548	-1.348	13.730	0.8613	12429
15.860	98158	67.6	1110.0	5.539	-1.353	13.734	0.8614	12438
15.880	98293	67.6	1110.4	5.529	-1.358	13.737	0.8615	12447
15.900	98428	67.6	1110.8	5.520	-1.363	13.741	0.8616	12457
15.920	98563	67.7	1111.1	5.511	-1.368	13.744	0.8617	12466
15.940	98698	67.7	1111.5	5.501	-1.373	13.748	0.8618	12475
15.960	98833	67.7	1111.9	5.492	-1.379	13.751	0.8619	12484
15.980	98968	67.7	1112.3	5.483	-1.384	13.754	0.8619	12493
16.000	99103	67.7	1112.7	5.474	-1.389	13.758	0.8620	12502
16.020	99238	67.7	1113.1	5.465	-1.394	13.761	0.8621	12512
16.040	99374	67.7	1113.5	5.455	-1.396	13.766	0.8622	12521
16.060	99509	67.7	1113.9	5.446	-1.398	13.771	0.8623	12530
16.080	99645	67.7	1114.3	5.436	-1.400	13.775	0.8625	12539
16.100	99781	67.7	1114.6	5.427	-1.402	13.780	0.8626	12548
16.120	99917	67.7	1115.0	5.418	-1.403	13.785	0.8627	12557
16.140	100053	67.8	1115.4	5.408	-1.405	13.790	0.8628	12567
16.160	100188	67.8	1115.8	5.399	-1.407	13.794	0.8629	12576
16.180	100324	67.8	1116.2	5.390	-1.409	13.799	0.8630	12585
16.200	100460	67.8	1116.6	5.380	-1.411	13.804	0.8631	12594
16.220	100596	67.8	1116.9	5.371	-1.413	13.808	0.8632	12603
16.240	100732	67.8	1117.3	5.362	-1.414	13.813	0.8633	12612
16.260	100868	67.8	1117.7	5.353	-1.416	13.818	0.8634	12621
16.280	101003	67.8	1118.1	5.344	-1.418	13.822	0.8635	12631
16.300	101139	67.8	1118.5	5.334	-1.420	13.827	0.8636	12640
16.320	101275	67.8	1118.9	5.325	-1.422	13.831	0.8637	12649
16.340	101411	67.8	1119.2	5.316	-1.424	13.836	0.8638	12658
16.360	101547	67.8	1119.6	5.307	-1.425	13.840	0.8639	12667
16.380	101682	67.9	1120.0	5.298	-1.427	13.845	0.8640	12676

Πίνακας 10
Πίνακας συντελεστή θερμικής διαστολής (Volume Correction Factor – VCF)

TABLE 6A. GENERALIZED CRUDE OILS
VOLUME CORRECTION TO 60 F

TEMP. F	API GRAVITY AT 60 F										TEMP. F	
	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5		35.0
FACTOR FOR CORRECTING VOLUME TO 60 F												
75.0	0.9933	0.9933	0.9932	0.9932	0.9931	0.9931	0.9931	0.9930	0.9930	0.9929	0.9929	75.0
75.5	0.9931	0.9930	0.9930	0.9930	0.9929	0.9929	0.9928	0.9928	0.9927	0.9927	0.9926	75.5
76.0	0.9929	0.9928	0.9928	0.9927	0.9927	0.9926	0.9926	0.9925	0.9925	0.9925	0.9924	76.0
76.5	0.9926	0.9926	0.9925	0.9925	0.9925	0.9924	0.9924	0.9923	0.9923	0.9922	0.9922	76.5
77.0	0.9924	0.9924	0.9923	0.9923	0.9922	0.9922	0.9921	0.9921	0.9920	0.9920	0.9919	77.0
77.5	0.9922	0.9921	0.9921	0.9920	0.9920	0.9919	0.9919	0.9918	0.9918	0.9917	0.9917	77.5
78.0	0.9920	0.9919	0.9919	0.9918	0.9918	0.9917	0.9917	0.9916	0.9916	0.9915	0.9915	78.0
78.5	0.9917	0.9917	0.9916	0.9916	0.9915	0.9915	0.9914	0.9914	0.9913	0.9913	0.9912	78.5
79.0	0.9915	0.9915	0.9914	0.9914	0.9913	0.9913	0.9912	0.9911	0.9911	0.9910	0.9910	79.0
79.5	0.9913	0.9912	0.9912	0.9911	0.9911	0.9910	0.9910	0.9909	0.9909	0.9908	0.9907	79.5
80.0	0.9911	0.9910	0.9910	0.9909	0.9908	0.9908	0.9907	0.9907	0.9906	0.9906	0.9905	80.0
80.5	0.9908	0.9908	0.9907	0.9907	0.9906	0.9906	0.9905	0.9904	0.9904	0.9903	0.9903	80.5
81.0	0.9906	0.9906	0.9905	0.9904	0.9904	0.9903	0.9903	0.9902	0.9902	0.9901	0.9900	81.0
81.5	0.9904	0.9903	0.9903	0.9902	0.9902	0.9901	0.9900	0.9900	0.9899	0.9899	0.9898	81.5
82.0	0.9902	0.9901	0.9901	0.9900	0.9899	0.9899	0.9898	0.9897	0.9897	0.9896	0.9896	82.0
82.5	0.9900	0.9899	0.9898	0.9898	0.9897	0.9896	0.9896	0.9895	0.9894	0.9894	0.9893	82.5
83.0	0.9897	0.9897	0.9896	0.9895	0.9895	0.9894	0.9893	0.9893	0.9892	0.9891	0.9891	83.0
83.5	0.9895	0.9894	0.9894	0.9893	0.9892	0.9892	0.9891	0.9890	0.9890	0.9889	0.9888	83.5
84.0	0.9893	0.9892	0.9891	0.9891	0.9890	0.9889	0.9889	0.9888	0.9887	0.9887	0.9886	84.0
84.5	0.9891	0.9890	0.9889	0.9889	0.9888	0.9887	0.9886	0.9886	0.9885	0.9884	0.9884	84.5
85.0	0.9888	0.9888	0.9887	0.9886	0.9886	0.9885	0.9884	0.9883	0.9883	0.9882	0.9881	85.0
85.5	0.9886	0.9885	0.9885	0.9884	0.9883	0.9883	0.9882	0.9881	0.9880	0.9880	0.9879	85.5
86.0	0.9884	0.9883	0.9882	0.9882	0.9881	0.9880	0.9879	0.9879	0.9878	0.9877	0.9877	86.0
86.5	0.9882	0.9881	0.9880	0.9879	0.9879	0.9878	0.9877	0.9876	0.9876	0.9875	0.9874	86.5
87.0	0.9879	0.9879	0.9878	0.9877	0.9876	0.9876	0.9875	0.9874	0.9873	0.9873	0.9872	87.0
87.5	0.9877	0.9876	0.9876	0.9875	0.9874	0.9873	0.9873	0.9872	0.9871	0.9870	0.9869	87.5
88.0	0.9875	0.9874	0.9873	0.9873	0.9872	0.9871	0.9870	0.9869	0.9869	0.9868	0.9867	88.0
88.5	0.9873	0.9872	0.9871	0.9870	0.9869	0.9869	0.9868	0.9867	0.9866	0.9865	0.9865	88.5
89.0	0.9870	0.9870	0.9869	0.9868	0.9867	0.9866	0.9866	0.9865	0.9864	0.9863	0.9862	89.0
89.5	0.9868	0.9867	0.9867	0.9866	0.9865	0.9864	0.9863	0.9862	0.9862	0.9861	0.9860	89.5
90.0	0.9866	0.9865	0.9864	0.9863	0.9863	0.9862	0.9861	0.9860	0.9859	0.9858	0.9857	90.0

* DENOTES EXTRAPOLATED VALUE

TABLE 6A. GENERALIZED CRUDE OILS
VOLUME CORRECTION TO 60 F

TEMP. F	API GRAVITY AT 60 F										TEMP. F	
	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5		35.0
FACTOR FOR CORRECTING VOLUME TO 60 F												
90.0	0.9866	0.9865	0.9864	0.9863	0.9863	0.9862	0.9861	0.9860	0.9859	0.9858	0.9857	90.0
90.5	0.9864	0.9863	0.9862	0.9861	0.9860	0.9859	0.9859	0.9858	0.9857	0.9856	0.9855	90.5
91.0	0.9861	0.9861	0.9860	0.9859	0.9858	0.9857	0.9856	0.9855	0.9854	0.9854	0.9853	91.0
91.5	0.9859	0.9858	0.9857	0.9857	0.9856	0.9855	0.9854	0.9853	0.9852	0.9851	0.9850	91.5
92.0	0.9857	0.9856	0.9855	0.9854	0.9853	0.9852	0.9852	0.9851	0.9850	0.9849	0.9848	92.0
92.5	0.9855	0.9854	0.9853	0.9852	0.9851	0.9850	0.9849	0.9848	0.9847	0.9846	0.9846	92.5
93.0	0.9852	0.9852	0.9851	0.9850	0.9849	0.9848	0.9847	0.9846	0.9845	0.9844	0.9843	93.0
93.5	0.9850	0.9849	0.9848	0.9847	0.9846	0.9845	0.9844	0.9843	0.9842	0.9841	0.9841	93.5
94.0	0.9848	0.9847	0.9846	0.9845	0.9844	0.9843	0.9842	0.9841	0.9840	0.9839	0.9838	94.0
94.5	0.9846	0.9845	0.9844	0.9843	0.9842	0.9841	0.9840	0.9839	0.9838	0.9837	0.9836	94.5
95.0	0.9843	0.9842	0.9842	0.9841	0.9840	0.9839	0.9838	0.9837	0.9836	0.9835	0.9834	95.0
95.5	0.9841	0.9840	0.9839	0.9838	0.9837	0.9836	0.9835	0.9834	0.9833	0.9832	0.9831	95.5
96.0	0.9839	0.9838	0.9837	0.9836	0.9835	0.9834	0.9833	0.9832	0.9831	0.9830	0.9829	96.0
96.5	0.9837	0.9836	0.9835	0.9834	0.9833	0.9832	0.9831	0.9830	0.9829	0.9827	0.9826	96.5
97.0	0.9834	0.9833	0.9832	0.9831	0.9830	0.9829	0.9828	0.9827	0.9826	0.9825	0.9824	97.0
97.5	0.9832	0.9831	0.9830	0.9829	0.9828	0.9827	0.9826	0.9825	0.9824	0.9823	0.9822	97.5
98.0	0.9830	0.9829	0.9828	0.9827	0.9826	0.9825	0.9824	0.9823	0.9821	0.9820	0.9819	98.0
98.5	0.9828	0.9827	0.9826	0.9825	0.9823	0.9822	0.9821	0.9820	0.9819	0.9818	0.9817	98.5
99.0	0.9826	0.9824	0.9823	0.9822	0.9821	0.9820	0.9819	0.9818	0.9817	0.9816	0.9814	99.0
99.5	0.9823	0.9822	0.9821	0.9820	0.9819	0.9818	0.9817	0.9815	0.9814	0.9813	0.9812	99.5
100.0	0.9821	0.9820	0.9819	0.9818	0.9817	0.9815	0.9814	0.9813	0.9812	0.9811	0.9810	100.0
100.5	0.9819	0.9818	0.9817	0.9816	0.9815	0.9813	0.9812	0.9811	0.9810	0.9808	0.9807	100.5
101.0	0.9817	0.9815	0.9814	0.9813	0.9812	0.9811	0.9810	0.9808	0.9807	0.9806	0.9805	101.0
101.5	0.9814	0.9813	0.9812	0.9811	0.9810	0.9808	0.9807	0.9806	0.9805	0.9804	0.9803	101.5
102.0	0.9812	0.9811	0.9810	0.9808	0.9807	0.9806	0.9805	0.9804	0.9803	0.9801	0.9800	102.0
102.5	0.9810	0.9809	0.9807	0.9806	0.9805	0.9804	0.9803	0.9801	0.9800	0.9799	0.9798	102.5
103.0	0.9808	0.9806	0.9805	0.9804	0.9803	0.9801	0.9800	0.9799	0.9798	0.9797	0.9795	103.0
103.5	0.9805	0.9804	0.9803	0.9802	0.9800	0.9799	0.9798	0.9797	0.9795	0.9794	0.9793	103.5
104.0	0.9803	0.9802	0.9801	0.9799	0.9798	0.9797	0.9796	0.9794	0.9793	0.9792	0.9791	104.0
104.5	0.9801	0.9799	0.9798	0.9797	0.9796	0.9795	0.9793	0.9792	0.9791	0.9789	0.9788	104.5
105.0	0.9799	0.9797	0.9796	0.9795	0.9793	0.9792	0.9791	0.9790	0.9788	0.9787	0.9786	105.0

* DENOTES EXTRAPOLATED VALUE

